Phantom.eu

YOUR DAILY KNOW-HOW EXPERT

ALL YOU NEED IN MACHINING TOOLS

phantom.eu

■ Bij uitstek geschikt - Très approprié - Muy adecuado - Ideal geeignet - Very adequate

□ Beperkt geschikt - Approprié - Adecuado - Eingeschränkt geeignet - Adequate

ISO ■	ISO □	NL	FR	ES	DE	EN
P 11 ≤600 N/mm^2	P 11 ≤600 N/mm^2	**Ongelegeerd en gelegeerd staal ≤600 N/mm^2** 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)	**Aciers non-alliés ou faiblement alliés ≤600 N/mm^2** 1.0037 (A37), 1.0038 (E 24-2 Ne), 1.00402 (1C20), 1.1178 (1C30)	**Acero no aleado ≤600 N/mm^2** 1.0037 (S235JR), 1.0038 (S235JR G2), 1.0402 (F.112), 1.1178 (C30E)	**Unlegierter und legierter Stahl ≤600 N/mm^2** 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)	**Unalloyed and low-alloyed steel ≤600 N/mm^2** 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)
P 12 ≤850 N/mm^2	P 12 ≤850 N/mm^2	**Ongelegeerd en gelegeerd staal 600 - 850 N/mm^2** 1.0050 (St50-2), 1.0070 (St70-2), 1.0301 (C10), 1.0503 (C45), 1.1121 (Ck10), 1.1191 (C45E), 1.0718 (11SMnPb30), 1.0736 (11SMn37)	**Aciers non-alliés ou faiblement alliés 600 - 850 N/mm^2** 1.0050 (A50-2), 1.0070 (A70-2), 1.0301 (1C10), 1.0503 (1C45), 1.1121 (XC10), 1.1191 (2C45), 1.0718 (S250PB), 1.0736 (S300Pb)	**Acero no aleado 600 - 850 N/mm^2** 1.0050 (Fe490-2), 1.0070 (Fe690-2), 1.0301 (F.1151), 1.0503 (F.114), 1.1121 (F.1510-C10K), 1.1191 (C45K), 1.0718 (F.2112-11SMnPb28), 1.0736 (F.2113-11SMn37)	**Unlegierter und legierter Stahl 600 - 850 N/mm^2** 1.0050 (St50-2), 1.0070 (St70-2), 1.0301 (C10), 1.0503 (C45), 1.1121 (Ck10), 1.1191 (C45E), 1.0718 (11SMnPb30), 1.0736 (11SMn37)	**Unalloyed and low-alloyed steel 600 - 850 N/mm^2** 1.0050 (St50-2), 1.0070 (St70-2), 1.0301 (C10), 1.0503 (C45), 1.1121 (Ck10), 1.1191 (C45E), 1.0718 (11SMnPb30), 1.0736 (11SMn37)
P 13 ≤1000 N/mm^2	P 13 ≤1000 N/mm^2	**Gelegeerd staal 850 - 1000 N/mm^2** 1.0727 (46S20), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (X210Cr12), 1.2083 (X42Cr13), 1.2767 (X45NiCrMo4), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)	**Aciers alliés 850 - 1000 N/mm^2** 1.0727 (45MF4), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (Z200C12), 1.2083 (Z40C14), 1.2767 (Y35NCD16), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)	**Acero aleado 850 - 1000 N/mm^2** 1.0727 (46S20), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (F.5212-X210Cr12), 1.2083 (X42Cr13), 1.2767 (X45NiCrMo4), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)	**Legierter Stahl 850 - 1000 N/mm^2** 1.0727 (46S20), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (X210Cr12), 1.2083 (X42Cr13), 1.2767 (X45NiCrMo4), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)	**Alloyed steel 850 - 1000 N/mm^2** 1.0727 (46S20), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (X210Cr12), 1.2083 (X42Cr13), 1.2767 (X45NiCrMo4), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)
P 14 ≤1400 N/mm^2	P 14 ≤1400 N/mm^2	**Gelegeerd staal 1000 - 1400 N/mm^2** 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	**Aciers alliés 1000 - 1400 N/mm^2** 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	**Acero aleado 1000 - 1400 N/mm^2** 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	**Legierter Stahl 1000 - 1400 N/mm^2** 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	**Alloyed steel 1000 - 1400 N/mm^2** 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)
H 15 HRC	H 15 HRC	**Gehard en inzetgehard staal 50 - 60 HRC** 1.2344 (X40CrMoV5), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)	**Aciers trempés et Aciers de cémentation alliés 50 - 60 HRC** 1.2344 (Z 40 CDV 5), 1.2767 (X45NiCrMo4), 1.2379 (D2), 1.2080 (Z200C12), 1.3343 (Z85WDCV)	**Acero templado 50 - 60 HRC** 1.2344 (X40CrMoV5), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)	**Gehärteter und einsatzgehärteter Stahl, 50–60 HRC** 1.2344 (X40CrMoV5), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)	**Hardened and case hardenend steel** 50 - 60 HRC 1.2344 (X40CrMoV5), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)
M 21 INOX ≤850N/mm^2	M 21 INOX ≤850N/mm^2	**Roestvaststaal, INOX ≤850 N/mm^2** 1.4005 (X12CrS13), 1.4104 (X14CrMoS17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	**Aciers Inoxydables ≤850 N/mm^2** 1.4005 (Z11CF13), 1.4104 (Z13CF17), 1.4105 (Z8CF17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	**Acero inoxidable ≤850 N/mm^2** 1.4006 (F.3401-X10Cr13), 1.4104 (F.3117-X10Crs17), 1.4301 (F.3504-X5CrNi18-10)(304), 1.4305 (F.3508-X10CrNiS18-09)(303)	**Rostfreier Stahl, INOX ≤850 N/mm^2** 1.4005 (X12CrS13), 1.4104 (X14CrMoS17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	**Stainless steel, INOX ≤850 N/mm^2** 1.4005 (X12CrS13), 1.4104 (X14CrMoS17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)
M 22 INOX >850N/mm^2	M 22 INOX >850N/mm^2	**Roestvaststaal, INOX >850 N/mm^2** 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	**Aciers Inoxydables >850 N/mm^2** 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	**Acero inoxidable >850 N/mm^2** 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (F.3535-X6CrNiMoTi17-12-2)(316Ti)	**Rostfreier Stahl, INOX >850 N/mm^2** 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	**Stainless steel, INOX >850 N/mm^2** 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)
K 31 GG	K 31 GG	**Grijs gietijzer GG <260 HB30** 0.6015 (GG 15), 0.6025 (GG 25), 0.6040 (GG 40)	**Fontes <260 HB30** 0.6015 (GG 15), 0.6025 (GG 25), 0.6040 (GG 40)	**Fundición gris con grafito laminado** GG <260 HB30 0.6015 (FG15), 0.6025 (FG25), 0.6040 (FG40)	**Grauguss GG <260 HB30** 0.6015 (GG 15), 0.6025 (GG 25), 0.6040 (GG 40)	**Grey cast iron GG <260 HB30** 0.6015 (GG 15), 0.6025 (GG 25), 0.6040 (GG 40)
K 32 GGG GTS-GTW	K 32 GGG GTS-GTW	**Smeedbaar en Nodulair gietijzer <260 HB30** 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)	**Fontes à graphites et malléables <260 HB30** 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)	**Fundición gris con grafito esferoidal <260 HB30** 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)	**Formbar und dehnbares Gusseisen <260 HB30** 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)	**Nodular and malleable cast iron <260 HB30** 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)
N 41 Alu	N 41 Alu	**Aluminium en Aluminiumlegeringen** 3.0255 (Al99,5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	**Aluminium et Alliages d'Aluminium** 3.0255 (A59050C), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	**Aluminio y aleaciones de Aluminio** 3.0255 (Al99,5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	**Aluminium und Aluminiumlegierungen** 3.0255 (Al99,5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	**Aluminium and Aluminium alloys** 3.0255 (Al99,5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)
N 42 Alu Si>10%	N 42 Alu Si>10%	**Gietaluminium Si 10 - 24%** 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9),, 3.2581 (G-AlSi12), 3.2583 (G-AlSi12Cu)	**Alliages d'Aluminium Si 10 - 24%** 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9), 3.2581 (G-AlSi12), 3.2583 (G-AlSi12Cu)	**Fundición de Aluminio aleada Si 10 - 24%** 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9), 3.2581 (L-2520,21), 3.2583 (L2530)	**Druckguss Si 10 - 24%** 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9), 3.2581 (G-AlSi12), 3.2583 (G-AlSi12Cu)	**Cast Aluminium Si 10 - 24%** 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9),, 3.2581 (G-AlSi12), 3.2583 (G-AlSi12Cu)
N 43 Mg	N 43 Mg	**Magnesiumlegeringen** 3.5200 (MgMn2), 3.5812 (G-MgAl8Zn1), 3.5612 (G-MgAl6Zn1)	**Alliages de Magnésium** 3.5200 (MgMn2), 3.5812 (AZ81hp), 3.5612 (AZ61)	**Aleaciones de Magnesio** 3.5200 (MgMn2), 3.5812 (AZ81hp), 3.5612 (AZ61)	**Magnesiumlegierungen** 3.5200 (MgMn2), 3.5812 (G-MgAl8Zn1), 3.5612 (G-MgAl6Zn1)	**Magnesium alloys** 3.5200 (MgMn2), 3.5812 (G-MgAl8Zn1), 3.5612 (G-MgAl6Zn1)
N 51 Cu	N 51 Cu	**Koper en Koperlegeringen** 2.0070 (SE-Cu), 2.1020 (CuSn6), 2.1096 (G-CuSn5ZnPb), 2.0380 (CuZn39Pb2), 2.0401 (CuZn39Pb3), 2.0250 (CuZn20), 2.0280 (CuZn33), 2.0332 (CuZn37Pb0,5)	**Cuivres et Alliages de cuivres** 2.0070 (SE-Cu), 2.1020 (CuSn6), 2.1096 (G-CuSn5ZnPb), 2.0380 (CuZn40), 2.0401 (Cu-Zn39Pb3), 2.0250 (CuZn20), 2.0280 (CuZn33), 2.0332 (CuZn37Pb0,5)	**Cobre y aleaciones de cobre** 2.0070 (SE-Cu), 2.1020 (CuSn6), 2.1096 (G-CuSn5ZnPb), 2.0380 (CuZn39Pb2), 2.0401 (CuZn39Pb3), 2.0250 (CuZn20), 2.0280 (CuZn33), 2.0332 (CuZn37Pb0,5)	**Kupfer und Kupferlegierungen** 2.0070 (SE-Cu), 2.1020 (CuSn6), 2.1096 (G-CuSn5ZnPb), 2.0380 (CuZn39Pb2), 2.0401 (CuZn39Pb3), 2.0250 (CuZn20), 2.0280 (CuZn33), 2.0332 (CuZn37Pb0,5)	**Copper and copper alloys** 2.0070 (SE-Cu), 2.1020 (CuSn6), 2.1096 (G-CuSn5ZnPb), 2.0380 (CuZn39Pb2), 2.0401 (CuZn39Pb3), 2.0250 (CuZn20), 2.0280 (CuZn33), 2.0332 (CuZn37Pb0,5)
N 52 CuAlFe	N 52 CuAlFe	**Koper- en Aluminiumlegering** 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (CuBe2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18	**Cuivre et Alliages d'Aluminium** 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (CuBe1.9) AMPCO® 8, AMPCO® 8 15, AMPCO® 18	**Cobre y aleaciones de Aluminio** 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (CuBe2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18	**Kupfer- und Aluminiumlegierungen** 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (Cu-Be2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18	**Copper and Aluminium alloys** 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (CuBe2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18
N 61 PVC	N 61 PVC	**Duroplastic en Thermoplastic** PMMA, PVC, PE, PP, PTFE	**Duroplastiques et Thermoplastiques** PMMA, PVC, PE, PP, PTFE	**Duroplásticos en Termoplásticos** PMMA, PVC, PE, PP, PTFE	**Duroplaste und Thermoplaste** PMMA, PVC, PE, PP, PTFE	**Duroplastics en Thermoplastics** PMMA, PVC, PE, PP, PTFE
N 62 GFK/CFK	N 62 GFK/CFK	**Versterkte kunststoffen** GFK, CFK	**Plastiques réenforcés** GFK, CFK	**Plásticos reforzados** GFK, CFK	**Verstärkte Kunststoffe** GFK, CFK	**Reinforced plastics** GFK, CFK
S 71 Ni/Co	S 71 Ni/Co	**Nikkel- en Cobaltlegeringen** Hastelloy, Inconel, Nimonic, Jetalloy	**Alliages de Nickel et de Cobalt** Hastelloy, Inconel, Nimonic, Jetalloy	**Aleaciones de Níquel y Cobalto** Hastelloy, Inconel, Nimonic, Jetalloy	**Nickel und Kobaltlegierungen** Hastelloy, Inconel, Nimonic, Jetalloy	**Nikkel and Cobalt alloys** Hastelloy, Inconel, Nimonic, Jetalloy
S 72 Ti	S 72 Ti	**Titaniumlegeringen** 3.7024 (Ti99,5), 3.7114 (TiAl5Sn2,5), 3.7124 (TiCu2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2,5)	**Alliages de Titane** 3.7024 (T35), 3.7114 (TiAl5Sn2,5), 3.7124 (T-U2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2,5)	**Titanio aleado** 3.7024 (Ti99,5), 3.7114 (TiAl5Sn2,5), 3.7124 (TiCu2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2,5)	**Titanlegierungen** 3.7024 (Ti99,5), 3.7114 (TiAl5Sn2,5), 3.7124 (TiCu2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2,5)	**Titanium alloys** 3.7024 (Ti99,5), 3.7114 (TiAl5Sn2,5), 3.7124 (TiCu2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2,5)

Art. nr. 00.000.1337

Because we are Van Ommen; an international supplier of metalworking tools.

We have two strong brands: Phantom and International Tools.

Our strength lies in our in-depth technical knowledge and innovative ordering platform phantom.eu on which both brands are available.

Want wij zijn Van Ommen; een internationale leverancier van metaalbewerkingsgereedschappen.

We hebben twee sterke merken: Phantom en International Tools.

Onze kracht ligt in onze diepgaande technische kennis en het innovatieve bestelplatform phantom.eu waarop beide merken beschikbaar zijn

Phantom
THERE'S NO END TO WHAT YOU CAN DO

International Tools
SMART METAL TOOLS FOR YOU

Phantom.eu
YOUR DAILY KNOW-HOW EXPERT

Van Ommen
THE BEST BUSINESS PARTNER YOU EVER HAD

Because we are Van Ommen

Parce que nous sommes Van Ommen, un fournisseur international d'outils pour le travail des métaux.

Nous avons deux marques fortes : Phantom et International Tools.

Notre force réside dans nos connaissances techniques approfondies et notre plateforme de commande innovante phantom.eu sur.

Porque somos Van Ommen, un proveedor internacional de herramientas para metalurgia.

Tenemos dos marcas fuertes: Phantom e International Tools.

Nuestra fuerza reside en nuestros profundos conocimientos técnicos y en la innovadora plataforma de pedidos phantom.eu, en la que están disponibles ambas marcas.

Denn wir sind Van Ommen, ein internationaler Anbieter von Metallbearbeitungswerkzeugen.

Wir haben zwei starke Marken: Phantom und International Tools.

Unsere Stärke liegt in unserem fundierten technischen Wissen und unserer innovativen Bestellplattform phantom.eu, auf der beide Marken verfügbar sind.

EN | Knowledge platform made for metalworkers by metalworkers

NL | Kennisplatform gemaakt voor metaalbewerkers door metaalbewerkers

FR | Plateforme de connaissances conçue pour des spécialsites par des spécialistes

ES | Una plataforma de conocimiento hecha por metalúrgicos para metalúrgicos

DE | Wissensplattform von Metallarbeitern für Metallarbeiter

Phantom.eu
YOUR DAILY KNOW-HOW EXPERT


Phantom
THERE'S NO END TO WHAT YOU CAN DO
Wide and complete range
END MILLS
Made in Germany
EN | Use of logical lengths
Workpiece icon for better view field of usage
NL | Gebruik van logische lengtes
Werkgebiedicoon voor overzicht inzetgebied
FR | Utilisation de longueurs logiques
Icône de plage de travail pour visualiser
les zones de performance
ES | Uso de longitudes lógicas
Icono claro para facilitar el uso de la fresa
DE | Verwendung von logischen Längen
Arbeitsbereichssymbol für einen Überblick
über den Arbeitsbereich
View our full range at phantom.eu

Phantom
THERE'S NO END TO WHAT YOU CAN DO

First choice

UNI MACHINE TAPS

EN | Assured of approved thread
1 tap for all materials

NL | Verzekerd van goedgekeurd schroefdraad
1 tap voor alle materialen

FR | Filetage homologué garanti
1 taraud adapté à toutes les matières

ES | Garantía de rosca homologada
1 macho para todos los materiales

DE | Garantiert bewährte Gewinde
1 Gewindebohrer für alle Materialien

phantom.eu

Phantom
THERE'S NO END TO WHAT YOU CAN DO

STEP-POINT DRILLS

EN | Professional force free drilling by hand
Ideal force distribution
Drilling at an angle

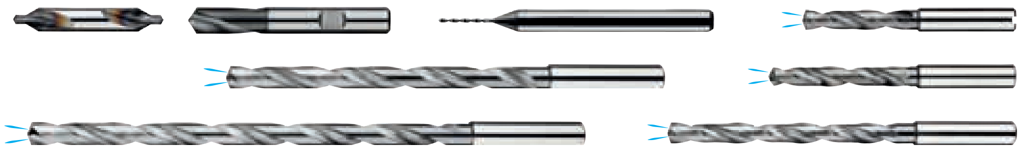
NL | Professioneel licht boren uit de hand
Ideale krachtverdeling
Boren onder een hoek

FR | Perçage facile & rapide
Répartition idéale des forces
Perçage angulaire possible

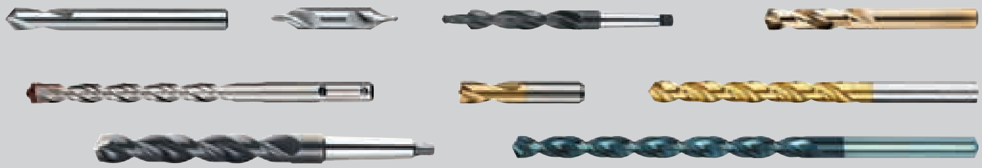
ES | Taladro, professional, controlado y fácil
Distribución de fuerza ideal
Permite taladrar en ángulo

DE | Professionelles Lichtbohren aus der Hand
Ideale Kraftverteilung
Winkelbohren

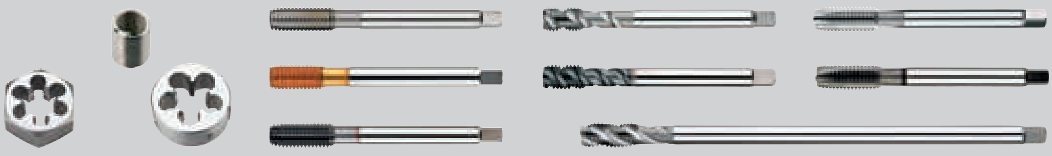
NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



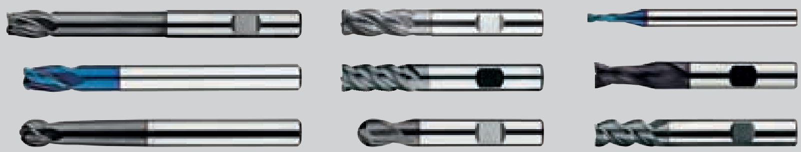
NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



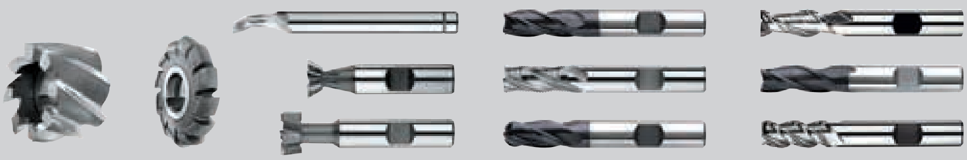
NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



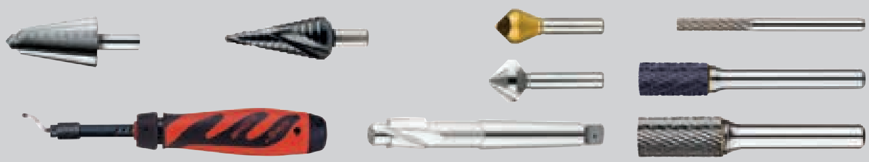
NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



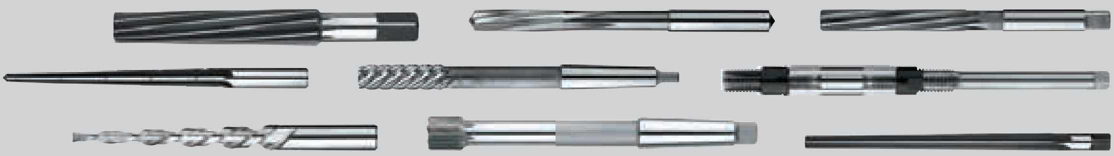
NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



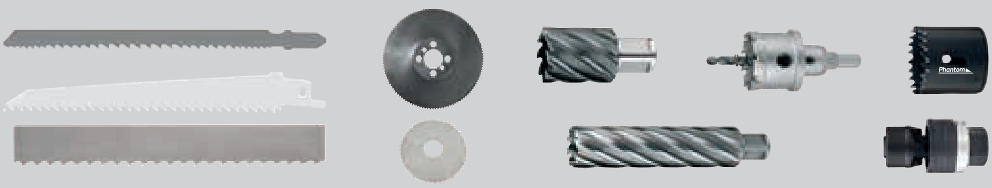
NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring



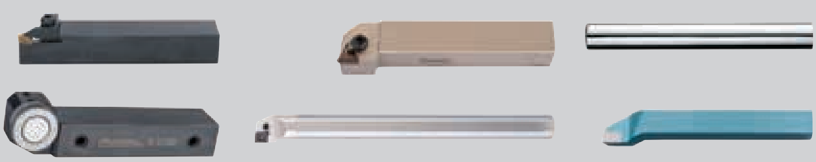
NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming



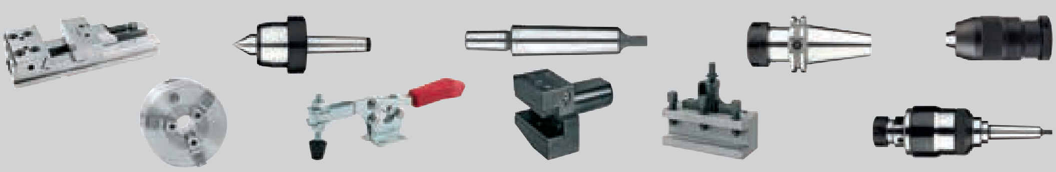
NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



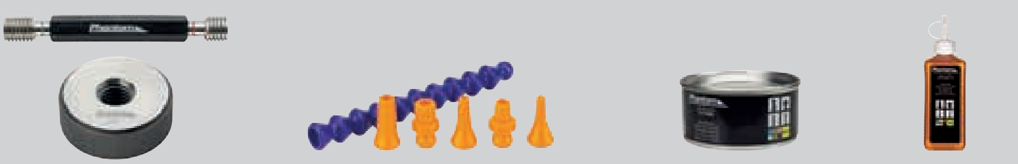
NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
VHM SC	Volhardmetaal	Carbure Monobloc	Metal Duro integral	Vollhartmetall	Solid Carbide
MG HM	Micro-Grain volhardmetaal	Carbure Micrograin	Metal Duro Micro-Grano	Micro-Grain Vollhartmetall	Micrograin tungsten carbide
TiAlN	TiAN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung	TiAlN coated
AlCrN-X	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung	AlCrN-X coated
DLC	DLC gecoat	Revêtement DLC	Recubrimiento DLC	DLC Beschichtung	DLC coated
DIN 6537-K	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
3xD	Max. boordiepte	Profondeur max. de perçage	Profundidad máx. de perforacion	Max. Bohrtiefe	Max drilling depth
N	Type N, standaard spiraaluitvoering	Type N, hélice standard	Tipo N, Versión helicoidal estándar	Type N, standard Spiralwinkel	Type N, standard spiral
h6	Cilindrische schacht h6	Queue cylindrique h6	Mango cilíndrico h6	Zylinderschaft h6	Straight shank h6
DIN 6535-HA	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft	Straight shank
DIN 6535-HB	Cilindrische schacht met Weldon vlak	Queue cylindrique avec méplat type Weldon	Mango cilíndrico con plano de arrastre tipo Weldon	Zylinderschaft mit Mitnahmefläche Typ Weldon	Straight shank, type Weldon (DIN 6535-HA)
DIN 6535-HE	Cilindrische schacht met Whistle-Notch	Queue cylindrique avec Whistle-Notch	Mango cilíndrico con Whistle-Notch	Zylinderschaft mit Whistle-Notch	Straight shank with Wistle Notch
	Meervlaks-kruis-aanslijping	Affûtage multi-pentes	Afilado multi facetas	Mehrflachs-Kreuzanschliff	Multi-facet point

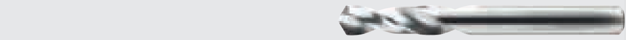
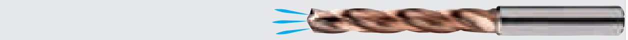
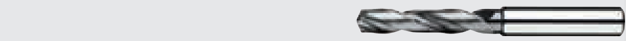
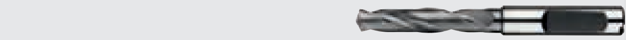
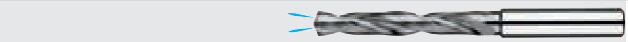
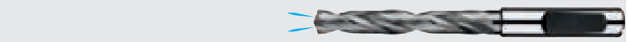
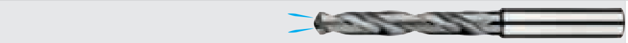
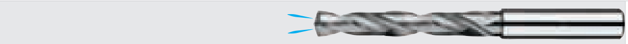
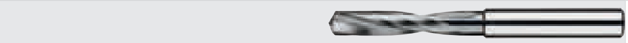
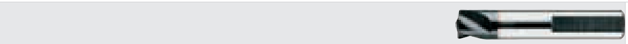
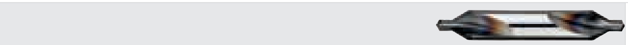
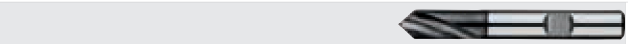
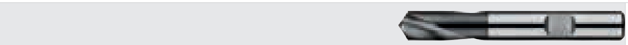
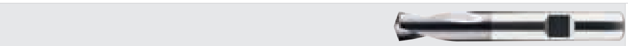
	NL	FR	ES	DE	EN
	Phantom VHM-aanslijping	Affûtage Carbure Phantom	Afilado metal duro Phantom	Phantom VHM-Anschliff	Phantom SC point
	Boor met 3 snijkanten	Foret à 3 lèvres	Broca con 3 facetas	Bohrer mit 3 Schneiden	Drill with 3 cutting sides
	Koelkanaal	A trous d'huile	Canal de refrigeración	Mit Kühlkanal	Coolant feed
140°	Tophoek	Angle au sommet	Ángulo de la punta	Spitzenwinkel	Top angle
h7	Boortolerantie	Tolérance du perçage	Tolerancia de taladrar	Bohrtoleranz	Drilltolerance
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl	For stainless steel
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium	For aluminium
UNI	Universeel	Universel	Universal	Universal	Universal
HF	Hoge voeding	Grande Avance	Alto avance	Hohe Ernährung	High Feed
60°	Uitvoering centreergat	Angle de lamage	Versión ángulo avellanado	Ausführung Zentrierloch	Centre hole
90°	Centreerhoek	Point de centrage	Ángulo de centrar	Zentrierspitze	Centre angle
142°	NC-Centreerboor 142°	Foret à pointer NC 142°	Broca de puntear NC 142°	NC Anbohr 142°	NC Spotting Drill 142°
- 0,000 +0,005	Tolerantie 0,005 mm	Tolérance 0,005 mm	Tolerancia 0,005 mm	Toleranz 0,005 mm	Tolerance 0.005 mm

NL **VHM Boren**
FR **Forets Carbure monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**
EN **Solid carbide Drills**

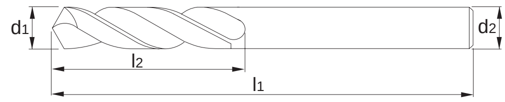
P K / H N / M S — Bij uitstekt geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K / H N / M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

› 11.200	Phantom	DIN 6539	3xD		P	M	K	N	S			P. 2
› 11.204	Phantom	DIN 6539	3xD		P	M	K	N	S			P. 2
› 11.240	Phantom	DIN 6539	3xD		P		K	N				P. 3
› 11.245	Phantom	DIN 6537-L	5xD		P		K			H		P. 4
› 11.250	Phantom	DIN 6537-K	3xD	UNI	P	M	K	N	S	H		P. 4
› 11.251	Phantom	DIN 6537-K	3xD	UNI	P	M	K	N	S	H		P. 5
› 11.252	International Tools	DIN 6537-K	3xD	ECO PRO	P	M	K	N	S	H	 NEW	P. 5
› 11.253	Phantom	DIN 6537-K	3xD	UNI	P	M	K	N	S	H		P. 6
› 11.254	Phantom	DIN 6537-K	3xD	UNI	P	M	K	N	S	H		P. 6
› 11.259	Phantom	DIN 6537-K	3xD	ALU				N				P. 7
› 11.262	Phantom	DIN 6537-K	3xD	INOX	P	M			S			P. 7
› 11.270	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H		P. 8
› 11.271	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H		P. 9
› 11.272	International Tools	DIN 6537-L	5xD	ECO PRO	P	M	K	N	S	H	 NEW	P. 9
› 11.273	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H		P. 10
› 11.274	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H		P. 11
› 11.279	Phantom	DIN 6537-L	5xD	ALU				N				P. 11
› 11.282	Phantom	DIN 6537-L	5xD	INOX	P	M			S			P. 12
› 11.286	Phantom	NORM	5xD	HRC						H		P. 13
› 11.295	Phantom	NORM	8xD	UNI	P	M	K	N	S	H		P. 13
› 11.296	Phantom	NORM	8xD	UNI	P	M	K	N	S	H		P. 13
› 11.305	Phantom	NORM	10xD	UNI	P	M	K	N	S	H		P. 14
› 11.310	Phantom	NORM	15xD	UNI	P	M	K	N	S	H		P. 14
› 11.330	Phantom	NORM	5xD	UNI	P	M	K	N	S	H		P. 14
› 11.335	Phantom	NORM	8xD	UNI	P	M	K	N	S	H		P. 15
› 11.360	Phantom				P	M	K	N	S	H		P. 15
› 11.650	Phantom	DIN 338	8xD		P	M	K	N	S			P. 16
› 11.654	Phantom	DIN 338	8xD		P	M	K	N	S			P. 16
› 13.814	Phantom				P	M						P. 17
› 15.144	Phantom		DIN 333-A	60°	P	M						P. 18
› 15.624	Phantom		DIN 6535-HB	90°	P	M	K	N	S	H		P. 18
› 15.724	Phantom		DIN 6535-HB	120°	P	M	K	N	S	H		P. 18
› 15.764	Phantom		DIN 6535-HB	142°	P	M	K	N	S	H		P. 19

› 11.200 Phantom



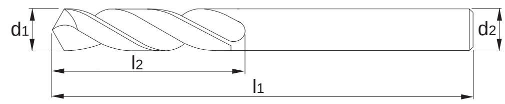
NL Volhardmetaal Spiraalboor
FR Foret Carbure monobloc
ES Broca Metal Duro Integral
DE Vollhartmetall Spiralbohrer
EN Solid carbide Twist drill

MG HM	DIN 6539	3xD	N	h6	118°	h7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	N 61 PVC	N 62 GFK/CFK	S 71 Ni/Co	S 72 Ti
70-80 D	50-80 D	50-70 D	25-80 B	20-25 D	20-25 C	72-90 D	70-80 D	160-200 G	120-150 F	120-180 F	120-180 E	30-40 C	60-80 C	12-15 B	15-20 C

Ref.	d1	d2	l1	l2
11.200.0100	1	1	26	6
11.200.0110	1.1	1.1	28	7
11.200.0120	1.2	1.2	30	8
11.200.0130	1.3	1.3	30	8
11.200.0140	1.4	1.4	32	9
11.200.0150	1.5	1.5	32	9
11.200.0160	1.6	1.6	34	10
11.200.0170	1.7	1.7	34	10
11.200.0180	1.8	1.8	36	11
11.200.0190	1.9	1.9	36	11
11.200.0200	2	2	38	12
11.200.0210	2.1	2.1	38	12
11.200.0220	2.2	2.2	40	13
11.200.0230	2.3	2.3	40	13
11.200.0240	2.4	2.4	43	14
11.200.0250	2.5	2.5	43	14
11.200.0260	2.6	2.6	43	14
11.200.0270	2.7	2.7	46	16
11.200.0280	2.8	2.8	46	16
11.200.0290	2.9	2.9	46	16
11.200.0300	3	3	46	16
11.200.0310	3.1	3.1	49	18
11.200.0320	3.2	3.2	49	18
11.200.0330	3.3	3.3	49	18
11.200.0340	3.4	3.4	52	20
11.200.0350	3.5	3.5	52	20
11.200.0360	3.6	3.6	52	20
11.200.0370	3.7	3.7	52	20
11.200.0380	3.8	3.8	55	22
11.200.0390	3.9	3.9	55	22
11.200.0400	4	4	55	22
11.200.0410	4.1	4.1	55	22
11.200.0420	4.2	4.2	55	22
11.200.0430	4.3	4.3	58	24
11.200.0440	4.4	4.4	58	24
11.200.0450	4.5	4.5	58	24
11.200.0460	4.6	4.6	58	24
11.200.0470	4.7	4.7	58	24
11.200.0480	4.8	4.8	62	26
11.200.0490	4.9	4.9	62	26
11.200.0500	5	5	62	26
11.200.0510	5.1	5.1	62	26
11.200.0520	5.2	5.2	62	26
11.200.0530	5.3	5.3	62	26
11.200.0540	5.4	5.4	66	28
11.200.0550	5.5	5.5	66	28
11.200.0560	5.6	5.6	66	28
11.200.0570	5.7	5.7	66	28
11.200.0580	5.8	5.8	66	28
11.200.0590	5.9	5.9	66	28
11.200.0600	6	6	66	28
11.200.0610	6.1	6.1	70	31
11.200.0620	6.2	6.2	70	31
11.200.0630	6.3	6.3	70	31
11.200.0640	6.4	6.4	70	31
11.200.0650	6.5	6.5	70	31
11.200.0660	6.6	6.6	70	31
11.200.0670	6.7	6.7	70	31
11.200.0680	6.8	6.8	74	34
11.200.0690	6.9	6.9	74	34
11.200.0700	7	7	74	34
11.200.0710	7.1	7.1	74	34
11.200.0720	7.2	7.2	74	34
11.200.0730	7.3	7.3	74	34
11.200.0740	7.4	7.4	74	34
11.200.0750	7.5	7.5	74	34
11.200.0760	7.6	7.6	79	37
11.200.0770	7.7	7.7	79	37
11.200.0780	7.8	7.8	79	37
11.200.0790	7.9	7.9	79	37
11.200.0800	8	8	79	37
11.200.0810	8.1	8.1	79	37
11.200.0820	8.2	8.2	79	37
11.200.0830	8.3	8.3	79	37
11.200.0840	8.4	8.4	79	37
11.200.0850	8.5	8.5	79	37
11.200.0860	8.6	8.6	84	40
11.200.0870	8.7	8.7	84	40
11.200.0880	8.8	8.8	84	40
11.200.0890	8.9	8.9	84	40
11.200.0900	9	9	84	40
11.200.0910	9.1	9.1	84	40
11.200.0920	9.2	9.2	84	40
11.200.0930	9.3	9.3	84	40
11.200.0940	9.4	9.4	84	40
11.200.0950	9.5	9.5	84	40
11.200.0960	9.6	9.6	89	43
11.200.0970	9.7	9.7	89	43
11.200.0980	9.8	9.8	89	43
11.200.0990	9.9	9.9	89	43
11.200.1000	10	10	89	43
11.200.1020	10.2	10.2	89	43
11.200.1050	10.5	10.5	89	43
11.200.1100	11	11	95	47
11.200.1150	11.5	11.5	95	47
11.200.1200	12	12	102	51
11.200.1300	13	13	102	51
11.200.1400	14	14	107	54
11.200.1500	15	15	111	56
11.200.1600	16	16	115	58

› 11.204 Phantom



NL Volhardmetaal Spiraalboor TiAlN
FR Foret Carbure monobloc TiAlN
ES Broca Metal Duro Integral TiAlN
DE Vollhartmetall Spiralbohrer TiAlN
EN Solid carbide Twist drill TiAlN

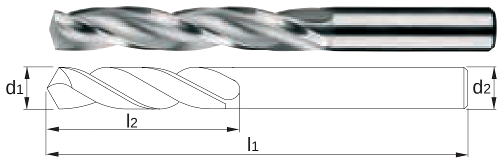
MG HM	TiAlN	DIN 6539	3xD	N	h6	118°	h7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 43 Mg	N 51 Cu	N 61 PVC	N 62 GFK/CFK	S 71 Ni/Co	S 72 Ti
100-110 D	65-105 D	72-95 D	32-95 B	27-32 D	28-32 C	72-90 D	75-95 D	120-180 F	120-180 E	30-40 C	80-95 C	12-15 B	17-24 C

Ref.	d1	d2	l1	l2
11.204.0100	1	1	26	6
11.204.0150	1.5	1.5	32	9
11.204.0200	2	2	38	12
11.204.0250	2.5	2.5	43	14
11.204.0300	3	3	46	16
11.204.0350	3.5	3.5	52	20
11.204.0400	4	4	55	22
11.204.0420	4.2	4.2	55	22
11.204.0450	4.5	4.5	58	24
11.204.0500	5	5	62	26
11.204.0510	5.1	5.1	62	26
11.204.0520	5.2	5.2	62	26
11.204.0550	5.5	5.5	66	28
11.204.0600	6	6	66	28
11.204.0610	6.1	6.1	70	31
11.204.0650	6.5	6.5	70	31
11.204.0700	7	7	74	34
11.204.0750	7.5	7.5	74	34
11.204.0800	8	8	79	37
11.204.0850	8.5	8.5	79	37
11.204.0900	9	9	84	40
11.204.0950	9.5	9.5	84	40
11.204.1000	10	10	89	43
11.204.1020	10.2	10.2	89	43
11.204.1050	10.5	10.5	89	43
11.204.1100	11	11	95	47
11.204.1150	11.5	11.5	95	47
11.204.1200	12	12	102	51
11.204.1250	12.5	12.5	102	51
11.204.1300	13	13	102	51

› 11.240 Phantom

NL Volhardmetaal Spiraalboor 3xD 3 snijkanten
FR Foret Carbure monobloc 3xD 3 taillants
ES Broca Metal Duro Integral 3xD 3 labios
DE Vollhartmetall Spiralbohrer 3xD 3 Schneiden
EN Solid carbide Twist drill 3xD 3 flute



MG HM | DIN 6539 | 3xD | N | 150° | h7

P 13	K 31	K 32	N 41	N 42	N 43	N 51
≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu
50-70 C	80-100 F	70-80 F	180-200 G	120-150 F	160-180 F	120-180 E

Ref.	d1	d2	l1	l2
11.240.0300	3	3	46	16
11.240.0310	3.1	3.1	49	18
11.240.0320	3.2	3.2	49	18
11.240.0330	3.3	3.3	49	18
11.240.0340	3.4	3.4	52	20
11.240.0350	3.5	3.5	52	20
11.240.0360	3.6	3.6	52	20
11.240.0370	3.7	3.7	52	20
11.240.0380	3.8	3.8	55	22
11.240.0390	3.9	3.9	55	22
11.240.0400	4	4	55	22
11.240.0410	4.1	4.1	55	22
11.240.0420	4.2	4.2	55	22
11.240.0430	4.3	4.3	58	24
11.240.0440	4.4	4.4	58	24
11.240.0450	4.5	4.5	58	24
11.240.0460	4.6	4.6	58	24
11.240.0470	4.7	4.7	58	24
11.240.0480	4.8	4.8	62	26
11.240.0490	4.9	4.9	62	26
11.240.0500	5	5	62	26
11.240.0510	5.1	5.1	62	26
11.240.0520	5.2	5.2	62	26
11.240.0530	5.3	5.3	62	26
11.240.0540	5.4	5.4	66	28
11.240.0550	5.5	5.5	66	28
11.240.0560	5.6	5.6	66	28

Ref.	d1	d2	l1	l2
11.240.0570	5.7	5.7	66	28
11.240.0580	5.8	5.8	66	28
11.240.0590	5.9	5.9	66	28
11.240.0600	6	6	66	28
11.240.0610	6.1	6.1	70	31
11.240.0620	6.2	6.2	70	31
11.240.0630	6.3	6.3	70	31
11.240.0640	6.4	6.4	70	31
11.240.0650	6.5	6.5	70	31
11.240.0660	6.6	6.6	70	31
11.240.0670	6.7	6.7	70	31
11.240.0680	6.8	6.8	74	34
11.240.0690	6.9	6.9	74	34
11.240.0700	7	7	74	34
11.240.0710	7.1	7.1	74	34
11.240.0720	7.2	7.2	74	34
11.240.0730	7.3	7.3	74	34
11.240.0740	7.4	7.4	74	34
11.240.0750	7.5	7.5	74	34
11.240.0770	7.7	7.7	79	37
11.240.0780	7.8	7.8	79	37
11.240.0790	7.9	7.9	79	37
11.240.0800	8	8	79	37
11.240.0810	8.1	8.1	79	37
11.240.0820	8.2	8.2	79	37
11.240.0830	8.3	8.3	79	37
11.240.0840	8.4	8.4	79	37

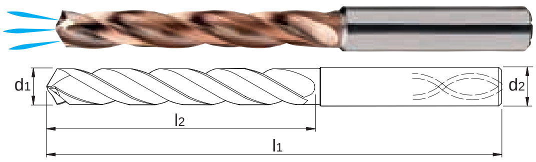
Ref.	d1	d2	l1	l2
11.240.0850	8.5	8.5	79	37
11.240.0860	8.6	8.6	84	40
11.240.0870	8.7	8.7	84	40
11.240.0880	8.8	8.8	84	40
11.240.0890	8.9	8.9	84	40
11.240.0900	9	9	84	40
11.240.0920	9.2	9.2	84	40
11.240.0930	9.3	9.3	84	40
11.240.0950	9.5	9.5	84	40
11.240.0970	9.7	9.7	89	43
11.240.0980	9.8	9.8	89	43
11.240.0990	9.9	9.9	89	43
11.240.1000	10	10	89	43
11.240.1020	10.2	10.2	89	43
11.240.1050	10.5	10.5	89	43
11.240.1100	11	11	95	47
11.240.1150	11.5	11.5	95	47
11.240.1200	12	12	102	51
11.240.1250	12.5	12.5	102	51
11.240.1300	13	13	102	51
11.240.1350	13.5	13.5	107	54
11.240.1400	14	14	107	54
11.240.1450	14.5	14.5	111	56
11.240.1500	15	15	111	56
11.240.1550	15.5	15.5	115	58
11.240.1600	16	16	115	58

NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 11.245 Phantom



NL Volhardmetaal Spiraalboor 5xD High-Feed, met koelkanaal, AlCrN-X, 3 snijkanten
FR Foret Carbure monobloc 5xD High-Feed, à trou d´huile, AlCrN-X, 3 taillants
ES Broca Metal Duro Integral 5xD High-Feed, con canal de refrigeración, AlCrN-X, 3 labios
DE Vollhartmetall Spiralbohrer 5xD High-Feed, mit Innenkühlung, AlCrN-X, 3 Schneiden
EN Solid carbide Twist drill 5xD High-Feed, with coolant holes, AlCrN-X, 3 flute

MG HM | AlCrN-X | DIN 6537-L | 5xD | h6 | DIN 6535-HA | 140° | m7 | HF

P 11	P 12	P 13	P 14	H 15	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	GG	GGG GTS-GTW
120-130 K	90-140 K	90-110 K	70-85 J	35-55 D	80-110 K	100-120 L

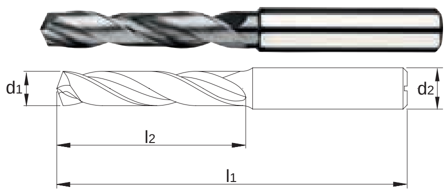
Ref.	d1	d2	l1	l2
11.245.0500	5	6	82	44
11.245.0510	5.1	6	82	44
11.245.0520	5.2	6	82	44
11.245.0530	5.3	6	82	44
11.245.0550	5.5	6	82	44
11.245.0580	5.8	6	82	44
11.245.0600	6	6	82	44
11.245.0650	6.5	8	91	53
11.245.0680	6.8	8	91	53
11.245.0700	7	8	91	53
11.245.0740	7.4	8	91	53
11.245.0800	8	8	91	53
11.245.0850	8.5	10	103	61
11.245.0900	9	10	103	61
11.245.1000	10	10	103	61
11.245.1020	10.2	12	118	71
11.245.1050	10.5	12	118	71
11.245.1100	11	12	118	71
11.245.1200	12	12	118	71
11.245.1300	13	14	124	77
11.245.1400	14	14	124	77
11.245.1500	15	16	133	83
11.245.1600	16	16	133	83

NL Phantom High Feed VHM-MG 3-snijder spiraalboor
FR Phantom High Feed Foret carbure monobloc 3 taillants
ES Phantom High Feed de Alto Avance de metal duro con 3 labios
DE Phantom High Feed VHM-Bohrer mit 3 Schneiden
EN Phantom High Feed SC 3-flute cutter

Read me

www.phantom.eu

› 11.250 Phantom



NL UNI Volhardmetaal Spiraalboor 3xD TiAlN
FR Foret Carbure monobloc 3xD UNI TiAlN
ES Broca Metal Duro Integral 3xD UNI TiAlN
DE UNI Vollhartmetall Spiralbohrer 3xD TiAlN
EN UNI Solid carbide Twist drill 3xD TiAlN

MG HM | TiAlN | DIN 6537-K | 3xD | DIN 6535-HA | h6 | 140° | m7 | UNI

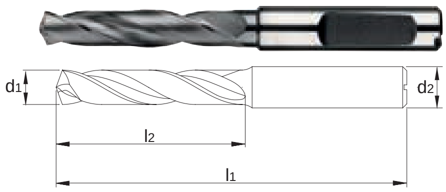
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
120-130 G	65-145 F	55-110 F	45-100 C	25-45 C	50-55 C	35-45 C	155-210 H	125-155 G	60-180 G	22-25 D

Ref.	d1	d2	l1	l2
11.250.0100	1	3	45	7
11.250.0110	1.1	3	45	7
11.250.0120	1.2	3	45	7
11.250.0130	1.3	3	45	7
11.250.0140	1.4	3	45	7
11.250.0150	1.5	3	55	14
11.250.0160	1.6	3	55	14
11.250.0170	1.7	3	55	14
11.250.0180	1.8	3	55	14
11.250.0190	1.9	3	55	14
11.250.0200	2	4	55	20
11.250.0210	2.1	4	55	20
11.250.0220	2.2	4	55	20
11.250.0230	2.3	4	55	20
11.250.0240	2.4	4	55	20
11.250.0250	2.5	4	55	20
11.250.0260	2.6	4	55	20
11.250.0270	2.7	4	55	20
11.250.0280	2.8	4	55	20
11.250.0290	2.9	4	55	20
11.250.0300	3	6	62	20
11.250.0310	3.1	6	62	20
11.250.0320	3.2	6	62	20
11.250.0330	3.3	6	62	20
11.250.0340	3.4	6	62	20
11.250.0350	3.5	6	62	20
11.250.0360	3.6	6	62	20
11.250.0370	3.7	6	62	20
11.250.0380	3.8	6	66	24
11.250.0390	3.9	6	66	24
11.250.0400	4	6	66	24
11.250.0410	4.1	6	66	24
11.250.0420	4.2	6	66	24
11.250.0430	4.3	6	66	24
11.250.0440	4.4	6	66	24
11.250.0450	4.5	6	66	24
11.250.0460	4.6	6	66	24
11.250.0470	4.7	6	66	24
11.250.0480	4.8	6	66	28
11.250.0490	4.9	6	66	28
11.250.0500	5	6	66	28
11.250.0510	5.1	6	66	28
11.250.0520	5.2	6	66	28
11.250.0530	5.3	6	66	28
11.250.0540	5.4	6	66	28
11.250.0550	5.5	6	66	28
11.250.0560	5.6	6	66	28
11.250.0570	5.7	6	66	28
11.250.0580	5.8	6	66	28
11.250.0590	5.9	6	66	28
11.250.0600	6	6	66	28
11.250.0610	6.1	8	79	34
11.250.0620	6.2	8	79	34
11.250.0630	6.3	8	79	34
11.250.0640	6.4	8	79	34
11.250.0650	6.5	8	79	34
11.250.0660	6.6	8	79	34
11.250.0670	6.7	8	79	34
11.250.0680	6.8	8	79	34
11.250.0690	6.9	8	79	34
11.250.0700	7	8	79	34
11.250.0720	7.2	8	79	41
11.250.0750	7.5	8	79	41
11.250.0800	8	8	79	41
11.250.0850	8.5	10	89	47
11.250.0860	8.6	10	89	47
11.250.0880	8.8	10	89	47
11.250.0900	9	10	89	47
11.250.0950	9.5	10	89	47
11.250.1000	10	10	89	47
11.250.1020	10.2	12	102	55
11.250.1030	10.3	12	102	55

› 11.250 *Phantom*

Ref.	d1	d2	l1	l2
11.250.1050	10.5	12	102	55
11.250.1100	11	12	102	55
11.250.1150	11.5	12	102	55
11.250.1200	12	12	102	55
11.250.1250	12.5	14	107	60
11.250.1300	13	14	107	60
11.250.1350	13.5	14	107	60
11.250.1400	14	14	107	60
11.250.1450	14.5	16	115	65
11.250.1500	15	16	115	65
11.250.1550	15.5	16	115	65
11.250.1600	16	16	115	65

› 11.251 *Phantom*



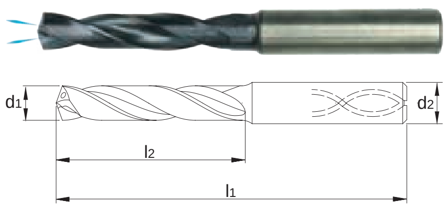
NL **UNI Volhardmetaal Spiraalboor 3xD TiAIN**
FR **Foret Carbure monobloc 3xD UNI TiAIN**
ES **Broca Metal Duro Integral 3xD UNI TiAIN**
DE **UNI Vollhartmetall Spiralbohrer 3xD TiAIN**
EN **UNI Solid carbide Twist drill 3xD TiAIN**

MG HM | TiAIN | DIN 6537-K | 3xD | DIN 6535-HE | h6 | 140° | m7 | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 51 Cu	S 71 Ni/Co
120-130 G	65-145 F	55-110 F	45-100 C	25-45 C	50-55 C	35-45 C	155-210 H	125-155 G	60-180 G	22-25 D

Ref.	d1	d2	l1	l2
11.251.0300	3	6	62	20
11.251.0330	3.3	6	62	20
11.251.0350	3.5	6	62	20
11.251.0380	3.8	6	66	24
11.251.0400	4	6	66	24
11.251.0420	4.2	6	66	24
11.251.0450	4.5	6	66	24
11.251.0480	4.8	6	66	28
11.251.0500	5	6	66	28
11.251.0550	5.5	6	66	28
11.251.0580	5.8	6	66	28
11.251.0600	6	6	66	28
11.251.0650	6.5	8	79	34
11.251.0680	6.8	8	79	34
11.251.0700	7	8	79	34
11.251.0750	7.5	8	79	41
11.251.0800	8	8	79	41
11.251.0850	8.5	10	89	47
11.251.0880	8.8	10	89	47
11.251.0900	9	10	89	47
11.251.0950	9.5	10	89	47
11.251.1000	10	10	89	47
11.251.1020	10.2	12	102	55
11.251.1100	11	12	102	55
11.251.1150	11.5	12	102	55
11.251.1200	12	12	102	55
11.251.1250	12.5	14	107	60
11.251.1300	13	14	107	60
11.251.1400	14	14	107	60
11.251.1500	15	16	115	65

› 11.252 *International Tools*



NL **ECO PRO Volhardmetaal Spiraalboor 3xD met koelkanaal, TiAIN**
FR **Foret Carbure monobloc 3xD ECO PRO à trou d´huile, TiAIN**
ES **Broca Metal Duro Integral 3xD ECO PRO con canal de refrigeración, TiAIN**
DE **ECO PRO Vollhartmetall Spiralbohrer 3xD mit Innenkühlung, TiAIN**
EN **ECO PRO Solid carbide Twist drill 3xD with coolant holes, TiAIN**

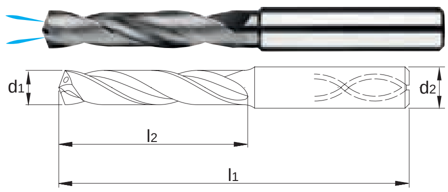
NIEUW | NOUVEAU | NUEVO | NEU

MG HM | TiAIN | DIN 6537-K | 3xD | DIN 6535-HA | h6 | 140° | m7 | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 51 Cu	S 71 Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

Ref.	d1	d2	l1	l2
11.252.0300	3	6	62	20
11.252.0320	3.2	6	62	20
11.252.0330	3.3	6	62	20
11.252.0340	3.4	6	62	20
11.252.0350	3.5	6	62	20
11.252.0400	4	6	66	24
11.252.0420	4.2	6	66	24
11.252.0430	4.3	6	66	24
11.252.0450	4.5	6	66	24
11.252.0480	4.8	6	66	28
11.252.0500	5	6	66	28
11.252.0510	5.1	6	66	28
11.252.0520	5.2	6	66	28
11.252.0550	5.5	6	66	28
11.252.0580	5.8	6	66	28
11.252.0600	6	6	66	28
11.252.0620	6.2	8	79	34
11.252.0650	6.5	8	79	34
11.252.0680	6.8	8	79	34
11.252.0690	6.9	8	79	34
11.252.0700	7	8	79	34
11.252.0740	7.4	8	79	41
11.252.0750	7.5	8	79	41
11.252.0780	7.8	8	79	41
11.252.0800	8	8	79	41
11.252.0850	8.5	10	89	47
11.252.0860	8.6	10	89	47
11.252.0880	8.8	10	89	47
11.252.0900	9	10	89	47
11.252.0950	9.5	10	89	47
11.252.1000	10	10	89	47
11.252.1020	10.2	12	102	55
11.252.1030	10.3	12	102	55
11.252.1050	10.5	12	102	55
11.252.1100	11	12	102	55
11.252.1150	11.5	12	102	55
11.252.1200	12	12	102	55
11.252.1250	12.5	14	107	60
11.252.1300	13	14	107	60
11.252.1400	14	14	107	60

› 11.253 Phantom



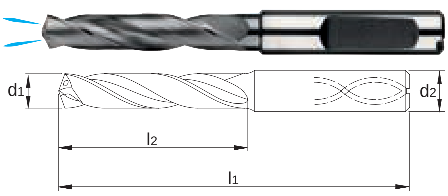
NL **UNI Volhardmetaal Spiraalboor 3xD met koelkanaal, TiAIN**
FR **Foret Carbure monobloc 3xD UNI à trou d'huile, TiAIN**
ES **Broca Metal Duro Integral 3xD UNI con canal de refrigeración, TiAIN**
DE **UNI Vollhartmetall Spiralbohrer 3xD mit Innenkühlung, TiAIN**
EN **UNI Solid carbide Twist drill 3xD with coolant holes, TiAIN**

MG HM	TiAlN	DIN 6537-K	3xD	DIN 6535-HA	h6			140°	m7	UNI

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

Ref.	d1	d2	l1	l2
11.253.0100	1	3	45	7
11.253.0110	1.1	3	45	7
11.253.0120	1.2	3	45	7
11.253.0130	1.3	3	45	7
11.253.0140	1.4	3	45	7
11.253.0150	1.5	3	55	14
11.253.0160	1.6	3	55	14
11.253.0170	1.7	3	55	14
11.253.0180	1.8	3	55	14
11.253.0190	1.9	3	55	14
11.253.0200	2	4	55	20
11.253.0210	2.1	4	55	20
11.253.0220	2.2	4	55	20
11.253.0230	2.3	4	55	20
11.253.0240	2.4	4	55	20
11.253.0250	2.5	4	55	20
11.253.0260	2.6	4	55	20
11.253.0270	2.7	4	55	20
11.253.0280	2.8	4	55	20
11.253.0290	2.9	4	55	20
11.253.0300	3	6	62	20
11.253.0310	3.1	6	62	20
11.253.0320	3.2	6	62	20
11.253.0330	3.3	6	62	20
11.253.0340	3.4	6	62	20
11.253.0350	3.5	6	62	20
11.253.0360	3.6	6	62	20
11.253.0370	3.7	6	62	20
11.253.0380	3.8	6	66	24
11.253.0390	3.9	6	66	24
11.253.0400	4	6	66	24
11.253.0410	4.1	6	66	24
11.253.0420	4.2	6	66	24
11.253.0430	4.3	6	66	24
11.253.0440	4.4	6	66	24
11.253.0450	4.5	6	66	24
11.253.0460	4.6	6	66	24
11.253.0470	4.7	6	66	24
11.253.0480	4.8	6	66	28
11.253.0490	4.9	6	66	28
11.253.0500	5	6	66	28
11.253.0510	5.1	6	66	28
11.253.0520	5.2	6	66	28
11.253.0530	5.3	6	66	28
11.253.0540	5.4	6	66	28
11.253.0550	5.5	6	66	28
11.253.0560	5.6	6	66	28
11.253.0570	5.7	6	66	28
11.253.0580	5.8	6	66	28
11.253.0590	5.9	6	66	28
11.253.0600	6	6	66	28
11.253.0610	6.1	8	79	34
11.253.0620	6.2	8	79	34
11.253.0630	6.3	8	79	34
11.253.0640	6.4	8	79	34
11.253.0650	6.5	8	79	34
11.253.0660	6.6	8	79	34
11.253.0670	6.7	8	79	34
11.253.0680	6.8	8	79	34
11.253.0690	6.9	8	79	34
11.253.0700	7	8	79	34
11.253.0710	7.1	8	79	41
11.253.0720	7.2	8	79	41
11.253.0730	7.3	8	79	41
11.253.0740	7.4	8	79	41
11.253.0750	7.5	8	79	41
11.253.0760	7.6	8	79	41
11.253.0770	7.7	8	79	41
11.253.0780	7.8	8	79	41
11.253.0790	7.9	8	79	41
11.253.0800	8	8	79	41
11.253.0810	8.1	10	89	47
11.253.0820	8.2	10	89	47
11.253.0830	8.3	10	89	47
11.253.0840	8.4	10	89	47
11.253.0850	8.5	10	89	47
11.253.0860	8.6	10	89	47
11.253.0870	8.7	10	89	47
11.253.0880	8.8	10	89	47
11.253.0890	8.9	10	89	47
11.253.0900	9	10	89	47
11.253.0910	9.1	10	89	47
11.253.0920	9.2	10	89	47
11.253.0930	9.3	10	89	47
11.253.0940	9.4	10	89	47
11.253.0950	9.5	10	89	47
11.253.0960	9.6	10	89	47
11.253.0970	9.7	10	89	47
11.253.0980	9.8	10	89	47
11.253.0990	9.9	10	89	47
11.253.1000	10	10	89	47
11.253.1020	10.2	12	102	55
11.253.1030	10.3	12	102	55
11.253.1050	10.5	12	102	55
11.253.1080	10.8	12	102	55
11.253.1100	11	12	102	55
11.253.1150	11.5	12	102	55
11.253.1180	11.8	12	102	55
11.253.1200	12	12	102	55
11.253.1220	12.2	14	107	60
11.253.1230	12.3	14	107	60
11.253.1250	12.5	14	107	60
11.253.1280	12.8	14	107	60
11.253.1300	13	14	107	60
11.253.1350	13.5	14	107	60
11.253.1380	13.8	14	107	60
11.253.1400	14	14	107	60
11.253.1450	14.5	16	115	65
11.253.1480	14.8	16	115	65
11.253.1500	15	16	115	65
11.253.1550	15.5	16	115	65
11.253.1580	15.8	16	115	65
11.253.1600	16	16	115	65
11.253.1650	16.5	18	123	73
11.253.1680	16.8	18	123	73
11.253.1700	17	18	123	73
11.253.1750	17.5	18	123	73
11.253.1780	17.8	18	123	73
11.253.1800	18	18	123	73
11.253.1850	18.5	20	131	79
11.253.1880	18.8	20	131	79
11.253.1900	19	20	131	79
11.253.1950	19.5	20	131	79
11.253.1980	19.8	20	131	79
11.253.2000	20	20	131	79

› 11.254 Phantom



NL **UNI Volhardmetaal Spiraalboor 3xD met koelkanaal, TiAIN**
FR **Foret Carbure monobloc 3xD UNI à trou d'huile, TiAIN**
ES **Broca Metal Duro Integral 3xD UNI con canal de refrigeración, TiAIN**
DE **UNI Vollhartmetall Spiralbohrer 3xD mit Innenkühlung, TiAIN**
EN **UNI Solid carbide Twist drill 3xD with coolant holes, TiAIN**

MG HM	TiAlN	DIN 6537-K	3xD	DIN 6535-HE	h6			140°	m7	UNI

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

Ref.	d1	d2	l1	l2
11.254.0300	3	6	62	20
11.254.0310	3.1	6	62	20
11.254.0320	3.2	6	62	20
11.254.0330	3.3	6	62	20
11.254.0340	3.4	6	62	20
11.254.0350	3.5	6	62	20
11.254.0360	3.6	6	62	20
11.254.0370	3.7	6	62	20
11.254.0380	3.8	6	66	24
11.254.0390	3.9	6	66	24
11.254.0400	4	6	66	24
11.254.0410	4.1	6	66	24
11.254.0420	4.2	6	66	24
11.254.0430	4.3	6	66	24
11.254.0440	4.4	6	66	24
11.254.0450	4.5	6	66	24
11.254.0460	4.6	6	66	24
11.254.0470	4.7	6	66	24
11.254.0480	4.8	6	66	28
11.254.0490	4.9	6	66	28
11.254.0500	5	6	66	28

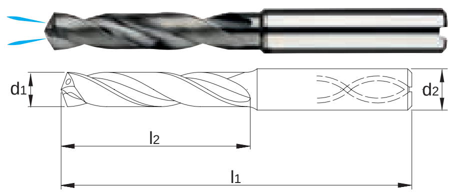
› 11.254 Phantom

Ref.	d1	d2	l1	l2
11.254.0510	5.1	6	66	28
11.254.0520	5.2	6	66	28
11.254.0530	5.3	6	66	28
11.254.0540	5.4	6	66	28
11.254.0550	5.5	6	66	28
11.254.0560	5.6	6	66	28
11.254.0570	5.7	6	66	28
11.254.0590	5.9	6	66	28
11.254.0600	6	6	66	28
11.254.0620	6.2	8	79	34
11.254.0630	6.3	8	79	34
11.254.0650	6.5	8	79	34
11.254.0670	6.7	8	79	34
11.254.0680	6.8	8	79	34
11.254.0690	6.9	8	79	34

Ref.	d1	d2	l1	l2
11.254.0700	7	8	79	34
11.254.0750	7.5	8	79	41
11.254.0780	7.8	8	79	41
11.254.0800	8	8	79	41
11.254.0850	8.5	10	89	47
11.254.0860	8.6	10	89	47
11.254.0880	8.8	10	89	47
11.254.0900	9	10	89	47
11.254.0920	9.2	10	89	47
11.254.0950	9.5	10	89	47
11.254.0980	9.8	10	89	47
11.254.1000	10	10	89	47
11.254.1010	10.1	12	102	55
11.254.1020	10.2	12	102	55
11.254.1030	10.3	12	102	55

Ref.	d1	d2	l1	l2
11.254.1050	10.5	12	102	55
11.254.1100	11	12	102	55
11.254.1150	11.5	12	102	55
11.254.1180	11.8	12	102	55
11.254.1200	12	12	102	55
11.254.1220	12.2	14	107	60
11.254.1250	12.5	14	107	60
11.254.1300	13	14	107	60
11.254.1400	14	14	107	60
11.254.1500	15	16	115	65
11.254.1550	15.5	16	115	65
11.254.1700	17	18	123	73
11.254.1900	19	20	131	79
11.254.2000	20	20	131	79

› 11.259 Phantom



NL **Volhardmetaal Spiraalboor 3xD met koelkanaal, DLC, Aluminium**
FR **Foret Carbure monobloc 3xD à trou d´huile, DLC, Aluminium**
ES **Broca Metal Duro Integral 3xD con canal de refrigeración, DLC, Aluminio**
DE **Vollhartmetall Spiralbohrer 3xD mit Innenkühlung, DLC, Aluminium**
EN **Solid carbide Twist drill 3xD with coolant holes, DLC, Aluminium**

MG HM | DLC | DIN 6537-K | 3xD | DIN 6535-HA | h6 | 118° | m7 | ALU

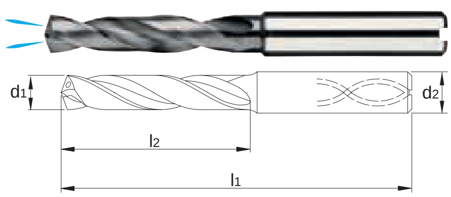
N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 51 Cu
250-310 I	220-260 I	200-280 H	80-310 G

Ref.	d1	d2	l1	l2
11.259.0300	3	6	62	20
11.259.0320	3.2	6	62	20
11.259.0330	3.3	6	62	20
11.259.0350	3.5	6	62	20
11.259.0400	4	6	66	24
11.259.0410	4.1	6	66	24
11.259.0420	4.2	6	66	24
11.259.0450	4.5	6	66	24
11.259.0490	4.9	6	66	28
11.259.0500	5	6	66	28
11.259.0510	5.1	6	66	28
11.259.0520	5.2	6	66	28
11.259.0540	5.4	6	66	28
11.259.0550	5.5	6	66	28
11.259.0580	5.8	6	66	28
11.259.0600	6	6	66	28
11.259.0610	6.1	8	79	34

Ref.	d1	d2	l1	l2
11.259.0620	6.2	8	79	34
11.259.0650	6.5	8	79	34
11.259.0660	6.6	8	79	34
11.259.0680	6.8	8	79	34
11.259.0700	7	8	79	34
11.259.0750	7.5	8	79	41
11.259.0780	7.8	8	79	41
11.259.0800	8	8	79	41
11.259.0820	8.2	10	89	47
11.259.0850	8.5	10	89	47
11.259.0880	8.8	10	89	47
11.259.0900	9	10	89	47
11.259.0950	9.5	10	89	47
11.259.0980	9.8	10	89	47
11.259.1000	10	10	89	47
11.259.1020	10.2	12	102	55
11.259.1050	10.5	12	102	55

Ref.	d1	d2	l1	l2
11.259.1080	10.8	12	102	55
11.259.1100	11	12	102	55
11.259.1120	11.2	12	102	55
11.259.1150	11.5	12	102	55
11.259.1180	11.8	12	102	55
11.259.1200	12	12	102	55
11.259.1250	12.5	14	107	60
11.259.1300	13	14	107	60
11.259.1350	13.5	14	107	60
11.259.1380	13.8	14	107	60
11.259.1400	14	14	107	60
11.259.1450	14.5	16	115	65
11.259.1480	14.8	16	115	65
11.259.1500	15	16	115	65
11.259.1600	16	16	115	65
11.259.1800	18	18	123	73
11.259.2000	20	20	131	79

› 11.262 Phantom



NL **Volhardmetaal Spiraalboor 3xD met koelkanaal, TiAlN, roestvaststaal**
FR **Foret Carbure monobloc 3xD à trou d´huile, TiAlN, Inox**
ES **Broca Metal Duro Integral 3xD con canal de refrigeración, TiAlN, acero inoxidable**
DE **Vollhartmetall Spiralbohrer 3xD mit Innenkühlung, TiAlN, rostfreien Stahl**
EN **Solid carbide Twist drill 3xD with coolant holes, TiAlN, stainless steel**

MG HM | TiAlN | DIN 6537-K | 3xD | DIN 6535-HA | h6 | 140° | m7 | INOX

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	S 72 Ti
130-145 G	80-125 F	65-145 F	60-105 C	72-80 C	60-80 C	30-35 B

Ref.	d1	d2	l1	l2
11.262.0300	3	6	62	20
11.262.0310	3.1	6	62	20
11.262.0320	3.2	6	62	20
11.262.0330	3.3	6	62	20
11.262.0340	3.4	6	62	20
11.262.0350	3.5	6	62	20

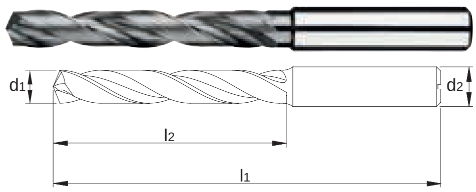
Ref.	d1	d2	l1	l2
11.262.0370	3.7	6	62	20
11.262.0380	3.8	6	66	24
11.262.0390	3.9	6	66	24
11.262.0400	4	6	66	24
11.262.0410	4.1	6	66	24
11.262.0420	4.2	6	66	24

Ref.	d1	d2	l1	l2
11.262.0440	4.4	6	66	24
11.262.0450	4.5	6	66	24
11.262.0460	4.6	6	66	24
11.262.0470	4.7	6	66	24
11.262.0480	4.8	6	66	28
11.262.0490	4.9	6	66	28

› 11.262 Phantom

Ref.	d1	d2	l1	l2
11.262.0360	3.6	6	62	20
11.262.0510	5.1	6	66	28
11.262.0520	5.2	6	66	28
11.262.0530	5.3	6	66	28
11.262.0540	5.4	6	66	28
11.262.0550	5.5	6	66	28
11.262.0560	5.6	6	66	28
11.262.0570	5.7	6	66	28
11.262.0580	5.8	6	66	28
11.262.0590	5.9	6	66	28
11.262.0600	6	6	66	28
11.262.0610	6.1	8	79	34
11.262.0620	6.2	8	79	34
11.262.0630	6.3	8	79	34
11.262.0650	6.5	8	79	34
11.262.0670	6.7	8	79	34
11.262.0680	6.8	8	79	34
11.262.0690	6.9	8	79	34
11.262.0700	7	8	79	34
11.262.0430	4.3	6	66	24
11.262.0750	7.5	8	79	41
11.262.0780	7.8	8	79	41
11.262.0800	8	8	79	41
11.262.0850	8.5	10	89	47
11.262.0860	8.6	10	89	47
11.262.0880	8.8	10	89	47
11.262.0900	9	10	89	47
11.262.0920	9.2	10	89	47
11.262.0950	9.5	10	89	47
11.262.0980	9.8	10	89	47
11.262.1000	10	10	89	47
11.262.1020	10.2	12	102	55
11.262.1050	10.5	12	102	55
11.262.1080	10.8	12	102	55
11.262.1100	11	12	102	55
11.262.1120	11.2	12	102	55
11.262.1150	11.5	12	102	55
11.262.1180	11.8	12	102	55
11.262.0500	5	6	66	28
11.262.1200	12	12	102	55
11.262.1250	12.5	14	107	60
11.262.1300	13	14	107	60
11.262.1350	13.5	14	107	60
11.262.1400	14	14	107	60
11.262.1450	14.5	16	115	65
11.262.1500	15	16	115	65
11.262.1550	15.5	16	115	65
11.262.1600	16	16	115	65
11.262.1650	16.5	18	123	73
11.262.1700	17	18	123	73
11.262.1750	17.5	18	123	73
11.262.1800	18	18	123	73
11.262.1850	18.5	20	131	79
11.262.1900	19	20	131	79
11.262.1950	19.5	20	131	79
11.262.2000	20	20	131	79

› 11.270 Phantom



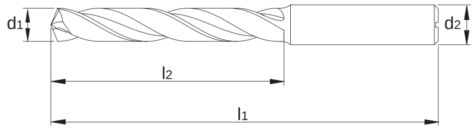
NL **UNI Volhardmetaal Spiraalboor 5xD TiAlN**
FR **Foret Carbure monobloc 5xD UNI TiAlN**
ES **Broca Metal Duro Integral 5xD UNI TiAlN**
DE **UNI Vollhartmetall Spiralbohrer 5xD TiAlN**
EN **UNI Solid carbide Twist drill 5xD TiAlN**

MG HM | TiAlN | DIN 6537-L | 5xD | DIN 6535-HA | h6 | 140° | m7 | UNI

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
120-130 G	65-145 F	55-110 F	45-100 C	25-45 C	50-55 C	35-45 C	155-210 H	125-155 G	60-180 G	22-25 D

Ref.	d1	d2	l1	l2
11.270.0100	1	3	55	8
11.270.0110	1.1	3	55	12
11.270.0120	1.2	3	55	12
11.270.0130	1.3	3	55	12
11.270.0140	1.4	3	55	12
11.270.0150	1.5	3	55	16
11.270.0160	1.6	3	55	16
11.270.0170	1.7	3	55	16
11.270.0180	1.8	3	55	16
11.270.0190	1.9	3	55	16
11.270.0200	2	4	57	21
11.270.0210	2.1	4	57	21
11.270.0220	2.2	4	57	21
11.270.0230	2.3	4	57	21
11.270.0240	2.4	4	57	21
11.270.0250	2.5	4	57	21
11.270.0260	2.6	4	57	21
11.270.0270	2.7	4	57	21
11.270.0280	2.8	4	57	21
11.270.0290	2.9	4	57	21
11.270.0300	3	6	66	28
11.270.0310	3.1	6	66	28
11.270.0320	3.2	6	66	28
11.270.0330	3.3	6	66	28
11.270.0340	3.4	6	66	28
11.270.0350	3.5	6	66	28
11.270.0360	3.6	6	66	28
11.270.0370	3.7	6	66	28
11.270.0380	3.8	6	74	36
11.270.0390	3.9	6	74	36
11.270.0400	4	6	74	36
11.270.0410	4.1	6	74	36
11.270.0420	4.2	6	74	36
11.270.0430	4.3	6	74	36
11.270.0440	4.4	6	74	36
11.270.0450	4.5	6	74	36
11.270.0460	4.6	6	74	36
11.270.0470	4.7	6	74	36
11.270.0480	4.8	6	82	44
11.270.0490	4.9	6	82	44
11.270.0500	5	6	82	44
11.270.0510	5.1	6	82	44
11.270.0520	5.2	6	82	44
11.270.0530	5.3	6	82	44
11.270.0540	5.4	6	82	44
11.270.0550	5.5	6	82	44
11.270.0560	5.6	6	82	44
11.270.0570	5.7	6	82	44
11.270.0580	5.8	6	82	44
11.270.0590	5.9	6	82	44
11.270.0600	6	6	82	44
11.270.0610	6.1	8	91	53
11.270.0620	6.2	8	91	53
11.270.0630	6.3	8	91	53
11.270.0640	6.4	8	91	53
11.270.0650	6.5	8	91	53
11.270.0660	6.6	8	91	53
11.270.0670	6.7	8	91	53
11.270.0680	6.8	8	91	53
11.270.0690	6.9	8	91	53
11.270.0700	7	8	91	53
11.270.0710	7.1	8	91	53
11.270.0720	7.2	8	91	53
11.270.0730	7.3	8	91	53
11.270.0740	7.4	8	91	53
11.270.0750	7.5	8	91	53
11.270.0760	7.6	8	91	53
11.270.0770	7.7	8	91	53
11.270.0780	7.8	8	91	53
11.270.0790	7.9	8	91	53
11.270.0800	8	8	91	53
11.270.0810	8.1	10	103	61
11.270.0820	8.2	10	103	61
11.270.0830	8.3	10	103	61
11.270.0840	8.4	10	103	61
11.270.0850	8.5	10	103	61
11.270.0860	8.6	10	103	61
11.270.0870	8.7	10	103	61
11.270.0880	8.8	10	103	61
11.270.0890	8.9	10	103	61
11.270.0900	9	10	103	61
11.270.0910	9.1	10	103	61
11.270.0920	9.2	10	103	61
11.270.0930	9.3	10	103	61
11.270.0940	9.4	10	103	61
11.270.0950	9.5	10	103	61
11.270.0960	9.6	10	103	61
11.270.0970	9.7	10	103	61
11.270.0980	9.8	10	103	61
11.270.0990	9.9	10	103	61
11.270.1000	10	10	103	61
11.270.1020	10.2	12	118	71
11.270.1030	10.3	12	118	71
11.270.1050	10.5	12	118	71
11.270.1080	10.8	12	118	71
11.270.1100	11	12	118	71
11.270.1150	11.5	12	118	71
11.270.1180	11.8	12	118	71
11.270.1200	12	12	118	71
11.270.1230	12.3	14	124	77
11.270.1250	12.5	14	124	77
11.270.1280	12.8	14	124	77
11.270.1300	13	14	124	77
11.270.1350	13.5	14	124	77
11.270.1380	13.8	14	124	77
11.270.1400	14	14	124	77
11.270.1450	14.5	16	133	83
11.270.1480	14.8	16	133	83
11.270.1500	15	16	133	83
11.270.1550	15.5	16	133	83
11.270.1580	15.8	16	133	83
11.270.1600	16	16	133	83

› 11.271 *Phantom*



NL UNI Volhardmetaal Spiraalboor 5xD TiAlN
FR Foret Carbure monobloc 5xD UNI TiAlN
ES Broca Metal Duro Integral 5xD UNI TiAlN
DE UNI Vollhartmetall Spiralbohrer 5xD TiAlN
EN UNI Solid carbide Twist drill 5xD TiAlN

MG HM | TiAlN | DIN 6537-L | 5xD | DIN 6535-HE | h6 | 140° | m7 | UNI

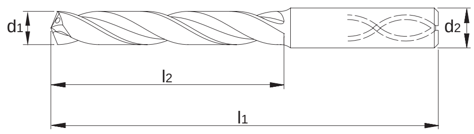
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
120-130 G	65-145 F	55-110 F	45-100 C	25-45 C	50-55 C	35-45 C	155-210 H	125-155 G	60-180 G	22-25 D

Ref.	d1	d2	l1	l2
11.271.0300	3	6	66	28
11.271.0330	3.3	6	66	28
11.271.0380	3.8	6	74	36
11.271.0400	4	6	74	36
11.271.0420	4.2	6	74	36
11.271.0480	4.8	6	82	44
11.271.0500	5	6	82	44
11.271.0550	5.5	6	82	44
11.271.0580	5.8	6	82	44
11.271.0600	6	6	82	44

Ref.	d1	d2	l1	l2
11.271.0650	6.5	8	91	53
11.271.0680	6.8	8	91	53
11.271.0700	7	8	91	53
11.271.0750	7.5	8	91	53
11.271.0780	7.8	8	91	53
11.271.0800	8	8	91	53
11.271.0850	8.5	10	103	61
11.271.0880	8.8	10	103	61
11.271.0900	9	10	103	61
11.271.0950	9.5	10	103	61

Ref.	d1	d2	l1	l2
11.271.1000	10	10	103	61
11.271.1020	10.2	12	118	71
11.271.1100	11	12	118	71
11.271.1200	12	12	118	71
11.271.1250	12.5	14	124	77
11.271.1300	13	14	124	77
11.271.1400	14	14	124	77
11.271.1500	15	16	133	83
11.271.1600	16	16	133	83

› 11.272 *International Tools*



NL ECO PRO Volhardmetaal Spiraalboor 5xD met koelkanaal, TiAlN
FR Foret Carbure monobloc 5xD ECO PRO à trou d´huile, TiAlN
ES Broca Metal Duro Integral 5xD ECO PRO con canal de refrigeración, TiAlN
DE ECO PRO Vollhartmetall Spiralbohrer 5xD mit Innenkühlung, TiAlN
EN ECO PRO Solid carbide Twist drill 5xD with coolant holes, TiAlN

NIEUW | NOUVEAU | NUEVO | NEU

MG HM | TiAlN | DIN 6537-L | 5xD | DIN 6535-HA | h6 | 140° | m7 | ECO PRO

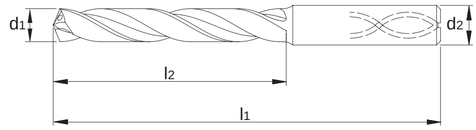
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

Ref.	d1	d2	l1	l2
11.272.0300	3	6	66	28
11.272.0320	3.2	6	66	28
11.272.0330	3.3	6	66	28
11.272.0340	3.4	6	66	28
11.272.0350	3.5	6	66	28
11.272.0400	4	6	74	36
11.272.0420	4.2	6	74	36
11.272.0430	4.3	6	74	36
11.272.0450	4.5	6	74	36
11.272.0480	4.8	6	82	44
11.272.0500	5	6	82	44
11.272.0510	5.1	6	82	44
11.272.0520	5.2	6	82	44
11.272.0550	5.5	6	82	44

Ref.	d1	d2	l1	l2
11.272.0580	5.8	6	82	44
11.272.0600	6	6	82	44
11.272.0620	6.2	8	91	53
11.272.0650	6.5	8	91	53
11.272.0680	6.8	8	91	53
11.272.0690	6.9	8	91	53
11.272.0700	7	8	91	53
11.272.0740	7.4	8	91	53
11.272.0750	7.5	8	91	53
11.272.0780	7.8	8	91	53
11.272.0800	8	8	91	53
11.272.0850	8.5	10	103	61
11.272.0860	8.6	10	103	61
11.272.0880	8.8	10	103	61

Ref.	d1	d2	l1	l2
11.272.0900	9	10	103	61
11.272.0950	9.5	10	103	61
11.272.1000	10	10	103	61
11.272.1020	10.2	12	118	71
11.272.1030	10.3	12	118	71
11.272.1050	10.5	12	118	71
11.272.1100	11	12	118	71
11.272.1150	11.5	12	118	71
11.272.1200	12	12	118	71
11.272.1250	12.5	14	124	77
11.272.1300	13	14	124	77
11.272.1400	14	14	124	77

› 11.273 Phantom



NL UNI Volhardmetaal Spiraalboor 5xD met koelkanaal, TiAIN
FR Foret Carbure monobloc 5xD UNI à trou d´huile, TiAIN
ES Broca Metal Duro Integral 5xD UNI con canal de refrigeración, TiAIN
DE UNI Vollhartmetall Spiralbohrer 5xD mit Innenkühlung, TiAIN
EN UNI Solid carbide Twist drill 5xD with coolant holes, TiAIN

MG HM | TiAIN | DIN 6537-L | 5xD | DIN 6535-HA | h6 | 140° | m7 | UNI

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

Ref.	d1	d2	l1	l2
11.273.0100	1	3	55	8
11.273.0110	1.1	3	55	12
11.273.0120	1.2	3	55	12
11.273.0130	1.3	3	55	12
11.273.0140	1.4	3	55	12
11.273.0150	1.5	3	55	16
11.273.0160	1.6	3	55	16
11.273.0170	1.7	3	55	16
11.273.0180	1.8	3	55	16
11.273.0190	1.9	3	55	16
11.273.0200	2	4	57	21
11.273.0210	2.1	4	57	21
11.273.0220	2.2	4	57	21
11.273.0230	2.3	4	57	21
11.273.0240	2.4	4	57	21
11.273.0250	2.5	4	57	21
11.273.0260	2.6	4	57	21
11.273.0270	2.7	4	57	21
11.273.0280	2.8	4	57	21
11.273.0290	2.9	4	57	21
11.273.0300	3	6	66	28
11.273.0310	3.1	6	66	28
11.273.0320	3.2	6	66	28
11.273.0325	3.25	6	66	28
11.273.0330	3.3	6	66	28
11.273.0340	3.4	6	66	28
11.273.0350	3.5	6	66	28
11.273.0360	3.6	6	66	28
11.273.0365	3.65	6	66	28
11.273.0370	3.7	6	66	28
11.273.0380	3.8	6	74	36
11.273.0390	3.9	6	74	36
11.273.0400	4	6	74	36
11.273.0410	4.1	6	74	36
11.273.0420	4.2	6	74	36
11.273.0430	4.3	6	74	36
11.273.0440	4.4	6	74	36
11.273.0450	4.5	6	74	36
11.273.0460	4.6	6	74	36
11.273.0465	4.65	6	74	36
11.273.0470	4.7	6	74	36
11.273.0480	4.8	6	82	44
11.273.0490	4.9	6	82	44
11.273.0500	5	6	82	44
11.273.0510	5.1	6	82	44
11.273.0520	5.2	6	82	44
11.273.0530	5.3	6	82	44
11.273.0540	5.4	6	82	44
11.273.0550	5.5	6	82	44
11.273.0555	5.55	6	82	44
11.273.0560	5.6	6	82	44

Ref.	d1	d2	l1	l2
11.273.0570	5.7	6	82	44
11.273.0580	5.8	6	82	44
11.273.0590	5.9	6	82	44
11.273.0600	6	6	82	44
11.273.0610	6.1	8	91	53
11.273.0620	6.2	8	91	53
11.273.0630	6.3	8	91	53
11.273.0640	6.4	8	91	53
11.273.0650	6.5	8	91	53
11.273.0660	6.6	8	91	53
11.273.0670	6.7	8	91	53
11.273.0680	6.8	8	91	53
11.273.0690	6.9	8	91	53
11.273.0700	7	8	91	53
11.273.0710	7.1	8	91	53
11.273.0720	7.2	8	91	53
11.273.0730	7.3	8	91	53
11.273.0740	7.4	8	91	53
11.273.0750	7.5	8	91	53
11.273.0755	7.55	8	91	53
11.273.0760	7.6	8	91	53
11.273.0770	7.7	8	91	53
11.273.0780	7.8	8	91	53
11.273.0790	7.9	8	91	53
11.273.0800	8	8	91	53
11.273.0810	8.1	10	103	61
11.273.0820	8.2	10	103	61
11.273.0830	8.3	10	103	61
11.273.0840	8.4	10	103	61
11.273.0850	8.5	10	103	61
11.273.0860	8.6	10	103	61
11.273.0870	8.7	10	103	61
11.273.0880	8.8	10	103	61
11.273.0890	8.9	10	103	61
11.273.0900	9	10	103	61
11.273.0910	9.1	10	103	61
11.273.0920	9.2	10	103	61
11.273.0930	9.3	10	103	61
11.273.0940	9.4	10	103	61
11.273.0950	9.5	10	103	61
11.273.0955	9.55	10	103	61
11.273.0960	9.6	10	103	61
11.273.0970	9.7	10	103	61
11.273.0980	9.8	10	103	61
11.273.0990	9.9	10	103	61
11.273.1000	10	10	103	61
11.273.1010	10.1	12	118	71
11.273.1020	10.2	12	118	71
11.273.1030	10.3	12	118	71
11.273.1040	10.4	12	118	71
11.273.1050	10.5	12	118	71

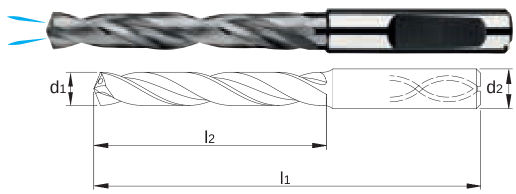
Ref.	d1	d2	l1	l2
11.273.1060	10.6	12	118	71
11.273.1070	10.7	12	118	71
11.273.1080	10.8	12	118	71
11.273.1090	10.9	12	118	71
11.273.1100	11	12	118	71
11.273.1110	11.1	12	118	71
11.273.1120	11.2	12	118	71
11.273.1130	11.3	12	118	71
11.273.1140	11.4	12	118	71
11.273.1150	11.5	12	118	71
11.273.1155	11.55	12	118	71
11.273.1160	11.6	12	118	71
11.273.1170	11.7	12	118	71
11.273.1180	11.8	12	118	71
11.273.1190	11.9	12	118	71
11.273.1200	12	12	118	71
11.273.1210	12.1	14	124	77
11.273.1220	12.2	14	124	77
11.273.1225	12.25	14	124	77
11.273.1230	12.3	14	124	77
11.273.1240	12.4	14	124	77
11.273.1250	12.5	14	124	77
11.273.1260	12.6	14	124	77
11.273.1270	12.7	14	124	77
11.273.1280	12.8	14	124	77
11.273.1290	12.9	14	124	77
11.273.1300	13	14	124	77
11.273.1350	13.5	14	124	77
11.273.1380	13.8	14	124	77
11.273.1400	14	14	124	77
11.273.1450	14.5	16	133	83
11.273.1480	14.8	16	133	83
11.273.1500	15	16	133	83
11.273.1510	15.1	16	133	83
11.273.1550	15.5	16	133	83
11.273.1580	15.8	16	133	83
11.273.1600	16	16	133	83
11.273.1650	16.5	18	143	93
11.273.1680	16.8	18	143	93
11.273.1700	17	18	143	93
11.273.1750	17.5	18	143	93
11.273.1780	17.8	18	143	93
11.273.1800	18	18	143	93
11.273.1850	18.5	20	153	101
11.273.1880	18.8	20	153	101
11.273.1900	19	20	153	101
11.273.1950	19.5	20	153	101
11.273.1980	19.8	20	153	101
11.273.2000	20	20	153	101

NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me

www.phantom.eu

› 11.274 Phantom



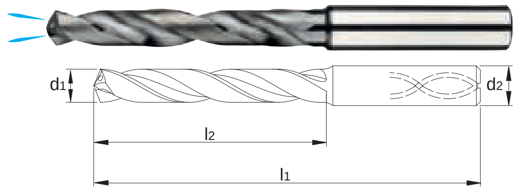
NL UNI Volhardmetaal Spiraalboor 5xD met koelkanaal, TiAIN
FR Foret Carbure monobloc 5xD UNI à trou d´huile, TiAIN
ES Broca Metal Duro Integral 5xD UNI con canal de refrigeración, TiAIN
DE UNI Vollhartmetall Spiralbohrer 5xD mit Innenkühlung, TiAIN
EN UNI Solid carbide Twist drill 5xD with coolant holes, TiAIN

MG HM | TiAIN | DIN 6537-L | 5xD | DIN 6535-HE | h6 | 140° | m7 | UNI

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

Ref.	d1	d2	l1	l2
11.274.0300	3	6	66	28
11.274.0310	3.1	6	66	28
11.274.0320	3.2	6	66	28
11.274.0330	3.3	6	66	28
11.274.0340	3.4	6	66	28
11.274.0350	3.5	6	66	28
11.274.0360	3.6	6	66	28
11.274.0370	3.7	6	66	28
11.274.0380	3.8	6	74	36
11.274.0390	3.9	6	74	36
11.274.0400	4	6	74	36
11.274.0420	4.2	6	74	36
11.274.0430	4.3	6	74	36
11.274.0440	4.4	6	74	36
11.274.0450	4.5	6	74	36
11.274.0460	4.6	6	74	36
11.274.0470	4.7	6	74	36
11.274.0480	4.8	6	82	44
11.274.0490	4.9	6	82	44
11.274.0500	5	6	82	44
11.274.0510	5.1	6	82	44
11.274.0520	5.2	6	82	44
11.274.0530	5.3	6	82	44
11.274.0540	5.4	6	82	44
11.274.0550	5.5	6	82	44
11.274.0560	5.6	6	82	44
11.274.0570	5.7	6	82	44
11.274.0580	5.8	6	82	44
11.274.0590	5.9	6	82	44
11.274.0600	6	6	82	44
11.274.0650	6.5	8	91	53
11.274.0680	6.8	8	91	53
11.274.0690	6.9	8	91	53
11.274.0700	7	8	91	53
11.274.0750	7.5	8	91	53
11.274.0800	8	8	91	53
11.274.0850	8.5	10	103	61
11.274.0860	8.6	10	103	61
11.274.0900	9	10	103	61
11.274.0950	9.5	10	103	61
11.274.1000	10	10	103	61
11.274.1010	10.1	12	118	71
11.274.1020	10.2	12	118	71
11.274.1030	10.3	12	118	71
11.274.1100	11	12	118	71
11.274.1150	11.5	12	118	71
11.274.1200	12	12	118	71
11.274.1250	12.5	14	124	77
11.274.1300	13	14	124	77
11.274.1350	13.5	14	124	77
11.274.1400	14	14	124	77
11.274.1500	15	16	133	83
11.274.1600	16	16	133	83
11.274.1800	18	18	143	93
11.274.2000	20	20	153	101

› 11.279 Phantom



NL Volhardmetaal Spiraalboor 5xD met koelkanaal, DLC, Aluminium
FR Foret Carbure monobloc 5xD à trou d´huile, DLC, Aluminium
ES Broca Metal Duro Integral 5xD con canal de refrigeración, DLC, Aluminio
DE Vollhartmetall Spiralbohrer 5xD mit Innenkühlung, DLC, Aluminium
EN Solid carbide Twist drill 5xD with coolant holes, DLC, Aluminium

MG HM | DLC | DIN 6537-L | 5xD | DIN 6535-HA | h6 | 118° | m7 | ALU

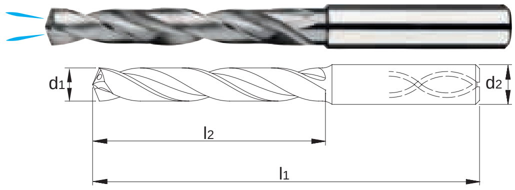
N 41	N 42	N 43	N 51
Alu	Alu Si>10%	Mg	Cu
250-310 I	220-260 I	200-280 H	80-310 G

Ref.	d1	d2	l1	l2
11.279.0300	3	6	66	28
11.279.0310	3.1	6	66	28
11.279.0320	3.2	6	66	28
11.279.0330	3.3	6	66	28
11.279.0340	3.4	6	66	28
11.279.0350	3.5	6	66	28
11.279.0360	3.6	6	66	28
11.279.0370	3.7	6	66	28
11.279.0380	3.8	6	74	36
11.279.0390	3.9	6	74	36
11.279.0400	4	6	74	36
11.279.0410	4.1	6	74	36
11.279.0420	4.2	6	74	36
11.279.0430	4.3	6	74	36
11.279.0440	4.4	6	74	36
11.279.0450	4.5	6	74	36
11.279.0460	4.6	6	74	36
11.279.0470	4.7	6	74	36
11.279.0480	4.8	6	82	44
11.279.0490	4.9	6	82	44
11.279.0500	5	6	82	44
11.279.0510	5.1	6	82	44
11.279.0520	5.2	6	82	44
11.279.0530	5.3	6	82	44
11.279.0540	5.4	6	82	44
11.279.0550	5.5	6	82	44
11.279.0560	5.6	6	82	44
11.279.0570	5.7	6	82	44
11.279.0580	5.8	6	82	44
11.279.0590	5.9	6	82	44
11.279.0600	6	6	82	44
11.279.0610	6.1	8	91	53
11.279.0620	6.2	8	91	53
11.279.0630	6.3	8	91	53
11.279.0640	6.4	8	91	53
11.279.0650	6.5	8	91	53
11.279.0660	6.6	8	91	53
11.279.0670	6.7	8	91	53
11.279.0680	6.8	8	91	53
11.279.0690	6.9	8	91	53
11.279.0700	7	8	91	53
11.279.0710	7.1	8	91	53
11.279.0720	7.2	8	91	53
11.279.0730	7.3	8	91	53
11.279.0740	7.4	8	91	53
11.279.0750	7.5	8	91	53
11.279.0760	7.6	8	91	53
11.279.0770	7.7	8	91	53
11.279.0780	7.8	8	91	53
11.279.0790	7.9	8	91	53
11.279.0800	8	8	91	53
11.279.0810	8.1	10	103	61
11.279.0820	8.2	10	103	61
11.279.0830	8.3	10	103	61
11.279.0840	8.4	10	103	61
11.279.0850	8.5	10	103	61
11.279.0860	8.6	10	103	61
11.279.0870	8.7	10	103	61
11.279.0880	8.8	10	103	61
11.279.0890	8.9	10	103	61
11.279.0900	9	10	103	61
11.279.0910	9.1	10	103	61
11.279.0920	9.2	10	103	61
11.279.0930	9.3	10	103	61
11.279.0940	9.4	10	103	61
11.279.0950	9.5	10	103	61
11.279.0960	9.6	10	103	61
11.279.0970	9.7	10	103	61
11.279.0980	9.8	10	103	61
11.279.0990	9.9	10	103	61
11.279.1000	10	10	103	61
11.279.1020	10.2	12	118	71
11.279.1030	10.3	12	118	71
11.279.1050	10.5	12	118	71
11.279.1080	10.8	12	118	71
11.279.1090	10.9	12	118	71
11.279.1100	11	12	118	71
11.279.1120	11.2	12	118	71
11.279.1150	11.5	12	118	71
11.279.1180	11.8	12	118	71
11.279.1200	12	12	118	71
11.279.1250	12.5	14	124	77
11.279.1300	13	14	124	77
11.279.1350	13.5	14	124	77

› 11.279 Phantom

Ref.	d1	d2	l1	l2
11.279.1380	13.8	14	124	77
11.279.1400	14	14	124	77
11.279.1450	14.5	16	133	83
11.279.1480	14.8	16	133	83
11.279.1500	15	16	133	83
11.279.1600	16	16	133	83
11.279.1800	18	18	143	93
11.279.2000	20	20	153	101

› 11.282 Phantom



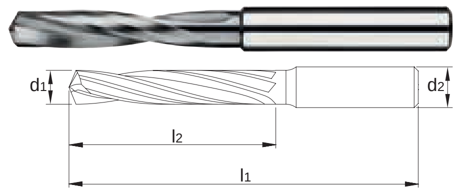
NL Volhardmetaal Spiraalboor 5xD met koelkanaal, TiAlN, roestvaststaal
FR Foret Carbure monobloc 5xD à trou d´huile, TiAlN, Inox
ES Broca Metal Duro Integral 5xD con canal de refrigeración, TiAlN, acero inoxidable
DE Vollhartmetall Spiralbohrer 5xD mit Innenkühlung, TiAlN, rostfreien Stahl
EN Solid carbide Twist drill 5xD with coolant holes, TiAlN, stainless steel

MG HM | TiAlN | DIN 6537-L | 5xD | DIN 6535-HA | h6 | 140° | m7 | INOX

P 11	P 12	P 13	P 14	M 21	M 22	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ti
130-145 G	80-125 F	65-145 F	60-105 C	72-80 C	60-80 C	30-35 B

Ref.	d1	d2	l1	l2
11.282.0200	2	4	57	21
11.282.0210	2.1	4	57	21
11.282.0220	2.2	4	57	21
11.282.0230	2.3	4	57	21
11.282.0240	2.4	4	57	21
11.282.0250	2.5	4	57	21
11.282.0260	2.6	4	57	21
11.282.0270	2.7	4	57	21
11.282.0280	2.8	4	57	21
11.282.0290	2.9	4	57	21
11.282.0300	3	6	66	28
11.282.0310	3.1	6	66	28
11.282.0320	3.2	6	66	28
11.282.0330	3.3	6	66	28
11.282.0340	3.4	6	66	28
11.282.0350	3.5	6	66	28
11.282.0360	3.6	6	66	28
11.282.0370	3.7	6	66	28
11.282.0380	3.8	6	74	36
11.282.0390	3.9	6	74	36
11.282.0400	4	6	74	36
11.282.0410	4.1	6	74	36
11.282.0420	4.2	6	74	36
11.282.0430	4.3	6	74	36
11.282.0440	4.4	6	74	36
11.282.0450	4.5	6	74	36
11.282.0460	4.6	6	74	36
11.282.0470	4.7	6	74	36
11.282.0480	4.8	6	82	44
11.282.0490	4.9	6	82	44
11.282.0500	5	6	82	44
11.282.0510	5.1	6	82	44
11.282.0520	5.2	6	82	44
11.282.0530	5.3	6	82	44
11.282.0540	5.4	6	82	44
11.282.0550	5.5	6	82	44
11.282.0560	5.6	6	82	44
11.282.0570	5.7	6	82	44
11.282.0580	5.8	6	82	44
11.282.0590	5.9	6	82	44
11.282.0600	6	6	82	44
11.282.0610	6.1	8	91	53
11.282.0620	6.2	8	91	53
11.282.0630	6.3	8	91	53
11.282.0640	6.4	8	91	53
11.282.0650	6.5	8	91	53
11.282.0660	6.6	8	91	53
11.282.0670	6.7	8	91	53
11.282.0680	6.8	8	91	53
11.282.0690	6.9	8	91	53
11.282.0700	7	8	91	53
11.282.0710	7.1	8	91	53
11.282.0720	7.2	8	91	53
11.282.0730	7.3	8	91	53
11.282.0740	7.4	8	91	53
11.282.0750	7.5	8	91	53
11.282.0760	7.6	8	91	53
11.282.0770	7.7	8	91	53
11.282.0780	7.8	8	91	53
11.282.0790	7.9	8	91	53
11.282.0800	8	8	91	53
11.282.0810	8.1	10	103	61
11.282.0820	8.2	10	103	61
11.282.0830	8.3	10	103	61
11.282.0840	8.4	10	103	61
11.282.0850	8.5	10	103	61
11.282.0860	8.6	10	103	61
11.282.0870	8.7	10	103	61
11.282.0880	8.8	10	103	61
11.282.0890	8.9	10	103	61
11.282.0900	9	10	103	61
11.282.0910	9.1	10	103	61
11.282.0920	9.2	10	103	61
11.282.0930	9.3	10	103	61
11.282.0940	9.4	10	103	61
11.282.0950	9.5	10	103	61
11.282.0960	9.6	10	103	61
11.282.0970	9.7	10	103	61
11.282.0980	9.8	10	103	61
11.282.0990	9.9	10	103	61
11.282.1000	10	10	103	61
11.282.1020	10.2	12	118	71
11.282.1050	10.5	12	118	71
11.282.1080	10.8	12	118	71
11.282.1100	11	12	118	71
11.282.1120	11.2	12	118	71
11.282.1150	11.5	12	118	71
11.282.1180	11.8	12	118	71
11.282.1200	12	12	118	71
11.282.1250	12.5	14	124	77
11.282.1300	13	14	124	77
11.282.1350	13.5	14	124	77
11.282.1400	14	14	124	77
11.282.1450	14.5	16	133	83
11.282.1500	15	16	133	83
11.282.1550	15.5	16	133	83
11.282.1600	16	16	133	83
11.282.1650	16.5	18	143	93
11.282.1700	17	18	143	93
11.282.1750	17.5	18	143	93
11.282.1800	18	18	143	93
11.282.1850	18.5	20	153	101
11.282.1900	19	20	153	101
11.282.1950	19.5	20	153	101
11.282.2000	20	20	153	101

› 11.286 Phantom



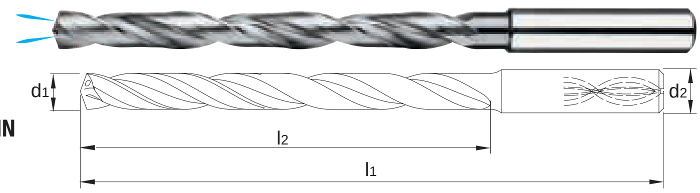
NL Volhardmetaal Spiraalboor 5xD TiAIN, gehard staal, HRC 45-70
FR Foret Carbure monobloc 5xD TiAIN, acier trempé, HRC 45-70
ES Broca Metal Duro Integral 5xD TiAIN, aceros duros, HRC 45-70
DE Vollhartmetall Spiralbohrer 5xD TiAIN, harte Stähle, HRC 45-70
EN Solid carbide Twist drill 5xD TiAIN, hardened steel, HRC 45-70

MG HM | TiAIN | NORM | 5xD | DIN 6535-HA | h6 | 140° | h7 | HRC

H 15 HRC
10-22 A

Ref.	d1	d2	l1	l2
11.286.0300	3	3	46	16
11.286.0350	3.5	4	50	20
11.286.0400	4	4	52	22
11.286.0450	4.5	6	68	28
11.286.0500	5	6	72	32
11.286.0550	5.5	6	75	35
11.286.0600	6	6	75	35
11.286.0650	6.5	8	80	40
11.286.0700	7	8	85	45
11.286.0750	7.5	8	85	45
11.286.0800	8	8	98	50
11.286.0850	8.5	10	98	50
11.286.0900	9	10	105	57
11.286.0950	9.5	10	105	57
11.286.1000	10	10	111	63
11.286.1200	12	12	119	71

› 11.295 Phantom



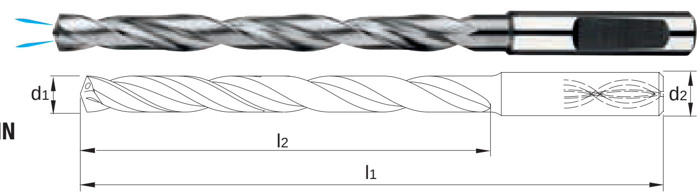
NL UNI Volhardmetaal Spiraalboor 8xD met koelkanaal, TiAIN
FR Foret Carbure monobloc 8xD UNI à trou d´huile, TiAIN
ES Broca Metal Duro Integral 8xD UNI con canal de refrigeración, TiAIN
DE UNI Vollhartmetall Spiralbohrer 8xD mit Innenkühlung, TiAIN
EN UNI Solid carbide Twist drill 8xD with coolant holes, TiAIN

MG HM | TiAIN | NORM | 8xD | DIN 6535-HA | h6 | 140° | m7 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 F	80-170 F	65-145 F	60-105 B	55-60 B	35-45 C	155-210 H	130-160 G	80-220 F	30-35 C

Ref.	d1	d2	l1	l2
11.295.0300	3	6	72	34
11.295.0330	3.3	6	72	34
11.295.0350	3.5	6	72	34
11.295.0400	4	6	81	43
11.295.0420	4.2	6	81	43
11.295.0450	4.5	6	81	43
11.295.0500	5	6	95	57
11.295.0550	5.5	6	95	57
11.295.0600	6	6	95	57
11.295.0650	6.5	8	114	76
11.295.0680	6.8	8	114	76
11.295.0700	7	8	114	76
11.295.0750	7.5	8	114	76
11.295.0800	8	8	114	76
11.295.0850	8.5	10	142	95
11.295.0900	9	10	142	95
11.295.0950	9.5	10	142	95
11.295.1000	10	10	142	95
11.295.1020	10.2	12	162	114
11.295.1050	10.5	12	162	114
11.295.1100	11	12	162	114
11.295.1150	11.5	12	162	114
11.295.1200	12	12	162	114
11.295.1250	12.5	14	178	133
11.295.1300	13	14	178	133
11.295.1350	13.5	14	178	133
11.295.1400	14	14	178	133
11.295.1500	15	16	203	152
11.295.1600	16	16	203	152
11.295.1800	18	18	222	171
11.295.2000	20	20	243	190

› 11.296 Phantom



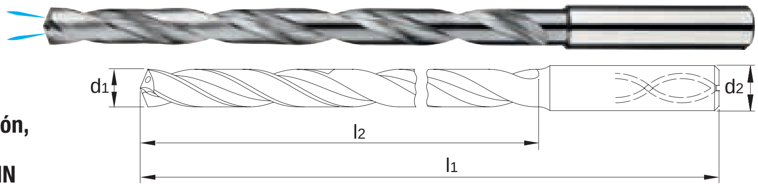
NL UNI Volhardmetaal Spiraalboor 8xD met koelkanaal, TiAIN
FR Foret Carbure monobloc 8xD UNI à trou d´huile, TiAIN
ES Broca Metal Duro Integral 8xD UNI con canal de refrigeración, TiAIN
DE UNI Vollhartmetall Spiralbohrer 8xD mit Innenkühlung, TiAIN
EN UNI Solid carbide Twist drill 8xD with coolant holes, TiAIN

MG HM | TiAIN | NORM | 8xD | DIN 6535-HE | h6 | 140° | m7 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 F	80-170 F	65-145 F	60-105 B	55-60 B	35-45 C	155-210 H	130-160 G	80-220 F	30-35 C

Ref.	d1	d2	l1	l2
11.296.0400	4	6	81	43
11.296.0420	4.2	6	81	43
11.296.0450	4.5	6	81	43
11.296.0500	5	6	95	57
11.296.0550	5.5	6	95	57
11.296.0600	6	6	95	57
11.296.0650	6.5	8	114	76
11.296.0680	6.8	8	114	76
11.296.0700	7	8	114	76
11.296.0750	7.5	8	114	76
11.296.0800	8	8	114	76
11.296.0850	8.5	10	142	95
11.296.0900	9	10	142	95
11.296.0950	9.5	10	142	95
11.296.1000	10	10	142	95
11.296.1020	10.2	12	162	114
11.296.1050	10.5	12	162	114
11.296.1100	11	12	162	114
11.296.1150	11.5	12	162	114
11.296.1200	12	12	162	114
11.296.1250	12.5	14	178	133
11.296.1300	13	14	178	133
11.296.1350	13.5	14	178	133
11.296.1400	14	14	178	133
11.296.1500	15	16	203	152
11.296.1600	16	16	203	152
11.296.1800	18	18	222	171
11.296.2000	20	20	243	190

› 11.305 *Phantom*



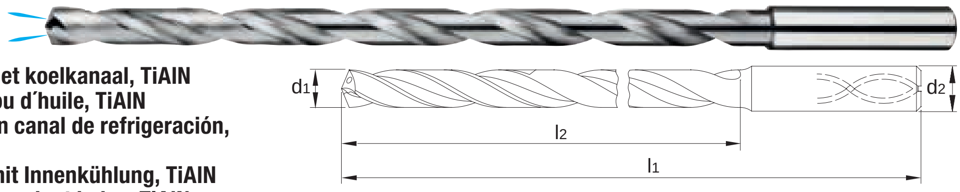
NL **UNI Volhardmetaal Spiraalboor 10xD met koelkanaal, TiAlN**
FR **Foret Carbure monobloc 10xD UNI à trou d´huile, TiAlN**
ES **Broca Metal Duro Integral 10xD UNI con canal de refrigeración, TiAlN**
DE **UNI Vollhartmetall Spiralbohrer 10xD mit Innenkühlung, TiAlN**
EN **UNI Solid carbide Twist drill 10xD with coolant holes, TiAlN**

MG HM | TiAlN | NORM | 10xD | DIN 6535-HA | h6 | 140° | h7 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 E	80-170 F	65-145 F	60-105 B	55-60 B	35-45 D	160-210 H	130-160 G	80-220 F	30-35 C

Ref.	d1	d2	l1	l2
11.305.0300	3	6	80	40
11.305.0330	3.3	6	87	47
11.305.0350	3.5	6	87	47
11.305.0400	4	6	93	53
11.305.0420	4.2	6	100	60
11.305.0450	4.5	6	100	60
11.305.0500	5	6	106	66
11.305.0550	5.5	6	113	73
11.305.0600	6	6	119	79
11.305.0650	6.5	8	126	86
11.305.0680	6.8	8	132	92
11.305.0700	7	8	132	92
11.305.0750	7.5	8	139	99
11.305.0800	8	8	145	105
11.305.0850	8.5	10	156	112
11.305.0900	9	10	162	118
11.305.0950	9.5	10	170	123
11.305.1000	10	10	176	132
11.305.1050	10.5	12	188	139
11.305.1100	11	12	194	145
11.305.1150	11.5	12	201	152
11.305.1200	12	12	207	158
11.305.1250	12.5	14	214	165
11.305.1300	13	14	220	171
11.305.1350	13.5	14	227	178
11.305.1400	14	14	233	184

› 11.310 *Phantom*



NL **UNI Volhardmetaal Spiraalboor 15xD met koelkanaal, TiAlN**
FR **Foret Carbure monobloc 15xD UNI à trou d´huile, TiAlN**
ES **Broca Metal Duro Integral 15xD UNI con canal de refrigeración, TiAlN**
DE **UNI Vollhartmetall Spiralbohrer 15xD mit Innenkühlung, TiAlN**
EN **UNI Solid carbide Twist drill 15xD with coolant holes, TiAlN**

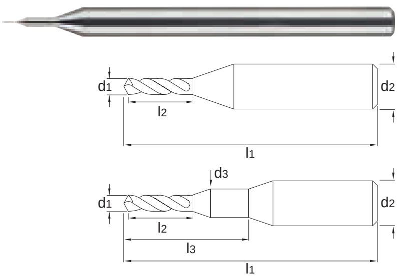
MG HM | TiAlN | NORM | 15xD | DIN 6535-HA | h6 | 140° | h7 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 E	80-170 F	65-145 F	60-105 B	55-60 B	35-45 D	160-210 H	130-160 G	80-220 F	30-35 C

Ref.	d1	d2	l1	l2
11.310.0300	3	6	95	55
11.310.0350	3.5	6	104	64
11.310.0400	4	6	113	73
11.310.0450	4.5	6	122	82
11.310.0500	5	6	131	91
11.310.0550	5.5	6	140	100
11.310.0600	6	6	149	109
11.310.0650	6.5	8	158	118
11.310.0700	7	8	167	127
11.310.0750	7.5	8	176	136
11.310.0800	8	8	185	145
11.310.0850	8.5	10	198	154
11.310.0900	9	10	207	163
11.310.0950	9.5	10	217	173
11.310.1000	10	10	226	182
11.310.1050	10.5	12	240	191
11.310.1100	11	12	249	200
11.310.1150	11.5	12	258	209
11.310.1200	12	12	267	218
11.310.1250	12.5	14	276	227
11.310.1300	13	14	285	236
11.310.1350	13.5	14	294	245
11.310.1400	14	14	303	254

› 11.330 *Phantom*

NL **UNI Volhardmetaal Microboor 5xD**
FR **Micro-foret Carbure monobloc 5xD UNI**
ES **Micro-Broca Metal Duro Integral 5xD UNI**
DE **UNI Vollhartmetall Kleinstbohrer 5xD**
EN **UNI Solid carbide Micro Drill 5xD**



MG HM | NORM | 5xD | h5 | 130° | d1 +0,000/ -0,004 | UNI

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC	GFK/CFK	Ni/Co	Ti
55-65 S	40-50 S	30-40 R	20-30 Q	15-25 Q	55-75 S	40-60 S	80-100 U	60-100 U	80-100 T	30-40 Q	55-60 S	12-15 P	25-40 P

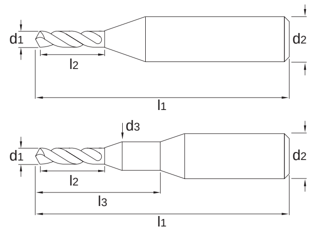
Ref.	d1	d2	d3	l1	l2	l3
11.330.0100	0.1	3	1	39	0.5	5
11.330.0150	0.15	3	1	39	0.8	5
11.330.0200	0.2	3	1	39	1	5
11.330.0250	0.25	3	1	39	1.25	5
11.330.0300	0.3	3	1	39	1.5	5
11.330.0350	0.35	3	1	39	1.75	5
11.330.0400	0.4	3	1	39	2	5
11.330.0450	0.45	3	1	39	2.25	5
11.330.0500	0.5	3	1.5	39	2.5	10
11.330.0550	0.55	3	1.5	39	3	10
11.330.0600	0.6	3	1.5	39	3	10
11.330.0650	0.65	3	1.5	39	3.5	10
11.330.0700	0.7	3	1.5	39	3.5	10
11.330.0750	0.75	3	1.5	39	4	10
11.330.0800	0.8	3	1.5	39	4	10
11.330.0850	0.85	3	1.5	39	4.5	10
11.330.0900	0.9	3	1.5	39	4.5	10
11.330.1000	1	3	2	39	5	10

› 11.330 Phantom

Ref.	d1	d2	d3	l1	l2	l3
11.330.1100	1.1	3	2	39	5.5	10
11.330.1200	1.2	3	2	39	6	10
11.330.1300	1.3	3	2	39	6.5	10
11.330.1400	1.4	3	2	39	7	10
11.330.1500	1.5	3		39	7.5	
11.330.1600	1.6	3		39	8	
11.330.1700	1.7	3		39	8.5	
11.330.1800	1.8	3		39	9	
11.330.1900	1.9	3		39	9.5	
11.330.2000	2	3		39	10	
11.330.2100	2.1	3		39	10.5	
11.330.2200	2.2	3		39	11	
11.330.2300	2.3	3		39	11.5	
11.330.2400	2.4	3		39	12	
11.330.2500	2.5	3		39	12.5	
11.330.2600	2.6	3		39	13	
11.330.2700	2.7	3		39	13.5	
11.330.2800	2.8	3		39	14	
11.330.2900	2.9	3		39	14.5	
11.330.3000	3	3		39	15	

› 11.335 Phantom

NL UNI Volhardmetaal Microboor 8xD
FR Micro-foret Carbure monobloc 8xD UNI
ES Micro-Broca Metal Duro Integral 8xD UNI
DE UNI Vollhartmetall Kleinstbohrer 8xD
EN UNI Solid carbide Micro Drill 8xD

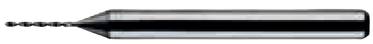


MG HM | NORM | 8xD | h5 | 130° | d1 +0,000/ -0,004 | UNI

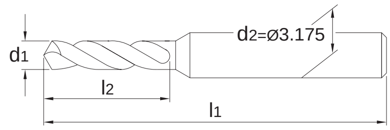
P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC	GFK/CFK	Ni/Co	Ti
55-65 S	40-50 S	30-40 R	20-30 Q	15-25 Q	55-75 S	40-60 S	80-100 U	60-100 U	80-100 T	30-40 Q	55-60 S	12-15 P	25-40 P

Ref.	d1	d2	d3	l1	l2	l3
11.335.0100	0.1	3	1	39	0.8	5
11.335.0150	0.15	3	1	39	1.3	5
11.335.0200	0.2	3	1	39	1.6	7
11.335.0250	0.25	3	1	39	2	7
11.335.0300	0.3	3	1	39	2.4	7
11.335.0350	0.35	3	1	39	2.8	7
11.335.0400	0.4	3	1	39	3.2	7
11.335.0450	0.45	3	1	39	3.6	7
11.335.0500	0.5	3	1.5	39	4	15
11.335.0550	0.55	3	1.5	39	4.8	15
11.335.0600	0.6	3	1.5	39	4.8	15
11.335.0650	0.65	3	1.5	39	5.6	15
11.335.0700	0.7	3	1.5	39	5.6	15
11.335.0750	0.75	3	1.5	39	6.4	15
11.335.0800	0.8	3	1.5	39	6.4	15
11.335.0850	0.85	3	1.5	39	7.2	15
11.335.0900	0.9	3	1.5	39	7.2	15
11.335.1000	1	3	2	39	8	15
11.335.1100	1.1	3	2	39	8.8	15
11.335.1200	1.2	3	2	39	9.6	15
11.335.1300	1.3	3	2	39	10.4	15
11.335.1400	1.4	3	2	39	11.2	15
11.335.1500	1.5	3		39	12	
11.335.1600	1.6	3		39	12.8	
11.335.1700	1.7	3		39	13.6	
11.335.1800	1.8	3		39	14.4	
11.335.1900	1.9	3		39	15.2	
11.335.2000	2	3		39	16	

› 11.360 Phantom



NL Volhardmetaal Microboor
FR Micro-foret Carbure monobloc
ES Micro-Broca Metal Duro Integral
DE Vollhartmetall Kleinstbohrer
EN Solid carbide Micro Drill

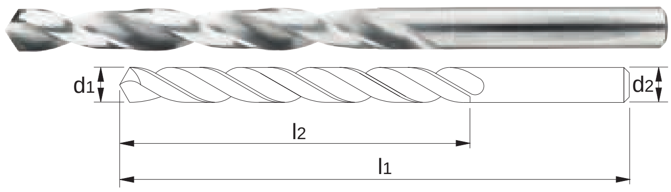


MG HM | NORM | Ø3,175 | h5 | 118° | d1 +0,005/ -0,000

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	GFK/CFK	Ni/Co	Ti
45-50 E	25-50 D	25-45 D	20-40 B	10-20 B	20-25 C	20-25 B	64-80 E	50-60 E	120-150 F	60-100 F	120-150 E	40-77 D	30-36 C	55-60 D	12-15 B	25-45 D

Ref.	d1	d2	l1	l2
11.360.0030	0.3	3.175	38	5.5
11.360.0040	0.4	3.175	38	5.5
11.360.0050	0.5	3.175	38	5.5
11.360.0060	0.6	3.175	38	7
11.360.0070	0.7	3.175	38	8.5
11.360.0080	0.8	3.175	38	10.5
11.360.0090	0.9	3.175	38	10.5
11.360.0100	1	3.175	38	10.5
11.360.0110	1.1	3.175	38	10.5
11.360.0120	1.2	3.175	38	10.5
11.360.0130	1.3	3.175	38	10.5
11.360.0140	1.4	3.175	38	10.5
11.360.0150	1.5	3.175	38	10.5
11.360.0160	1.6	3.175	38	10.5
11.360.0170	1.7	3.175	38	10.5
11.360.0180	1.8	3.175	38	10.5
11.360.0190	1.9	3.175	38	10.5
11.360.0200	2	3.175	38	10.5

› 11.650 Phantom



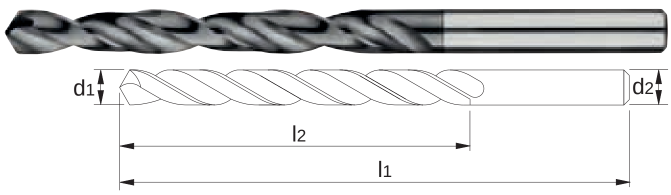
NL **Volhardmetaal Spiraalboor**
FR **Foret Carbure monobloc**
ES **Broca Metal Duro Integral**
DE **Vollhartmetall Spiralbohrer**
EN **Solid carbide Twist drill**

MG HM | DIN 338 | 8xD | N | h6 | 118° | h7

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	GFK/CFK	Ni/Co	Ti
70-80 D	50-80 D	65-70 D	25-80 B	20-25 D	20-25 C	72-90 D	70-80 D	160-200 G	120-150 F	120-180 E	120-180 E	30-40 C	60-80 C	12-15 B	15-20 C

Ref.	d1	d2	l1	l2
11.650.0100	1	1	34	12
11.650.0110	1.1	1.1	36	14
11.650.0120	1.2	1.2	38	16
11.650.0130	1.3	1.3	38	16
11.650.0140	1.4	1.4	40	18
11.650.0150	1.5	1.5	40	18
11.650.0160	1.6	1.6	43	20
11.650.0170	1.7	1.7	43	20
11.650.0180	1.8	1.8	46	22
11.650.0190	1.9	1.9	46	22
11.650.0200	2	2	49	24
11.650.0210	2.1	2.1	49	24
11.650.0220	2.2	2.2	53	27
11.650.0230	2.3	2.3	53	27
11.650.0240	2.4	2.4	57	30
11.650.0250	2.5	2.5	57	30
11.650.0260	2.6	2.6	57	30
11.650.0270	2.7	2.7	61	33
11.650.0280	2.8	2.8	61	33
11.650.0290	2.9	2.9	61	33
11.650.0300	3	3	61	33
11.650.0310	3.1	3.1	65	36
11.650.0320	3.2	3.2	65	36
11.650.0330	3.3	3.3	65	36
11.650.0340	3.4	3.4	70	39
11.650.0350	3.5	3.5	70	39
11.650.0360	3.6	3.6	70	39
11.650.0370	3.7	3.7	70	39
11.650.0380	3.8	3.8	75	43
11.650.0390	3.9	3.9	75	43
11.650.0400	4	4	75	43
11.650.0410	4.1	4.1	75	43
11.650.0420	4.2	4.2	75	43
11.650.0430	4.3	4.3	80	47
11.650.0440	4.4	4.4	80	47
11.650.0450	4.5	4.5	80	47
11.650.0460	4.6	4.6	80	47
11.650.0470	4.7	4.7	80	47
11.650.0480	4.8	4.8	86	52
11.650.0490	4.9	4.9	86	52
11.650.0500	5	5	86	52
11.650.0550	5.5	5.5	93	57
11.650.0600	6	6	93	57
11.650.0650	6.5	6.5	101	63
11.650.0680	6.8	6.8	109	69
11.650.0690	6.9	6.9	109	69
11.650.0700	7	7	109	69
11.650.0710	7.1	7.1	109	69
11.650.0750	7.5	7.5	109	69
11.650.0800	8	8	117	75
11.650.0850	8.5	8.5	117	75
11.650.0900	9	9	125	81
11.650.0930	9.3	9.3	125	81
11.650.0940	9.4	9.4	125	81
11.650.0950	9.5	9.5	125	81
11.650.0960	9.6	9.6	133	87
11.650.1000	10	10	133	87
11.650.1020	10.2	10.2	133	87
11.650.1050	10.5	10.5	133	87
11.650.1100	11	11	142	94
11.650.1150	11.5	11.5	142	94
11.650.1180	11.8	11.8	142	94
11.650.1200	12	12	151	101

› 11.654 Phantom



NL **Volhardmetaal Spiraalboor TiAlN**
FR **Foret Carbure monobloc TiAlN**
ES **Broca Metal Duro Integral TiAlN**
DE **Vollhartmetall Spiralbohrer TiAlN**
EN **Solid carbide Twist drill TiAlN**

MG HM | TiAlN | DIN 338 | 8xD | N | h6 | 118° | h7

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 43	N 51	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Mg	Cu	PVC	GFK/CFK	Ni/Co	Ti
100-110 D	65-105 D	82-95 D	32-95 B	27-32 D	28-32 C	72-90 D	75-95 D	120-180 E	120-180 E	30-40 C	80-95 C	12-15 B	17-24 C

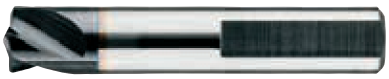
Ref.	d1	d2	l1	l2
11.654.0100	1	1	34	12
11.654.0150	1.5	1.5	40	18
11.654.0200	2	2	49	24
11.654.0250	2.5	2.5	57	30
11.654.0300	3	3	61	33
11.654.0330	3.3	3.3	65	36
11.654.0350	3.5	3.5	70	39
11.654.0400	4	4	75	43
11.654.0420	4.2	4.2	75	43
11.654.0450	4.5	4.5	80	47
11.654.0500	5	5	86	52
11.654.0550	5.5	5.5	93	57
11.654.0600	6	6	93	57
11.654.0650	6.5	6.5	101	63
11.654.0700	7	7	109	69
11.654.0750	7.5	7.5	109	69
11.654.0800	8	8	117	75
11.654.0850	8.5	8.5	117	75
11.654.0900	9	9	125	81
11.654.0950	9.5	9.5	125	81
11.654.1000	10	10	133	87

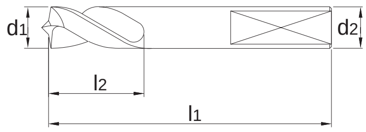
NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 13.814 Phantom





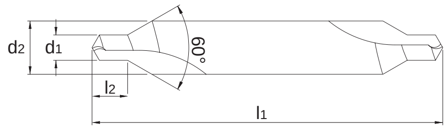
NL **Volhardmetaal Puntlasboor TiAlN, 3 snijkanten**
FR **Foret à dépointer Carbure monobloc TiAlN, 3 taillants**
ES **Broca para puntos de soldadura Metal Duro Integral TiAlN, 3 labios**
DE **Vollhartmetall Bohrer zum Bohren von Punktschweißstellen TiAlN, 3 Schneiden**
EN **Solid carbide Spot Weld Drill TiAlN, 3 flute**

VHM SC | TiAlN | h6

P 11	P 12	P 13	P 14	M 21	M 22
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²
75-85 *	60-70 *	55-65 *	30-40 *	20-35 *	18-30 *

Ref.	d1	d2	l1	l2
13.814.0645	6	6	45	15
13.814.0845	8	8	45	15
13.814.1045	10	10	45	15

› 15.144 Phantom



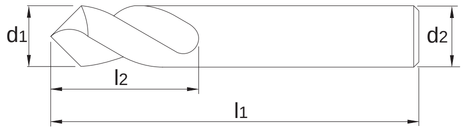
NL Volhardmetaal Centerboor TiAlN, 60°
FR Foret à centrer Carbure monobloc TiAlN, 60°
ES Broca escalonada Metal Duro Integral TiAlN, 60°
DE Vollhartmetall Zentrierbohrer TiAlN, 60°
EN Solid carbide Centre Drill TiAlN, 60°

MG HM	60°	TiAlN	DIN 333-A	NFE 66051-A	h5

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850N/mm²
100-110 D	65-105 D	82-95 D	32-95 B	10-20 C	20-45 B

Ref.	d1	d2	l1	l2
15.144.1031	1	3.15	31.5	1,3-1,7
15.144.1231	1.25	3.15	31.5	1,6-2,0
15.144.1640	1.6	4	35.5	2,0-2,6
15.144.2050	2	5	40	2,5-3,1
15.144.2563	2.5	6.3	45	3,1-3,8
15.144.3180	3.15	8	50	3,9-4,6
15.144.4010	4	10	56	5,0-5,9
15.144.5013	5	12.5	63	6,3-7,2

› 15.624 Phantom



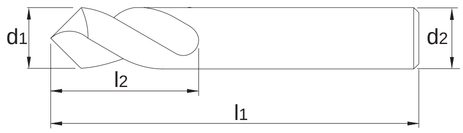
NL Volhardmetaal NC-Centreerboor TiAlN, 90°
FR Foret à pointer NC Carbure monobloc TiAlN, 90°
ES Broca de puntear NC Metal Duro Integral TiAlN, 90°
DE Vollhartmetall NC Anbohrer TiAlN, 90°
EN Solid carbide NC Spotting Drill TiAlN, 90°

MG HM	90°	TiAlN	DIN 6535-HB	h5

P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	N 61 PVC	S 71 Ni/Co	S 72 Ti
70-80 F	34-70 F	25-35 B	10-28 A	14-22 E	15-20 E	72-90 D	70-80 D	90-140 G	80-100 F	120-180 E	120-150 G	8-10 B	15-20 E

Ref.	d1	d2	l1	l2
15.624.0200	2	2	40	8
15.624.0300	3	3	45	10
15.624.0400	4	4	50	12
15.624.0500	5	5	50	13
15.624.0600	6	6	50	13
15.624.0800	8	8	60	23
15.624.1000	10	10	70	24
15.624.1200	12	12	70	24
15.624.1600	16	16	75	29
15.624.2000	20	20	100	35

› 15.724 Phantom



NL Volhardmetaal NC-Centreerboor TiAlN, 120°
FR Foret à pointer NC Carbure monobloc TiAlN, 120°
ES Broca de puntear NC Metal Duro Integral TiAlN, 120°
DE Vollhartmetall NC Anbohrer TiAlN, 120°
EN Solid carbide NC Spotting Drill TiAlN, 120°

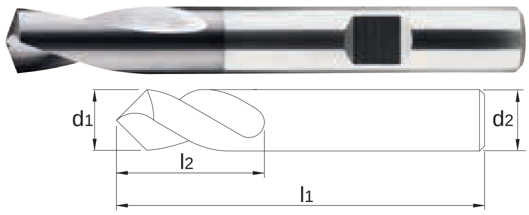
MG HM	120°	TiAlN	h5	DIN 6535-HB

P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	N 61 PVC	S 71 Ni/Co	S 72 Ti
70-80 F	34-70 F	25-35 B	10-28 A	14-22 E	15-20 E	72-90 D	70-80 D	90-140 G	80-100 F	120-180 E	120-150 G	8-10 B	15-20 E

Ref.	d1	d2	l1	l2
15.724.0200	2	2	32	8
15.724.0300	3	3	32	8
15.724.0400	4	4	40	10
15.724.0500	5	5	50	13
15.724.0600	6	6	50	13
15.724.0800	8	8	60	23
15.724.1000	10	10	70	24
15.724.1200	12	12	70	24
15.724.1600	16	16	75	29
15.724.2000	20	20	100	35

› 15.764 Phantom

NL Volhardmetaal NC-Centreerboor TiAlN, 142°
FR Foret à pointer NC Carbure monobloc TiAlN, 142°
ES Broca de puntear NC Metal Duro Integral TiAlN, 142°
DE Vollhartmetall NC Anbohrer TiAlN, 142°
EN Solid carbide NC Spotting Drill TiAlN, 142°



MG HM | 142° | TiAlN | h5 | DIN 6535-HB

P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 61	S 71	S 72
≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
70-80 F	34-70 F	25-35 B	10-28 A	14-22 E	15-20 E	72-90 D	70-80 D	90-140 G	80-100 F	120-180 E	120-150 G	8-10 B	15-20 E

Ref.	d1	d2	l1	l2
15.764.0300	3	3	45	10
15.764.0400	4	4	50	12
15.764.0500	5	5	50	15
15.764.0600	6	6	50	18
15.764.0800	8	8	60	18
15.764.1000	10	10	70	23
15.764.1200	12	12	70	24
15.764.1600	16	16	80	26

NL Verschil tussen centerboor en centreerboor
FR La différence entre un foret à centrer et un foret à pointer
ES Diferencia entre broca de centrar y broca de puntear
DE Unterschied zwischen Zentrierbohrer und Anbohrer
EN The difference between centre drills and spot drills

Read me

www.phantom.eu

NL Voedingswaardentabel
FR Tableau des avances
ES Tabla de avances
DE Vorschubtabelle
EN Feed table

P 11 ≤600 N/mm² = ISO

25-35 E Vc = 25-35 FRC = E

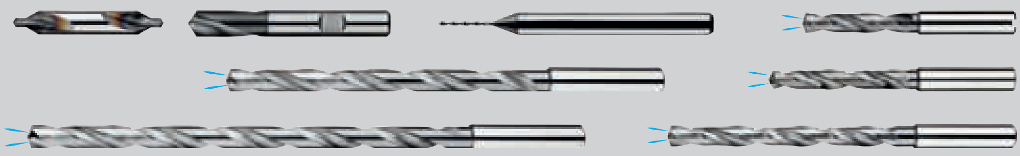
	FRC																	
	A	B	C	D	E	F	G	H	I	J	K	L	P	Q	R	S	T	U
d1(mm	f (mm/n)																	
0,1													0,0022	0,0025	0,003	0,004	0,006	0,007
0,3	0,002	0,003	0,003	0,004	0,010	0,010	0,010	0,010	0,010				0,0040	0,0045	0,005	0,007	0,010	0,013
0,5	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019				0,0060	0,0070	0,008	0,010	0,016	0,020
0,8	0,005	0,007	0,008	0,009	0,012	0,014	0,016	0,018	0,023				0,0100	0,0110	0,013	0,017	0,026	0,030
1	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025				0,0135	0,0150	0,018	0,023	0,036	0,045
1,5	0,012	0,014	0,016	0,018	0,020	0,023	0,025	0,032	0,040				0,0200	0,0240	0,028	0,035	0,056	0,070
2	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125				0,0250	0,030	0,035	0,044	0,070	0,085
3	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160				0,0400	0,0450	0,055	0,069	0,10	0,130
4	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200									
5	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,250	0,250	0,300						
6	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,300	0,300	0,360						
8	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315	0,400	0,400	0,480						
10	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400	0,500	0,500	0,600						
12	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400	0,540	0,600	0,720						
14	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630	0,700	0,840						
16	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,640	0,720	0,840						
18	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630									
20	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630									

NL Uitleg calculatietool
FR Regardez la vidéo d’instruction de l’outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

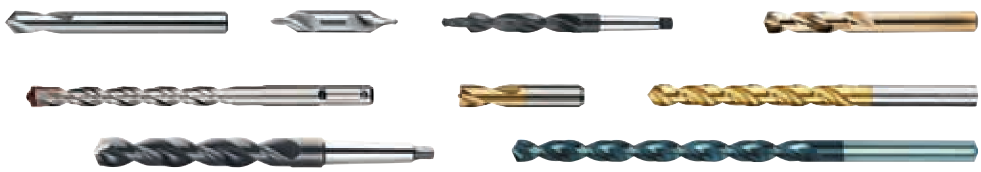
Watch me

www.phantom.eu

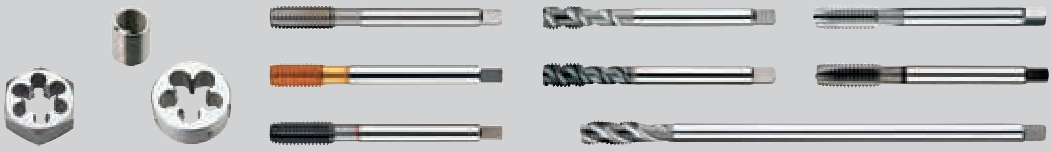
NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



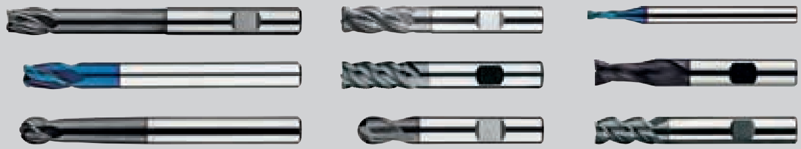
NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



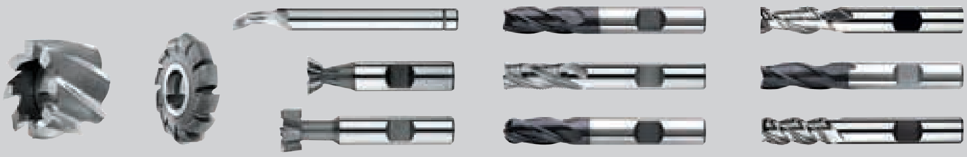
NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



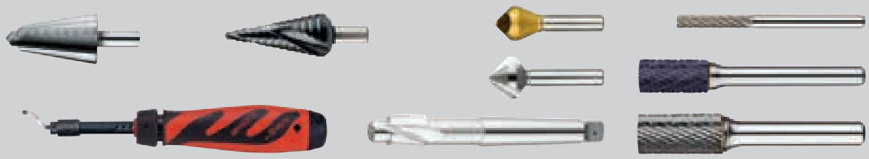
NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling

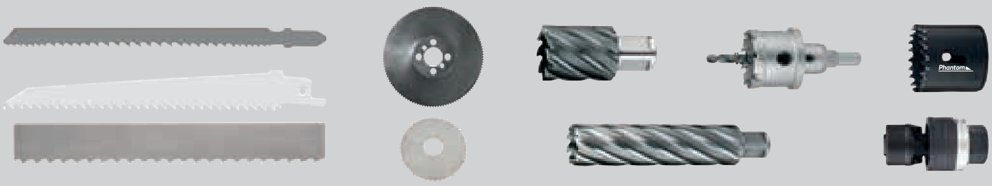


NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring

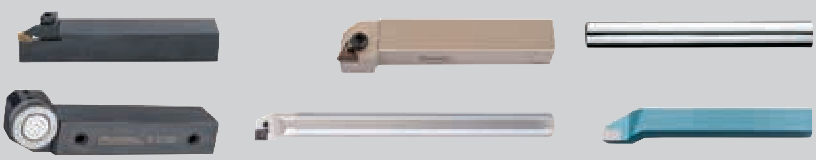


NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

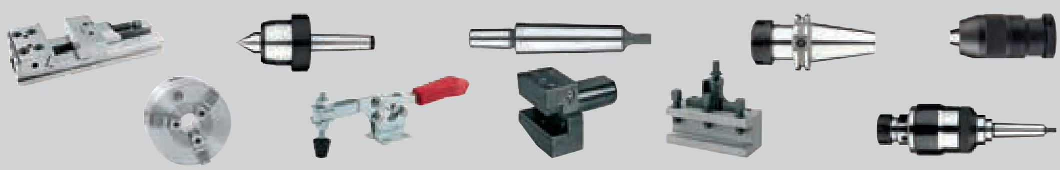
NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



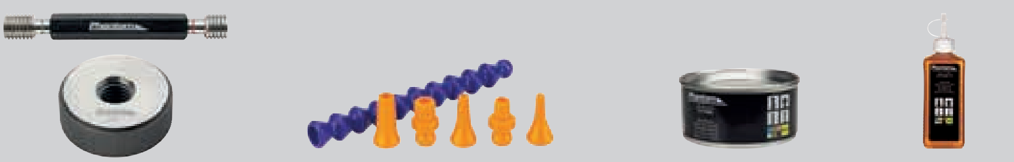
NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
HSS	HSS	HSS	HSS	HSS	HSS
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalto)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)
HSS-E PM	PM HSS-E	Acier rapide fritté de haute qualité	Acero rápido pulvi-metalúrgico con	PM HSS-E	Powder Metal High-speed steel
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden	Carbide Tipped
HM	Hardmetaal	Carbure monobloc	Metal duro integral	Hartmetall	Solid Carbide
CV	Hoog gelegeerd Chroom Vanadium staal	Acier hautement allié au Chrome Vanadium	Acero de alta aleación de Cromo Vanadio	Hochlegiert Chrom-Vanadium-Stahl	High alloyed Chrome Vanadium Steel
OX.	Stoomontlaten	Vaporisé	Vaporizado	Dampfangelassen	Steam tempered
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung	TiN coated
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung	TiAlN coated
AlCrN	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung	AlCrN-X coated
DIN 338	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
ECO	ECO, basis kwaliteit	ECO, qualité standard	ECO, calidad básica	ECO, grundlegende Qualität	ECO, basic quality
ECO PRO	ECO PRO, industrie kwaliteit	ECO PRO, qualité industrielle	ECO PRO, calidad de la industria	ECO PRO, Industriequalität	ECO PRO, industry quality
3xD	Max. boordiepte	Profondeur max. de perçage	Profundidad máx. de perforacion	Max. Bohrtiefe	Max drilling depth
N	Type N, standaard spiraaluitvoering	Type N, hélice standard	Tipo N, Versión helicoidal estándar	Type N, standard Spiralwinkel	Type N, standard spiral
>N	Spiraalhoek sterker dan standaard	Hélice plus rapide que standard	Ángulo de hélice más rápido que estándar	Spiralwinkel stärker wie Standard	Helix quicker than standard
H	Type H, flauwe spiraalhoek	Type H, hélice lente	Tipo H, Ángulo de hélice lento	Type H, flache Spiralwinkel	Type H, flat helix
W	Type W, sterke spiraalhoek	Type W, hélice rapide	Tipo W, Ángulo de hélice rápido	Type W, starke Spiralwinkeln	Type W, quick helix
TS	Type TS, Tiefloch-spiraal	Type TS, goujure large	Tipo TS, Hélice para perforación profunda	Type TS, Tiefloch Spiral	Type TS, deep hole helix
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft	Straight shank
Ø10	Afgedraaide schacht	Queue réduite	Mango rebajado	Abgedrehtem Zylinderschaft	Reduced shank
	Schacht zeskant	Queue hexagonale	Mango hexagonal	Sechskantschaft	Hexa shaft
1/4"	Bitopname (1/4")	Queue hexagonale 1/4" (6,35 mm)	Mango hexagonal 1/4" (6,35 mm)	Bitaufname (1/4")	Hexagonal shank (1/4")
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel	Morse Taper shank
1:50	Coniciteit	Conicité	Conicidad	Konizität	Taper
	Standaard boorpunt	Affûtage standard	Afilado normal	Standard Bohrerspitze	Standard drill point
	Kruisaanslijping	Affûtage en croix	Afilado en Cruz	Kreuzanschliff	Splitpoint
	S-aanslijping	Affûtage en S	Afilado en S	S-Anschliff	S point

	NL	FR	ES	DE	EN
	Viervlaks-aanslijping	Affûtage 4 pentes	Afilado 4 facetas	Vierflachs-Anschliff	4-facet point
	Met verdunde punt	Ame amincie	Con alma delgada	Ausgedünde Spitze	With thinned point
	Aanslijping 3-lippenboor	Affûtage à 3 lèvres	Afilado con 3 labios	Aufbohrer-anschliff	3-Flute
	HM-Snijkanten	A plaquettes carbure brasées	Punta Metal Duro	HM-Schneiden	Carbide Tipped
	Lage snijkrachten, sneller boren	Faible force de coupe et perçage plus rapide	Baja fuerza de corte, taladro más rápido	Geringe Schnittkräfte, schnelleres Bohren	Low cutting force, faster drilling
NAS 907	NAS 907	NAS 907	NAS 907	NAS 907	NAS 907
1	Fijnpassing	Ajustement fin	Ajuste fino	Senkung fein	Fine tolerances
2	Middelpassing	Ajustement moyen	Ajuste medio	Senkung mittel	Medial tolerances
	Koelkanaal	A trous d'huile	Canal de refrigeración	Mit Kühlkanal	Coolant feed
118°	Tophoek	Angle au sommet	Ángulo de la punta	Spitzenwinkel	Top angle
B	Form B (met centreerpunt)	Forme B (avec pointe de centrage)	Forma B (con punta de centrado)	Form B (mit Zentrierspitze)	Form B (with centering point)
	Met Lewis centreerpunt	Avec pointe de centrage Lewis	Con punta de centrado Lewis	mit Lewis Zentrierspitze	With Lewis centering point
90°	Hoek 90°	Angle 90°	Ángulo 90°	Winkel 90°	Angle 90°
180°	Hoek 180°	Angle 180°	Ángulo 180°	Winkel 180°	Angle 180°
60°	Uitvoering centreergat	Angle de lamage	Versión ángulo avellanado	Ausführung Zentrierloch	Centre hole
60°	Centreerboor met kraag	Foret à centrer à bourrelet de renfort	Broca de centrar con valona	Zentrierbohrer mit Kragen	Centre Drill with reinforcing bulge 60°
60°	Centreerboor met radius	Foret à centrer à rayon	Broca de centrar con radio	Zentrierbohrer mit Radius	Centre Drill radius form 60°
60° 120°	Centreerboor met dubbele hoek	Foret à centrer à centre protégé	Broca de centrar con chaflan	Zentrierbohrer mit Schutzsenkung	Centre Drill Bell type
90°	Centreerhoek	Point de centrage	Ángulo de centrar	Zentrierspitze	Centr angle
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl	For stainless steel
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium	For aluminium
HP2 UNI	HP2 Universeel	Haute Performance Universel	Alta Rendimiento Universal	HP2 Universal	HP2 Universal
	Ook voor hardhout	Aussi pour bois dur	También para madera dura	Auch für Hartholz	Also suitable for hardwood
	Linkssnijdend	Coupe à gauche	Corte a izquierda	Linksschneidend	Left hand cutting
SDS plus	SDS-PLUS	SDS-PLUS	SDS-PLUS	SDS-PLUS	SDS-PLUS
SDS max	SDS-MAX	SDS-MAX	SDS-MAX	SDS-MAX	SDS-MAX
Z=2	2 Snijkanten	À 2 lèvres	Con 2 facetas	2 Schneiden	2 flutes
Z=4	4 Snijkanten	À 4 lèvres	Con 4 facetas	4 Schneiden	4 flutes
	Volgens PGM-keurmerk	Conformément à la directive PGM	Según la directiva PGM	Gemäß PGM-vorschriften	According to PGM standard

NL HSS en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling

P K / H N / M S — Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K / H N / M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

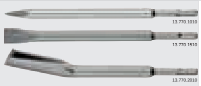
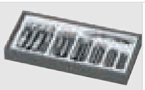
› 11.100	International Tools	HSS	DIN 1897	ECO	P		K					P. 8
› 11.110	International Tools	HSS	DIN 1897	ECO	P	M	K	N				P. 8
› 11.120	International Tools	HSS	C6,3 1/4"	ECO	P		K	N				P. 9
› 11.130	Phantom	HSS	DIN 1897		P	M	K	N				P. 9
› 11.145	Phantom	HSS	NORM		P	M	K	N				P. 10
› 11.150	International Tools	HSS-E	DIN 1897	ECO PRO	P	M	K	N				P. 10
› 11.160	Phantom	HSS-E	DIN 1897		P	M	K	N				P. 10
› 11.161	Phantom	HSS-E	DIN 1897		P	M	K	N				P. 11
› 11.167	Phantom	HSS-E	DIN 1897	INOX	P	M	K	N	S			P. 11
› 11.168	Phantom	HSS-E	DIN 1897	HP2 UNI	P	M	K	N				P. 12
› 11.170	Phantom	HM-TIP	DIN 8037		P	M	K	N	S	H	NEW	P. 13
› 11.174	Phantom	HSS-E	DIN 1897		P	M	K					P. 13
› 11.340	Phantom	HSS-E PM	DIN 1899 A		P	M	K	N				P. 14
› 11.400	International Tools	HSS	DIN 338	ECO	P		K					P. 15
› 11.403	Phantom	HSS	Ø13		P	M	K	N			NEW	P. 16
› 11.410	International Tools	HSS	Ø10	ECO	P		K					P. 16
› 11.413	International Tools	HSS	Ø13	ECO	P		K					P. 16
› 11.414	International Tools	HSS	Ø13	ECO	P		K				NEW	P. 17
› 11.415	International Tools	HSS-E	Ø13	ECO PRO	P	M	K	N				P. 17
› 11.416	International Tools	HSS	DIN 338	ECO	P		K	N				P. 17
› 11.420	International Tools	HSS	DIN 338	ECO PRO	P		K	N				P. 18
› 11.423	International Tools	HSS	DIN 338	ECO	P		K	N				P. 19
› 11.426	International Tools	HSS	DIN 338	ECO	P		K	N				P. 19
› 11.430	International Tools	HSS	DIN 338	ECO PRO	P		K	N				P. 20
› 11.431	International Tools	HSS	DIN 338	ECO PRO	P	M	K	N				P. 21
› 11.434	International Tools	HSS			P	M	K	N			NEW	P. 22
› 11.440	Phantom	HSS			P	M	K	N				P. 22
› 11.441	Phantom	HSS			P	M	K	N				P. 23
› 11.443	Phantom	HSS			P	M	K	N				P. 23
› 11.445	Phantom	HSS-E			P	M	K	N				P. 24
› 11.446	Phantom	HSS-E			P	M	K	N				P. 24
› 11.447	Phantom	HSS-E			P	M	K	N				P. 25
› 11.450	Phantom	HSS	DIN 338		P	M	K	N				P. 25

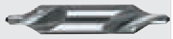
› 11.451	Phantom	HSS	DIN 338		P	M	K	N			P. 26
› 11.461	Phantom	HSS	DIN 338		P	M	K	N			P. 27
› 11.490	International Tools	HSS-E	DIN 338	ECO PRO	P	M	K	N			P. 28
› 11.500	Phantom	HSS-E	DIN 338		P	M	K	N			P. 29
› 11.501	Phantom	HSS-E	DIN 338		P	M	K	N			P. 30
› 11.506	Phantom	HSS-E	DIN 338		P	M	K	N			P. 30
› 11.510	Phantom	HSS-E 8%	DIN 338		P	M	K	N	S		P. 31
› 11.568	Phantom	HSS-E	DIN 338	HP2 UNI	P	M	K	N			P. 31
› 11.600	Phantom	HM-TIP	DIN 338		P	M	K	N	S	H	P. 32
› 11.700	Phantom	HSS	DIN 338	H				N			P. 33
› 11.710	Phantom	HSS	DIN 338	ALU				N			P. 33
› 11.760	Phantom	HSS-E	DIN 338	INOX	P	M			S		P. 34
› 11.764	Phantom	HSS-E	DIN 338	INOX	P	M			S		P. 35
› 11.770	Phantom	HSS-E	DIN 338	TS	P	M	K	N			P. 35
› 11.774	Phantom	HSS-E	DIN 338	TS	P	M	K	N			P. 36
› 11.810	International Tools	HSS	DIN 340	ECO	P		K				P. 37
› 11.813	International Tools	HSS	DIN 340	ECO PRO	P		K	N			P. 37
› 11.815	Phantom	HSS	DIN 340		P	M	K	N			P. 38
› 11.820	Phantom	HSS-E	DIN 340	INOX	P	M			S		P. 38
› 11.840	Phantom	HM-TIP	DIN 340		P	M	K	N	S	H	P. 39
› 11.850	Phantom	HSS	DIN 340	TS	P			N			P. 39
› 11.860	Phantom	HSS	DIN 340	TS	P		K	N			P. 39
› 11.870	Phantom	HSS-E	DIN 340	TS	P	M	K	N			P. 40
› 11.874	Phantom	HSS-E	DIN 340	TS	P	M	K	N			P. 40
› 11.890	Phantom	HSS	NORM		P	M	K	N			P. 41
› 11.900	Phantom	HSS	DIN 1869		P		K	N			P. 41
› 11.920	Phantom	HSS	DIN 1869	TS	P		K	N			P. 41
› 11.940	Phantom	HSS-E	DIN 1869	TS	P	M	K	N			P. 42
› 12.150	Phantom	HSS-E 8%	NORM	DIN 228-B	P						P. 43
› 12.400	International Tools	HSS	DIN 345	DIN 228-B	P		K				P. 43
› 12.420	International Tools	HSS	NORM	DIN 228-B	P		K				P. 44
› 12.430	International Tools	HSS	DIN 345	DIN 228-B	P	M	K	N		NEW	P. 44
› 12.440	Phantom	HSS	DIN 345	DIN 228-B	P	M	K	N			P. 45
› 12.480	Phantom	HSS	DIN 346	DIN 228-B	P	M	K	N			P. 46
› 12.500	Phantom	HSS-E	DIN 345	DIN 228-B	P	M	K	N			P. 46

› 12.520	Phantom	HSS-E	DIN 345	DIN 228-B	P M K N	P. 47
› 12.600	Phantom	HM-TIP	DIN 345	DIN 228-B	P M K N S H	P. 47
› 12.800	Phantom	HSS	DIN 341	DIN 228-B	P M K N	P. 48
› 12.840	Phantom	HSS		DIN 228-B	P M K N	P. 48
› 12.860	Phantom	HSS		DIN 228-BK	P M K N	P. 48
› 12.900	Phantom	HSS	DIN 1870	DIN 228-B	P M K N	P. 49
› 12.910	Phantom	HSS	NORM	DIN 228-B	P M K N	P. 49
› 12.920	Phantom	HSS-E	DIN 1870	DIN 228-B	P M N	P. 50
› 13.200	Phantom	HSS	DIN 1898 A	1:50	P	P. 50
› 13.300	Phantom	HSS	DIN 344		P M N	P. 50
› 13.320	Phantom	HSS	DIN 343		P M N	P. 51
› 13.350	Phantom	HSS	DIN 222		P M N	P. 52
› 84.410	Phantom		DIN 228-B	DIN 217		P. 52
› 13.603	Phantom	CV		B		P. 53
› 13.606	Phantom	CV		90°		P. 53
› 13.610	Phantom	CV		E6,3 1/4"		P. 53
› 13.615	Phantom			E6,3 1/4"		P. 53
› 13.640	Phantom	CV				P. 54
› 13.650	Phantom	CV				P. 54
› 13.680	Phantom	HM		PU		P. 54
› 13.700	Phantom	HM	ISO 5468	PU		P. 55
› 13.710	Phantom	HM		PU		P. 55
› 13.720	Phantom	HM	ISO 5468	PU		P. 55
› 13.730	Phantom	HM		PU		P. 55
› 13.740	Phantom	HM	Z=2	SDS plus		P. 56
› 13.744	Phantom	HM	Z=4	SDS plus		P. 56
› 13.750	Phantom	HM		SDS max		P. 57
› 13.765	Phantom	HM		SDS plus		P. 57
› 13.766	Phantom	HM				P. 57
› 13.770	Phantom			SDS plus		P. 58

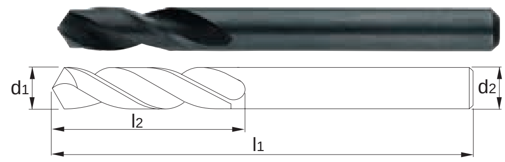
› 13.775	Phantom			SDS max					P. 58
› 13.790	Phantom	HM		E6,3 1/4"					P. 58
› 13.800	Phantom	HSS-E			P	M			P. 59
› 13.801	Phantom	HSS-E			P	M			P. 59
› 15.095	International Tools	HSS	DIN 333-A	60°	P		K	N	P. 60
› 15.096	International Tools	HSS	DIN 333-A	60°	P		K	N	P. 60
› 15.100	Phantom	HSS	DIN 333-A	60°	P		K	N	P. 60
› 15.120	Phantom	HSS-E	DIN 333-A	60°	P	M	K	N	P. 61
› 15.124	Phantom	HSS-E	DIN 333-A	60°	P	M	K	N	P. 61
› 15.150	Phantom	HSS-E	NORM	60°	P	M	K	N	P. 61
› 15.200	Phantom	HSS	DIN 333-W	60°	P		K	N	P. 62
› 15.250	Phantom	HSS	DIN 333-R	60°	P		K	N	P. 62
› 15.380	Phantom	HSS	DIN 333-B	60° 120°	P		K	N	P. 63
› 15.500	Phantom	HSS	NORM	90°	P		K	N	P. 63
› 15.600	Phantom	HSS-E	ISO 10898	90°	P	M	K	N	P. 63
› 15.604	Phantom	HSS-E	ISO 10898	90°	P	M	K	N	P. 64
› 15.606	Phantom	HSS-E 8%	ISO 10898	90°	P	M	K	N	P. 64
› 15.611	Phantom	HSS-E		90°	P	M	K	N	P. 64
› 15.640	Phantom	HSS-E		90°	P	M	K	N	P. 65
› 15.644	Phantom	HSS-E		90°	P	M	K	N	P. 65
› 15.650	Phantom	HSS-E	DIN 228-B	90°	P	M	K	N	P. 65
› 15.700	Phantom	HSS-E		120°	P	M	K	N	P. 66
› 15.704	Phantom	HSS-E		120°	P	M	K	N	P. 66
› 15.740	Phantom	HSS-E		120°	P	M	K	N	P. 66
› 15.744	Phantom	HSS-E		120°	P	M	K	N	P. 67
› 15.751	Phantom	HSS-E		142°	P	M	K	N	P. 67
› 15.820	Phantom	HSS-E	DIN 332-D	60°	P	M	K	N	P. 67
› 15.840	Phantom	HSS-E	DIN 332-D	60°	P	M	K	N	P. 68
› 15.880	Phantom	HSS-E		90°	P	M	K	N	P. 68
› 16.100	Phantom	HSS-E		90°	P	M	K	N	P. 69
› 16.104	Phantom	HSS-E		90°	P	M	K	N	P. 69
› 16.120	Phantom	HSS-E		90°	P	M	K	N	P. 69
› 16.124	Phantom	HSS-E		90°	P	M	K	N	P. 70
› 16.200	Phantom	HSS		90°	P	M	K	N	P. 70
› 16.220	Phantom	HSS	DIN 8374	90°	P	M	K	N	P. 70

› 16.250	Phantom	HSS	DIN 8378	90°	P M K N	P. 71
› 16.300	Phantom	HSS	DIN 8375	90°	P M K N	P. 71
› 16.350	Phantom	HSS	DIN 8379	90°	P M K N	P. 71
› 16.500	Phantom	HSS-E		180°	P M K N	P. 72
› 16.504	Phantom	HSS-E		180°	P M K N	P. 72
› 16.600	Phantom	HSS	DIN 8376	180°	P M K N	P. 72
› 16.700	Phantom	HSS	DIN 8377	180°	P M K N	P. 73
› 16.730	Phantom	HSS		180°	P M K N	P. 73
› 19.100	Phantom					P. 74
› 19.113	Phantom	HSS	DIN 1897		P M K N	P. 74
› 19.116	Phantom	HSS-E	DIN 1897		P M K N	P. 74
› 19.120	International Tools	HSS	DIN 338	ECO	P K N	P. 75
› 19.124	International Tools	HSS	DIN 338	ECO PRO	P K N	P. 75
› 19.127	International Tools	HSS	DIN 338	ECO	P K N	P. 75
› 19.130	International Tools	HSS	DIN 338	ECO	P K N	P. 76
› 19.134	International Tools	HSS	DIN 338	ECO PRO	P K N	P. 76
› 19.135	International Tools	HSS			P M K N	P. 76 NEW
› 19.136	International Tools	HSS	DIN 338	ECO PRO	P M K N	P. 77
› 19.137	Phantom	HSS			P M K N	P. 77
› 19.138	Phantom	HSS			P M K N	P. 77
› 19.139	Phantom	HSS			P M K N	P. 78
› 19.140	Phantom	HSS-E			P M K N	P. 78
› 19.141	Phantom	HSS-E			P M K N	P. 79

› 19.142	Phantom	HSS-E			P M K N		P. 79
› 19.144	International Tools	HSS	DIN 338	ECO	P K		P. 80
› 19.145	Phantom	HSS	DIN 338		P M K N		P. 80
› 19.146	Phantom	HSS	DIN 338		P M K N		P. 80
› 19.147	Phantom	HSS	DIN 338		P M K N		P. 81
› 19.149	International Tools	HSS-E	DIN 338	ECO PRO	P M K N		P. 81
› 19.150	Phantom	HSS-E	DIN 338		P M K N		P. 81
› 19.152	Phantom	HSS-E	DIN 338		P M K N		P. 82
› 19.154	Phantom	HSS-E 8%	DIN 338		P M K N S		P. 82
› 19.156	Phantom	HSS-E	DIN 338	HP2 UNI	P M K N		P. 82
› 19.160	Phantom	HM-TIP	DIN 338		P M K N S H		P. 83
› 19.171	Phantom	HSS	DIN 338	ALU	N		P. 83
› 19.176	Phantom	HSS-E	DIN 338	INOX	P M S		P. 83
› 19.363	Phantom	CV		B			P. 84
› 19.370	Phantom	HM	DIN 8039	PU			P. 84
› 19.372	Phantom	HM		PU			P. 84
› 19.374	Phantom	HM	Z=2	SDS plus			P. 84
› 19.376	Phantom	HM	Z=4	SDS plus			P. 85
› 19.377	Phantom			SDS plus			P. 85
› 19.540	Phantom	HSS	DIN 333-A	60°	P K N		P. 85

› 19.910	Phantom	HSS	DIN 338	P	M	K	N		P. 86
› 19.914	Phantom	HSS	DIN 338	P	M	K	N		P. 86
› 19.951	Phantom	HSS	60°	P		K	N		P. 86
› 19.956	Phantom	HSS-E	90°	P	M	K	N		P. 87
› 19.957	Phantom	HSS-E	120°	P	M	K	N		P. 87

› 11.100 International Tools



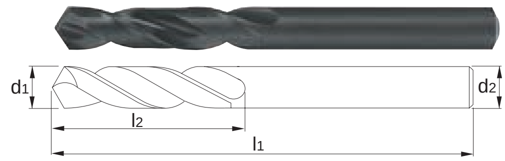
NL **ECO HSS Spiraalboor gewalst**
FR **Foret HSS ECO laminé**
ES **Broca HSS ECO laminada**
DE **ECO HSS Spiralbohrer Gewalzt**
EN **ECO HSS Twist drill roll-forged**

HSS | DIN 1897 | N | 118° | ECO

P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 D	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	d2	l1	l2
11.100.0200	2	2	38	12
11.100.0210	2.1	2.1	38	12
11.100.0220	2.2	2.2	40	13
11.100.0230	2.3	2.3	40	13
11.100.0240	2.4	2.4	43	14
11.100.0250	2.5	2.5	43	14
11.100.0260	2.6	2.6	43	14
11.100.0270	2.7	2.7	46	16
11.100.0280	2.8	2.8	46	16
11.100.0290	2.9	2.9	46	16
11.100.0310	3.1	3.1	49	18
11.100.0320	3.2	3.2	49	18
11.100.0330	3.3	3.3	49	18
11.100.0340	3.4	3.4	52	20
11.100.0350	3.5	3.5	52	20
11.100.0360	3.6	3.6	52	20
11.100.0370	3.7	3.7	52	20
11.100.0380	3.8	3.8	55	22
11.100.0390	3.9	3.9	55	22
11.100.0400	4	4	55	22
11.100.0410	4.1	4.1	55	22
11.100.0420	4.2	4.2	55	22
11.100.0430	4.3	4.3	58	24
11.100.0440	4.4	4.4	58	24
11.100.0450	4.5	4.5	58	24
11.100.0460	4.6	4.6	58	24
11.100.0470	4.7	4.7	58	24
11.100.0480	4.8	4.8	62	26
11.100.0490	4.9	4.9	62	26
11.100.0500	5	5	62	26
11.100.0510	5.1	5.1	62	26
11.100.0520	5.2	5.2	62	26
11.100.0530	5.3	5.3	62	26
11.100.0540	5.4	5.4	66	28
11.100.0550	5.5	5.5	66	28
11.100.0560	5.6	5.6	66	28
11.100.0570	5.7	5.7	66	28
11.100.0580	5.8	5.8	66	28
11.100.0590	5.9	5.9	66	28
11.100.0600	6	6	66	28
11.100.0620	6.2	6.2	70	31
11.100.0650	6.5	6.5	70	31
11.100.0680	6.8	6.8	74	34
11.100.0700	7	7	74	34
11.100.0750	7.5	7.5	74	34
11.100.0800	8	8	79	37
11.100.0900	9	9	84	40

› 11.110 International Tools



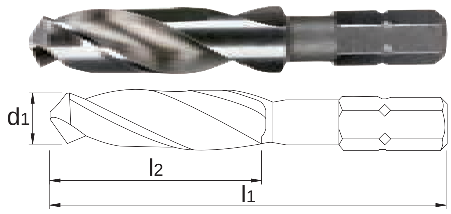
NL **ECO HSS Spiraalboor**
FR **Foret HSS ECO**
ES **Broca HSS ECO**
DE **ECO HSS Spiralbohrer**
EN **ECO HSS Twist drill**

HSS | DIN 1897 | N | >3 | 118° | ECO

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.110.0100	1	1	26	6
11.110.0150	1.5	1.5	32	9
11.110.0200	2	2	38	12
11.110.0250	2.5	2.5	43	14
11.110.0300	3	3	46	16
11.110.0320	3.2	3.2	49	18
11.110.0330	3.3	3.3	49	18
11.110.0350	3.5	3.5	52	20
11.110.0400	4	4	55	22
11.110.0410	4.1	4.1	55	22
11.110.0420	4.2	4.2	55	22
11.110.0450	4.5	4.5	58	24
11.110.0490	4.9	4.9	62	26
11.110.0500	5	5	62	26
11.110.0510	5.1	5.1	62	26
11.110.0520	5.2	5.2	62	26
11.110.0550	5.5	5.5	66	28
11.110.0580	5.8	5.8	66	28
11.110.0600	6	6	66	28
11.110.0650	6.5	6.5	70	31
11.110.0700	7	7	74	34
11.110.0750	7.5	7.5	74	34
11.110.0800	8	8	79	37
11.110.0850	8.5	8.5	79	37
11.110.0900	9	9	84	40
11.110.0950	9.5	9.5	84	40
11.110.1000	10	10	89	43
11.110.1050	10.5	10.5	89	43
11.110.1100	11	11	95	47
11.110.1150	11.5	11.5	95	47
11.110.1200	12	12	102	51
11.110.1250	12.5	12.5	102	51
11.110.1300	13	13	102	51

› 11.120 *International Tools*



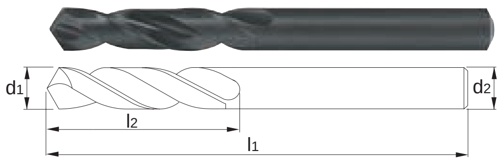
NL ECO HSS Spiraalboor 1/4" (6,35 mm)-zeskant bitopname
FR Foret HSS ECO avec queue hexagonale 1/4" (6,35 mm)
ES Broca HSS ECO con mango sujeción 1/4" (6,35 mm) bit
DE ECO HSS Spiralbohrer 1/4" (6,35 mm) Hexa-Bitaufnahme
EN ECO HSS Twist drill 1/4" (6,35 mm) hexagonal shank

HSS | N | C6,3 1/4" | 118° | ECO

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	45-50 E	35-40 G	25-40 D	22-28 D

Ref.	d1	l1	l2
11.120.0200	2	34	12
11.120.0250	2.5	36	14
11.120.0300	3	38	16
11.120.0330	3.3	40	18
11.120.0350	3.5	40	18
11.120.0400	4	44	20
11.120.0420	4.2	45	20
11.120.0450	4.5	46	24
11.120.0500	5	50	26
11.120.0550	5.5	50	26
11.120.0600	6	50	26
11.120.0650	6.5	50	30
11.120.0680	6.8	50	30
11.120.0700	7	50	30
11.120.0750	7.5	51	32
11.120.0800	8	51	32
11.120.0850	8.5	53	33
11.120.0900	9	53	33
11.120.0950	9.5	54	38
11.120.1000	10	54	38
11.120.1020	10.2	54	38

› 11.130 *Phantom*



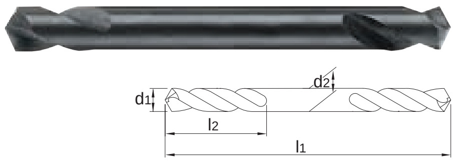
NL HSS Spiraalboor
FR Foret HSS
ES Broca HSS
DE HSS Spiralbohrer
EN HSS Twist drill

HSS | OX. | DIN 1897 | N | ≥1,6 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.130.0100	1	1	26	6
11.130.0110	1.1	1.1	28	7
11.130.0120	1.2	1.2	30	8
11.130.0130	1.3	1.3	30	8
11.130.0140	1.4	1.4	32	9
11.130.0150	1.5	1.5	32	9
11.130.0160	1.6	1.6	34	10
11.130.0170	1.7	1.7	34	10
11.130.0180	1.8	1.8	36	11
11.130.0190	1.9	1.9	36	11
11.130.0200	2	2	38	12
11.130.0210	2.1	2.1	38	12
11.130.0220	2.2	2.2	40	13
11.130.0230	2.3	2.3	40	13
11.130.0240	2.4	2.4	43	14
11.130.0250	2.5	2.5	43	14
11.130.0260	2.6	2.6	43	14
11.130.0270	2.7	2.7	46	16
11.130.0280	2.8	2.8	46	16
11.130.0290	2.9	2.9	46	16
11.130.0300	3	3	46	16
11.130.0310	3.1	3.1	49	18
11.130.0320	3.2	3.2	49	18
11.130.0330	3.3	3.3	49	18
11.130.0340	3.4	3.4	52	20
11.130.0350	3.5	3.5	52	20
11.130.0360	3.6	3.6	52	20
11.130.0370	3.7	3.7	52	20
11.130.0380	3.8	3.8	55	22
11.130.0390	3.9	3.9	55	22
11.130.0400	4	4	55	22
11.130.0410	4.1	4.1	55	22
11.130.0420	4.2	4.2	55	22
11.130.0430	4.3	4.3	58	24
11.130.0440	4.4	4.4	58	24
11.130.0450	4.5	4.5	58	24
11.130.0460	4.6	4.6	58	24
11.130.0470	4.7	4.7	58	24
11.130.0480	4.8	4.8	62	26
11.130.0490	4.9	4.9	62	26
11.130.0500	5	5	62	26
11.130.0510	5.1	5.1	62	26
11.130.0520	5.2	5.2	62	26
11.130.0530	5.3	5.3	62	26
11.130.0540	5.4	5.4	66	28
11.130.0550	5.5	5.5	66	28
11.130.0560	5.6	5.6	66	28
11.130.0570	5.7	5.7	66	28
11.130.0580	5.8	5.8	66	28
11.130.0590	5.9	5.9	66	28
11.130.0600	6	6	66	28
11.130.0610	6.1	6.1	70	31
11.130.0620	6.2	6.2	70	31
11.130.0630	6.3	6.3	70	31
11.130.0640	6.4	6.4	70	31
11.130.0650	6.5	6.5	70	31
11.130.0660	6.6	6.6	70	31
11.130.0670	6.7	6.7	70	31
11.130.0680	6.8	6.8	74	34
11.130.0690	6.9	6.9	74	34
11.130.0700	7	7	74	34
11.130.0750	7.5	7.5	74	34
11.130.0780	7.8	7.8	79	37
11.130.0800	8	8	79	37
11.130.0850	8.5	8.5	79	37
11.130.0880	8.8	8.8	84	40
11.130.0900	9	9	84	40
11.130.0950	9.5	9.5	84	40
11.130.0980	9.8	9.8	89	43
11.130.1000	10	10	89	43
11.130.1050	10.5	10.5	89	43
11.130.1100	11	11	95	47
11.130.1150	11.5	11.5	95	47
11.130.1200	12	12	102	51
11.130.1250	12.5	12.5	102	51
11.130.1300	13	13	102	51
11.130.1350	13.5	13.5	107	54
11.130.1400	14	14	107	54
11.130.1450	14.5	14.5	111	56
11.130.1500	15	15	111	56
11.130.1550	15.5	15.5	115	58
11.130.1600	16	16	115	58
11.130.1650	16.5	16.5	119	60
11.130.1700	17	17	119	60
11.130.1750	17.5	17.5	123	62
11.130.1800	18	18	123	62
11.130.1850	18.5	18.5	127	64
11.130.1900	19	19	127	64
11.130.1950	19.5	19.5	131	66
11.130.2000	20	20	131	66

11.145 Phantom



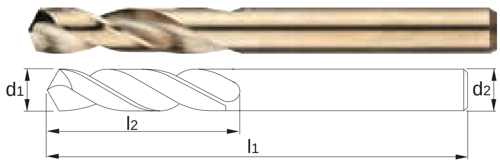
NL HSS Spiraalboor dubbelzijdig
FR Foret HSS double-pointe
ES Broca HSS de doble punta
DE HSS Spiralbohrer Doppelseitig
EN HSS Twist drill double ended

HSS | NORM | N | ≥2,5 | 135°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.145.0200	2	2	38	7.5
11.145.0210	2.1	2.1	38	7.5
11.145.0250	2.5	2.5	43	9.5
11.145.0300	3	3	46	10.6
11.145.0320	3.2	3.2	49	11.2
11.145.0330	3.3	3.3	49	11.2
11.145.0350	3.5	3.5	52	12.5
11.145.0400	4	4	55	14
11.145.0410	4.1	4.1	55	14
11.145.0420	4.2	4.2	55	14
11.145.0450	4.5	4.5	58	15.5
11.145.0480	4.8	4.8	62	17
11.145.0490	4.9	4.9	62	16
11.145.0500	5	5	62	17
11.145.0510	5.1	5.1	62	17
11.145.0520	5.2	5.2	62	17
11.145.0550	5.5	5.5	66	19
11.145.0600	6	6	66	19

11.150 International Tools



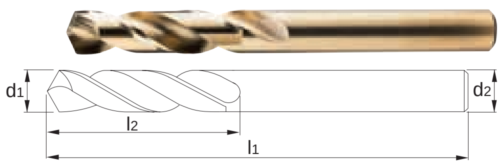
NL ECO PRO HSS-E Spiraalboor
FR Foret HSS-E ECO PRO
ES Broca HSS-E ECO PRO
DE ECO PRO HSS-E Spiralbohrer
EN ECO PRO HSS-E Twist drill

HSS-E | DIN 1897 | N | >3 | 135° | ECO PRO

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
11.150.0100	1	1	26	6
11.150.0150	1.5	1.5	32	9
11.150.0200	2	2	38	12
11.150.0220	2.2	2.2	40	13
11.150.0250	2.5	2.5	43	14
11.150.0300	3	3	46	16
11.150.0310	3.1	3.1	49	18
11.150.0320	3.2	3.2	49	18
11.150.0330	3.3	3.3	49	18
11.150.0340	3.4	3.4	52	20
11.150.0350	3.5	3.5	52	20
11.150.0370	3.7	3.7	52	20
11.150.0380	3.8	3.8	55	22
11.150.0400	4	4	55	22
11.150.0410	4.1	4.1	55	22
11.150.0420	4.2	4.2	55	22
11.150.0450	4.5	4.5	58	24
11.150.0470	4.7	4.7	58	24
11.150.0480	4.8	4.8	62	26
11.150.0490	4.9	4.9	62	26
11.150.0500	5	5	62	26
11.150.0520	5.2	5.2	62	26
11.150.0550	5.5	5.5	66	28
11.150.0600	6	6	66	28
11.150.0650	6.5	6.5	70	31
11.150.0680	6.8	6.8	74	34
11.150.0700	7	7	74	34
11.150.0750	7.5	7.5	74	34
11.150.0800	8	8	79	37
11.150.0850	8.5	8.5	79	37
11.150.0900	9	9	84	40
11.150.0950	9.5	9.5	84	40
11.150.1000	10	10	89	43
11.150.1050	10.5	10.5	89	43
11.150.1100	11	11	95	47
11.150.1150	11.5	11.5	95	47
11.150.1200	12	12	102	51
11.150.1250	12.5	12.5	102	51
11.150.1300	13	13	102	51

11.160 Phantom



NL HSS-E Spiraalboor
FR Foret HSS-E
ES Broca HSS-E
DE HSS-E Spiralbohrer
EN HSS-E Twist drill

HSS-E | DIN 1897 | N | ≥2 | 135°

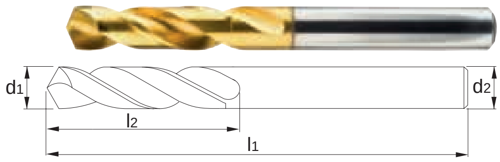
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
11.160.0100	1	1	26	6
11.160.0120	1.2	1.2	30	8
11.160.0150	1.5	1.5	32	9
11.160.0160	1.6	1.6	34	10
11.160.0200	2	2	38	12
11.160.0210	2.1	2.1	38	12
11.160.0220	2.2	2.2	40	13
11.160.0230	2.3	2.3	40	13
11.160.0240	2.4	2.4	43	14
11.160.0250	2.5	2.5	43	14
11.160.0260	2.6	2.6	43	14
11.160.0270	2.7	2.7	46	16
11.160.0280	2.8	2.8	46	16
11.160.0290	2.9	2.9	46	16
11.160.0300	3	3	46	16
11.160.0310	3.1	3.1	49	18
11.160.0320	3.2	3.2	49	18
11.160.0330	3.3	3.3	49	18
11.160.0340	3.4	3.4	52	20
11.160.0350	3.5	3.5	52	20
11.160.0360	3.6	3.6	52	20
11.160.0370	3.7	3.7	52	20
11.160.0380	3.8	3.8	55	22
11.160.0390	3.9	3.9	55	22
11.160.0400	4	4	55	22
11.160.0410	4.1	4.1	55	22
11.160.0420	4.2	4.2	55	22
11.160.0430	4.3	4.3	58	24
11.160.0440	4.4	4.4	58	24
11.160.0450	4.5	4.5	58	24

› 11.160 *Phantom*

Ref.	d1	d2	l1	l2
11.160.0460	4.6	4.6	58	24
11.160.0470	4.7	4.7	58	24
11.160.0480	4.8	4.8	62	26
11.160.0490	4.9	4.9	62	26
11.160.0500	5	5	62	26
11.160.0510	5.1	5.1	62	26
11.160.0520	5.2	5.2	62	26
11.160.0530	5.3	5.3	62	26
11.160.0540	5.4	5.4	66	28
11.160.0550	5.5	5.5	66	28
11.160.0560	5.6	5.6	66	28
11.160.0570	5.7	5.7	66	28
11.160.0580	5.8	5.8	66	28
11.160.0590	5.9	5.9	66	28
11.160.0600	6	6	66	28
11.160.0610	6.1	6.1	70	31
11.160.0620	6.2	6.2	70	31
11.160.0640	6.4	6.4	70	31
11.160.0650	6.5	6.5	70	31
11.160.0670	6.7	6.7	70	31
11.160.0680	6.8	6.8	74	34
11.160.0700	7	7	74	34
11.160.0750	7.5	7.5	74	34
11.160.0800	8	8	79	37
11.160.0850	8.5	8.5	79	37
11.160.0900	9	9	84	40
11.160.0950	9.5	9.5	84	40
11.160.1000	10	10	89	43
11.160.1020	10.2	10.2	89	43
11.160.1050	10.5	10.5	89	43
11.160.1100	11	11	95	47
11.160.1150	11.5	11.5	95	47
11.160.1200	12	12	102	51
11.160.1250	12.5	12.5	102	51
11.160.1300	13	13	102	51

› 11.161 *Phantom*



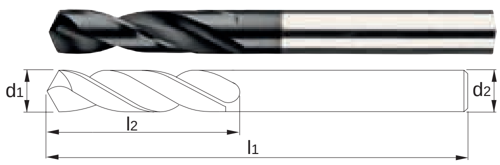
NL HSS-E Spiraalboor TiN
FR Foret HSS-E TiN
ES Broca HSS-E TiN
DE HSS-E Spiralbohrer TiN
EN HSS-E Twist drill TiN

HSS-E | TiN | DIN 1897 | N | ≥2 | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
32-40 E	35-40 E	25-32 E	12-20 D	15-20 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
11.161.0100	1	1	26	6
11.161.0110	1.1	1.1	28	7
11.161.0120	1.2	1.2	30	8
11.161.0130	1.3	1.3	30	8
11.161.0140	1.4	1.4	32	9
11.161.0150	1.5	1.5	32	9
11.161.0160	1.6	1.6	34	10
11.161.0170	1.7	1.7	34	10
11.161.0180	1.8	1.8	36	11
11.161.0190	1.9	1.9	36	11
11.161.0200	2	2	38	12
11.161.0210	2.1	2.1	38	12
11.161.0220	2.2	2.2	40	13
11.161.0230	2.3	2.3	40	13
11.161.0240	2.4	2.4	43	14
11.161.0250	2.5	2.5	43	14
11.161.0260	2.6	2.6	43	14
11.161.0270	2.7	2.7	46	16
11.161.0280	2.8	2.8	46	16
11.161.0290	2.9	2.9	46	16
11.161.0300	3	3	46	16
11.161.0310	3.1	3.1	49	18
11.161.0320	3.2	3.2	49	18
11.161.0330	3.3	3.3	49	18
11.161.0340	3.4	3.4	52	20
11.161.0350	3.5	3.5	52	20
11.161.0360	3.6	3.6	52	20
11.161.0370	3.7	3.7	52	20
11.161.0380	3.8	3.8	55	22
11.161.0390	3.9	3.9	55	22
11.161.0400	4	4	55	22
11.161.0410	4.1	4.1	55	22
11.161.0420	4.2	4.2	55	22
11.161.0430	4.3	4.3	58	24
11.161.0440	4.4	4.4	58	24
11.161.0450	4.5	4.5	58	24
11.161.0460	4.6	4.6	58	24
11.161.0470	4.7	4.7	58	24
11.161.0480	4.8	4.8	62	26
11.161.0490	4.9	4.9	62	26
11.161.0500	5	5	62	26
11.161.0510	5.1	5.1	62	26
11.161.0520	5.2	5.2	62	26
11.161.0530	5.3	5.3	62	26
11.161.0550	5.5	5.5	66	28
11.161.0570	5.7	5.7	66	28
11.161.0580	5.8	5.8	66	28
11.161.0600	6	6	66	28
11.161.0620	6.2	6.2	70	31
11.161.0650	6.5	6.5	70	31
11.161.0680	6.8	6.8	74	34
11.161.0700	7	7	74	34
11.161.0750	7.5	7.5	74	34
11.161.0800	8	8	79	37
11.161.0850	8.5	8.5	79	37
11.161.0900	9	9	84	40
11.161.0950	9.5	9.5	84	40
11.161.1000	10	10	89	43
11.161.1050	10.5	10.5	89	43
11.161.1100	11	11	95	47
11.161.1150	11.5	11.5	95	47
11.161.1200	12	12	102	51
11.161.1250	12.5	12.5	102	51
11.161.1300	13	13	102	51

› 11.167 *Phantom*



NL HSS-E Spiraalboor TiAlN, roestvaststaal
FR Foret HSS-E TiAlN, Inox
ES Broca HSS-E TiAlN, acero inoxidable
DE HSS-E Spiralbohrer TiAlN, rostfreien Stahl
EN HSS-E Twist drill TiAlN, stainless steel

HSS-E | TiAlN | DIN 1897 | >N | 130° | INOX

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 52	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	CuAlFe	Ni/Co	Ti
42-48 F	36-48 F	30-42 E	16-24 D	18-22 E	17-20 D	40-45 G	35-40 G	15-20 E	5-8 B	8-12 C

Ref.	d1	d2	l1	l2
11.167.0100	1	1	26	6
11.167.0150	1.5	1.5	32	9
11.167.0200	2	2	38	12
11.167.0220	2.2	2.2	40	13
11.167.0250	2.5	2.5	43	14
11.167.0280	2.8	2.8	46	16
11.167.0300	3	3	46	16
11.167.0310	3.1	3.1	49	18
11.167.0320	3.2	3.2	49	18
11.167.0330	3.3	3.3	49	18
11.167.0340	3.4	3.4	52	20
11.167.0350	3.5	3.5	52	20
11.167.0360	3.6	3.6	52	20
11.167.0370	3.7	3.7	52	20
11.167.0380	3.8	3.8	55	22
11.167.0390	3.9	3.9	55	22
11.167.0400	4	4	55	22
11.167.0410	4.1	4.1	55	22
11.167.0420	4.2	4.2	55	22
11.167.0430	4.3	4.3	58	24
11.167.0440	4.4	4.4	58	24
11.167.0450	4.5	4.5	58	24
11.167.0460	4.6	4.6	58	24
11.167.0470	4.7	4.7	58	24
11.167.0480	4.8	4.8	62	26
11.167.0490	4.9	4.9	62	26
11.167.0500	5	5	62	26

› 11.167 Phantom

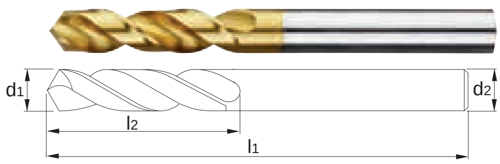
Ref.	d1	d2	l1	l2
11.167.0510	5.1	5.1	62	26
11.167.0520	5.2	5.2	62	26
11.167.0530	5.3	5.3	62	26
11.167.0540	5.4	5.4	66	28
11.167.0550	5.5	5.5	66	28
11.167.0560	5.6	5.6	66	28
11.167.0570	5.7	5.7	66	28
11.167.0580	5.8	5.8	66	28
11.167.0590	5.9	5.9	66	28

Ref.	d1	d2	l1	l2
11.167.0600	6	6	66	28
11.167.0650	6.5	6.5	70	31
11.167.0680	6.8	6.8	74	34
11.167.0700	7	7	74	34
11.167.0750	7.5	7.5	74	34
11.167.0800	8	8	79	37
11.167.0850	8.5	8.5	79	37
11.167.0900	9	9	84	40
11.167.0950	9.5	9.5	84	40

Ref.	d1	d2	l1	l2
11.167.1000	10	10	89	43
11.167.1020	10.2	10.2	89	43
11.167.1050	10.5	10.5	89	43
11.167.1100	11	11	95	47
11.167.1150	11.5	11.5	95	47
11.167.1200	12	12	102	51
11.167.1250	12.5	12.5	102	51
11.167.1300	13	13	102	51

› 11.168 Phantom

NL HP2 UNI HSS-E Spiraalboor TiN
FR Foret HSS-E HP2 UNI TiN
ES Broca HSS-E HP2 UNI TiN
DE HP2 UNI HSS-E Spiralbohrer TiN
EN HP2 UNI HSS-E Twist drill TiN



HSS-E | TiN | DIN 1897 | >N | 118° | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
38-42 F	20-44 E	20-40 E	16-22 C	15-20 D	12-18 C	40-45 F	35-40 F	50-70 E	40-60 F	60-80 F	40-44 E	15-20 D	24-28 D

Ref.	d1	d2	l1	l2
11.168.0100	1	1	26	6
11.168.0110	1.1	1.1	28	7
11.168.0120	1.2	1.2	30	8
11.168.0130	1.3	1.3	30	8
11.168.0140	1.4	1.4	32	9
11.168.0150	1.5	1.5	32	9
11.168.0160	1.6	1.6	34	10
11.168.0170	1.7	1.7	34	10
11.168.0180	1.8	1.8	36	11
11.168.0190	1.9	1.9	36	11
11.168.0200	2	2	38	12
11.168.0210	2.1	2.1	38	12
11.168.0220	2.2	2.2	40	13
11.168.0230	2.3	2.3	40	13
11.168.0240	2.4	2.4	43	14
11.168.0250	2.5	2.5	43	14
11.168.0260	2.6	2.6	43	14
11.168.0270	2.7	2.7	46	16
11.168.0280	2.8	2.8	46	16
11.168.0290	2.9	2.9	46	16
11.168.0300	3	3	46	16
11.168.0310	3.1	3.1	49	18
11.168.0320	3.2	3.2	49	18
11.168.0330	3.3	3.3	49	18
11.168.0340	3.4	3.4	52	20
11.168.0350	3.5	3.5	52	20
11.168.0360	3.6	3.6	52	20
11.168.0370	3.7	3.7	52	20
11.168.0380	3.8	3.8	55	22
11.168.0390	3.9	3.9	55	22
11.168.0400	4	4	55	22
11.168.0410	4.1	4.1	55	22
11.168.0420	4.2	4.2	55	22
11.168.0430	4.3	4.3	58	24

Ref.	d1	d2	l1	l2
11.168.0440	4.4	4.4	58	24
11.168.0450	4.5	4.5	58	24
11.168.0460	4.6	4.6	58	24
11.168.0470	4.7	4.7	58	24
11.168.0480	4.8	4.8	62	26
11.168.0490	4.9	4.9	62	26
11.168.0500	5	5	62	26
11.168.0510	5.1	5.1	62	26
11.168.0520	5.2	5.2	62	26
11.168.0530	5.3	5.3	62	26
11.168.0540	5.4	5.4	66	28
11.168.0550	5.5	5.5	66	28
11.168.0560	5.6	5.6	66	28
11.168.0570	5.7	5.7	66	28
11.168.0580	5.8	5.8	66	28
11.168.0590	5.9	5.9	66	28
11.168.0600	6	6	66	28
11.168.0610	6.1	6.1	70	31
11.168.0620	6.2	6.2	70	31
11.168.0630	6.3	6.3	70	31
11.168.0640	6.4	6.4	70	31
11.168.0650	6.5	6.5	70	31
11.168.0660	6.6	6.6	70	31
11.168.0670	6.7	6.7	70	31
11.168.0680	6.8	6.8	74	34
11.168.0690	6.9	6.9	74	34
11.168.0700	7	7	74	34
11.168.0710	7.1	7.1	74	34
11.168.0720	7.2	7.2	74	34
11.168.0730	7.3	7.3	74	34
11.168.0740	7.4	7.4	74	34
11.168.0750	7.5	7.5	74	34
11.168.0760	7.6	7.6	79	37
11.168.0770	7.7	7.7	79	37

Ref.	d1	d2	l1	l2
11.168.0780	7.8	7.8	79	37
11.168.0790	7.9	7.9	79	37
11.168.0800	8	8	79	37
11.168.0810	8.1	8.1	79	37
11.168.0820	8.2	8.2	79	37
11.168.0830	8.3	8.3	79	37
11.168.0840	8.4	8.4	79	37
11.168.0850	8.5	8.5	79	37
11.168.0860	8.6	8.6	84	40
11.168.0870	8.7	8.7	84	40
11.168.0880	8.8	8.8	84	40
11.168.0890	8.9	8.9	84	40
11.168.0900	9	9	84	40
11.168.0910	9.1	9.1	84	40
11.168.0920	9.2	9.2	84	40
11.168.0930	9.3	9.3	84	40
11.168.0940	9.4	9.4	84	40
11.168.0950	9.5	9.5	84	40
11.168.0960	9.6	9.6	89	43
11.168.0970	9.7	9.7	89	43
11.168.0980	9.8	9.8	89	43
11.168.0990	9.9	9.9	89	43
11.168.1000	10	10	89	43
11.168.1010	10.1	10.1	89	43
11.168.1020	10.2	10.2	89	43
11.168.1030	10.3	10.3	89	43
11.168.1050	10.5	10.5	89	43
11.168.1100	11	11	95	47
11.168.1150	11.5	11.5	95	47
11.168.1200	12	12	102	51
11.168.1250	12.5	12.5	102	51
11.168.1300	13	13	102	51
11.168.1350	13.5	13.5	107	54
11.168.1400	14	14	107	54

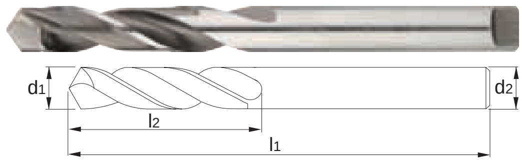
NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 11.170 Phantom

NL HM-tip Spiraalboor
FR Foret à plaquette carbure
ES Broca con punta Metal Duro
DE Hartmetallbestückt Spiralbohrer
EN Carbide Tipped Twist drill



NIEUW NOUVEAU NUEVO NEU

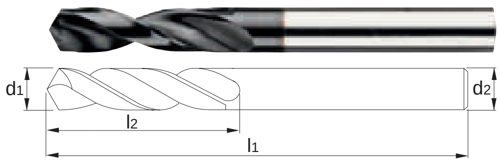
HM-TIP | DIN 8037 | N | 120°

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK	Ni/Co	Ti
75-85 *	60-70 *	55-65 *	30-40 *	10-20 *	20-35 *	18-30 *	70-85 *	60-75 *	120-150 *	35-40 *	70-130 *	25-30 *	30-35 *

Ref.	d1	d2	l1	l2
11.170.0200	2	2	45	18
11.170.0250	2.5	2.5	45	18
11.170.0300	3	3	50	20
11.170.0320	3.2	3.2	56	25
11.170.0330	3.3	3.3	56	25
11.170.0350	3.5	3.5	56	25
11.170.0370	3.7	3.7	56	25
11.170.0400	4	4	56	25
11.170.0410	4.1	4.1	63	28
11.170.0420	4.2	4.2	63	28
11.170.0450	4.5	4.5	63	28
11.170.0500	5	5	63	28
11.170.0520	5.2	5.2	71	32
11.170.0550	5.5	5.5	71	32
11.170.0600	6	6	71	32
11.170.0620	6.2	6.2	71	32
11.170.0650	6.5	6.5	71	32
11.170.0670	6.7	6.7	80	40
11.170.0680	6.8	6.8	80	40
11.170.0700	7	7	80	40
11.170.0750	7.5	7.5	80	40
11.170.0800	8	8	80	40
11.170.0850	8.5	8.5	90	50
11.170.0900	9	9	90	50
11.170.0950	9.5	9.5	90	50
11.170.1000	10	10	100	56
11.170.1050	10.5	10.5	100	56
11.170.1100	11	11	100	56
11.170.1200	12	12	112	63
11.170.1250	12.5	12.5	112	63
11.170.1300	13	13	112	63
11.170.1400	14	14	125	71

› 11.174 Phantom

NL HSS-E Spiraalboor TiAlN, automaten (roestvast) staal
FR Foret HSS-E TiAlN, en acier (inoxydable) de décolletage
ES Broca HSS-E TiAlN, acero (inoxidable) de corte libre
DE HSS-E Spiralbohrer TiAlN, automaten (röstvrij)stahl
EN HSS-E Twist drill TiAlN, free-cutting (stainless) steel

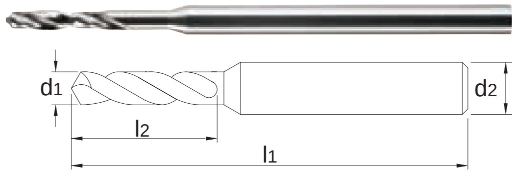


HSS-E | TiAlN | DIN 1897 | >N | <3 | ≥3 | 130°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe	PVC
42-48 F	36-48 F	20-40 E	20-24 D	13-17 D	12-14 C	40-45 F	35-40 F	40-44 E	15-20 D	25-30 E

Ref.	d1	d2	l1	l2
11.174.0100	1	1	26	6
11.174.0110	1.1	1.1	28	7
11.174.0120	1.2	1.2	30	8
11.174.0130	1.3	1.3	30	8
11.174.0140	1.4	1.4	32	9
11.174.0150	1.5	1.5	32	9
11.174.0160	1.6	1.6	34	10
11.174.0170	1.7	1.7	34	10
11.174.0180	1.8	1.8	36	11
11.174.0190	1.9	1.9	36	11
11.174.0200	2	2	38	12
11.174.0210	2.1	2.1	38	12
11.174.0220	2.2	2.2	40	13
11.174.0230	2.3	2.3	40	13
11.174.0240	2.4	2.4	43	14
11.174.0250	2.5	2.5	43	14
11.174.0260	2.6	2.6	43	14
11.174.0270	2.7	2.7	46	16
11.174.0280	2.8	2.8	46	16
11.174.0290	2.9	2.9	46	16
11.174.0300	3	3	46	16
11.174.0310	3.1	3.1	49	18
11.174.0320	3.2	3.2	49	18
11.174.0330	3.3	3.3	49	18
11.174.0340	3.4	3.4	52	20
11.174.0350	3.5	3.5	52	20
11.174.0360	3.6	3.6	52	20
11.174.0370	3.7	3.7	52	20
11.174.0380	3.8	3.8	55	22
11.174.0390	3.9	3.9	55	22
11.174.0400	4	4	55	22
11.174.0410	4.1	4.1	55	22
11.174.0420	4.2	4.2	55	22
11.174.0430	4.3	4.3	58	24
11.174.0440	4.4	4.4	58	24
11.174.0450	4.5	4.5	58	24
11.174.0460	4.6	4.6	58	24
11.174.0470	4.7	4.7	58	24
11.174.0480	4.8	4.8	62	26
11.174.0490	4.9	4.9	62	26
11.174.0500	5	5	62	26
11.174.0510	5.1	5.1	62	26
11.174.0520	5.2	5.2	62	26
11.174.0530	5.3	5.3	62	26
11.174.0540	5.4	5.4	66	28
11.174.0550	5.5	5.5	66	28
11.174.0560	5.6	5.6	66	28
11.174.0570	5.7	5.7	66	28
11.174.0580	5.8	5.8	66	28
11.174.0590	5.9	5.9	66	28
11.174.0600	6	6	66	28
11.174.0610	6.1	6.1	70	31
11.174.0620	6.2	6.2	70	31
11.174.0630	6.3	6.3	70	31
11.174.0640	6.4	6.4	70	31
11.174.0650	6.5	6.5	70	31
11.174.0660	6.6	6.6	70	31
11.174.0670	6.7	6.7	70	31
11.174.0680	6.8	6.8	74	34
11.174.0690	6.9	6.9	74	34
11.174.0700	7	7	74	34
11.174.0710	7.1	7.1	74	34
11.174.0720	7.2	7.2	74	34
11.174.0730	7.3	7.3	74	34
11.174.0740	7.4	7.4	74	34
11.174.0750	7.5	7.5	74	34
11.174.0760	7.6	7.6	79	37
11.174.0770	7.7	7.7	79	37
11.174.0780	7.8	7.8	79	37
11.174.0790	7.9	7.9	79	37
11.174.0800	8	8	79	37
11.174.0810	8.1	8.1	79	37
11.174.0820	8.2	8.2	79	37
11.174.0830	8.3	8.3	79	37
11.174.0840	8.4	8.4	79	37
11.174.0850	8.5	8.5	79	37
11.174.0860	8.6	8.6	84	40
11.174.0870	8.7	8.7	84	40
11.174.0880	8.8	8.8	84	40
11.174.0890	8.9	8.9	84	40
11.174.0900	9	9	84	40
11.174.0910	9.1	9.1	84	40
11.174.0920	9.2	9.2	84	40
11.174.0930	9.3	9.3	84	40
11.174.0940	9.4	9.4	84	40
11.174.0950	9.5	9.5	84	40
11.174.0960	9.6	9.6	89	43
11.174.0970	9.7	9.7	89	43
11.174.0980	9.8	9.8	89	43
11.174.0990	9.9	9.9	89	43
11.174.1000	10	10	89	43
11.174.1020	10.2	10.2	89	43
11.174.1050	10.5	10.5	89	43
11.174.1100	11	11	95	47
11.174.1150	11.5	11.5	95	47
11.174.1200	12	12	102	51
11.174.1250	12.5	12.5	102	51
11.174.1300	13	13	102	51
11.174.1350	13.5	13.5	107	54
11.174.1400	14	14	107	54
11.174.1450	14.5	14.5	111	56
11.174.1500	15	15	111	56
11.174.1550	15.5	15.5	115	58
11.174.1600	16	16	115	58
11.174.1650	16.5	16.5	119	60
11.174.1700	17	17	119	60
11.174.1750	17.5	17.5	123	62
11.174.1800	18	18	123	62
11.174.1850	18.5	18.5	127	64
11.174.1900	19	19	127	64
11.174.1950	19.5	19.5	131	66
11.174.2000	20	20	131	66

11.340 Phantom



NL **HSS-E PM Microboor**
FR **Micro-foret HSS-E PM**
ES **Micro-Broca HSS-E PM**
DE **HSS-E PM Kleinstbohrer**
EN **HSS-E PM Micro Drill**

HSS-E PM | DIN 1899 A | h8 | 118° | d1 +0,000/ -0,004

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
18-21 E	16-18 E	14-16 E	12-14 D	14-18 D	10-15 C	22-26 F	18-22 F	22-42 E	13-18 C

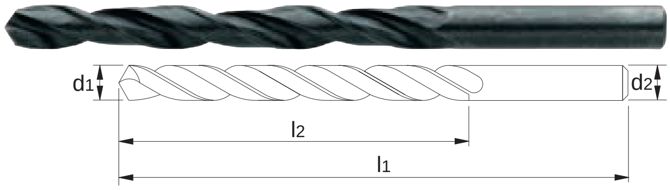
Ref.	d1	d2	l1	l2
11.340.0020	0.2	1	25	1.5
11.340.0025	0.25	1	25	1.9
11.340.0030	0.3	1	25	1.9
11.340.0035	0.35	1	25	2.4
11.340.0040	0.4	1	25	3
11.340.0045	0.45	1	25	3
11.340.0050	0.5	1	25	3.4
11.340.0055	0.55	1	25	3.9
11.340.0060	0.6	1	25	3.9
11.340.0065	0.65	1	25	4.2
11.340.0070	0.7	1	25	4.8
11.340.0075	0.75	1	25	4.8
11.340.0080	0.8	1.5	25	5.3
11.340.0085	0.85	1.5	25	5.3
11.340.0090	0.9	1.5	25	6
11.340.0095	0.95	1.5	25	6
11.340.0100	1	1.5	25	6.8
11.340.0105	1.05	1.5	25	6.8
11.340.0110	1.1	1.5	25	7.6
11.340.0115	1.15	1.5	25	7.6
11.340.0120	1.2	1.5	25	8.5
11.340.0125	1.25	1.5	25	8.5
11.340.0130	1.3	1.5	25	8.5
11.340.0135	1.35	1.5	25	9.5
11.340.0140	1.4	1.5	25	9.5
11.340.0145	1.45	1.5	25	9.5
11.340.0150	1.5	2	30	9.5

NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

11.400 International Tools



NL ECO HSS Spiraalboor gewalst
FR Foret HSS ECO laminé
ES Broca HSS ECO laminada
DE ECO HSS Spiralbohrer Gewalzt
EN ECO HSS Twist drill roll-forged

HSS | DIN 338 | N | 118° | ECO

P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

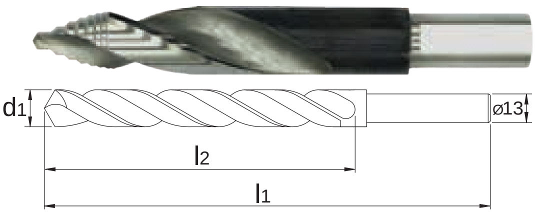
Ref.	d1	d2	l1	l2
11.400.0100	1	1	34	12
11.400.0110	1.1	1.1	36	14
11.400.0120	1.2	1.2	38	16
11.400.0130	1.3	1.3	38	16
11.400.0140	1.4	1.4	40	18
11.400.0150	1.5	1.5	40	18
11.400.0160	1.6	1.6	43	20
11.400.0170	1.7	1.7	43	20
11.400.0180	1.8	1.8	46	22
11.400.0190	1.9	1.9	46	22
11.400.0200	2	2	49	24
11.400.0210	2.1	2.1	49	24
11.400.0220	2.2	2.2	53	27
11.400.0230	2.3	2.3	53	27
11.400.0240	2.4	2.4	57	30
11.400.0250	2.5	2.5	57	30
11.400.0260	2.6	2.6	57	30
11.400.0270	2.7	2.7	61	33
11.400.0280	2.8	2.8	61	33
11.400.0290	2.9	2.9	61	33
11.400.0300	3	3	61	33
11.400.0310	3.1	3.1	65	36
11.400.0320	3.2	3.2	65	36
11.400.0330	3.3	3.3	65	36
11.400.0340	3.4	3.4	70	39
11.400.0350	3.5	3.5	70	39
11.400.0360	3.6	3.6	70	39
11.400.0370	3.7	3.7	70	39
11.400.0380	3.8	3.8	75	43
11.400.0390	3.9	3.9	75	43
11.400.0400	4	4	75	43
11.400.0410	4.1	4.1	75	43
11.400.0420	4.2	4.2	75	43
11.400.0430	4.3	4.3	80	47
11.400.0440	4.4	4.4	80	47
11.400.0450	4.5	4.5	80	47
11.400.0460	4.6	4.6	80	47
11.400.0470	4.7	4.7	80	47
11.400.0480	4.8	4.8	86	52
11.400.0490	4.9	4.9	86	52
11.400.0500	5	5	86	52
11.400.0510	5.1	5.1	86	52
11.400.0520	5.2	5.2	86	52
11.400.0530	5.3	5.3	86	52
11.400.0540	5.4	5.4	93	57

Ref.	d1	d2	l1	l2
11.400.0550	5.5	5.5	93	57
11.400.0560	5.6	5.6	93	57
11.400.0570	5.7	5.7	93	57
11.400.0580	5.8	5.8	93	57
11.400.0590	5.9	5.9	93	57
11.400.0600	6	6	93	57
11.400.0610	6.1	6.1	101	63
11.400.0620	6.2	6.2	101	63
11.400.0630	6.3	6.3	101	63
11.400.0640	6.4	6.4	101	63
11.400.0650	6.5	6.5	101	63
11.400.0660	6.6	6.6	101	63
11.400.0670	6.7	6.7	101	63
11.400.0680	6.8	6.8	109	69
11.400.0690	6.9	6.9	109	69
11.400.0700	7	7	109	69
11.400.0710	7.1	7.1	109	69
11.400.0720	7.2	7.2	109	69
11.400.0730	7.3	7.3	109	69
11.400.0740	7.4	7.4	109	69
11.400.0750	7.5	7.5	109	69
11.400.0760	7.6	7.6	117	75
11.400.0770	7.7	7.7	117	75
11.400.0780	7.8	7.8	117	75
11.400.0790	7.9	7.9	117	75
11.400.0800	8	8	117	75
11.400.0810	8.1	8.1	117	75
11.400.0820	8.2	8.2	117	75
11.400.0830	8.3	8.3	117	75
11.400.0840	8.4	8.4	117	75
11.400.0850	8.5	8.5	117	75
11.400.0860	8.6	8.6	125	81
11.400.0870	8.7	8.7	125	81
11.400.0880	8.8	8.8	125	81
11.400.0890	8.9	8.9	125	81
11.400.0900	9	9	125	81
11.400.0910	9.1	9.1	125	81
11.400.0920	9.2	9.2	125	81
11.400.0930	9.3	9.3	125	81
11.400.0940	9.4	9.4	125	81
11.400.0950	9.5	9.5	125	81
11.400.0960	9.6	9.6	133	87
11.400.0970	9.7	9.7	133	87
11.400.0980	9.8	9.8	133	87
11.400.0990	9.9	9.9	133	87

Ref.	d1	d2	l1	l2
11.400.1000	10	10	133	87
11.400.1010	10.1	10.1	133	87
11.400.1020	10.2	10.2	133	87
11.400.1030	10.3	10.3	133	87
11.400.1040	10.4	10.4	133	87
11.400.1050	10.5	10.5	133	87
11.400.1060	10.6	10.6	133	87
11.400.1070	10.7	10.7	142	94
11.400.1080	10.8	10.8	142	94
11.400.1090	10.9	10.9	142	94
11.400.1100	11	11	142	94
11.400.1110	11.1	11.1	142	94
11.400.1120	11.2	11.2	142	94
11.400.1130	11.3	11.3	142	94
11.400.1140	11.4	11.4	142	94
11.400.1150	11.5	11.5	142	94
11.400.1160	11.6	11.6	142	94
11.400.1170	11.7	11.7	142	94
11.400.1180	11.8	11.8	142	94
11.400.1190	11.9	11.9	151	101
11.400.1200	12	12	151	101
11.400.1210	12.1	12.1	151	101
11.400.1220	12.2	12.2	151	101
11.400.1230	12.3	12.3	151	101
11.400.1240	12.4	12.4	151	101
11.400.1250	12.5	12.5	151	101
11.400.1260	12.6	12.6	151	101
11.400.1270	12.7	12.7	151	101
11.400.1280	12.8	12.8	151	101
11.400.1290	12.9	12.9	151	101
11.400.1300	13	13	151	101
11.400.1350	13.5	13.5	160	108
11.400.1400	14	14	160	108
11.400.1450	14.5	14.5	169	114
11.400.1500	15	15	169	114
11.400.1550	15.5	15.5	178	120
11.400.1600	16	16	178	120
11.400.1650	16.5	16.5	184	125
11.400.1700	17	17	184	125
11.400.1750	17.5	17.5	191	130
11.400.1800	18	18	191	130
11.400.1850	18.5	18.5	198	135
11.400.1900	19	19	198	135
11.400.1950	19.5	19.5	205	140
11.400.2000	20	20	205	140

› 11.403 Phantom

NL HSS Spiraalboor Step-point, met drievlaks schacht 13 mm
FR Foret à pointe étagée HSS Step-point, à 3 méplats, queue 13 mm
ES Broca HSS Step-point, con mango 3 chaflanes 13 mm
DE HSS Spiralbohrer Step-point, 3-Flächen-Schaft 13 mm
EN HSS Stub Drill Step-point, with 3 flat surfaces 13 mm



NIEUW NOUVEAU NUEVO NEU

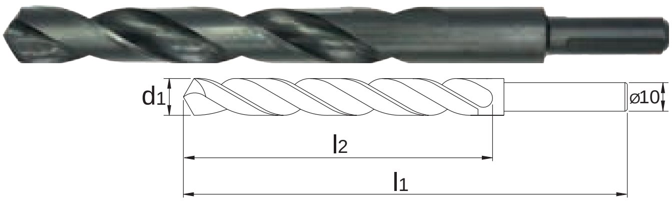
HSS | OX. | NORM | N | Ø13 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	l1	l2	Ref.	d1	l1	l2	Ref.	d1	l1	l2
11.403.1350	13.5	107	61	11.403.1600	16	115	69	11.403.1850	18.5	127	81
11.403.1400	14	107	61	11.403.1650	16.5	119	73	11.403.1900	19	127	81
11.403.1450	14.5	111	65	11.403.1700	17	119	73	11.403.1950	19.5	131	85
11.403.1500	15	111	65	11.403.1750	17.5	123	77	11.403.2000	20	131	85
11.403.1550	15.5	115	69	11.403.1800	18	123	77				

› 11.410 International Tools

NL ECO HSS Spiraalboor gewalst, schacht 10 mm
FR Foret HSS ECO laminé, queue 10 mm
ES Broca HSS ECO laminada, mango 10 mm
DE ECO HSS Spiralbohrer Gewalzt, Schaft 10 mm
EN ECO HSS Twist drill roll-forged, shank 10 mm



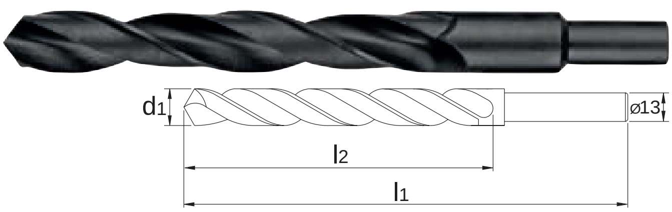
HSS | N | Ø10 | 118° | ECO

P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	l1	l2	Ref.	d1	l1	l2	Ref.	d1	l1	l2
11.410.1050	10.5	133	87	11.410.1250	12.5	151	101	11.410.1450	14.5	169	114
11.410.1100	11	142	94	11.410.1300	13	151	101	11.410.1500	15	169	114
11.410.1150	11.5	142	94	11.410.1350	13.5	160	108	11.410.1550	15.5	178	120
11.410.1200	12	151	101	11.410.1400	14	160	108	11.410.1600	16	178	120

› 11.413 International Tools

NL ECO HSS Spiraalboor gewalst, schacht 13 mm
FR Foret HSS ECO laminé, queue 13 mm
ES Broca HSS ECO laminada, mango 13 mm
DE ECO HSS Spiralbohrer Gewalzt, Schaft 13 mm
EN ECO HSS Twist drill roll-forged, shank 13 mm

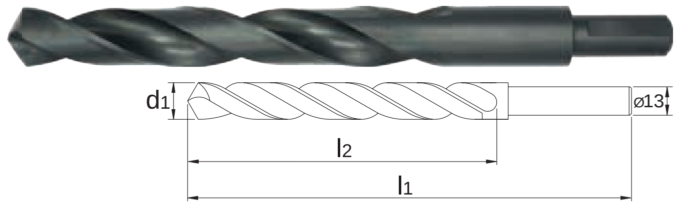


HSS | N | Ø13 | 118° | ECO

P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	l1	l2	Ref.	d1	l1	l2	Ref.	d1	l1	l2
11.413.1350	13.5	160	108	11.413.1750	17.5	191	130	11.413.2300	23	213	155
11.413.1400	14	160	108	11.413.1800	18	191	130	11.413.2400	24	222	160
11.413.1450	14.5	169	114	11.413.1850	18.5	198	135	11.413.2500	25	222	160
11.413.1500	15	169	114	11.413.1900	19	198	135	11.413.2600	26	227	165
11.413.1550	15.5	178	120	11.413.1950	19.5	205	140	11.413.2700	27	232	170
11.413.1600	16	178	120	11.413.2000	20	205	140	11.413.2800	28	232	170
11.413.1650	16.5	184	125	11.413.2100	21	208	145	11.413.2900	29	237	175
11.413.1700	17	184	125	11.413.2200	22	208	150	11.413.3000	30	237	175

› 11.414 International Tools



NIEUW NOUVEAU NUEVO NEU

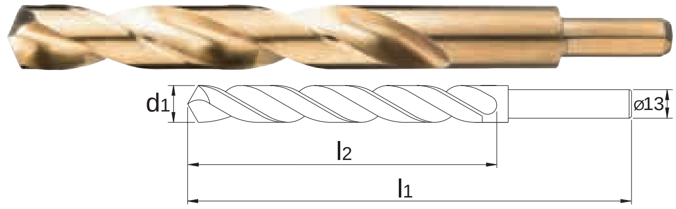
NL ECO HSS Spiraalboor schacht 13 mm
FR Foret HSS ECO queue 13 mm
ES Broca HSS ECO mango 13 mm
DE ECO HSS Spiralbohrer Schaft 13 mm
EN ECO HSS Twist drill shank 13 mm

HSS | N | Ø13 | ≤25 | 118° | ECO

P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	l1	l2
11.414.1350	13.5	160	108
11.414.1400	14	160	108
11.414.1450	14.5	169	114
11.414.1500	15	169	114
11.414.1550	15.5	178	120
11.414.1600	16	178	120
11.414.1650	16.5	184	125
11.414.1700	17	184	125
11.414.1750	17.5	191	130
11.414.1800	18	191	130
11.414.1850	18.5	198	135
11.414.1900	19	198	135
11.414.1950	19.5	205	140
11.414.2000	20	205	140
11.414.2100	21	208	145
11.414.2200	22	208	150
11.414.2300	23	213	155
11.414.2400	24	222	160
11.414.2500	25	222	160

› 11.415 International Tools



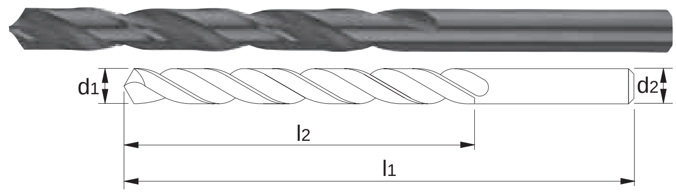
NL ECO PRO HSS-E Spiraalboor met drievlaks schacht 13 mm
FR Foret HSS-E ECO PRO à 3 méplats, queue 13 mm
ES Broca HSS-E ECO PRO con mango 3 chaflanes 13 mm
DE ECO PRO HSS-E Spiralbohrer 3-Flächen-Schaft 13 mm
EN ECO PRO HSS-E Twist drill with 3 flat surfaces 13 mm

HSS-E | N | Ø13 | 135° | ECO PRO

P 11	P 12	P 13	M 21	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	14-18 D	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	l1	l2
11.415.1350	13.5	160	108
11.415.1400	14	160	108
11.415.1450	14.5	169	114
11.415.1500	15	169	114
11.415.1550	15.5	178	120
11.415.1600	16	178	120
11.415.1650	16.5	184	125
11.415.1700	17	184	125
11.415.1750	17.5	191	130
11.415.1800	18	191	130
11.415.1850	18.5	198	135
11.415.1900	19	198	135
11.415.1950	19.5	205	140
11.415.2000	20	205	140
11.415.2100	21	208	145
11.415.2200	22	208	150
11.415.2300	23	213	155
11.415.2400	24	222	160
11.415.2500	25	222	160

› 11.416 International Tools



NL ECO HSS Spiraalboor
FR Foret HSS ECO
ES Broca HSS ECO
DE ECO HSS Spiralbohrer
EN ECO HSS Twist drill

HSS | DIN 338 | N | 118° | ECO

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	45-50 E	35-40 G	25-40 D	22-28 D

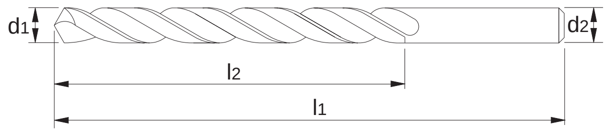
Ref.	d1	d2	l1	l2
11.416.0100	1	1	34	12
11.416.0110	1.1	1.1	36	14
11.416.0120	1.2	1.2	38	16
11.416.0130	1.3	1.3	38	16
11.416.0140	1.4	1.4	40	18
11.416.0150	1.5	1.5	40	18
11.416.0160	1.6	1.6	43	20
11.416.0170	1.7	1.7	43	20
11.416.0180	1.8	1.8	46	22
11.416.0190	1.9	1.9	46	22
11.416.0200	2	2	49	24
11.416.0210	2.1	2.1	49	24
11.416.0220	2.2	2.2	53	27
11.416.0230	2.3	2.3	53	27
11.416.0240	2.4	2.4	57	30
11.416.0250	2.5	2.5	57	30
11.416.0260	2.6	2.6	57	30
11.416.0270	2.7	2.7	61	33
11.416.0280	2.8	2.8	61	33
11.416.0290	2.9	2.9	61	33
11.416.0300	3	3	61	33
11.416.0310	3.1	3.1	65	36
11.416.0320	3.2	3.2	65	36
11.416.0330	3.3	3.3	65	36
11.416.0340	3.4	3.4	70	39
11.416.0350	3.5	3.5	70	39
11.416.0360	3.6	3.6	70	39
11.416.0370	3.7	3.7	70	39
11.416.0380	3.8	3.8	75	43
11.416.0390	3.9	3.9	75	43
11.416.0400	4	4	75	43
11.416.0410	4.1	4.1	75	43
11.416.0420	4.2	4.2	75	43
11.416.0430	4.3	4.3	80	47
11.416.0440	4.4	4.4	80	47
11.416.0450	4.5	4.5	80	47
11.416.0460	4.6	4.6	80	47
11.416.0470	4.7	4.7	80	47
11.416.0480	4.8	4.8	86	52
11.416.0490	4.9	4.9	86	52
11.416.0500	5	5	86	52
11.416.0510	5.1	5.1	86	52

11.416 International Tools

Ref.	d1	d2	l1	l2
11.416.0520	5.2	5.2	86	52
11.416.0530	5.3	5.3	86	52
11.416.0540	5.4	5.4	93	57
11.416.0550	5.5	5.5	93	57
11.416.0560	5.6	5.6	93	57
11.416.0570	5.7	5.7	93	57
11.416.0580	5.8	5.8	93	57
11.416.0590	5.9	5.9	93	57
11.416.0600	6	6	93	57
11.416.0610	6.1	6.1	101	63
11.416.0620	6.2	6.2	101	63
11.416.0630	6.3	6.3	101	63
11.416.0640	6.4	6.4	101	63
11.416.0650	6.5	6.5	101	63
11.416.0660	6.6	6.6	101	63
11.416.0670	6.7	6.7	101	63
11.416.0680	6.8	6.8	109	69
11.416.0690	6.9	6.9	109	69
11.416.0700	7	7	109	69
11.416.0710	7.1	7.1	109	69
11.416.0720	7.2	7.2	109	69
11.416.0730	7.3	7.3	109	69
11.416.0740	7.4	7.4	109	69
11.416.0750	7.5	7.5	109	69
11.416.0760	7.6	7.6	117	75
11.416.0770	7.7	7.7	117	75
11.416.0780	7.8	7.8	117	75
11.416.0790	7.9	7.9	117	75
11.416.0800	8	8	117	75
11.416.0810	8.1	8.1	117	75
11.416.0820	8.2	8.2	117	75
11.416.0830	8.3	8.3	117	75
11.416.0840	8.4	8.4	117	75
11.416.0850	8.5	8.5	117	75
11.416.0860	8.6	8.6	125	81
11.416.0870	8.7	8.7	125	81
11.416.0880	8.8	8.8	125	81
11.416.0890	8.9	8.9	125	81
11.416.0900	9	9	125	81
11.416.0910	9.1	9.1	125	81
11.416.0920	9.2	9.2	125	81
11.416.0930	9.3	9.3	125	81
11.416.0940	9.4	9.4	125	81
11.416.0950	9.5	9.5	125	81
11.416.0960	9.6	9.6	133	87
11.416.0970	9.7	9.7	133	87
11.416.0980	9.8	9.8	133	87
11.416.0990	9.9	9.9	133	87
11.416.1000	10	10	133	87
11.416.1010	10.1	10.1	133	87
11.416.1020	10.2	10.2	133	87
11.416.1030	10.3	10.3	133	87
11.416.1040	10.4	10.4	133	87
11.416.1050	10.5	10.5	133	87
11.416.1060	10.6	10.6	133	87
11.416.1070	10.7	10.7	142	94
11.416.1080	10.8	10.8	142	94
11.416.1090	10.9	10.9	142	94
11.416.1100	11	11	142	94
11.416.1110	11.1	11.1	142	94
11.416.1120	11.2	11.2	142	94
11.416.1130	11.3	11.3	142	94
11.416.1140	11.4	11.4	142	94
11.416.1150	11.5	11.5	142	94
11.416.1160	11.6	11.6	142	94
11.416.1170	11.7	11.7	142	94
11.416.1180	11.8	11.8	142	94
11.416.1190	11.9	11.9	151	101
11.416.1200	12	12	151	101
11.416.1210	12.1	12.1	151	101
11.416.1220	12.2	12.2	151	101
11.416.1230	12.3	12.3	151	101
11.416.1240	12.4	12.4	151	101
11.416.1250	12.5	12.5	151	101
11.416.1260	12.6	12.6	151	101
11.416.1270	12.7	12.7	151	101
11.416.1280	12.8	12.8	151	101
11.416.1290	12.9	12.9	151	101
11.416.1300	13	13	151	101

11.420 International Tools

NL **ECO PRO HSS Spiraalboor**
FR **Foret HSS ECO PRO**
ES **Broca HSS ECO PRO**
DE **ECO PRO HSS Spiralbohrer**
EN **ECO PRO HSS Twist drill**



HSS | DIN 338 | N | 118° | ECO PRO

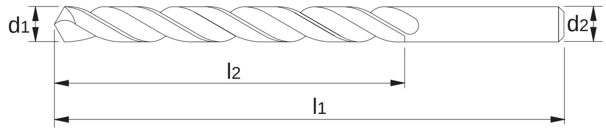
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	45-50 E	35-40 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.420.0100	1	1	34	12
11.420.0110	1.1	1.1	36	14
11.420.0120	1.2	1.2	38	16
11.420.0130	1.3	1.3	38	16
11.420.0140	1.4	1.4	40	18
11.420.0150	1.5	1.5	40	18
11.420.0160	1.6	1.6	43	20
11.420.0170	1.7	1.7	43	20
11.420.0180	1.8	1.8	46	22
11.420.0190	1.9	1.9	46	22
11.420.0200	2	2	49	24
11.420.0210	2.1	2.1	49	24
11.420.0220	2.2	2.2	53	27
11.420.0230	2.3	2.3	53	27
11.420.0240	2.4	2.4	57	30
11.420.0250	2.5	2.5	57	30
11.420.0260	2.6	2.6	57	30
11.420.0270	2.7	2.7	61	33
11.420.0280	2.8	2.8	61	33
11.420.0290	2.9	2.9	61	33
11.420.0300	3	3	61	33
11.420.0310	3.1	3.1	65	36
11.420.0320	3.2	3.2	65	36
11.420.0330	3.3	3.3	65	36
11.420.0340	3.4	3.4	70	39
11.420.0350	3.5	3.5	70	39
11.420.0360	3.6	3.6	70	39
11.420.0370	3.7	3.7	70	39
11.420.0380	3.8	3.8	75	43
11.420.0390	3.9	3.9	75	43
11.420.0400	4	4	75	43
11.420.0410	4.1	4.1	75	43
11.420.0420	4.2	4.2	75	43
11.420.0430	4.3	4.3	80	47
11.420.0440	4.4	4.4	80	47
11.420.0450	4.5	4.5	80	47
11.420.0460	4.6	4.6	80	47
11.420.0470	4.7	4.7	80	47
11.420.0480	4.8	4.8	86	52
11.420.0490	4.9	4.9	86	52
11.420.0500	5	5	86	52
11.420.0510	5.1	5.1	86	52
11.420.0520	5.2	5.2	86	52
11.420.0530	5.3	5.3	86	52
11.420.0540	5.4	5.4	93	57
11.420.0550	5.5	5.5	93	57
11.420.0560	5.6	5.6	93	57
11.420.0570	5.7	5.7	93	57
11.420.0580	5.8	5.8	93	57
11.420.0590	5.9	5.9	93	57
11.420.0600	6	6	93	57
11.420.0610	6.1	6.1	101	63
11.420.0620	6.2	6.2	101	63
11.420.0630	6.3	6.3	101	63
11.420.0640	6.4	6.4	101	63
11.420.0650	6.5	6.5	101	63
11.420.0660	6.6	6.6	101	63
11.420.0670	6.7	6.7	101	63
11.420.0680	6.8	6.8	109	69
11.420.0690	6.9	6.9	109	69
11.420.0700	7	7	109	69
11.420.0710	7.1	7.1	109	69
11.420.0720	7.2	7.2	109	69
11.420.0730	7.3	7.3	109	69
11.420.0740	7.4	7.4	109	69
11.420.0750	7.5	7.5	109	69
11.420.0760	7.6	7.6	117	75
11.420.0770	7.7	7.7	117	75
11.420.0780	7.8	7.8	117	75
11.420.0790	7.9	7.9	117	75
11.420.0800	8	8	117	75
11.420.0810	8.1	8.1	117	75
11.420.0820	8.2	8.2	117	75
11.420.0830	8.3	8.3	117	75
11.420.0840	8.4	8.4	117	75
11.420.0850	8.5	8.5	117	75
11.420.0860	8.6	8.6	125	81
11.420.0870	8.7	8.7	125	81
11.420.0880	8.8	8.8	125	81
11.420.0890	8.9	8.9	125	81
11.420.0900	9	9	125	81
11.420.0910	9.1	9.1	125	81
11.420.0920	9.2	9.2	125	81
11.420.0930	9.3	9.3	125	81
11.420.0940	9.4	9.4	125	81
11.420.0950	9.5	9.5	125	81
11.420.0960	9.6	9.6	133	87
11.420.0970	9.7	9.7	133	87
11.420.0980	9.8	9.8	133	87
11.420.0990	9.9	9.9	133	87
11.420.1000	10	10	133	87
11.420.1010	10.1	10.1	133	87
11.420.1020	10.2	10.2	133	87
11.420.1030	10.3	10.3	133	87
11.420.1040	10.4	10.4	133	87
11.420.1050	10.5	10.5	133	87
11.420.1060	10.6	10.6	133	87
11.420.1070	10.7	10.7	142	94
11.420.1080	10.8	10.8	142	94
11.420.1090	10.9	10.9	142	94
11.420.1100	11	11	142	94
11.420.1110	11.1	11.1	142	94
11.420.1120	11.2	11.2	142	94
11.420.1130	11.3	11.3	142	94
11.420.1140	11.4	11.4	142	94
11.420.1150	11.5	11.5	142	94
11.420.1160	11.6	11.6	142	94
11.420.1170	11.7	11.7	142	94
11.420.1180	11.8	11.8	142	94
11.420.1190	11.9	11.9	151	101
11.420.1200	12	12	151	101

› 11.420 International Tools

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.420.1210	12.1	12.1	151	101	11.420.1250	12.5	12.5	151	101	11.420.1290	12.9	12.9	151	101
11.420.1220	12.2	12.2	151	101	11.420.1260	12.6	12.6	151	101	11.420.1300	13	13	151	101
11.420.1230	12.3	12.3	151	101	11.420.1270	12.7	12.7	151	101					
11.420.1240	12.4	12.4	151	101	11.420.1280	12.8	12.8	151	101					

› 11.423 International Tools



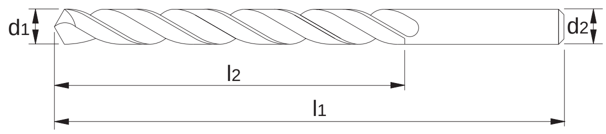
NL ECO HSS Spiraalboor Kruisaanslijping, blank
FR Foret HSS ECO Affûtage en croix, finition polie
ES Broca HSS ECO Afilado en cruz, blanca
DE ECO HSS Spiralbohrer Kreuzanschliff, blank
EN ECO HSS Twist drill Split point, bright finish

HSS | DIN 338 | N | >3 | 118° | ECO

P 11	P 12	P 13	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	35-40 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.423.0100	1	1	34	12	11.423.0480	4.8	4.8	86	52	11.423.0800	8	8	117	75
11.423.0150	1.5	1.5	40	18	11.423.0490	4.9	4.9	86	52	11.423.0850	8.5	8.5	117	75
11.423.0200	2	2	49	24	11.423.0500	5	5	86	52	11.423.0900	9	9	125	81
11.423.0250	2.5	2.5	57	30	11.423.0510	5.1	5.1	86	52	11.423.0950	9.5	9.5	125	81
11.423.0300	3	3	61	33	11.423.0520	5.2	5.2	86	52	11.423.1000	10	10	133	87
11.423.0310	3.1	3.1	65	36	11.423.0550	5.5	5.5	93	57	11.423.1020	10.2	10.2	133	87
11.423.0320	3.2	3.2	65	36	11.423.0570	5.7	5.7	93	57	11.423.1050	10.5	10.5	133	87
11.423.0330	3.3	3.3	65	36	11.423.0580	5.8	5.8	93	57	11.423.1100	11	11	142	94
11.423.0350	3.5	3.5	70	39	11.423.0600	6	6	93	57	11.423.1150	11.5	11.5	142	94
11.423.0380	3.8	3.8	75	43	11.423.0620	6.2	6.2	101	63	11.423.1200	12	12	151	101
11.423.0400	4	4	75	43	11.423.0650	6.5	6.5	101	63	11.423.1250	12.5	12.5	151	101
11.423.0410	4.1	4.1	75	43	11.423.0680	6.8	6.8	109	69	11.423.1300	13	13	151	101
11.423.0420	4.2	4.2	75	43	11.423.0700	7	7	109	69					
11.423.0450	4.5	4.5	80	47	11.423.0750	7.5	7.5	109	69					

› 11.426 International Tools



NL ECO HSS Spiraalboor Kruisaanslijping
FR Foret HSS ECO Affûtage en croix
ES Broca HSS ECO Afilado en cruz
DE ECO HSS Spiralbohrer Kreuzanschliff
EN ECO HSS Twist drill Split point

HSS | DIN 338 | N | >3 | 118° | ECO

P 11	P 12	P 13	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	35-40 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.426.0100	1	1	34	12	11.426.0350	3.5	3.5	70	39	11.426.0600	6	6	93	57
11.426.0110	1.1	1.1	36	14	11.426.0360	3.6	3.6	70	39	11.426.0610	6.1	6.1	101	63
11.426.0120	1.2	1.2	38	16	11.426.0370	3.7	3.7	70	39	11.426.0620	6.2	6.2	101	63
11.426.0130	1.3	1.3	38	16	11.426.0380	3.8	3.8	75	43	11.426.0630	6.3	6.3	101	63
11.426.0140	1.4	1.4	40	18	11.426.0390	3.9	3.9	75	43	11.426.0640	6.4	6.4	101	63
11.426.0150	1.5	1.5	40	18	11.426.0400	4	4	75	43	11.426.0650	6.5	6.5	101	63
11.426.0160	1.6	1.6	43	20	11.426.0410	4.1	4.1	75	43	11.426.0660	6.6	6.6	101	63
11.426.0170	1.7	1.7	43	20	11.426.0420	4.2	4.2	75	43	11.426.0670	6.7	6.7	101	63
11.426.0180	1.8	1.8	46	22	11.426.0430	4.3	4.3	80	47	11.426.0680	6.8	6.8	109	69
11.426.0190	1.9	1.9	46	22	11.426.0440	4.4	4.4	80	47	11.426.0690	6.9	6.9	109	69
11.426.0200	2	2	49	24	11.426.0450	4.5	4.5	80	47	11.426.0700	7	7	109	69
11.426.0210	2.1	2.1	49	24	11.426.0460	4.6	4.6	80	47	11.426.0710	7.1	7.1	109	69
11.426.0220	2.2	2.2	53	27	11.426.0470	4.7	4.7	80	47	11.426.0720	7.2	7.2	109	69
11.426.0230	2.3	2.3	53	27	11.426.0480	4.8	4.8	86	52	11.426.0730	7.3	7.3	109	69
11.426.0240	2.4	2.4	57	30	11.426.0490	4.9	4.9	86	52	11.426.0740	7.4	7.4	109	69
11.426.0250	2.5	2.5	57	30	11.426.0500	5	5	86	52	11.426.0750	7.5	7.5	109	69
11.426.0260	2.6	2.6	57	30	11.426.0510	5.1	5.1	86	52	11.426.0760	7.6	7.6	117	75
11.426.0270	2.7	2.7	61	33	11.426.0520	5.2	5.2	86	52	11.426.0770	7.7	7.7	117	75
11.426.0280	2.8	2.8	61	33	11.426.0530	5.3	5.3	86	52	11.426.0780	7.8	7.8	117	75
11.426.0290	2.9	2.9	61	33	11.426.0540	5.4	5.4	93	57	11.426.0790	7.9	7.9	117	75
11.426.0300	3	3	61	33	11.426.0550	5.5	5.5	93	57	11.426.0800	8	8	117	75
11.426.0310	3.1	3.1	65	36	11.426.0560	5.6	5.6	93	57	11.426.0810	8.1	8.1	117	75
11.426.0320	3.2	3.2	65	36	11.426.0570	5.7	5.7	93	57	11.426.0820	8.2	8.2	117	75
11.426.0330	3.3	3.3	65	36	11.426.0580	5.8	5.8	93	57	11.426.0830	8.3	8.3	117	75
11.426.0340	3.4	3.4	70	39	11.426.0590	5.9	5.9	93	57	11.426.0840	8.4	8.4	117	75

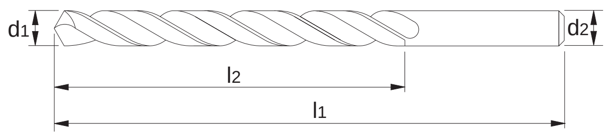
› 11.426 International Tools

Ref.	d1	d2	l1	l2
11.426.0850	8.5	8.5	117	75
11.426.0860	8.6	8.6	125	81
11.426.0870	8.7	8.7	125	81
11.426.0880	8.8	8.8	125	81
11.426.0890	8.9	8.9	125	81
11.426.0900	9	9	125	81
11.426.0910	9.1	9.1	125	81
11.426.0920	9.2	9.2	125	81
11.426.0930	9.3	9.3	125	81
11.426.0940	9.4	9.4	125	81
11.426.0950	9.5	9.5	125	81
11.426.0960	9.6	9.6	133	87
11.426.0970	9.7	9.7	133	87
11.426.0980	9.8	9.8	133	87
11.426.0990	9.9	9.9	133	87

Ref.	d1	d2	l1	l2
11.426.1000	10	10	133	87
11.426.1010	10.1	10.1	133	87
11.426.1020	10.2	10.2	133	87
11.426.1040	10.4	10.4	133	87
11.426.1050	10.5	10.5	133	87
11.426.1060	10.6	10.6	133	87
11.426.1070	10.7	10.7	142	94
11.426.1080	10.8	10.8	142	94
11.426.1090	10.9	10.9	142	94
11.426.1100	11	11	142	94
11.426.1110	11.1	11.1	142	94
11.426.1120	11.2	11.2	142	94
11.426.1130	11.3	11.3	142	94
11.426.1140	11.4	11.4	142	94
11.426.1150	11.5	11.5	142	94

Ref.	d1	d2	l1	l2
11.426.1160	11.6	11.6	142	94
11.426.1170	11.7	11.7	142	94
11.426.1180	11.8	11.8	142	94
11.426.1190	11.9	11.9	151	101
11.426.1200	12	12	151	101
11.426.1210	12.1	12.1	151	101
11.426.1220	12.2	12.2	151	101
11.426.1230	12.3	12.3	151	101
11.426.1240	12.4	12.4	151	101
11.426.1250	12.5	12.5	151	101
11.426.1260	12.6	12.6	151	101
11.426.1270	12.7	12.7	151	101
11.426.1280	12.8	12.8	151	101
11.426.1300	13	13	151	101

› 11.430 International Tools



NL ECO PRO HSS Spiraalboor Kruisaanslijping
FR Foret HSS ECO PRO Affûtage en croix
ES Broca HSS ECO PRO Afilado en cruz
DE ECO PRO HSS Spiralbohrer Kreuzanschliff
EN ECO PRO HSS Twist drill Split point

HSS | DIN 338 | N | >3 | 118° | ECO PRO

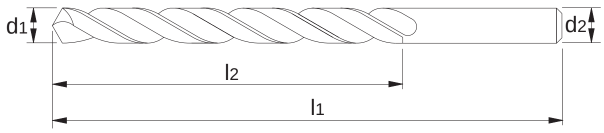
P 11	P 12	P 13	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	35-40 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.430.0100	1	1	34	12
11.430.0110	1.1	1.1	36	14
11.430.0120	1.2	1.2	38	16
11.430.0130	1.3	1.3	38	16
11.430.0140	1.4	1.4	40	18
11.430.0150	1.5	1.5	40	18
11.430.0160	1.6	1.6	43	20
11.430.0170	1.7	1.7	43	20
11.430.0180	1.8	1.8	46	22
11.430.0190	1.9	1.9	46	22
11.430.0200	2	2	49	24
11.430.0210	2.1	2.1	49	24
11.430.0220	2.2	2.2	53	27
11.430.0230	2.3	2.3	53	27
11.430.0240	2.4	2.4	57	30
11.430.0250	2.5	2.5	57	30
11.430.0260	2.6	2.6	57	30
11.430.0270	2.7	2.7	61	33
11.430.0280	2.8	2.8	61	33
11.430.0290	2.9	2.9	61	33
11.430.0300	3	3	61	33
11.430.0310	3.1	3.1	65	36
11.430.0320	3.2	3.2	65	36
11.430.0330	3.3	3.3	65	36
11.430.0340	3.4	3.4	70	39
11.430.0350	3.5	3.5	70	39
11.430.0360	3.6	3.6	70	39
11.430.0370	3.7	3.7	70	39
11.430.0380	3.8	3.8	75	43
11.430.0390	3.9	3.9	75	43
11.430.0400	4	4	75	43
11.430.0410	4.1	4.1	75	43
11.430.0420	4.2	4.2	75	43
11.430.0430	4.3	4.3	80	47
11.430.0440	4.4	4.4	80	47
11.430.0450	4.5	4.5	80	47
11.430.0460	4.6	4.6	80	47
11.430.0470	4.7	4.7	80	47
11.430.0480	4.8	4.8	86	52
11.430.0490	4.9	4.9	86	52
11.430.0500	5	5	86	52

Ref.	d1	d2	l1	l2
11.430.0510	5.1	5.1	86	52
11.430.0520	5.2	5.2	86	52
11.430.0530	5.3	5.3	86	52
11.430.0540	5.4	5.4	93	57
11.430.0550	5.5	5.5	93	57
11.430.0560	5.6	5.6	93	57
11.430.0570	5.7	5.7	93	57
11.430.0580	5.8	5.8	93	57
11.430.0590	5.9	5.9	93	57
11.430.0600	6	6	93	57
11.430.0610	6.1	6.1	101	63
11.430.0620	6.2	6.2	101	63
11.430.0630	6.3	6.3	101	63
11.430.0640	6.4	6.4	101	63
11.430.0650	6.5	6.5	101	63
11.430.0660	6.6	6.6	101	63
11.430.0670	6.7	6.7	101	63
11.430.0680	6.8	6.8	109	69
11.430.0690	6.9	6.9	109	69
11.430.0700	7	7	109	69
11.430.0710	7.1	7.1	109	69
11.430.0720	7.2	7.2	109	69
11.430.0730	7.3	7.3	109	69
11.430.0740	7.4	7.4	109	69
11.430.0750	7.5	7.5	109	69
11.430.0760	7.6	7.6	117	75
11.430.0770	7.7	7.7	117	75
11.430.0780	7.8	7.8	117	75
11.430.0790	7.9	7.9	117	75
11.430.0800	8	8	117	75
11.430.0810	8.1	8.1	117	75
11.430.0820	8.2	8.2	117	75
11.430.0830	8.3	8.3	117	75
11.430.0840	8.4	8.4	117	75
11.430.0850	8.5	8.5	117	75
11.430.0860	8.6	8.6	125	81
11.430.0870	8.7	8.7	125	81
11.430.0880	8.8	8.8	125	81
11.430.0890	8.9	8.9	125	81
11.430.0900	9	9	125	81
11.430.0910	9.1	9.1	125	81

Ref.	d1	d2	l1	l2
11.430.0920	9.2	9.2	125	81
11.430.0930	9.3	9.3	125	81
11.430.0940	9.4	9.4	125	81
11.430.0950	9.5	9.5	125	81
11.430.0960	9.6	9.6	133	87
11.430.0970	9.7	9.7	133	87
11.430.0980	9.8	9.8	133	87
11.430.0990	9.9	9.9	133	87
11.430.1000	10	10	133	87
11.430.1010	10.1	10.1	133	87
11.430.1020	10.2	10.2	133	87
11.430.1030	10.3	10.3	133	87
11.430.1040	10.4	10.4	133	87
11.430.1050	10.5	10.5	133	87
11.430.1060	10.6	10.6	133	87
11.430.1070	10.7	10.7	142	94
11.430.1080	10.8	10.8	142	94
11.430.1090	10.9	10.9	142	94
11.430.1100	11	11	142	94
11.430.1120	11.2	11.2	142	94
11.430.1150	11.5	11.5	142	94
11.430.1180	11.8	11.8	142	94
11.430.1200	12	12	151	101
11.430.1220	12.2	12.2	151	101
11.430.1250	12.5	12.5	151	101
11.430.1280	12.8	12.8	151	101
11.430.1300	13	13	151	101
11.430.1350	13.5	13.5	160	108
11.430.1400	14	14	160	108
11.430.1450	14.5	14.5	169	114
11.430.1500	15	15	169	114
11.430.1550	15.5	15.5	178	120
11.430.1600	16	16	178	120
11.430.1650	16.5	16.5	184	125
11.430.1700	17	17	184	125
11.430.1750	17.5	17.5	191	130
11.430.1800	18	18	191	130
11.430.1850	18.5	18.5	198	135
11.430.1900	19	19	198	135
11.430.1950	19.5	19.5	205	140
11.430.2000	20	20	205	140

› 11.431 International Tools



NL ECO PRO HSS Spiraalboor TiN-tip
FR Foret HSS ECO PRO avec revêtement TiN sur la partie utile
ES Broca HSS ECO PRO con punta TiN
DE ECO PRO HSS Spiralbohrer TiN-Tip
EN ECO PRO HSS Twist drill TiN coated tip

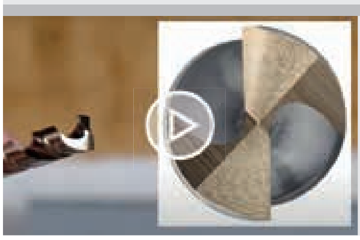
HSS | TiN | DIN 338 | N | >3 | 118° | ECO PRO

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
27-30 F	25-28 F	17-22 E	10-14 D	20-33 E	20-28 E	50-80 E	45-70 G	40-65 D	25-36 D

Ref.	d1	d2	l1	l2
11.431.0100	1	1	34	12
11.431.0110	1.1	1.1	36	14
11.431.0120	1.2	1.2	38	16
11.431.0130	1.3	1.3	38	16
11.431.0140	1.4	1.4	40	18
11.431.0150	1.5	1.5	40	18
11.431.0160	1.6	1.6	43	20
11.431.0170	1.7	1.7	43	20
11.431.0180	1.8	1.8	46	22
11.431.0190	1.9	1.9	46	22
11.431.0200	2	2	49	24
11.431.0210	2.1	2.1	49	24
11.431.0220	2.2	2.2	53	27
11.431.0230	2.3	2.3	53	27
11.431.0240	2.4	2.4	57	30
11.431.0250	2.5	2.5	57	30
11.431.0260	2.6	2.6	57	30
11.431.0270	2.7	2.7	61	33
11.431.0280	2.8	2.8	61	33
11.431.0290	2.9	2.9	61	33
11.431.0300	3	3	61	33
11.431.0310	3.1	3.1	65	36
11.431.0320	3.2	3.2	65	36
11.431.0330	3.3	3.3	65	36
11.431.0340	3.4	3.4	70	39
11.431.0350	3.5	3.5	70	39
11.431.0360	3.6	3.6	70	39
11.431.0370	3.7	3.7	70	39
11.431.0380	3.8	3.8	75	43
11.431.0390	3.9	3.9	75	43
11.431.0400	4	4	75	43
11.431.0410	4.1	4.1	75	43
11.431.0420	4.2	4.2	75	43
11.431.0430	4.3	4.3	80	47
11.431.0440	4.4	4.4	80	47
11.431.0450	4.5	4.5	80	47
11.431.0460	4.6	4.6	80	47

Ref.	d1	d2	l1	l2
11.431.0470	4.7	4.7	80	47
11.431.0480	4.8	4.8	86	52
11.431.0490	4.9	4.9	86	52
11.431.0500	5	5	86	52
11.431.0510	5.1	5.1	86	52
11.431.0520	5.2	5.2	86	52
11.431.0530	5.3	5.3	86	52
11.431.0540	5.4	5.4	93	57
11.431.0550	5.5	5.5	93	57
11.431.0560	5.6	5.6	93	57
11.431.0570	5.7	5.7	93	57
11.431.0580	5.8	5.8	93	57
11.431.0590	5.9	5.9	93	57
11.431.0600	6	6	93	57
11.431.0610	6.1	6.1	101	63
11.431.0620	6.2	6.2	101	63
11.431.0630	6.3	6.3	101	63
11.431.0640	6.4	6.4	101	63
11.431.0650	6.5	6.5	101	63
11.431.0660	6.6	6.6	101	63
11.431.0670	6.7	6.7	101	63
11.431.0680	6.8	6.8	109	69
11.431.0690	6.9	6.9	109	69
11.431.0700	7	7	109	69
11.431.0710	7.1	7.1	109	69
11.431.0720	7.2	7.2	109	69
11.431.0730	7.3	7.3	109	69
11.431.0740	7.4	7.4	109	69
11.431.0750	7.5	7.5	109	69
11.431.0760	7.6	7.6	117	75
11.431.0770	7.7	7.7	117	75
11.431.0780	7.8	7.8	117	75
11.431.0790	7.9	7.9	117	75
11.431.0800	8	8	117	75
11.431.0810	8.1	8.1	117	75
11.431.0820	8.2	8.2	117	75
11.431.0830	8.3	8.3	117	75

Ref.	d1	d2	l1	l2
11.431.0840	8.4	8.4	117	75
11.431.0850	8.5	8.5	117	75
11.431.0860	8.6	8.6	125	81
11.431.0870	8.7	8.7	125	81
11.431.0880	8.8	8.8	125	81
11.431.0890	8.9	8.9	125	81
11.431.0900	9	9	125	81
11.431.0910	9.1	9.1	125	81
11.431.0920	9.2	9.2	125	81
11.431.0930	9.3	9.3	125	81
11.431.0940	9.4	9.4	125	81
11.431.0950	9.5	9.5	125	81
11.431.0960	9.6	9.6	133	87
11.431.0970	9.7	9.7	133	87
11.431.0980	9.8	9.8	133	87
11.431.0990	9.9	9.9	133	87
11.431.1000	10	10	133	87
11.431.1010	10.1	10.1	133	87
11.431.1020	10.2	10.2	133	87
11.431.1030	10.3	10.3	133	87
11.431.1040	10.4	10.4	133	87
11.431.1050	10.5	10.5	133	87
11.431.1060	10.6	10.6	133	87
11.431.1070	10.7	10.7	142	94
11.431.1080	10.8	10.8	142	94
11.431.1090	10.9	10.9	142	94
11.431.1100	11	11	142	94
11.431.1120	11.2	11.2	142	94
11.431.1150	11.5	11.5	142	94
11.431.1180	11.8	11.8	142	94
11.431.1200	12	12	151	101
11.431.1220	12.2	12.2	151	101
11.431.1250	12.5	12.5	151	101
11.431.1280	12.8	12.8	151	101
11.431.1300	13	13	151	101

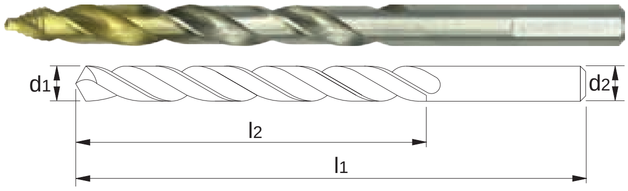


NL Standaardpunt vs splitpoint
FR Affûtage standard versus un affûtage en croix
ES Afilado normal o Afilado en cruz
DE Kegelmantelanschliff gegen Kreuzanschliff
EN Traditional vs splitpoint drill bit

Watch me

www.phantom.eu

› 11.434 International Tools



NL **ECO PRO HSS Spiraalboor Step-point, TiN-tip, met drievlaks schacht**
FR **Foret HSS ECO PRO Step-point, avec revêtement TiN sur la partie utile, queue à trois méplats**
ES **Broca HSS ECO PRO Step-point, con punta TiN, con mango 3 chaflanes**
DE **ECO PRO HSS Spiralbohrer Step-point, TiN-Tip, 3-Flächen-Schaft**
EN **ECO PRO HSS Twist drill Step-point, TiN coated tip, with 3 flat surfaces**

NIEUW / NOUVEAU / NUEVO / NEU

HSS | TiN | DIN 338 | N | ≥4 | ≥2.5 | ≥2 | 118° | ECO PRO

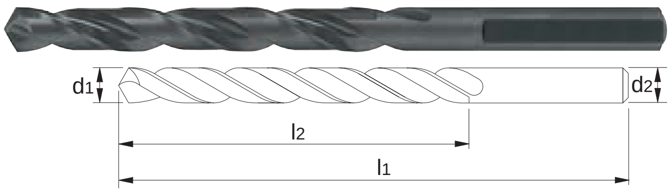
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.434.0100	1	1	34	12
11.434.0150	1.5	1.5	40	18
11.434.0200	2	2	49	24
11.434.0250	2.5	2.5	57	30
11.434.0300	3	3	61	33
11.434.0320	3.2	3.2	65	36
11.434.0330	3.3	3.3	65	36
11.434.0350	3.5	3.5	70	39
11.434.0400	4	4	75	43
11.434.0420	4.2	4.2	75	43
11.434.0450	4.5	4.5	80	47

Ref.	d1	d2	l1	l2
11.434.0480	4.8	4.8	86	52
11.434.0500	5	5	86	52
11.434.0510	5.1	5.1	86	52
11.434.0520	5.2	5.2	86	52
11.434.0550	5.5	5.5	93	57
11.434.0600	6	6	93	57
11.434.0650	6.5	6.5	101	63
11.434.0680	6.8	6.8	109	69
11.434.0700	7	7	109	69
11.434.0750	7.5	7.5	109	69
11.434.0800	8	8	117	75

Ref.	d1	d2	l1	l2
11.434.0850	8.5	8.5	117	75
11.434.0900	9	9	125	81
11.434.0950	9.5	9.5	125	81
11.434.1000	10	10	133	87
11.434.1020	10.2	10.2	133	87
11.434.1050	10.5	10.5	133	87
11.434.1100	11	11	142	94
11.434.1150	11.5	11.5	142	94
11.434.1200	12	12	151	101
11.434.1250	12.5	12.5	151	101
11.434.1300	13	13	151	101

› 11.440 Phantom



NL **HSS Spiraalboor met drievlaks schacht**
FR **Foret HSS queue à trois méplats**
ES **Broca HSS con mango 3 chaflanes**
DE **HSS Spiralbohrer 3-Flächen-Schaft**
EN **HSS Twist drill with 3 flat surfaces**

HSS | OX. | DIN 338 | N | 118°

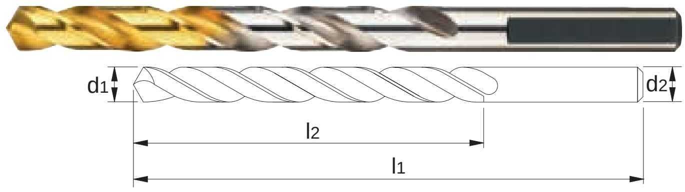
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.440.0400	4	4	75	43
11.440.0420	4.2	4.2	75	43
11.440.0450	4.5	4.5	80	47
11.440.0500	5	5	86	52
11.440.0550	5.5	5.5	93	57
11.440.0600	6	6	93	57
11.440.0650	6.5	6.5	101	63
11.440.0680	6.8	6.8	109	69

Ref.	d1	d2	l1	l2
11.440.0700	7	7	109	69
11.440.0750	7.5	7.5	109	69
11.440.0800	8	8	117	75
11.440.0850	8.5	8.5	117	75
11.440.0900	9	9	125	81
11.440.0950	9.5	9.5	125	81
11.440.1000	10	10	133	87
11.440.1020	10.2	10.2	133	87

Ref.	d1	d2	l1	l2
11.440.1050	10.5	10.5	133	87
11.440.1100	11	11	142	94
11.440.1150	11.5	11.5	142	94
11.440.1200	12	12	151	101
11.440.1250	12.5	12.5	151	101
11.440.1300	13	13	151	101

› 11.441 Phantom



NL HSS Spiraalboor TiN-tip, met drievlaks schacht, (handgebruik)
FR Foret HSS avec revêtement TiN sur la partie utile, queue à trois méplats, (usage à la main)
ES Broca HSS con punta TiN, con mango 3 chaflanes, (uso manual)
DE HSS Spiralbohrer TiN-Tip, 3-Flächen-Schaft, (handgebrauch)
EN HSS Twist drill TiN coated tip, with 3 flat surfaces, (handuse)

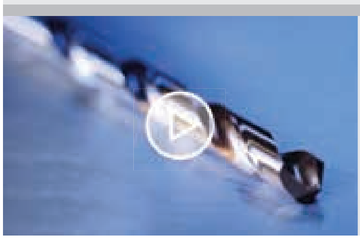
HSS | TiN | DIN 338 | >N | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
27-30 F	25-28 F	17-22 E	10-14 D	20-33 E	20-28 E	50-80 E	45-70 G	40-65 D	25-36 D

Ref.	d1	d2	l1	l2
11.441.0400	4	4	75	43
11.441.0410	4.1	4.1	75	43
11.441.0420	4.2	4.2	75	43
11.441.0430	4.3	4.3	80	47
11.441.0450	4.5	4.5	80	47
11.441.0470	4.7	4.7	80	47
11.441.0480	4.8	4.8	86	52
11.441.0490	4.9	4.9	86	52
11.441.0500	5	5	86	52
11.441.0510	5.1	5.1	86	52
11.441.0520	5.2	5.2	86	52
11.441.0530	5.3	5.3	86	52

Ref.	d1	d2	l1	l2
11.441.0550	5.5	5.5	93	57
11.441.0570	5.7	5.7	93	57
11.441.0580	5.8	5.8	93	57
11.441.0600	6	6	93	57
11.441.0610	6.1	6.1	101	63
11.441.0620	6.2	6.2	101	63
11.441.0630	6.3	6.3	101	63
11.441.0650	6.5	6.5	101	63
11.441.0670	6.7	6.7	101	63
11.441.0680	6.8	6.8	109	69
11.441.0700	7	7	109	69
11.441.0750	7.5	7.5	109	69

Ref.	d1	d2	l1	l2
11.441.0800	8	8	117	75
11.441.0850	8.5	8.5	117	75
11.441.0900	9	9	125	81
11.441.0950	9.5	9.5	125	81
11.441.1000	10	10	133	87
11.441.1020	10.2	10.2	133	87
11.441.1050	10.5	10.5	133	87
11.441.1100	11	11	142	94
11.441.1150	11.5	11.5	142	94
11.441.1200	12	12	151	101
11.441.1250	12.5	12.5	151	101
11.441.1300	13	13	151	101

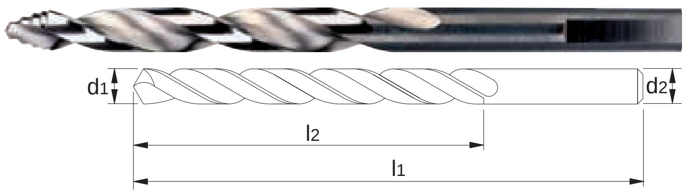


NL De boor bij uitstek voor handgebruik
FR Le foret idéalement adapté pour l'utilisation manuelle
ES La broca por excelencia para uso manual
DE Der Spitzenbohrer für den Handgebrauch
EN The drill of choice for manual use

Watch me

www.phantom.eu

› 11.443 Phantom



NL HSS Spiraalboor Step-point, met drievlaks schacht
FR Foret à pointe étagée HSS Step-point, queue à trois méplats
ES Broca HSS Step-point, con mango 3 chaflanes
DE HSS Spiralbohrer Step-point, 3-Flächen-Schaft
EN HSS Stub Drill Step-point, with 3 flat surfaces

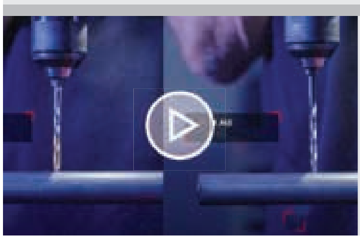
HSS | OX. | DIN 338 | N | ≥4 | ≥2,5 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.443.0100	1	1	34	12
11.443.0150	1.5	1.5	40	18
11.443.0200	2	2	49	24
11.443.0250	2.5	2.5	57	30
11.443.0300	3	3	61	33
11.443.0320	3.2	3.2	65	36
11.443.0330	3.3	3.3	65	36
11.443.0350	3.5	3.5	70	39
11.443.0400	4	4	75	43
11.443.0410	4.1	4.1	75	43
11.443.0420	4.2	4.2	75	43
11.443.0450	4.5	4.5	80	47

Ref.	d1	d2	l1	l2
11.443.0490	4.9	4.9	86	52
11.443.0500	5	5	86	52
11.443.0510	5.1	5.1	86	52
11.443.0520	5.2	5.2	86	52
11.443.0550	5.5	5.5	93	57
11.443.0600	6	6	93	57
11.443.0650	6.5	6.5	101	63
11.443.0680	6.8	6.8	109	69
11.443.0700	7	7	109	69
11.443.0750	7.5	7.5	109	69
11.443.0800	8	8	117	75
11.443.0850	8.5	8.5	117	75

Ref.	d1	d2	l1	l2
11.443.0900	9	9	125	81
11.443.0950	9.5	9.5	125	81
11.443.1000	10	10	133	87
11.443.1020	10.2	10.2	133	87
11.443.1050	10.5	10.5	133	87
11.443.1100	11	11	142	94
11.443.1150	11.5	11.5	142	94
11.443.1200	12	12	151	101
11.443.1250	12.5	12.5	151	101
11.443.1300	13	13	151	101

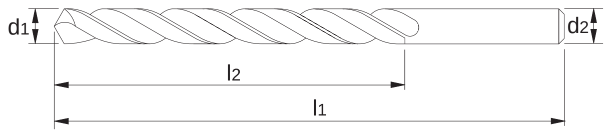


NL Step-point spiraalboor in actie
FR Regardez le foret à pointe étagée Step-point en action
ES Broca escalonada en acción
DE Spiralbohrer mit Stufenspitze in Aktion
EN Step-Point Stub Drill in Action

Watch me

www.phantom.eu

› 11.445 Phantom



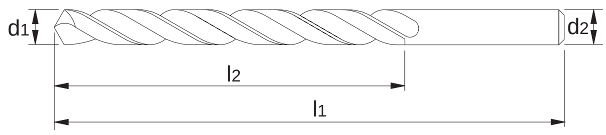
NL HSS-E Spiraalboor met drievlaks schacht
FR Foret HSS-E queue à trois méplats
ES Broca HSS-E con mango 3 chaflanes
DE HSS-E Spiralbohrer 3-Flächen-Schaft
EN HSS-E Twist drill with 3 flat surfaces

HSS-E | DIN 338 | N | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
11.445.0400	4	4	75	43
11.445.0420	4.2	4.2	75	43
11.445.0450	4.5	4.5	80	47
11.445.0500	5	5	86	52
11.445.0550	5.5	5.5	93	57
11.445.0600	6	6	93	57
11.445.0650	6.5	6.5	101	63
11.445.0680	6.8	6.8	109	69
11.445.0700	7	7	109	69
11.445.0750	7.5	7.5	109	69
11.445.0800	8	8	117	75
11.445.0850	8.5	8.5	117	75
11.445.0900	9	9	125	81
11.445.0950	9.5	9.5	125	81
11.445.1000	10	10	133	87
11.445.1020	10.2	10.2	133	87
11.445.1050	10.5	10.5	133	87
11.445.1100	11	11	142	94
11.445.1150	11.5	11.5	142	94
11.445.1200	12	12	151	101
11.445.1250	12.5	12.5	151	101
11.445.1300	13	13	151	101

› 11.446 Phantom



NL HSS-E Spiraalboor TiN-tip, met drievlaks schacht, (handgebruik)
FR Foret HSS-E avec revêtement TiN sur la partie utile, queue à trois méplats, (usage à la main)
ES Broca HSS-E con punta TiN, con mango 3 chaflanes, (uso manual)
DE HSS-E Spiralbohrer TiN-Tip, 3-Flächen-Schaft, (handgebrauch)
EN HSS-E Twist drill TiN coated tip, with 3 flat surfaces, (handuse)

HSS-E | TiN | DIN 338 | >N | 118°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
32-40 E	35-40 E	25-32 E	12-20 D	15-20 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

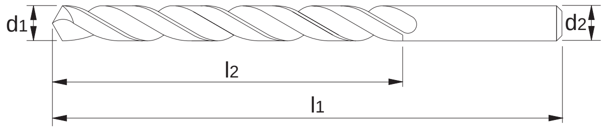
Ref.	d1	d2	l1	l2
11.446.0400	4	4	75	43
11.446.0410	4.1	4.1	75	43
11.446.0420	4.2	4.2	75	43
11.446.0430	4.3	4.3	80	47
11.446.0450	4.5	4.5	80	47
11.446.0470	4.7	4.7	80	47
11.446.0480	4.8	4.8	86	52
11.446.0490	4.9	4.9	86	52
11.446.0500	5	5	86	52
11.446.0510	5.1	5.1	86	52
11.446.0520	5.2	5.2	86	52
11.446.0530	5.3	5.3	86	52
11.446.0550	5.5	5.5	93	57
11.446.0570	5.7	5.7	93	57
11.446.0580	5.8	5.8	93	57
11.446.0600	6	6	93	57
11.446.0610	6.1	6.1	101	63
11.446.0620	6.2	6.2	101	63
11.446.0630	6.3	6.3	101	63
11.446.0650	6.5	6.5	101	63
11.446.0670	6.7	6.7	101	63
11.446.0680	6.8	6.8	109	69
11.446.0700	7	7	109	69
11.446.0750	7.5	7.5	109	69
11.446.0800	8	8	117	75
11.446.0850	8.5	8.5	117	75
11.446.0900	9	9	125	81
11.446.0950	9.5	9.5	125	81
11.446.1000	10	10	133	87
11.446.1020	10.2	10.2	133	87
11.446.1050	10.5	10.5	133	87
11.446.1100	11	11	142	94
11.446.1150	11.5	11.5	142	94
11.446.1200	12	12	151	101
11.446.1250	12.5	12.5	151	101
11.446.1300	13	13	151	101

NL Effect toerental boor op RVS
FR Effet de la vitesse de rotation d'un foret sur le perçage d'inox
ES Efecto de las revoluciones de la broca en inox
DE Effekt Drehzahl Spiralbohrer auf Rostfreien Stahl
EN Effect off revolutions drillbit on stainless steel

Watch me

www.phantom.eu

› 11.447 Phantom

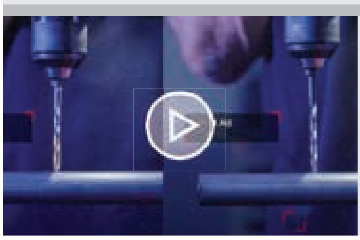


NL HSS-E Spiraalboor Step-point, met drievlaks schacht
FR Foret HSS-E Step-point, queue à trois méplats
ES Broca HSS-E Step-point, con mango 3 chaflanes
DE HSS-E Spiralbohrer Step-point, 3-Flächen-Schaft
EN HSS-E Twist drill Step-point, with 3 flat surfaces

HSS-E | OX. | DIN 338 | >N | ≥4 | ≥2,5 | 118°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
11.447.0100	1	1	34	12
11.447.0150	1.5	1.5	40	18
11.447.0200	2	2	49	24
11.447.0250	2.5	2.5	57	30
11.447.0300	3	3	61	33
11.447.0320	3.2	3.2	65	36
11.447.0330	3.3	3.3	65	36
11.447.0350	3.5	3.5	70	39
11.447.0400	4	4	75	43
11.447.0410	4.1	4.1	75	43
11.447.0420	4.2	4.2	75	43
11.447.0450	4.5	4.5	80	47
11.447.0490	4.9	4.9	86	52
11.447.0500	5	5	86	52
11.447.0510	5.1	5.1	86	52
11.447.0520	5.2	5.2	86	52
11.447.0550	5.5	5.5	93	57
11.447.0600	6	6	93	57
11.447.0650	6.5	6.5	101	63
11.447.0680	6.8	6.8	109	69
11.447.0700	7	7	109	69
11.447.0750	7.5	7.5	109	69
11.447.0800	8	8	117	75
11.447.0850	8.5	8.5	117	75
11.447.0900	9	9	125	81
11.447.0950	9.5	9.5	125	81
11.447.1000	10	10	133	87
11.447.1020	10.2	10.2	133	87
11.447.1050	10.5	10.5	133	87
11.447.1100	11	11	142	94
11.447.1150	11.5	11.5	142	94
11.447.1200	12	12	151	101
11.447.1250	12.5	12.5	151	101
11.447.1300	13	13	151	101

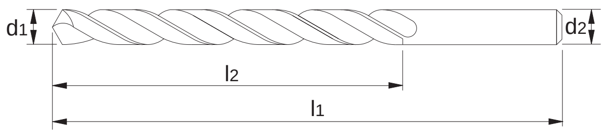


NL Step-point spiraalboor in actie
FR Regardez le foret à pointe étagée Step-point en action
ES Broca escalonada en acción
DE Spiralbohrer mit Stufenspitze in Aktion
EN Step-Point Stub Drill in Action

Watch me

www.phantom.eu

› 11.450 Phantom



NL HSS Spiraalboor
FR Foret HSS
ES Broca HSS
DE HSS Spiralbohrer
EN HSS Twist drill

HSS | OX. | DIN 338 | N | ≥1 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.450.0020	0.2	0.2	19	2.5
11.450.0025	0.25	0.25	19	3
11.450.0030	0.3	0.3	19	3
11.450.0035	0.35	0.35	19	4
11.450.0040	0.4	0.4	20	5
11.450.0045	0.45	0.45	20	5
11.450.0050	0.5	0.5	22	6
11.450.0055	0.55	0.55	24	7
11.450.0060	0.6	0.6	24	7
11.450.0065	0.65	0.65	26	8
11.450.0070	0.7	0.7	28	9
11.450.0075	0.75	0.75	28	9
11.450.0080	0.8	0.8	30	10
11.450.0085	0.85	0.85	30	10
11.450.0090	0.9	0.9	32	11
11.450.0095	0.95	0.95	32	11
11.450.0100	1	1	34	12
11.450.0105	1.05	1.05	34	12
11.450.0110	1.1	1.1	36	14
11.450.0115	1.15	1.15	36	14
11.450.0120	1.2	1.2	38	16
11.450.0125	1.25	1.25	38	16
11.450.0130	1.3	1.3	38	16
11.450.0135	1.35	1.35	40	18
11.450.0140	1.4	1.4	40	18
11.450.0145	1.45	1.45	40	18
11.450.0150	1.5	1.5	40	18
11.450.0155	1.55	1.55	43	20
11.450.0160	1.6	1.6	43	20
11.450.0165	1.65	1.65	43	20
11.450.0170	1.7	1.7	43	20
11.450.0175	1.75	1.75	46	22
11.450.0180	1.8	1.8	46	22
11.450.0185	1.85	1.85	46	22
11.450.0190	1.9	1.9	46	22
11.450.0195	1.95	1.95	49	24
11.450.0200	2	2	49	24
11.450.0205	2.05	2.05	49	24
11.450.0210	2.1	2.1	49	24
11.450.0215	2.15	2.15	53	27
11.450.0220	2.2	2.2	53	27
11.450.0225	2.25	2.25	53	27
11.450.0230	2.3	2.3	53	27
11.450.0235	2.35	2.35	53	27
11.450.0240	2.4	2.4	57	30
11.450.0245	2.45	2.45	57	30
11.450.0250	2.5	2.5	57	30
11.450.0255	2.55	2.55	57	30
11.450.0260	2.6	2.6	57	30
11.450.0265	2.65	2.65	57	30
11.450.0270	2.7	2.7	61	33
11.450.0275	2.75	2.75	61	33
11.450.0280	2.8	2.8	61	33
11.450.0285	2.85	2.85	61	33
11.450.0290	2.9	2.9	61	33
11.450.0295	2.95	2.95	61	33
11.450.0300	3	3	61	33
11.450.0305	3.05	3.05	65	36
11.450.0310	3.1	3.1	65	36
11.450.0315	3.15	3.15	65	36
11.450.0320	3.2	3.2	65	36
11.450.0325	3.25	3.25	65	36
11.450.0330	3.3	3.3	65	36
11.450.0335	3.35	3.35	65	36
11.450.0340	3.4	3.4	70	39
11.450.0345	3.45	3.45	70	39
11.450.0350	3.5	3.5	70	39
11.450.0355	3.55	3.55	70	39
11.450.0360	3.6	3.6	70	39
11.450.0365	3.65	3.65	70	39
11.450.0370	3.7	3.7	70	39
11.450.0375	3.75	3.75	70	39
11.450.0380	3.8	3.8	75	43
11.450.0385	3.85	3.85	75	43
11.450.0390	3.9	3.9	75	43
11.450.0395	3.95	3.95	75	43
11.450.0400	4	4	75	43
11.450.0405	4.05	4.05	75	43

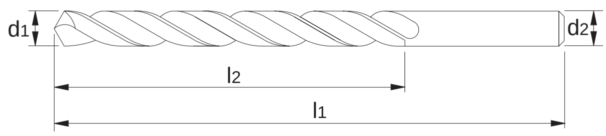
› 11.450 Phantom

Ref.	d1	d2	l1	l2
11.450.0410	4.1	4.1	75	43
11.450.0415	4.15	4.15	75	43
11.450.0420	4.2	4.2	75	43
11.450.0425	4.25	4.25	75	43
11.450.0430	4.3	4.3	80	47
11.450.0435	4.35	4.35	80	47
11.450.0440	4.4	4.4	80	47
11.450.0445	4.45	4.45	80	47
11.450.0450	4.5	4.5	80	47
11.450.0455	4.55	4.55	80	47
11.450.0460	4.6	4.6	80	47
11.450.0465	4.65	4.65	80	47
11.450.0470	4.7	4.7	80	47
11.450.0475	4.75	4.75	80	47
11.450.0480	4.8	4.8	86	52
11.450.0485	4.85	4.85	86	52
11.450.0490	4.9	4.9	86	52
11.450.0495	4.95	4.95	86	52
11.450.0500	5	5	86	52
11.450.0510	5.1	5.1	86	52
11.450.0520	5.2	5.2	86	52
11.450.0525	5.25	5.25	86	52
11.450.0530	5.3	5.3	86	52
11.450.0540	5.4	5.4	93	57
11.450.0550	5.5	5.5	93	57
11.450.0555	5.55	5.55	93	57
11.450.0560	5.6	5.6	93	57
11.450.0570	5.7	5.7	93	57
11.450.0575	5.75	5.75	93	57
11.450.0580	5.8	5.8	93	57
11.450.0590	5.9	5.9	93	57
11.450.0600	6	6	93	57
11.450.0610	6.1	6.1	101	63
11.450.0620	6.2	6.2	101	63
11.450.0625	6.25	6.25	101	63
11.450.0630	6.3	6.3	101	63
11.450.0635	6.35	6.35	101	63
11.450.0640	6.4	6.4	101	63
11.450.0650	6.5	6.5	101	63
11.450.0660	6.6	6.6	101	63
11.450.0670	6.7	6.7	101	63
11.450.0675	6.75	6.75	109	69
11.450.0680	6.8	6.8	109	69
11.450.0690	6.9	6.9	109	69
11.450.0700	7	7	109	69
11.450.0710	7.1	7.1	109	69
11.450.0720	7.2	7.2	109	69
11.450.0725	7.25	7.25	109	69
11.450.0730	7.3	7.3	109	69
11.450.0740	7.4	7.4	109	69

Ref.	d1	d2	l1	l2
11.450.0750	7.5	7.5	109	69
11.450.0760	7.6	7.6	117	75
11.450.0770	7.7	7.7	117	75
11.450.0775	7.75	7.75	117	75
11.450.0780	7.8	7.8	117	75
11.450.0790	7.9	7.9	117	75
11.450.0800	8	8	117	75
11.450.0810	8.1	8.1	117	75
11.450.0820	8.2	8.2	117	75
11.450.0825	8.25	8.25	117	75
11.450.0830	8.3	8.3	117	75
11.450.0840	8.4	8.4	117	75
11.450.0850	8.5	8.5	117	75
11.450.0860	8.6	8.6	125	81
11.450.0870	8.7	8.7	125	81
11.450.0875	8.75	8.75	125	81
11.450.0880	8.8	8.8	125	81
11.450.0890	8.9	8.9	125	81
11.450.0900	9	9	125	81
11.450.0910	9.1	9.1	125	81
11.450.0920	9.2	9.2	125	81
11.450.0925	9.25	9.25	125	81
11.450.0930	9.3	9.3	125	81
11.450.0940	9.4	9.4	125	81
11.450.0950	9.5	9.5	125	81
11.450.0960	9.6	9.6	133	87
11.450.0970	9.7	9.7	133	87
11.450.0975	9.75	9.75	133	87
11.450.0980	9.8	9.8	133	87
11.450.0990	9.9	9.9	133	87
11.450.1000	10	10	133	87
11.450.1010	10.1	10.1	133	87
11.450.1020	10.2	10.2	133	87
11.450.1025	10.25	10.25	133	87
11.450.1030	10.3	10.3	133	87
11.450.1040	10.4	10.4	133	87
11.450.1050	10.5	10.5	133	87
11.450.1060	10.6	10.6	133	87
11.450.1070	10.7	10.7	142	94
11.450.1075	10.75	10.75	142	94
11.450.1080	10.8	10.8	142	94
11.450.1090	10.9	10.9	142	94
11.450.1100	11	11	142	94
11.450.1110	11.1	11.1	142	94
11.450.1120	11.2	11.2	142	94
11.450.1125	11.25	11.25	142	94
11.450.1130	11.3	11.3	142	94
11.450.1140	11.4	11.4	142	94
11.450.1150	11.5	11.5	142	94
11.450.1160	11.6	11.6	142	94

Ref.	d1	d2	l1	l2
11.450.1170	11.7	11.7	142	94
11.450.1175	11.75	11.75	142	94
11.450.1180	11.8	11.8	142	94
11.450.1190	11.9	11.9	151	101
11.450.1200	12	12	151	101
11.450.1210	12.1	12.1	151	101
11.450.1220	12.2	12.2	151	101
11.450.1225	12.25	12.25	151	101
11.450.1230	12.3	12.3	151	101
11.450.1240	12.4	12.4	151	101
11.450.1250	12.5	12.5	151	101
11.450.1260	12.6	12.6	151	101
11.450.1270	12.7	12.7	151	101
11.450.1275	12.75	12.75	151	101
11.450.1280	12.8	12.8	151	101
11.450.1290	12.9	12.9	151	101
11.450.1300	13	13	151	101
11.450.1310	13.1	13.1	151	101
11.450.1320	13.2	13.2	151	101
11.450.1325	13.25	13.25	160	108
11.450.1330	13.3	13.3	160	108
11.450.1340	13.4	13.4	160	108
11.450.1350	13.5	13.5	160	108
11.450.1360	13.6	13.6	160	108
11.450.1370	13.7	13.7	160	108
11.450.1375	13.75	13.75	160	108
11.450.1380	13.8	13.8	160	108
11.450.1390	13.9	13.9	160	108
11.450.1400	14	14	160	108
11.450.1425	14.25	14.25	169	114
11.450.1450	14.5	14.5	169	114
11.450.1475	14.75	14.75	169	114
11.450.1500	15	15	169	114
11.450.1510	15.1	15.1	178	120
11.450.1525	15.25	15.25	178	120
11.450.1550	15.5	15.5	178	120
11.450.1575	15.75	15.75	178	120
11.450.1580	15.8	15.8	178	120
11.450.1600	16	16	178	120
11.450.1650	16.5	16.5	184	125
11.450.1690	16.9	16.9	184	125
11.450.1700	17	17	184	125
11.450.1750	17.5	17.5	191	130
11.450.1800	18	18	191	130
11.450.1850	18.5	18.5	198	135
11.450.1890	18.9	18.9	198	135
11.450.1900	19	19	198	135
11.450.1950	19.5	19.5	205	140
11.450.2000	20	20	205	140

› 11.451 Phantom



NL HSS Spiraalboor TiN-tip
FR Foret HSS avec revêtement TiN sur la partie utile
ES Broca HSS con punta TiN
DE HSS Spiralbohrer TiN-Tip
EN HSS Twist drill TiN coated tip

HSS | TiN | DIN 338 | N | ≥16 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
27-30 F	25-28 F	17-22 E	10-14 D	20-33 E	20-28 E	50-80 E	45-70 G	40-65 D	25-36 D

Ref.	d1	d2	l1	l2
11.451.0100	1	1	34	12
11.451.0110	1.1	1.1	36	14
11.451.0120	1.2	1.2	38	16
11.451.0130	1.3	1.3	38	16
11.451.0140	1.4	1.4	40	18
11.451.0150	1.5	1.5	40	18
11.451.0160	1.6	1.6	43	20
11.451.0170	1.7	1.7	43	20
11.451.0180	1.8	1.8	46	22
11.451.0190	1.9	1.9	46	22
11.451.0200	2	2	49	24
11.451.0210	2.1	2.1	49	24
11.451.0220	2.2	2.2	53	27
11.451.0230	2.3	2.3	53	27

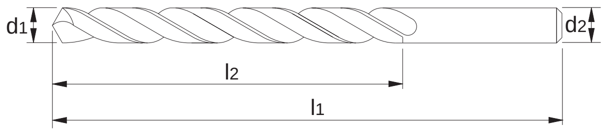
Ref.	d1	d2	l1	l2
11.451.0240	2.4	2.4	57	30
11.451.0250	2.5	2.5	57	30
11.451.0260	2.6	2.6	57	30
11.451.0270	2.7	2.7	61	33
11.451.0280	2.8	2.8	61	33
11.451.0290	2.9	2.9	61	33
11.451.0300	3	3	61	33
11.451.0310	3.1	3.1	65	36
11.451.0320	3.2	3.2	65	36
11.451.0330	3.3	3.3	65	36
11.451.0340	3.4	3.4	70	39
11.451.0350	3.5	3.5	70	39
11.451.0360	3.6	3.6	70	39
11.451.0370	3.7	3.7	70	39

Ref.	d1	d2	l1	l2
11.451.0380	3.8	3.8	75	43
11.451.0390	3.9	3.9	75	43
11.451.0400	4	4	75	43
11.451.0410	4.1	4.1	75	43
11.451.0420	4.2	4.2	75	43
11.451.0430	4.3	4.3	80	47
11.451.0440	4.4	4.4	80	47
11.451.0450	4.5	4.5	80	47
11.451.0460	4.6	4.6	80	47
11.451.0470	4.7	4.7	80	47
11.451.0480	4.8	4.8	86	52
11.451.0490	4.9	4.9	86	52
11.451.0500	5	5	86	52
11.451.0510	5.1	5.1	86	52

› 11.451 Phantom

Ref.	d1	d2	l1	l2
11.451.0520	5.2	5.2	86	52
11.451.0530	5.3	5.3	86	52
11.451.0540	5.4	5.4	93	57
11.451.0550	5.5	5.5	93	57
11.451.0560	5.6	5.6	93	57
11.451.0570	5.7	5.7	93	57
11.451.0580	5.8	5.8	93	57
11.451.0590	5.9	5.9	93	57
11.451.0600	6	6	93	57
11.451.0610	6.1	6.1	101	63
11.451.0620	6.2	6.2	101	63
11.451.0630	6.3	6.3	101	63
11.451.0640	6.4	6.4	101	63
11.451.0650	6.5	6.5	101	63
11.451.0660	6.6	6.6	101	63
11.451.0670	6.7	6.7	101	63
11.451.0680	6.8	6.8	109	69
11.451.0690	6.9	6.9	109	69
11.451.0700	7	7	109	69
11.451.0710	7.1	7.1	109	69
11.451.0720	7.2	7.2	109	69
11.451.0730	7.3	7.3	109	69
11.451.0740	7.4	7.4	109	69
11.451.0750	7.5	7.5	109	69
11.451.0760	7.6	7.6	117	75
11.451.0770	7.7	7.7	117	75
11.451.0780	7.8	7.8	117	75
11.451.0790	7.9	7.9	117	75
11.451.0800	8	8	117	75
11.451.0810	8.1	8.1	117	75
11.451.0820	8.2	8.2	117	75
11.451.0830	8.3	8.3	117	75
11.451.0840	8.4	8.4	117	75
11.451.0850	8.5	8.5	117	75
11.451.0860	8.6	8.6	125	81
11.451.0870	8.7	8.7	125	81
11.451.0880	8.8	8.8	125	81
11.451.0890	8.9	8.9	125	81
11.451.0900	9	9	125	81
11.451.0910	9.1	9.1	125	81
11.451.0920	9.2	9.2	125	81
11.451.0930	9.3	9.3	125	81
11.451.0940	9.4	9.4	125	81
11.451.0950	9.5	9.5	125	81
11.451.0960	9.6	9.6	133	87
11.451.0970	9.7	9.7	133	87
11.451.0980	9.8	9.8	133	87
11.451.0990	9.9	9.9	133	87
11.451.1000	10	10	133	87
11.451.1010	10.1	10.1	133	87
11.451.1020	10.2	10.2	133	87
11.451.1030	10.3	10.3	133	87
11.451.1040	10.4	10.4	133	87
11.451.1050	10.5	10.5	133	87
11.451.1060	10.6	10.6	133	87
11.451.1070	10.7	10.7	142	94
11.451.1080	10.8	10.8	142	94
11.451.1090	10.9	10.9	142	94
11.451.1100	11	11	142	94
11.451.1110	11.1	11.1	142	94
11.451.1120	11.2	11.2	142	94
11.451.1130	11.3	11.3	142	94
11.451.1140	11.4	11.4	142	94
11.451.1150	11.5	11.5	142	94
11.451.1160	11.6	11.6	142	94
11.451.1170	11.7	11.7	142	94
11.451.1180	11.8	11.8	142	94
11.451.1190	11.9	11.9	151	101
11.451.1200	12	12	151	101
11.451.1210	12.1	12.1	151	101
11.451.1220	12.2	12.2	151	101
11.451.1230	12.3	12.3	151	101
11.451.1240	12.4	12.4	151	101
11.451.1250	12.5	12.5	151	101
11.451.1260	12.6	12.6	151	101
11.451.1270	12.7	12.7	151	101
11.451.1280	12.8	12.8	151	101
11.451.1290	12.9	12.9	151	101
11.451.1300	13	13	151	101

› 11.461 Phantom



NL **HSS Spiraalboor TiN-tip, (handgebruik)**
FR **Foret HSS avec revêtement TiN sur la partie utile, (usage à la main)**
ES **Broca HSS con punta TiN, (uso manual)**
DE **HSS Spiralbohrer TiN-Tip, (handgebrauch)**
EN **HSS Twist drill TiN coated tip, (handuse)**

HSS | TiN | DIN 338 | >N | ≥1,6 | 118°

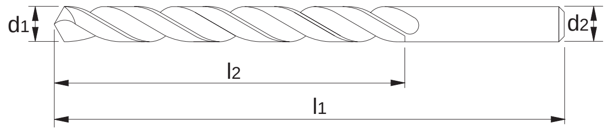
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
27-30 F	25-28 F	17-22 E	10-14 D	20-33 E	20-28 E	50-80 E	45-70 G	40-65 D	25-36 D

Ref.	d1	d2	l1	l2
11.461.0100	1	1	34	12
11.461.0110	1.1	1.1	36	14
11.461.0120	1.2	1.2	38	16
11.461.0130	1.3	1.3	38	16
11.461.0140	1.4	1.4	40	18
11.461.0150	1.5	1.5	40	18
11.461.0160	1.6	1.6	43	20
11.461.0170	1.7	1.7	43	20
11.461.0180	1.8	1.8	46	22
11.461.0190	1.9	1.9	46	22
11.461.0200	2	2	49	24
11.461.0210	2.1	2.1	49	24
11.461.0220	2.2	2.2	53	27
11.461.0230	2.3	2.3	53	27
11.461.0240	2.4	2.4	57	30
11.461.0250	2.5	2.5	57	30
11.461.0260	2.6	2.6	57	30
11.461.0270	2.7	2.7	61	33
11.461.0280	2.8	2.8	61	33
11.461.0290	2.9	2.9	61	33
11.461.0300	3	3	61	33
11.461.0310	3.1	3.1	65	36
11.461.0320	3.2	3.2	65	36
11.461.0330	3.3	3.3	65	36
11.461.0340	3.4	3.4	70	39
11.461.0350	3.5	3.5	70	39
11.461.0360	3.6	3.6	70	39
11.461.0370	3.7	3.7	70	39
11.461.0380	3.8	3.8	75	43
11.461.0390	3.9	3.9	75	43
11.461.0400	4	4	75	43
11.461.0410	4.1	4.1	75	43
11.461.0420	4.2	4.2	75	43
11.461.0430	4.3	4.3	80	47
11.461.0440	4.4	4.4	80	47
11.461.0450	4.5	4.5	80	47
11.461.0460	4.6	4.6	80	47
11.461.0470	4.7	4.7	80	47
11.461.0480	4.8	4.8	86	52
11.461.0490	4.9	4.9	86	52
11.461.0500	5	5	86	52
11.461.0510	5.1	5.1	86	52
11.461.0520	5.2	5.2	86	52
11.461.0530	5.3	5.3	86	52
11.461.0540	5.4	5.4	93	57
11.461.0550	5.5	5.5	93	57
11.461.0560	5.6	5.6	93	57
11.461.0570	5.7	5.7	93	57
11.461.0580	5.8	5.8	93	57
11.461.0590	5.9	5.9	93	57
11.461.0600	6	6	93	57
11.461.0610	6.1	6.1	101	63
11.461.0620	6.2	6.2	101	63
11.461.0630	6.3	6.3	101	63
11.461.0640	6.4	6.4	101	63
11.461.0650	6.5	6.5	101	63
11.461.0660	6.6	6.6	101	63
11.461.0670	6.7	6.7	101	63
11.461.0680	6.8	6.8	109	69
11.461.0690	6.9	6.9	109	69
11.461.0700	7	7	109	69
11.461.0710	7.1	7.1	109	69
11.461.0720	7.2	7.2	109	69
11.461.0730	7.3	7.3	109	69
11.461.0740	7.4	7.4	109	69
11.461.0750	7.5	7.5	109	69
11.461.0760	7.6	7.6	117	75
11.461.0770	7.7	7.7	117	75
11.461.0780	7.8	7.8	117	75
11.461.0790	7.9	7.9	117	75
11.461.0800	8	8	117	75
11.461.0810	8.1	8.1	117	75
11.461.0820	8.2	8.2	117	75
11.461.0830	8.3	8.3	117	75
11.461.0840	8.4	8.4	117	75
11.461.0850	8.5	8.5	117	75
11.461.0860	8.6	8.6	125	81
11.461.0870	8.7	8.7	125	81
11.461.0880	8.8	8.8	125	81
11.461.0890	8.9	8.9	125	81
11.461.0900	9	9	125	81
11.461.0910	9.1	9.1	125	81
11.461.0920	9.2	9.2	125	81
11.461.0930	9.3	9.3	125	81
11.461.0940	9.4	9.4	125	81
11.461.0950	9.5	9.5	125	81
11.461.0960	9.6	9.6	133	87
11.461.0970	9.7	9.7	133	87
11.461.0980	9.8	9.8	133	87
11.461.0990	9.9	9.9	133	87
11.461.1000	10	10	133	87
11.461.1010	10.1	10.1	133	87
11.461.1020	10.2	10.2	133	87
11.461.1030	10.3	10.3	133	87
11.461.1040	10.4	10.4	133	87
11.461.1050	10.5	10.5	133	87
11.461.1060	10.6	10.6	133	87
11.461.1070	10.7	10.7	142	94
11.461.1080	10.8	10.8	142	94
11.461.1090	10.9	10.9	142	94
11.461.1100	11	11	142	94
11.461.1110	11.1	11.1	142	94
11.461.1120	11.2	11.2	142	94
11.461.1130	11.3	11.3	142	94
11.461.1140	11.4	11.4	142	94
11.461.1150	11.5	11.5	142	94
11.461.1160	11.6	11.6	142	94
11.461.1170	11.7	11.7	142	94
11.461.1180	11.8	11.8	142	94
11.461.1190	11.9	11.9	151	101
11.461.1200	12	12	151	101

› 11.461 Phantom

Ref.	d1	d2	l1	l2
11.461.1210	12.1	12.1	151	101
11.461.1220	12.2	12.2	151	101
11.461.1230	12.3	12.3	151	101
11.461.1240	12.4	12.4	151	101
11.461.1250	12.5	12.5	151	101
11.461.1260	12.6	12.6	151	101
11.461.1270	12.7	12.7	151	101
11.461.1280	12.8	12.8	151	101
11.461.1290	12.9	12.9	151	101
11.461.1300	13	13	151	101
11.461.1350	13.5	13.5	160	108
11.461.1400	14	14	160	108
11.461.1450	14.5	14.5	169	114
11.461.1500	15	15	169	114
11.461.1550	15.5	15.5	178	120
11.461.1600	16	16	178	120

› 11.490 International Tools



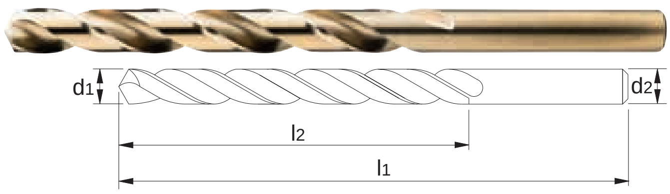
NL **ECO PRO HSS-E Spiraalboor**
FR **Foret HSS-E ECO PRO**
ES **Broca HSS-E ECO PRO**
DE **ECO PRO HSS-E Spiralbohrer**
EN **ECO PRO HSS-E Twist drill**

HSS-E | DIN 338 | N | >3 | 135° | ECO PRO

P 11	P 12	P 13	M 21	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	14-18 D	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
11.490.0100	1	1	34	12
11.490.0110	1.1	1.1	36	14
11.490.0120	1.2	1.2	38	16
11.490.0130	1.3	1.3	38	16
11.490.0140	1.4	1.4	40	18
11.490.0150	1.5	1.5	40	18
11.490.0160	1.6	1.6	43	20
11.490.0170	1.7	1.7	43	20
11.490.0180	1.8	1.8	46	22
11.490.0190	1.9	1.9	46	22
11.490.0200	2	2	49	24
11.490.0210	2.1	2.1	49	24
11.490.0220	2.2	2.2	53	27
11.490.0230	2.3	2.3	53	27
11.490.0240	2.4	2.4	57	30
11.490.0250	2.5	2.5	57	30
11.490.0260	2.6	2.6	57	30
11.490.0270	2.7	2.7	61	33
11.490.0280	2.8	2.8	61	33
11.490.0290	2.9	2.9	61	33
11.490.0300	3	3	61	33
11.490.0310	3.1	3.1	65	36
11.490.0320	3.2	3.2	65	36
11.490.0330	3.3	3.3	65	36
11.490.0340	3.4	3.4	70	39
11.490.0350	3.5	3.5	70	39
11.490.0360	3.6	3.6	70	39
11.490.0370	3.7	3.7	70	39
11.490.0380	3.8	3.8	75	43
11.490.0390	3.9	3.9	75	43
11.490.0400	4	4	75	43
11.490.0410	4.1	4.1	75	43
11.490.0420	4.2	4.2	75	43
11.490.0430	4.3	4.3	80	47
11.490.0440	4.4	4.4	80	47
11.490.0450	4.5	4.5	80	47
11.490.0460	4.6	4.6	80	47
11.490.0470	4.7	4.7	80	47
11.490.0480	4.8	4.8	86	52
11.490.0490	4.9	4.9	86	52
11.490.0500	5	5	86	52
11.490.0510	5.1	5.1	86	52
11.490.0520	5.2	5.2	86	52
11.490.0530	5.3	5.3	86	52
11.490.0540	5.4	5.4	93	57
11.490.0550	5.5	5.5	93	57
11.490.0560	5.6	5.6	93	57
11.490.0570	5.7	5.7	93	57
11.490.0580	5.8	5.8	93	57
11.490.0590	5.9	5.9	93	57
11.490.0600	6	6	93	57
11.490.0610	6.1	6.1	101	63
11.490.0620	6.2	6.2	101	63
11.490.0630	6.3	6.3	101	63
11.490.0640	6.4	6.4	101	63
11.490.0650	6.5	6.5	101	63
11.490.0660	6.6	6.6	101	63
11.490.0670	6.7	6.7	101	63
11.490.0680	6.8	6.8	109	69
11.490.0690	6.9	6.9	109	69
11.490.0700	7	7	109	69
11.490.0710	7.1	7.1	109	69
11.490.0720	7.2	7.2	109	69
11.490.0730	7.3	7.3	109	69
11.490.0740	7.4	7.4	109	69
11.490.0750	7.5	7.5	109	69
11.490.0760	7.6	7.6	117	75
11.490.0770	7.7	7.7	117	75
11.490.0780	7.8	7.8	117	75
11.490.0790	7.9	7.9	117	75
11.490.0800	8	8	117	75
11.490.0810	8.1	8.1	117	75
11.490.0820	8.2	8.2	117	75
11.490.0830	8.3	8.3	117	75
11.490.0840	8.4	8.4	117	75
11.490.0850	8.5	8.5	117	75
11.490.0860	8.6	8.6	125	81
11.490.0870	8.7	8.7	125	81
11.490.0880	8.8	8.8	125	81
11.490.0890	8.9	8.9	125	81
11.490.0900	9	9	125	81
11.490.0910	9.1	9.1	125	81
11.490.0920	9.2	9.2	125	81
11.490.0930	9.3	9.3	125	81
11.490.0940	9.4	9.4	125	81
11.490.0950	9.5	9.5	125	81
11.490.0960	9.6	9.6	133	87
11.490.0970	9.7	9.7	133	87
11.490.0980	9.8	9.8	133	87
11.490.0990	9.9	9.9	133	87
11.490.1000	10	10	133	87
11.490.1020	10.2	10.2	133	87
11.490.1050	10.5	10.5	133	87
11.490.1100	11	11	142	94
11.490.1150	11.5	11.5	142	94
11.490.1200	12	12	151	101
11.490.1250	12.5	12.5	151	101
11.490.1300	13	13	151	101

› 11.500 Phantom



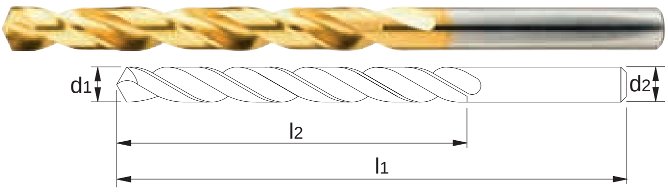
NL HSS-E Spiraalboor
FR Foret HSS-E
ES Broca HSS-E
DE HSS-E Spiralbohrer
EN HSS-E Twist drill

HSS-E	DIN 338	N		≥2	135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
11.500.0020	0.2	0.2	19	2.5
11.500.0025	0.25	0.25	19	3
11.500.0030	0.3	0.3	19	3
11.500.0040	0.4	0.4	20	5
11.500.0045	0.45	0.45	20	5
11.500.0050	0.5	0.5	22	6
11.500.0060	0.6	0.6	24	7
11.500.0065	0.65	0.65	26	8
11.500.0070	0.7	0.7	28	9
11.500.0075	0.75	0.75	28	9
11.500.0080	0.8	0.8	30	10
11.500.0090	0.9	0.9	32	11
11.500.0095	0.95	0.95	32	11
11.500.0100	1	1	34	12
11.500.0110	1.1	1.1	36	14
11.500.0120	1.2	1.2	38	16
11.500.0125	1.25	1.25	38	16
11.500.0130	1.3	1.3	38	16
11.500.0140	1.4	1.4	40	18
11.500.0150	1.5	1.5	40	18
11.500.0160	1.6	1.6	43	20
11.500.0170	1.7	1.7	43	20
11.500.0175	1.75	1.75	46	22
11.500.0180	1.8	1.8	46	22
11.500.0190	1.9	1.9	46	22
11.500.0200	2	2	49	24
11.500.0205	2.05	2.05	49	24
11.500.0210	2.1	2.1	49	24
11.500.0220	2.2	2.2	53	27
11.500.0225	2.25	2.25	53	27
11.500.0230	2.3	2.3	53	27
11.500.0240	2.4	2.4	57	30
11.500.0250	2.5	2.5	57	30
11.500.0260	2.6	2.6	57	30
11.500.0270	2.7	2.7	61	33
11.500.0275	2.75	2.75	61	33
11.500.0280	2.8	2.8	61	33
11.500.0290	2.9	2.9	61	33
11.500.0300	3	3	61	33
11.500.0310	3.1	3.1	65	36
11.500.0320	3.2	3.2	65	36
11.500.0325	3.25	3.25	65	36
11.500.0330	3.3	3.3	65	36
11.500.0340	3.4	3.4	70	39
11.500.0350	3.5	3.5	70	39
11.500.0360	3.6	3.6	70	39
11.500.0370	3.7	3.7	70	39
11.500.0375	3.75	3.75	70	39
11.500.0380	3.8	3.8	75	43
11.500.0390	3.9	3.9	75	43
11.500.0400	4	4	75	43
11.500.0410	4.1	4.1	75	43
11.500.0420	4.2	4.2	75	43
11.500.0425	4.25	4.25	75	43
11.500.0430	4.3	4.3	80	47
11.500.0440	4.4	4.4	80	47
11.500.0450	4.5	4.5	80	47
11.500.0460	4.6	4.6	80	47
11.500.0465	4.65	4.65	80	47
11.500.0470	4.7	4.7	80	47
11.500.0475	4.75	4.75	80	47
11.500.0480	4.8	4.8	86	52
11.500.0490	4.9	4.9	86	52
11.500.0500	5	5	86	52
11.500.0510	5.1	5.1	86	52
11.500.0520	5.2	5.2	86	52
11.500.0525	5.25	5.25	86	52
11.500.0530	5.3	5.3	86	52
11.500.0540	5.4	5.4	93	57
11.500.0550	5.5	5.5	93	57
11.500.0555	5.55	5.55	93	57
11.500.0560	5.6	5.6	93	57
11.500.0570	5.7	5.7	93	57
11.500.0575	5.75	5.75	93	57
11.500.0580	5.8	5.8	93	57
11.500.0590	5.9	5.9	93	57
11.500.0600	6	6	93	57
11.500.0610	6.1	6.1	101	63
11.500.0620	6.2	6.2	101	63
11.500.0625	6.25	6.25	101	63
11.500.0630	6.3	6.3	101	63
11.500.0635	6.35	6.35	101	63
11.500.0640	6.4	6.4	101	63
11.500.0650	6.5	6.5	101	63
11.500.0660	6.6	6.6	101	63
11.500.0670	6.7	6.7	101	63
11.500.0675	6.75	6.75	109	69
11.500.0680	6.8	6.8	109	69
11.500.0690	6.9	6.9	109	69
11.500.0700	7	7	109	69
11.500.0710	7.1	7.1	109	69
11.500.0720	7.2	7.2	109	69
11.500.0725	7.25	7.25	109	69
11.500.0730	7.3	7.3	109	69
11.500.0740	7.4	7.4	109	69
11.500.0750	7.5	7.5	109	69
11.500.0760	7.6	7.6	117	75
11.500.0770	7.7	7.7	117	75
11.500.0775	7.75	7.75	117	75
11.500.0780	7.8	7.8	117	75
11.500.0790	7.9	7.9	117	75
11.500.0800	8	8	117	75
11.500.0810	8.1	8.1	117	75
11.500.0820	8.2	8.2	117	75
11.500.0825	8.25	8.25	117	75
11.500.0830	8.3	8.3	117	75
11.500.0840	8.4	8.4	117	75
11.500.0850	8.5	8.5	117	75
11.500.0860	8.6	8.6	125	81
11.500.0870	8.7	8.7	125	81
11.500.0875	8.75	8.75	125	81
11.500.0880	8.8	8.8	125	81
11.500.0890	8.9	8.9	125	81
11.500.0900	9	9	125	81
11.500.0910	9.1	9.1	125	81
11.500.0920	9.2	9.2	125	81
11.500.0925	9.25	9.25	125	81
11.500.0930	9.3	9.3	125	81
11.500.0940	9.4	9.4	125	81
11.500.0950	9.5	9.5	125	81
11.500.0960	9.6	9.6	133	87
11.500.0970	9.7	9.7	133	87
11.500.0975	9.75	9.75	133	87
11.500.0980	9.8	9.8	133	87
11.500.0990	9.9	9.9	133	87
11.500.1000	10	10	133	87
11.500.1010	10.1	10.1	133	87
11.500.1020	10.2	10.2	133	87
11.500.1025	10.25	10.25	133	87
11.500.1030	10.3	10.3	133	87
11.500.1040	10.4	10.4	133	87
11.500.1050	10.5	10.5	133	87
11.500.1060	10.6	10.6	133	87
11.500.1070	10.7	10.7	142	94
11.500.1080	10.8	10.8	142	94
11.500.1100	11	11	142	94
11.500.1110	11.1	11.1	142	94
11.500.1120	11.2	11.2	142	94
11.500.1130	11.3	11.3	142	94
11.500.1140	11.4	11.4	142	94
11.500.1150	11.5	11.5	142	94
11.500.1160	11.6	11.6	142	94
11.500.1170	11.7	11.7	142	94
11.500.1175	11.75	11.75	142	94
11.500.1180	11.8	11.8	142	94
11.500.1190	11.9	11.9	151	101
11.500.1200	12	12	151	101
11.500.1210	12.1	12.1	151	101
11.500.1220	12.2	12.2	151	101
11.500.1230	12.3	12.3	151	101
11.500.1240	12.4	12.4	151	101
11.500.1250	12.5	12.5	151	101
11.500.1260	12.6	12.6	151	101
11.500.1270	12.7	12.7	151	101
11.500.1280	12.8	12.8	151	101
11.500.1290	12.9	12.9	151	101
11.500.1300	13	13	151	101
11.500.1310	13.1	13.1	151	101
11.500.1350	13.5	13.5	160	108
11.500.1400	14	14	160	108
11.500.1450	14.5	14.5	169	114
11.500.1500	15	15	169	114
11.500.1510	15.1	15.1	178	120
11.500.1550	15.5	15.5	178	120
11.500.1600	16	16	178	120
11.500.1650	16.5	16.5	184	125
11.500.1690	16.9	16.9	184	125
11.500.1700	17	17	184	125
11.500.1750	17.5	17.5	191	130
11.500.1800	18	18	191	130
11.500.1850	18.5	18.5	198	135
11.500.1890	18.9	18.9	198	135
11.500.1900	19	19	198	135
11.500.1950	19.5	19.5	205	140
11.500.2000	20	20	205	140

11.501 Phantom



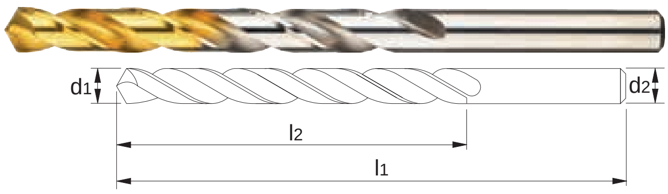
NL HSS-E Spiraalboor TiN
FR Foret HSS-E TiN
ES Broca HSS-E TiN
DE HSS-E Spiralbohrer TiN
EN HSS-E Twist drill TiN

HSS-E | TiN | DIN 338 | N | ≥2 | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
32-40 E	35-40 E	25-32 E	12-20 D	15-20 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.501.0100	1	1	34	12	11.501.0400	4	4	75	43	11.501.0700	7	7	109	69
11.501.0110	1.1	1.1	36	14	11.501.0420	4.2	4.2	75	43	11.501.0800	8	8	117	75
11.501.0150	1.5	1.5	40	18	11.501.0440	4.4	4.4	80	47	11.501.0900	9	9	125	81
11.501.0180	1.8	1.8	46	22	11.501.0460	4.6	4.6	80	47	11.501.0950	9.5	9.5	125	81
11.501.0200	2	2	49	24	11.501.0500	5	5	86	52	11.501.1000	10	10	133	87
11.501.0250	2.5	2.5	57	30	11.501.0520	5.2	5.2	86	52	11.501.1100	11	11	142	94
11.501.0280	2.8	2.8	61	33	11.501.0540	5.4	5.4	93	57	11.501.1150	11.5	11.5	142	94
11.501.0300	3	3	61	33	11.501.0550	5.5	5.5	93	57	11.501.1200	12	12	151	101
11.501.0320	3.2	3.2	65	36	11.501.0570	5.7	5.7	93	57	11.501.1250	12.5	12.5	151	101
11.501.0340	3.4	3.4	70	39	11.501.0600	6	6	93	57	11.501.1300	13	13	151	101
11.501.0350	3.5	3.5	70	39	11.501.0650	6.5	6.5	101	63					

11.506 Phantom



NL HSS-E Spiraalboor TiN-tip, (handgebruik)
FR Foret HSS-E avec revêtement TiN sur la partie utile, (usage à la main)
ES Broca HSS-E con punta TiN, (uso manual)
DE HSS-E Spiralbohrer TiN-Tip, (handgebrauch)
EN HSS-E Twist drill TiN coated tip, (handuse)

HSS-E | TiN | DIN 338 | >N | ≥1,6 | 118°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
32-40 E	35-40 E	25-32 E	12-20 D	15-20 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

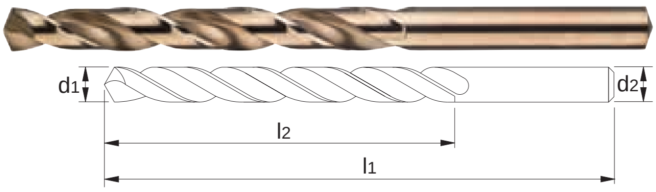
Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.506.0100	1	1	34	12	11.506.0360	3.6	3.6	70	39	11.506.0610	6.1	6.1	101	63
11.506.0120	1.2	1.2	38	16	11.506.0370	3.7	3.7	70	39	11.506.0620	6.2	6.2	101	63
11.506.0150	1.5	1.5	40	18	11.506.0380	3.8	3.8	75	43	11.506.0630	6.3	6.3	101	63
11.506.0160	1.6	1.6	43	20	11.506.0390	3.9	3.9	75	43	11.506.0650	6.5	6.5	101	63
11.506.0200	2	2	49	24	11.506.0400	4	4	75	43	11.506.0670	6.7	6.7	101	63
11.506.0210	2.1	2.1	49	24	11.506.0410	4.1	4.1	75	43	11.506.0680	6.8	6.8	109	69
11.506.0220	2.2	2.2	53	27	11.506.0420	4.2	4.2	75	43	11.506.0700	7	7	109	69
11.506.0230	2.3	2.3	53	27	11.506.0430	4.3	4.3	80	47	11.506.0750	7.5	7.5	109	69
11.506.0240	2.4	2.4	57	30	11.506.0450	4.5	4.5	80	47	11.506.0800	8	8	117	75
11.506.0250	2.5	2.5	57	30	11.506.0470	4.7	4.7	80	47	11.506.0850	8.5	8.5	117	75
11.506.0260	2.6	2.6	57	30	11.506.0480	4.8	4.8	86	52	11.506.0900	9	9	125	81
11.506.0270	2.7	2.7	61	33	11.506.0490	4.9	4.9	86	52	11.506.0950	9.5	9.5	125	81
11.506.0280	2.8	2.8	61	33	11.506.0500	5	5	86	52	11.506.1000	10	10	133	87
11.506.0290	2.9	2.9	61	33	11.506.0510	5.1	5.1	86	52	11.506.1020	10.2	10.2	133	87
11.506.0300	3	3	61	33	11.506.0520	5.2	5.2	86	52	11.506.1050	10.5	10.5	133	87
11.506.0310	3.1	3.1	65	36	11.506.0530	5.3	5.3	86	52	11.506.1100	11	11	142	94
11.506.0320	3.2	3.2	65	36	11.506.0550	5.5	5.5	93	57	11.506.1150	11.5	11.5	142	94
11.506.0330	3.3	3.3	65	36	11.506.0570	5.7	5.7	93	57	11.506.1200	12	12	151	101
11.506.0340	3.4	3.4	70	39	11.506.0580	5.8	5.8	93	57	11.506.1250	12.5	12.5	151	101
11.506.0350	3.5	3.5	70	39	11.506.0600	6	6	93	57	11.506.1300	13	13	151	101

NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 11.510 Phantom



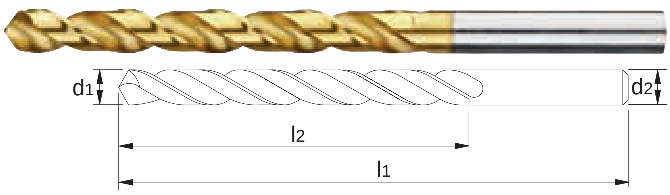
NL HSS-E 8% Spiraalboor Aero
FR Foret HSS-E 8% Aéro
ES Broca HSS-E 8% Aero
DE HSS-E 8% Spiralbohrer Aero
EN HSS-E 8% Twist drill Aero

HSS-E 8% | P3 | NAS 907 | DIN 338 | N | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC	Ni/Co	Ti
35-40 E	30-40 E	12-30 E	12-20 C	14-20 D	10-15 C	30-35 F	24-30 F	50-90 F	40-60 F	60-80 F	30-40 E	15-20 D	20-30 D	6-8 A	6-10 B

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.510.0100	1	1	34	12	11.510.0450	4.5	4.5	80	47	11.510.0800	8	8	117	75
11.510.0110	1.1	1.1	36	14	11.510.0460	4.6	4.6	80	47	11.510.0810	8.1	8.1	117	75
11.510.0120	1.2	1.2	38	16	11.510.0470	4.7	4.7	80	47	11.510.0820	8.2	8.2	117	75
11.510.0130	1.3	1.3	38	16	11.510.0480	4.8	4.8	86	52	11.510.0830	8.3	8.3	117	75
11.510.0140	1.4	1.4	40	18	11.510.0490	4.9	4.9	86	52	11.510.0840	8.4	8.4	117	75
11.510.0150	1.5	1.5	40	18	11.510.0500	5	5	86	52	11.510.0850	8.5	8.5	117	75
11.510.0160	1.6	1.6	43	20	11.510.0510	5.1	5.1	86	52	11.510.0860	8.6	8.6	125	81
11.510.0170	1.7	1.7	43	20	11.510.0520	5.2	5.2	86	52	11.510.0870	8.7	8.7	125	81
11.510.0180	1.8	1.8	46	22	11.510.0530	5.3	5.3	86	52	11.510.0880	8.8	8.8	125	81
11.510.0190	1.9	1.9	46	22	11.510.0540	5.4	5.4	93	57	11.510.0890	8.9	8.9	125	81
11.510.0200	2	2	49	24	11.510.0550	5.5	5.5	93	57	11.510.0900	9	9	125	81
11.510.0210	2.1	2.1	49	24	11.510.0560	5.6	5.6	93	57	11.510.0910	9.1	9.1	125	81
11.510.0220	2.2	2.2	53	27	11.510.0570	5.7	5.7	93	57	11.510.0920	9.2	9.2	125	81
11.510.0230	2.3	2.3	53	27	11.510.0580	5.8	5.8	93	57	11.510.0930	9.3	9.3	125	81
11.510.0240	2.4	2.4	57	30	11.510.0590	5.9	5.9	93	57	11.510.0940	9.4	9.4	125	81
11.510.0250	2.5	2.5	57	30	11.510.0600	6	6	93	57	11.510.0950	9.5	9.5	125	81
11.510.0260	2.6	2.6	57	30	11.510.0610	6.1	6.1	101	63	11.510.0960	9.6	9.6	133	87
11.510.0270	2.7	2.7	61	33	11.510.0620	6.2	6.2	101	63	11.510.0970	9.7	9.7	133	87
11.510.0280	2.8	2.8	61	33	11.510.0630	6.3	6.3	101	63	11.510.0980	9.8	9.8	133	87
11.510.0290	2.9	2.9	61	33	11.510.0640	6.4	6.4	101	63	11.510.0990	9.9	9.9	133	87
11.510.0300	3	3	61	33	11.510.0650	6.5	6.5	101	63	11.510.1000	10	10	133	87
11.510.0310	3.1	3.1	65	36	11.510.0660	6.6	6.6	101	63	11.510.1020	10.2	10.2	133	87
11.510.0320	3.2	3.2	65	36	11.510.0670	6.7	6.7	101	63	11.510.1050	10.5	10.5	133	87
11.510.0330	3.3	3.3	65	36	11.510.0680	6.8	6.8	109	69	11.510.1100	11	11	142	94
11.510.0340	3.4	3.4	70	39	11.510.0690	6.9	6.9	109	69	11.510.1150	11.5	11.5	142	94
11.510.0350	3.5	3.5	70	39	11.510.0700	7	7	109	69	11.510.1200	12	12	151	101
11.510.0360	3.6	3.6	70	39	11.510.0710	7.1	7.1	109	69	11.510.1250	12.5	12.5	151	101
11.510.0370	3.7	3.7	70	39	11.510.0720	7.2	7.2	109	69	11.510.1300	13	13	151	101
11.510.0380	3.8	3.8	75	43	11.510.0730	7.3	7.3	109	69	11.510.1350	13.5	13.5	160	108
11.510.0390	3.9	3.9	75	43	11.510.0740	7.4	7.4	109	69	11.510.1400	14	14	160	108
11.510.0400	4	4	75	43	11.510.0750	7.5	7.5	109	69	11.510.1450	14.5	14.5	169	114
11.510.0410	4.1	4.1	75	43	11.510.0760	7.6	7.6	117	75	11.510.1500	15	15	169	114
11.510.0420	4.2	4.2	75	43	11.510.0770	7.7	7.7	117	75	11.510.1600	16	16	178	120
11.510.0430	4.3	4.3	80	47	11.510.0780	7.8	7.8	117	75					
11.510.0440	4.4	4.4	80	47	11.510.0790	7.9	7.9	117	75					

› 11.568 Phantom



NL HP2 UNI HSS-E Spiraalboor TiN
FR Foret HSS-E HP2 UNI TiN
ES Broca HSS-E HP2 UNI TiN
DE HP2 UNI HSS-E Spiralbohrer TiN
EN HP2 UNI HSS-E Twist drill TiN

HSS-E | TiN | DIN 338 | >N | 118° | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
38-42 F	20-44 E	20-40 E	16-22 C	15-20 D	12-18 C	40-45 F	35-40 F	50-70 E	40-60 F	60-80 F	40-44 E	15-20 D	24-28 D

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.568.0100	1	1	34	12	11.568.0240	2.4	2.4	57	30	11.568.0380	3.8	3.8	75	43
11.568.0110	1.1	1.1	36	14	11.568.0250	2.5	2.5	57	30	11.568.0390	3.9	3.9	75	43
11.568.0120	1.2	1.2	38	16	11.568.0260	2.6	2.6	57	30	11.568.0400	4	4	75	43
11.568.0130	1.3	1.3	38	16	11.568.0270	2.7	2.7	61	33	11.568.0410	4.1	4.1	75	43
11.568.0140	1.4	1.4	40	18	11.568.0280	2.8	2.8	61	33	11.568.0420	4.2	4.2	75	43
11.568.0150	1.5	1.5	40	18	11.568.0290	2.9	2.9	61	33	11.568.0430	4.3	4.3	80	47
11.568.0160	1.6	1.6	43	20	11.568.0300	3	3	61	33	11.568.0440	4.4	4.4	80	47
11.568.0170	1.7	1.7	43	20	11.568.0310	3.1	3.1	65	36	11.568.0450	4.5	4.5	80	47
11.568.0180	1.8	1.8	46	22	11.568.0320	3.2	3.2	65	36	11.568.0460	4.6	4.6	80	47
11.568.0190	1.9	1.9	46	22	11.568.0330	3.3	3.3	65	36	11.568.0470	4.7	4.7	80	47
11.568.0200	2	2	49	24	11.568.0340	3.4	3.4	70	39	11.568.0480	4.8	4.8	86	52
11.568.0210	2.1	2.1	49	24	11.568.0350	3.5	3.5	70	39	11.568.0490	4.9	4.9	86	52
11.568.0220	2.2	2.2	53	27	11.568.0360	3.6	3.6	70	39	11.568.0500	5	5	86	52
11.568.0230	2.3	2.3	53	27	11.568.0370	3.7	3.7	70	39	11.568.0510	5.1	5.1	86	52

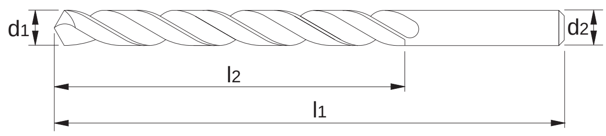
› 11.568 Phantom

Ref.	d1	d2	l1	l2
11.568.0520	5.2	5.2	86	52
11.568.0530	5.3	5.3	86	52
11.568.0540	5.4	5.4	93	57
11.568.0550	5.5	5.5	93	57
11.568.0560	5.6	5.6	93	57
11.568.0570	5.7	5.7	93	57
11.568.0580	5.8	5.8	93	57
11.568.0590	5.9	5.9	93	57
11.568.0600	6	6	93	57
11.568.0610	6.1	6.1	101	63
11.568.0620	6.2	6.2	101	63
11.568.0630	6.3	6.3	101	63
11.568.0640	6.4	6.4	101	63
11.568.0650	6.5	6.5	101	63
11.568.0660	6.6	6.6	101	63
11.568.0670	6.7	6.7	101	63
11.568.0680	6.8	6.8	109	69
11.568.0690	6.9	6.9	109	69
11.568.0700	7	7	109	69
11.568.0710	7.1	7.1	109	69
11.568.0720	7.2	7.2	109	69

Ref.	d1	d2	l1	l2
11.568.0730	7.3	7.3	109	69
11.568.0740	7.4	7.4	109	69
11.568.0750	7.5	7.5	109	69
11.568.0760	7.6	7.6	117	75
11.568.0770	7.7	7.7	117	75
11.568.0780	7.8	7.8	117	75
11.568.0790	7.9	7.9	117	75
11.568.0800	8	8	117	75
11.568.0810	8.1	8.1	117	75
11.568.0820	8.2	8.2	117	75
11.568.0830	8.3	8.3	117	75
11.568.0840	8.4	8.4	117	75
11.568.0850	8.5	8.5	117	75
11.568.0860	8.6	8.6	125	81
11.568.0870	8.7	8.7	125	81
11.568.0880	8.8	8.8	125	81
11.568.0890	8.9	8.9	125	81
11.568.0900	9	9	125	81
11.568.0910	9.1	9.1	125	81
11.568.0920	9.2	9.2	125	81
11.568.0930	9.3	9.3	125	81

Ref.	d1	d2	l1	l2
11.568.0940	9.4	9.4	125	81
11.568.0950	9.5	9.5	125	81
11.568.0960	9.6	9.6	133	87
11.568.0970	9.7	9.7	133	87
11.568.0980	9.8	9.8	133	87
11.568.0990	9.9	9.9	133	87
11.568.1000	10	10	133	87
11.568.1010	10.1	10.1	133	87
11.568.1020	10.2	10.2	133	87
11.568.1030	10.3	10.3	133	87
11.568.1040	10.4	10.4	133	87
11.568.1050	10.5	10.5	133	87
11.568.1100	11	11	142	94
11.568.1150	11.5	11.5	142	94
11.568.1200	12	12	151	101
11.568.1230	12.3	12.3	151	101
11.568.1250	12.5	12.5	151	101
11.568.1300	13	13	151	101
11.568.1350	13.5	13.5	160	108
11.568.1400	14	14	160	108

› 11.600 Phantom



NL HM-tip Spiraalboor
FR Foret à plaquette carbure
ES Broca con punta Metal Duro
DE Hartmetallbestückt Spiralbohrer
EN Carbide Tipped Twist drill

HM-TIP | DIN 338 | N | 120°

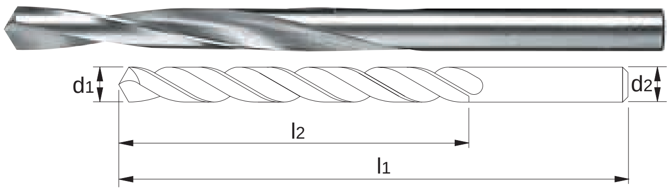
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK	Ni/Co	Ti
75-85	60-70	55-65	30-40	10-20	20-35	18-30	70-85	60-75	120-150	35-40	70-130	25-30	30-35

Ref.	d1	d2	l1	l2
11.600.0200	2	2	49	24
11.600.0210	2.1	2.1	49	24
11.600.0220	2.2	2.2	53	27
11.600.0230	2.3	2.3	53	27
11.600.0240	2.4	2.4	57	30
11.600.0250	2.5	2.5	57	30
11.600.0260	2.6	2.6	57	30
11.600.0270	2.7	2.7	61	33
11.600.0280	2.8	2.8	61	33
11.600.0290	2.9	2.9	61	33
11.600.0300	3	3	61	33
11.600.0310	3.1	3.1	65	36
11.600.0320	3.2	3.2	65	36
11.600.0330	3.3	3.3	65	36
11.600.0340	3.4	3.4	70	39
11.600.0350	3.5	3.5	70	39
11.600.0360	3.6	3.6	70	39
11.600.0370	3.7	3.7	70	39
11.600.0380	3.8	3.8	75	43
11.600.0390	3.9	3.9	75	43
11.600.0400	4	4	75	43
11.600.0410	4.1	4.1	75	43
11.600.0420	4.2	4.2	75	43
11.600.0430	4.3	4.3	80	47
11.600.0440	4.4	4.4	80	47
11.600.0450	4.5	4.5	80	47
11.600.0460	4.6	4.6	80	47
11.600.0470	4.7	4.7	80	47
11.600.0480	4.8	4.8	86	52
11.600.0490	4.9	4.9	86	52
11.600.0500	5	5	86	52
11.600.0510	5.1	5.1	86	52

Ref.	d1	d2	l1	l2
11.600.0520	5.2	5.2	86	52
11.600.0530	5.3	5.3	86	52
11.600.0540	5.4	5.4	93	57
11.600.0550	5.5	5.5	93	57
11.600.0560	5.6	5.6	93	57
11.600.0570	5.7	5.7	93	57
11.600.0580	5.8	5.8	93	57
11.600.0590	5.9	5.9	93	57
11.600.0600	6	6	93	57
11.600.0610	6.1	6.1	101	63
11.600.0620	6.2	6.2	101	63
11.600.0630	6.3	6.3	101	63
11.600.0635	6.35	6.35	101	63
11.600.0640	6.4	6.4	101	63
11.600.0650	6.5	6.5	101	63
11.600.0660	6.6	6.6	101	63
11.600.0670	6.7	6.7	101	63
11.600.0680	6.8	6.8	109	69
11.600.0690	6.9	6.9	109	69
11.600.0700	7	7	109	69
11.600.0710	7.1	7.1	109	69
11.600.0720	7.2	7.2	109	69
11.600.0730	7.3	7.3	109	69
11.600.0740	7.4	7.4	109	69
11.600.0750	7.5	7.5	109	69
11.600.0760	7.6	7.6	117	75
11.600.0770	7.7	7.7	117	75
11.600.0780	7.8	7.8	117	75
11.600.0790	7.9	7.9	117	75
11.600.0800	8	8	117	75
11.600.0810	8.1	8.1	117	75
11.600.0820	8.2	8.2	117	75

Ref.	d1	d2	l1	l2
11.600.0830	8.3	8.3	117	75
11.600.0840	8.4	8.4	117	75
11.600.0850	8.5	8.5	117	75
11.600.0860	8.6	8.6	125	81
11.600.0870	8.7	8.7	125	81
11.600.0880	8.8	8.8	125	81
11.600.0890	8.9	8.9	125	81
11.600.0900	9	9	125	81
11.600.0910	9.1	9.1	125	81
11.600.0920	9.2	9.2	125	81
11.600.0930	9.3	9.3	125	81
11.600.0940	9.4	9.4	125	81
11.600.0950	9.5	9.5	125	81
11.600.0960	9.6	9.6	133	87
11.600.0970	9.7	9.7	133	87
11.600.0980	9.8	9.8	133	87
11.600.0990	9.9	9.9	133	87
11.600.1000	10	10	133	87
11.600.1020	10.2	10.2	133	87
11.600.1050	10.5	10.5	133	87
11.600.1100	11	11	142	94
11.600.1150	11.5	11.5	142	94
11.600.1200	12	12	151	101
11.600.1250	12.5	12.5	151	101
11.600.1300	13	13	151	101
11.600.1350	13.5	13.5	160	108
11.600.1400	14	14	160	108
11.600.1450	14.5	14.5	169	114
11.600.1500	15	15	169	114
11.600.1550	15.5	15.5	178	120
11.600.1600	16	16	178	120

› 11.700 Phantom



NL HSS Spiraalboor type H, messing, brons en zink
FR Foret HSS type H, laiton, bronze et zinc
ES Broca HSS tipo H, latón, bronce y cinc
DE HSS Spiralbohrer Typ H, speziell für die Bearbeitung von Messing, Bronze und Zink
EN HSS Twist drill type H, brass, bronze and zinc

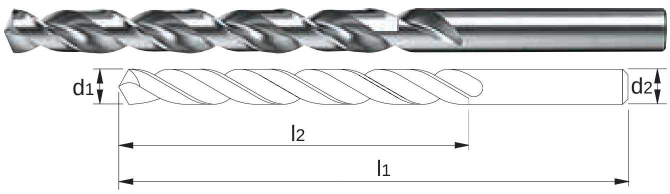
HSS | DIN 338 | H | 118°

N 43 Mg | N 51 Cu | N 61 PVC

40-50 F | 50-70 E | 18-28 E

Ref.	d1	d2	l1	l2
11.700.0100	1	1	34	12
11.700.0110	1.1	1.1	36	14
11.700.0120	1.2	1.2	38	16
11.700.0130	1.3	1.3	38	16
11.700.0140	1.4	1.4	40	18
11.700.0150	1.5	1.5	40	18
11.700.0160	1.6	1.6	43	20
11.700.0170	1.7	1.7	43	20
11.700.0180	1.8	1.8	46	22
11.700.0190	1.9	1.9	46	22
11.700.0200	2	2	49	24
11.700.0210	2.1	2.1	49	24
11.700.0220	2.2	2.2	53	27
11.700.0230	2.3	2.3	53	27
11.700.0240	2.4	2.4	57	30
11.700.0250	2.5	2.5	57	30
11.700.0260	2.6	2.6	57	30
11.700.0270	2.7	2.7	61	33
11.700.0280	2.8	2.8	61	33
11.700.0290	2.9	2.9	61	33
11.700.0300	3	3	61	33
11.700.0310	3.1	3.1	65	36
11.700.0320	3.2	3.2	65	36
11.700.0330	3.3	3.3	65	36
11.700.0340	3.4	3.4	70	39
11.700.0350	3.5	3.5	70	39
11.700.0360	3.6	3.6	70	39
11.700.0370	3.7	3.7	70	39
11.700.0380	3.8	3.8	75	43
11.700.0390	3.9	3.9	75	43
11.700.0400	4	4	75	43
11.700.0410	4.1	4.1	75	43
11.700.0420	4.2	4.2	75	43
11.700.0430	4.3	4.3	80	47
11.700.0440	4.4	4.4	80	47
11.700.0450	4.5	4.5	80	47
11.700.0460	4.6	4.6	80	47
11.700.0470	4.7	4.7	80	47
11.700.0480	4.8	4.8	86	52
11.700.0490	4.9	4.9	86	52
11.700.0500	5	5	86	52
11.700.0510	5.1	5.1	86	52
11.700.0520	5.2	5.2	86	52
11.700.0530	5.3	5.3	86	52
11.700.0540	5.4	5.4	93	57
11.700.0550	5.5	5.5	93	57
11.700.0560	5.6	5.6	93	57
11.700.0570	5.7	5.7	93	57
11.700.0580	5.8	5.8	93	57
11.700.0590	5.9	5.9	93	57
11.700.0600	6	6	93	57
11.700.0610	6.1	6.1	101	63
11.700.0620	6.2	6.2	101	63
11.700.0630	6.3	6.3	101	63
11.700.0640	6.4	6.4	101	63
11.700.0650	6.5	6.5	101	63
11.700.0660	6.6	6.6	101	63
11.700.0670	6.7	6.7	101	63
11.700.0680	6.8	6.8	109	69
11.700.0690	6.9	6.9	109	69
11.700.0700	7	7	109	69
11.700.0710	7.1	7.1	109	69
11.700.0720	7.2	7.2	109	69
11.700.0730	7.3	7.3	109	69
11.700.0740	7.4	7.4	109	69
11.700.0750	7.5	7.5	109	69
11.700.0760	7.6	7.6	117	75
11.700.0770	7.7	7.7	117	75
11.700.0780	7.8	7.8	117	75
11.700.0790	7.9	7.9	117	75
11.700.0800	8	8	117	75
11.700.0810	8.1	8.1	117	75
11.700.0820	8.2	8.2	117	75
11.700.0830	8.3	8.3	117	75
11.700.0840	8.4	8.4	117	75
11.700.0850	8.5	8.5	117	75
11.700.0860	8.6	8.6	125	81
11.700.0870	8.7	8.7	125	81
11.700.0880	8.8	8.8	125	81
11.700.0890	8.9	8.9	125	81
11.700.0900	9	9	125	81
11.700.0910	9.1	9.1	125	81
11.700.0920	9.2	9.2	125	81
11.700.0930	9.3	9.3	125	81
11.700.0940	9.4	9.4	125	81
11.700.0950	9.5	9.5	125	81
11.700.0960	9.6	9.6	133	87
11.700.0970	9.7	9.7	133	87
11.700.0980	9.8	9.8	133	87
11.700.0990	9.9	9.9	133	87
11.700.1000	10	10	133	87
11.700.1020	10.2	10.2	133	87
11.700.1050	10.5	10.5	133	87
11.700.1100	11	11	142	94
11.700.1150	11.5	11.5	142	94
11.700.1200	12	12	151	101
11.700.1250	12.5	12.5	151	101
11.700.1300	13	13	151	101

› 11.710 Phantom



NL HSS Spiraalboor type W, Aluminium
FR Foret HSS Type W, Aluminium
ES Broca HSS tipo W, Aluminio
DE HSS Spiralbohrer Typ W, Aluminium
EN HSS Twist drill type W, Aluminium

HSS | DIN 338 | W | 130° | ALU

N 41 Alu | N 42 Alu Si>10% | N 51 Cu | N 61 PVC

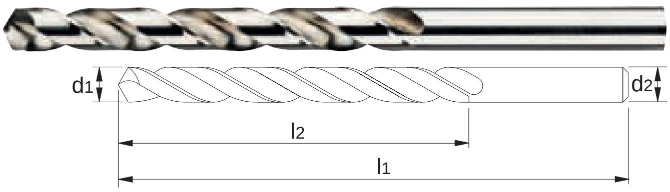
50-70 F | 40-60 F | 35-40 E | 18-28 E

Ref.	d1	d2	l1	l2
11.710.0100	1	1	34	12
11.710.0110	1.1	1.1	36	14
11.710.0120	1.2	1.2	38	16
11.710.0130	1.3	1.3	38	16
11.710.0140	1.4	1.4	40	18
11.710.0150	1.5	1.5	40	18
11.710.0160	1.6	1.6	43	20
11.710.0170	1.7	1.7	43	20
11.710.0180	1.8	1.8	46	22
11.710.0190	1.9	1.9	46	22
11.710.0200	2	2	49	24
11.710.0210	2.1	2.1	49	24
11.710.0220	2.2	2.2	53	27
11.710.0230	2.3	2.3	53	27
11.710.0240	2.4	2.4	57	30
11.710.0250	2.5	2.5	57	30
11.710.0260	2.6	2.6	57	30
11.710.0270	2.7	2.7	61	33
11.710.0280	2.8	2.8	61	33
11.710.0290	2.9	2.9	61	33
11.710.0300	3	3	61	33
11.710.0310	3.1	3.1	65	36
11.710.0320	3.2	3.2	65	36
11.710.0330	3.3	3.3	65	36
11.710.0340	3.4	3.4	70	39
11.710.0350	3.5	3.5	70	39
11.710.0360	3.6	3.6	70	39
11.710.0370	3.7	3.7	70	39
11.710.0380	3.8	3.8	75	43
11.710.0390	3.9	3.9	75	43
11.710.0400	4	4	75	43
11.710.0410	4.1	4.1	75	43
11.710.0420	4.2	4.2	75	43
11.710.0430	4.3	4.3	80	47
11.710.0440	4.4	4.4	80	47
11.710.0450	4.5	4.5	80	47
11.710.0460	4.6	4.6	80	47
11.710.0470	4.7	4.7	80	47
11.710.0480	4.8	4.8	86	52
11.710.0490	4.9	4.9	86	52
11.710.0500	5	5	86	52
11.710.0510	5.1	5.1	86	52
11.710.0520	5.2	5.2	86	52
11.710.0530	5.3	5.3	86	52
11.710.0540	5.4	5.4	93	57

› 11.710 Phantom

Ref.	d1	d2	l1	l2
11.710.0550	5.5	5.5	93	57
11.710.0560	5.6	5.6	93	57
11.710.0570	5.7	5.7	93	57
11.710.0580	5.8	5.8	93	57
11.710.0590	5.9	5.9	93	57
11.710.0600	6	6	93	57
11.710.0610	6.1	6.1	101	63
11.710.0620	6.2	6.2	101	63
11.710.0630	6.3	6.3	101	63
11.710.0640	6.4	6.4	101	63
11.710.0650	6.5	6.5	101	63
11.710.0660	6.6	6.6	101	63
11.710.0670	6.7	6.7	101	63
11.710.0680	6.8	6.8	109	69
11.710.0690	6.9	6.9	109	69
11.710.0700	7	7	109	69
11.710.0710	7.1	7.1	109	69
11.710.0720	7.2	7.2	109	69
11.710.0730	7.3	7.3	109	69
11.710.0740	7.4	7.4	109	69
11.710.0750	7.5	7.5	109	69
11.710.0760	7.6	7.6	117	75
11.710.0770	7.7	7.7	117	75
11.710.0780	7.8	7.8	117	75
11.710.0790	7.9	7.9	117	75
11.710.0800	8	8	117	75
11.710.0810	8.1	8.1	117	75
11.710.0820	8.2	8.2	117	75
11.710.0830	8.3	8.3	117	75
11.710.0840	8.4	8.4	117	75
11.710.0850	8.5	8.5	117	75
11.710.0860	8.6	8.6	125	81
11.710.0870	8.7	8.7	125	81
11.710.0880	8.8	8.8	125	81
11.710.0890	8.9	8.9	125	81
11.710.0900	9	9	125	81
11.710.0910	9.1	9.1	125	81
11.710.0920	9.2	9.2	125	81
11.710.0930	9.3	9.3	125	81
11.710.0940	9.4	9.4	125	81
11.710.0950	9.5	9.5	125	81
11.710.0960	9.6	9.6	133	87
11.710.0970	9.7	9.7	133	87
11.710.0980	9.8	9.8	133	87
11.710.0990	9.9	9.9	133	87
11.710.1000	10	10	133	87
11.710.1020	10.2	10.2	133	87
11.710.1050	10.5	10.5	133	87
11.710.1100	11	11	142	94
11.710.1150	11.5	11.5	142	94
11.710.1200	12	12	151	101
11.710.1250	12.5	12.5	151	101
11.710.1300	13	13	151	101
11.710.1400	14	14	160	108
11.710.1500	15	15	169	114
11.710.1600	16	16	178	120

› 11.760 Phantom



NL HSS-E Spiraalboor roestvaststaal
FR Foret HSS-E Inox
ES Broca HSS-E acero inoxidable
DE HSS-E Spiralbohrer rostfreien Stahl
EN HSS-E Twist drill stainless steel

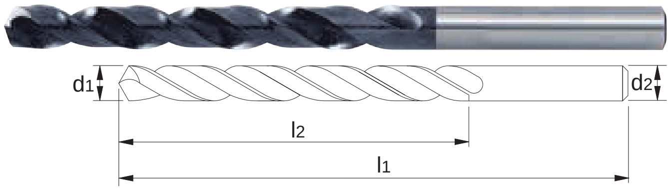
HSS-E | DIN 338 | >N | 130° | INOX

P 14	M 21	M 22	S 71	S 72
≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
12-16 E	14-18 D	12-16 C	6-8 A	6-10 B

Ref.	d1	d2	l1	l2
11.760.0100	1	1	34	12
11.760.0110	1.1	1.1	36	14
11.760.0120	1.2	1.2	38	16
11.760.0130	1.3	1.3	38	16
11.760.0140	1.4	1.4	40	18
11.760.0150	1.5	1.5	40	18
11.760.0160	1.6	1.6	43	20
11.760.0170	1.7	1.7	43	20
11.760.0180	1.8	1.8	46	22
11.760.0190	1.9	1.9	46	22
11.760.0200	2	2	49	24
11.760.0210	2.1	2.1	49	24
11.760.0220	2.2	2.2	53	27
11.760.0230	2.3	2.3	53	27
11.760.0240	2.4	2.4	57	30
11.760.0250	2.5	2.5	57	30
11.760.0260	2.6	2.6	57	30
11.760.0270	2.7	2.7	61	33
11.760.0280	2.8	2.8	61	33
11.760.0290	2.9	2.9	61	33
11.760.0300	3	3	61	33
11.760.0310	3.1	3.1	65	36
11.760.0320	3.2	3.2	65	36
11.760.0330	3.3	3.3	65	36
11.760.0340	3.4	3.4	70	39
11.760.0350	3.5	3.5	70	39
11.760.0360	3.6	3.6	70	39
11.760.0370	3.7	3.7	70	39
11.760.0380	3.8	3.8	75	43
11.760.0390	3.9	3.9	75	43
11.760.0400	4	4	75	43
11.760.0410	4.1	4.1	75	43
11.760.0420	4.2	4.2	75	43
11.760.0430	4.3	4.3	80	47
11.760.0440	4.4	4.4	80	47
11.760.0450	4.5	4.5	80	47
11.760.0460	4.6	4.6	80	47
11.760.0470	4.7	4.7	80	47
11.760.0480	4.8	4.8	86	52
11.760.0490	4.9	4.9	86	52
11.760.0500	5	5	86	52
11.760.0510	5.1	5.1	86	52
11.760.0520	5.2	5.2	86	52
11.760.0530	5.3	5.3	86	52
11.760.0540	5.4	5.4	93	57
11.760.0550	5.5	5.5	93	57
11.760.0560	5.6	5.6	93	57
11.760.0570	5.7	5.7	93	57
11.760.0580	5.8	5.8	93	57
11.760.0590	5.9	5.9	93	57
11.760.0600	6	6	93	57
11.760.0610	6.1	6.1	101	63
11.760.0620	6.2	6.2	101	63
11.760.0630	6.3	6.3	101	63
11.760.0640	6.4	6.4	101	63
11.760.0650	6.5	6.5	101	63
11.760.0660	6.6	6.6	101	63
11.760.0670	6.7	6.7	101	63
11.760.0680	6.8	6.8	109	69
11.760.0690	6.9	6.9	109	69
11.760.0700	7	7	109	69
11.760.0710	7.1	7.1	109	69
11.760.0720	7.2	7.2	109	69
11.760.0730	7.3	7.3	109	69
11.760.0740	7.4	7.4	109	69
11.760.0750	7.5	7.5	109	69
11.760.0760	7.6	7.6	117	75
11.760.0770	7.7	7.7	117	75
11.760.0780	7.8	7.8	117	75
11.760.0790	7.9	7.9	117	75
11.760.0800	8	8	117	75
11.760.0810	8.1	8.1	117	75
11.760.0820	8.2	8.2	117	75
11.760.0830	8.3	8.3	117	75
11.760.0840	8.4	8.4	117	75
11.760.0850	8.5	8.5	117	75
11.760.0860	8.6	8.6	125	81
11.760.0870	8.7	8.7	125	81
11.760.0880	8.8	8.8	125	81
11.760.0890	8.9	8.9	125	81
11.760.0900	9	9	125	81
11.760.0910	9.1	9.1	125	81
11.760.0920	9.2	9.2	125	81
11.760.0930	9.3	9.3	125	81
11.760.0940	9.4	9.4	125	81
11.760.0950	9.5	9.5	125	81
11.760.0960	9.6	9.6	133	87
11.760.0970	9.7	9.7	133	87
11.760.0980	9.8	9.8	133	87
11.760.0990	9.9	9.9	133	87
11.760.1000	10	10	133	87
11.760.1020	10.2	10.2	133	87
11.760.1040	10.4	10.4	133	87
11.760.1050	10.5	10.5	133	87
11.760.1070	10.7	10.7	142	94
11.760.1100	11	11	142	94
11.760.1120	11.2	11.2	142	94
11.760.1150	11.5	11.5	142	94
11.760.1200	12	12	151	101
11.760.1210	12.1	12.1	151	101
11.760.1230	12.3	12.3	151	101
11.760.1250	12.5	12.5	151	101
11.760.1300	13	13	151	101
11.760.1350	13.5	13.5	160	108
11.760.1400	14	14	160	108
11.760.1450	14.5	14.5	169	114
11.760.1500	15	15	169	114
11.760.1550	15.5	15.5	178	120
11.760.1600	16	16	178	120
11.760.1650	16.5	16.5	184	125
11.760.1700	17	17	184	125
11.760.1750	17.5	17.5	191	130
11.760.1800	18	18	191	130
11.760.1900	19	19	198	135
11.760.2000	20	20	205	140

› 11.764 Phantom

NL HSS-E Spiraalboor TiAlN, roestvaststaal
FR Foret HSS-E TiAlN, Inox
ES Broca HSS-E TiAlN, acero inoxidable
DE HSS-E Spiralbohrer TiAlN, rostfreien Stahl
EN HSS-E Twist drill TiAlN, stainless steel



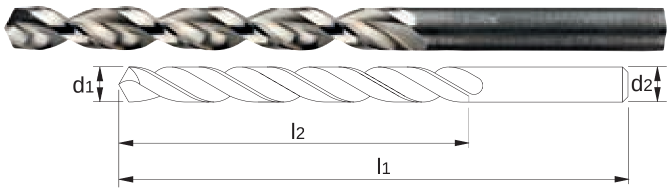
HSS-E | TiAlN | DIN 338 | >N | 130° | INOX

P 14	M 21	M 22	S 71	S 72
≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
28-34 E	17-22 D	16-20 C	8-10 A	12-16 B

Ref.	d1	d2	l1	l2
11.764.0100	1	1	34	12
11.764.0110	1.1	1.1	36	14
11.764.0120	1.2	1.2	38	16
11.764.0130	1.3	1.3	38	16
11.764.0140	1.4	1.4	40	18
11.764.0150	1.5	1.5	40	18
11.764.0160	1.6	1.6	43	20
11.764.0170	1.7	1.7	43	20
11.764.0180	1.8	1.8	46	22
11.764.0190	1.9	1.9	46	22
11.764.0200	2	2	49	24
11.764.0210	2.1	2.1	49	24
11.764.0220	2.2	2.2	53	27
11.764.0230	2.3	2.3	53	27
11.764.0240	2.4	2.4	57	30
11.764.0250	2.5	2.5	57	30
11.764.0260	2.6	2.6	57	30
11.764.0270	2.7	2.7	61	33
11.764.0280	2.8	2.8	61	33
11.764.0290	2.9	2.9	61	33
11.764.0300	3	3	61	33
11.764.0310	3.1	3.1	65	36
11.764.0320	3.2	3.2	65	36
11.764.0330	3.3	3.3	65	36
11.764.0340	3.4	3.4	70	39
11.764.0350	3.5	3.5	70	39
11.764.0360	3.6	3.6	70	39
11.764.0370	3.7	3.7	70	39
11.764.0380	3.8	3.8	75	43
11.764.0390	3.9	3.9	75	43
11.764.0400	4	4	75	43
11.764.0410	4.1	4.1	75	43
11.764.0420	4.2	4.2	75	43
11.764.0430	4.3	4.3	80	47
11.764.0440	4.4	4.4	80	47
11.764.0450	4.5	4.5	80	47
11.764.0460	4.6	4.6	80	47
11.764.0470	4.7	4.7	80	47
11.764.0480	4.8	4.8	86	52
11.764.0490	4.9	4.9	86	52
11.764.0500	5	5	86	52
11.764.0510	5.1	5.1	86	52
11.764.0520	5.2	5.2	86	52
11.764.0530	5.3	5.3	86	52
11.764.0540	5.4	5.4	93	57
11.764.0550	5.5	5.5	93	57
11.764.0560	5.6	5.6	93	57
11.764.0570	5.7	5.7	93	57
11.764.0580	5.8	5.8	93	57
11.764.0590	5.9	5.9	93	57
11.764.0600	6	6	93	57
11.764.0610	6.1	6.1	101	63
11.764.0620	6.2	6.2	101	63
11.764.0630	6.3	6.3	101	63
11.764.0640	6.4	6.4	101	63
11.764.0650	6.5	6.5	101	63
11.764.0660	6.6	6.6	101	63
11.764.0670	6.7	6.7	101	63
11.764.0680	6.8	6.8	109	69
11.764.0690	6.9	6.9	109	69
11.764.0700	7	7	109	69
11.764.0710	7.1	7.1	109	69
11.764.0720	7.2	7.2	109	69
11.764.0730	7.3	7.3	109	69
11.764.0740	7.4	7.4	109	69
11.764.0750	7.5	7.5	109	69
11.764.0760	7.6	7.6	117	75
11.764.0770	7.7	7.7	117	75
11.764.0780	7.8	7.8	117	75
11.764.0790	7.9	7.9	117	75
11.764.0800	8	8	117	75
11.764.0810	8.1	8.1	117	75
11.764.0820	8.2	8.2	117	75
11.764.0830	8.3	8.3	117	75
11.764.0840	8.4	8.4	117	75
11.764.0850	8.5	8.5	117	75
11.764.0860	8.6	8.6	125	81
11.764.0870	8.7	8.7	125	81
11.764.0880	8.8	8.8	125	81
11.764.0890	8.9	8.9	125	81
11.764.0900	9	9	125	81
11.764.0910	9.1	9.1	125	81
11.764.0920	9.2	9.2	125	81
11.764.0930	9.3	9.3	125	81
11.764.0940	9.4	9.4	125	81
11.764.0950	9.5	9.5	125	81
11.764.0960	9.6	9.6	133	87
11.764.0970	9.7	9.7	133	87
11.764.0980	9.8	9.8	133	87
11.764.0990	9.9	9.9	133	87
11.764.1000	10	10	133	87
11.764.1020	10.2	10.2	133	87
11.764.1030	10.3	10.3	133	87
11.764.1050	10.5	10.5	133	87
11.764.1100	11	11	142	94
11.764.1150	11.5	11.5	142	94
11.764.1200	12	12	151	101
11.764.1250	12.5	12.5	151	101
11.764.1300	13	13	151	101
11.764.1350	13.5	13.5	160	108
11.764.1400	14	14	160	108

› 11.770 Phantom

NL HSS-E Spiraalboor type TS
FR Foret HSS-E type TS
ES Broca HSS-E tipo TS
DE HSS-E Spiralbohrer Typ TS
EN HSS-E Twist drill type TS



HSS-E | DIN 338 | TS | 130°

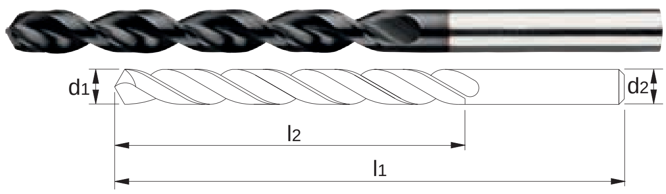
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	CuAlFe
35-40 E	20-40 E	30-40 D	12-16 C	14-18 E	12-16 D	30-35 E	28-30 E	70-80 F	10-15 D	25-30 D

Ref.	d1	d2	l1	l2
11.770.0200	2	2	49	24
11.770.0250	2.5	2.5	57	30
11.770.0300	3	3	61	33
11.770.0310	3.1	3.1	65	36
11.770.0320	3.2	3.2	65	36
11.770.0330	3.3	3.3	65	36
11.770.0340	3.4	3.4	70	39
11.770.0350	3.5	3.5	70	39
11.770.0360	3.6	3.6	70	39
11.770.0370	3.7	3.7	70	39
11.770.0380	3.8	3.8	75	43
11.770.0390	3.9	3.9	75	43
11.770.0400	4	4	75	43
11.770.0410	4.1	4.1	75	43
11.770.0420	4.2	4.2	75	43
11.770.0430	4.3	4.3	80	47
11.770.0440	4.4	4.4	80	47
11.770.0450	4.5	4.5	80	47
11.770.0460	4.6	4.6	80	47
11.770.0470	4.7	4.7	80	47
11.770.0480	4.8	4.8	86	52
11.770.0490	4.9	4.9	86	52
11.770.0500	5	5	86	52
11.770.0510	5.1	5.1	86	52
11.770.0520	5.2	5.2	86	52
11.770.0530	5.3	5.3	86	52
11.770.0540	5.4	5.4	93	57
11.770.0550	5.5	5.5	93	57
11.770.0560	5.6	5.6	93	57
11.770.0570	5.7	5.7	93	57
11.770.0580	5.8	5.8	93	57
11.770.0590	5.9	5.9	93	57
11.770.0600	6	6	93	57
11.770.0610	6.1	6.1	101	63
11.770.0620	6.2	6.2	101	63
11.770.0630	6.3	6.3	101	63
11.770.0640	6.4	6.4	101	63
11.770.0650	6.5	6.5	101	63
11.770.0660	6.6	6.6	101	63
11.770.0670	6.7	6.7	101	63
11.770.0680	6.8	6.8	109	69
11.770.0690	6.9	6.9	109	69
11.770.0700	7	7	109	69
11.770.0750	7.5	7.5	109	69
11.770.0780	7.8	7.8	117	75

› 11.770 Phantom

Ref.	d1	d2	l1	l2
11.770.0800	8	8	117	75
11.770.0850	8.5	8.5	117	75
11.770.0870	8.7	8.7	125	81
11.770.0880	8.8	8.8	125	81
11.770.0900	9	9	125	81
11.770.0950	9.5	9.5	125	81
11.770.0980	9.8	9.8	133	87
11.770.1000	10	10	133	87
11.770.1020	10.2	10.2	133	87
11.770.1050	10.5	10.5	133	87
11.770.1100	11	11	142	94
11.770.1150	11.5	11.5	142	94
11.770.1200	12	12	151	101
11.770.1250	12.5	12.5	151	101
11.770.1300	13	13	151	101
11.770.1400	14	14	160	108

› 11.774 Phantom



NL **HSS-E Spiraalboor type TS, TiAIN**
FR **Foret HSS-E type TS, TiAIN**
ES **Broca HSS-E tipo TS, TiAIN**
DE **HSS-E Spiralbohrer Typ TS, TiAIN**
EN **HSS-E Twist drill type TS, TiAIN**

HSS-E | TiAIN | DIN 338 | TS | 130°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe
38-42 E	22-48 E	30-40 D	20-34 D	17-22 E	16-20 D	40-45 F	30-36 F	72-85 G	15-20 E

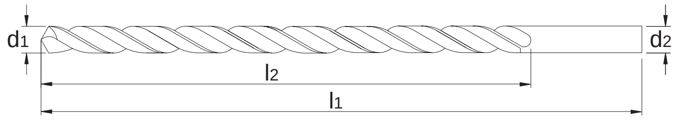
Ref.	d1	d2	l1	l2
11.774.0200	2	2	49	24
11.774.0250	2.5	2.5	57	30
11.774.0300	3	3	61	33
11.774.0320	3.2	3.2	65	36
11.774.0330	3.3	3.3	65	36
11.774.0350	3.5	3.5	70	39
11.774.0400	4	4	75	43
11.774.0420	4.2	4.2	75	43
11.774.0450	4.5	4.5	80	47
11.774.0500	5	5	86	52
11.774.0510	5.1	5.1	86	52
11.774.0550	5.5	5.5	93	57
11.774.0560	5.6	5.6	93	57
11.774.0580	5.8	5.8	93	57
11.774.0600	6	6	93	57
11.774.0650	6.5	6.5	101	63
11.774.0680	6.8	6.8	109	69
11.774.0690	6.9	6.9	109	69
11.774.0700	7	7	109	69
11.774.0750	7.5	7.5	109	69
11.774.0780	7.8	7.8	117	75
11.774.0800	8	8	117	75
11.774.0850	8.5	8.5	117	75
11.774.0860	8.6	8.6	125	81
11.774.0870	8.7	8.7	125	81
11.774.0900	9	9	125	81
11.774.0950	9.5	9.5	125	81
11.774.0980	9.8	9.8	133	87
11.774.1000	10	10	133	87
11.774.1020	10.2	10.2	133	87
11.774.1050	10.5	10.5	133	87
11.774.1100	11	11	142	94
11.774.1150	11.5	11.5	142	94
11.774.1200	12	12	151	101
11.774.1250	12.5	12.5	151	101
11.774.1300	13	13	151	101
11.774.1400	14	14	160	108
11.774.1900	19	19	198	135

NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

11.810 International Tools



NL ECO HSS Spiraalboor gewalst
FR Foret HSS ECO laminé
ES Broca HSS ECO laminada
DE ECO HSS Spiralbohrer Gewalzt
EN ECO HSS Twist drill roll-forged

HSS | DIN 340 | N | 118° | ECO

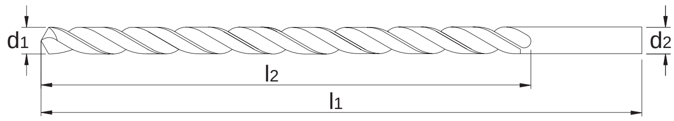
P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	d2	l1	l2
11.810.0200	2	2	85	56
11.810.0210	2.1	2.1	85	56
11.810.0220	2.2	2.2	90	59
11.810.0230	2.3	2.3	90	59
11.810.0240	2.4	2.4	95	62
11.810.0250	2.5	2.5	95	62
11.810.0260	2.6	2.6	95	62
11.810.0270	2.7	2.7	100	66
11.810.0280	2.8	2.8	100	66
11.810.0290	2.9	2.9	100	66
11.810.0300	3	3	100	66
11.810.0310	3.1	3.1	106	69
11.810.0320	3.2	3.2	106	69
11.810.0330	3.3	3.3	106	69
11.810.0340	3.4	3.4	112	73
11.810.0350	3.5	3.5	112	73
11.810.0360	3.6	3.6	112	73
11.810.0370	3.7	3.7	112	73
11.810.0380	3.8	3.8	119	78

Ref.	d1	d2	l1	l2
11.810.0390	3.9	3.9	119	78
11.810.0400	4	4	119	78
11.810.0410	4.1	4.1	119	78
11.810.0420	4.2	4.2	119	78
11.810.0430	4.3	4.3	126	82
11.810.0440	4.4	4.4	126	82
11.810.0450	4.5	4.5	126	82
11.810.0460	4.6	4.6	126	82
11.810.0470	4.7	4.7	126	82
11.810.0480	4.8	4.8	132	87
11.810.0490	4.9	4.9	132	87
11.810.0500	5	5	132	87
11.810.0510	5.1	5.1	132	87
11.810.0520	5.2	5.2	132	87
11.810.0530	5.3	5.3	132	87
11.810.0540	5.4	5.4	139	91
11.810.0550	5.5	5.5	139	91
11.810.0560	5.6	5.6	139	91
11.810.0570	5.7	5.7	139	91

Ref.	d1	d2	l1	l2
11.810.0580	5.8	5.8	139	91
11.810.0590	5.9	5.9	139	91
11.810.0600	6	6	139	91
11.810.0650	6.5	6.5	148	97
11.810.0680	6.8	6.8	156	102
11.810.0700	7	7	156	102
11.810.0750	7.5	7.5	156	102
11.810.0800	8	8	165	109
11.810.0850	8.5	8.5	165	109
11.810.0900	9	9	175	115
11.810.0950	9.5	9.5	175	115
11.810.1000	10	10	184	121
11.810.1050	10.5	10.5	184	121
11.810.1100	11	11	195	128
11.810.1150	11.5	11.5	195	128
11.810.1200	12	12	205	134
11.810.1250	12.5	12.5	205	134
11.810.1300	13	13	205	134

11.813 International Tools



NL ECO PRO HSS Spiraalboor
FR Foret HSS ECO PRO
ES Broca HSS ECO PRO
DE ECO PRO HSS Spiralbohrer
EN ECO PRO HSS Twist drill

HSS | DIN 340 | N | >3 | 118° | ECO PRO

P 11	P 12	P 13	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

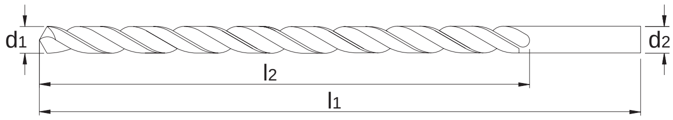
Ref.	d1	d2	l1	l2
11.813.0100	1	1	56	33
11.813.0110	1.1	1.1	60	37
11.813.0120	1.2	1.2	65	41
11.813.0130	1.3	1.3	65	41
11.813.0140	1.4	1.4	70	45
11.813.0150	1.5	1.5	70	45
11.813.0160	1.6	1.6	76	50
11.813.0170	1.7	1.7	76	50
11.813.0180	1.8	1.8	80	53
11.813.0190	1.9	1.9	80	53
11.813.0200	2	2	85	56
11.813.0210	2.1	2.1	85	56
11.813.0220	2.2	2.2	90	59
11.813.0230	2.3	2.3	90	59
11.813.0240	2.4	2.4	95	62
11.813.0250	2.5	2.5	95	62
11.813.0260	2.6	2.6	95	62
11.813.0270	2.7	2.7	100	66
11.813.0280	2.8	2.8	100	66
11.813.0290	2.9	2.9	100	66
11.813.0300	3	3	100	66
11.813.0310	3.1	3.1	106	69
11.813.0320	3.2	3.2	106	69

Ref.	d1	d2	l1	l2
11.813.0330	3.3	3.3	106	69
11.813.0340	3.4	3.4	112	73
11.813.0350	3.5	3.5	112	73
11.813.0360	3.6	3.6	112	73
11.813.0370	3.7	3.7	112	73
11.813.0380	3.8	3.8	119	78
11.813.0390	3.9	3.9	119	78
11.813.0400	4	4	119	78
11.813.0410	4.1	4.1	119	78
11.813.0420	4.2	4.2	119	78
11.813.0430	4.3	4.3	126	82
11.813.0440	4.4	4.4	126	82
11.813.0450	4.5	4.5	126	82
11.813.0460	4.6	4.6	126	82
11.813.0470	4.7	4.7	126	82
11.813.0480	4.8	4.8	132	87
11.813.0490	4.9	4.9	132	87
11.813.0500	5	5	132	87
11.813.0510	5.1	5.1	132	87
11.813.0520	5.2	5.2	132	87
11.813.0530	5.3	5.3	132	87
11.813.0540	5.4	5.4	139	91
11.813.0550	5.5	5.5	139	91

Ref.	d1	d2	l1	l2
11.813.0560	5.6	5.6	139	91
11.813.0570	5.7	5.7	139	91
11.813.0580	5.8	5.8	139	91
11.813.0590	5.9	5.9	139	91
11.813.0600	6	6	139	91
11.813.0650	6.5	6.5	148	97
11.813.0680	6.8	6.8	156	102
11.813.0700	7	7	156	102
11.813.0750	7.5	7.5	156	102
11.813.0800	8	8	165	109
11.813.0850	8.5	8.5	165	109
11.813.0900	9	9	175	115
11.813.0950	9.5	9.5	175	115
11.813.1000	10	10	184	121
11.813.1020	10.2	10.2	184	121
11.813.1050	10.5	10.5	184	121
11.813.1100	11	11	195	128
11.813.1150	11.5	11.5	195	128
11.813.1200	12	12	205	134
11.813.1250	12.5	12.5	205	134
11.813.1300	13	13	205	134

› 11.815 Phantom

NL **HSS Spiraalboor**
FR **Foret HSS**
ES **Broca HSS**
DE **HSS Spiralbohrer**
EN **HSS Twist drill**



HSS | OX. ≥ 2,5mm | DIN 340 | N | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

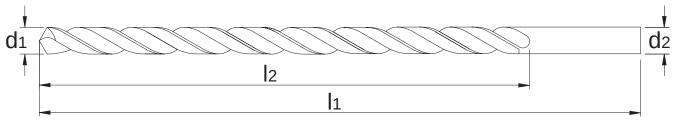
Ref.	d1	d2	l1	l2
11.815.0100	1	1	56	33
11.815.0110	1.1	1.1	60	37
11.815.0120	1.2	1.2	65	41
11.815.0130	1.3	1.3	65	41
11.815.0140	1.4	1.4	70	45
11.815.0150	1.5	1.5	70	45
11.815.0160	1.6	1.6	76	50
11.815.0170	1.7	1.7	76	50
11.815.0180	1.8	1.8	80	53
11.815.0190	1.9	1.9	80	53
11.815.0200	2	2	85	56
11.815.0210	2.1	2.1	85	56
11.815.0220	2.2	2.2	90	59
11.815.0230	2.3	2.3	90	59
11.815.0240	2.4	2.4	95	62
11.815.0250	2.5	2.5	95	62
11.815.0260	2.6	2.6	95	62
11.815.0270	2.7	2.7	100	66
11.815.0280	2.8	2.8	100	66
11.815.0290	2.9	2.9	100	66
11.815.0300	3	3	100	66
11.815.0310	3.1	3.1	106	69
11.815.0320	3.2	3.2	106	69
11.815.0330	3.3	3.3	106	69

Ref.	d1	d2	l1	l2
11.815.0340	3.4	3.4	112	73
11.815.0350	3.5	3.5	112	73
11.815.0360	3.6	3.6	112	73
11.815.0370	3.7	3.7	112	73
11.815.0380	3.8	3.8	119	78
11.815.0390	3.9	3.9	119	78
11.815.0400	4	4	119	78
11.815.0410	4.1	4.1	119	78
11.815.0420	4.2	4.2	119	78
11.815.0430	4.3	4.3	126	82
11.815.0440	4.4	4.4	126	82
11.815.0450	4.5	4.5	126	82
11.815.0460	4.6	4.6	126	82
11.815.0470	4.7	4.7	126	82
11.815.0480	4.8	4.8	132	87
11.815.0490	4.9	4.9	132	87
11.815.0500	5	5	132	87
11.815.0510	5.1	5.1	132	87
11.815.0520	5.2	5.2	132	87
11.815.0530	5.3	5.3	132	87
11.815.0540	5.4	5.4	139	91
11.815.0550	5.5	5.5	139	91
11.815.0560	5.6	5.6	139	91
11.815.0570	5.7	5.7	139	91

Ref.	d1	d2	l1	l2
11.815.0580	5.8	5.8	139	91
11.815.0590	5.9	5.9	139	91
11.815.0600	6	6	139	91
11.815.0620	6.2	6.2	148	97
11.815.0650	6.5	6.5	148	97
11.815.0680	6.8	6.8	156	102
11.815.0700	7	7	156	102
11.815.0750	7.5	7.5	156	102
11.815.0780	7.8	7.8	165	109
11.815.0800	8	8	165	109
11.815.0850	8.5	8.5	165	109
11.815.0880	8.8	8.8	175	115
11.815.0900	9	9	175	115
11.815.0950	9.5	9.5	175	115
11.815.0980	9.8	9.8	184	121
11.815.1000	10	10	184	121
11.815.1020	10.2	10.2	184	121
11.815.1050	10.5	10.5	184	121
11.815.1100	11	11	195	128
11.815.1150	11.5	11.5	195	128
11.815.1200	12	12	205	134
11.815.1250	12.5	12.5	205	134
11.815.1300	13	13	205	134

› 11.820 Phantom

NL **HSS-E Spiraalboor roestvaststaal**
FR **Foret HSS-E Inox**
ES **Broca HSS-E acero inoxidable**
DE **HSS-E Spiralbohrer rostfreien Stahl**
EN **HSS-E Twist drill stainless steel**



HSS-E | DIN 340 | >N | 130° | INOX

P 14	M 21	M 22	S 71	S 72
≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
12-16 E	14-18 D	12-16 C	6-8 A	6-10 B

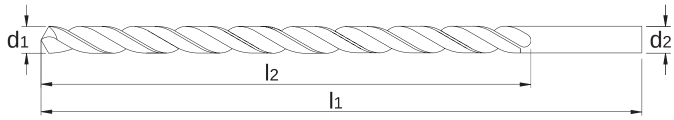
Ref.	d1	d2	l1	l2
11.820.0100	1	1	56	33
11.820.0150	1.5	1.5	70	45
11.820.0200	2	2	85	56
11.820.0250	2.5	2.5	95	62
11.820.0300	3	3	100	66
11.820.0310	3.1	3.1	106	69
11.820.0320	3.2	3.2	106	69
11.820.0350	3.5	3.5	112	73
11.820.0400	4	4	119	78
11.820.0410	4.1	4.1	119	78
11.820.0420	4.2	4.2	119	78
11.820.0450	4.5	4.5	126	82

Ref.	d1	d2	l1	l2
11.820.0500	5	5	132	87
11.820.0510	5.1	5.1	132	87
11.820.0520	5.2	5.2	132	87
11.820.0550	5.5	5.5	139	91
11.820.0600	6	6	139	91
11.820.0650	6.5	6.5	148	97
11.820.0670	6.7	6.7	148	97
11.820.0680	6.8	6.8	156	102
11.820.0700	7	7	156	102
11.820.0750	7.5	7.5	156	102
11.820.0800	8	8	165	109
11.820.0850	8.5	8.5	165	109

Ref.	d1	d2	l1	l2
11.820.0900	9	9	175	115
11.820.0950	9.5	9.5	175	115
11.820.1000	10	10	184	121
11.820.1050	10.5	10.5	184	121
11.820.1100	11	11	195	128
11.820.1110	11.1	11.1	195	128
11.820.1150	11.5	11.5	195	128
11.820.1200	12	12	205	134
11.820.1250	12.5	12.5	205	134
11.820.1300	13	13	205	134

› 11.840 Phantom

NL HM-tip Spiraalboor
FR Foret à plaquette carbure
ES Broca con punta Metal Duro
DE Hartmetallbestückt Spiralbohrer
EN Carbide Tipped Twist drill



HM-TIP | DIN 340 | N | 120°

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK	Ni/Co	Ti
75-85 *	60-70 *	55-65 *	30-40 *	10-20 *	20-35 *	18-30 *	70-85 *	60-75 *	120-150 *	35-40 *	70-130 *	25-30 *	30-35 *

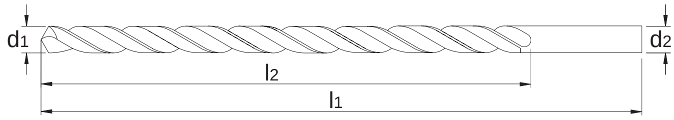
Ref.	d1	d2	l1	l2
11.840.0200	2	2	85	56
11.840.0250	2.5	2.5	95	62
11.840.0300	3	3	100	66
11.840.0310	3.1	3.1	106	69
11.840.0320	3.2	3.2	106	69
11.840.0330	3.3	3.3	106	69
11.840.0350	3.5	3.5	112	73
11.840.0370	3.7	3.7	112	73
11.840.0380	3.8	3.8	119	78
11.840.0400	4	4	119	78
11.840.0410	4.1	4.1	119	78
11.840.0420	4.2	4.2	119	78
11.840.0450	4.5	4.5	126	82
11.840.0480	4.8	4.8	132	87
11.840.0500	5	5	132	87

Ref.	d1	d2	l1	l2
11.840.0510	5.1	5.1	132	87
11.840.0520	5.2	5.2	132	87
11.840.0550	5.5	5.5	139	91
11.840.0560	5.6	5.6	139	91
11.840.0600	6	6	139	91
11.840.0610	6.1	6.1	148	97
11.840.0620	6.2	6.2	148	97
11.840.0630	6.3	6.3	148	97
11.840.0640	6.4	6.4	148	97
11.840.0650	6.5	6.5	148	97
11.840.0700	7	7	156	102
11.840.0750	7.5	7.5	156	102
11.840.0800	8	8	165	109
11.840.0850	8.5	8.5	165	109
11.840.0900	9	9	175	115

Ref.	d1	d2	l1	l2
11.840.0950	9.5	9.5	175	115
11.840.1000	10	10	184	121
11.840.1020	10.2	10.2	184	121
11.840.1050	10.5	10.5	184	121
11.840.1100	11	11	195	128
11.840.1150	11.5	11.5	195	128
11.840.1200	12	12	205	134
11.840.1250	12.5	12.5	205	134
11.840.1300	13	13	205	134
11.840.1400	14	14	214	140
11.840.1500	15	15	220	144
11.840.1600	16	16	227	149
11.840.1700	17	17	235	154
11.840.1800	18	18	241	158
11.840.2000	20	20	254	166

› 11.850 Phantom

NL HSS Spiraalboor type TS
FR Foret HSS type TS
ES Broca HSS tipo TS
DE HSS Spiralbohrer Typ TS
EN HSS Twist drill type TS



HSS | DIN 340 | TS | 130°

P 11	N 41	N 43	N 61
≤600 N/mm²	Alu	Mg	PVC
18-25 E	60-65 F	55-60 E	18-21 E

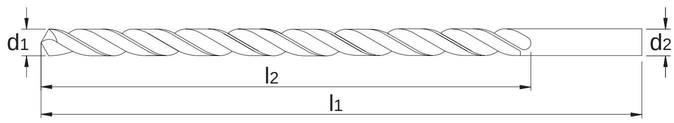
Ref.	d1	d2	l1	l2
11.850.0300	3	3	100	66
11.850.0350	3.5	3.5	112	73
11.850.0400	4	4	119	78
11.850.0450	4.5	4.5	126	82
11.850.0500	5	5	132	87

Ref.	d1	d2	l1	l2
11.850.0550	5.5	5.5	139	91
11.850.0600	6	6	139	91
11.850.0650	6.5	6.5	148	97
11.850.0700	7	7	156	102
11.850.0800	8	8	165	109

Ref.	d1	d2	l1	l2
11.850.0850	8.5	8.5	165	109
11.850.0900	9	9	175	115
11.850.1000	10	10	184	121
11.850.1050	10.5	10.5	184	121
11.850.1200	12	12	205	134

› 11.860 Phantom

NL HSS Spiraalboor type TS
FR Foret HSS type TS
ES Broca HSS tipo TS
DE HSS Spiralbohrer Typ TS
EN HSS Twist drill type TS



HSS | DIN 340 | TS | <3 | ≥3 | 130°

P 11	P 12	K 31	K 32	N 42	N 52	N 61
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	PVC
22-24 E	14-22 E	20-25 E	18-22 E	40-45 F	30-36 E	18-21 E

Ref.	d1	d2	l1	l2
11.860.0100	1	1	56	33
11.860.0150	1.5	1.5	70	45
11.860.0200	2	2	85	56
11.860.0210	2.1	2.1	85	56
11.860.0220	2.2	2.2	90	59
11.860.0230	2.3	2.3	90	59
11.860.0240	2.4	2.4	95	62
11.860.0250	2.5	2.5	95	62
11.860.0260	2.6	2.6	95	62

Ref.	d1	d2	l1	l2
11.860.0270	2.7	2.7	100	66
11.860.0280	2.8	2.8	100	66
11.860.0290	2.9	2.9	100	66
11.860.0300	3	3	100	66
11.860.0310	3.1	3.1	106	69
11.860.0320	3.2	3.2	106	69
11.860.0330	3.3	3.3	106	69
11.860.0340	3.4	3.4	112	73
11.860.0350	3.5	3.5	112	73

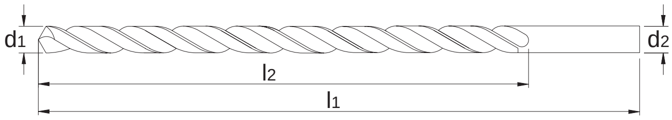
Ref.	d1	d2	l1	l2
11.860.0360	3.6	3.6	112	73
11.860.0370	3.7	3.7	112	73
11.860.0380	3.8	3.8	119	78
11.860.0390	3.9	3.9	119	78
11.860.0400	4	4	119	78
11.860.0410	4.1	4.1	119	78
11.860.0420	4.2	4.2	119	78
11.860.0430	4.3	4.3	126	82
11.860.0440	4.4	4.4	126	82

› 11.860 Phantom

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.860.0450	4.5	4.5	126	82	11.860.0620	6.2	6.2	148	97	11.860.0790	7.9	7.9	165	109
11.860.0460	4.6	4.6	126	82	11.860.0630	6.3	6.3	148	97	11.860.0800	8	8	165	109
11.860.0470	4.7	4.7	126	82	11.860.0640	6.4	6.4	148	97	11.860.0850	8.5	8.5	165	109
11.860.0480	4.8	4.8	132	87	11.860.0650	6.5	6.5	148	97	11.860.0870	8.7	8.7	175	115
11.860.0490	4.9	4.9	132	87	11.860.0660	6.6	6.6	148	97	11.860.0900	9	9	175	115
11.860.0500	5	5	132	87	11.860.0670	6.7	6.7	148	97	11.860.0950	9.5	9.5	175	115
11.860.0510	5.1	5.1	132	87	11.860.0680	6.8	6.8	156	102	11.860.1000	10	10	184	121
11.860.0520	5.2	5.2	132	87	11.860.0690	6.9	6.9	156	102	11.860.1020	10.2	10.2	184	121
11.860.0530	5.3	5.3	132	87	11.860.0700	7	7	156	102	11.860.1050	10.5	10.5	184	121
11.860.0540	5.4	5.4	139	91	11.860.0710	7.1	7.1	156	102	11.860.1100	11	11	195	128
11.860.0550	5.5	5.5	139	91	11.860.0720	7.2	7.2	156	102	11.860.1150	11.5	11.5	195	128
11.860.0560	5.6	5.6	139	91	11.860.0730	7.3	7.3	156	102	11.860.1200	12	12	205	134
11.860.0570	5.7	5.7	139	91	11.860.0740	7.4	7.4	156	102	11.860.1250	12.5	12.5	205	134
11.860.0580	5.8	5.8	139	91	11.860.0750	7.5	7.5	156	102	11.860.1300	13	13	205	134
11.860.0590	5.9	5.9	139	91	11.860.0760	7.6	7.6	165	109	11.860.1400	14	14	214	140
11.860.0600	6	6	139	91	11.860.0770	7.7	7.7	165	109	11.860.1500	15	15	220	144
11.860.0610	6.1	6.1	148	97	11.860.0780	7.8	7.8	165	109	11.860.1600	16	16	227	149

› 11.870 Phantom

NL HSS-E Spiraalboor type TS
FR Foret HSS-E type TS
ES Broca HSS-E tipo TS
DE HSS-E Spiralbohrer Typ TS
EN HSS-E Twist drill type TS



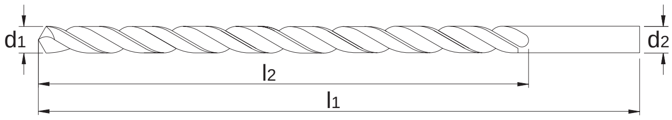
HSS-E | DIN 340 | TS | <3 | ≥3 | 130°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	CuAlFe
35-40 E	20-40 E	30-40 D	12-16 C	14-18 E	12-16 D	30-35 E	28-30 E	70-80 F	10-15 D	25-30 D

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.870.0200	2	2	85	56	11.870.0600	6	6	139	91	11.870.1000	10	10	184	121
11.870.0250	2.5	2.5	95	62	11.870.0650	6.5	6.5	148	97	11.870.1020	10.2	10.2	184	121
11.870.0300	3	3	100	66	11.870.0660	6.6	6.6	148	97	11.870.1050	10.5	10.5	184	121
11.870.0330	3.3	3.3	106	69	11.870.0680	6.8	6.8	156	102	11.870.1100	11	11	195	128
11.870.0350	3.5	3.5	112	73	11.870.0700	7	7	156	102	11.870.1150	11.5	11.5	195	128
11.870.0400	4	4	119	78	11.870.0750	7.5	7.5	156	102	11.870.1200	12	12	205	134
11.870.0420	4.2	4.2	119	78	11.870.0800	8	8	165	109	11.870.1250	12.5	12.5	205	134
11.870.0450	4.5	4.5	126	82	11.870.0850	8.5	8.5	165	109	11.870.1300	13	13	205	134
11.870.0500	5	5	132	87	11.870.0900	9	9	175	115					
11.870.0550	5.5	5.5	139	91	11.870.0950	9.5	9.5	175	115					

› 11.874 Phantom

NL HSS-E Spiraalboor type TS, TiAlN
FR Foret HSS-E type TS, TiAlN
ES Broca HSS-E tipo TS, TiAlN
DE HSS-E Spiralbohrer Typ TS, TiAlN
EN HSS-E Twist drill type TS, TiAlN

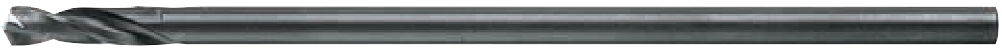


HSS-E | TiAlN | DIN 340 | TS | <3 | ≥3 | 130°

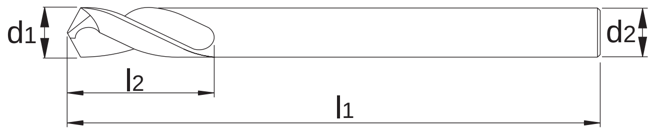
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe
38-42 E	22-48 E	30-40 D	20-34 D	17-22 E	16-20 D	40-45 F	30-36 F	72-85 G	15-20 E

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
11.874.0200	2	2	85	56	11.874.0550	5.5	5.5	139	91	11.874.0950	9.5	9.5	175	115
11.874.0250	2.5	2.5	95	62	11.874.0600	6	6	139	91	11.874.1000	10	10	184	121
11.874.0300	3	3	100	66	11.874.0650	6.5	6.5	148	97	11.874.1020	10.2	10.2	184	121
11.874.0330	3.3	3.3	106	69	11.874.0680	6.8	6.8	156	102	11.874.1050	10.5	10.5	184	121
11.874.0350	3.5	3.5	112	73	11.874.0700	7	7	156	102	11.874.1100	11	11	195	128
11.874.0400	4	4	119	78	11.874.0750	7.5	7.5	156	102	11.874.1150	11.5	11.5	195	128
11.874.0420	4.2	4.2	119	78	11.874.0800	8	8	165	109	11.874.1200	12	12	205	134
11.874.0450	4.5	4.5	126	82	11.874.0850	8.5	8.5	165	109					
11.874.0500	5	5	132	87	11.874.0900	9	9	175	115					

› 11.890 Phantom



- **NL** HSS Dakdekkersboor
- **FR** Foret pour couvreurs HSS
- **ES** Broca para tejados HSS
- **DE** HSS Blechschälbohrer
- **EN** HSS Roofer Drill



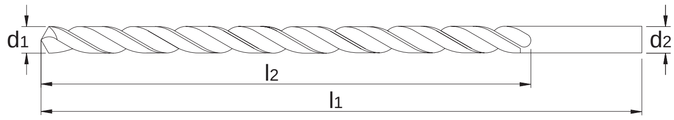
HSS | NORM | N | 135°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
11.890.4910	4.9	4.9	100	30
11.890.5007	5	5	70	30
11.890.5010	5	5	100	30
11.890.5015	5	5	150	30
11.890.5021	5	5	210	30
11.890.5110	5.1	5.1	100	30
11.890.5115	5.1	5.1	150	30
11.890.5121	5.1	5.1	210	30
11.890.5310	5.3	5.3	100	30
11.890.5315	5.3	5.3	150	30
11.890.5321	5.3	5.3	210	30
11.890.5510	5.5	5.5	100	30
11.890.5515	5.5	5.5	150	30
11.890.5710	5.7	5.7	100	30
11.890.5715	5.7	5.7	150	30
11.890.5721	5.7	5.7	210	30
11.890.5810	5.8	5.8	100	30
11.890.5815	5.8	5.8	150	30
11.890.5821	5.8	5.8	210	30

› 11.900 Phantom

- **NL** HSS Spiraalboor
- **FR** Foret HSS
- **ES** Broca HSS
- **DE** HSS Spiralbohrer
- **EN** HSS Twist drill



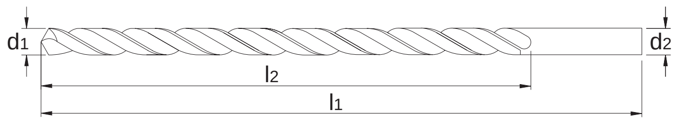
HSS | DIN 1869 | N | 118°

P 11	P 12	P 13	K 31	K 32	N 42	N 43	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu
20-25 D	15-25 D	8-20 C	18-22 E	14-20 E	35-40 F	50-55 E	20-28 D

Ref.	d1	d2	l1	l2
11.900.0201	2	2	125	85
11.900.0251	2.5	2.5	140	95
11.900.0301	3	3	150	100
11.900.0303	3	3	190	130
11.900.0351	3.5	3.5	165	115
11.900.0353	3.5	3.5	210	145
11.900.0401	4	4	175	120
11.900.0403	4	4	220	150
11.900.0451	4.5	4.5	185	125
11.900.0453	4.5	4.5	235	160
11.900.0481	4.8	4.8	195	135
11.900.0501	5	5	195	135
11.900.0503	5	5	245	170
11.900.0551	5.5	5.5	205	140
11.900.0553	5.5	5.5	260	180
11.900.0581	5.8	5.8	205	140
11.900.0601	6	6	205	140
11.900.0603	6	6	260	180
11.900.0651	6.5	6.5	215	150
11.900.0653	6.5	6.5	275	190
11.900.0701	7	7	225	155
11.900.0703	7	7	290	200
11.900.0751	7.5	7.5	225	155
11.900.0753	7.5	7.5	290	200
11.900.0801	8	8	240	165
11.900.0803	8	8	305	210
11.900.0851	8.5	8.5	240	165
11.900.0853	8.5	8.5	305	210
11.900.0901	9	9	250	175
11.900.0903	9	9	320	220
11.900.0951	9.5	9.5	250	175
11.900.0953	9.5	9.5	320	220
11.900.1001	10	10	265	185
11.900.1003	10	10	340	235
11.900.1101	11	11	280	195
11.900.1103	11	11	365	250
11.900.1201	12	12	295	205
11.900.1203	12	12	375	260

› 11.920 Phantom

- **NL** HSS Spiraalboor type TS
- **FR** Foret HSS type TS
- **ES** Broca HSS tipo TS
- **DE** HSS Spiralbohrer Typ TS
- **EN** HSS Twist drill type TS



HSS | DIN 1869 | TS | 130°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	PVC
20-25 D	16-25 D	16-22 C	6-10 C	18-22 E	14-20 E	35-40 F	50-55 E	20-28 D	18-30 E

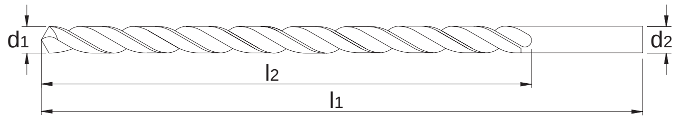
Ref.	d1	d2	l1	l2
11.920.0201	2	2	125	85
11.920.0251	2.5	2.5	140	95
11.920.0301	3	3	150	100
11.920.0303	3	3	190	130
11.920.0305	3	3	240	160
11.920.0351	3.5	3.5	165	115
11.920.0353	3.5	3.5	210	145
11.920.0355	3.5	3.5	265	180
11.920.0401	4	4	175	120
11.920.0403	4	4	220	150
11.920.0405	4	4	280	190
11.920.0407	4	4	400	300
11.920.0451	4.5	4.5	185	125
11.920.0453	4.5	4.5	235	160
11.920.0455	4.5	4.5	295	200
11.920.0501	5	5	195	135
11.920.0503	5	5	245	170
11.920.0505	5	5	315	210
11.920.0507	5	5	500	350
11.920.0551	5.5	5.5	205	140
11.920.0553	5.5	5.5	260	180
11.920.0557	5.5	5.5	330	225
11.920.0601	6	6	205	140
11.920.0603	6	6	260	180
11.920.0605	6	6	330	225
11.920.0607	6	6	600	400
11.920.0608	6	6	500	400

› 11.920 Phantom

Ref.	d1	d2	l1	l2
11.920.0651	6.5	6.5	215	150
11.920.0653	6.5	6.5	275	190
11.920.0655	6.5	6.5	350	235
11.920.0701	7	7	225	155
11.920.0703	7	7	290	200
11.920.0705	7	7	370	250
11.920.0751	7.5	7.5	225	155
11.920.0753	7.5	7.5	290	200
11.920.0755	7.5	7.5	370	250
11.920.0801	8	8	240	165
11.920.0803	8	8	305	210
11.920.0805	8	8	390	265
11.920.0809	8	8	500	400
11.920.0851	8.5	8.5	240	165
11.920.0853	8.5	8.5	305	210
11.920.0901	9	9	250	175
11.920.0903	9	9	320	220
11.920.0905	9	9	410	280
11.920.0951	9.5	9.5	250	175
11.920.0953	9.5	9.5	320	220
11.920.0955	9.5	9.5	410	280
11.920.1001	10	10	265	185
11.920.1003	10	10	340	235
11.920.1005	10	10	430	295
11.920.1008	10	10	600	500
11.920.1051	10.5	10.5	265	185
11.920.1053	10.5	10.5	340	235
11.920.1054	10.5	10.5	430	295
11.920.1101	11	11	280	195
11.920.1103	11	11	365	250
11.920.1104	11	11	455	310
11.920.1151	11.5	11.5	280	195
11.920.1153	11.5	11.5	365	250
11.920.1201	12	12	295	205
11.920.1203	12	12	375	260
11.920.1205	12	12	480	330
11.920.1206	12	12	600	500
11.920.1251	12.5	12.5	295	205
11.920.1253	12.5	12.5	375	260
11.920.1301	13	13	295	205
11.920.1303	13	13	375	260
11.920.1401	14	14	300	200

› 11.940 Phantom

NL **HSS-E Spiraalboor type TS**
FR **Foret HSS-E type TS**
ES **Broca HSS-E tipo TS**
DE **HSS-E Spiralbohrer Typ TS**
EN **HSS-E Twist drill type TS**



HSS-E | DIN 1869 | TS | 130°

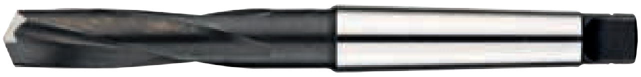
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	CuAlFe
30-35 D	20-30 D	10-20 C	8-10 B	8-10 C	6-10 B	25-30 D	20-25 D	40-50 F	20-30 D	25-30 C

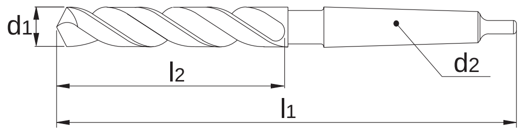
Ref.	d1	d2	l1	l2
11.940.0301	3	3	150	100
11.940.0303	3	3	190	130
11.940.0351	3.5	3.5	165	115
11.940.0353	3.5	3.5	210	145
11.940.0355	3.5	3.5	265	180
11.940.0401	4	4	175	120
11.940.0403	4	4	220	150
11.940.0405	4	4	280	190
11.940.0451	4.5	4.5	185	125
11.940.0453	4.5	4.5	235	160
11.940.0501	5	5	195	135
11.940.0503	5	5	245	170
11.940.0505	5	5	315	210
11.940.0551	5.5	5.5	205	140
11.940.0553	5.5	5.5	260	180
11.940.0601	6	6	205	140
11.940.0603	6	6	260	180
11.940.0605	6	6	330	225
11.940.0651	6.5	6.5	215	150
11.940.0653	6.5	6.5	275	190
11.940.0701	7	7	225	155
11.940.0703	7	7	290	200
11.940.0705	7	7	370	250
11.940.0751	7.5	7.5	225	155
11.940.0753	7.5	7.5	290	200
11.940.0801	8	8	240	165
11.940.0803	8	8	305	210
11.940.0805	8	8	390	265
11.940.0851	8.5	8.5	240	165
11.940.0853	8.5	8.5	305	210
11.940.0901	9	9	250	175
11.940.0903	9	9	320	220
11.940.0905	9	9	410	280
11.940.0951	9.5	9.5	250	175
11.940.0953	9.5	9.5	320	220
11.940.1001	10	10	265	185
11.940.1003	10	10	340	235
11.940.1005	10	10	430	295
11.940.1101	11	11	280	195
11.940.1103	11	11	365	250
11.940.1104	11	11	455	310
11.940.1201	12	12	295	205
11.940.1203	12	12	375	260
11.940.1205	12	12	480	330
11.940.1301	13	13	295	205
11.940.1303	13	13	375	260

NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me
www.phantom.eu

› 12.150 Phantom





NL HSS-E 8% Spiraalboor Hardox, MK
FR Foret HSS-E 8% Hardox, CM
ES Broca HSS-E 8% Hardox, CM
DE HSS-E 8% Spiralbohrer Hardox, MK
EN HSS-E 8% Twist drill Hardox, MT

HSS-E 8% | NORM | H | DIN 228-B | 130°

P 14 ≤1400 N/mm²

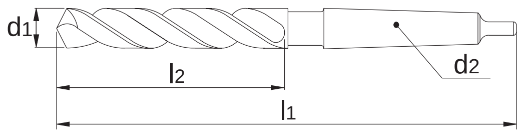
4-15 C

Ref.	d1	d2	l1	l2
12.150.1000	10	MK 1	131	50
12.150.1050	10.5	MK 1	131	50
12.150.1100	11	MK 1	136	55
12.150.1200	12	MK 2	157	59
12.150.1250	12.5	MK 2	157	59
12.150.1300	13	MK 2	157	59
12.150.1400	14	MK 2	161	63
12.150.1450	14.5	MK 2	164	66
12.150.1500	15	MK 2	164	66
12.150.1600	16	MK 2	168	70
12.150.1650	16.5	MK 2	171	73
12.150.1700	17	MK 2	171	73

Ref.	d1	d2	l1	l2
12.150.1750	17.5	MK 2	175	77
12.150.1800	18	MK 2	175	77
12.150.1850	18.5	MK 2	201	80
12.150.1900	19	MK 3	201	80
12.150.1950	19.5	MK 3	204	83
12.150.2000	20	MK 3	204	83
12.150.2100	21	MK 3	208	87
12.150.2200	22	MK 3	211	90
12.150.2300	23	MK 3	215	94
12.150.2400	24	MK 3	219	98
12.150.2500	25	MK 3	219	98
12.150.2600	26	MK 3	224	103

Ref.	d1	d2	l1	l2
12.150.2700	27	MK 4	256	107
12.150.2800	28	MK 4	256	107
12.150.2900	29	MK 4	261	112
12.150.3000	30	MK 4	261	112
12.150.3100	31	MK 4	266	117
12.150.3200	32	MK 4	271	122
12.150.3300	33	MK 4	271	122
12.150.3400	34	MK 4	277	128
12.150.3500	35	MK 4	277	128
12.150.3800	38	MK 4	288	139
12.150.4000	40	MK 4	288	139

› 12.400 International Tools



NL ECO HSS Spiraalboor gewalst, MK
FR Foret HSS ECO laminé, CM
ES Broca HSS ECO laminada, CM
DE ECO HSS Spiralbohrer Gewalzt, MK
EN ECO HSS Twist drill roll-forged, MT

HSS | DIN 345 | N | DIN 228-B | 118° | ECO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW

20-25 E | 20-25 E | 15-20 D | 15-20 E | 25-30 E

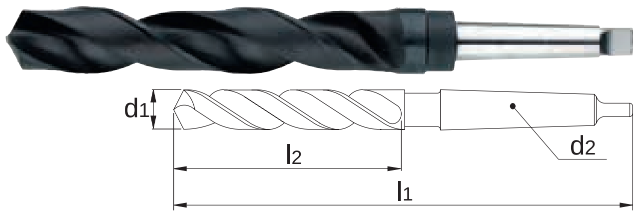
Ref.	d1	d2	l1	l2
12.400.0800	8	MK 1	156	75
12.400.0850	8.5	MK 1	156	75
12.400.0900	9	MK 1	162	81
12.400.0950	9.5	MK 1	162	81
12.400.0975	9.75	MK 1	168	87
12.400.1000	10	MK 1	168	87
12.400.1050	10.5	MK 1	168	87
12.400.1100	11	MK 1	175	94
12.400.1125	11.25	MK 1	175	94
12.400.1150	11.5	MK 1	175	94
12.400.1200	12	MK 1	182	101
12.400.1250	12.5	MK 1	182	101
12.400.1300	13	MK 1	182	101
12.400.1350	13.5	MK 1	189	108
12.400.1400	14	MK 1	189	108
12.400.1450	14.5	MK 2	212	114
12.400.1500	15	MK 2	212	114
12.400.1550	15.5	MK 2	218	120
12.400.1600	16	MK 2	218	120
12.400.1650	16.5	MK 2	223	125
12.400.1675	16.75	MK 2	223	125
12.400.1700	17	MK 2	223	125
12.400.1750	17.5	MK 2	228	130
12.400.1800	18	MK 2	228	130
12.400.1825	18.25	MK 2	233	135
12.400.1850	18.5	MK 2	233	135
12.400.1900	19	MK 2	233	135
12.400.1950	19.5	MK 2	238	140
12.400.2000	20	MK 2	238	140
12.400.2050	20.5	MK 2	243	145
12.400.2100	21	MK 2	243	145
12.400.2150	21.5	MK 2	248	150
12.400.2200	22	MK 2	248	150

Ref.	d1	d2	l1	l2
12.400.2225	22.25	MK 2	248	150
12.400.2250	22.5	MK 2	253	155
12.400.2300	23	MK 2	253	155
12.400.2325	23.25	MK 3	276	155
12.400.2350	23.5	MK 3	276	155
12.400.2400	24	MK 3	281	160
12.400.2450	24.5	MK 3	281	160
12.400.2500	25	MK 3	281	160
12.400.2550	25.5	MK 3	286	165
12.400.2575	25.75	MK 3	286	165
12.400.2600	26	MK 3	286	165
12.400.2625	26.25	MK 3	286	165
12.400.2650	26.5	MK 3	286	165
12.400.2700	27	MK 3	291	170
12.400.2750	27.5	MK 3	291	170
12.400.2800	28	MK 3	291	170
12.400.2850	28.5	MK 3	296	175
12.400.2875	28.75	MK 3	296	175
12.400.2900	29	MK 3	296	175
12.400.2925	29.25	MK 3	296	175
12.400.2950	29.5	MK 3	296	175
12.400.3000	30	MK 3	296	175
12.400.3050	30.5	MK 3	301	180
12.400.3100	31	MK 3	301	180
12.400.3125	31.25	MK 3	301	180
12.400.3150	31.5	MK 3	301	180
12.400.3200	32	MK 4	334	185
12.400.3250	32.5	MK 4	334	185
12.400.3300	33	MK 4	334	185
12.400.3350	33.5	MK 4	334	185
12.400.3400	34	MK 4	339	190
12.400.3450	34.5	MK 4	339	190
12.400.3500	35	MK 4	339	190

Ref.	d1	d2	l1	l2
12.400.3550	35.5	MK 4	339	190
12.400.3600	36	MK 4	344	195
12.400.3650	36.5	MK 4	344	195
12.400.3700	37	MK 4	344	195
12.400.3750	37.5	MK 4	344	195
12.400.3800	38	MK 4	349	200
12.400.3850	38.5	MK 4	349	200
12.400.3900	39	MK 4	349	200
12.400.3950	39.5	MK 4	349	200
12.400.4000	40	MK 4	349	200
12.400.4050	40.5	MK 4	354	205
12.400.4100	41	MK 4	354	205
12.400.4150	41.5	MK 4	354	205
12.400.4200	42	MK 4	354	205
12.400.4250	42.5	MK 4	354	205
12.400.4300	43	MK 4	359	210
12.400.4350	43.5	MK 4	359	210
12.400.4400	44	MK 4	359	210
12.400.4450	44.5	MK 4	359	210
12.400.4500	45	MK 4	359	210
12.400.4550	45.5	MK 4	364	215
12.400.4600	46	MK 4	364	215
12.400.4650	46.5	MK 4	364	215
12.400.4700	47	MK 4	364	215
12.400.4750	47.5	MK 4	364	215
12.400.4800	48	MK 4	369	220
12.400.4850	48.5	MK 4	369	220
12.400.4900	49	MK 4	369	220
12.400.4950	49.5	MK 4	369	220
12.400.5000	50	MK 4	369	220
12.400.5100	51	MK 5	412	225

› 12.420 International Tools

NL ECO HSS Spiraalboor gewalst, met verjongde MK
FR Foret HSS ECO laminé, à queue CM réduite
ES Broca HSS ECO laminada, con CM rebajado
DE ECO HSS Spiralbohrer Gewalzt, mit kleinerem MK
EN ECO HSS Twist drill roll-forged, reduced MT



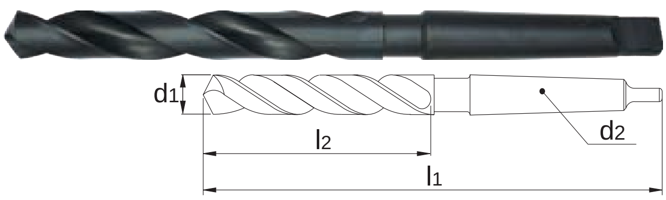
HSS | NORM | N | 118° | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
12.420.2400	24	MK 2	262	160	12.420.3200	32	MK 3	310	185	12.420.4000	40	MK 3	325	200
12.420.2500	25	MK 2	262	160	12.420.3300	33	MK 3	310	185	12.420.4100	41	MK 3	330	205
12.420.2600	26	MK 2	267	165	12.420.3400	34	MK 3	315	190	12.420.4400	44	MK 3	335	210
12.420.2700	27	MK 2	272	170	12.420.3500	35	MK 3	315	190	12.420.4500	45	MK 3	335	210
12.420.2800	28	MK 2	272	170	12.420.3600	36	MK 3	320	195	12.420.4600	46	MK 3	340	215
12.420.2900	29	MK 2	277	175	12.420.3700	37	MK 3	320	195	12.420.4700	47	MK 3	340	215
12.420.3000	30	MK 2	277	175	12.420.3800	38	MK 3	325	200	12.420.4800	48	MK 3	345	220
12.420.3100	31	MK 2	282	180	12.420.3900	39	MK 3	325	200	12.420.4900	49	MK 3	345	220

› 12.430 International Tools

NL ECO HSS Spiraalboor MK
FR Foret HSS ECO CM
ES Broca HSS ECO CM
DE ECO HSS Spiralbohrer MK
EN ECO HSS Twist drill MT



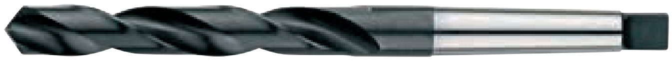
NIEUW / NOUVEAU / NUEVO / NEU

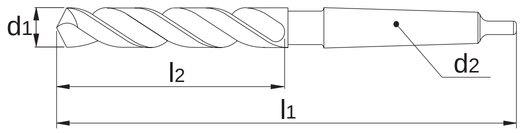
HSS | OX. | DIN 345 | N | DIN 228-B | ≥14 | 118° | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
12.430.0800	8	MK 1	156	75	12.430.2200	22	MK 2	248	150	12.430.3600	36	MK 4	344	195
12.430.0850	8.5	MK 1	156	75	12.430.2250	22.5	MK 2	253	155	12.430.3650	36.5	MK 4	344	195
12.430.0900	9	MK 1	162	81	12.430.2300	23	MK 2	253	155	12.430.3700	37	MK 4	344	195
12.430.0950	9.5	MK 1	162	81	12.430.2350	23.5	MK 3	276	155	12.430.3750	37.5	MK 4	344	195
12.430.1000	10	MK 1	168	87	12.430.2400	24	MK 3	281	160	12.430.3800	38	MK 4	349	200
12.430.1050	10.5	MK 1	168	87	12.430.2450	24.5	MK 3	281	160	12.430.3850	38.5	MK 4	349	200
12.430.1100	11	MK 1	175	94	12.430.2500	25	MK 3	281	160	12.430.3900	39	MK 4	349	200
12.430.1150	11.5	MK 1	175	94	12.430.2550	25.5	MK 3	286	165	12.430.3950	39.5	MK 4	349	200
12.430.1200	12	MK 1	182	101	12.430.2600	26	MK 3	286	165	12.430.4000	40	MK 4	349	200
12.430.1250	12.5	MK 1	182	101	12.430.2650	26.5	MK 3	286	165	12.430.4050	40.5	MK 4	354	205
12.430.1300	13	MK 1	182	101	12.430.2700	27	MK 3	291	170	12.430.4100	41	MK 4	354	205
12.430.1350	13.5	MK 1	189	108	12.430.2750	27.5	MK 3	291	170	12.430.4150	41.5	MK 4	354	205
12.430.1400	14	MK 1	189	108	12.430.2800	28	MK 3	291	170	12.430.4200	42	MK 4	354	205
12.430.1450	14.5	MK 2	212	114	12.430.2850	28.5	MK 3	296	175	12.430.4250	42.5	MK 4	354	205
12.430.1500	15	MK 2	212	114	12.430.2900	29	MK 3	296	175	12.430.4300	43	MK 4	359	210
12.430.1550	15.5	MK 2	218	120	12.430.2950	29.5	MK 3	296	175	12.430.4350	43.5	MK 4	359	210
12.430.1600	16	MK 2	218	120	12.430.3000	30	MK 3	296	175	12.430.4400	44	MK 4	359	210
12.430.1650	16.5	MK 2	223	125	12.430.3050	30.5	MK 3	301	180	12.430.4450	44.5	MK 4	359	210
12.430.1700	17	MK 2	223	125	12.430.3100	31	MK 3	301	180	12.430.4500	45	MK 4	359	210
12.430.1750	17.5	MK 2	228	130	12.430.3150	31.5	MK 3	301	180	12.430.4550	45.5	MK 4	364	215
12.430.1800	18	MK 2	228	130	12.430.3200	32	MK 4	334	185	12.430.4600	46	MK 4	364	215
12.430.1850	18.5	MK 2	233	135	12.430.3250	32.5	MK 4	334	185	12.430.4650	46.5	MK 4	364	215
12.430.1900	19	MK 2	233	135	12.430.3300	33	MK 4	334	185	12.430.4700	47	MK 4	364	215
12.430.1950	19.5	MK 2	238	140	12.430.3350	33.5	MK 4	334	185	12.430.4800	48	MK 4	369	220
12.430.2000	20	MK 2	238	140	12.430.3400	34	MK 4	339	190	12.430.4850	48.5	MK 4	369	220
12.430.2050	20.5	MK 2	243	145	12.430.3450	34.5	MK 4	339	190	12.430.4900	49	MK 4	369	220
12.430.2100	21	MK 2	243	145	12.430.3500	35	MK 4	339	190	12.430.4950	49.5	MK 4	369	220
12.430.2150	21.5	MK 2	248	150	12.430.3550	35.5	MK 4	339	190	12.430.5000	50	MK 4	369	220

› 12.440 Phantom





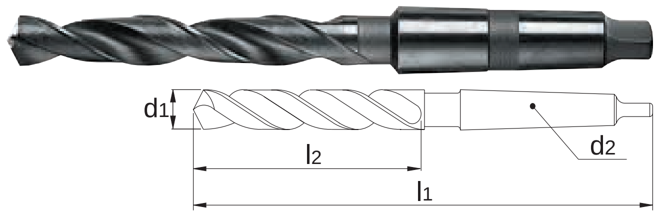
NL **HSS Spiraalboor MK**
FR **Foret HSS CM**
ES **Broca HSS CM**
DE **HSS Spiralbohrer MK**
EN **HSS Twist drill MT**

HSS | OX. | DIN 345 | N | DIN 228-B | ≥14 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
12.440.0325	3.25	MK 1	117	36
12.440.0375	3.75	MK 1	120	39
12.440.0475	4.75	MK 1	128	47
12.440.0500	5	MK 1	133	52
12.440.0550	5.5	MK 1	138	57
12.440.0600	6	MK 1	138	57
12.440.0625	6.25	MK 1	144	63
12.440.0650	6.5	MK 1	144	63
12.440.0675	6.75	MK 1	150	69
12.440.0700	7	MK 1	150	69
12.440.0725	7.25	MK 1	150	69
12.440.0750	7.5	MK 1	150	69
12.440.0775	7.75	MK 1	156	75
12.440.0800	8	MK 1	156	75
12.440.0825	8.25	MK 1	156	75
12.440.0850	8.5	MK 1	156	75
12.440.0875	8.75	MK 1	162	81
12.440.0900	9	MK 1	162	81
12.440.0925	9.25	MK 1	162	81
12.440.0950	9.5	MK 1	162	81
12.440.0975	9.75	MK 1	168	87
12.440.1000	10	MK 1	168	87
12.440.1025	10.25	MK 1	168	87
12.440.1050	10.5	MK 1	168	87
12.440.1075	10.75	MK 1	175	94
12.440.1100	11	MK 1	175	94
12.440.1125	11.25	MK 1	175	94
12.440.1150	11.5	MK 1	175	94
12.440.1175	11.75	MK 1	175	94
12.440.1200	12	MK 1	182	101
12.440.1225	12.25	MK 1	182	101
12.440.1250	12.5	MK 1	182	101
12.440.1275	12.75	MK 1	182	101
12.440.1300	13	MK 1	182	101
12.440.1325	13.25	MK 1	189	108
12.440.1350	13.5	MK 1	189	108
12.440.1375	13.75	MK 1	189	108
12.440.1400	14	MK 1	189	108
12.440.1425	14.25	MK 2	212	114
12.440.1450	14.5	MK 2	212	114
12.440.1475	14.75	MK 2	212	114
12.440.1500	15	MK 2	212	114
12.440.1525	15.25	MK 2	218	120
12.440.1550	15.5	MK 2	218	120
12.440.1575	15.75	MK 2	218	120
12.440.1600	16	MK 2	218	120
12.440.1625	16.25	MK 2	223	125
12.440.1650	16.5	MK 2	223	125
12.440.1675	16.75	MK 2	223	125
12.440.1700	17	MK 2	223	125
12.440.1725	17.25	MK 2	228	130
12.440.1750	17.5	MK 2	228	130
12.440.1775	17.75	MK 2	228	130
12.440.1800	18	MK 2	228	130
12.440.1825	18.25	MK 2	233	135
12.440.1850	18.5	MK 2	233	135
12.440.1875	18.75	MK 2	233	135
12.440.1900	19	MK 2	233	135
12.440.1925	19.25	MK 2	238	140
12.440.1950	19.5	MK 2	238	140
12.440.1975	19.75	MK 2	238	140
12.440.2000	20	MK 2	238	140
12.440.2025	20.25	MK 2	243	145
12.440.2050	20.5	MK 2	243	145
12.440.2075	20.75	MK 2	243	145
12.440.2100	21	MK 2	243	145
12.440.2125	21.25	MK 2	248	150
12.440.2150	21.5	MK 2	248	150
12.440.2175	21.75	MK 2	248	150
12.440.2200	22	MK 2	248	150
12.440.2225	22.25	MK 2	248	150
12.440.2250	22.5	MK 2	253	155
12.440.2275	22.75	MK 2	253	155
12.440.2300	23	MK 2	253	155
12.440.2325	23.25	MK 3	276	155
12.440.2350	23.5	MK 3	276	155
12.440.2375	23.75	MK 3	281	160
12.440.2400	24	MK 3	281	160
12.440.2425	24.25	MK 3	281	160
12.440.2450	24.5	MK 3	281	160
12.440.2475	24.75	MK 3	281	160
12.440.2500	25	MK 3	281	160
12.440.2525	25.25	MK 3	286	165
12.440.2550	25.5	MK 3	286	165
12.440.2575	25.75	MK 3	286	165
12.440.2600	26	MK 3	286	165
12.440.2625	26.25	MK 3	286	165
12.440.2650	26.5	MK 3	286	165
12.440.2675	26.75	MK 3	291	170
12.440.2700	27	MK 3	291	170
12.440.2725	27.25	MK 3	291	170
12.440.2750	27.5	MK 3	291	170
12.440.2775	27.75	MK 3	291	170
12.440.2800	28	MK 3	291	170
12.440.2825	28.25	MK 3	296	175
12.440.2850	28.5	MK 3	296	175
12.440.2875	28.75	MK 3	296	175
12.440.2900	29	MK 3	296	175
12.440.2925	29.25	MK 3	296	175
12.440.2950	29.5	MK 3	296	175
12.440.2975	29.75	MK 3	296	175
12.440.3000	30	MK 3	296	175
12.440.3025	30.25	MK 3	301	180
12.440.3050	30.5	MK 3	301	180
12.440.3075	30.75	MK 3	301	180
12.440.3100	31	MK 3	301	180
12.440.3125	31.25	MK 3	301	180
12.440.3150	31.5	MK 3	301	180
12.440.3200	32	MK 4	334	185
12.440.3250	32.5	MK 4	334	185
12.440.3300	33	MK 4	334	185
12.440.3350	33.5	MK 4	334	185
12.440.3400	34	MK 4	339	190
12.440.3450	34.5	MK 4	339	190
12.440.3500	35	MK 4	339	190
12.440.3550	35.5	MK 4	339	190
12.440.3600	36	MK 4	344	195
12.440.3650	36.5	MK 4	344	195
12.440.3700	37	MK 4	344	195
12.440.3750	37.5	MK 4	344	195
12.440.3800	38	MK 4	349	200
12.440.3850	38.5	MK 4	349	200
12.440.3900	39	MK 4	349	200
12.440.3950	39.5	MK 4	349	200
12.440.4000	40	MK 4	349	200
12.440.4050	40.5	MK 4	354	205
12.440.4100	41	MK 4	354	205
12.440.4150	41.5	MK 4	354	205
12.440.4200	42	MK 4	354	205
12.440.4250	42.5	MK 4	354	205
12.440.4300	43	MK 4	359	210
12.440.4350	43.5	MK 4	359	210
12.440.4400	44	MK 4	359	210
12.440.4450	44.5	MK 4	359	210
12.440.4500	45	MK 4	359	210
12.440.4550	45.5	MK 4	364	215
12.440.4600	46	MK 4	364	215
12.440.4650	46.5	MK 4	364	215
12.440.4700	47	MK 4	364	215
12.440.4750	47.5	MK 4	364	215
12.440.4800	48	MK 4	369	220
12.440.4850	48.5	MK 4	369	220
12.440.4900	49	MK 4	369	220
12.440.4950	49.5	MK 4	369	220
12.440.5000	50	MK 4	369	220
12.440.5100	51	MK 5	412	225
12.440.5200	52	MK 5	412	225
12.440.5300	53	MK 5	412	225
12.440.5400	54	MK 5	417	230
12.440.5500	55	MK 5	417	230
12.440.5600	56	MK 5	417	230
12.440.5700	57	MK 5	422	235
12.440.5800	58	MK 5	422	235
12.440.5900	59	MK 5	422	235
12.440.6000	60	MK 5	422	235

› 12.480 Phantom



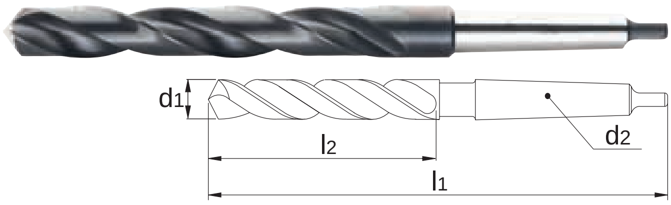
NL **HSS Spiraalboor met verzwaarde MK**
FR **Foret HSS à queue CM renforcée**
ES **Broca HSS con mango CM reforzado**
DE **HSS Spiralbohrer mit verstärktem MK**
EN **HSS Twist drill reinforced MT**

HSS | OX. | DIN 346 | N | DIN 228-B | ≥12 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
12.480.1100	11	MK 2	175	94	12.480.1800	18	MK 3	228	130	12.480.2300	23	MK 3	253	155
12.480.1200	12	MK 2	182	101	12.480.1900	19	MK 3	233	135	12.480.2600	26	MK 4	286	165
12.480.1300	13	MK 2	182	101	12.480.2000	20	MK 3	238	140	12.480.2700	27	MK 4	291	170
12.480.1400	14	MK 2	189	108	12.480.2100	21	MK 3	243	145	12.480.2800	28	MK 4	291	170
12.480.1700	17	MK 3	223	125	12.480.2200	22	MK 3	248	150	12.480.2900	29	MK 4	296	175

› 12.500 Phantom



NL **HSS-E Spiraalboor MK**
FR **Foret HSS-E CM**
ES **Broca HSS-E CM**
DE **HSS-E Spiralbohrer MK**
EN **HSS-E Twist drill MT**

HSS-E | OX. | DIN 345 | N | DIN 228-B | 118°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

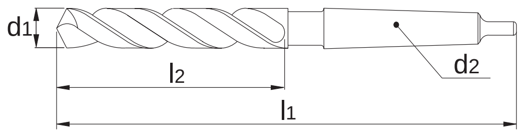
Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
12.500.0700	7	MK 1	150	69	12.500.1850	18.5	MK 2	233	135	12.500.2750	27.5	MK 3	291	170
12.500.0800	8	MK 1	156	75	12.500.1900	19	MK 2	233	135	12.500.2800	28	MK 3	291	170
12.500.0900	9	MK 1	162	81	12.500.1950	19.5	MK 2	238	140	12.500.2850	28.5	MK 3	296	175
12.500.1000	10	MK 1	168	87	12.500.2000	20	MK 2	238	140	12.500.2900	29	MK 3	296	175
12.500.1100	11	MK 1	175	94	12.500.2050	20.5	MK 2	243	145	12.500.2950	29.5	MK 3	296	175
12.500.1200	12	MK 1	182	101	12.500.2100	21	MK 2	243	145	12.500.3000	30	MK 3	296	175
12.500.1250	12.5	MK 1	182	101	12.500.2150	21.5	MK 2	248	150	12.500.3100	31	MK 3	301	180
12.500.1300	13	MK 1	182	101	12.500.2200	22	MK 2	248	150	12.500.3200	32	MK 4	334	185
12.500.1350	13.5	MK 1	189	108	12.500.2250	22.5	MK 2	253	155	12.500.3300	33	MK 4	334	185
12.500.1400	14	MK 1	189	108	12.500.2300	23	MK 2	253	155	12.500.3400	34	MK 4	339	190
12.500.1450	14.5	MK 2	212	114	12.500.2350	23.5	MK 3	276	155	12.500.3500	35	MK 4	339	190
12.500.1500	15	MK 2	212	114	12.500.2400	24	MK 3	281	160	12.500.3600	36	MK 4	344	195
12.500.1550	15.5	MK 2	218	120	12.500.2450	24.5	MK 3	281	160	12.500.3700	37	MK 4	344	195
12.500.1600	16	MK 2	218	120	12.500.2500	25	MK 3	281	160	12.500.3800	38	MK 4	349	200
12.500.1650	16.5	MK 2	223	125	12.500.2550	25.5	MK 3	286	165	12.500.3900	39	MK 4	349	200
12.500.1700	17	MK 2	223	125	12.500.2600	26	MK 3	286	165	12.500.4000	40	MK 4	349	200
12.500.1750	17.5	MK 2	228	130	12.500.2650	26.5	MK 3	286	165					
12.500.1800	18	MK 2	228	130	12.500.2700	27	MK 3	291	170					

NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

Watch me

www.phantom.eu

› 12.520 Phantom



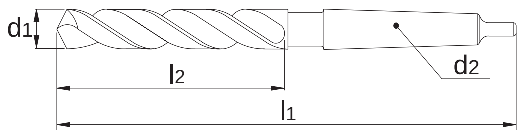
NL HSS-E Spiraalboor type TS, MK
FR Foret HSS-E type TS, CM
ES Broca HSS-E tipo TS, CM
DE HSS-E Spiralbohrer Typ TS, MK
EN HSS-E Twist drill type TS, MT

HSS-E | OX. | DIN 345 | TS | DIN 228-B | 130°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	N 61 PVC
35-40 E	20-40 E	16-35 D	12-16 C	14-18 D	12-16 C	18-22 E	14-20 E	35-40 F	50-55 E	20-28 D	18-30 E

Ref.	d1	d2	l1	l2
12.520.1000	10	MK 1	168	87
12.520.1050	10.5	MK 1	168	87
12.520.1100	11	MK 1	175	94
12.520.1150	11.5	MK 1	175	94
12.520.1200	12	MK 1	182	101
12.520.1250	12.5	MK 1	182	101
12.520.1300	13	MK 1	182	101
12.520.1350	13.5	MK 1	189	108
12.520.1400	14	MK 1	189	108
12.520.1450	14.5	MK 2	212	114
12.520.1500	15	MK 2	212	114
12.520.1550	15.5	MK 2	218	120
12.520.1600	16	MK 2	218	120
12.520.1650	16.5	MK 2	223	125
12.520.1700	17	MK 2	223	125
12.520.1750	17.5	MK 2	228	130
12.520.1800	18	MK 2	228	130
12.520.1850	18.5	MK 2	233	135
12.520.1900	19	MK 2	233	135
12.520.2000	20	MK 2	238	140
12.520.2050	20.5	MK 2	243	145
12.520.2100	21	MK 2	243	145
12.520.2200	22	MK 2	248	150
12.520.2250	22.5	MK 2	253	155
12.520.2300	23	MK 2	253	155
12.520.2400	24	MK 3	281	160
12.520.2500	25	MK 3	281	160

› 12.600 Phantom



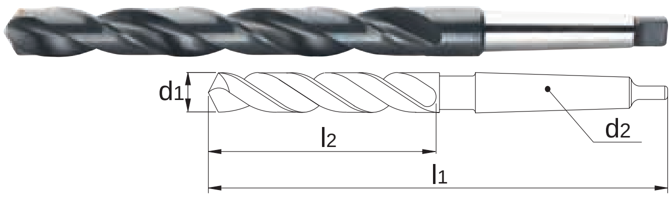
NL HM-tip Spiraalboor MK
FR Foret à plaquette carbure CM
ES Broca con punta Metal Duro CM
DE Hartmetallbestückt Spiralbohrer MK
EN Carbide Tipped Twist drill MT

HM-TIP | DIN 345 | N | DIN 228-B | 120°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 52 CuAlFe	N 62 GFK/CFK	S 71 Ni/Co	S 72 Ti
75-85 *	60-70 *	55-65 *	30-40 *	10-20 *	20-35 *	18-30 *	70-85 *	60-75 *	120-150 *	35-40 *	70-130 *	25-30 *	30-35 *

Ref.	d1	d2	l1	l2
12.600.1000	10	MK 1	168	87
12.600.1050	10.5	MK 1	168	87
12.600.1100	11	MK 1	175	94
12.600.1150	11.5	MK 1	175	94
12.600.1200	12	MK 1	182	101
12.600.1250	12.5	MK 1	182	101
12.600.1300	13	MK 1	182	101
12.600.1350	13.5	MK 1	189	108
12.600.1400	14	MK 1	189	108
12.600.1450	14.5	MK 2	212	114
12.600.1500	15	MK 2	212	114
12.600.1550	15.5	MK 2	218	120
12.600.1600	16	MK 2	218	120
12.600.1650	16.5	MK 2	223	125
12.600.1700	17	MK 2	223	125
12.600.1750	17.5	MK 2	228	130
12.600.1800	18	MK 2	228	130
12.600.1850	18.5	MK 2	233	135
12.600.1900	19	MK 2	233	135
12.600.1950	19.5	MK 2	238	140
12.600.2000	20	MK 2	238	140
12.600.2050	20.5	MK 2	243	145
12.600.2100	21	MK 2	243	145
12.600.2150	21.5	MK 2	248	150
12.600.2200	22	MK 2	248	150
12.600.2250	22.5	MK 2	253	155
12.600.2300	23	MK 2	253	155
12.600.2350	23.5	MK 3	276	155
12.600.2400	24	MK 3	281	160
12.600.2450	24.5	MK 3	281	160
12.600.2500	25	MK 3	281	160
12.600.2550	25.5	MK 3	286	165
12.600.2650	26.5	MK 3	286	165
12.600.2700	27	MK 3	291	170
12.600.2750	27.5	MK 3	291	170
12.600.2900	29	MK 3	296	175
12.600.2950	29.5	MK 3	296	175
12.600.3300	33	MK 4	334	185
12.600.3400	34	MK 4	339	190
12.600.3600	36	MK 4	344	195
12.600.3700	37	MK 4	344	195
12.600.3900	39	MK 4	349	200
12.600.4000	40	MK 4	349	200

12.800 Phantom



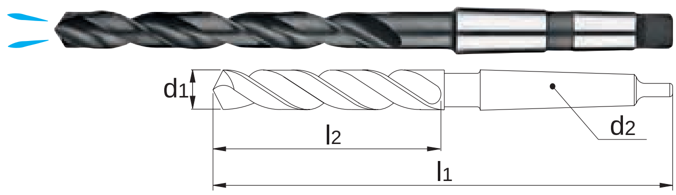
NL **HSS Spiraalboor MK**
FR **Foret HSS CM**
ES **Broca HSS CM**
DE **HSS Spiralbohrer MK**
EN **HSS Twist drill MT**

HSS | OX. | DIN 341 | N | DIN 228-B | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
12.800.1000	10	MK 1	197	116
12.800.1050	10.5	MK 1	197	116
12.800.1100	11	MK 1	206	125
12.800.1150	11.5	MK 1	206	125
12.800.1200	12	MK 1	215	134
12.800.1250	12.5	MK 1	215	134
12.800.1300	13	MK 1	215	134
12.800.1350	13.5	MK 1	223	142
12.800.1400	14	MK 1	223	142
12.800.1450	14.5	MK 2	245	147
12.800.1500	15	MK 2	245	147
12.800.1550	15.5	MK 2	251	153
12.800.1600	16	MK 2	251	153
12.800.1650	16.5	MK 2	257	159
12.800.1700	17	MK 2	257	159
12.800.1750	17.5	MK 2	263	165
12.800.1800	18	MK 2	263	165
12.800.1850	18.5	MK 2	269	171
12.800.1900	19	MK 2	269	171
12.800.1950	19.5	MK 2	275	177
12.800.2000	20	MK 2	275	177
12.800.2050	20.5	MK 2	282	184
12.800.2100	21	MK 2	282	184
12.800.2150	21.5	MK 2	289	191
12.800.2200	22	MK 2	289	191
12.800.2250	22.5	MK 2	296	198
12.800.2300	23	MK 2	296	198
12.800.2350	23.5	MK 3	319	198
12.800.2400	24	MK 3	327	206
12.800.2500	25	MK 3	327	206
12.800.2600	26	MK 3	335	214
12.800.2700	27	MK 3	343	222
12.800.2800	28	MK 3	343	222
12.800.2900	29	MK 3	351	230
12.800.3000	30	MK 3	351	230
12.800.3100	31	MK 3	360	239
12.800.3200	32	MK 4	397	248
12.800.3300	33	MK 4	397	248
12.800.3400	34	MK 4	406	257
12.800.3500	35	MK 4	406	257
12.800.3600	36	MK 4	416	267
12.800.3700	37	MK 4	416	267
12.800.3800	38	MK 4	426	277
12.800.3900	39	MK 4	426	277
12.800.4000	40	MK 4	426	277

12.840 Phantom



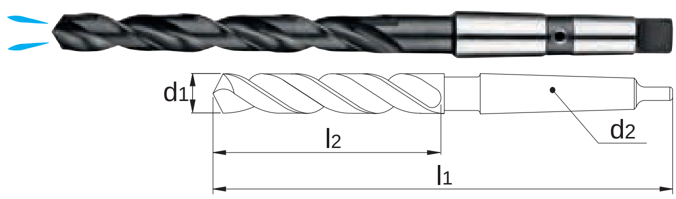
NL **HSS Spiraalboor met koelkanaal, axiaal, MK**
FR **Foret HSS à trou d´huile, axial, CM**
ES **Broca HSS con canal de refrigeración, axial, CM**
DE **HSS Spiralbohrer mit Innenkühlung, axial, MK**
EN **HSS Twist drill with coolant holes, axial, MT**

HSS | OX. | NORM | N | DIN 228-B | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
12.840.1000	10	MK 2	233	116
12.840.1100	11	MK 2	242	125
12.840.1200	12	MK 2	251	134
12.840.1300	13	MK 2	251	134
12.840.1400	14	MK 2	259	142
12.840.1500	15	MK 2	264	147
12.840.1600	16	MK 2	270	153
12.840.1800	18	MK 2	282	165
12.840.2000	20	MK 3	313	177
12.840.2200	22	MK 3	327	191
12.840.2400	24	MK 3	342	206
12.840.2500	25	MK 3	342	206
12.840.2600	26	MK 3	350	214
12.840.2800	28	MK 4	385	222
12.840.3000	30	MK 4	393	230

12.860 Phantom



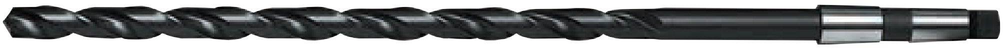
NL **HSS Spiraalboor met koelkanaal, radiaal, MK**
FR **Foret HSS à trou d´huile, radial, CM**
ES **Broca HSS con canal de refrigeración, radial, CM**
DE **HSS Spiralbohrer mit Innenkühlung, radial, MK**
EN **HSS Twist drill with coolant holes, radial, MT**

HSS | OX. | NORM | N | DIN 228-BK | 118°

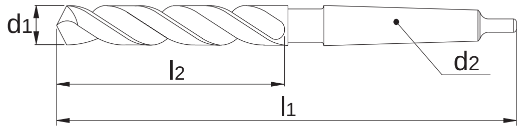
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
12.860.1000	10	MK 2	233	116
12.860.1100	11	MK 2	242	125
12.860.1200	12	MK 2	251	134
12.860.1300	13	MK 2	251	134
12.860.1400	14	MK 2	259	142
12.860.1500	15	MK 2	264	147
12.860.1600	16	MK 2	270	153
12.860.1800	18	MK 2	282	165
12.860.2000	20	MK 3	313	177
12.860.2200	22	MK 3	327	191
12.860.2400	24	MK 3	342	206
12.860.2500	25	MK 3	342	206
12.860.2600	26	MK 3	350	214
12.860.2800	28	MK 4	385	222
12.860.3000	30	MK 4	393	230

› 12.900 Phantom



NL HSS Spiraalboor MK
FR Foret HSS CM
ES Broca HSS CM
DE HSS Spiralbohrer MK
EN HSS Twist drill MT



HSS | OX. | DIN 1870 | N | DIN 228-B | 118°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

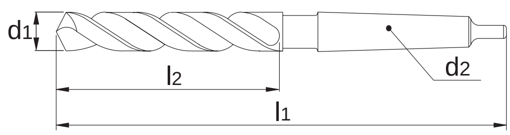
Ref.	d1	d2	l1	l2
12.900.1001	10	MK 1	285	185
12.900.1003	10	MK 1	360	235
12.900.1051	10.5	MK 1	285	185
12.900.1053	10.5	MK 1	360	235
12.900.1101	11	MK 1	300	195
12.900.1103	11	MK 1	375	250
12.900.1151	11.5	MK 1	300	195
12.900.1201	12	MK 1	310	205
12.900.1203	12	MK 1	395	260
12.900.1251	12.5	MK 1	310	205
12.900.1253	12.5	MK 1	395	260
12.900.1301	13	MK 1	310	205
12.900.1303	13	MK 1	395	260
12.900.1351	13.5	MK 1	325	220
12.900.1353	13.5	MK 1	410	275
12.900.1401	14	MK 1	325	220
12.900.1403	14	MK 1	410	275
12.900.1451	14.5	MK 2	340	220
12.900.1453	14.5	MK 2	425	275
12.900.1501	15	MK 2	340	220
12.900.1503	15	MK 2	425	275
12.900.1551	15.5	MK 2	355	230
12.900.1553	15.5	MK 2	445	295
12.900.1601	16	MK 2	355	230

Ref.	d1	d2	l1	l2
12.900.1603	16	MK 2	445	295
12.900.1651	16.5	MK 2	355	230
12.900.1653	16.5	MK 2	445	295
12.900.1701	17	MK 2	355	230
12.900.1703	17	MK 2	445	295
12.900.1751	17.5	MK 2	370	245
12.900.1753	17.5	MK 2	465	310
12.900.1801	18	MK 2	370	245
12.900.1803	18	MK 2	465	310
12.900.1851	18.5	MK 2	370	245
12.900.1853	18.5	MK 2	465	310
12.900.1901	19	MK 2	370	245
12.900.1903	19	MK 2	465	310
12.900.1951	19.5	MK 2	385	260
12.900.1953	19.5	MK 2	490	325
12.900.2001	20	MK 2	385	260
12.900.2003	20	MK 2	490	325
12.900.2051	20.5	MK 2	385	260
12.900.2053	20.5	MK 2	490	325
12.900.2101	21	MK 2	385	260
12.900.2103	21	MK 2	490	325
12.900.2201	22	MK 2	405	270
12.900.2203	22	MK 2	515	345
12.900.2301	23	MK 2	405	270

Ref.	d1	d2	l1	l2
12.900.2303	23	MK 2	515	345
12.900.2401	24	MK 3	440	290
12.900.2403	24	MK 3	555	365
12.900.2501	25	MK 3	440	290
12.900.2503	25	MK 3	555	365
12.900.2601	26	MK 3	440	290
12.900.2603	26	MK 3	555	365
12.900.2701	27	MK 3	460	305
12.900.2801	28	MK 3	460	305
12.900.2803	28	MK 3	580	385
12.900.2901	29	MK 3	460	305
12.900.3001	30	MK 3	460	305
12.900.3003	30	MK 3	580	385
12.900.3201	32	MK 4	505	320
12.900.3203	32	MK 4	635	410
12.900.3501	35	MK 4	530	340
12.900.3801	38	MK 4	555	360
12.900.4001	40	MK 4	555	360
12.900.4003	40	MK 4	695	460
12.900.4201	42	MK 4	555	360
12.900.4501	45	MK 4	585	385
12.900.4503	45	MK 4	735	490
12.900.5001	50	MK 4	605	405

› 12.910 Phantom

NL HSS Spiraalboor, XXL type TS, MK
FR Foret, XXL HSS type TS, CM
ES Broca, XXL HSS tipo TS, CM
DE HSS Spiralbohrer, XXL Typ TS, MK
EN HSS Twist drill, XXL type TS, MT



HSS | OX. | NIT. >ø 16,0 | NORM | TS | DIN 228-B | 130°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 E	22-30 E	15-20 D	8-12 C	15-20 D	25-30 D	45-50 F	25-40 D	22-28 C

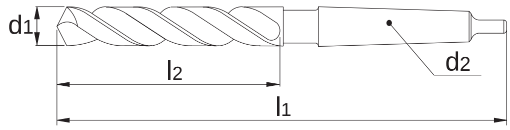
Ref.	d1	d2	l1	l2
12.910.1005	10	MK 1	500	420
12.910.1205	12	MK 1	500	420
12.910.1405	14	MK 1	500	420
12.910.1407	14	MK 1	650	500
12.910.1505	15	MK 2	600	475
12.910.1507	15	MK 2	750	650
12.910.1605	16	MK 2	600	500

Ref.	d1	d2	l1	l2
12.910.1705	17	MK 2	600	500
12.910.1805	18	MK 2	600	500
12.910.1905	19	MK 2	600	500
12.910.2005	20	MK 2	600	500
12.910.2105	21	MK 2	600	500
12.910.2205	22	MK 2	600	500
12.910.2305	23	MK 2	600	500

Ref.	d1	d2	l1	l2
12.910.2405	24	MK 3	600	475
12.910.2505	25	MK 3	600	475
12.910.2605	26	MK 3	600	475
12.910.2805	28	MK 3	600	475
12.910.3005	30	MK 3	600	475
12.910.3503	35	MK 4	600	450
12.910.3803	38	MK 4	600	450

› 12.920 Phantom

NL **HSS-E Spiraalboor type TS, MK**
FR **Foret HSS-E type TS, CM**
ES **Broca HSS-E tipo TS, CM**
DE **HSS-E Spiralbohrer Typ TS, MK**
EN **HSS-E Twist drill type TS, MT**



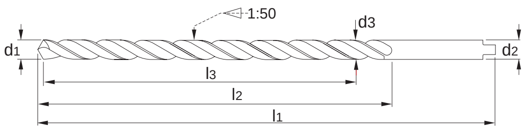
HSS-E | OX. | NIT. >ø 16,0 | DIN 1870 | TS | DIN 228-B | 130°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe
30-35 D	20-30 D	10-20 C	8-10 B	8-10 C	6-10 B	40-50 F	20-30 D	8-10 C

Ref.	d1	d2	l1	l2
12.920.1001	10	MK 1	285	185
12.920.1002	10	MK 1	360	235
12.920.1201	12	MK 1	310	205
12.920.1202	12	MK 1	395	260
12.920.1301	13	MK 1	310	205
12.920.1302	13	MK 1	395	260
12.920.1351	13.5	MK 1	325	220
12.920.1401	14	MK 1	325	220
12.920.1402	14	MK 1	410	275
12.920.1451	14.5	MK 2	340	220
12.920.1501	15	MK 2	340	220
12.920.1502	15	MK 2	425	275
12.920.1551	15.5	MK 2	355	230
12.920.1601	16	MK 2	355	230
12.920.1602	16	MK 2	445	295
12.920.1651	16.5	MK 2	355	230
12.920.1701	17	MK 2	355	230
12.920.1751	17.5	MK 2	370	245
12.920.1801	18	MK 2	370	245
12.920.1802	18	MK 2	465	310
12.920.1851	18.5	MK 2	370	245
12.920.1901	19	MK 2	370	245
12.920.1902	19	MK 2	465	310
12.920.2001	20	MK 2	385	260
12.920.2002	20	MK 2	490	325

› 13.200 Phantom

NL **HSS Conische Pengatboor**
FR **Foret conique HSS**
ES **Broca para pasadores cónicos HSS**
DE **HSS konische Stiftlochbohrer**
EN **HSS Taper Pin Drill**



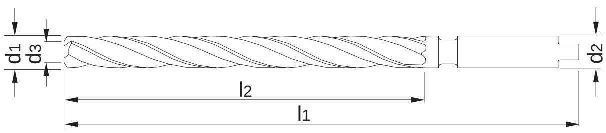
HSS | OX. | DIN 1898 A | 1:50 | 118°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²
20-25 C	18-22 C	14-20 C

Ref.	d1	d3	d2	l1	l2	l3
13.200.0300	2.84	4.25	4	100	63	58
13.200.0400	3.78	5.45	5	112	74	68
13.200.0500	4.7	6.58	6.3	122	81	73
13.200.0600	5.71	8.25	8	160	114	105
13.200.0800	7.64	11.11	10	207	157	145
13.200.1000	9.65	13.79	12.5	245	190	175

› 13.300 Phantom

NL **HSS Opboor (Drielippenboor)**
FR **Foret aléseur (à trois lèvres) HSS**
ES **Broca escariador (con tres labios) HSS**
DE **HSS Aufbohrer**
EN **HSS Core Drill (3 Flute)**



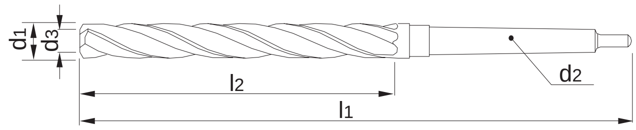
HSS | DIN 344

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu
28-35 C	18-22 C	14-22 C	8-12 B	40-45 C

Ref.	d1	d2	l1	l2	d3
13.300.0480	4.8	4.8	108	74	3.5
13.300.0500	5	5	108	74	3.5
13.300.0580	5.8	5.8	116	80	4.2
13.300.0600	6	6	116	80	4.2
13.300.0680	6.8	6.8	133	93	4.9
13.300.0700	7	7	133	93	4.9
13.300.0780	7.8	7.8	142	100	5.6
13.300.0800	8	8	142	100	5.6
13.300.0880	8.8	8.8	151	107	6.3
13.300.0900	9	9	151	107	6.3
13.300.0980	9.8	9.8	162	116	7
13.300.1000	10	10	162	116	7
13.300.1075	10.75	10.75	173	125	7.7
13.300.1100	11	11	173	125	7.7
13.300.1175	11.75	11.75	184	134	8.4
13.300.1200	12	12	184	134	8.4
13.300.1275	12.75	12.75	184	134	8.4
13.300.1300	13	13	184	134	9.1
13.300.1375	13.75	13.75	194	142	9.8
13.300.1400	14	14	194	142	9.8
13.300.1475	14.75	14.75	202	147	10.5
13.300.1500	15	15	202	147	10.5
13.300.1575	15.75	15.75	211	153	11.2
13.300.1600	16	16	211	153	11.2

› 13.320 Phantom

NL HSS Opboor (Drielippenboor) MK
FR Foret aléseur (à trois lèvres) HSS CM
ES Broca escariador (con tres labios) HSS CM
DE HSS Aufbohrer (Dreilippenbohrer) MK
EN HSS Core Drill (3 Flute) MT



HSS | DIN 343 | DIN 228-B

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
28-35 C	18-22 C	14-22 C	8-12 B	40-45 C

Ref.	d1	d2	d3	l1	l2
13.320.0780	7.8	MK 1	5.6	156	75
13.320.0800	8	MK 1	5.6	156	75
13.320.0880	8.8	MK 1	6.3	162	81
13.320.0900	9	MK 1	6.3	162	81
13.320.0980	9.8	MK 1	7	168	87
13.320.1000	10	MK 1	7	168	87
13.320.1075	10.75	MK 1	7.7	175	94
13.320.1100	11	MK 1	7.7	175	94
13.320.1175	11.75	MK 1	8.4	182	101
13.320.1200	12	MK 1	8.4	182	101
13.320.1275	12.75	MK 1	8.4	182	101
13.320.1300	13	MK 1	9.1	182	101
13.320.1375	13.75	MK 1	9.8	189	108
13.320.1400	14	MK 1	9.8	189	108
13.320.1475	14.75	MK 2	10.5	212	114
13.320.1500	15	MK 2	10.5	212	114
13.320.1575	15.75	MK 2	11.2	218	120
13.320.1600	16	MK 2	11.2	218	120
13.320.1675	16.75	MK 2	11.9	223	125
13.320.1700	17	MK 2	11.9	223	125
13.320.1775	17.75	MK 2	12.6	228	130
13.320.1800	18	MK 2	12.6	228	130
13.320.1870	18.7	MK 2	13.3	233	135
13.320.1900	19	MK 2	13.3	233	135
13.320.1970	19.7	MK 2	14	238	140
13.320.2000	20	MK 2	14	238	140
13.320.2070	20.7	MK 2	14.6	243	145
13.320.2100	21	MK 2	14.6	243	145
13.320.2170	21.7	MK 2	15.3	248	150
13.320.2200	22	MK 2	15.3	248	150
13.320.2270	22.7	MK 2	16	253	155
13.320.2300	23	MK 2	16	253	155
13.320.2370	23.7	MK 3	16.6	281	160
13.320.2400	24	MK 3	16.6	281	160
13.320.2470	24.7	MK 3	16.6	281	160
13.320.2500	25	MK 3	17.3	281	160
13.320.2570	25.7	MK 3	18	286	165
13.320.2600	26	MK 3	18	286	165
13.320.2670	26.7	MK 3	18.6	291	170
13.320.2700	27	MK 3	18.6	291	170
13.320.2770	27.7	MK 3	18.6	291	170
13.320.2800	28	MK 3	19.3	291	170
13.320.2870	28.7	MK 3	20	296	175
13.320.2900	29	MK 3	20	296	175
13.320.2970	29.7	MK 3	20	296	175
13.320.3000	30	MK 3	20.5	296	175
13.320.3060	30.6	MK 3	21	301	180
13.320.3100	31	MK 3	21	301	180
13.320.3160	31.6	MK 4	22	334	185
13.320.3200	32	MK 4	22	334	185
13.320.3260	32.6	MK 4	22	334	185
13.320.3300	33	MK 4	23	334	185
13.320.3360	33.6	MK 4	24	339	190
13.320.3400	34	MK 4	24	339	190
13.320.3460	34.6	MK 4	24	339	190
13.320.3500	35	MK 4	25	339	190
13.320.3560	35.6	MK 4	25.5	344	195
13.320.3600	36	MK 4	25.5	344	195
13.320.3660	36.6	MK 4	25.5	344	195
13.320.3700	37	MK 4	26	344	195
13.320.3760	37.6	MK 4	26.5	349	200
13.320.3800	38	MK 4	26.5	349	200
13.320.3860	38.6	MK 4	26.5	349	200
13.320.3900	39	MK 4	27	349	200
13.320.3960	39.6	MK 4	27	349	200
13.320.4000	40	MK 4	28	349	200
13.320.4060	40.6	MK 4	28.5	354	205
13.320.4100	41	MK 4	28.5	354	205
13.320.4160	41.6	MK 4	28.5	354	205
13.320.4200	42	MK 4	29	354	205
13.320.4260	42.6	MK 4	30	359	210
13.320.4300	43	MK 4	30	359	210
13.320.4360	43.6	MK 4	30	359	210
13.320.4400	44	MK 4	30.5	359	210
13.320.4460	44.6	MK 4	30.5	359	210
13.320.4500	45	MK 4	31	359	210
13.320.4560	45.6	MK 4	32	364	215
13.320.4600	46	MK 4	32	364	215
13.320.4660	46.6	MK 4	32	364	215
13.320.4700	47	MK 4	32.5	364	215
13.320.4760	47.6	MK 4	33	369	220
13.320.4800	48	MK 4	33	369	220
13.320.4860	48.6	MK 4	33	369	220
13.320.4900	49	MK 4	34	369	220
13.320.4960	49.6	MK 4	34	369	220
13.320.5000	50	MK 4	34.5	369	220

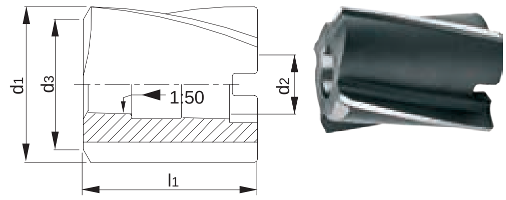
NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 13.350 Phantom

NL HSS Opsteekopboor
FR Foret creux HSS
ES Broca escariador hueco HSS
DE HSS Aufsteckaufbohrer
EN HSS Shell Core Drill



HSS | DIN 222

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
28-35 C	18-22 C	14-22 C	8-12 B	40-45 C

Ref.	d1	d2	d3	l1	84.410
13.350.3960	39.6	16	35	50	Nr. 3
13.350.4000	40	16	35	50	Nr. 3
13.350.4160	41.6	16	37	50	Nr. 3
13.350.4200	42	16	37	50	Nr. 3
13.350.4360	43.6	16	39	50	Nr. 3
13.350.4400	44	16	39	50	Nr. 3
13.350.4460	44.6	16	40	50	Nr. 3
13.350.4500	45	16	40	50	Nr. 3
13.350.4560	45.6	19	40	56	Nr. 4
13.350.4600	46	19	40	56	Nr. 4
13.350.4660	46.6	19	41	56	Nr. 4
13.350.4700	47	19	41	56	Nr. 4
13.350.4760	47.6	19	42	56	Nr. 4
13.350.4800	48	19	42	56	Nr. 4
13.350.4960	49.6	19	44	56	Nr. 4
13.350.5000	50	19	44	56	Nr. 4

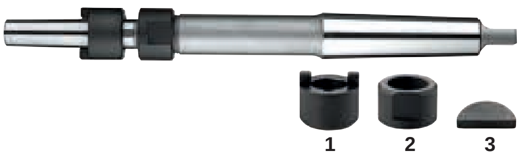
NL Demontage opboor van opsteekhouder
FR Démonter un foret creux d’un mandrin
ES Desmontar broca escariador hueco de la espiga
DE Demontieren Aufsteckbohrer von Halter
EN Remove shell core drill from arbor

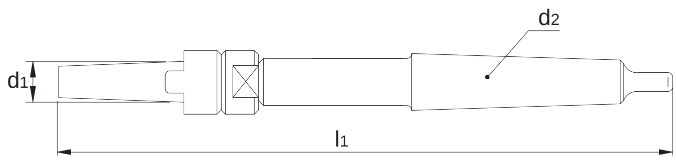
Watch me

www.phantom.eu

› 84.410 Phantom

NL Opsteekhouder, voor opsteekruimers DIN 219 en opsteekopboor DIN 222, MK
FR Arbre de montage, pour alésoirs creux DIN 219 et forets creux DIN 222, CM
ES Porta-escariadores, para escariadores huecos DIN 219 y brocas escariadores huecos DIN 222, CM
DE Aufsteckhalter, für Aufsteckreibahlen DIN 219 und Aufsteckaufbohrer DIN 222, MK
EN Shell Reamer Arbor, for Shell Reamers DIN 219 and Shell Core Drills DIN 222, MT





DIN 228-B | DIN 217

Ref.	Nr.	d1	l1	d2	Ø 51.650	Ø 13.350	1 incl.	2 incl.	3 excl.
84.410.0200	2	13	250	MK 3	25-30	-	84.411.0200	84.412.0200	84.413.0200
84.410.0300	3	16	261	MK 3	31-35	36-45	84.411.0300	84.412.0300	84.413.0300
84.410.0400	4	19	298	MK 4	36-42	46-52	84.411.0400	84.412.0400	84.413.0400
84.410.0500	5	22	312	MK 4	43-50	-	84.411.0500	84.412.0500	84.413.0500
84.410.0600	6	27	359	MK 5	51-60	-	84.411.0600	84.412.0600	84.413.0600
84.410.0700	7	32	376	MK 5	61-71	-	84.411.0700	84.412.0700	84.413.0700
84.410.0800	8	40	396	MK 5	72-85	-	84.411.0800	84.412.0800	84.413.0800
84.410.0900	9	50	416	MK 5	86-100	-	84.411.0900	84.412.0900	84.413.0900

› 13.603 Phantom

NL CV Houtspiraalboor
FR Foret à bois Acier spécial (Chrome)
ES Broca para madera Cromo Vanadium
DE CV Holzspiralbohrer
EN CV Lip and Spur Drill

CV | B

Ref.	d1	d2	l1	l2
13.603.0300	3	3	61	33
13.603.0400	4	4	75	43
13.603.0500	5	5	86	52
13.603.0600	6	6	93	57
13.603.0700	7	7	109	69

Ref.	d1	d2	l1	l2
13.603.0800	8	8	117	75
13.603.0900	9	9	125	81
13.603.1000	10	10	133	87
13.603.1100	11	10	142	94
13.603.1200	12	10	151	101

Ref.	d1	d2	l1	l2
13.603.1300	13	10	151	101
13.603.1400	14	10	160	108
13.603.1500	15	10	169	114
13.603.1600	16	10	178	120

› 13.606 Phantom

NL CV Opsteekverzinkboor voor hout, 90°
FR Fraisoir à rapporter Acier spécial (Chrome) pour bois, 90°
ES Avellanador Cromo Vanadium para madera, 90°
DE CV Aufsteck-Kegelsenker für Holz, 90°
EN CV Countersink for wood, 90°

CV | 90°

Ref.	d1
13.606.0300	3
13.606.0400	4

Ref.	d1
13.606.0500	5
13.606.0600	6

› 13.610 Phantom

NL CV Speedboor
FR Mèche plate Acier spécial (Chrome)
ES Broca plana Cromo Vanadium
DE CV Speedbohrer
EN CV Spade Bit

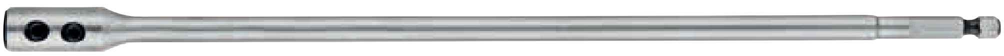
CV | E6,3 1/4″

Ref.	d1	l1
13.610.0600	6	150
13.610.0800	8	150
13.610.1000	10	150
13.610.1200	12	150
13.610.1400	14	150
13.610.1600	16	150

Ref.	d1	l1
13.610.1800	18	150
13.610.1900	19	150
13.610.2000	20	150
13.610.2200	22	150
13.610.2400	24	150
13.610.2500	25	150

Ref.	d1	l1
13.610.2600	26	150
13.610.2800	28	150
13.610.3000	30	150
13.610.3200	32	150
13.610.3500	35	150

› 13.615 Phantom



NL Verlengstuk voor Speedboor
FR Rallonge pour Mèches plates
ES Alargador para Brocas planas
DE Verlängerungsstück für Speedbohrer
EN Extension for Speed Drills

E6,3 1/4″

Ref.	l1
13.615.1000	300

› 13.640 Phantom

NL CV Slangenboor type Lewis
FR Foret Acier spécial (Chrome) modèle Lewis
ES Broca Hueca Cromo Vanadium modelo Lewis
DE CV Schlangenbohrer Typ Lewis
EN CV Auger Drill type Lewis

CV

Ref.	d1	l1	l2
13.640.0823	8	235	150
13.640.0846	8	460	390
13.640.1023	10	235	150
13.640.1046	10	460	390
13.640.1223	12	235	150
13.640.1246	12	460	390
13.640.1423	14	235	150
13.640.1446	14	460	390
13.640.1523	15	235	150
13.640.1623	16	235	150

Ref.	d1	l1	l2
13.640.1646	16	460	390
13.640.1823	18	235	150
13.640.1846	18	460	390
13.640.2023	20	235	150
13.640.2046	20	460	390
13.640.2223	22	235	145
13.640.2246	22	460	390
13.640.2423	24	235	145
13.640.2446	24	460	390
13.640.2523	25	235	140

Ref.	d1	l1	l2
13.640.2546	25	460	390
13.640.2623	26	235	140
13.640.2646	26	460	390
13.640.2823	28	235	140
13.640.2846	28	460	390
13.640.3023	30	235	135
13.640.3046	30	460	390
13.640.3223	32	235	135
13.640.3246	32	460	390

› 13.650 Phantom

NL CV Bekistingsboor
FR Foret pour bardages Acier spécial (Chrome)
ES Broca encofrado Cromo Vanadium
DE CV Schalungsbohrer
EN CV Shuttering Drill

CV 118°

Ref.	d1	d2	l1
13.650.0804	8	6	400
13.650.0806	8	6	600
13.650.1004	10	8	400
13.650.1006	10	8	600
13.650.1008	10	8	800
13.650.1204	12	8	400
13.650.1206	12	8	600
13.650.1208	12	8	800
13.650.1404	14	8	400
13.650.1406	14	8	600

Ref.	d1	d2	l1
13.650.1408	14	8	800
13.650.1604	16	10	400
13.650.1606	16	10	600
13.650.1608	16	10	800
13.650.1804	18	10	400
13.650.1806	18	10	600
13.650.1808	18	10	800
13.650.2004	20	10	400
13.650.2006	20	10	600
13.650.2008	20	10	800

Ref.	d1	d2	l1
13.650.2204	22	12	400
13.650.2206	22	12	600
13.650.2404	24	12	400
13.650.2406	24	12	600
13.650.2604	26	12	400
13.650.2606	26	12	600
13.650.2610	26	12	1000
13.650.2804	28	12	400
13.650.2808	28	12	800
13.650.3006	30	12	600

› 13.680 Phantom

NL HM-tip Allround Spiraalboor voor hout, steen en staal
FR Foret multi-matériaux à plaquette carbure pour bois, pierre et acier
ES Broca multiuso con punta Metal Duro para madera, piedra y acero
DE Hartmetallbestückt Allround Spiralbohrer für Holz, Stein und Stahl
EN Carbide Tipped Allround drill for wood, stone, and steel

PU HM

Ref.	d1	d2	l1	l2
13.680.0400	4	3.5	75	39
13.680.0500	5	4.5	85	39

Ref.	d1	d2	l1	l2
13.680.0600	6	5.5	100	54
13.680.0800	8	7.5	120	80

Ref.	d1	d2	l1	l2
13.680.1000	10	9.5	120	80

NL Allround boor HM tip
FR Foret universel à pointe carbure
ES Broca universal punta Metal Duro
DE Mehrzeckbohrer mit HM schneiden
EN Allround drill TCT

Watch me

www.phantom.eu

› 13.700 Phantom

NL HM-tip Steenboor
FR Foret à pierre à plaquette carbure
ES Broca para piedra con punta Metal Duro
DE Hartmetallbestückt Steinbohrer
EN Carbide Tipped Masonry Drill

PU | HM | DIN 8039 | ISO 5468

Ref.	d1	d2	l1	l2
13.700.0300	3	2.5	60	30
13.700.0400	4	3.5	75	39
13.700.0500	5	4.5	85	39
13.700.0550	5.5	5	85	39
13.700.0600	6	5.5	100	54
13.700.0650	6.5	6	100	54
13.700.0700	7	6.5	100	54
13.700.0800	8	7.5	120	80
13.700.0900	9	8.5	120	80
13.700.1000	10	9.5	120	80
13.700.1100	11	10	150	90
13.700.1200	12	10	150	90
13.700.1300	13	10	150	90
13.700.1400	14	10	150	90
13.700.1500	15	10	150	90
13.700.1600	16	10	150	90
13.700.1800	18	10	160	100
13.700.2000	20	13	160	100

› 13.710 Phantom

NL HM-tip Steenboor lang
FR Foret à pierre à plaquette carbure version longue
ES Broca para piedra con punta Metal Duro larga
DE Hartmetallbestückt Steinbohrer lang
EN Carbide Tipped Masonry Drill long

PU | HM

Ref.	d1	d2	l1	l2
13.710.0515	5	4.5	150	90
13.710.0615	6	5.5	150	90
13.710.0620	6	5.5	200	140
13.710.0640	6	5.5	400	300
13.710.0715	7	6.5	150	90
13.710.0815	8	7.5	150	90
13.710.0820	8	7.5	200	140
13.710.0840	8	7.5	400	300
13.710.1015	10	9.5	150	90
13.710.1020	10	9.5	200	140
13.710.1040	10	9.5	400	300
13.710.1060	10	9.5	600	500
13.710.1220	12	10	200	140
13.710.1240	12	10	400	300
13.710.1260	12	10	600	500
13.710.1420	14	10	200	140
13.710.1460	14	10	600	500
13.710.1640	16	10	400	300
13.710.1660	16	10	600	500
13.710.1840	18	10	400	300
13.710.1860	18	10	600	500
13.710.2040	20	13	400	300
13.710.2060	20	13	600	500

› 13.720 Phantom

NL HM-tip Betonboor
FR Foret Béton à plaquette carbure
ES Broca para hormigón con punta Metal Duro
DE Hartmetallbestückt Betonbohrer
EN Carbide Tipped Concrete Drill

PU | HM | DIN 8039 | ISO 5468

Ref.	d1	d2	l1	l2
13.720.0300	3	2.5	60	30
13.720.0400	4	3.5	75	39
13.720.0500	5	4.5	85	39
13.720.0600	6	5.5	100	54
13.720.0650	6.5	6	100	54
13.720.0700	7	6.5	100	54
13.720.0800	8	7.5	120	80
13.720.0900	9	8.5	120	80
13.720.1000	10	9.5	120	80
13.720.1100	11	10	150	90
13.720.1200	12	10	150	90
13.720.1300	13	10	150	90
13.720.1400	14	10	150	90
13.720.1500	15	10	150	90
13.720.1600	16	10	150	90
13.720.1800	18	10	160	100
13.720.2000	20	13	160	100

› 13.730 Phantom

NL HM-tip Betonboor lang
FR Foret Béton à plaquette carbure version longue
ES Broca para hormigón con punta Metal Duro larga
DE Hartmetallbestückt Betonbohrer lang
EN Carbide Tipped Concrete Drill long

PU | HM

Ref.	d1	d2	l1	l2
13.730.0615	6	5.5	150	90
13.730.0815	8	7.5	150	90
13.730.0820	8	7.5	200	140
13.730.1015	10	9.5	150	90
13.730.1020	10	9.5	200	140
13.730.1220	12	10	200	140

› 13.740 Phantom

NL **HM-tip Hamerboor, SDS-PLUS met 2 snijkanten**
FR **Foret Béton, SDS-PLUS à plaquette carbure à 2 taillants**
ES **Broca martillo, SDS-PLUS con punta Metal Duro con 2 labios**
DE **Hartmetallbestückt Hammerbohrer, SDS-PLUS mit 2 Schneiden**
EN **Carbide Tipped Hammer Drill, SDS-PLUS with 2 flutes**

SDS plus | Z=2 | HM

Ref.	d1	l1	l2
13.740.0411	4	110	50
13.740.0511	5	110	50
13.740.0516	5	160	100
13.740.0551	5.5	110	50
13.740.0552	5.5	160	100
13.740.0611	6	110	50
13.740.0616	6	160	100
13.740.0621	6	210	150
13.740.0626	6	260	200
13.740.0631	6	310	250
13.740.0651	6.5	110	50
13.740.0652	6.5	160	100
13.740.0711	7	110	50
13.740.0716	7	160	100
13.740.0721	7	210	150
13.740.0811	8	110	50
13.740.0816	8	160	100
13.740.0821	8	210	150
13.740.0826	8	260	200
13.740.0831	8	310	250
13.740.0846	8	450	400
13.740.0916	9	160	100
13.740.0921	9	210	150
13.740.1011	10	110	50
13.740.1016	10	160	100

Ref.	d1	l1	l2
13.740.1021	10	210	150
13.740.1026	10	260	200
13.740.1031	10	310	250
13.740.1046	10	450	400
13.740.1116	11	160	100
13.740.1216	12	160	100
13.740.1221	12	210	150
13.740.1226	12	260	200
13.740.1231	12	310	250
13.740.1246	12	450	400
13.740.1316	13	160	100
13.740.1326	13	260	200
13.740.1346	13	450	400
13.740.1416	14	160	100
13.740.1421	14	210	150
13.740.1426	14	260	200
13.740.1431	14	310	250
13.740.1446	14	450	400
13.740.1516	15	160	100
13.740.1521	15	210	150
13.740.1526	15	260	200
13.740.1546	15	450	400
13.740.1616	16	160	100
13.740.1621	16	210	150
13.740.1626	16	260	200

Ref.	d1	l1	l2
13.740.1631	16	310	250
13.740.1646	16	450	400
13.740.1660	16	600	550
13.740.1690	16	1000	950
13.740.1821	18	210	150
13.740.1826	18	260	200
13.740.1831	18	310	250
13.740.1846	18	450	400
13.740.1860	18	600	550
13.740.1890	18	1000	950
13.740.2021	20	210	150
13.740.2026	20	260	200
13.740.2031	20	310	250
13.740.2046	20	450	400
13.740.2090	20	1000	950
13.740.2226	22	260	200
13.740.2231	22	310	250
13.740.2246	22	450	400
13.740.2426	24	260	200
13.740.2446	24	450	400
13.740.2526	25	260	200
13.740.2531	25	310	250
13.740.2546	25	450	400
13.740.2590	25	1000	950

› 13.744 Phantom

NL **HM-tip Hamerboor, SDS-PLUS met 4 snijkanten**
FR **Foret Béton, SDS-PLUS à plaquette carbure à 4 taillants**
ES **Broca martillo, SDS-PLUS con punta Metal Duro con 4 labios**
DE **Hartmetallbestückt Hammerbohrer, SDS-PLUS mit 4 Schneiden**
EN **Carbide Tipped Hammer Drill, SDS-PLUS with 4 flutes**

SDS plus | Z=4 | HM

Ref.	d1	l1	l2
13.744.0511	5	110	50
13.744.0516	5	160	100
13.744.0552	5.5	160	100
13.744.0611	6	110	50
13.744.0616	6	160	100
13.744.0621	6	210	150
13.744.0626	6	260	200
13.744.0631	6	310	250
13.744.0652	6.5	160	100
13.744.0716	7	160	100
13.744.0811	8	110	50
13.744.0816	8	160	100
13.744.0821	8	210	150
13.744.0826	8	260	200
13.744.0831	8	310	250
13.744.0846	8	450	400
13.744.0916	9	160	100

Ref.	d1	l1	l2
13.744.1011	10	110	50
13.744.1016	10	160	100
13.744.1021	10	210	150
13.744.1026	10	260	200
13.744.1031	10	310	250
13.744.1046	10	450	400
13.744.1216	12	160	100
13.744.1221	12	210	150
13.744.1226	12	260	200
13.744.1231	12	310	250
13.744.1246	12	450	400
13.744.1416	14	160	100
13.744.1421	14	210	150
13.744.1426	14	260	200
13.744.1431	14	310	250
13.744.1446	14	450	400
13.744.1516	15	160	100

Ref.	d1	l1	l2
13.744.1526	15	260	200
13.744.1616	16	160	100
13.744.1621	16	210	150
13.744.1626	16	260	200
13.744.1631	16	310	250
13.744.1646	16	450	400
13.744.1660	16	600	550
13.744.1690	16	1000	950
13.744.1825	18	250	200
13.744.1846	18	450	400
13.744.2025	20	250	200
13.744.2046	20	450	400
13.744.2225	22	250	200
13.744.2246	22	450	400
13.744.2426	24	250	200
13.744.2525	25	250	200
13.744.2546	25	450	400

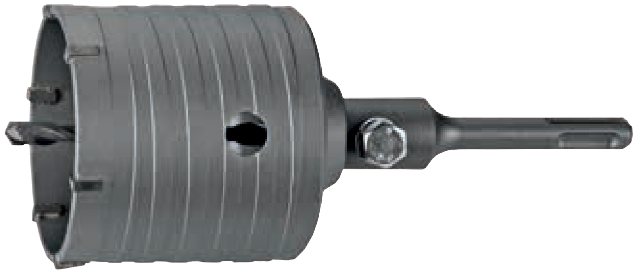
› 13.750 Phantom

NL **HM-tip Hamerboor, SDS-MAX**
FR **Foret Béton, SDS-MAX à plaquette carbure**
ES **Broca martillo, SDS-MAX con punta Metal Duro**
DE **Hartmetallbestückt Hammerbohrer, SDS-MAX**
EN **Carbide Tipped Hammer Drill, SDS-MAX**

SDS max | Z=2 | Z=3 | Z=4 | HM

Ref.	d1	l1	l2	z
13.750.1234	12	340	200	2
13.750.1254	12	540	400	2
13.750.1269	12	690	550	2
13.750.1434	14	340	200	2
13.750.1454	14	540	400	2
13.750.1554	15	540	400	2
13.750.1634	16	340	200	3
13.750.1654	16	540	400	3
13.750.1692	16	920	800	3
13.750.1834	18	340	200	4
13.750.1854	18	540	400	4
13.750.1894	18	940	800	4
13.750.2032	20	320	200	4
13.750.2052	20	520	400	4
13.750.2092	20	920	800	4
13.750.2232	22	320	200	4
13.750.2252	22	520	400	4
13.750.2292	22	920	800	4
13.750.2432	24	320	200	4
13.750.2452	24	520	400	4
13.750.2532	25	320	200	4
13.750.2552	25	520	400	4
13.750.2592	25	920	800	4
13.750.2832	28	320	200	4
13.750.2857	28	570	450	4
13.750.3032	30	320	200	4
13.750.3057	30	570	450	4
13.750.3232	32	320	200	4
13.750.3257	32	570	450	4
13.750.3292	32	920	800	4
13.750.3532	35	320	200	4
13.750.3557	35	570	450	4
13.750.3832	38	320	200	4
13.750.3857	38	570	450	4
13.750.4032	40	320	200	4
13.750.4057	40	570	450	4
13.750.4092	40	920	800	4
13.750.4557	45	570	450	4
13.750.5057	50	570	450	4

› 13.765 Phantom



NL **HM-tip Dozenboor, SDS-PLUS**
FR **Couronne-Trépan, SDS-PLUS à plaquette carbure**
ES **Corona de taladrado, SDS-PLUS con punta Metal Duro**
DE **Hartmetallbestückt Hohlbohrer, SDS-PLUS**
EN **Carbide Tipped Hammer active core bit, SDS-PLUS**

SDS plus | HM

Ref.	d1	l1
13.765.0040	40	85
13.765.0050	50	85
13.765.0068	68	85
13.765.0080	80	85

› 13.766 Phantom

NL **Toebehoren voor Dozenboor**
FR **Accessoires pour Couronne-Trépan**
ES **Accesorios para corona de taladro**
DE **Zubehör für Hohlbohrer**
EN **Accessories for active core bit**

Ref.	d1	l1	Type
13.766.0040	40		
13.766.0050	50		
13.766.0068	68		
13.766.0080	80		
13.766.0300		95	Hexa
13.766.0400		110	SDS-PLUS
13.766.0500		220	SDS-PLUS
13.766.0811	8	110	

1 SC
1 HSS(-E)

› 13.770 Phantom

NL Beitel, SDS-PLUS
FR Burin, SDS-PLUS
ES Cincel, SDS-PLUS
DE Meißel, SDS-PLUS
EN Chisel, SDS-PLUS

SDS plus

Ref.	b1	l1	Ref.	b1	l1	Ref.	b1	l1
13.770.1010		250	13.770.2010	40	250	13.770.8010	22	250
13.770.1510	20	250	13.770.2510	50	250	13.770.8510	22	250

› 13.775 Phantom

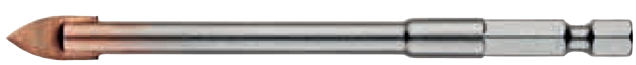
NL Beitel, SDS-MAX
FR Burin, SDS-MAX
ES Cincel, SDS-MAX
DE Meißel, SDS-MAX
EN Chisel, SDS-MAX

SDS max

Ref.	b1	l1	Ref.	b1	l1	Ref.	b1	l1
13.775.1010		280	13.775.1515	25	400	13.775.8010	26	300
13.775.1020		400	13.775.1520	25	600	13.775.8510	35	380
13.775.1510	25	280	13.775.2010	50	400			

› 13.790 Phantom

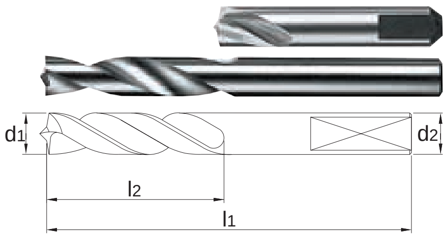
NL HM-tip Boor voor keramiek en glas
FR Foret Spécial à plaquette carbure pour céramique et verre
ES Broca vidrio con punta Metal Duro para vidrio y cerámico
DE Hartmetallbestückt Glasbohrer für Keramik und Glas
EN Carbide Tipped Glass Drill for ceramics and glass



E6,3 1/4″ HM

Ref.	d1	l1	d2	Ref.	d1	l1	d2	Ref.	d1	l1	d2
13.790.0300	3	65	1/4″ BIT	13.790.0600	6	65	1/4″ BIT	13.790.1200	12	113	Ø 10 mm
13.790.0400	4	65	1/4″ BIT	13.790.0800	8	105	1/4″ BIT				
13.790.0500	5	65	1/4″ BIT	13.790.1000	10	110	1/4″ BIT				

› 13.800 *Phantom*



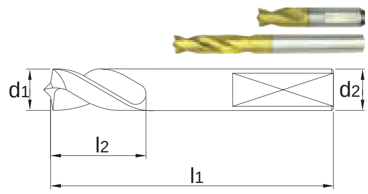
NL **HSS-E Puntlasboor**
FR **Foret à dépointer HSS-E**
ES **Broca para puntos de soldadura HSS-E**
DE **HSS-E Bohrer zum Bohren von Punktschweißstellen**
EN **HSS-E Spot Weld Drill**

HSS-E

P 11	P 12	P 13	P 14	M 21	M 22
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²
28-35 *	30-36 *	20-27 *	12-20 *	14-18 *	10-15 *

Ref.	d1	d2	l1	l2
13.800.0844	8	8	44	23
13.800.0879	8	8	79	30

› 13.801 *Phantom*



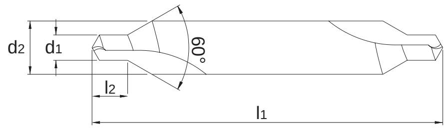
NL **HSS-E Puntlasboor TiN**
FR **Foret à dépointer HSS-E TiN**
ES **Broca para puntos de soldadura HSS-E TiN**
DE **HSS-E Bohrer zum Bohren von Punktschweißstellen TiN**
EN **HSS-E Spot Weld Drill TiN**

HSS-E TiN

P 11	P 12	P 13	P 14	M 21	M 22
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²
28-35 *	30-36 *	20-27 *	12-20 *	14-18 *	10-15 *

Ref.	d1	d2	l1	l2
13.801.0644	6	6	44	16
13.801.0666	6	6	66	28
13.801.0844	8	8	44	23
13.801.0879	8	8	79	37
13.801.1089	10	10	89	43

› 15.095 International Tools



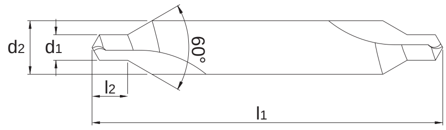
NL ECO PRO HSS Centerboor 60°
FR Foret à centrer HSS ECO PRO 60°
ES Broca escalonada HSS ECO PRO 60°
DE ECO PRO HSS Zentrierbohrer 60°
EN ECO PRO HSS Centre Drill 60°

HSS | 60° | DIN 333-A | NFE 66051-A | ECO PRO | h7

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	15-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	d1	d2	l1	l2
15.095.1031	1	3.15	31	1,3-1,7
15.095.1040	1	4	35	1,3-1,7
15.095.1231	1.25	3.15	31	1,6-2,0
15.095.1550	1.5	5	40	2,0-2,6
15.095.1640	1.6	4	35	2,0-2,6
15.095.2050	2	5	40	2,5-3,1
15.095.2060	2	6	45	2,5-3,1
15.095.2563	2.5	6.3	45	3,1-3,8
15.095.2580	2.5	8	50	3,1-3,8
15.095.3090	3	10	55	3,9-4,6
15.095.3180	3.15	8	50	3,9-4,6
15.095.3190	3.15	10	55	3,9-4,6
15.095.4010	4	10	55	5,0-5,9
15.095.4012	4	12	63	5,0-5,9
15.095.5013	5	12.5	63	6,3-7,2
15.095.6316	6.3	16	71	8,0-8,9
15.095.8020	8	20	80	10,1-11,1
15.095.9025	10	25	100	12,8-13,8

› 15.096 International Tools



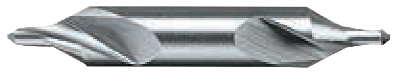
NL ECO PRO HSS Centerboor TiN, 60°
FR Foret à centrer HSS ECO PRO TiN, 60°
ES Broca escalonada HSS ECO PRO TiN, 60°
DE ECO PRO HSS Zentrierbohrer TiN, 60°
EN ECO PRO HSS Centre Drill TiN, 60°

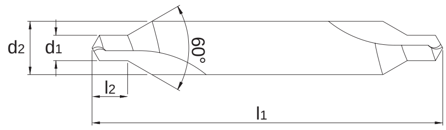
HSS | TiN | 60° | DIN 333-A | NFE 66051-A | ECO PRO | h7

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	15-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	d1	d2	l1	l2
15.096.1040	1	4	35	1,3-1,7
15.096.1640	1.6	4	35	2,0-2,6
15.096.2050	2	5	40	2,5-3,1
15.096.2563	2.5	6.3	45	3,1-3,8
15.096.3180	3.15	8	50	3,9-4,6
15.096.4010	4	10	55	5,0-5,9
15.096.5013	5	12.5	63	6,3-7,2

› 15.100 Phantom





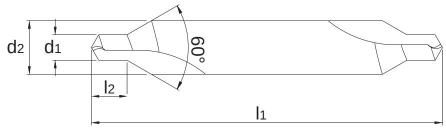
NL HSS Centerboor 60°
FR Foret à centrer HSS 60°
ES Broca escalonada HSS 60°
DE HSS Zentrierbohrer 60°
EN HSS Centre Drill 60°

HSS | 60° | DIN 333-A | NFE 66051-A | h7

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	15-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	d1	d2	l1	l2
15.100.0531	0.5	3.15	25	0,6-0,9
15.100.0735	0.75	3.5	35	1,0-1,3
15.100.0831	0.8	3.15	25	1,0-1,3
15.100.1031	1	3.15	31	1,3-1,7
15.100.1040	1	4	35	1,3-1,7
15.100.1231	1.25	3.15	31	1,6-2,0
15.100.1240	1.25	4	35	1,6-2,0
15.100.1550	1.5	5	40	2,0-2,6
15.100.1640	1.6	4	35	2,0-2,6
15.100.1650	1.6	5	40	2,0-2,6
15.100.2050	2	5	40	2,5-3,1
15.100.2060	2	6	45	2,5-3,1
15.100.2063	2	6.3	45	2,5-3,1
15.100.2563	2.5	6.3	45	3,1-3,8
15.100.2580	2.5	8	50	3,1-3,8
15.100.3090	3	10	55	3,9-4,6
15.100.3180	3.15	8	50	3,9-4,6
15.100.3190	3.15	10	55	3,9-4,6
15.100.3590	3.5	10	55	4,0-4,5
15.100.4010	4	10	55	5,0-5,9
15.100.4012	4	12	63	5,0-5,9
15.100.4013	4	12.5	63	5,0-5,9
15.100.5013	5	12.5	63	6,3-7,2
15.100.5014	5	14	69	6,3-7,2
15.100.5016	5	16	71	6,3-7,2
15.100.6018	6	18	77	8,0-8,9
15.100.6316	6.3	16	71	8,0-8,9
15.100.6320	6.3	20	80	8,0-8,9
15.100.8020	8	20	80	10,1-11,1
15.100.9025	10	25	100	12,8-13,8
15.100.9531	12.5	31.5	125	16,5-17,5

› 15.120 Phantom



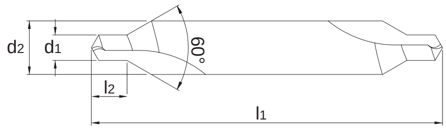
NL HSS-E Centerboor 60°
FR Foret à centrer HSS-E 60°
ES Broca escalonada HSS-E 60°
DE HSS-E Zentrierbohrer 60°
EN HSS-E Centre Drill 60°

HSS-E | 60° | NFE 66051-A | DIN 333-A | h7

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D	18-21 E

Ref.	d1	d2	l1	l2
15.120.0735	0.75	3.5	35	1,0-1,3
15.120.0831	0.8	3.15	25	1,0-1,3
15.120.1040	1	4	35	1,3-1,7
15.120.1231	1.25	3.15	31	1,6-2,0
15.120.1550	1.5	5	40	2,0-2,6
15.120.1640	1.6	4	35	2,0-2,6
15.120.2050	2	5	40	2,5-3,1
15.120.2060	2	6	45	2,5-3,1
15.120.2563	2.5	6.3	45	3,1-3,8
15.120.2580	2.5	8	50	3,1-3,8
15.120.3090	3	10	55	3,9-4,6
15.120.3180	3.15	8	50	3,9-4,6
15.120.4010	4	10	55	5,0-5,9
15.120.4012	4	12	63	5,0-5,9
15.120.5013	5	12.5	63	6,3-7,2
15.120.5014	5	14	69	6,3-7,2

› 15.124 Phantom



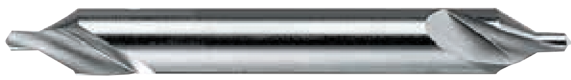
NL HSS-E Centerboor TiAlN, 60°
FR Foret à centrer HSS-E TiAlN, 60°
ES Broca escalonada HSS-E TiAlN, 60°
DE HSS-E Zentrierbohrer TiAlN, 60°
EN HSS-E Centre Drill TiAlN, 60°

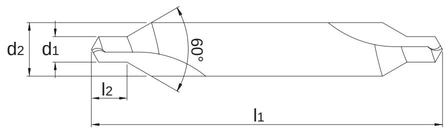
HSS-E | 60° | TiAlN | DIN 333-A | NFE 66051-A | h7

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe	PVC
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D	18-21 E

Ref.	d1	d2	l1	l2
15.124.0531	0.5	3.15	25	0,6-0,9
15.124.0831	0.8	3.15	25	1,0-1,3
15.124.1031	1	3.15	31	1,3-1,7
15.124.1040	1	4	35	1,3-1,7
15.124.1231	1.25	3.15	31	1,6-2,0
15.124.1550	1.5	5	40	2,0-2,6
15.124.1640	1.6	4	35	2,0-2,6
15.124.2050	2	5	40	2,5-3,1
15.124.2060	2	6	45	2,5-3,1
15.124.2563	2.5	6.3	45	3,1-3,8
15.124.2580	2.5	8	50	3,1-3,8
15.124.3090	3	10	55	3,9-4,6
15.124.3180	3.15	8	50	3,9-4,6
15.124.4010	4	10	55	5,0-5,9
15.124.4012	4	12	63	5,0-5,9
15.124.5013	5	12.5	63	6,3-7,2
15.124.6316	6.3	16	71	8,0-8,9
15.124.8020	8	20	80	10,1-11,1

› 15.150 Phantom





NL HSS-E Centerboor 60°, lang
FR Foret à centrer HSS-E 60°, version longue
ES Broca escalonada HSS-E 60°, larga
DE HSS-E Zentrierbohrer 60°, lang
EN HSS-E Centre Drill 60°, long

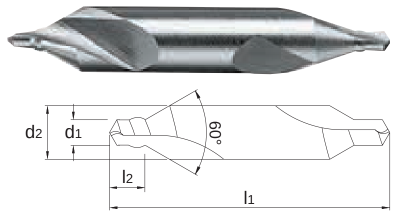
HSS-E | 60° | NORM | h7

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D	18-21 E

Ref.	d1	d2	l1	l2
15.150.0753	0.75	3.5	60	1,0-1,3
15.150.0756	0.75	3.5	120	1,0-1,3
15.150.1003	1	4	60	1,3-1,7
15.150.1005	1	4	100	1,3-1,7
15.150.1006	1	4	120	1,3-1,7
15.150.1007	1	4	150	1,3-1,7
15.150.1503	1.5	5	60	2,0-2,6
15.150.1505	1.5	5	100	2,0-2,6
15.150.1506	1.5	5	120	2,0-2,6
15.150.1507	1.5	5	150	2,0-2,6
15.150.2004	2	6	80	2,5-3,1
15.150.2005	2	6	100	2,5-3,1
15.150.2006	2	6	120	2,5-3,1
15.150.2007	2	6	150	2,5-3,1
15.150.2008	2	5	200	2,5-3,1
15.150.2504	2.5	8	80	3,1-3,8
15.150.2505	2.5	8	100	3,1-3,8
15.150.2506	2.5	8	120	3,1-3,8
15.150.2507	2.5	8	150	3,1-3,8
15.150.2508	2.5	6.3	200	3,1-3,8
15.150.3004	3	8	80	3,9-4,6
15.150.3005	3	8	100	3,9-4,6
15.150.3006	3	8	120	3,9-4,6
15.150.3007	3	8	150	3,9-4,6
15.150.3015	3	10	100	3,9-4,6
15.150.3016	3	10	120	3,9-4,6
15.150.3017	3	10	150	3,9-4,6
15.150.3158	3.15	8	200	3,9-4,6
15.150.3166	3.15	10	120	3,9-4,6
15.150.4005	4	10	100	5,0-5,9
15.150.4006	4	10	120	5,0-5,9
15.150.4007	4	10	150	5,0-5,9
15.150.4008	4	10	200	5,0-5,9
15.150.4015	4	12	100	5,0-5,9
15.150.4016	4	12	120	5,0-5,9
15.150.4017	4	12	150	5,0-5,9
15.150.5006	5	14	120	6,3-7,2

› 15.200 Phantom

NL HSS Centerboor met kraag, 60°
FR Foret à centrer HSS à collerette, 60°
ES Broca escalonada HSS con valona, 60°
DE HSS Zentrierbohrer mit Kragen, 60°
EN HSS Centre Drill headed, 60°



HSS | 60° | DIN 333-W | NFE 66051-W | h7

P 11	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

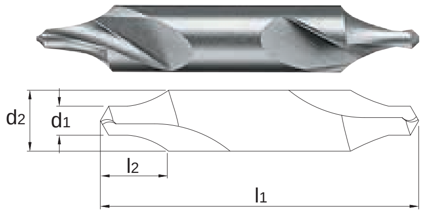
Ref.	d1	d2	l1	l2
15.200.0530	0.5	3	31	0,6-0,9
15.200.0531	0.5	3.15	25	0,6-0,9
15.200.0735	0.75	3.5	35	0,8-1,2
15.200.0831	0.8	3.15	25	1,0-1,3
15.200.1031	1	3.15	31	1,3-1,7
15.200.1040	1	4	35	1,3-1,7
15.200.1231	1.25	3.15	31	1,6-2,0
15.200.1240	1.25	4	35	1,6-2,0
15.200.1550	1.5	5	40	2,0-2,6
15.200.1640	1.6	4	35	2,0-2,6
15.200.1650	1.6	5	40	2,0-2,6

Ref.	d1	d2	l1	l2
15.200.2050	2	5	40	2,5-3,1
15.200.2060	2	6	45	2,5-3,1
15.200.2063	2	6.3	45	2,5-3,1
15.200.2563	2.5	6.3	45	3,1-3,8
15.200.2580	2.5	8	50	3,1-3,8
15.200.3080	3	8	50	3,9-4,6
15.200.3090	3	10	55	3,9-4,6
15.200.3180	3.15	8	50	3,9-4,6
15.200.3190	3.15	10	55	3,9-4,6
15.200.4010	4	10	55	5,0-5,9
15.200.4012	4	12	63	5,0-5,9

Ref.	d1	d2	l1	l2
15.200.4013	4	12.5	63	5,0-5,9
15.200.5012	5	12	63	6,3-7,2
15.200.5013	5	12.5	63	6,3-7,2
15.200.5014	5	14	69	6,3-7,2
15.200.5016	5	16	71	6,3-7,2
15.200.6018	6	18	77	8,0-8,9
15.200.6316	6.3	16	71	8,0-8,9
15.200.6320	6.3	20	80	8,0-8,9
15.200.8020	8	20	80	10,1-11,1
15.200.9025	10	25	100	12,8-13,8

› 15.250 Phantom

NL HSS Centerboor met radius, 60°
FR Foret à centrer HSS à rayon, 60°
ES Broca escalonada HSS con radio, 60°
DE HSS Zentrierbohrer mit Radius, 60°
EN HSS Centre Drill radius form, 60°



HSS | 60° | DIN 333-R | NFE 66051-R | h7

P 11	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	d1	d2	l1	l2	r
15.250.0530	0.5	3	31	2,3-2,6	2
15.250.0531	0.5	3.15	25	2,3-2,6	2
15.250.0735	0.75	3.5	35	2,8-3,0	3.4
15.250.0831	0.8	3.15	25	2,6-2,9	2.5
15.250.1031	1	3.15	31	3,0-3,3	2.9
15.250.1040	1	4	35	3,3-3,6	3.9
15.250.1231	1.25	3.15	31	3,3-3,6	3.15
15.250.1240	1.25	4	35	3,7-4,1	4
15.250.1550	1.5	5	40	4,5-4,9	5
15.250.1640	1.6	4	35	4,2-4,7	4
15.250.1650	1.6	5	40	4,5-4,9	5
15.250.2050	2	5	40	5,0-5,4	5
15.250.2060	2	6	45	5,4-5,8	5.8
15.250.2063	2	6.3	45	5,6-6,0	6.3
15.250.2563	2.5	6.3	45	6,3-6,8	6.3
15.250.2580	2.5	8	50	7,5-8,0	8

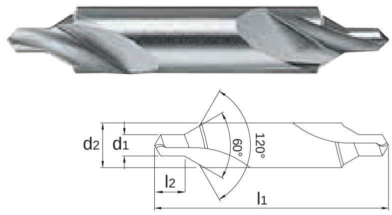
Ref.	d1	d2	l1	l2	r
15.250.3080	3	8	50	8,0-8,5	8
15.250.3090	3	10	55	8,9-9,4	10
15.250.3180	3.15	8	50	8,0-8,5	8
15.250.3190	3.15	10	55	8,9-9,4	10
15.250.4010	4	10	55	10,0-10,6	10
15.250.4012	4	12	63	10,7-11,3	11.5
15.250.4013	4	12.5	63	11,2-11,8	12.5
15.250.5012	5	12	63	11,4-12,0	11.5
15.250.5013	5	12.5	63	12,5-13,1	12.5
15.250.5014	5	14	69	12,8-13,4	13.4
15.250.5016	5	16	71	14,4-15,0	16
15.250.6018	6	18	77	16,6-17,2	17.8
15.250.6316	6.3	16	71	16,0-16,6	16
15.250.6320	6.3	20	80	17,8-19,0	20
15.250.8020	8	20	80	20,0-20,7	20
15.250.8025	8	25	100	25,0-25,7	25

NL Verschil tussen centerboor en centreerboor
FR La différence entre un foret à centrer et un foret à pointer
ES Diferencia entre broca de centrar y broca de puntear
DE Unterschied zwischen Zentrierbohrer und Anbohrer
EN The difference between centre drills and spot drills

Read me

www.phantom.eu

› 15.380 Phantom



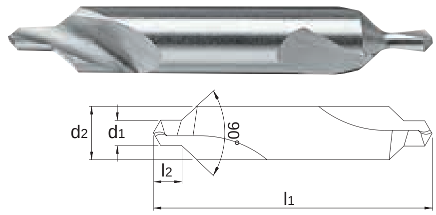
NL HSS Centerboor met dubbele hoek, 60°, 120°
FR Foret à centrer HSS à centre protégé, 60°, 120°
ES Broca escalonada HSS con chaflan, 60°, 120°
DE HSS Zentrierbohrer mit Schutzsenkung, 60°, 120°
EN HSS Centre Drill Bell type, 60°, 120°

HSS | 60° 120° | DIN 333-B | NFE 66051-B | h7

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	15-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
15.380.0740	0.75	4	35	1,3-1,7	15.380.2592	2.5	12	63	3,9-4,6	15.380.4018	4	18	77	6,3-7,2
15.380.1060	1	6	45	2,0-2,6	15.380.3080	3	8	50	3,9-4,6	15.380.5012	5	12	63	6,3-7,2
15.380.1550	1.5	5	40	2,0-2,6	15.380.3090	3	10	55	3,9-4,6	15.380.5014	5	14	69	6,3-7,2
15.380.1580	1.5	8	50	2,5-3,1	15.380.3094	3	14	69	5,0-5,9	15.380.5018	5	18	77	8,0-8,9
15.380.2060	2	6	45	2,5-3,1	15.380.4010	4	10	55	5,0-5,9	15.380.6025	6	25	100	8,0-8,9
15.380.2090	2	10	55	3,1-3,8	15.380.4012	4	12	63	5,0-5,9					
15.380.2580	2.5	8	50	3,1-3,8	15.380.4016	4	16	71	5,0-5,9					

› 15.500 Phantom



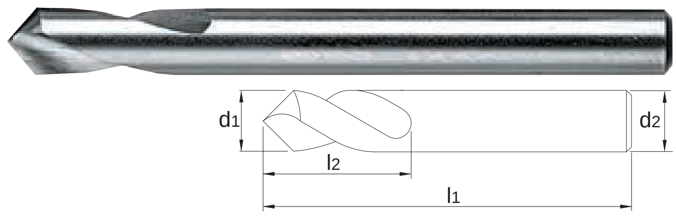
NL HSS Centerboor 90°
FR Foret à centrer HSS 90°
ES Broca escalonada HSS 90°
DE HSS Zentrierbohrer 90°
EN HSS Centre Drill 90°

HSS | 90° | NORM | h7

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	15-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
15.500.0735	0.75	3.5	35	1,0-1,3	15.500.2580	2.5	8	50	3,1-3,8	15.500.4012	4	12	63	5,0-5,9
15.500.1040	1	4	35	1,3-1,7	15.500.3080	3	8	50	3,9-4,6	15.500.5012	5	12	63	6,3-7,2
15.500.1550	1.5	5	40	2,0-2,6	15.500.3090	3	10	55	3,9-4,6	15.500.5014	5	14	69	6,3-7,2
15.500.2060	2	6	45	2,5-3,1	15.500.4010	4	10	55	5,0-5,9	15.500.6018	6	18	77	8,0-8,9

› 15.600 Phantom



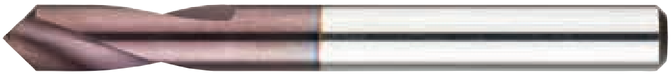
NL HSS-E NC-Centreerboor 90°
FR Foret à pointer NC HSS-E 90°
ES Broca de puntear NC HSS-E 90°
DE HSS-E NC Anbohrer 90°
EN HSS-E NC Spotting Drill 90°

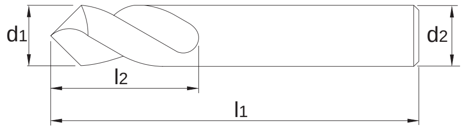
HSS-E | ISO 10898 | 90° | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	45-50 E	30-40 E	10-15 D	18-28 E

Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
15.600.0200	2	2	49	8	15.600.0800	8	8	79	25	15.600.1800	18	18	130	40
15.600.0300	3	3	50	10	15.600.1000	10	10	89	25	15.600.2000	20	20	131	40
15.600.0400	4	4	52	12	15.600.1200	12	12	102	30	15.600.2500	25	25	138	45
15.600.0500	5	5	60	15	15.600.1400	14	14	115	35					
15.600.0600	6	6	66	20	15.600.1600	16	16	115	35					

› 15.604 Phantom





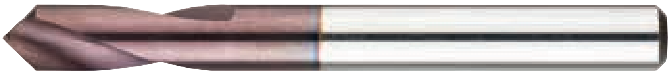
NL **HSS-E NC-Centreerboor TiAlN, 90°**
FR **Foret à pointer NC HSS-E TiAlN, 90°**
ES **Broca de puntear NC HSS-E TiAlN, 90°**
DE **HSS-E NC Anbohrer TiAlN, 90°**
EN **HSS-E NC Spotting Drill TiAlN, 90°**

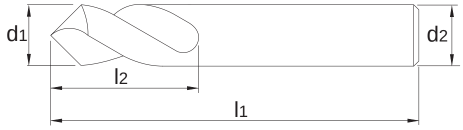
HSS-E | ISO 10898 | 90° | TiAlN | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

Ref.	d1	d2	l1	l2
15.604.0300	3	3	50	10
15.604.0400	4	4	52	12
15.604.0500	5	5	60	15
15.604.0600	6	6	66	20
15.604.0800	8	8	79	25
15.604.1000	10	10	89	25
15.604.1200	12	12	102	30
15.604.1600	16	16	115	35
15.604.1800	18	18	130	40
15.604.2000	20	20	131	40
15.604.2500	25	25	138	45

› 15.606 Phantom





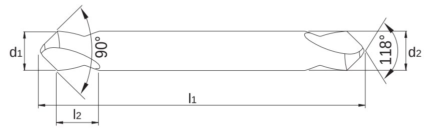
NL **HSS-E 8% NC-Centreerboor AlCrN-X, 90°**
FR **Foret à pointer NC HSS-E 8% AlCrN-X, 90°**
ES **Broca de puntear NC HSS-E 8% AlCrN-X, 90°**
DE **HSS-E 8% NC Anbohrer AlCrN-X, 90°**
EN **HSS-E 8% NC Spotting Drill AlCrN-X, 90°**

HSS-E 8% | ISO 10898 | 90° | AlCrN-X | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-50 E	25-50 E	20-30 F	10-25 D	10-20 C	45-50 E	35-45 D	100-110 E	70-90 E	45-50 D	25-30 D

Ref.	d1	d2	l1	l2
15.606.0300	3	3	50	10
15.606.0400	4	4	52	12
15.606.0500	5	5	60	15
15.606.0600	6	6	66	20
15.606.0800	8	8	79	25
15.606.1000	10	10	89	25
15.606.1200	12	12	102	30

› 15.611 Phantom



NL **HSS-E NC Duo-Centreerboor AlCrN-X, 90°**
FR **Foret à pointer Duo HSS-E AlCrN-X, 90°**
ES **Broce de puntear NC Duo HSS-E AlCrN-X, 90°**
DE **HSS-E NC Duo Anbohrer AlCrN-X, 90°**
EN **HSS-E Duo NC Spotting Drill AlCrN-X, 90°**

HSS-E | AlCrN-X | 90° | h7

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

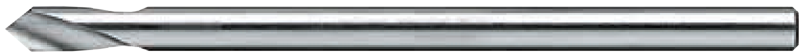
Ref.	d1	d2	l1	l2
15.611.0300	3	3	40	7
15.611.0400	4	4	45	9
15.611.0600	6	6	55	11
15.611.0800	8	8	65	12
15.611.1000	10	10	75	15
15.611.1200	12	12	85	18
15.611.1600	16	16	90	24
15.611.2000	20	20	100	29

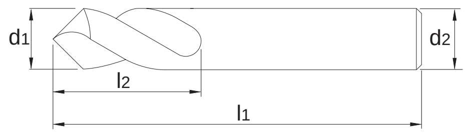
NL Verschil tussen centerboor en centreerboor
FR La différence entre un foret à centrer et un foret à pointer
ES Diferencia entre broca de centrar y broca de puntear
DE Unterschied zwischen Zentrierbohrer und Anbohrer
EN The difference between centre drills and spot drills

Read me

www.phantom.eu

› 15.640 *Phantom*





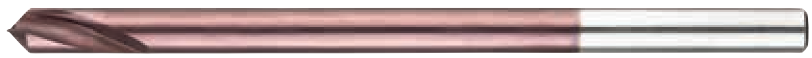
NL HSS-E NC-Centreerboor 90°, lang
FR Foret à pointer NC HSS-E 90°, version longue
ES Broca de puntear NC HSS-E 90°, larga
DE HSS-E NC Anbohrer 90°, lang
EN HSS-E NC Spotting Drill 90°, long

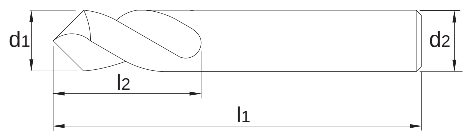
HSS-E | 90° | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	45-50 E	30-40 E	10-15 D	18-28 E

Ref.	d1	d2	l1	l2
15.640.0400	4	4	100	12
15.640.0500	5	5	120	15
15.640.0600	6	6	140	20
15.640.0800	8	8	140	25
15.640.1000	10	10	170	25
15.640.1200	12	12	170	30
15.640.1600	16	16	200	35
15.640.2000	20	20	200	40

› 15.644 *Phantom*





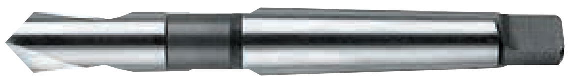
NL HSS-E NC-Centreerboor TiAlN, 90°, lang
FR Foret à pointer NC HSS-E TiAlN, 90°, version longue
ES Broca de puntear NC HSS-E TiAlN, 90°, larga
DE HSS-E NC Anbohrer TiAlN, 90°, lang
EN HSS-E NC Spotting Drill TiAlN, 90°, long

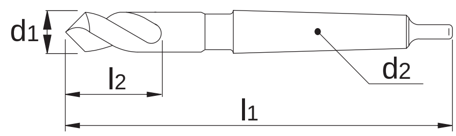
HSS-E | 90° | TiAlN | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

Ref.	d1	d2	l1	l2
15.644.0400	4	4	100	12
15.644.0500	5	5	120	15
15.644.0600	6	6	140	20
15.644.0800	8	8	140	25
15.644.1000	10	10	170	25
15.644.1200	12	12	170	30
15.644.1600	16	16	200	35
15.644.2000	20	20	200	40

› 15.650 *Phantom*



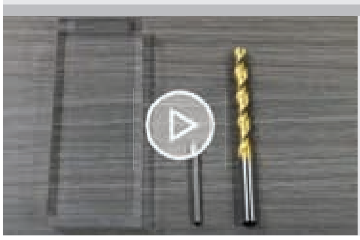


NL HSS-E NC-Centreerboor 90°, MK
FR Foret à pointer NC HSS-E 90°, CM
ES Broca de puntear NC HSS-E 90°, CM
DE HSS-E NC Anbohrer 90°, MK
EN HSS-E NC Spotting Drill 90°, MT

HSS-E | 90° | DIN 228-B

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	45-50 E	30-40 E	10-15 D	18-28 E

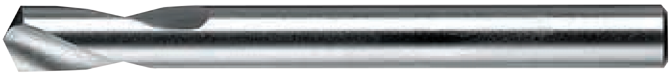
Ref.	d1	d2	l1	l2
15.650.1600	16	MK 2	148	35
15.650.2000	20	MK 2	148	40
15.650.2500	25	MK 3	171	45

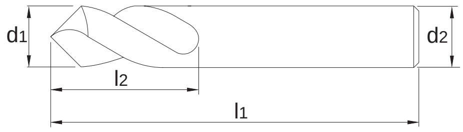


NL Centreren met HSS boor 90°
FR Différence entre centrer avec un foret HSS 90° ou un foret de 120°
ES Centrar con una broca de puntear HSS 90°
DE Zentrieren mit HSS Zentrierbohrer 90°
EN Centerdrilling HSS centerdrill 90°

www.phantom.eu

› 15.700 Phantom





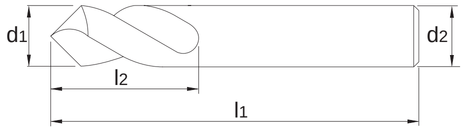
NL HSS-E NC-Centreerboor 120°
FR Foret à pointer NC HSS-E 120°
ES Broca de puntear NC HSS-E 120°
DE HSS-E NC Anbohrer 120°
EN HSS-E NC Spotting Drill 120°

HSS-E | 120° | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	45-50 E	30-40 E	10-15 D	18-28 E

Ref.	d1	d2	l1	l2
15.700.0200	2	2	49	8
15.700.0300	3	3	50	10
15.700.0400	4	4	52	12
15.700.0500	5	5	60	15
15.700.0600	6	6	66	20
15.700.0800	8	8	79	25
15.700.1000	10	10	89	25
15.700.1200	12	12	102	30
15.700.1400	14	14	115	35
15.700.1600	16	16	115	35
15.700.1800	18	18	130	40
15.700.2000	20	20	131	40
15.700.2500	25	25	138	45

› 15.704 Phantom



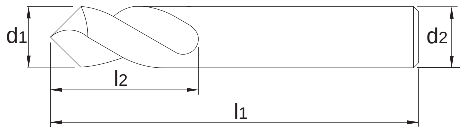
NL HSS-E NC-Centreerboor TiAlN, 120°
FR Foret à pointer NC HSS-E TiAlN, 120°
ES Broca de puntear NC HSS-E TiAlN, 120°
DE HSS-E NC Anbohrer TiAlN, 120°
EN HSS-E NC Spotting Drill TiAlN, 120°

HSS-E | 120° | TiAlN | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

Ref.	d1	d2	l1	l2
15.704.0300	3	3	50	10
15.704.0400	4	4	52	12
15.704.0500	5	5	60	15
15.704.0600	6	6	66	20
15.704.0800	8	8	79	25
15.704.1000	10	10	89	25
15.704.1200	12	12	102	30
15.704.1600	16	16	115	35
15.704.2000	20	20	131	40
15.704.2500	25	25	138	45

› 15.740 Phantom

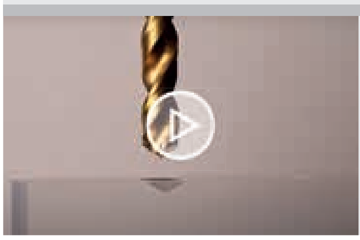


NL HSS-E NC-Centreerboor 120°, lang
FR Foret à pointer NC HSS-E 120°, version longue
ES Broca de puntear NC HSS-E 120°, larga
DE HSS-E NC Anbohrer 120°, lang
EN HSS-E NC Spotting Drill 120°, long

HSS-E | 120° | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	45-50 E	30-40 E	10-15 D	18-28 E

Ref.	d1	d2	l1	l2
15.740.0400	4	4	100	12
15.740.0500	5	5	120	15
15.740.0600	6	6	140	20
15.740.0800	8	8	140	25
15.740.1000	10	10	170	25
15.740.1200	12	12	170	30
15.740.1600	16	16	200	35
15.740.2000	20	20	200	40

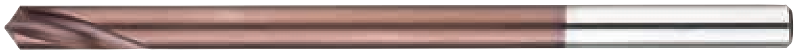


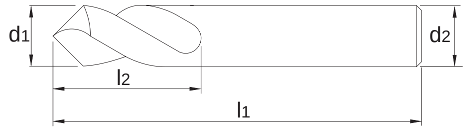
NL Centreren met HSS boor 120°
FR Centrer avec un foret HSS 120°
ES Centrar con una broca de puntear HSS 120°
DE Zentrieren mit HSS Zentrierbohrer 120°
EN Centerdrilling HSS centerdrill 120°

Watch me

www.phantom.eu

› 15.744 Phantom





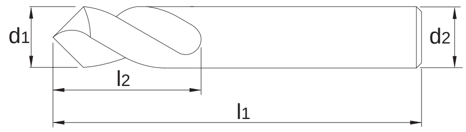
NL HSS-E NC-Centreerboor TiAlN, 120°, lang
FR Foret à pointer NC HSS-E TiAlN, 120°, version longue
ES Broca de puntear NC HSS-E TiAlN, 120°, larga
DE HSS-E NC Anbohrer TiAlN, 120°, lang
EN HSS-E NC Spotting Drill TiAlN, 120°, long

HSS-E | 120° | TiAlN | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

Ref.	d1	d2	l1	l2
15.744.0400	4	4	100	12
15.744.0500	5	5	120	15
15.744.0600	6	6	140	20
15.744.0800	8	8	140	25
15.744.1000	10	10	170	25
15.744.1200	12	12	170	30
15.744.1600	16	16	200	35
15.744.2000	20	20	200	40

› 15.751 Phantom



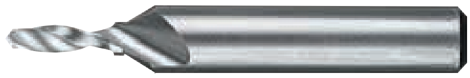
NL HSS-E NC-Centreerboor TiN, 142°
FR Foret à pointer NC HSS-E TiN, 142°
ES Broca de puntear NC HSS-E TiN, 142°
DE HSS-E NC Anbohrer TiN, 142°
EN HSS-E NC Spotting Drill TiN, 142°

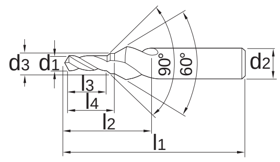
HSS-E | TiN | 142° | h7

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

Ref.	d1	d2	l1	l2
15.751.0300	3	3	50	10
15.751.0400	4	4	52	12
15.751.0500	5	5	60	15
15.751.0600	6	6	66	20
15.751.0800	8	8	79	25
15.751.1000	10	10	89	25
15.751.1200	12	12	102	30
15.751.1600	16	16	115	35
15.751.2000	20	20	131	40

› 15.820 Phantom





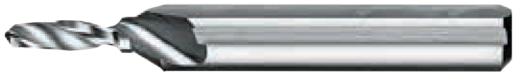
NL HSS-E Centerboor voor tapgaten, 60°
FR Foret à centrer HSS-E pour trous à tarauder, 60°
ES Broca escalonada HSS-E para pretaladros con centraje, 60°
DE HSS-E Zentrierbohrer für Gewindelöcher, 60°
EN HSS-E Centre Drill for threaded holes, 60°

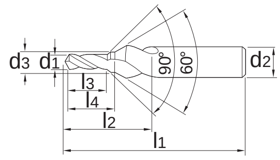
HSS-E | 60° | DIN 332-D | h7 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	M	d1	d3	l1	l2	l4	l3	d2
15.820.0400	4	3.3	4.3	63	23	12.6	11	8
15.820.0500	5	4.2	5.3	67	27	15.1	13	10
15.820.0600	6	5	6.4	71	33	18.9	16	12.5
15.820.0800	8	6.8	8.4	88	41	23	19	14
15.820.1000	10	8.5	10.5	90	47	27.7	23	16
15.820.1200	12	10.2	13	105	59	34.5	28	20

› 15.840 Phantom





NL HSS-E Centerboor voor tapgaten, 60°, met spanvlak
FR Foret à centrer HSS-E pour trous à tarauder, 60°, avec méplat
ES Broca escalonada HSS-E para pretaladros con centraje, 60°, con plano de arrastre
DE HSS-E Zentrierbohrer für Gewindelöcher, 60°, mit ebener Fläche
EN HSS-E Centre Drill for threaded holes, 60°, with flat face

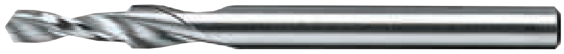
HSS-E | 60° | DIN 332-D | h7 | 118°

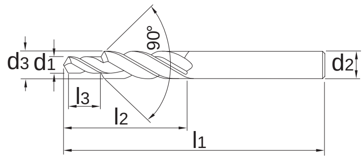
P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	M	d1	d3	l1	l2	l4	l3	d2
15.840.0400	4	3.3	4.3	63	23	12.6	11	8
15.840.0500	5	4.2	5.3	67	27	15.1	13	10
15.840.0600	6	5	6.4	71	33	18.9	16	12.5
15.840.0800	8	6.8	8.4	88	41	23	19	14
15.840.1000	10	8.5	10.5	90	47	27.7	23	16

Ref.	M	d1	d3	l1	l2	l4	l3	d2
15.840.1200	12	10.2	13	105	59	34.5	28	20
15.840.1600	16	14	17	132	67	41.3	33	25
15.840.2000	20	17.5	21	145	77	48.3	38	31.5
15.840.2400	24	21	25	160	90	57	45	40

› 15.880 Phantom





NL HSS-E Kerngat-spiraalboor voor tapgaten, 90°
FR Foret étagé HSS-E pour trous à tarauder, 90°
ES Broca de centrar HSS-E para pretaladros con centraje, 90°
DE HSS-E Kernlochbohrer für Gewindelöcher, 90°
EN HSS-E Step Drill for threaded holes, 90°

HSS-E | 90° | h8 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	M	d1	d3	l1	l2	l3	d2
15.880.0300	3	2.5	3.4	52	20	8	3.4
15.880.0400	4	3.3	4.5	58	24	11	4.5
15.880.0500	5	4.2	5.5	66	28	13	5.5
15.880.0600	6	5	6.6	70	31	16	6.6

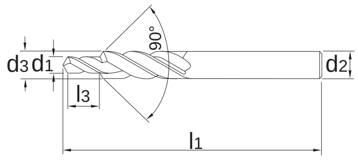
Ref.	M	d1	d3	l1	l2	l3	d2
15.880.0800	8	6.8	9	64	40	20	9
15.880.1000	10	8.5	11	95	47	24	11
15.880.1200	12	10.2	14	107	54	29	14

NL Verschil tussen centerboor en centreerboor
FR La différence entre un foret à centrer et un foret à pointer
ES Diferencia entre broca de centrar y broca de puntear
DE Unterschied zwischen Zentrierbohrer und Anbohrer
EN The difference between centre drills and spot drills

Read me

www.phantom.eu

› 16.100 Phantom



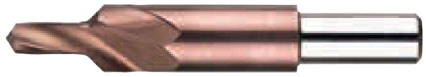
NL HSS-E Meerfasenboor fijnpassing, kort, 90°
FR Foret étagé HSS-E ajustement fin, version courte, 90°
ES Broca bidiametral HSS-E ajuste fino, corto, 90°
DE HSS-E Mehrfasenstufenbohrer Senkung fein, kurz, 90°
EN HSS-E Subland Drill fine tolerances, short, 90°

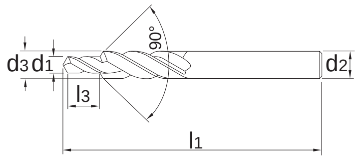
HSS-E | 90° | N | h9 | 1 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	M	d1	d3	l1	l3	d2
16.100.0200	2	2.2	4.6	45	6	4.6
16.100.0250	2.5	2.7	5.7	45	7	5.7
16.100.0300	3	3.2	6.5	45	9	6.5
16.100.0400	4	4.3	8.6	50	11	8.6
16.100.0500	5	5.3	10.4	55	13	10.4
16.100.0600	6	6.4	12.4	63	15	12.4
16.100.0800	8	8.4	16.4	100	19	12.5
16.100.1000	10	10.5	20.4	110	23	12.5

› 16.104 Phantom





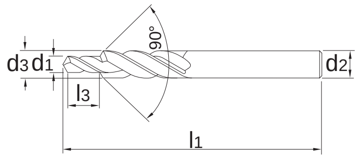
NL HSS-E Meerfasenboor fijnpassing, AlCrN-X, kort, 90°
FR Foret étagé HSS-E ajustement fin, AlCrN-X, version courte, 90°
ES Broca bidiametral HSS-E ajuste fino, AlCrN-X, corto, 90°
DE HSS-E Mehrfasenstufenbohrer Senkung fein, AlCrN-X, kurz, 90°
EN HSS-E Subland Drill fine tolerances, AlCrN-X, short, 90°

HSS-E | AlCrN-X | 90° | N | h9 | 1 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 E	20-25 D

Ref.	M	d1	d3	l1	l3	d2
16.104.0300	3	3.2	6.5	45	9	6.5
16.104.0400	4	4.3	8.6	50	11	8.6
16.104.0500	5	5.3	10.4	55	13	10.4
16.104.0600	6	6.4	12.4	63	15	12.4
16.104.0800	8	8.4	16.4	100	19	12.5
16.104.1000	10	10.5	20.4	110	23	12.5

› 16.120 Phantom



NL HSS-E Meerfasenboor fijnpassing, lang, 90°
FR Foret étagé HSS-E ajustement fin, version longue, 90°
ES Broca bidiametral HSS-E ajuste fino, larga, 90°
DE HSS-E Mehrfasenstufenbohrer Senkung fein, lang, 90°
EN HSS-E Subland Drill fine tolerances, long, 90°

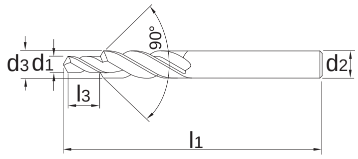
HSS-E | 90° | N | h9 | 1 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	M	d1	d3	l1	l3	d2
16.120.0400	4	4.3	8.6	110	30	8.6
16.120.0500	5	5.3	10.4	110	30	10.4
16.120.0600	6	6.4	12.4	110	30	12.4
16.120.0800	8	8.4	16.4	110	30	12.5
16.120.1000	10	10.5	20.4	110	30	12.5

16.124 Phantom

NL HSS-E Meerfasenboor fijnpassing, AlCrN-X, lang, 90°
FR Foret étagé HSS-E ajustement fin, AlCrN-X, version longue, 90°
ES Broca bidiametral HSS-E ajuste fino, AlCrN-X, larga, 90°
DE HSS-E Mehrfasenstufenbohrer Senkung fein, AlCrN-X, lang, 90°
EN HSS-E Subland Drill fine tolerances, AlCrN-X, long, 90°



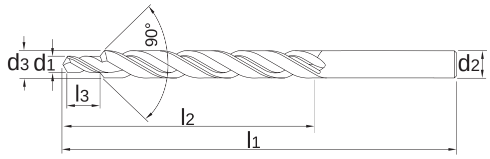
HSS-E | AlCrN-X | 90° | N | h9 | 1 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 E	20-25 D

Ref.	M	d1	d3	l1	l3	d2
16.124.0400	4	4.3	8.6	110	30	8.6
16.124.0500	5	5.3	10.4	110	30	10.4
16.124.0600	6	6.4	12.4	110	30	12.4
16.124.0800	8	8.4	16.4	110	30	12.5
16.124.1000	10	10.5	20.4	110	30	12.5

16.200 Phantom

NL HSS Meerfasenboor middelpassing, kort, 90°
FR Foret étagé HSS ajustement moyen, version courte, 90°
ES Broca bidiametral HSS ajuste medio, corto, 90°
DE HSS Mehrfasenstufenbohrer mittelpassung, kurz, 90°
EN HSS Subland Drill medial tolerances, short, 90°



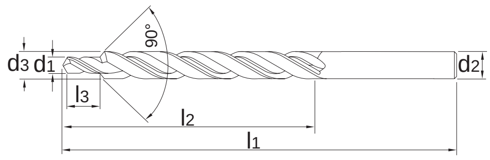
HSS | 90° | DIN 8374 | N | h9 | 2 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.200.0300	3	3.4	6.6	101	63	9	6.6
16.200.0400	4	4.5	9	125	81	11	9
16.200.0500	5	5.5	11	142	94	13	11
16.200.0600	6	6.6	13	151	101	15	13
16.200.0800	8	9	17.2	191	130	19	17.2

16.220 Phantom

NL HSS Meerfasenboor fijnpassing, kort, 90°
FR Foret étagé HSS ajustement fin, version courte, 90°
ES Broca bidiametral HSS ajuste fino, corto, 90°
DE HSS Mehrfasenstufenbohrer Senkung fein, kurz, 90°
EN HSS Subland Drill fine tolerances, short, 90°



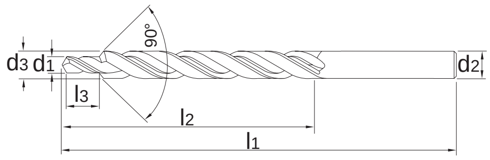
HSS | 90° | DIN 8374 | N | h9 | 1 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.220.0300	3	3.2	6	93	57	9	6
16.220.0400	4	4.3	8	117	75	11	8
16.220.0500	5	5.3	10	133	87	13	10
16.220.0600	6	6.4	11.5	142	94	15	11.5
16.220.0800	8	8.4	15	169	114	19	15
16.220.1000	10	10.5	19	198	135	23	19

› 16.250 Phantom

NL **HSS Kerngat-spiraalboor voor tapgaten, 90°**
FR **Foret étagé HSS pour trous à tarauder, 90°**
ES **Broca de centrar HSS para pretaladros con centraje, 90°**
DE **HSS Kernlochbohrer für Gewindelöcher, 90°**
EN **HSS Step Drill for threaded holes, 90°**



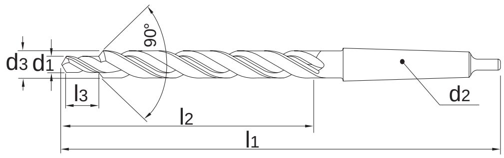
HSS | 90° | DIN 8378 | N | h9 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.250.0300	3	2.5	3.4	70	39	8.8	3.4
16.250.0400	4	3.3	4.5	80	47	11.4	4.5
16.250.0500	5	4.2	5.5	93	57	13.6	5.5
16.250.0600	6	5	6.6	101	63	16.5	6.6
16.250.0800	8	6.8	9	125	81	21	9
16.250.1000	10	8.5	11	142	94	25.5	11
16.250.1200	12	10.2	13.5	160	108	30	13.5

› 16.300 Phantom

NL **HSS Meerfasenboor middelpassing, kort, 90°, MK**
FR **Foret étagé HSS ajustement moyen, version courte, 90°, CM**
ES **Broca bidiametral HSS ajuste medio, corto, 90°, CM**
DE **HSS Mehrfasenstufenbohrer Senkung mittel, kurz, 90°, MK**
EN **HSS Subland Drill medial tolerances, short, 90°, MT**

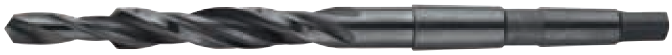


HSS | 90° | DIN 8375 | N | DIN 228-B | 2 | 118°

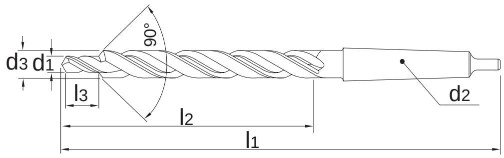
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.300.0500	5	5.5	11	175	94	13	MK 1
16.300.0600	6	6.6	13	182	101	15	MK 1
16.300.0800	8	9	17.2	228	130	19	MK 2
16.300.1000	10	11	21.5	248	150	23	MK 2

› 16.350 Phantom



NL **HSS Kerngat-spiraalboor voor tapgaten, 90°, MK**
FR **Foret étagé HSS pour trous à tarauder, 90°, CM**
ES **Broca de centrar HSS para pretaladros con centraje, 90°, CM**
DE **HSS Kernlochbohrer für Gewindelöcher, 90°, MK**
EN **HSS Step Drill for threaded holes, 90°, MT**



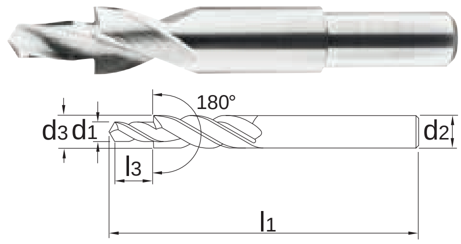
HSS | 90° | DIN 8379 | N | DIN 228-B | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.350.0800	8	6.8	9	162	81	21	MK 1
16.350.1000	10	8.5	11	175	94	25.5	MK 1
16.350.1200	12	10.2	13.5	189	108	30	MK 1
16.350.1400	14	12	15.5	218	120	34.5	MK 2
16.350.1600	16	14	17.5	228	130	38.5	MK 2
16.350.1800	18	15.5	20	238	140	43.5	MK 2
16.350.2000	20	17.5	22	248	150	47.5	MK 2

› 16.500 Phantom

NL **HSS-E Meerfasenboor 180°**
FR **Foret étagé HSS-E 180°**
ES **Broca bidiametral HSS-E 180°**
DE **HSS-E Mehrfasenstufenbohrer 180°**
EN **HSS-E Subland Drill 180°**



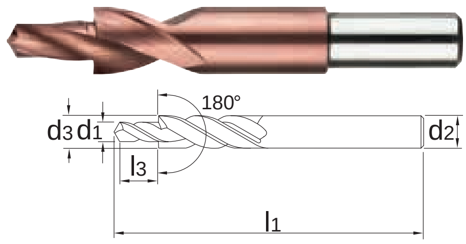
HSS-E | 180° | h9 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	M	d1	d3	l1	l3	d2
16.500.0300	3	3.4	6	45	9	6
16.500.0400	4	4.5	8	50	11	8
16.500.0500	5	5.5	10	55	13	10
16.500.0600	6	6.6	11	63	15	11
16.500.0800	8	9	15	100	19	12.5
16.500.1000	10	11	18	110	23	12.5
16.500.1200	12	14	20	110	28	12.5

› 16.504 Phantom

NL **HSS-E Meerfasenboor AlCrN-X, 180°**
FR **Foret étagé HSS-E AlCrN-X, 180°**
ES **Broca bidiametral HSS-E AlCrN-X, 180°**
DE **HSS-E Mehrfasenstufenbohrer AlCrN-X, 180°**
EN **HSS-E Subland Drill AlCrN-X, 180°**



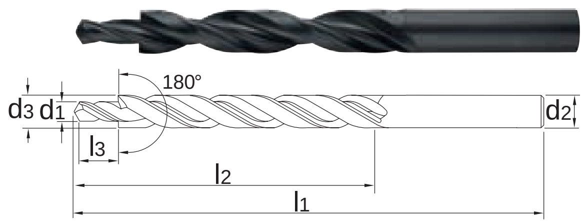
HSS-E | AlCrN-X | 180° | h9 | 118°

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 E	20-25 D

Ref.	M	d1	d3	l1	l3	d2
16.504.0400	4	4.5	8	50	11	8
16.504.0500	5	5.5	10	55	13	10
16.504.0600	6	6.6	11	63	15	11
16.504.0800	8	9	15	100	19	12.5
16.504.1000	10	11	18	110	23	12.5

› 16.600 Phantom

NL **HSS Meerfasenboor 180°**
FR **Foret étagé HSS 180°**
ES **Broca bidiametral HSS 180°**
DE **HSS Mehrfasenstufenbohrer 180°**
EN **HSS Subland Drill 180°**

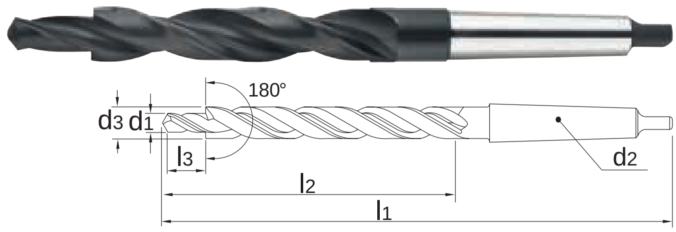


HSS | 180° | DIN 8376 | N | h9 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.600.0300	3	3.4	6	93	57	9	6
16.600.0400	4	4.5	8	117	75	11	8
16.600.0500	5	5.5	10	133	87	13	10
16.600.0600	6	6.6	11	142	94	15	11
16.600.0800	8	9	15	169	114	19	15
16.600.1000	10	11	18	191	130	23	18

› 16.700 Phantom



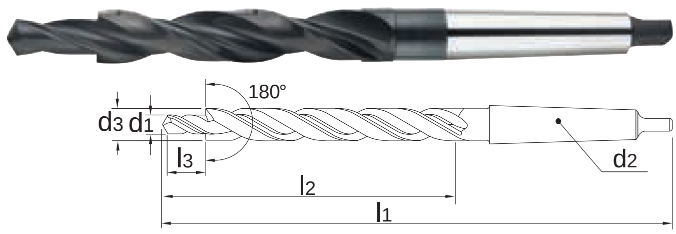
NL **HSS Meerfasenboor 180°, MK**
FR **Foret étagé HSS 180°, CM**
ES **Broca bidiametral HSS 180°, CM**
DE **HSS Mehrfasenstufenbohrer 180°, MK**
EN **HSS Subland Drill 180°, MT**

HSS | 180° | DIN 8377 | N | DIN 228-B | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.700.0500	5	5.5	10	168	87	13	MK 1
16.700.0600	6	6.6	11	175	94	15	MK 1
16.700.0800	8	9	15	212	114	19	MK 2
16.700.1000	10	11	18	228	130	23	MK 2
16.700.1200	12	13.5	20	238	140	27	MK 2
16.700.1400	14	15.5	24	281	160	31	MK 3
16.700.1600	16	17.5	26	286	165	35	MK 3
16.700.1800	18	20	30	296	175	39	MK 3
16.700.2000	20	22	33	334	185	43	MK 4

› 16.730 Phantom



NL **HSS Meerfasenboor 180°, MK**
FR **Foret étagé HSS 180°, CM**
ES **Broca bidiametral HSS 180°, CM**
DE **HSS Mehrfasenstufenbohrer 180°, MK**
EN **HSS Subland Drill 180°, MT**

HSS | 180° | N | DIN 228-B | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d1	d3	l1	l2	l3	d2
16.730.0800	8	8.4	13.5	189	108	20	MK 1
16.730.1000	10	10.5	16.5	223	125	24	MK 2
16.730.1200	12	13	19	233	135	28	MK 2
16.730.1400	14	15	23	253	155	32	MK 2
16.730.1600	16	17	25	281	160	36	MK 3

19.100 Phantom

NL **Set Spiraalboren leeg**
FR **Coffret de Forets vide**
ES **Estuche de brocas vacío**
DE **Satz Spiralbohrer Leer**
EN **Drill set empty**

Ref.	Ø mm
19.100.1050	1-10 mm x 0,5 mm
19.100.1305	1-13 mm x 0,5 mm
19.100.1350	1-13 mm x 0,5 mm
19.100.1450	1-10,5 mm x 0,5 mm + 3,3-4,2-6,8-10,2 mm
19.100.1602	6-10 mm x 0,1 mm
19.100.1605	1-5,9 mm x 0,1 mm
19.100.9965	1-10 mm x 0,1 mm (91x)

19.113 Phantom

NL **HSS Set Spiraalboren**
FR **Coffret de Forets HSS**
ES **Estuche de brocas HSS**
DE **HSS Satz Spiralbohrer**
EN **HSS Drill set**

HSS | OX. | DIN 1897 | N | ≥1,6 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.113.1000	11.130	1-10 mm x 0,5 mm
19.113.1300	11.130	1-13 mm x 0,5 mm

19.116 Phantom

NL **HSS-E Set Spiraalboren**
FR **Coffret de Forets HSS-E**
ES **Estuche de brocas HSS-E**
DE **HSS-E Satz Spiralbohrer**
EN **HSS-E Drill set**

HSS-E | DIN 1897 | N | ≥2 | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	Type	Ø mm
19.116.1000	11.160	1-10 mm x 0,5 mm
19.116.1300	11.160	1-13 mm x 0,5 mm

› 19.120 *International Tools*

NL ECO HSS Set Spiraalboren
FR Coffret de Forets HSS ECO
ES Estuche de brocas HSS ECO
DE ECO HSS Satz Spiralbohrer
EN ECO HSS Drill set

HSS	DIN 338	N			118°	ECO		
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	45-50 E	35-40 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.120.1000	11.416	1-10 mm x 0,5 mm
19.120.1300	11.416	1-13 mm x 0,5 mm
19.120.6000	11.416	1-10 mm x 0,5 mm (170x)

› 19.124 *International Tools*

NL ECO PRO HSS Set Spiraalboren
FR Coffret de Forets HSS ECO PRO
ES Estuche de brocas HSS ECO PRO
DE ECO PRO HSS Satz Spiralbohrer
EN ECO PRO HSS Drill set

HSS	DIN 338	N			118°	ECO PRO		
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	45-50 E	35-40 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.124.1000	11.420	1-10 mm x 0,5 mm
19.124.1010	11.420	1-10 mm x 0,1 mm (91x)
19.124.1300	11.420	1-13 mm x 0,5 mm
19.124.6000	11.420	1-10 mm x 0,5 mm (170x)
19.124.6100	11.420	1-13 mm x 0,5 mm + 3,3 - 4,2 mm (220x)

› 19.127 *International Tools*

NL ECO HSS Set Spiraalboren Kruisaanslijping, blank
FR Coffret de Forets HSS ECO Affûtage en croix, finition polie
ES Estuche de brocas HSS ECO Afilado en cruz, blanca
DE ECO HSS Satz Spiralbohrer Kreuzanschliff, blank
EN ECO HSS Drill set Split point, bright finish

HSS	DIN 338	N		>3	118°	ECO	
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	35-40 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.127.1000	11.423	1-10 mm x 0,5 mm
19.127.1300	11.423	1-13 mm x 0,5 mm

› 19.130 International Tools

NL ECO HSS Set Spiraalboren Kruisaanslijping
FR Coffret de Forets HSS ECO Affûtage en croix
ES Estuche de brocas HSS ECO Afilado en cruz
DE ECO HSS Satz Spiralbohrer Kreuzanschliff
EN ECO HSS Drill set Split point

HSS | DIN 338 | N | >3 | 118° | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	35-40 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.130.1000	11.426	1-10 mm x 0,5 mm
19.130.1300	11.426	1-13 mm x 0,5 mm

Ref.	Type	Ø mm
19.130.6000	11.426	1-10 mm x 0,5 mm (170x)

› 19.134 International Tools

NL ECO PRO HSS Set Spiraalboren Kruisaanslijping
FR Coffret de Forets HSS ECO PRO Affûtage en croix
ES Estuche de brocas HSS ECO PRO Afilado en cruz
DE ECO PRO HSS Satz Spiralbohrer Kreuzanschliff
EN ECO PRO HSS Drill set Split point

HSS | DIN 338 | N | >3 | 118° | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	35-40 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.134.1000	11.430	1-10 mm x 0,5 mm
19.134.1300	11.430	1-13 mm x 0,5 mm

Ref.	Type	Ø mm
19.134.6000	11.430	1-10 mm x 0,5 mm (170x)
19.134.6100	11.430	1-13 mm x 0,5 mm + 3,3 - 4,2 mm (220x)

› 19.135 International Tools

NL ECO PRO HSS Set Spiraalboren Step-point, TiN-tip, met drievlaks schacht
FR Coffret de Forets HSS ECO PRO Step-point, avec revêtement TiN sur la partie utile, queue à trois méplats
ES Estuche de brocas HSS ECO PRO Step-point, con punta TiN, con mango 3 chaflanes
DE ECO PRO HSS Satz Spiralbohrer Step-point, TiN-Tip, 3-Flächen-Schaft
EN ECO PRO HSS Drill set Step-point, TiN coated tip, with 3 flat surfaces

NIEUW / NOUVEAU / NUEVO / NEU

HSS | TiN | DIN 338 | N | ≥4 | ≥2,5 | ≥2 | 118° | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.135.1000	11.434	1-10 mm x 0,5 mm

Ref.	Type	Ø mm
19.135.1300	11.434	1-13 mm x 0,5 mm

› 19.136 *International Tools*

- NL ECO PRO HSS Set Spiraalboren TiN-tip
- FR Coffret de Forets HSS ECO PRO avec revêtement TiN sur la partie utile
- ES Estuche de brocas HSS ECO PRO con punta TiN
- DE ECO PRO HSS Satz Spiralbohrer TiN-Tip
- EN ECO PRO HSS Drill set TiN coated tip

HSS | TiN | DIN 338 | N | >3 | 118° | ECO PRO

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	48-60 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.136.1000	11.431	1-10 mm x 0,5 mm
19.136.1300	11.431	1-13 mm x 0,5 mm

› 19.137 *Phantom*

- NL HSS Set Spiraalboren met drievlaks schacht
- FR Coffret de Forets HSS queue à trois méplats
- ES Estuche de brocas HSS con mango 3 chaflanes
- DE HSS Satz Spiralbohrer 3-Flächen-Schaft
- EN HSS Drill set with 3 flat surfaces

HSS | OX. | DIN 338 | N | <4 | ≥4 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.137.1000	11.440	1-10 mm x 0,5 mm
19.137.1300	11.440	1-13 mm x 0,5 mm

› 19.138 *Phantom*

- NL HSS Set Spiraalboren TiN-tip, met drievlaks schacht, (handgebruik)
- FR Coffret de Forets HSS avec revêtement TiN sur la partie utile, queue à trois méplats, (usage à la main)
- ES Estuche de brocas HSS con punta TiN, con mango 3 chaflanes, (uso manual)
- DE HSS Satz Spiralbohrer TiN-Tip, 3-Flächen-Schaft, (handgebrauch)
- EN HSS Drill set TiN coated tip, with 3 flat surfaces, (handuse)

HSS | TiN | DIN 338 | >N | <4 | ≥4 | ≥1,6 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
27-30 F	25-28 F	17-22 E	10-14 D	20-33 E	20-28 E	50-80 E	45-70 G	40-65 D	25-36 D

Ref.	Type	Ø mm
19.138.1000	11.441	1-10 mm x 0,5 mm
19.138.1300	11.441	1-13 mm x 0,5 mm

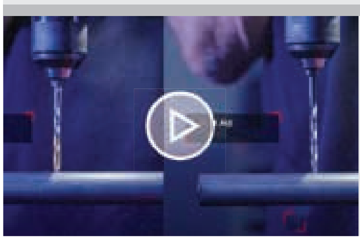
› 19.139 Phantom

NL HSS Set Spiraalboren Step-point, met drievlaks schacht
FR Coffret de Forets HSS Step-point, queue à trois méplats
ES Estuche de brocas HSS Step-point, con mango 3 chaflanes
DE HSS Satz Spiralbohrer Step-point, 3-Flächen-Schaft
EN HSS Drill set Step-point, with 3 flat surfaces

HSS | OX. | DIN 338 | N | ≥4 | ≥2,5 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.139.0310	11.443	3-10 mm x 1 mm	19.139.1300	11.443	1-13 mm x 0,5 mm
19.139.1000	11.443	1-10 mm x 0,5 mm			



NL Step-point spiraalboor in actie
FR Regardez le foret à pointe étagée Step-point en action
ES Broca escalonada en acción
DE Spiralbohrer mit Stufenspitze in Aktion
EN Step-Point Stub Drill in Action

Watch me

www.phantom.eu

› 19.140 Phantom

NL HSS-E Set Spiraalboren met drievlaks schacht
FR Coffret de Forets HSS-E queue à trois méplats
ES Estuche de brocas HSS-E con mango 3 chaflanes
DE HSS-E Satz Spiralbohrer 3-Flächen-Schaft
EN HSS-E Drill set with 3 flat surfaces

HSS-E | DIN 338 | N | <4 | ≥4 | ≥2 | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.140.1000	11.445	1-10 mm x 0,5 mm	19.140.1300	11.445	1-13 mm x 0,5 mm

› 19.141 Phantom

NL HSS-E Set Spiraalboren TiN-tip, met drievlaks schacht, (handgebruik)
FR Coffret de Forets HSS-E avec revêtement TiN sur la partie utile, queue à trois méplats, (usage à la main)
ES Estuche de brocas HSS-E con punta TiN, con mango 3 chaflanes, (uso manual)
DE HSS-E Satz Spiralbohrer TiN-Tip, 3-Flächen-Schaft, (handgebrauch)
EN HSS-E Drill set TiN coated tip, with 3 flat surfaces, (handuse)

HSS-E	TiN	DIN 338	>N	<4	≥4	≥1,6	118°		

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
32-40 E	35-40 E	25-32 E	12-20 D	15-20 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.141.1000	11.446	1-10 mm x 0,5 mm	19.141.1300	11.446	1-13 mm x 0,5 mm

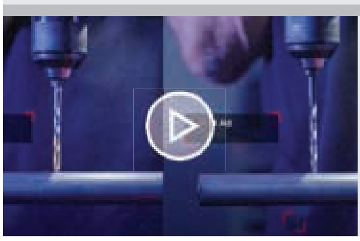
› 19.142 Phantom

NL HSS-E Set Spiraalboren Step-point, met drievlaks schacht
FR Coffret de Forets HSS-E Step-point, queue à trois méplats
ES Estuche de brocas HSS-E Step-point, con mango 3 chaflanes
DE HSS-E Satz Spiralbohrer Step-point, 3-Flächen-Schaft
EN HSS-E Drill set Step-point, with 3 flat surfaces

HSS-E	OX.	DIN 338	N	≥4	≥2,5		118°	

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.142.0310	11.447	3-10 mm x 1 mm	19.142.1300	11.447	1-13 mm x 0,5 mm
19.142.1000	11.447	1-10 mm x 0,5 mm			



NL Step-point spiraalboor in actie
FR Regardez le foret à pointe étagée Step-point en action
ES Broca escalonada en acción
DE Spiralbohrer mit Stufenspitze in Aktion
EN Step-Point Stub Drill in Action

Watch me

www.phantom.eu

19.144 International Tools

NL ECO HSS Set Spiraalboren gewalst
FR Coffret de Forets HSS ECO laminé
ES Estuche de brocas HSS ECO laminada
DE ECO HSS Satz Spiralbohrer Gewalzt
EN ECO HSS Drill set roll-forged

HSS | DIN 338 | N | 118° | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.144.1002	11.400	1-10 mm x 0,5 mm	19.144.6001	11.400	1-10 mm x 0,5 mm (170x)
19.144.1302	11.400	1-13 mm x 0,5 mm	19.144.6100	11.400	1-13 mm x 0,5 mm + 3,3 - 4,2 mm (220x)

19.145 Phantom

NL HSS Set Spiraalboren
FR Coffret de Forets HSS
ES Estuche de brocas HSS
DE HSS Satz Spiralbohrer
EN HSS Drill set

HSS | OX. | DIN 338 | N | ≥1 | 118°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.145.1000	11.450	1-10 mm x 0,5 mm	19.145.1590	11.450	1-5,9 mm x 0,1 mm
19.145.1010	11.450	1-10 mm x 0,1 mm (91x)	19.145.1600	11.450	6-10 mm x 0,1 mm
19.145.1150	11.450	1-10,5 mm x 0,5 mm + 3,3-4,2-6,8-10,2 mm	19.145.6000	11.450	1-10 mm x 0,5 mm (170x)
19.145.1300	11.450	1-13 mm x 0,5 mm	19.145.6100	11.450	1-13 mm x 0,5 mm + 3,3 - 4,2 mm (220x)

19.146 Phantom

NL HSS Set Spiraalboren TiN-tip
FR Coffret de Forets HSS avec revêtement TiN sur la partie utile
ES Estuche de brocas HSS con punta TiN
DE HSS Satz Spiralbohrer TiN-Tip
EN HSS Drill set TiN coated tip

HSS | TiN | DIN 338 | N | ≥1,6 | 118°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	48-60 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.146.1000	11.451	1-10 mm x 0,5 mm	19.146.1150	11.451	1-10,5 mm x 0,5 mm + 3,3-4,2-6,8-10,2 mm
19.146.1010	11.451	1-10 mm x 0,1 mm (91x)	19.146.1300	11.451	1-13 mm x 0,5 mm

› 19.147 *Phantom*

NL HSS Set Spiraalboren TiN-tip, (handgebruik)
FR Coffret de Forets HSS avec revêtement TiN sur la partie utile, (usage à la main)
ES Estuche de brocas HSS con punta TiN, (uso manual)
DE HSS Satz Spiralbohrer TiN-Tip, (handgebrauch)
EN HSS Drill set TiN coated tip, (handuse)

HSS | TiN | DIN 338 | >N | ≥1,6 | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	48-60 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.147.0310	11.461	3-10 mm x 1 mm
19.147.1000	11.461	1-10 mm x 0,5 mm
19.147.1010	11.461	1-10 mm x 0,1 mm (91x)
19.147.1150	11.461	1-10,5 mm x 0,5 mm + 3,3-4,2-6,8-10,2 mm
19.147.1300	11.461	1-13 mm x 0,5 mm

› 19.149 *International Tools*

NL ECO PRO HSS-E Set Spiraalboren
FR Coffret de Forets HSS-E ECO PRO
ES Estuche de brocas HSS-E ECO PRO
DE ECO PRO HSS-E Satz Spiralbohrer
EN ECO PRO HSS-E Drill set

HSS-E | DIN 338 | N | >3 | 135° | ECO PRO

P 11	P 12	P 13	M 21	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	14-18 D	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	Type	Ø mm
19.149.1000	11.490	1-10 mm x 0,5 mm
19.149.1300	11.490	1-13 mm x 0,5 mm
19.149.6000	11.490	1-10 mm x 0,5 mm (170x)
19.149.6100	11.490	1-13 mm x 0,5 mm + 3,3 - 4,2 mm (220x)

› 19.150 *Phantom*

NL HSS-E Set Spiraalboren
FR Coffret de Forets HSS-E
ES Estuche de brocas HSS-E
DE HSS-E Satz Spiralbohrer
EN HSS-E Drill set

HSS-E | DIN 338 | N | ≥2 | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	Type	Ø mm
19.150.0310	11.500	3-10 mm x 1 mm
19.150.1000	11.500	1-10 mm x 0,5 mm
19.150.1010	11.500	1-10 mm x 0,1 mm (91x)
19.150.1150	11.500	1-10,5 mm x 0,5 mm + 3,3-4,2-6,8-10,2 mm
19.150.1300	11.500	1-13 mm x 0,5 mm
19.150.1590	11.500	1-5,9 mm x 0,1 mm
19.150.1600	11.500	6-10 mm x 0,1 mm
19.150.6000	11.500	1-10 mm x 0,5 mm (170x)
19.150.6100	11.500	1-13 mm x 0,5 mm + 3,3 - 4,2 mm (220x)

› 19.152 Phantom

NL **HSS-E Set Spiraalboren TiN-tip, (handgebruik)**
FR **Coffret de Forets HSS-E avec revêtement TiN sur la partie utile, (usage à la main)**
ES **Estuche de brocas HSS-E con punta TiN, (uso manual)**
DE **HSS-E Satz Spiralbohrer TiN-Tip, (handgebrauch)**
EN **HSS-E Drill set TiN coated tip, (handuse)**

HSS-E | TiN | DIN 338 | >N | ≥1,6 | 118°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
32-40 E	35-40 E	25-32 E	12-20 D	15-20 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.152.1000	11.506	1-10 mm x 0,5 mm	19.152.1300	11.506	1-13 mm x 0,5 mm

› 19.154 Phantom

NL **HSS-E 8% Set Spiraalboren Aero**
FR **Coffret de Forets HSS-E 8% Aéro**
ES **Estuche de brocas HSS-E 8% Aero**
DE **HSS-E 8% Satz Spiralbohrer Aero**
EN **HSS-E 8% Drill set Aero**

HSS-E 8% | P3 | NAS 907 | DIN 338 | N | 135°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC	Ni/Co	Ti
35-40 E	30-40 E	12-30 E	12-20 C	14-20 D	10-15 C	30-35 F	24-30 F	50-90 F	40-60 F	60-80 F	30-40 E	15-20 D	20-30 D	6-8 A	6-10 B

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.154.1000	11.510	1-10 mm x 0,5 mm	19.154.1300	11.510	1-13 mm x 0,5 mm

› 19.156 Phantom

NL **HP2 UNI HSS-E Set Spiraalboren TiN**
FR **Coffret de Forets HSS-E HP2 UNI TiN**
ES **Estuche de brocas HSS-E HP2 UNI TiN**
DE **HP2 UNI HSS-E Satz Spiralbohrer TiN**
EN **HP2 UNI HSS-E Drill set TiN**

HSS-E | TiN | DIN 338 | >N | 118° | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
38-42 F	20-44 E	20-40 E	16-22 C	15-20 D	12-18 C	40-45 F	35-40 F	50-70 E	40-60 F	60-80 F	40-44 E	15-20 D	24-28 D

Ref.	Type	Ø mm	Ref.	Type	Ø mm
19.156.1000	11.568	1-10 mm x 0,5 mm	19.156.1300	11.568	1-13 mm x 0,5 mm

› 19.160 Phantom

- NL **HM-tip Set Spiraalboren**
- FR **Coffret de Forets à plaquette carbure**
- ES **Estuche de brocas con punta Metal Duro**
- DE **Hartmetallbestückt Satz Spiralbohrer**
- EN **Carbide Tipped Drill set**

HM-TIP | DIN 338 | N | 120°

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK	Ni/Co	Ti
75-85 *	60-70 *	55-65 *	30-40 *	10-20 *	20-35 *	18-30 *	70-85 *	60-75 *	120-150 *	35-40 *	70-130 *	25-30 *	30-35 *

Ref.	Type	Ø mm
19.160.0310	11.600	3-4-5-6-7-8-9-10 mm

› 19.171 Phantom

- NL **HSS Set Spiraalboren Aluminium**
- FR **Coffret de Forets HSS Aluminium**
- ES **Estuche de brocas HSS Aluminio**
- DE **HSS Satz Spiralbohrer Aluminium**
- EN **HSS Drill set Aluminium**

HSS | DIN 338 | W | 130° | ALU

N 41	N 42	N 51	N 61
Alu	Alu Si>10%	Cu	PVC
50-70 F	40-60 F	35-40 E	18-28 E

Ref.	Type	Ø mm
19.171.1000	11.710	1-10 mm x 0,5 mm
19.171.1300	11.710	1-13 mm x 0,5 mm
19.171.1590	11.710	1-5,9 mm x 0,1 mm
19.171.1600	11.710	6-10 mm x 0,1 mm

› 19.176 Phantom

- NL **HSS-E Set Spiraalboren roestvaststaal**
- FR **Coffret de Forets HSS-E Inox**
- ES **Estuche de brocas HSS-E acero inoxidable**
- DE **HSS-E Satz Spiralbohrer rostfreien Stahl**
- EN **HSS-E Drill set stainless steel**

HSS-E | DIN 338 | >N | 130° | INOX

P 14	M 21	M 22	S 71	S 72
≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
12-16 E	14-18 D	12-16 C	6-8 A	6-10 B

Ref.	Type	Ø mm
19.176.1000	11.760	1-10 mm x 0,5 mm
19.176.1150	11.760	1-10,5 mm x 0,5 mm + 3,3-4,2-6,8-10,2 mm
19.176.1300	11.760	1-13 mm x 0,5 mm

› 19.363 Phantom

NL CV Set Houtspiraalboren
FR Jeu de Forets à bois Acier spécial (Chrome)
ES Juego de brocas para madera Cromo Vanadium
DE CV Satz Holzbohrer
EN CV Lip and Spur Drills set

CV | B

Ref.	Type	Ø mm
19.363.0310	13.603	3, 4, 5, 6, 7, 8, 9, 10 mm

› 19.370 Phantom

NL HM-tip set Steenboren
FR Jeu de Forets à pierre à plaquette carbure
ES Juego de brocas para piedra con punta Metal Duro
DE Hartmetallbestückt Satz Steinbohrer
EN Carbide Tipped Masonry Drill set

PU | HM | DIN 8039

Ref.	Type	Ø mm
19.370.0100	13.700	3, 4, 5, 6, 7, 8, 9, 10 mm

› 19.372 Phantom

NL HM-tip Set Betonboren
FR Jeu de Forets à béton à plaquette carbure
ES Juego de brocas para hormigón con punta Metal Duro
DE Hartmetallbestückt Satz Betonbohrer
EN Carbide Tipped Concrete Drill set

PU | HM

Ref.	Type	Ø mm
19.372.0100	13.720	3, 4, 5, 6, 7, 8, 9, 10 mm

› 19.374 Phantom

NL HM-tip Set Hamerboren, SDS-PLUS met 2 snijkanten
FR Jeu Forets à béton, SDS-PLUS à plaquette carbure à 2 taillants
ES Juego de brocas martillo, SDS-PLUS con punta Metal Duro con 2 labios
DE Hartmetallbestückt Satz Hammerbohrer, SDS-PLUS mit 2 Schneiden
EN Carbide Tipped Hammer Drill set, SDS-PLUS with 2 flutes

SDS plus | Z=2 | HM

Ref.	Type	Ø mm
19.374.0100	13.740	5x160, 6x160, 8x160, 10x160 mm
19.374.0512	13.740	5x110, 6x110, 8x110, 6x160, 8x160, 10x160, 12x160 mm
19.374.1000	13.740	5x110 , 6x160, 8x160, 10x160, 12x160, 8x210, 10x210, 12x210 mm (5x)

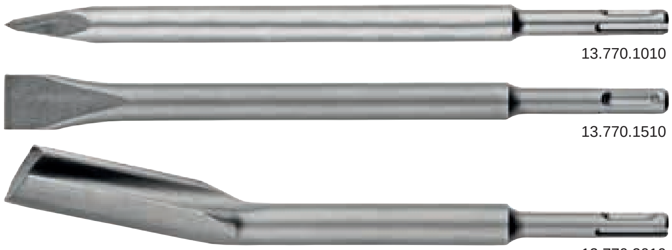
› 19.376 Phantom

NL HM-tip Set Hamerboren, SDS-PLUS met 4 snijkanten
FR Jeu de Forets à béton, SDS-PLUS à plaquette carbure à 4 taillants
ES Juego de brocas martillo, SDS-PLUS con punta Metal Duro con 4 labios
DE Hartmetallbestückt Satz Hammerbohrer, SDS-PLUS mit 4 Schneiden
EN Carbide Tipped Hammer Drill set, SDS-PLUS with 4 flutes

SDS plus | Z=4 | HM | SICHERSAFE POM

Ref.	Type	Ø mm
19.376.0512	13.744	5x110, 6x110, 8x110, 6x160, 8x160, 10x160, 12x160 mm

› 19.377 Phantom



13.770.1010

13.770.1510

13.770.2010

NL Set Beitels, SDS-PLUS
FR Jeu de Burins, SDS-PLUS
ES Juego de Cincel, SDS-PLUS
DE Satz Meißel, SDS-PLUS
EN Chisel set, SDS-PLUS

SDS plus

Ref.	Type	Ø mm
19.377.0100	13.770	13.770.1010-13.770.1510-13.770.2010

› 19.540 Phantom

NL HSS Set Centerboren
FR Jeu de Forets à centrer HSS
ES Juego de brocas de centrar HSS
DE HSS Satz Zentrierbohrer
EN HSS Centre Drill set

HSS | 60° | DIN 333-A | NFE 66051-A | h7

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
20-25 E	15-25 E	16-22 F	25-30 E	20-25 D	50-60 E	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	Type	Ø mm
19.540.0000	15.100	DIN 333A 0,5x3 (5) - 1x4 (5) - 1,5x5 (5) - 2x6 (5) - 2,5x8 (5) - 3x10 (4)- 4x12 (1)
19.540.0001	15.100	DIN 333A 1x3,15 (5) - 1,6x4 (5) - 2x5 (5) - 2,5x6,3 (5) - 3,15x8 (5) - 4x10 (4) - 5x12,5 (1)
19.540.0101	15.100	DIN 333A 1x4 (3) - 1,5x5 (3) - 2x6 (3) - 2,5x8 (3) - 3x10 (2) - 4x12 (1)

› 19.910 Phantom

NL **HSS Set Spiraalboren links**
FR **Coffret de Forets HSS à gauche**
ES **Estuche de brocas HSS izquierda**
DE **HSS Satz Spiralbohrer links**
EN **HSS Drill set left hand**

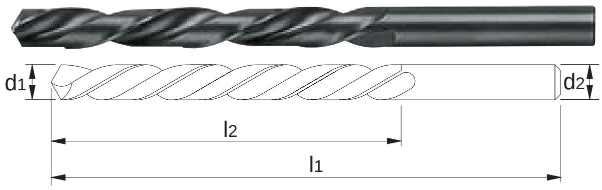
HSS | DIN 338 | N | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	Type	Ø mm
19.910.1000	19.914	1-10 mm x 0,5 mm

› 19.914 Phantom

NL **HSS Spiraalboor links**
FR **Foret HSS à gauche**
ES **Broca HSS izquierda**
DE **HSS Spiralbohrer links**
EN **HSS Twist drill left hand**



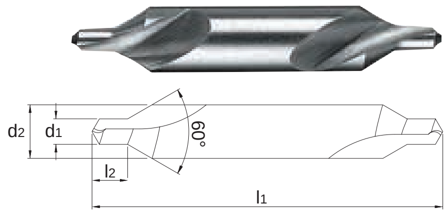
HSS | DIN 338 | N | 118°

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
19.914.0100	1	1	34	12
19.914.0150	1.5	1.5	40	18
19.914.0200	2	2	49	24
19.914.0250	2.5	2.5	57	30
19.914.0300	3	3	61	33
19.914.0350	3.5	3.5	70	39
19.914.0400	4	4	75	43
19.914.0420	4.2	4.2	75	43
19.914.0450	4.5	4.5	80	47
19.914.0500	5	5	86	52
19.914.0550	5.5	5.5	93	57
19.914.0600	6	6	93	57
19.914.0650	6.5	6.5	101	63
19.914.0700	7	7	109	69
19.914.0750	7.5	7.5	109	69
19.914.0800	8	8	117	75
19.914.0850	8.5	8.5	117	75
19.914.0900	9	9	125	81
19.914.0950	9.5	9.5	125	81
19.914.1000	10	10	133	87

› 19.951 Phantom

NL **HSS Centerboor links, 60°**
FR **Foret à centrer HSS à gauche, 60°**
ES **Broca escalonada HSS izquierda, 60°**
DE **HSS Zentrierbohrer links, 60°**
EN **HSS Centre Drill left hand, 60°**

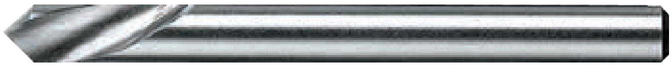


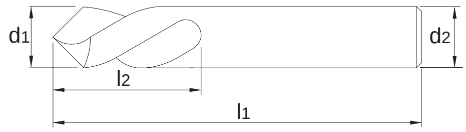
HSS | 60° | DIN 333-A | NFE 66051-A | h7

P 11	P 12	P 13	K 31	K 32	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	PVC
20-25 E	15-25 E	16-22 F	25-30 E	20-25 D	60-70 E	45-50 E	25-40 E	18-28 E

Ref.	d1	d2	l1	l2
19.951.0531	0.5	3.15	25	0,6-0,9
19.951.0735	0.75	3.5	35	1,0-1,3
19.951.1040	1	4	35	1,3-1,7
19.951.1550	1.5	5	40	2,0-2,6
19.951.1640	1.6	4	35	2,0-2,6
19.951.2050	2	5	40	2,5-3,1
19.951.2060	2	6	45	2,5-3,1
19.951.2563	2.5	6.3	45	3,1-3,8
19.951.2580	2.5	8	50	3,1-3,8
19.951.3090	3	10	55	3,9-4,6
19.951.3180	3.15	8	50	3,9-4,6
19.951.4010	4	10	55	5,0-5,9
19.951.4012	4	12	63	5,0-5,9
19.951.4013	4	12.5	63	5,0-5,9
19.951.5014	5	14	69	6,3-7,2

› 19.956 Phantom





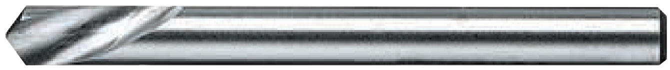
NL HSS-E NC-Centreerboor links, 90°
FR Foret à pointer NC HSS-E à gauche, 90°
ES Broca de puntear NC HSS-E izquierda, 90°
DE HSS-E NC Anbohrer links, 90°
EN HSS-E NC Spotting Drill left hand, 90°

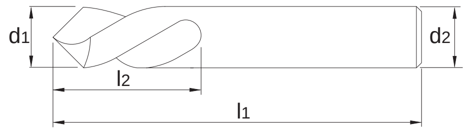
HSS-E | 90° | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	d1	d2	l1	l2
19.956.0300	3	3	50	10
19.956.0400	4	4	52	12
19.956.0500	5	5	60	15
19.956.0600	6	6	66	20
19.956.0800	8	8	79	25
19.956.1000	10	10	89	25
19.956.1200	12	12	102	30

› 19.957 Phantom





NL HSS-E NC-Centreerboor links, 120°
FR Foret à pointer NC HSS-E à gauche, 120°
ES Broca de puntear NC HSS-E izquierda, 120°
DE HSS-E NC Anbohrer links, 120°
EN HSS-E NC Spotting Drill left hand, 120°

HSS-E | 120° | h6

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	20-40 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

Ref.	d1	d2	l1	l2
19.957.0300	3	3	50	10
19.957.0400	4	4	52	12
19.957.0500	5	5	60	15
19.957.0600	6	6	66	20
19.957.0800	8	8	79	25
19.957.1000	10	10	89	25
19.957.1200	12	12	102	30

NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

Watch me

www.phantom.eu

NL **Voedingswaardentabel**
FR **Tableau des avances**
ES **Tabla de avances**
DE **Vorschubtabelle**
EN **Feed table**

P 11 ≤600 N/mm² = ISO

25-35 E — Vc = 25-35, FRC = E

	FRC								
	A	B	C	D	E	F	G	H	I
d1(mm)	f (mm/n)								
0,3	0,002	0,003	0,003	0,004	0,010	0,010	0,010	0,010	0,010
0,5	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
0,8	0,005	0,007	0,008	0,009	0,012	0,014	0,016	0,018	0,023
1	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
1,5	0,012	0,014	0,016	0,018	0,020	0,023	0,025	0,032	0,040
2	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
3	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
14	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
16	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
18	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
20	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
22	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
30	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250
50	0,250	0,310	0,400	0,500	0,630	0,800	1,000	1,250	1,250
60	0,315	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600

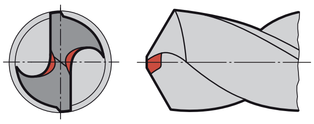
NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

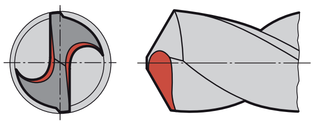
DIN 1412

NL Boorpunten volgens DIN 1412
FR Affûtage des forets selon DIN 1412
ES Afilado de brocas según DIN 1412
DE Anschliffformen DIN 1412
EN Drill points according to DIN 1412



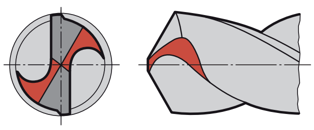
Form A

NL Uitgedunde punt
FR Pointe amincie
ES Con alma delgado
DE Ausgespitzte Querschneide
EN Web thinning



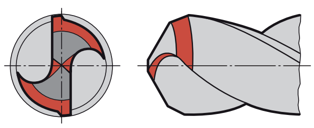
Form B

NL Uitgedunde punt met gecorrigeerde hoofdsnijkant
FR Pointe amincie avec correction des lèvres
ES Con alma delgado, corregido
DE Ausgespitzte Querschneide mit korrigierte Hauptschneide
EN Corrected rake angle



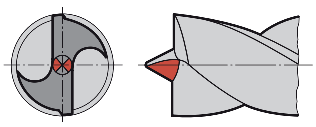
Form C

NL Kruisaanslijping
FR Affûtage en croix
ES Afilado en cruz
DE Kreuzanschliff
EN Split point



Form D

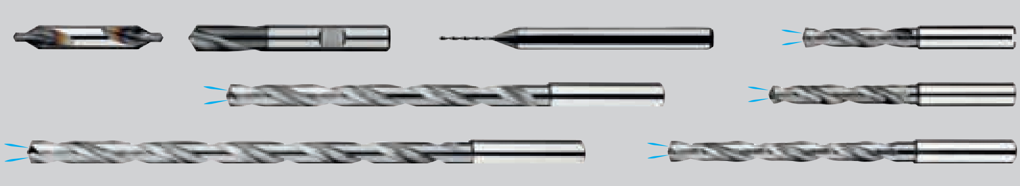
NL Boorpunt voor grijs gietijzer
FR Affûtage pour fonte grise
ES Filo para fundición gris
DE Anschliff für Grauguss
EN Cast iron point



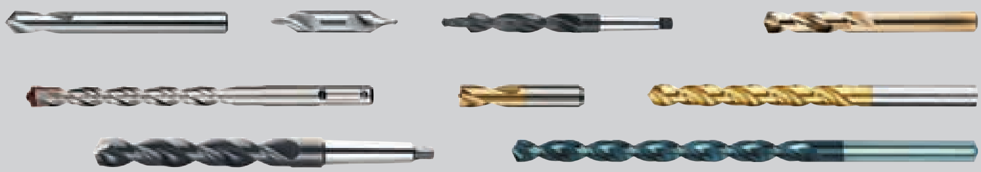
Form E

NL Centreerpunt
FR Pointe centrale
ES Punta de centraje
DE Zentrumspitze
EN Centre point

NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling

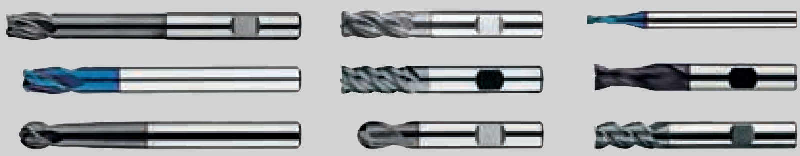


NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling

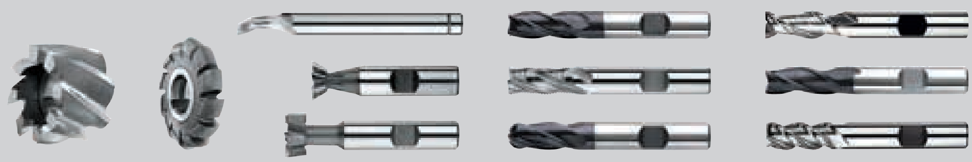


NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting

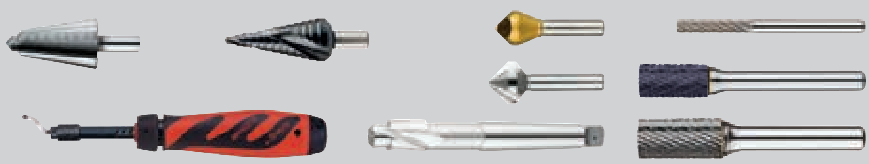
NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



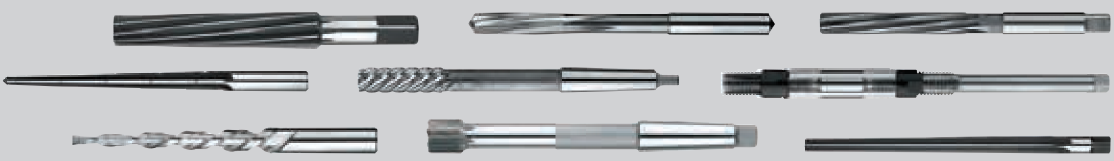
NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



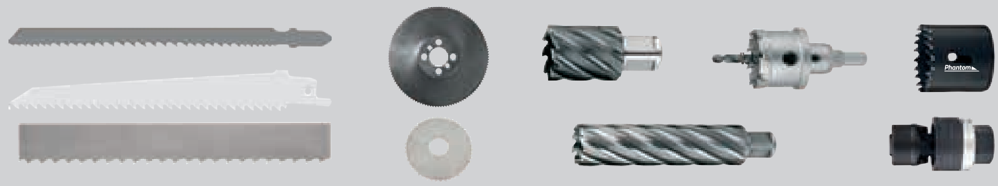
NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring



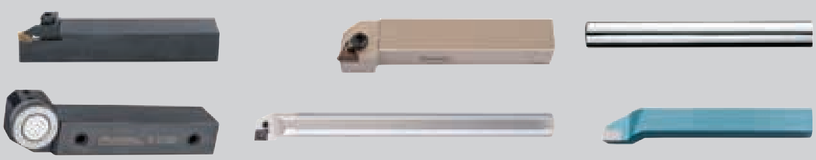
NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming



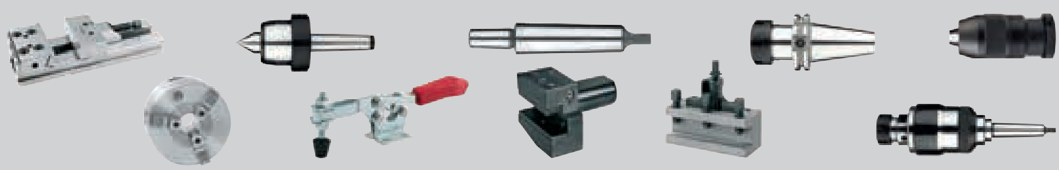
NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



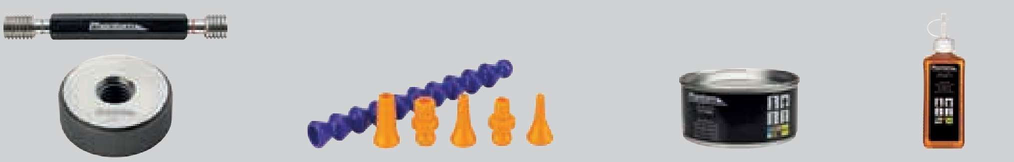
NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
HSS	HSS	HSS	HSS	HSS	HSS
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalto)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)
HSS-E PM	PowderMetal HSS-E (5% Cobalt)	Acier rapide fritté de haute qualité	Acero rápido pulvimetalúrgico	Pulvermetall HSS-E (5% Cobalt)	PowderMetal HSS-E (5% Cobalt)
MG HM	Micro-Grain volhardmetaal	Carbure micrograin	Metal duro micrograno	Micro-Grain Vollhartmetall	Micrograin tungsten carbide
M	Metrisch	Metrique	Métrica	Metrisch	Metric
MF	Metrisch Fijn	Métrique pas fin	Métrica Fina	Metrisch Fein	Metric Fine
UNC	UNC schroefdraad	Filetage UNC	Rosca UNC	UNC Gewinde	UNC Thread
UNF	UNF schroefdraad	Filetage UNF	Rosca UNF	UNF Gewinde	UNF Thread
NFE 66103	NFE 66103	NFE 66103	NFE 66103	NFE 66103	NFE 66103
UN-8	Unified schroefdraad	Filetage UN-8	Rosca UN-8	Unified Gewinde	Unified screw thread
BA	British Association schroefdraad	Filetage BA	Rosca BA	British Association Gewinde	British Association screw thread
BSC FG	British Standard Cycle schroefdraad	Filetage BSC (pour bicyclettes)	Rosca BSC (para bicicletas)	British Standard Cycle (Fahrradgewinde)	British Standard Cycle screw thread
BSF	British Standard Whitworth, Fijne schroefdraad	Filetage BSF, pas fin	Rosca BSF, paso fino	British Standard Whitworth, Feingewinde	British Standard Whitworth, Fine screw thread
BSP G	British Standard Pipe (Gasdraad)	Filetage BSP(Gaz)	Rosca BSP (Gas)	British Standard Pipe (Gasgewinde)	British Standard Pipe (Gas thread)
BSPP Rp	BSP Parallel schroefdraad (drukdicht)	Filetage BSPP Gaz (Parallèle, étanche à la pression)	Rosca BSPP Paralelo (estanco a la presión)	BSP Parallel Gewinde (druckdicht)	BSP Parallel screw thread (pressure tight)
BSPT Rc	BSP Taper schroefdraad (conisch, drukdicht)	Filetage BSPT Gaz (conique, étanche à la pression)	Rosca BSPT (cónica, estanco a la presión)	BSP Gewinde (konisch, druckdicht)	BSP Taper screw thread (pressure tight)
BSW	British Standard Whitworth schroefdraad	Filetage BSW	Rosca BSW	British Standard Whitworth Gewinde	British Standard Whitworth screw thread
NPT	National Pipe Taper schroefdraad	Filetage NPT	Rosca NPT	National Pipe Taper Gewinde	American National Pipe Taper screw thread
NPTF	National Pipe Taper Fuel schroefdraad	Filetage NPTF	Rosca NPTF	National Pipe Taper Fuel Gewinde	American National Pipe Taper Fuel screw thread
Tr	Trapezium schroefdraad	Filetage Trapèze	Rosca Trapezoidal	Trapezgewinde (Regel)	Trapezoidal screw thread
PG	Panzerrohr-Gewinde	Filetage PG	Rosca PG	Panzerrohr-Gewinde	Panzerrohr-Gewinde screw thread
EG	EG (Phan-Coil)	EG (Phan-Coil)	EG (Phan-Coil)	EG (Phan-Coil)	EG (Phan-Coil)
Phan-Coil	Schroefdraadreparatie	Réparation de filetage	Reparar de rosca	Gewindereparatur	Thread repair
60°	Tophoek schroefdraad	Angle au sommet	Ángulo de punta de la rosca	Flankenwinkel	Point angle
NIT.	Genitreerd	Nitruré	Nitrurado	Nitriert	Nitrated
OX.	Stoomontlaten	Vaporisé	Vaporizado	Dampfangelassen	Steam tempered
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung	TiN coated
TiCN	TiCN gecoat	Revêtement TiCN	Recubrimiento TiCN	TiCN Beschichtung	TiCN coated
HARD LUBE	HARDLUBE-gecoat	Revêtement HARDLUBE	Recubrimiento HARDLUBE	HARDLUBE Beschichtung	HARDLUBE coated
DIN 371	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm

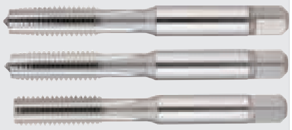
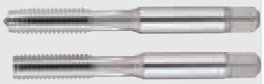
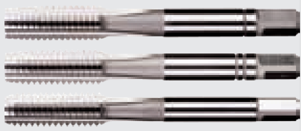
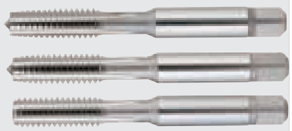
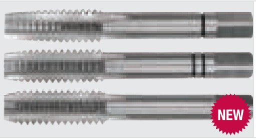
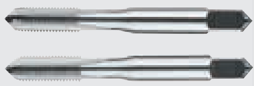
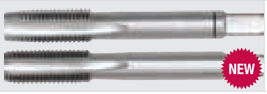
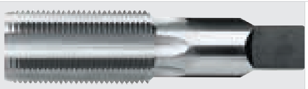
	NL	FR	ES	DE	EN
NFE 66103	NFE norm	Norme NFE	Norma NFE	NFE Norm	NFE norm
ISO 529	ISO norm	Norme ISO	Norma ISO	ISO Norm	ISO norm
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
ECO	ECO, basis kwaliteit	ECO, qualité standard	ECO, calidad básica	ECO, grundlegende Qualität	ECO, basic quality
ECO PRO	ECO PRO, industrie kwaliteit	ECO PRO, qualité industrielle	ECO PRO, calidad de la industria	ECO PRO, Industriequalität	ECO PRO, industry quality
2,5xD	Max. draadlengte	Profondeur max. de taraudage	Profundidad máx. de roscar	Max. Gewindelänge	Max. thread length
	Eindsnijder	Taraud finisseur	Macho de acabado	Fertigschneider	Bottoming cutter
	Set a 3 stuks	Jeu de 3 pièces	Juego de 3 piezas	Satz von 3 Stück	Set of 3
	Voor handgebruik	Pour usage à la main	Para uso manual	für Handgebrauch	For hand use
1:16	Coniciteit	Conicité	Conicidad	Konizität	Taper
38°	Spiraalhoek	Angle d'hélice	Angulo de hélice	Spiralwinkel	Spiral angles
Form B	Met schilaansnijding	Coupe GUN	Con entrada corregida (GUN)	Schälanschnitt	GUN nosed
2,5	Aantal gangen aansnijding	Nombre de filets	Número de hilos	Anzahl Gangen Anschnitt	Number of lead chamfers
	Draad teruglopend na de 5e gang	Tronqués après le 5ème filet	Roasca rebajada a partir de 5° hilo	Rücklaufend nach dem 5. Gang	Back tapered after the 5th chamfer
	Schilaansnijding snijplaten	Entrée GUN	Entrada corregida (GUN)	Schälanschnitt Schneideisen	Chamfer form for dies
	Koelkanaal	A trous d'huile	Canal de refrigeración	Mit Kühlkanal	Coolant feed
	Doorlopende gaten	Trou débouchant	Agujero pasante	Durchgangslöcher	Through holes
	Blinde gaten	Trou borgne	Agujero ciego	Sacklöcher	Blind holes
2 xD	Max. draadlengte 2xD	Profondeur max. du filetage 2xD	Profundidad máx. de roscar 2xD	Max. Gewindelänge 2xD	Max. thread length (2 x D)
1,5 xD	Max. draadlengte 1,5xD	Profondeur max. du filetage 1,5xD	Profundidad máx. de roscar 1,5xD	Max. Gewindelänge 1,5xD	Max. thread length (1.5 x D)
2B	Tolerantie 2B	Tolérance 2B	Tolerancia 2B	Toleranz 2B	Tolerance 2B
+0,1 +0,2	Overmaats	Surcoté	Sobremedida	Übermass	Oversized
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl	For stainless steel
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium	For aluminium
GG GGG	Voor gietijzer	Pour fonte	Para fundición	Für Gusseisen	For cast iron
UNI	Universeel	Universel	Universal	Universal High Performance	Universal
HP2 UNI	High Performance Universeel	Haute Performance Universel	Alta Rendimiento Universal	High Performance Universal	High Performance Universal
	Linkssnijdend	Coupe à gauche	Corte a izquierda	Linksschneidend	Left hand cutting
DIN 6535-HA	Cilindrische schacht DIN 6535-HA	Queue cylindrique DIN 6335-HA	Mango cilíndrico DIN 6335-HA	Zylinderschaft DIN 6535-HA	Straight shank DIN 6535-HA

NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**
EN **Thread Cutting**

P K H N M S: Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K H N M S: Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

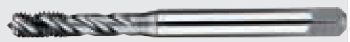
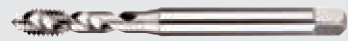
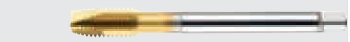
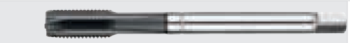
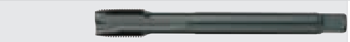
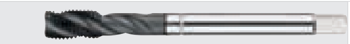
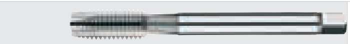
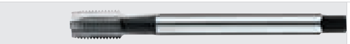
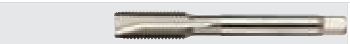
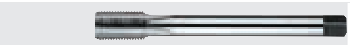
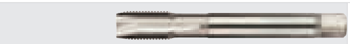
P= pagina
P= page
P= página
P= Seite

› 21.100	Phantom	M	ISO 529		P M K N		P. 11
› 21.103	Phantom	M	ISO 529		P M K N		P. 11
› 21.110	Phantom	M	ISO 529		P M K N		P. 11
› 21.140	International Tools	M	DIN 352	ECO	P M K N		P. 12
› 21.145	Phantom	M	DIN 352		P M K N		P. 12
› 21.148	Phantom	M	DIN 352		P M K N		P. 13
› 21.150	Phantom	M	DIN 352	INOX	M K		P. 13
› 21.163	Phantom	M	ISO 529	+0,1 +0,2	P M K N		P. 13
› 21.200	Phantom	MF	ISO 529		P M K N		P. 14
› 21.202	Phantom	MF	ISO 529		P M K N		P. 14
› 21.240	International Tools	MF	DIN 2181	ECO	P M K N		P. 14
› 21.250	Phantom	MF	DIN 2181		P M K N		P. 15
› 21.252	Phantom	MF	DIN 2181		P M K N		P. 15
› 21.300	Phantom	UNC	ISO 529		P M K N		P. 16
› 21.310	International Tools	UNC	DIN 352	ECO	P M K N	 NEW	P. 16
› 21.350	Phantom	UNF	ISO 529		P M K N		P. 17
› 21.365	International Tools	UNF	DIN 2181	ECO	P M K N	 NEW	P. 17
› 21.392	Phantom	UN-8	ISO 529		P M K N		P. 18

› 21.400	Phantom	BSP G	ISO 529		P M K N	P. 18
› 21.402	Phantom	BSP G	ISO 529		P M K N	P. 18
› 21.404	International Tools	BSP G	DIN 5157	ECO	P M K N	P. 19
› 21.405	Phantom	BSP G	DIN 5157		P M K N	P. 19
› 21.407	Phantom	BSP G	DIN 5157		P M K N	P. 19
› 21.410	Phantom	BSPT Rc	ISO 529		P M K N	P. 20
› 21.420	Phantom	BSW	ISO 529		P M K N	P. 20
› 21.430	Phantom	BSF	ISO 529		P M K N	P. 20
› 21.500	Phantom	NPT	ISO 529		P M K N	P. 21
› 21.600	Phantom	PG	ISO 529		P M K N	P. 21
› 21.812	Phantom	M	ISO 529	Phan-Coil	P M K N	P. 21
› 21.822	Phantom	MF	ISO 529	Phan-Coil	P M K N	P. 22
› 21.832	Phantom	UNC	ISO 529	Phan-Coil	P M K N	P. 22
› 21.840	Phantom	UNF	ISO 529	Phan-Coil	P M K N	P. 22
› 81.900		DIN 1814				P. 23
› 81.905		DIN 1814				P. 23
› 81.930						P. 23
› 81.935						P. 23
› 81.950		DIN 377				P. 24
› 22.100	International Tools	M	C6,3 1/4"		P K N	P. 25
› 22.190	International Tools	M	DIN 352		P K N	P. 25
› 22.191	International Tools	M	DIN 371		P K N	P. 25
› 22.192	International Tools	M	DIN 376		P K N	P. 26
› 22.195	International Tools	M	DIN 371		P K N	P. 26
› 22.196	International Tools	M	DIN 376		P K N	P. 26
› 22.197	International Tools	M	DIN 371		P M K N	P. 27
› 22.198	International Tools	M	DIN 376		P M K N	P. 27
› 22.200	Phantom	M	DIN 371		P M K N S	P. 27

				P	M	K	N	S	
› 22.201	Phantom	M	DIN 376	P	M	K	N	S	P. 28
› 22.205	Phantom	M	ISO 529	P		K	N		P. 28
› 22.210	Phantom	M	DIN 371	P	M	K	N	S	P. 29
› 22.211	Phantom	M	DIN 376	P	M	K	N	S	P. 29
› 22.220	Phantom	M	DIN 371	P		K			P. 29
› 22.221	Phantom	M	DIN 376	P		K			P. 30
› 22.230	Phantom	M	DIN 371	P	M	K	N	S	P. 30
› 22.231	Phantom	M	DIN 376	P	M	K	N	S	P. 30
› 22.240	Phantom	M	DIN 371	P	M	K	N	S	P. 31
› 22.241	Phantom	M	DIN 376	P	M	K	N	S	P. 31
› 22.252	Phantom	M	DIN 371	P		K	N	S	P. 31
› 22.253	Phantom	M	DIN 376	P		K	N	S	P. 32
› 22.268	Phantom	M	DIN 371	P	M	K	N	S	P. 32
› 22.269	Phantom	M	DIN 376	P	M	K	N	S	P. 32
› 22.350	Phantom	M	NORM	P	M	K	N	S	P. 33
› 22.351	Phantom	M	NORM	P	M	K	N	S	P. 33
› 22.500	Phantom	M	DIN 371	P	M				P. 33
› 22.501	Phantom	M	DIN 376	P	M				P. 34
› 22.504	Phantom	M	DIN 371	P	M				P. 34
› 22.505	Phantom	M	DIN 376	P	M				P. 34
› 22.530	Phantom	M	DIN 371	P			N	S	P. 35
› 22.531	Phantom	M	DIN 376	P			N	S	P. 35
› 22.550	Phantom	M	DIN 371				N		P. 35
› 22.595	International Tools	M	DIN 371	P	M				P. 36
› 22.596	International Tools	M	DIN 376	P	M				P. 36
› 22.600	Phantom	M	DIN 371	P	M				P. 36
› 22.601	Phantom	M	DIN 376	P	M				P. 37
› 22.604	Phantom	M	DIN 371	P	M				P. 37
› 22.605	Phantom	M	DIN 376	P	M				P. 37
› 22.610	Phantom	M	DIN 371	P	M			S	P. 38
› 22.611	Phantom	M	DIN 376	P	M			S	P. 38
› 22.650	Phantom	M	DIN 371			K			P. 38
› 22.651	Phantom	M	DIN 376			K			P. 39
› 22.700	Phantom	M	DIN 371	P			N		P. 39
› 22.701	Phantom	M	DIN 376	P			N		P. 39

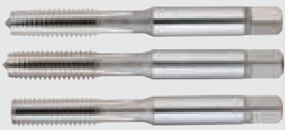
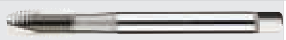
› 22.705	Phantom	M	ISO 529	P			N			P. 40
› 22.720	Phantom	M	DIN 371				N			P. 40
› 22.721	Phantom	M	DIN 376				N			P. 40
› 22.895	Phantom	M	Phan-Coil	P		K	N			P. 41
› 22.896	Phantom	M	Phan-Coil	P		K	N			P. 41
› 23.150	Phantom	M	DIN 371	P		K	N			P. 42
› 23.151	Phantom	M	DIN 376	P		K	N			P. 42
› 23.291	International Tools	M	DIN 371	P		K	N			P. 42
› 23.292	International Tools	M	DIN 376	P		K	N			P. 43
› 23.295	International Tools	M	DIN 371	P		K	N			P. 43
› 23.296	International Tools	M	DIN 376	P		K	N			P. 43
› 23.297	International Tools	M	DIN 371	P	M	K	N			P. 44
› 23.298	International Tools	M	DIN 376	P	M	K	N			P. 44
› 23.300	Phantom	M	DIN 371	P	M	K	N	S		P. 44
› 23.301	Phantom	M	DIN 376	P	M	K	N	S		P. 45
› 23.305	Phantom	M	ISO 529	P		K	N			P. 45
› 23.310	Phantom	M	DIN 371	P		K				P. 45
› 23.311	Phantom	M	DIN 376	P		K				P. 46
› 23.320	Phantom	M	DIN 371	P	M	K	N	S		P. 46
› 23.321	Phantom	M	DIN 376	P	M	K	N	S		P. 46
› 23.324	Phantom	M	DIN 371	P	M	K	N	S		P. 47
› 23.325	Phantom	M	DIN 376	P	M	K	N	S		P. 47
› 23.352	Phantom	M	DIN 371	P		K	N	S		P. 47
› 23.353	Phantom	M	DIN 376	P		K	N	S		P. 48
› 23.368	Phantom	M	DIN 371	P	M	K	N	S		P. 48
› 23.369	Phantom	M	DIN 376	P	M	K	N	S		P. 48
› 23.370	Phantom	M	NORM	P	M	K	N	S		P. 49
› 23.371	Phantom	M	NORM	P	M	K	N	S		P. 49
› 23.400	Phantom	M	DIN 371	P	M					P. 49
› 23.401	Phantom	M	DIN 376	P	M					P. 50
› 23.404	Phantom	M	DIN 371	P	M					P. 50
› 23.405	Phantom	M	DIN 376	P	M					P. 50
› 23.430	Phantom	M	DIN 371	P			N	S		P. 51
› 23.431	Phantom	M	DIN 376	P			N	S		P. 51
› 23.440	Phantom	M		P	M		N		H	P. 51

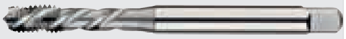
				P	M	K	N	S		
› 23.445	International Tools	M	DIN 371	P	M					P. 52
› 23.446	International Tools	M	DIN 376	P	M					P. 52
› 23.450	Phantom	M	DIN 371	P	M			S		P. 52
› 23.451	Phantom	M	DIN 376	P	M			S		P. 53
› 23.454	Phantom	M	DIN 371	P	M			S		P. 53
› 23.455	Phantom	M	DIN 376	P	M			S		P. 53
› 23.480	Phantom	M	DIN 371	P			N			P. 54
› 23.481	Phantom	M	DIN 376	P			N			P. 54
› 23.500	Phantom	M	DIN 371				N			P. 54
› 23.501	Phantom	M	DIN 376				N			P. 55
› 23.585	Phantom	M	Phan-Coil	P		K	N			P. 55
› 23.586	Phantom	M	Phan-Coil	P		K	N			P. 55
› 23.615	International Tools	MF	DIN 374	P		K	N			P. 56
› 23.620	Phantom	MF	DIN 374	P	M	K	N	S		P. 56
› 23.621	Phantom	MF	DIN 374	P	M	K	N	S		P. 57
› 23.625	Phantom	MF	ISO 529	P		K	N			P. 57
› 23.668	Phantom	MF	DIN 374	P	M	K	N	S		P. 57
› 23.750	Phantom	MF	DIN 374	P	M		N	S		P. 58
› 23.835	International Tools	MF	DIN 374	P		K	N			P. 58
› 23.840	Phantom	MF	DIN 374	P	M	K	N	S		P. 58
› 23.868	Phantom	MF	DIN 374	P	M	K	N	S		P. 59
› 24.120	Phantom	UNC	DIN 371	P	M	K	N	S		P. 60
› 24.121	Phantom	UNC	DIN 376	P	M	K	N	S		P. 60
› 24.125	Phantom	UNC	ISO 529	P		K	N			P. 60
› 24.340	Phantom	UNC	DIN 371	P	M	K	N	S		P. 61
› 24.341	Phantom	UNC	DIN 376	P	M	K	N	S		P. 61
› 24.520	Phantom	UNF	DIN 371	P	M	K	N	S		P. 61
› 24.521	Phantom	UNF	DIN 376	P	M	K	N	S		P. 62
› 24.525	Phantom	UNF	ISO 529	P		K	N			P. 62
› 24.740	Phantom	UNF	DIN 371	P	M	K	N	S		P. 62
› 24.741	Phantom	UNF	DIN 376	P	M	K	N	S		P. 63
› 24.991	Phantom	UNEF	DIN 374	P	M	K	N			P. 63
› 25.095	International Tools	BSP G	DIN 5156	P		K	N			P. 63
› 25.097	Phantom	BSP G	DIN 5156	P	M	K	N	S		P. 64
› 25.100	Phantom	BSP G	DIN 5156	P		K	N			P. 64

› 25.105	Phantom	BSP G	ISO 529	P		K	N				P. 64
› 25.160	Phantom	BSP G	DIN 5156	P	M						P. 65
› 25.295	International Tools	BSP G	DIN 5156	P		K	N				P. 65
› 25.297	Phantom	BSP G	DIN 5156	P	M	K	N	S			P. 65
› 25.300	Phantom	BSP G	DIN 5156	P		K	N				P. 66
› 25.360	Phantom	BSP G	DIN 5156	P	M						P. 66
› 25.480	Phantom	BSPT Rc	DIN 5156	P	M	K	N				P. 66
› 25.500	Phantom	BSPP Rp	DIN 5156	P	M	K	N				P. 67
› 25.520	Phantom	BSW	DIN 2182	P		K	N				P. 67
› 25.521	Phantom	BSW	DIN 2183	P		K	N				P. 67
› 25.640	Phantom	BSW	DIN 2182	P		K	N				P. 68
› 25.641	Phantom	BSW	DIN 2183	P		K	N				P. 68
› 25.720	Phantom	BSF	DIN 371	P		K	N				P. 68
› 25.721	Phantom	BSF	DIN 376	P		K	N				P. 69
› 25.760	Phantom	FG	DIN 79012	P		K	N				P. 69
› 25.820	Phantom	NPT	DIN 374	P		K	N				P. 69
› 25.840	Phantom	NPTF	DIN 374	P		K	N				P. 70
› 25.900	Phantom	PG	DIN 40433	P		K	N				P. 70
› 25.950	Phantom	Tr	DIN 103	P		K	N				P. 70
› 26.100	Phantom	M	DIN 2174	P			N				P. 71
› 26.101	Phantom	M	DIN 2174	P			N				P. 71
› 26.110	Phantom	M	DIN 2174	P	M		N				P. 71
› 26.111	Phantom	M	DIN 2174	P	M		N				P. 72
› 26.160	Phantom	M	DIN 2174	P	M		N				P. 72
› 26.161	Phantom	M	DIN 2174	P	M		N				P. 72
› 26.310	Phantom	M		P	M	K	N	S	H		P. 73
› 26.316	Phantom	M		P	M	K	N	S	H		P. 73
› 26.384	Phantom	M		P	M	K	N	S	H		P. 73
› 26.500	Phantom	M	NORM	P		K	N				P. 74
› 26.610	International Tools	M	C6,3 1/4"	P			N			NEW	P. 74
› 26.700	Phantom	M	NORM	P			N				P. 74
› 27.100	International Tools	M	DIN EN 22568	P		K	N				P. 75
› 27.110	International Tools	M		P		K	N				P. 75

› 27.120	Phantom	M	DIN EN 22568	P	M		N		P. 75
› 27.150	Phantom	M	DIN EN 22568	P	M		N	S	P. 76
› 27.175	Phantom	M	DIN EN 22568				N		P. 76
› 27.200	International Tools	MF	DIN EN 22568	P		K	N		P. 76
› 27.220	Phantom	MF	DIN EN 22568	P	M		N		P. 77
› 27.300	International Tools	UNC	DIN EN 22568	P		K	N		P. 77
› 27.320	Phantom	UNC	DIN EN 22568	P	M		N		P. 78
› 27.400	International Tools	UNF	DIN EN 22568	P		K	N		P. 78
› 27.420	Phantom	UNF	DIN EN 22568	P	M		N		P. 78
› 27.470	Phantom	UNEF	DIN EN 22568	P	M		N		P. 79
› 27.500	International Tools	BSP G	DIN EN 24231	P		K	N		P. 79
› 27.520	Phantom	BSP G	DIN EN 24231	P	M		N		P. 79
› 27.530	Phantom	BSPT Rc	DIN EN 24230	P	M		N		P. 80
› 27.550	International Tools	BSW	DIN EN 22568	P		K	N		P. 80
› 27.560	Phantom	BSW	DIN EN 22568	P	M		N		P. 80
› 27.575	Phantom	BSF	DIN EN 22568	P	M		N		P. 81
› 27.600	Phantom	NPT		P	M		N		P. 81
› 27.610	Phantom	NPTF		P	M		N		P. 81
› 27.650	Phantom	PG	DIN 40434	P	M		N		P. 82
› 81.910									P. 82

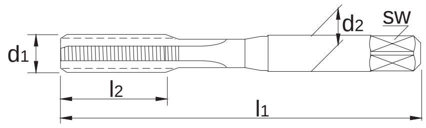
› 27.700	International Tools	M	DIN 382	P	K	N		P. 83
› 27.750	International Tools	MF	DIN 382	P	K	N		P. 83
› 27.800	International Tools	UNC	DIN 382	P	K	N		P. 84
› 27.840	International Tools	UNF	DIN 382	P	K	N		P. 84
› 27.900	International Tools	BSP G	DIN 382	P	K	N		P. 84
› 27.940	International Tools	BSW	DIN 382	P	K	N		P. 85
› 27.980	Phantom	NPT	DIN 382	P	K	N		P. 85
› 28.800	International Tools							P. 86
› 28.810	International Tools							P. 86
› 28.820	International Tools	M	MF				NEW 	P. 86
› 28.825	International Tools	M	BSW	BSF			NEW 	P. 87
› 28.830	Phantom	M	Phan-Coil					P. 88
› 28.831	Phantom	MF	Phan-Coil					P. 88
› 28.832	Phantom	UNC	Phan-Coil					P. 89
› 28.833	Phantom	UNF	Phan-Coil					P. 89
› 28.860	Phantom		Phan-Coil					P. 89
› 28.865	Phantom		Phan-Coil					P. 90
› 28.870	Phantom	M	Phan-Coil					P. 90
› 28.871	Phantom	MF	Phan-Coil					P. 90
› 28.872	Phantom	UNC	Phan-Coil					P. 91
› 28.880	Phantom	M	Phan-Coil					P. 91
› 29.100	International Tools							P. 92

› 29.110	International Tools		 NEW	P. 92
› 29.120	International Tools			P. 92
› 29.130	International Tools			P. 93
› 29.170	International Tools		 NEW	P. 93
› 29.180	International Tools			P. 93
› 29.185	International Tools			P. 93
› 29.190	International Tools			P. 94
› 29.195	International Tools			P. 94
› 29.220	Phantom			P. 94
› 29.240	Phantom			P. 95
› 29.250	Phantom			P. 95
› 29.260	Phantom			P. 95
› 29.275	International Tools		 NEW	P. 96
› 29.278	International Tools			P. 96
› 29.280	Phantom			P. 96
› 29.285	International Tools			P. 97
› 29.300	International Tools			P. 97
› 29.910	Phantom	M ISO 529 P M K N		P. 97
› 29.950	Phantom	M P M K N S		P. 98
› 29.951	Phantom	M P M K N S		P. 98

› 29.956	Phantom	M		↰	P	M	K	N	S		P. 98
› 29.957	Phantom	M		↰	P	M	K	N	S		P. 99
› 29.960	Phantom	MF		↰	P	M	K	N	S		P. 99
› 29.961	Phantom	MF		↰	P	M	K	N	S		P. 99
› 29.970	International Tools	M	DIN EN 22568	↰	P		K	N			P. 100
› 29.971	Phantom	M	DIN EN 22568	↰	P	M		N			P. 100
› 29.972	International Tools	MF	DIN EN 22568	↰	P		K	N			P. 100
› 29.973	Phantom	MF	DIN EN 22568	↰	P	M		N			P. 101
› 29.978	Phantom	UNF	DIN EN 22568	↰	P	M		N			P. 101
› 29.985	International Tools	BSP G	DIN EN 24231	↰	P		K	N			P. 101
› 29.990	International Tools	M	DIN 382	↰	P		K	N			P. 102

› 21.100 Phantom

NL HSS Handtappen set à 3 stuks Metrisch
FR Tarauds à main HSS Jeu de 3 pièces Métrique
ES Machos mano HSS juego de 3 piezas Métrica
DE HSS Handgewindebohrer Satz von 3 Stück Metrisch
EN HSS Hand Taps set of 3 pieces Metric Coarse



HSS | M | 60° | NFE 66103 | ISO 529 | FormA 6-8 | FormD 3,5-5 | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

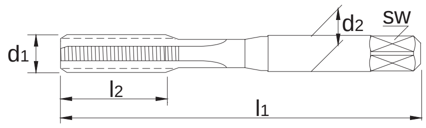
Ref.	d1	P	l1	l2	d2	sw
21.100.0160	M1,6	0.35	28	9	3	2.35
21.100.0200	M2	0.4	41	8	2.5	2
21.100.0230	M2,3	0.4	44	9.5	2.8	2.24
21.100.0250	M2,5	0.45	44.5	9.5	2.8	2.24
21.100.0260	M2,6	0.45	44.5	9.5	2.8	2.24
21.100.0300	M3	0.5	48	11	3.15	2.5
21.100.0350	M3,5	0.6	50	13	3.55	2.8
21.100.0400	M4	0.7	53	13	4	3.15
21.100.0450	M4,5	0.75	53	13	4	3.15
21.100.0500	M5	0.8	58	16	5	4
21.100.0550	M5,5	0.9	58	16	5	4

Ref.	d1	P	l1	l2	d2	sw
21.100.0600	M6	1	66	19	6.3	5
21.100.0700	M7	1	66	19	7.1	5.6
21.100.0800	M8	1.25	72	22	8	6.3
21.100.0900	M9	1.25	72	22	9	7.1
21.100.1000	M10	1.5	80	24	10	8
21.100.1100	M11	1.5	85	25	8	6.3
21.100.1200	M12	1.75	89	29	9	7.1
21.100.1400	M14	2	95	30	11.2	9
21.100.1600	M16	2	102	32	12.5	10
21.100.1800	M18	2.5	112	37	14	11.2
21.100.2000	M20	2.5	112	37	14	11.2

Ref.	d1	P	l1	l2	d2	sw
21.100.2200	M22	2.5	118	38	16	12.5
21.100.2400	M24	3	130	45	18	14
21.100.2700	M27	3	135	45	20	16
21.100.3000	M30	3.5	138	48	20	16
21.100.3300	M33	3.5	151	51	22.4	18
21.100.3600	M36	4	162	57	25	20
21.100.3900	M39	4	170	60	28	22.4
21.100.4200	M42	4.5	170	60	28	22.4
21.100.4500	M45	4.5	187	67	31.5	25
21.100.5200	M52	5	200	70	35.5	28

› 21.103 Phantom

NL HSS Handtappen vorm C Metrisch
FR Tarauds à main HSS Forme C Métrique
ES Machos mano HSS Forma C Métrica
DE HSS Handgewindebohrer Form C Metrisch
EN HSS Hand Taps Form C Metric Coarse



HSS | M | 60° | NFE 66103 | ISO 529 | FormC 2-3 | ISO 2 6H

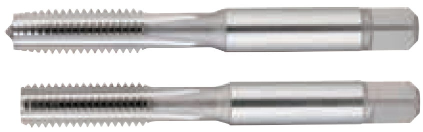
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.103.0200	M2	0.4	41	8	2.5	2
21.103.0250	M2,5	0.45	44.5	9.5	2.8	2.24
21.103.0260	M2,6	0.45	44.5	9.5	2.8	2.24
21.103.0300	M3	0.5	48	11	3.15	2.5
21.103.0400	M4	0.7	53	13	4	3.15

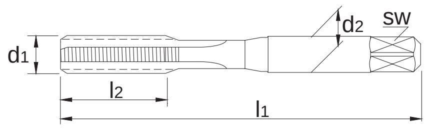
Ref.	d1	P	l1	l2	d2	sw
21.103.0500	M5	0.8	58	16	5	4
21.103.0600	M6	1	66	19	6.3	5
21.103.0800	M8	1.25	72	22	8	6.3
21.103.1000	M10	1.5	80	24	10	8
21.103.1200	M12	1.75	89	29	9	7.1

Ref.	d1	P	l1	l2	d2	sw
21.103.1400	M14	2	95	30	11.2	9
21.103.1600	M16	2	102	32	12.5	10
21.103.2000	M20	2.5	112	37	14	11.2
21.103.2400	M24	3	130	45	18	14

› 21.110 Phantom



NL HSS Handtappen set à 2 stuks, vorm D+C Metrisch
FR Tarauds à main HSS Jeu de 2 pièces, Forme D+C Métrique
ES Machos mano HSS juego de 2 piezas, Forma D+C Métrica
DE HSS Handgewindebohrer Satz von 2 Stück, Form D+C Metrisch
EN HSS Hand Taps set of 2 pieces, Form D+C Metric Coarse



HSS | M | 60° | NFE 66103 | ISO 529 | FormD 3,5-5 | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

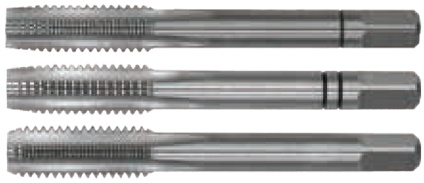
Ref.	d1	P	l1	l2	d2	sw
21.110.0250	M2,5	0.45	44.5	9.5	2.8	2.24
21.110.0300	M3	0.5	48	11	3.15	2.5
21.110.0400	M4	0.7	53	13	4	3.15
21.110.0500	M5	0.8	58	16	5	4

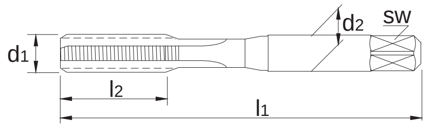
Ref.	d1	P	l1	l2	d2	sw
21.110.0600	M6	1	66	19	6.3	5
21.110.0800	M8	1.25	72	22	8	6.3
21.110.1000	M10	1.5	80	24	10	8
21.110.1200	M12	1.75	89	29	9	7.1

Ref.	d1	P	l1	l2	d2	sw
21.110.1400	M14	2	95	30	11.2	9
21.110.1600	M16	2	102	32	12.5	10
21.110.2400	M24	3	130	45	18	14
21.110.2700	M27	3	135	45	20	16

› 21.140 International Tools

NL ECO HSS Handtappen set à 3 stuks Metrisch
FR Tarauds à main HSS ECO Jeu de 3 pièces Métrique
ES Machos mano HSS ECO juego de 3 piezas Métrica
DE ECO HSS Handgewindebohrer Satz von 3 Stück Metrisch
EN ECO HSS Hand Taps set of 3 pieces Metric Coarse





HSS | M | 60° | DIN 352 | ISO 2 6H | ECO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

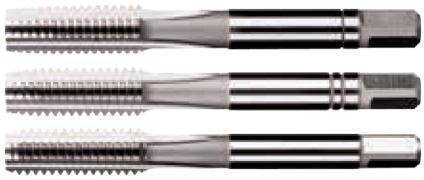
Ref.	d1	P	l1	l2	d2	sw
21.140.0300	M3	0.5	40	11	3.5	2.7
21.140.0400	M4	0.7	45	13	4.5	3.4
21.140.0500	M5	0.8	50	16	6	4.9
21.140.0600	M6	1	56	19	6	4.9
21.140.0800	M8	1.25	63	22	6	4.9

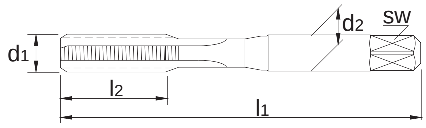
Ref.	d1	P	l1	l2	d2	sw
21.140.1000	M10	1.5	70	24	7	5.5
21.140.1200	M12	1.75	75	28	9	7
21.140.1400	M14	2	80	30	11	9
21.140.1600	M16	2	80	32	12	9
21.140.1800	M18	2.5	95	34	14	11

Ref.	d1	P	l1	l2	d2	sw
21.140.2000	M20	2.5	95	34	16	12
21.140.2200	M22	2.5	100	34	18	14.5
21.140.2400	M24	3	110	38	18	14.5
21.140.2700	M27	3	110	38	20	16
21.140.3000	M30	3.5	125	45	22	18

› 21.145 Phantom

NL HSS Handtappen set à 3 stuks Metrisch
FR Tarauds à main HSS Jeu de 3 pièces Métrique
ES Machos mano HSS juego de 3 piezas Métrica
DE HSS Handgewindebohrer Satz von 3 Stück Metrisch
EN HSS Hand Taps set of 3 pieces Metric Coarse





HSS | M | 60° | DIN 352 | ISO 2 6H

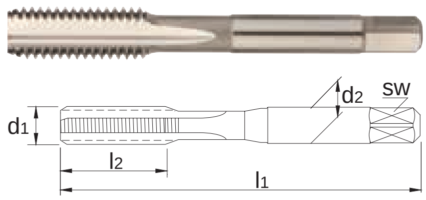
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.145.0160	M1,6	0.35	32	8	2.5	2.1
21.145.0200	M2	0.4	36	8	2.8	2.1
21.145.0220	M2,2	0.45	36	9	2.8	2.1
21.145.0250	M2,5	0.45	40	9	2.8	2.1
21.145.0260	M2,6	0.45	40	9	2.8	2.1
21.145.0300	M3	0.5	40	11	3.5	2.7
21.145.0350	M3,5	0.6	45	12	4	3
21.145.0400	M4	0.7	45	13	4.5	3.4
21.145.0450	M4,5	0.75	50	16	6	4.9
21.145.0500	M5	0.8	50	16	6	4.9
21.145.0550	M5,5	0.9	56	18	6	4.9

Ref.	d1	P	l1	l2	d2	sw
21.145.0600	M6	1	56	19	6	4.9
21.145.0700	M7	1	56	19	6	4.9
21.145.0800	M8	1.25	63	22	6	4.9
21.145.0900	M9	1.25	63	22	7	5.5
21.145.1000	M10	1.5	70	24	7	5.5
21.145.1100	M11	1.5	70	24	8	6.2
21.145.1200	M12	1.75	75	28	9	7
21.145.1400	M14	2	80	30	11	9
21.145.1600	M16	2	80	32	12	9
21.145.1800	M18	2.5	95	34	14	11
21.145.2000	M20	2.5	95	34	16	12

Ref.	d1	P	l1	l2	d2	sw
21.145.2200	M22	2.5	100	34	18	14.5
21.145.2400	M24	3	110	38	18	14.5
21.145.2700	M27	3	110	38	20	16
21.145.3000	M30	3.5	125	45	22	18
21.145.3300	M33	3.5	125	50	25	20
21.145.3600	M36	4	150	56	28	22
21.145.3900	M39	4	150	60	32	24
21.145.4200	M42	4.5	150	60	32	24
21.145.4500	M45	4.5	160	65	36	29
21.145.4800	M48	5	180	70	36	29
21.145.5200	M52	5	180	70	40	32

› 21.148 Phantom



NL HSS Eindsnijder Metrisch
FR Taraud finisseur HSS Métrique
ES Macho de acabado HSS Métrica
DE HSS Fertigschneider Metrisch
EN HSS Bottom Tap Metric Coarse

HSS | M | 60° | DIN 352 | FormC 2-3 | ISO 2 6H

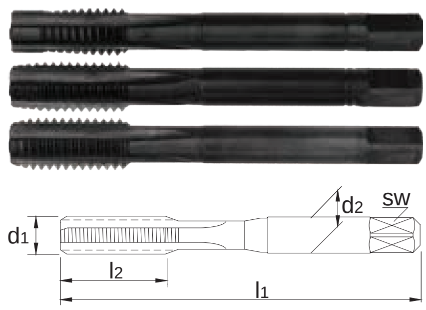
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.148.0160	M1,6	0.35	32	8	2.5	2.1
21.148.0200	M2	0.4	36	8	2.8	2.1
21.148.0220	M2,2	0.45	36	9	2.8	2.1
21.148.0250	M2,5	0.45	40	9	2.8	2.1
21.148.0260	M2,6	0.45	40	9	2.8	2.1
21.148.0300	M3	0.5	40	11	3.5	2.7
21.148.0350	M3,5	0.6	45	12	4	3
21.148.0400	M4	0.7	45	13	4.5	3.4
21.148.0450	M4,5	0.75	50	16	6	4.9
21.148.0500	M5	0.8	50	16	6	4.9
21.148.0550	M5,5	0.9	56	18	6	4.9

Ref.	d1	P	l1	l2	d2	sw
21.148.0600	M6	1	56	19	6	4.9
21.148.0700	M7	1	56	19	6	4.9
21.148.0800	M8	1.25	63	22	6	4.9
21.148.0900	M9	1.25	63	22	7	5.5
21.148.1000	M10	1.5	70	24	7	5.5
21.148.1100	M11	1.5	70	24	8	6.2
21.148.1200	M12	1.75	75	28	9	7
21.148.1400	M14	2	80	30	11	9
21.148.1600	M16	2	80	32	12	9
21.148.1800	M18	2.5	95	34	14	11
21.148.2000	M20	2.5	95	34	16	12

Ref.	d1	P	l1	l2	d2	sw
21.148.2200	M22	2.5	100	34	18	14.5
21.148.2400	M24	3	110	38	18	14.5
21.148.2700	M27	3	110	38	20	16
21.148.3000	M30	3.5	125	45	22	18
21.148.3300	M33	3.5	125	50	25	20
21.148.3600	M36	4	150	56	28	22
21.148.3900	M39	4	150	60	32	24
21.148.4200	M42	4.5	150	60	32	24
21.148.4500	M45	4.5	160	65	36	29
21.148.4800	M48	5	180	70	36	29
21.148.5200	M52	5	180	70	40	32

› 21.150 Phantom



NL HSS-E Handtappen set à 3 stuks, stoomontlaten, Nr. 1 met geleiding Metrisch
FR Tarauds à main HSS-E Jeu de 3 pièces, vaporisé, N° 1 avec guidage Métrique
ES Machos mano HSS-E juego de 3 piezas, vaporizada, N° 1 con guía Métrica
DE HSS-E Handgewindebohrer Satz von 3 Stück, dampfangelassen, Nr. 1 mit einfacher Führung Metrisch
EN HSS-E Hand Taps set of 3 pieces, steam oxide, Nr. 1 with guidance Metric Coarse

HSS-E | M | 60° | OX. | DIN 352 | ISO 2 6H | INOX

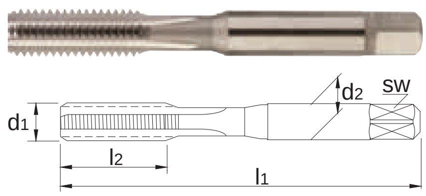
M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | K 31 GG | K 32 GGG GTS-GTW

Ref.	d1	P	l1	l2	d2	sw
21.150.0300	M3	0.5	40	11	3.5	2.7
21.150.0400	M4	0.7	45	13	4.5	3.4
21.150.0500	M5	0.8	50	16	6	4.9

Ref.	d1	P	l1	l2	d2	sw
21.150.0600	M6	1	56	19	6	4.9
21.150.0800	M8	1.25	63	22	6	4.9
21.150.1000	M10	1.5	70	24	7	5.5

Ref.	d1	P	l1	l2	d2	sw
21.150.1200	M12	1.75	75	28	9	7

› 21.163 Phantom



NL HSS Handtappen vorm C, Overmaats Metrisch
FR Tarauds à main HSS Forme C, surcoté Métrique
ES Machos mano HSS Forma C, sobremedida Métrica
DE HSS Handgewindebohrer Form C, Übermaß Metrisch
EN HSS Hand Taps Form C, Oversized Metric Coarse

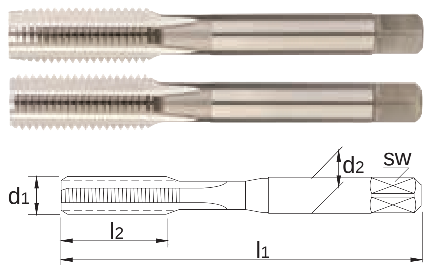
HSS | M | 60° | NFE 66103 | ISO 529 | FormC 2-3 | +0,1 +0,2 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.163.0610	M6+0,1	1	66	19	6.3	5
21.163.0820	M8+0,2	1.25	72	22	8	6.3
21.163.1010	M10+0,1	1.5	80	24	10	8
21.163.1210	M12+0,1	1.75	89	29	9	7.1
21.163.1220	M12+0,2	1.75	89	29	9	7.1

Ref.	d1	P	l1	l2	d2	sw
21.163.1610	M16+0,1	2	102	32	12.5	10
21.163.1620	M16+0,2	2	102	32	12.5	10
21.163.2020	M20+0,2	2.5	112	37	14	11.2
21.163.2420	M24+0,2	3	130	45	18	14

› 21.200 Phantom



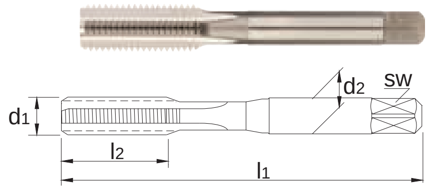
NL HSS Handtappen Metrisch Fijn, set à 2 stuks
FR Tarauds à main HSS Métrique Fin, Jeu de 2 pièces
ES Machos mano HSS Métrica Fina, juego de 2 piezas
DE HSS Handgewindebohrer Metrisch Fein, Satz von 2 Stück
EN HSS Hand Taps Metric Fine, set of 2 pieces

HSS | MF | 60° | NFE 66103 | ISO 529 | FormD 3,5-5 | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.200.0303	MF3	0.35	48	11	3.15	2.5
21.200.0403	MF4	0.35	53	13	4	3.15
21.200.0405	MF4	0.5	53	13	4	3.15
21.200.0505	MF5	0.5	58	16	5	4
21.200.0605	MF6	0.5	66	19	6.3	5
21.200.0607	MF6	0.75	66	19	6.3	5
21.200.0707	MF7	0.75	66	19	7.1	5.6
21.200.0807	MF8	0.75	72	22	8	6.3
21.200.0810	MF8	1	72	22	8	6.3
21.200.0910	MF9	1	72	22	9	7.1
21.200.1007	MF10	0.75	80	24	10	8
21.200.1010	MF10	1	80	24	10	8
21.200.1012	MF10	1.25	80	24	10	8
21.200.1110	MF11	1	85	25	8	6.3
21.200.1210	MF12	1	89	29	9	7.1
21.200.1212	MF12	1.25	89	29	9	7.1
21.200.1215	MF12	1.5	89	29	9	7.1
21.200.1410	MF14	1	95	30	11.2	9
21.200.1412	MF14	1.25	95	30	11.2	9
21.200.1415	MF14	1.5	95	30	11.2	9
21.200.1610	MF16	1	95	32	12.5	10
21.200.1612	MF16	1.25	102	32	12.5	10
21.200.1615	MF16	1.5	102	32	12.5	10
21.200.1810	MF18	1	112	37	14	11.2
21.200.1815	MF18	1.5	112	37	14	11.2
21.200.1820	MF18	2	112	37	14	11.2
21.200.2010	MF20	1	112	37	14	11.2
21.200.2015	MF20	1.5	112	37	14	11.2
21.200.2020	MF20	2	112	37	14	11.2
21.200.2210	MF22	1	118	38	16	12.5
21.200.2215	MF22	1.5	118	38	16	12.5
21.200.2220	MF22	2	118	38	16	12.5
21.200.2415	MF24	1.5	120	35	18	14
21.200.2420	MF24	2	120	35	18	14
21.200.2715	MF27	1.5	127	37	20	16
21.200.2720	MF27	2	127	37	20	16

› 21.202 Phantom



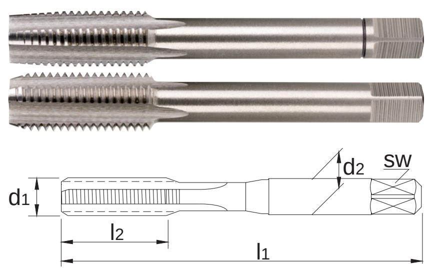
NL HSS Handtappen vorm C, Metrisch Fijn
FR Tarauds à main HSS Forme C, Métrique Fin
ES Machos mano HSS Forma C, Métrica Fina
DE HSS Handgewindebohrer Form C, Metrisch Fein
EN HSS Hand Taps Form C, Metric Fine

HSS | MF | 60° | NFE 66103 | ISO 529 | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.202.0810	MF8	1	72	22	8	6.3
21.202.1012	MF10	1.25	80	24	10	8
21.202.1210	MF12	1	89	29	9	7.1
21.202.1212	MF12	1.25	89	29	9	7.1
21.202.1215	MF12	1.5	89	29	9	7.1
21.202.1415	MF14	1.5	95	30	11.2	9
21.202.1615	MF16	1.5	102	32	12.5	10
21.202.2015	MF20	1.5	112	37	14	11.2

› 21.240 International Tools



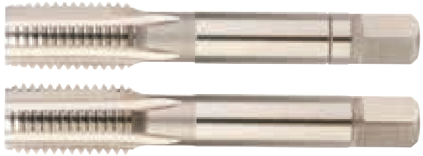
NL ECO HSS Handtappen Metrisch Fijn, set à 2 stuks
FR Tarauds à main HSS ECO Métrique Fin, Jeu de 2 pièces
ES Machos mano HSS ECO Métrica Fina, juego de 2 piezas
DE ECO HSS Handgewindebohrer Metrisch Fein, Satz von 2 Stück
EN ECO HSS Hand Taps Metric Fine, set of 2 pieces

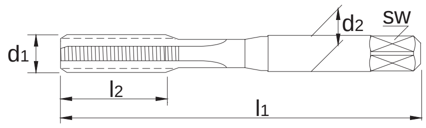
HSS | MF | 60° | DIN 2181 | ISO 2 6H | ECO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.240.0405	MF4	0.5	45	10	4.5	3.4
21.240.0505	MF5	0.5	52	12	6	4.9
21.240.0607	MF6	0.75	56	14	6	4.9
21.240.0807	MF8	0.75	63	18	6	4.9
21.240.0810	MF8	1	63	22	6	4.9
21.240.1010	MF10	1	63	20	7	5.5
21.240.1012	MF10	1.25	70	24	7	5.5
21.240.1210	MF12	1	70	22	9	7
21.240.1212	MF12	1.25	70	22	9	7
21.240.1215	MF12	1.5	70	22	9	7
21.240.1410	MF14	1	70	22	11	9
21.240.1412	MF14	1.25	70	22	11	9
21.240.1415	MF14	1.5	70	22	11	9
21.240.1615	MF16	1.5	70	22	12	9
21.240.1810	MF18	1	80	22	14	11
21.240.1815	MF18	1.5	80	22	14	11
21.240.2015	MF20	1.5	80	22	16	12
21.240.2215	MF22	1.5	80	22	18	14.5
21.240.2415	MF24	1.5	90	22	18	14.5
21.240.2420	MF24	2	90	22	18	14.5
21.240.3015	MF30	1.5	90	22	22	18
21.240.3020	MF30	2	90	22	22	18

› 21.250 Phantom





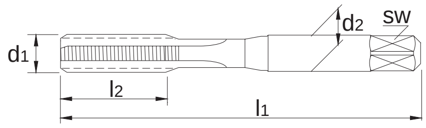
NL HSS Handtappen Metrisch Fijn, set à 2 stuks
FR Tarauds à main HSS Métrique Fin, Jeu de 2 pièces
ES Machos mano HSS Métrica Fina, juego de 2 piezas
DE HSS Handgewindebohrer Metrisch Fein, Satz von 2 Stück
EN HSS Hand Taps Metric Fine, set of 2 pieces

HSS | MF | 60° | DIN 2181 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.250.0303	MF3	0.35	40	8	3.5	2.7
21.250.0405	MF4	0.5	45	10	4.5	3.4
21.250.0505	MF5	0.5	52	12	6	4.9
21.250.0605	MF6	0.5	56	14	6	4.9
21.250.0607	MF6	0.75	56	14	6	4.9
21.250.0707	MF7	0.75	56	14	6	4.9
21.250.0807	MF8	0.75	63	18	6	4.9
21.250.0810	MF8	1	63	22	6	4.9
21.250.0910	MF9	1	63	22	7	5.5
21.250.1007	MF10	0.75	63	20	7	5.5
21.250.1010	MF10	1	63	20	7	5.5
21.250.1012	MF10	1.25	70	24	7	5.5
21.250.1110	MF11	1	63	20	8	6.2
21.250.1210	MF12	1	70	22	9	7
21.250.1212	MF12	1.25	70	22	9	7
21.250.1215	MF12	1.5	70	22	9	7
21.250.1410	MF14	1	70	22	11	9
21.250.1412	MF14	1.25	70	22	11	9
21.250.1415	MF14	1.5	70	22	11	9
21.250.1610	MF16	1	70	22	12	9
21.250.1612	MF16	1.25	70	22	12	9
21.250.1615	MF16	1.5	70	22	12	9
21.250.1810	MF18	1	80	22	14	11
21.250.1815	MF18	1.5	80	22	14	11
21.250.1820	MF18	2	80	22	14	11
21.250.2010	MF20	1	80	22	16	12
21.250.2015	MF20	1.5	80	22	16	12
21.250.2020	MF20	2	80	22	16	12
21.250.2210	MF22	1	80	22	18	14.5
21.250.2215	MF22	1.5	80	22	18	14.5
21.250.2220	MF22	2	80	22	18	14.5
21.250.2415	MF24	1.5	90	22	18	14.5
21.250.2420	MF24	2	90	22	18	14.5
21.250.2715	MF27	1.5	90	22	20	16
21.250.2720	MF27	2	90	22	20	16
21.250.3015	MF30	1.5	90	22	22	18
21.250.3020	MF30	2	90	22	22	18
21.250.3320	MF33	2	100	25	25	20

› 21.252 Phantom

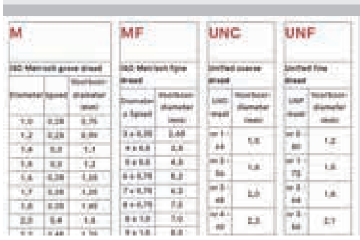


NL HSS Eindsnijder Metrisch Fijn
FR Taraud finisseur HSS Métrique Fin
ES Macho de acabado HSS Métrica Fina
DE HSS Fertigschneider Metrisch Fein
EN HSS Bottom Tap Metric Fine

HSS | MF | 60° | DIN 2181 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.252.0303	MF3	0.35	40	8	3.5	2.7
21.252.0405	MF4	0.5	45	10	4.5	3.4
21.252.0505	MF5	0.5	52	12	6	4.9
21.252.0605	MF6	0.5	56	14	6	4.9
21.252.0607	MF6	0.75	56	14	6	4.9
21.252.0707	MF7	0.75	56	14	6	4.9
21.252.0807	MF8	0.75	63	18	6	4.9
21.252.0810	MF8	1	63	22	6	4.9
21.252.0910	MF9	1	63	22	7	5.5
21.252.1007	MF10	0.75	63	20	7	5.5
21.252.1010	MF10	1	63	20	7	5.5
21.252.1012	MF10	1.25	70	24	7	5.5
21.252.1110	MF11	1	63	20	8	6.2
21.252.1210	MF12	1	70	22	9	7
21.252.1212	MF12	1.25	70	22	9	7
21.252.1215	MF12	1.5	70	22	9	7
21.252.1410	MF14	1	70	22	11	9
21.252.1412	MF14	1.25	70	22	11	9
21.252.1415	MF14	1.5	70	22	11	9
21.252.1610	MF16	1	70	22	12	9
21.252.1612	MF16	1.25	70	22	12	9
21.252.1615	MF16	1.5	70	22	12	9
21.252.1810	MF18	1	80	22	14	11
21.252.1815	MF18	1.5	80	22	14	11
21.252.1820	MF18	2	80	22	14	11
21.252.2010	MF20	1	80	22	16	12
21.252.2015	MF20	1.5	80	22	16	12
21.252.2020	MF20	2	80	22	16	12
21.252.2210	MF22	1	80	22	18	14.5
21.252.2215	MF22	1.5	80	22	18	14.5
21.252.2220	MF22	2	80	22	18	14.5
21.252.2415	MF24	1.5	90	22	18	14.5
21.252.2420	MF24	2	90	22	18	14.5
21.252.2715	MF27	1.5	90	22	20	16
21.252.2720	MF27	2	90	22	20	16
21.252.3015	MF30	1.5	90	22	22	18
21.252.3020	MF30	2	90	22	22	18
21.252.3320	MF33	2	100	25	25	20

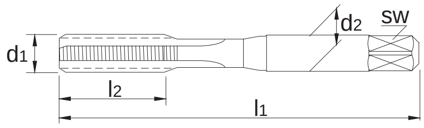


NL Voorboordiameters
FR Diamètres de pré-perçages
ES Diámetros de pre-taladro
DE Bohrungsdurchmesser
EN Pre-drilling diameters

Read me

www.phantom.eu

› 21.300 Phantom



NL HSS Handtappen UNC, set à 3 stuks
FR Tarauds à main HSS UNC, Jeu de 3 pièces
ES Machos mano HSS UNC, juego de 3 piezas
DE HSS Handgewindebohrer UNC, Satz von 3 Stück
EN HSS Hand Taps UNC, set of 3 pieces

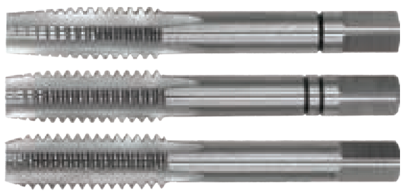
HSS | UNC | 60° | NFE 66104 | ISO 529 | FormA 6-8 | FormD 3,5-5 | FormC 2-3 | 2B

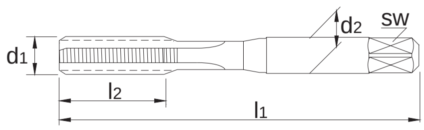
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.300.0185	UNC Nr. 1	64	41	8	2.5	2
21.300.0218	UNC Nr. 2	56	41	8	2.5	2
21.300.0251	UNC Nr. 3	48	44	9.5	2.8	2.24
21.300.0284	UNC Nr. 4	40	48	11	3.15	2.5
21.300.0317	UNC Nr. 5	40	50	13	3.55	2.8
21.300.0350	UNC Nr. 6	32	50	13	3.55	2.8
21.300.0416	UNC Nr. 8	32	53	13	4	3.15
21.300.0482	UNC Nr. 10	24	58	16	5	4
21.300.0548	UNC Nr. 12	24	66	19	6.3	5
21.300.0635	UNC 1/4	20	66	19	6.3	5
21.300.0794	UNC 5/16	18	72	22	8	6.3
21.300.0952	UNC 3/8	16	80	24	10	8

Ref.	d1	TPI	l1	l2	d2	sw
21.300.1111	UNC 7/16	14	85	25	8	6.3
21.300.1270	UNC 1/2	13	89	29	9	7.1
21.300.1429	UNC 9/16	12	95	30	11.2	9
21.300.1588	UNC 5/8	11	102	32	12.5	10
21.300.1905	UNC 3/4	10	112	37	14	11.2
21.300.2222	UNC 7/8	9	118	38	16	12.5
21.300.2540	UNC 1	8	120	35	18	14
21.300.2858	UNC 1.1/8	7	127	37	20	16
21.300.3175	UNC 1.1/4	7	137	37	22.4	18
21.300.3493	UNC 1.3/8	6	144	39	25	20
21.300.3810	UNC 1.1/2	6	149	39	28	22.4

› 21.310 International Tools





NIEUW / NOUVEAU / NUEVO / NEU

NL ECO HSS Handtappen UNC, set à 3 stuks
FR Tarauds à main HSS ECO UNC, Jeu de 3 pièces
ES Machos mano HSS ECO UNC, juego de 3 piezas
DE ECO HSS Handgewindebohrer UNC, Satz von 3 Stück
EN ECO HSS Hand Taps UNC, set of 3 pieces

HSS | UNC | 60° | DIN 352 | 2B | ECO

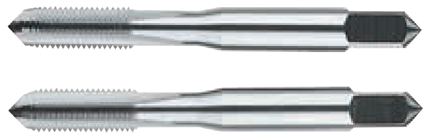
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

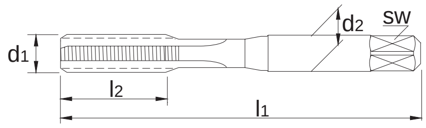
Ref.	d1	TPI	l1	l2	d2	sw
21.310.0635	UNC 1/4	20	50	19	6	4.9
21.310.0794	UNC 5/16	18	56	22	6	4.9
21.310.0952	UNC 3/8	16	70	24	7	5.5
21.310.1111	UNC 7/16	14	70	24	8	6.2
21.310.1270	UNC 1/2	13	75	29	9	7
21.310.1429	UNC 9/16	12	80	30	11	9

Ref.	d1	TPI	l1	l2	d2	sw
21.310.1588	UNC 5/8	11	80	32	12	9
21.310.1905	UNC 3/4	10	95	40	14	11
21.310.2222	UNC 7/8	9	100	40	18	14.5
21.310.2540	UNC 1	8	110	50	18	14.5
21.310.3175	UNC 1.1/4	7	132	56	22	18

› 21.350 *Phantom*

NL **HSS Handtappen UNF, set à 2 stuks**
FR **Tarauds à main HSS UNF, Jeu de 2 pièces**
ES **Machos mano HSS UNF, juego de 2 piezas**
DE **HSS Handgewindebohrer UNF, Satz von 2 Stück**
EN **HSS Hand Taps UNF, set of 2 pieces**



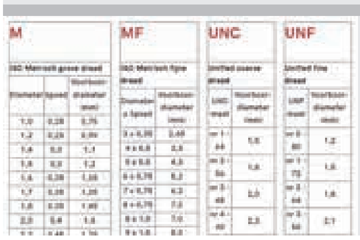


HSS | UNF | 60° | NFE 66104 | ISO 529 | FormD 3,5-5 | FormC 2-3 | 2B

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.350.0218	UNF Nr. 2	64	41	8	2.5	2
21.350.0284	UNF Nr. 4	48	48	11	3.15	2.5
21.350.0416	UNF Nr. 8	36	53	13	4	3.15
21.350.0482	UNF Nr. 10	32	58	16	5	4
21.350.0548	UNF Nr. 12	28	66	19	6.3	5
21.350.0635	UNF 1/4	28	66	19	6.3	5
21.350.0794	UNF 5/16	24	72	22	8	6.3
21.350.0952	UNF 3/8	24	80	24	10	8
21.350.1111	UNF 7/16	20	85	25	8	6.3
21.350.1270	UNF 1/2	20	89	29	9	7.1

Ref.	d1	TPI	l1	l2	d2	sw
21.350.1429	UNF 9/16	18	95	30	11.2	9
21.350.1588	UNF 5/8	18	102	32	12.5	10
21.350.1905	UNF 3/4	16	112	37	14	11.2
21.350.2222	UNF 7/8	14	118	38	16	12.5
21.350.2540	UNF 1	12	130	45	18	14
21.350.2858	UNF 1.1/8	12	138	48	20	16
21.350.3175	UNF 1.1/4	12	151	51	22.4	18
21.350.3493	UNF 1.3/8	12	162	57	25	20
21.350.3810	UNF 1.1/2	12	170	60	28	22.4



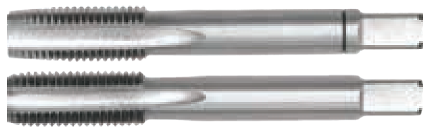
NL Voorboordiameters
FR Diamètres de pré-perçages
ES Diámetros de pre-taladro
DE Bohrungsdurchmesser
EN Pre-drilling diameters

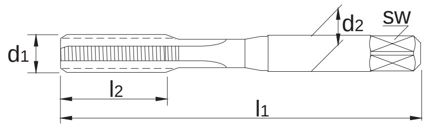
Read me

www.phantom.eu

› 21.365 *International Tools*

NL **ECO HSS Handtappen UNF, set à 2 stuks**
FR **Tarauds à main HSS ECO UNF, Jeu de 2 pièces**
ES **Machos mano HSS ECO UNF, juego de 2 piezas**
DE **ECO HSS Handgewindebohrer UNF, Satz von 2 Stück**
EN **ECO HSS Hand Taps UNF, set of 2 pieces**





NIEUW NOUVEAU NUEVO NEU

HSS | UNF | 60° | DIN 2181 | 2B | ECO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

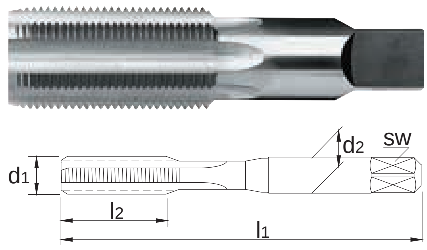
Ref.	d1	TPI	l1	l2	d2	sw
21.365.0635	UNF 1/4	28	50	18	6	4.9
21.365.0794	UNF 5/16	24	56	22	6	4.9
21.365.0952	UNF 3/8	24	63	22	7	5.5
21.365.1111	UNF 7/16	20	63	22	8	6.2
21.365.1270	UNF 1/2	20	75	24	9	7

Ref.	d1	TPI	l1	l2	d2	sw
21.365.1429	UNF 9/16	18	80	28	11	9
21.365.1588	UNF 5/8	18	80	28	12	9
21.365.1905	UNF 3/4	16	95	32	14	11
21.365.2222	UNF 7/8	14	100	36	18	14.5
21.365.2540	UNF 1	12	110	40	18	14.5

1 SC
1 HSS(-E)
2

› 21.392 Phantom

NL HSS Handtappen vorm D, UN-8
FR Tarauds à main HSS Forme D, UN-8
ES Machos mano HSS Forma D, UN-8
DE HSS Handgewindebohrer Form D, UN-8
EN HSS Hand Taps Form D, UN-8



HSS | UN-8 | 60° | NFE 66103 | ISO 529 | FormD 3,5-5 | 2B

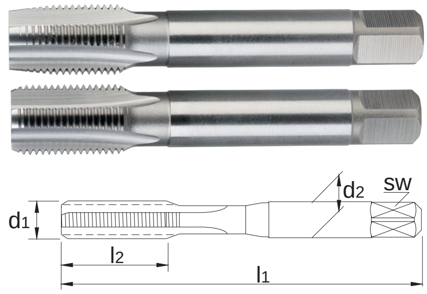
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.392.2858	UN 1.1/8	8	138	48	20	16
21.392.3175	UN 1.1/4	8	151	51	22.4	18
21.392.3493	UN 1.3/8	8	162	57	25	20
21.392.3810	UN 1.1/2	8	170	60	28	22.4

Ref.	d1	TPI	l1	l2	d2	sw
21.392.4128	UN 1.5/8	8	170	60	28	22.4
21.392.4445	UN 1.3/4	8	187	67	31.5	25
21.392.4763	UN 1.7/8	8	187	67	31.5	25
21.392.5080	UN 2	8	200	70	33.5	28

› 21.400 Phantom

NL HSS Handtappen set à 2 stuks G (BSP)
FR Tarauds à main HSS Jeu de 2 pièces G (BSP)
ES Machos mano HSS juego de 2 piezas G (BSP)
DE HSS Handgewindebohrer Satz von 2 Stück G (BSP)
EN HSS Hand Taps set of 2 pieces G (BSP)



HSS | BSP G | 55° | NFE 66103 | ISO 529 | FormD 3,5-5 | FormC 2-3

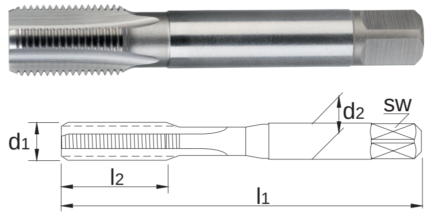
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.400.0973	G 1/8	28	59	15	8	6.3
21.400.1316	G 1/4	19	67	19	11	9
21.400.1666	G 3/8	19	75	21	12.5	10
21.400.2096	G 1/2	14	87	26	16	12.5
21.400.2291	G 5/8	14	91	26	18	14
21.400.2644	G 3/4	14	96	28	20	16

Ref.	d1	TPI	l1	l2	d2	sw
21.400.3020	G 7/8	14	102	29	22.4	18
21.400.3325	G 1	11	109	33	25	20
21.400.4191	G 1.1/4	11	119	39	31.5	25.5
21.400.4780	G 1.1/2	11	125	37	35.5	28
21.400.5375	G 1.3/4	11	132	39	35.5	28

› 21.402 Phantom

NL HSS Handtappen vorm C G (BSP)
FR Tarauds à main HSS Forme C G (BSP)
ES Machos mano HSS Forma C G (BSP)
DE HSS Handgewindebohrer Form C G (BSP)
EN HSS Hand Taps Form C G (BSP)



HSS | BSP G | 55° | NFE 66103 | ISO 529 | FormC 2-3

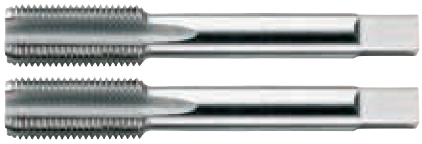
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

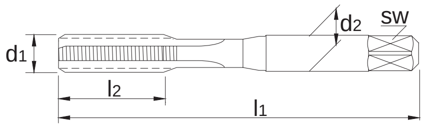
Ref.	d1	TPI	l1	l2	d2	sw
21.402.0973	G 1/8	28	59	15	8	6.3
21.402.1316	G 1/4	19	67	19	11	9
21.402.1666	G 3/8	19	75	21	12.5	10

Ref.	d1	TPI	l1	l2	d2	sw
21.402.2096	G 1/2	14	87	26	16	12.5
21.402.2644	G 3/4	14	96	28	20	16
21.402.3325	G 1	11	109	33	25	20

› 21.404 *International Tools*

NL ECO HSS Handtappen set à 2 stuks G (BSP)
FR Tarauds à main HSS ECO Jeu de 2 pièces G (BSP)
ES Machos mano HSS ECO juego de 2 piezas G (BSP)
DE ECO HSS Handgewindebohrer Satz von 2 Stück G (BSP)
EN ECO HSS Hand Taps set of 2 pieces G (BSP)





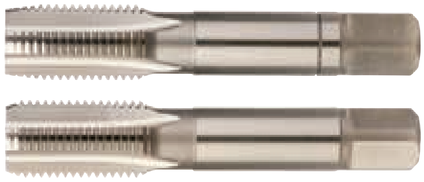
HSS | BSP G | 55° | DIN 5157 | ECO

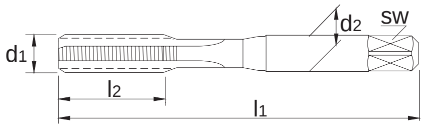
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.404.0973	G 1/8	28	63	20	7	5.5
21.404.1316	G 1/4	19	70	22	11	9
21.404.1666	G 3/8	19	70	22	12	9
21.404.2096	G 1/2	14	80	22	16	12
21.404.2644	G 3/4	14	90	22	20	16
21.404.3325	G 1	11	100	25	25	20

› 21.405 *Phantom*

NL HSS Handtappen set à 2 stuks G (BSP)
FR Tarauds à main HSS Jeu de 2 pièces G (BSP)
ES Machos mano HSS juego de 2 piezas G (BSP)
DE HSS Handgewindebohrer Satz von 2 Stück G (BSP)
EN HSS Hand Taps set of 2 pieces G (BSP)





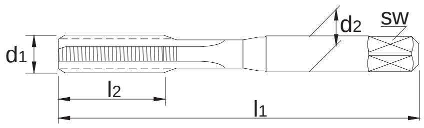
HSS | BSP G | 55° | DIN 5157

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.405.0973	G 1/8	28	63	20	7	5.5
21.405.1316	G 1/4	19	70	22	11	9
21.405.1666	G 3/8	19	70	22	12	9
21.405.2096	G 1/2	14	80	22	16	12
21.405.2291	G 5/8	14	80	22	18	14.5
21.405.2644	G 3/4	14	90	22	20	16
21.405.3020	G 7/8	14	90	22	22	18
21.405.3325	G 1	11	100	25	25	20
21.405.4191	G 1.1/4	11	125	40	32	24
21.405.4780	G 1.1/2	11	140	40	36	29
21.405.5375	G 1.3/4	11	140	40	40	32
21.405.5961	G 2	11	160	40	45	35

› 21.407 *Phantom*

NL HSS Eindsnijder G (BSP)
FR Taraud finisseur HSS G (BSP)
ES Macho de acabado HSS G (BSP)
DE HSS Fertigschneider G (BSP)
EN HSS Bottom Tap G (BSP)

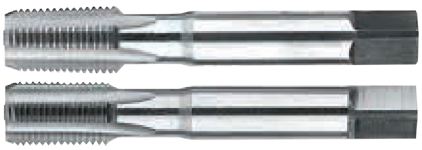
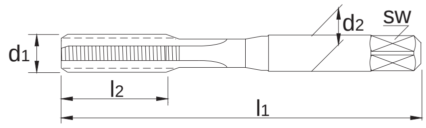


HSS | BSP G | 55° | DIN 5157

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.407.0973	G 1/8	28	63	20	7	5.5
21.407.1316	G 1/4	19	70	22	11	9
21.407.1666	G 3/8	19	70	22	12	9
21.407.2096	G 1/2	14	80	22	16	12
21.407.2291	G 5/8	14	80	22	18	14.5
21.407.2644	G 3/4	14	90	22	20	16
21.407.3020	G 7/8	14	90	22	22	18
21.407.3325	G 1	11	100	25	25	20
21.407.4191	G 1.1/4	11	125	40	32	24
21.407.4780	G 1.1/2	11	140	40	36	29
21.407.5375	G 1.3/4	11	140	40	40	32
21.407.5961	G 2	11	160	40	45	35

21.410 Phantom

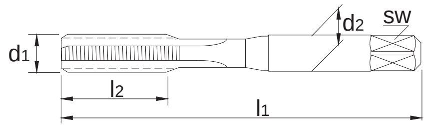
NL HSS Handtappen set à 2 stuks Rc (BSPT)
FR Tarauds à main HSS Jeu de 2 pièces Rc (BSPT)
ES Machos mano HSS juego de 2 piezas Rc (BSPT)
DE HSS Handgewindebohrer Satz von 2 Stück Rc (BSPT)
EN HSS Hand Taps set of 2 pieces Rc (BSPT)

HSS | BSPT Rc | 55° | NFE 66103 | ISO 529 | FormD 3,5-5 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.410.0973	Rc 1/8	28	59	15	8	6.3
21.410.1316	Rc 1/4	19	67	19	10	8
21.410.1666	Rc 3/8	19	75	21	12.5	10
21.410.2096	Rc 1/2	14	87	26	16	12.5
21.410.2644	Rc 3/4	14	96	28	20	16

21.420 Phantom

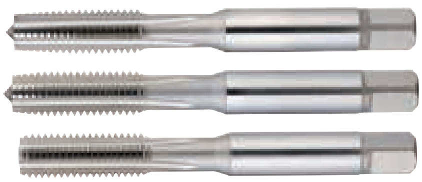
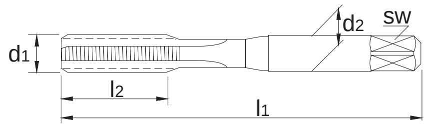
NL HSS Handtappen BSW (Whitworth), set à 3 stuks
FR Tarauds à main HSS BSW (Whitworth), Jeu de 3 pièces
ES Machos mano HSS BSW (Whitworth), juego de 3 piezas
DE HSS Handgewindebohrer BSW (Whitworth), Satz von 3 Stück
EN HSS Hand Taps BSW (Whitworth), set of 3 pieces

HSS | BSW | 55° | NFE 66104 | ISO 529 | FormA 6-8 | FormD 3,5-5 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.420.0317	BSW 1/8	40	50	18	3.55	2.8
21.420.0397	BSW 5/32	32	53	13	4	3.15
21.420.0476	BSW 3/16	24	58	16	5	4
21.420.0635	BSW 1/4	20	66	19	7.1	5.6
21.420.0794	BSW 5/16	18	72	22	8	6.3
21.420.0952	BSW 3/8	16	80	24	10	8
21.420.1111	BSW 7/16	14	85	25	8	6.3
21.420.1270	BSW 1/2	12	89	29	9	7.1
21.420.1429	BSW 9/16	12	95	30	11.2	9
21.420.1588	BSW 5/8	11	102	32	12.5	10
21.420.1905	BSW 3/4	10	112	37	14	11.2
21.420.2222	BSW 7/8	9	118	38	16	12.5
21.420.2540	BSW 1	8	130	45	18	14

21.430 Phantom

NL HSS Handtappen BSF, set à 3 stuks
FR Tarauds à main HSS BSF, Jeu de 3 pièces
ES Machos mano HSS BSF, juego de 3 piezas
DE HSS Handgewindebohrer BSF, Satz von 3 Stück
EN HSS Hand Taps BSF, set of 3 pieces

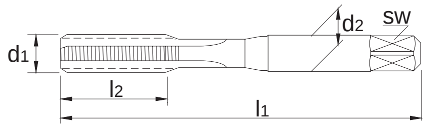
HSS | BSF | 55° | NFE 66104 | ISO 529 | FormA 6-8 | FormD 3,5-5 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.430.0476	BSF 3/16	32	58	16	5	4
21.430.0635	BSF 1/4	26	66	19	7.1	5.6
21.430.0794	BSF 5/16	22	72	22	8	6.3
21.430.0952	BSF 3/8	20	80	24	10	8
21.430.1111	BSF 7/16	18	85	25	8	6.3
21.430.1270	BSF 1/2	16	89	29	9	7.1
21.430.1588	BSF 5/8	14	102	32	12.5	10
21.430.1905	BSF 3/4	12	112	37	14	11.2
21.430.2222	BSF 7/8	11	118	38	16	12.5
21.430.2540	BSF 1	10	130	45	18	14

› 21.500 Phantom

NL **HSS Handtappen NPT, set à 2 stuks**
FR **Tarauds à main HSS NPT, Jeu de 2 pièces**
ES **Machos mano HSS NPT, juego de 2 piezas**
DE **HSS Handgewindebohrer NPT, Satz von 2 Stück**
EN **HSS Hand Taps NPT, set of 2 pieces**



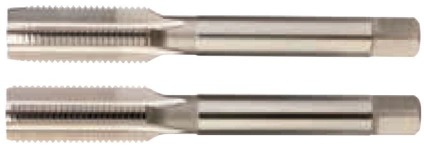
HSS | NPT | 60° | ISO 529 | FormD 3,5-5 | FormC 2-3

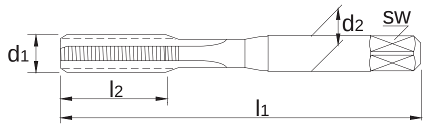
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.500.0794	NPT 1/16	27	52	14	5.6	4.5
21.500.1029	NPT 1/8	27	59	15	8	6.3
21.500.1372	NPT 1/4	18	67	19	10	8
21.500.1715	NPT 3/8	18	75	21	12.5	10
21.500.2134	NPT 1/2	14	87	26	16	12.5
21.500.2667	NPT 3/4	14	96	28	20	16
21.500.3340	NPT 1	11.5	109	33	25	20
21.500.4216	NPT 1.1/4	11.5	119	36	31.5	25
21.500.4826	NPT 1.1/2	11.5	125	37	35.5	28
21.500.6033	NPT 2	11.5	140	41	40	31.5

› 21.600 Phantom

NL **HSS Handtappen PG, set à 2 stuks**
FR **Tarauds à main HSS PG, Jeu de 2 pièces**
ES **Machos mano HSS PG, juego de 2 piezas**
DE **HSS Handgewindebohrer PG, Satz von 2 Stück**
EN **HSS Hand Taps PG, set of 2 pieces**





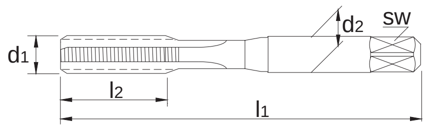
HSS | PG | 80° | ISO 529 | FormD 3,5-5 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.600.0700	PG 7	20	89	29	9	7.1
21.600.0900	PG 9	18	95	30	12.5	10
21.600.1100	PG 11	18	112	37	14	11.2
21.600.1350	PG 13,5	18	112	37	14	11.2
21.600.1600	PG 16	18	118	38	16	12.5
21.600.2100	PG 21	16	127	37	20	16

› 21.812 Phantom

NL **HSS Handtappen vorm C, voor Phan-Coil Metrisch**
FR **Tarauds à main HSS Forme C, pour Phan-Coil Métrique**
ES **Machos mano HSS Forma C, para Phan-Coil Métrica**
DE **HSS Handgewindebohrer Form C, für Phan-Coil Metrisch**
EN **HSS Hand Taps Form C, for Phan-Coil Metric Coarse**

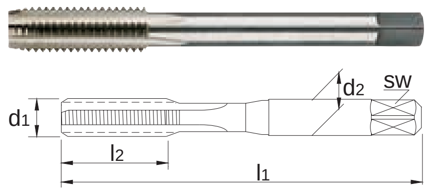


HSS | Phan-Coil | EG | M | 60° | ISO 529 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.812.0300	M3	3.65	0.5	53	13	4
21.812.0400	M4	4.91	0.7	58	16	5
21.812.0500	M5	6.04	0.8	66	19	6.3
21.812.0600	M6	7.3	1	72	22	8
21.812.0800	M8	9.62	1.25	80	24	10
21.812.1000	M10	11.95	1.5	89	29	9
21.812.1200	M12	14.27	1.75	95	30	11.2
21.812.1400	M14	16.6	2	102	32	12.5
21.812.1600	M16	18.6	2	112	37	14

› 21.822 Phantom



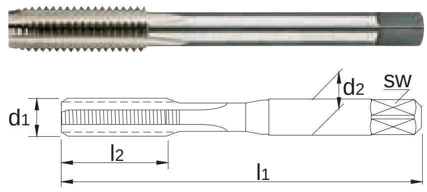
NL HSS Handtappen vorm C, Metrisch Fijn, voor Phan-Coil
FR Tarauds à main HSS Forme C, Métrique Fin, pour Phan-Coil
ES Machos mano HSS Forma C, Métrica Fina, para Phan-Coil
DE HSS Handgewindebohrer Form C, Metrisch Fein, für Phan-Coil
EN HSS Hand Taps Form C, Metric Fine, for Phan-Coil

HSS | Phan-Coil | EG | MF | 60° | ISO 529 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.822.0810	MF8	9.7	1	80	24	10
21.822.1010	MF10	11.95	1	89	29	9
21.822.1025	MF10	12.1	1.25	89	29	9
21.822.1215	MF12	14.25	1.5	95	30	11.2
21.822.1415	MF14	16.55	1.5	102	32	12.5
21.822.1615	MF16	18.9	1.5	112	34	14
21.822.1815	MF18	21.05	1.5	112	34	14

› 21.832 Phantom



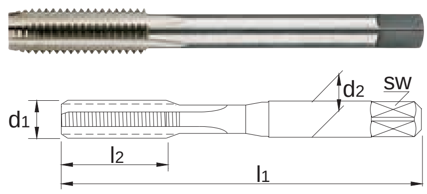
NL HSS Handtappen vorm C, UNC, voor Phan-Coil
FR Tarauds à main HSS Forme C, UNC, pour Phan-Coil
ES Machos mano HSS Forma C, UNC, para Phan-Coil
DE HSS Handgewindebohrer Form C, UNC, für Phan-Coil
EN HSS Hand Taps Form C, UNC, for Phan-Coil

HSS | Phan-Coil | EG | UNC | 60° | ISO 529 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.832.0482	UNC Nr. 10	6.2	24	66	25	6.3
21.832.0635	UNC 1/4	8	20	72	23	8
21.832.0794	UNC 5/16	9.77	18	80	24	10
21.832.0952	UNC 3/8	11.58	16	85	24	8
21.832.1270	UNC 1/2	15.23	13	102	32	12.5
21.832.1588	UNC 5/8	18.87	11	112	37	14

› 21.840 Phantom



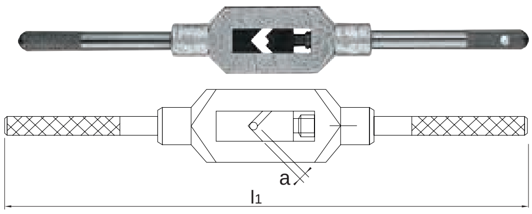
NL HSS Handtappen vorm C, UNF, voor Phan-Coil
FR Tarauds à main HSS Forme C, UNF, pour Phan-Coil
ES Machos mano HSS Forma C, UNF, para Phan-Coil
DE HSS Handgewindebohrer Form C, UNF, für Phan-Coil
EN HSS Hand Taps Form C, UNF, for Phan-Coil

HSS | Phan-Coil | EG | UNF | 60° | ISO 529 | FormC 2-3

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	TPI	l1	l2	d2	sw
21.840.0482	UNF Nr. 10	5.85	32	66	19	6.3
21.840.0635	UNF 1/4	7.52	28	72	22	8
21.840.0794	UNF 5/16	9.31	24	80	24	10
21.840.0952	UNF 3/8	10.89	24	85	25	8
21.840.1270	UNF 1/2	14.35	20	90	25	11.2
21.840.1588	UNF 5/8	17.7	18	112	37	14

› 81.900

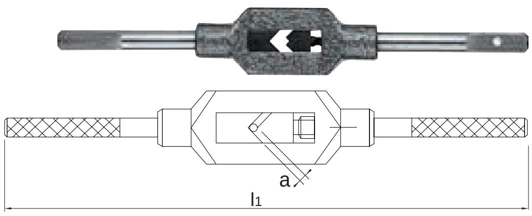


NL **Verstelbaar Wringijzer, standaard kwaliteit, Zink-legering**
FR **Tourne à gauche expansible, qualité standard, alliage de zinc**
ES **Giramacho extensible, calidad estándar, aleación de cinc**
DE **Verstellbare Windeisen, Standard-Qualität, Zinkdruckguβ**
EN **Adjustable Tap Wrench, standard quality, zinc die cast**

DIN
1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0000	0	M1-M6	1/16-1/4	-	125	2-5
81.900.0100	1	M1-M10	1/16-3/8	1/8	180	2-6
81.900.0150	1,5	M3-M12	1/16-1/2	1/8	200	2,5-8
81.900.0200	2	M4,5-M16	5/32-1/2	1/8	280	4-9
81.900.0300	3	M4,5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.900.0400	4	M7-M27	7/16-1	1/4-3/4	500	5,5-16
81.900.0500	5L	M9-M33	1/2-1.1/4	1/4-1	750	7-20

› 81.905

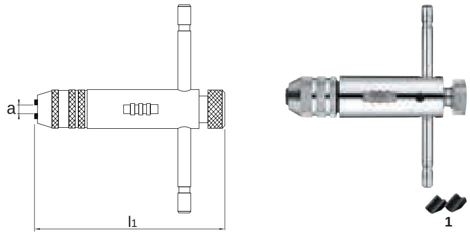


NL **Verstelbaar Wringijzer, extra kwaliteit, staal**
FR **Tourne à gauche expansible, qualité supérieure, acier**
ES **Giramacho extensible, calidad superior, acero**
DE **Verstellbare Windeisen, Extra-Qualität, Stahl**
EN **Adjustable Tap Wrench, extra quality, steel**

DIN
1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0000	0	M1-M6	1/16-1/4	-	130	2-5
81.905.0100	1	M1-M10	1/16-3/8	1/8	180	2-6
81.905.0150	1,5	M3-M12	1/16-1/2	1/8	200	2,5-8
81.905.0200	2	M4,5-M16	5/32-1/2	1/8	280	4-9
81.905.0300	3	M4,5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.905.0400	4	M7-M27	7/16-1	1/4-3/4	500	5,5-16
81.905.0500	5S	M9-M33	1/2-1.1/4	1/4-1	750	7-20
81.905.0600	6L	M18-M42	3/4-1.1/2	1/2-1.1/4	1000	9-25
81.905.0800	8	M27-M68	1-2.1/2	3/4-3	1250	16-40

› 81.930

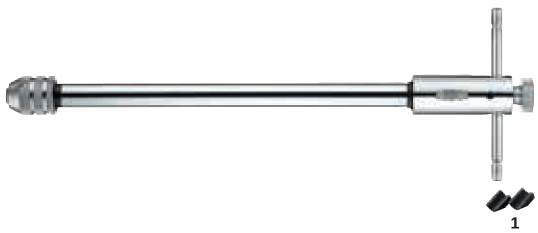


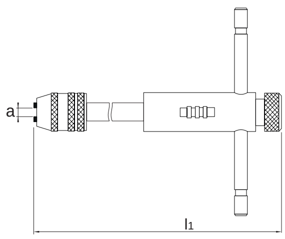
NL **Rateltapkruk**
FR **Porte-tarauds à cliquet**
ES **Giromacho en T con carraca**
DE **Werkzeughalter mit Knarre**
EN **T-handle tap Wrench**

Ref.	Nr.	M	BSW	BSP	a	l1	1
81.930.0100	1	M3-M10	1/8-3/8	-	2,4-5,5	85	81.938.0100
81.930.0200	2	M5-M12	7/32-1/2	1/8	4,5-7	100	81.938.0200

› 81.935

NL **Rateltapkruk, lang**
FR **Porte-tarauds à cliquet, version longue**
ES **Giromacho en T con carraca, larga**
DE **Werkzeughalter mit Knarre, lang**
EN **T-handle tap Wrench, long**

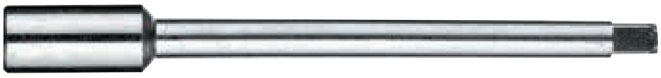


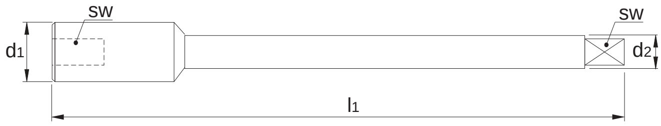


Ref.	Nr.	M	BSW	BSP	a	l1	1
81.935.1000	10	M3-M10	1/8-3/8		2,4-5,5	250	81.938.0100
81.935.2000	20	M5-M12	7/32-1/2	1/8	4,5-7	300	81.938.0200

› 81.950

NL **Tapverlengstuk**
FR **Rallonge pour tarauds**
ES **Prolongador de machos**
DE **Gewindebohrer Verlängerung**
EN **Extension Sleeve**

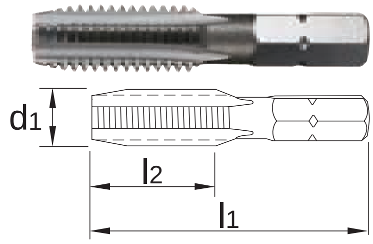




DIN 377

Ref.	sw	M	BSW	BSP	l1	d1	d2
81.950.0210	2.1	M1-M2,6	1/16-3/32		60	5	2.5
81.950.0240	2.4				70	6	3
81.950.0270	2.7	M3	1/8		80	7	3.5
81.950.0300	3	M3,5			90	7	4
81.950.0340	3.4	M4	5/32		95	8	4.5
81.950.0380	3.8				100	9	5
81.950.0430	4.3				105	10	5.5
81.950.0490	4.9	M4,5-M8	3/16-5/16		110	11	6.5
81.950.0550	5.5	M9-M10	3/8	1/16-1/8	115	12	7
81.950.0620	6.2	M11	7/16		120	14	8
81.950.0700	7	M12	1/2		125	15	9
81.950.0800	8				125	17	10
81.950.0900	9	M13-M16	9/16-5/8	1/4-3/8	130	19	11.2
81.950.1000	10				140	21	12.5
81.950.1100	11	M18	11/16-3/4		150	23	14
81.950.1200	12	M20		1/2	155	25	16
81.950.1300	13				165	27	17
81.950.1450	14.5	M22-M24	7/8-15/16	5/8	175	29	19
81.950.1600	16	M27	1	3/4	180	30	20
81.950.1800	18	M30	1.1/8	7/8	200	33	22.4
81.950.2000	20	M33	1.1/4	-	210	36	25
81.950.2200	22	M36	1.3/8	1.1/8	220	38	29
81.950.2400	24	M39-M42	1.1/2-1.5/8	1.1/4	235	42	32
81.950.2600	26				250	45	34.5
81.950.2900	29	M45-M48	1.3/4-1.7/8	1.3/8-2	265	50	38.5
81.950.3200	32	M52	2	2.1/4	285	55	42.5

› 22.100 International Tools



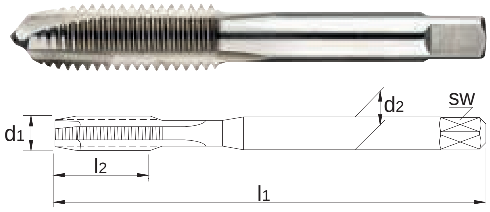
NL ECO HSS Machinetap Metrisch, 1/4" (6,35 mm)-zeskant bitopname
FR Taraud machine HSS ECO Métrique, avec queue hexagonale 1/4" (6,35 mm)
ES Macho máquina HSS ECO Métrica, con mango sujeción 1/4" (6,35 mm) bit
DE ECO HSS Maschinengewindebohrer Metrisch, 1/4" (6,35 mm) Hexa-Bitaufnahme
EN ECO HSS Machine Tap Metric Coarse, 1/4" (6,35 mm) hexagonal shank

HSS | M | 60° | DIN 3126 | C6,3 1/4" | FormC 2-3 | ISO 2 6H | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
12-17	9-15	7-12	20-30

Ref.	d1	P	l1	l2
22.100.0300	M3	0.5	33	11
22.100.0400	M4	0.7	35	12
22.100.0500	M5	0.8	36	15
22.100.0600	M6	1	39	18
22.100.0800	M8	1.25	40	19
22.100.1000	M10	1.5	41	21

› 22.190 International Tools



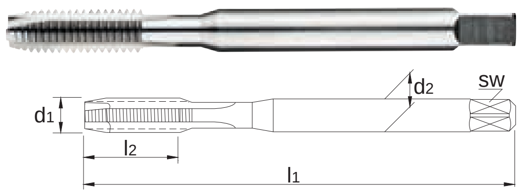
NL ECO HSS Machinetap Metrisch, kort
FR Taraud machine HSS ECO Métrique, version courte
ES Macho máquina HSS ECO Métrica, corto
DE ECO HSS Maschinengewindebohrer Metrisch, kurz
EN ECO HSS Machine Tap Metric Coarse, short

HSS | M | 60° | DIN 352 | 3xD | FormB 3,5-5 | ISO 2 6H | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
12-17	9-15	7-12	20-30

Ref.	d1	P	l1	l2	d2	sw
22.190.0300	M3	0.5	40	11	3.5	2.7
22.190.0400	M4	0.7	45	13	4.5	3.4
22.190.0500	M5	0.8	50	16	6	4.9
22.190.0600	M6	1	56	19	6	4.9
22.190.0800	M8	1.25	63	22	6	4.9
22.190.1000	M10	1.5	70	24	7	5.5
22.190.1200	M12	1.75	75	28	9	7

› 22.191 International Tools



NL ECO HSS Machinetap Metrisch
FR Taraud machine HSS ECO Métrique
ES Macho máquina HSS ECO Métrica
DE ECO HSS Maschinengewindebohrer Metrisch
EN ECO HSS Machine Tap Metric Coarse

HSS | M | 60° | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
12-17	9-15	7-12	20-30

Ref.	d1	P	l1	l2	d2	sw
22.191.0300	M3	0.5	56	11	3.5	2.7
22.191.0500	M5	0.8	70	16	6	4.9
22.191.0800	M8	1.25	90	22	8	6.2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

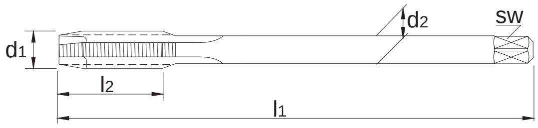
NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

22.192 International Tools

NL ECO HSS Machinetap Metrisch
FR Taraud machine HSS ECO Métrique
ES Macho máquina HSS ECO Métrica
DE ECO HSS Maschinengewindebohrer Metrisch
EN ECO HSS Machine Tap Metric Coarse



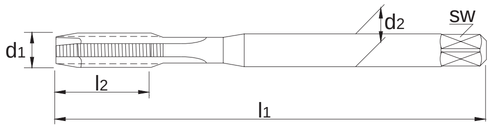
HSS | M | 60° | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
12-17	9-15	7-12	20-30

Ref.	d1	P	l1	l2	d2	sw
22.192.1200	M12	1.75	110	28	9	7

22.195 International Tools

NL ECO PRO HSS-E Machinetap Metrisch
FR Taraud machine HSS-E ECO PRO Métrique
ES Macho máquina HSS-E ECO PRO Métrica
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch
EN ECO PRO HSS-E Machine Tap Metric Coarse



HSS-E | M | 60° | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	25-35

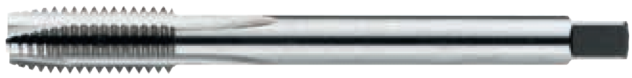
Ref.	d1	P	l1	l2	d2	sw
22.195.0200	M2	0.4	45	8	2.8	2.1
22.195.0300	M3	0.5	56	11	3.5	2.7
22.195.0400	M4	0.7	63	13	4.5	3.4

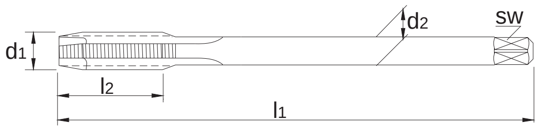
Ref.	d1	P	l1	l2	d2	sw
22.195.0500	M5	0.8	70	16	6	4.9
22.195.0600	M6	1	80	19	6	4.9
22.195.0800	M8	1.25	90	22	8	6.2

Ref.	d1	P	l1	l2	d2	sw
22.195.1000	M10	1.5	100	24	10	8

22.196 International Tools

NL ECO PRO HSS-E Machinetap Metrisch
FR Taraud machine HSS-E ECO PRO Métrique
ES Macho máquina HSS-E ECO PRO Métrica
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch
EN ECO PRO HSS-E Machine Tap Metric Coarse





HSS-E | M | 60° | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | ECO PRO

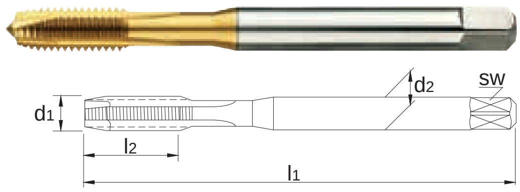
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	25-35

Ref.	d1	P	l1	l2	d2	sw
22.196.1000	M10	1.5	100	24	7	5.5
22.196.1200	M12	1.75	110	28	9	7
22.196.1400	M14	2	110	30	11	9
22.196.1600	M16	2	110	32	12	9

Ref.	d1	P	l1	l2	d2	sw
22.196.2000	M20	2.5	140	34	16	12
22.196.2200	M22	2.5	140	34	18	14.5
22.196.2400	M24	3	160	38	18	14.5
22.196.2700	M27	3	160	38	20	16

Ref.	d1	P	l1	l2	d2	sw
22.196.3000	M30	3.5	180	45	22	18
22.196.3300	M33	3.5	180	50	25	20
22.196.3600	M36	4	200	56	28	22

› 22.197 *International Tools*



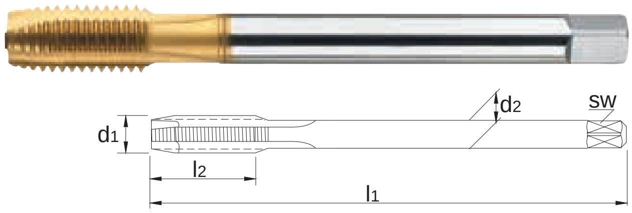
NL ECO PRO HSS-E Machinetap Metrisch, TiN
FR Taraud machine HSS-E ECO PRO Métrique, TiN
ES Macho máquina HSS-E ECO PRO Métrica, TiN
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, TiN
EN ECO PRO HSS-E Machine Tap Metric Coarse, TiN

HSS-E | M | 60° | TiN | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | ECO PRO

P 11	P 12	M 21	K 31	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	GG	Alu	Alu Si>10%	Cu
22-30	18-27	7-10	15-22	32-52	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
22.197.0300	M3	0.5	56	11	3.5	2.7
22.197.0400	M4	0.7	63	13	4.5	3.4
22.197.0500	M5	0.8	70	16	6	4.9
22.197.0600	M6	1	80	19	6	4.9
22.197.0800	M8	1.25	90	22	8	6.2
22.197.1000	M10	1.5	100	24	10	8

› 22.198 *International Tools*



NL ECO PRO HSS-E Machinetap Metrisch, TiN
FR Taraud machine HSS-E ECO PRO Métrique, TiN
ES Macho máquina HSS-E ECO PRO Métrica, TiN
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, TiN
EN ECO PRO HSS-E Machine Tap Metric Coarse, TiN

HSS-E | M | 60° | TiN | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | ECO PRO

P 11	P 12	M 21	K 31	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	GG	Alu	Alu Si>10%	Cu
22-30	18-27	7-10	15-22	32-52	15-20	5-12

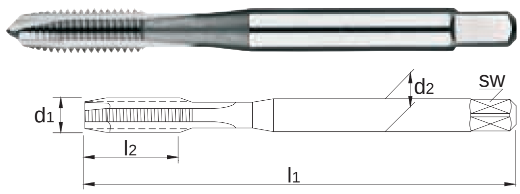
Ref.	d1	P	l1	l2	d2	sw
22.198.1200	M12	1.75	110	28	9	7

NL Tappen van doorlopend en blind gat
FR Tarauder un trou débouchant et un trou borgne
ES Roscar un agujero pasante y ciego
DE Gewindebohrer Durchgangslocher und Sacklocher
EN Tapping through and blind hole

Watch me

www.phantom.eu

› 22.200 *Phantom*



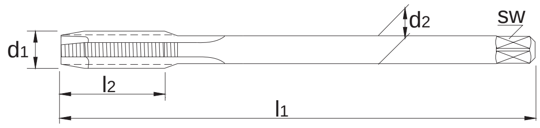
NL UNI HSS-E Machinetap Metrisch
FR Taraud machine HSS-E UNI Métrique
ES Macho máquina HSS-E UNI Métrica
DE UNI HSS-E Maschinengewindebohrer Metrisch
EN UNI HSS-E Machine Tap Metric Coarse

HSS-E | M | 60° | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.200.0100	M1	0.25	40	5.5	2.5	2.1
22.200.0110	M1,1	0.25	40	5.5	2.5	2.1
22.200.0120	M1,2	0.25	40	5.5	2.5	2.1
22.200.0140	M1,4	0.3	40	7	2.5	2.1
22.200.0160	M1,6	0.35	40	8	2.5	2.1
22.200.0170	M1,7	0.35	40	8	2.5	2.1
22.200.0180	M1,8	0.35	40	8	2.5	2.1
22.200.0200	M2	0.4	45	8	2.8	2.1
22.200.0220	M2,2	0.45	45	9	2.8	2.1
22.200.0230	M2,3	0.4	45	9	2.8	2.1
22.200.0250	M2,5	0.45	50	9	2.8	2.1
22.200.0260	M2,6	0.45	50	9	2.8	2.1
22.200.0300	M3	0.5	56	11	3.5	2.7
22.200.0350	M3,5	0.6	56	12	4	3
22.200.0400	M4	0.7	63	13	4.5	3.4
22.200.0450	M4,5	0.75	70	16	6	4.9
22.200.0500	M5	0.8	70	16	6	4.9
22.200.0600	M6	1	80	19	6	4.9
22.200.0700	M7	1	80	19	7	5.5
22.200.0800	M8	1.25	90	22	8	6.2
22.200.0900	M9	1.25	90	22	9	7
22.200.1000	M10	1.5	100	24	10	8

› 22.201 Phantom

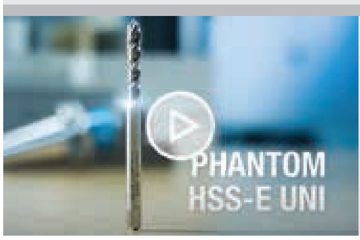


NL UNI HSS-E Machinetap Metrisch
FR Taraud machine HSS-E UNI Métrique
ES Macho máquina HSS-E UNI Métrica
DE UNI HSS-E Maschinengewindebohrer Metrisch
EN UNI HSS-E Machine Tap Metric Coarse

HSS-E | M | 60° | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.201.0200	M2	0.4	45	4	1.4	
22.201.0250	M2,5	0.45	50	5	1.8	
22.201.0300	M3	0.5	56	11	2.2	
22.201.0400	M4	0.7	63	13	2.8	2.1
22.201.0500	M5	0.8	70	16	3.5	2.7
22.201.0600	M6	1	80	19	4.5	3.4
22.201.0700	M7	1	80	19	5.5	4.3
22.201.0800	M8	1.25	90	22	6	4.9
22.201.0900	M9	1.25	90	22	7	5.5
22.201.1000	M10	1.5	100	24	7	5.5
22.201.1200	M12	1.75	110	28	9	7
22.201.1400	M14	2	110	30	11	9
22.201.1600	M16	2	110	32	12	9
22.201.1800	M18	2.5	125	34	14	11
22.201.2000	M20	2.5	140	34	16	12
22.201.2200	M22	2.5	140	34	18	14.5
22.201.2400	M24	3	160	38	18	14.5
22.201.2700	M27	3	160	38	20	16
22.201.3000	M30	3.5	180	45	22	18
22.201.3300	M33	3.5	180	50	25	20
22.201.3600	M36	4	200	56	28	22
22.201.3900	M39	4	200	60	32	24
22.201.4200	M42	4.5	200	60	32	24
22.201.4500	M45	4.5	220	65	36	29
22.201.4800	M48	5	250	70	36	29
22.201.5200	M52	5	250	70	40	32

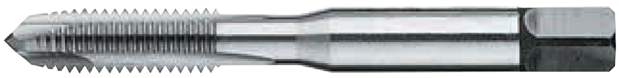


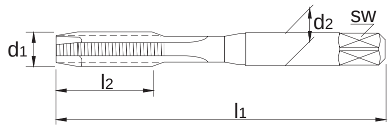
NL Test Phantom HSS-E UNI Machinetappen
FR Test de tarauds machine UNI HSS-E
ES Test Phantom HSS-E UNI Machos de roscado de máquina
DE Test Phantom HSS-E UNI Maschinengewindebohrer
EN Test Phantom HSS-E UNI Machine Taps

Watch me

www.phantom.eu

› 22.205 Phantom





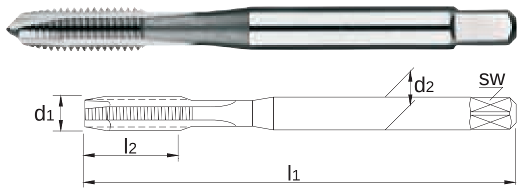
NL HSS Machinetap Metrisch
FR Taraud machine HSS Métrique
ES Macho máquina HSS Métrica
DE HSS Maschinengewindebohrer Metrisch
EN HSS Machine Tap Metric Coarse

HSS | M | 60° | NFE 66103 | ISO 529 | 2xD | FormB 3,5-5 | ISO 2 6H

P 11	P 12	K 31	K 32	N 41	N 52
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
22.205.0200	M2	0.4	41	8	2.5	2
22.205.0250	M2,5	0.45	44	9.5	2.8	2.24
22.205.0300	M3	0.5	48	11	3.15	2.5
22.205.0350	M3,5	0.6	50	13	3.55	2.8
22.205.0400	M4	0.7	53	13	4	3.15
22.205.0450	M4,5	0.75	58	16	5	4
22.205.0500	M5	0.8	58	16	5	4
22.205.0600	M6	1	66	19	6.3	5
22.205.0700	M7	1	66	19	7.1	5.6
22.205.0800	M8	1.25	72	22	8	6.3
22.205.0900	M9	1.25	72	22	9	7.1
22.205.1000	M10	1.5	80	24	10	8
22.205.1200	M12	1.75	89	29	9	7.1
22.205.1400	M14	2	95	30	11.2	9
22.205.1600	M16	2	102	32	12.5	10
22.205.1800	M18	2.5	112	37	14	11.2
22.205.2000	M20	2.5	112	37	14	11.2
22.205.2200	M22	2.5	118	38	16	12.5
22.205.2400	M24	3	130	45	18	14
22.205.2700	M27	3	135	45	20	16
22.205.3000	M30	3.5	138	48	20	16

› 22.210 *Phantom*



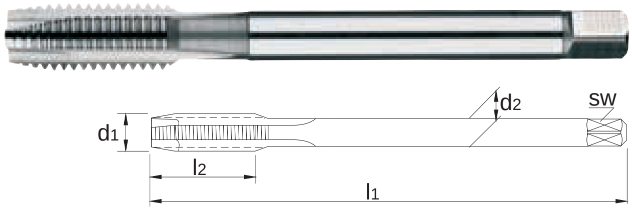
NL UNI HSS-E Machinetap Metrisch, Overmaats
FR Taraud machine HSS-E UNI Métrique, surcoté
ES Macho máquina HSS-E UNI Métrica, sobremedida
DE UNI HSS-E Maschinengewindebohrer Metrisch, Übermaß
EN UNI HSS-E Machine Tap Metric Coarse, Oversized

HSS-E	M	60°	DIN 371	3xD		FormB 3,5-5	+0,1 +0,2	ISO 2 6H	UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.210.0510	M5+0,1	0.8	70	16	6	4.9
22.210.0610	M6+0,1	1	80	19	6	4.9
22.210.0620	M6+0,2	1	80	19	6	4.9
22.210.0820	M8+0,2	1.25	90	22	8	6.2
22.210.1020	M10+0,2	1.5	100	24	10	8

› 22.211 *Phantom*



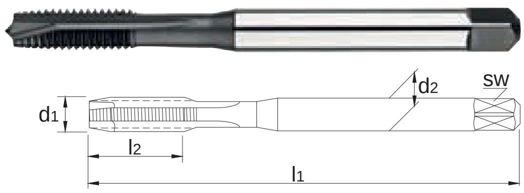
NL UNI HSS-E Machinetap Metrisch, Overmaats
FR Taraud machine HSS-E UNI Métrique, surcoté
ES Macho máquina HSS-E UNI Métrica, sobremedida
DE UNI HSS-E Maschinengewindebohrer Metrisch, Übermaß
EN UNI HSS-E Machine Tap Metric Coarse, Oversized

HSS-E	M	60°	DIN 376	3xD		FormB 3,5-5	+0,1 +0,2	ISO 2 6H	UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.211.1220	M12+0,2	1.75	110	28	9	7
22.211.1420	M14+0,2	2	110	30	11	9
22.211.1610	M16+0,1	2	110	32	12	9
22.211.1620	M16+0,2	2	110	32	12	9

› 22.220 *Phantom*

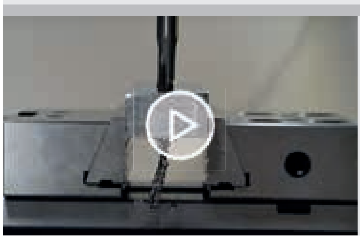


NL HSS-E Machinetap Metrisch, stoomontlaten
FR Taraud machine HSS-E Métrique, vaporisé
ES Macho máquina HSS-E Métrica, vaporizado
DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen
EN HSS-E Machine Tap Metric Coarse, steam oxide

HSS-E	M	60°	OX.	DIN 371	3xD		FormB 3,5-5	ISO 2 6H

P 11	P 12	K 31	K 32
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW
15-20	10-20	10-15	5-8

Ref.	d1	P	l1	l2	d2	sw
22.220.0200	M2	0.4	45	8	2.8	2.1
22.220.0220	M2,2	0.45	45	9	2.8	2.1
22.220.0230	M2,3	0.4	45	9	2.8	2.1
22.220.0250	M2,5	0.45	50	9	2.8	2.1
22.220.0260	M2,6	0.45	50	9	2.8	2.1
22.220.0300	M3	0.5	56	11	3.5	2.7
22.220.0350	M3,5	0.6	56	12	4	3
22.220.0400	M4	0.7	63	13	4.5	3.4
22.220.0500	M5	0.8	70	16	6	4.9
22.220.0600	M6	1	80	19	6	4.9
22.220.0700	M7	1	80	19	7	5.5
22.220.0800	M8	1.25	90	22	8	6.2
22.220.1000	M10	1.5	100	24	10	8

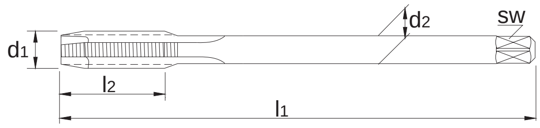


NL Tappen van doorlopend gat
FR Tarauder un trou débouchant
ES Roscar un agujero pasante
DE Gewindebohrer Durchgangslocher
EN Tapping throug hole

Watch me

www.phantom.eu

22.221 Phantom



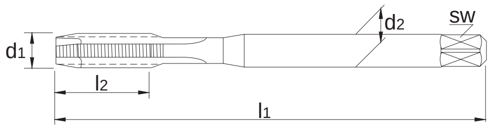
- NL HSS-E Machinetap Metrisch, stoomontlaten
- FR Taraud machine HSS-E Métrique, vaporisé
- ES Macho máquina HSS-E Métrica, vaporizado
- DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen
- EN HSS-E Machine Tap Metric Coarse, steam oxide

HSS-E | M | 60° | OX. | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW
15-20	10-20	10-15	5-8

Ref.	d1	P	l1	l2	d2	sw
22.221.0300	M3	0.5	56	11	2.2	
22.221.0400	M4	0.7	63	13	2.8	2.1
22.221.0500	M5	0.8	70	16	3.5	2.7
22.221.0600	M6	1	80	19	4.5	3.4
22.221.0800	M8	1.25	90	22	6	4.9
22.221.0900	M9	1.25	90	22	7	5.5
22.221.1000	M10	1.5	100	24	7	5.5
22.221.1200	M12	1.75	110	28	9	7
22.221.1400	M14	2	110	30	11	9
22.221.1600	M16	2	110	32	12	9
22.221.1800	M18	2.5	125	34	14	11
22.221.2000	M20	2.5	140	34	16	12
22.221.2200	M22	2.5	140	34	18	14.5
22.221.2400	M24	3	160	38	18	14.5
22.221.2700	M27	3	160	38	20	16
22.221.3000	M30	3.5	180	45	22	18

22.230 Phantom



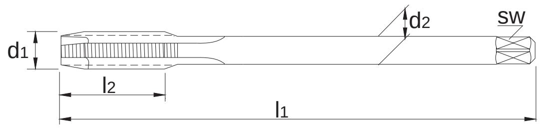
- NL UNI HSS-E Machinetap Metrisch, TiN
- FR Taraud machine HSS-E UNI Métrique, TiN
- ES Macho máquina HSS-E UNI Métrica, TiN
- DE UNI HSS-E Maschinengewindebohrer Metrisch, TiN
- EN UNI HSS-E Machine Tap Metric Coarse, TiN

HSS-E | M | 60° | TiN | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.230.0200	M2	0.4	45	8	2.8	2.1
22.230.0250	M2,5	0.45	50	9	2.8	2.1
22.230.0300	M3	0.5	56	11	3.5	2.7
22.230.0400	M4	0.7	63	13	4.5	3.4
22.230.0500	M5	0.8	70	16	6	4.9
22.230.0600	M6	1	80	19	6	4.9
22.230.0700	M7	1	80	19	7	5.5
22.230.0800	M8	1.25	90	22	8	6.2
22.230.0900	M9	1.25	90	22	9	7
22.230.1000	M10	1.5	100	24	10	8

22.231 Phantom



- NL UNI HSS-E Machinetap Metrisch, TiN
- FR Taraud machine HSS-E UNI Métrique, TiN
- ES Macho máquina HSS-E UNI Métrica, TiN
- DE UNI HSS-E Maschinengewindebohrer Metrisch, TiN
- EN UNI HSS-E Machine Tap Metric Coarse, TiN

HSS-E | M | 60° | TiN | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

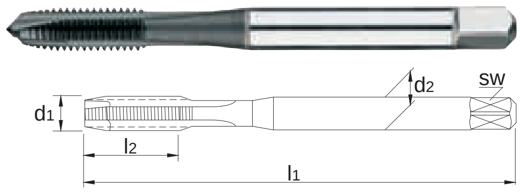
Ref.	d1	P	l1	l2	d2	sw
22.231.0300	M3	0.5	56	11	2.2	
22.231.0400	M4	0.7	63	13	2.8	2.1
22.231.0500	M5	0.8	70	16	3.5	2.7
22.231.0600	M6	1	80	19	4.5	3.4
22.231.0700	M7	1	80	19	5.5	4.3
22.231.0800	M8	1.25	90	22	6	4.9
22.231.0900	M9	1.25	90	22	7	5.5
22.231.1000	M10	1.5	100	24	7	5.5
22.231.1200	M12	1.75	110	28	9	7
22.231.1400	M14	2	110	30	11	9
22.231.1600	M16	2	110	32	12	9
22.231.1800	M18	2.5	125	34	14	11
22.231.2000	M20	2.5	140	34	16	12
22.231.2200	M22	2.5	140	34	18	14.5
22.231.2400	M24	3	160	38	18	14.5
22.231.2700	M27	3	160	38	20	16
22.231.3000	M30	3.5	180	45	22	18

- NL 80% kiest voor Phantom UNI machinetap!
- FR 80% de notre clientèle choisissent un taraud machine Phantom UNI !
- ES ¡El 80% elige el macho máquina Phantom UNI!
- DE 80% entscheiden sich für den UNI-Maschinengewindebohrer von Phantom!
- EN 80% opt for the Phantom UNI machine tap!

Watch me

www.phantom.eu

› 22.240 Phantom



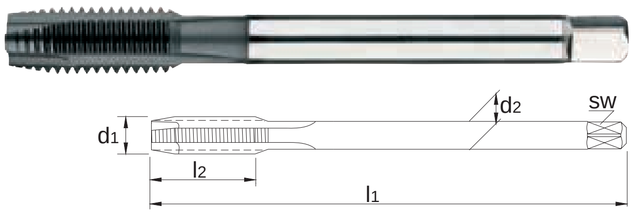
NL UNI HSS-E Machinetap Metrisch, TiCN
FR Taraud machine HSS-E UNI Métrique, TiCN
ES Macho máquina HSS-E UNI Métrica, TiCN
DE UNI HSS-E Maschinengewindebohrer Metrisch, TiCN
EN UNI HSS-E Machine Tap Metric Coarse, TiCN

HSS-E	M	60°	TiCN	DIN 371	3xD		FormB 3,5-5	ISO 2 6H	UNI

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.240.0200	M2	0.4	45	8	2.8	2.1
22.240.0250	M2,5	0.45	50	9	2.8	2.1
22.240.0300	M3	0.5	56	11	3.5	2.7
22.240.0400	M4	0.7	63	13	4.5	3.4
22.240.0500	M5	0.8	70	16	6	4.9
22.240.0600	M6	1	80	19	6	4.9
22.240.0700	M7	1	80	19	7	5.5
22.240.0800	M8	1.25	90	22	8	6.2
22.240.0900	M9	1.25	90	22	9	7
22.240.1000	M10	1.5	100	24	10	8

› 22.241 Phantom



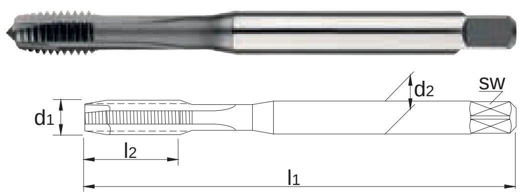
NL UNI HSS-E Machinetap Metrisch, TiCN
FR Taraud machine HSS-E UNI Métrique, TiCN
ES Macho máquina HSS-E UNI Métrica, TiCN
DE UNI HSS-E Maschinengewindebohrer Metrisch, TiCN
EN UNI HSS-E Machine Tap Metric Coarse, TiCN

HSS-E	M	60°	TiCN	DIN 376	3xD		FormB 3,5-5	ISO 2 6H	UNI

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.241.0300	M3	0.5	56	11	2.2	
22.241.0400	M4	0.7	63	13	2.8	2.1
22.241.0500	M5	0.8	70	16	3.5	2.7
22.241.0600	M6	1	80	19	4.5	3.4
22.241.0800	M8	1.25	90	22	6	4.9
22.241.1000	M10	1.5	100	24	7	5.5
22.241.1200	M12	1.75	110	28	9	7
22.241.1400	M14	2	110	30	11	9
22.241.1600	M16	2	110	32	12	9
22.241.1800	M18	2.5	125	34	14	11
22.241.2000	M20	2.5	140	34	16	12
22.241.2200	M22	2.5	140	34	18	14.5
22.241.2400	M24	3	160	38	18	14.5
22.241.2700	M27	3	160	38	20	16
22.241.3000	M30	3.5	180	45	22	18

› 22.252 Phantom

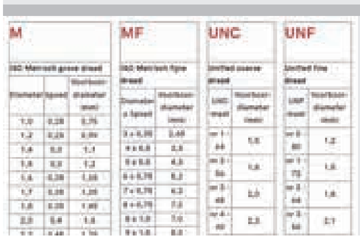


NL HSS-E PM Synchro Machinetap Metrisch, TiCN
FR Taraud Machine Synchro HSS-E PM Métrique, TiCN
ES Macho Máquina Sincronizado HSS-E PM Métrica, TiCN
DE HSS-E PM Synchron-Maschinengewindebohrer Metrisch, TiCN
EN HSS-E PM Synchro Machine Tap Metric Coarse, TiCN

HSS-E PM	M	60°	TiCN	DIN 371	3xD		FormB 3,5-5	6HX

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	Ni/Co	Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw
22.252.0300	M3	0.5	56	11	3.5	2.7
22.252.0400	M4	0.7	63	13	4.5	3.4
22.252.0500	M5	0.8	70	16	6	4.9
22.252.0600	M6	1	80	19	6	4.9
22.252.0800	M8	1.25	90	22	8	6.2
22.252.1000	M10	1.5	100	24	10	8

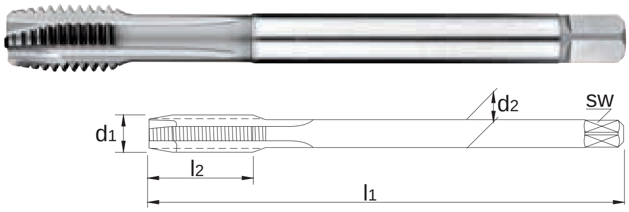


NL Voorboordiameters
FR Diamètres de pré-perçages
ES Diámetros de pre-taladro
DE Bohrungsdurchmesser
EN Pre-drilling diameters

Read me

www.phantom.eu

22.253 Phantom



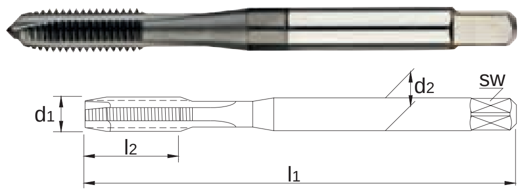
NL **HSS-E PM Synchro Machinetap Metrisch, TiCN**
FR **Taraud Machine Synchro HSS-E PM Métrique, TiCN**
ES **Macho Máquina Sincronizado HSS-E PM Métrica, TiCN**
DE **HSS-E PM Synchron-Maschinengewindebohrer Metrisch, TiCN**
EN **HSS-E PM Synchro Machine Tap Metric Coarse, TiCN**

HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | FormB 3,5-5 | 6HX

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	Ni/Co	Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw
22.253.1200	M12	1.75	110	28	9	7
22.253.1600	M16	2	110	32	12	9
22.253.2000	M20	2.5	140	34	16	12

22.268 Phantom



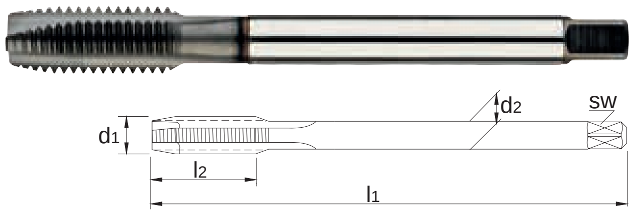
NL **HP2 UNI HSS-E PM Machinetap Metrisch, HARDLUBE**
FR **Taraud machine HSS-E PM HP2 UNI Métrique, HARDLUBE**
ES **Macho máquina HSS-E PM HP2 UNI Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**
EN **HP2 UNI HSS-E PM Machine Tap Metric Coarse, HARDLUBE**

HSS-E PM | M | 60° | HARD LUBE | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw
22.268.0300	M3	0.5	56	11	3.5	2.7
22.268.0400	M4	0.7	63	13	4.5	3.4
22.268.0500	M5	0.8	70	16	6	4.9
22.268.0600	M6	1	80	19	6	4.9
22.268.0800	M8	1.25	90	22	8	6.2
22.268.1000	M10	1.5	100	24	10	8

22.269 Phantom



NL **HP2 UNI HSS-E PM Machinetap Metrisch, HARDLUBE**
FR **Taraud machine HSS-E PM HP2 UNI Métrique, HARDLUBE**
ES **Macho máquina HSS-E PM HP2 UNI Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**
EN **HP2 UNI HSS-E PM Machine Tap Metric Coarse, HARDLUBE**

HSS-E PM | M | 60° | HARD LUBE | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw
22.269.1200	M12	1.75	110	28	9	7
22.269.1400	M14	2	110	30	11	9
22.269.1600	M16	2	110	32	12	9
22.269.2000	M20	2.5	140	34	16	12

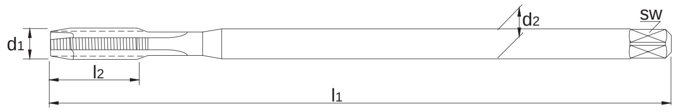
NL Hardlube gecoate HP2 Machinetappen in actie
FR Les tarauds machine HP2 revêtus de HARDLUBE en action
ES Los machos de roscar a máquina con recubrimiento Hardlube HP2 en acción
DE Hardlube-beschichtete HP2-Maschinengewindebohrer
EN Hardlube-coated HP2 Machine Taps in Action

Watch me

www.phantom.eu

› 22.350 Phantom

NL UNI HSS-E Machinetap Metrisch, lang
FR Taraud machine HSS-E UNI Métrique, version longue
ES Macho máquina HSS-E UNI Métrica, largo
DE UNI HSS-E Maschinengewindebohrer Metrisch, lang
EN UNI HSS-E Machine Tap Metric Coarse, long



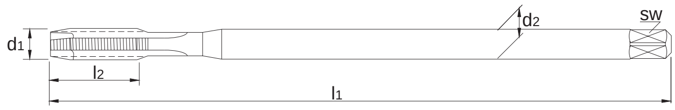
HSS-E | M | 60° | NORM | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.350.0400	M4	0.7	126	13	4.5	3.4
22.350.0500	M5	0.8	140	15	6	4.9
22.350.0600	M6	1	160	17	6	4.9
22.350.0800	M8	1.25	180	20	8	6.2

› 22.351 Phantom

NL UNI HSS-E Machinetap Metrisch, lang
FR Taraud machine HSS-E UNI Métrique, version longue
ES Macho máquina HSS-E UNI Métrica, largo
DE UNI HSS-E Maschinengewindebohrer Metrisch, lang
EN UNI HSS-E Machine Tap Metric Coarse, long

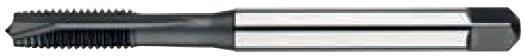


HSS-E | M | 60° | NORM | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

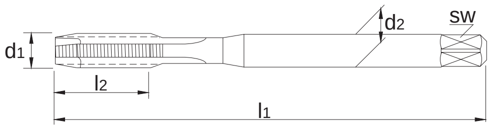
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	8-15	2-8

Ref.	d1	P	l1	l2	d2	sw
22.351.0800	M8	1.25	180	20	6	4.9
22.351.1000	M10	1.5	200	22	7	5.5
22.351.1200	M12	1.75	220	24	9	7
22.351.1600	M16	2	220	32	12	9
22.351.2000	M20	2.5	280	32	16	12
22.351.2400	M24	3	320	34	18	14.5

› 22.500 Phantom



NL HSS-E PM Machinetap Metrisch, 1400 N/mm², stoomontlaten
FR Taraud machine HSS-E PM Métrique, 1400 N/mm², vaporisé
ES Macho máquina HSS-E PM Métrica, 1400 N/mm², vaporizado
DE HSS-E PM Maschinengewindebohrer Metrisch, 1400 N/mm², dampfangelassen
EN HSS-E PM Machine Tap Metric Coarse, 1400 N/mm², steam oxide

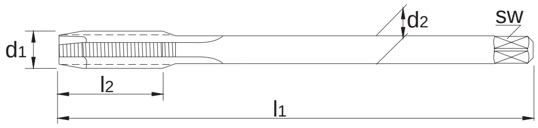


HSS-E PM | M | 60° | OX. | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 22 INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
22.500.0300	M3	0.5	56	11	3.5	2.7
22.500.0400	M4	0.7	63	13	4.5	3.4
22.500.0500	M5	0.8	70	16	6	4.9
22.500.0600	M6	1	80	19	6	4.9
22.500.0800	M8	1.25	90	22	8	6.2
22.500.1000	M10	1.5	100	24	10	8

› 22.501 Phantom



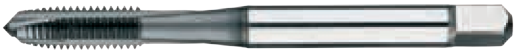
NL HSS-E PM Machinetap Metrisch, 1400 N/mm², stoomontlaten
FR Taraud machine HSS-E PM Métrique, 1400 N/mm², vaporisé
ES Macho máquina HSS-E PM Métrica, 1400 N/mm², vaporizado
DE HSS-E PM Maschinengewindebohrer Metrisch, 1400 N/mm², dampfangelassen
EN HSS-E PM Machine Tap Metric Coarse, 1400 N/mm², steam oxide

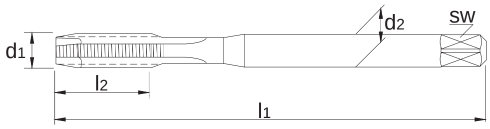
HSS-E PM | M | 60° | OX. | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 22 INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
22.501.0800	M8	1.25	90	22	6	4.9
22.501.1000	M10	1.5	100	24	7	5.5
22.501.1200	M12	1.75	110	28	9	7
22.501.1400	M14	2	110	30	11	9
22.501.1600	M16	2	110	32	12	9
22.501.1800	M18	2.5	125	34	14	11
22.501.2000	M20	2.5	140	34	16	12
22.501.2200	M22	2.5	140	34	18	14.5
22.501.2400	M24	3	160	38	18	14.5
22.501.2700	M27	3	160	38	20	16
22.501.3000	M30	3.5	180	45	22	18

› 22.504 Phantom





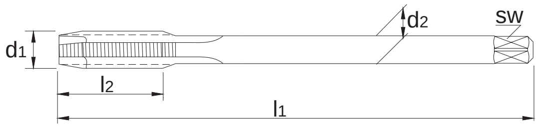
NL HSS-E PM Machinetap Metrisch, 1400 N/mm², TiCN
FR Taraud machine HSS-E PM Métrique, 1400 N/mm², TiCN
ES Macho máquina HSS-E PM Métrica, 1400 N/mm², TiCN
DE HSS-E PM Maschinengewindebohrer Metrisch, 1400 N/mm², TiCN
EN HSS-E PM Machine Tap Metric Coarse, 1400 N/mm², TiCN

HSS-E PM | M | 60° | TiCN | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 22 INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
22.504.0300	M3	0.5	56	11	3.5	2.7
22.504.0400	M4	0.7	63	13	4.5	3.4
22.504.0500	M5	0.8	70	16	6	4.9
22.504.0600	M6	1	80	19	6	4.9
22.504.0800	M8	1.25	90	22	8	6.2
22.504.1000	M10	1.5	100	24	10	8

› 22.505 Phantom



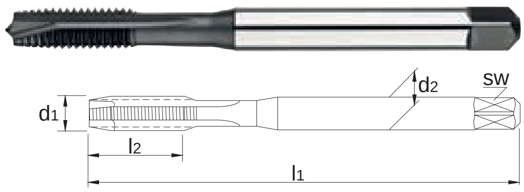
NL HSS-E PM Machinetap Metrisch, 1400 N/mm², TiCN
FR Taraud machine HSS-E PM Métrique, 1400 N/mm², TiCN
ES Macho máquina HSS-E PM Métrica, 1400 N/mm², TiCN
DE HSS-E PM Maschinengewindebohrer Metrisch, 1400 N/mm², TiCN
EN HSS-E PM Machine Tap Metric Coarse, 1400 N/mm², TiCN

HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 22 INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
22.505.1200	M12	1.75	110	28	9	7

› 22.530 *Phantom*



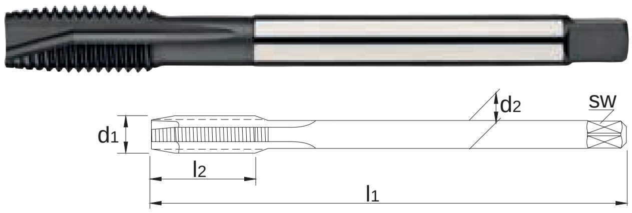
NL HSS-E PM Machinetap Metrisch, Titanium- en Nikkellegeringen, stoomontlaten
FR Taraud machine HSS-E PM Métrique, alliage de Titane et Nickel, vaporisé
ES Macho máquina HSS-E PM Métrica, aleados de Titano y Níquel, vaporizada
DE HSS-E PM Maschinengewindebohrer Metrisch, Titanium- und Nickellegierungen, dampfangelassen
EN HSS-E PM Machine Tap Metric Coarse, Titanium- and Nickel alloys, steam oxide

HSS-E PM | M | 60° | OX. | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	N 52 CuAlFe	S 71 Ni/Co	S 72 Ti
6-10	3-5	3-5	2-15	4-15

Ref.	d1	P	l1	l2	d2	sw
22.530.0300	M3	0.5	56	11	3.5	2.7
22.530.0400	M4	0.7	63	13	4.5	3.4
22.530.0500	M5	0.8	70	16	6	4.9
22.530.0600	M6	1	80	19	6	4.9
22.530.0800	M8	1.25	90	22	8	6.2
22.530.1000	M10	1.5	100	24	10	8

› 22.531 *Phantom*



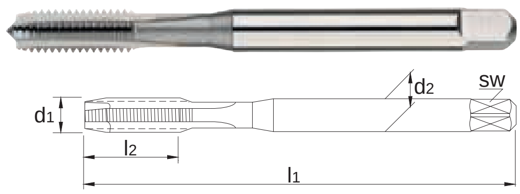
NL HSS-E PM Machinetap Metrisch, Titanium- en Nikkellegeringen, stoomontlaten
FR Taraud machine HSS-E PM Métrique, alliage de Titane et Nickel, vaporisé
ES Macho máquina HSS-E PM Métrica, aleados de Titano y Níquel, vaporizada
DE HSS-E PM Maschinengewindebohrer Metrisch, Titanium- und Nickellegierungen, dampfangelassen
EN HSS-E PM Machine Tap Metric Coarse, Titanium- and Nickel alloys, steam oxide

HSS-E PM | M | 60° | OX. | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	N 52 CuAlFe	S 71 Ni/Co	S 72 Ti
6-10	3-5	3-5	2-15	4-15

Ref.	d1	P	l1	l2	d2	sw
22.531.1200	M12	1.75	110	28	9	7

› 22.550 *Phantom*



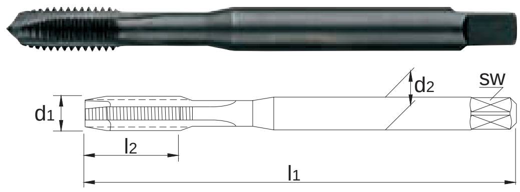
NL HSS-E Machinetap Metrisch, Messing
FR Taraud machine HSS-E Métrique, Laiton
ES Macho máquina HSS-E Métrica, Latón
DE HSS-E Maschinengewindebohrer Metrisch, Messing
EN HSS-E Machine Tap Metric Coarse, brass

HSS-E | M | 60° | DIN 371 | 2xD | FormC 2-3 | ISO 2 6H

N 51 Cu	N 52 CuAlFe
15-35	3-5

Ref.	d1	P	l1	l2	d2	sw
22.550.0300	M3	0.5	56	11	3.5	2.7
22.550.0400	M4	0.7	63	13	4.5	3.4
22.550.0500	M5	0.8	70	16	6	4.9
22.550.0600	M6	1	80	19	6	4.9
22.550.0800	M8	1.25	90	22	8	6.2
22.550.1000	M10	1.5	100	24	10	8

› 22.595 International Tools



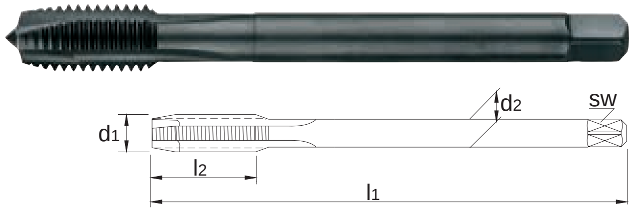
NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
ES Macho máquina HSS-E ECO PRO Métrica, vaporizado, acero inoxidable
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl
EN ECO PRO HSS-E Machine Tap Metric Coarse, steam oxide, stainless steel

HSS-E | M | 60° | OX. | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX | ECO PRO

P 11 ≤600 N/mm² — 15-20
M 21 INOX ≤850N/mm² — 7-10

Ref.	d1	P	l1	l2	d2	sw
22.595.0300	M3	0.5	56	11	3.5	2.7
22.595.0400	M4	0.7	63	13	4.5	3.4
22.595.0500	M5	0.8	70	16	6	4.9
22.595.0600	M6	1	80	19	6	4.9
22.595.0800	M8	1.25	90	22	8	6.2
22.595.1000	M10	1.5	100	24	10	8

› 22.596 International Tools



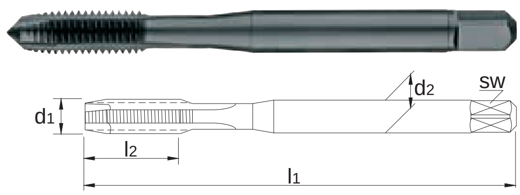
NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
ES Macho máquina HSS-E ECO PRO Métrica, vaporizado, acero inoxidable
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl
EN ECO PRO HSS-E Machine Tap Metric Coarse, steam oxide, stainless steel

HSS-E | M | 60° | OX. | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX | ECO PRO

P 11 ≤600 N/mm² — 15-20
M 21 INOX ≤850N/mm² — 7-10

Ref.	d1	P	l1	l2	d2	sw
22.596.1200	M12	1.75	110	28	9	7
22.596.1600	M16	2	110	32	12	9
22.596.2000	M20	2.5	140	34	16	12

› 22.600 Phantom



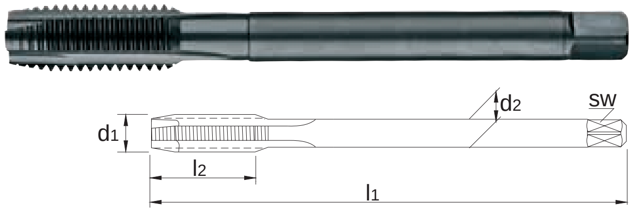
NL HSS-E PM Machinetap Metrisch, stoomontlaten, roestvaststaal
FR Taraud machine HSS-E PM Métrique, vaporisé, Inox
ES Macho máquina HSS-E PM Métrica, vaporizado, acero inoxidable
DE HSS-E PM Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl
EN HSS-E PM Machine Tap Metric Coarse, steam oxide, stainless steel

HSS-E PM | M | 60° | OX. | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX

P 11 ≤600 N/mm² — 15-20
M 21 INOX ≤850N/mm² — 7-10
M 22 INOX >850N/mm² — 5-8

Ref.	d1	P	l1	l2	d2	sw
22.600.0300	M3	0.5	56	11	3.5	2.7
22.600.0400	M4	0.7	63	13	4.5	3.4
22.600.0500	M5	0.8	70	16	6	4.9
22.600.0600	M6	1	80	19	6	4.9
22.600.0800	M8	1.25	90	22	8	6.2
22.600.1000	M10	1.5	100	24	10	8

› 22.601 Phantom



NL **HSS-E PM Machinetap Metrisch, stoomontlaten, roestvaststaal**
FR **Taraud machine HSS-E PM Métrique, vaporisé, Inox**
ES **Macho máquina HSS-E PM Métrica, vaporizado, acero inoxidable**
DE **HSS-E PM Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl**
EN **HSS-E PM Machine Tap Metric Coarse, steam oxide, stainless steel**

HSS-E PM | M | 60° | OX. | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX

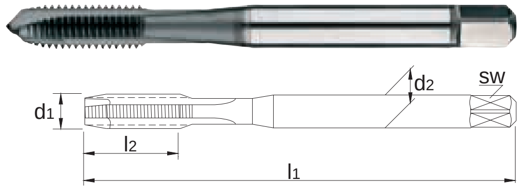
P 11 ≤600 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²
15-20	7-10	5-8

Ref.	d1	P	l1	l2	d2	sw
22.601.0800	M8	1.25	90	22	6	4.9
22.601.1000	M10	1.5	100	24	7	5.5
22.601.1200	M12	1.75	110	28	9	7
22.601.1400	M14	2	110	30	11	9

Ref.	d1	P	l1	l2	d2	sw
22.601.1600	M16	2	110	32	12	9
22.601.1800	M18	2.5	125	34	14	11
22.601.2000	M20	2.5	140	34	16	12
22.601.2200	M22	2.5	140	34	18	14.5

Ref.	d1	P	l1	l2	d2	sw
22.601.2400	M24	3	160	38	18	14.5
22.601.2700	M27	3	160	38	20	16
22.601.3000	M30	3.5	180	45	22	18

› 22.604 Phantom



NL **HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal**
FR **Taraud machine HSS-E PM Métrique, TiCN, Inox**
ES **Macho máquina HSS-E PM Métrica, TiCN, acero inoxidable**
DE **HSS-E PM Maschinengewindebohrer Metrisch, TiCN, rostfreien Stahl**
EN **HSS-E PM Machine Tap Metric Coarse, TiCN, stainless steel**

HSS-E PM | M | 60° | TiCN | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX

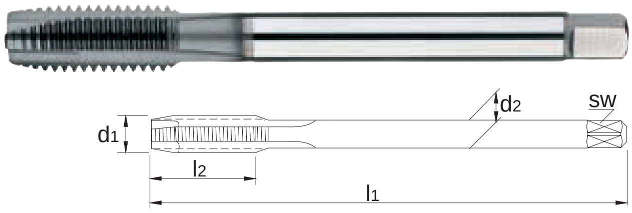
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²
15-20	15-20	7-10	4-8

Ref.	d1	P	l1	l2	d2	sw
22.604.0200	M2	0.4	45	8	2.8	2.1
22.604.0250	M2,5	0.45	50	9	2.8	2.1
22.604.0300	M3	0.5	56	11	3.5	2.7

Ref.	d1	P	l1	l2	d2	sw
22.604.0400	M4	0.7	63	13	4.5	3.4
22.604.0500	M5	0.8	70	16	6	4.9
22.604.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.604.0800	M8	1.25	90	22	8	6.2
22.604.1000	M10	1.5	100	24	10	8

› 22.605 Phantom



NL **HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal**
FR **Taraud machine HSS-E PM Métrique, TiCN, Inox**
ES **Macho máquina HSS-E PM Métrica, TiCN, acero inoxidable**
DE **HSS-E PM Maschinengewindebohrer Metrisch, TiCN, rostfreien Stahl**
EN **HSS-E PM Machine Tap Metric Coarse, TiCN, stainless steel**

HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²
15-20	15-20	7-10	4-8

Ref.	d1	P	l1	l2	d2	sw
22.605.1200	M12	1.75	110	28	9	7
22.605.1400	M14	2	110	30	11	9

Ref.	d1	P	l1	l2	d2	sw
22.605.1600	M16	2	110	32	12	9
22.605.2000	M20	2.5	140	34	16	12

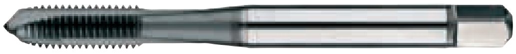
Ref.	d1	P	l1	l2	d2	sw

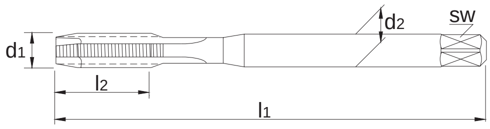
NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me

www.phantom.eu

› 22.610 Phantom





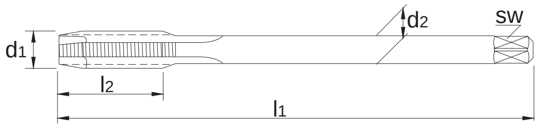
NL **HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal**
FR **Taraud machine HSS-E PM Métrique, TiCN, Inox**
ES **Macho máquina HSS-E PM Métrica, TiCN, acero inoxidable**
DE **HSS-E PM Maschinengewindebohrer Metrisch, TiCN, rostfreien Stahl**
EN **HSS-E PM Machine Tap Metric Coarse, TiCN, stainless steel**

HSS-E PM | M | 60° | TiCN | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX

P 11	P 12	M 21	M 22	S 71	S 72
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
15-20	15-20	7-10	4-10	4-12	4-12

Ref.	d1	P	l1	l2	d2	sw
22.610.0200	M2	0.4	45	8	2.8	2.1
22.610.0250	M2,5	0.45	50	9	2.8	2.1
22.610.0300	M3	0.5	56	11	3.5	2.7
22.610.0400	M4	0.7	63	13	4.5	3.4
22.610.0500	M5	0.8	70	16	6	4.9
22.610.0600	M6	1	80	19	6	4.9
22.610.0800	M8	1.25	90	22	8	6.2
22.610.1000	M10	1.5	100	24	10	8

› 22.611 Phantom



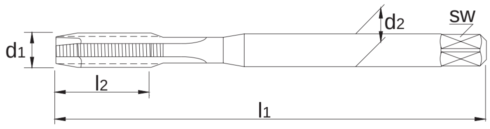
NL **HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal**
FR **Taraud machine HSS-E PM Métrique, TiCN, Inox**
ES **Macho máquina HSS-E PM Métrica, TiCN, acero inoxidable**
DE **HSS-E PM Maschinengewindebohrer Metrisch, TiCN, rostfreien Stahl**
EN **HSS-E PM Machine Tap Metric Coarse, TiCN, stainless steel**

HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | INOX

P 11	P 12	M 21	M 22	S 71	S 72
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
15-20	15-20	7-10	4-10	4-12	4-12

Ref.	d1	P	l1	l2	d2	sw
22.611.1200	M12	1.75	110	28	9	7
22.611.1400	M14	2	110	30	11	9
22.611.1600	M16	2	110	32	12	9
22.611.2000	M20	2.5	140	34	16	12

› 22.650 Phantom



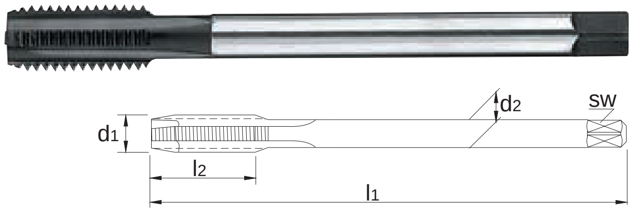
NL **HSS-E Machinetap Metrisch, genitreerd, gietijzer**
FR **Taraud machine HSS-E Métrique, nitruré, Fonte**
ES **Macho máquina HSS-E Métrica, nitrurado, fundición**
DE **HSS-E Maschinengewindebohrer Metrisch, nitriert, Gusseisen**
EN **HSS-E Machine Tap Metric Coarse, nitrided, cast iron**

HSS-E | M | 60° | NIT. | DIN 371 | 2xD | FormC 2-3 | 6HX | GG GGG

K 31	K 32
GG	GGG GTS-GTW
10-15	5-8

Ref.	d1	P	l1	l2	d2	sw
22.650.0300	M3	0.5	56	11	3.5	2.7
22.650.0400	M4	0.7	63	13	4.5	3.4
22.650.0500	M5	0.8	70	16	6	4.9
22.650.0600	M6	1	80	19	6	4.9
22.650.0800	M8	1.25	90	22	8	6.2
22.650.1000	M10	1.5	100	24	10	8

› 22.651 Phantom



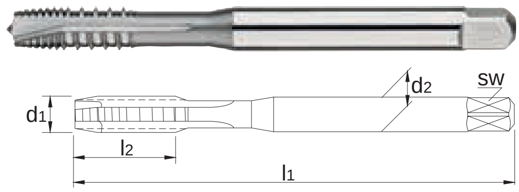
NL HSS-E Machinetap Metrisch, genitreerd, gietijzer
FR Taraud machine HSS-E Métrique, nitruré, Fonte
ES Macho máquina HSS-E Métrica, nitrurado, fundición
DE HSS-E Maschinengewindebohrer Metrisch, nitriert, Gusseisen
EN HSS-E Machine Tap Metric Coarse, nitrided, cast iron

HSS-E | M | 60° | NIT. | DIN 376 | 2xD | FormC 2-3 | 6HX | GG GGG

K 31 GG 10-15 | K 32 GGG GTS-GTW 5-8

Ref.	d1	P	l1	l2	d2	sw
22.651.0800	M8	1.25	90	22	6	4.9
22.651.1000	M10	1.5	100	24	7	5.5
22.651.1200	M12	1.75	110	28	9	7
22.651.1400	M14	2	110	30	11	9
22.651.1600	M16	2	110	32	12	9
22.651.1800	M18	2.5	125	34	14	11
22.651.2000	M20	2.5	140	34	16	12

› 22.700 Phantom



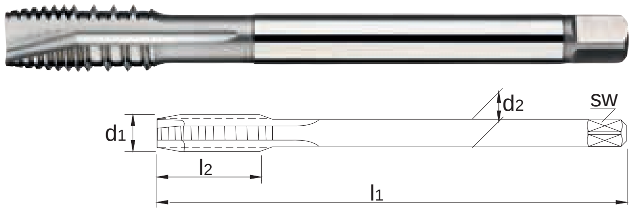
NL HSS-E Machinetap Metrisch, Aluminium
FR Taraud machine HSS-E Métrique, Aluminium
ES Macho máquina HSS-E Métrica, Aluminio
DE HSS-E Maschinengewindebohrer Metrisch, Aluminium
EN HSS-E Machine Tap Metric Coarse, Aluminium

HSS-E | M | 60° | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² 15-20 | N 41 Alu 10-35 | N 51 Cu 8-12

Ref.	d1	P	l1	l2	d2	sw
22.700.0300	M3	0.5	56	11	3.5	2.7
22.700.0400	M4	0.7	63	13	4.5	3.4
22.700.0500	M5	0.8	70	16	6	4.9
22.700.0600	M6	1	80	19	6	4.9
22.700.0800	M8	1.25	90	22	8	6.2
22.700.1000	M10	1.5	100	24	10	8

› 22.701 Phantom



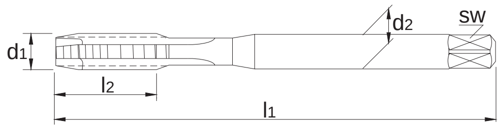
NL HSS-E Machinetap Metrisch, Aluminium
FR Taraud machine HSS-E Métrique, Aluminium
ES Macho máquina HSS-E Métrica, Aluminio
DE HSS-E Maschinengewindebohrer Metrisch, Aluminium
EN HSS-E Machine Tap Metric Coarse, Aluminium

HSS-E | M | 60° | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² 15-20 | N 41 Alu 10-35 | N 51 Cu 8-12

Ref.	d1	P	l1	l2	d2	sw
22.701.0800	M8	1.25	90	22	6	4.9
22.701.1000	M10	1.5	100	24	7	5.5
22.701.1200	M12	1.75	110	28	9	7

› 22.705 Phantom



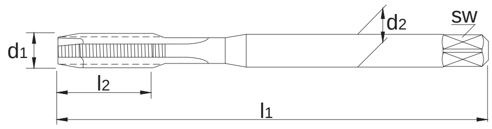
NL **HSS Machinetap Metrisch, Aluminium**
FR **Taraud machine HSS Métrique, Aluminium**
ES **Macho máquina HSS Métrica, Aluminio**
DE **HSS Maschinengewindebohrer Metrisch, Aluminium**
EN **HSS Machine Tap Metric Coarse, Aluminium**

HSS | M | 60° | ISO 529 | 2xD | FormB 3,5-5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² — 12-17 | N 41 Alu — 15-20 | N 51 Cu — 5-12

Ref.	d1	P	l1	l2	d2	sw
22.705.0200	M2	0.4	41	8	2.5	2
22.705.0250	M2,5	0.45	44	9.5	2.8	2.24
22.705.0300	M3	0.5	48	11	3.15	2.5
22.705.0400	M4	0.7	53	13	4	3.15
22.705.0500	M5	0.8	58	16	5	4
22.705.0600	M6	1	66	19	6.3	5
22.705.0700	M7	1	66	19	7.1	5.6
22.705.0800	M8	1.25	72	22	8	6.3
22.705.1000	M10	1.5	80	24	10	8
22.705.1200	M12	1.75	89	29	9	7.1
22.705.1400	M14	2	95	30	11.2	9
22.705.1600	M16	2	102	32	12.5	10
22.705.1800	M18	2.5	112	37	14	11.2
22.705.2000	M20	2.5	112	37	14	11.2
22.705.2200	M22	2.5	118	38	16	12.5
22.705.2400	M24	3	130	45	18	14
22.705.3000	M30	3.5	138	48	20	16

› 22.720 Phantom



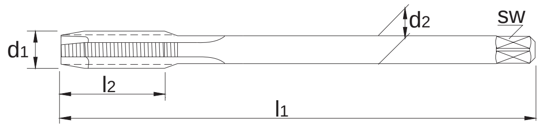
NL **HSS-E Machinetap Metrisch, genitreerd, Aluminium Si > 10%**
FR **Taraud machine HSS-E Métrique, nitruré, Aluminium Si > 10%**
ES **Macho máquina HSS-E Métrica, nitrurado, Aluminio Si > 10%**
DE **HSS-E Maschinengewindebohrer Metrisch, nitriert, Aluminium Si > 10%**
EN **HSS-E Machine Tap Metric Coarse, nitrided, Aluminium Si > 10%**

HSS-E | M | 60° | NIT. | DIN 371 | 3xD | FormB 3,5-5 | ISO 2 6H | ALU

N 42 Alu Si>10% — 10-15

Ref.	d1	P	l1	l2	d2	sw
22.720.0300	M3	0.5	56	11	3.5	2.7
22.720.0400	M4	0.7	63	13	4.5	3.4
22.720.0500	M5	0.8	70	16	6	4.9
22.720.0600	M6	1	80	19	6	4.9
22.720.0800	M8	1.25	90	22	8	6.2
22.720.1000	M10	1.5	100	24	10	8

› 22.721 Phantom



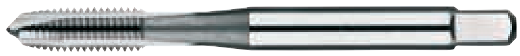
NL **HSS-E Machinetap Metrisch, genitreerd, Aluminium Si > 10%**
FR **Taraud machine HSS-E Métrique, nitruré, Aluminium Si > 10%**
ES **Macho máquina HSS-E Métrica, nitrurado, Aluminio Si > 10%**
DE **HSS-E Maschinengewindebohrer Metrisch, nitriert, Aluminium Si > 10%**
EN **HSS-E Machine Tap Metric Coarse, nitrided, Aluminium Si > 10%**

HSS-E | M | 60° | NIT. | DIN 376 | 3xD | FormB 3,5-5 | ISO 2 6H | ALU

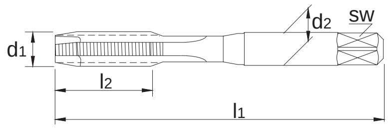
N 42 Alu Si>10% — 10-15

Ref.	d1	P	l1	l2	d2	sw
22.721.1200	M12	1.75	110	28	9	7

› 22.895 *Phantom*



NL HSS-E Machinetap Metrisch, voor Phan-Coil
FR Taraud machine HSS-E Métrique, pour Phan-Coil
ES Macho máquina HSS-E Métrica, para Phan-Coil
DE HSS-E Maschinengewindebohrer Metrisch, für Phan-Coil
EN HSS-E Machine Tap Metric Coarse, for Phan-Coil



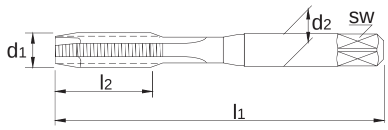
HSS-E	Phan-Coil	EG	M	60°	DIN 371	2xD	FormB 3,5-5	ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
22.895.0300	M3	3.65	0.5	63	7	4.5
22.895.0400	M4	4.91	0.7	70	8	6
22.895.0500	M5	6.04	0.8	80	10	6
22.895.0600	M6	7.3	1	90	12.5	8
22.895.0800	M8	9.62	1.25	100	15	10

› 22.896 *Phantom*

NL HSS-E Machinetap Metrisch, voor Phan-Coil
FR Taraud machine HSS-E Métrique, pour Phan-Coil
ES Macho máquina HSS-E Métrica, para Phan-Coil
DE HSS-E Maschinengewindebohrer Metrisch, für Phan-Coil
EN HSS-E Machine Tap Metric Coarse, for Phan-Coil

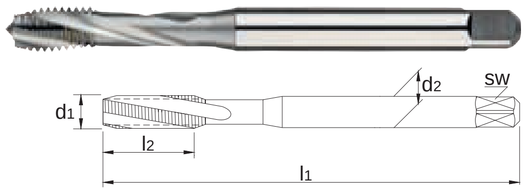


HSS-E	Phan-Coil	EG	M	60°	DIN 376	2xD	ISO 2 6H	FormB 3,5-5

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
22.896.1000	M10	11.95	1.5	110	17.5	9
22.896.1200	M12	14.27	1.75	110	20	11
22.896.1400	M14	16.6	2	110	22	12
22.896.1600	M16	18.6	2	125	25	14

› 23.150 *Phantom*



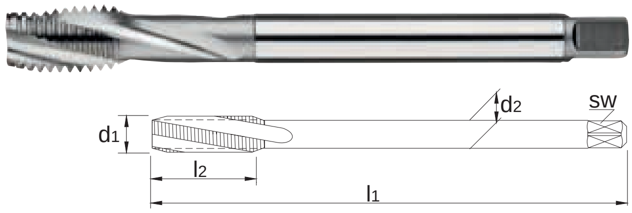
NL HSS-E Machinetap Metrisch
FR Taraud machine HSS-E Métrique
ES Macho máquina HSS-E Métrica
DE HSS-E Maschinengewindebohrer Metrisch
EN HSS-E Machine Tap Metric Coarse

HSS-E | M | 60° | DIN 371 | 2,5xD | 20° | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
15-20	10-18	5-15	10-35	10-20	15--20	20-30

Ref.	d1	P	l1	l2	d2	sw
23.150.0300	M3	0.5	56	11	3.5	2.7
23.150.0400	M4	0.7	63	13	4.5	3.4
23.150.0500	M5	0.8	70	16	6	4.9
23.150.0600	M6	1	80	19	6	4.9
23.150.0700	M7	1	80	19	7	5.5
23.150.0800	M8	1.25	90	22	8	6.2
23.150.1000	M10	1.5	100	24	10	8

› 23.151 *Phantom*



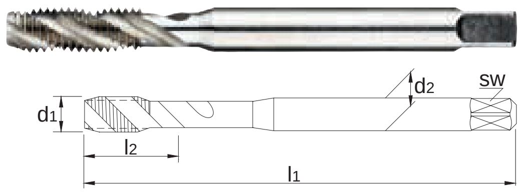
NL HSS-E Machinetap Metrisch
FR Taraud machine HSS-E Métrique
ES Macho máquina HSS-E Métrica
DE HSS-E Maschinengewindebohrer Metrisch
EN HSS-E Machine Tap Metric Coarse

HSS-E | M | 60° | DIN 376 | 2,5xD | 20° | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
15-20	10-18	5-15	10-35	10-20	15--20	20-30

Ref.	d1	P	l1	l2	d2	sw
23.151.0600	M6	1	80	19	4.5	3.4
23.151.0800	M8	1.25	90	22	6	4.9
23.151.1000	M10	1.5	100	24	7	5.5
23.151.1200	M12	1.75	110	28	9	7
23.151.1400	M14	2	110	30	11	9
23.151.1600	M16	2	110	32	12	9
23.151.1800	M18	2.5	125	34	14	11
23.151.2000	M20	2.5	140	34	16	12
23.151.2200	M22	2.5	140	34	18	14.5
23.151.2400	M24	3	160	38	18	14.5
23.151.2700	M27	3	160	38	20	16
23.151.3000	M30	3.5	180	45	22	18
23.151.3300	M33	3.5	180	50	25	20
23.151.3600	M36	4	200	56	28	22

› 23.291 *International Tools*



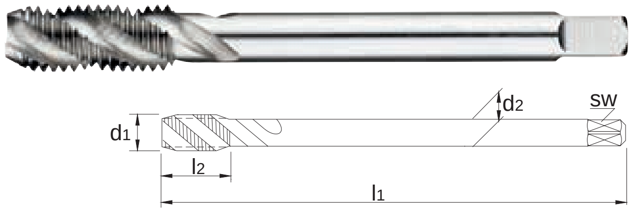
NL ECO HSS Machinetap Metrisch
FR Taraud machine HSS ECO Métrique
ES Macho máquina HSS ECO Métrica
DE ECO HSS Maschinengewindebohrer Metrisch
EN ECO HSS Machine Tap Metric Coarse

HSS | M | 60° | DIN 371 | 2xD | 35° | FormC 2-3 | ISO 2 6H | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
12-17	9-15	7-12	20-30

Ref.	d1	P	l1	l2	d2	sw
23.291.0300	M3	0.5	56	11	3.5	2.7
23.291.0400	M4	0.7	63	13	4.5	3.4
23.291.0500	M5	0.8	70	16	6	4.9
23.291.0600	M6	1	80	19	6	4.9
23.291.0800	M8	1.25	90	22	8	6.2
23.291.1000	M10	1.5	100	24	10	8

› 23.292 *International Tools*



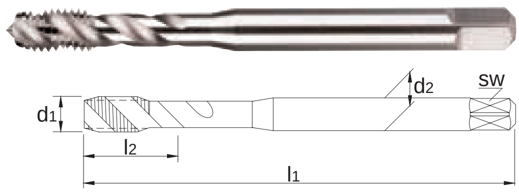
NL ECO HSS Machinetap Metrisch
FR Taraud machine HSS ECO Métrique
ES Macho máquina HSS ECO Métrica
DE ECO HSS Maschinengewindebohrer Metrisch
EN ECO HSS Machine Tap Metric Coarse

HSS | M | 60° | DIN 376 | 2xD | 35° | FormC 2-3 | ISO 2 6H | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
12-17	9-15	7-12	20-30

Ref.	d1	P	l1	l2	d2	sw
23.292.1200	M12	1.75	110	28	9	7

› 23.295 *International Tools*



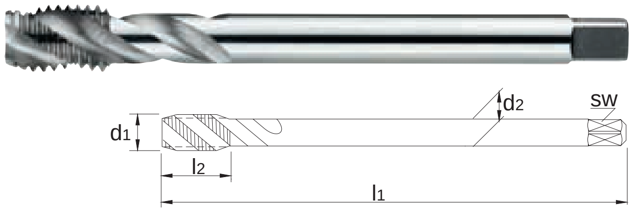
NL ECO PRO HSS-E Machinetap Metrisch
FR Taraud machine HSS-E ECO PRO Métrique
ES Macho máquina HSS-E ECO PRO Métrica
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch
EN ECO PRO HSS-E Machine Tap Metric Coarse

HSS-E | M | 60° | DIN 371 | 2xD | 35° | FormC 2-3 | ISO 2 6H | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	25-35

Ref.	d1	P	l1	l2	d2	sw
23.295.0200	M2	0.4	45	8	2.8	2.1
23.295.0300	M3	0.5	56	11	3.5	2.7
23.295.0400	M4	0.7	63	13	4.5	3.4
23.295.0500	M5	0.8	70	16	6	4.9
23.295.0600	M6	1	80	19	6	4.9
23.295.0800	M8	1.25	90	22	8	6.2
23.295.1000	M10	1.5	100	24	10	8

› 23.296 *International Tools*



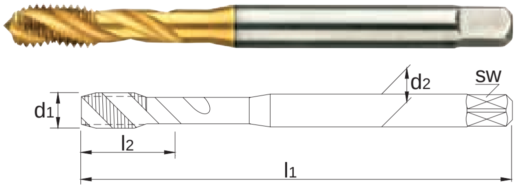
NL ECO PRO HSS-E Machinetap Metrisch
FR Taraud machine HSS-E ECO PRO Métrique
ES Macho máquina HSS-E ECO PRO Métrica
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch
EN ECO PRO HSS-E Machine Tap Metric Coarse

HSS-E | M | 60° | DIN 376 | 2xD | 35° | FormC 2-3 | ISO 2 6H | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	25-35

Ref.	d1	P	l1	l2	d2	sw
23.296.1000	M10	1.5	100	24	7	5.5
23.296.1200	M12	1.75	110	28	9	7
23.296.1400	M14	2	110	30	11	9
23.296.1600	M16	2	110	32	12	9
23.296.2000	M20	2.5	140	34	16	12
23.296.2200	M22	2.5	140	34	18	14.5
23.296.2400	M24	3	160	38	18	14.5
23.296.2700	M27	3	160	38	20	16
23.296.3000	M30	3.5	180	45	22	18

› 23.297 International Tools



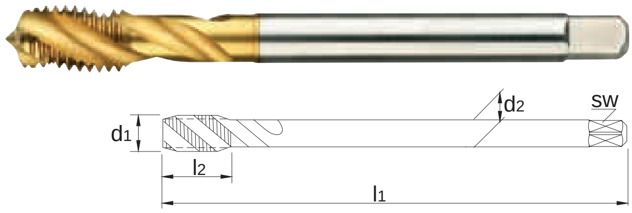
NL ECO PRO HSS-E Machinetap Metrisch, TiN
FR Taraud machine HSS-E ECO PRO Métrique, TiN
ES Macho máquina HSS-E ECO PRO Métrica, TiN
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, TiN
EN ECO PRO HSS-E Machine Tap Metric Coarse, TiN

HSS-E	M	60°	TiN	DIN 371	2xD		35°	FormC 2-3	ISO 2 6H	ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
22-30	18-27	7-10	15-22	32-52	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
23.297.0300	M3	0.5	56	11	3.5	2.7
23.297.0400	M4	0.7	63	13	4.5	3.4
23.297.0500	M5	0.8	70	16	6	4.9
23.297.0600	M6	1	80	19	6	4.9
23.297.0800	M8	1.25	90	22	8	6.2
23.297.1000	M10	1.5	100	24	10	8

› 23.298 International Tools



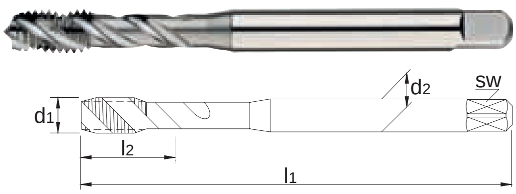
NL ECO PRO HSS-E Machinetap Metrisch, TiN
FR Taraud machine HSS-E ECO PRO Métrique, TiN
ES Macho máquina HSS-E ECO PRO Métrica, TiN
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, TiN
EN ECO PRO HSS-E Machine Tap Metric Coarse, TiN

HSS-E	M	60°	TiN	DIN 376	2xD		35°	FormC 2-3	ISO 2 6H	ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
22-30	18-27	7-10	15-22	32-52	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
23.298.1200	M12	1.75	110	28	9	7

› 23.300 Phantom



NL UNI HSS-E Machinetap Metrisch
FR Taraud machine HSS-E UNI Métrique
ES Macho máquina HSS-E UNI Métrica
DE UNI HSS-E Maschinengewindebohrer Metrisch
EN UNI HSS-E Machine Tap Metric Coarse

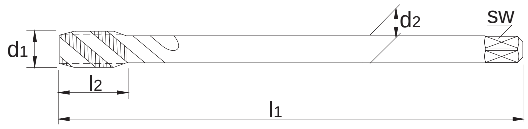
HSS-E	M	60°	DIN 371	2,5xD		40°	FormC 2-3	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.300.0200	M2	0.4	45	8	2.8	2.1
23.300.0220	M2,2	0.45	45	9	2.8	2.1
23.300.0230	M2,3	0.4	45	9	2.8	2.1
23.300.0250	M2,5	0.45	50	9	2.8	2.1
23.300.0260	M2,6	0.45	50	9	2.8	2.1
23.300.0300	M3	0.5	56	11	3.5	2.7
23.300.0350	M3,5	0.6	56	12	4	3
23.300.0400	M4	0.7	63	13	4.5	3.4
23.300.0500	M5	0.8	70	16	6	4.9
23.300.0600	M6	1	80	19	6	4.9
23.300.0700	M7	1	80	19	7	5.5
23.300.0800	M8	1.25	90	22	8	6.2
23.300.1000	M10	1.5	100	24	10	8

› 23.301 Phantom

NL **UNI HSS-E Machinetap Metrisch**
FR **Taraud machine HSS-E UNI Métrique**
ES **Macho máquina HSS-E UNI Métrica**
DE **UNI HSS-E Maschinengewindebohrer Metrisch**
EN **UNI HSS-E Machine Tap Metric Coarse**



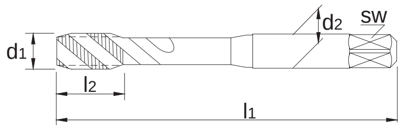
HSS-E | M | 60° | DIN 376 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.301.0600	M6	1	80	19	4.5	3.4
23.301.0800	M8	1.25	90	22	6	4.9
23.301.0900	M9	1.25	90	22	7	5.5
23.301.1000	M10	1.5	100	24	7	5.5
23.301.1200	M12	1.75	110	28	9	7
23.301.1400	M14	2	110	30	11	9
23.301.1600	M16	2	110	32	12	9
23.301.1800	M18	2.5	125	34	14	11
23.301.2000	M20	2.5	140	34	16	12
23.301.2200	M22	2.5	140	34	18	14.5
23.301.2400	M24	3	160	38	18	14.5
23.301.2700	M27	3	160	38	20	16
23.301.3000	M30	3.5	180	45	22	18
23.301.3300	M33	3.5	180	50	25	20
23.301.3600	M36	4	200	56	28	22

› 23.305 Phantom

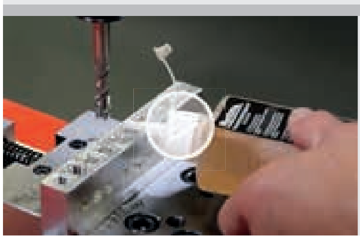
NL **HSS-E Machinetap Metrisch**
FR **Taraud machine HSS-E Métrique**
ES **Macho máquina HSS-E Métrica**
DE **HSS-E Maschinengewindebohrer Metrisch**
EN **HSS-E Machine Tap Metric Coarse**



HSS-E | M | 60° | ISO 529 | 2xD | 40° | FormC 2-3 | ISO 2 6H

P 11	P 12	K 31	K 32	N 41	N 52
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
23.305.0300	M3	0.5	48	14	3.15	2.5
23.305.0400	M4	0.7	53	7	4	3.15
23.305.0500	M5	0.8	58	8	5	4
23.305.0600	M6	1	66	10	6.3	5
23.305.0800	M8	1.25	72	13	8	6.3
23.305.1000	M10	1.5	80	15	10	8
23.305.1200	M12	1.75	89	18	9	7.1
23.305.1400	M14	2	95	20	11.2	9
23.305.1600	M16	2	102	20	12.5	10
23.305.1800	M18	2.5	112	25	14	11.2
23.305.2000	M20	2.5	112	25	14	11.2
23.305.2200	M22	2.5	118	25	16	12.5
23.305.2400	M24	3	130	30	18	14
23.305.2700	M27	3	135	30	20	16
23.305.3000	M30	3.5	138	35	20	16

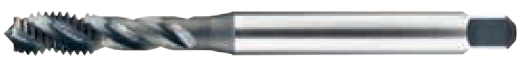


NL Tappen van blind gat
FR Tarauder un trou borgne
ES Roscar un agujero ciego
DE Gewindebohrer Sacklocher
EN Tapping blind hole

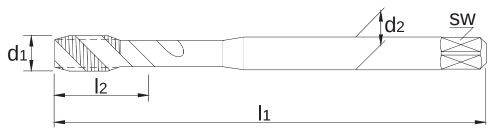
Watch me

www.phantom.eu

› 23.310 Phantom



NL **HSS-E Machinetap Metrisch, stoomontlaten**
FR **Taraud machine HSS-E Métrique, vaporisé**
ES **Macho máquina HSS-E Métrica, vaporizado**
DE **HSS-E Maschinengewindebohrer Metrisch, dampfangelassen**
EN **HSS-E Machine Tap Metric Coarse, steam oxide**

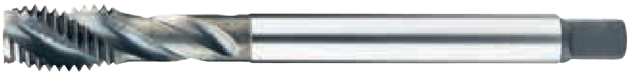


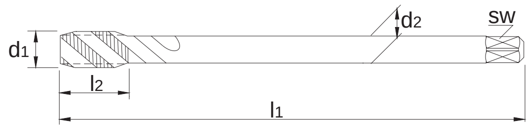
HSS-E | M | 60° | OX. | DIN 371 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H

P 11	P 12	K 31	K 32
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW
15-20	10-20	10-15	5-8

Ref.	d1	P	l1	l2	d2	sw
23.310.0200	M2	0.4	45	8	2.8	2.1
23.310.0300	M3	0.5	56	11	3.5	2.7
23.310.0400	M4	0.7	63	13	4.5	3.4
23.310.0500	M5	0.8	70	16	6	4.9
23.310.0600	M6	1	80	19	6	4.9
23.310.0800	M8	1.25	90	22	8	6.2
23.310.1000	M10	1.5	100	24	10	8

› 23.311 Phantom





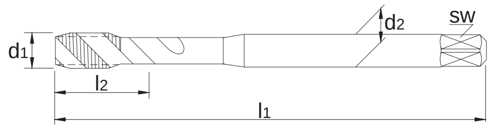
NL **HSS-E Machinetap Metrisch, stoomontlaten**
FR **Taraud machine HSS-E Métrique, vaporisé**
ES **Macho máquina HSS-E Métrica, vaporizado**
DE **HSS-E Maschinengewindebohrer Metrisch, dampfangelassen**
EN **HSS-E Machine Tap Metric Coarse, steam oxide**

HSS-E	M	60°	OX.	DIN 376	2,5xD		40°	FormC 2-3	ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW
15-20	10-20	10-15	5-8

Ref.	d1	P	l1	l2	d2	sw
23.311.1200	M12	1.75	110	28	9	7
23.311.1400	M14	2	110	30	11	9
23.311.1600	M16	2	110	32	12	9
23.311.1800	M18	2.5	125	34	14	11
23.311.2000	M20	2.5	140	34	16	12
23.311.2200	M22	2.5	140	34	18	14.5
23.311.2400	M24	3	160	38	18	14.5
23.311.2700	M27	3	160	38	20	16
23.311.3000	M30	3.5	180	45	22	18

› 23.320 Phantom



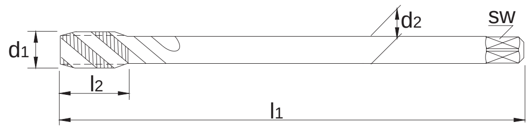
NL **UNI HSS-E Machinetap Metrisch, TiN**
FR **Taraud machine HSS-E UNI Métrique, TiN**
ES **Macho máquina HSS-E UNI Métrica, TiN**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, TiN**
EN **UNI HSS-E Machine Tap Metric Coarse, TiN**

HSS-E	M	60°	TiN	DIN 371	2,5xD		40°	FormC 2-3	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.320.0200	M2	0.4	45	8	2.8	2.1
23.320.0250	M2,5	0.45	50	9	2.8	2.1
23.320.0300	M3	0.5	56	11	3.5	2.7
23.320.0400	M4	0.7	63	13	4.5	3.4
23.320.0500	M5	0.8	70	16	6	4.9
23.320.0600	M6	1	80	19	6	4.9
23.320.0700	M7	1	80	19	7	5.5
23.320.0800	M8	1.25	90	22	8	6.2
23.320.1000	M10	1.5	100	24	10	8

› 23.321 Phantom



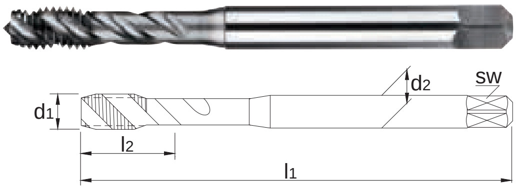
NL **UNI HSS-E Machinetap Metrisch, TiN**
FR **Taraud machine HSS-E UNI Métrique, TiN**
ES **Macho máquina HSS-E UNI Métrica, TiN**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, TiN**
EN **UNI HSS-E Machine Tap Metric Coarse, TiN**

HSS-E	M	60°	TiN	DIN 376	2,5xD		40°	FormC 2-3	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.321.0600	M6	1	80	19	4.5	3.4
23.321.0800	M8	1.25	90	22	6	4.9
23.321.1000	M10	1.5	100	24	7	5.5
23.321.1200	M12	1.75	110	28	9	7
23.321.1400	M14	2	110	30	11	9
23.321.1600	M16	2	110	32	12	9
23.321.2000	M20	2.5	140	34	16	12
23.321.2400	M24	3	160	38	18	14.5

› 23.324 Phantom



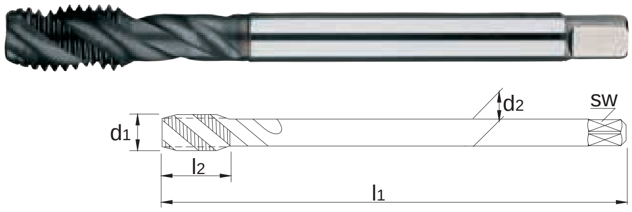
NL UNI HSS-E Machinetap Metrisch, TiCN
FR Taraud machine HSS-E UNI Métrique, TiCN
ES Macho máquina HSS-E UNI Métrica, TiCN
DE UNI HSS-E Maschinengewindebohrer Metrisch, TiCN
EN UNI HSS-E Machine Tap Metric Coarse, TiCN

HSS-E	M	60°	TiCN	DIN 371	2,5xD		40°	FormC 2-3	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.324.0300	M3	0.5	56	11	3.5	2.7
23.324.0400	M4	0.7	63	13	4.5	3.4
23.324.0500	M5	0.8	70	16	6	4.9
23.324.0600	M6	1	80	19	6	4.9
23.324.0800	M8	1.25	90	22	8	6.2
23.324.1000	M10	1.5	100	24	10	8

› 23.325 Phantom



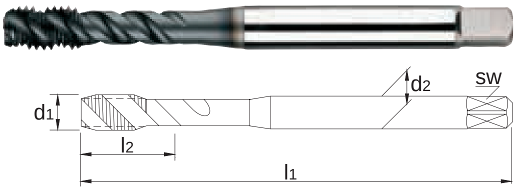
NL UNI HSS-E Machinetap Metrisch, TiCN
FR Taraud machine HSS-E UNI Métrique, TiCN
ES Macho máquina HSS-E UNI Métrica, TiCN
DE UNI HSS-E Maschinengewindebohrer Metrisch, TiCN
EN UNI HSS-E Machine Tap Metric Coarse, TiCN

HSS-E	M	60°	TiCN	DIN 376	2,5xD		40°	FormC 2-3	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.325.0600	M6	1	80	19	4.5	3.4
23.325.0800	M8	1.25	90	22	6	4.9
23.325.1000	M10	1.5	100	24	7	5.5
23.325.1200	M12	1.75	110	28	9	7
23.325.1400	M14	2	110	30	11	9
23.325.1600	M16	2	110	32	12	9
23.325.2000	M20	2.5	140	34	16	12

› 23.352 Phantom



NL HSS-E PM Synchro Machinetap Metrisch, TiCN
FR Taraud Machine Synchro HSS-E PM Métrique, TiCN
ES Macho Máquina Sincronizado HSS-E PM Métrica, TiCN
DE HSS-E PM Synchron-Maschinengewindebohrer Metrisch, TiCN
EN HSS-E PM Synchro Machine Tap Metric Coarse, TiCN

HSS-E PM	M	60°	TiCN	DIN 371	2,5xD		40°	6HX	FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	S 71 Ni/Co	S 72 Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

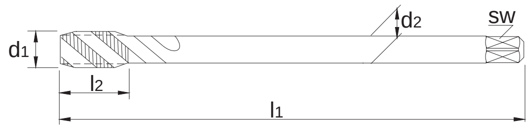
Ref.	d1	P	l1	l2	d2	sw
23.352.0300	M3	0.5	56	11	3.5	2.7
23.352.0400	M4	0.7	63	13	4.5	3.4
23.352.0500	M5	0.8	70	16	6	4.9
23.352.0600	M6	1	80	19	6	4.9
23.352.0800	M8	1.25	90	22	8	6.2
23.352.1000	M10	1.5	100	24	10	8

NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

Watch me

www.phantom.eu

› 23.353 Phantom



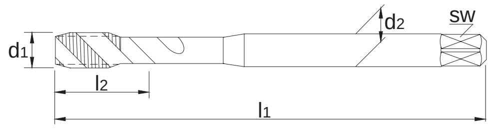
NL **HSS-E PM Synchro Machinetap Metrisch, TiCN**
FR **Taraud Machine Synchro HSS-E PM Métrique, TiCN**
ES **Macho Máquina Sincronizado HSS-E PM Métrica, TiCN**
DE **HSS-E PM Synchron-Maschinengewindebohrer Metrisch, TiCN**
EN **HSS-E PM Synchro Machine Tap Metric Coarse, TiCN**

HSS-E PM	M	60°	TiCN	DIN 376	2,5xD		40°	6HX	FormC 2-3

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	Ni/Co	Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw
23.353.1200	M12	1.75	110	28	9	7
23.353.1600	M16	2	110	32	12	9
23.353.2000	M20	2.5	140	34	16	12

› 23.368 Phantom



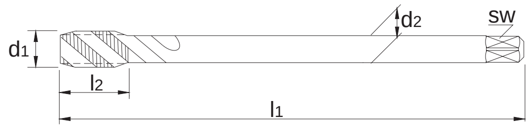
NL **HP2 UNI HSS-E PM Machinetap Metrisch, HARDLUBE**
FR **Taraud machine HSS-E PM HP2 UNI Métrique, HARDLUBE**
ES **Macho máquina HSS-E PM HP2 UNI Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**
EN **HP2 UNI HSS-E PM Machine Tap Metric Coarse, HARDLUBE**

HSS-E PM	M	60°	HARD LUBE	DIN 371	2,5xD		50°	FormC 2-3	6HX	HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw
23.368.0300	M3	0.5	56	11	3.5	2.7
23.368.0400	M4	0.7	63	13	4.5	3.4
23.368.0500	M5	0.8	70	16	6	4.9
23.368.0600	M6	1	80	19	6	4.9
23.368.0800	M8	1.25	90	22	8	6.2
23.368.1000	M10	1.5	100	24	10	8

› 23.369 Phantom



NL **HP2 UNI HSS-E PM Machinetap Metrisch, HARDLUBE**
FR **Taraud machine HSS-E PM HP2 UNI Métrique, HARDLUBE**
ES **Macho máquina HSS-E PM HP2 UNI Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**
EN **HP2 UNI HSS-E PM Machine Tap Metric Coarse, HARDLUBE**

HSS-E PM	M	60°	HARD LUBE	DIN 376	2,5xD		50°	FormC 2-3	6HX	HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw
23.369.1200	M12	1.75	110	28	9	7
23.369.1400	M14	2	110	30	11	9
23.369.1600	M16	2	110	32	12	9
23.369.2000	M20	2.5	140	34	16	12

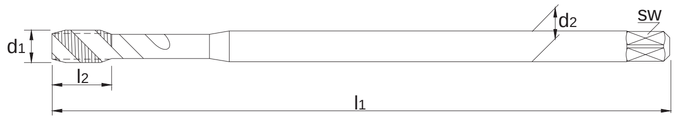
NL Hardlube gecoate HP2 Machinetappen in actie
FR Les tarauds machine HP2 revêtus de HARDLUBE en action
ES Los machos de roscar a máquina con recubrimiento Hardlube HP2 en acción
DE Hardlube-beschichtete HP2-Maschinengewindebohrer
EN Hardlube-coated HP2 Machine Taps in Action

Watch me

www.phantom.eu

› 23.370 Phantom

- NL UNI HSS-E Machinetap Metrisch, lang
- FR Taraud machine HSS-E UNI Métrique, version longue
- ES Macho máquina HSS-E UNI Métrica, largo
- DE UNI HSS-E Maschinengewindebohrer Metrisch, lang
- EN UNI HSS-E Machine Tap Metric Coarse, long

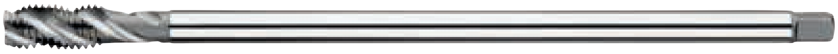


HSS-E | M | 60° | NORM | 2,5xD | 40° | FormC 2-3 | ISO 2 6H | UNI

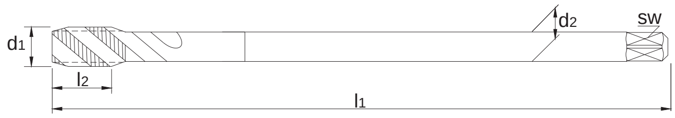
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.370.0400	M4	0.7	126	7	4.5	3.4
23.370.0500	M5	0.8	140	8	6	4.9
23.370.0600	M6	1	160	10	6	4.9
23.370.0800	M8	1.25	180	12.5	8	6.2

› 23.371 Phantom



- NL UNI HSS-E Machinetap Metrisch, lang
- FR Taraud machine HSS-E UNI Métrique, version longue
- ES Macho máquina HSS-E UNI Métrica, largo
- DE UNI HSS-E Maschinengewindebohrer Metrisch, lang
- EN UNI HSS-E Machine Tap Metric Coarse, long

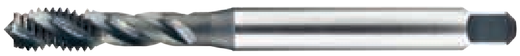


HSS-E | M | 60° | NORM | 2,5xD | 40° | FormC 2-3 | ISO 2 6H | UNI

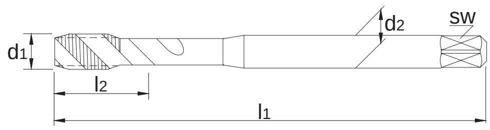
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.371.0800	M8	1.25	180	12	6	4.9
23.371.1000	M10	1.5	200	15	7	5.5
23.371.1200	M12	1.75	220	17.5	9	7
23.371.1600	M16	2	220	20	12	9
23.371.2000	M20	2.5	280	25	16	12

› 23.400 Phantom



- NL HSS-E PM Machinetap Metrisch, 1200 N/mm²
- FR Taraud machine HSS-E PM Métrique, 1200 N/mm²
- ES Macho máquina HSS-E PM Métrica, 1200 N/mm²
- DE HSS-E PM Maschinengewindebohrer Metrisch, 1200 N/mm²
- EN HSS-E PM Machine Tap Metric Coarse, 1200 N/mm²

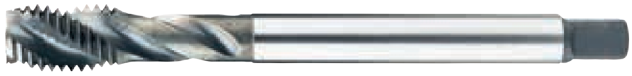


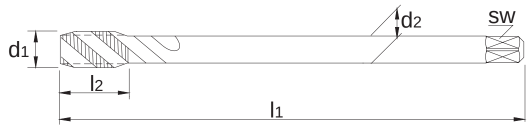
HSS-E PM | M | 60° | OX. | DIN 371 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H

P 13	P 14	M 22
≤1000 N/mm²	≤1400 N/mm²	INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
23.400.0300	M3	0.5	56	11	3.5	2.7
23.400.0400	M4	0.7	63	13	4.5	3.4
23.400.0500	M5	0.8	70	16	6	4.9
23.400.0600	M6	1	80	19	6	4.9
23.400.0800	M8	1.25	90	22	8	6.2
23.400.1000	M10	1.5	100	24	10	8

› 23.401 Phantom





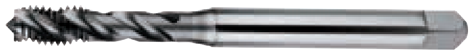
NL HSS-E PM Machinetap Metrisch, 1200 N/mm²
FR Taraud machine HSS-E PM Métrique, 1200 N/mm²
ES Macho máquina HSS-E PM Métrica, 1200 N/mm²
DE HSS-E PM Maschinengewindebohrer Metrisch, 1200 N/mm²
EN HSS-E PM Machine Tap Metric Coarse, 1200 N/mm²

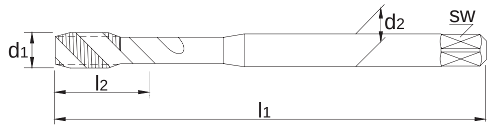
HSS-E PM | M | 60° | OX. | DIN 376 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 22 INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
23.401.0800	M8	1.25	90	22	6	4.9
23.401.1000	M10	1.5	100	24	7	5.5
23.401.1200	M12	1.75	110	28	9	7
23.401.1400	M14	2	110	30	11	9
23.401.1600	M16	2	110	32	12	9
23.401.1800	M18	2.5	125	34	14	11
23.401.2000	M20	2.5	140	34	16	12
23.401.2200	M22	2.5	140	34	18	14.5
23.401.2400	M24	3	160	38	18	14.5
23.401.2700	M27	3	160	38	20	16
23.401.3000	M30	3.5	180	45	22	18

› 23.404 Phantom





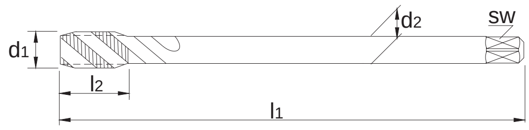
NL HSS-E PM Machinetap Metrisch, 1200 N/mm², TiCN
FR Taraud machine HSS-E PM Métrique, 1200 N/mm², TiCN
ES Macho máquina HSS-E PM Métrica, 1200 N/mm², TiCN
DE HSS-E PM Maschinengewindebohrer Metrisch, 1200 N/mm², TiCN
EN HSS-E PM Machine Tap Metric Coarse, 1200 N/mm², TiCN

HSS-E PM | M | 60° | TiCN | DIN 371 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 22 INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
23.404.0300	M3	0.5	56	11	3.5	2.7
23.404.0400	M4	0.7	63	13	4.5	3.4
23.404.0500	M5	0.8	70	16	6	4.9
23.404.0600	M6	1	80	19	6	4.9
23.404.0800	M8	1.25	90	22	8	6.2
23.404.1000	M10	1.5	100	24	10	8

› 23.405 Phantom



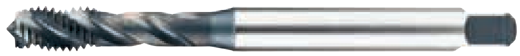
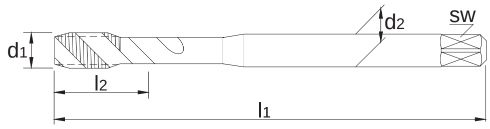
NL HSS-E PM Machinetap Metrisch, 1200 N/mm², TiCN
FR Taraud machine HSS-E PM Métrique, 1200 N/mm², TiCN
ES Macho máquina HSS-E PM Métrica, 1200 N/mm², TiCN
DE HSS-E PM Maschinengewindebohrer Metrisch, 1200 N/mm², TiCN
EN HSS-E PM Machine Tap Metric Coarse, 1200 N/mm², TiCN

HSS-E PM | M | 60° | TiCN | DIN 376 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 22 INOX >850N/mm²
10-15	6-10	4-6

Ref.	d1	P	l1	l2	d2	sw
23.405.1200	M12	1.75	110	28	9	7

› 23.430 Phantom

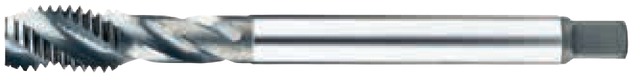
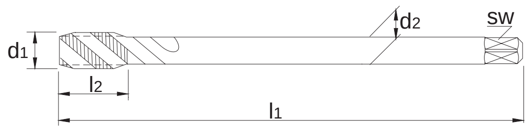
NL **HSS-E PM Machinetap Metrisch, stoomontlaten, Titanium- en Nikkellegeringen**
FR **Taraud machine HSS-E PM Métrique, vaporisé, alliage de Titane et Nickel**
ES **Macho máquina HSS-E PM Métrica, vaporizado, aleados de Titano y Níquel**
DE **HSS-E PM Maschinengewindebohrer Metrisch, dampfangelassen, Titanium- und Nickellegierungen**
EN **HSS-E PM Machine Tap Metric Coarse, steam oxide, Titanium- and Nickel alloys**

HSS-E PM | M | 60° | OX. | DIN 371 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H

P 14 ≤1400 N/mm²	N 52 CuAlFe	S 71 Ni/Co	S 72 Ti
3-5	3-5	2-15	4-15

Ref.	d1	P	l1	l2	d2	sw
23.430.0400	M4	0.7	63	13	4.5	3.4
23.430.0500	M5	0.8	70	16	6	4.9
23.430.0600	M6	1	80	19	6	4.9
23.430.0800	M8	1.25	90	22	8	6.2
23.430.1000	M10	1.5	100	24	10	8

› 23.431 Phantom

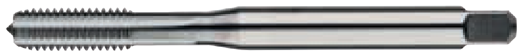
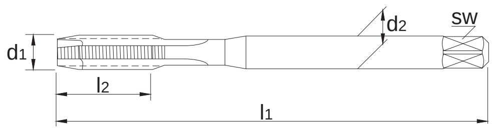
NL **HSS-E PM Machinetap Metrisch, stoomontlaten, Titanium- en Nikkellegeringen**
FR **Taraud machine HSS-E PM Métrique, vaporisé, alliage de Titane et Nickel**
ES **Macho máquina HSS-E PM Métrica, vaporizado, aleados de Titano y Níquel**
DE **HSS-E PM Maschinengewindebohrer Metrisch, dampfangelassen, Titanium- und Nickellegierungen**
EN **HSS-E PM Machine Tap Metric Coarse, steam oxide, Titanium- and Nickel alloys**

HSS-E PM | M | 60° | OX. | DIN 376 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H

P 14 ≤1400 N/mm²	N 52 CuAlFe	S 71 Ni/Co	S 72 Ti
3-5	3-5	2-15	4-15

Ref.	d1	P	l1	l2	d2	sw
23.431.1200	M12	1.75	110	28	9	7

› 23.440 Phantom

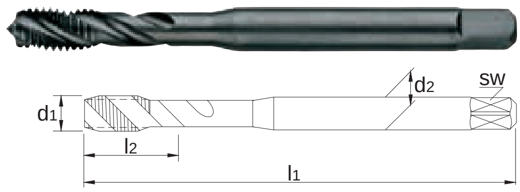
NL **Volhardmetaal Machinetap Metrisch, TiCN, HRC 50-60**
FR **Taraud machine carbure monobloc Métrique, TiCN, HRC 50-60**
ES **Macho máquina Metal Duro Integral Métrica, TiCN, HRC 50-60**
DE **Vollhartmetall Maschinengewindebohrer Metrisch, TiCN, HRC 50-60**
EN **Solid carbide Machine Tap Metric Coarse, TiCN, HRC 50-60**

MG HM | M | 60° | TiCN | DIN 371 | 2xD | FormC 2-3 | 6HX

P 14 ≤1400 N/mm²	H 15 HRC	M 22 INOX >850N/mm²	N 52 CuAlFe	N 62 GFK/CFK
25-40	5-15	30-50	25-30	10-20

Ref.	d1	P	l1	l2	d2	sw
23.440.0300	M3	0.5	56	11	3.5	2.7
23.440.0400	M4	0.7	63	13	4.5	3.4
23.440.0500	M5	0.8	70	16	6	4.9
23.440.0600	M6	1	80	19	6	4.9
23.440.0800	M8	1.25	90	22	8	6.2
23.440.1000	M10	1.5	100	24	10	8

› 23.445 International Tools



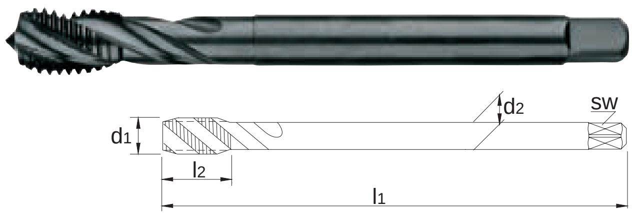
NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
ES Macho máquina HSS-E ECO PRO Métrica, vaporizado, acero inoxidable
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl
EN ECO PRO HSS-E Machine Tap Metric Coarse, steam oxide, stainless steel

HSS-E | M | 60° | OX. | DIN 371 | 2xD | 35° | FormC 2-3 | ISO 2 6H | INOX | ECO PRO

P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²
3-5	7-10

Ref.	d1	P	l1	l2	d2	sw
23.445.0300	M3	0.5	56	11	3.5	2.7
23.445.0400	M4	0.7	63	13	4.5	3.4
23.445.0500	M5	0.8	70	16	6	4.9
23.445.0600	M6	1	80	19	6	4.9
23.445.0800	M8	1.25	90	22	8	6.2
23.445.1000	M10	1.5	100	24	10	8

› 23.446 International Tools



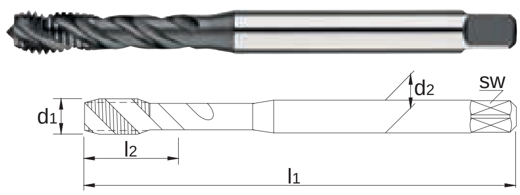
NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
ES Macho máquina HSS-E ECO PRO Métrica, vaporizado, acero inoxidable
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl
EN ECO PRO HSS-E Machine Tap Metric Coarse, steam oxide, stainless steel

HSS-E | M | 60° | OX. | DIN 376 | 2xD | 35° | FormC 2-3 | ISO 2 6H | INOX | ECO PRO

P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²
3-5	7-10

Ref.	d1	P	l1	l2	d2	sw
23.446.1200	M12	1.75	110	28	9	7
23.446.1600	M16	2	110	32	12	9
23.446.2000	M20	2.5	140	34	16	12

› 23.450 Phantom



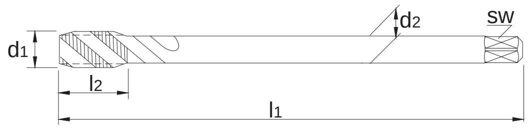
NL HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
FR Taraud machine HSS-E Métrique, vaporisé, Inox
ES Macho máquina HSS-E Métrica, vaporizado, acero inoxidable
DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl
EN HSS-E Machine Tap Metric Coarse, steam oxide, stainless steel

HSS-E | M | 60° | OX. | DIN 371 | 2,5xD | 45° | FormC 2-3 | ISO 2 6H | INOX

P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	S 71 Ni/Co
3-5	7-10	5-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.450.0300	M3	0.5	56	11	3.5	2.7
23.450.0400	M4	0.7	63	13	4.5	3.4
23.450.0500	M5	0.8	70	16	6	4.9
23.450.0600	M6	1	80	19	6	4.9
23.450.0800	M8	1.25	90	22	8	6.2
23.450.1000	M10	1.5	100	24	10	8

› 23.451 Phantom



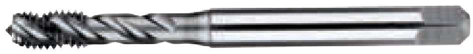
NL HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
FR Taraud machine HSS-E Métrique, vaporisé, Inox
ES Macho máquina HSS-E Métrica, vaporizado, acero inoxidable
DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl
EN HSS-E Machine Tap Metric Coarse, steam oxide, stainless steel

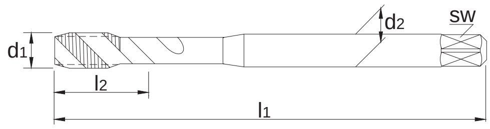
HSS-E	M	60°	OX.	DIN 376	2,5xD		40°	FormC 2-3	ISO 2 6H	INOX

P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	S 71 Ni/Co
3-5	7-10	5-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.451.0800	M8	1.25	90	22	6	4.9
23.451.1000	M10	1.5	100	24	7	5.5
23.451.1200	M12	1.75	110	28	9	7
23.451.1400	M14	2	110	30	11	9
23.451.1600	M16	2	110	32	12	9
23.451.1800	M18	2.5	125	34	14	11
23.451.2000	M20	2.5	140	34	16	12
23.451.2200	M22	2.5	140	34	18	14.5
23.451.2400	M24	3	160	38	18	14.5
23.451.2700	M27	3	160	38	20	16
23.451.3000	M30	3.5	180	45	22	18
23.451.3300	M33	3.5	180	50	25	20
23.451.3600	M36	4	200	56	28	22
23.451.3900	M39	4	200	60	32	24
23.451.4200	M42	4.5	200	60	32	24
23.451.4500	M45	4.5	220	65	36	29
23.451.4800	M48	5	250	70	36	29

› 23.454 Phantom





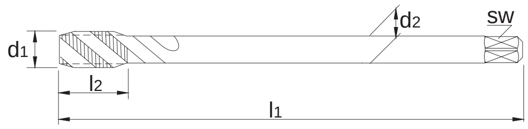
NL HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal
FR Taraud machine HSS-E PM Métrique, TiCN, Inox
ES Macho máquina HSS-E PM Métrica, TiCN, acero inoxidable
DE HSS-E PM Maschinengewindebohrer Metrisch, TiCN, rostfreien Stahl
EN HSS-E PM Machine Tap Metric Coarse, TiCN, stainless steel

HSS-E PM	M	60°	TiCN	DIN 371	2,5xD		40°	FormC 2-3	ISO 2 6H	INOX

P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	S 71 Ni/Co
6-8	7-10	5-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.454.0200	M2	0.4	45	8	2.8	2.1
23.454.0250	M2,5	0.45	50	9	2.8	2.1
23.454.0300	M3	0.5	56	11	3.5	2.7
23.454.0400	M4	0.7	63	13	4.5	3.4
23.454.0500	M5	0.8	70	16	6	4.9
23.454.0600	M6	1	80	19	6	4.9
23.454.0800	M8	1.25	90	22	8	6.2
23.454.1000	M10	1.5	100	24	10	8

› 23.455 Phantom



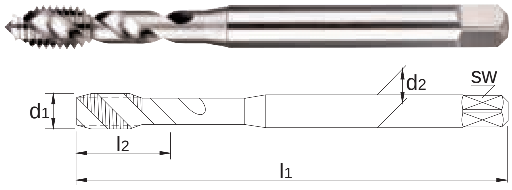
NL HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal
FR Taraud machine HSS-E PM Métrique, TiCN, Inox
ES Macho máquina HSS-E PM Métrica, TiCN, acero inoxidable
DE HSS-E PM Maschinengewindebohrer Metrisch, TiCN, rostfreien Stahl
EN HSS-E PM Machine Tap Metric Coarse, TiCN, stainless steel

HSS-E PM	M	60°	TiCN	DIN 376	2,5xD		40°	FormC 2-3	ISO 2 6H	INOX

P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	S 71 Ni/Co
6-8	7-10	5-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.455.1200	M12	1.75	110	28	9	7
23.455.1600	M16	2	110	32	12	9
23.455.2000	M20	2.5	140	34	16	12

› 23.480 Phantom



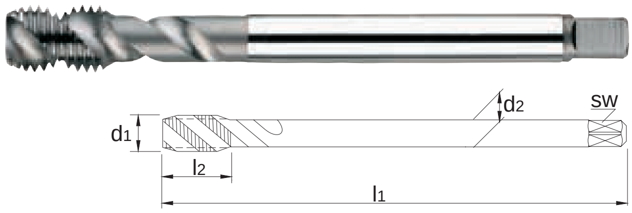
NL **HSS-E Machinetap Metrisch, Aluminium**
FR **Taraud machine HSS-E Métrique, Aluminium**
ES **Macho máquina HSS-E Métrica, Aluminio**
DE **HSS-E Maschinengewindebohrer Metrisch, Aluminium**
EN **HSS-E Machine Tap Metric Coarse, Aluminium**

HSS-E | M | 60° | DIN 371 | 2,5xD | 45° | FormC 2-3 | ISO 2 6H | ALU

P 11 ≤600 N/mm²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20	10-35	10-15	8-12

Ref.	d1	P	l1	l2	d2	sw
23.480.0300	M3	0.5	56	11	3.5	2.7
23.480.0400	M4	0.7	63	13	4.5	3.4
23.480.0500	M5	0.8	70	16	6	4.9
23.480.0600	M6	1	80	19	6	4.9
23.480.0800	M8	1.25	90	22	8	6.2
23.480.1000	M10	1.5	100	24	10	8

› 23.481 Phantom



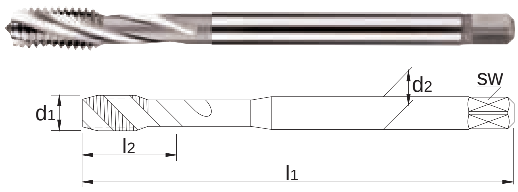
NL **HSS-E Machinetap Metrisch, Aluminium**
FR **Taraud machine HSS-E Métrique, Aluminium**
ES **Macho máquina HSS-E Métrica, Aluminio**
DE **HSS-E Maschinengewindebohrer Metrisch, Aluminium**
EN **HSS-E Machine Tap Metric Coarse, Aluminium**

HSS-E | M | 60° | DIN 376 | 2,5xD | 45° | FormC 2-3 | ISO 2 6H | ALU

P 11 ≤600 N/mm²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20	10-35	10-15	8-12

Ref.	d1	P	l1	l2	d2	sw
23.481.0800	M8	1.25	90	22	6	4.9
23.481.1000	M10	1.5	100	24	7	5.5
23.481.1200	M12	1.75	110	28	9	7
23.481.1400	M14	2	110	30	11	9
23.481.1600	M16	2	110	32	12	9

› 23.500 Phantom



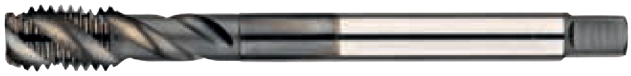
NL **HSS-E Machinetap Metrisch, genitreerd, Aluminium Si > 10%**
FR **Taraud machine HSS-E Métrique, nitruré, Aluminium Si > 10%**
ES **Macho máquina HSS-E Métrica, nitrurado, Aluminio Si > 10%**
DE **HSS-E Maschinengewindebohrer Metrisch, nitriert, Aluminium Si > 10%**
EN **HSS-E Machine Tap Metric Coarse, nitrided, Aluminium Si > 10%**

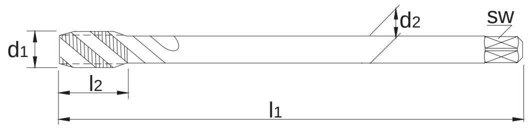
HSS-E | M | 60° | NIT. | DIN 371 | 2,5xD | 45° | FormC 2-3 | ISO 2 6H | ALU

N 42 Alu Si>10%
10-15

Ref.	d1	P	l1	l2	d2	sw
23.500.0300	M3	0.5	56	11	3.5	2.7
23.500.0400	M4	0.7	63	13	4.5	3.4
23.500.0500	M5	0.8	70	16	6	4.9
23.500.0600	M6	1	80	19	6	4.9
23.500.0800	M8	1.25	90	22	8	6.2
23.500.1000	M10	1.5	100	24	10	8

› 23.501 Phantom





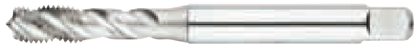
NL **HSS-E Machinetap Metrisch, genitreerd, Aluminium Si > 10%**
FR **Taraud machine HSS-E Métrique, nitruré, Aluminium Si > 10%**
ES **Macho máquina HSS-E Métrica, nitrurado, Aluminio Si > 10%**
DE **HSS-E Maschinengewindebohrer Metrisch, nitriert, Aluminium Si > 10%**
EN **HSS-E Machine Tap Metric Coarse, nitrided, Aluminium Si > 10%**

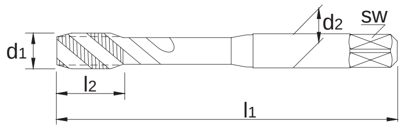
HSS-E | M | 60° | NIT. | DIN 376 | 2,5xD | 45° | FormC 2-3 | ISO 2 6H | ALU

N 42 Alu Si>10% — 10-15

Ref.	d1	P	l1	l2	d2	sw
23.501.1200	M12	1.75	110	28	9	7

› 23.585 Phantom





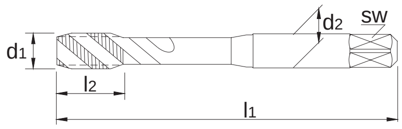
NL **HSS-E Machinetap Metrisch, voor Phan-Coil**
FR **Taraud machine HSS-E Métrique, pour Phan-Coil**
ES **Macho máquina HSS-E Métrica, para Phan-Coil**
DE **HSS-E Maschinengewindebohrer Metrisch, für Phan-Coil**
EN **HSS-E Machine Tap Metric Coarse, for Phan-Coil**

HSS-E | Phan-Coil | EG | M | 60° | DIN 371 | 2xD | 40° | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
23.585.0300	M3	3.65	0.5	63	5	4.5
23.585.0400	M4	4.91	0.7	70	8	6
23.585.0500	M5	6.04	0.8	80	8	6
23.585.0600	M6	7.3	1	90	10	8
23.585.0800	M8	9.62	1.25	100	16	10
23.585.1600	M16	18.6	2	125	25	14

› 23.586 Phantom



NL **HSS-E Machinetap Metrisch, voor Phan-Coil**
FR **Taraud machine HSS-E Métrique, pour Phan-Coil**
ES **Macho máquina HSS-E Métrica, para Phan-Coil**
DE **HSS-E Maschinengewindebohrer Metrisch, für Phan-Coil**
EN **HSS-E Machine Tap Metric Coarse, for Phan-Coil**

HSS-E | Phan-Coil | EG | M | 60° | DIN 376 | 2xD | 40° | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
23.586.1000	M10	11.95	1.5	110	15	9
23.586.1200	M12	14.27	1.75	110	20	11
23.586.1400	M14	16.6	2	110	22	12
23.586.1600	M16	18.6	2	125	20	14

NL Uitleg calculatietool
FR Regardez la vidéo d’instruction de l’outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

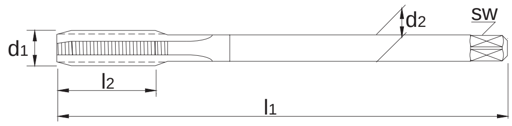
Watch me

www.phantom.eu

Search on www.phantom.eu

23.615 *International Tools*

NL ECO PRO HSS-E Machinetap Metrisch Fijn
FR Taraud machine HSS-E ECO PRO Métrique Fin
ES Macho máquina HSS-E ECO PRO Métrica Fina
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch Fein
EN ECO PRO HSS-E Machine Tap Metric Fine



HSS-E | MF | 60° | DIN 374 | 15xD | FormB 3,5-5 | ISO 2 6H | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	23-35

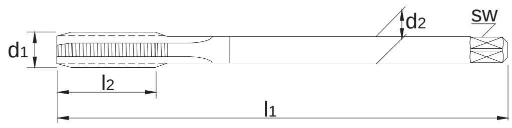
Ref.	d1	P	l1	l2	d2	sw
23.615.0505	MF5	0.5	70	12	3.5	2.7
23.615.0605	MF6	0.5	80	14	4.5	3.4
23.615.0607	MF6	0.75	80	14	4.5	3.4
23.615.0807	MF8	0.75	80	19	6	4.9
23.615.0810	MF8	1	90	22	6	4.9
23.615.1007	MF10	0.75	90	20	7	5.5
23.615.1010	MF10	1	90	20	7	5.5
23.615.1012	MF10	1.25	100	24	7	5.5
23.615.1210	MF12	1	100	22	9	7

Ref.	d1	P	l1	l2	d2	sw
23.615.1212	MF12	1.25	100	22	9	7
23.615.1215	MF12	1.5	100	22	9	7
23.615.1410	MF14	1	100	22	11	9
23.615.1412	MF14	1.25	100	22	11	9
23.615.1415	MF14	1.5	100	22	11	9
23.615.1610	MF16	1	100	22	12	9
23.615.1615	MF16	1.5	100	22	12	9
23.615.1810	MF18	1	110	25	14	11
23.615.1815	MF18	1.5	110	25	14	11

Ref.	d1	P	l1	l2	d2	sw
23.615.2010	MF20	1	125	25	16	12
23.615.2015	MF20	1.5	125	25	16	12
23.615.2020	MF20	2	140	25	16	12
23.615.2215	MF22	1.5	125	25	18	14.5
23.615.2415	MF24	1.5	140	28	18	14.5
23.615.2420	MF24	2	140	28	18	14.5
23.615.2515	MF25	1.5	140	28	18	14.5

23.620 *Phantom*

NL UNI HSS-E Machinetap Metrisch Fijn
FR Taraud machine HSS-E UNI Métrique Fin
ES Macho máquina HSS-E UNI Métrica Fina
DE UNI HSS-E Maschinengewindebohrer Metrisch Fein
EN UNI HSS-E Machine Tap Metric Fine



HSS-E | MF | 60° | DIN 374 | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

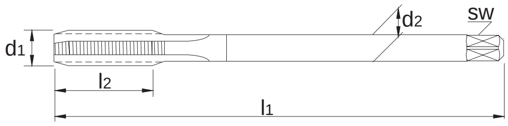
Ref.	d1	P	l1	l2	d2	sw
23.620.0303	MF3	0.35	56	8	2.2	
23.620.0405	MF4	0.5	63	10	2.8	2.1
23.620.0505	MF5	0.5	70	11	3.5	2.7
23.620.0605	MF6	0.5	80	13	4.5	3.4
23.620.0607	MF6	0.75	80	13	4.5	3.4
23.620.0705	MF7	0.5	80	13	5.5	4.3
23.620.0707	MF7	0.75	80	13	5.5	4.3
23.620.0805	MF8	0.5	80	13	6	4.9
23.620.0807	MF8	0.75	80	13	6	4.9
23.620.0810	MF8	1	90	20	6	4.9
23.620.0907	MF9	0.75	90	20	7	5.5
23.620.0910	MF9	1	90	20	7	5.5
23.620.1005	MF10	0.5	90	16	7	5.5
23.620.1007	MF10	0.75	90	16	7	5.5
23.620.1010	MF10	1	90	16	7	5.5
23.620.1012	MF10	1.25	100	22	7	5.5
23.620.1110	MF11	1	90	20	8	6.2
23.620.1112	MF11	1.25	90	20	8	6.2
23.620.1205	MF12	0.5	100	22	9	7
23.620.1207	MF12	0.75	100	22	9	7
23.620.1210	MF12	1	100	22	9	7
23.620.1212	MF12	1.25	100	22	9	7
23.620.1215	MF12	1.5	100	22	9	7
23.620.1310	MF13	1	100	22	11	9
23.620.1410	MF14	1	100	22	11	9

Ref.	d1	P	l1	l2	d2	sw
23.620.1412	MF14	1.25	100	22	11	9
23.620.1415	MF14	1.5	100	22	11	9
23.620.1510	MF15	1	100	22	12	9
23.620.1515	MF15	1.5	100	22	12	9
23.620.1610	MF16	1	100	22	12	9
23.620.1612	MF16	1.25	100	22	12	9
23.620.1615	MF16	1.5	100	22	12	9
23.620.1810	MF18	1	110	25	14	11
23.620.1815	MF18	1.5	110	25	14	11
23.620.1820	MF18	2	125	30	14	11
23.620.2010	MF20	1	125	25	16	12
23.620.2015	MF20	1.5	125	25	16	12
23.620.2020	MF20	2	140	32	16	12
23.620.2210	MF22	1	125	25	18	14.5
23.620.2212	MF22	1.25	125	25	18	14.5
23.620.2215	MF22	1.5	125	25	18	14.5
23.620.2220	MF22	2	140	32	18	14.5
23.620.2410	MF24	1	140	28	18	14.5
23.620.2415	MF24	1.5	140	28	18	14.5
23.620.2420	MF24	2	140	28	18	14.5
23.620.2510	MF25	1	140	28	18	14.5
23.620.2515	MF25	1.5	140	28	18	14.5
23.620.2520	MF25	2	140	28	18	14.5
23.620.2615	MF26	1.5	140	28	18	14.5
23.620.2715	MF27	1.5	140	28	20	16

Ref.	d1	P	l1	l2	d2	sw
23.620.2720	MF27	2	140	28	20	16
23.620.2815	MF28	1.5	140	28	20	16
23.620.3010	MF30	1	150	28	22	18
23.620.3015	MF30	1.5	150	28	22	18
23.620.3020	MF30	2	150	28	22	18
23.620.3215	MF32	1.5	150	28	22	18
23.620.3315	MF33	1.5	160	30	25	20
23.620.3320	MF33	2	160	30	25	20
23.620.3415	MF34	1.5	170	30	28	22
23.620.3515	MF35	1.5	170	30	28	22
23.620.3615	MF36	1.5	170	30	28	22
23.620.3620	MF36	2	170	30	28	22
23.620.3630	MF36	3	200	50	28	22
23.620.3815	MF38	1.5	170	30	28	22
23.620.4015	MF40	1.5	170	30	32	24
23.620.4215	MF42	1.5	170	30	32	24
23.620.4220	MF42	2	170	30	32	24
23.620.4230	MF42	3	200	45	32	24
23.620.4515	MF45	1.5	180	32	36	29
23.620.4520	MF45	2	180	32	36	29
23.620.4815	MF48	1.5	190	32	36	29
23.620.5015	MF50	1.5	190	32	36	29
23.620.5215	MF52	1.5	190	32	40	32

› 23.621 Phantom

NL **UNI HSS-E Machinetap Metrisch Fijn, TiN**
FR **Taraud machine HSS-E UNI Métrique Fin, TiN**
ES **Macho máquina HSS-E UNI Métrica Fina, TiN**
DE **UNI HSS-E Maschinengewindebohrer Metrisch Fein, TiN**
EN **UNI HSS-E Machine Tap Metric Fine, TiN**



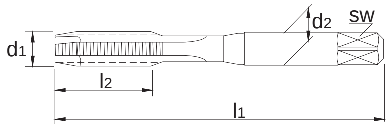
HSS-E | MF | 60° | TiN | DIN 374 | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.621.0810	MF8	1	90	20	6	4.9
23.621.1010	MF10	1	90	16	7	5.5
23.621.1012	MF10	1.25	100	22	7	5.5
23.621.1210	MF12	1	100	22	9	7
23.621.1212	MF12	1.25	100	22	9	7
23.621.1215	MF12	1.5	100	22	9	7
23.621.1415	MF14	1.5	100	22	11	9
23.621.1615	MF16	1.5	100	22	12	9
23.621.1815	MF18	1.5	110	25	14	11
23.621.2010	MF20	1	125	25	16	12
23.621.2015	MF20	1.5	125	25	16	12
23.621.2020	MF20	2	140	32	16	12
23.621.2215	MF22	1.5	125	25	18	14.5
23.621.2415	MF24	1.5	140	28	18	14.5
23.621.2420	MF24	2	140	28	18	14.5
23.621.2515	MF25	1.5	140	28	18	14.5
23.621.2720	MF27	2	140	28	20	16
23.621.3015	MF30	1.5	150	28	22	18
23.621.3020	MF30	2	150	28	22	18
23.621.3215	MF32	1.5	150	28	22	18
23.621.3620	MF36	2	170	30	28	22

› 23.625 Phantom

NL **HSS Machinetap Metrisch Fijn**
FR **Taraud machine HSS Métrique Fin**
ES **Macho máquina HSS Métrica Fina**
DE **HSS Maschinengewindebohrer Metrisch Fein**
EN **HSS Machine Tap Metric Fine**

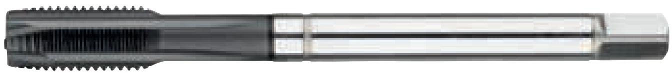


HSS | MF | 60° | ISO 529 | 2xD | FormB 3,5-5 | ISO 2 6H

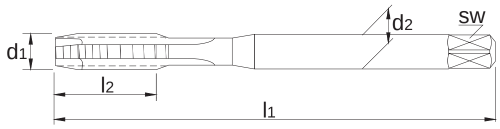
P 11	P 12	K 31	N 41
≤600 N/mm²	≤850 N/mm²	GG	Alu
15-20	12-18	10-15	23-35

Ref.	d1	P	l1	l2	d2	sw
23.625.0403	MF4	0.35	53	13	4	3.15
23.625.0405	MF4	0.5	53	13	4	3.15
23.625.0455	MF4,5	0.5	58	16	5	4
23.625.0505	MF5	0.5	58	16	5	4
23.625.0606	MF6	0.6	66	19	6.3	5
23.625.0607	MF6	0.75	66	19	6.3	5
23.625.0705	MF7	0.5	66	19	7.1	5.6
23.625.0707	MF7	0.75	66	19	7.1	5.6
23.625.0805	MF8	0.5	72	22	8	6.3
23.625.0807	MF8	0.75	72	22	8	6.3
23.625.0810	MF8	1	72	22	8	6.3
23.625.0907	MF9	0.75	72	22	9	7.1
23.625.0910	MF9	1	72	22	9	7.1
23.625.1005	MF10	0.5	80	24	10	8
23.625.1007	MF10	0.75	80	24	10	8
23.625.1010	MF10	1	80	24	10	8
23.625.1012	MF10	1.25	80	24	10	8
23.625.1110	MF11	1	85	25	8	6.3
23.625.1112	MF11	1.25	85	25	8	6.3
23.625.1205	MF12	0.5	89	29	9	7.1
23.625.1207	MF12	0.75	89	29	9	7.1
23.625.1210	MF12	1	89	29	9	7.1
23.625.1215	MF12	1.5	89	29	9	7.1
23.625.1307	MF13	0.75	89	29	9	7.1
23.625.1407	MF14	0.75	95	30	11.2	9
23.625.1410	MF14	1	95	30	11.2	9
23.625.1412	MF14	1.25	95	30	11.2	9
23.625.1415	MF14	1.5	95	30	11.2	9
23.625.1417	MF14	1.75	95	30	11.2	9
23.625.1520	MF15	2	95	30	11.2	9
23.625.1607	MF16	0.75	95	32	12.5	10
23.625.1612	MF16	1.25	102	32	12.5	10
23.625.1615	MF16	1.5	102	32	12.5	10
23.625.1715	MF17	1.5	102	32	12.5	10
23.625.1810	MF18	1	112	37	14	11.2
23.625.1815	MF18	1.5	112	37	14	11.2
23.625.1910	MF19	1	112	37	14	11.2
23.625.2212	MF22	1.25	118	38	16	12.5
23.625.2510	MF25	1	120	35	18	14
23.625.2520	MF25	2	120	35	18	14
23.625.3920	MF39	2	149	39	28	22.4
23.625.4820	MF48	2	165	45	31.5	25

› 23.668 Phantom



NL **HP2 UNI HSS-E PM Machinetap Metrisch Fijn, HARDLUBE**
FR **Taraud machine HSS-E PM HP2 UNI Métrique Fin, HARDLUBE**
ES **Macho máquina HSS-E PM HP2 UNI Métrica Fina, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch Fein, HARD-LUBE**
EN **HP2 UNI HSS-E PM Machine Tap Metric Fine, HARDLUBE**

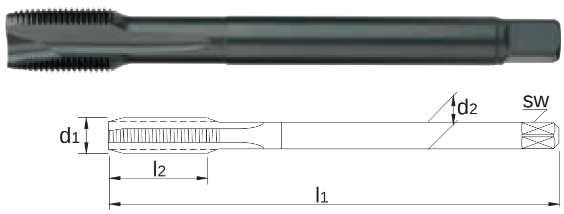


HSS-E PM | MF | 60° | HARD LUBE | DIN 374 | 3xD | FormB 3,5-5 | ISO 2 6H | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw
23.668.0810	MF8	1	90	20	6	4.9
23.668.1010	MF10	1	90	16	7	5.5
23.668.1012	MF10	1.25	90	16	7	5.5
23.668.1210	MF12	1	100	22	9	7
23.668.1212	MF12	1.25	100	22	9	7
23.668.1215	MF12	1.5	100	22	9	7
23.668.1410	MF14	1	100	22	11	9
23.668.1415	MF14	1.5	100	22	11	9
23.668.1615	MF16	1.5	100	22	12	9
23.668.1815	MF18	1.5	110	25	14	11
23.668.2015	MF20	1.5	125	25	16	12
23.668.2215	MF22	1.5	125	25	18	14.5
23.668.2415	MF24	1.5	140	28	18	14.5
23.668.2420	MF24	2	140	28	18	14.5

› 23.750 Phantom



NL **HSS-E PM Machinetap Metrisch Fijn, stoomontlaten, roestvaststaal**
FR **Taraud machine HSS-E PM Métrique Fin, vaporisé, Inox**
ES **Macho máquina HSS-E PM Métrica Fina, vaporizado, acero inoxidable**
DE **HSS-E PM Maschinengewindebohrer Metrisch Fein, dampfangelassen, rostfreien Stahl**
EN **HSS-E PM Machine Tap Metric Fine, steam oxide, stainless steel**

HSS-E PM	MF	60°	OX.	DIN 374	3xD		FormB 3,5-5	ISO 2 6H	INOX

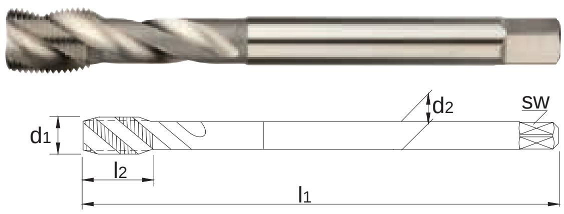
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	25-35	10-20	15-35	4-8	4-8

Ref.	d1	P	l1	l2	d2	sw
23.750.0405	MF4	0.5	63	10	2.8	2.1
23.750.0505	MF5	0.5	70	11	3.5	2.7
23.750.0605	MF6	0.5	80	13	4.5	3.4
23.750.0607	MF6	0.75	80	13	4.5	3.4
23.750.0807	MF8	0.75	80	13	6	4.9
23.750.0810	MF8	1	90	20	6	4.9
23.750.1010	MF10	1	90	20	7	5.5
23.750.1012	MF10	1.25	100	22	7	5.5
23.750.1210	MF12	1	100	22	9	7
23.750.1212	MF12	1.25	100	22	9	7

Ref.	d1	P	l1	l2	d2	sw
23.750.1215	MF12	1.5	100	22	9	7
23.750.1410	MF14	1	100	22	11	9
23.750.1412	MF14	1.25	100	22	11	9
23.750.1415	MF14	1.5	100	22	11	9
23.750.1610	MF16	1	100	22	12	9
23.750.1615	MF16	1.5	100	22	12	9
23.750.1810	MF18	1	110	25	14	11
23.750.1815	MF18	1.5	110	25	14	11
23.750.2010	MF20	1	125	25	16	12
23.750.2015	MF20	1.5	125	25	16	12

Ref.	d1	P	l1	l2	d2	sw
23.750.2210	MF22	1	125	25	18	14.5
23.750.2215	MF22	1.5	125	25	18	14.5
23.750.2415	MF24	1.5	140	28	18	14.5
23.750.2420	MF24	2	140	28	18	14.5
23.750.2615	MF26	1.5	140	28	18	14.5
23.750.2715	MF27	1.5	140	28	20	16
23.750.2720	MF27	2	140	28	20	16
23.750.2815	MF28	1.5	140	28	20	16
23.750.3015	MF30	1.5	150	28	22	18
23.750.3020	MF30	2	150	28	22	18

› 23.835 International Tools



NL **ECO PRO HSS-E Machinetap Metrisch Fijn**
FR **Taraud machine HSS-E ECO PRO Métrique Fin**
ES **Macho máquina HSS-E ECO PRO Métrica Fina**
DE **ECO PRO HSS-E Maschinengewindebohrer Metrisch Fein**
EN **ECO PRO HSS-E Machine Tap Metric Fine**

HSS-E	MF	60°	DIN 374	2xD		35°	FormC 2-3	ISO 2 6H	ECO PRO

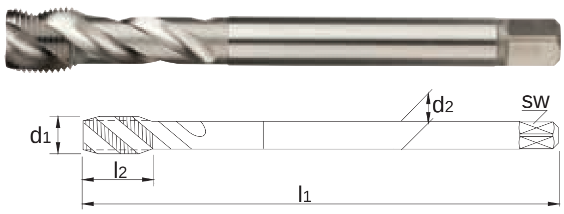
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	23-35

Ref.	d1	P	l1	l2	d2	sw
23.835.0810	MF8	1	90	10	6	4.9
23.835.1010	MF10	1	90	12	7	5.5
23.835.1012	MF10	1.25	100	12	7	5.5
23.835.1210	MF12	1	100	14	9	7

Ref.	d1	P	l1	l2	d2	sw
23.835.1212	MF12	1.25	100	14	9	7
23.835.1215	MF12	1.5	100	14	9	7
23.835.1415	MF14	1.5	100	16	11	9
23.835.1615	MF16	1.5	100	16	12	9

Ref.	d1	P	l1	l2	d2	sw
23.835.1815	MF18	1.5	110	20	14	11
23.835.2015	MF20	1.5	125	20	16	12

› 23.840 Phantom



NL **UNI HSS-E Machinetap Metrisch Fijn**
FR **Taraud machine HSS-E UNI Métrique Fin**
ES **Macho máquina HSS-E UNI Métrica Fina**
DE **UNI HSS-E Maschinengewindebohrer Metrisch Fein**
EN **UNI HSS-E Machine Tap Metric Fine**

HSS-E	MF	60°	DIN 374	2,5xD		40°	FormC 2-3	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.840.0405	MF4	0.5	63	10	2.8	2.1
23.840.0505	MF5	0.5	70	11	3.5	2.7
23.840.0605	MF6	0.5	80	13	4.5	3.4
23.840.0607	MF6	0.75	80	13	4.5	3.4
23.840.0807	MF8	0.75	80	13	6	4.9
23.840.0810	MF8	1	90	20	6	4.9
23.840.0910	MF9	1	90	20	7	5.5
23.840.1007	MF10	0.75	90	16	7	5.5
23.840.1010	MF10	1	90	16	7	5.5
23.840.1012	MF10	1.25	100	22	7	5.5
23.840.1110	MF11	1	90	20	8	6.2
23.840.1210	MF12	1	100	22	9	7

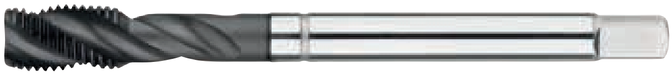
Ref.	d1	P	l1	l2	d2	sw
23.840.1212	MF12	1.25	100	22	9	7
23.840.1215	MF12	1.5	100	22	9	7
23.840.1310	MF13	1	100	22	11	9
23.840.1410	MF14	1	100	22	11	9
23.840.1412	MF14	1.25	100	22	11	9
23.840.1415	MF14	1.5	100	22	11	9
23.840.1510	MF15	1	100	22	12	9
23.840.1515	MF15	1.5	100	22	12	9
23.840.1610	MF16	1	100	22	12	9
23.840.1615	MF16	1.5	100	22	12	9
23.840.1810	MF18	1	110	25	14	11
23.840.1815	MF18	1.5	110	25	14	11

Ref.	d1	P	l1	l2	d2	sw
23.840.1820	MF18	2	125	30	14	11
23.840.2010	MF20	1	125	25	16	12
23.840.2015	MF20	1.5	125	25	16	12
23.840.2020	MF20	2	140	32	16	12
23.840.2210	MF22	1	125	25	18	14.5
23.840.2215	MF22	1.5	125	25	18	14.5
23.840.2220	MF22	2	140	32	18	14.5
23.840.2410	MF24	1	140	28	18	14.5
23.840.2415	MF24	1.5	140	28	18	14.5
23.840.2420	MF24	2	140	28	18	14.5
23.840.2515	MF25	1.5	140	28	18	14.5
23.840.2615	MF26	1.5	140	28	18	14.5

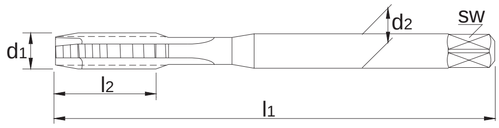
› 23.840 Phantom

Ref.	d1	P	l1	l2	d2	sw
23.840.2715	MF27	1.5	140	28	20	16
23.840.2720	MF27	2	140	28	20	16
23.840.2815	MF28	1.5	140	28	20	16
23.840.3010	MF30	1	150	28	22	18
23.840.3015	MF30	1.5	150	28	22	18
23.840.3020	MF30	2	150	28	22	18
23.840.3215	MF32	1.5	150	28	22	18
23.840.3315	MF33	1.5	160	30	25	20
23.840.3320	MF33	2	160	30	25	20
23.840.3515	MF35	1.5	170	30	28	22
23.840.3615	MF36	1.5	170	30	28	22
23.840.3620	MF36	2	170	30	28	22
23.840.3630	MF36	3	200	50	28	22
23.840.4015	MF40	1.5	170	30	32	24

› 23.868 Phantom



NL HP2 UNI HSS-E PM Machinetap Metrisch Fijn, HARDLUBE
FR Taraud machine HSS-E PM HP2 UNI Métrique Fin, HARDLUBE
ES Macho máquina HSS-E PM HP2 UNI Métrica Fina, HARDLUBE
DE HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch Fein, HARDLUBE
EN HP2 UNI HSS-E PM Machine Tap Metric Fine, HARDLUBE



HSS-E PM | MF | 60° | HARD LUBE | DIN 374 | 2,5xD | 50° | FormC 2-3 | ISO 2 6H | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

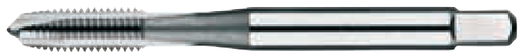
Ref.	d1	P	l1	l2	d2	sw
23.868.0810	MF8	1	90	20	6	4.9
23.868.1010	MF10	1	90	16	7	5.5
23.868.1012	MF10	1.25	100	22	7	5.5
23.868.1210	MF12	1	100	22	9	7
23.868.1212	MF12	1.25	100	22	9	7
23.868.1215	MF12	1.5	100	22	9	7
23.868.1412	MF14	1.25	100	22	11	9
23.868.1415	MF14	1.5	100	22	11	9
23.868.1615	MF16	1.5	100	22	12	9
23.868.1815	MF18	1.5	110	25	14	11
23.868.2015	MF20	1.5	125	25	16	12
23.868.2215	MF22	1.5	125	25	18	14.5
23.868.2415	MF24	1.5	140	28	18	14.5
23.868.2420	MF24	2	140	28	18	14.5

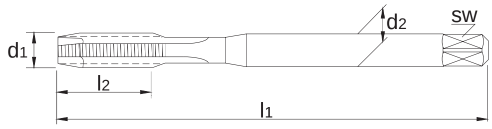
NL Hardlube gecoate HP2 Machinetappen in actie
FR Les tarauds machine HP2 revêtus de HARDLUBE en action
ES Los machos de roscar a máquina con recubrimiento Hardlube HP2 en acción
DE Hardlube-beschichtete HP2-Maschinengewindebohrer
EN Hardlube-coated HP2 Machine Taps in Action

Watch me

www.phantom.eu

› 24.120 Phantom





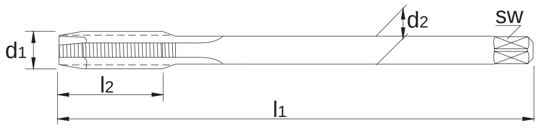
NL UNI HSS-E Machinetap UNC
FR Taraud machine HSS-E UNI UNC
ES Macho máquina HSS-E UNI UNC
DE UNI HSS-E Maschinengewindebohrer UNC
EN UNI HSS-E Machine Tap UNC

HSS-E | UNC | 60° | DIN 371 | 3xD | FormB 3,5-5 | 2B | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.120.0284	UNC Nr. 4	40	56	11	3.5	2.7
24.120.0317	UNC Nr. 5	40	56	11	3.5	2.7
24.120.0350	UNC Nr. 6	32	56	13	4	3
24.120.0416	UNC Nr. 8	32	63	13	4.5	3.4
24.120.0482	UNC Nr. 10	24	70	15	6	4.9
24.120.0548	UNC Nr. 12	24	80	19	6	4.9
24.120.0635	UNC 1/4	20	80	19	7	5.5
24.120.0794	UNC 5/16	18	90	22	8	6.2
24.120.0952	UNC 3/8	16	100	22	9	7

› 24.121 Phantom



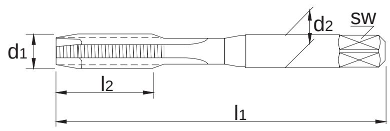
NL UNI HSS-E Machinetap UNC
FR Taraud machine HSS-E UNI UNC
ES Macho máquina HSS-E UNI UNC
DE UNI HSS-E Maschinengewindebohrer UNC
EN UNI HSS-E Machine Tap UNC

HSS-E | UNC | 60° | DIN 376 | 3xD | FormB 3,5-5 | 2B | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.121.1111	UNC 7/16	14	100	22	8	6.2
24.121.1270	UNC 1/2	13	110	24	9	7
24.121.1429	UNC 9/16	12	110	26	11	9
24.121.1588	UNC 5/8	11	110	27	12	9
24.121.1905	UNC 3/4	10	125	30	14	11
24.121.2222	UNC 7/8	9	140	32	18	14.5
24.121.2540	UNC 1	8	160	36	18	14.5

› 24.125 Phantom



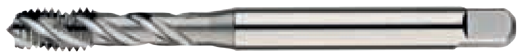
NL HSS Machinetap UNC
FR Taraud machine HSS UNC
ES Macho máquina HSS UNC
DE HSS Maschinengewindebohrer UNC
EN HSS Machine Tap UNC

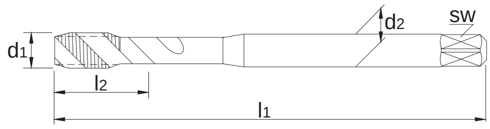
HSS | UNC | 60° | NFE 66104 | ISO 529 | 2,5xD | FormB 3,5-5 | 2B

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	3-6	15-20	5-12

Ref.	d1	TPI	l1	l2	d2	sw
24.125.0482	UNC Nr. 10	24	58	16	5	4
24.125.0635	UNC 1/4	20	66	19	6.3	5
24.125.0794	UNC 5/16	18	72	22	8	6.3
24.125.0952	UNC 3/8	16	80	24	10	8
24.125.1111	UNC 7/16	14	85	25	8	6.3
24.125.1270	UNC 1/2	13	89	29	9	7.1
24.125.1429	UNC 9/16	12	95	30	11.2	9
24.125.1588	UNC 5/8	11	102	32	12.5	10
24.125.1905	UNC 3/4	10	112	37	14	11.2
24.125.2222	UNC 7/8	9	118	38	16	12.5
24.125.2540	UNC 1	8	130	45	18	14
24.125.2858	UNC 1.1/8	7	138	48	20	16
24.125.3175	UNC 1.1/4	7	151	51	22.4	18
24.125.3810	UNC 1.1/2	6	170	60	28	22.4

› 24.340 Phantom





NL UNI HSS-E Machinetap UNC
FR Taraud machine HSS-E UNI UNC
ES Macho máquina HSS-E UNI UNC
DE UNI HSS-E Maschinengewindebohrer UNC
EN UNI HSS-E Machine Tap UNC

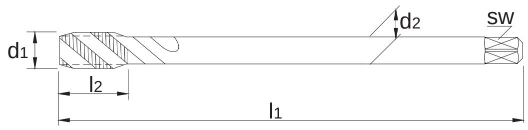
HSS-E | UNC | 60° | DIN 371 | 2,5xD | 40° | FormC 2-3 | 2B | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.340.0285	UNC Nr. 4	40	56	5	3.5	2.7
24.340.0317	UNC Nr. 5	40	56	6	3.5	2.7
24.340.0350	UNC Nr. 6	32	56	6	4	3
24.340.0416	UNC Nr. 8	32	63	7	4.5	3.4
24.340.0482	UNC Nr. 10	24	70	8	6	4.9

Ref.	d1	TPI	l1	l2	d2	sw
24.340.0548	UNC Nr. 12	24	80	10	6	4.9
24.340.0635	UNC 1/4	20	80	10	7	5.5
24.340.0794	UNC 5/16	18	90	13	8	6.2
24.340.0952	UNC 3/8	16	100	16	9	7

› 24.341 Phantom



NL UNI HSS-E Machinetap UNC
FR Taraud machine HSS-E UNI UNC
ES Macho máquina HSS-E UNI UNC
DE UNI HSS-E Maschinengewindebohrer UNC
EN UNI HSS-E Machine Tap UNC

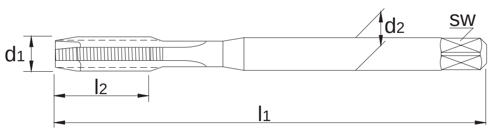
HSS-E | UNC | 60° | DIN 376 | 2,5xD | 40° | FormC 2-3 | 2B | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.341.1111	UNC 7/16	14	100	15	8	6.2
24.341.1270	UNC 1/2	13	110	18	9	7
24.341.1429	UNC 9/16	12	110	20	11	9
24.341.1588	UNC 5/8	11	110	20	12	9

Ref.	d1	TPI	l1	l2	d2	sw
24.341.1905	UNC 3/4	10	125	25	14	11
24.341.2222	UNC 7/8	9	140	28	18	14.5
24.341.2540	UNC 1	8	160	32	18	14.5

› 24.520 Phantom



NL UNI HSS-E Machinetap UNF
FR Taraud machine HSS-E UNI UNF
ES Macho máquina HSS-E UNI UNF
DE UNI HSS-E Maschinengewindebohrer UNF
EN UNI HSS-E Machine Tap UNF

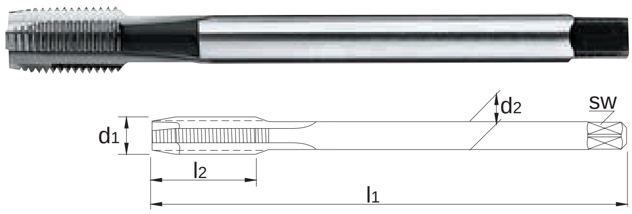
HSS-E | UNF | 60° | DIN 371 | 3xD | FormB 3,5-5 | 2B | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.520.0285	UNF Nr. 4	48	56	11	3.5	2.7
24.520.0317	UNF Nr. 5	44	56	11	3.5	2.7
24.520.0350	UNF Nr. 6	40	56	13	4	3
24.520.0416	UNF Nr. 8	36	63	13	4.5	3.4
24.520.0482	UNF Nr. 10	32	70	16	6	4.9

Ref.	d1	TPI	l1	l2	d2	sw
24.520.0548	UNF Nr. 12	28	80	19	6	4.9
24.520.0635	UNF 1/4	28	80	19	7	5.5
24.520.0794	UNF 5/16	24	90	22	8	6.2
24.520.0952	UNF 3/8	24	100	18	9	7

› 24.521 Phantom



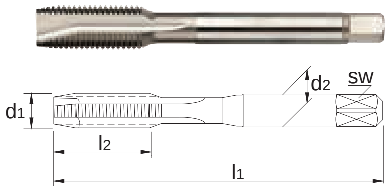
NL UNI HSS-E Machinetap UNF
FR Taraud machine HSS-E UNI UNF
ES Macho máquina HSS-E UNI UNF
DE UNI HSS-E Maschinengewindebohrer UNF
EN UNI HSS-E Machine Tap UNF

HSS-E | UNF | 60° | DIN 376 | 3xD | FormB 3,5-5 | 2B | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.521.1111	UNF 7/16	20	100	22	8	6.2
24.521.1270	UNF 1/2	20	110	28	9	7
24.521.1429	UNF 9/16	18	110	32	11	9
24.521.1588	UNF 5/8	18	110	32	12	9
24.521.1905	UNF 3/4	16	125	34	14	11
24.521.2222	UNF 7/8	14	140	34	18	14.5
24.521.2540	UNF 1	12	160	38	18	14.5

› 24.525 Phantom



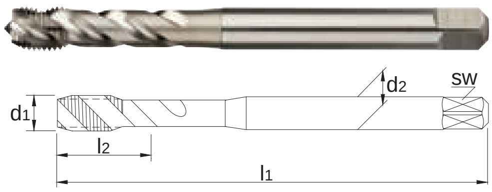
NL HSS Machinetap UNF
FR Taraud machine HSS UNF
ES Macho máquina HSS UNF
DE HSS Maschinengewindebohrer UNF
EN HSS Machine Tap UNF

HSS | UNF | 60° | NFE 66104 | ISO 529 | 2,5xD | FormB 3,5-5 | 2B

P 11	P 12	K 32	N 41	N 52
≤600 N/mm²	≤850 N/mm²	GGG GTS-GTW	Alu	CuAlFe
12-17	10-15	3-6	15-20	5-12

Ref.	d1	TPI	l1	l2	d2	sw
24.525.0482	UNF Nr. 10	32	58	16	5	4
24.525.0635	UNF 1/4	28	66	19	6.3	5
24.525.0794	UNF 5/16	24	72	22	8	6.3
24.525.0952	UNF 3/8	24	80	24	10	8
24.525.1111	UNF 7/16	20	85	25	8	6.3
24.525.1270	UNF 1/2	20	89	29	9	7.1
24.525.1588	UNF 5/8	18	102	32	12.5	10
24.525.1905	UNF 3/4	16	112	37	14	11.2
24.525.2222	UNF 7/8	14	118	38	16	12.5
24.525.2540	UNF 1	12	120	35	18	14
24.525.2858	UNF 1.1/8	12	127	37	20	16

› 24.740 Phantom



NL UNI HSS-E Machinetap UNF
FR Taraud machine HSS-E UNI UNF
ES Macho máquina HSS-E UNI UNF
DE UNI HSS-E Maschinengewindebohrer UNF
EN UNI HSS-E Machine Tap UNF

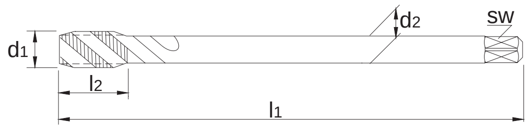
HSS-E | UNF | 60° | DIN 371 | 2,5xD | 40° | FormC 2-3 | 2B | UNI

P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.740.0285	UNF Nr. 4	48	56	5	3.5	2.7
24.740.0317	UNF Nr. 5	44	56	6	3.5	2.7
24.740.0350	UNF Nr. 6	40	56	6	4	3
24.740.0416	UNF Nr. 8	36	63	7	4.5	3.4
24.740.0482	UNF Nr. 10	32	70	8	6	4.9
24.740.0548	UNF Nr. 12	28	80	10	6	4.9
24.740.0635	UNF 1/4	28	80	10	7	5.5
24.740.0794	UNF 5/16	24	90	13	8	6.2
24.740.0952	UNF 3/8	24	100	10	9	7

› 24.741 Phantom

NL UNI HSS-E Machinetap UNF
FR Taraud machine HSS-E UNI UNF
ES Macho máquina HSS-E UNI UNF
DE UNI HSS-E Maschinengewindebohrer UNF
EN UNI HSS-E Machine Tap UNF



HSS-E | UNF | 60° | DIN 376 | 2,5xD | 40° | FormC 2-3 | 2B | UNI

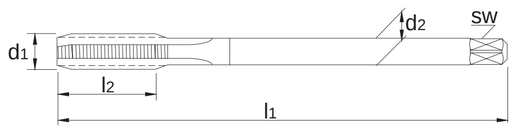
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
24.741.1111	UNF 7/16	20	100	15	8	6.2
24.741.1270	UNF 1/2	20	110	18	9	7
24.741.1429	UNF 9/16	18	110	20	11	9
24.741.1588	UNF 5/8	18	110	20	12	9

Ref.	d1	TPI	l1	l2	d2	sw
24.741.1905	UNF 3/4	16	125	25	14	11
24.741.2222	UNF 7/8	14	140	28	18	14.5
24.741.2540	UNF 1	12	160	32	18	14.5

› 24.991 Phantom

NL HSS-E Machinetap UNEF
FR Taraud machine HSS-E UNEF
ES Macho máquina HSS-E UNEF
DE HSS-E Maschinengewindebohrer UNEF
EN HSS-E Machine Tap UNEF



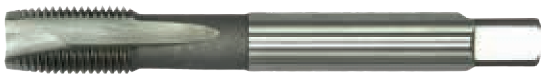
HSS-E | UNEF | 60° | DIN 374 | 15xD | FormB 3,5-5 | 2B

P 11	P 12	P 13	M 21	M 22	K 31	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	Alu
15-20	12-18	10-15	7-10	5-8	10-15	25-35

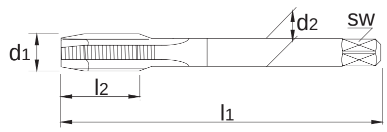
Ref.	d1	TPI	l1	l2	d2	sw
24.991.0635	UNEF 1/4	32	80	16	7	5.5
24.991.0794	UNEF 5/16	32	90	18	8	6.2
24.991.0952	UNEF 3/8	32	90	16	7	5.5
24.991.1111	UNEF 7/16	28	100	16	9	7
24.991.1270	UNEF 1/2	28	100	16	9	7

Ref.	d1	TPI	l1	l2	d2	sw
24.991.1429	UNEF 9/16	24	100	16	11	9
24.991.1588	UNEF 5/8	24	100	16	12	9
24.991.1905	UNEF 3/4	20	110	25	14	11
24.991.2222	UNEF 7/8	20	140	25	18	14.5
24.991.2540	UNEF 1	20	140	28	20	16

› 25.095 International Tools



NL ECO PRO HSS-E Machinetap G (BSP)
FR Taraud machine HSS-E ECO PRO G (BSP)
ES Macho máquina HSS-E ECO PRO G (BSP)
DE ECO PRO HSS-E Maschinengewindebohrer G (BSP)
EN ECO PRO HSS-E Machine Tap G (BSP)



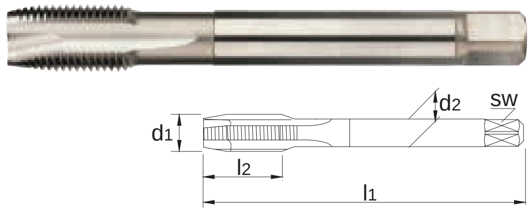
HSS-E | BSP G | 55° | DIN 5156 | 15xD | FormB 3,5-5 | ECO PRO

P 11	P 12	K 31	N 41
≤600 N/mm²	≤850 N/mm²	GG	Alu
15-20	12-18	10-15	23-35

Ref.	d1	TPI	l1	l2	d2	sw
25.095.0973	G 1/8	28	90	20	7	5.5
25.095.1316	G 1/4	19	100	22	11	9
25.095.1666	G 3/8	19	100	22	12	9

Ref.	d1	TPI	l1	l2	d2	sw
25.095.2096	G 1/2	14	125	25	16	12
25.095.2644	G 3/4	14	140	28	20	16
25.095.3325	G 1	11	160	30	25	20

› 25.097 Phantom



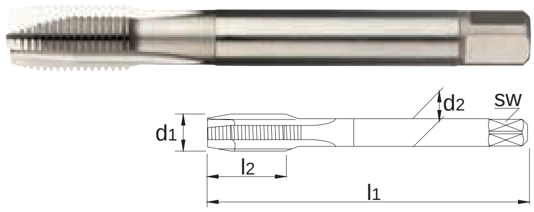
NL UNI HSS-E Machinetap G (BSP)
FR Taraud machine HSS-E UNI G (BSP)
ES Macho máquina HSS-E UNI G (BSP)
DE UNI HSS-E Maschinengewindebohrer G (BSP)
EN UNI HSS-E Machine Tap G (BSP)

HSS-E | BSP G | 55° | DIN 5156 | 3xD | FormB 3,5-5 | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
25.097.0973	G 1/8	28	90	20	7	5.5
25.097.1316	G 1/4	19	100	22	11	9
25.097.1666	G 3/8	19	100	22	12	9
25.097.2096	G 1/2	14	125	25	16	12
25.097.2291	G 5/8	14	125	25	18	14.5
25.097.2644	G 3/4	14	140	28	20	16
25.097.3020	G 7/8	14	150	28	22	18
25.097.3325	G 1	11	160	30	25	20
25.097.3790	G 1.1/8	11	170	30	28	22
25.097.4191	G 1.1/4	11	170	30	32	24
25.097.4780	G 1.1/2	11	190	32	36	29

› 25.100 Phantom



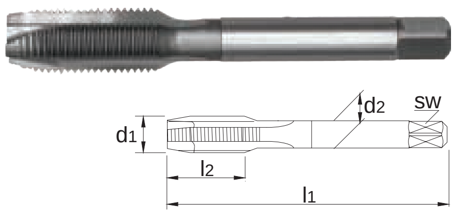
NL HSS-E Machinetap G (BSP)
FR Taraud machine HSS-E G (BSP)
ES Macho máquina HSS-E G (BSP)
DE HSS-E Maschinengewindebohrer G (BSP)
EN HSS-E Machine Tap G (BSP)

HSS-E | BSP G | 55° | DIN 5156 | 3xD | FormB 3,5-5

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
15-20	10-20	5-15	10-35	10-20	8-35	20-30

Ref.	d1	TPI	l1	l2	d2	sw
25.100.0973	G 1/8	28	90	20	7	5.5
25.100.1316	G 1/4	19	100	22	11	9
25.100.1666	G 3/8	19	100	22	12	9
25.100.2096	G 1/2	14	125	25	16	12
25.100.2291	G 5/8	14	125	25	18	14.5
25.100.2644	G 3/4	14	140	28	20	16
25.100.3020	G 7/8	14	150	28	22	18
25.100.3325	G 1	11	160	30	25	20
25.100.3790	G 1.1/8	11	170	30	28	22
25.100.4191	G 1.1/4	11	170	30	32	24
25.100.4780	G 1.1/2	11	190	32	36	29

› 25.105 Phantom



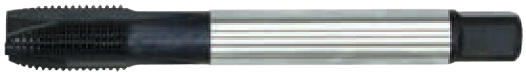
NL HSS Machinetap G (BSP)
FR Taraud machine HSS G (BSP)
ES Macho máquina HSS G (BSP)
DE HSS Maschinengewindebohrer G (BSP)
EN HSS Machine Tap G (BSP)

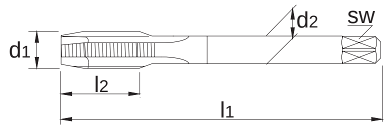
HSS | BSP G | 55° | NFE 66103 | ISO 529 | 2,5xD | FormB 3,5-5

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu
12-17	10-15	3-6	15-20

Ref.	d1	TPI	l1	l2	d2	sw
25.105.0973	G 1/8	28	80	24	10	8
25.105.1316	G 1/4	19	89	29	9	7.1
25.105.1666	G 3/8	19	102	32	12.5	10
25.105.2096	G 1/2	14	112	37	14	11.2
25.105.2291	G 5/8	14	118	38	18	14
25.105.2644	G 3/4	14	127	37	20	16
25.105.3020	G 7/8	14	137	37	22.4	18
25.105.3325	G 1	11	127	37	22.4	18
25.105.4191	G 1.1/4	11	149	39	28	22.4
25.105.4780	G 1.1/2	11	169	45	31.5	25
25.105.5961	G 2	11	193	43	40	31.5

› 25.160 *Phantom*





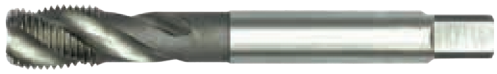
NL HSS-E Machinetap stoomontlaten, roestvaststaal G (BSP)
FR Taraud machine HSS-E vaporisé, Inox G (BSP)
ES Macho máquina HSS-E vaporizado, acero inoxidable G (BSP)
DE HSS-E Maschinengewindebohrer dampfangelassen, rostfreien Stahl G (BSP)
EN HSS-E Machine Tap steam oxide, stainless steel G (BSP)

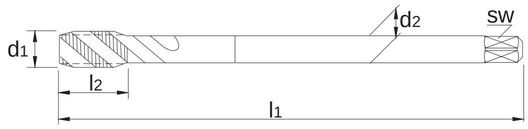
HSS-E	BSP G	55°	OX.	DIN 5156	2xD		FormB 3,5-5	INOX

P 11	P 12	M 21	M 22
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²
15-20	10-20	7-10	4-8

Ref.	d1	TPI	l1	l2	d2	sw
25.160.0973	G 1/8	28	90	20	7	5.5
25.160.1316	G 1/4	19	100	22	11	9
25.160.1666	G 3/8	19	100	22	12	9
25.160.2096	G 1/2	14	125	25	16	12

› 25.295 *International Tools*





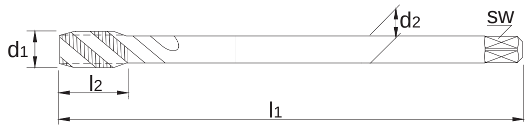
NL ECO PRO HSS-E Machinetap G (BSP)
FR Taraud machine HSS-E ECO PRO G (BSP)
ES Macho máquina HSS-E ECO PRO G (BSP)
DE ECO PRO HSS-E Maschinengewindebohrer G (BSP)
EN ECO PRO HSS-E Machine Tap G (BSP)

HSS-E	BSP G	55°	DIN 5156	2xD		35°	FormC 2-3	ECO PRO

P 11	P 12	K 31	N 41
≤600 N/mm²	≤850 N/mm²	GG	Alu
15-20	12-18	10-15	23-35

Ref.	d1	TPI	l1	l2	d2	sw
25.295.0973	G 1/8	28	90	20	7	5.5
25.295.1316	G 1/4	19	100	22	11	9
25.295.1666	G 3/8	19	100	22	12	9
25.295.2096	G 1/2	14	125	25	16	12
25.295.2644	G 3/4	14	140	28	20	16
25.295.3325	G 1	11	160	30	25	20

› 25.297 *Phantom*



NL UNI HSS-E Machinetap G (BSP)
FR Taraud machine HSS-E UNI G (BSP)
ES Macho máquina HSS-E UNI G (BSP)
DE UNI HSS-E Maschinengewindebohrer G (BSP)
EN UNI HSS-E Machine Tap G (BSP)

HSS-E	BSP G	55°	DIN 5156	2,5xD		40°	FormC 2-3	UNI

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	TPI	l1	l2	d2	sw
25.297.0973	G 1/8	28	90	20	7	5.5
25.297.1316	G 1/4	19	100	22	11	9
25.297.1666	G 3/8	19	100	22	12	9
25.297.2096	G 1/2	14	125	25	16	12
25.297.2291	G 5/8	14	125	25	18	14.5
25.297.2644	G 3/4	14	140	28	20	16
25.297.3020	G 7/8	14	150	28	22	18
25.297.3325	G 1	11	160	30	25	20
25.297.3790	G 1.1/8	11	170	30	28	22
25.297.4191	G 1.1/4	11	170	30	32	24
25.297.4780	G 1.1/2	11	190	32	36	29

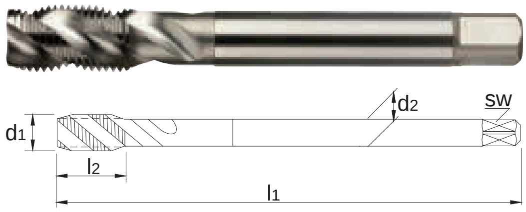
NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me

www.phantom.eu

1 SC
1 HSS(-E)
2

› 25.300 Phantom



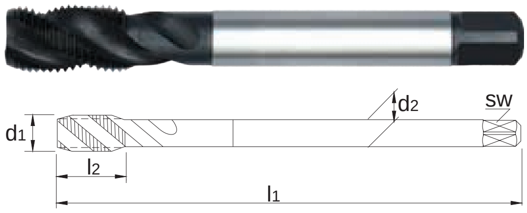
NL **HSS-E Machinetap G (BSP)**
FR **Taraud machine HSS-E G (BSP)**
ES **Macho máquina HSS-E G (BSP)**
DE **HSS-E Maschinengewindebohrer G (BSP)**
EN **HSS-E Machine Tap G (BSP)**

HSS-E | BSP G | 55° | DIN 5156 | 2,5xD | 40° | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
15-20	10-20	5-15	10-35	10-20	8-35	20-30

Ref.	d1	TPI	l1	l2	d2	sw
25.300.0973	G 1/8	28	90	20	7	5.5
25.300.1316	G 1/4	19	100	22	11	9
25.300.1666	G 3/8	19	100	22	12	9
25.300.2096	G 1/2	14	125	25	16	12
25.300.2291	G 5/8	14	125	25	18	14.5
25.300.2644	G 3/4	14	140	28	20	16
25.300.3020	G 7/8	14	150	28	22	18
25.300.3325	G 1	11	160	30	25	20
25.300.3790	G 1.1/8	11	170	30	28	22
25.300.4191	G 1.1/4	11	170	30	32	24
25.300.4780	G 1.1/2	11	190	32	36	29

› 25.360 Phantom



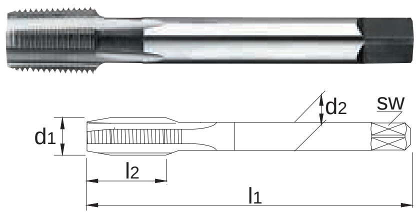
NL **HSS-E Machinetap stoomontlaten, roestvaststaal G (BSP)**
FR **Taraud machine HSS-E vaporisé, Inox G (BSP)**
ES **Macho máquina HSS-E vaporizado, acero inoxidable G (BSP)**
DE **HSS-E Maschinengewindebohrer dampfangelassen, rostfreien Stahl G (BSP)**
EN **HSS-E Machine Tap steam oxide, stainless steel G (BSP)**

HSS-E | BSP G | 55° | OX. | DIN 5156 | 2,5xD | 40° | FormC 2-3 | INOX

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²
15-20	10-20	7-10	4-8

Ref.	d1	TPI	l1	l2	d2	sw
25.360.0973	G 1/8	28	90	20	7	5.5
25.360.1316	G 1/4	19	100	22	11	9
25.360.1666	G 3/8	19	100	22	12	9
25.360.2096	G 1/2	14	125	25	16	12

› 25.480 Phantom



NL **HSS-E Machinetap Rc (BSPT)**
FR **Taraud machine HSS-E Rc (BSPT)**
ES **Macho máquina HSS-E Rc (BSPT)**
DE **HSS-E Maschinengewindebohrer Rc (BSPT)**
EN **HSS-E Machine Tap Rc (BSPT)**

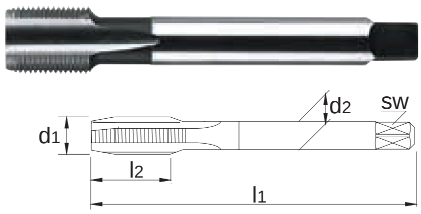
HSS-E | BSPT Rc | 55° | DIN 5156 | 1:16 | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	7-10	5-8	10-15	25-35

Ref.	d1	TPI	l1	l2	d2	sw
25.480.0973	Rc 1/8	28	90	20	7	5.5
25.480.1316	Rc 1/4	19	100	22	11	9
25.480.1666	Rc 3/8	19	100	22	12	9
25.480.2096	Rc 1/2	14	125	25	16	12
25.480.2644	Rc 3/4	14	140	28	20	16
25.480.3325	Rc 1	11	160	30	25	20

› 25.500 Phantom

NL HSS-E Machinetap Rp (BSPP)
FR Taraud machine HSS-E Rp (BSPP)
ES Macho máquina HSS-E Rp (BSPP)
DE HSS-E Maschinengewindebohrer Rp (BSPP)
EN HSS-E Machine Tap Rp (BSPP)



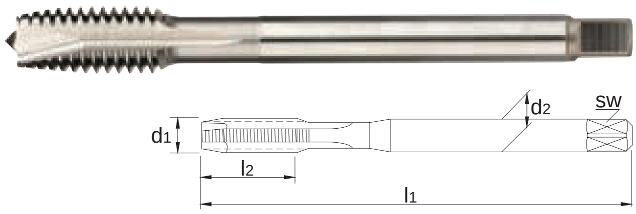
HSS-E | BSPP Rp | 55° | ISO 228-1 | DIN 5156 | 2 xD | 1,5 xD | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	7-10	5-8	10-15	25-35

Ref.	d1	TPI	l1	l2	d2	sw
25.500.0973	Rp 1/8	28	90	20	7	5.5
25.500.1316	Rp 1/4	19	100	22	11	9
25.500.1666	Rp 3/8	19	100	22	12	9
25.500.2096	Rp 1/2	14	125	25	16	12
25.500.2644	Rp 3/4	14	140	28	20	16
25.500.3325	Rp 1	11	160	30	25	20

› 25.520 Phantom

NL HSS-E Machinetap BSW (Whitworth)
FR Taraud machine HSS-E BSW (Whitworth)
ES Macho máquina HSS-E BSW (Whitworth)
DE HSS-E Maschinengewindebohrer BSW (Whitworth)
EN HSS-E Machine Tap BSW (Whitworth)



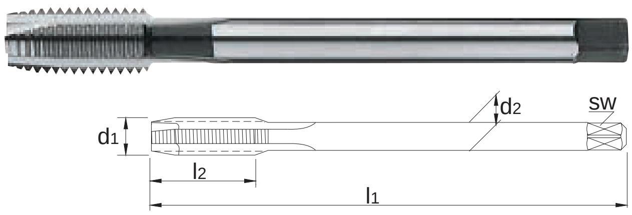
HSS-E | BSW | 55° | DIN 2182 | 3xD | FormB 3,5-5

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.520.0317	BSW 1/8	40	56	11	3.5	2.7
25.520.0397	BSW 5/32	32	63	13	4.5	3.4
25.520.0476	BSW 3/16	24	70	15	6	4.9
25.520.0556	BSW 7/32	24	80	16	6	4.9
25.520.0635	BSW 1/4	20	80	17	7	5.5
25.520.0794	BSW 5/16	18	90	20	8	6.2
25.520.0952	BSW 3/8	16	100	24	9	7

› 25.521 Phantom

NL HSS-E Machinetap BSW (Whitworth)
FR Taraud machine HSS-E BSW (Whitworth)
ES Macho máquina HSS-E BSW (Whitworth)
DE HSS-E Maschinengewindebohrer BSW (Whitworth)
EN HSS-E Machine Tap BSW (Whitworth)

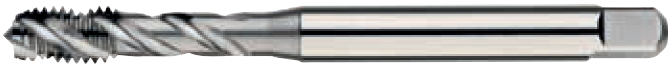


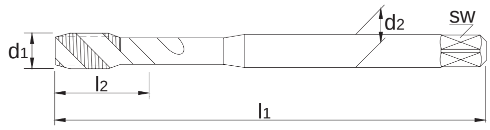
HSS-E | BSW | 55° | DIN 2183 | 3xD | FormB 3,5-5

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.521.1111	BSW 7/16	14	100	22	8	6.2
25.521.1270	BSW 1/2	12	110	24	9	7
25.521.1429	BSW 9/16	12	110	26	11	9
25.521.1588	BSW 5/8	11	110	27	12	9
25.521.1905	BSW 3/4	10	125	30	14	11
25.521.2222	BSW 7/8	9	140	32	18	14.5
25.521.2540	BSW 1	8	160	36	20	16

› 25.640 Phantom





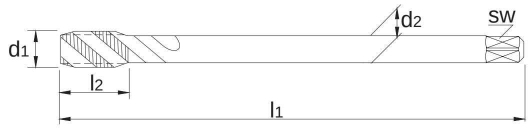
NL **HSS-E Machinetap BSW (Whitworth)**
FR **Taraud machine HSS-E BSW (Whitworth)**
ES **Macho máquina HSS-E BSW (Whitworth)**
DE **HSS-E Maschinengewindebohrer BSW (Whitworth)**
EN **HSS-E Machine Tap BSW (Whitworth)**

HSS-E | BSW | 55° | DIN 2182 | 2,5xD | 40° | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.640.0317	BSW 1/8	40	56	5	3.5	2.7
25.640.0397	BSW 5/32	32	63	7	4.5	3.4
25.640.0476	BSW 3/16	24	70	8	6	4.9
25.640.0635	BSW 1/4	20	80	10	7	5.5
25.640.0794	BSW 5/16	18	90	12	8	6.2
25.640.0952	BSW 3/8	16	100	16	9	7

› 25.641 Phantom



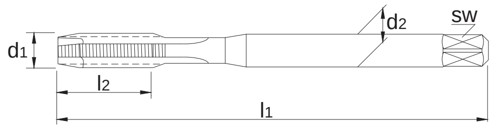
NL **HSS-E Machinetap BSW (Whitworth)**
FR **Taraud machine HSS-E BSW (Whitworth)**
ES **Macho máquina HSS-E BSW (Whitworth)**
DE **HSS-E Maschinengewindebohrer BSW (Whitworth)**
EN **HSS-E Machine Tap BSW (Whitworth)**

HSS-E | BSW | 55° | DIN 2183 | 2,5xD | 40° | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.641.1111	BSW 7/16	14	100	14	8	6.2
25.641.1270	BSW 1/2	12	110	16	9	7
25.641.1429	BSW 9/16	12	110	20	11	9
25.641.1588	BSW 5/8	11	110	20	12	9
25.641.1905	BSW 3/4	10	125	25	14	11
25.641.2222	BSW 7/8	9	140	28	18	14.5
25.641.2540	BSW 1	8	160	30	20	16

› 25.720 Phantom



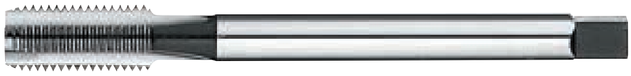
NL **HSS-E Machinetap BSF**
FR **Taraud machine HSS-E BSF**
ES **Macho máquina HSS-E BSF**
DE **HSS-E Maschinengewindebohrer BSF**
EN **HSS-E Machine Tap BSF**

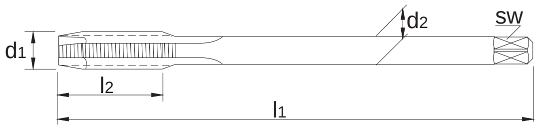
HSS-E | BSF | 55° | DIN 371 | 2 xD | 1,5 xD | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.720.0635	BSF 1/4	26	80	17	7	5.5
25.720.0794	BSF 5/16	22	90	20	8	6.2

› 25.721 Phantom





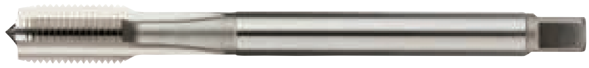
NL HSS-E Machinetap BSF
FR Taraud machine HSS-E BSF
ES Macho máquina HSS-E BSF
DE HSS-E Maschinengewindebohrer BSF
EN HSS-E Machine Tap BSF

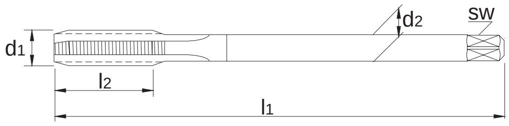
HSS-E | BSF | 55° | DIN 376 | 2 xD | 1,5 xD | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.721.0952	BSF 3/8	20	100	22	7	5.5
25.721.1111	BSF 7/16	18	100	22	8	6.2
25.721.1270	BSF 1/2	16	110	24	9	7
25.721.1588	BSF 5/8	14	110	27	12	9
25.721.1905	BSF 3/4	12	125	30	14	11
25.721.2222	BSF 7/8	11	140	32	18	14.5
25.721.2540	BSF 1	10	160	36	18	14.5

› 25.760 Phantom





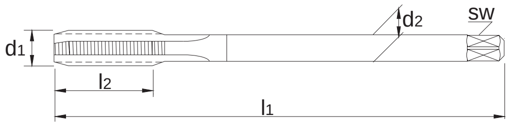
NL HSS-E Machinetap FG (Rijwieldraad)
FR Taraud machine HSS-E FG (filetage bicyclette)
ES Macho máquina HSS-E FG (rosca bicicleta)
DE HSS-E Maschinengewindebohrer FG (Fahrradgewinde)
EN HSS-E Machine Tap FG (cycle thread)

HSS-E | FG | 60° | DIN 79012 | DIN 374 | 2 xD | 1,5 xD | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.760.0635	FG 6,35	26	80	16	6	4.9
25.760.0790	FG 7,9	26	90	16	8	6.2
25.760.0950	FG 9,5	26	90	16	7	5.5
25.760.1430	FG 14,3	20	100	11	11	9
25.760.2540	FG 25,4	24	140	18	18	14.5

› 25.820 Phantom



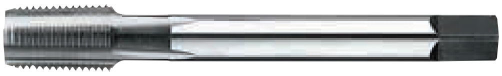
NL HSS-E Machinetap NPT
FR Taraud machine HSS-E NPT
ES Macho máquina HSS-E NPT
DE HSS-E Maschinengewindebohrer NPT
EN HSS-E Machine Tap NPT

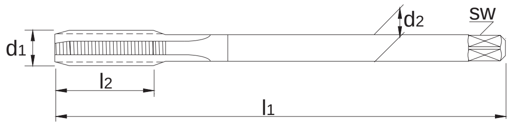
HSS-E | NPT | 60° | DIN 374 | 1:16 | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.820.0794	NPT 1/16	27	90	14	6	4.9
25.820.1029	NPT 1/8	27	90	20	7	5.5
25.820.1372	NPT 1/4	18	100	22	11	9
25.820.1715	NPT 3/8	18	110	22	12	9
25.820.2134	NPT 1/2	14	140	25	16	12
25.820.2667	NPT 3/4	14	140	28	20	16
25.820.3340	NPT 1	11.5	160	30	25	20
25.820.4216	NPT 1.1/4	11.5	170	33	32	24
25.820.4826	NPT 1.1/2	11.5	190	33	36	29
25.820.6033	NPT 2	11.5	225	33	45	35

› 25.840 Phantom





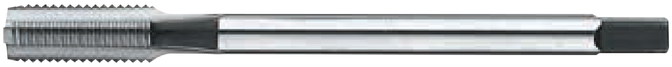
NL HSS-E Machinetap NPTF
FR Taraud machine HSS-E NPTF
ES Macho máquina HSS-E NPTF
DE HSS-E Maschinengewindebohrer NPTF
EN HSS-E Machine Tap NPTF

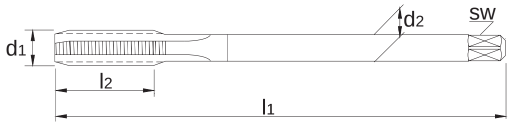
HSS-E | NPTF | 60° | DIN 374 | 1:16 | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.840.0794	NPTF 1/16	27	90	14	6	4.9
25.840.1029	NPTF 1/8	27	90	20	7	5.5
25.840.1372	NPTF 1/4	18	100	22	11	9
25.840.1715	NPTF 3/8	18	110	22	12	9
25.840.2134	NPTF 1/2	14	140	25	16	12
25.840.2667	NPTF 3/4	14	140	28	20	16
25.840.3340	NPTF 1	11.5	160	30	25	20

› 25.900 Phantom





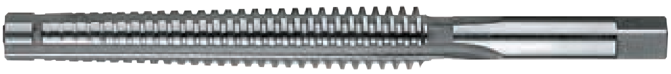
NL HSS-E Machinetap PG
FR Taraud machine HSS-E PG
ES Macho máquina HSS-E PG
DE HSS-E Maschinengewindebohrer PG
EN HSS-E Machine Tap PG

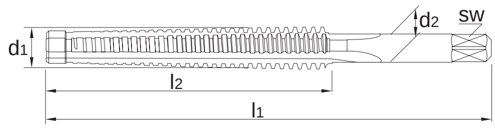
HSS-E | PG | 80° | DIN 40433 | FormC 2-3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	TPI	l1	l2	d2	sw
25.900.0700	PG 7	20	100	22	9	7
25.900.0900	PG 9	18	100	22	12	9
25.900.1100	PG 11	18	110	25	14	11
25.900.1350	PG 13,5	18	125	25	16	12
25.900.1600	PG 16	18	125	25	18	14.5
25.900.2100	PG 21	16	150	28	22	18
25.900.2900	PG 29	16	170	30	28	22
25.900.3600	PG 36	16	190	32	36	29

› 25.950 Phantom





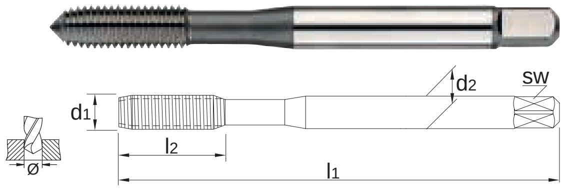
NL HSS-E Machinetap Trapezium
FR Taraud machine HSS-E Trapézoïdal
ES Macho máquina HSS-E Trapezoidal
DE HSS-E Maschinengewindebohrer Trapezgewinde (Regel)
EN HSS-E Machine Tap Trapezoidal

HSS-E | Tr | 30° | DIN 103 | 2xD | 7H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	P	l1	l2	d2	sw
25.950.1203	Tr 12	3	165	115	8	6.2
25.950.1403	Tr 14	3	170	115	10	8
25.950.1404	Tr 14	4	200	135	10	8
25.950.1604	Tr 16	4	210	135	11	9
25.950.1804	Tr 18	4	220	135	13	10
25.950.2004	Tr 20	4	225	140	15	12
25.950.2205	Tr 22	5	260	170	16	12
25.950.2405	Tr 24	5	270	170	18	14.5
25.950.2605	Tr 26	5	250	155	20	16
25.950.2805	Tr 28	5	290	190	22	18

› 26.100 *Phantom*



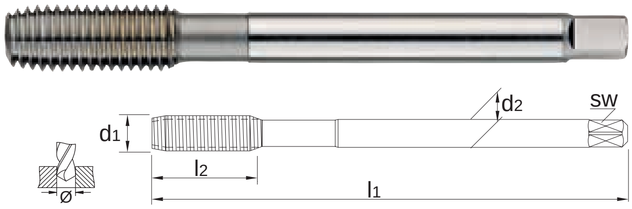
NL HSS-E Roltap Metrisch, genitreerd
FR Taraud à refouler HSS-E Métrique, nitruré
ES Macho de laminación HSS-E Métrica, nitrurado
DE HSS-E Gewindeformer Metrisch, nitriert
EN HSS-E Fluteless Tap Metric Coarse, nitrided

HSS-E	M	60°	NIT.	DIN 2174	DIN 371	3xD			FormC 2-3	6HX

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-25	10-20	10-35	10-20	15-35

Ref.	d1	P	l1	l2	d2	sw
26.100.0200	M2	0.4	45	8	2.8	2.1
26.100.0250	M2,5	0.45	50	9	2.8	2.1
26.100.0300	M3	0.5	56	11	3.5	2.7
26.100.0400	M4	0.7	63	13	4.5	3.4
26.100.0500	M5	0.8	70	16	6	4.9
26.100.0600	M6	1	80	19	6	4.9
26.100.0800	M8	1.25	90	22	8	6.2
26.100.1000	M10	1.5	100	24	10	8

› 26.101 *Phantom*



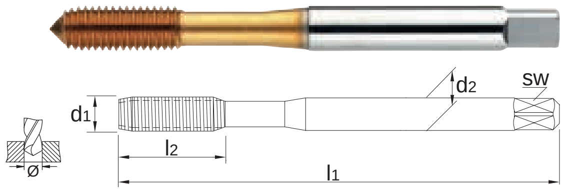
NL HSS-E Roltap Metrisch, genitreerd
FR Taraud à refouler HSS-E Métrique, nitruré
ES Macho de laminación HSS-E Métrica, nitrurado
DE HSS-E Gewindeformer Metrisch, nitriert
EN HSS-E Fluteless Tap Metric Coarse, nitrided

HSS-E	M	60°	NIT.	DIN 2174	DIN 376	3xD			FormC 2-3	6HX

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-25	10-20	10-35	10-20	15-35

Ref.	d1	P	l1	l2	d2	sw
26.101.1200	M12	1.75	110	29	9	7

› 26.110 *Phantom*



NL HSS-E Roltap Metrisch, TiN
FR Taraud à refouler HSS-E Métrique, TiN
ES Macho de laminación HSS-E Métrica, TiN
DE HSS-E Gewindeformer Metrisch, TiN
EN HSS-E Fluteless Tap Metric Coarse, TiN

HSS-E	M	60°	TiN	DIN 2174	DIN 371	3xD			FormC 2-3	6HX

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-25	10-20	7-10	10-35	10-20	15-35

Ref.	d1	P	l1	l2	d2	sw
26.110.0200	M2	0.4	45	8	2.8	2.1
26.110.0250	M2,5	0.45	50	9	2.8	2.1
26.110.0300	M3	0.5	56	11	3.5	2.7
26.110.0400	M4	0.7	63	13	4.5	3.4
26.110.0500	M5	0.8	70	16	6	4.9
26.110.0600	M6	1	80	19	6	4.9
26.110.0800	M8	1.25	90	22	8	6.2
26.110.1000	M10	1.5	100	24	10	8

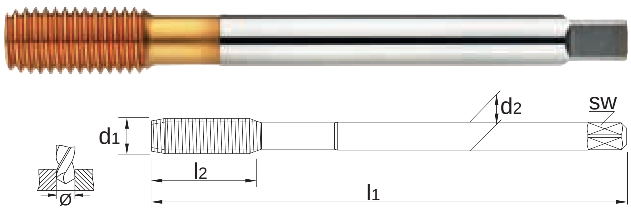
NL Uitleg calculatietool
FR Regardez la vidéo d’instruction de l’outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 26.111 Phantom

NL HSS-E Roltap Metrisch, TiN
FR Taraud à refouler HSS-E Métrique, TiN
ES Macho de laminación HSS-E Métrica, TiN
DE HSS-E Gewindeformer Metrisch, TiN
EN HSS-E Fluteless Tap Metric Coarse, TiN



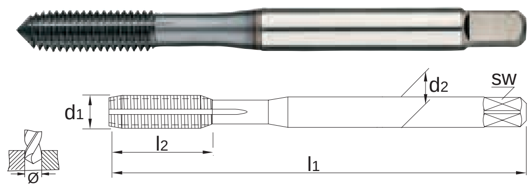
HSS-E | M | 60° | TiN | DIN 2174 | DIN 376 | 3xD | FormC 2-3 | 6HX

P 11	P 12	M 21	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	Alu	Alu Si>10%	Cu
15-25	10-20	7-10	10-35	10-20	15-35

Ref.	d1	P	l1	l2	d2	sw
26.111.1200	M12	1.75	110	29	9	7

› 26.160 Phantom

NL HSS-E Roltap met smeergroef, Metrisch, TiCN
FR Taraud à refouler HSS-E rainures de lubrification, Métrique, TiCN
ES Macho de laminación HSS-E con ranura de refrigeración, Métrica, TiCN
DE HSS-E Gewindeformer mit Schmiernut, Metrisch, TiCN
EN HSS-E Fluteless Tap with lubrification grooves, Metric Coarse, TiCN



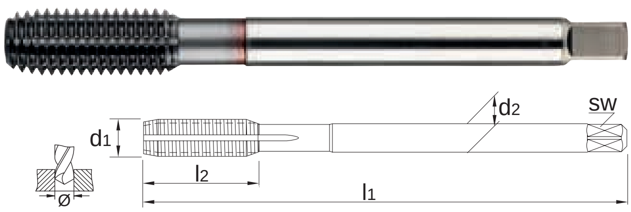
HSS-E | M | 60° | TiCN | DIN 2174 | DIN 371 | 3xD | FormC 2-3 | 6HX

P 11	P 12	M 21	M 22	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu
15-25	10-20	7-10	4-8	10-35	10-20	15-35

Ref.	d1	P	l1	l2	d2	sw
26.160.0300	M3	0.5	56	11	3.5	2.7
26.160.0400	M4	0.7	63	13	4.5	3.4
26.160.0500	M5	0.8	70	16	6	4.9
26.160.0600	M6	1	80	19	6	4.9
26.160.0800	M8	1.25	90	22	8	6.2
26.160.1000	M10	1.5	100	24	10	8

› 26.161 Phantom

NL HSS-E Roltap met smeergroef, Metrisch, TiCN
FR Taraud à refouler HSS-E rainures de lubrification, Métrique, TiCN
ES Macho de laminación HSS-E con ranura de refrigeración, Métrica, TiCN
DE HSS-E Gewindeformer mit Schmiernut, Metrisch, TiCN
EN HSS-E Fluteless Tap with lubrification grooves, Metric Coarse, TiCN



HSS-E | M | 60° | TiCN | DIN 2174 | DIN 376 | 3xD | FormC 2-3 | 6HX

P 11	P 12	M 21	M 22	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu
15-25	10-20	7-10	4-8	10-35	10-20	15-35

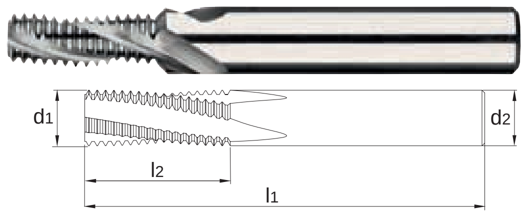
Ref.	d1	P	l1	l2	d2	sw
26.161.1200	M12	1.75	110	29	9	7
26.161.1400	M14	2	110	26	11	9
26.161.1600	M16	2	110	26	12	9
26.161.1800	M18	2.5	125	30	14	11
26.161.2000	M20	2.5	140	32	16	12

NL Roltappen voorboren?
FR Avant-trou pour tarauds à refouler ?
ES ¿Taladrado previo para machos laminadores?
DE Vorbohren für Gewindeformer?
EN Pre-drilling for roll taps?

Read me

www.phantom.eu

› 26.310 Phantom



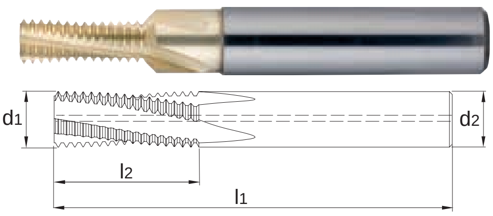
NL Volhardmetaal Draadfrees 2xD
FR Fraise à fileter carbure monobloc 2xD
ES Fresa de roscado Metal Duro Integral 2xD
DE Vollhartmetall Gewindefräser 2xD
EN Solid carbide Thread milling cutter 2xD

MG HM	EG	M	60°	2xD	DIN 6535-HA

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 52	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	CuAlFe	Ni/Co	Ti
70-100 K	70-90 K	60-80 K	50-70 K	30-40 J	40-50 J	30-50 J	90-130 N	80-100 N	200-240 K	180-220 K	120-140 J	110-130 J	25-35 I	20-30 I

Ref.	M	P	d1	l1	l2	d2	z
26.310.0600	M6	1	4.8	54	13.5	6	3
26.310.0800	M8	1.25	6.4	62	18.1	8	3
26.310.1000	M10	1.5	7.95	74	21.8	10	3
26.310.1200	M12	1.75	9.95	74	25.4	10	4
26.310.1400	M14	2	11.2	90	31	12	4
26.310.1600	M16	2	12.8	90	35	14	4
26.310.2000	M20	2.5	14.95	102	41.3	16	4

› 26.316 Phantom



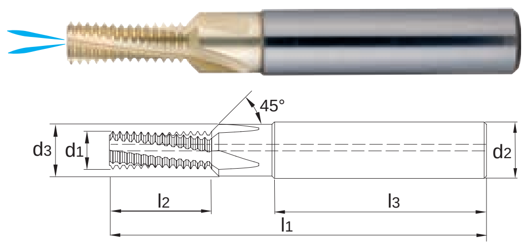
NL Volhardmetaal Draadfrees 2xD met koelkanaal, ZrN-X
FR Fraise à fileter carbure monobloc 2xD à trou d´huile, ZrN-X
ES Fresa de roscado Metal Duro Integral 2xD con canal de refrigeración, ZrN-X
DE Vollhartmetall Gewindefräser 2xD mit Innenkühlung, ZrN-X
EN Solid carbide Thread milling cutter 2xD with coolant holes, ZrN-X

MG HM	EG	M	60°	ZrN-X	2xD	DIN 6535-HA

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 52	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	CuAlFe	Ni/Co	Ti
80-110 K	80-100 K	70-90 K	60-80 K	40-50 J	50-60 J	40-50 J	100-140 N	90-110 N	220-260 K	220-240 K	130-150 J	120-140 J	35-45 I	25-35 I

Ref.	M	P	d1	l1	l2	d2	z
26.316.0600	M6	1	4.8	54	13.5	6	3
26.316.0800	M8	1.25	6.4	62	18.1	8	3
26.316.1000	M10	1.5	7.95	74	21.8	10	3
26.316.1200	M12	1.75	9.95	74	25.4	10	4
26.316.1400	M14	2	11.2	90	31	12	4
26.316.1600	M16	2	12.8	90	35	14	4
26.316.2000	M20	2.5	14.95	102	41.3	16	4

› 26.384 Phantom



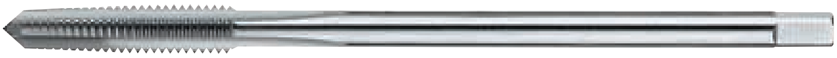
NL Volhardmetaal Draadfrees 2xD met koelkanaal, met fase, ZrN-X
FR Fraise à fileter carbure monobloc 2xD à trou d´huile, avec chanfrein, ZrN-X
ES Fresa de roscado Metal Duro Integral 2xD con canal de refrigeración, con escalonado de avellanar, ZrN-X
DE Vollhartmetall Gewindefräser 2xD mit Innenkühlung, mit Fase, ZrN-X
EN Solid carbide Thread milling cutter 2xD with coolant holes, with countersink profile , ZrN-X

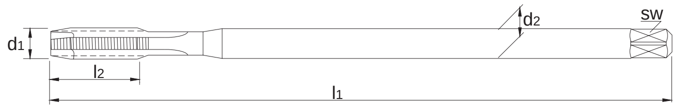
MG HM	EG	M	60°	ZrN-X	90°	2xD	DIN 6535-HA

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 52	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	CuAlFe	Ni/Co	Ti
80-110 K	80-100 K	70-90 K	60-80 K	40-50 J	50-60 J	40-50 J	100-140 N	90-110 N	220-260 K	220-240 K	130-150 J	120-140 J	35-45 I	25-35 I

Ref.	M	P	d1	l1	l2	l3	d2	d3	z
26.384.0300	M3	0.5	2.3	48	6.8	36	6	3.4	3
26.384.0400	M4	0.7	3	48	8.8	36	6	4.5	3
26.384.0500	M5	0.8	4	54	10.8	36	6	5.5	3
26.384.0600	M6	1	4.8	62	13.5	36	8	6.6	3
26.384.0800	M8	1.25	6.4	74	18.1	40	10	6.8	3
26.384.1000	M10	1.5	7.95	80	21.8	45	12	8.5	4
26.384.1200	M12	1.75	9.95	90	25.4	45	14	10.2	4
26.384.1600	M16	2	12.8	102	35	48	18	14	4

› 26.500 Phantom





NL HSS-E Machinemoertap Metrisch
FR Taraud à enfilade HSS-E Métrique
ES Macho para tuercas HSS-E Métrica
DE HSS-E Maschinen Muttergewindebohrer Metrisch
EN HSS-E Tap for Nuts, long series Metric Coarse

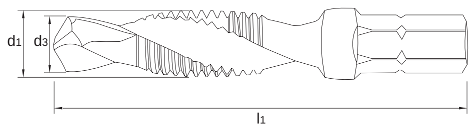
HSS-E | M | 60° | NORM | 12 | ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
26.500.0400	M4	0.7	90	25	2.8	2.1
26.500.0500	M5	0.8	100	28	3.5	2.7
26.500.0600	M6	1	110	32	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
26.500.0800	M8	1.25	125	40	6	4.9
26.500.1000	M10	1.5	140	45	7	5.5

› 26.610 International Tools



NL ECO HSS Combi-boortap, Verzinkboor Metrisch
FR Foret taraudeur, Fraise à chanfreiner HSS ECO Métrique
ES Broca-Macho, Avellanador para desbarbar HSS ECO Métrica
DE ECO HSS Kombi-Gewindebohrer, Kegelsenker Metrisch
EN ECO HSS Combi-Tap, Countersink Metric Coarse

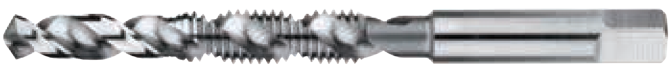
HSS | M | 60° | DIN 3126 | C6,3 1/4" | ISO 2 6H | 90° | ECO

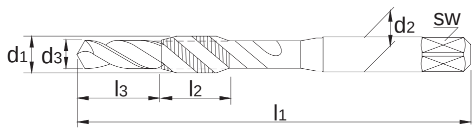
NIEUW NOUVEAU NUEVO NEU

Ref.	d1	P	d3	l1
26.610.0300	M3	0.5	2.5	36
26.610.0400	M4	0.7	3.3	39
26.610.0500	M5	0.8	4.2	41

Ref.	d1	P	d3	l1
26.610.0600	M6	1	5	44
26.610.0800	M8	1.25	6.8	50
26.610.1000	M10	0.15	8.5	59

› 26.700 Phantom





NL HSS Combi-boortap Metrisch
FR Foret taraudeur HSS Métrique
ES Broca-Macho HSS Métrica
DE HSS Kombi-Gewindebohrer Metrisch
EN HSS Combi-Tap Metric Coarse

HSS | M | 60° | NORM | ISO 2 6H

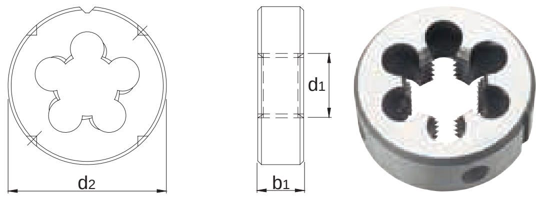
P 11 ≤600 N/mm²	N 41 Alu	N 42 Alu Si>10%
12-20	15-25	18-25

Ref.	d1	P	l1	l2	l3	d2	d3	sw
26.700.0300	M3	0.5	56	11	12	3	2.5	2.4
26.700.0400	M4	0.7	63	14	15	4	3.3	3
26.700.0500	M5	0.8	71	18	15	5	4.2	3.8
26.700.0600	M6	1	80	22	15	6	5	4.9

Ref.	d1	P	l1	l2	l3	d2	d3	sw
26.700.0800	M8	1.25	95	25	20	8	6.8	6.2
26.700.1000	M10	1.5	106	31	25	10	8.5	8
26.700.1200	M12	1.75	115	35	30	12	10.2	9

› 27.100 *International Tools*

NL ECO PRO HSS Ronde Snijplaat Metrisch
FR Filière ronde HSS ECO PRO Métrique
ES Terraja esférica HSS ECO PRO Métrica
DE ECO PRO HSS Runde Schneideisen Metrisch
EN ECO PRO HSS Thread Die Metric Coarse



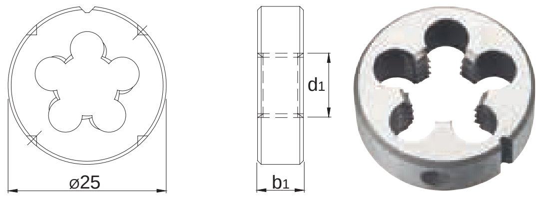
HSS | M | 60° | DIN EN 22568 | 6g | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	P	d2	b1
27.100.0200	M2	0.4	16	5
27.100.0250	M2,5	0.45	16	5
27.100.0300	M3	0.5	20	5
27.100.0400	M4	0.7	20	5
27.100.0500	M5	0.8	20	7
27.100.0600	M6	1	20	7
27.100.0700	M7	1	25	9
27.100.0800	M8	1.25	25	9
27.100.1000	M10	1.5	30	11
27.100.1200	M12	1.75	38	14
27.100.1400	M14	2	38	14
27.100.1600	M16	2	45	18
27.100.1800	M18	2.5	45	18
27.100.2000	M20	2.5	45	18
27.100.2200	M22	2.5	55	22
27.100.2400	M24	3	55	22
27.100.2700	M27	3	65	25
27.100.3000	M30	3.5	65	25
27.100.3300	M33	3.5	65	25
27.100.3600	M36	4	65	25

› 27.110 *International Tools*

NL ECO PRO HSS Ronde Snijplaat Metrisch, 25 mm
FR Filière ronde HSS ECO PRO Métrique, 25 mm
ES Terraja esférica HSS ECO PRO Métrica, 25 mm
DE ECO PRO HSS Runde Schneideisen Metrisch, 25 mm
EN ECO PRO HSS Thread Die Metric Coarse, 25 mm



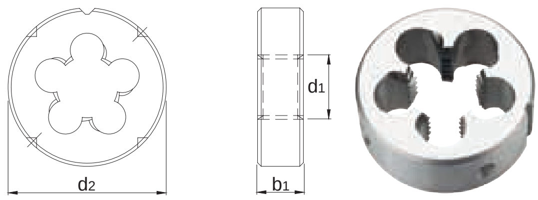
HSS | M | 60° | NORM | 6g | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	P	d2	b1
27.110.0300	M3	0.5	25	9
27.110.0400	M4	0.7	25	9
27.110.0500	M5	0.8	25	9
27.110.0600	M6	1	25	9
27.110.0800	M8	1.25	25	9
27.110.1000	M10	1.5	25	9
27.110.1200	M12	1.75	25	9

› 27.120 *Phantom*

NL HSS Ronde Snijplaat Metrisch, schilaansnijding
FR Filière ronde HSS Métrique, coupe gun
ES Terraja esférica HSS Métrica, entrada corregida (gun)
DE HSS Runde Schneideisen Metrisch, Schälanschnitt
EN HSS Thread Die Metric Coarse, gun nosed



HSS | M | 60° | DIN EN 22568 | ≥M3 | 6g

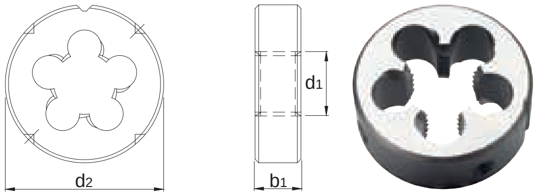
P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	P	d2	b1
27.120.0100	M1	0.25	16	5
27.120.0120	M1,2	0.25	16	5
27.120.0140	M1,4	0.3	16	5
27.120.0160	M1,6	0.35	16	5
27.120.0180	M1,8	0.35	16	5
27.120.0200	M2	0.4	16	5
27.120.0220	M2,2	0.45	16	5
27.120.0230	M2,3	0.4	16	5
27.120.0250	M2,5	0.45	16	5
27.120.0260	M2,6	0.45	16	5
27.120.0300	M3	0.5	20	5
27.120.0350	M3,5	0.6	20	5
27.120.0400	M4	0.7	20	5
27.120.0500	M5	0.8	20	7
27.120.0600	M6	1	20	7
27.120.0700	M7	1	25	9
27.120.0800	M8	1.25	25	9
27.120.0900	M9	1.25	25	9
27.120.1000	M10	1.5	30	11
27.120.1100	M11	1.5	30	11
27.120.1200	M12	1.75	38	14
27.120.1400	M14	2	38	14
27.120.1600	M16	2	45	18
27.120.1800	M18	2.5	45	18
27.120.2000	M20	2.5	45	18
27.120.2200	M22	2.5	55	22
27.120.2400	M24	3	55	22
27.120.2700	M27	3	65	25
27.120.3000	M30	3.5	65	25
27.120.3300	M33	3.5	65	25
27.120.3600	M36	4	65	25
27.120.3900	M39	4	75	30
27.120.4200	M42	4.5	75	30
27.120.4500	M45	4.5	90	36
27.120.4800	M48	5	90	36
27.120.5200	M52	5	90	36

1 SC
1 HSS(-E)
2

› 27.150 Phantom

NL HSS-E PM Ronde Snijplaat Metrisch, schilaansnijding, gelept, roestvaststaal
FR Filière ronde HSS-E PM Métrique, coupe gun, filets rodés, Inox
ES Terraja esférica HSS-E PM Métrica, entrada corregida (gun), lapeada, acero inoxidable
DE HSS-E PM Runde Schneideisen Metrisch, Schälanschnitt, geläppt, rostfreien Stahl
EN HSS-E PM Thread Die Metric Coarse, gun nosed, pumiced, stainless steel



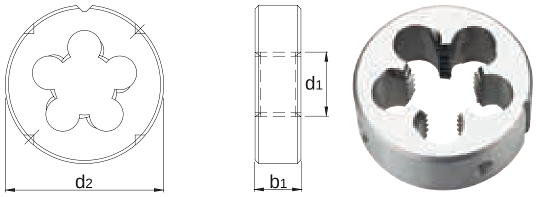
HSS-E PM | M | 60° | DIN EN 22568 | 6g | INOX

P 11	P 12	P 13	P 14	M 21	M 22	N 42	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu Si>10%	Ti
10-14	6-10	5-8	5-8	4-6	4-6	8-12	5-8

Ref.	d1	P	d2	b1
27.150.0200	M2	0.4	16	5
27.150.0250	M2,5	0.45	16	5
27.150.0300	M3	0.5	20	5
27.150.0350	M3,5	0.6	20	5
27.150.0400	M4	0.7	20	5
27.150.0500	M5	0.8	20	7
27.150.0550	M5,5	0.9	20	7
27.150.0600	M6	1	20	7
27.150.0700	M7	1	25	9
27.150.0800	M8	1.25	25	9
27.150.1000	M10	1.5	30	11
27.150.1200	M12	1.75	38	14
27.150.1400	M14	2	38	14
27.150.1600	M16	2	45	18
27.150.1800	M18	2.5	45	18
27.150.2000	M20	2.5	45	18
27.150.2200	M22	2.5	55	22
27.150.2400	M24	3	55	22

› 27.175 Phantom

NL HSS Ronde Snijplaat Metrisch, schilaansnijding, gelept, Messing
FR Filière ronde HSS Métrique, coupe gun, filets rodés, Laiton
ES Terraja esférica HSS Métrica, entrada corregida (gun), lapeada, Latón
DE HSS Runde Schneideisen Metrisch, Schälanschnitt, geläppt, Messing
EN HSS Thread Die Metric Coarse, gun nosed, pumiced, brass



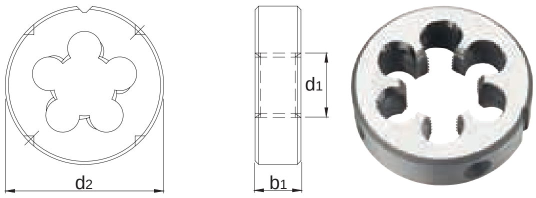
HSS | M | 60° | DIN EN 22568 | 6g

N 51	N 52
Cu	CuAlFe
11-15	5-18

Ref.	d1	P	d2	b1
27.175.0300	M3	0.5	20	5
27.175.0400	M4	0.7	20	5
27.175.0500	M5	0.8	20	7
27.175.0600	M6	1	20	7
27.175.0800	M8	1.25	25	9
27.175.1000	M10	1.5	30	11
27.175.1200	M12	1.75	38	14

› 27.200 International Tools

NL ECO PRO HSS Ronde Snijplaat Metrisch Fijn
FR Filière ronde HSS ECO PRO Métrique Fin
ES Terraja esférica HSS ECO PRO Métrica Fina
DE ECO PRO HSS Runde Schneideisen Metrisch Fein
EN ECO PRO HSS Thread Die Metric Fine

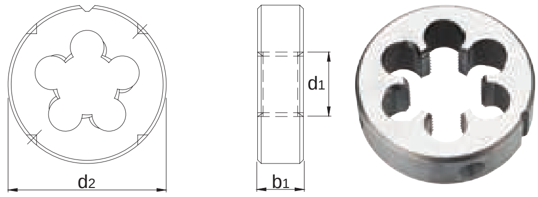


HSS | MF | 60° | DIN EN 22568 | 6g | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	P	d2	b1
27.200.0403	MF4	0.35	20	5
27.200.0405	MF4	0.5	20	5
27.200.0505	MF5	0.5	20	5
27.200.0605	MF6	0.5	20	5
27.200.0607	MF6	0.75	20	7
27.200.0707	MF7	0.75	25	9
27.200.0805	MF8	0.5	25	9
27.200.0807	MF8	0.75	25	9
27.200.0810	MF8	1	25	9
27.200.0910	MF9	1	25	9
27.200.1007	MF10	0.75	30	11
27.200.1010	MF10	1	30	11
27.200.1012	MF10	1.25	30	11
27.200.1210	MF12	1	38	10
27.200.1212	MF12	1.25	38	10
27.200.1215	MF12	1.5	38	10
27.200.1310	MF13	1	38	10
27.200.1410	MF14	1	38	10
27.200.1412	MF14	1.25	38	10
27.200.1415	MF14	1.5	38	10
27.200.1510	MF15	1	38	10
27.200.1610	MF16	1	45	14
27.200.1615	MF16	1.5	45	14
27.200.1810	MF18	1	45	14
27.200.1815	MF18	1.5	45	14
27.200.2010	MF20	1	45	14
27.200.2015	MF20	1.5	45	14
27.200.2215	MF22	1.5	55	16
27.200.2220	MF22	2	55	16
27.200.2415	MF24	1.5	55	16
27.200.2420	MF24	2	55	16
27.200.2715	MF27	1.5	65	18
27.200.2720	MF27	2	65	18
27.200.3015	MF30	1.5	65	18
27.200.3020	MF30	2	65	18

› 27.220 Phantom



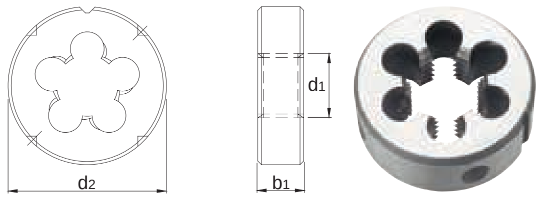
NL HSS Ronde Snijplaat Metrisch Fijn, schilaansnijding
FR Filière ronde HSS Métrique Fin, coupe gun
ES Terraja esférica HSS Métrica Fina, entrada corregida (gun)
DE HSS Runde Schneideisen Metrisch Fein, Schälanschnitt
EN HSS Thread Die Metric Fine, gun nosed

HSS | MF | 60° | DIN EN 22568 | 6g

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	P	d2	b1
27.220.0303	MF3	0.35	20	5
27.220.0403	MF4	0.35	20	5
27.220.0405	MF4	0.5	20	5
27.220.0505	MF5	0.5	20	5
27.220.0605	MF6	0.5	20	5
27.220.0607	MF6	0.75	20	7
27.220.0707	MF7	0.75	25	9
27.220.0805	MF8	0.5	25	9
27.220.0807	MF8	0.75	25	9
27.220.0810	MF8	1	25	9
27.220.0907	MF9	0.75	25	9
27.220.0910	MF9	1	25	9
27.220.1005	MF10	0.5	30	11
27.220.1007	MF10	0.75	30	11
27.220.1010	MF10	1	30	11
27.220.1012	MF10	1.25	30	11
27.220.1110	MF11	1	30	11
27.220.1205	MF12	0.5	38	10
27.220.1207	MF12	0.75	38	10
27.220.1210	MF12	1	38	10
27.220.1212	MF12	1.25	38	10
27.220.1215	MF12	1.5	38	10
27.220.1310	MF13	1	38	10
27.220.1405	MF14	0.5	38	10
27.220.1407	MF14	0.75	38	10
27.220.1410	MF14	1	38	10
27.220.1412	MF14	1.25	38	10
27.220.1415	MF14	1.5	38	10
27.220.1510	MF15	1	38	10
27.220.1515	MF15	1.5	38	10
27.220.1607	MF16	0.75	45	14
27.220.1610	MF16	1	45	14
27.220.1612	MF16	1.25	45	14
27.220.1615	MF16	1.5	45	14
27.220.1810	MF18	1	45	14
27.220.1812	MF18	1.25	45	14
27.220.1815	MF18	1.5	45	14
27.220.1820	MF18	2	45	14
27.220.2010	MF20	1	45	14
27.220.2015	MF20	1.5	45	14
27.220.2020	MF20	2	45	14
27.220.2210	MF22	1	55	16
27.220.2215	MF22	1.5	55	16
27.220.2220	MF22	2	55	16
27.220.2410	MF24	1	55	16
27.220.2415	MF24	1.5	55	16
27.220.2420	MF24	2	55	16
27.220.2510	MF25	1	55	16
27.220.2515	MF25	1.5	55	16
27.220.2520	MF25	2	55	16
27.220.2610	MF26	1	55	16
27.220.2615	MF26	1.5	55	16
27.220.2710	MF27	1	65	18
27.220.2715	MF27	1.5	65	18
27.220.2720	MF27	2	65	18
27.220.2815	MF28	1.5	65	18
27.220.2820	MF28	2	65	18
27.220.3010	MF30	1	65	19
27.220.3015	MF30	1.5	65	18
27.220.3020	MF30	2	65	18
27.220.3215	MF32	1.5	65	18
27.220.3315	MF33	1.5	65	18
27.220.3320	MF33	2	65	18
27.220.3415	MF34	1.5	65	18
27.220.3515	MF35	1.5	65	18
27.220.3615	MF36	1.5	65	18
27.220.3620	MF36	2	65	18
27.220.3630	MF36	3	65	25
27.220.3815	MF38	1.5	75	20
27.220.3920	MF39	2	75	20
27.220.3930	MF39	3	75	30
27.220.4015	MF40	1.5	75	20
27.220.4020	MF40	2	75	20
27.220.4215	MF42	1.5	75	20
27.220.4220	MF42	2	75	20
27.220.4230	MF42	3	75	30
27.220.4515	MF45	1.5	90	22
27.220.4520	MF45	2	90	22
27.220.4530	MF45	3	90	22
27.220.4815	MF48	1.5	90	22
27.220.4830	MF48	3	90	22
27.220.5015	MF50	1.5	90	22
27.220.5215	MF52	1.5	90	22

› 27.300 International Tools



NL ECO PRO HSS Ronde Snijplaat UNC
FR Filière ronde HSS ECO PRO UNC
ES Terraja esférica HSS ECO PRO UNC
DE ECO PRO HSS Runde Schneideisen UNC
EN ECO PRO HSS Thread Die UNC

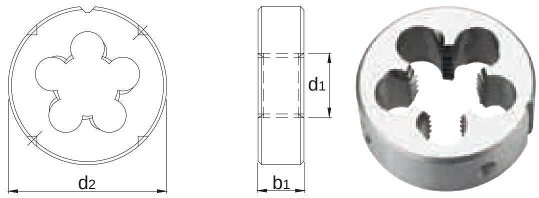
HSS | UNC | 60° | DIN EN 22568 | 2A | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	TPI	d2	b1
27.300.0251	UNC Nr. 3	48	16	5
27.300.0635	UNC 1/4	20	20	7
27.300.0794	UNC 5/16	18	25	9
27.300.0952	UNC 3/8	16	30	11
27.300.1111	UNC 7/16	14	30	11
27.300.1270	UNC 1/2	13	38	14
27.300.1429	UNC 9/16	12	38	14
27.300.1588	UNC 5/8	11	45	18
27.300.1905	UNC 3/4	10	45	18
27.300.2222	UNC 7/8	9	55	22
27.300.2540	UNC 1	8	55	22

› 27.320 Phantom

NL HSS Ronde Snijplaat schilaansnijding, UNC
FR Filière ronde HSS coupe gun, UNC
ES Terraja esférica HSS entrada corregida (gun), UNC
DE HSS Runde Schneideisen Schälanschnitt, UNC
EN HSS Thread Die gun nosed, UNC



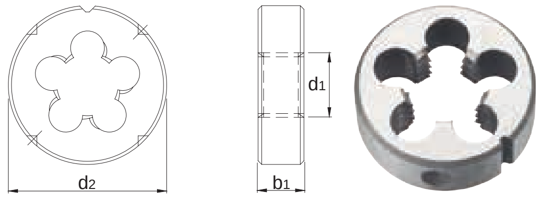
HSS | UNC | 60° | DIN EN 22568 | ≥Nr.5 | 2A

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1
27.320.0284	UNC Nr. 4	40	16	5
27.320.0317	UNC Nr. 5	40	20	5
27.320.0350	UNC Nr. 6	32	20	7
27.320.0416	UNC Nr. 8	32	20	7
27.320.0482	UNC Nr. 10	24	20	7
27.320.0548	UNC Nr. 12	24	20	7
27.320.0635	UNC 1/4	20	20	7
27.320.0794	UNC 5/16	18	25	9
27.320.0952	UNC 3/8	16	30	11
27.320.1111	UNC 7/16	14	30	11
27.320.1270	UNC 1/2	13	38	14
27.320.1429	UNC 9/16	12	38	14
27.320.1588	UNC 5/8	11	45	18
27.320.1905	UNC 3/4	10	45	18
27.320.2222	UNC 7/8	9	55	22
27.320.2540	UNC 1	8	55	22
27.320.2858	UNC 1.1/8	7	65	25
27.320.3175	UNC 1.1/4	7	65	25
27.320.3810	UNC 1.1/2	6	75	30

› 27.400 International Tools

NL ECO PRO HSS Ronde Snijplaat UNF
FR Filière ronde HSS ECO PRO UNF
ES Terraja esférica HSS ECO PRO UNF
DE ECO PRO HSS Runde Schneideisen UNF
EN ECO PRO HSS Thread Die UNF



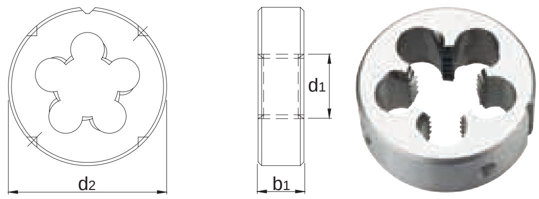
HSS | UNF | 60° | DIN EN 22568 | 2A | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%

Ref.	d1	TPI	d2	b1
27.400.0218	UNF Nr. 2	64	16	5
27.400.0251	UNF Nr. 3	56	16	5
27.400.0635	UNF 1/4	28	20	7
27.400.0794	UNF 5/16	24	25	9
27.400.0952	UNF 3/8	24	30	11
27.400.1111	UNF 7/16	20	30	11
27.400.1270	UNF 1/2	20	38	10
27.400.1429	UNF 9/16	18	38	10
27.400.1588	UNF 5/8	18	45	14
27.400.1905	UNF 3/4	16	45	14
27.400.2222	UNF 7/8	14	55	16
27.400.2540	UNF 1	12	55	16

› 27.420 Phantom

NL HSS Ronde Snijplaat schilaansnijding, UNF
FR Filière ronde HSS coupe gun, UNF
ES Terraja esférica HSS entrada corregida (gun), UNF
DE HSS Runde Schneideisen Schälanschnitt, UNF
EN HSS Thread Die gun nosed, UNF



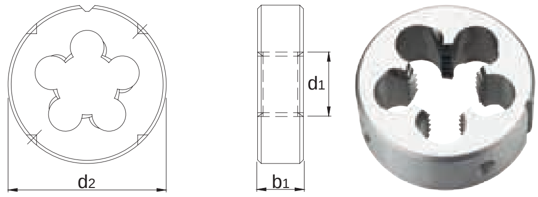
HSS | UNF | 60° | DIN EN 22568 | ≥Nr.5 | 2A

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1
27.420.0185	UNF Nr. 1	72	16	5
27.420.0218	UNF Nr. 2	64	16	5
27.420.0252	UNF Nr. 3	56	16	5
27.420.0284	UNF Nr. 4	48	16	5
27.420.0317	UNF Nr. 5	44	20	5
27.420.0350	UNF Nr. 6	40	20	5
27.420.0416	UNF Nr. 8	36	20	7
27.420.0482	UNF Nr. 10	32	20	7
27.420.0548	UNF Nr. 12	28	20	7
27.420.0635	UNF 1/4	28	20	7
27.420.0794	UNF 5/16	24	25	9
27.420.0952	UNF 3/8	24	30	11
27.420.1111	UNF 7/16	20	30	11
27.420.1270	UNF 1/2	20	38	10
27.420.1429	UNF 9/16	18	38	10
27.420.1588	UNF 5/8	18	45	14
27.420.1905	UNF 3/4	16	45	14
27.420.2222	UNF 7/8	14	55	16
27.420.2540	UNF 1	12	55	16
27.420.2858	UNF 1.1/8	12	65	18
27.420.3175	UNF 1.1/4	12	65	18
27.420.3493	UNF 1.3/8	12	65	18
27.420.3810	UNF 1.1/2	12	75	20

› 27.470 Phantom

NL HSS Ronde Snijplaat schilaansnijding, UNEF
FR Filière ronde HSS coupe gun, UNEF
ES Terraja esférica HSS entrada corregida (gun), UNEF
DE HSS Runde Schneideisen Schälanschnitt, UNEF
EN HSS Thread Die gun nosed, UNEF



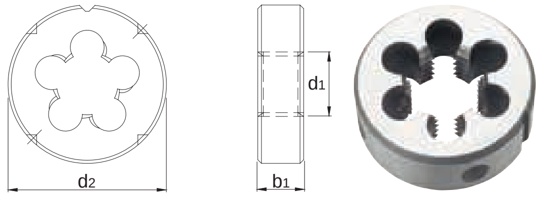
HSS | UNEF | 60° | DIN EN 22568 | 2A

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1	Ref.	d1	TPI	d2	b1
27.470.0635	UNEF 1/4	32	20	7	27.470.1429	UNEF 9/16	24	38	10
27.470.0794	UNEF 5/16	32	25	9	27.470.1588	UNEF 5/8	24	45	14
27.470.0952	UNEF 3/8	32	30	11	27.470.1905	UNEF 3/4	20	45	14
27.470.1111	UNEF 7/16	28	30	11	27.470.2222	UNEF 7/8	20	55	16
27.470.1270	UNEF 1/2	28	38	10	27.470.2540	UNEF 1	20	55	16

› 27.500 International Tools

NL ECO PRO HSS Ronde Snijplaat G (BSP)
FR Filière ronde HSS ECO PRO G (BSP)
ES Terraja esférica HSS ECO PRO G (BSP)
DE ECO PRO HSS Runde Schneideisen G (BSP)
EN ECO PRO HSS Thread Die G (BSP)



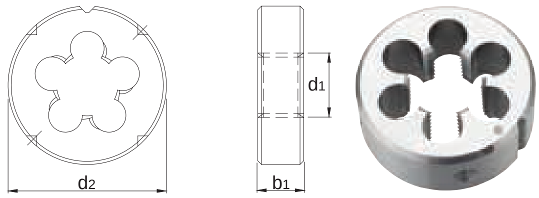
HSS | BSP G | 55° | DIN EN 24231 | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	TPI	d2	b1	Ref.	d1	TPI	d2	b1
27.500.0973	G 1/8	28	30	11	27.500.3020	G 7/8	14	65	18
27.500.1316	G 1/4	19	38	10	27.500.3325	G 1	11	65	18
27.500.1666	G 3/8	19	45	14	27.500.4191	G 1.1/4	11	75	20
27.500.2096	G 1/2	14	45	14	27.500.4432	G 1.3/8	11	90	22
27.500.2291	G 5/8	14	55	16	27.500.4780	G 1.1/2	11	90	22
27.500.2644	G 3/4	14	55	16					

› 27.520 Phantom

NL HSS Ronde Snijplaat schilaansnijding G (BSP)
FR Filière ronde HSS coupe gun G (BSP)
ES Terraja esférica HSS entrada corregida (gun) G (BSP)
DE HSS Runde Schneideisen Schälanschnitt G (BSP)
EN HSS Thread Die gun nosed G (BSP)

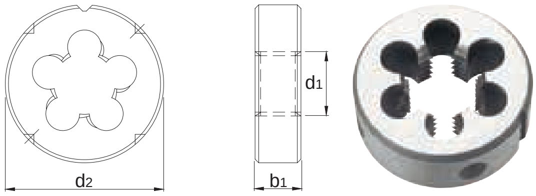


HSS | BSP G | 55° | DIN EN 24231

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1	Ref.	d1	TPI	d2	b1
27.520.0973	G 1/8	28	30	11	27.520.3325	G 1	11	65	18
27.520.1316	G 1/4	19	38	10	27.520.3790	G 1.1/8	11	75	20
27.520.1666	G 3/8	19	45	14	27.520.4191	G 1.1/4	11	75	20
27.520.2096	G 1/2	14	45	14	27.520.4432	G 1.3/8	11	90	22
27.520.2291	G 5/8	14	55	16	27.520.4780	G 1.1/2	11	90	22
27.520.2644	G 3/4	14	55	16	27.520.5375	G 1.3/4	11	90	22
27.520.3020	G 7/8	14	65	18	27.520.5961	G 2	11	105	22

› 27.530 *Phantom*



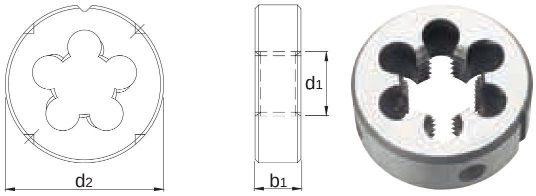
NL HSS Ronde Snijplaat schilaansnijding Rc (BSPT)
FR Filière ronde HSS coupe gun Rc (BSPT)
ES Terraja esférica HSS entrada corregida (gun) Rc (BSPT)
DE HSS Runde Schneideisen Schälanschnitt Rc (BSPT)
EN HSS Thread Die gun nosed Rc (BSPT)

HSS | BSPT Rc | 55° | DIN EN 24230 | ISO 4230 | 1:16

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1	Ref.	d1	TPI	d2	b1
27.530.0973	Rc 1/8	28	30	11	27.530.2096	Rc 1/2	14	45	18
27.530.1316	Rc 1/4	19	38	14	27.530.2644	Rc 3/4	14	55	22
27.530.1666	Rc 3/8	19	45	14	27.530.3325	Rc 1	11	65	25

› 27.550 *International Tools*



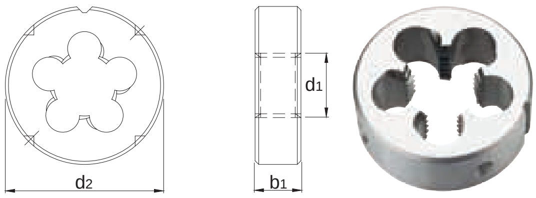
NL ECO PRO HSS Ronde Snijplaat BSW (Whitworth)
FR Filière ronde HSS ECO PRO BSW (Whitworth)
ES Terraja esférica HSS ECO PRO BSW (Whitworth)
DE ECO PRO HSS Runde Schneideisen BSW (Whitworth)
EN ECO PRO HSS Thread Die BSW (Whitworth)

HSS | BSW | 55° | DIN EN 22568 | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

Ref.	d1	TPI	d2	b1	Ref.	d1	TPI	d2	b1
27.550.0317	BSW 1/8	40	20	5	27.550.1270	BSW 1/2	12	38	14
27.550.0476	BSW 3/16	24	20	7	27.550.1429	BSW 9/16	12	38	14
27.550.0635	BSW 1/4	20	20	7	27.550.1588	BSW 5/8	11	45	18
27.550.0794	BSW 5/16	18	25	9	27.550.1905	BSW 3/4	10	45	18
27.550.0952	BSW 3/8	16	30	11	27.550.2222	BSW 7/8	9	55	22
27.550.1111	BSW 7/16	14	30	11	27.550.2540	BSW 1	8	55	22

› 27.560 *Phantom*



NL HSS Ronde Snijplaat schilaansnijding, BSW (Whitworth)
FR Filière ronde HSS coupe gun, BSW (Whitworth)
ES Terraja esférica HSS entrada corregida (gun), BSW (Whitworth)
DE HSS Runde Schneideisen Schälanschnitt, BSW (Whitworth)
EN HSS Thread Die gun nosed, BSW (Whitworth)

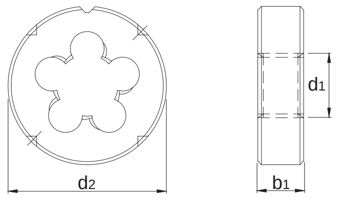
HSS | BSW | 55° | DIN EN 22568

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1	Ref.	d1	TPI	d2	b1
27.560.0317	BSW 1/8	40	20	5	27.560.1429	BSW 9/16	12	38	14
27.560.0397	BSW 5/32	32	20	5	27.560.1588	BSW 5/8	11	45	18
27.560.0476	BSW 3/16	24	20	7	27.560.1905	BSW 3/4	10	45	18
27.560.0635	BSW 1/4	20	20	7	27.560.2222	BSW 7/8	9	55	22
27.560.0794	BSW 5/16	18	25	9	27.560.2540	BSW 1	8	55	22
27.560.0952	BSW 3/8	16	30	11	27.560.3175	BSW 1.1/4	7	65	25
27.560.1111	BSW 7/16	14	30	11	27.560.3493	BSW 1.3/8	6	65	25
27.560.1270	BSW 1/2	12	38	14	27.560.3810	BSW 1.1/2	6	75	30

› 27.575 *Phantom*

NL **HSS Ronde Snijplaat schilaansnijding, BSF**
FR **Filière ronde HSS coupe gun, BSF**
ES **Terraja esférica HSS entrada corregida (gun), BSF**
DE **HSS Runde Schneideisen Schälanschnitt, BSF**
EN **HSS Thread Die gun nosed, BSF**



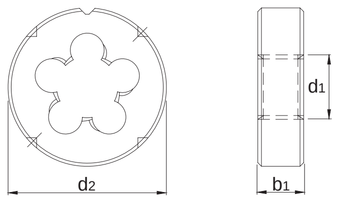
HSS | BSF | 55° | DIN EN 22568

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1
27.575.0476	BSF 3/16	32	20	7
27.575.0635	BSF 1/4	26	20	7
27.575.0794	BSF 5/16	22	25	9
27.575.0952	BSF 3/8	20	30	11
27.575.1111	BSF 7/16	18	30	11
27.575.1270	BSF 1/2	16	38	10
27.575.1429	BSF 9/16	16	38	10
27.575.1588	BSF 5/8	14	45	14
27.575.1905	BSF 3/4	12	45	14
27.575.2222	BSF 7/8	11	55	16
27.575.2540	BSF 1	10	55	16

› 27.600 *Phantom*

NL **HSS Ronde Snijplaat schilaansnijding, NPT**
FR **Filière ronde HSS coupe gun, NPT**
ES **Terraja esférica HSS entrada corregida (gun), NPT**
DE **HSS Runde Schneideisen Schälanschnitt, NPT**
EN **HSS Thread Die gun nosed, NPT**



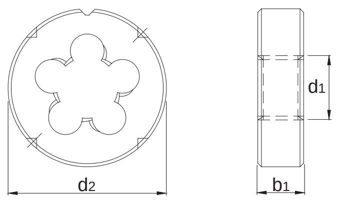
HSS | NPT | 60° | 1:16

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1
27.600.0794	NPT 1/16	27	25	9
27.600.1029	NPT 1/8	27	30	11
27.600.1372	NPT 1/4	18	38	14
27.600.1715	NPT 3/8	18	45	14
27.600.2134	NPT 1/2	14	45	18
27.600.2667	NPT 3/4	14	55	22
27.600.3340	NPT 1	11.5	65	25
27.600.4216	NPT 1.1/4	11.5	75	26
27.600.4826	NPT 1.1/2	11.5	90	27
27.600.6033	NPT 2	11.5	105	28

› 27.610 *Phantom*

NL **HSS Ronde Snijplaat schilaansnijding, NPTF**
FR **Filière ronde HSS coupe gun, NPTF**
ES **Terraja esférica HSS entrada corregida (gun), NPTF**
DE **HSS Runde Schneideisen Schälanschnitt, NPTF**
EN **HSS Thread Die gun nosed, NPTF**

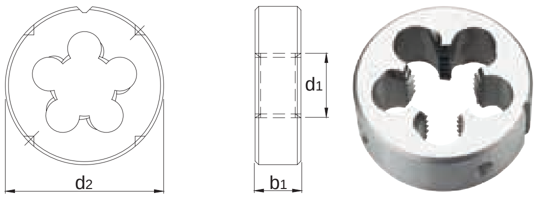


HSS | NPTF | 60° | 1:16

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1
27.610.1029	NPTF 1/8	27	30	11
27.610.1372	NPTF 1/4	18	38	14
27.610.1715	NPTF 3/8	18	45	14
27.610.2134	NPTF 1/2	14	45	18
27.610.2667	NPTF 3/4	14	55	22
27.610.3340	NPTF 1	11.5	65	25

› 27.650 Phantom



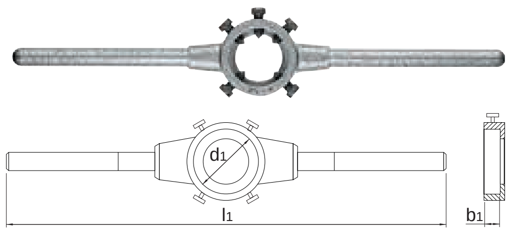
NL HSS Ronde Snijplaat schilaansnijding, PG
FR Filière ronde HSS coupe gun, PG
ES Terraja esférica HSS entrada corregida (gun), PG
DE HSS Runde Schneideisen Schälanschnitt, PG
EN HSS Thread Die gun nosed, PG

HSS | PG | 80° | DIN 40434

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1
27.650.0700	PG 7	20	38	10
27.650.0900	PG 9	18	38	10
27.650.1100	PG 11	18	45	14
27.650.1350	PG 13,5	18	45	14
27.650.1600	PG 16	18	55	16
27.650.2100	PG 21	16	65	18
27.650.2900	PG 29	16	65	18
27.650.3600	PG 36	16	90	22
27.650.4800	PG 48	16	105	22

› 81.910



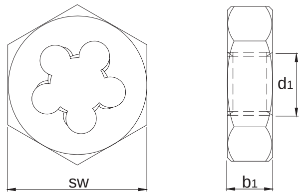
NL Snijplaathouder, standaard kwaliteit, Zink-legering
FR Porte-filières, qualité standard, alliage de zinc
ES Portaterraja, calidad estándar, aleación de cinc
DE Schneideisenhalter, Standard-Qualität, Zinkdruckguß
EN Die Stock, standard quality, zinc die cast

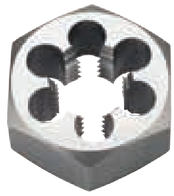
DIN EN 22568 | DIN 225 | DIN EN 24230 | DIN EN 24231 | ISO 2568

Ref.	d1	b1	l1
81.910.1605	16	5	160
81.910.2005	20	5	200
81.910.2007	20	7	200
81.910.2509	25	9	224
81.910.3011	30	11	280
81.910.3810	38	10	315
81.910.3814	38	14	315
81.910.4514	45	14	450
81.910.4518	45	18	450
81.910.5516	55	16	560
81.910.5522	55	22	560
81.910.6518	65	18	630
81.910.6525	65	25	630
81.910.7520	75	20	800
81.910.7530	75	30	800
81.910.9022	90	22	900
81.910.9036	90	36	900
81.910.9122	105	22	1000
81.910.9136	105	36	1000
81.910.9222	120	22	1100
81.910.9236	120	36	1100
81.910.9322	130	22	1100
81.910.9336	130	36	1100
81.910.9422	140	22	1200
81.910.9522	150	22	1200
81.910.9622	160	22	1300

› 27.700 *International Tools*

NL **ECO PRO HSS Zeskante Snijmoer Metrisch**
FR **Filière hexagonale HSS ECO PRO Métrique**
ES **Terraja hexagonal HSS ECO PRO Métrica**
DE **ECO PRO HSS Sechskant Schneideisen Metrisch**
EN **ECO PRO HSS Hexagon Die Nut Metric Coarse**





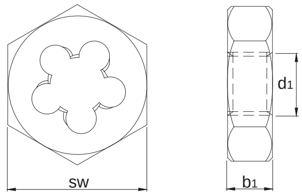
HSS | M | 60° | DIN 382 | 6g | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

Ref.	d1	P	sw	b1
27.700.0300	M3	0.5	19	5
27.700.0400	M4	0.7	19	5
27.700.0500	M5	0.8	19	7
27.700.0600	M6	1	19	7
27.700.0700	M7	1	22	9
27.700.0800	M8	1.25	22	9
27.700.0900	M9	1.25	22	9
27.700.1000	M10	1.5	27	11
27.700.1200	M12	1.75	36	14
27.700.1400	M14	2	36	14
27.700.1600	M16	2	41	18
27.700.1800	M18	2.5	41	18
27.700.2000	M20	2.5	41	18
27.700.2200	M22	2.5	50	22
27.700.2400	M24	3	50	22
27.700.2700	M27	3	60	25
27.700.3000	M30	3.5	60	25
27.700.3300	M33	3.5	60	25
27.700.3600	M36	4	60	25
27.700.3900	M39	4	70	30
27.700.4200	M42	4.5	70	30
27.700.4500	M45	4.5	85	36
27.700.4800	M48	5	85	36
27.700.5200	M52	5	85	36

› 27.750 *International Tools*

NL **ECO PRO HSS Zeskante Snijmoer Metrisch Fijn**
FR **Filière hexagonale HSS ECO PRO Métrique Fin**
ES **Terraja hexagonal HSS ECO PRO Métrica Fina**
DE **ECO PRO HSS Sechskant Schneideisen Metrisch Fein**
EN **ECO PRO HSS Hexagon Die Nut Metric Fine**



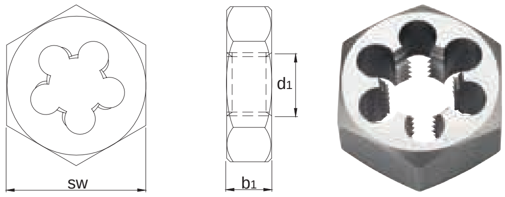
HSS | MF | 60° | DIN 382 | 6g | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

Ref.	d1	P	sw	b1
27.750.0303	MF3	0.35	19	5
27.750.0403	MF4	0.35	19	5
27.750.0505	MF5	0.5	19	5
27.750.0605	MF6	0.5	19	5
27.750.0607	MF6	0.75	19	7
27.750.0805	MF8	0.5	22	9
27.750.0807	MF8	0.75	22	9
27.750.0810	MF8	1	22	9
27.750.1007	MF10	0.75	27	11
27.750.1010	MF10	1	27	11
27.750.1012	MF10	1.25	27	11
27.750.1207	MF12	0.75	36	10
27.750.1210	MF12	1	36	10
27.750.1212	MF12	1.25	36	10
27.750.1215	MF12	1.5	36	10
27.750.1410	MF14	1	36	10
27.750.1412	MF14	1.25	36	10
27.750.1415	MF14	1.5	36	10
27.750.1610	MF16	1	41	14
27.750.1612	MF16	1.25	41	14
27.750.1615	MF16	1.5	41	14
27.750.1810	MF18	1	41	14
27.750.1812	MF18	1.25	41	14
27.750.1815	MF18	1.5	41	14
27.750.1820	MF18	2	41	14
27.750.2010	MF20	1	41	14
27.750.2012	MF20	1.25	41	14
27.750.2015	MF20	1.5	41	14
27.750.2020	MF20	2	41	14
27.750.2212	MF22	1.25	50	16
27.750.2215	MF22	1.5	50	16
27.750.2220	MF22	2	50	16
27.750.2415	MF24	1.5	50	16
27.750.2420	MF24	2	50	16
27.750.2515	MF25	1.5	50	16
27.750.2615	MF26	1.5	50	16
27.750.2620	MF26	2	50	16
27.750.2715	MF27	1.5	60	18
27.750.2720	MF27	2	60	18
27.750.2815	MF28	1.5	60	18
27.750.2820	MF28	2	60	18
27.750.3015	MF30	1.5	60	18
27.750.3020	MF30	2	60	18
27.750.3215	MF32	1.5	60	18
27.750.3220	MF32	2	60	18
27.750.3315	MF33	1.5	60	18
27.750.3515	MF35	1.5	60	18
27.750.3520	MF35	2	60	18
27.750.3615	MF36	1.5	60	18
27.750.3620	MF36	2	60	18
27.750.3630	MF36	3	60	25
27.750.3815	MF38	1.5	70	20
27.750.3820	MF38	2	70	20
27.750.4015	MF40	1.5	70	20
27.750.4020	MF40	2	70	20
27.750.4030	MF40	3	70	30
27.750.4215	MF42	1.5	70	20
27.750.4220	MF42	2	70	20
27.750.4230	MF42	3	70	30
27.750.4515	MF45	1.5	85	22
27.750.4530	MF45	3	85	36
27.750.4615	MF46	1.5	85	22
27.750.4815	MF48	1.5	85	22
27.750.4820	MF48	2	85	22
27.750.4830	MF48	3	85	36
27.750.5015	MF50	1.5	85	22
27.750.5020	MF50	2	85	22
27.750.5215	MF52	1.5	85	22
27.750.5220	MF52	2	85	22
27.750.6020	MF60	2	100	22

› 27.800 International Tools

NL ECO PRO HSS Zeskante Snijmoer UNC
FR Filière hexagonale HSS ECO PRO UNC
ES Terraja hexagonal HSS ECO PRO UNC
DE ECO PRO HSS Sechskant Schneideisen UNC
EN ECO PRO HSS Hexagon Die Nut UNC



HSS | UNC | 60° | DIN 382 | 2A | ECO PRO

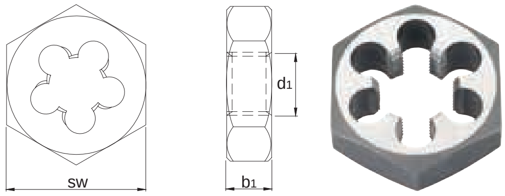
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

Ref.	d1	TPI	sw	b1
27.800.0635	UNC 1/4	20	19	7
27.800.0794	UNC 5/16	18	22	9
27.800.0952	UNC 3/8	16	27	11
27.800.1111	UNC 7/16	14	27	11
27.800.1270	UNC 1/2	13	36	14
27.800.1429	UNC 9/16	12	36	14
27.800.1588	UNC 5/8	11	41	18

Ref.	d1	TPI	sw	b1
27.800.1905	UNC 3/4	10	41	18
27.800.2222	UNC 7/8	9	50	22
27.800.2540	UNC 1	8	50	22
27.800.2858	UNC 1.1/8	7	60	25
27.800.3175	UNC 1.1/4	7	60	25
27.800.3810	UNC 1.1/2	6	70	30

› 27.840 International Tools

NL ECO PRO HSS Zeskante Snijmoer UNF
FR Filière hexagonale HSS ECO PRO UNF
ES Terraja hexagonal HSS ECO PRO UNF
DE ECO PRO HSS Sechskant Schneideisen UNF
EN ECO PRO HSS Hexagon Die Nut UNF



HSS | UNF | 60° | DIN 382 | 2A | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

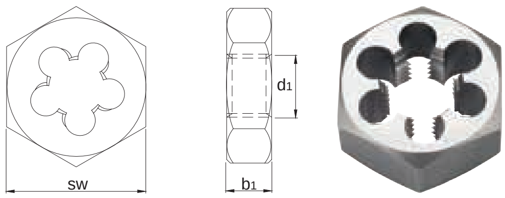
Ref.	d1	TPI	sw	b1
27.840.0635	UNF 1/4	28	19	7
27.840.0794	UNF 5/16	24	22	9
27.840.0952	UNF 3/8	24	27	11
27.840.1111	UNF 7/16	20	27	11
27.840.1270	UNF 1/2	20	36	10

Ref.	d1	TPI	sw	b1
27.840.1429	UNF 9/16	18	36	10
27.840.1588	UNF 5/8	18	41	14
27.840.1905	UNF 3/4	16	41	14
27.840.2222	UNF 7/8	14	50	16
27.840.2540	UNF 1	12	50	16

Ref.	d1	TPI	sw	b1
27.840.2858	UNF 1.1/8	12	60	18
27.840.3175	UNF 1.1/4	12	60	18
27.840.3810	UNF 1.1/2	12	70	20

› 27.900 International Tools

NL ECO PRO HSS Zeskante Snijmoer G (BSP)
FR Filière hexagonale HSS ECO PRO G (BSP)
ES Terraja hexagonal HSS ECO PRO G (BSP)
DE ECO PRO HSS Sechskant Schneideisen G (BSP)
EN ECO PRO HSS Hexagon Die Nut G (BSP)



HSS | BSP G | 55° | DIN 382 | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

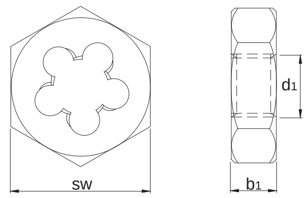
Ref.	d1	TPI	sw	b1
27.900.0973	G 1/8	28	27	11
27.900.1316	G 1/4	19	36	10
27.900.1666	G 3/8	19	41	14
27.900.2096	G 1/2	14	41	14
27.900.2291	G 5/8	14	50	16
27.900.2644	G 3/4	14	50	16

Ref.	d1	TPI	sw	b1
27.900.3020	G 7/8	14	60	18
27.900.3325	G 1	11	60	18
27.900.3790	G 1.1/8	11	70	20
27.900.4191	G 1.1/4	11	70	20
27.900.4432	G 1.3/8	11	85	22
27.900.4780	G 1.1/2	11	85	22

Ref.	d1	TPI	sw	b1
27.900.5375	G 1.3/4	11	85	22
27.900.5961	G 2	11	100	22
27.900.7518	G 2.1/2	11	120	22
27.900.8788	G 3	11	130	22

› 27.940 International Tools

NL ECO PRO HSS Zeskante Snijmoer BSW (Whitworth)
FR Filière hexagonale HSS ECO PRO BSW (Whitworth)
ES Terraja hexagonal HSS ECO PRO BSW (Whitworth)
DE ECO PRO HSS Sechskant Schneideisen BSW (Whitworth)
EN ECO PRO HSS Hexagon Die Nut BSW (Whitworth)



HSS | BSW | 55° | DIN 382 | ECO PRO

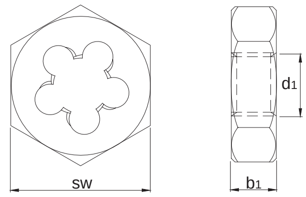
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

Ref.	d1	TPI	sw	b1
27.940.0317	BSW 1/8	40	19	5
27.940.0476	BSW 3/16	24	19	7
27.940.0635	BSW 1/4	20	19	7
27.940.0794	BSW 5/16	18	22	9
27.940.0952	BSW 3/8	16	27	11
27.940.1111	BSW 7/16	14	27	11
27.940.1270	BSW 1/2	12	36	14
27.940.1588	BSW 5/8	11	41	18
27.940.1905	BSW 3/4	10	41	18

Ref.	d1	TPI	sw	b1
27.940.2222	BSW 7/8	9	50	22
27.940.2540	BSW 1	8	50	22
27.940.2858	BSW 1.1/8	7	60	25
27.940.3175	BSW 1.1/4	7	60	25
27.940.3493	BSW 1.3/8	6	60	25
27.940.3810	BSW 1.1/2	6	70	30
27.940.4445	BSW 1.3/4	5	85	36
27.940.5080	BSW 2	4.5	85	36

› 27.980 Phantom

NL HSS Zeskante Snijmoer NPT
FR Filière hexagonale HSS NPT
ES Terraja hexagonal HSS NPT
DE HSS Sechskant Schneideisen NPT
EN HSS Hexagon Die Nut NPT



HSS | NPT | 60° | DIN 382 | 1:16

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

Ref.	d1	TPI	sw	b1
27.980.1029	NPT 1/8	27	27	11
27.980.1372	NPT 1/4	18	36	14

Ref.	d1	TPI	sw	b1
27.980.1715	NPT 3/8	18	41	14
27.980.2134	NPT 1/2	14	41	18

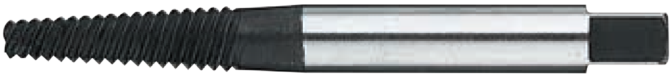
Ref.	d1	TPI	sw	b1
27.980.2667	NPT 3/4	14	60	18
27.980.3340	NPT 1	11.5	60	25

NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me

www.phantom.eu

› 28.800 International Tools



NL **ECO Draadeinduithaler**
FR **Extracteurs de vis, goujons et tubes cassés ECO**
ES **Extractor de tornillos rotos ECO**
DE **ECO Schraubenausdreher**
EN **ECO Extractors for broken screws, bolts etc.**

ECO

Ref.	Nr. Ø	M
28.800.0100	1	M3-6
28.800.0200	2	M6-8
28.800.0300	3	M8-11
28.800.0400	4	M11-14
28.800.0500	5	M14-18
28.800.0600	6	M18-24
28.800.0700	7	M24-33
28.800.0800	8	M33-45

NL Afgebroken bout verwijderen of afgebroken schroef uitboren?
FR Extraire un boulon cassé où enlever une vis cassée ?
ES ¿Quitar un perno roto, o taladrar un tornillo roto?
DE Abgebrochene Schraube entfernen oder ausbohren?
EN Remove broken bolts or drill out broken screws?

Read me

www.phantom.eu

› 28.810 International Tools

NL **ECO Tapeinduithaler**
FR **Extracteur de tarauds ECO**
ES **Extractor de machos rotos ECO**
DE **ECO Gewindekronen**
EN **ECO Flute Tap Extractor**

ECO

Ref.	M	Ø "	z
28.810.0302	3	1/8	2
28.810.0403	4	5/32	3
28.810.0502	5	3/16	2
28.810.0503	5	3/16	3
28.810.0603	6	1/4	3
28.810.0604	6	1/4	4
28.810.0803	8	5/16	3
28.810.0804	8	5/16	4
28.810.1003	10	3/8	3
28.810.1004	10	3/8	4
28.810.1203	12	1/2	3
28.810.1204	12	1/2	4
28.810.1403	14	9/16	3
28.810.1404	14	9/16	4
28.810.1603	16	5/8	3
28.810.1604	16	5/8	4
28.810.2003	20	3/4	3
28.810.2004	20	3/4	4
28.810.2204	22	7/8	4
28.810.2404	24	1	4

› 28.820 International Tools

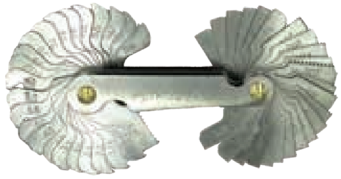
NL **ECO PRO Schroefdraadmeter Metrisch**
FR **Jauge de pas de filetage ECO PRO Métrique**
ES **Calibre de paso de rosca ECO PRO Métrica**
DE **ECO PRO Gewindesteigungslehre Metrisch**
EN **ECO PRO Thread pitch gauge Metric Coarse**

M MF ECO PRO

NIEUW NOUVEAU NUEVO NEU

Ref.	Type	NR
28.820.0260	P: 0,25-6,0 mm	24
28.820.0517	P: 0,5-1,75 mm	12

› 28.825 *International Tools*



NL ECO PRO Schroefdraadmeter Metrisch, BSW (Whitworth)
FR Jauge de pas de filetage ECO PRO Métrique, BSW (Whitworth)
ES Calibre de paso de rosca ECO PRO Métrica, BSW (Whitworth)
DE ECO PRO Gewindesteigungslehre Metrisch, BSW (Whitworth)
EN ECO PRO Thread pitch gauge Metric Coarse, BSW (Whitworth)

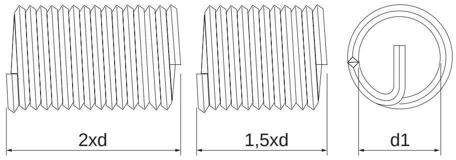
M | MF | BSW | BSF | ECO PRO

NIEUW NOUVEAU NUEVO NEU

Ref.	Type	NR
28.825.0262	M-P: 0,25-6,0/BSW-TPI: 4-28	52

› 28.830 Phantom

NL **Phan-Coil RVS Schroefdraad inzetstukken Metrisch**
FR **Phan-Coil Filets rapportés Inox Métrique**
ES **Phan-Coil Insertos roscados acero inoxidable Métrica**
DE **Phan-Coil rostfreien Stahl Gewindeeinsätze Metrisch**
EN **Phan-Coil stainless steel Screw Thread Insert Metric Coarse**

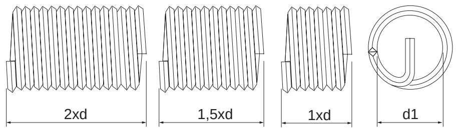


Phan-Coil | EG | M

Ref.	d1	P	Max. x d1	Packed per
28.830.2030	M3	0.5	1.5	50
28.830.2040	M4	0.7	1.5	50
28.830.2050	M5	0.8	1.5	50
28.830.2060	M6	1	1.5	50
28.830.2080	M8	1.25	1.5	50
28.830.2100	M10	1.5	1.5	25
28.830.2120	M12	1.75	1.5	15
28.830.2140	M14	2	1.5	5
28.830.2160	M16	2	1.5	5
28.830.4030	M3	0.5	2	50
28.830.4040	M4	0.7	2	50
28.830.4050	M5	0.8	2	50
28.830.4060	M6	1	2	50
28.830.4080	M8	1.25	2	50
28.830.4100	M10	1.5	2	25
28.830.4120	M12	1.75	2	15
28.830.4140	M14	2	2	5
28.830.4160	M16	2	2	5

› 28.831 Phantom

NL **Phan-Coil RVS Schroefdraad inzetstukken Metrisch Fijn**
FR **Phan-Coil Filets rapportés Inox Métrique Fin**
ES **Phan-Coil Insertos roscados acero inoxidable Métrica Fina**
DE **Phan-Coil rostfreien Stahl Gewindeeinsätze Metrisch Fein**
EN **Phan-Coil stainless steel Screw Thread Insert Metric Fine**



Phan-Coil | EG | MF

Ref.	d1	P	Max. x d1	Packed per
28.831.0102	MF10	1	1	25
28.831.0103	MF10	1.25	1	25
28.831.0124	MF12	1.5	1	15
28.831.0144	MF14	1.5	1	5
28.831.0164	MF16	1.5	1	5
28.831.0184	MF18	1.5	1	3
28.831.2082	MF8	1	1.5	50
28.831.2102	MF10	1	1.5	25
28.831.2103	MF10	1.25	1.5	25
28.831.2124	MF12	1.5	1.5	15
28.831.2144	MF14	1.5	1.5	5
28.831.2164	MF16	1.5	1.5	5
28.831.2184	MF18	1.5	1.5	3
28.831.4103	MF10	1.25	2	25
28.831.4124	MF12	1.5	2	15
28.831.4144	MF14	1.5	2	5

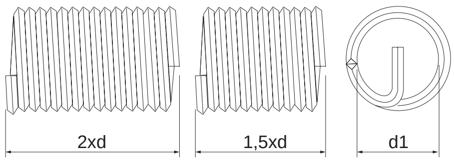
NL Schroefdraad repareren of herstellen
FR Réparer ou restaurer un filetage ?
ES ¿Reparar o restaurar roscas?
DE Gewinde reparieren oder wiederherstellen?
EN Threading – repair or restore?

Read me

www.phantom.eu

› 28.832 Phantom

NL Phan-Coil RVS Schroefdraad inzetstukken UNC
FR Phan-Coil Filets rapportés Inox UNC
ES Phan-Coil Insertos roscados acero inoxidable UNC
DE Phan-Coil rostfreien Stahl Gewindeeinsätze UNC
EN Phan-Coil stainless steel Screw Thread Insert UNC

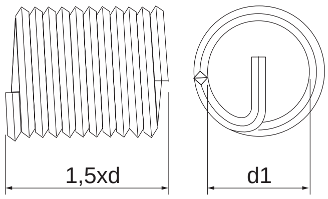


Phan-Coil | EG | UNC

Ref.	d1	TPI	Max. x d1	Packed per
28.832.2048	UNC Nr. 10	24	1.5	50
28.832.2063	UNC 1/4	20	1.5	25
28.832.2079	UNC 5/16	18	1.5	20
28.832.2095	UNC 3/8	16	1.5	10
28.832.2127	UNC 1/2	13	1.5	5
28.832.2158	UNC 5/8	11	1.5	3
28.832.4048	UNC Nr. 10	24	2	50
28.832.4063	UNC 1/4	20	2	25
28.832.4079	UNC 5/16	18	2	20
28.832.4095	UNC 3/8	16	2	10
28.832.4127	UNC 1/2	13	2	5
28.832.4158	UNC 5/8	11	2	3

› 28.833 Phantom

NL Phan-Coil RVS Schroefdraad inzetstukken UNF
FR Phan-Coil Filets rapportés Inox UNF
ES Phan-Coil Insertos roscados acero inoxidable UNF
DE Phan-Coil rostfreien Stahl Gewindeeinsätze UNF
EN Phan-Coil stainless steel Screw Thread Insert UNF

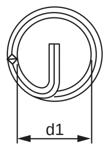


Phan-Coil | EG | UNF

Ref.	d1	TPI	Max. x d1	Packed per
28.833.2048	UNF Nr. 10	32	1.5	50
28.833.2063	UNF 1/4	28	1.5	50
28.833.2079	UNF 5/16	24	1.5	25
28.833.2095	UNF 3/8	24	1.5	20
28.833.2127	UNF 1/2	20	1.5	5
28.833.2158	UNF 5/8	18	1.5	5

› 28.860 Phantom

NL Draadinzetter voor Phan-Coil
FR Broche de pose pour Phan-Coil
ES Herramienta de inserción para Phan-Coil
DE Einbauwerkzeug für Phan-Coil
EN Insertion spindle for Phan-Coil

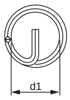


Phan-Coil

Ref.	Nr. Ø	d1
28.860.0025	25	M4
28.860.0030	30	UNC Nr. 10
28.860.0035	35	M5 - UNF Nr. 10
28.860.0040	40	M6
28.860.0045	45	UNC 1/4 - UNF 1/4
28.860.0055	55	M8 - MF8x1 - UNC 5/16 - UNF 5/16
28.860.0065	65	UNC 3/8

Ref.	Nr. Ø	d1
28.860.0070	70	M10 - MF10x1 - MF10x1,25 - UNF 3/8
28.860.0080	80	M12 - MF12x1,5
28.860.0085	85	UNC 1/2 - UNF 1/2
28.860.0090	90	M14 - MF14x1,5
28.860.0095	95	M16 - MF16x1,5 - UNC 5/8 - UNF 5/8
28.860.0100	100	M18 - MF18x2 - MF18x1,5

› 28.865 Phantom



NL Draadlipbreker voor Phan-Coil
FR Rupteur d'entraîneur pour Phan-Coil
ES Rompedor de lengüeta para Phan-Coil
DE Zapfenbrecher für Phan-Coil
EN Tang break-off tool for Phan-Coil

Phan-Coil

Ref.	Nr. Ø	d1	Ref.	Nr. Ø	d1
28.865.0025	25	M4	28.865.0070	70	M10 - MF10x1 - MF10x1,25 - UNF 3/8
28.865.0030	30	UNC Nr. 10	28.865.0080	80	M12 - MF12x1,5
28.865.0035	35	M5 - UNF Nr. 10	28.865.0085	85	UNC 1/2 - UNF 1/2
28.865.0040	40	M6	28.865.0090	90	M14 - MF14x1,5
28.865.0045	45	UNC 1/4 - UNF 1/4	28.865.0095	95	M16 - MF16x1,5 - UNC 5/8 - UNF 5/8
28.865.0055	55	M8 - MF8x1 - UNC 5/16 - UNF 5/16	28.865.0100	100	M18 - MF18x2 - MF18x1,5
28.865.0065	65	UNC 3/8			

› 28.870 Phantom

NL Set Phan-Coils Metrisch
FR Jeu de Phan-Coils Métrique
ES Juego de Phan-Coils Métrica
DE Satz Phan-Coils Metrisch
EN Set Phan-Coils Metric Coarse

Phan-Coil | EG | M

Ref.	d1	P	Max. x d1	1	2	3	4	5
28.870.0040	M4	0.7	2	11.450.0420	21.812.0400	28.860.0025	28.865.0025	1,5xD (5), 2xD (5)
28.870.0050	M5	0.8	2	11.450.0525	21.812.0500	28.860.0035	28.865.0035	1,5xD (5), 2xD (5)
28.870.0060	M6	1	2	11.450.0630	21.812.0600	28.860.0040	28.865.0040	1,5xD (5), 2xD (5)
28.870.0080	M8	1.25	2	11.450.0840	21.812.0800	28.860.0055	28.865.0055	1,5xD (5), 2xD (5)
28.870.0100	M10	1.5	2	11.450.1050	21.812.1000	28.860.0070	28.865.0070	1,5xD (5), 2xD (5)
28.870.0120	M12	1.75	2	11.450.1250	21.812.1200	28.860.0080	28.865.0080	1,5xD (3), 2xD (3)
28.870.0160	M16	2	2	11.450.1650	21.812.1600	28.860.0095	28.865.0095	1,5xD (2), 2xD (2)

NL Schroefdraad repareren of herstellen
FR Réparer ou restaurer un filetage ?
ES ¿Reparar o restaurar roscas?
DE Gewinde reparieren oder wiederherstellen?
EN Threading – repair or restore?

Read me

www.phantom.eu

› 28.871 Phantom

NL Set Phan-Coils Metrisch Fijn
FR Jeu de Phan-Coils Métrique Fin
ES Juego de Phan-Coils Métrica Fina
DE Satz Phan-Coils Metrisch Fein
EN Set Phan-Coils Metric Fine

Phan-Coil | EG | MF

Ref.	d1	P	Max. x d1	1	2	3	4	5
28.871.0082	MF8	1	1.5	11.450.0830	21.822.0810	28.860.0055	28.865.0055	1,5xD (5)
28.871.0102	MF10	1	1.5	11.450.1030	21.822.1010	28.860.0070	28.865.0070	1,5xD (5)
28.871.0103	MF10	1.25	1.5	11.450.1040	21.822.1025	28.860.0070	28.865.0070	1,5xD (5)
28.871.0124	MF12	1.5	2	11.450.1250	21.822.1215	28.860.0080	28.865.0080	1,5xD (3), 2xD (3)

› 28.872 Phantom

NL Set Phan-Coils UNC
FR Jeu de Phan-Coils UNC
ES Juego de Phan-Coils UNC
DE Satz Phan-Coils UNC
EN Set Phan-Coils UNC

1 2 3 4 5

Phan-Coil | EG | UNC

Ref.	d1	TPI	Max. x d1	1	2	3	4	5
28.872.0048	UNC Nr. 10	24	2	11.450.0510	21.832.0482	28.860.0030	28.865.0030	1,5xD (5), 2xD (5)
28.872.0063	UNC 1/4	20	2	11.450.0670	21.832.0635	28.860.0045	28.865.0045	1,5xD (5), 2xD (5)
28.872.0079	UNC 5/16	18	2	11.450.0840	21.832.0794	28.860.0055	28.865.0055	1,5xD (5), 2xD (5)
28.872.0095	UNC 3/8	16	2	11.450.1000	21.832.0952	28.860.0065	28.865.0065	1,5xD (5), 2xD (5)
28.872.0127	UNC 1/2	13	2	11.450.1330	21.832.1270	28.860.0085	28.865.0085	1,5xD (3), 2xD (3)

› 28.880 Phantom

NL Set Phan-Coils Metrisch, (combinatie)
FR Jeu de Phan-Coils Métrique, (combinaison)
ES Juego de Phan-Coils Métrica, (combinación)
DE Satz Phan-Coils Metrisch, (Kombination)
EN Set Phan-Coils Metric Coarse, (combination)

1 2 3 4 5

Phan-Coil | EG | M

Ref.	Contents	1	2	3	4	5
28.880.1000	M5 M6 M8 M10 M12	11.450.0525 11.450.0630 11.450.0840 11.450.1050 11.450.1250	21.812.0500 21.812.0600 21.812.0800 21.812.1000 21.812.1200	28.860.0035 28.860.0040 28.860.0055 28.860.0070 28.860.0080	28.865.0035 28.865.0040 28.865.0055 28.865.0070 28.865.0080	M5 1,5xD(4) 2xD(4)M6 1,5xD(4) 2xD(4) M8 1,5xD(4) 2xD(4) M10 1,5xD(3) 2xD(3) M12 1,5xD(3) 2xD(3)

› 29.100 International Tools

NL ECO PRO HSS Set Draadsnijden in kunststof koffer
FR Coffret de taraudage HSS ECO PRO en coffret plastique
ES Juego de roscar HSS ECO PRO en estuche plástico
DE ECO PRO HSS Satz Gewindeschneiden im Kunststoffkoffer
EN ECO PRO HSS Set Threading Tools in plastic case

1 2 3 4 5 6 7

HSS | M | 60° | ISO 2 6H | ECO PRO

Ref.	Ø	1	2	3	4	5	6	7
29.100.1000	M3-M12	M3-4-5-6-8-10-12	M3-4-5-6-8-10-12	2,5-3,3-4,2-5-6,8-8,5-10,2	Nr. 1 + 2	Nr. 1 + 2	20x5-20x7-25x9-30x11-38x14	2,7-3,4-4,9-5,5-7
29.100.2000	M3-M12	M3-4-5-6-8-10-12	(Ø25 mm) M3-4-5-6-8-10-12	2,5-3,3-4,2-5-6,8-8,5-10,2	Nr. 1,5	Nr. 1	25x9	-

› 29.110 International Tools

NL ECO PRO HSS Set Draadsnijden in kunststof koffer
FR Coffret de taraudage HSS ECO PRO en coffret plastique
ES Juego de roscar HSS ECO PRO en estuche plástico
DE ECO PRO HSS Satz Gewindeschneiden im Kunststoffkoffer
EN ECO PRO HSS Set Threading Tools in plastic case

1 2 3 4 5 6

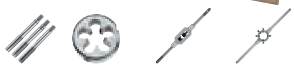
HSS | ECO PRO

NIEUW NOUVEAU NUEVO NEU

Ref.	Ø	1	2	3	4	5	6
29.110.0314	M3-M14	M3-4-5-6-8-10-12-14	M3-4-5-6-8-10-12-14	-	Nr. 1 + 2	-	20x5-20x7-25x9-30x11-38x14
29.110.0530	M5-M30	M5-6-8-10-12-14-16-18-20-22-24-27-30	M5-6-8-10-12-14-16-18-20-22-24-27-30	-	Nr. 1 + 3 + 5	-	20x7-25x9-30x11-38x14-45x18-55x22-65x25
29.110.1312	M3-M12	M3-4-5-6-8-10-12	M3-4-5-6-8-10-12	2,5-3,3-4,2-5-6,8-8,5-10,2	Nr. 1 + 2	Nr. 1 + 2	20x5-20x7-25x9-30x11-38x14
29.110.1324	M3-M24	M3-4-5-6-8-10-12-14-16-18-20-22-24	M3-4-5-6-8-10-12-14-16-18-20-22-24	-	Nr. 0 + 2 + 4	-	20x5-20x7-25x9-30x11-38x14-45x18-55x22
29.110.3225	G (BSP) 1/8-1"	G (BSP) 1/8-1/4-3/8-1/2-3/4-1"	G (BSP) 1/8-1/4-3/8-1/2-3/4-1"	-	Nr. 3 + 5	-	30x11-38x10-45x14-55x16-65x18
29.110.8312	M3-M12	M3-4-5-6-8-10-12	(Ø25 mm) M3-4-5-6-8-10-12	2,5-3,3-4,2-5-6,8-8,5-10,2	Nr. 1,5	Nr. 1	25x9

› 29.120 International Tools

NL ECO PRO HSS Set Draadsnijden in houten cassette
FR Coffret de taraudage HSS ECO PRO en coffret bois
ES Juego de roscar HSS ECO PRO en estuche de madera
DE ECO PRO HSS Satz Gewindeschneiden in Holzkassetten
EN ECO PRO HSS Set Threading Tools in wooden case



1 2 3 4

HSS | ECO PRO

Ref.	Ø	1	2	3	4
29.120.0001	M3-M14	M3-4-5-6-8-10-12-14	M3-4-5-6-8-10-12-14	Nr. 1 + 2	20x5-20x7-25x9-30x11-38x14
29.120.0002	M3-M24	M3-4-5-6-8-10-12-14-16-18-20-22-24	M3-4-5-6-8-10-12-14-16-18-20-22-24	Nr. 0 + 2 + 4	20x5-20x7-25x9-30x11-38x14-45x18-55x22
29.120.0003	M5-M30	M5-6-8-10-12-14-16-18-20-22-24-27-30	M5-6-8-10-12-14-16-18-20-22-24-27-30	Nr. 1 + 3 + 5	20x7-25x9-30x11-38x14-45x18-55x22-65x25
29.120.0004	UNC1/4-1"	UNC 1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	UNC 1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	Nr. 0 + 2 + 4	20x7-25x9-30x11-38x14-45x18-55x22
29.120.0005	UNF1/4-1"	UNF 1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	UNF 1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	Nr. 0 + 2 + 4	20x7-25x9-30x11-38x10-45x14-55x16
29.120.0006	G (BSP) 1/8-1"	G (BSP) 1/8-1/4-3/8-1/2-3/4-1"	G (BSP) 1/8-1/4-3/8-1/2-3/4-1"	Nr. 3 + 5	30x11-38x10-45x14-55x16-65x18
29.120.0007	MF6-20	MF 6x0,75-8x1-10x1-12x1,5-14x1,5-16x1,5-18x1,5-20x1,5	MF 6x0,75-8x1-10x1-12x1,5-14x1,5-16x1,5-18x1,5-20x1,5	Nr. 1 + 3	20x7-25x9-30x11-38x10-45x14
29.120.0009	NPT1/8-1"	NPT 1/8-1/4-3/8-1/2-3/4-1"	NPT 1/8-1/4-3/8-1/2-3/4-1"	Nr. 1 + 3 + 5	30x11-38x14-45x18-55x22-65x25
29.120.1320	M3-M20	M3-4-5-6-8-10-12-14-16-18-20	M3-4-5-6-8-10-12-14-16-18-20	Nr. 1 + 3	20x5-20x7-25x9-30x11-38x14-45x18
29.120.7225	BSW1/8-1"	BSW 1/8-3/16-1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	BSW 1/8-3/16-1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	Nr. 0 + 2 + 4	20x5-20x7-25x9-30x11-38x14-45x18-55x22

› 29.130 *International Tools*

NL ECO PRO HSS Set Draadsnijden in stalen cassette
FR Coffret de taraudage HSS ECO PRO en coffret métal
ES Juego de roscar HSS ECO PRO en estuche metálico
DE ECO PRO HSS Satz Gewindeschneiden in Kassette aus Stahl
EN ECO PRO HSS Set Threading Tools in metal case

HSS | M | 60° | ISO 2 6H | ECO PRO

Ref.	Ø	1	2	3	4	5
29.130.0200	M3-M12	M3-4-5-6-8-10-12	M3-4-5-6-8-10-12	-	Nr. 1.5	25x9
29.130.1312	M3-M12	M3-4-5-6-8-10-12	M3-4-5-6-8-10-12	2,5-3,3-4,2-5-6,8-8,5-10,2	Nr. 1 + 2	20x5-20x7-25x9-30x11-38x14
29.130.1320	M3-M20	M3-4-5-6-8-10-12-14-16-18-20	M3-4-5-6-8-10-12-14-16-18-20	-	Nr. 1 + 3	20x5-20x7-25x9-30x11-38x14-45x18

› 29.170 *International Tools*

NL ECO HSS Set Draadsnijden in kunststof koffer
FR Coffret de taraudage HSS ECO en coffret plastique
ES Juego de roscar HSS ECO en estuche plástico
DE ECO HSS Satz Gewindeschneiden im Kunststoffkoffer
EN ECO HSS Set Threading Tools in plastic case

HSS | M | 60° | DIN 352 | ISO 2 6H | ECO

NIEUW NOUVEAU NUEVO NEU

Ref.	1	2	3
29.170.0312	21.140 (M3-4-5-6-8-10-12)	Nr. 1,5	Nr. 1

› 29.180 *International Tools*

NL ECO HSS Set Handtappen (combinatie)
FR Jeu de Tarauds à main HSS ECO (combinaison)
ES Juego de Machos mano HSS ECO (combinación)
DE ECO HSS Satz Handgewindebohrer (Kombination)
EN ECO HSS Hand tap Set (combination)

HSS | M | 60° | DIN 352 | ISO 2 6H | ECO

Ref.	1	2
29.180.0001	21.140 (M3-4-5-6-8-10-12)	-
29.180.0002	21.140 (M3-4-5-6-8-10-12)	11.400 (2,5-3,3-4,2-5-6,8-8,5-10,2)

› 29.185 *International Tools*

NL ECO HSS Set Draadsnijden 1/4" (6,35 mm)-zeskant bitopname, (combinatie)
FR Coffret de taraudage HSS ECO avec queue hexagonale 1/4" (6,35 mm), (combinaison)
ES Juego de roscar HSS ECO con sujeción 1/4" (6,35 mm) bit, (combinación)
DE ECO HSS Satz Gewindeschneiden 1/4" (6,35 mm) Hexa-Bitaufnahme, (Kombination)
EN ECO HSS Set Threading Tools 1/4" (6,35 mm) hexagonal shank, (combination)

HSS | M | 60° | DIN 3126 | C6,3 1/4" | ISO 2 6H | ECO

Ref.	1	2	3
29.185.1310	22.100 (M3-4-5-6-8-10)	11.120 (2,5-3,3-4,2-5-6,8-8,5)	81.990.0635

› 29.190 International Tools

A B

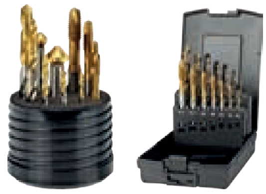
1 2 3 4

NL **ECO Set machinetappen (combinatie)**
FR **Jeu de tarauds machine ECO (combinaison)**
ES **Juego de machos máquina ECO (combinación)**
DE **ECO Satz Maschinengewindebohren (Kombination)**
EN **ECO machine tap Set (combination)**

HSS | M | 60° | ISO 2 6H | ECO

Ref.	1	2	3	4	A, B, C
29.190.1000	22.191/22.192 (M3-4-5-6-8-10-12)	-	-	-	B
29.190.2000	22.191/22.192 (M3-4-5-6-8-10-12)	11.416 (2,5-4,2-5-6,8-8,5-10,2)	-	-	B
29.190.2250	22.190 (M3-4-5-6-8-10-12)	11.416 (2,5-4,2-5-6,8-8,5-10,2)	-	81.900 (Nr. 1,5)	B
29.190.3000	22.190 (M4-5-6-8-10)	11.416 (3,3-4,2-5-6,8-8,5)	42.533 (10,4 16,5)	-	A
29.190.6000	23.291/23.292 (M3-4-5-6-8-10-12)	-	-	-	B

› 29.195 International Tools



A B

1 2 3 4

NL **ECO PRO Set machinetappen (combinatie)**
FR **Jeu de tarauds machine ECO PRO (combinaison)**
ES **Juego de machos máquina ECO PRO (combinación)**
DE **ECO PRO Satz Maschinengewindebohren (Kombination)**
EN **ECO PRO machine tap Set (combination)**

M | 60° | ISO 2 6H | ECO PRO

Ref.	1	2	3	4	A, B, C
29.195.1000	22.195/22.196 (M3-4-5-6-8-10-12)	-	-	-	B
29.195.1250	22.197/22.198 (M3-4-5-6-8-10-12)	-	-	-	B
29.195.1500	22.595/22.596 (M3-4-5-6-8-10-12)	-	-	-	B
29.195.2000	22.195/22.196 (M3-4-5-6-8-10-12)	11.420 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	-	B
29.195.2250	22.195/22.196 (M3-4-5-6-8-10-12)	11.420 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	81.905 (Nr. 1,5)	B
29.195.2500	22.195/22.196 (M3-4-5-6-8-10-12)	11.490 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	-	B
29.195.3000	22.195 (M4-5-6-8-10)	11.420 (3,3-4,2-5-6,8-8,5)	42.535 (10,4 16,5)	-	A
29.195.3500	22.197 (M4-5-6-8-10)	11.431 (3,3-4,2-5-6,8-8,5)	42.536 (10,4 16,5)	-	A
29.195.4000	22.197/22.198 (M3-4-5-6-8-10-12)	11.431 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	-	B
29.195.5000	22.197/22.198 (M3-4-5-6-8-10-12)	11.490 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	-	B
29.195.6000	23.295/23.296 (M3-4-5-6-8-10-12)	-	-	-	B

› 29.220 Phantom

B C

1 2

NL **HSS Set Handtappen (combinatie)**
FR **Jeu de Tarauds à main HSS (combinaison)**
ES **Juego de Machos mano HSS (combinación)**
DE **HSS Satz Handgewindebohrer (Kombination)**
EN **HSS Hand tap Set (combination)**

HSS | M | 60° | ISO 2 6H

Ref.	1	2	A, B, C
29.220.0003	21.100 (M3-4-5-6-8-10-12)	-	C
29.220.0004	21.145 (M3-4-5-6-8-10-12)	-	B
29.220.0005	21.145 (M3-4-5-6-8-10-12)	11.450 (2,5-3,3-4,2-5-6,8-8,5-10,2)	B

› 29.240 Phantom

NL Set Draadsnijden, Cassette leeg
FR Coffret de taraudage, Coffret vide
ES Juego de roscar, Estuche vacío
DE Satz Gewindeschneiden, Kassette leer
EN Set Threading Tools, Cassette empty


B


C

Ref.	1	2	A, B, C
29.240.0002	DIN 352 (M3-4-5-6-8-10-12 X 3)	DIN 338 (2,5-3,3-4,2-5-6,8-8,5-10,2)	C
29.240.0003	ISO 529 (M3-4-5-6-8-10-12 X 3)	-	C
29.240.0004	DIN 371/6 (M3-4-5-6-8-10-12 X 1)	-	C
29.240.0006	DIN 376 (M3-4-5-6-8-10-12 X 1)	-	C
29.240.0007	DIN 376 (M3-4-5-6-8-10-12 X 1)	DIN 338 (2,5-3,3-4,2-5-6,8-8,5-10,2)	C
29.240.0008	ISO 529 (M3-4-5-6-8-10-12 X 1)	-	C
29.240.0011	DIN 371/6 (M3-4-5-6-8-10-12 X 1)	-	B
29.240.0012	DIN 371/6 (M3-4-5-6-8-10-12 X 1)	DIN 338 (2,5-3,3-4,2-5-6,8-8,5-10,2)	B
29.240.0013	Phan-Coil set EG M, MF, UNC, UNF	-	C
29.240.0014	DIN 352 (M3-4-5-6-8-10-12 X 1)	DIN 338 (2,5-3,3-4,2-5-6,8-8,5-10,2)	B
29.240.0015	DIN 352 (M3-4-5-6-8-10-12 X 3)	-	B
29.240.0017	DIN 352 (M3-4-5-6-8-10-12 X 3)	DIN 338 (2,5-3,3-4,2-5-6,8-8,5-10,2)	B

› 29.250 Phantom

NL Set machinetappen
FR Jeu de tarauds machine
ES Juego de machos máquina
DE Satz Maschinengewindebohren
EN Machine tap Set


B


C


1

M | 60° | ISO 2 6H

Ref.	1	A, B, C
29.250.2000	22.200/22.201 (M3-4-5-6-8-10-12)	B
29.250.2100	22.201 (M3-4-5-6-8-10-12)	C
29.250.2105	22.201 (M3-4-5-6-8-10-12)	B
29.250.2120	22.230/22.231 (M3-4-5-6-8-10-12)	B
29.250.2150	22.205 (M3-4-5-6-8-10-12)	C
29.250.2155	22.205 (M3-4-5-6-8-10-12)	B
29.250.2500	22.268/22.269 (M3-4-5-6-8-10-12)	B
29.250.2600	22.600/22.601 (M3-4-5-6-8-10-12)	B
29.250.3300	23.300/23.301 (M3-4-5-6-8-10-12)	B
29.250.3450	23.450/23.451 (M3-4-5-6-8-10-12)	B

› 29.260 Phantom

NL Set machinetappen (combinatie)
FR Jeu de tarauds machine (combinaison)
ES Juego de machos máquina (combinación)
DE Satz Maschinengewindebohren (Kombination)
EN Machine tap Set (combination)


A


B


C


1


2


3

M | 60° | ISO 2 6H

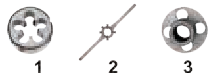
Ref.	1	2	3	A, B, C
29.260.1941	22.200/22.201 (M3-4-5-6-8-10-12)	11.441 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.1980	22.200/22.201 (M3-4-5-6-8-10-12)	11.450 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.1990	22.200/22.201 (M3-4-5-6-8-10-12)	11.451 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.1995	22.200/22.201 (M3-4-5-6-8-10-12)	11.461 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.2000	22.200/22.201 (M3-4-5-6-8-10-12)	11.500 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.2100	22.201 (M3-4-5-6-8-10-12)	11.500 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	C
29.260.2120	22.230/22.231 (M3-4-5-6-8-10-12)	11.461 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.2200	22.220/22.221 (M3-4-5-6-8-10-12)	11.451 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.2205	22.220/22.221 (M3-4-5-6-8-10-12)	11.461 (2,5-3,3-4,2-5-6,8-8,5-10,2)		B
29.260.2240	22.220 (M4-5-6-8-10)	11.451 (3,3-4,2-5-6,8-8,5)	42.540 (10,4 16,5)	A
29.260.2245	22.220 (M4-5-6-8-10)	11.461 (3,3-4,2-5-6,8-8,5)	42.547 (10,4 16,5)	A

› 29.260 Phantom

Ref.	1	2	3	A, B, C
29.260.2500	22.268/22.269 (M3-4-5-6-8-10-12)	11.568 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.2600	22.600/22.601 (M3-4-5-6-8-10-12)	11.760 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.3340	23.300/23.301 (M3-4-5-6-8-10-12)	11.450 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.3350	23.300/23.301 (M3-4-5-6-8-10-12)	11.451 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.3355	23.300/23.301 (M3-4-5-6-8-10-12)	11.461 (2,5-3,3-4,2-5-6,8-8,5-10,2)		B
29.260.3360	23.300/23.301 (M3-4-5-6-8-10-12)	11.500 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B
29.260.3450	23.450/23.451 (M3-4-5-6-8-10-12)	11.760 (2,5-3,3-4,2-5-6,8-8,5-10,2)	-	B

› 29.275 International Tools

NL ECO PRO Set Snijplaten
FR Jeu de Filières ECO PRO
ES Juego de Terraja esférica ECO PRO
DE ECO PRO Satz Schneideisen
EN ECO PRO Set Thread Dies



1 2 3

HSS | M | 60° | DIN EN 22568 | 6g | ECO PRO

Ref.	Type	1	2	3
29.275.0312	27.100	M3-4-5-6-8-10-12	-	-
29.275.0320	27.100	M3-4-5-6-8-10-12-14-16-20	-	-
29.275.1320	27.100	M3-4-5-6-8-10-12-14-16-20	-	-
29.275.9312	27.100	M3-4-5-6-8-10-12	20x5, 20x7, 25x9, 30x11, 38x14	M3-4-5-6-8-10-12

› 29.278 International Tools

NL ECO PRO Set Snijplaten 25 mm
FR Jeu de Filières ECO PRO 25 mm
ES Juego de Terraja esférica ECO PRO 25 mm
DE ECO PRO Satz Schneideisen 25 mm
EN ECO PRO Set Thread Dies 25 mm

1 2

HSS | M | 60° | DIN EN 22568 | 6g | ECO PRO

NIEUW / NOUVEAU / NUEVO / NEU

Ref.	Type	1	2
29.278.0312	27.110	M3-4-5-6-8-10-12 (Ø25 mm)	25x9

› 29.280 Phantom

NL Set Snijplaten
FR Jeu de Filières
ES Juego de Terraja esférica
DE Satz Schneideisen
EN Set Thread Dies

1

HSS | M | 60° | DIN EN 22568 | ≥M3 | 6g

Ref.	Type	1
29.280.0312	27.120	M3-4-5-6-8-10-12
29.280.2000	27.120	M3-4-5-6-8-10-12-14-16-20

› 29.285 International Tools

NL ECO PRO Snijmoeren set
FR Jeu de Filière hexagonale ECO PRO
ES Juego de troqueles hexagonales ECO PRO
DE ECO PRO Schneidmuttern Satz
EN ECO PRO Die nut set

HSS | M | 60° | DIN 382 | 6g | ECO PRO

Ref.	Type	1
29.285.0312	27.700	M3-4-5-6-8-10-12

› 29.300 International Tools

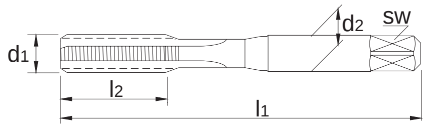
NL ECO Set Draadeinduithalers
FR Jeu d'extracteurs, goujons et tubes cassés ECO
ES Juego de extractores de tornillos rotos ECO
DE ECO Satz Schraubenausdreher
EN ECO Set Extractors for broken screws, bolts etc.

ECO

Ref.	1
29.300.0100	28.800 Nr. 1-5 / M3-M18
29.300.0200	28.800 Nr. 1-6 / M3-M24
29.300.0300	28.800 Nr. 1-8 / M3-M45

› 29.910 Phantom

NL HSS Handtappen Metrisch, links, set à 3 stuks
FR Tarauds à main HSS Métrique, à gauche, Jeu de 3 pièces
ES Machos mano HSS Métrica, izquierda, juego de 3 piezas
DE HSS Handgewindebohrer Metrisch, links, Satz von 3 Stück
EN HSS Hand Taps Metric Coarse, left hand, set of 3 pieces

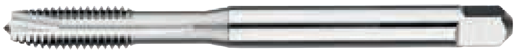


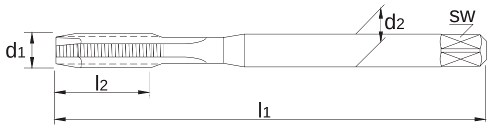
HSS | M | 60° | NFE 66103 | ISO 529 | FormA 6-8 | FormD 3,5-5 | FormC 2-3 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
29.910.0300	M3	0.5	48	11	3.15	2.5
29.910.0400	M4	0.7	53	13	4	3.15
29.910.0500	M5	0.8	58	16	5	4
29.910.0600	M6	1	66	19	6.3	5
29.910.0800	M8	1.25	72	22	8	6.3
29.910.1000	M10	1.5	80	24	10	8
29.910.1200	M12	1.75	89	29	9	7.1
29.910.1400	M14	2	95	30	11.2	9
29.910.1600	M16	2	102	32	12.5	10
29.910.1800	M18	2.5	112	37	14	11.2
29.910.2000	M20	2.5	112	37	14	11.2
29.910.2400	M24	3	130	45	18	14

› 29.950 Phantom





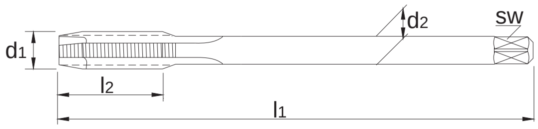
NL UNI HSS-E Machinetap Metrisch, links
FR Taraud machine HSS-E UNI Métrique, à gauche
ES Macho máquina HSS-E UNI Métrica, izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch, links
EN UNI HSS-E Machine Tap Metric Coarse, left hand

HSS-E	M	60°		DIN 371	3xD		FormB 3,5-5	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
29.950.0300	M3	0.5	56	11	3.5	2.7
29.950.0400	M4	0.7	63	13	4.5	3.4
29.950.0500	M5	0.8	70	16	6	4.9
29.950.0600	M6	1	80	19	6	4.9
29.950.0800	M8	1.25	90	22	8	6.2
29.950.1000	M10	1.5	100	24	10	8

› 29.951 Phantom



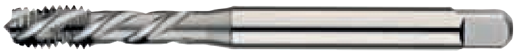
NL UNI HSS-E Machinetap Metrisch, links
FR Taraud machine HSS-E UNI Métrique, à gauche
ES Macho máquina HSS-E UNI Métrica, izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch, links
EN UNI HSS-E Machine Tap Metric Coarse, left hand

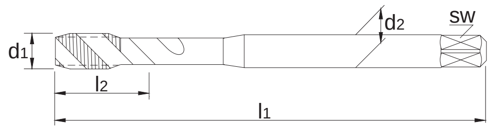
HSS-E	M	60°		DIN 376	3xD		FormB 3,5-5	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
29.951.1200	M12	1.75	110	28	9	7
29.951.1400	M14	2	110	30	11	9
29.951.1600	M16	2	110	32	12	9
29.951.1800	M18	2.5	125	34	14	11
29.951.2000	M20	2.5	140	34	16	12
29.951.2200	M22	2.5	140	34	18	14.5
29.951.2400	M24	3	160	38	18	14.5
29.951.3000	M30	3.5	180	45	22	18

› 29.956 Phantom





NL UNI HSS-E Machinetap Metrisch, links
FR Taraud machine HSS-E UNI Métrique, à gauche
ES Macho máquina HSS-E UNI Métrica, izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch, links
EN UNI HSS-E Machine Tap Metric Coarse, left hand

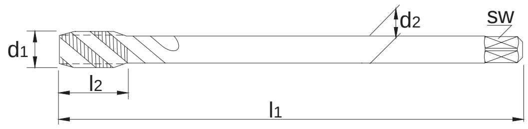
HSS-E	M	60°		DIN 371	2,5xD		40°	FormC 2-3	ISO 2 6H	UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
29.956.0300	M3	0.5	56	11	3.5	2.7
29.956.0400	M4	0.7	63	13	4.5	3.4
29.956.0500	M5	0.8	70	16	6	4.9
29.956.0600	M6	1	80	19	6	4.9
29.956.0800	M8	1.25	90	22	8	6.2
29.956.1000	M10	1.5	100	24	10	8

› 29.957 *Phantom*

NL UNI HSS-E Machinetap Metrisch, links
FR Taraud machine HSS-E UNI Métrique, à gauche
ES Macho máquina HSS-E UNI Métrica, izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch, links
EN UNI HSS-E Machine Tap Metric Coarse, left hand

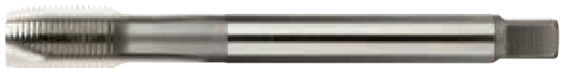


HSS-E | M | 60° | DIN 376 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H | UNI

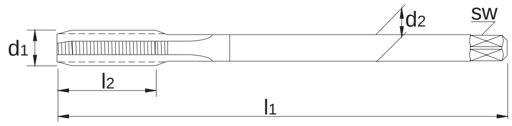
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
29.957.1200	M12	1.75	110	28	9	7
29.957.1400	M14	2	110	30	11	9
29.957.1600	M16	2	110	32	12	9
29.957.2000	M20	2.5	140	34	16	12
29.957.2400	M24	3	160	38	18	14.5
29.957.3000	M30	3.5	180	45	22	18

› 29.960 *Phantom*



NL UNI HSS-E Machinetap Metrisch Fijn, links
FR Taraud machine HSS-E UNI Métrique Fin, à gauche
ES Macho máquina HSS-E UNI Métrica Fina, izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch Fein, links
EN UNI HSS-E Machine Tap Metric Fine, left hand

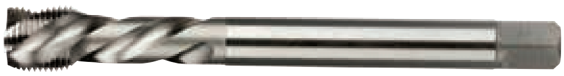


HSS-E | MF | 60° | DIN 374 | 3xD | FormB 3,5-5 | ISO 2 6H | UNI

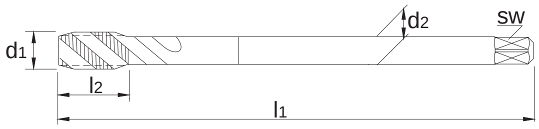
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
29.960.0607	MF6	0.75	80	13	4.5	3.4
29.960.0810	MF8	1	90	20	6	4.9
29.960.1010	MF10	1	90	16	7	5.5
29.960.1012	MF10	1.25	100	22	7	5.5
29.960.1210	MF12	1	100	22	9	7
29.960.1212	MF12	1.25	100	22	9	7
29.960.1415	MF14	1.5	100	22	11	9
29.960.1615	MF16	1.5	100	22	12	9
29.960.1815	MF18	1.5	110	25	14	11
29.960.2015	MF20	1.5	125	25	16	12
29.960.2215	MF22	1.5	125	25	18	14.5
29.960.2415	MF24	1.5	140	28	18	14.5
29.960.2420	MF24	2	140	28	18	14.5
29.960.3015	MF30	1.5	150	28	22	18

› 29.961 *Phantom*



NL UNI HSS-E Machinetap Metrisch Fijn, links
FR Taraud machine HSS-E UNI Métrique Fin, à gauche
ES Macho máquina HSS-E UNI Métrica Fina, izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch Fein, links
EN UNI HSS-E Machine Tap Metric Fine, left hand



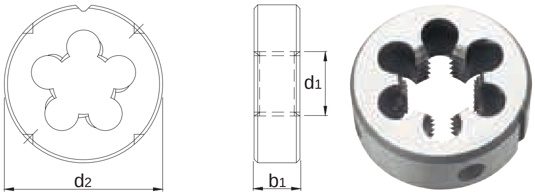
HSS-E | MF | 60° | DIN 374 | 2,5xD | 40° | FormC 2-3 | ISO 2 6H | UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
29.961.0810	MF8	1	90	20	6	4.9
29.961.1010	MF10	1	90	16	7	5.5
29.961.1012	MF10	1.25	100	22	7	5.5
29.961.1210	MF12	1	100	22	9	7
29.961.1212	MF12	1.25	100	22	9	7
29.961.1215	MF12	1.5	100	22	9	7
29.961.1410	MF14	1	100	22	11	9
29.961.1412	MF14	1.25	100	22	11	9
29.961.1415	MF14	1.5	100	22	11	9
29.961.1615	MF16	1.5	100	22	12	9
29.961.1815	MF18	1.5	110	25	14	11
29.961.2015	MF20	1.5	125	25	16	12
29.961.2215	MF22	1.5	125	25	18	14.5
29.961.2415	MF24	1.5	140	28	18	14.5
29.961.2615	MF26	1.5	140	20	18	14.5
29.961.2715	MF27	1.5	140	20	20	16
29.961.2720	MF27	2	140	20	20	16
29.961.2815	MF28	1.5	140	20	20	16
29.961.3015	MF30	1.5	150	22	22	18
29.961.3020	MF30	2	150	22	22	18

1 SC
1 HSS(-E)
2

› 29.970 International Tools



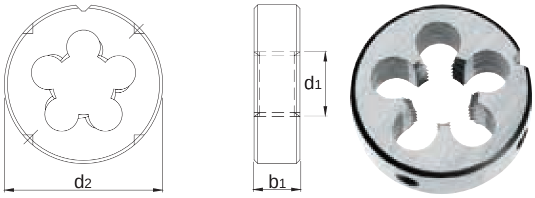
NL ECO PRO HSS Ronde Snijplaat Metrisch, links
FR Filière ronde HSS ECO PRO Métrique, à gauche
ES Terraja esférica HSS ECO PRO Métrica, izquierda
DE ECO PRO HSS Runde Schneideisen Metrisch, links
EN ECO PRO HSS Thread Die Metric Coarse, left hand

HSS | M | 60° | DIN EN 22568 | 6g | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	P	d2	b1
29.970.0300	M3	0.5	20	5
29.970.0400	M4	0.7	20	5
29.970.0500	M5	0.8	20	7
29.970.0600	M6	1	20	7
29.970.0800	M8	1.25	25	9
29.970.1000	M10	1.5	30	11
29.970.1200	M12	1.75	38	14
29.970.1400	M14	2	38	14
29.970.1600	M16	2	45	18
29.970.1800	M18	2.5	45	18
29.970.2000	M20	2.5	45	18
29.970.2200	M22	2.5	55	22
29.970.2400	M24	3	55	22
29.970.2700	M27	3	65	25
29.970.3000	M30	3.5	65	25

› 29.971 Phantom



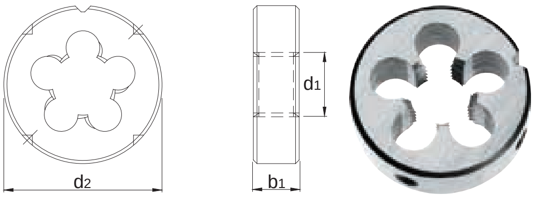
NL HSS Ronde Snijplaat Metrisch, schilaansnijding, links
FR Filière ronde HSS Métrique, coupe gun, à gauche
ES Terraja esférica HSS Métrica, entrada corregida (gun), izquierda
DE HSS Runde Schneideisen Metrisch, Schälanschnitt, links
EN HSS Thread Die Metric Coarse, gun nosed, left hand

HSS | M | 60° | DIN EN 22568 | 6g

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	P	d2	b1
29.971.0300	M3	0.5	20	5
29.971.0400	M4	0.7	20	5
29.971.0500	M5	0.8	20	7
29.971.0600	M6	1	20	7
29.971.0800	M8	1.25	25	9
29.971.1000	M10	1.5	30	11
29.971.1200	M12	1.75	38	14
29.971.1400	M14	2	38	14
29.971.1600	M16	2	45	18
29.971.1800	M18	2.5	45	18
29.971.2000	M20	2.5	45	18
29.971.2200	M22	2.5	55	22
29.971.2400	M24	3	55	22
29.971.2700	M27	3	65	25
29.971.3000	M30	3.5	65	25

› 29.972 International Tools



NL ECO PRO HSS Ronde Snijplaat Metrisch Fijn, links
FR Filière ronde HSS ECO PRO Métrique Fin, à gauche
ES Terraja esférica HSS ECO PRO Métrica Fina, izquierda
DE ECO PRO HSS Runde Schneideisen Metrisch Fein, links
EN ECO PRO HSS Thread Die Metric Fine, left hand

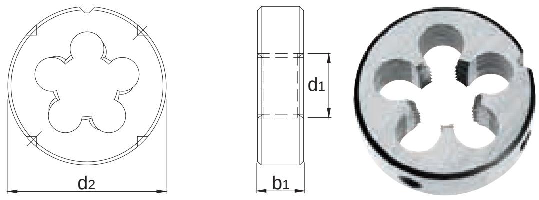
HSS | MF | 60° | DIN EN 22568 | 6g | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	P	d2	b1
29.972.0605	MF6	0.5	20	5
29.972.0607	MF6	0.75	20	7
29.972.0807	MF8	0.75	25	9
29.972.0810	MF8	1	25	9
29.972.1010	MF10	1	30	11
29.972.1210	MF12	1	38	10
29.972.1215	MF12	1.5	38	10
29.972.1410	MF14	1	38	10
29.972.1415	MF14	1.5	38	10
29.972.1615	MF16	1.5	45	14
29.972.1815	MF18	1.5	45	14
29.972.2010	MF20	1	45	14
29.972.2015	MF20	1.5	45	14
29.972.2215	MF22	1.5	55	16
29.972.2415	MF24	1.5	55	16
29.972.3015	MF30	1.5	65	18

› 29.973 Phantom

NL HSS Ronde Snijplaat Metrisch Fijn, schilaansnijding, links
FR Filière ronde HSS Métrique Fin, coupe gun, à gauche
ES Terraja esférica HSS Métrica Fina, entrada corregida (gun), izquierda
DE HSS Runde Schneideisen Metrisch Fein, Schälanschnitt, links
EN HSS Thread Die Metric Fine, gun nosed, left hand



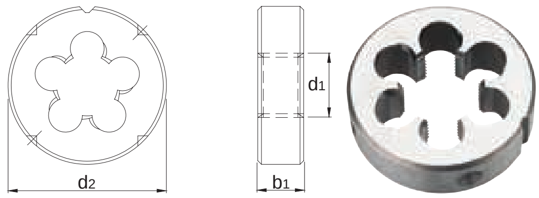
HSS | MF | 60° | DIN EN 22568 | 6g

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	P	d2	b1
29.973.0605	MF6	0.5	20	5
29.973.0607	MF6	0.75	20	7
29.973.0807	MF8	0.75	25	9
29.973.0810	MF8	1	25	9
29.973.1010	MF10	1	30	11
29.973.1210	MF12	1	38	10
29.973.1215	MF12	1.5	38	10
29.973.1410	MF14	1	38	10
29.973.1415	MF14	1.5	38	10
29.973.1610	MF16	1	45	14
29.973.1615	MF16	1.5	45	14
29.973.1815	MF18	1.5	45	14
29.973.2010	MF20	1	45	14
29.973.2015	MF20	1.5	45	14
29.973.2215	MF22	1.5	55	16
29.973.2415	MF24	1.5	55	16
29.973.3015	MF30	1.5	65	18

› 29.978 Phantom

NL HSS Ronde Snijplaat schilaansnijding, links, UNF
FR Filière ronde HSS coupe gun, à gauche, UNF
ES Terraja esférica HSS entrada corregida (gun), izquierda, UNF
DE HSS Runde Schneideisen Schälanschnitt, links, UNF
EN HSS Thread Die gun nosed, left hand, UNF



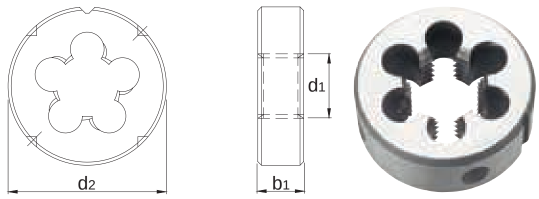
HSS | UNF | 60° | DIN EN 22568 | 2A

P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
10-14	6-10	5-8	4-6	15-25

Ref.	d1	TPI	d2	b1
29.978.0635	UNF 1/4	28	20	7
29.978.0794	UNF 5/16	24	25	9
29.978.0952	UNF 3/8	24	30	11
29.978.1111	UNF 7/16	20	30	11
29.978.1270	UNF 1/2	20	38	10
29.978.1429	UNF 9/16	18	38	10
29.978.1588	UNF 5/8	18	45	14
29.978.1905	UNF 3/4	16	45	14
29.978.2222	UNF 7/8	14	55	16

› 29.985 International Tools

NL ECO PRO HSS Ronde Snijplaat links G (BSP)
FR Filière ronde HSS ECO PRO à gauche G (BSP)
ES Terraja esférica HSS ECO PRO izquierda G (BSP)
DE ECO PRO HSS Runde Schneideisen links G (BSP)
EN ECO PRO HSS Thread Die left hand G (BSP)



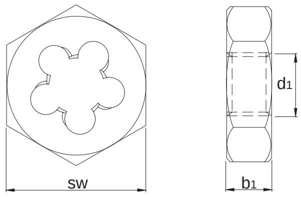
HSS | BSP G | 55° | DIN EN 24231 | ECO PRO

P 11	P 12	K 31	K 32	N 41	N 42
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%

Ref.	d1	TPI	d2	b1
29.985.0973	G 1/8	28	30	11
29.985.1316	G 1/4	19	38	10
29.985.1666	G 3/8	19	45	14
29.985.2096	G 1/2	14	45	14
29.985.2291	G 5/8	14	55	16
29.985.2644	G 3/4	14	55	16
29.985.3020	G 7/8	14	65	18
29.985.3325	G 1	11	65	18
29.985.4191	G 1.1/4	11	75	20

› 29.990 *International Tools*

NL **ECO PRO HSS Zeskante Snijmoer Metrisch, links**
FR **Filière hexagonale HSS ECO PRO Métrique, à gauche**
ES **Terraja hexagonal HSS ECO PRO Métrica, izquierda**
DE **ECO PRO HSS Sechskant Schneideisen Metrisch, links**
EN **ECO PRO HSS Hexagon Die Nut Metric Coarse, left hand**



HSS | M | 60° | DIN 382 | 6g | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10%

Ref.	d1	P	sw	b1
29.990.0300	M3	0.5	19	5
29.990.0400	M4	0.7	19	5
29.990.0500	M5	0.8	19	7
29.990.0600	M6	1	19	7
29.990.0800	M8	1.25	22	9

Ref.	d1	P	sw	b1
29.990.1000	M10	1.5	27	11
29.990.1200	M12	1.75	36	14
29.990.1400	M14	2	36	14
29.990.1600	M16	2	41	18
29.990.1800	M18	2.5	41	18

Ref.	d1	P	sw	b1
29.990.2000	M20	2.5	41	18
29.990.2200	M22	2.5	50	22
29.990.2400	M24	3	50	22

NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

Watch me

www.phantom.eu

NL Voorboordiametertabel
FR Tableau de diamètres de pré-perçage
ES Tabla de perforación previa
DE Bohrungsdurchmessertabelle
EN Predrilling diameter table

P =
NL: Spoed in mm of gangen per inch
FR: Pas de filetage en mm ou pas par pouce
ES: Paso de rosca en mm o paso por pulgada
DE: Gewindesteigung in mm oder Steigung pro Zoll
EN: Thread pitch in mm or pitch per inch

M

d1 (mm)	P	(mm)
1	0,25	0,75
1,1	0,25	0,85
1,2	0,25	0,95
1,4	0,3	1,1
1,5	0,3	1,2
1,6	0,35	1,25
1,7	0,35	1,35
1,8	0,35	1,45
2	0,4	1,6
2,2	0,45	1,75
2,3	0,4	1,9
2,5	0,45	2,05
2,6	0,45	2,15
3	0,5	2,5
3,5	0,6	2,9
4	0,7	3,3
4,5	0,75	3,7
5	0,8	4,2
5,5	0,9	4,6
6	1	5
7	1	6
8	1,25	6,8
9	1,25	7,8
10	1,5	8,5
11	1,5	9,5
12	1,75	10,2
14	2	12
16	2	14
18	2,5	15,5
20	2,5	17,5
22	2,5	19,5
24	3	21
27	3	24
30	3,5	26,5
33	3,5	29,5
36	4	32
39	4	35
42	4,5	37,5
45	4,5	40,5
48	5	43
52	5	47

MF

d1 (mm)	P	(mm)
3	0,35	2,65
4	0,35	3,65
4	0,5	3,5
4,5	0,5	4
5	0,5	4,5
6	0,5	5,5
6	0,6	5,4
6	0,75	5,2
7	0,5	6,5
7	0,75	6,2
8	0,5	7,5
8	0,75	7,2
8	1	7
9	0,75	8,25
9	1	8
10	0,5	9,5
10	0,75	9,2
10	1	9
10	1,25	8,8
11	1	10
11	1,25	9,75
12	0,5	11,5
12	0,75	11,25
12	1	11
12	1,25	10,8
12	1,5	10,5
13	0,75	12,25
13	1	12
14	0,75	13,25
14	1	13
14	1,25	12,8
14	1,5	12,5
14	1,75	12,25
15	1	14
15	1,5	13,5
15	2	13
16	0,75	15,25
16	1	15
16	1,25	14,75
16	1,5	14,5
17	1,5	15,5

MF

d1 (mm)	P	(mm)
18	1	17
18	1,5	16,5
18	2	16
19	1	18
20	1	19
20	1,5	18,5
20	2	18
22	1	21
22	1,25	20,75
22	1,5	20,5
22	2	20
24	1	23
24	1,5	22,5
24	2	22
25	1	24
25	1,5	23,5
25	2	23
26	1,5	24,5
27	1,25	25,75
27	1,5	25,5
27	2	25
28	1,5	26,5
28	3	25
30	1	29
30	1,5	28,5
30	2	28
32	1,5	30,5
33	1,5	31,5
33	2	31
34	1,5	32,5
35	1,5	33,5
36	1,5	34,5
36	2	34
36	3	33
38	1,5	36,5
39	2	37
40	1,5	38,5
42	1,5	40,5
42	2	40
42	3	39
45	1,5	43,5

MF

d1 (mm)	P	(mm)
45	2	43
48	1,5	46,5
48	2	46
50	1,5	48,5
52	1,5	50,5

BSP

d1 (mm)	P	(mm)
G 1/16	28	6,8
G 1/8	28	8,8
G 1/4	19	11,8
G 3/8	19	15,25
G 1/2	14	19
G 5/8	14	21
G 3/4	14	24,5
G 7/8	14	28,25
G 1	11	30,75
G 1 1/8	11	35,5
G 1 1/4	11	39,5
G 1 3/8	11	41,75
G 1 1/2	11	45,25
G 1 3/4	11	51
G 2	11	57

PG

d1 (mm)	P	(mm)
PG 7	20	11,4
PG 9	18	14
PG 11	18	17,35
PG 13,5	18	19,15
PG 16	18	21,25
PG 21	16	26,95
PG 29	16	35,6
PG 36	16	45,6

M Threadformers

d1 (mm)		P	(mm)
M	2	0,4	1,8
M	2,5	0,45	2,3
M	3	0,5	2,75
M	4	0,7	3,65
M	5	0,8	4,65
M	6	1	5,55
M	8	1,25	7,4
M	10	1,5	9,3
M	12	1,75	11,2
M	14	2	13,1
M	16	2	15,1
M	18	2,5	16,9
M	20	2,5	18,9

BSW

d1 (mm)	P	(mm)
1/16	60	1,15
3/32	48	1,85
1/8	40	2,55
5/32	32	3,2
3/16	24	3,7
7/32	24	4,5
1/4	20	5,1
5/16	18	6,5
3/8	16	7,9
7/16	14	9,25
1/2	12	10,5
9/16	12	12
5/8	11	13,5
3/4	10	16,4
7/8	9	19,25
1	8	22,0

UNC

d1 (æ)	P	(mm)
nr 1	64	1,55
nr 2	56	1,85
nr 3	48	2,1
nr 4	40	2,35
nr 5	40	2,65
nr 6	32	2,85
nr 8	32	3,5
nr 10	24	3,9
nr 12	24	4,5
1/4	20	5,1
5/16	18	6,6
3/8	16	8
7/16	14	9,4
1/2	13	10,8
9/16	12	12,2
5/8	11	13,5
3/4	10	16,5
7/8	9	19,5
1	8	22,25
1 1/8	7	25
1 1/4	7	28
1 3/8	6	30,75
1 1/2	6	34
1 3/4	5	39,5
2	4 1/2	45

Phan-Coil EG MF

d1 (mm)			P	(mm)
EG	MF	8	1	8,3
EG	MF	10	1	10,3
EG	MF	10	1,25	10,4
EG	MF	12	1,5	12,5
EG	MF	14	1,5	14,5
EG	MF	16	1,5	16,5
EG	MF	18	1,5	18,5

Phan-Coil EG M

d1 (mm)			P	(mm)
EG	M	3	0,5	3,15
EG	M	4	0,7	4,2
EG	M	5	0,8	5,25
EG	M	6	1	6,3
EG	M	7	1	7,3
EG	M	8	1,25	8,4
EG	M	10	1,5	10,5
EG	M	12	1,75	12,5
EG	M	14	2	14,5
EG	M	16	2	16,5

UNF

d1 (")	P	(mm)
nr 2	64	1,85
nr 3	56	2,15
nr 4	48	2,4
nr 5	44	2,7
nr 6	40	2,95
nr 8	36	3,5
nr 10	32	4,1
nr 12	28	4,6
1/4	28	5,5
5/16	24	6,9
3/8	24	8,5
7/16	20	9,9
1/2	20	11,5
9/16	18	12,9
5/8	18	14,5
3/4	16	17,5
7/8	14	20,5
1	14	23,5
1	12	23,25
1 1/8	12	26,5
1 1/4	12	29,75
1 3/8	12	32,75
1 1/2	12	36

Table of standards for pitch-diameter combinations of screw Thread

mm	inch	Description	M	MF	UNC	UNF	UNEF	UN	UNS	Bicycle	BSW	BSF	W	BSB	BA	BSP	NPT	Pg	Vg
1	0,0394	14,BA	0,25	0,2											0,23				
1,1			0,25	0,2															
1,2	0,0472	13 BA	0,25	0,2											0,25				
1,3	0,0512	12 BA		0,25											0,28				
1,4			0,3	0,2/0,25															
1,5	0,0591	11 BA													0,31				
1,524	0,06	Nr. 0				80					60								
1,588	0,0625	1/16																	
1,6			0,35	0,2															
1,7	0,0669	10 BA	0,35	0,2/0,25											0,35				
1,8			0,35	0,2															
1,854	0,073	Nr. 1			64	72													
1,9	0,0748	9 BA													0,39				
2			0,4	0,2/0,25/0,35															
2,096		15 SWG								56									
2,184	0,086	Nr. 2			56	64													
2,2	0,0866	8 BA	0,45	0,25											0,43				
2,299		14 SWG								56									
2,3			0,4	0,2/0,25/0,35															
2,381	0,0937	3/32									48								
2,5	0,0984	7 BA	0,45	0,35											0,48				
2,515	0,099	Nr. 3			48	56													
2,6			0,45	0,2/0,25/0,35															
2,604		13 SWG								56									
2,8	0,1102	6 BA													0,53				
2,845	0,112	Nr. 4			40	48													
2,908		12 SWG								56									
3			0,5	0,2/0,25/0,35															
3,175	0,125	1/8 Nr. 5			40	44				40	40				0,59				
3,2	0,126	5 BA																	
3,279		11 SWG								44									
3,5			0,6	0,2/0,25/0,35/0,5															
3,505	0,138	Nr. 6			32	40													
3,6	0,1417	4 BA													0,66				
3,614		10 SWG								40									
3,969	0,1562	5/32			32					32	32								
4			0,7	0,2/0,25/0,35/0,5															
4,021		9 SWG								40									
4,1	0,1614	3 BA													0,73				
4,166	0,164	Nr. 8			32	36													
4,5			0,75	02/0,25/0,35/0,5															
4,511		8 SWG								32									
4,7	0,185	2 BA													0,81				
4,762	0,1875	3/16			24	32			40	32	24	32							
4,826	0,19	Nr. 10			24	32			28/36/40/48/56										
5			0,8	0,2/0,25/0,35/0,5/0,75															
5,2		Vq 5																	36
5,28		Vq 5,2																	24
5,3	0,2087	1 BA													0,9				
5,486	0,216	Nr. 12			24	28	32		36/40/48/56										
5,5			0,9	0,2/0,25/0,35/0,5/0,75															
5,556	0,2188	7/32			24					26	24	28							
6	0,2362	0 BA	1	0,2/0,25/0,35/0,5/0,75											1,0				
6,03		Vq 6																	32
6,35	0,25	1/4			20	28	32		24/27/36/40/48/56	26	20	26							
6,5				0,2/0,25/0,35/0,5/0,75															
6,747	0,2656	17/64								26									

Table of standards for pitch-diameter combinations of screw Thread

mm	inch	Description	M	MF	UNC	UNF	UNEF	UN	UNS	Bicycle	BSW	BSF	W	BSB	BA	BSP	NPT	Pg	Vg
7			1	0,2/0,25/0,35/0,5/0,75															
7,144	0,2813	9/32								26		26							
7,5				0,2/0,25/0,35/0,5/0,75/1															
7,723		G 1/16														28			
7,747		Vg 8																	32
7,88		Vg 7,8																	30
7,938	0,3125	5/16			18	24	32	20/28	27/36/40/48	26	18	22		26					
7,94		1/16 NPT															27		
8			1,25	0,2/0,25/0,35/0,5/0,75/1															
8,5				0,2/0,25/0,35/0,5/0,75/1															
9			1,25	0,2/0,25/0,35/0,5/0,75/1															
9,5				0,2/0,25/0,35/0,5/0,75/1															
9,525	0,375	3/8			16	24	32	20/28	18/27/36/40	26	16	20		26					
9,728	0,383	G 1/8														28			
9,906	0,39								27										
10			1,5	0,2/0,25/0,35/0,5/0,75/1/1,25															
10,29		1/8 NPT															27		
10,338	0,407	Vg 10																	28
10,5				0,35/0,5/0,75/1															
11			1,5	0,35/0,5/0,75/1															
11,13	0,4375	7/16			14	20	28	16/32	18/24/27/32	26	14	18		26					
11,5				0,35/0,5/0,75/1/1,5															
12			1,75	0,35/0,5/0,75/1/1,25/1,5															
12,243		Vg 12																	26
12,5		Pg 7		0,35/0,5/0,75/1/1,5														20	
12,7	0,5	1/2			13	20	28	12/16/32	12/14/18/24/27	26	12	16		26					
13				0,35/0,5/0,75/1/1,5															
13,157	0,518	G 1/4														19			
13,5				0,35/0,5/0,75/1/1,5															
13,72		1/4 NPT															18		
14			2	0,35/0,5/0,75/1/1,25/1,5															
14,287	0,5625	9/16			12	18	24	12/16/20/28/32	14/27	20/26	12	16		26					
14,5				0,35/0,5/0,75/1/1,5															
15				0,35/0,5/0,75/1/1,5															
15,2		Pg 9																	
15,875	0,625	5/8			11	18	24	12/16/20/28/32		26	11	14		26					
16			2	0,35/0,5/0,75/1/1,5/2															
16,662	0,656	G 3/8														19			
17				0,35/0,5/0,75/1/1,5/2															
17,15		3/8 NPT															18		
17,462	0,6875	11/16					24	12/16/20/28/32		26	11	14							
18			2,5	0,35/0,5/0,75/1/1,5/2															
18,6		Pg 11																	
19				0,35/0,5/0,75/1/1,5/2														18	
19,05	0,75	3/4			10	16	20	12/28/32	14/18/24/27	26	10	12		26					
19,8		W 19,8											14						
20			2,5	0,35/0,5/0,75/1/1,5/2															
20,4	0,8003	Pg 13,5																18	
20,638	0,8125	13/16					20	12/16/28/32			10	12							
20,955	0,825	G 1/2														14			
21				0,35/0,5/0,75/1/1,5/2															
21,34		1/2 NPT															14		
21,8		W 21,8											14						
22			2,5	0,35/0,5/0,75/1/1,5/2															
22,225	0,875	7/8			9	14	20	12/16/28/32	10/18/24/27	24	9	11		26					
22,5		Pg 16																18	
22,911	0,902	G 5/8														14			

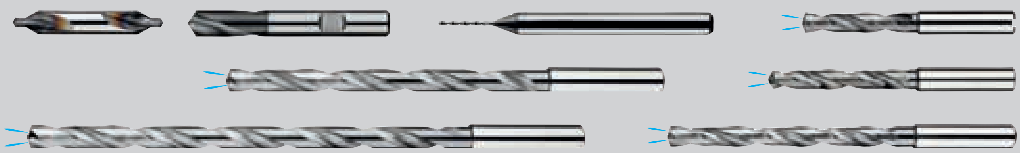
Table of standards for pitch-diameter combinations of screw Thread

mm	inch	Description	M	MF	UNC	UNF	UNEF	UN	UNS	Bicycle	BSW	BSF	W	BSB	BA	BSP	NPT	Pg	Vg
23				0,35/0,5/0,75/1/1,5/2															
23,812	0,9375	15/16					20	12/16/28/32			9	11							
24			3	0,35/0,5/0,75/1/1,5/2															
24,32		W 24,32											14						
24,606	0,9688	31/32								30									
25				0,35/0,5/0,75/1/1,5/2															
25,4	1	1			8	12/14	20	16/28/32	10/14/18/24/27	24	8	10		26					
26				0,35/0,5/0,75/1/1,5/2															
26,441	1,041	G 3/4														14			
26,67		3/4 NPT															14		
26,987	1,0625	1.1/16					18	8/12/16/20/28											
27			3	0,35/0,5/0,75/1/1,5/2															
28				0,35/0,5/0,75/1/1,5/2/3															
28,3	Pg,21																	16	
28,575	1,125	1.1/8			7	12	18	8/16/20/28	10/14/24	26	7	9							
28,8		W 28,8											14						
30			3,5	0,35/0,5/0,75/1/1,5/2/3															
30,162	1,1875	1.3/16					18	8/12/16/20/28											
30,201	1,189	G 7/8														14			
31,75	1,25	1.1/4			7	12	18	8/16/20/28	10/14/24		7	9							
32				0,35/0,5/0,75/1/1,5/2/3															
32,766	1,29									24									
33			3,5	0,35/0,5/0,75/1/1,5/2/3															
33,249	1,309	G 1														11			
33,337	1,3125	1.5/16					18	8/12/16/20/28											
33,4		1 NPT															11,5		
34				0,35/0,5/0,75/1/1,5/2/3															
34,798	1,37									24									
34,925	1,375	1.3/8			6	12	18	8/16/20/28	10/14/24		6	8							
35				0,35/0,5/0,75/1/1,5/2/3															
36			4																
36,512	1,4375	1.7/16		0,35/0,5/0,75/1/1,5/2/3			18	6/8/12/16/20/28											
36,83	1,45									26									
37		Pg 29																16	
39,897	1,492	G 1.1/8														11			
38				0,35/0,5/0,75/1/1,5/2/3															
38,1	1,5	1.1/2			6	12	18	8/16/20/28	10/14/24		6	8							
39			4	0,35/0,5/0,75/1/1,5/2/3															
39,687	1,5625	1.9/16					18	6/8/12/16/20		24							11,5		
40				0,35/0,5/0,75/1/1,5/2/3/4															
41,275	1,625	1.5/8					18	6/8/12/16/20	10/14/24		5	8							
41,91	1,65	G1.1/4														11			
42			4,5	0,35/0,5/0,75/1/1,5/2/3/4															
42,16		1.1/4 NPT																	
42,863	1,6875	1.11/16					18	6/8/12/16/20											
44,323	1,745	G 1.3/8														11			
44,45	1,75	1.3/4			5	12	16	6/8/12/16/20	10/14/18		5	7							
45			4,5	0,35/0,5/0,75/1/1,5/2/3/4															
46				0,5/0,75/1/1,5/2/3															
47		Pg 36																	
47,625	1,875	1.7/8						6/8/12/16/20	10/14/18		4,5								
47,803	1,882	G 1.1/2																16	
48			5	0,35/0,5/0,75/1/1,5/2/3/4												11			
48,26		1.1/2 NPT																	
50				0,35/0,5/0,75/1/1,5/2/3/4													11,5		
50,8	2	2			4,5	12	16	6/8/12/16/20	10/14/18		4,5	7							
52			5	0,75/1/1,5/2/3/4															

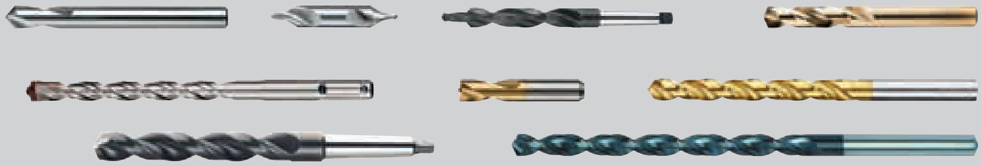
Table of standards for pitch-diameter combinations of screw Thread

mm	inch	Description	M	MF	UNC	UNF	UNEF	UN	UNS	Bicycle	BSW	BSF	W	BSB	BA	BSP	NPT	PG	VG
52,887	2 0625	2.1/16						16								11			
53,746	2 116	G 1.3/4																	
53,975	2 125	2.1/8						6/8/12/16/20										16	
54		Pg 42																	
55				0,75/1/1,5/2/3/4															
55,562	2 1875	2.3/16						16											
56			5,5	0,75/1/1,5/2/3/4															
57,15	2 25	2.1/4			4,5	1,2		6/8/12/16/20	10/14/18		4	6							
58				0,75/1/1,5/2/3/4															
58,737	2 3125	2.5/16						16										16	
59,3		Pg 48														11			
59,614	2 347	G 2																	
60			5,5	0,75/1/1,5/2/3/4															
60,235	2 375	2.3/8						6/8/12/16/20									11,5		
60,33		2 NPT																	
61,912	2 4375	2.7/16						16											
62				0,75/1/1,5/2/3/4															
63,5	2 5	2.1/2			4	1,2		6/8/12/16/20	10/14/18		4	6							
64			6	0,75/1/1,5/2/3/4															
65				0,75/1/1,5/2/3/4												11			
65,71	2 587	G 2.1/4																	
66,675	2 265	2.5/8						4/6/8/12/16/20											
68			6	0,75/1/1,5/2/3/4															
69,85	2 75	2.3/4			4			6/8/12/16/20	0/14/18		3,5	6							
70				0,75/1/1,5/2/3/4/6															
72				0,75/1/1,5/2/3/4/6															
73,025	2 875	2.7/8						4/6/8/12/16/20								8			
73,03		2.1/2 NPT																	
75				0,75/1/1,5/2/3/4											11				
75,184	2 96	G 2.1/2																	
76				0,75/1/1,5/2/3/4/6															
76,2	3	3			4	1,2		6/8/12/16/20	10/14/18		3,5	5							

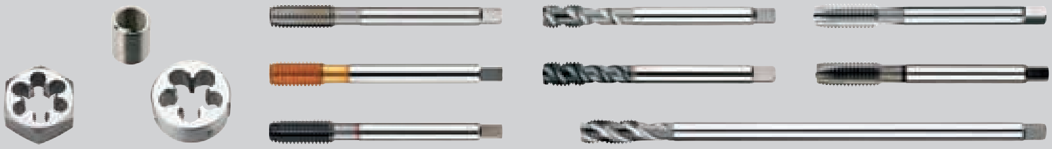
NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



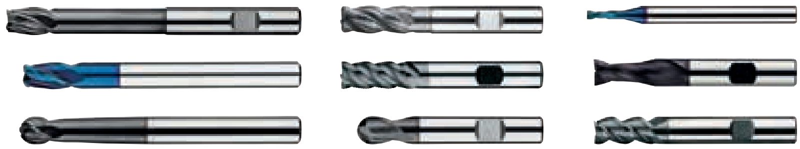
NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



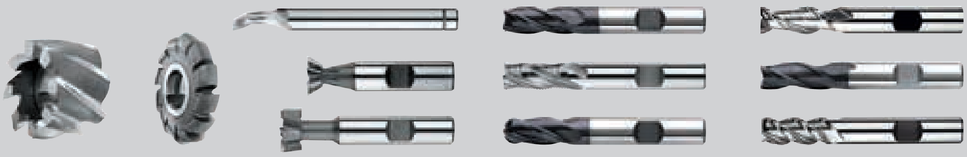
NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



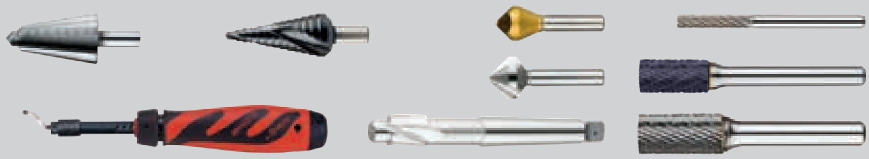
NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling

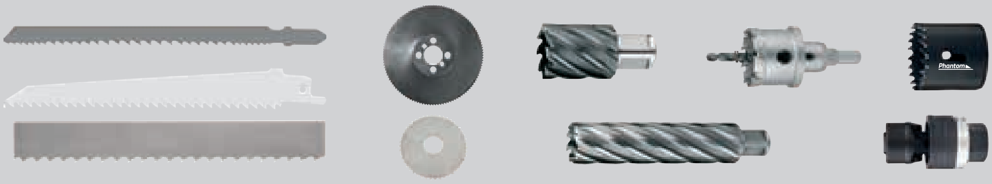


NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring

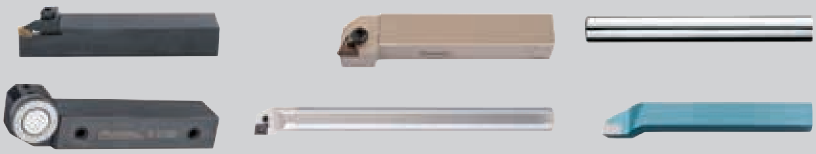


NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

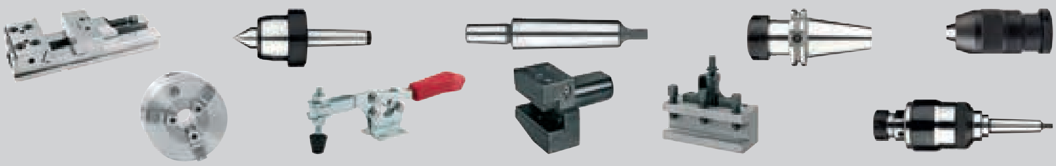
NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



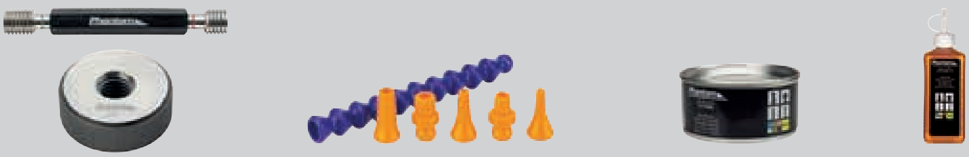
NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
	2 snijkanten, centrumsnijdend	2 dents, coupe au centre	2 dientes, corte con centro	2 Schneiden, Zentrumschneidend	2 flutes, centre cutting
	3 snijkanten, centrumsnijdend	3 dents, coupe au centre	3 dientes, corte con centro	3 Schneiden, Zentrumschneidend	3 flutes, centre cutting
	4 Snijkanten, centrumsnijdend	4 dents, coupe au centre	4 dientes, con corte centro	4 Schneiden, Zentrumschneidend	4 flutes, centre cutting
	4 snijkanten, niet centrumsnijdend	4 dents, pas de coupe au centre	4 dientes, corte sin centro	4 Schneiden, Nicht Zentrumschneidend	4 flutes, not centre cutting
	4 Snijkanten, met ongelijke tandverdeling	4 dents, avec denture à pas différentiel	4 dientes, con paso irregular	4 Schneiden, mit ungleicher Zahn-teilung	4 flutes, with irregular pitch
	5 Snijkanten, met ongelijke tandverdeling	5 dents, avec denture à pas différentiel	5 dientes, con paso irregular	5 Schneiden, mit ungleicher Zahn-teilung	5 flutes, with irregular pitch
	6 snijkanten, centrumsnijdend	6 dents, coupe au centre	6 dientes, corte con centro	6 Schneiden, Zentrumschneidend	6 flutes, centre cutting
	8 snijkanten, centrumsnijdend	8 dents, coupe au centre	8 dientes, corte con centro	8 Schneiden, Zentrumschneidend	8 flutes, centre cutting
	2 snijkanten, volradius	2 dents, à rayon complet	2 dientes, con radio completo	2 Schneiden, Vollradius	2 flutes, full radius
	4 Snijkanten, volradius	4 dents, à rayon complet	4 dientes, con radio completo	4 Schneiden, Vollradius	4 flutes, full radius
	Routerfrees met 135° boorpunt	Fraise à contour-ner avec pointe de perçage 135°	Fresa de contor-near con punta de taladro 135°	Router mit 135° Bohrspitze	Router cutter with 135° drill point
	Routerfrees zon-der kopvertanding	Fraise à contour-ner sans denture en bout	Fresa de contor-near sin corte al centro	Router ohne Stirn-verzahnung	Router cutter without endcut
	Routerfrees met kopvertanding	Fraise à contour-ner avec denture en bout	Fresa de contor-near con corte al centro	Router mit Stirnver-zahnung	Router cutter with endcut
	Routerfrees 2-snijder	Fraise à contour-ner 2 dents	Fresa de contor-near de 2 labios	Router 2-Schneider	2 Flute Router cutter
	Ongelijke spiraalhoek	Avec angles d'hélice variables	Con ángulo de hélice desigual	Mit ungleichen Spiralwinkel	With unequal spiral angles
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Vollhartmetall	Solid Carbide
MG HM	Micro-Grain volhardmetaal	Carbure micrograin	Metal duro micrograno	Micro-Grain Vollhartmetall	Micrograin tungsten carbide
NG HM	Nano-Grain volhardmetaal	Carbure Nanograin	Metal duro nanograno	Nano-Grain Vollhartmetall	Nano grained tungsten carbide
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung	TiAlN coated
TiCN	TiCN gecoat	Revêtement TiCN	Recubrimiento TiCN	TiCN Beschichtung	TiCN coated
TiAlN B	TiAlN-B gecoat	Revêtement TiAlN-B	Recubrimiento TiAlN-B	TiAlN-B Beschichtung	TiAlN-B coated
AlTiN X	AlTiN-X gecoat	Revêtement AlTiN-X	Recubrimiento AlTiN-X	AlTiN-X Beschichtung	AlTiN-X coated
HR	Ronde tand, fijn	Profil rond, pas fin	Profilo redondo, paso fino	Feiner Verzahnung	Fine teeth
WR	Ronde tand, grof	Profil rond, pas ébauche	Profilo redondo	Runder Verzahnung	Rounded profile

	NL	FR	ES	DE	EN
DIN 6527	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
r	Snijkantradius	Rayon de coupe	Radio de corte	Radius am Schnei-denecke	Protective chamfer
	Spiraalhoek	Angle d'Hélice	Angulo de hélice	Spiralwinkel	Helix angle
DIN 6535 HB	Cilindrische schacht met Weldon vlak	Queue cylindrique avec méplat type Weldon	Mango cilíndrico con plano de ar-rastre tipo Weldon	Zylinderschaft mit Mitnahmeflache Tyo Weldon	Straight shank, type Weldon (DIN 6535-HA)
h6	Cilindrische schacht h6	Queue cylindrique h6	Mango cilíndrico h6	Zylinderschaft h6	Straight shank h6
r ±0.01	Tolerantie radius	Tolérance rayon	Tolerancia radio	Toleranz Radius	Tolerances radiu
d1 +0.00 -0.03	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmes-ser	Tolerance diameter
d1 h10	Tolerantie h10	Tolérance h10	Tolerancia h10	Toleranz h10	Tolerance h10
HSC	High Speed Cutting	Usinage à grande vitesse	Mecanizado de alta velocidad	Hochgeschwindig-keitszerspanung	High Speed Cutting
HRC	Frezen voor gehard staal	Fraises pour aciers trempés	Fresas para acero templado	Fräser für gehärtet Stahl	Milling for Hardened Steel
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl	For stainless steel
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium	For aluminium
	Interpolair frezen	Interpolation	Mecanizado por interpolación	Zirkular Fräsen	Interpolation Drilling
	Graveren	Gravure	Grabado	Gravieren	Engraving
	Mantelfrezen met fasen	Chanfreins longitudinaux	Chaflanes Longi-tudinales	Konturfasen	Longitudinal Chamfers
	Fase Frezen	Chanfreins longitudinaux	Chaflanes Longi-tudinales	Konturfasen	Longitudinal Chamfers
	Boren en aan-schuinen	Chanfreins directs	Chaflanes Directos	Direkt Fasen	Direct Chamfers
	V-Sleuf frezen	Rainurage en V	Ranura en "V"	"V"-Nuten Fräsen	V-Grooving
	Mantelfrezen	Contournage	Contorneado	Konturfräsen	Countouring
	Centeren	Centrage	Centrado	Zentrieren	Centering
	Aanschuinen	Chanfreinage	Chaflanado	Fasen	Chamfering
	Boren	Perçage	Taladrado	Bohren	Drilling

NL **VHM Frezen**
FR **Fraises Carbure monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**
EN **Solid Carbide Milling**

P K / H N / M S — Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K / H N / M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

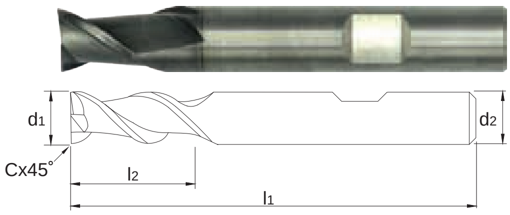
32.242	International Tools	DIN 6527	ECO PRO	P	M	K	N	S		NEW	P. 3
32.244	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 3
32.252	International Tools	DIN 6527	ECO PRO	P	M	K	N	S		NEW	P. 3
32.254	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 4
32.256	Phantom	NORM	UNI	P	M	K	N	S			P. 4
32.270	Phantom	NORM	UNI	P	M	K	N	S			P. 4
32.275	Phantom	NORM	HSC	P					H		P. 5
32.290	Phantom	NORM	HSC	P					H		P. 5
32.330	Phantom	NORM	ALU				N				P. 6
32.633	Phantom	NORM	ALU				N				P. 6
32.750	Phantom	NORM	UNI	P	M	K	N				P. 6
33.242	International Tools	DIN 6527	ECO PRO	P	M	K	N	S		NEW	P. 7
33.244	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 7
33.252	International Tools	DIN 6527	ECO PRO	P	M	K	N	S		NEW	P. 7
33.254	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 8
33.256	Phantom	DIN 6528	UNI	P	M	K	N	S			P. 8
33.544	Phantom	DIN 6527	INOX	P	M	K	N	S			P. 8
33.610	Phantom	NORM	ALU				N				P. 9
33.633	Phantom	NORM	ALU				N				P. 9
34.242	International Tools	DIN 6527	ECO PRO	P	M	K	N	S		NEW	P. 10
34.244	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 10
34.246	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 10
34.252	International Tools	DIN 6527	ECO PRO	P	M	K	N	S		NEW	P. 11
34.254	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 11
34.256	Phantom	NORM	UNI	P	M	K	N	S			P. 11
34.260	Phantom	DIN 6527	UNI	P	M	K	N	S			P. 12
34.302	Phantom	1,5xD	HP2 UNI	P	M	K		S			P. 12
34.314	Phantom	2xD 3xD	HP2 UNI	P	M	K		S			P. 13
34.316	Phantom	2xD 3xD	HP2 UNI	P	M	K		S			P. 13
34.318	Phantom	1,5xD 5xD	HP2 UNI	P	M	K		S			P. 14
34.330	Phantom	2xD	HP2 UNI	P	M	K		S			P. 14
34.331	Phantom	3xD	HP2 UNI	P	M	K		S			P. 15

SC 1
HSS(-E) 1
2
SC 3

1 SC
1 HSS(-E)
2
3 SC

› 34.332	Phantom	VARI	2xD 4xD	HP2 UNI	P	M	K		S			P. 15
› 34.375	Phantom		NORM	UNI	P	M	K	N				P. 15
› 34.400	Phantom		NORM	HSC	P					H		P. 16
› 34.410	Phantom		NORM	HSC	P					H		P. 16
› 34.424	Phantom		NORM	HRC	P					H		P. 17
› 34.464	Phantom		NORM	HRC	P					H		P. 17
› 34.510	Phantom		NORM	HSC	P					H		P. 17
› 34.515	Phantom		NORM	HSC	P					H		P. 18
› 35.244	Phantom		HR	UNI	P	M	K					P. 19
› 35.254	Phantom		HR	HP2 UNI	P	M	K		S			P. 19
› 35.484	Phantom		HR	INOX	P	M			S			P. 19
› 35.540	Phantom		WR	ALU				N				P. 20
› 35.852	Phantom		NORM					N				P. 21
› 35.860	Phantom		NORM					N				P. 21
› 35.868	Phantom		NORM					N				P. 21
› 35.876	Phantom		NORM					N				P. 22
› 36.130	Phantom	21°	NORM	ALU				N				P. 23
› 36.140	Phantom	30°	NORM	ALU				N				P. 23
› 36.164	Phantom		NORM	90°	P	M		N	S			P. 23
› 36.166	Phantom		NORM	90°	P	M		N	S			P. 24
› 36.242	International Tools		DIN 6527	ECO PRO	P	M	K	N	S		NEW	P. 24
› 36.244	Phantom		DIN 6527	UNI	P	M	K	N	S			P. 24
› 36.256	Phantom		NORM	UNI	P	M	K	N	S			P. 25
› 36.275	Phantom		NORM	HSC	P					H		P. 25
› 36.285	Phantom		NORM	HRC	P					H		P. 26
› 36.345	Phantom	VARI	NORM	INOX	P	M	K		S			P. 26
› 36.430	Phantom		NORM		P	M	K					P. 26

› 32.242 *International Tools*

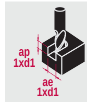


NL ECO PRO Volhardmetaal Schachtfrees, 2-snijder kort, AlTiN-X
FR Fraise à rainurer 2 dents carbure monobloc ECO PRO version courte, AlTiN-X
ES Fresa de ranurar de 2 labios Metal Duro Integral ECO PRO corta, AlTiN-X
DE ECO PRO Vollhartmetall Langlochfräser (2-Schneider) kurz, AlTiN-X
EN ECO PRO solid carbide 2 Flute End Mill short, AlTiN-X

30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | ECO PRO

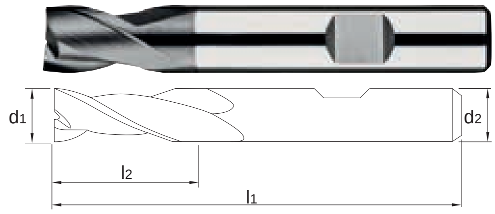
NIEUW NOUVEAU NUEVO NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	C	z
32.242.0300	3	6	50	4	0,1	2
32.242.0400	4	6	54	5	0,15	2
32.242.0500	5	6	54	6	0,15	2
32.242.0600	6	6	54	7	0,2	2
32.242.0800	8	8	58	9	0,2	2
32.242.1000	10	10	66	11	0,3	2
32.242.1200	12	12	73	12	0,35	2
32.242.1600	16	16	82	16	0,4	2
32.242.2000	20	20	92	20	0,5	2

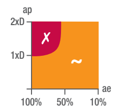
› 32.244 *Phantom*



NL UNI Volhardmetaal Schachtfrees, 2-snijder kort, AlTiN-X
FR Fraise à rainurer 2 dents carbure monobloc UNI version courte, AlTiN-X
ES Fresa de ranurar de 2 labios Metal Duro Integral UNI corta, AlTiN-X
DE UNI Vollhartmetall Langlochfräser (2-Schneider) kurz, AlTiN-X
EN UNI solid carbide 2 Flute End Mill short, AlTiN-X

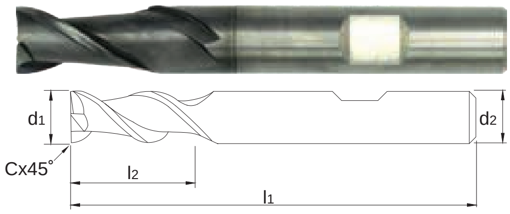
30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
32.244.0200	2	6	50	3	2
32.244.0300	3	6	50	4	2
32.244.0400	4	6	54	5	2
32.244.0500	5	6	54	6	2
32.244.0600	6	6	54	7	2
32.244.0800	8	8	58	9	2
32.244.1000	10	10	66	11	2
32.244.1200	12	12	73	12	2
32.244.1600	16	16	82	16	2
32.244.2000	20	20	92	20	2

› 32.252 *International Tools*

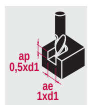


NL ECO PRO Volhardmetaal Schachtfrees, 2-snijder lang, AlTiN-X
FR Fraise à rainurer 2 dents carbure monobloc ECO PRO version longue, AlTiN-X
ES Fresa de ranurar de 2 labios Metal Duro Integral ECO PRO larga, AlTiN-X
DE ECO PRO Vollhartmetall Langlochfräser (2-Schneider) lang, AlTiN-X
EN ECO PRO solid carbide 2 Flute End Mill long, AlTiN-X

30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | ECO PRO

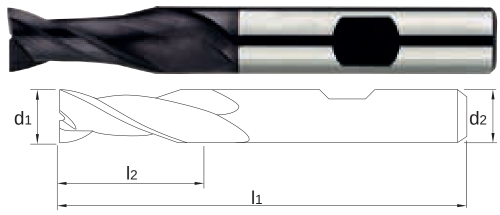
NIEUW NOUVEAU NUEVO NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	C	z
32.252.0300	3	6	57	7	0,1	2
32.252.0400	4	6	57	8	0,15	2
32.252.0500	5	6	57	10	0,15	2
32.252.0600	6	6	57	10	0,2	2
32.252.0800	8	8	63	16	0,2	2
32.252.1000	10	10	72	19	0,3	2
32.252.1200	12	12	83	22	0,35	2
32.252.1600	16	16	92	26	0,4	2
32.252.2000	20	20	104	32	0,5	2

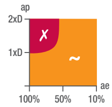
› 32.254 Phantom



NL UNI Volhardmetaal Schachtfrees, 2-snijder lang, AlTiN-X
FR Fraise à rainurer 2 dents carbure monobloc UNI version longue, AlTiN-X
ES Fresa de ranurar de 2 labios Metal Duro Integral UNI larga, AlTiN-X
DE UNI Vollhartmetall Langlochfräser (2-Schneider) lang, AlTiN-X
EN UNI solid carbide 2 Flute End Mill long, AlTiN-X

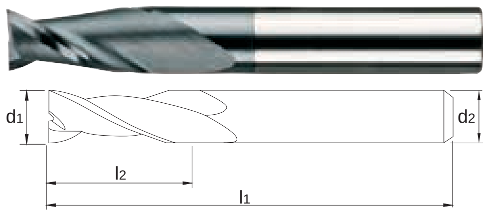
30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
32.254.0300	3	6	57	7	2
32.254.0400	4	6	57	8	2
32.254.0500	5	6	57	10	2
32.254.0600	6	6	57	10	2
32.254.0800	8	8	63	16	2
32.254.1000	10	10	72	19	2
32.254.1200	12	12	83	22	2
32.254.1600	16	16	92	26	2
32.254.2000	20	20	104	32	2

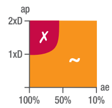
› 32.256 Phantom



NL UNI Volhardmetaal Schachtfrees, 2-snijder lang, AlTiN-X
FR Fraise à rainurer 2 dents carbure monobloc UNI version longue, AlTiN-X
ES Fresa de ranurar de 2 labios Metal Duro Integral UNI larga, AlTiN-X
DE UNI Vollhartmetall Langlochfräser (2-Schneider) lang, AlTiN-X
EN UNI solid carbide 2 Flute End Mill long, AlTiN-X

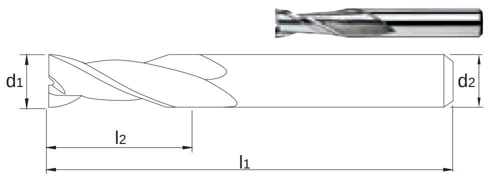
30° | MG HM | AlTiN X | NORM | DIN 6535-HA | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
32.256.0100	1	3	39	3	2
32.256.0150	1.5	3	39	5	2
32.256.0200	2	3	39	7	2
32.256.0250	2.5	3	39	7	2
32.256.0300	3	3	39	9	2
32.256.0350	3.5	4	50	12	2
32.256.0400	4	4	51	14	2
32.256.0450	4.5	5	51	14	2
32.256.0500	5	5	51	16	2
32.256.0600	6	6	64	19	2
32.256.0700	7	8	64	19	2
32.256.0800	8	8	64	19	2
32.256.0900	9	10	70	22	2
32.256.1000	10	10	70	22	2
32.256.1100	11	11	76	25	2
32.256.1200	12	12	76	25	2
32.256.1400	14	14	89	30	2
32.256.1600	16	16	89	32	2
32.256.1800	18	18	100	36	2
32.256.2000	20	20	102	38	2
32.256.2200	22	25	102	38	2
32.256.2500	25	25	102	38	2

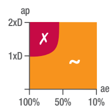
› 32.270 Phantom



NL UNI Volhardmetaal Precisie Schachtfrees, 2-snijder
FR Fraise de précision 2 dents carbure monobloc UNI
ES Fresa de precisión Metal Duro Integral UNI
DE UNI Vollhartmetall Präzision Fräser (2-Schneider)
EN UNI solid carbide Precision 2 Flute End Mill

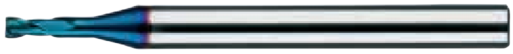
30° | MG HM | NORM | DIN 6535-HA | h5 | d1 h7 | UNI

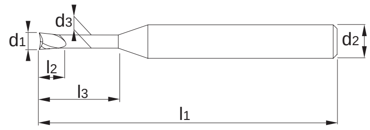
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ti
60-70 B	55-65 B	50-60 B	35-50 A	42-50 A	25-32 A	60-70 B	80-85 B	145-180 C	70-90 B	100-110 B	30-55 A	40-50 A	18-25 F



Ref.	d1	d2	l1	l2	z
32.270.0030	0.3	3	39	0.8	2
32.270.0040	0.4	3	39	1	2
32.270.0045	0.45	3	39	1	2
32.270.0050	0.5	3	39	1.5	2
32.270.0055	0.55	3	39	1.5	2
32.270.0060	0.6	3	39	1.5	2
32.270.0065	0.65	3	39	1.5	2
32.270.0070	0.7	3	39	2	2
32.270.0080	0.8	3	39	2	2
32.270.0085	0.85	3	39	2	2
32.270.0090	0.9	3	39	2.5	2
32.270.0100	1	3	39	3	2
32.270.0110	1.1	3	39	3	2
32.270.0115	1.15	3	39	3	2
32.270.0120	1.2	3	39	4	2
32.270.0125	1.25	3	39	4	2
32.270.0130	1.3	3	39	4	2
32.270.0140	1.4	3	39	4	2
32.270.0150	1.5	3	39	4	2
32.270.0160	1.6	3	39	5	2
32.270.0170	1.7	3	39	5	2
32.270.0180	1.8	3	39	5	2
32.270.0190	1.9	3	39	5	2
32.270.0200	2	3	39	5	2
32.270.0210	2.1	3	39	6	2
32.270.0220	2.2	3	39	6	2
32.270.0230	2.3	3	39	6	2
32.270.0240	2.4	3	39	6	2
32.270.0250	2.5	3	39	7	2
32.270.0260	2.6	3	39	7	2
32.270.0270	2.7	3	39	7	2
32.270.0280	2.8	3	39	7	2
32.270.0290	2.9	3	39	7	2
32.270.0300	3	4	44	10	2
32.270.0310	3.1	4	44	10	2
32.270.0320	3.2	4	44	10	2
32.270.0330	3.3	4	44	10	2
32.270.0390	3.9	4	44	10	2

› 32.275 Phantom

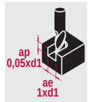




NL Volhardmetaal Precisie HSC Schachtfrees, 2-snijder TiAlSiN, HRC 45-70
FR Fraise de précision UGV 2 dents carbure monobloc TiAlSiN, HRC 45-70
ES Fresa de precisión MAV Metal Duro Integral TiAlSiN, HRC 45-70
DE Vollhartmetall Präzision HSC Fräser (2-Schneider) TiAlSiN, HRC 45-70
EN solid carbide HSC Precision 2 Flute End Mill TiAlSiN, HRC 45-70

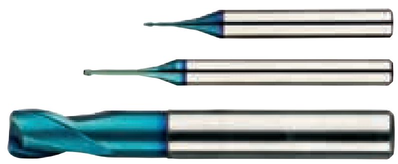
30° | NG HM | TiAlSiN | NORM | DIN 6535-HA | h5 | d1 +0,000 -0,012 | HSC

P 14 ≤1400 N/mm² | H 15 HRC
55-60 E | 20-45 D

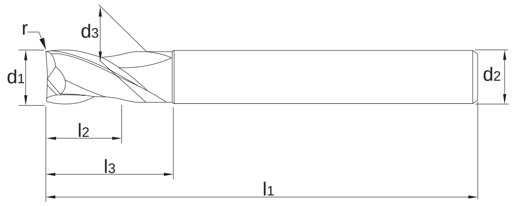


Ref.	d1	d2	d3	l1	l2	l3	z
32.275.0100	0.1	4	0.085	45	0.15	0.3	2
32.275.0101	0.1	4	0.085	45	0.15	0.5	2
32.275.0200	0.2	4	0.17	45	0.3	0.5	2
32.275.0202	0.2	4	0.17	45	0.3	1.5	2
32.275.0300	0.3	4	0.27	45	0.45	1	2
32.275.0302	0.3	4	0.27	45	0.45	1.5	2
32.275.0303	0.3	4	0.27	45	0.45	3	2
32.275.0400	0.4	4	0.37	45	0.6	1	2
32.275.0401	0.4	4	0.37	45	0.6	2	2
32.275.0402	0.4	4	0.37	45	0.6	3	2
32.275.0403	0.4	4	0.37	45	0.6	4	2
32.275.0500	0.5	4	0.45	45	0.7	2	2
32.275.0502	0.5	4	0.45	45	0.7	4	2
32.275.0503	0.5	4	0.45	45	0.7	6	2
32.275.0600	0.6	4	0.55	45	0.9	2	2
32.275.0602	0.6	4	0.55	45	0.9	4	2
32.275.0603	0.6	4	0.55	45	0.9	6	2
32.275.0800	0.8	4	0.75	45	1.2	2	2
32.275.0801	0.8	4	0.75	45	1.2	4	2
32.275.0802	0.8	4	0.75	45	1.2	6	2
32.275.0803	0.8	4	0.75	45	1.2	8	2
32.275.0804	0.8	4	0.75	45	1.2	12	2
32.275.1000	1	4	0.95	45	1.5	4	2
32.275.1001	1	4	0.95	45	1.5	6	2
32.275.1002	1	4	0.95	45	1.5	8	2
32.275.1003	1	4	0.95	45	1.5	10	2
32.275.1004	1	4	0.95	45	1.5	12	2
32.275.1005	1	4	0.95	50	1.5	16	2
32.275.1006	1	4	0.95	55	1.5	20	2
32.275.1200	1.2	4	1.15	45	1.8	6	2
32.275.1202	1.2	4	1.15	45	1.8	10	2
32.275.1500	1.5	4	1.45	45	2.3	6	2
32.275.1501	1.5	4	1.45	45	2.3	8	2
32.275.1502	1.5	4	1.45	45	2.3	10	2
32.275.1503	1.5	4	1.45	45	2.3	12	2
32.275.1505	1.5	4	1.45	50	2.3	16	2
32.275.1507	1.5	4	1.45	55	2.3	20	2
32.275.2000	2	4	1.95	45	3	6	2
32.275.2001	2	4	1.95	45	3	8	2
32.275.2002	2	4	1.95	45	3	10	2
32.275.2003	2	4	1.95	45	3	12	2
32.275.2005	2	4	1.95	50	3	16	2
32.275.2007	2	4	1.95	55	3	20	2
32.275.2009	2	4	1.95	70	3	30	2
32.275.3000	3	6	2.85	45	4.5	10	2
32.275.3003	3	6	2.85	55	4.5	16	2
32.275.3006	3	6	2.85	65	4.5	25	2
32.275.3009	3	6	2.85	90	4.5	40	2
32.275.4000	4	6	3.85	50	6	12	2
32.275.4002	4	6	3.85	60	6	20	2
32.275.4004	4	6	3.85	70	6	30	2
32.275.4006	4	6	3.85	90	6	40	2
32.275.4008	4	6	3.85	100	6	50	2

› 32.290 Phantom

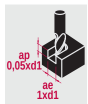


NL Volhardmetaal HSC Torusfrees, 2-snijder TiAlSiN, HRC 45-70
FR Fraise torique UGV 2 dents carbure monobloc TiAlSiN, HRC 45-70
ES Fresa tórica MAV Metal Duro Integral TiAlSiN, HRC 45-70
DE Vollhartmetall HSC Torusfräser TiAlSiN, HRC 45-70
EN solid carbide HSC Torus Milling Cutter TiAlSiN, HRC 45-70



30° | NG HM | TiAlSiN | NORM | r | DIN 6535-HA | h5 | d1≤ø6 +0,000 -0,012 | d1>ø6 +0,000 -0,015 | HSC

P 14 ≤1400 N/mm² | H 15 HRC
80-250 B | 40-200 B



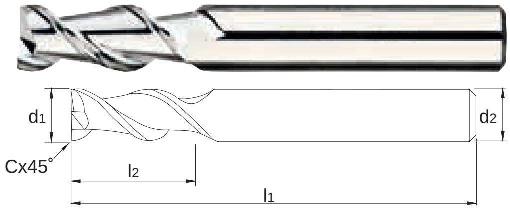
Ref.	d1	d2	d3	l1	l2	l3	r	z
32.290.0111	0.5	4	0.45	45	0.7	1.5	0.05	2
32.290.0112	0.5	4	0.45	45	0.7	2.5	0.05	2
32.290.0113	0.5	4	0.45	45	0.7	4	0.05	2
32.290.0211	0.6	4	0.55	45	0.9	2	0.05	2
32.290.0212	0.6	4	0.55	45	0.9	3	0.05	2
32.290.0213	0.6	4	0.55	45	0.9	4	0.05	2
32.290.0421	0.8	4	0.75	45	1.2	2	0.1	2
32.290.0422	0.8	4	0.75	45	1.2	4	0.1	2
32.290.0423	0.8	4	0.75	45	1.2	6	0.1	2
32.290.0521	1	6	0.95	50	1.5	4	0.1	2
32.290.0522	1	6	0.95	50	1.5	6	0.1	2
32.290.0532	1	6	0.95	50	1.5	6	0.2	2
32.290.0533	1	6	0.95	50	1.5	8	0.2	2
32.290.0631	1.5	6	1.45	50	2.5	4	0.2	2
32.290.0632	1.5	6	1.45	50	2.5	6	0.2	2
32.290.0633	1.5	6	1.45	50	2.5	8	0.2	2
32.290.0634	1.5	6	1.45	50	2.5	10	0.2	2
32.290.0635	1.5	6	1.45	50	2.5	12	0.2	2
32.290.0733	2	6	1.95	50	3	8	0.2	2
32.290.0741	2	6	1.95	50	3	6	0.3	2
32.290.0742	2	6	1.95	50	3	8	0.3	2
32.290.0743	2	6	1.95	55	3	10	0.3	2
32.290.0744	2	6	1.95	55	3	12	0.3	2
32.290.0745	2	6	1.95	55	3	16	0.3	2
32.290.0751	2	6	1.95	55	3	6	0.5	2
32.290.0754	2	6	1.95	55	3	12	0.5	2
32.290.0841	3	6	2.85	55	4	8	0.3	2
32.290.0843	3	6	2.85	55	4	12	0.3	2
32.290.0852	3	6	2.85	55	4	12	0.5	2
32.290.0854	3	6	2.85	55	4	20	0.5	2
32.290.0951	4	6	3.85	55	5	12	0.5	2
32.290.0952	4	6	3.85	55	5	16	0.5	2
32.290.0953	4	6	3.85	55	5	20	0.5	2
32.290.0961	4	6	3.85	55	5	12	1	2
32.290.0963	4	6	3.85	55	5	16	1	2
32.290.1052	6	6	5.85	60	7	20	0.5	2
32.290.1062	6	6	5.85	60	7	20	1	2
32.290.1074	6	6	5.85	60	7	20	1.5	2
32.290.1082	6	6	5.85	60	7	20	2	2
32.290.1152	8	8	7.7	60	9	25	0.5	2

1 SC
1 HSS(-E)
2
3 SC

32.290 Phantom

Ref.	d1	d2	d3	l1	l2	l3	r	z
32.290.1162	8	8	7.7	60	9	25	1	2
32.290.1174	8	8	7.7	60	9	25	1.5	2
32.290.1182	8	8	7.7	60	9	25	2	2
32.290.1253	10	10	9.7	70	11	32	0.5	2
32.290.1263	10	10	9.7	70	11	32	1	2
32.290.1273	10	10	9.7	70	11	32	1.5	2
32.290.1285	10	10	9.7	70	11	32	2	2
32.290.1352	12	12	11.7	80	12	38	0.5	2
32.290.1362	12	12	11.7	80	12	38	1	2
32.290.1372	12	12	11.7	80	12	38	1.5	2
32.290.1384	12	12	11.7	80	12	38	2	2

32.330 Phantom

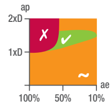


NL **Volhardmetaal Schachtfrees, 2-snijder lang, Aluminium**
FR **Fraise à rainurer 2 dents carbure monobloc version longue, Aluminium**
ES **Fresa de ranurar de 2 labios Metal Duro Integral larga, Aluminio**
DE **Vollhartmetall Langlochfräser (2-Schneider) lang, Aluminium**
EN **solid carbide 2 Flute End Mill long, Aluminium**

45° | MG HM | NORM | Cx45 | DIN 6535-HA | h5 | d1 +0,000 −0,015 | ALU

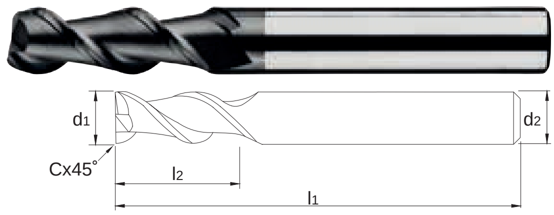
N 41 Alu | N 51 Cu | N 61 PVC

280-350 P | 300-400 P | 400-600 P



Ref.	d1	d2	l1	l2	C	z
32.330.0300	3	6	57	8	0,05	2
32.330.0400	4	6	57	11	0,05	2
32.330.0500	5	6	57	13	0,05	2
32.330.0600	6	6	57	13	0,05	2
32.330.0800	8	8	63	19	0,05	2
32.330.1000	10	10	72	22	0,1	2
32.330.1200	12	12	83	26	0,1	2
32.330.1600	16	16	92	32	0,1	2
32.330.2000	20	20	104	38	0,1	2

32.633 Phantom

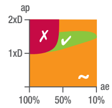


NL **Volhardmetaal Schachtfrees, 2-snijder extra lang, TiCN, Aluminium**
FR **Fraise à rainurer 2 dents carbure monobloc extra longue, TiCN, Aluminium**
ES **Fresa de ranurar de 2 labios Metal Duro Integral extra larga, TiCN, Aluminio**
DE **Vollhartmetall Langlochfräser (2-Schneider) extra lang, TiCN, Aluminium**
EN **solid carbide 2 Flute End Mill extra long, TiCN, Aluminium**

45° | MG HM | TiCN | NORM | Cx45 | DIN 6535-HA | d1 +0,00 -0,03 | ALU

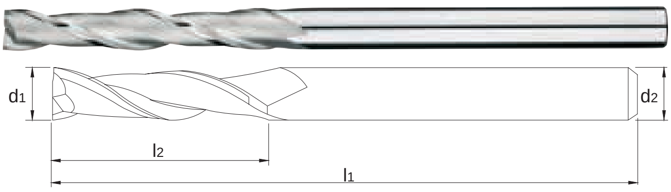
N 41 Alu | N 51 Cu | N 61 PVC

280-350 P | 300-400 P | 400-600 P



Ref.	d1	d2	l1	l2	C	z
32.633.0100	1	6	40	3	0,025	2
32.633.0200	2	6	40	6	0,05	2
32.633.0300	3	6	50	11	0,05	2
32.633.0400	4	6	70	16	0,05	2
32.633.0500	5	6	70	22	0,05	2
32.633.0600	6	6	70	22	0,05	2
32.633.0800	8	8	80	28	0,05	2
32.633.1000	10	10	90	32	0,1	2
32.633.1200	12	12	95	38	0,1	2
32.633.1600	16	16	110	52	0,1	2
32.633.2000	20	20	110	55	0,1	2

32.750 Phantom

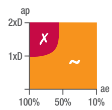


NL **UNI Volhardmetaal Schachtfrees, 2-snijder extra lang**
FR **Fraise à rainurer 2 dents carbure monobloc UNI extra longue**
ES **Fresa de ranurar de 2 labios Metal Duro Integral UNI extra larga**
DE **UNI Vollhartmetall Langlochfräser (2-Schneider) extra lang**
EN **UNI solid carbide 2 Flute End Mill extra long**

30° | MG HM | NORM | DIN 6535-HA | d1 h10 | UNI

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10% | N 43 Mg | N 51 Cu | N 61 PVC

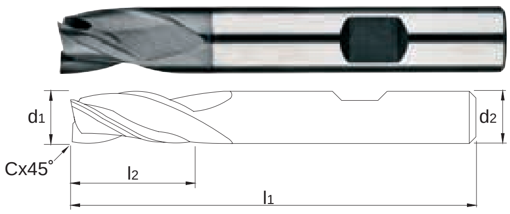
55-65 G | 55-65 G | 50-60 F | 35-50 F | 42-50 F | 25-32 G | 60-70 G | 80-85 G | 145-180 H | 70-90 F | 100-110 H | 30-55 F | 40-50 F



Ref.	d1	d2	l1	l2	z
32.750.0300	3	3	75	30	2
32.750.0400	4	4	75	30	2
32.750.0500	5	5	100	40	2
32.750.0600	6	6	150	50	2
32.750.0800	8	8	150	50	2
32.750.1000	10	10	150	60	2
32.750.1200	12	12	150	75	2
32.750.1400	14	14	150	65	2
32.750.1600	16	16	150	65	2
32.750.1800	18	18	150	65	2
32.750.2000	20	20	150	65	2

› 33.242 *International Tools*

NL ECO PRO Volhardmetaal Schachtfrees, 3-snijder kort, AlTiN-X
FR Fraise universelle 3 dents carbure monobloc ECO PRO version courte, AlTiN-X
ES Fresa frontal de 3 labios Metal Duro Integral ECO PRO corta, AlTiN-X
DE ECO PRO Vollhartmetall Universalfräser (3-Schneider) kurz, AlTiN-X
EN ECO PRO solid carbide 3 Flute End Mill short, AlTiN-X



30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | ECO PRO

NIEUW NOUVEAU NUEVO NEU

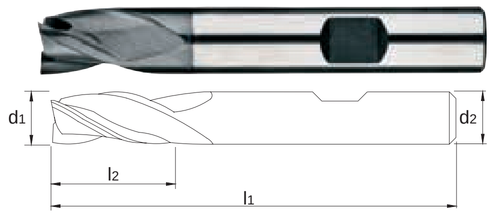
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G

ap 1xd1 / ae 1xd1

Ref.	d1	d2	l1	l2	C	z
33.242.0300	3	6	50	4	0,1	3
33.242.0400	4	6	54	5	0,15	3
33.242.0500	5	6	54	6	0,15	3
33.242.0600	6	6	54	7	0,2	3
33.242.0800	8	8	58	9	0,2	3
33.242.1000	10	10	66	11	0,3	3
33.242.1200	12	12	73	12	0,35	3
33.242.1600	16	16	82	16	0,4	3
33.242.2000	20	20	92	20	0,5	3

› 33.244 *Phantom*

NL UNI Volhardmetaal Schachtfrees, 3-snijder kort, AlTiN-X
FR Fraise universelle 3 dents carbure monobloc UNI version courte, AlTiN-X
ES Fresa frontal de 3 labios Metal Duro Integral UNI corta, AlTiN-X
DE UNI Vollhartmetall Universalfräser (3-Schneider) kurz, AlTiN-X
EN UNI solid carbide 3 Flute End Mill short, AlTiN-X



30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | UNI

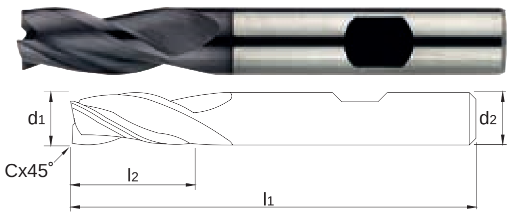
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G

ap 2xD 1xD / ae 100% 50% 10%

Ref.	d1	d2	l1	l2	z
33.244.0200	2	6	50	3	3
33.244.0300	3	6	50	4	3
33.244.0350	3.5	6	50	4	3
33.244.0400	4	6	54	5	3
33.244.0450	4.5	6	54	5	3
33.244.0500	5	6	54	6	3
33.244.0600	6	6	54	7	3
33.244.0700	7	8	58	8	3
33.244.0800	8	8	58	9	3
33.244.0900	9	10	66	10	3
33.244.1000	10	10	66	11	3
33.244.1200	12	12	73	12	3
33.244.1400	14	14	75	14	3
33.244.1600	16	16	82	16	3
33.244.1800	18	18	84	18	3
33.244.2000	20	20	92	20	3

› 33.252 *International Tools*

NL ECO PRO Volhardmetaal Schachtfrees, 3-snijder lang, AlTiN-X
FR Fraise universelle 3 dents carbure monobloc ECO PRO version longue, AlTiN-X
ES Fresa frontal de 3 labios Metal Duro Integral ECO PRO larga, AlTiN-X
DE ECO PRO Vollhartmetall Universalfräser (3-Schneider) lang, AlTiN-X
EN ECO PRO solid carbide 3 Flute End Mill long, AlTiN-X



30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | ECO PRO

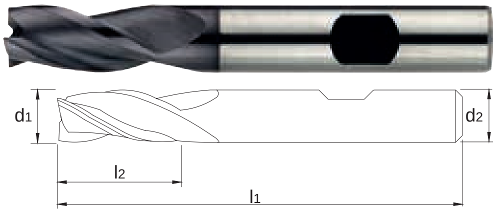
NIEUW NOUVEAU NUEVO NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G

ap 1xd1 / ae 1xd1

Ref.	d1	d2	l1	l2	C	z
33.252.0300	3	6	57	7	0,1	3
33.252.0400	4	6	57	8	0,15	3
33.252.0500	5	6	57	10	0,15	3
33.252.0600	6	6	57	10	0,2	3
33.252.0800	8	8	63	16	0,2	3
33.252.1000	10	10	72	19	0,3	3
33.252.1200	12	12	83	22	0,35	3
33.252.1600	16	16	92	26	0,4	3
33.252.2000	20	20	104	32	0,5	3

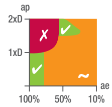
› 33.254 Phantom



NL UNI Volhardmetaal Schachtfrees, 3-snijder lang, AlTiN-X
FR Fraise universelle 3 dents carbure monobloc UNI version longue, AlTiN-X
ES Fresa frontal de 3 labios Metal Duro Integral UNI larga, AlTiN-X
DE UNI Vollhartmetall Universalfräser (3-Schneider) lang, AlTiN-X
EN UNI solid carbide 3 Flute End Mill long, AlTiN-X

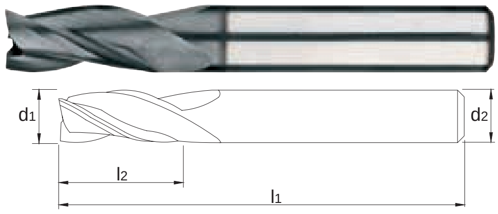
30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
33.254.0300	3	6	57	7	3
33.254.0400	4	6	57	8	3
33.254.0500	5	6	57	10	3
33.254.0600	6	6	57	10	3
33.254.0800	8	8	63	16	3
33.254.1000	10	10	72	19	3
33.254.1200	12	12	83	22	3
33.254.1600	16	16	92	26	3
33.254.2000	20	20	104	32	3

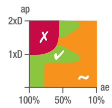
› 33.256 Phantom



NL UNI Volhardmetaal Schachtfrees, 3-snijder lang, AlTiN-X
FR Fraise universelle 3 dents carbure monobloc UNI version longue, AlTiN-X
ES Fresa frontal de 3 labios Metal Duro Integral UNI larga, AlTiN-X
DE UNI Vollhartmetall Universalfräser (3-Schneider) lang, AlTiN-X
EN UNI solid carbide 3 Flute End Mill long, AlTiN-X

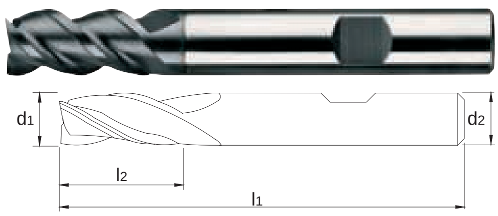
30° | MG HM | AlTiN X | DIN 6528 | DIN 6535-HA | h5 | d1 +0,00 -0,03 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	100-110 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
33.256.0100	1	3	38	3	3
33.256.0150	1.5	3	38	4	3
33.256.0200	2	3	38	6	3
33.256.0250	2.5	3	38	7	3
33.256.0300	3	3	38	7	3
33.256.0350	3.5	3.5	50	7	3
33.256.0400	4	4	50	8	3
33.256.0450	4.5	4.5	50	8	3
33.256.0500	5	5	50	10	3
33.256.0600	6	6	57	10	3
33.256.0700	7	7	60	13	3
33.256.0800	8	8	63	16	3
33.256.0900	9	9	67	16	3
33.256.1000	10	10	72	19	3
33.256.1100	11	11	83	22	3
33.256.1200	12	12	83	22	3
33.256.1400	14	14	83	22	3
33.256.1600	16	16	92	26	3
33.256.1800	18	18	92	26	3
33.256.2000	20	20	104	32	3
33.256.2200	22	25	104	38	3
33.256.2500	25	25	104	38	3

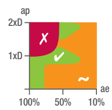
› 33.544 Phantom



NL Volhardmetaal Schachtfrees, 3-snijder lang, AlTiN-X, roestvaststaal
FR Fraise universelle 3 dents carbure monobloc version longue, AlTiN-X, Inox
ES Fresa frontal de 3 labios Metal Duro Integral larga, AlTiN-X, acero inoxidable
DE Vollhartmetall Universalfräser (3-Schneider) lang, AlTiN-X, rostfreien Stahl
EN solid carbide 3 Flute End Mill long, AlTiN-X, stainless steel

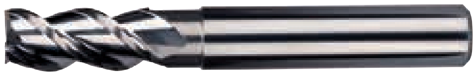
45° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | INOX

P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61	S 71	S 72
≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC	Ni/Co	Ti
80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	170-190 K	70-110 I	50-100 H	80-90 G	31-45 H	42-50 G

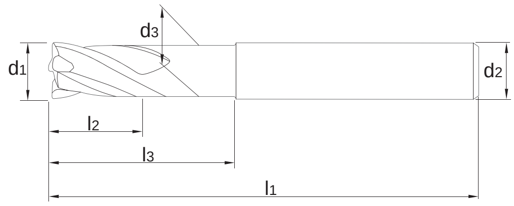


Ref.	d1	d2	l1	l2	z
33.544.0300	3	6	57	7	3
33.544.0400	4	6	57	8	3
33.544.0500	5	6	57	10	3
33.544.0600	6	6	57	10	3
33.544.0800	8	8	63	16	3
33.544.1000	10	10	72	19	3
33.544.1200	12	12	83	22	3
33.544.1600	16	16	92	26	3
33.544.2000	20	20	104	32	3

› 33.610 Phantom



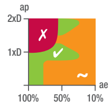
NL **Volhardmetaal Schachtfrees, 3-snijder lang, Aluminium**
FR **Fraise universelle 3 dents carbure monobloc version longue, Aluminium**
ES **Fresa frontal de 3 labios Metal Duro Integral larga, Aluminio**
DE **Vollhartmetall Universalfräser (3-Schneider) lang, Aluminium**
EN **solid carbide 3 Flute End Mill long, Aluminium**



45° | MG HM | NORM | DIN 6535-HA | h5 | ALU

N 41 Alu | N 51 Cu | N 61 PVC

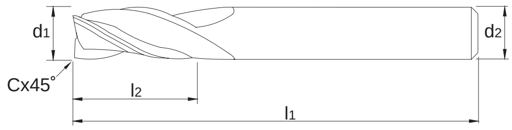
280-350 P | 300-400 P | 400-600 P



Ref.	d1	d2	d3	l1	l2	l3	z
33.610.0300	3	6	2.7	57	8	12	3
33.610.0400	4	6	3.7	57	11	18	3
33.610.0500	5	6	4.7	57	13	18	3
33.610.0600	6	6	5.7	57	13	18	3
33.610.0800	8	8	7.4	63	21	25	3
33.610.1000	10	10	9.2	72	22	30	3
33.610.1200	12	12	11	83	26	36	3
33.610.1600	16	16	15	92	36	42	3
33.610.2000	20	20	19	104	41	52	3

› 33.633 Phantom

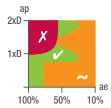
NL **Volhardmetaal Schachtfrees, 3-snijder extra lang, TiCN, Aluminium**
FR **Fraise universelle 3 dents carbure monobloc extra longue, TiCN, Aluminium**
ES **Fresa frontal de 3 labios Metal Duro Integral extra larga, TiCN, Aluminio**
DE **Vollhartmetall Universalfräser (3-Schneider) extra lang, TiCN, Aluminium**
EN **solid carbide 3 Flute End Mill extra long, TiCN, Aluminium**



45° | MG HM | TiCN | NORM | Cx45 | DIN 6535-HA | ALU

N 41 Alu | N 51 Cu | N 61 PVC

280-350 P | 300-400 P | 400-600 P



Ref.	d1	d2	l1	l2	C	z
33.633.0300	3	6	65	4	0,05	3
33.633.0400	4	6	65	16	0,05	3
33.633.0500	5	6	70	22	0,05	3
33.633.0600	6	6	70	22	0,05	3
33.633.0800	8	8	80	28	0,05	3
33.633.1000	10	10	90	32	0,1	3
33.633.1200	12	12	95	38	0,1	3
33.633.1600	16	16	110	52	0,1	3
33.633.2000	20	20	110	55	0,1	3

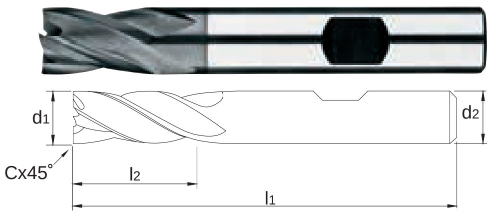
NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 34.242 International Tools

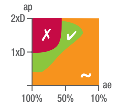
NL ECO PRO Volhardmetaal Schachtfrees, 4-snijder kort, AlTiN-X
FR Fraise standard 4 dents carbure monobloc ECO PRO version courte, AlTiN-X
ES Fresa frontal de 4 labios Metal Duro Integral ECO PRO corta, AlTiN-X
DE ECO PRO Vollhartmetall 4 Schneiden-Schaftfräser kurz, AlTiN-X
EN ECO PRO solid carbide 4 Flute End Mill short, AlTiN-X



30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | ECO PRO

NIEUW | NOUVEAU | NUEVO | NEU

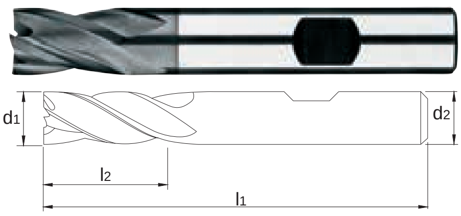
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	C	z
34.242.0300	3	6	50	5	0,1	4
34.242.0400	4	6	54	8	0,15	4
34.242.0500	5	6	54	9	0,15	4
34.242.0600	6	6	54	10	0,2	4
34.242.0800	8	8	58	12	0,2	4
34.242.1000	10	10	66	14	0,3	4
34.242.1200	12	12	73	16	0,35	4
34.242.1600	16	16	82	22	0,4	4
34.242.2000	20	20	92	26	0,5	4

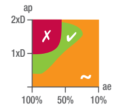
› 34.244 Phantom

NL UNI Volhardmetaal Schachtfrees, 4-snijder kort, AlTiN-X
FR Fraise standard 4 dents carbure monobloc UNI version courte, AlTiN-X
ES Fresa frontal de 4 labios Metal Duro Integral UNI corta, AlTiN-X
DE UNI Vollhartmetall 4 Schneiden-Schaftfräser kurz, AlTiN-X
EN UNI solid carbide 4 Flute End Mill short, AlTiN-X



30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | UNI

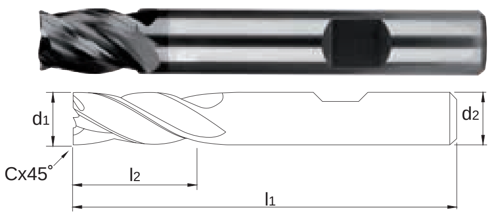
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
34.244.0200	2	6	50	4	4
34.244.0300	3	6	50	5	4
34.244.0400	4	6	54	8	4
34.244.0500	5	6	54	9	4
34.244.0600	6	6	54	10	4
34.244.0700	7	8	58	11	4
34.244.0800	8	8	58	12	4
34.244.0900	9	10	66	13	4
34.244.1000	10	10	66	14	4
34.244.1200	12	12	73	16	4
34.244.1600	16	16	82	22	4
34.244.2000	20	20	92	26	4

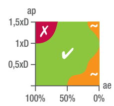
› 34.246 Phantom

NL UNI Volhardmetaal Vari-frees, 4-snijder kort, AlTiN-X
FR Fraise Vari carbure monobloc UNI version courte, AlTiN-X
ES Fresa Vari Metal Duro Integral UNI corta, AlTiN-X
DE UNI Vollhartmetall Fräser mit ungleicher Drallsteigung kurz, AlTiN-X
EN UNI solid carbide Vari Flute End Mill short, AlTiN-X



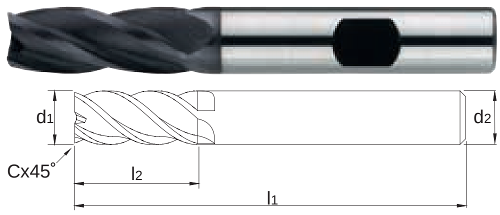
VARI | MG HM | AlTiN X | DIN 6527 | Cx45 | DIN 6535-HB | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	C	z
34.246.0300	3	6	50	5	0,1	4
34.246.0400	4	6	54	8	0,15	4
34.246.0500	5	6	54	9	0,15	4
34.246.0600	6	6	54	10	0,2	4
34.246.0800	8	8	58	12	0,2	4
34.246.1000	10	10	66	14	0,3	4
34.246.1200	12	12	73	16	0,35	4
34.246.1600	16	16	82	22	0,4	4
34.246.2000	20	20	92	26	0,5	4

› 34.252 *International Tools*

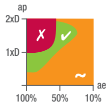


NL ECO PRO Volhardmetaal Schachtfrees, 4-snijder lang, AlTiN-X
FR Fraise standard 4 dents carbure monobloc ECO PRO version longue, AlTiN-X
ES Fresa frontal de 4 labios Metal Duro Integral ECO PRO larga, AlTiN-X
DE ECO PRO Vollhartmetall 4 Schneiden-Schaftfräser lang, AlTiN-X
EN ECO PRO solid carbide 4 Flute End Mill long, AlTiN-X

30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | ECO PRO

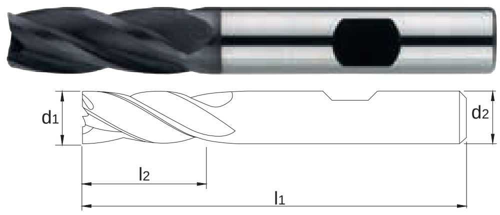
NIEUW | NOUVEAU | NUEVO | NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	C	z
34.252.0300	3	6	57	8	0,1	4
34.252.0400	4	6	57	11	0,15	4
34.252.0500	5	6	57	13	0,15	4
34.252.0600	6	6	57	13	0,2	4
34.252.0800	8	8	63	19	0,2	4
34.252.1000	10	10	72	22	0,3	4
34.252.1200	12	12	83	26	0,35	4
34.252.1600	16	16	92	32	0,4	4
34.252.2000	20	20	104	38	0,5	4

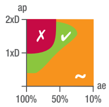
› 34.254 *Phantom*



NL UNI Volhardmetaal Schachtfrees, 4-snijder lang, AlTiN-X
FR Fraise standard 4 dents carbure monobloc UNI version longue, AlTiN-X
ES Fresa frontal de 4 labios Metal Duro Integral UNI larga, AlTiN-X
DE UNI Vollhartmetall 4 Schneiden-Schaftfräser lang, AlTiN-X
EN UNI solid carbide 4 Flute End Mill long, AlTiN-X

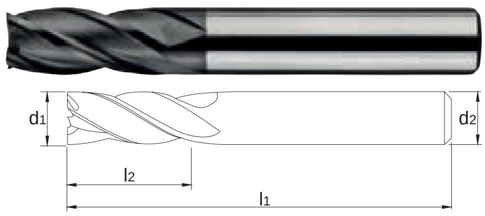
30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
34.254.0300	3	6	57	8	4
34.254.0400	4	6	57	11	4
34.254.0500	5	6	57	13	4
34.254.0600	6	6	57	13	4
34.254.0800	8	8	63	19	4
34.254.1000	10	10	72	22	4
34.254.1200	12	12	83	26	4
34.254.1600	16	16	92	32	4
34.254.2000	20	20	104	38	4

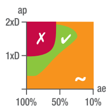
› 34.256 *Phantom*



NL UNI Volhardmetaal Schachtfrees, 4-snijder lang, AlTiN-X
FR Fraise standard 4 dents carbure monobloc UNI version longue, AlTiN-X
ES Fresa frontal de 4 labios Metal Duro Integral UNI larga, AlTiN-X
DE UNI Vollhartmetall 4 Schneiden-Schaftfräser lang, AlTiN-X
EN UNI solid carbide 4 Flute End Mill long, AlTiN-X

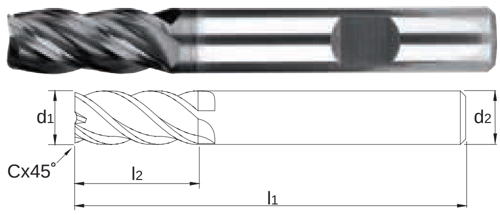
30° | MG HM | AlTiN X | NORM | DIN 6535-HA | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	z
34.256.0100	1	4	40	3	4
34.256.0150	1.5	4	40	4.5	4
34.256.0200	2	2	32	8	4
34.256.0250	2.5	2.5	32	8	4
34.256.0300	3	3	32	12	4
34.256.0350	3.5	3.5	32	12	4
34.256.0400	4	4	40	12	4
34.256.0450	4.5	4.5	50	14	4
34.256.0500	5	5	50	14	4
34.256.0600	6	6	50	16	4
34.256.0700	7	7	60	20	4
34.256.0800	8	8	60	20	4
34.256.0900	9	9	60	20	4
34.256.1000	10	10	70	22	4
34.256.1100	11	11	70	22	4
34.256.1200	12	12	70	22	4
34.256.1400	14	14	75	25	4
34.256.1600	16	16	75	25	4
34.256.1800	18	18	75	25	4
34.256.2000	20	20	100	32	4
34.256.2200	22	25	100	32	4
34.256.2500	25	25	150	45	4

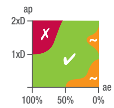
34.260 Phantom



NL UNI Volhardmetaal Vari-frees, 4-snijder lang, AlTiN-X
FR Fraise Vari carbure monobloc UNI version longue, AlTiN-X
ES Fresa Vari Metal Duro Integral UNI larga, AlTiN-X
DE UNI Vollhartmetall Fräser mit ungleicher Drallsteigung lang, AlTiN-X
EN UNI solid carbide Vari Flute End Mill long, AlTiN-X

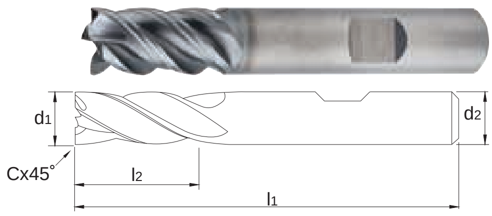
VARI | MG HM | AlTiN X | DIN 6527 | Cx45 | DIN 6535-HB | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	C	z
34.260.0300	3	6	57	8	0,1	4
34.260.0400	4	6	57	11	0,15	4
34.260.0500	5	6	57	13	0,15	4
34.260.0600	6	6	57	13	0,2	4
34.260.0800	8	8	63	19	0,2	4
34.260.1000	10	10	72	22	0,3	4
34.260.1200	12	12	83	26	0,35	4
34.260.1400	14	14	83	26	0,35	4
34.260.1600	16	16	92	32	0,4	4
34.260.2000	20	20	104	38	0,5	4

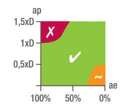
34.302 Phantom



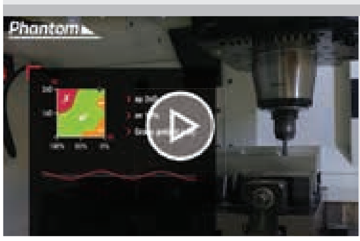
NL HP2 UNI Volhardmetaal Vari-frees, 4-snijder 1,5xD AlCrN
FR Fraise Vari 4 dents carbure monobloc 1,5xD HP2 UNI AlCrN
ES Fresa Vari Metal Duro Integral 1,5xD HP2 UNI AlCrN
DE HP2 UNI Vollhartmetall Fräser mit ungleicher Teilung 1,5xD AlCrN
EN HP2 UNI solid carbide Vari Flute End Mill 1,5xD AlCrN

VARI | MG HM | AlCrN | NORM | 1,5xD | Cx45 | DIN 6535-HB | d1 h10 | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
180-240 L	160-220 L	150-200 K	100-140 K	80-140 I	60-120 H	120-180 J	80-130 J	40-60 J	60-80 I



Ref.	d1	d2	l1	l2	C	z
34.302.0300	3	6	50	5	0,05	4
34.302.0400	4	6	54	8	0,05	4
34.302.0500	5	6	54	9	0,1	4
34.302.0600	6	6	54	10	0,1	4
34.302.0800	8	8	58	12	0,2	4
34.302.1000	10	10	66	17	0,25	4
34.302.1200	12	12	73	20	0,3	4
34.302.1600	16	16	82	26	0,4	4
34.302.2000	20	20	92	32	0,5	4

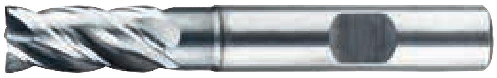


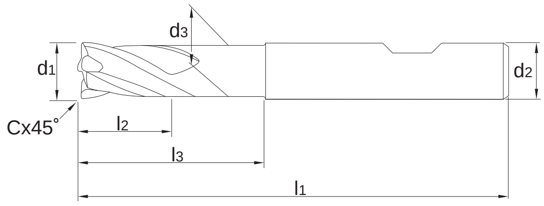
NL HP2 vari-frees met werkgebiedicoon in werking
FR Fraises carbure HP2 universelles. 4 dents, denture décalée et hélice variable, revêtement AlCrN
ES ¡La fresa Vari HP2 Phantom con icono de área de trabajo en funcionamiento!
DE Phantom-Fräser HP2 mit ungleicher Teilung im Betrieb mit Arbeitsbereichsdiagramm!
EN Phantom HP2 vari flute end mill in operation with work area icon!

Watch me

www.phantom.eu

› 34.314 Phantom

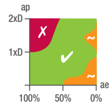




NL HP2 UNI Volhardmetaal Vari-frees, 4-snijder 2xD/3xD AlCrN
FR Fraise Vari 4 dents carbure monobloc 2xD/3xD HP2 UNI AlCrN
ES Fresa Vari Metal Duro Integral 2xD/3xD HP2 UNI AlCrN
DE HP2 UNI Vollhartmetall Fräser mit ungleicher Teilung 2xD/3xD AlCrN
EN HP2 UNI solid carbide Vari Flute End Mill 2xD/3xD AlCrN

VARI | MG HM | AlCrN | NORM | 2xD 3xD | Cx45 | DIN 6535-HB | d1 h10 | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
180-240 L	160-220 L	150-200 K	100-140 K	80-140 I	60-120 H	120-180 J	80-130 J	40-60 J	60-80 I



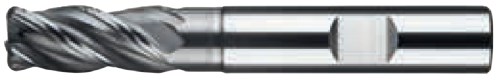
Ref.	d1	d2	d3	l1	l2	l3	C	z
34.314.0300	3	6	2.9	57	6	9	0,03	4
34.314.0400	4	6	3.8	57	8	12	0,04	4
34.314.0500	5	6	4.8	57	10	15	0,05	4
34.314.0600	6	6	5.6	57	12	18	0,06	4
34.314.0800	8	8	7.6	63	16	24	0,08	4
34.314.1000	10	10	9.5	72	20	30	0,1	4
34.314.1200	12	12	11.5	83	24	36	0,12	4
34.314.1400	14	14	13.5	93	28	42	0,15	4
34.314.1600	16	16	15.3	108	32	48	0,16	4
34.314.1800	18	18	17.5	108	36	54	0,2	4
34.314.2000	20	20	19.3	126	40	60	0,2	4

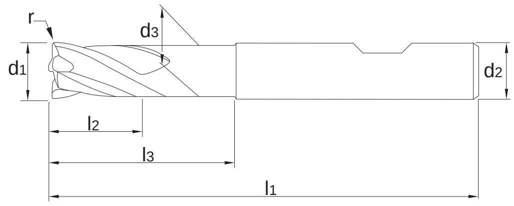
NL Universele VHM frees én werkgebiedicoon
FR Phantom simplifie le fraisage CNC grâce à sa fraise universelle VHM et son icône de zone de travail
ES Fresa de metal duro universal e icono del área de trabajo
DE Universeller VHM-Fräser und Arbeitsbereichsdiagramm
EN Universal SC cutter plus work area icon

Read me

www.phantom.eu

› 34.316 Phantom

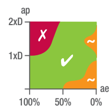




NL HP2 UNI Volhardmetaal Vari-frees, 4-snijder 2xD/3xD AlCrN, kantradius
FR Fraise Vari 4 dents carbure monobloc 2xD/3xD HP2 UNI AlCrN, à rayon
ES Fresa Vari Metal Duro Integral 2xD/3xD HP2 UNI AlCrN, radio de corte
DE HP2 UNI Vollhartmetall Fräser mit ungleicher Teilung 2xD/3xD AlCrN, Eckradius
EN HP2 UNI solid carbide Vari Flute End Mill 2xD/3xD AlCrN, corner radius

VARI | MG HM | AlCrN | NORM | 2xD 3xD | r | DIN 6535-HB | d1 h10 | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
180-240 L	160-220 L	150-200 K	100-140 K	80-140 I	60-120 H	120-180 J	80-130 J	40-60 J	60-80 I



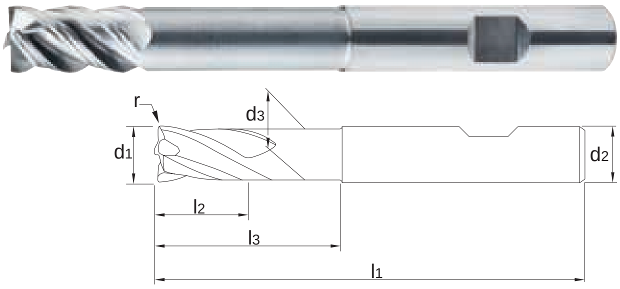
Ref.	d1	d2	d3	l1	l2	l3	r	z
34.316.0303	3	6	2.9	57	6	9	0.25	4
34.316.0305	3	6	2.9	57	6	9	0.5	4
34.316.0310	3	6	2.9	57	6	9	1	4
34.316.0403	4	6	3.8	57	8	12	0.25	4
34.316.0405	4	6	3.8	57	8	12	0.5	4
34.316.0410	4	6	3.8	57	8	12	1	4
34.316.0415	4	6	3.8	57	8	12	1.5	4
34.316.0503	5	6	4.8	57	10	15	0.25	4
34.316.0505	5	6	4.8	57	10	15	0.5	4
34.316.0510	5	6	4.8	57	10	15	1	4
34.316.0603	6	6	5.6	57	12	18	0.25	4
34.316.0605	6	6	5.6	57	12	18	0.5	4
34.316.0608	6	6	5.6	57	12	18	0.8	4
34.316.0610	6	6	5.6	57	12	18	1	4
34.316.0615	6	6	5.6	57	12	18	1.5	4
34.316.0620	6	6	5.6	57	12	18	2	4
34.316.0803	8	8	7.6	63	16	24	0.25	4
34.316.0805	8	8	7.6	63	16	24	0.5	4
34.316.0808	8	8	7.6	63	16	24	0.8	4
34.316.0810	8	8	7.6	63	16	24	1	4
34.316.0815	8	8	7.6	63	16	24	1.5	4
34.316.0820	8	8	7.6	63	16	24	2	4
34.316.0830	8	8	7.6	63	16	24	3	4
34.316.1003	10	10	9.5	72	20	30	0.25	4
34.316.1005	10	10	9.5	72	20	30	0.5	4
34.316.1008	10	10	9.5	72	20	30	0.8	4
34.316.1010	10	10	9.5	72	20	30	1	4
34.316.1013	10	10	9.5	72	20	30	1.25	4
34.316.1015	10	10	9.5	72	20	30	1.5	4
34.316.1020	10	10	9.5	72	20	30	2	4
34.316.1025	10	10	9.5	72	20	30	2.5	4
34.316.1030	10	10	9.5	72	20	30	3	4
34.316.1203	12	12	11.5	83	24	36	0.25	4
34.316.1205	12	12	11.5	83	24	36	0.5	4
34.316.1208	12	12	11.5	83	24	36	0.8	4
34.316.1210	12	12	11.5	83	24	36	1	4
34.316.1213	12	12	11.5	83	24	36	1.25	4
34.316.1215	12	12	11.5	83	24	36	1.5	4
34.316.1220	12	12	11.5	83	24	36	2	4
34.316.1225	12	12	11.5	83	24	36	2.5	4
34.316.1230	12	12	11.5	83	24	36	3	4
34.316.1235	12	12	11.5	83	24	36	3.5	4
34.316.1240	12	12	11.5	83	24	36	4	4
34.316.1250	12	12	11.5	83	24	36	5	4

34.316 Phantom

Ref.	d1	d2	d3	l1	l2	l3	r	z
34.316.1605	16	16	15.3	108	32	48	0.5	4
34.316.1608	16	16	15.3	108	32	48	0.8	4
34.316.1610	16	16	15.3	108	32	48	1	4
34.316.1615	16	16	15.3	108	32	48	1.5	4
34.316.1620	16	16	15.3	108	32	48	2	4
34.316.1625	16	16	15.3	108	32	48	2.5	4
34.316.1630	16	16	15.3	108	32	48	3	4
34.316.1635	16	16	15.3	108	32	48	3.5	4
34.316.1640	16	16	15.3	108	32	48	4	4
34.316.1645	16	16	15.3	108	32	48	4.5	4
34.316.1650	16	16	15.3	108	32	48	5	4
34.316.2005	20	20	19.3	126	40	60	0.5	4
34.316.2008	20	20	19.3	126	40	60	0.8	4
34.316.2010	20	20	19.3	126	40	60	1	4
34.316.2015	20	20	19.3	126	40	60	1.5	4
34.316.2020	20	20	19.3	126	40	60	2	4
34.316.2025	20	20	19.3	126	40	60	2.5	4
34.316.2030	20	20	19.3	126	40	60	3	4
34.316.2035	20	20	19.3	126	40	60	3.5	4
34.316.2040	20	20	19.3	126	40	60	4	4
34.316.2045	20	20	19.3	126	40	60	4.5	4
34.316.2050	20	20	19.3	126	40	60	5	4

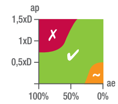
34.318 Phantom

NL HP2 UNI Volhardmetaal Vari-frees, 4-snijder 1,5xD/5xD AlCrN
FR Fraise Vari 4 dents carbure monobloc 1,5xD/5xD HP2 UNI AlCrN
ES Fresa Vari Metal Duro Integral 1,5xD/5xD HP2 UNI AlCrN
DE HP2 UNI Vollhartmetall Fräser mit ungleicher Teilung 1,5xD/5xD AlCrN
EN HP2 UNI solid carbide Vari Flute End Mill 1,5xD/5xD AlCrN



VARI | MG HM | AlCrN | NORM | 1,5xD 5xD | r | DIN 6535-HB | d1 h10 | HP2 UNI

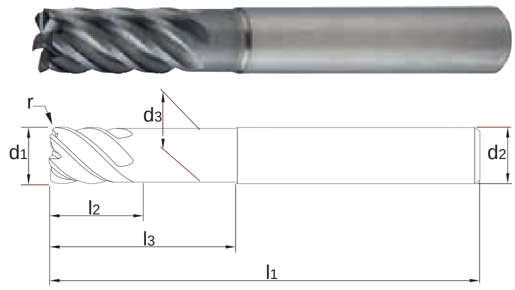
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
180-240 L	160-220 L	150-200 K	100-140 K	80-140 I	60-120 H	120-180 J	80-130 J	40-60 J	60-80 I



Ref.	d1	d2	d3	l1	l2	l3	r	z
34.318.0300	3	6	2.8	57	5	15	0.1	4
34.318.0400	4	6	3.8	62	8	20	0.1	4
34.318.0500	5	6	4.8	70	9	25	0.1	4
34.318.0600	6	6	5.7	70	10	30	0.1	4
34.318.0800	8	8	7.6	80	12	40	0.2	4
34.318.1000	10	10	9.5	90	17	50	0.2	4
34.318.1200	12	12	11.5	110	20	60	0.25	4
34.318.1600	16	16	15.5	130	26	80	0.5	4

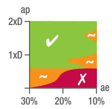
34.330 Phantom

NL HP2 UNI Volhardmetaal Trochoïdaal-frees 2xD AlCrN
FR Fraise-trochoïdale carbure monobloc 2xD HP2 UNI AlCrN
ES Fresa trocoidal Metal Duro Integral 2xD HP2 UNI AlCrN
DE HP2 UNI Vollhartmetall Trochoidaler-Schaftfräser 2xD AlCrN
EN HP2 UNI solid carbide Trochoidal-end mill 2xD AlCrN



VARI | MG HM | AlCrN | NORM | 2xD | r | DIN 6535-HA | d1 h10 | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
180-240 L	160-220 L	150-200 K	100-140 K	80-140 I	60-120 H	120-180 J	80-130 J	40-60 J	60-80 I



Ref.	d1	d2	d3	l1	l2	l3	r	z
34.330.0301	3	6	2.8	57	6	14		6
34.330.0401	4	6	3.8	57	8	16		6
34.330.0501	5	6	4.8	57	10	18		6
34.330.0601	6	6	5.7	57	12	19	0.1	6
34.330.0802	8	8	7.6	63	16	25	0.2	6
34.330.1002	10	10	9.5	72	20	30	0.2	6
34.330.1203	12	12	11.5	83	24	36	0.25	6
34.330.1605	16	16	15.5	92	32	42	0.5	6
34.330.2005	20	20	19.5	104	40	54	0.5	6

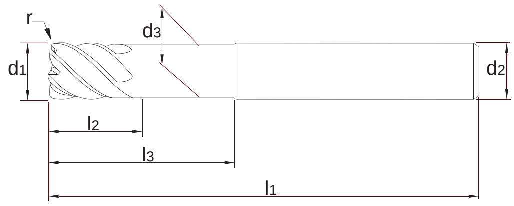
NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me

www.phantom.eu

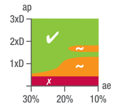
› 34.331 Phantom

NL HP2 UNI Volhardmetaal Trochoïdaal-frees 3xD AlCrN
FR Fraise-trochoïdale carbure monobloc 3xD HP2 UNI AlCrN
ES Fresa trocoidal Metal Duro Integral 3xD HP2 UNI AlCrN
DE HP2 UNI Vollhartmetall Trochoidaler-Schaftfräser 3xD AlCrN
EN HP2 UNI solid carbide Trochoidal-end mill 3xD AlCrN



VARI | MG HM | AlCrN | NORM | 3xD | r | DIN 6535-HA | d1 h10 | HP2 UNI

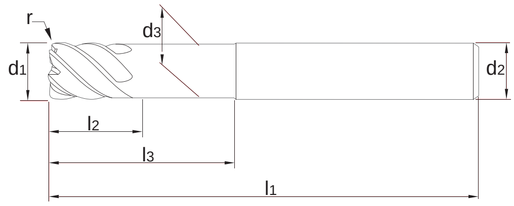
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
180-240 L	160-220 L	150-200 K	100-140 K	80-140 I	60-120 H	120-180 J	80-130 J	40-60 J	60-80 I



Ref.	d1	d2	d3	l1	l2	l3	r	z
34.331.0301	3	6	2.8	62	9	14		6
34.331.0401	4	6	3.8	62	12	18		6
34.331.0501	5	6	4.8	62	15	21		6
34.331.0601	6	6	5.7	62	18	24	0.1	6
34.331.0802	8	8	7.6	68	24	30	0.2	6
34.331.1002	10	10	9.5	80	30	38	0.2	6
34.331.1203	12	12	11.5	93	36	46	0.25	6
34.331.1605	16	16	15.5	108	48	58	0.5	6
34.331.2005	20	20	19.5	126	60	74	0.5	6

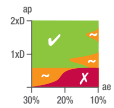
› 34.332 Phantom

NL HP2 UNI Volhardmetaal Trochoïdaal-frees 2xD/4xD AlCrN
FR Fraise-trochoïdale carbure monobloc 2xD/4xD HP2 UNI AlCrN
ES Fresa trocoidal Metal Duro Integral 2xD/4xD HP2 UNI AlCrN
DE HP2 UNI Vollhartmetall Trochoidaler-Schaftfräser 2xD/4xD AlCrN
EN HP2 UNI solid carbide Trochoidal-end mill 2xD/4xD AlCrN



VARI | MG HM | AlCrN | NORM | 2xD 4xD | r | DIN 6535-HA | d1 h10 | HP2 UNI

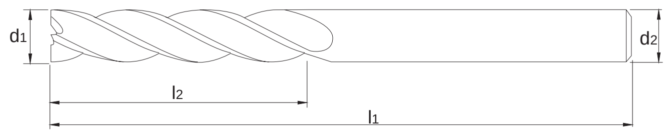
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
180-240 L	160-220 L	150-200 K	100-140 K	80-140 I	60-120 H	120-180 J	80-130 J	40-60 J	60-80 I



Ref.	d1	d2	d3	l1	l2	l3	r	z
34.332.0301	3	6	2.8	62	6	12		6
34.332.0401	4	6	3.8	62	8	16		6
34.332.0501	5	6	4.8	62	10	20		6
34.332.0601	6	6	5.7	62	12	24	0.1	6
34.332.0802	8	8	7.6	70	16	32	0.2	6
34.332.1002	10	10	9.5	80	20	40	0.2	6
34.332.1203	12	12	11.5	95	24	48	0.25	6
34.332.1605	16	16	15.5	115	32	64	0.5	6
34.332.2005	20	20	19.5	132	40	80	0.5	6

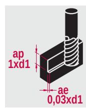
› 34.375 Phantom

NL UNI Volhardmetaal Schachtfrees, 4-snijder extra lang
FR Fraise standard 4 dents carbure monobloc UNI extra longue
ES Fresa frontal de 4 labios Metal Duro Integral UNI extra larga
DE UNI Vollhartmetall 4 Schneiden-Schaftfräser extra lang
EN UNI solid carbide 4 Flute End Mill extra long



30° | MG HM | NORM | DIN 6535-HA | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
55-65 G	55-65 G	50-60 F	35-50 F	42-50 F	25-32 G	60-70 G	80-85 G	145-180 H	70-90 F	100-110 H	30-55 F	40-50 F



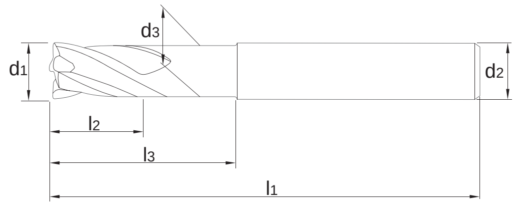
Ref.	d1	d2	l1	l2	z
34.375.0300	3	3	75	30	4
34.375.0400	4	4	75	30	4
34.375.0500	5	5	100	40	4
34.375.0600	6	6	150	50	4
34.375.0800	8	8	150	50	4
34.375.1000	10	10	150	60	4
34.375.1200	12	12	150	75	4
34.375.1400	14	14	150	65	4
34.375.1600	16	16	150	65	4
34.375.1800	18	18	150	65	4
34.375.2000	20	20	150	65	4

1 SC
1 HSS(-E)
2
3 SC

› 34.400 Phantom

NL Volhardmetaal HSC Schachtfrees, 4-snijder TiAlSiN, verjongde schacht (nek), HRC 45-70
FR Fraise UGV 4 dents carbure monobloc TiAlSiN, queue détalonnée, HRC 45-70
ES Fresa integral MAV Metal Duro Integral TiAlSiN, mango rebajado (cuello), HRC 45-70
DE Vollhartmetall HSC High-Speed Schaftfräser TiAlSiN, abgesetztem Schaft, HRC 45-70
EN solid carbide HSC 4 Flute Milling Cutter TiAlSiN, relieved neck version, HRC 45-70





30° NG HM TiAlSiN NORM DIN 6535-HA h5 HSC

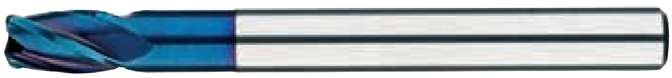
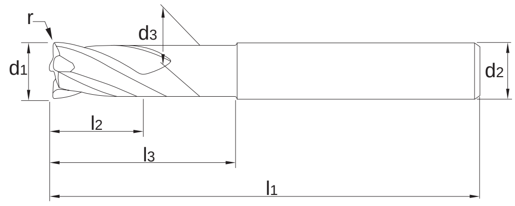
P 14 ≤1400 N/mm² | H 15 HRC
150-210 K | 80-120 F

ap 1xd1 ae 0,03xd1

Ref.	d1	d2	d3	l1	l2	l3	z
34.400.0100	1	6	0.95	50	1.5	3	4
34.400.0200	2	6	1.95	50	2	5	4
34.400.0300	3	6	2.85	55	3	8	4
34.400.0400	4	6	3.85	55	4	10	4
34.400.0500	5	6	4.85	55	5	13	4
34.400.0600	6	6	5.85	55	6	15	4
34.400.0800	8	8	7.7	65	8	20	4
34.400.1000	10	10	9.7	75	10	25	4
34.400.1200	12	12	11.7	85	12	28	4
34.400.1600	16	16	15.7	90	16	32	4
34.400.2000	20	20	19.7	105	20	40	4

› 34.410 Phantom

NL Volhardmetaal HSC Torusfrees, 4-snijder verjongde schacht (nek), TiAlSiN, HRC 45-70
FR Fraise torique UGV 4 dents carbure monobloc queue détalonnée, TiAlSiN, HRC 45-70
ES Fresa tórica MAV Metal Duro Integral mango rebajado (cuello), TiAlSiN, HRC 45-70
DE Vollhartmetall HSC Torusfräser abgesetztem Schaft, TiAlSiN, HRC 45-70
EN solid carbide HSC Torus Milling Cutter relieved neck version, TiAlSiN, HRC 45-70

30° NG HM TiAlSiN NORM r DIN 6535-HA h5 HSC

P 14 ≤1400 N/mm² | H 15 HRC
150-210 K | 80-120 F

ap 1xd1 ae 0,03xd1

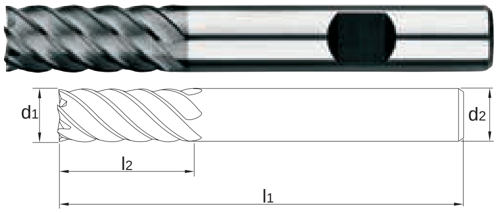
Ref.	d1	d2	d3	l1	l2	l3	r	z
34.410.0605	6	6	5.85	90	9	20	0.5	4
34.410.0610	6	6	5.85	90	9	20	1	4
34.410.0805	8	8	7.7	100	12	25	0.5	4
34.410.0810	8	8	7.7	100	12	25	1	4
34.410.1005	10	10	9.7	100	15	32	0.5	4
34.410.1010	10	10	9.7	100	15	32	1	4
34.410.1020	10	10	9.7	100	15	32	2	4
34.410.1205	12	12	11.7	110	15	38	0.5	4
34.410.1210	12	12	11.7	110	18	38	1	4
34.410.1220	12	12	11.7	110	18	38	2	4

NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

Watch me

www.phantom.eu

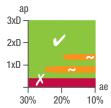
› 34.424 Phantom



- NL **Volhardmetaal Schachtfrees, meersnijder lang, AlTiN-X, HRC 30-65**
- FR **Fraise standard carbure monobloc version longue, AlTiN-X, HRC 30-65**
- ES **Fresa frontal de varios labios Metal Duro Integral larga, AlTiN-X, HRC 30-65**
- DE **Vollhartmetall Mehrschneiden-Schaftfräser lang, AlTiN-X, HRC 30-65**
- EN **solid carbide Multi Flute End Mill long, AlTiN-X, HRC 30-65**

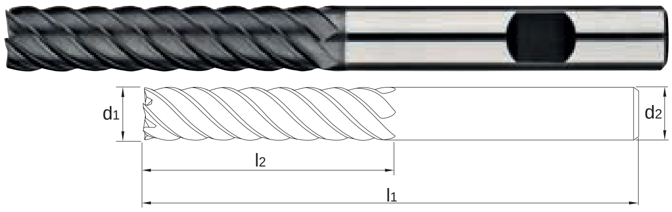
45° | MG HM | AlTiN X | NORM | DIN 6535-HB | d1 +0,00 -0,03 | HRC

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC
105-120 O	85-105 N	20-30 H



Ref.	d1	d2	l1	l2	z
34.424.0600	6	6	57	13	6
34.424.0800	8	8	63	19	6
34.424.0900	9	10	72	19	6
34.424.1000	10	10	72	22	6
34.424.1200	12	12	83	26	6
34.424.1400	14	16	83	26	6
34.424.1600	16	16	92	32	6
34.424.1800	18	18	92	32	8
34.424.2000	20	20	104	38	8

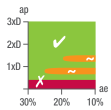
› 34.464 Phantom



- NL **Volhardmetaal Schachtfrees, meersnijder extra lang, AlTiN-X, HRC 30-65**
- FR **Fraise standard carbure monobloc extra longue, AlTiN-X, HRC 30-65**
- ES **Fresa frontal de varios labios Metal Duro Integral extra larga, AlTiN-X, HRC 30-65**
- DE **Vollhartmetall Mehrschneiden-Schaftfräser extra lang, AlTiN-X, HRC 30-65**
- EN **solid carbide Multi Flute End Mill extra long, AlTiN-X, HRC 30-65**

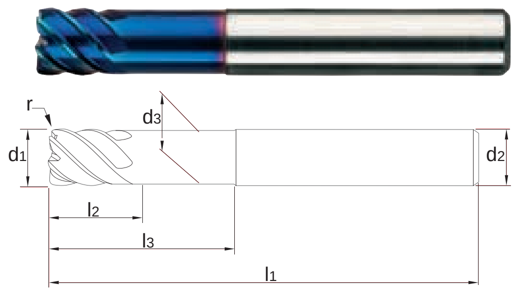
45° | MG HM | AlTiN X | NORM | DIN 6535-HB | d1 +0,00 -0,03 | HRC

P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC
105-120 O	75-85 N	20-30 H



Ref.	d1	d2	l1	l2	z
34.464.0600	6	6	70	26	6
34.464.0800	8	8	90	36	6
34.464.1000	10	10	100	46	6
34.464.1200	12	12	110	56	6
34.464.1600	16	16	130	66	6
34.464.2000	20	20	140	76	6
34.464.2500	25	25	180	92	6

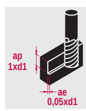
› 34.510 Phantom



- NL **Volhardmetaal HSC Torusfrees, 6-snijder verjongde schacht (nek), TiAlSiN, HRC 45-70**
- FR **Fraise torique UGV, 6 dents carbure monobloc queue détalonnée, TiAlSiN, HRC 45-70**
- ES **Fresa tórica MAV Metal Duro Integral mango rebajado (cuello), TiAlSiN, HRC 45-70**
- DE **Vollhartmetall HSC Torusfräser abgesetztem Schaft, TiAlSiN, HRC 45-70**
- EN **solid carbide HSC Torus Milling Cutter relieved neck version, TiAlSiN, HRC 45-70**

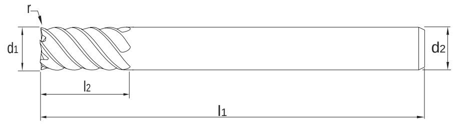
45° | NG HM | TiAlSiN | NORM | r | DIN 6535-HA | h5 | HSC

P 14 ≤1400 N/mm²	H 15 HRC
330-475 K	200-330 I



Ref.	d1	d2	d3	l1	l2	l3	r	z
34.510.0620	6	6	5.85	50	6	14	0.5	6
34.510.0820	8	8	7.7	60	8	24	0.5	6
34.510.1030	10	10	9.7	70	10	30	1	6
34.510.1230	12	12	11.7	75	12	30	1	6

› 34.515 Phantom

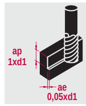


NL Volhardmetaal HSC Schachtfrees, 6-snijder TiAlSiN, kantradius, HRC 45-70
FR Fraise UGV 6 dents carbure monobloc TiAlSiN, à rayon, HRC 45-70
ES Fresa integral MAV Metal Duro Integral TiAlSiN, radio de corte, HRC 45-70
DE Vollhartmetall HSC High-Speed Schaftfräser TiAlSiN, Eckradius, HRC 45-70
EN solid carbide HSC Multi Flute Milling Cutter TiAlSiN, corner radius, HRC 45-70

45° | NG HM | TiAlSiN | NORM | r | DIN 6535-HA | h5 | HSC

P 14 ≤1400 N/mm² | H 15 HRC

330-475 K | 200-330 I



Ref.	d1	d2	l1	l2	r	z
34.515.0621	6	6	70	13	0.5	6
34.515.0622	6	6	70	26	0.5	6
34.515.0821	8	8	90	19	0.5	6
34.515.0822	8	8	90	36	0.5	6
34.515.1021	10	10	100	22	0.5	6
34.515.1032	10	10	100	22	1	6

Ref.	d1	d2	l1	l2	r	z
34.515.1033	10	10	100	46	1	6
34.515.1221	12	12	110	26	0.5	6
34.515.1232	12	12	110	26	1	6
34.515.1233	12	12	110	56	1	6
34.515.1631	16	16	130	32	1	6
34.515.1642	16	16	130	32	1.5	6

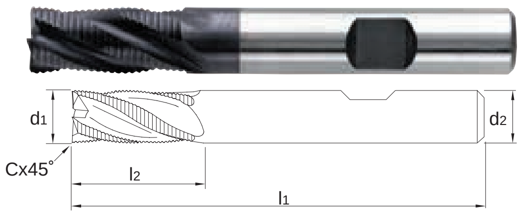
Ref.	d1	d2	l1	l2	r	z
34.515.1643	16	16	130	66	1.5	6
34.515.2031	20	20	140	38	1	6
34.515.2042	20	20	140	38	1.5	6
34.515.2053	20	20	140	38	2	6
34.515.2054	20	20	140	76	2	6

NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

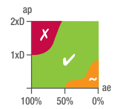
› 35.244 Phantom



NL UNI Volhardmetaal Ruwfrees lang, TiAlN, fijn
FR Fraise d'ébauche carbure monobloc UNI version longue, TiAlN, pas fin
ES Fresa de desbaste Metal Duro Integral UNI larga, TiAlN, paso fino
DE UNI Vollhartmetall Schruppfräser lang, TiAlN, fein
EN UNI solid carbide Roughing Cutter long, TiAlN, fine pitch

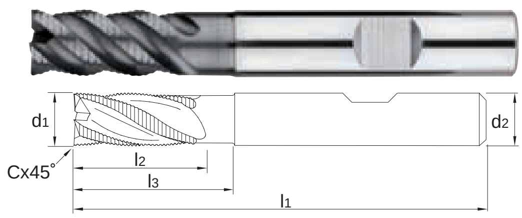
20° | MG HM | TiAlN | HR | NORM | Cx45 | DIN 6535-HB | d1 h10 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW
90-110 I	95-110 H	70-80 G	60-80 F	55-60 G	40-50 F	130-140 J	100-130 I



Ref.	d1	d2	l1	l2	C	z
35.244.0400	4	6	57	11	x	3
35.244.0500	5	6	57	13	x	3
35.244.0600	6	6	57	16	0,4	3
35.244.0800	8	8	63	16	0,4	3
35.244.1000	10	10	72	22	0,6	4
35.244.1200	12	12	83	26	0,6	4
35.244.1400	14	14	83	26	0,6	4
35.244.1600	16	16	92	32	0,6	4
35.244.2000	20	20	104	38	0,6	4

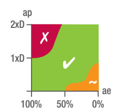
› 35.254 Phantom



NL HP2 UNI Volhardmetaal Ruwfrees 2xD/3xD AlCrN, fijn
FR Fraise d'ébauche carbure monobloc 2xD/3xD HP2 UNI AlCrN, pas fin
ES Fresa de desbaste Metal Duro Integral 2xD/3xD HP2 UNI AlCrN, paso fino
DE HP2 UNI Vollhartmetall Schruppfräser 2xD/3xD AlCrN, fein
EN HP2 UNI solid carbide Roughing Cutter 2xD/3xD AlCrN, fine pitch

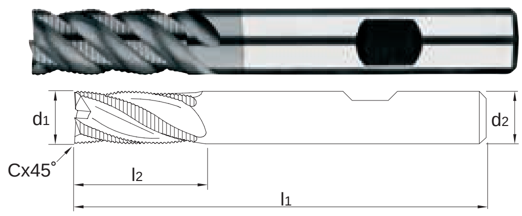
45° | MG HM | AlCrN | HR | 2xD 3xD | Cx45 | DIN 6535-HB | d1 h10 | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
160-200 I	130-180 H	110-160 I	80-120 H	70-120 J	50-100 I	100-160 I	80-140 I	40-50 I	50-65 I



Ref.	d1	d2	d3	l1	l2	l3	C	z
35.254.0400	4	6	3.8	57	8	12	0,04	3
35.254.0500	5	6	4.8	57	10	15	0,05	4
35.254.0600	6	6	5.6	57	12	18	0,06	4
35.254.0800	8	8	7.6	63	16	24	0,08	4
35.254.1000	10	10	9.5	72	20	30	0,1	4
35.254.1200	12	12	11.5	83	24	36	0,12	4
35.254.1400	14	14	13.5	93	28	42	0,15	4
35.254.1600	16	16	15.3	108	32	48	0,16	5
35.254.2000	20	20	19.3	126	40	60	0,2	6

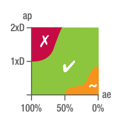
› 35.484 Phantom



NL Volhardmetaal Ruwfrees lang, TiAlN, fijn, roestvaststaal
FR Fraise d'ébauche carbure monobloc version longue, TiAlN, pas fin, Inox
ES Fresa de desbaste Metal Duro Integral larga, TiAlN, paso fino, acero inoxidable
DE Vollhartmetall Schruppfräser lang, TiAlN, fein, rostfreien Stahl
EN solid carbide Roughing Cutter long, TiAlN, fine pitch, stainless steel

45° | MG HM | TiAlN | HR | NORM | Cx45 | DIN 6535-HB | d1 h10 | INOX

P 12	P 13	P 14	M 21	M 22	S 71	S 72
≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
70-80 H	80-100 I	70-100 H	50-80 J	40-60 I	35-40 I	50-65 I

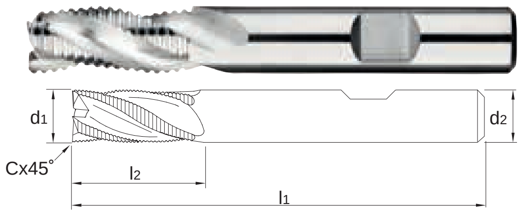


Ref.	d1	d2	l1	l2	C	z
35.484.0400	4	6	57	11	0,1	3
35.484.0500	5	6	57	13	0,15	4
35.484.0600	6	6	57	16	0,15	4
35.484.0800	8	8	63	16	0,2	4
35.484.1000	10	10	72	22	0,2	4
35.484.1200	12	12	83	26	0,2	4
35.484.1400	14	14	83	26	0,2	5
35.484.1600	16	16	92	32	0,2	5
35.484.2000	20	20	104	38	0,2	6

Search on www.phantom.eu

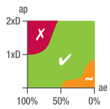
› 35.540 Phantom

NL Volhardmetaal Ruwfrees lang, rond, Aluminium
FR Fraise d'ébauche carbure monobloc version longue, ronde, Aluminium
ES Fresa de desbaste Metal Duro Integral larga, redondo, Aluminio
DE Vollhartmetall Schruppfräser lang, rund, Aluminium
EN solid carbide Roughing Cutter long, coarse pitch, Aluminium



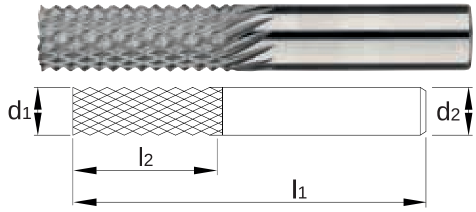
30° MG HM WR NORM Cx45 DIN 6535-HB d1 h10 ALU

N 41	N 42	N 43	N 51	N 61
Alu	Alu Si>10%	Mg	Cu	PVC
250-270 N	160-180 M	115-130 J	115-130 L	250-270 N



Ref.	d1	d2	l1	l2	C	z
35.540.0600	6	6	57	13	0,6	3
35.540.0800	8	8	63	16	0,6	3
35.540.1000	10	10	72	22	0,6	3
35.540.1200	12	12	83	26	0,6	3
35.540.1600	16	16	92	32	0,9	3
35.540.2000	20	20	104	38	0,9	3

› 35.852 *Phantom*



NL Volhardmetaal Router zonder kopvertanding
FR Fraise à contourner carbure monobloc sans denture en bout
ES Fresa de contornear Metal Duro Integral sin corte al centro
DE Vollhartmetall Router ohne Kopfverzahnung
EN solid carbide Router cutter without End Cut

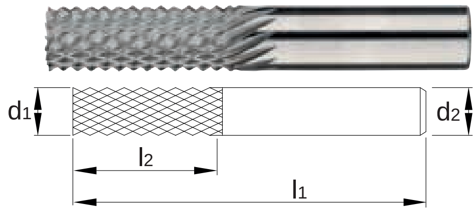
MG HM | NORM | DIN 6535-HA

N 62 GFK/CFK

100-200 A

Ref.	d1	d2	l1	l2
35.852.0300	3	3	45	13
35.852.0400	4	4	50	16
35.852.0600	6	6	63	19
35.852.0800	8	8	63	25
35.852.1000	10	10	63	25
35.852.1200	12	12	75	30

› 35.860 *Phantom*



NL Volhardmetaal Router met kopvertanding
FR Fraise à contourner carbure monobloc avec denture en bout
ES Fresa de contornear Metal Duro Integral con corte al centro
DE Vollhartmetall Router mit Stirnverzahnung
EN solid carbide Router cutter with end cut

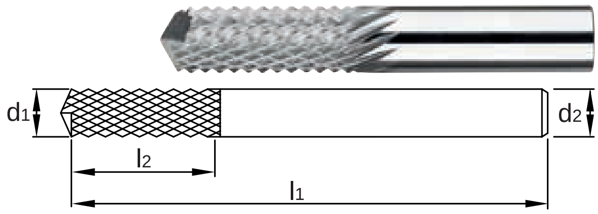
MG HM | NORM | DIN 6535-HA

N 62 GFK/CFK

100-200 A

Ref.	d1	d2	l1	l2
35.860.0300	3	3	45	13
35.860.0400	4	4	50	16
35.860.0600	6	6	63	19
35.860.0800	8	8	63	25
35.860.1000	10	10	63	25
35.860.1200	12	12	75	30

› 35.868 *Phantom*



NL Volhardmetaal Router met boorpunt
FR Fraise à contourner carbure monobloc avec pointe de perçage
ES Fresa de contornear Metal Duro Integral con punta de taladro
DE Vollhartmetall Router mit Bohrspitze
EN solid carbide Router cutter with drill point

MG HM | NORM | DIN 6535-HA

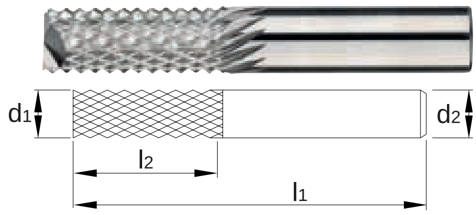
N 62 GFK/CFK

100-200 A

Ref.	d1	d2	l1	l2
35.868.0300	3	3	45	13
35.868.0400	4	4	50	16
35.868.0600	6	6	63	19
35.868.0800	8	8	63	25
35.868.1000	10	10	63	25
35.868.1200	12	12	75	30

Search on www.phantom.eu

› 35.876 Phantom



NL Volhardmetaal Router twee snijkanten, kopvertanding
FR Fraise à contourner carbure monobloc à deux taillants, denture en bout
ES Fresa de contornear Metal Duro Integral con dos labios, corte al centro
DE Vollhartmetall Router zwei Schneiden, Kopfverzahnung
EN solid carbide Router cutter two flutes, End Cut

MG HM | NORM | DIN 6535-HA

N 62 GFK/CFK

100-200 A

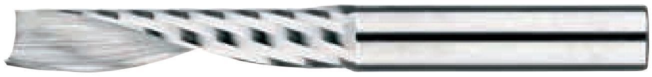
Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2	Ref.	d1	d2	l1	l2
35.876.0300	3	3	45	13	35.876.0600	6	6	63	19	35.876.1000	10	10	63	25
35.876.0400	4	4	50	16	35.876.0800	8	8	63	25	35.876.1200	12	12	75	30

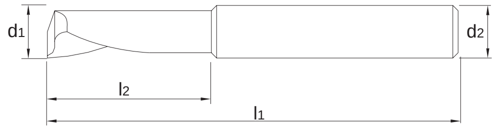
NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

Watch me

www.phantom.eu

› 36.130 Phantom





NL Volhardmetaal Eensnijderfrees Aluminium, 21°
FR Fraise à 1 dent carbure monobloc Aluminium, 21°
ES Fresa frontal de 1 labio Metal Duro Integral Aluminio, 21°
DE Vollhartmetall Einzahnfräser Aluminium, 21°
EN solid carbide 1 Flute End Mill Aluminium, 21°

MG HM | 21° | NORM | DIN 6535-HA | ALU

N 41 Alu | N 61 PVC

300-450 H | 300-450 H

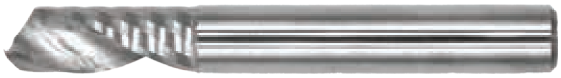
ap 1xd1 ae 1xd1

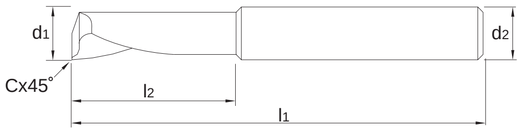
Ref.	d1	d2	l1	l2	z
36.130.0201	2	2	50	8	1
36.130.0202	2	6	64	8	1
36.130.0251	2.5	2.5	50	8	1
36.130.0252	2.5	6	64	8	1
36.130.0301	3	3	50	8	1
36.130.0302	3	6	64	8	1
36.130.0303	3	3	64	12	1
36.130.0304	3	6	64	12	1

Ref.	d1	d2	l1	l2	z
36.130.0401	4	4	64	8	1
36.130.0402	4	4	64	12	1
36.130.0403	4	4	64	20	1
36.130.0404	4	6	64	20	1
36.130.0405	4	4	64	30	1
36.130.0501	5	5	64	16	1
36.130.0502	5	6	64	16	1
36.130.0503	5	5	64	30	1

Ref.	d1	d2	l1	l2	z
36.130.0602	6	6	64	12	1
36.130.0603	6	6	64	20	1
36.130.0604	6	6	76	30	1
36.130.0605	6	6	76	38	1
36.130.0801	8	8	64	25	1
36.130.0802	8	8	76	38	1
36.130.1001	10	10	76	30	1

› 36.140 Phantom





NL Volhardmetaal Eensnijderfrees Aluminium, 30°
FR Fraise à 1 dent carbure monobloc Aluminium, 30°
ES Fresa frontal de 1 labio Metal Duro Integral Aluminio, 30°
DE Vollhartmetall Einzahnfräser Aluminium, 30°
EN solid carbide 1 Flute End Mill Aluminium, 30°

MG HM | 30° | NORM | Cx45 | DIN 6535-HA | h5 | ALU

N 41 Alu | N 42 Alu Si>10% | N 61 PVC

300-450 H | 145-220 I | 300-450 H

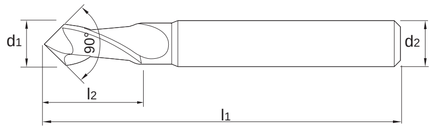
ap 1xd1 ae 1xd1

Ref.	d1	d2	l1	l2	C	z
36.140.0200	2	3	50	8	0,05	1
36.140.0250	2.5	3	40	12	0,05	1
36.140.0300	3	3	50	12	0,05	1

Ref.	d1	d2	l1	l2	C	z
36.140.0400	4	4	60	15	0,1	1
36.140.0500	5	5	60	17	0,1	1
36.140.0600	6	6	65	20	0,1	1

Ref.	d1	d2	l1	l2	C	z
36.140.0800	8	8	65	22	0,15	1
36.140.1000	10	10	75	25	0,15	1
36.140.1200	12	12	80	30	0,15	1

› 36.164 Phantom



NL Volhardmetaal Multi-frees AlTiN-X, 90°
FR Fraise Multi carbure monobloc AlTiN-X, 90°
ES Fresa para ranuras Metal Duro Integral AlTiN-X, 90°
DE Vollhartmetall Multifräser AlTiN-X, 90°
EN solid carbide Multi 2 Flute End Mill AlTiN-X, 90°

30° | MG HM | AlTiN X | NORM | DIN 6535-HA

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | N 41 Alu | N 42 Alu Si>10% | N 51 Cu | N 61 PVC | S 71 Ni/Co | S 72 Ti

70-75 S | 40-60 S | 35-40 S | 30-35 Q | 30-35 Q | 25-30 P | 150-180 S | 120-150 S | 50-120 S | 150-180 S | 20-25 P | 30-35 P

Ref.	d1	d2	l1	l2	z
36.164.0300	3	4	50	6	2
36.164.0400	4	5	50	8	2
36.164.0500	5	6	50	10	2
36.164.0600	6	8	60	12	2

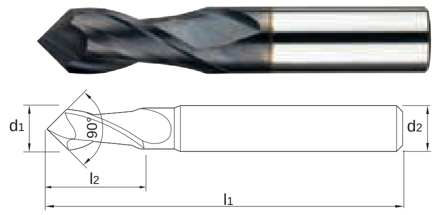
Ref.	d1	d2	l1	l2	z
36.164.0800	8	10	70	16	2
36.164.1000	10	12	70	18	2
36.164.1200	12	12	70	20	2
36.164.1400	14	14	80	24	2

Ref.	d1	d2	l1	l2	z
36.164.1600	16	16	80	26	2
36.164.2000	20	20	100	32	2

3 SC

› 36.166 Phantom

- NL Volhardmetaal Multi-PLUS frees AlTiN-X, 90°
- FR Fraise Multi PLUS carbure monobloc AlTiN-X, 90°
- ES Fresa Multi PLUS Metal Duro Integral AlTiN-X, 90°
- DE Vollhartmetall Multi-PLUS Fräser AlTiN-X, 90°
- EN solid carbide Multi-PLUS 2 Flute End Mill AlTiN-X, 90°



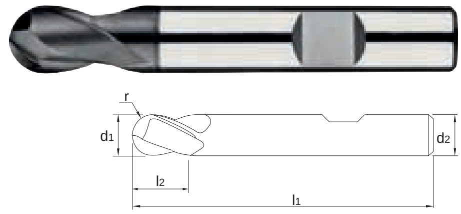
30° | MG HM | AlTiN X | NORM | DIN 6535-HA

P 11	P 12	P 13	P 14	M 21	M 22	N 41	N 42	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu	PVC	Ni/Co	Ti
70-75 S	40-60 S	35-40 S	30-35 Q	30-35 Q	25-30 P	150-180 S	120-150 S	50-120 S	150-180 S	20-25 P	30-35 P

Ref.	d1	d2	l1	l2	z
36.166.0050	0.5	3	39	1	2
36.166.0100	1	3	39	2	2
36.166.0150	1.5	3	39	3	2
36.166.0200	2	3	39	4	2
36.166.0250	2.5	3	39	5	2
36.166.0300	3	4	50	6	2
36.166.0400	4	5	50	8	2
36.166.0500	5	6	50	10	2
36.166.0600	6	8	60	12	2
36.166.0800	8	10	70	16	2
36.166.1000	10	12	70	18	2
36.166.1200	12	12	70	20	2
36.166.1600	16	16	80	26	2
36.166.2000	20	20	100	32	2

› 36.242 International Tools

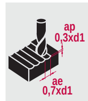
- NL ECO PRO Volhardmetaal Radiusfrees, 2-snijder kort, AlTiN-X
- FR Fraise à rayon 2 dents carbure monobloc ECO PRO version courte, AlTiN-X
- ES Fresa de punta esférica Metal Duro Integral ECO PRO corta, AlTiN-X
- DE ECO PRO Vollhartmetall 2 Schneiden Radiusfräser kurz, AlTiN-X
- EN ECO PRO solid carbide 2 Flute Ball Nose End Mill short, AlTiN-X



30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | r ±0,02 | ECO PRO

NIEUW / NOUVEAU / NUEVO / NEU

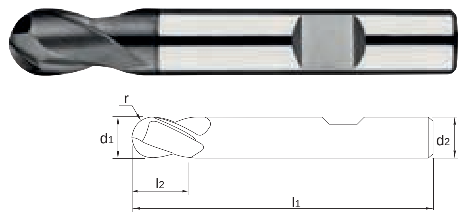
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	r	z
36.242.0300	3	6	50	4	1.5	2
36.242.0400	4	6	54	5	2	2
36.242.0500	5	6	54	6	2.5	2
36.242.0600	6	6	54	7	3	2
36.242.0800	8	8	58	9	4	2
36.242.1000	10	10	66	11	5	2
36.242.1200	12	12	73	12	6	2
36.242.1600	16	16	82	16	8	2
36.242.2000	20	20	92	20	10	2

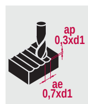
› 36.244 Phantom

- NL UNI Volhardmetaal Radiusfrees, 2-snijder kort, AlTiN-X
- FR Fraise à rayon 2 dents carbure monobloc UNI version courte, AlTiN-X
- ES Fresa de punta esférica Metal Duro Integral UNI corta, AlTiN-X
- DE UNI Vollhartmetall 2 Schneiden Radiusfräser kurz, AlTiN-X
- EN UNI solid carbide 2 Flute Ball Nose End Mill short, AlTiN-X



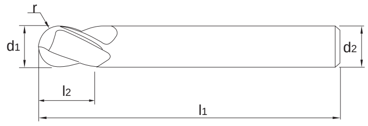
30° | MG HM | AlTiN X | DIN 6527 | DIN 6535-HB | d1 h10 | r ±0,02 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	r	z
36.244.0200	2	6	50	3	1	2
36.244.0300	3	6	50	4	1.5	2
36.244.0400	4	6	54	5	2	2
36.244.0500	5	6	54	6	2.5	2
36.244.0600	6	6	54	7	3	2
36.244.0800	8	8	58	9	4	2
36.244.1000	10	10	66	11	5	2
36.244.1200	12	12	73	12	6	2
36.244.1400	14	14	75	14	7	2
36.244.1600	16	16	82	16	8	2
36.244.1800	18	18	84	18	9	2
36.244.2000	20	20	92	20	10	2

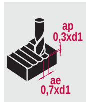
› 36.256 Phantom



NL UNI Volhardmetaal Radiusfrees, 2-snijder lang, TiAIN
FR Fraise à rayon 2 dents carbure monobloc UNI version longue, TiAIN
ES Fresa de punta esférica Metal Duro Integral UNI larga, TiAIN
DE UNI Vollhartmetall 2 Schneiden Radiusfräser lang, TiAIN
EN UNI solid carbide 2 Flute Ball Nose End Mill long, TiAIN

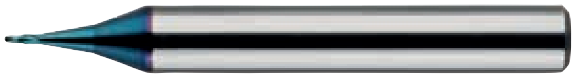
30° | MG HM | TiAIN | NORM | DIN 6535-HA | r ±0,02 | d1 +0,00 -0,03 | UNI

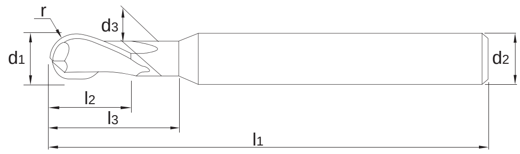
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	50-90 I	80-90 G	25-35 H	30-40 G



Ref.	d1	d2	l1	l2	r	z
36.256.0100	1	3	39	3	0.5	2
36.256.0150	1.5	3	39	5	0.75	2
36.256.0200	2	3	39	7	1	2
36.256.0250	2.5	3	39	8	1.25	2
36.256.0300	3	3	39	9	1.5	2
36.256.0350	3.5	4	51	12	1.75	2
36.256.0400	4	4	51	14	2	2
36.256.0450	4.5	5	51	14	2.25	2
36.256.0500	5	5	51	16	2.5	2
36.256.0600	6	6	64	19	3	2
36.256.0700	7	7	64	19	3.5	2
36.256.0800	8	8	64	21	4	2
36.256.0900	9	10	70	22	4.5	2
36.256.1000	10	10	70	22	5	2
36.256.1100	11	11	70	25	5.5	2
36.256.1200	12	12	76	25	6	2
36.256.1400	14	14	89	30	7	2
36.256.1600	16	16	89	32	8	2
36.256.1800	18	18	102	32	9	2
36.256.2000	20	20	102	38	10	2
36.256.2200	22	22	102	38	11	2
36.256.2500	25	25	102	38	12.5	2

› 36.275 Phantom

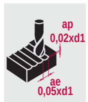




NL Volhardmetaal Precisie HSC Radiusfrees, 2-snijder TiAlSiN, HRC 45-70
FR Fraise à rayon de précision UGV carbure monobloc TiAlSiN, HRC 45-70
ES Fresa de punta esférical de precisión MAV Metal Duro Integral TiAlSiN, HRC 45-70
DE Vollhartmetall Präzisions HSC Radiusfräser (2-Schneider) TiAlSiN, HRC 45-70
EN solid carbide HSC Precision 2 Flute Ball Nose End Mill TiAlSiN, HRC 45-70

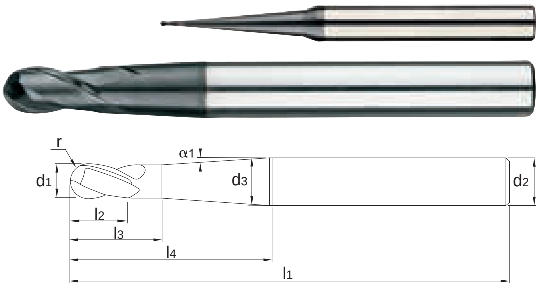
30° | NG HM | TiAlSiN | NORM | DIN 6535-HA | h5 | r ø<3 ±0,005 | r ø≥3 ±0,01 | d1ø<3 +0/-0,012 | d1ø≥3 +0/-0,015 | HSC

P 14	H 15
≤1400 N/mm²	HRC
75-275 U	75-160 T



Ref.	d1	d2	d3	l1	l2	l3	r	z
36.275.0030	0.3	4		40	0.5		0.15	2
36.275.0040	0.4	4		40	0.6		0.2	2
36.275.0050	0.5	4		40	0.7		0.25	2
36.275.0060	0.6	4		40	0.9		0.3	2
36.275.0070	0.7	4		40	1.1		0.35	2
36.275.0080	0.8	4		40	1.2		0.4	2
36.275.0090	0.9	4		40	1.4		0.45	2
36.275.0100	1	6	0.95	50	1.5	3	0.5	2
36.275.0150	1.5	6	1.45	50	2	4	0.75	2
36.275.0200	2	6	1.95	50	2.5	5	1	2
36.275.0250	2.5	6	2.4	50	3	7	1.25	2
36.275.0300	3	6	2.85	60	4	10	1.5	2
36.275.0400	4	6	3.85	60	5	10	2	2
36.275.0500	5	6	4.85	60	6	12	2.5	2
36.275.0600	6	6	5.85	60	7	15	3	2
36.275.0800	8	8	7.7	80	9	15	4	2
36.275.1000	10	10	9.7	80	11	25	5	2
36.275.1200	12	12	11.7	80	14	25	6	2

› 36.285 Phantom



NL Volhardmetaal Precisie Radiusfrees, 2-snijder AlTiN-X, HRC 30-65
FR Fraise à rayon de précision 2 dents carbure monobloc AlTiN-X, HRC 30-65
ES Fresa de punta esférical de precisión Metal Duro Integral AlTiN-X, HRC 30-65
DE Vollhartmetall Präzisions-Radiusfräser (2-Schneider) AlTiN-X, HRC 30-65
EN solid carbide Precision Radius Cutter AlTiN-X, HRC 30-65

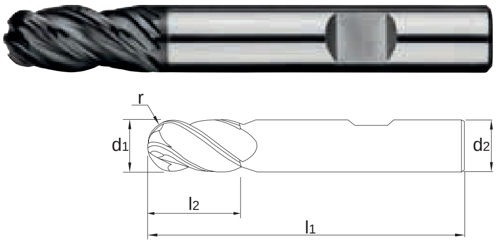
30° | MG HM | AlTiN X | NORM | DIN 6535-HA | r ±0,02 | d1 +0,00 -0,03 | HRC

P 13	P 14	H 15
≤1000 N/mm²	≤1400 N/mm²	HRC
75-200 X	60-110 W	80-135 V

ap 0,2xd1 / ae 0,2-0,3mm

Ref.	d1	d2	d3	l1	l2	l3	l4	r	z	α1
36.285.0111	1	6	2	60	2	4	23	0.5	2	1°30'
36.285.0112	1	6	4.3	60	2	4	23	0.5	2	5°
36.285.0113	1	6	5	80	2	4	42	0.5	2	3°
36.285.0221	2	6	2.9	60	4	6	23	1	2	1°30'
36.285.0222	2	6	5	60	4	6	23	1	2	5°
36.285.0223	2	6	5.7	80	4	6	41	1	2	3°
36.285.0331	3	6	5.3	90	6	8	52	1.5	2	1°30'
36.285.0333	3	6	5.6	70	6	8	32	1.5	2	3°
36.285.0441	4	6	6	90	8	10	49	2	2	1°30'
36.285.0443	4	6	6	70	8	10	28	2	2	3°
36.285.0551	5	8	7	110	10	12	61	2.5	2	1°30'
36.285.0553	5	8	8	90	10	12	41	2.5	2	3°
36.285.0661	6	8	8	110	12	15	53	3	2	1°30'
36.285.0663	6	8	8	90	12	15	34	3	2	3°
36.285.0871	8	10	10	120	14	17	55	4	2	1°30'
36.285.0873	8	10	10	100	14	17	36	4	2	3°
36.285.1081	10	12	12	130	18	21	59	5	2	1°30'
36.285.1083	10	12	12	110	18	21	40	5	2	3°
36.285.1291	12	16	15	160	22	25	83	6	2	1°30'
36.285.1293	12	16	16	140	22	25	63	6	2	3°

› 36.345 Phantom



NL Volhardmetaal Radiusfrees, 4-snijder lang, AlTiN-X, roestvaststaal
FR Fraise à rayon 4 dents carbure monobloc version longue, AlTiN-X, Inox
ES Fresa de punta esférica Metal Duro Integral larga, AlTiN-X, acero inoxidable
DE Vollhartmetall 4 Schneiden Radiusfräser lang, AlTiN-X, rostfreien Stahl
EN solid carbide 4 Flute Ball Nose End Mill long, AlTiN-X, stainless steel

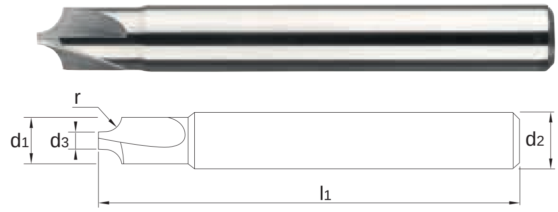
VARI | MG HM | AlTiN X | NORM | DIN 6535-HB | r ±0,02 | d1 +0,00 -0,03 | INOX

P 13	P 14	M 21	M 22	K 31	K 32	S 71	S 72
≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Ni/Co	Ti
125-140 I	95-110 I	75-96 I	65-80 H	100-120 J	130-140 J	25-35 G	80-95 H

ap 1xd1 / ae 0,5xd1

Ref.	d1	d2	l1	l2	r	z
36.345.0300	3	6	57	8	1.5	4
36.345.0400	4	6	57	11	2	4
36.345.0500	5	6	57	13	2.5	4
36.345.0600	6	6	57	13	3	4
36.345.0800	8	8	63	19	4	4
36.345.1000	10	10	72	22	5	4
36.345.1200	12	12	83	26	6	4
36.345.1600	16	16	92	32	8	4

› 36.430 Phantom



NL Volhardmetaal Radiusfrees, 4-snijder Kwarthol frees
FR Fraise à rayon 4 dents carbure monobloc Fraise à 1/4 de cercle concave
ES Fresa de punta esférica Metal Duro Integral Fresa semicóncava de 1/4 de círculo
DE Vollhartmetall 4 Schneiden Radiusfräser Viertelrund-Profilfräser
EN solid carbide 4 Flute Ball Nose End Mill Corner Rounding Cutter

0° | MG HM | NORM | DIN 6535-HA | r H11

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
90-110 L	95-110 L	70-80 K	60-80 K	55-60 J	40-50 H	130-140 K	100-130 K	300-450 H

Ref.	r	d1	d2	d3	l1	z
36.430.0100	1	2.9	6	0.9	50	4
36.430.0150	1.5	4.5	6	0.9	50	4
36.430.0200	2	5.5	6	0.9	50	4
36.430.0250	2.5	6	8	0.9	60	4
36.430.0300	3	7.5	8	1.9	60	4
36.430.0350	3.5	8.9	10	1.9	60	4
36.430.0400	4	9.9	10	1.9	60	4
36.430.0450	4.5	10.9	12	1.9	70	4
36.430.0500	5	11.9	12	1.9	70	4
36.430.0600	6	15.9	16	3.9	80	4
36.430.0800	8	19.9	20	3.9	80	4

NL Voedingswaarde
FR Tableau des avances
ES Tabla de avances
DE Vorschubtabelle
EN Feed table

P 11 ≤600 N/mm²	= ISO
25-35 E	Vc = 25-35 FRC = E

	FRC																						
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
d1(mm)	fz (mm/z)																							
0,3	0,001	0,001	0,001	0,002	0,003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,012	0,015	-	-	-
0,5	0,001	0,001	0,002	0,003	0,006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,019	0,024	-	-	-
0,8	0,002	0,002	0,003	0,005	0,008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,030	0,039	-	-	-
1	0,002	0,006	0,004	0,006	0,009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,037	0,048	0,012	0,008	0,008
1,5	0,003	0,008	0,005	0,009	0,012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,041	0,054	-	-	0,011
2	0,004	0,010	0,007	0,012	0,016	0,002	0,002	0,004	0,005	0,006	0,007	0,008	0,011	0,027	-	0,011	0,022	0,035	0,040	0,044	0,057	0,028	0,014	0,026
3	0,006	0,015	0,010	0,016	0,039	0,003	0,004	0,007	0,010	0,010	0,010	0,011	0,027	0,035	-	0,022	0,035	0,040	0,055	0,067	0,091	0,043	0,023	0,026
5	0,008	0,026	0,015	0,026	-	0,009	0,010	0,014	0,020	0,020	0,022	0,027	0,035	0,044	0,048	0,035	0,040	0,055	0,065	0,111	0,156	0,052	0,031	0,045
6	0,010	0,030	0,026	0,032	-	0,011	0,013	0,017	0,024	0,025	0,027	0,035	0,044	0,059	0,059	0,040	0,055	0,065	0,080	0,122	0,174	0,059	0,039	0,060
8	0,015	0.038	0,030	0,040	-	0,016	0,019	0,024	0,032	0,032	0,035	0,044	0,055	0,078	0,067	0,055	0,065	0,080	0,105	0,132	0,189	0,067	0,060	0,090
10	0,026	0,043	0,038	0,045	-	0,021	0,025	0,030	0,038	0,039	0,044	0,055	0,065	0,098	0,071	0,065	0,080	0,105	0,135	0,142	0,199	0,075	0,080	0,120
12	0,030	0,051	0,043	0,060	-	0,026	0,030	0,036	0,046	0,048	0,052	0,065	0,085	0,097	0,078	0,080	0,105	0,135	0,150	0,142	0,212	0,082	0,101	0,150
16	0,032	0,051	0,043	0,060	-	0,032	0,038	0,045	0,054	0,058	0,063	0,085	0,100	0,099	0,117	0,105	0,135	0,150	0,168	-	-	0,092	0,120	0,180
20	0,037	0,051	0,043	0,060	-	0,038	0,045	0,057	0,066	0,073	0,080	0,100	0,135	0,120	-	0,135	0,150	0,168	0,180	-	-	-	-	0,200
22	0,037	0,051	0,043	0,060	-	0,045	0,057	0,066	0,070	0,080	0,100	0,135	0,150	0,128	-	0,150	0,168	0,180	0,200	-	-	-	-	-
25	0,040	0,051	0,043	0,060	-	0,057	0,066	0,070	0,073	0,100	0,135	0,150	0,168	0,135	-	0,168	0,180	0,200	0,220	-	-	-	-	0,109

NL **Correctiefactor voor hogere voeding bij Ae waarde ≤ 40%**
FR **Facteur de correction pour avance plus élevée pour valeur Ae ≤ 40%**
ES **Factor de corrección para una alimentación más alta en valores Ae ≤ 40%**
DE **Korrektur beim hohere Vorschubgeschwindigkeit wenn Ae Wert ≤ 40%**
EN **Correction factor for higher feed with ae value ≤ 40%**

% Ae of d1	5%	7%	10%	15%	20%	25%	30%	40%
fz x	2,8	2,4	2	1,7	1,5	1,3	1,2	1,1

NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

HP2 UNI VARI

NL Voedingswaarde voor 45° induiken
FR Tableau des avances pour une pénétration à 45°
ES Tabla de alimentión para inmersión de 45°
DE Vorschubgeschwindigkeit beim 45°eintauchen
EN Feed table for 45° plunging

	Dimensions in mm								
	3	4	5	6	8	10	12	16	20
	fz (mm/z)								
P 11 ≤600 N/mm²	0,008	0,012	0,018	0,025	0,038	0,045	0,050	0,070	0,090
P 12 ≤850 N/mm²	0,007	0,012	0,018	0,025	0,036	0,042	0,048	0,068	0,080
P 13 ≤1000 N/mm²	0,007	0,012	0,018	0,025	0,035	0,040	0,045	0,065	0,075
P 14 ≤1400 N/mm²	0,005	0,008	0,012	0,020	0,030	0,035	0,040	0,055	0,070
M 21 INOX ≤850N/mm²	0,004	0,006	0,010	0,015	0,023	0,034	0,045	0,050	0,055
M 22 INOX >850N/mm²	0,004	0,006	0,010	0,015	0,020	0,030	0,035	0,045	0,050
K 31 GG	0,005	0,008	0,012	0,018	0,025	0,038	0,045	0,060	0,075
K 32 GGG GTS-GTW	0,005	0,008	0,012	0,018	0,025	0,038	0,045	0,060	0,075
S 71 Ni/Co	0,003	0,006	0,010	0,015	0,020	0,035	0,045	0,050	0,055
S 72 Ti	0,003	0,006	0,010	0,015	0,020	0,030	0,035	0,045	0,050

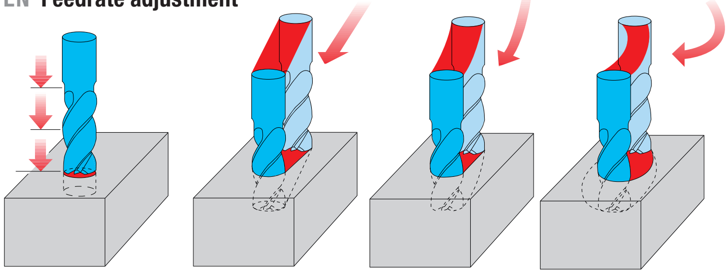
NL: ISO M en ISO S maximaal 10° induiken.
FR: ISO M et ISO S pénétration à 10° maximum.
ES: ISO M e ISO S con una inmersión máxima de 10°.
DE: ISO M und ISO maximal 10° eintauchen.
EN: ISO M and ISO S maximum plunging angle of 10°.

NL Voedingswaarde voor borende bewerking
FR Modification des avances pour une opération de perçage
ES Tabla de alimentión para mecanizado con broca
DE Vorschubgeschwindigkeit beim Bohren
EN Feed table for drilling operations

	Dimensions in mm								
	3	4	5	6	8	10	12	16	20
	fz (mm/z)								
P 11 ≤600 N/mm²	0,004	0,008	0,012	0,018	0,025	0,030	0,035	0,048	0,060
P 12 ≤850 N/mm²	0,003	0,006	0,010	0,016	0,024	0,028	0,032	0,045	0,055
P 13 ≤1000 N/mm²	0,002	0,005	0,008	0,015	0,023	0,028	0,030	0,043	0,050
P 14 ≤1400 N/mm²	0,002	0,004	0,006	0,013	0,020	0,025	0,025	0,038	0,045
K 31 GG	0,002	0,004	0,006	0,013	0,018	0,025	0,030	0,040	0,050
K 32 GGG GTS-GTW	0,002	0,004	0,006	0,013	0,018	0,025	0,030	0,040	0,050

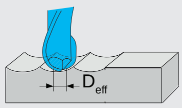
NL **Voedingswaarde aanpassing**
FR **Modification des avances**
ES **Modificación de avances**
DE **Vorschubanpassung**
EN **Feedrate adjustment**

≤ 15° 15°...30°



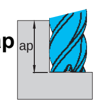
90°	≤ 15°	15°...30°	
Vf = 30 %	Vf = 100 %	Vf = 70 %V	f = 85 %

NL **Formules**
FR **Formules**
ES **Fórmulas**
DE **Formuln**
EN **Formulas**

Vc	NL: Snijsnelheid (m/min) FR: Vitesse de coupe (m/min) ES: Velocidad de corte (m/min) DE: Schnittgeschwindigkeit (m/min) EN: Cutting speed (m/min)		$Vc = \frac{\pi \times D \times n}{1000}$
n	NL: Toerental (omw/min) FR: Vitesse de tour (tr/min) ES: Número de revoluciones (rpm) DE: Umdrehung (U/min) EN: Revolutions per minute (rpm)		$n = \frac{Vc \times 1000}{\pi \times D}$
fz	NL: Voeding per tand (mm/z) FR: Avance par dent (mm/z) ES: Avance por diente (mm/z) DE: Vorschub pro Zahn (mm/z) EN: Feedrate per tooth (mm/z)		$fz = \frac{vf}{n \times z}$
Vf	NL: Tafelvoeding (mm/min) FR: Avances (mm/min) ES: Avance (mm/min DE: Vorschub (mm/min) EN: Feedrate (mm/min)		vf = (n) x (z) x (fz)
D(eff)	NL: Effectieve diameter (mm) FR: Diamètre effectif (mm) ES: Diámetro efectivo (mm) DE: Effektiver Durchmesser (mm) EN: Effective diameter (mm)		$D(eff) = 2 \times D \times ap - ap^2$

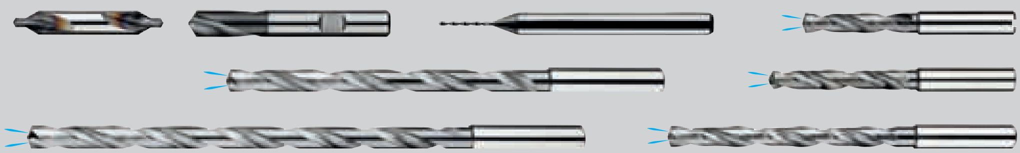
π= 3.14 **D =** 

(mm) **z = aantal tanden**
mb. de dents
no. de dientes
Zähnezahl
no. of flutes

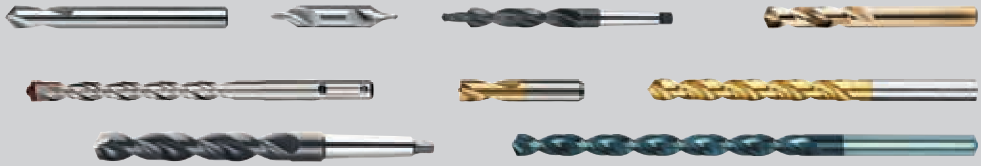
ap 

(mm)

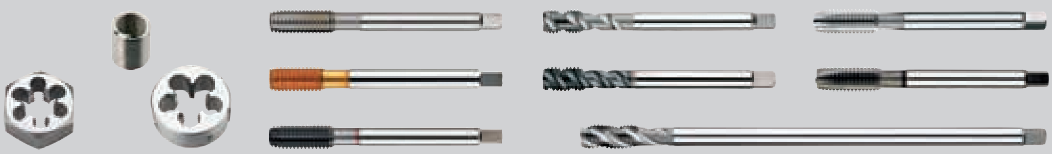
NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



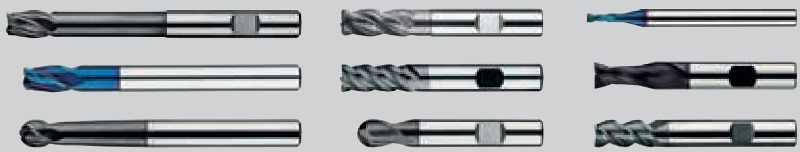
NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



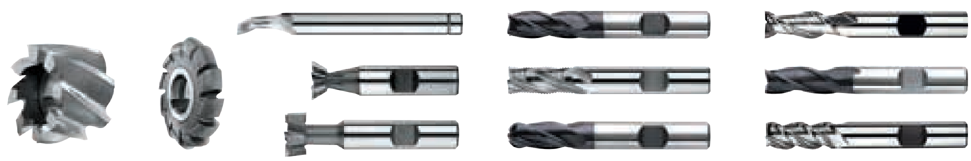
NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



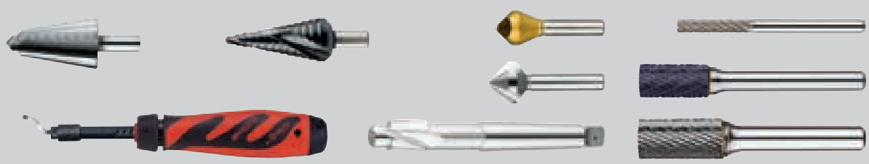
NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



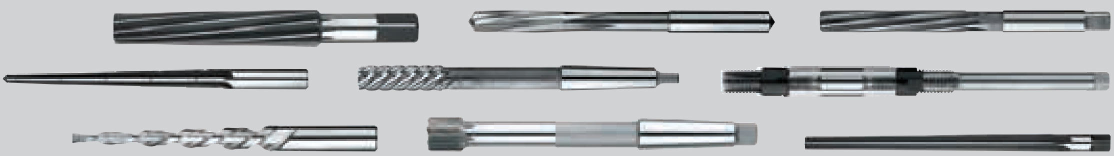
NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



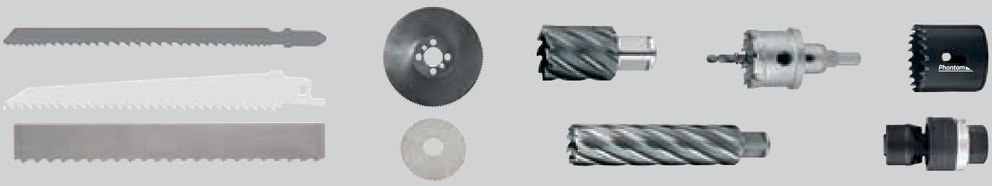
NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring



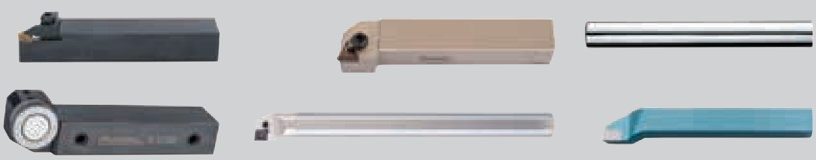
NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming



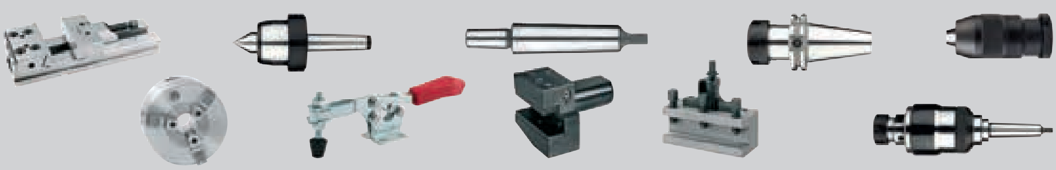
NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



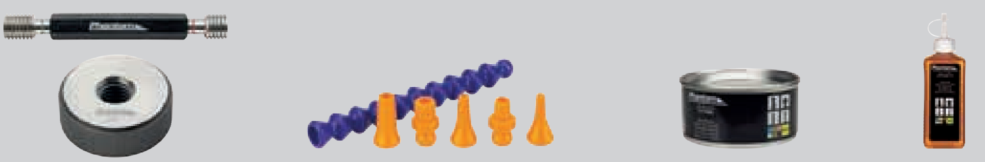
NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
	2 snijkanten, centrumsnijdend	2 dents, coupe au centre	2 dientes, corte con centro	2 Schneiden, Zentrumschnei-dend	2 flutes, centre cutting
	2 snijkanten, volradius	2 dents, à rayon complet	2 dientes, con radio completo	2 Schneiden, Vollradius	2 flutes, full radius
	3 snijkanten, centrumsnijdend	3 dents, coupe au centre	3 dientes, corte con centro	3 Schneiden, Zentrumschnei-dend	3 flutes, centre cutting
	4 Snijkanten, centrumsnijdend	4 dents, coupe au centre	4 dientes, con corte centro	4 Schneiden, Zentrumschnei-dend	4 Snijkanten, centrumsnijdend
	4 snijkanten, niet centrumsnijdend	4 dents, pas de coupe au centre	4 dientes, corte sin centro	4 Schneiden, Nicht Zentrum-schneidend	4 flutes, not centre cutting
	4 Snijkanten, centrumsnijdend, volradius	4 dents, coupe au centre, à rayon complet	4 dientes, corte al centro, con radio completo	4 Schneiden, Zentrumschnei-dend	4 flutes, centre cutting, ball nose
	5 Snijkanten, met ongelijke tandverdeling	5 dents, avec denture à pas différentiel	5 dientes, con paso irregular	5 Schneiden, mit ungleicher Zahnteilung	5 flutes, with irregular pitch
	6 snijkanten, centrumsnijdend	6 dents, coupe au centre	6 dientes, corte con centro	6 Schneiden, Zen-trumschneidend	6 flutes, centre cutting
HSS-E 8%	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalto)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)
HSS-E PM	PM HSS-E	Acier rapide fritté de haute qualité	Acero rápido pulvimetalúrgico con	PM HSS-E	PM HSS-E
TiCN	TiCN gecoat	Revêtement TiCN	Recubrimiento TiCN	TiCN Beschichtung	TiCN coated
TiAIN	TiAIN gecoat	Revêtement TiAIN	Recubrimiento TiAIN	TiAIN Beschichtung	TiAIN coated
DIN 844-B	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm

	NL	FR	ES	DE	EN
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
30°	Spiraalhoek	Angle d'Hélice	Angulo de hélice	Spiralwinkel	Helix
HR	Ronde tand, fijn	Profil rond, pas fin	Profilo redondo, paso fino	Feiner Verzahnung	Fine teeth
HRf	Ronde tand, extra fijn	Profil rond, pas extra fin	Profilo redondo, paso extra fino	Extra feiner Verzahnung	Extra fine pitch
NR	Ronde tand, grof (NR)	Runder Verzah-nung (NR)	Profilo redondo (NR)	Runder Verzah-nung (NR)	Rounded profile (NR)
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft	Straight shank
h6	Cilindrische schacht h6	Queue cylindrique h6	Mango cilíndrico h6	Zylinderschaft h6	Straight shank h6
DIN 1835-B	Cilindrische schacht met Weldon vlak	Queue cylindrique avec méplat type Weldon	Mango cilíndrico con plano de ar-rastre tipo Weldon	Zylinderschaft mit Mitnahmeflache Tyo Weldon	Straight shank, type Weldon (DIN 6535-HA)
	Cilindrische schacht met aantrekdraad	Queue cylindrique filetée	Mango cilíndrico roscado	Zylinderschaft mit Anzugsge-winde	Threaded shank DIN 1835-D
	Met langsspiebaan	Avec rainure de clavette	Con ranura longitudinal	Mit Längsnut	Vertically mounted
	Met langs- en dwarsspiebaan	Avec rainure de clavette et tenons	Con ranura longitudinal y transversal	Mit Längs- und Quernut	Vertically and horizontally mounted
d1 +0,00 -0,03	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser	Tolerance diameter
UNI	Universeel	Universel	Universal	Universal	Universal

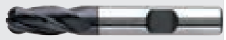
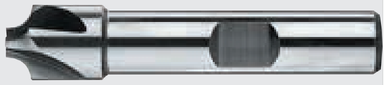
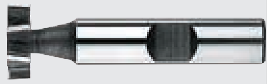
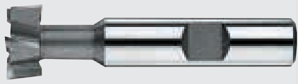
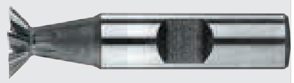
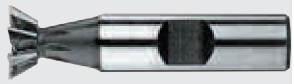
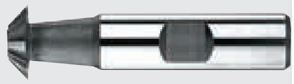
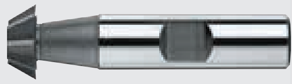
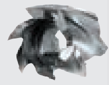
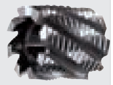
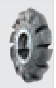
NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**
EN **HSS-E Milling**

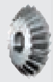
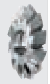
P K H N M S — Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K H N M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

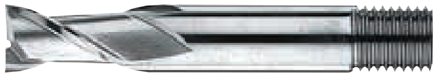
					P	M	K	N	
› 32.200	Phantom	DIN 327-D			P			N	P. 4
› 32.220	Phantom	DIN 327-B			P			N	P. 4
› 32.224	Phantom	DIN 327-B			P	M		N	P. 5
› 32.228	Phantom	DIN 327-B	HSS-E PM		P	M	K	N	P. 5
› 32.260	Phantom	NORM			P			N	P. 5
› 32.320	Phantom	DIN 844-B			P			N	P. 6
› 32.520	Phantom	NORM			P			N	P. 6
› 33.200	Phantom	DIN 844-D			P			N	P. 7
› 33.220	Phantom	DIN 844-B			P			N	P. 7
› 33.224	Phantom	DIN 844-B			P	M		N	P. 7
› 33.228	Phantom	DIN 844-B	HSS-E PM		P	M	K	N	P. 8
› 33.520	Phantom	DIN 844-B			P				P. 8
› 34.200	Phantom	DIN 844-D			P			N	P. 9
› 34.220	Phantom	DIN 844-B			P			N	P. 9
› 34.224	Phantom	DIN 844-B			P	M		N	P. 9
› 34.228	Phantom	DIN 844-B	HSS-E PM		P	M	K	N	P. 10
› 34.238	Phantom	DIN 844-B	HSS-E PM	VARI	P	M	K	N	P. 10
› 34.350	Phantom	DIN 844-D			P			N	P. 10
› 34.355	Phantom	DIN 844-B			P			N	P. 11
› 34.370	Phantom	NORM			P			N	P. 11
› 35.024	Phantom	NORM			P	M			P. 12
› 35.100	Phantom	DIN 844-D			P			N	P. 12
› 35.120	Phantom	DIN 844-B			P			N	P. 12
› 35.124	Phantom	DIN 844-B			P			N	P. 13
› 35.126	Phantom	DIN 844-B	HSS-E PM		P	M	K	N	P. 13
› 35.220	Phantom	DIN 844-B			P			N	P. 13
› 35.224	Phantom	DIN 844-B			P	M		N	P. 14
› 35.226	Phantom	DIN 844-B	HSS-E PM		P	M	K	N	P. 14
› 35.228	Phantom	DIN 844-B	HSS-E PM		P	M	K		P. 14
› 35.324	Phantom	DIN 844-B			P	M		N	P. 15
› 35.720	Phantom	DIN 844-B			P			N	P. 15
› 35.726	Phantom	DIN 844-B	HSS-E PM		P	M	K	N	P. 15
› 35.766	Phantom	DIN 844-B	HSS-E PM		P	M	K	N	P. 16

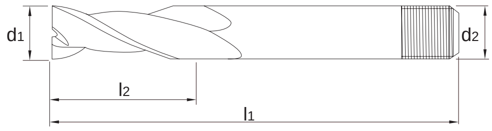
Article	Brand	Standard	Material	Application				Image	Page
› 36.100	Phantom	NORM	ALU				N		P. 17
› 36.220	Phantom	DIN 327-B		P			N		P. 17
› 36.228	Phantom	DIN 327-B	HSS-E PM	P	M	K			P. 17
› 36.324	Phantom	DIN 844-B		P			N		P. 18
› 36.410	Phantom	DIN 6518-B		P			N		P. 18
› 36.510	Phantom	DIN 850-D		P			N		P. 18
› 36.560	Phantom	DIN 851-AB		P			N		P. 19
› 36.620	Phantom	DIN 1833-C		P			N		P. 19
› 36.650	Phantom	DIN 1833-C		P			N		P. 19
› 36.720	Phantom	DIN 1833-D		P			N		P. 20
› 36.750	Phantom	DIN 1833-D		P			N		P. 20
› 37.260	Phantom	DIN 841		P	M	K			P. 21
› 37.270	Phantom	DIN 841		P		K			P. 21
› 37.350	Phantom	DIN 1880		P			N		P. 21
› 37.360	Phantom	DIN 1880		P	M	K			P. 22
› 37.500	Phantom	DIN 841		P			N		P. 22
› 37.600	Phantom	DIN 1880		P			N		P. 22
› 37.604	Phantom	DIN 1880		P					P. 23
› 38.210	Phantom	DIN 885-A		P	M	K	N		P. 23
› 38.300	Phantom	DIN 856		P	M	K	N		P. 23
› 38.350	Phantom	DIN 855		P	M	K	N		P. 24

› 38.400	Phantom	DIN 842	P M K N		P. 24
› 38.450	Phantom	DIN 847	P M K N		P. 24
› 38.500	Phantom	DIN 3972	P M K N		P. 25
› 39.100	Phantom				P. 27
› 39.200	Phantom	DIN 327-B	P N		P. 27
› 39.300	Phantom	DIN 844-B	P N		P. 27
› 39.400	Phantom	DIN 844-B	P N		P. 28

› 32.200 Phantom

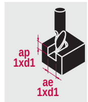
NL HSS-E Schachtfrees, 2-snijder kort, type N
FR Fraise à rainurer 2 dents HSS-E version courte, type N
ES Fresa de ranurar de 2 labios HSS-E corta, tipo N
DE HSS-E Langlochfräser (2-Schneider) kurz, Typ N
EN HSS-E 2 Flute End Mill short, type N





30° | HSS-E 8% | DIN 327-D | DIN 1835-D | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K



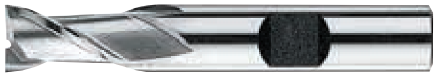
Ref.	d1	d2	l1	l2	z
32.200.0200	2	6	48	4	2
32.200.0300	3	6	49	5	2
32.200.0400	4	6	51	7	2
32.200.0500	5	6	52	8	2
32.200.0600	6	6	52	8	2
32.200.0700	7	10	60	10	2
32.200.0800	8	10	61	11	2
32.200.0900	9	10	61	11	2
32.200.0950	9.5	10	61	11	2
32.200.1000	10	10	63	13	2

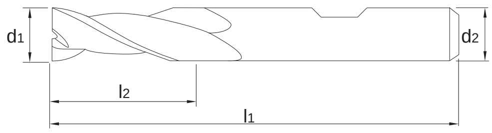
Ref.	d1	d2	l1	l2	z
32.200.1200	12	12	73	16	2
32.200.1400	14	12	73	16	2
32.200.1500	15	12	73	16	2
32.200.1600	16	16	79	19	2
32.200.1800	18	16	79	19	2
32.200.2000	20	20	82	22	2
32.200.2200	22	20	88	22	2
32.200.2400	24	25	102	26	2
32.200.2500	25	25	102	26	2
32.200.2600	26	25	102	26	2

Ref.	d1	d2	l1	l2	z
32.200.2800	28	25	102	26	2
32.200.3000	30	25	102	26	2
32.200.3200	32	32	112	32	2
32.200.3400	34	32	112	32	2
32.200.3500	35	32	112	32	2
32.200.3600	36	32	112	32	2
32.200.3800	38	40	130	38	2
32.200.4000	40	40	130	38	2

› 32.220 Phantom

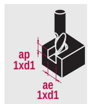
NL HSS-E Schachtfrees, 2-snijder kort, type N
FR Fraise à rainurer 2 dents HSS-E version courte, type N
ES Fresa de ranurar de 2 labios HSS-E corta, tipo N
DE HSS-E Langlochfräser (2-Schneider) kurz, Typ N
EN HSS-E 2 Flute End Mill short, type N





30° | HSS-E 8% | DIN 327-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K

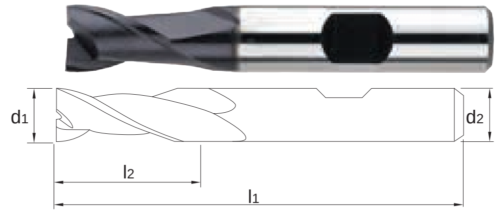


Ref.	d1	d2	l1	l2	z
32.220.0200	2	6	48	4	2
32.220.0250	2.5	6	49	5	2
32.220.0300	3	6	49	5	2
32.220.0350	3.5	6	50	6	2
32.220.0400	4	6	51	7	2
32.220.0450	4.5	6	51	7	2
32.220.0500	5	6	52	8	2
32.220.0550	5.5	6	52	8	2
32.220.0600	6	6	52	8	2
32.220.0650	6.5	10	60	10	2
32.220.0700	7	10	60	10	2
32.220.0750	7.5	10	60	10	2
32.220.0800	8	10	61	11	2
32.220.0850	8.5	10	61	11	2

Ref.	d1	d2	l1	l2	z
32.220.0900	9	10	61	11	2
32.220.0950	9.5	10	61	11	2
32.220.1000	10	10	63	13	2
32.220.1050	10.5	12	70	13	2
32.220.1100	11	12	70	13	2
32.220.1200	12	12	73	16	2
32.220.1250	12.5	12	73	16	2
32.220.1300	13	12	73	16	2
32.220.1400	14	12	73	16	2
32.220.1500	15	12	73	16	2
32.220.1600	16	16	79	19	2
32.220.1700	17	16	79	19	2
32.220.1800	18	16	79	19	2
32.220.1900	19	16	79	19	2

Ref.	d1	d2	l1	l2	z
32.220.2000	20	20	82	22	2
32.220.2100	21	20	88	22	2
32.220.2200	22	20	88	22	2
32.220.2400	24	25	102	26	2
32.220.2500	25	25	102	26	2
32.220.2600	26	25	102	26	2
32.220.2800	28	25	102	26	2
32.220.3000	30	25	102	26	2
32.220.3200	32	32	112	32	2
32.220.3400	34	32	112	32	2
32.220.3500	35	32	112	32	2
32.220.3600	36	32	112	32	2
32.220.3800	38	40	130	38	2
32.220.4000	40	40	130	38	2

› 32.224 Phantom



NL HSS-E Schachtfrees, 2-snijder kort, type N, TiAlN
FR Fraise à rainurer 2 dents HSS-E version courte, type N, TiAlN
ES Fresa de ranurar de 2 labios HSS-E corta, tipo N, TiAlN
DE HSS-E Langlochfräser (2-Schneider) kurz, Typ N, TiAlN
EN HSS-E 2 Flute End Mill short, type N, TiAlN

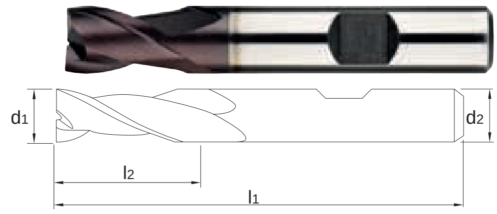
30° | HSS-E 8% | TiAlN | DIN 327-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	M 21	M 22	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu
45-50 J	40-45 I	30-35 J	20-25 I	18-22 I	12-18 I	105-150 K

ap 1xd1 / ae 1xd1

Ref.	d1	d2	l1	l2	z
32.224.0200	2	6	48	4	2
32.224.0300	3	6	49	5	2
32.224.0400	4	6	51	7	2
32.224.0500	5	6	52	8	2
32.224.0600	6	6	52	8	2
32.224.0700	7	10	60	10	2
32.224.0800	8	10	61	11	2
32.224.0900	9	10	61	11	2
32.224.1000	10	10	63	13	2
32.224.1200	12	12	73	16	2
32.224.1400	14	12	73	16	2
32.224.1500	15	12	73	16	2
32.224.1600	16	16	79	19	2
32.224.1800	18	16	79	19	2
32.224.2000	20	20	82	22	2
32.224.2500	25	25	102	26	2
32.224.3000	30	25	102	26	2

› 32.228 Phantom



NL HSS-E PM Schachtfrees, 2-snijder kort, type N, TiAlN
FR Fraise à rainurer 2 dents HSS-E PM version courte, type N, TiAlN
ES Fresa de ranurar de 2 labios HSS-E PM corta, tipo N, TiAlN
DE HSS-E PM Langlochfräser (2-Schneider) kurz, Typ N, TiAlN
EN HSS-E PM 2 Flute End Mill short, type N, TiAlN

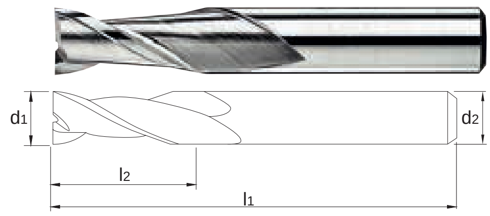
30° | HSS-E PM | TiAlN | DIN 327-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
45-70 J	35-50 J	30-40 J	20-30 J	20-25 I	15-20 I	35-45 J	35-45 J	50-70 J	15-30 H

ap 1xd1 / ae 1xd1

Ref.	d1	d2	l1	l2	z
32.228.0200	2	6	48	4	2
32.228.0300	3	6	49	5	2
32.228.0400	4	6	51	7	2
32.228.0500	5	6	52	8	2
32.228.0600	6	6	52	8	2
32.228.0800	8	10	61	11	2
32.228.1000	10	10	63	13	2
32.228.1200	12	12	73	16	2
32.228.1400	14	12	73	16	2
32.228.1600	16	16	79	19	2
32.228.1800	18	16	79	19	2
32.228.2000	20	20	82	22	2
32.228.2200	22	20	88	22	2
32.228.2500	25	25	102	26	2

› 32.260 Phantom



NL HSS-E Precisie Schachtfrees, 2-snijder type N
FR Fraise de précision 2 dents HSS-E type N
ES Fresa de precisión HSS-E tipo N
DE HSS-E Präzision Fräser (2-Schneider) Typ N
EN HSS-E Precision 2 Flute End Mill type N

30° | HSS-E 8% | NORM | DIN 1835-A | d1 ±0,01 | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 B	28-32 A	20-25 B	15-20 A	75-105 C

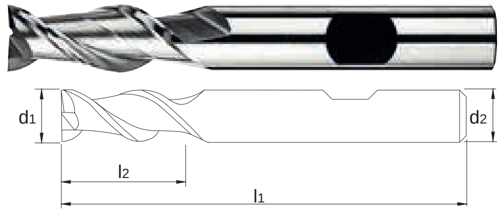
ap 0,5xd1 / ae 1xd1

Ref.	d1	d2	l1	l2	z
32.260.0040	0.4	3	37	1	2
32.260.0050	0.5	3	37	1.5	2
32.260.0060	0.6	3	37	1.5	2
32.260.0070	0.7	4	37	2	2
32.260.0080	0.8	4	37	2	2
32.260.0090	0.9	4	37	2.5	2
32.260.0100	1	4	37	3	2
32.260.0110	1.1	4	37	3	2
32.260.0120	1.2	4	37	4	2
32.260.0130	1.3	4	37	4	2
32.260.0140	1.4	4	37	4	2
32.260.0150	1.5	4	37	4	2
32.260.0160	1.6	4	37	4	2
32.260.0170	1.7	4	37	5	2
32.260.0180	1.8	4	37	5	2
32.260.0190	1.9	4	37	5	2
32.260.0200	2	4	37	5	2
32.260.0210	2.1	4	37	5	2
32.260.0220	2.2	4	37	5	2
32.260.0230	2.3	4	40	7	2
32.260.0240	2.4	4	40	7	2
32.260.0250	2.5	4	40	7	2
32.260.0260	2.6	4	40	7	2
32.260.0270	2.7	4	40	7	2
32.260.0280	2.8	5	44	8	2
32.260.0290	2.9	5	44	8	2
32.260.0300	3	5	44	8	2
32.260.0310	3.1	5	44	8	2
32.260.0320	3.2	5	44	8	2
32.260.0330	3.3	5	44	10	2
32.260.0340	3.4	5	44	10	2
32.260.0350	3.5	5	44	10	2
32.260.0360	3.6	5	44	10	2
32.260.0370	3.7	5	44	10	2
32.260.0380	3.8	6	51	12	2
32.260.0390	3.9	6	51	12	2
32.260.0400	4	6	51	12	2
32.260.0410	4.1	6	51	12	2
32.260.0420	4.2	6	51	12	2
32.260.0430	4.3	6	51	12	2
32.260.0440	4.4	6	51	12	2
32.260.0450	4.5	6	51	12	2
32.260.0460	4.6	6	51	12	2
32.260.0470	4.7	6	51	12	2
32.260.0480	4.8	6	52	14	2
32.260.0490	4.9	6	52	14	2
32.260.0500	5	6	52	14	2
32.260.0510	5.1	6	52	14	2

› 32.260 Phantom

Ref.	d1	d2	l1	l2	z
32.260.0520	5.2	6	52	14	2
32.260.0530	5.3	6	52	14	2
32.260.0540	5.4	6	52	14	2
32.260.0550	5.5	6	52	14	2
32.260.0560	5.6	6	52	14	2
32.260.0570	5.7	6	52	14	2
32.260.0580	5.8	8	60	16	2
32.260.0590	5.9	8	60	16	2
32.260.0600	6	8	60	16	2
32.260.0610	6.1	8	60	16	2
32.260.0620	6.2	8	60	16	2
32.260.0630	6.3	8	60	16	2
32.260.0640	6.4	8	60	16	2
32.260.0650	6.5	8	60	16	2
32.260.0660	6.6	8	60	16	2
32.260.0670	6.7	8	60	16	2
32.260.0680	6.8	8	60	16	2
32.260.0690	6.9	8	60	16	2
32.260.0700	7	8	60	16	2
32.260.0710	7.1	8	60	16	2
32.260.0720	7.2	8	60	16	2
32.260.0730	7.3	8	60	16	2
32.260.0740	7.4	8	60	16	2
32.260.0750	7.5	8	60	16	2
32.260.0760	7.6	8	60	16	2
32.260.0770	7.7	8	60	16	2
32.260.0780	7.8	8	61	18	2
32.260.0790	7.9	8	61	18	2
32.260.0800	8	8	61	18	2
32.260.0810	8.1	10	69	18	2
32.260.0820	8.2	10	69	18	2
32.260.0830	8.3	10	69	18	2
32.260.0840	8.4	10	69	18	2
32.260.0850	8.5	10	69	18	2
32.260.0860	8.6	10	69	18	2
32.260.0870	8.7	10	69	18	2
32.260.0880	8.8	10	69	18	2
32.260.0890	8.9	10	69	18	2
32.260.0900	9	10	69	18	2
32.260.0910	9.1	10	69	18	2
32.260.0920	9.2	10	69	18	2
32.260.0930	9.3	10	69	18	2
32.260.0940	9.4	10	69	18	2
32.260.0950	9.5	10	69	18	2
32.260.0960	9.6	10	69	18	2
32.260.0970	9.7	10	69	18	2
32.260.0980	9.8	10	69	20	2
32.260.0990	9.9	10	69	20	2
32.260.1000	10	10	69	20	2
32.260.1010	10.1	12	70	25	2

› 32.320 Phantom



NL **HSS-E Schachtfrees, 2-snijder kort, type W, Aluminium**
FR **Fraise à rainurer 2 dents HSS-E version courte, Type W, Aluminium**
ES **Fresa de ranurar de 2 labios HSS-E corta, tipo W, Aluminio**
DE **HSS-E Langlochfräser (2-Schneider) kurz, Typ W, Aluminium**
EN **HSS-E 2 Flute End Mill short, type W, Aluminium**

42° | HSS-E 8% | DIN 844-B | DIN 1835-B | W | ALU

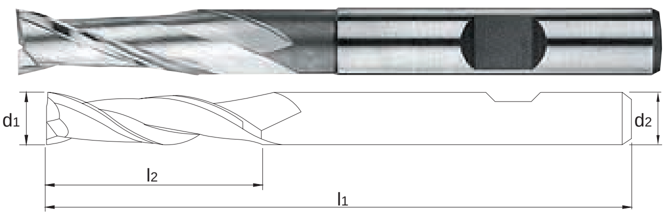
P 11 ≤600 N/mm² | N 41 Alu | N 42 Alu Si>10%

30-35 J | 75-130 Q | 70-90 P

ap 0,5xd1 | ae 1xd1

Ref.	d1	d2	l1	l2	z
32.320.0200	2	6	51	7	2
32.320.0300	3	6	52	8	2
32.320.0400	4	6	55	11	2
32.320.0500	5	6	57	13	2
32.320.0600	6	6	57	13	2
32.320.0700	7	10	66	16	2
32.320.0800	8	10	69	19	2
32.320.0900	9	10	69	19	2
32.320.1000	10	10	72	22	2
32.320.1100	11	12	79	22	2
32.320.1200	12	12	83	26	2
32.320.1300	13	12	83	26	2
32.320.1400	14	12	83	26	2
32.320.1500	15	12	83	26	2
32.320.1600	16	16	92	32	2
32.320.1800	18	16	92	32	2
32.320.2000	20	20	104	38	2

› 32.520 Phantom



NL **HSS-E Schachtfrees, 2-snijder lang, type N**
FR **Fraise à rainurer 2 dents HSS-E version longue, type N**
ES **Fresa de ranurar de 2 labios HSS-E larga, tipo N**
DE **HSS-E Langlochfräser (2-Schneider) lang, Typ N**
EN **HSS-E 2 Flute End Mill long, type N**

30° | HSS-E 8% | NORM | DIN 1835-B | N

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 41 Alu

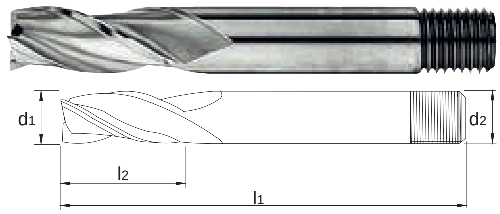
30-35 G | 28-32 F | 20-25 G | 15-20 G | 75-105 I

ap 0,3xd1 | ae 1xd1

Ref.	d1	d2	l1	l2	z
32.520.0300	3	6	56	8	2
32.520.0400	4	6	63	11	2
32.520.0500	5	6	68	13	2
32.520.0600	6	6	68	13	2
32.520.0800	8	10	88	19	2
32.520.1000	10	10	95	22	2
32.520.1200	12	12	110	26	2
32.520.1400	14	12	110	26	2
32.520.1600	16	16	123	32	2
32.520.1800	18	16	123	32	2
32.520.2000	20	20	141	38	2
32.520.2400	24	25	166	45	2
32.520.2500	25	25	166	45	2

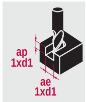
› 33.200 *Phantom*

NL HSS-E Schachtfrees, 3-snijder kort, type N
FR Fraise universelle 3 dents HSS-E version courte, type N
ES Fresa frontal de 3 labios HSS-E corta, tipo N
DE HSS-E Universalfräser (3-Schneider) kurz, Typ N
EN HSS-E 3 Flute End Mill short, type N



30° | HSS-E 8% | DIN 844-D | DIN 1835-D | N

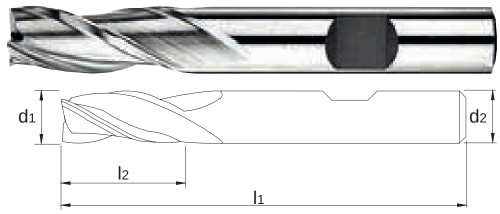
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K



Ref.	d1	d2	l1	l2	z
33.200.0400	4	6	55	11	3
33.200.0500	5	6	57	13	3
33.200.0600	6	6	57	13	3
33.200.0700	7	10	66	16	3
33.200.0800	8	10	69	19	3
33.200.0900	9	10	69	19	3
33.200.1000	10	10	72	22	3
33.200.1200	12	12	83	26	3
33.200.1400	14	12	83	26	3
33.200.1500	15	12	83	26	3
33.200.1600	16	16	92	32	3
33.200.1800	18	16	92	32	3
33.200.2000	20	20	104	38	3

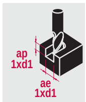
› 33.220 *Phantom*

NL HSS-E Schachtfrees, 3-snijder kort, type N
FR Fraise universelle 3 dents HSS-E version courte, type N
ES Fresa frontal de 3 labios HSS-E corta, tipo N
DE HSS-E Universalfräser (3-Schneider) kurz, Typ N
EN HSS-E 3 Flute End Mill short, type N



30° | HSS-E 8% | DIN 844-B | DIN 1835-B | N

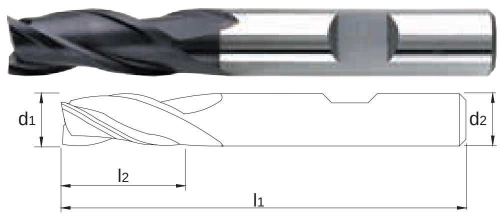
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K



Ref.	d1	d2	l1	l2	z
33.220.0100	1	6	47	3	3
33.220.0150	1.5	6	51	7	3
33.220.0200	2	6	51	7	3
33.220.0250	2.5	6	52	8	3
33.220.0300	3	6	52	8	3
33.220.0350	3.5	6	54	10	3
33.220.0400	4	6	55	11	3
33.220.0450	4.5	6	55	11	3
33.220.0500	5	6	57	13	3
33.220.0550	5.5	6	57	13	3
33.220.0600	6	6	57	13	3
33.220.0650	6.5	10	66	16	3
33.220.0700	7	10	66	16	3
33.220.0800	8	10	69	19	3
33.220.0900	9	10	69	19	3
33.220.1000	10	10	72	22	3
33.220.1200	12	12	83	26	3
33.220.1400	14	12	83	26	3
33.220.1500	15	12	83	26	3
33.220.1600	16	16	92	32	3
33.220.1800	18	16	92	32	3
33.220.2000	20	20	104	38	3
33.220.2200	22	20	104	38	3
33.220.2400	24	25	121	45	3
33.220.2500	25	25	121	45	3

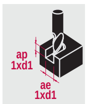
› 33.224 *Phantom*

NL HSS-E Schachtfrees, 3-snijder kort, type N, TiAIN
FR Fraise universelle 3 dents HSS-E version courte, type N, TiAIN
ES Fresa frontal de 3 labios HSS-E corta, tipo N, TiAIN
DE HSS-E Universalfräser (3-Schneider) kurz, Typ N, TiAIN
EN HSS-E 3 Flute End Mill short, type N, TiAIN



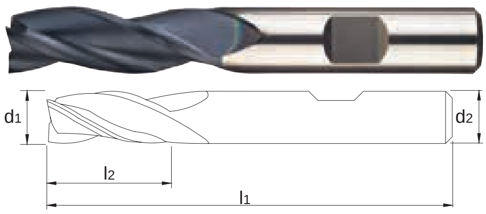
30° | HSS-E 8% | TiAIN | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	M 21	M 22	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu
45-50 J	40-45 I	30-35 J	20-25 I	18-22 I	12-18 I	105-150 K



Ref.	d1	d2	l1	l2	z
33.224.0150	1.5	6	51	7	3
33.224.0200	2	6	51	7	3
33.224.0250	2.5	6	52	8	3
33.224.0300	3	6	52	8	3
33.224.0400	4	6	55	11	3
33.224.0500	5	6	57	13	3
33.224.0600	6	6	57	13	3
33.224.0800	8	10	69	19	3
33.224.1000	10	10	72	22	3
33.224.1200	12	12	83	26	3
33.224.1400	14	12	83	26	3
33.224.1600	16	16	92	32	3
33.224.1800	18	16	92	32	3
33.224.2000	20	20	104	38	3
33.224.2500	25	25	121	45	3

› 33.228 Phantom



NL HSS-E PM Schachtfrees, 3-snijder kort, type N, AlTiN-X
FR Fraise universelle 3 dents HSS-E PM version courte, type N, AlTiN-X
ES Fresa frontal de 3 labios HSS-E PM corta, tipo N, AlTiN-X
DE HSS-E PM Universalfräser (3-Schneider) kurz, Typ N, AlTiN-X
EN HSS-E PM 3 Flute End Mill short, type N, AlTiN-X

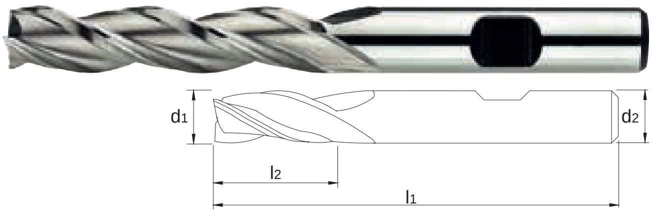
30° | HSS-E PM | AlTiN X | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
45-70 J	35-50 J	30-40 J	20-30 J	20-25 I	15-20 I	35-45 J	35-45 J	50-70 J	15-30 H

ap 1xd1
ae 1xd1

Ref.	d1	d2	l1	l2	z
33.228.0200	2	6	51	7	3
33.228.0300	3	6	52	8	3
33.228.0400	4	6	55	11	3
33.228.0500	5	6	57	13	3
33.228.0600	6	6	57	13	3
33.228.0800	8	10	69	19	3
33.228.1000	10	10	72	22	3
33.228.1200	12	12	83	26	3
33.228.1400	14	12	83	26	3
33.228.1600	16	16	92	32	3
33.228.1800	18	16	92	32	3
33.228.2000	20	20	104	38	3

› 33.520 Phantom



NL HSS-E Schachtfrees, 3-snijder lang, type N
FR Fraise universelle 3 dents HSS-E version longue, type N
ES Fresa frontal de 3 labios HSS-E larga, tipo N
DE HSS-E Universalfräser (3-Schneider) lang, Typ N
EN HSS-E 3 Flute End Mill long, type N

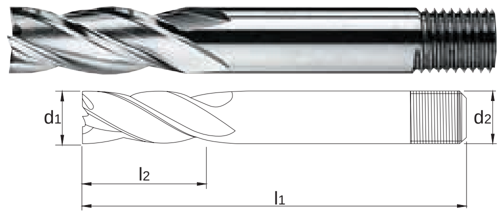
30° | HSS-E 8% | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²
30-35 G	28-32 F	20-25 G	15-20 G

ap 1xd1
ae 1xd1

Ref.	d1	d2	l1	l2	z
33.520.0300	3	6	56	12	3
33.520.0400	4	6	63	19	3
33.520.0500	5	6	68	24	3
33.520.0600	6	6	68	24	3
33.520.0700	7	10	80	30	3
33.520.0800	8	10	88	38	3
33.520.0900	9	10	88	38	3
33.520.1000	10	10	95	45	3
33.520.1100	11	12	102	45	3
33.520.1200	12	12	110	53	3
33.520.1300	13	12	110	53	3
33.520.1400	14	12	110	53	3
33.520.1500	15	12	110	53	3
33.520.1600	16	16	123	63	3
33.520.1800	18	16	123	63	3
33.520.2000	20	20	141	75	3

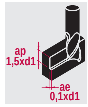
› 34.200 Phantom



NL HSS-E Schachtfrees, meersnijder kort, type N
FR Fraise standard HSS-E version courte, type N
ES Fresa frontal de varios labios HSS-E corta, tipo N
DE HSS-E Mehrschneiden-Schaftfräser kurz, Typ N
EN HSS-E Multi Flute End Mill short, type N

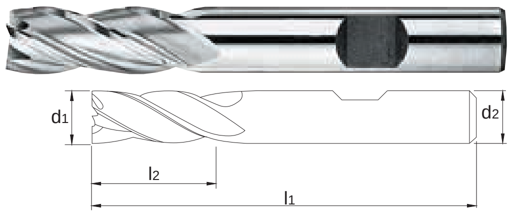
30° | HSS-E 8% | DIN 844-D | DIN 1835-D | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K



Ref.	d1	d2	l1	l2	z	Ref.	d1	d2	l1	l2	z	Ref.	d1	d2	l1	l2	z
34.200.0200	2	6	51	7	4	34.200.1100	11	12	79	22	4	34.200.2000	20	20	104	38	4
34.200.0300	3	6	52	8	4	34.200.1200	12	12	83	26	4	34.200.2200	22	20	104	38	6
34.200.0400	4	6	55	11	4	34.200.1300	13	12	83	26	4	34.200.2300	23	25	104	38	6
34.200.0500	5	6	57	13	4	34.200.1400	14	12	83	26	4	34.200.2400	24	25	121	45	6
34.200.0600	6	6	57	13	4	34.200.1500	15	12	83	26	4	34.200.2500	25	25	121	45	6
34.200.0700	7	10	66	16	4	34.200.1600	16	16	92	32	4	34.200.2600	26	25	121	45	6
34.200.0800	8	10	69	19	4	34.200.1700	17	16	92	32	4	34.200.2800	28	25	121	45	6
34.200.0900	9	10	69	19	4	34.200.1800	18	16	92	32	4	34.200.3000	30	25	121	45	6
34.200.1000	10	10	72	22	4	34.200.1900	19	16	92	32	4	34.200.4000	40	32	143	63	6

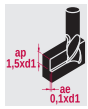
› 34.220 Phantom



NL HSS-E Schachtfrees, meersnijder kort, type N
FR Fraise standard HSS-E version courte, type N
ES Fresa frontal de varios labios HSS-E corta, tipo N
DE HSS-E Mehrschneiden-Schaftfräser kurz, Typ N
EN HSS-E Multi Flute End Mill short, type N

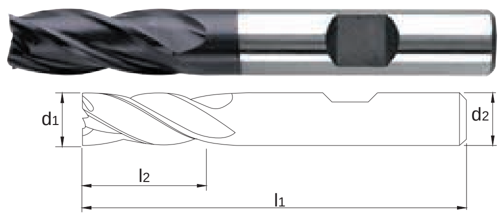
30° | HSS-E 8% | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K



Ref.	d1	d2	l1	l2	z	Ref.	d1	d2	l1	l2	z	Ref.	d1	d2	l1	l2	z
34.220.0200	2	6	51	7	4	34.220.1300	13	12	83	26	4	34.220.2600	26	25	121	45	6
34.220.0300	3	6	52	8	4	34.220.1400	14	12	83	26	4	34.220.2800	28	25	121	45	6
34.220.0400	4	6	55	11	4	34.220.1500	15	12	83	26	4	34.220.3000	30	25	121	45	6
34.220.0500	5	6	57	13	4	34.220.1600	16	16	92	32	4	34.220.3200	32	32	133	53	6
34.220.0600	6	6	57	13	4	34.220.1700	17	16	92	32	4	34.220.3400	34	32	133	53	6
34.220.0700	7	10	66	16	4	34.220.1800	18	16	92	32	4	34.220.3500	35	32	133	53	6
34.220.0800	8	10	69	19	4	34.220.1900	19	16	92	32	4	34.220.3600	36	32	133	53	6
34.220.0900	9	10	69	19	4	34.220.2000	20	20	104	38	4	34.220.3800	38	32	143	63	6
34.220.1000	10	10	72	22	4	34.220.2200	22	20	104	38	6	34.220.4000	40	32	143	63	6
34.220.1100	11	12	79	22	4	34.220.2400	24	25	121	45	6						
34.220.1200	12	12	83	26	4	34.220.2500	25	25	121	45	6						

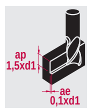
› 34.224 Phantom



NL HSS-E Schachtfrees, meersnijder kort, type N, TiAIN
FR Fraise standard HSS-E version courte, type N, TiAIN
ES Fresa frontal de varios labios HSS-E corta, tipo N, TiAIN
DE HSS-E Mehrschneiden-Schaftfräser kurz, Typ N, TiAIN
EN HSS-E Multi Flute End Mill short, type N, TiAIN

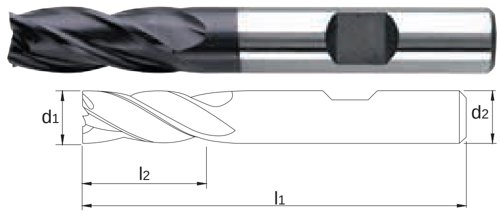
30° | HSS-E 8% | TiAIN | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	M 21	M 22	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu
45-50 J	40-45 I	30-35 J	20-25 I	22-28 I	18-24 G	105-150 K



Ref.	d1	d2	l1	l2	z	Ref.	d1	d2	l1	l2	z	Ref.	d1	d2	l1	l2	z
34.224.0200	2	6	51	7	4	34.224.0800	8	10	69	19	4	34.224.1800	18	16	92	32	4
34.224.0300	3	6	52	8	4	34.224.1000	10	10	72	22	4	34.224.2000	20	20	104	38	4
34.224.0400	4	6	55	11	4	34.224.1200	12	12	83	26	4	34.224.2500	25	25	121	45	4
34.224.0500	5	6	57	13	4	34.224.1400	14	12	83	26	4	34.224.3000	30	25	121	45	6
34.224.0600	6	6	57	13	4	34.224.1600	16	16	92	32	4	34.224.3200	32	32	133	53	6

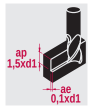
› 34.228 Phantom



NL HSS-E PM Schachtfrees, meersnijder kort, type N, AlTiN-X
FR Fraise standard HSS-E PM version courte, type N, AlTiN-X
ES Fresa frontal de varios labios HSS-E PM corta, tipo N, AlTiN-X
DE HSS-E PM Mehrschneiden-Schaftfräser kurz, Typ N, AlTiN-X
EN HSS-E PM Multi Flute End Mill short, type N, AlTiN-X

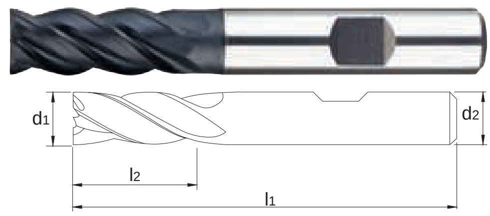
30° | HSS-E PM | AlTiN X | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
45-70 J	35-50 J	30-40 J	20-30 J	20-25 I	15-20 I	35-45 J	35-45 J	50-70 J	15-30 H



Ref.	d1	d2	l1	l2	z
34.228.0300	3	6	52	8	4
34.228.0400	4	6	55	11	4
34.228.0500	5	6	57	13	4
34.228.0600	6	6	57	13	4
34.228.0800	8	10	69	19	4
34.228.1000	10	10	72	22	4
34.228.1200	12	12	83	26	4
34.228.1400	14	12	83	26	4
34.228.1600	16	16	92	32	4
34.228.1800	18	16	92	32	4
34.228.2000	20	20	104	38	4

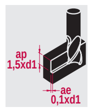
› 34.238 Phantom



NL UNI HSS-E PM Vari-frees, 4-snijder kort, AlTiN-X
FR Fraise Vari 4 dents HSS-E PM UNI version courte, AlTiN-X
ES Fresa Vari HSS-E PM UNI corta, AlTiN-X
DE UNI HSS-E PM Fräser mit ungleicher Teilung kurz, AlTiN-X
EN UNI HSS-E PM Vari Flute End Mill short, AlTiN-X

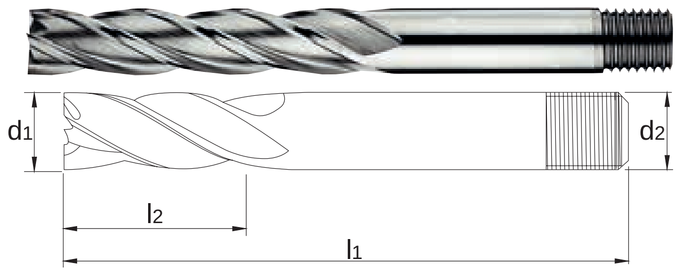
VARI | HSS-E PM | AlTiN X | DIN 844-B | DIN 1835-B | Cx45 | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
45-70 J	35-50 J	30-40 J	20-30 J	20-25 I	15-20 I	35-45 J	35-45 J	50-70 J	15-30 H



Ref.	d1	d2	l1	l2	z
34.238.0600	6	6	57	13	4
34.238.0800	8	10	69	19	4
34.238.1000	10	10	72	22	4
34.238.1200	12	12	83	26	4
34.238.1600	16	16	92	32	4
34.238.2000	20	20	104	38	4

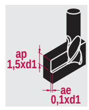
› 34.350 Phantom



NL HSS-E Schachtfrees, meersnijder lang, type N
FR Fraise standard HSS-E version longue, type N
ES Fresa frontal de varios labios HSS-E larga, tipo N
DE HSS-E Mehrschneiden-Schaftfräser lang, Typ N
EN HSS-E Multi Flute End Mill long, type N

30° | HSS-E 8% | DIN 844-D | DIN 1835-D | N

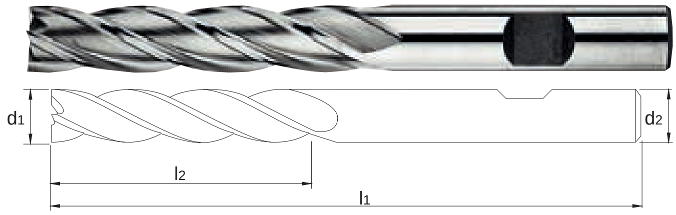
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 G	28-32 F	20-25 G	15-20 G	75-105 I



Ref.	d1	d2	l1	l2	z
34.350.0300	3	6	56	12	4
34.350.0400	4	6	63	19	4
34.350.0500	5	6	68	24	4
34.350.0600	6	6	68	24	4
34.350.0800	8	10	88	38	4
34.350.1000	10	10	95	45	4
34.350.1200	12	12	110	53	4
34.350.1400	14	12	110	53	4
34.350.1500	15	12	110	53	4
34.350.1600	16	16	123	63	4
34.350.1800	18	16	123	63	4
34.350.2000	20	20	141	75	4
34.350.2200	22	20	141	75	6
34.350.2400	24	25	166	90	6
34.350.2500	25	25	166	90	6
34.350.2600	26	25	166	90	6
34.350.2800	28	25	166	90	6
34.350.3000	30	25	166	90	6
34.350.3200	32	32	186	106	6
34.350.3600	36	32	186	106	6
34.350.4000	40	40	217	125	6

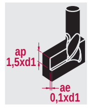
› 34.355 Phantom

NL HSS-E Schachtfrees, meersnijder lang, type N
FR Fraise standard HSS-E version longue, type N
ES Fresa frontal de varios labios HSS-E larga, tipo N
DE HSS-E Mehrschneiden-Schaftfräser lang, Typ N
EN HSS-E Multi Flute End Mill long, type N



30° | HSS-E 8% | DIN 844-B | DIN 1835-B | N

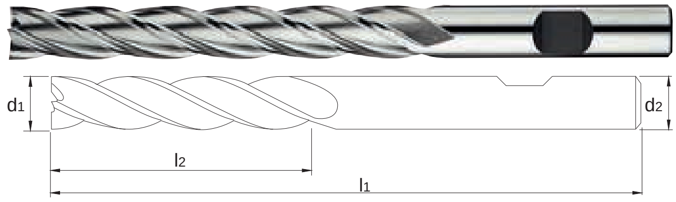
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 G	28-32 F	20-25 G	15-20 G	75-105 I



Ref.	d1	d2	l1	l2	z
34.355.0200	2	6	54	10	4
34.355.0300	3	6	56	12	4
34.355.0400	4	6	63	19	4
34.355.0500	5	6	68	24	4
34.355.0600	6	6	68	24	4
34.355.0700	7	10	80	30	4
34.355.0800	8	10	88	38	4
34.355.1000	10	10	95	45	4
34.355.1100	11	12	102	45	4
34.355.1200	12	12	110	53	4
34.355.1400	14	12	110	53	4
34.355.1500	15	12	110	53	4
34.355.1600	16	16	123	63	4
34.355.1800	18	16	123	63	4
34.355.1900	19	16	123	63	4
34.355.2000	20	20	141	75	4
34.355.2200	22	20	141	75	5
34.355.2400	24	25	166	90	6
34.355.2500	25	25	166	90	5
34.355.2600	26	25	166	90	6
34.355.3000	30	25	166	90	6
34.355.3200	32	32	186	106	6
34.355.3600	36	32	186	106	6
34.355.4000	40	40	217	125	6

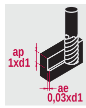
› 34.370 Phantom

NL HSS-E Schachtfrees, 4-snijder extra lang, type N
FR Fraise standard 4 dents HSS-E extra longue, type N
ES Fresa frontal de 4 labios HSS-E extra larga, tipo N
DE HSS-E 4 Schneiden-Schaftfräser extra lang, Typ N
EN HSS-E 4 Flute End Mill extra long, type N



30° | HSS-E 8% | NORM | DIN 1835-B | N

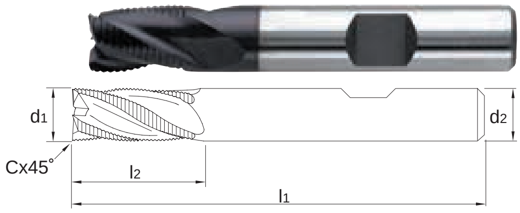
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 G	28-32 F	20-25 G	15-20 G	75-105 I



Ref.	d1	d2	l1	l2	z
34.370.0600	6	6	100	56	4
34.370.0800	8	10	113	63	4
34.370.1000	10	10	120	70	4
34.370.1200	12	12	137	80	4
34.370.1400	14	12	137	80	4
34.370.1600	16	16	150	90	4
34.370.1800	18	16	160	100	4
34.370.2000	20	20	176	110	4
34.370.2500	25	25	186	110	4

› 35.024 Phantom

NL HSS-E Ruwfrees kort, type HR, TiAlN
FR Fraise d'ébauche HSS-E version courte, type HR, TiAlN
ES Fresa de desbaste HSS-E corta, tipo HR, TiAlN
DE HSS-E Schruppfräser kurz, Typ HR, TiAlN
EN HSS-E Roughing Cutter short, type HR, TiAlN



30° | HSS-E 8% | TiAlN | HR NORM | DIN 1835-B | Cx45

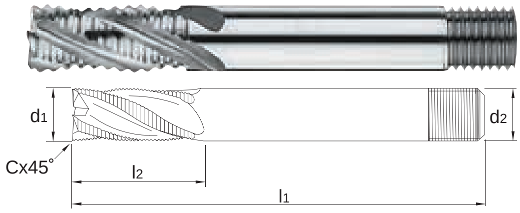
P 11	P 12	P 13	P 14	M 21	M 22
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²
45-50 I	35-40 H	30-35 I	18-24 H	22-28 I	18-24 G

ap 1,5xd1 – ae 0,3xd1

Ref.	d1	d2	l1	l2	C	z
35.024.0600	6	6	52	8	0,2	4
35.024.0800	8	10	61	11	0,2	4
35.024.1000	10	10	63	13	0,2	4
35.024.1200	12	12	73	16	0,2	4
35.024.1600	16	16	79	19	0,25	4
35.024.2000	20	20	82	22	0,25	4

› 35.100 Phantom

NL HSS-E Ruwfrees kort, type NR
FR Fraise d'ébauche HSS-E version courte, type NR
ES Fresa de desbaste HSS-E corta, tipo NR
DE HSS-E Schruppfräser kurz, Typ NR
EN HSS-E Roughing Cutter short, type NR



30° | HSS-E 8% | NR | DIN 844-D | DIN 1835-D | Cx45

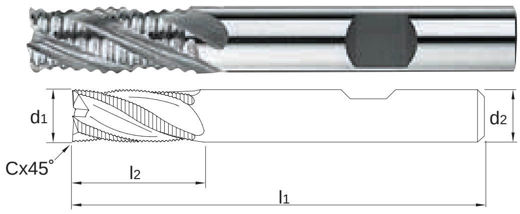
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 L	25-30 K	20-25 L	15-20 J	75-85 L

ap 1xd1 – ae 0,5xd1

Ref.	d1	d2	l1	l2	C	z
35.100.0600	6	6	57	13	0,25	3
35.100.0700	7	10	66	16	0,25	3
35.100.0800	8	10	69	19	0,25	3
35.100.0900	9	10	69	19	0,35	3
35.100.1000	10	10	72	22	0,35	4
35.100.1100	11	12	79	22	0,5	4
35.100.1200	12	12	83	26	0,5	4
35.100.1300	13	12	83	26	0,5	4
35.100.1400	14	12	83	26	0,55	4
35.100.1500	15	12	83	26	0,55	4
35.100.1600	16	16	92	32	0,55	4
35.100.1800	18	16	92	32	0,55	4
35.100.2000	20	20	104	38	0,55	4
35.100.2200	22	20	104	38	x	5
35.100.3600	36	32	133	53	x	6

› 35.120 Phantom

NL HSS-E Ruwfrees kort, type NR
FR Fraise d'ébauche HSS-E version courte, type NR
ES Fresa de desbaste HSS-E corta, tipo NR
DE HSS-E Schruppfräser kurz, Typ NR
EN HSS-E Roughing Cutter short, type NR



30° | HSS-E 8% | NR | DIN 844-B | DIN 1835-B | Cx45

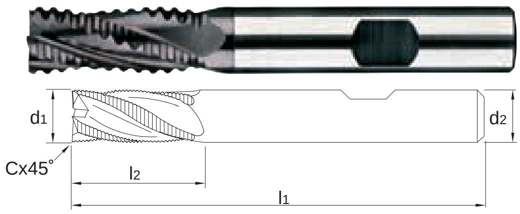
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 L	25-30 K	20-25 L	15-20 J	75-85 L

ap 1xd1 – ae 0,5xd1

Ref.	d1	d2	l1	l2	C	z
35.120.0600	6	6	57	13	0,25	3
35.120.0700	7	10	66	16	0,25	3
35.120.0800	8	10	69	19	0,25	3
35.120.0900	9	10	69	19	0,35	3
35.120.1000	10	10	72	22	0,35	4
35.120.1100	11	12	79	22	0,5	4
35.120.1200	12	12	83	26	0,5	4
35.120.1300	13	12	83	26	0,5	4
35.120.1400	14	12	83	26	0,55	4
35.120.1500	15	12	83	26	0,55	4
35.120.1600	16	16	92	32	0,55	4
35.120.1800	18	16	92	32	0,55	4
35.120.2000	20	20	104	38	0,55	4
35.120.2200	22	20	104	38	0,55	5
35.120.2400	24	25	121	45	0,55	5
35.120.2500	25	25	121	45	0,55	5
35.120.2800	28	25	121	45	0,7	6
35.120.3000	30	25	121	45	0,7	6
35.120.3200	32	32	133	53	0,7	6
35.120.3600	36	32	133	53	0,7	6
35.120.4000	40	32	143	63	0,9	6

› 35.124 *Phantom*

NL HSS-E Ruwfrees kort, type NR, TiAlN
FR Fraise d'ébauche HSS-E version courte, type NR, TiAlN
ES Fresa de desbaste HSS-E corta, tipo NR, TiAlN
DE HSS-E Schruppfräser kurz, Typ NR, TiAlN
EN HSS-E Roughing Cutter short, type NR, TiAlN



30° | HSS-E 8% | TiAlN | NR | DIN 844-B | DIN 1835-B | Cx45

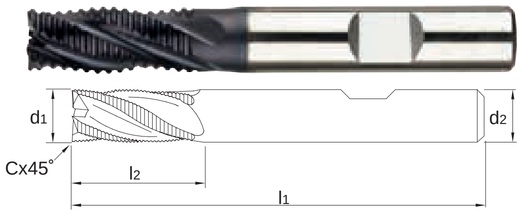
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
45-50 L	35-40 K	25-30 L	15-20 J	105-120 L

ap 1xd1
ae 0,5xd1

Ref.	d1	d2	l1	l2	C	z
35.124.0600	6	6	57	13	0,25	3
35.124.0800	8	10	69	19	0,25	3
35.124.1000	10	10	72	22	0,35	4
35.124.1200	12	12	83	26	0,5	4
35.124.1400	14	12	83	26	0,55	4
35.124.1600	16	16	92	32	0,55	4
35.124.1800	18	16	92	32	0,55	4
35.124.2000	20	20	104	38	0,55	4
35.124.2500	25	25	121	45	0,55	5
35.124.2800	28	25	121	45	0,7	6
35.124.3000	30	25	121	45	0,7	6
35.124.3600	36	32	133	53	0,7	6
35.124.4000	40	32	143	63	0,9	6

› 35.126 *Phantom*

NL HSS-E PM Ruwfrees kort, type NR, AlTiN-X
FR Fraise d'ébauche HSS-E PM version courte, type NR, AlTiN-X
ES Fresa de desbaste HSS-E PM corta, tipo NR, AlTiN-X
DE HSS-E PM Schruppfräser kurz, Typ NR, AlTiN-X
EN HSS-E PM Roughing Cutter short, type NR, AlTiN-X



30° | HSS-E PM | AlTiN X | NR | DIN 844-B | DIN 1835-B | Cx45

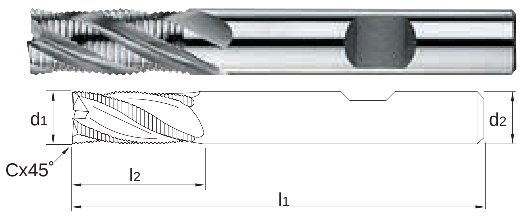
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
55-60 L	40-50 K	30-35 L	25-30 J	30-35 I	25-30 G	40-45 I	40-50 I	105-120 L

ap 1xd1
ae 0,5xd1

Ref.	d1	d2	l1	l2	C	z
35.126.0600	6	6	57	13	0,25	4
35.126.0800	8	10	69	19	0,25	4
35.126.1000	10	10	72	22	0,35	4
35.126.1200	12	12	83	26	0,5	4
35.126.1400	14	12	83	26	0,55	4
35.126.1600	16	16	92	32	0,55	4
35.126.1800	18	16	92	32	0,55	4
35.126.2000	20	20	104	38	0,55	4
35.126.2200	22	20	104	38	0,55	5
35.126.2500	25	25	121	45	0,55	5
35.126.2800	28	25	121	45	0,7	5
35.126.3000	30	25	121	45	0,7	5
35.126.3200	32	32	133	53	0,7	6

› 35.220 *Phantom*

NL HSS-E Ruwfrees kort, type HR
FR Fraise d'ébauche HSS-E version courte, type HR
ES Fresa de desbaste HSS-E corta, tipo HR
DE HSS-E Schruppfräser kurz, Typ HR
EN HSS-E Roughing Cutter short, type HR



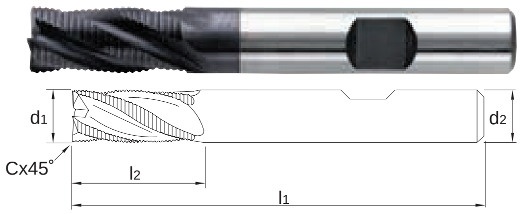
30° | HSS-E 8% | HR | DIN 844-B | DIN 1835-B | Cx45

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 L	25-30 K	20-25 L	15-20 J	75-85 L

ap 1,5xd1
ae 0,3xd1

Ref.	d1	d2	l1	l2	C	z
35.220.0600	6	6	57	13	0,2	3
35.220.0700	7	10	66	16	0,2	3
35.220.0800	8	10	69	19	0,2	3
35.220.1000	10	10	72	22	0,2	4
35.220.1200	12	12	83	26	0,2	4
35.220.1400	14	12	83	26	0,25	4
35.220.1600	16	16	92	32	0,25	4
35.220.1800	18	16	92	32	0,25	4
35.220.2000	20	20	104	38	0,25	4

› 35.224 *Phantom*



NL HSS-E Ruwfrees kort, type HR, TiAlN
FR Fraise d'ébauche HSS-E version courte, type HR, TiAlN
ES Fresa de desbaste HSS-E corta, tipo HR, TiAlN
DE HSS-E Schruppfräser kurz, Typ HR, TiAlN
EN HSS-E Roughing Cutter short, type HR, TiAlN

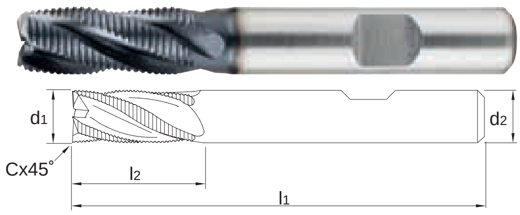
30° | HSS-E 8% | TiAlN | HR | DIN 844-B | DIN 1835-B | Cx45

P 11	P 12	P 13	P 14	M 21	M 22	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu
45-50 L	35-40 K	25-30 L	15-20 J	22-28 I	18-24 G	105-120 L

ap 1,5xd1 / ae 0,3xd1

Ref.	d1	d2	l1	l2	C	z
35.224.0600	6	6	57	13	0,2	3
35.224.0800	8	10	69	19	0,2	3
35.224.1000	10	10	72	22	0,2	4
35.224.1200	12	12	83	26	0,2	4
35.224.1400	14	12	83	26	0,25	4
35.224.1600	16	16	92	32	0,25	4
35.224.1800	18	16	92	32	0,25	4
35.224.2000	20	20	104	38	0,25	4

› 35.226 *Phantom*



NL HSS-E PM Ruwfrees kort, type HR, AlTiN-X
FR Fraise d'ébauche HSS-E PM version courte, type HR, AlTiN-X
ES Fresa de desbaste HSS-E PM corta, tipo HR, AlTiN-X
DE HSS-E PM Schruppfräser kurz, Typ HR, AlTiN-X
EN HSS-E PM Roughing Cutter short, type HR, AlTiN-X

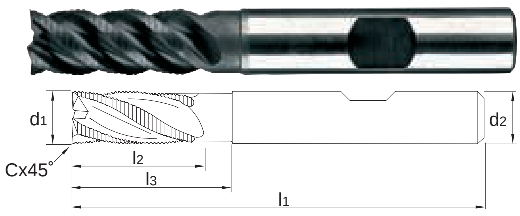
30° | HSS-E PM | AlTiN X | HR | DIN 844-B | DIN 1835-B | Cx45

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
55-60 L	40-50 K	30-35 L	25-30 J	30-35 I	25-30 G	40-45 I	40-50 I	105-120 L

ap 1,5xd1 / ae 0,3xd1

Ref.	d1	d2	l1	l2	C	z
35.226.0600	6	6	57	13	0,2	4
35.226.0800	8	10	69	19	0,2	4
35.226.1000	10	10	72	22	0,2	4
35.226.1200	12	12	83	26	0,2	4
35.226.1400	14	12	83	26	0,25	4
35.226.1600	16	16	92	32	0,25	4
35.226.1800	18	16	92	32	0,25	4
35.226.2000	20	20	104	38	0,25	4
35.226.2500	25	25	121	45	0,25	5
35.226.3000	30	25	121	45	0,25	5

› 35.228 *Phantom*



NL HSS-E PM Ruwfrees kort, type HR, TiAlN
FR Fraise d'ébauche HSS-E PM version courte, type HR, TiAlN
ES Fresa de desbaste HSS-E PM corta, tipo HR, TiAlN
DE HSS-E PM Schruppfräser kurz, Typ HR, TiAlN
EN HSS-E PM Roughing Cutter short, type HR, TiAlN

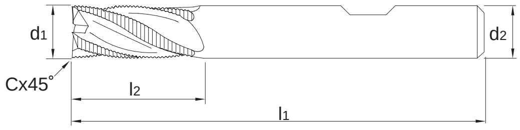
45° | HSS-E PM | TiAlN | HR | DIN 844-B | DIN 1835-B | Cx45

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW
55-60 J	40-50 J	30-35 I	25-30 J	30-35 H	25-30 H	40-45 I	40-50 I

ap 1,5xd1 / ae 0,3xd1

Ref.	d1	d2	d3	l1	l2	l3	C	z
35.228.0400	4	6		55	11		0,1	3
35.228.0500	5	6		57	13		0,15	4
35.228.0600	6	6		57	13		0,15	4
35.228.0700	7	10		66	16		0,15	4
35.228.0800	8	10		69	19		0,2	4
35.228.0900	9	10		69	19		0,2	4
35.228.1000	10	10	9.5	72	22	31	0,2	4
35.228.1200	12	12	11.5	83	26	37	0,2	4
35.228.1400	14	12		83	26		0,2	5
35.228.1600	16	16	15	92	32	44	0,2	5
35.228.1800	18	16		92	32		0,2	6
35.228.2000	20	20	19	104	38	54	0,2	6
35.228.2500	25	25	24	121	45	63	0,2	6

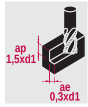
› 35.324 Phantom



- NL HSS-E Ruwfrees kort, type HRf, TiAIN
- FR Fraise d'ébauche HSS-E version courte, type HRf, TiAIN
- ES Fresa de desbaste HSS-E corta, tipo HRf, TiAIN
- DE HSS-E Schruppfräser kurz, Typ HRf, TiAIN
- EN HSS-E Roughing Cutter short, type HRf, TiAIN

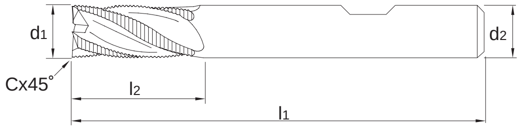
30° | HSS-E 8% | TiAIN | HRf | DIN 844-B | DIN 1835-B | Cx45

P 11	P 12	P 13	P 14	M 21	M 22	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu
45-50 L	35-40 K	25-30 L	15-20 J	22-28 I	18-24 G	105-120 L



Ref.	d1	d2	l1	l2	C	z
35.324.0600	6	6	57	13	0,3	3
35.324.0800	8	10	69	19	0,3	3
35.324.1000	10	10	72	22	0,3	4
35.324.1200	12	12	83	26	0,35	4
35.324.1600	16	16	92	32	0,35	4
35.324.1800	18	16	92	32	0,45	4
35.324.2000	20	20	104	38	0,45	4
35.324.2500	25	25	121	45	0,45	5

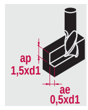
› 35.720 Phantom



- NL HSS-E Ruwfrees lang, type NR
- FR Fraise d'ébauche HSS-E version longue, type NR
- ES Fresa de desbaste HSS-E larga, tipo NR
- DE HSS-E Schruppfräser lang, Typ NR
- EN HSS-E Roughing Cutter long, type NR

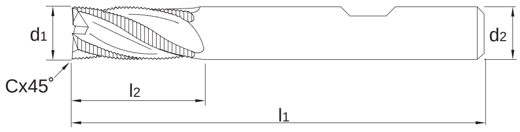
30° | HSS-E 8% | NR | DIN 844-B | DIN 1835-B | Cx45

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 G	28-32 F	20-25 G	15-20 G	75-105 I



Ref.	d1	d2	l1	l2	C	z
35.720.0600	6	6	68	24	0,25	3
35.720.0800	8	10	88	38	0,25	3
35.720.1000	10	10	95	45	0,35	4
35.720.1200	12	12	110	53	0,5	4
35.720.1600	16	16	123	63	0,55	4
35.720.1800	18	16	123	63	0,55	4
35.720.2000	20	20	141	75	0,55	4
35.720.2200	22	20	141	75	0,55	5
35.720.2500	25	25	166	90	0,55	5
35.720.2800	28	25	166	90	0,7	6
35.720.3000	30	25	166	90	0,7	6
35.720.3200	32	32	186	106	0,7	6
35.720.3600	36	32	186	106	0,7	6
35.720.4000	40	40	217	125	0,9	6

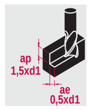
› 35.726 Phantom



- NL HSS-E PM Ruwfrees lang, type NR, AlTiN-X
- FR Fraise d'ébauche HSS-E PM version longue, type NR, AlTiN-X
- ES Fresa de desbaste HSS-E PM larga, tipo NR, AlTiN-X
- DE HSS-E PM Schruppfräser lang, Typ NR, AlTiN-X
- EN HSS-E PM Roughing Cutter long, type NR, AlTiN-X

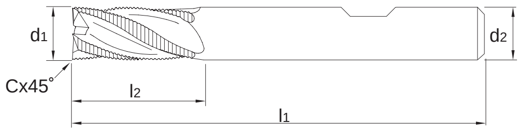
30° | HSS-E PM | AlTiN X | NR | DIN 844-B | DIN 1835-B | Cx45

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
55-60 G	40-50 F	30-35 G	25-30 G	30-35 G	25-30 F	40-45 G	40-50 G	105-120 I



Ref.	d1	d2	l1	l2	C	z
35.726.0600	6	6	68	24	0,25	4
35.726.0800	8	10	88	38	0,25	4
35.726.1000	10	10	95	45	0,35	4
35.726.1200	12	12	110	53	0,5	4
35.726.1400	14	12	110	53	0,55	4
35.726.1600	16	16	123	63	0,55	4
35.726.1800	18	16	123	63	0,55	4
35.726.2000	20	20	141	75	0,55	4
35.726.2500	25	25	166	90	0,55	5
35.726.3200	32	32	186	106	0,7	6

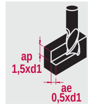
› 35.766 Phantom



NL HSS-E PM Ruwfrees lang, type HR, AlTiN-X
FR Fraise d'ébauche HSS-E PM version longue, type HR, AlTiN-X
ES Fresa de desbaste HSS-E PM larga, tipo HR, AlTiN-X
DE HSS-E PM Schruppfräser lang, Typ HR, AlTiN-X
EN HSS-E PM Roughing Cutter long, type HR, AlTiN-X

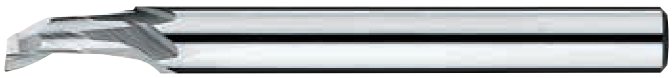
30° | HSS-E PM | AlTiN X | HR | DIN 844-B | DIN 1835-B | Cx45

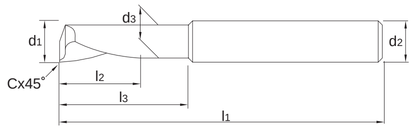
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
55-60 G	40-50 F	30-35 G	25-30 G	30-35 G	25-30 F	40-45 G	40-50 G	105-120 I



Ref.	d1	d2	l1	l2	C	z
35.766.0600	6	6	68	24	0,2	4
35.766.0800	8	10	88	38	0,2	4
35.766.1000	10	10	95	45	0,2	4
35.766.1200	12	12	110	53	0,2	4
35.766.1400	14	12	110	53	0,25	4
35.766.1600	16	16	123	63	0,25	4
35.766.1800	18	16	123	63	0,25	4
35.766.2000	20	20	141	75	0,25	4

› 36.100 Phantom



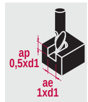


NL HSS-E Eensnijderfrees Aluminium
FR Fraise à 1 dent HSS-E Aluminium
ES Fresa frontal de 1 labio HSS-E Aluminio
DE HSS-E Einzahnfräser Aluminium
EN HSS-E 1 Flute End Mill Aluminium

HSS-E | 30° | NORM | DIN 1835-A | Cx45 | ALU

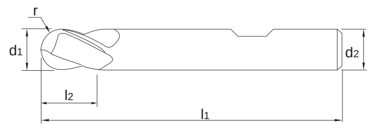
P 11 ≤600 N/mm² | N 41 Alu

25-35 I | 160-220 M



Ref.	d1	d2	d3	l1	l2	l3	C	z
36.100.0300	3	8		60	12		0,15	1
36.100.0400	4	8		60	12		0,15	1
36.100.0500	5	8		60	14		0,15	1
36.100.0501	5	8	4.8	80	18	35	0,15	1
36.100.0502	5	8		100	40		0,15	1
36.100.0600	6	8		60	14		0,15	1
36.100.0700	7	8		60	14		0,15	1
36.100.0800	8	8		80	14		0,25	1
36.100.0801	8	8	7.5	120	14	68	0,25	1
36.100.0900	9	8		80	14		0,25	1
36.100.1000	10	8		80	14		0,25	1

› 36.220 Phantom

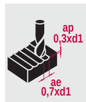


NL HSS-E Radiusfrees, 2-snijder kort, type N
FR Fraise à rayon 2 dents HSS-E version courte, type N
ES Fresa de punta esférica HSS-E corta, tipo N
DE HSS-E 2 Schneiden Radiusfräser kurz, Typ N
EN HSS-E 2 Flute Ball Nose End Mill short, type N

30° | HSS-E 8% | DIN 327-B | DIN 1835-B | N | r ±0,02

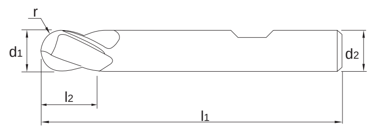
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 41 Alu

35-40 K | 25-30 J | 20-25 K | 15-20 I | 95-105 K



Ref.	d1	d2	l1	l2	r	z
36.220.0200	2	6	48	4	1	2
36.220.0300	3	6	49	5	1.5	2
36.220.0400	4	6	51	7	2	2
36.220.0500	5	6	52	8	2.5	2
36.220.0600	6	6	52	8	3	2
36.220.0700	7	10	60	10	3.5	2
36.220.0800	8	10	61	11	4	2
36.220.0900	9	10	61	11	4.5	2
36.220.1000	10	10	63	13	5	2
36.220.1100	11	12	70	13	5.5	2
36.220.1200	12	12	73	16	6	2
36.220.1300	13	12	73	16	6.5	2
36.220.1400	14	12	73	16	7	2
36.220.1500	15	12	73	16	7.5	2
36.220.1600	16	16	79	19	8	2
36.220.1800	18	16	79	19	9	2
36.220.2000	20	20	82	22	10	2
36.220.2200	22	20	88	22	11	2
36.220.2400	24	25	102	26	12	2
36.220.2500	25	25	102	26	12.5	2

› 36.228 Phantom

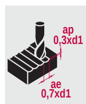


NL HSS-E PM Radiusfrees, 2-snijder kort, type N, TiAlN
FR Fraise à rayon 2 dents HSS-E PM version courte, type N, TiAlN
ES Fresa de punta esférica HSS-E PM corta, tipo N, TiAlN
DE HSS-E PM 2 Schneiden Radiusfräser kurz, Typ N, TiAlN
EN HSS-E PM 2 Flute Ball Nose End Mill short, type N, TiAlN

30° | HSS-E PM | TiAlN | DIN 327-B | DIN 1835-B | N | r ±0,02

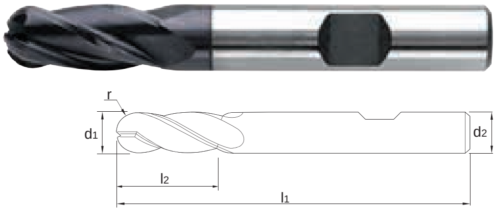
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | K 31 GG | K 32 GGG GTS-GTW

70-85 M | 55-70 L | 35-40 K | 20-25 K | 25-30 K | 20-25 K | 55-60 L | 65-70 L



Ref.	d1	d2	l1	l2	r	z
36.228.0300	3	6	49	5	1.5	2
36.228.0400	4	6	51	7	2	2
36.228.0500	5	6	52	8	2.5	2
36.228.0600	6	6	52	8	3	2
36.228.0800	8	10	61	11	4	2
36.228.1000	10	10	63	13	5	2
36.228.1200	12	12	73	16	6	2
36.228.1600	16	16	79	19	8	2
36.228.2000	20	20	82	22	10	2

36.324 Phantom



NL HSS-E Radiusfrees, 4-snijder kort, type N, TiAIN
FR Fraise à rayon 4 dents HSS-E version courte, type N, TiAIN
ES Fresa de punta esférica HSS-E corta, tipo N, TiAIN
DE HSS-E 4 Schneiden Radiusfräser kurz, Typ N, TiAIN
EN HSS-E 4 Flute Ball Nose End Mill short, type N, TiAIN

30° | HSS-E 8% | TiAIN | DIN 844-B | DIN 1835-B | N | r ±0,02

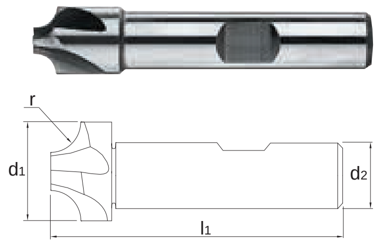
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 41 Alu

45-50 J | 40-45 I | 30-35 J | 20-25 I | 130-145 K

ap 1xd1 | ae 0,5xd1

Ref.	d1	d2	l1	l2	r	z
36.324.0600	6	6	57	13	3	4
36.324.0800	8	10	69	19	4	4
36.324.1000	10	10	72	22	5	4
36.324.1200	12	12	83	26	6	4
36.324.1600	16	16	92	32	8	4
36.324.2000	20	20	104	38	10	4
36.324.2200	22	20	104	38	11	4
36.324.2400	24	25	121	45	12	4
36.324.2500	25	25	121	45	12.5	4

36.410 Phantom



NL HSS-E Radiusfrees Kwarthol frees
FR Fraise à rayon HSS-E Fraise à 1/4 de cercle concave
ES Fresa de punta esférica HSS-E Fresa semicóncava de 1/4 de círculo
DE HSS-E Viertelrund-Profilfräser Viertelrund-Profilfräser
EN HSS-E Form Relieved Radius End Mill Corner Rounding Cutter

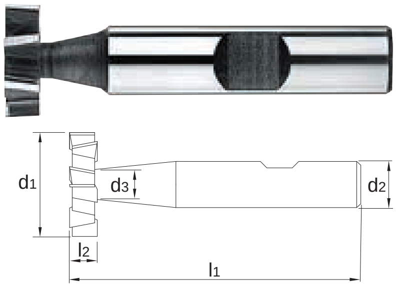
0° | HSS-E 8% | DIN 6518-B | DIN 1835-B | r H11

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | N 41 Alu

18-24 F | 15-18 F | 10-15 F | 80-90 F

Ref.	r	d1	d2	l1	z
36.410.0100	1	8	10	60	4
36.410.0150	1.5	9	10	60	4
36.410.0200	2	10	10	60	4
36.410.0250	2.5	11	10	60	4
36.410.0300	3	12	12	60	4
36.410.0350	3.5	13	12	60	4
36.410.0400	4	14	12	60	4
36.410.0450	4.5	15	12	60	4
36.410.0500	5	16	12	60	4
36.410.0550	5.5	19	16	67	4
36.410.0600	6	20	16	67	4
36.410.0650	6.5	21	16	71	4
36.410.0700	7	22	16	71	4
36.410.0750	7.5	23	16	71	4
36.410.0800	8	24	16	71	4
36.410.0850	8.5	25	25	85	4
36.410.0900	9	26	25	85	4
36.410.0950	9.5	27	25	85	4
36.410.1000	10	28	25	85	4
36.410.1100	11	32	25	90	4
36.410.1200	12	34	25	90	4
36.410.1250	12.5	41	25	100	4
36.410.1300	13	42	25	100	4
36.410.1400	14	44	25	100	4
36.410.1500	15	46	25	100	4
36.410.1600	16	48	25	100	4
36.410.1800	18	52	32	112	4
36.410.2000	20	56	32	112	4

36.510 Phantom



NL HSS-E Schijfspiefrees (Woodruff-frees) kruisvertand
FR Fraise pour logements de clavettes (type Woodruff) HSS-E denture alternée
ES Fresa de ranurar (tipo Woodruff) HSS-E diente alternado
DE HSS-E Schlitzfräser (Woodruff-Fräser) kreuzverzahnt
EN HSS-E Woodruff Keyseat Cutter staggered teeth

HSS-E | DIN 850-D | DIN 1835-B

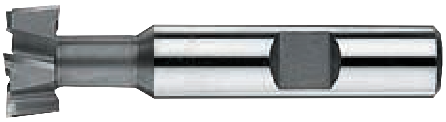
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 41 Alu

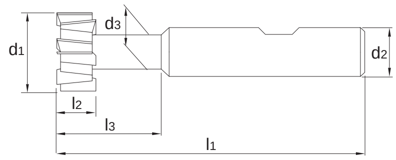
25-30 G | 20-25 F | 15-20 F | 10-15 F | 90-100 G

Ref.	d1	d2	d3	l1	l2	z
36.510.1020	10.5	6	4	50	2	6
36.510.1025	10.5	6	4	50	2.5	6
36.510.1030	10.5	6	4.2	50	3	6
36.510.1320	13.5	10	4.6	56	2	6
36.510.1330	13.5	10	4.6	56	3	6
36.510.1340	13.5	10	4.6	56	4	6
36.510.1630	16.5	10	4.6	56	3	6
36.510.1640	16.5	10	4.6	56	4	6
36.510.1650	16.5	10	5	56	5	6
36.510.1930	19.5	10	5.6	56	3	8
36.510.1940	19.5	10	5.6	56	4	8
36.510.1950	19.5	10	6	56	5	8
36.510.1960	19.5	10	6.5	56	6	8
36.510.2240	22.5	10	6	63	4	8
36.510.2250	22.5	10	6	63	5	8
36.510.2260	22.5	10	6.5	63	6	8
36.510.2280	22.5	10	6.5	63	8	8
36.510.2550	25.5	10	7.5	63	5	10
36.510.2560	25.5	10	7.5	63	6	10
36.510.2580	25.5	10	7.5	63	8	10
36.510.2860	28.5	12	8.5	63	6	10
36.510.2880	28.5	12	8.5	63	8	10
36.510.2890	28.5	12	9.3	63	10	10
36.510.3260	32.5	12	8.5	63	6	10
36.510.3280	32.5	12	8.5	63	8	10
36.510.3290	32.5	12	9.3	71	10	10
36.510.4590	45.5	12	11.8	71	10	12

› 36.560 *Phantom*

NL HSS-E T-Gleuffrees kruisvertand
FR Fraise à rainurer en T HSS-E denture alternée
ES Fresa para ranurar en T HSS-E diente alternado
DE HSS-E T-Nutenfräser kreuzverzahnt
EN HSS-E T-Slot Cutter staggered teeth





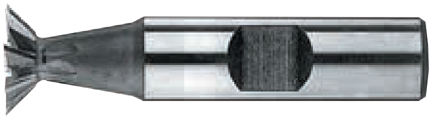
HSS-E | DIN 851-AB | DIN 1835-B

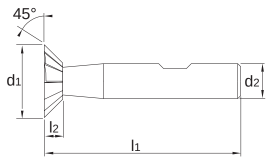
P 11	P 12	P 13	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	Alu
25-30 G	20-25 F	15-20 F	90-100 G

Ref.	d1	d2	d3	l1	l2	l3	z
36.560.1250	12.5	10	5	57	6	13	6
36.560.1600	16	10	7	62	8	18	6
36.560.1900	19	12	8	71	9	25	6
36.560.2200	22	12	10	75	10	26	6
36.560.2500	25	16	12	82	11	28	8
36.560.2800	28	16	13	83	12	29	8
36.560.3200	32	20	15	90	14	36	8

› 36.620 *Phantom*

NL HSS-E Zwaluwstaartfrees 45°
FR Fraise conique à cône renversé HSS-E 45°
ES Fresa cónica angular HSS-E 45°
DE HSS-E Winkelfräser 45°
EN HSS-E Dovetail Cutter 45°





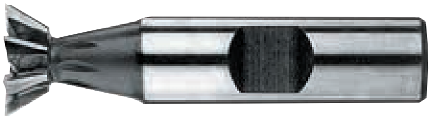
HSS-E | DIN 1833-C | DIN 1835-B

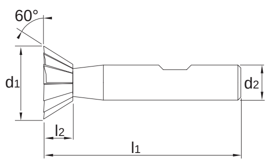
P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
25-30 A	20-25 A	15-20 A	10-15 A	90-100 A

Ref.	d1	d2	l1	l2
36.620.1600	16	12	60	4
36.620.2000	20	12	63	5
36.620.2500	25	12	67	6.3
36.620.3200	32	16	71	8
36.620.4000	40	16	80	10

› 36.650 *Phantom*

NL HSS-E Zwaluwstaartfrees 60°
FR Fraise conique à cône renversé HSS-E 60°
ES Fresa cónica angular HSS-E 60°
DE HSS-E Winkelfräser 60°
EN HSS-E Dovetail Cutter 60°



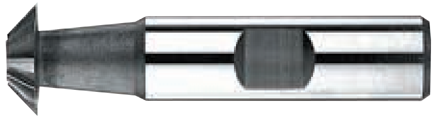


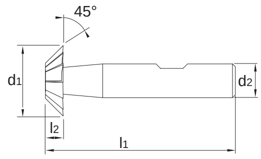
HSS-E | DIN 1833-C | DIN 1835-B

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
25-30 A	20-25 A	15-20 A	10-15 A	90-100 A

Ref.	d1	d2	l1	l2
36.650.1600	16	12	60	6.3
36.650.2000	20	12	63	8
36.650.2500	25	12	67	10
36.650.3200	32	16	71	12.5
36.650.4000	40	16	80	16

› 36.720 Phantom





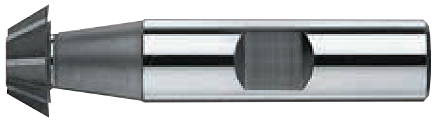
NL **HSS-E Duivenstaartfrees 45°**
FR **Fraise conique à cône direct HSS-E 45°**
ES **Fresa cónica angular HSS-E 45°**
DE **HSS-E Winkelstirnfräser 45°**
EN **HSS-E Inverted Dovetail Cutter 45°**

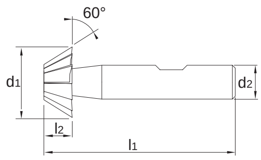
HSS-E | DIN 1833-D | DIN 1835-B

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
25-30 A	20-25 A	15-20 A	10-15 A	90-100 A

Ref.	d1	d2	l1	l2
36.720.1600	16	12	60	4
36.720.2000	20	12	63	5
36.720.2500	25	12	67	6.3
36.720.3200	32	16	71	8
36.720.4000	40	16	80	10

› 36.750 Phantom





NL **HSS-E Duivenstaartfrees 60°**
FR **Fraise conique à cône direct HSS-E 60°**
ES **Fresa cónica angular HSS-E 60°**
DE **HSS-E Winkelstirnfräser 60°**
EN **HSS-E Inverted Dovetail Cutter 60°**

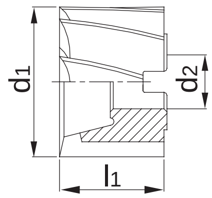
HSS-E | DIN 1833-D | DIN 1835-B

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
25-30 A	20-25 A	15-20 A	10-15 A	90-100 A

Ref.	d1	d2	l1	l2
36.750.1600	16	12	60	6.3
36.750.2000	20	12	63	8
36.750.2500	25	12	67	10
36.750.3200	32	16	71	12.5
36.750.4000	40	16	80	16

› 37.260 *Phantom*

NL HSS-E Mantelkopfrees type N, grofgetand
FR Fraise deux tailles HSS-E type N, denture grosse
ES Fresa frontal sin mango HSS-E tipo N, dentado grueso
DE HSS-E Walzenstirnfräser Typ N, grobverzahnt
EN HSS-E Shell End Mill type N, coarse teethed



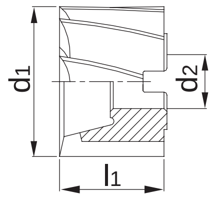
HSS-E | DIN 841 | N

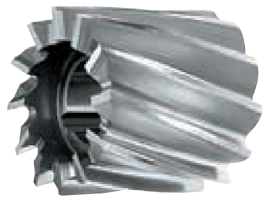
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW
25-30 H	20-25 G	15-20 G	10-15 F	10-15 G	8-12 F	17-22 G	20-25 H

Ref.	d1	d2	l1	z
37.260.0303	30	13	30	6
37.260.0353	35	16	35	6
37.260.0402	40	16	20	8
37.260.0404	40	16	40	8
37.260.0502	50	22	25	8
37.260.0505	50	22	50	8
37.260.0603	60	27	30	8
37.260.0606	60	27	60	8
37.260.0753	75	27	35	10
37.260.0757	75	27	75	10
37.260.1103	110	32	35	12

› 37.270 *Phantom*

NL HSS-E Mantelkopfrees type H, fijngetand
FR Fraise deux tailles HSS-E type H, denture fine
ES Fresa frontal sin mango HSS-E tipo H, dentado fino
DE HSS-E Walzenstirnfräser Typ H, feingezahnt
EN HSS-E Shell End Mill type H, fine teethed





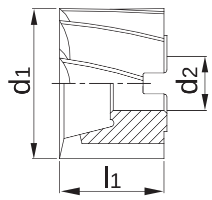
HSS-E | DIN 841 | H

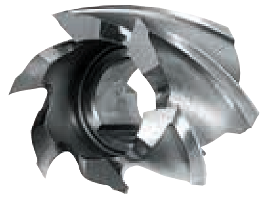
P 11	P 12	P 13	P 14	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	GG	GGG GTS-GTW
25-30 H	20-25 G	15-20 G	10-15 F	17-22 G	20-25 H

Ref.	d1	d2	l1	z
37.270.0303	30	13	30	8
37.270.0353	35	16	35	10
37.270.0404	40	16	40	10
37.270.0505	50	22	50	12
37.270.0606	60	27	60	12
37.270.0757	75	27	75	14

› 37.350 *Phantom*

NL HSS-E Mantelkopfrees type W, Aluminium
FR Fraise deux tailles HSS-E Type W, Aluminium
ES Fresa frontal sin mango HSS-E tipo W, Aluminio
DE HSS-E Walzenstirnfräser Typ W, Aluminium
EN HSS-E Shell End Mill type W, Aluminium





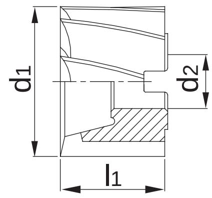
HSS-E | DIN 1880 | W | ALU

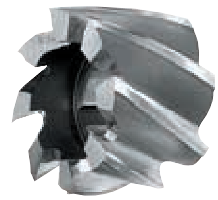
P 11	P 12	N 41	N 51
≤600 N/mm²	≤850 N/mm²	Alu	Cu
25-30 H	20-25 G	95-105 J	60-100 I

Ref.	d1	d2	l1	z
37.350.0400	40	16	32	4
37.350.0500	50	22	36	4
37.350.0630	63	27	40	5
37.350.0800	80	27	45	6

› 37.360 Phantom

NL HSS-E Mantelkopfrees type N, grofgetand
FR Fraise deux tailles HSS-E type N, denture grosse
ES Fresa frontal sin mango HSS-E tipo N, dentado grueso
DE HSS-E Walzenstirnfräser Typ N, grobverzahnt
EN HSS-E Shell End Mill type N, coarse teethed





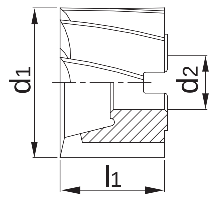
HSS-E 8% | DIN 1880 | N

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW
25-30 H	20-25 G	15-20 G	10-15 F	10-15 G	8-12 F	17-22 G	20-25 H

Ref.	d1	d2	l1	z
37.360.0400	40	16	32	8
37.360.0500	50	22	36	8
37.360.0630	63	27	40	8
37.360.0800	80	27	45	10
37.360.1000	100	32	50	12
37.360.1250	125	40	56	14
37.360.1600	160	50	63	16

› 37.500 Phantom

NL HSS-E Mantelkopruwfrees type NR
FR Fraise deux tailles semi-finition HSS-E type NR
ES Fresa frontal sin mango de desbaste HSS-E tipo NR
DE HSS-E Walzenstirnschruppfräser Typ NR
EN HSS-E Semi-finishing Shell End Mill type NR



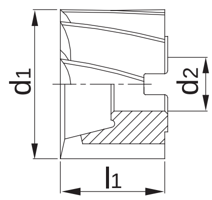
HSS-E | NR | DIN 841 | Cx45

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
25-30 J	20-25 J	15-20 H	10-15 G	95-105 J

Ref.	d1	d2	l1	z
37.500.0404	40	16	40	6
37.500.0505	50	22	50	6
37.500.0603	60	27	30	8
37.500.0606	60	27	60	8
37.500.0753	75	27	35	10
37.500.0757	75	27	75	8
37.500.1103	110	32	35	12

› 37.600 Phantom

NL HSS-E Mantelkopruwfrees type NR
FR Fraise deux tailles semi-finition HSS-E type NR
ES Fresa frontal sin mango de desbaste HSS-E tipo NR
DE HSS-E Walzenstirnschruppfräser Typ NR
EN HSS-E Semi-finishing Shell End Mill type NR

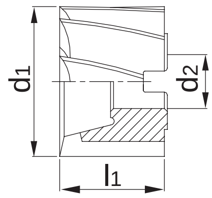


HSS-E 8% | NR | DIN 1880 | Cx45

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
25-30 J	20-25 J	15-20 H	10-15 G	95-105 J

Ref.	d1	d2	l1	z
37.600.0400	40	16	32	6
37.600.0500	50	22	36	6
37.600.0630	63	27	40	8
37.600.0800	80	27	44.5	8
37.600.1000	100	32	49.5	10
37.600.1250	125	40	55.5	12
37.600.1600	160	50	62.5	14

› 37.604 Phantom



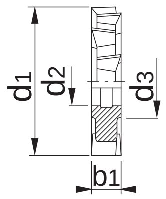
NL HSS-E Mantelkopruwfrees type NR, TiAIN
FR Fraise deux tailles semi-finition HSS-E type NR, TiAIN
ES Fresa frontal sin mango de desbaste HSS-E tipo NR, TiAIN
DE HSS-E Walzenstirnschruppfräser Typ NR, TiAIN
EN HSS-E Semi-finishing Shell End Mill type NR, TiAIN

HSS-E 8% | TiAIN | NR | DIN 1880 | Cx45

P 11	P 12	P 13	P 14
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²
30-35 J	30-35 J	20-25 H	12-18 G

Ref.	d1	d2	l1	z
37.604.0400	40	16	32	6
37.604.0500	50	22	36	6
37.604.0630	63	27	40	8

› 38.210 Phantom



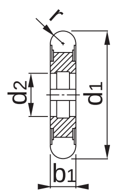
NL HSS-E Schijffrees type H, kruisvertand
FR Fraise trois tailles HSS-E type H, denture alternée
ES Fresa para ranurar HSS-E tipo H, diente alternado
DE HSS-E Scheibenfräser Typ H, kreuzverzahnt
EN HSS-E Side and Face Milling Cutter type H, staggered teeth

HSS-E | DIN 885-A | H

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
25-30 D	20-25 C	15-20 A	10-15 A	10-15 B	8-12 A	17-22 B	20-25 B	95-105 B

Ref.	d1	b1	d2	d3	z
38.210.0503	50	3	16	27	16
38.210.0504	50	4	16	27	16
38.210.0505	50	5	16	27	16
38.210.0506	50	6	16	27	16
38.210.0508	50	8	16	27	16
38.210.0510	50	10	16	27	16
38.210.0603	63	3	22	34	18
38.210.0604	63	4	22	34	18
38.210.0605	63	5	22	34	18
38.210.0606	63	6	22	34	18
38.210.0608	63	8	22	34	18
38.210.0610	63	10	22	34	18
38.210.0612	63	12	22	34	18
38.210.0614	63	14	22	34	18
38.210.0616	63	16	22	34	18
38.210.0618	63	18	22	34	14
38.210.0620	63	20	22	34	14
38.210.0803	80	3	27	41	20
38.210.0804	80	4	27	41	20
38.210.0805	80	5	27	41	20
38.210.0806	80	6	27	41	20
38.210.0808	80	8	27	41	20
38.210.0810	80	10	27	41	18
38.210.0812	80	12	27	41	18
38.210.0814	80	14	27	41	18
38.210.0816	80	16	27	41	18
38.210.0820	80	20	27	41	18
38.210.1003	100	3	32	47	20
38.210.1004	100	4	32	47	20
38.210.1005	100	5	32	47	20
38.210.1006	100	6	32	47	20
38.210.1008	100	8	32	47	20
38.210.1010	100	10	32	47	20
38.210.1012	100	12	32	47	20
38.210.1014	100	14	32	47	20
38.210.1016	100	16	32	47	20
38.210.1018	100	18	32	47	20
38.210.1020	100	20	32	47	20
38.210.1022	100	22	32	47	20
38.210.1025	100	25	32	47	20
38.210.1204	125	4	32	47	26
38.210.1205	125	5	32	47	26
38.210.1206	125	6	32	47	26
38.210.1208	125	8	32	47	26
38.210.1210	125	10	32	47	22
38.210.1212	125	12	32	47	22
38.210.1214	125	14	32	47	22
38.210.1216	125	16	32	47	22
38.210.1218	125	18	32	47	22
38.210.1220	125	20	32	47	22
38.210.1225	125	25	32	47	22
38.210.1604	160	4	40	55	30
38.210.1605	160	5	40	55	30
38.210.1606	160	6	40	55	26
38.210.1608	160	8	40	55	26
38.210.1610	160	10	40	55	26
38.210.1612	160	12	40	55	26
38.210.1614	160	14	40	55	26
38.210.1616	160	16	40	55	26
38.210.1618	160	18	40	55	26
38.210.1620	160	20	40	55	26

› 38.300 Phantom



NL HSS-E Convexfrees
FR Fraise 1/2 cercle convexe HSS-E
ES Fresa convexa para ranurar HSS-E
DE HSS-E Konvexfräser
EN HSS-E Convex Milling Cutter

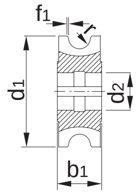
HSS-E | DIN 856

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
25-30 D	20-25 C	15-20 A	10-15 A	10-15 B	8-12 A	17-22 B	20-25 B	95-105 B

Ref.	r	d1	b1	d2	z
38.300.0100	1	50	2	16	16
38.300.0125	1.25	50	2.5	16	16
38.300.0150	1.5	50	3	16	16
38.300.0200	2	50	4	16	16
38.300.0250	2.5	63	5	22	12
38.300.0300	3	63	6	22	12
38.300.0350	3.5	63	7	22	12
38.300.0400	4	63	8	22	12
38.300.0450	4.5	63	9	22	12
38.300.0500	5	63	10	22	12
38.300.0550	5.5	80	11	27	12
38.300.0600	6	80	12	27	12
38.300.0800	8	80	16	27	12
38.300.1000	10	100	20	32	12
38.300.1200	12	100	24	32	12

› 38.350 *Phantom*

NL HSS-E Concaaffrees
FR Fraise 1/2 cercle concave HSS-E
ES Fresa cóncava para ranurar HSS-E
DE HSS-E Konkavfräser
EN HSS-E Concave Milling Cutter



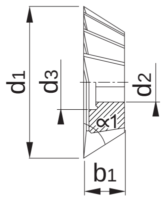
HSS-E | DIN 855

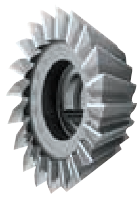
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm^2	≤850 N/mm^2	≤1000 N/mm^2	≤1400 N/mm^2	INOX ≤850 N/mm^2	INOX >850 N/mm^2	GG	GGG GTS-GTW	Alu
25-30 D	20-25 C	15-20 A	10-15 A	10-15 B	8-12 A	17-22 B	20-25 B	95-105 B

Ref.	r	d1	b1	d2	f1	z
38.350.0100	1	50	6	16	0.2	14
38.350.0125	1.25	50	6	16	0.2	14
38.350.0150	1.5	50	8	16	0.2	14
38.350.0200	2	50	9	16	0.25	14
38.350.0250	2.5	63	10	22	0.3	14
38.350.0300	3	63	12	22	0.3	12
38.350.0400	4	63	16	22	0.4	12
38.350.0500	5	63	20	22	0.5	10
38.350.0600	6	80	24	27	0.6	10
38.350.0800	8	80	32	27	0.8	10
38.350.1000	10	100	36	32	1	10
38.350.1200	12	100	40	32	1.2	10

› 38.400 *Phantom*

NL HSS-E Hoekkopfrees
FR Fraise conique 2 tailles HSS-E
ES Fresa semicircular cónica HSS-E
DE HSS-E Winkelstirnfräser
EN HSS-E Single Angle Milling Cutter





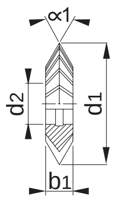
HSS-E | DIN 842

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm^2	≤850 N/mm^2	≤1000 N/mm^2	≤1400 N/mm^2	INOX ≤850 N/mm^2	INOX >850 N/mm^2	GG	GGG GTS-GTW	Alu
25-30 D	20-25 C	15-20 A	10-15 A	10-15 B	8-12 A	17-22 B	20-25 B	95-105 B

Ref.	d1	d2	d3	b1	α1	z
38.400.4504	40	10	15	12	45°	14
38.400.4505	50	13	19	15	45°	16
38.400.4506	63	16	23	18	45°	16
38.400.4508	80	22	30	23	45°	18
38.400.4510	100	27	39	30	45°	20
38.400.5004	40	10	15	13	50°	14
38.400.5005	50	13	19	16	50°	16
38.400.5006	63	16	23	20	50°	16
38.400.5008	80	22	30	25	50°	18
38.400.5010	100	27	39	32	50°	20
38.400.6004	40	10	15	13	60°	14
38.400.6005	50	13	19	16	60°	16
38.400.6006	63	16	23	20	60°	16
38.400.6008	80	22	30	25	60°	18
38.400.6010	100	27	39	32	60°	20

› 38.450 *Phantom*

NL HSS-E Prismafrees
FR Fraise isocèle 2 tailles HSS-E
ES Fresa semicircular angular HSS-E
DE HSS-E Prismenfräser
EN HSS-E Double Angle Milling Cutter



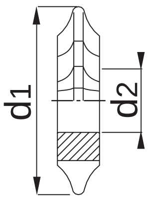
HSS-E | DIN 847

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm^2	≤850 N/mm^2	≤1000 N/mm^2	≤1400 N/mm^2	INOX ≤850 N/mm^2	INOX >850 N/mm^2	GG	GGG GTS-GTW	Alu
25-30 D	20-25 C	15-20 A	10-15 A	10-15 B	8-12 A	17-22 B	20-25 B	95-105 B

Ref.	d1	d2	b1	α1	z
38.450.4505	50	16	8	45°	16
38.450.4506	63	22	10	45°	16
38.450.4508	80	27	12	45°	20
38.450.4510	100	32	18	45°	20
38.450.6005	50	16	10	60°	16
38.450.6006	63	22	14	60°	16
38.450.6008	80	27	18	60°	18
38.450.6010	100	32	25	60°	20
38.450.9005	50	16	14	90°	16
38.450.9006	63	22	20	90°	16
38.450.9008	80	27	22	90°	18
38.450.9010	100	32	32	90°	20

› 38.500 Phantom

NL HSS Moduulfrees drukhoek 20°
FR Fraise module HSS angle de pression 20°
ES Fresa de módulo HSS ángulo de presión 20°
DE HSS Modulscheibenfräser Eingriffswinkel 20°
EN HSS Roller Chain Sprocket Milling Cutter pressure angle 20°



HSS | DIN 3972

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
25-30 D	20-25 C	15-20 A	10-15 A	10-15 B	8-12 A	17-22 B	20-25 B	95-105 B

Ref.	Modul	d1	d2	Nr.
38.500.0501	0.5	40	16	1 (12-13z)
38.500.0502	0.5	40	16	2 (14-16z)
38.500.0503	0.5	40	16	3 (17-20z)
38.500.0504	0.5	40	16	4 (21-25z)
38.500.0505	0.5	40	16	5 (26-34z)
38.500.0506	0.5	40	16	6 (35-54z)
38.500.0507	0.5	40	16	7 (55-135z)
38.500.0508	0.5	40	16	8 (>136z)
38.500.0751	0.75	40	16	1 (12-13z)
38.500.0752	0.75	40	16	2 (14-16z)
38.500.0753	0.75	40	16	3 (17-20z)
38.500.0754	0.75	40	16	4 (21-25z)
38.500.0755	0.75	40	16	5 (26-34z)
38.500.0756	0.75	40	16	6 (35-54z)
38.500.0757	0.75	40	16	7 (55-135z)
38.500.0758	0.75	40	16	8 (>136z)
38.500.1001	1	50	16	1 (12-13z)
38.500.1002	1	50	16	2 (14-16z)
38.500.1003	1	50	16	3 (17-20z)
38.500.1004	1	50	16	4 (21-25z)
38.500.1005	1	50	16	5 (26-34z)
38.500.1006	1	50	16	6 (35-54z)
38.500.1007	1	50	16	7 (55-135z)
38.500.1008	1	50	16	8 (>136z)
38.500.1251	1.25	50	16	1 (12-13z)
38.500.1252	1.25	50	16	2 (14-16z)
38.500.1253	1.25	50	16	3 (17-20z)
38.500.1254	1.25	50	16	4 (21-25z)
38.500.1255	1.25	50	16	5 (26-34z)
38.500.1256	1.25	50	16	6 (35-54z)
38.500.1257	1.25	50	16	7 (55-135z)
38.500.1258	1.25	50	16	8 (>136z)
38.500.1501	1.5	63	22	1 (12-13z)
38.500.1502	1.5	63	22	2 (14-16z)
38.500.1503	1.5	63	22	3 (17-20z)
38.500.1504	1.5	63	22	4 (21-25z)
38.500.1505	1.5	63	22	5 (26-34z)
38.500.1506	1.5	63	22	6 (35-54z)
38.500.1507	1.5	63	22	7 (55-135z)
38.500.1508	1.5	63	22	8 (>136z)
38.500.1751	1.75	63	22	1 (12-13z)
38.500.1752	1.75	63	22	2 (14-16z)
38.500.1753	1.75	63	22	3 (17-20z)
38.500.1754	1.75	63	22	4 (21-25z)
38.500.1755	1.75	63	22	5 (26-34z)
38.500.1756	1.75	63	22	6 (35-54z)
38.500.1757	1.75	63	22	7 (55-135z)
38.500.1758	1.75	63	22	8 (>136z)
38.500.2001	2	63	22	1 (12-13z)
38.500.2002	2	63	22	2 (14-16z)
38.500.2003	2	63	22	3 (17-20z)
38.500.2004	2	63	22	4 (21-25z)
38.500.2005	2	63	22	5 (26-34z)
38.500.2006	2	63	22	6 (35-54z)
38.500.2007	2	63	22	7 (55-135z)
38.500.2008	2	63	22	8 (>136z)
38.500.2251	2.25	63	22	1 (12-13z)
38.500.2252	2.25	63	22	2 (14-16z)
38.500.2253	2.25	63	22	3 (17-20z)
38.500.2254	2.25	63	22	4 (21-25z)
38.500.2255	2.25	63	22	5 (26-34z)
38.500.2256	2.25	63	22	6 (35-54z)
38.500.2257	2.25	63	22	7 (55-135z)
38.500.2258	2.25	63	22	8 (>136z)
38.500.2501	2.5	63	22	1 (12-13z)
38.500.2502	2.5	63	22	2 (14-16z)
38.500.2503	2.5	63	22	3 (17-20z)
38.500.2504	2.5	63	22	4 (21-25z)
38.500.2505	2.5	63	22	5 (26-34z)
38.500.2506	2.5	63	22	6 (35-54z)
38.500.2507	2.5	63	22	7 (55-135z)
38.500.2508	2.5	63	22	8 (>136z)
38.500.2751	2.75	70	27	1 (12-13z)
38.500.2752	2.75	70	27	2 (14-16z)
38.500.2753	2.75	70	27	3 (17-20z)
38.500.2754	2.75	70	27	4 (21-25z)
38.500.2755	2.75	70	27	5 (26-34z)
38.500.2756	2.75	70	27	6 (35-54z)
38.500.2757	2.75	70	27	7 (55-135z)
38.500.2758	2.75	70	27	8 (>136z)
38.500.3001	3	70	27	1 (12-13z)
38.500.3002	3	70	27	2 (14-16z)
38.500.3003	3	70	27	3 (17-20z)
38.500.3004	3	70	27	4 (21-25z)
38.500.3005	3	70	27	5 (26-34z)
38.500.3006	3	70	27	6 (35-54z)
38.500.3007	3	70	27	7 (55-135z)
38.500.3008	3	70	27	8 (>136z)
38.500.3251	3.25	70	27	1 (12-13z)
38.500.3252	3.25	70	27	2 (14-16z)
38.500.3253	3.25	70	27	3 (17-20z)
38.500.3254	3.25	70	27	4 (21-25z)
38.500.3255	3.25	70	27	5 (26-34z)
38.500.3256	3.25	70	27	6 (35-54z)
38.500.3257	3.25	70	27	7 (55-135z)
38.500.3258	3.25	70	27	8 (>136z)
38.500.3501	3.5	80	27	1 (12-13z)
38.500.3502	3.5	80	27	2 (14-16z)
38.500.3503	3.5	80	27	3 (17-20z)
38.500.3504	3.5	80	27	4 (21-25z)
38.500.3505	3.5	80	27	5 (26-34z)
38.500.3506	3.5	80	27	6 (35-54z)
38.500.3507	3.5	80	27	7 (55-135z)
38.500.3508	3.5	80	27	8 (>136z)
38.500.3751	3.75	80	27	1 (12-13z)
38.500.3752	3.75	80	27	2 (14-16z)
38.500.3753	3.75	80	27	3 (17-20z)
38.500.3754	3.75	80	27	4 (21-25z)
38.500.3755	3.75	80	27	5 (26-34z)
38.500.3756	3.75	80	27	6 (35-54z)
38.500.3757	3.75	80	27	7 (55-135z)
38.500.3758	3.75	80	27	8 (>136z)
38.500.4001	4	80	27	1 (12-13z)
38.500.4002	4	80	27	2 (14-16z)
38.500.4003	4	80	27	3 (17-20z)
38.500.4004	4	80	27	4 (21-25z)
38.500.4005	4	80	27	5 (26-34z)
38.500.4006	4	80	27	6 (35-54z)
38.500.4007	4	80	27	7 (55-135z)
38.500.4008	4	80	27	8 (>136z)
38.500.4501	4.5	90	27	1 (12-13z)
38.500.4502	4.5	90	27	2 (14-16z)
38.500.4503	4.5	90	27	3 (17-20z)
38.500.4504	4.5	90	27	4 (21-25z)
38.500.4505	4.5	90	27	5 (26-34z)
38.500.4506	4.5	90	27	6 (35-54z)
38.500.4507	4.5	90	27	7 (55-135z)
38.500.4508	4.5	90	27	8 (>136z)
38.500.5001	5	90	32	1 (12-13z)
38.500.5002	5	90	32	2 (14-16z)
38.500.5003	5	90	32	3 (17-20z)
38.500.5004	5	90	32	4 (21-25z)
38.500.5005	5	90	32	5 (26-34z)
38.500.5006	5	90	32	6 (35-54z)
38.500.5007	5	90	32	7 (55-135z)
38.500.5008	5	90	32	8 (>136z)
38.500.6001	6	100	32	1 (12-13z)
38.500.6002	6	100	32	2 (14-16z)
38.500.6003	6	100	32	3 (17-20z)
38.500.6004	6	100	32	4 (21-25z)

› 38.500 Phantom

Ref.	Modul	d1	d2	Nr.
38.500.6005	6	100	32	5 (26-34z)
38.500.6006	6	100	32	6 (35-54z)
38.500.6007	6	100	32	7 (55-135z)
38.500.6008	6	100	32	8 (>136z)

› 39.100 Phantom

NL **Cassette Frezen leeg**
FR **Coffret pour fraises vide**
ES **Estuche de fresas vacío**
DE **Fräserkassetten leer**
EN **Milling Cutter case empty**

Ref.	Type	Ø mm	Ref.	Type	Ø mm
39.100.1050	DIN 327	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm	39.100.1200	DIN 844K	4, 5, 6, 8, 10, 12 mm
39.100.1150	DIN 844K	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm			

› 39.200 Phantom

NL **HSS-E Set Schachtfrezen, 2-snijder kort, type N**
FR **Jeu de Fraises à rainurer HSS-E version courte, type N**
ES **Juego de fresas frontales de 2 labios HSS-E corta, tipo N**
DE **HSS-E Satz Langlochfräser kurz, Typ N**
EN **HSS-E 2 Flute Milling Cutters set short, type N**

30° | HSS-E 8% | DIN 327-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K

Ref.	Type	Ø mm	Ref.	Type	Ø mm
39.200.1050	32.220	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm	39.200.1150	32.220	4, 5, 6, 8, 10, 12 mm

› 39.300 Phantom

NL **HSS-E Set Schachtfrezen, 3-snijder kort**
FR **Jeu de Fraises universelles HSS-E version courte**
ES **Jeugo de Fresas frontales de 3 labios HSS-E corta**
DE **HSS-E Satz Universalfräser kurz**
EN **HSS-E Set 3 Flute Milling Cutters short**

30° | HSS-E 8% | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K

Ref.	Type	Ø mm	Ref.	Type	Ø mm
39.300.1050	33.220	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm	39.300.1150	33.220	4, 5, 6, 8, 10, 12 mm

› 39.400 Phantom

NL **HSS-E Set Schachtfrezen, meersnijder kort**
FR **Jeu de Fraises standards HSS-E version courte**
ES **Juego de fresas frontales de varios labios HSS-E corta**
DE **HSS-E Satz Schaftfräser (4 Schneiden) kurz**
EN **HSS-E Multi Flute Milling Cutters set short**

30° | HSS-E 8% | DIN 844-B | DIN 1835-B | N

P 11	P 12	P 13	P 14	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K

Ref.	Type	Ø mm
39.400.1050	34.220	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm
39.400.1150	34.220	4, 5, 6, 8, 10, 12 mm

NL **Voedingswaardentabel**
FR **Tableau des avances**
ES **Tabla de avances**
DE **Vorschubtabelle**
EN **Feed table**

P 11 ≤600 N/mm² = ISO

25-35 E — Vc = 25-35, FRC = E

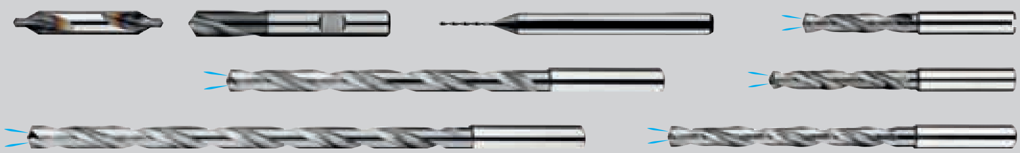
	FRC																						
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
d1(mm)	fz (mm/z)																							
0,3	0,001	0,001	0,001	0,002	0,003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,012	0,015	-	-	-
0,5	0,001	0,001	0,002	0,003	0,006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,019	0,024	-	-	-
0,8	0,002	0,002	0,003	0,005	0,008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,030	0,039	-	-	-
1	0,002	0,006	0,004	0,006	0,009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,037	0,048	0,012	0,008	0,008
1,5	0,003	0,008	0,005	0,009	0,012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,041	0,054	-	-	0,011
2	0,004	0,010	0,007	0,012	0,016	0,002	0,002	0,004	0,005	0,006	0,007	0,008	0,011	0,027	-	0,011	0,022	0,035	0,040	0,044	0,057	0,028	0,014	0,026
3	0,006	0,015	0,010	0,016	0,039	0,003	0,004	0,007	0,010	0,010	0,010	0,011	0,027	0,035	-	0,022	0,035	0,040	0,055	0,067	0,091	0,043	0,023	0,026
5	0,008	0,026	0,015	0,026	-	0,009	0,010	0,014	0,020	0,020	0,022	0,027	0,035	0,044	0,048	0,035	0,040	0,055	0,065	0,111	0,156	0,052	0,031	0,045
6	0,010	0,030	0,026	0,032	-	0,011	0,013	0,017	0,024	0,025	0,027	0,035	0,044	0,059	0,059	0,040	0,055	0,065	0,080	0,122	0,174	0,059	0,039	0,060
8	0,015	0.038	0,030	0,040	-	0,016	0,019	0,024	0,032	0,032	0,035	0,044	0,055	0,078	0,067	0,055	0,065	0,080	0,105	0,132	0,189	0,067	0,060	0,090
10	0,026	0,043	0,038	0,045	-	0,021	0,025	0,030	0,038	0,039	0,044	0,055	0,065	0,098	0,071	0,065	0,080	0,105	0,135	0,142	0,199	0,075	0,080	0,120
12	0,030	0,051	0,043	0,060	-	0,026	0,030	0,036	0,046	0,048	0,052	0,065	0,085	0,097	0,078	0,080	0,105	0,135	0,150	0,142	0,212	0,082	0,101	0,150
16	0,032	0,051	0,043	0,060	-	0,032	0,038	0,045	0,054	0,058	0,063	0,085	0,100	0,099	0,117	0,105	0,135	0,150	0,168	-	-	0,092	0,120	0,180
20	0,037	0,051	0,043	0,060	-	0,038	0,045	0,057	0,066	0,073	0,080	0,100	0,135	0,120	-	0,135	0,150	0,168	0,180	-	-	-	-	0,200
22	0,037	0,051	0,043	0,060	-	0,045	0,057	0,066	0,070	0,080	0,100	0,135	0,150	0,128	-	0,150	0,168	0,180	0,200	-	-	-	-	-
25	0,040	0,051	0,043	0,060	-	0,057	0,066	0,070	0,073	0,100	0,135	0,150	0,168	0,135	-	0,168	0,180	0,200	0,220	-	-	-	-	0,109
32	0,042	0,051	0,043	0,060	-	0,060	0,070	0,080	0,090	0,100	0,135	0,150	-	-	-	-	-	-	-	-	-	-	-	-
40	0,043	0,051	0,043	0,060	-	0,060	0,070	0,080	0,090	0,100	0,135	0,190	-	-	-	-	-	-	-	-	-	-	-	-
63	0,045	0,051	0,051	0,080	-	0,070	0,080	0,090	0,100	0,120	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	0,045	0,051	0,051	0,080	-	0,080	0,090	0,100	0,110	0,140	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	0,045	0,051	0,051	0,080	-	0,090	0,100	0,110	0,120	0,150	-	-	-	-	-	-	-	-	-	-	-	-	-	-
125	0,045	0,051	0,051	0,080	-	0,100	0,110	0,120	0,130	0,160	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160	0,045	0,051	0,051	0,080	-	0,110	0,120	0,130	0,140	0,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NL Uitleg calculatietool
FR Regardez la vidéo d’instruction de l’outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

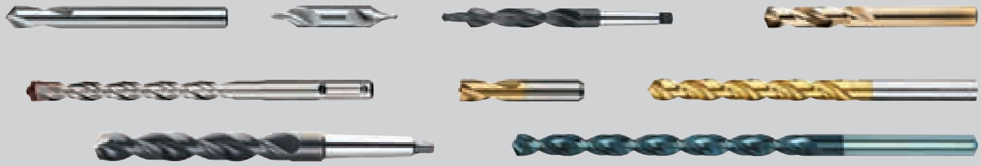
Watch me

www.phantom.eu

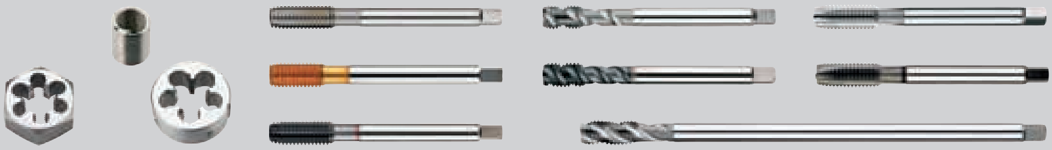
NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



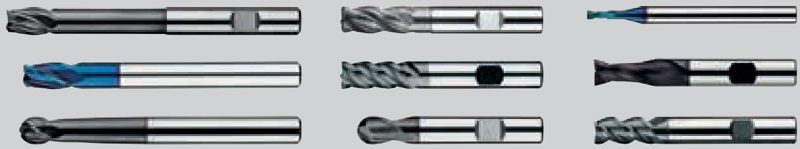
NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



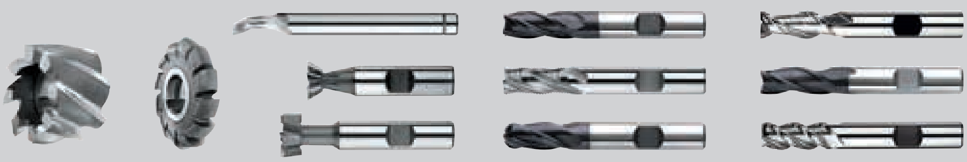
NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



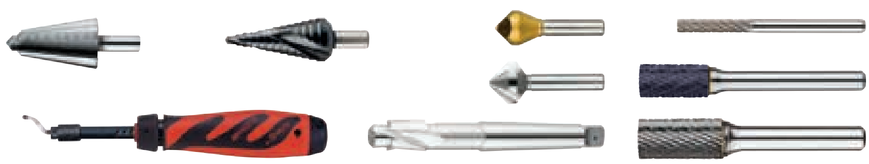
NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling

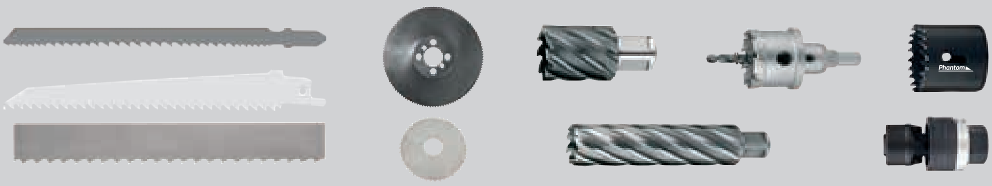


NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring

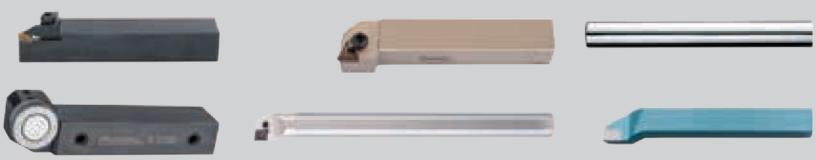


NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

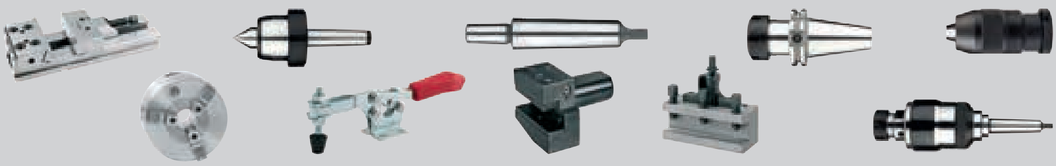
NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4

ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
HSS	HSS	HSS	HSS	HSS	HSS
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)
HSS-E 8%	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)
HM	Hardmetaal	Carbure monobloc	Metal duro integral	Hartmetall	Solid Carbide
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Vollhartmetall	Solid Carbide
OX.	Stoomontlaten	Vaporisé	Vaporizado	Dampfangelassen	Steam tempered
NIT.	Genitreerd	Nitruré	Nitrurado	Nitriert	Nitrated
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung	TiN coated
TiAIN	TiAIN gecoat	Revêtement TiAIN	Recubrimiento TiAIN	TiAIN Beschichtung	TiAIN coated
AlCrN-X	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung	AlCrN-X coated
90°	Hoek 90°	Angle 90°	Ángulo 90°	Winkel 90°	Angle 90°
180°	Hoek 180°	Angle 180°	Ángulo 180°	Winkel 180°	Angle 180°
DIN 335-C	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
ECO	ECO, basis kwaliteit	ECO, qualité standard	ECO, calidad básica	ECO, grund-legende Qualität	ECO, basic quality
ECO PRO	ECO PRO, industrie kwaliteit	ECO PRO, qualité industrielle	ECO PRO, calidad de la industria	ECO PRO, Industriequalität	ECO PRO, industry quality
O	Verzinkfrees met schuin gat	Fraise à chanfreiner à trou	Avellanador con agujero	Kegelsenker mit schräger Bohrung	Countersink with through holes
1	Verzinkfrees met 1 snijkant	Fraise à chanfrei-ner à un dent	Avellanador con 1 diente	Kegelsenker mit 1 Schneide	Countersink with single flute
3	Verzinkfrees 3 snij-kanten, frezende bewerking	Fraise à chan-freiner à 3 dents, pour fraisage	Avellanador con 3 dientes, para fresar	Kegelsenker mit 3 Schneiden, für fräsen	Countersink with 3 flutes, for mil-ling applications
3	Verzinkfrees 3 snijkanten, borende bewerking	Fraise à chan-freiner à 3 dents, pour perçage	Avellanador con 3 dientes, para taladar	Kegelsenker mit 3 Schneiden, für Bohren	Countersink with 3 flutes, for dril-ling applications
VARI	Variabele tandsteek	A pas variable	Paso variable	Variabler Verzah-nung	Variable pitch
90°	Verzinkhoek	Angle de chanfreinage	Ángulo de avellanar	Senkwinkel	Countersinking angle
	Parabolisch gesle-pen spaankamer	Goujure para-bolique	Labios para-bólicos	Parabolisch ge-sliefen Spanraum	Parabolic cut chip chamber
	Recht geslepen spaankamer	Goujure droite	Labios rectos	Gerade gesliefen Spanraum	Straight chiproom

	NL	FR	ES	DE	EN
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft	Straight shank
	Schacht zeskant	Queue hexagonale	Mango hexagonal	Sechskantschaft	Hexa shaft
	Schacht met drie platte vlakken	Queue à 3 méplats	Mango con 3 chaflanes	Zylinderschaft mit drei platten Flächen	Shank with 3 flat surfaces
1/4"	Bitopname (1/4")	Queue hexagonale 1/4" (6,35 mm)	Mango hexagonal 1/4" (6,35 mm)	Bitaufname (1/4")	Hexagonal shank 1/4"
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel	Morse Taper shank
	Voor handgebruik	Pour usage à la main	Para uso manual	Für Handgebrauch	For hand use
1	Fijnpassing 90°	Ajustement fin 90°	Ajuste fino 90°	Senkung fein 90°	Fine tolerances 90°
2	Middelpassing 90°	Ajustement moyen 90°	Ajuste medio 90°	Senkung mittel 90°	Medial tolerances 90°
3	Fijnpassing voor kerngaten 90°	Ajustement fin pour trous à tarauder 90°	Ajuste fino para agujeros para roscar 90°	Senkung fein für Kernlochsenkung 90°	Fine tolerances for core holes 90°
1	Fijnpassing 180°	Ajustement fin 180°	Ajuste fino 180°	Senkung fein 180°	Fine tolerances 180°
2	Middelpassing 180°	Ajustement moyen 180°	Ajuste medio 180°	Senkung mittel 180°	Medial tolerances 180°
3	Middelpassing voor kerngaten 180°	Ajustement moyen pour trous à tarauder 180°	Ajuste medio para agujeros para roscar 180°	Senkung mittel für Kernlochsenkung 180°	Medial tolerances for core holes 180°
	Rechte hoek	Angle droit	Borde recto	Gerade Kante	Straight edge
	Buitenrand buis	Angle extérieur	Borde externo de agujero	Außenbearbeitung Rohre	Pipe
	Rand achterzijde	Bord arrière de trou	Borde detrás de agujero	Innenbearbeitung Rückseite	Hole back edge
	Plat oppervlak	Surface plane	Superficie plana	Ebene Oberfläche	Flat surface
	Rand voorzijde	Angle d'un alésage	Borde de agujero	Innenbearbeitung Vorderseite	Hole edge
	Rand voor- en achterzijde	Trous sécants	Borde de agujero ambos lados	Innenbearbeitung Vorder- und Rückseite	Cross-hole both edges
	Oppervlak binnenkant gat	Surface interne d'un trou	Superficie interna de agujero	Innere Oberfläche "Wand"	Hole inner surface
	Plaatmateriaal	Tôles	Planchas	Bleche	Sheet

NL **Verzinken en Ontbramen**
FR **Chanfreinage et ébavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**
EN **Countersinking and Deburring**

P K H N M S — Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K H N M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

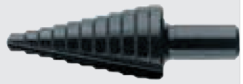
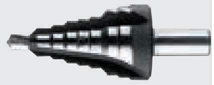
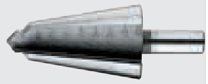
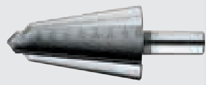
› 41.410	International Tools	A	Ø3	Ø6	P. 6
› 41.420	International Tools	B	Ø3	Ø6	P. 6
› 41.430	International Tools	C	Ø3	Ø6	P. 6
› 41.440	International Tools	D	Ø3	Ø6	P. 6
› 41.450	International Tools	E	Ø3	Ø6	P. 7
› 41.460	International Tools	F	Ø3	Ø6	P. 7
› 41.470	International Tools	G	Ø3	Ø6	P. 7
› 41.480	International Tools	H	Ø3	Ø6	P. 7
› 41.486	International Tools	L	Ø3	Ø6	P. 8
› 41.488	International Tools	M	Ø3	Ø6	P. 8
› 41.510	Phantom	A	Ø6		P. 8
› 41.511	Phantom	A	Ø6	TiAIN	P. 8
› 41.513	Phantom	A	Ø3		P. 9
› 41.518	Phantom	A	Ø8		P. 9
› 41.520	Phantom	B	Ø6		P. 9
› 41.521	Phantom	B	Ø6	TiAIN	P. 10
› 41.523	Phantom	B	Ø3		P. 10
› 41.528	Phantom	B	Ø8		P. 10
› 41.529	Phantom	B	Ø6		P. 10
› 41.530	Phantom	C	Ø6		P. 11
› 41.531	Phantom	C	Ø6	TiAIN	P. 11
› 41.533	Phantom	C	Ø3		P. 11
› 41.538	Phantom	C	Ø8		P. 12
› 41.539	Phantom	C	Ø6		P. 12
› 41.540	Phantom	D	Ø6		P. 12
› 41.543	Phantom	D	Ø3		P. 13
› 41.548	Phantom	D	Ø8		P. 13
› 41.549	Phantom	D	Ø6		P. 13
› 41.550	Phantom	E	Ø6		P. 13
› 41.553	Phantom	E	Ø3		P. 14
› 41.559	Phantom	E	Ø6		P. 14
› 41.560	Phantom	F	Ø6		P. 14
› 41.561	Phantom	F	Ø6	TiAIN	P. 15

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4

› 41.563	Phantom	F	Ø3						P. 15
› 41.568	Phantom	F	Ø8						P. 15
› 41.569	Phantom	F	Ø6						P. 15
› 41.570	Phantom	G	Ø6						P. 16
› 41.573	Phantom	G	Ø3						P. 16
› 41.578	Phantom	G	Ø8						P. 16
› 41.579	Phantom	G	Ø6						P. 17
› 41.580	Phantom	H	Ø6						P. 17
› 41.583	Phantom	H	Ø3						P. 17
› 41.588	Phantom	H	Ø8						P. 17
› 41.600	Phantom	J	Ø6						P. 18
› 41.610	Phantom	K	Ø6						P. 18
› 41.613	Phantom	K	Ø3						P. 18
› 41.620	Phantom	L	Ø6						P. 19
› 41.623	Phantom	L	Ø3						P. 19
› 41.628	Phantom	L	Ø8						P. 19
› 41.629	Phantom	L	Ø6						P. 19
› 41.630	Phantom	M	Ø6						P. 20
› 41.633	Phantom	M	Ø3						P. 20
› 41.640	Phantom	N	Ø6						P. 20
› 41.643	Phantom	N	Ø3						P. 21
› 41.650	Phantom	X	Ø6						P. 21
› 41.690	Phantom		Ø6						P. 21
› 42.100	Phantom	HSS-E	1	30°	P		K	N	P. 22
› 42.200	Phantom	HSS-E	1	45°	P		K	N	P. 22
› 42.300	Phantom	HSS-E	O	60°	P		K	N	P. 22
› 42.320	Phantom	HSS-E	1	60°	P		K	N	P. 23
› 42.330	Phantom	HSS-E	1	60°	P		K	N	P. 23
› 42.347	Phantom	HSS-E	3	60°	P	M	K	N	NEW P. 23
› 42.370	Phantom	HSS-E	3	60°	P	M	K	N	P. 24
› 42.420	Phantom	HSS-E	1	82°	P		K	N	P. 24
› 42.440	Phantom	HSS-E	3	82°	P	M	K	N	P. 24
› 42.500	Phantom	HSS-E	O	90°	P		K	N	P. 25
› 42.501	Phantom	HSS-E	O	90°	P		K	N	P. 25
› 42.510	Phantom	HSS-E	O	90°	P		K	N	P. 25

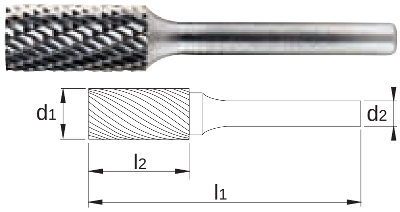
› 42.520	Phantom	HSS-E	1	90°	P		K	N			P. 26
› 42.530	Phantom	HSS-E	1	90°	P		K	N			P. 26
› 42.533	International Tools	HSS	3	90°	P		K	N			P. 26
› 42.535	International Tools	HSS	3	90°	P		K	N			P. 27
› 42.536	International Tools	HSS	3	90°	P	M	K	N			P. 27
› 42.543	International Tools	HSS	3	90°	P		K	N			P. 27
› 42.547	Phantom	HSS-E	3	90°	P	M	K	N			NEW P. 28
› 42.548	Phantom	HSS-E	3	90°	P	M	K	N	S		NEW P. 28
› 42.550	Phantom	HSS-E 8%	3	90°	P	M	K	N	S		P. 28
› 42.552	Phantom	HSS-E 8%	3	90°	P	M	K	N	S		P. 29
› 42.557	Phantom	HSS-E	3	90°	P	M	K	N			NEW P. 29
› 42.558	Phantom	HSS-E	3	90°	P	M	K	N	S		NEW P. 29
› 42.560	Phantom	MG HM	3	90°	P	M	K	N	S	H	P. 30
› 42.566	Phantom	HSS-E	3	90°	P	M	K	N			P. 30
› 42.567	Phantom	HSS-E	3	90°	P	M	K	N	S		P. 31
› 42.570	Phantom	HSS-E	3	90°	P	M	K	N			P. 31
› 42.582	Phantom	HSS-E 8%	>3	90°	P	M	K	N	S	H	NEW P. 31
› 42.590	International Tools	HSS	>3	90°	P						P. 31
› 42.640	Phantom	HSS-E	3	100°	P	M	K	N			P. 32
› 42.700	Phantom	HSS-E	O	120°	P		K	N			P. 32
› 42.710	Phantom	HSS-E	O	120°	P		K	N			P. 32
› 42.740	Phantom	HSS-E	3	120°	P	M	K	N			P. 33
› 43.200	Phantom	HSS-E	DIN 1866	90°	P	M	K	N			P. 34
› 43.210	Phantom	HSS-E	DIN 1866	90°	P	M	K	N			P. 34
› 43.240	Phantom	HSS-E	DIN 1866	90°	P	M	K	N			P. 34
› 43.320	Phantom	HSS-E	DIN 373	180°	P	M	K	N			P. 35
› 43.330	Phantom	HSS-E	DIN 373	180°	P	M	K	N			P. 35
› 43.350	Phantom	HSS-E	DIN 373	180°	P	M	K	N			P. 35
› 43.400	Phantom	HSS-E	DIN 373	180°	P	M	K	N			P. 36
› 43.410	Phantom	HSS-E	DIN 373	180°	P	M	K	N			P. 36
› 43.440	Phantom	HSS-E	DIN 373	180°	P	M	K	N			P. 36
› 44.100	Phantom	HSS	OX.		P	M	K	N			P. 37
› 44.102	Phantom	HSS	NIT.		P	M	K	N			P. 37

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4

› 44.110	Phantom	HSS	OX.			P	M	K	N		P. 37
› 44.120	Phantom	HSS	OX.			P	M	K	N		P. 38
› 44.130	Phantom	HSS	NIT.			P	M	K	N		P. 38
› 44.134	Phantom	HSS	TiAlN			P	M	K	N		P. 38
› 44.150	Phantom	HSS				P	M	K	N		P. 39
› 44.200	Phantom	HSS				P			N		P. 39
› 44.210	Phantom	HSS-E				P	M		N		P. 39
› 44.220	International Tools	HSS				P			N		P. 40
› 46.100	SHAVIV										P. 41
› 46.120	SHAVIV	B									P. 41
› 46.130	SHAVIV	C									P. 42
› 46.140	SHAVIV	D									P. 42
› 46.155	SHAVIV	B	E								P. 42
› 46.160	SHAVIV	F									P. 42
› 46.180	SHAVIV										P. 43
› 46.300	SHAVIV	E									P. 43
› 46.400	SHAVIV										P. 44
› 49.140	International Tools	VHM SC	Ø6								P. 45
› 49.150	Phantom	VHM SC	Ø6								P. 45
› 49.152	Phantom	VHM SC	Ø6								P. 45
› 49.236	Phantom	HSS-E	3	60°		P	M	K	N	 NEW	P. 46
› 49.240	International Tools	HSS	3	90°		P		K	N		P. 46
› 49.242	International Tools	HSS	3	90°		P		K	N		P. 46
› 49.244	International Tools	HSS	3	90°		P	M	K	N		P. 47

› 49.248	International Tools	HSS	3	90°	P K N		P. 47
› 49.250	Phantom	HSS-E	○	90°	P M K N		P. 47
› 49.252	Phantom	HSS-E	1	90°	P K N		P. 48
› 49.255	Phantom	HSS-E 8%	3	90°	P M K N S		P. 48
› 49.263	Phantom	HSS-E	3	90°	P M K N	NEW 	P. 48
› 49.264	Phantom	HSS-E	3	90°	P M K N S	NEW 	P. 49
› 49.265	Phantom	HSS-E	3	90°	P M K N	NEW 	P. 49
› 49.266	Phantom	HSS-E	3	90°	P M K N S	NEW 	P. 49
› 49.267	Phantom	HSS-E	3	90°	P M K N		P. 50
› 49.268	Phantom	HSS-E	3	90°	P M K N S		P. 50
› 49.320	Phantom	HSS-E	DIN 1866	90°	P M K N		P. 50
› 49.340	Phantom	HSS-E	DIN 373	180°	P M K N		P. 51
› 49.413	Phantom	HSS	NIT.		P M K N		P. 51
› 49.414	Phantom	HSS	TiAIN		P M K N		P. 51
› 49.420	Phantom	HSS			P N		P. 52
› 49.600	SHAVIV						P. 52

› 41.410 International Tools

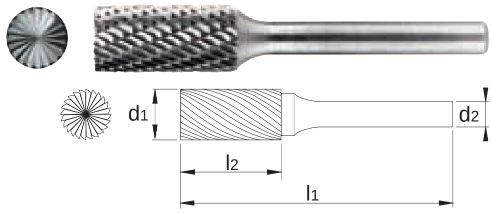


NL ECO PRO Hardmetaal Stiftfrees model A, cilindrisch
FR Fraise lime Carbure ECO PRO Forme A, forme cylindrique
ES Fresa rotativa Metal Duro ECO PRO forma A, cilíndrico
DE ECO PRO Hartmetall Frässtift Form A, Zylinderform
EN ECO PRO Carbide Burr model A, cylindrical

HM | A | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.410.0336	3	3	38	14	3	6-UNI
41.410.0606	6	6	50	18	6	6-UNI
41.410.0806	8	8	65	20	6	6-UNI
41.410.1006	10	10	65	20	6	6-UNI
41.410.1206	12	12	70	25	6	6-UNI
41.410.1606	16	16	70	25	6	6-UNI

› 41.420 International Tools

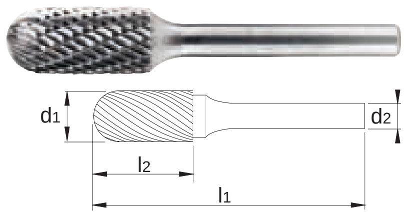


NL ECO PRO Hardmetaal Stiftfrees model B, cilindrisch met kopvertanding
FR Fraise lime Carbure ECO PRO Forme B, Forme cylindrique avec denture en bout
ES Fresa rotativa Metal Duro ECO PRO forma B, cilíndrico con corte al centro
DE ECO PRO Hartmetall Frässtift Form B, Zylinderform mit Stirnverzahnung
EN ECO PRO Carbide Burr model B, cylindrical with End Cut

HM | B | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.420.0336	3	3	38	14	3	6-UNI
41.420.0606	6	6	50	18	6	6-UNI
41.420.0806	8	8	65	20	6	6-UNI
41.420.1006	10	10	65	20	6	6-UNI
41.420.1206	12	12	70	25	6	6-UNI
41.420.1606	16	16	70	25	6	6-UNI

› 41.430 International Tools

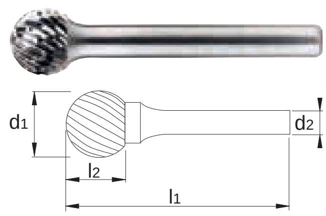


NL ECO PRO Hardmetaal Stiftfrees model C, cilindrisch, ronde kop
FR Fraise lime Carbure ECO PRO Forme C, Forme cylindrique à bout arrondi
ES Fresa rotativa Metal Duro ECO PRO forma C, cilíndrico, forma semiesférica
DE ECO PRO Hartmetall Frässtift Form C, Walzenrundform
EN ECO PRO Carbide Burr model C, Cylindrical, ball nose

HM | C | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.430.0336	3	3	38	14	3	6-UNI
41.430.0606	6	6	50	18	6	6-UNI
41.430.0806	8	8	65	20	6	6-UNI
41.430.1006	10	10	65	20	6	6-UNI
41.430.1206	12	12	70	25	6	6-UNI
41.430.1606	16	16	70	25	6	6-UNI

› 41.440 International Tools



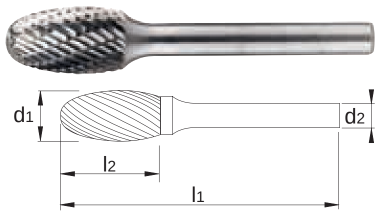
NL ECO PRO Hardmetaal Stiftfrees model D, kogelvorm
FR Fraise lime Carbure ECO PRO Forme D, Forme sphérique
ES Fresa rotativa Metal Duro ECO PRO forma D, modelo esférico
DE ECO PRO Hartmetall Frässtift Form D, Kugelform
EN ECO PRO Carbide Burr model D, ball

HM | D | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.440.0336	3	3	38	2.5	3	6-UNI
41.440.0606	6	6	50	5	6	6-UNI
41.440.0806	8	8	52	7	6	6-UNI
41.440.1006	10	10	54	9	6	6-UNI
41.440.1206	12	12	56	11	6	6-UNI
41.440.1606	16	16	59	14	6	6-UNI

› 41.450 *International Tools*

NL **ECO PRO Hardmetaal Stiftfrees model E, druppelvorm**
FR **Fraise lime Carbure ECO PRO Forme E, Forme goutte**
ES **Fresa rotativa Metal Duro ECO PRO forma E, forma oval**
DE **ECO PRO Hartmetall Frässtift Form E, Tropfenform**
EN **ECO PRO Carbide Burr model E, Oval**

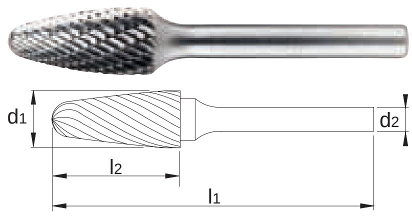


HM | E | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.450.0336	3	3	38	6	3	6-UNI
41.450.0606	6	6	50	10	6	6-UNI
41.450.0806	8	8	60	15	6	6-UNI
41.450.1006	10	10	60	15	6	6-UNI
41.450.1206	12	12	65	20	6	6-UNI
41.450.1606	16	16	70	25	6	6-UNI

› 41.460 *International Tools*

NL **ECO PRO Hardmetaal Stiftfrees model F, boomvorm met ronde kop**
FR **Fraise lime Carbure ECO PRO Forme F, Forme ogive à bout arrondi**
ES **Fresa rotativa Metal Duro ECO PRO forma F, forma ojival en semiesférica**
DE **ECO PRO Hartmetall Frässtift Form F, Rundbogenform**
EN **ECO PRO Carbide Burr model F, Ball nose tree**

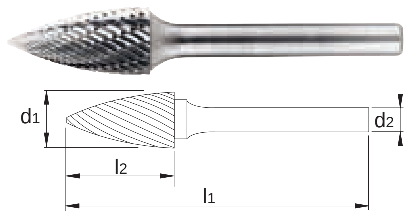


HM | F | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.460.0336	3	3	38	14	3	6-UNI
41.460.0606	6	6	50	18	6	6-UNI
41.460.0806	8	8	65	20	6	6-UNI
41.460.1006	10	10	65	20	6	6-UNI
41.460.1206	12	12	70	25	6	6-UNI
41.460.1606	16	16	70	25	6	6-UNI

› 41.470 *International Tools*

NL **ECO PRO Hardmetaal Stiftfrees model G, boomvorm spits**
FR **Fraise lime Carbure ECO PRO Forme G, Forme ogive**
ES **Fresa rotativa Metal Duro ECO PRO forma G, forma ojival en punta**
DE **ECO PRO Hartmetall Frässtift Form G, Spitzbogenform**
EN **ECO PRO Carbide Burr model G, pointed tree**

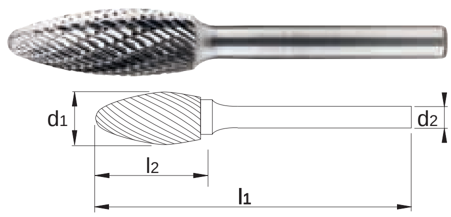


HM | G | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.470.0336	3	3	38	14	3	6-UNI
41.470.0606	6	6	50	18	6	6-UNI
41.470.0806	8	8	65	20	6	6-UNI
41.470.1006	10	10	65	20	6	6-UNI
41.470.1206	12	12	70	25	6	6-UNI
41.470.1606	16	16	70	25	6	6-UNI

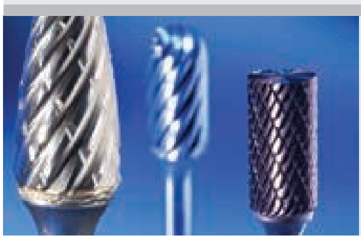
› 41.480 *International Tools*

NL **ECO PRO Hardmetaal Stiftfrees model H, vlamvorm**
FR **Fraise lime Carbure ECO PRO Forme H, Forme flamme**
ES **Fresa rotativa Metal Duro ECO PRO forma H, forma llama**
DE **ECO PRO Hartmetall Frässtift Form H, Flammenform**
EN **ECO PRO Carbide Burr model H, flame**



HM | H | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.480.0336	3	3	38	6	3	6-UNI
41.480.0606	6	6	50	14	6	6-UNI
41.480.0806	8	8	65	20	6	6-UNI
41.480.1006	10	10	65	20	6	6-UNI
41.480.1206	12	12	75	30	6	6-UNI
41.480.1606	16	16	80	35	6	6-UNI



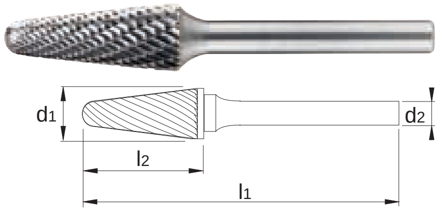
NL Stiftfrezen keuzehulp
FR Aide à la sélection des fraises lime
ES Ayuda para la selección de fresas rotativas
DE Auswahlhilfe Frässtifte
EN Selection guide for burrs

Read me

www.phantom.eu

› 41.486 International Tools

NL ECO PRO Hardmetaal Stiftfrees model L, kegelvorm, met ronde kop
FR Fraise lime Carbure ECO PRO Forme L, Forme conique à bout arrondi
ES Fresa rotativa Metal Duro ECO PRO forma L, forma cónica, con punta redondeada
DE ECO PRO Hartmetall Frässtift Form L, Rundkegelform
EN ECO PRO Carbide Burr model L, ball nose cone



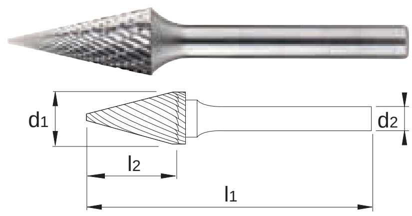
HM | L | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.486.0336	3	3	38	14	3	6-UNI
41.486.0606	6	6	50	18	6	6-UNI
41.486.0806	8	8	70	25	6	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.486.1006	10	10	65	20	6	6-UNI
41.486.1206	12	12	75	30	6	6-UNI
41.486.1606	16	16	78	33	6	6-UNI

› 41.488 International Tools

NL ECO PRO Hardmetaal Stiftfrees model M, kegelvorm, spits
FR Fraise lime Carbure ECO PRO Forme M, Forme conique à bout pointu
ES Fresa rotativa Metal Duro ECO PRO forma M, forma cónica, en punta
DE ECO PRO Hartmetall Frässtift Form M, Spitzkegelform
EN ECO PRO Carbide Burr model M, cone



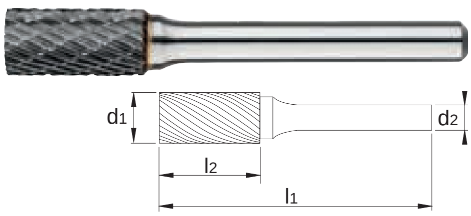
HM | M | Ø3 | Ø6 | ECO PRO

Ref.	Ø	d1	l1	l2	d2	z
41.488.0336	3	3	38	11	3	6-UNI
41.488.0606	6	6	50	20	6	6-UNI
41.488.0806	8	8	65	20	6	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.488.1006	10	10	65	20	6	6-UNI
41.488.1206	12	12	71	26	6	6-UNI
41.488.1606	16	16	70	25	6	6-UNI

› 41.510 Phantom

NL Hardmetaal Stiftfrees model A, cilindrisch, schacht 6 mm
FR Fraise lime Carbure Forme A, forme cylindrique, queue 6 mm
ES Fresa rotativa Metal Duro forma A, cilíndrico, mango 6 mm
DE Hartmetall Frässtift Form A, Zylinderform, Schaft 6 mm
EN Carbide Burr model A, cylindrical, shank 6 mm



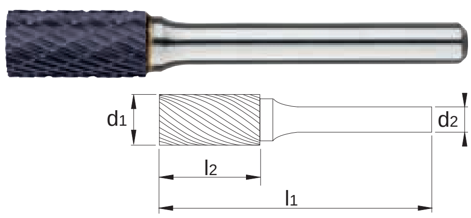
HM | A | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.510.0601	6	6	50	18	6	1-ALU
41.510.0603	6	6	50	18	6	3-FINE
41.510.0604	6	6	50	18	6	4-DIAMOND
41.510.0606	6	6	50	18	6	6-UNI
41.510.0608	6	6	50	18	6	8-STEEL
41.510.0609	6	6	50	18	6	9-INOX
41.510.0801	8	8	64	19	6	1-ALU
41.510.0803	8	8	64	19	6	3-FINE
41.510.0804	8	8	64	19	6	4-DIAMOND
41.510.0806	8	8	64	19	6	6-UNI
41.510.0808	8	8	64	19	6	8-STEEL
41.510.0809	8	8	64	19	6	9-INOX
41.510.1001	10	9.5	64	19	6	1-ALU
41.510.1003	10	9.5	64	19	6	3-FINE

Ref.	Ø	d1	l1	l2	d2	z
41.510.1004	10	9.5	64	19	6	4-DIAMOND
41.510.1006	10	9.5	64	19	6	6-UNI
41.510.1008	10	9.5	64	19	6	8-STEEL
41.510.1009	10	9.5	64	19	6	9-INOX
41.510.1201	12	12.7	70	25	6	1-ALU
41.510.1203	12	12.7	70	25	6	3-FINE
41.510.1204	12	12.7	70	25	6	4-DIAMOND
41.510.1206	12	12.7	70	25	6	6-UNI
41.510.1208	12	12.7	70	25	6	8-STEEL
41.510.1209	12	12.7	70	25	6	9-INOX
41.510.1601	16	16	70	25	6	1-ALU
41.510.1604	16	16	70	25	6	4-DIAMOND
41.510.1606	16	16	70	25	6	6-UNI
41.510.2006	20	19	70	25	6	6-UNI

› 41.511 Phantom

NL Hardmetaal Stiftfrees model A, cilindrisch, schacht 6 mm, TiAIN
FR Fraise lime Carbure Forme A, forme cylindrique, queue 6 mm, TiAIN
ES Fresa rotativa Metal Duro forma A, cilíndrico, mango 6 mm, TiAIN
DE Hartmetall Frässtift Form A, Zylinderform, Schaft 6 mm, TiAIN
EN Carbide Burr model A, cylindrical, shank 6 mm, TiAIN

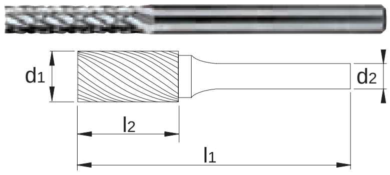


HM | TiAIN | A | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.511.0606	6	6	50	18	6	6-UNI
41.511.0806	8	8	64	19	6	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.511.1006	10	9.5	64	19	6	6-UNI
41.511.1206	12	12.7	70	25	6	6-UNI

› 41.513 Phantom

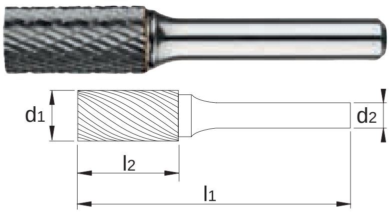


- **NL** Hardmetaal Stiftfrees model A, cilindrisch, schacht 3 mm
- **FR** Fraise lime Carbure Forme A, forme cylindrique, queue 3 mm
- **ES** Fresa rotativa Metal Duro forma A, cilíndrico, mango 3 mm
- **DE** Hartmetall Frässtift Form A, Zylinderform, Schaft 3 mm
- **EN** Carbide Burr model A, cylindrical, shank 3 mm

HM | A | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.513.0153	1.5	1.5	38	6	3	3-FINE
41.513.0154	1.5	1.5	38	6	3	4-DIAMOND
41.513.0206	2	2	38	11	3	6-UNI
41.513.0301	3	3	38	14	3	1-ALU
41.513.0303	3	3	38	14	3	3-FINE
41.513.0304	3	3	38	14	3	4-DIAMOND
41.513.0306	3	3	38	14	3	6-UNI
41.513.0309	3	3	38	14	3	9-INOX
41.513.0636	6	6.3	45	12.7	3	6-UNI
41.513.0639	6	6.3	45	12.7	3	9-INOX

› 41.518 Phantom

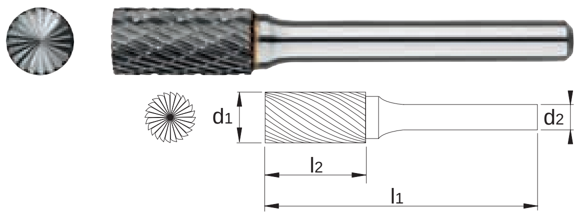


- **NL** Hardmetaal Stiftfrees model A, cilindrisch, schacht 8 mm
- **FR** Fraise lime Carbure Forme A, forme cylindrique, queue 8 mm
- **ES** Fresa rotativa Metal Duro forma A, cilíndrico, mango 8 mm
- **DE** Hartmetall Frässtift Form A, Zylinderform, Schaft 8 mm
- **EN** Carbide Burr model A, cylindrical, shank 8 mm

HM | A | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.518.1286	12	12.7	70	25	8	6-UNI
41.518.1681	16	16	70	25	8	1-ALU
41.518.1686	16	16	70	25	8	6-UNI
41.518.2086	20	19	70	25	8	6-UNI

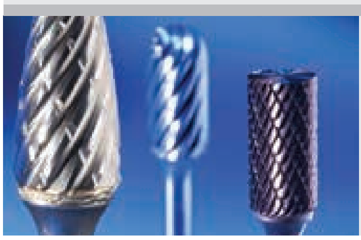
› 41.520 Phantom



- **NL** Hardmetaal Stiftfrees model B, cilindrisch met kopvertanding, schacht 6 mm
- **FR** Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout, queue 6 mm
- **ES** Fresa rotativa Metal Duro forma B, cilíndrico con corte al centro, mango 6 mm
- **DE** Hartmetall Frässtift Form B, Zylinderform mit Stirnverzahnung, Schaft 6 mm
- **EN** Carbide Burr model B, cylindrical with End Cut, shank 6 mm

HM | B | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.520.0601	6	6	50	18	6	1-ALU
41.520.0603	6	6	50	18	6	3-FINE
41.520.0604	6	6	50	18	6	4-DIAMOND
41.520.0606	6	6	50	18	6	6-UNI
41.520.0608	6	6	50	18	6	8-STEEL
41.520.0801	8	8	64	19	6	1-ALU
41.520.0803	8	8	64	19	6	3-FINE
41.520.0804	8	8	64	19	6	4-DIAMOND
41.520.0806	8	8	64	19	6	6-UNI
41.520.0808	8	8	64	19	6	8-STEEL
41.520.1001	10	9.5	64	19	6	1-ALU
41.520.1003	10	9.5	64	19	6	3-FINE
41.520.1004	10	9.5	64	19	6	4-DIAMOND
41.520.1006	10	9.5	64	19	6	6-UNI
41.520.1008	10	9.5	64	19	6	8-STEEL
41.520.1201	12	12.7	70	25	6	1-ALU
41.520.1203	12	12.7	70	25	6	3-FINE
41.520.1204	12	12.7	70	25	6	4-DIAMOND
41.520.1206	12	12.7	70	25	6	6-UNI
41.520.1208	12	12.7	70	25	6	8-STEEL
41.520.1603	16	16	70	25	6	3-FINE
41.520.1604	16	16	70	25	6	4-DIAMOND
41.520.1606	16	16	70	25	6	6-UNI
41.520.2006	20	19	70	25	6	6-UNI



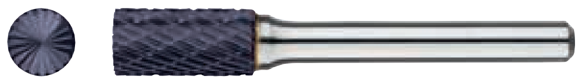
- **NL** Stiftfrezen keuzehulp
- **FR** Aide à la sélection des fraises lime
- **ES** Ayuda para la selección de fresas rotativas
- **DE** Auswahlhilfe Frässtifte
- **EN** Selection guide for burrs

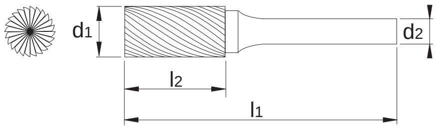
Read me

www.phantom.eu

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4

› 41.521 Phantom



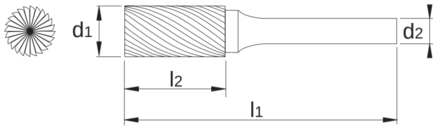


NL Hardmetaal Stiftfrees model B, cilindrisch met kopvertanding, schacht 6 mm, TiAlN
FR Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout, queue 6 mm, TiAlN
ES Fresa rotativa Metal Duro forma B, cilíndrico con corte al centro, mango 6 mm, TiAlN
DE Hartmetall Frässtift Form B, Zylinderform mit Stirnverzahnung, Schaft 6 mm, TiAlN
EN Carbide Burr model B, cylindrical with End Cut, shank 6 mm, TiAlN

HM | TiAlN | B | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.521.0606	6	6	50	18	6	6-UNI
41.521.0806	8	8	64	19	6	6-UNI
41.521.1006	10	9.5	64	19	6	6-UNI
41.521.1206	12	12.7	70	25	6	6-UNI

› 41.523 Phantom

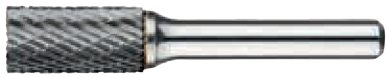


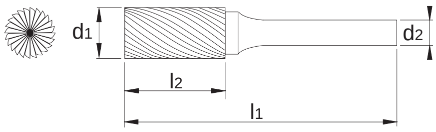
NL Hardmetaal Stiftfrees model B, cilindrisch met kopvertanding, schacht 3 mm
FR Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout, queue 3 mm
ES Fresa rotativa Metal Duro forma B, cilíndrico con corte al centro, mango 3 mm
DE Hartmetall Frässtift Form B, Zylinderform mit Stirnverzahnung, Schaft 3 mm
EN Carbide Burr model B, cylindrical with End Cut, shank 3 mm

HM | B | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.523.0153	1.5	1.5	38	6	3	3-FINE
41.523.0206	2	2	38	11	3	6-UNI
41.523.0301	3	3	38	14	3	1-ALU
41.523.0303	3	3	38	14	3	3-FINE
41.523.0304	3	3	38	14	3	4-DIAMOND
41.523.0306	3	3	38	14	3	6-UNI
41.523.0506	5	5	38	12.7	3	6-UNI
41.523.0636	6	6.3	38	12.7	3	6-UNI

› 41.528 Phantom



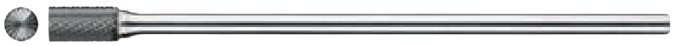


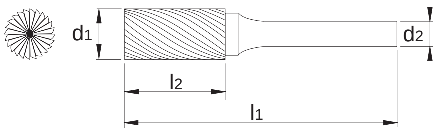
NL Hardmetaal Stiftfrees model B, cilindrisch met kopvertanding, schacht 8 mm
FR Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout, queue 8 mm
ES Fresa rotativa Metal Duro forma B, cilíndrico con corte al centro, mango 8 mm
DE Hartmetall Frässtift Form B, Zylinderform mit Stirnverzahnung, Schaft 8 mm
EN Carbide Burr model B, cylindrical with End Cut, shank 8 mm

HM | B | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.528.1286	12	12.7	70	25	8	6-UNI
41.528.1686	16	16	70	25	8	6-UNI
41.528.2086	20	19	70	25	8	6-UNI

› 41.529 Phantom



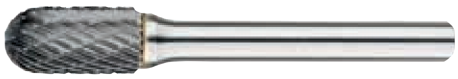


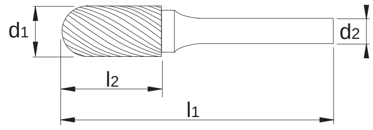
NL Hardmetaal Stiftfrees model B, cilindrisch met kopvertanding, schacht 6 mm, lang
FR Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout, queue 6 mm, version longue
ES Fresa rotativa Metal Duro forma B, cilíndrico con corte al centro, mango 6 mm, larga
DE Hartmetall Frässtift Form B, Zylinderform mit Stirnverzahnung, Schaft 6 mm, lang
EN Carbide Burr model B, cylindrical with End Cut, shank 6 mm, long

HM | B | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.529.0614	6	6	162	12.7	6	4-DIAMOND
41.529.1014	10	9.5	170	19	6	4-DIAMOND
41.529.1214	12	12.7	175	25	6	4-DIAMOND

› 41.530 Phantom





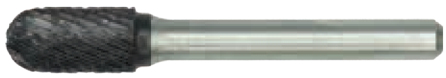
NL **Hardmetaal Stiftfrees model C, cilindrisch, ronde kop, schacht 6 mm**
FR **Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi, queue 6 mm**
ES **Fresa rotativa Metal Duro forma C, cilíndrico, forma semiesférica, mango 6 mm**
DE **Hartmetall Frässtift Form C, Walzenrundform, Schaft 6 mm**
EN **Carbide Burr model C, Cylindrical, ball nose, shank 6 mm**

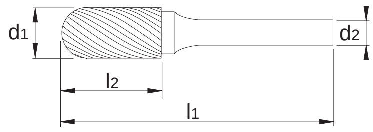
HM | C | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.530.0306	3	3	60	15	6	6-UNI
41.530.0406	4	4	60	15	6	6-UNI
41.530.0601	6	6	50	18	6	1-ALU
41.530.0603	6	6	50	18	6	3-FINE
41.530.0604	6	6	50	18	6	4-DIAMOND
41.530.0606	6	6	50	18	6	6-UNI
41.530.0608	6	6	50	18	6	8-STEEL
41.530.0609	6	6	50	18	6	9-INOX
41.530.0616	6	6	60	18	6	6-UNI
41.530.0636	6	6	100	18	6	6-UNI
41.530.0801	8	8	64	19	6	1-ALU
41.530.0803	8	8	64	19	6	3-FINE
41.530.0804	8	8	64	19	6	4-DIAMOND
41.530.0806	8	8	64	19	6	6-UNI
41.530.0808	8	8	64	19	6	8-STEEL
41.530.0809	8	8	64	19	6	9-INOX
41.530.1001	10	9.5	64	19	6	1-ALU

Ref.	Ø	d1	l1	l2	d2	z
41.530.1003	10	9.5	64	19	6	3-FINE
41.530.1004	10	9.5	64	19	6	4-DIAMOND
41.530.1006	10	9.5	64	19	6	6-UNI
41.530.1008	10	9.5	64	19	6	8-STEEL
41.530.1009	10	9.5	64	19	6	9-INOX
41.530.1201	12	12.7	70	25	6	1-ALU
41.530.1203	12	12.7	70	25	6	3-FINE
41.530.1204	12	12.7	70	25	6	4-DIAMOND
41.530.1206	12	12.7	70	25	6	6-UNI
41.530.1208	12	12.7	70	25	6	8-STEEL
41.530.1209	12	12.7	70	25	6	9-INOX
41.530.1601	16	16	70	25	6	1-ALU
41.530.1603	16	16	70	25	6	3-FINE
41.530.1604	16	16	70	25	6	4-DIAMOND
41.530.1606	16	16	70	25	6	6-UNI
41.530.2006	20	19	70	25	6	6-UNI

› 41.531 Phantom





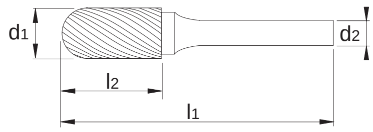
NL **Hardmetaal Stiftfrees model C, cilindrisch, ronde kop, schacht 6 mm, TiAlN**
FR **Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi, queue 6 mm, TiAlN**
ES **Fresa rotativa Metal Duro forma C, cilíndrico, forma semiesférica, mango 6 mm, TiAlN**
DE **Hartmetall Frässtift Form C, Walzenrundform, Schaft 6 mm, TiAlN**
EN **Carbide Burr model C, Cylindrical, ball nose, shank 6 mm, TiAlN**

HM | TiAlN | C | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.531.0606	6	6	50	18	6	6-UNI
41.531.0626	6	6	80	18	6	6-UNI
41.531.0806	8	8	64	19	6	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.531.1006	10	9.5	64	19	6	6-UNI
41.531.1206	12	12.7	70	25	6	6-UNI

› 41.533 Phantom



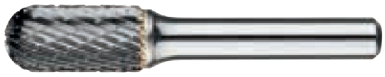
NL **Hardmetaal Stiftfrees model C, cilindrisch, ronde kop, schacht 3 mm**
FR **Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi, queue 3 mm**
ES **Fresa rotativa Metal Duro forma C, cilíndrico, forma semiesférica, mango 3 mm**
DE **Hartmetall Frässtift Form C, Walzenrundform, Schaft 3 mm**
EN **Carbide Burr model C, Cylindrical, ball nose, shank 3 mm**

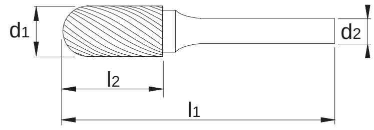
HM | C | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.533.0203	2	2	38	11	3	3-FINE
41.533.0206	2	2	38	11	3	6-UNI
41.533.0301	3	3	38	14	3	1-ALU
41.533.0303	3	3	38	14	3	3-FINE
41.533.0304	3	3	38	14	3	4-DIAMOND
41.533.0306	3	3	38	14	3	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.533.0309	3	3	38	14	3	9-INOX
41.533.0633	6	6.3	45	12.7	3	3-FINE
41.533.0634	6	6.3	45	12.7	3	4-DIAMOND
41.533.0636	6	6.3	45	12.7	3	6-UNI
41.533.0639	6	6.3	45	12.7	3	9-INOX

› 41.538 Phantom





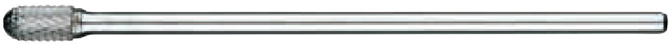
NL Hardmetaal Stiftfrees model C, cilindrisch, ronde kop, schacht 8 mm
FR Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi, queue 8 mm
ES Fresa rotativa Metal Duro forma C, cilíndrico, forma semiesférica, mango 8 mm
DE Hartmetall Frässtift Form C, Walzenrundform, Schaft 8 mm
EN Carbide Burr model C, Cylindrical, ball nose, shank 8 mm

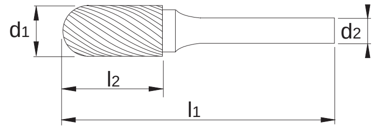
HM | C | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.538.1286	12	12.7	70	25	8	6-UNI
41.538.1686	16	16	70	25	8	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.538.2086	20	19	70	25	8	6-UNI

› 41.539 Phantom





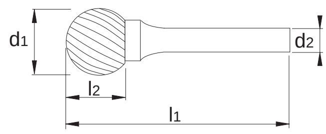
NL Hardmetaal Stiftfrees model C, cilindrisch, ronde kop, schacht 6 mm, lang
FR Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi, queue 6 mm, version longue
ES Fresa rotativa Metal Duro forma C, cilíndrico, forma semiesférica, mango 6 mm, larga
DE Hartmetall Frässtift Form C, Walzenrundform, Schaft 6 mm, lang
EN Carbide Burr model C, Cylindrical, ball nose, shank 6 mm, long

HM | C | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.539.0614	6	6	162	12.7	6	4-DIAMOND
41.539.1014	10	9.5	170	19	6	4-DIAMOND

Ref.	Ø	d1	l1	l2	d2	z
41.539.1214	12	12.7	175	25	6	4-DIAMOND

› 41.540 Phantom



NL Hardmetaal Stiftfrees model D, kogelvorm, schacht 6 mm
FR Fraise lime Carbure Forme D, Forme sphérique, queue 6 mm
ES Fresa rotativa Metal Duro forma D, modelo esférico, mango 6 mm
DE Hartmetall Frässtift Form D, Kugelform, Schaft 6 mm
EN Carbide Burr model D, ball, shank 6 mm

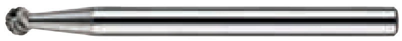
HM | D | Ø6

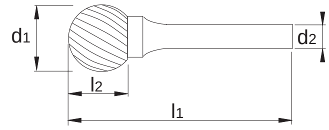
Ref.	Ø	d1	l1	l2	d2	z
41.540.0601	6	6	50	5	6	1-ALU
41.540.0603	6	6	50	5	6	3-FINE
41.540.0604	6	6	50	5	6	4-DIAMOND
41.540.0606	6	6	50	5	6	6-UNI
41.540.0608	6	6	50	5	6	8-STEEL
41.540.0609	6	6	50	5	6	9-INOX
41.540.0801	8	8	50	6.4	6	1-ALU
41.540.0803	8	8	50	6.4	6	3-FINE
41.540.0804	8	8	50	6.4	6	4-DIAMOND
41.540.0806	8	8	50	6.4	6	6-UNI
41.540.0808	8	8	50	6.4	6	8-STEEL
41.540.0809	8	8	50	6.4	6	9-INOX
41.540.1001	10	9.5	52	8	6	1-ALU
41.540.1003	10	9.5	52	8	6	3-FINE

Ref.	Ø	d1	l1	l2	d2	z
41.540.1004	10	9.5	52	8	6	4-DIAMOND
41.540.1006	10	9.5	52	8	6	6-UNI
41.540.1008	10	9.5	52	8	6	8-STEEL
41.540.1009	10	9.5	52	8	6	9-INOX
41.540.1201	12	12.7	55	11	6	1-ALU
41.540.1203	12	12.7	55	11	6	3-FINE
41.540.1204	12	12.7	55	11	6	4-DIAMOND
41.540.1206	12	12.7	55	11	6	6-UNI
41.540.1208	12	12.7	55	11	6	8-STEEL
41.540.1209	12	12.7	55	11	6	9-INOX
41.540.1601	16	16	58	14	6	1-ALU
41.540.1606	16	16	58	14	6	6-UNI
41.540.2006	20	19	62	16	6	6-UNI

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4

› 41.543 Phantom





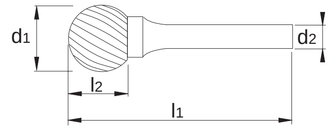
NL Hardmetaal Stiftfrees model D, kogelvorm, schacht 3 mm
FR Fraise lime Carbure Forme D, Forme sphérique, queue 3 mm
ES Fresa rotativa Metal Duro forma D, modelo esférico, mango 3 mm
DE Hartmetall Frässtift Form D, Kugelform, Schaft 3 mm
EN Carbide Burr model D, ball, shank 3 mm

HM | D | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.543.0203	2	2	38	1.8	3	3-FINE
41.543.0206	2	2	38	1.8	3	6-UNI
41.543.0301	3	3	38	2.5	3	1-ALU
41.543.0303	3	3	38	2.5	3	3-FINE
41.543.0304	3	3	38	2.5	3	4-DIAMOND
41.543.0306	3	3	38	2.5	3	6-UNI
41.543.0309	3	3	38	2.5	3	9-INOX

Ref.	Ø	d1	l1	l2	d2	z
41.543.0403	4	4	38	3.4	3	3-FINE
41.543.0406	4	4	38	3.4	3	6-UNI
41.543.0631	6	6.3	38	5	3	1-ALU
41.543.0633	6	6.3	38	5	3	3-FINE
41.543.0636	6	6.3	38	5	3	6-UNI
41.543.0639	6	6.3	38	5	3	9-INOX

› 41.548 Phantom



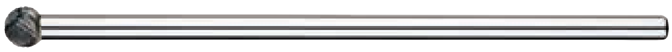
NL Hardmetaal Stiftfrees model D, kogelvorm, schacht 8 mm
FR Fraise lime Carbure Forme D, Forme sphérique, queue 8 mm
ES Fresa rotativa Metal Duro forma D, modelo esférico, mango 8 mm
DE Hartmetall Frässtift Form D, Kugelform, Schaft 8 mm
EN Carbide Burr model D, ball, shank 8 mm

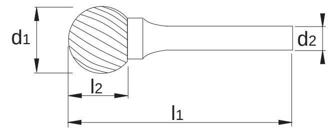
HM | D | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.548.1286	12	12.7	56	11	8	6-UNI
41.548.1686	16	16	59	14	8	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.548.2086	20	19	62	16.5	8	6-UNI

› 41.549 Phantom





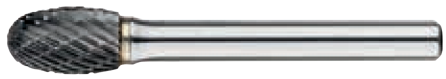
NL Hardmetaal Stiftfrees model D, kogelvorm, schacht 6 mm, lang
FR Fraise lime Carbure Forme D, Forme sphérique, queue 6 mm, version longue
ES Fresa rotativa Metal Duro forma D, modelo esférico, mango 6 mm, larga
DE Hartmetall Frässtift Form D, Kugelform, Schaft 6 mm, lang
EN Carbide Burr model D, ball, shank 6 mm, long

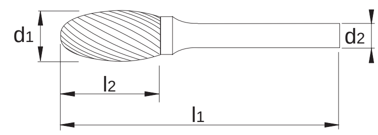
HM | D | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.549.1014	10	9.5	158	8	6	4-DIAMOND

Ref.	Ø	d1	l1	l2	d2	z
41.549.1214	12	12.7	161	11	6	4-DIAMOND

› 41.550 Phantom





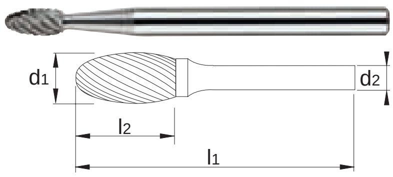
NL Hardmetaal Stiftfrees model E, druppelvorm, schacht 6 mm
FR Fraise lime Carbure Forme E, Forme goutte, queue 6 mm
ES Fresa rotativa Metal Duro forma E, forma oval, mango 6 mm
DE Hartmetall Frässtift Form E, Tropfenform, Schaft 6 mm
EN Carbide Burr model E, Oval, shank 6 mm

HM | E | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.550.0601	6	6	50	9.5	6	1-ALU
41.550.0606	6	6	50	9.5	6	6-UNI
41.550.0806	8	8	60	15	6	6-UNI
41.550.0809	8	8	60	15	6	9-INOX
41.550.1001	10	9.5	60	16	6	1-ALU
41.550.1004	10	9.5	60	16	6	4-DIAMOND
41.550.1006	10	9.5	60	16	6	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.550.1009	10	9.5	60	16	6	9-INOX
41.550.1201	12	12.7	66	22	6	1-ALU
41.550.1204	12	12.7	66	22	6	4-DIAMOND
41.550.1206	12	12.7	66	22	6	6-UNI
41.550.1209	12	12.7	66	22	6	9-INOX
41.550.1606	16	16	70	25	6	6-UNI
41.550.2003	20	19	69	25	6	3-FINE

› 41.553 *Phantom*



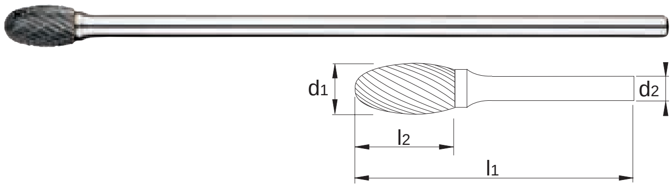
NL Hardmetaal Stiftfrees model E, druppelvorm, schacht 3 mm
FR Fraise lime Carbure Forme E, Forme goutte, queue 3 mm
ES Fresa rotativa Metal Duro forma E, forma oval, mango 3 mm
DE Hartmetall Frässtift Form E, Tropfenform, Schaft 3 mm
EN Carbide Burr model E, Oval, shank 3 mm

HM | E | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.553.0306	3	3	38	5.5	3	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.553.0636	6	6.3	42	9.5	3	6-UNI

› 41.559 *Phantom*

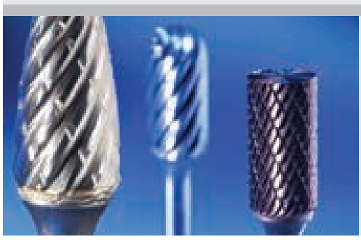


NL Hardmetaal Stiftfrees model E, druppelvorm, schacht 6 mm, lang
FR Fraise lime Carbure Forme E, Forme goutte, queue 6 mm, version longue
ES Fresa rotativa Metal Duro forma E, forma oval, mango 6 mm, larga
DE Hartmetall Frässtift Form E, Tropfenform, Schaft 6 mm, lang
EN Carbide Burr model E, Oval, shank 6 mm, long

HM | E | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.559.1014	10	9.5	166	16	6	4-DIAMOND

Ref.	Ø	d1	l1	l2	d2	z

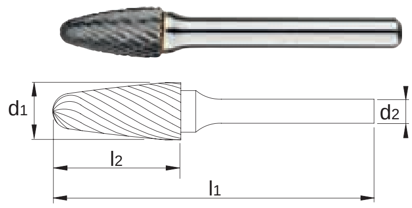


NL Stiftfrezen keuzehulp
FR Aide à la sélection des fraises lime
ES Ayuda para la selección de fresas rotativas
DE Auswahlhilfe Frässtifte
EN Selection guide for burrs

Read me

www.phantom.eu

› 41.560 *Phantom*



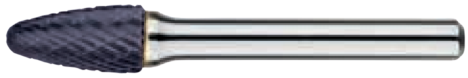
NL Hardmetaal Stiftfrees model F, boomvorm met ronde kop, schacht 6 mm
FR Fraise lime Carbure Forme F, Forme ogive à bout arrondi, queue 6 mm
ES Fresa rotativa Metal Duro forma F, forma ojival en semiesférica, mango 6 mm
DE Hartmetall Frässtift Form F, Rundbogenform, Schaft 6 mm
EN Carbide Burr model F, Ball nose tree, shank 6 mm

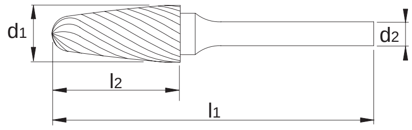
HM | F | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.560.0601	6	6	50	18	6	1-ALU
41.560.0603	6	6	50	18	6	3-FINE
41.560.0604	6	6	50	18	6	4-DIAMOND
41.560.0606	6	6	50	18	6	6-UNI
41.560.0608	6	6	50	18	6	8-STEEL
41.560.0609	6	6	50	18	6	9-INOX
41.560.0806	8	8	65	20	6	6-UNI
41.560.0808	8	8	65	20	6	8-STEEL
41.560.0809	8	8	65	20	6	9-INOX
41.560.1001	10	9.5	64	19	6	1-ALU
41.560.1003	10	9.5	64	19	6	3-FINE
41.560.1004	10	9.5	64	19	6	4-DIAMOND
41.560.1006	10	9.5	64	19	6	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.560.1008	10	9.5	64	19	6	8-STEEL
41.560.1009	10	9.5	64	19	6	9-INOX
41.560.1201	12	12.7	70	25	6	1-ALU
41.560.1203	12	12.7	70	25	6	3-FINE
41.560.1204	12	12.7	70	25	6	4-DIAMOND
41.560.1206	12	12.7	70	25	6	6-UNI
41.560.1208	12	12.7	70	25	6	8-STEEL
41.560.1209	12	12.7	70	25	6	9-INOX
41.560.1601	16	16	70	25	6	1-ALU
41.560.1604	16	16	70	25	6	4-DIAMOND
41.560.1606	16	16	70	25	6	6-UNI
41.560.2001	20	19	69	25	6	1-ALU
41.560.2013	20	19	82	38	6	3-FINE

› 41.561 Phantom



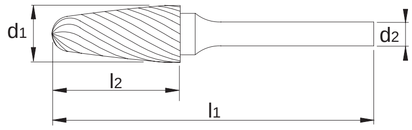


NL **Hardmetaal Stiftfrees model F, boomvorm met ronde kop, schacht 6 mm, TiAlN**
FR **Fraise lime Carbure Forme F, Forme ogive à bout arrondi, queue 6 mm, TiAlN**
ES **Fresa rotativa Metal Duro forma F, forma ojival en semiesférica, mango 6 mm, TiAlN**
DE **Hartmetall Frässtift Form F, Rundbogenform, Schaft 6 mm, TiAlN**
EN **Carbide Burr model F, Ball nose tree, shank 6 mm, TiAlN**

HM | TiAlN | F | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.561.0606	6	6	80	18	6	6-UNI
41.561.1006	10	9.5	64	19	6	6-UNI
41.561.1206	12	12.7	70	25	6	6-UNI

› 41.563 Phantom

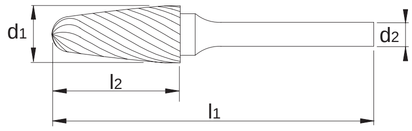


NL **Hardmetaal Stiftfrees model F, boomvorm met ronde kop, schacht 3 mm**
FR **Fraise lime Carbure Forme F, Forme ogive à bout arrondi, queue 3 mm**
ES **Fresa rotativa Metal Duro forma F, forma ojival en semiesférica, mango 3 mm**
DE **Hartmetall Frässtift Form F, Rundbogenform, Schaft 3 mm**
EN **Carbide Burr model F, Ball nose tree, shank 3 mm**

HM | F | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.563.0301	3	3	38	12.7	3	1-ALU
41.563.0303	3	3	38	12.7	3	3-FINE
41.563.0304	3	3	38	12.7	3	4-DIAMOND
41.563.0306	3	3	38	12.7	3	6-UNI
41.563.0309	3	3	38	12.7	3	9-INOX
41.563.0631	6	6.3	45	12.7	3	1-ALU
41.563.0633	6	6.3	45	12.7	3	3-FINE
41.563.0636	6	6.3	45	12.7	3	6-UNI
41.563.0639	6	6.3	45	12.7	3	9-INOX

› 41.568 Phantom

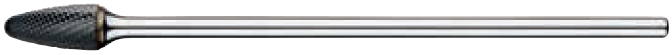


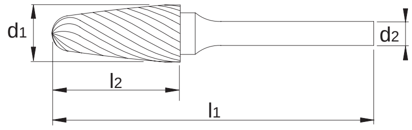
NL **Hardmetaal Stiftfrees model F, boomvorm met ronde kop, schacht 8 mm**
FR **Fraise lime Carbure Forme F, Forme ogive à bout arrondi, queue 8 mm**
ES **Fresa rotativa Metal Duro forma F, forma ojival en semiesférica, mango 8 mm**
DE **Hartmetall Frässtift Form F, Rundbogenform, Schaft 8 mm**
EN **Carbide Burr model F, Ball nose tree, shank 8 mm**

HM | F | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.568.1286	12	12.7	70	25	8	6-UNI
41.568.1686	16	16	70	25	8	6-UNI
41.568.2086	20	19	82	38	8	6-UNI

› 41.569 Phantom



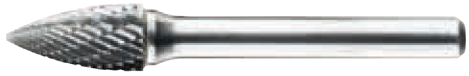


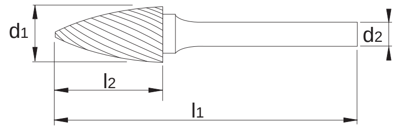
NL **Hardmetaal Stiftfrees model F, boomvorm met ronde kop, schacht 6 mm, lang**
FR **Fraise lime Carbure Forme F, Forme ogive à bout arrondi, queue 6 mm, version longue**
ES **Fresa rotativa Metal Duro forma F, forma ojival en semiesférica, mango 6 mm, larga**
DE **Hartmetall Frässtift Form F, Rundbogenform, Schaft 6 mm, lang**
EN **Carbide Burr model F, Ball nose tree, shank 6 mm, long**

HM | F | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.569.1214	12	12.7	175	25	6	4-DIAMOND

› 41.570 Phantom



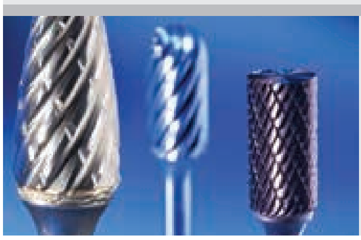


NL Hardmetaal Stiftfrees model G, boomvorm spits, schacht 6 mm
FR Fraise lime Carbure Forme G, Forme ogive, queue 6 mm
ES Fresa rotativa Metal Duro forma G, forma ojival en punta, mango 6 mm
DE Hartmetall Frässtift Form G, Spitzbogenform, Schaft 6 mm
EN Carbide Burr model G, pointed tree, shank 6 mm

HM | G | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.570.0601	6	6	50	18	6	1-ALU
41.570.0603	6	6	50	18	6	3-FINE
41.570.0604	6	6	50	18	6	4-DIAMOND
41.570.0606	6	6	50	18	6	6-UNI
41.570.0608	6	6	50	18	6	8-STEEL
41.570.0609	6	6	50	18	6	9-INOX
41.570.0801	8	8	64	19	6	1-ALU
41.570.0803	8	8	64	19	6	3-FINE
41.570.0804	8	8	64	19	6	4-DIAMOND
41.570.0806	8	8	64	19	6	6-UNI
41.570.0808	8	8	64	19	6	8-STEEL
41.570.0809	8	8	64	19	6	9-INOX
41.570.1001	10	9.5	64	19	6	1-ALU
41.570.1003	10	9.5	64	19	6	3-FINE
41.570.1004	10	9.5	64	19	6	4-DIAMOND

Ref.	Ø	d1	l1	l2	d2	z
41.570.1006	10	9.5	64	19	6	6-UNI
41.570.1008	10	9.5	64	19	6	8-STEEL
41.570.1009	10	9.5	64	19	6	9-INOX
41.570.1201	12	12.7	70	25	6	1-ALU
41.570.1203	12	12.7	70	25	6	3-FINE
41.570.1204	12	12.7	70	25	6	4-DIAMOND
41.570.1206	12	12.7	70	25	6	6-UNI
41.570.1208	12	12.7	70	25	6	8-STEEL
41.570.1209	12	12.7	70	25	6	9-INOX
41.570.1601	16	16	70	25	6	1-ALU
41.570.1603	16	16	70	25	6	3-FINE
41.570.1604	16	16	70	25	6	4-DIAMOND
41.570.1606	16	16	70	25	6	6-UNI
41.570.2001	20	19	69	25	6	1-ALU
41.570.2003	20	19	69	25	6	3-FINE

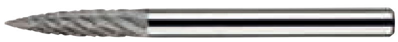


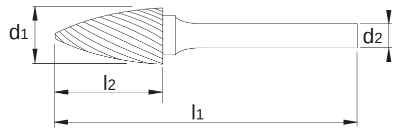
NL Stiftfrezen keuzehulp
FR Aide à la sélection des fraises lime
ES Ayuda para la selección de fresas rotativas
DE Auswahlhilfe Frässtifte
EN Selection guide for burrs

Read me

www.phantom.eu

› 41.573 Phantom





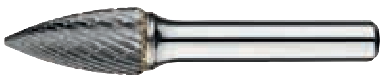
NL Hardmetaal Stiftfrees model G, boomvorm spits, schacht 3 mm
FR Fraise lime Carbure Forme G, Forme ogive, queue 3 mm
ES Fresa rotativa Metal Duro forma G, forma ojival en punta, mango 3 mm
DE Hartmetall Frässtift Form G, Spitzbogenform, Schaft 3 mm
EN Carbide Burr model G, pointed tree, shank 3 mm

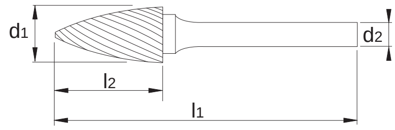
HM | G | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.573.0301	3	3	38	10	3	1-ALU
41.573.0303	3	3	38	10	3	3-FINE
41.573.0304	3	3	38	10	3	4-DIAMOND

Ref.	Ø	d1	l1	l2	d2	z
41.573.0306	3	3	38	10	3	6-UNI
41.573.0633	6	6.3	45	12.7	3	3-FINE
41.573.0636	6	6.3	45	12.7	3	6-UNI

› 41.578 Phantom





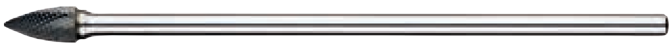
NL Hardmetaal Stiftfrees model G, boomvorm spits, schacht 8 mm
FR Fraise lime Carbure Forme G, Forme ogive, queue 8 mm
ES Fresa rotativa Metal Duro forma G, forma ojival en punta, mango 8 mm
DE Hartmetall Frässtift Form G, Spitzbogenform, Schaft 8 mm
EN Carbide Burr model G, pointed tree, shank 8 mm

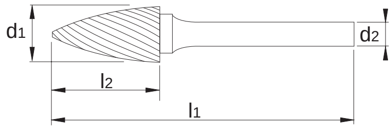
HM | G | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.578.1286	12	12.7	70	25	8	6-UNI
41.578.1686	16	16	70	25	8	6-UNI

Ref.	Ø	d1	l1	l2	d2	z
41.578.2086	20	19	83	38	8	6-UNI

› 41.579 Phantom



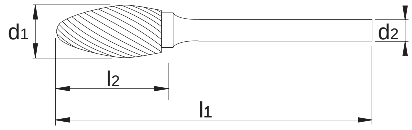


NL Hardmetaal Stiftfrees model G, boomvorm spits, schacht 6 mm, lang
FR Fraise lime Carbure Forme G, Forme ogive, queue 6 mm, version longue
ES Fresa rotativa Metal Duro forma G, forma ojival en punta, mango 6 mm, larga
DE Hartmetall Frässtift Form G, Spitzbogenform, Schaft 6 mm, lang
EN Carbide Burr model G, pointed tree, shank 6 mm, long

HM | G | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.579.0614	6	6	164	12.7	6	4-DIAMOND
41.579.1014	10	9.5	170	19	6	4-DIAMOND
41.579.1214	12	12.7	175	25	6	4-DIAMOND

› 41.580 Phantom

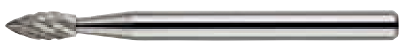


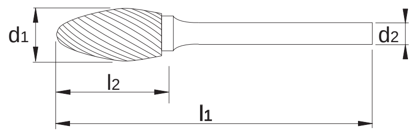
NL Hardmetaal Stiftfrees model H, vlamvorm, schacht 6 mm
FR Fraise lime Carbure Forme H, Forme flamme, queue 6 mm
ES Fresa rotativa Metal Duro forma H, forma llama, mango 6 mm
DE Hartmetall Frässtift Form H, Flammenform, Schaft 6 mm
EN Carbide Burr model H, flame, shank 6 mm

HM | H | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.580.0606	6	6	50	9.5	6	6-UNI
41.580.0801	8	8	64	19	6	1-ALU
41.580.0803	8	8	64	19	6	3-FINE
41.580.0804	8	8	64	19	6	4-DIAMOND
41.580.0806	8	8	64	19	6	6-UNI
41.580.0808	8	8	64	19	6	8-STEEL
41.580.0809	8	8	64	19	6	9-INOX
41.580.1006	10	9.5	65	19	6	6-UNI
41.580.1009	10	9.5	65	19	6	9-INOX
41.580.1201	12	12.7	77	32	6	1-ALU
41.580.1203	12	12.7	77	32	6	3-FINE
41.580.1204	12	12.7	77	32	6	4-DIAMOND
41.580.1206	12	12.7	77	32	6	6-UNI
41.580.1208	12	12.7	77	32	6	8-STEEL
41.580.1209	12	12.7	77	32	6	9-INOX
41.580.1601	16	16	80	36	6	1-ALU
41.580.1603	16	16	80	36	6	3-FINE
41.580.1606	16	16	80	36	6	6-UNI
41.580.2003	20	19	85	41	6	3-FINE

› 41.583 Phantom



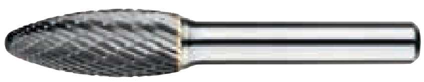


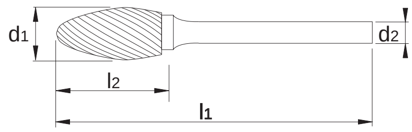
NL Hardmetaal Stiftfrees model H, vlamvorm, schacht 3 mm
FR Fraise lime Carbure Forme H, Forme flamme, queue 3 mm
ES Fresa rotativa Metal Duro forma H, forma llama, mango 3 mm
DE Hartmetall Frässtift Form H, Flammenform, Schaft 3 mm
EN Carbide Burr model H, flame, shank 3 mm

HM | H | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.583.0306	3	3	38	6.3	3	6-UNI
41.583.0636	6	6	43	10	3	6-UNI

› 41.588 Phantom



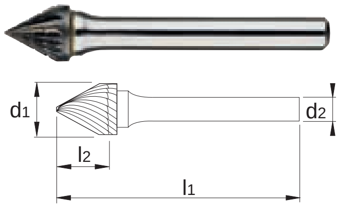


NL Hardmetaal Stiftfrees model H, vlamvorm, schacht 8 mm
FR Fraise lime Carbure Forme H, Forme flamme, queue 8 mm
ES Fresa rotativa Metal Duro forma H, forma llama, mango 8 mm
DE Hartmetall Frässtift Form H, Flammenform, Schaft 8 mm
EN Carbide Burr model H, flame, shank 8 mm

HM | H | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.588.1286	12	12.7	77	32	8	6-UNI
41.588.1686	16	16	81	36	8	6-UNI
41.588.2086	20	19	86	41	8	6-UNI

› 41.600 Phantom



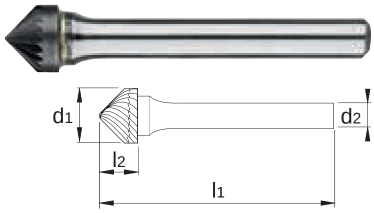
NL Hardmetaal Stiftfrees model J, kegelvorm 60°, schacht 6 mm
FR Fraise lime Carbure Forme J, Forme conique pointue 60°, queue 6 mm
ES Fresa rotativa Metal Duro forma J, forma cónica 60°, mango 6 mm
DE Hartmetall Frässtift Form J, Kegelsenkform 60°, Schaft 6 mm
EN Carbide Burr model J, countersink 60°, shank 6 mm

HM | J | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.600.0601	6	6	50	4	6	1-ALU
41.600.0606	6	6	50	4	6	6-UNI
41.600.1003	10	9.5	55	8	6	3-FINE
41.600.1006	10	9.5	55	8	6	6-UNI
41.600.1206	12	12.7	58	11	6	6-UNI
41.600.1601	16	16	61	14.5	6	1-ALU

Ref.	Ø	d1	l1	l2	d2	z
41.600.1606	16	16	61	14.5	6	6-UNI
41.600.2001	20	19	65	17.5	6	1-ALU
41.600.2003	20	19	65	17.5	6	3-FINE
41.600.2004	20	19	65	17.5	6	4-DIAMOND
41.600.2006	20	19	65	17.5	6	6-UNI

› 41.610 Phantom



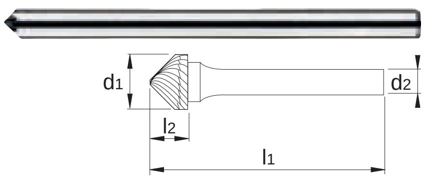
NL Hardmetaal Stiftfrees model K, kegelvorm 90°, schacht 6 mm
FR Fraise lime Carbure Forme K, Forme conique pointue 90°, queue 6 mm
ES Fresa rotativa Metal Duro forma K, forma cónica 90°, mango 6 mm
DE Hartmetall Frässtift Form K, Kegelsenkform 90°, Schaft 6 mm
EN Carbide Burr model K, countersink 90°, shank 6 mm

HM | K | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.610.0601	6	6	50	3	6	1-ALU
41.610.0603	6	6	50	6	6	3-FINE
41.610.0604	6	6	50	3	6	4-DIAMOND
41.610.1003	10	9.5	52	4.7	6	3-FINE

Ref.	Ø	d1	l1	l2	d2	z
41.610.1004	10	9.5	52	4.7	6	4-DIAMOND
41.610.1203	12	12.7	54	6.3	6	3-FINE
41.610.1603	16	16	57	8	6	3-FINE
41.610.2003	20	20	61	20	6	3-FINE

› 41.613 Phantom

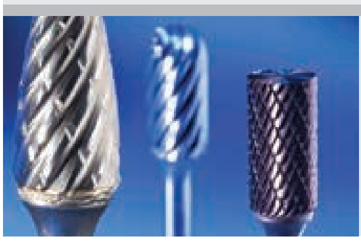


NL Hardmetaal Stiftfrees model K, kegelvorm 90°, schacht 3 mm
FR Fraise lime Carbure Forme K, Forme conique pointue 90°, queue 3 mm
ES Fresa rotativa Metal Duro forma K, forma cónica 90°, mango 3 mm
DE Hartmetall Frässtift Form K, Kegelsenkform 90°, Schaft 3 mm
EN Carbide Burr model K, countersink 90°, shank 3 mm

HM | K | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.613.0303	3	3	38	1.5	3	3-FINE

Ref.	Ø	d1	l1	l2	d2	z

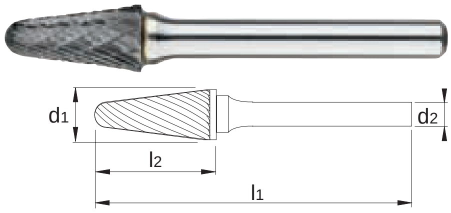


NL Stiftfrezen keuzehulp
FR Aide à la sélection des fraises lime
ES Ayuda para la selección de fresas rotativas
DE Auswahlhilfe Frässtifte
EN Selection guide for burrs

Read me

www.phantom.eu

› 41.620 Phantom

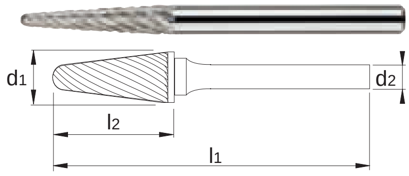


NL Hardmetaal Stiftfrees model L, kegelvorm, met ronde kop, schacht 6 mm
FR Fraise lime Carbure Forme L, Forme conique à bout arrondi, queue 6 mm
ES Fresa rotativa Metal Duro forma L, forma cónica, con punta redondeada, mango 6 mm
DE Hartmetall Frässtift Form L, Rundkegelform, Schaft 6 mm
EN Carbide Burr model L, ball nose cone, shank 6 mm

HM | L | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.620.0601	6	6	50	16	6	1-ALU
41.620.0603	6	6	50	16	6	3-FINE
41.620.0604	6	6	50	16	6	4-DIAMOND
41.620.0606	6	6	50	16	6	6-UNI
41.620.0801	8	8	70	22	6	1-ALU
41.620.0806	8	8	70	22	6	6-UNI
41.620.0809	8	8	70	22	6	9-INOX
41.620.1001	10	9.5	74	27	6	1-ALU
41.620.1006	10	9.5	74	27	6	6-UNI
41.620.1008	10	9.5	74	27	6	8-STEEL
41.620.1009	10	9.5	74	27	6	9-INOX
41.620.1201	12	12.7	76	28	6	1-ALU
41.620.1204	12	12.7	76	28	6	4-DIAMOND
41.620.1206	12	12.7	76	28	6	6-UNI
41.620.1208	12	12.7	76	28	6	8-STEEL
41.620.1209	12	12.7	76	28	6	9-INOX
41.620.1604	16	16	77	30	6	4-DIAMOND
41.620.1606	16	16	77	30	6	6-UNI

› 41.623 Phantom

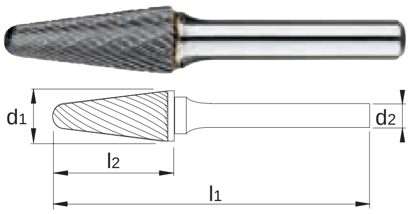


NL Hardmetaal Stiftfrees model L, kegelvorm, met ronde kop, schacht 3 mm
FR Fraise lime Carbure Forme L, Forme conique à bout arrondi, queue 3 mm
ES Fresa rotativa Metal Duro forma L, forma cónica, con punta redondeada, mango 3 mm
DE Hartmetall Frässtift Form L, Rundkegelform, Schaft 3 mm
EN Carbide Burr model L, ball nose cone, shank 3 mm

HM | L | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.623.0301	3	3	38	12.7	3	1-ALU
41.623.0303	3	3	38	12.7	3	3-FINE
41.623.0304	3	3	38	12.7	3	4-DIAMOND
41.623.0306	3	3	38	12.7	3	6-UNI

› 41.628 Phantom

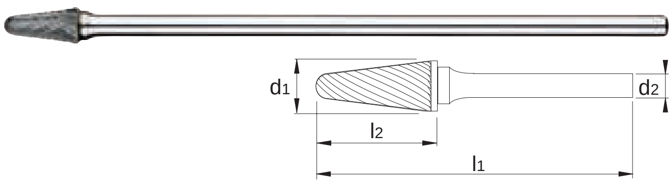


NL Hardmetaal Stiftfrees model L, kegelvorm, met ronde kop, schacht 8 mm
FR Fraise lime Carbure Forme L, Forme conique à bout arrondi, queue 8 mm
ES Fresa rotativa Metal Duro forma L, forma cónica, con punta redondeada, mango 8 mm
DE Hartmetall Frässtift Form L, Rundkegelform, Schaft 8 mm
EN Carbide Burr model L, ball nose cone, shank 8 mm

HM | L | Ø8

Ref.	Ø	d1	l1	l2	d2	z
41.628.1286	12	12.7	77	32	8	6-UNI
41.628.1686	16	16	78	33	8	6-UNI
41.628.2086	20	19	86	41	8	6-UNI

› 41.629 Phantom

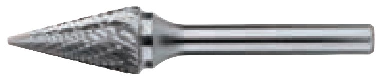


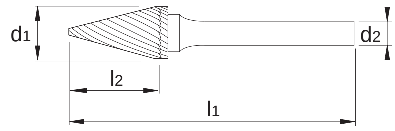
NL Hardmetaal Stiftfrees model L, kegelvorm, met ronde kop, schacht 6 mm, lang
FR Fraise lime Carbure Forme L, Forme conique à bout arrondi, queue 6 mm, version longue
ES Fresa rotativa Metal Duro forma L, forma cónica, con punta redondeada, mango 6 mm, larga
DE Hartmetall Frässtift Form L, Rundkegelform, Schaft 6 mm, lang
EN Carbide Burr model L, ball nose cone, shank 6 mm, long

HM | L | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.629.1214	12	12.7	178	28	6	4-DIAMOND

› 41.630 Phantom

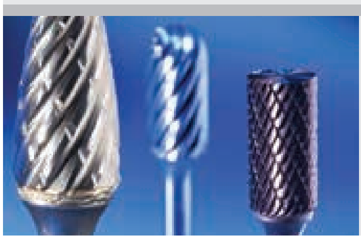




NL **Hardmetaal Stiftfrees model M, kegelvorm, spits, schacht 6 mm**
FR **Fraise lime Carbure Forme M, Forme conique à bout pointu, queue 6 mm**
ES **Fresa rotativa Metal Duro forma M, forma cónica, en punta, mango 6 mm**
DE **Hartmetall Frässtift Form M, Spitzkegelform, Schaft 6 mm**
EN **Carbide Burr model M, cone, shank 6 mm**

HM | M | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.630.0601	6	6	50	12.7	6	1-ALU
41.630.0603	6	6	50	12.7	6	3-FINE
41.630.0606	6	6	50	12.7	6	6-UNI
41.630.0611	6	6	50	19	6	1-ALU
41.630.0613	6	6	50	19	6	3-FINE
41.630.0616	6	6	50	19	6	6-UNI
41.630.0621	6	6	50	25	6	1-ALU
41.630.0623	6	6	50	25	6	3-FINE
41.630.0626	6	6	50	25	6	6-UNI
41.630.0806	8	8	63	18	6	6-UNI
41.630.1001	10	9.5	64	16	6	1-ALU
41.630.1003	10	9.5	64	16	6	3-FINE
41.630.1006	10	9.5	64	16	6	6-UNI
41.630.1201	12	12.7	70	22	6	1-ALU
41.630.1203	12	12.7	70	22	6	3-FINE
41.630.1206	12	12.7	70	22	6	6-UNI
41.630.1601	16	16	73	25	6	1-ALU
41.630.1603	16	16	73	25	6	3-FINE
41.630.1606	16	16	73	25	6	6-UNI

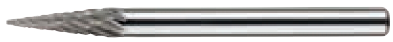


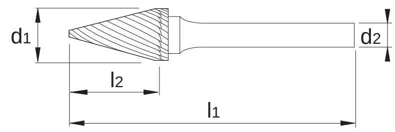
NL Stiftfrezen keuzehulp
FR Aide à la sélection des fraises lime
ES Ayuda para la selección de fresas rotativas
DE Auswahlhilfe Frässtifte
EN Selection guide for burrs

Read me

www.phantom.eu

› 41.633 Phantom



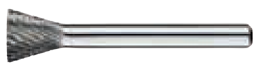


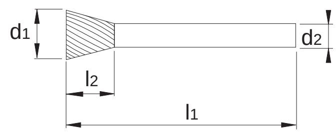
NL **Hardmetaal Stiftfrees model M, kegelvorm, spits, schacht 3 mm**
FR **Fraise lime Carbure Forme M, Forme conique à bout pointu, queue 3 mm**
ES **Fresa rotativa Metal Duro forma M, forma cónica, en punta, mango 3 mm**
DE **Hartmetall Frässtift Form M, Spitzkegelform, Schaft 3 mm**
EN **Carbide Burr model M, cone, shank 3 mm**

HM | M | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.633.0301	3	3	38	11	3	1-ALU
41.633.0303	3	3	38	11	3	3-FINE
41.633.0306	3	3	38	11	3	6-UNI

› 41.640 Phantom





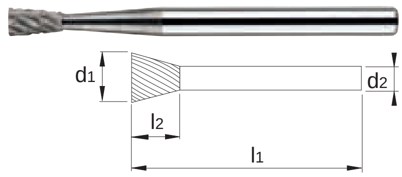
NL **Hardmetaal Stiftfrees model N, omgekeerde kegelvorm, schacht 6 mm**
FR **Fraise lime Carbure Forme N, Forme conique inversée, queue 6 mm**
ES **Fresa rotativa Metal Duro forma N, forma de cono invertido, mango 6 mm**
DE **Hartmetall Frässtift Form N, Winkelfrässtifte, Schaft 6 mm**
EN **Carbide Burr model N, Inverted cone, shank 6 mm**

HM | N | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.640.0606	6	6	50	8	6	6-UNI
41.640.0806	8	8	53	9.5	6	6-UNI
41.640.1206	12	12.7	57	12.7	6	6-UNI
41.640.1606	16	16	63	19	6	6-UNI
41.640.1903	19	19	63	19	6	3-FINE
41.640.1904	19	19	63	19	6	4-DIAMOND
41.640.2003	20	20	65	20	6	3-FINE

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4

› 41.643 Phantom

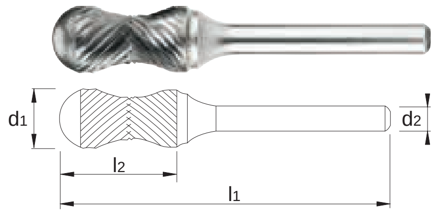


NL Hardmetaal Stiftfrees model N, omgekeerde kegelvorm, schacht 3 mm
FR Fraise lime Carbure Forme N, Forme conique inversée, queue 3 mm
ES Fresa rotativa Metal Duro forma N, forma de cono invertido, mango 3 mm
DE Hartmetall Frässtift Form N, Winkelfrässtifte, Schaft 3 mm
EN Carbide Burr model N, Inverted cone, shank 3 mm

HM | N | Ø3

Ref.	Ø	d1	l1	l2	d2	z
41.643.0306	3	3	38	4	3	6-UNI

› 41.650 Phantom

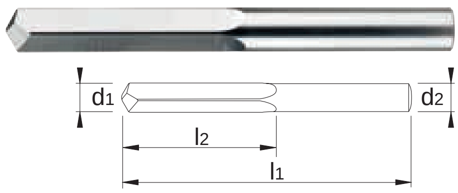


NL Hardmetaal Stiftfrees model X, schacht 6 mm, concave vorm
FR Fraise lime Carbure Forme X, queue 6 mm, forme concave
ES Fresa rotativa Metal Duro forma X, mango 6 mm, forma cóncava
DE Hartmetall Frässtift Form X, Schaft 6 mm, konkave Form
EN Carbide Burr model X, shank 6 mm, concave form

HM | X | Ø6

Ref.	Ø	d1	l1	l2	d2	z
41.650.1203	12	12.7	70	25	6	3-FINE

› 41.690 Phantom

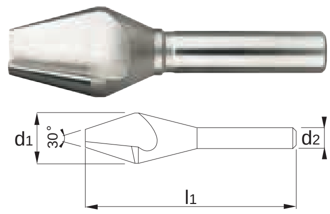


NL hardmetaal Cilinderslot breker
FR Foret destructeur de serrure Carbure
ES Fresa de cerrajero carburo
DE Hartmetall Zylinderschlossöffner
EN carbide Cylinder lock opener

HM | Ø6

Ref.	Ø	d1	l1	l2	d2
41.690.4606	4.6	4.6	60	30	6
41.690.4626	4.6	4.6	80	30	6

› 42.100 Phantom



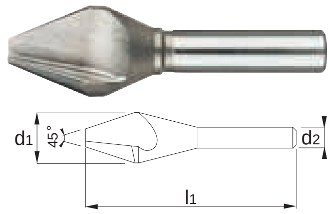
NL HSS-E Verzinkboor 30°, 1 snijkant
FR Fraise à chanfreiner HSS-E 30°, 1 dent
ES Avellanador para desbarbar HSS-E 30°, 1 labio
DE HSS-E Kegelsenker 30°, 1 Schneide
EN HSS-E Countersink 30°, 1 flute

HSS-E | 1 | 30°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.100.1000	10	6-10	49	6
42.100.1500	15	9-15	61	8
42.100.2000	20	12-20	72	10
42.100.2500	25	14-25	87	12
42.100.3000	30	17-30	94	12

› 42.200 Phantom



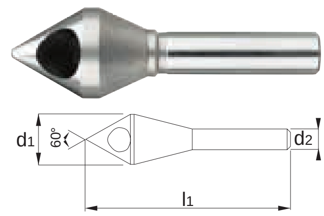
NL HSS-E Verzinkboor 45°, 1 snijkant
FR Fraise à chanfreiner HSS-E 45°, 1 dent
ES Avellanador para desbarbar HSS-E 45°, 1 labio
DE HSS-E Kegelsenker 45°, 1 Schneide
EN HSS-E Countersink 45°, 1 flute

HSS-E | 1 | 45°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	30-40 C	20-30 D	55-65 I	30-40 F	20-30 E	30-40 D	5-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.200.0600	6	3-6	43	6
42.200.1000	10	4-10	49	6
42.200.1500	15	5-15	61	8
42.200.2000	20	7-20	72	10
42.200.2500	25	8-25	87	12
42.200.3000	30	10-30	94	12

› 42.300 Phantom



NL HSS-E Verzinkboor 60°, schuin gat
FR Fraise à chanfreiner HSS-E 60°, à trou
ES Avellanador para desbarbar HSS-E 60°, con agujero
DE HSS-E Kegelsenker 60°, Querloch
EN HSS-E Countersink 60°, through hole

HSS-E | O | 60°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

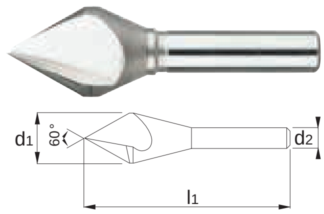
Ref.	d1	Min-Max Ø	l1	d2
42.300.1000	10	5-9	49	6
42.300.1500	15	8-14	60	8
42.300.2000	20	10-18	72	10
42.300.2500	25	12-23	87	12
42.300.3000	30	15-28	93	12

NL Dwarsgat- eensnijder- en driesnijderverzinker
FR Différences entre une fraise à chanfreiner à trou, une fraise à chanfreiner à 1 dent et une fraise à chanfreiner à 3 dents
ES Avellanador con agujero, 1 labio o 3 labios
DE Querlochsenker, Einschneidersenker, Dreischneidersenker
EN Hole, single flute, 3 flute countersinker

Watch me

www.phantom.eu

› 42.320 Phantom



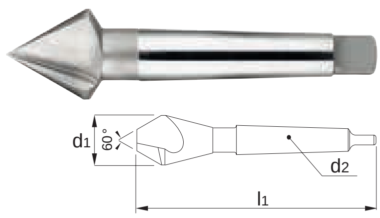
NL **HSS-E Verzinkboor 60°, 1 snijkant**
FR **Fraise à chanfreiner HSS-E 60°, 1 dent**
ES **Avellanador para desbarbar HSS-E 60°, 1 labio**
DE **HSS-E Kegelsenker 60°, 1 Schneide**
EN **HSS-E Countersink 60°, 1 flute**

HSS-E | 1 | 60°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.320.0600	6	1-6	43	6
42.320.1000	10	1-10	49	6
42.320.1200	12	2-12	53	8
42.320.1500	15	2-15	60	8
42.320.2000	20	2-20	72	10
42.320.2500	25	3-25	87	12
42.320.3000	30	3-30	98	12

› 42.330 Phantom



NL **HSS-E Verzinkboor 60°, 1 snijkant, MK**
FR **Fraise à chanfreiner HSS-E 60°, 1 dent, CM**
ES **Avellanador para desbarbar HSS-E 60°, 1 labio, CM**
DE **HSS-E Kegelsenker 60°, 1 Schneide, MK**
EN **HSS-E Countersink 60°, 1 flute, MT**

HSS-E | 1 | 60° | DIN 228-B

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

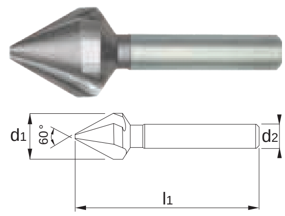
Ref.	d1	Min-Max Ø	l1	d2
42.330.1500	15	2-15	96	MK 1
42.330.2000	20	2-20	104	MK 1
42.330.2500	25	3-25	106	MK 1
42.330.3002	30	3-30	125	MK 2
42.330.4000	40	5-40	158	MK 3
42.330.6300	63	8-63	199	MK 3

NL Verzinken uitleg
FR Informations sur le chanfreinage
ES Explicación del avellanado
DE Senken erklärt
EN Countersinking explained

Read me

www.phantom.eu

› 42.347 Phantom



NL **HP2 UNI HSS-E Vari Verzinkboor 60°, 3 snijkanten**
FR **Fraise à chanfreiner Vari HSS-E HP2 UNI 60°, 3 taillants**
ES **Avellanador Vari HSS-E HP2 UNI 60°, 3 labios**
DE **HP2 UNI HSS-E Kegelsenker ungleichteilung 60°, 3 Schneiden**
EN **HP2 UNI HSS-E Vari Countersink 60°, 3 flute**

HSS-E | DIN 334-C | 3 | 3 | 60° | VARI | HP2 UNI

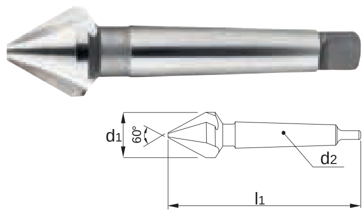
NIEUW NOUVEAU NUEVO NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
25-35 H	20-30 F	15-25 F	7-13 A	10-18 B	9-15 A	20-30 H	20-30 H	40-60 I	30-40 I	30-40 G	20-30 G	40-60 I

Ref.	d1	Min-Max Ø	l1	d2
42.347.0630	6.3	1,5-6,3	47	5
42.347.0830	8.3	2-8,3	52	6
42.347.1040	10.4	2,5-10,4	53	6
42.347.1240	12.4	3-12,4	60	8
42.347.1650	16.5	4-16,5	65	10
42.347.2050	20.5	4-20,5	69	10
42.347.2500	25	5-25	75	10
42.347.3100	31	6-31	81	12

42.370 Phantom

NL HSS-E Verzinkboor 60°, 3 snijkanten, MK
FR Fraise à chanfreiner HSS-E 60°, 3 taillants, CM
ES Avellanador para desbarbar HSS-E 60°, 3 labios, CM
DE HSS-E Kegelsenker 60°, 3 Schneiden, MK
EN HSS-E Countersink 60°, 3 flute, MT



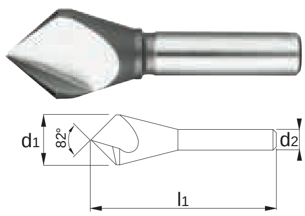
HSS-E | DIN 334-D | 3 | 3 | 60° | DIN 228-B

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	d1	Min-Max Ø	l1	d2
42.370.2050	20.5	4-20,5	100	MK 1
42.370.2500	25	6-25	112	MK 2
42.370.3100	31	6-31	122	MK 2
42.370.4000	40	8-40	158	MK 3
42.370.5000	50	10-50	172	MK 3
42.370.6300	63	10-63	199	MK 3
42.370.8000	80	14-80	239	MK 4

42.420 Phantom

NL HSS-E Verzinkboor 82°, 1 snijkant
FR Fraise à chanfreiner HSS-E 82°, 1 dent
ES Avellanador para desbarbar HSS-E 82°, 1 labio
DE HSS-E Kegelsenker 82°, 1 Schneide
EN HSS-E Countersink 82°, 1 flute



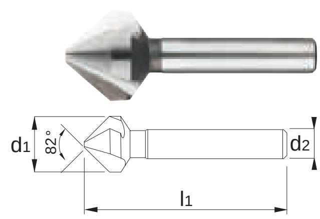
HSS-E | 1 | 82°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.420.1200	12	2-12	50	8
42.420.1500	15	2-15	56	8

42.440 Phantom

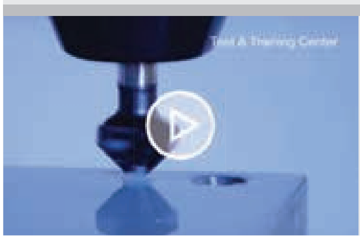
NL HSS-E Verzinkboor 82°, 3 snijkanten
FR Fraise à chanfreiner HSS-E 82°, 3 taillants
ES Avellanador para desbarbar HSS-E 82°, 3 labios
DE HSS-E Kegelsenker 82°, 3 Schneiden
EN HSS-E Countersink 82°, 3 flute



HSS-E | 3 | 3 | 82°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	d1	Min-Max Ø	l1	d2
42.440.0630	6.3	1,5-6,3	45	5
42.440.0830	8.3	2,5-8,3	50	6
42.440.1040	10.4	2,5-10,4	50	6
42.440.1240	12.4	3-12,4	56	8
42.440.1650	16.5	4-16,5	61	10
42.440.2050	20.5	4-20,5	64	10
42.440.2500	25	5-25	68	10
42.440.3100	31	6-31	73	12

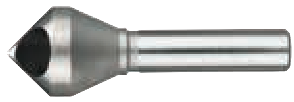


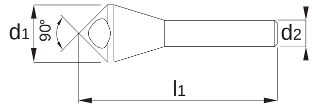
NL Vari verzinkboren in actie
FR Il n'y pas de limites avec notre nouvelle génération de fraises à chanfreiner
ES Los avellanadores Vari en acción
DE Vari-Kegelsenker in Aktion
EN Vari-countersinks in action

Watch me

www.phantom.eu

› 42.500 Phantom





NL HSS-E Verzinkboor 90°, schuin gat
FR Fraise à chanfreiner HSS-E 90°, à trou
ES Avellanador para desbarbar HSS-E 90°, con agujero
DE HSS-E Kegelsenker 90°, Querloch
EN HSS-E Countersink 90°, through hole

HSS-E | 90°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

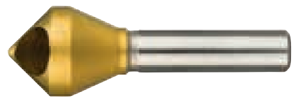
Ref.	d1	Min-Max Ø	l1	d2
42.500.0500	5	2-5	45	6
42.500.1000	10	4-9	45	6
42.500.1500	15	6-14	55	8
42.500.2000	20	8-18	65	10
42.500.2500	25	10-23	78	12
42.500.2800	28	11-26	86	12
42.500.3000	30	12-28	88	12
42.500.3500	35	14-33	116	16
42.500.4000	40	16-38	132	16
42.500.5000	50	20-48	136	16

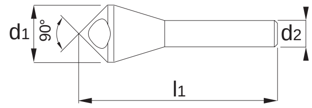
NL Verzinken keuzehulp
FR Aide à la sélection des fraises à chanfreiner
ES Ayuda para la selección de avellanadores
DE Auswahlhilfe Kegelsenker
EN Countersink selection guide

Read me

www.phantom.eu

› 42.501 Phantom





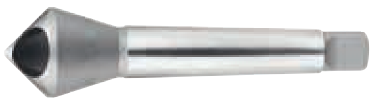
NL HSS-E Verzinkboor 90°, TiN, schuin gat
FR Fraise à chanfreiner HSS-E 90°, TiN, à trou
ES Avellanador para desbarbar HSS-E 90°, TiN, con agujero
DE HSS-E Kegelsenker 90°, TiN, Querloch
EN HSS-E Countersink 90°, TiN, through hole

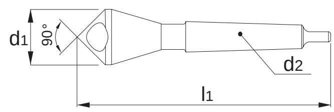
HSS-E | TiN | 90°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.501.0500	5	2-5	45	6
42.501.1000	10	4-9	45	6
42.501.1500	15	6-14	55	8
42.501.2000	20	8-18	65	10
42.501.2500	25	10-23	78	12
42.501.3000	30	12-28	88	12

› 42.510 Phantom





NL HSS-E Verzinkboor 90°, schuin gat, MK
FR Fraise à chanfreiner HSS-E 90°, à trou, CM
ES Avellanador para desbarbar HSS-E 90°, con agujero, CM
DE HSS-E Kegelsenker 90°, Querloch, MK
EN HSS-E Countersink 90°, through hole, MT

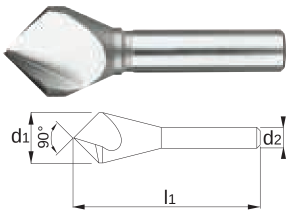
HSS-E | 90° | DIN 228-B

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.510.1500	15	6-14	91	MK 1
42.510.2000	20	8-18	96	MK 1
42.510.2500	25	10-23	101	MK 1
42.510.3002	30	12-28	120	MK 2
42.510.4003	40	16-38	153	MK 3
42.510.5002	50	20-48	135	MK 2
42.510.8000	80	32-77	215	MK 4

> 42.520 Phantom

NL HSS-E Verzinkboor 90°, 1 snijkant
FR Fraise à chanfreiner HSS-E 90°, 1 dent
ES Avellanador para desbarbar HSS-E 90°, 1 labio
DE HSS-E Kegelsenker 90°, 1 Schneide
EN HSS-E Countersink 90°, 1 flute



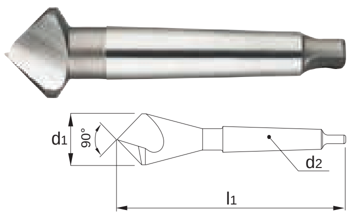
HSS-E | 1 | 90°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.520.0400	4	1-4	40	4
42.520.0500	5	1-5	40	5
42.520.0600	6	1-6	40	6
42.520.0800	8	1-8	40	6
42.520.1000	10	1-10	45	6
42.520.1200	12	2-12	50	8
42.520.1500	15	2-15	55	8
42.520.2000	20	2-20	65	10
42.520.2500	25	3-25	78	12
42.520.3000	30	3-30	88	12

> 42.530 Phantom

NL HSS-E Verzinkboor 90°, 1 snijkant, MK
FR Fraise à chanfreiner HSS-E 90°, 1 dent, CM
ES Avellanador para desbarbar HSS-E 90°, 1 labio, CM
DE HSS-E Kegelsenker 90°, 1 Schneide, MK
EN HSS-E Countersink 90°, 1 flute, MT



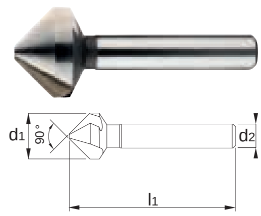
HSS-E | 1 | 90° | DIN 228-B

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.530.1500	15	2-15	91	MK 1
42.530.2000	20	2-20	96	MK 1
42.530.2500	25	3-25	101	MK 1
42.530.3002	30	3-30	120	MK 2
42.530.4002	40	5-40	130	MK 2
42.530.4003	40	5-40	153	MK 3
42.530.5000	50	12-50	158	MK 3
42.530.6300	63	12-63	173	MK 3
42.530.8000	80	12-80	215	MK 4

> 42.533 International Tools

NL ECO HSS Verzinkboor 90°, 3 snijkanten
FR Fraise à chanfreiner HSS ECO 90°, 3 taillants
ES Avellanador para desbarbar HSS ECO 90°, 3 labios
DE ECO HSS Kegelsenker 90°, 3 Schneiden
EN ECO HSS Countersink 90°, 3 flute

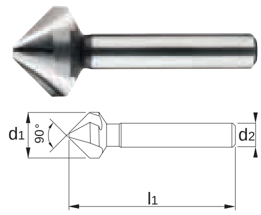


HSS | DIN 335-C | 3 | 3 | 90° | ECO

P 11	P 12	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu
17-22 *	10-15 *	15-20 *	20-25 *	35-45 *

Ref.	d1	Min-Max Ø	l1	d2
42.533.0630	6.3	1,5-6,3	45	5
42.533.0830	8.3	2-8,3	50	6
42.533.1040	10.4	2,5-10,4	50	6
42.533.1240	12.4	2,8-12,4	56	8
42.533.1440	14.4	2,9-14,4	56	8
42.533.1650	16.5	3,2-16,5	60	10
42.533.2050	20.5	3,5-20,5	63	10
42.533.2500	25	3,8-25	67	10
42.533.3100	31	4,2-31	71	12

› 42.535 *International Tools*



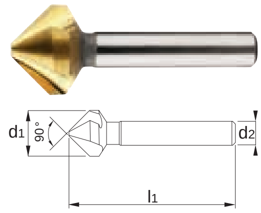
NL ECO PRO HSS Verzinkboor 90°, 3 snijkanten
FR Fraise à chanfreiner HSS ECO PRO 90°, 3 taillants
ES Avellanador para desbarbar HSS ECO PRO 90°, 3 labios
DE ECO PRO HSS Kegelsenker 90°, 3 Schneiden
EN ECO PRO HSS Countersink 90°, 3 flute

HSS | DIN 335-C | 3 | 3 | 90° | ≥40 | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20 *	8-12 *	6-10 *	10-15 *	15-20 *	30-40 *	20-25 *	15-25 *

Ref.	d1	Min-Max Ø	l1	d2
42.535.0630	6.3	1,5-6,3	45	5
42.535.0830	8.3	2-8,3	50	6
42.535.1040	10.4	2,5-10,4	50	6
42.535.1240	12.4	2,8-12,4	56	8
42.535.1440	14.4	2,9-14,4	56	10
42.535.1650	16.5	3,2-16,5	60	10
42.535.2050	20.5	3,5-20,5	63	10
42.535.2500	25	3,8-25	67	10
42.535.3100	31	4,2-31	71	12
42.535.4000	40	8-40	80	13
42.535.5000	50	10-50	90	13

› 42.536 *International Tools*



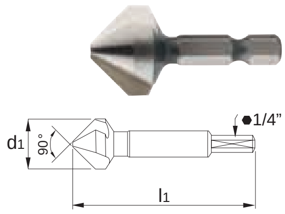
NL ECO PRO HSS Verzinkboor 90°, TiN, 3 snijkanten
FR Fraise à chanfreiner HSS ECO PRO 90°, TiN, 3 taillants
ES Avellanador para desbarbar HSS ECO PRO 90°, TiN, 3 labios
DE ECO PRO HSS Kegelsenker 90°, TiN, 3 Schneiden
EN ECO PRO HSS Countersink 90°, TiN, 3 flute

HSS | TiN | DIN 335-C | 3 | 3 | 90° | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20 *	8-12 *	6-10 *	5-10 *	10-15 *	15-20 *	30-40 *	20-25 *	15-25 *

Ref.	d1	Min-Max Ø	l1	d2
42.536.0630	6.3	1,5-6,3	45	5
42.536.0830	8.3	2-8,3	50	6
42.536.1040	10.4	2,5-10,4	50	6
42.536.1240	12.4	2,8-12,4	56	8
42.536.1440	14.4	2,9-14,4	56	10
42.536.1650	16.5	3,2-16,5	60	10
42.536.2050	20.5	3,5-20,5	63	10
42.536.2500	25	3,8-25	67	10
42.536.3100	31	4,2-31	71	12

› 42.543 *International Tools*



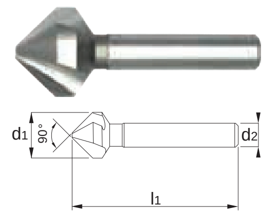
NL ECO HSS Verzinkboor 90°, 3 snijkanten, 1/4" (6,35 mm)-zeskant bitopname
FR Fraise à chanfreiner HSS ECO 90°, 3 taillants, avec queue hexagonale 1/4" (6,35 mm)
ES Avellanador para desbarbar HSS ECO 90°, 3 labios, con sujeción 1/4" (6,35 mm) bit
DE ECO HSS Kegelsenker 90°, 3 Schneiden, 1/4" (6,35 mm) Hexa-Bitaufnahme
EN ECO HSS Countersink 90°, 3 flute, 1/4" (6,35 mm) hexagonal shank

HSS | NORM | 3 | 90° | E6,3 1/4" | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20 *	8-12 *	6-10 *	10-15 *	15-20 *	30-40 *	20-25 *	15-25 *

Ref.	d1	Min-Max Ø	l1
42.543.0630	6.3	1,5-6,3	50
42.543.0830	8.3	2-8,3	50
42.543.1040	10.4	2,5-10,4	50
42.543.1240	12.4	2,8-12,4	50
42.543.1650	16.5	3,2-16,5	50
42.543.2050	20.5	3,5-20,5	50

› 42.547 Phantom



NL HP2 UNI HSS-E Vari Verzinkboor 90°, 3 snijkanten
FR Fraise à chanfreiner Vari HSS-E HP2 UNI 90°, 3 taillants
ES Avellanador Vari HSS-E HP2 UNI 90°, 3 labios
DE HP2 UNI HSS-E Kegelsenker ungleichteilung 90°, 3 Schneiden
EN HP2 UNI HSS-E Vari Countersink 90°, 3 flute

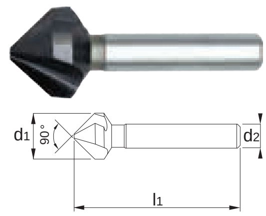
HSS-E | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

NIEUW / NOUVEAU / NUEVO / NEU

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	N 61 PVC
25-35 H	20-30 F	15-25 F	7-13 A	10-18 B	9-15 A	20-30 H	20-30 H	40-60 I	30-40 I	30-40 G	20-30 G	40-60 I

Ref.	d1	Min-Max Ø	l1	d2
42.547.0430	4.3	1,3-4,3	40	4
42.547.0530	5.3	1,5-5,3	40	4
42.547.0600	6	1,5-6	45	5
42.547.0630	6.3	1,5-6,3	45	5
42.547.0730	7.3	1,8-7,3	50	6
42.547.0800	8	2-8	50	6
42.547.0830	8.3	2-8,3	50	6
42.547.0940	9.4	2,2-9,4	50	6
42.547.1000	10	2,5-10	50	6
42.547.1040	10.4	2,5-10,4	50	6
42.547.1150	11.5	2,8-11,5	50	8
42.547.1240	12.4	2,8-12,4	56	8
42.547.1440	14.4	2,9-14,4	56	8
42.547.1500	15	3,2-15	60	10
42.547.1650	16.5	3,2-16,5	60	10
42.547.2050	20.5	3,5-20,5	63	10
42.547.2500	25	3,8-25	67	10
42.547.2800	28	4-28	71	12
42.547.3100	31	4-31	71	12

› 42.548 Phantom



NL HP2 UNI HSS-E Vari Verzinkboor 90°, 3 snijkanten, AlTiN-X
FR Fraise à chanfreiner Vari HSS-E HP2 UNI 90°, 3 taillants, AlTiN-X
ES Avellanador Vari HSS-E HP2 UNI 90°, 3 labios, AlTiN-X
DE HP2 UNI HSS-E Kegelsenker ungleichteilung 90°, 3 Schneiden, AlTiN-X
EN HP2 UNI HSS-E Vari Countersink 90°, 3 flute, AlTiN-X

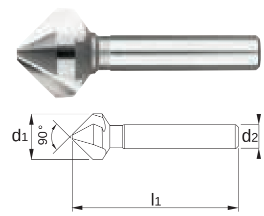
HSS-E | AlTiN X | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

NIEUW / NOUVEAU / NUEVO / NEU

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	S 71 Ni/Co	S 72 Ti
30-40 H	25-35 F	20-30 F	10-16 A	13-21 B	12-20 A	25-35 H	30-40 H	60-80 I	30-50 I	40-60 G	30-40 G	7-11 A	7-11 B

Ref.	d1	Min-Max Ø	l1	d2
42.548.0430	4.3	1,3-4,3	40	4
42.548.0600	6	1,5-6	45	5
42.548.0630	6.3	1,5-6,3	45	5
42.548.0800	8	2-8	50	6
42.548.0830	8.3	2-8,3	50	6
42.548.1000	10	2,5-10	50	6
42.548.1040	10.4	2,5-10,4	50	6
42.548.1150	11.5	2,8-11,5	50	8
42.548.1240	12.4	2,8-12,4	56	8
42.548.1500	15	3,2-15	60	10
42.548.1650	16.5	3,2-16,5	60	10
42.548.2050	20.5	3,5-20,5	63	10
42.548.2500	25	3,8-25	67	10
42.548.3100	31	4-31	71	12

› 42.550 Phantom



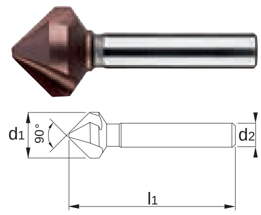
NL HSS-E 8% Verzinkboor 90°, 3 snijkanten
FR Fraise à chanfreiner HSS-E 8% 90°, 3 taillants
ES Avellanador para desbarbar HSS-E 8% 90°, 3 labios
DE HSS-E 8% Kegelsenker 90°, 3 Schneiden
EN HSS-E 8% Countersink 90°, 3 flute

HSS-E 8% | DIN 335-C | 3 | 3 | 90°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	N 61 PVC	S 71 Ni/Co
35-45 C	20-30 C	16-20 B	8-15 A	12-15 B	8-12 A	20-30 C	30-40 C	50-60 D	35-40 C	20-30 D	30-40 C	35-70 I	4-6 A

Ref.	d1	Min-Max Ø	l1	d2
42.550.0630	6.3	1,5-6,3	45	5
42.550.0830	8.3	2-8,3	50	6
42.550.1040	10.4	2,5-10,4	50	6
42.550.1240	12.4	2,8-12,4	56	8
42.550.1650	16.5	3,2-16,5	60	10
42.550.2050	20.5	3,5-20,5	63	10
42.550.2500	25	3,8-25	67	10
42.550.3100	31	6-31	71	12

› 42.552 Phantom



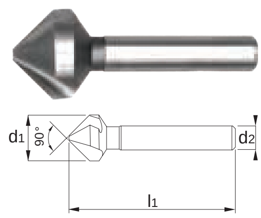
NL HSS-E 8% Verzinkboor 90°, 3 snijkanten, AlCrN-X
FR Fraise à chanfreiner HSS-E 8% 90°, 3 taillants, AlCrN-X
ES Avellanador para desbarbar HSS-E 8% 90°, 3 labios, AlCrN-X
DE HSS-E 8% Kegelsenker 90°, 3 Schneiden, AlCrN-X
EN HSS-E 8% Countersink 90°, 3 flute, AlCrN-X

HSS-E 8% | AlCrN-X | DIN 335-C | 3 | 3 | 90°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC	Ni/Co
35-45 C	20-30 C	16-20 B	8-15 A	12-15 B	8-12 A	20-30 C	30-40 C	50-60 D	35-40 C	20-30 D	30-40 C	35-70 I	4-6 A

Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2
42.552.0630	6.3	1,5-6,3	45	5	42.552.1240	12.4	2,8-12,4	56	8	42.552.2500	25	3,8-25	67	10
42.552.0830	8.3	2-8,3	50	6	42.552.1650	16.5	3,2-16,5	60	10	42.552.3100	31	6-31	71	12
42.552.1040	10.4	2,5-10,4	50	6	42.552.2050	20.5	3,5-20,5	63	10					

› 42.557 Phantom



NL HP2 UNI HSS-E Vari Verzinkboor 90°, 3 snijkanten, met drievlaks schacht
FR Fraise à chanfreiner Vari HSS-E HP2 UNI 90°, 3 taillants, queue à trois méplats
ES Avellanador Vari HSS-E HP2 UNI 90°, 3 labios, con mango 3 chaflanes
DE HP2 UNI HSS-E Kegelsenker ungleichteilung 90°, 3 Schneiden, 3-Flächen-Schaft
EN HP2 UNI HSS-E Vari Countersink 90°, 3 flute, with 3 flat surfaces

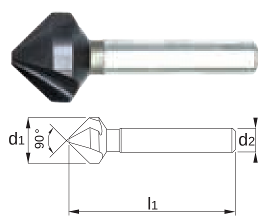
NIEUW NOUVEAU NUEVO NEU

HSS-E | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
25-35 H	20-30 F	15-25 F	7-13 A	10-18 B	9-15 A	20-30 H	20-30 H	40-60 I	30-40 I	30-40 G	20-30 G	40-60 I

Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2
42.557.0630	6.3	1,5-6,3	45	5	42.557.1500	15	3,2-15	60	10	42.557.3100	31	4-31	71	12
42.557.0830	8.3	2-8,3	50	6	42.557.1650	16.5	3,2-16,5	60	10	42.557.3500	35	7-35	104	12
42.557.1040	10.4	2,5-10,4	50	6	42.557.2050	20.5	3,5-20,5	63	10	42.557.4000	40	8-40	112	12
42.557.1240	12.4	2,8-12,4	56	8	42.557.2500	25	3,8-25	67	10	42.557.5000	50	10-50	125	16

› 42.558 Phantom



NL HP2 UNI HSS-E Vari Verzinkboor 90°, 3 snijkanten, AlTiN-X, met drievlaks schacht
FR Fraise à chanfreiner Vari HSS-E HP2 UNI 90°, 3 taillants, AlTiN-X, queue à trois méplats
ES Avellanador Vari HSS-E HP2 UNI 90°, 3 labios, AlTiN-X, con 3 chaflanes
DE HP2 UNI HSS-E Kegelsenker ungleichteilung 90°, 3 Schneiden, AlTiN-X, 3-Flächen-Schaft
EN HP2 UNI HSS-E Vari Countersink 90°, 3 flute, AlTiN-X, with 3 flat surfaces

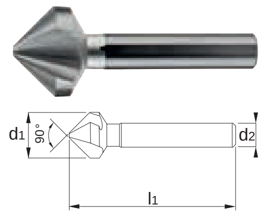
NIEUW NOUVEAU NUEVO NEU

HSS-E | AlTiN X | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	Ni/Co	Ti
30-40 H	25-35 F	20-30 F	10-16 A	13-21 B	12-20 A	25-35 H	30-40 H	60-80 I	30-50 I	40-60 G	30-40 G	7-11 A	7-11 B

Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2
42.558.0630	6.3	1,5-6,3	45	5	42.558.1500	15	3,2-15	60	10	42.558.3100	31	4-31	71	12
42.558.0830	8.3	2-8,3	50	6	42.558.1650	16.5	3,2-16,5	60	10	42.558.4000	40	8-40	112	12
42.558.1040	10.4	2,5-10,4	50	6	42.558.2050	20.5	3,5-20,5	63	10	42.558.5000	50	10-50	125	16
42.558.1240	12.4	2,8-12,4	56	8	42.558.2500	25	3,8-25	67	10					

› 42.560 *Phantom*



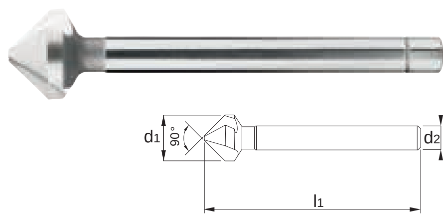
NL volhardmetaal Verzinkboor 90°, 3 snijkanten
FR Fraise à chanfreiner carbure monobloc 90°, 3 taillants
ES Avellanador para desbarbar Metal Duro Integral 90°, 3 labios
DE Vollhartmetall Kegelsenker 90°, 3 Schneiden
EN solid carbide Countersink 90°, 3 flute

MG HM | DIN 335-C | 3 | 3 | 90°

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
40-80 C	30-60 C	20-40 B	20-40 B	8-10 A	20-40 C	15-20 B	40-60 B	50-80 C	40-100 D	40-80 C	50-80 C	10-12 A	10-12 A

Ref.	d1	Min-Max Ø	l1	d2
42.560.0630	6.3	2-6,3	50	6
42.560.0830	8.3	2,5-8,3	50	6
42.560.1040	10.4	3-10,4	50	8
42.560.1240	12.4	3-12,4	56	8
42.560.1650	16.5	4-16,5	60	10
42.560.2050	20.5	4-20,5	60	10
42.560.2500	25	4-25	67	10
42.560.3100	31	5-31	71	12

› 42.566 *Phantom*



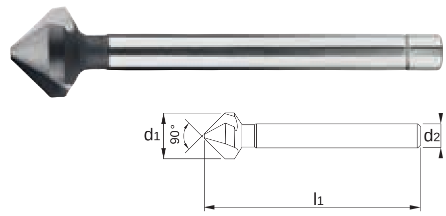
NL HSS-E Vari Verzinkboor 90°, 3 snijkanten, lang
FR Fraise à chanfreiner Vari HSS-E 90°, 3 taillants, version longue
ES Avellanador Vari HSS-E 90°, 3 labios, larga
DE HSS-E Kegelsenker ungleichteilung 90°, 3 Schneiden, lang
EN HSS-E Vari Countersink 90°, 3 flute, long

HSS-E | NORM | 3 | 3 | 90° | VARI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	d1	Min-Max Ø	l1	d2
42.566.0630	6.3	1,5-6,3	104	5
42.566.0830	8.3	2-8,3	105	6
42.566.1040	10.4	2,5-10,4	107	6
42.566.1240	12.4	2,8-12,4	108	8
42.566.1650	16.5	3,2-16,5	111	10
42.566.2050	20.5	3,5-20,5	114	10
42.566.2500	25	3,8-25	118	10
42.566.3100	31	6-31	140	12

› 42.567 *Phantom*



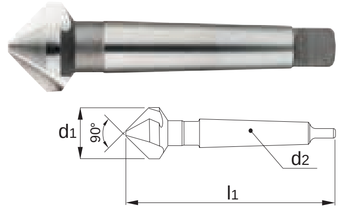
NL HSS-E Vari Verzinkboor 90°, 3 snijkanten, TiAlN, lang
FR Fraise à chanfreiner Vari HSS-E 90°, 3 taillants, TiAlN, version longue
ES Avellanador Vari HSS-E 90°, 3 labios, TiAlN, larga
DE HSS-E Kegelsenker ungleichteilung 90°, 3 Schneiden, TiAlN, lang
EN HSS-E Vari Countersink 90°, 3 flute, TiAlN, long

HSS-E | TiAlN | NORM | 3 | 3 | 90° | VARI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC	Ti
35-45 C	20-30 C	16-20 B	8-15 A	12-15 B	8-12 A	20-30 C	30-40 C	50-60 D	35-40 C	20-30 D	30-40 C	35-70 I	4-8 A

Ref.	d1	Min-Max Ø	l1	d2
42.567.0630	6.3	1,5-6,3	104	5
42.567.0830	8.3	2-8,3	105	6
42.567.1040	10.4	2,5-10,4	107	6
42.567.1240	12.4	2,8-12,4	108	8
42.567.1650	16.5	3,2-16,5	111	10
42.567.2050	20.5	3,5-20,5	114	10
42.567.2500	25	3,8-25	118	10
42.567.3100	31	6-31	140	12

› 42.570 *Phantom*



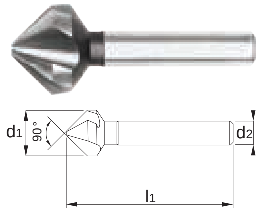
NL HSS-E Verzinkboor 90°, 3 snijkanten, MK
FR Fraise à chanfreiner HSS-E 90°, 3 taillants, CM
ES Avellanador para desbarbar HSS-E 90°, 3 labios, CM
DE HSS-E Kegelsenker 90°, 3 Schneiden, MK
EN HSS-E Countersink 90°, 3 flute, MT

HSS-E | DIN 335-D | 3 | 3 | 90° | DIN 228-B

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	d1	Min-Max Ø	l1	d2
42.570.1650	16.5	4-16,5	90	MK 1
42.570.2050	20.5	4-20,5	94	MK 1
42.570.2500	25	6-25	105	MK 2
42.570.2800	28	6-28	112	MK 2
42.570.3100	31	6-31	117	MK 2
42.570.3500	35	7-35	135	MK 2
42.570.4000	40	8-40	150	MK 3
42.570.5000	50	10-50	158	MK 3
42.570.6300	63	10-63	172	MK 3
42.570.8000	80	14-80	215	MK 4

› 42.582 *Phantom*



NL HRC50 HSS-E 8% Vari Verzinkboor 90°, meersnijder, met drievlaks schacht
FR Fraise à chanfreiner Vari HSS-E 8% HRC50 90°, multi-dents, à 3 méplats
ES Avellanador Vari HSS-E 8% HRC50 90°, multi labios, con 3 chaflanes
DE HRC50 HSS-E 8% Kegelsenker ungleichteilung 90°, Mehrschneiden, 3-Flächen-Schaft
EN HRC50 HSS-E 8% Vari Countersink 90°, Multi Flute, with 3 flat surfaces

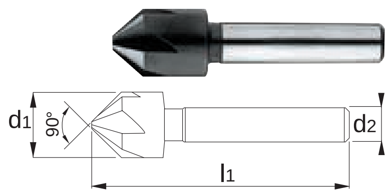
HSS-E 8% | DIN 335-C | >3 | 90° | ≥12,4 | VARI | HRc 50

NIEUW | NOUVEAU | NUEVO | NEU

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	Ni/Co	Ti
30-40 I	25-35 I	20-30 I	10-16 I	9-14 I	13-21 I	12-20 I	25-35 I	30-40 I	60-80 I	30-50 I	40-60 I	30-40 I	7-11 B	7-11 H

Ref.	d1	Min-Max Ø	l1	d2	z
42.582.0630	6.3	1,5-6,3	45	5	4
42.582.0830	8.3	2-8,3	50	6	4
42.582.1040	10.4	2,5-10,4	50	6	4
42.582.1240	12.4	2,8-12,4	56	8	5
42.582.1650	16.5	3,2-16,5	60	10	5
42.582.2050	20.5	3,5-20,5	63	10	5
42.582.2500	25	3,8-25	67	10	5
42.582.3100	31	4-31	71	12	5

› 42.590 *International Tools*



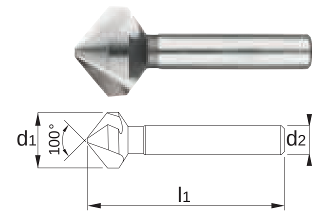
NL ECO HSS Verzinkboor 90°, meersnijder
FR Fraise à chanfreiner HSS ECO 90°, multi-dents
ES Avellanador para desbarbar HSS ECO 90°, multi labios
DE ECO HSS Kegelsenker 90°, Mehrschneiden
EN ECO HSS Countersink 90°, Multi Flute

HSS | DIN 335-A | >3 | 90° | ECO

P 11
≤600 N/mm²
10-15 *

Ref.	d1	d2	l1	z
42.590.0800	8	8	48	5
42.590.1250	12.5	8	48	5
42.590.1600	16	10	56	7
42.590.2000	20	10	60	7

› 42.640 Phantom



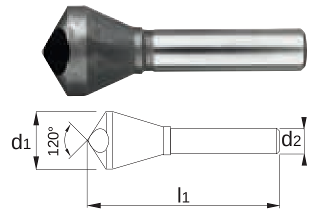
NL HSS-E Verzinkboor 100°, 3 snijkanten
FR Fraise à chanfreiner HSS-E 100°, 3 taillants
ES Avellanador para desbarbar HSS-E 100°, 3 labios
DE HSS-E Kegelsenker 100°, 3 Schneiden
EN HSS-E Countersink 100°, 3 flute

HSS-E | NORM | 3 | 3 | 100°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2
42.640.1040	10.4	2,5-10,4	49	6	42.640.2050	20.5	4-20,5	62	10	42.640.3100	31	6-31	68	12
42.640.1650	16.5	4-16,5	59	10	42.640.2500	25	5-25	65	10					

› 42.700 Phantom



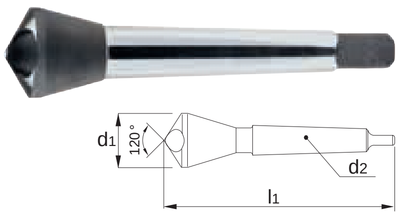
NL HSS-E Verzinkboor 120°, schuin gat
FR Fraise à chanfreiner HSS-E 120°, à trou
ES Avellanador para desbarbar HSS-E 120°, con agujero
DE HSS-E Kegelsenker 120°, Querloch
EN HSS-E Countersink 120°, through hole

HSS-E | NORM | 120°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2
42.700.1000	10	4-9	43	6	42.700.2000	20	6-18	61	10	42.700.3000	30	10-28	82	12
42.700.1500	15	5-14	52	8	42.700.2500	25	8-23	73	12					

› 42.710 Phantom



NL HSS-E Verzinkboor 120°, schuin gat, MK
FR Fraise à chanfreiner HSS-E 120°, à trou, CM
ES Avellanador para desbarbar HSS-E 120°, con agujero, CM
DE HSS-E Kegelsenker 120°, Querloch, MK
EN HSS-E Countersink 120°, through hole, MT

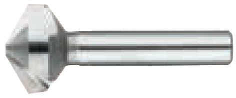
HSS-E | NORM | 120° | DIN 228-B

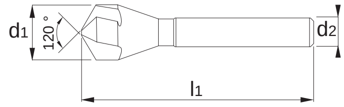
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2	Ref.	d1	Min-Max Ø	l1	d2
42.710.2000	20	6-18	92	MK 1	42.710.3000	30	10-28	114	MK 2	42.710.4000	40	14-38	145	MK 3

› 42.740 Phantom

NL HSS-E Verzinkboor 120°, 3 snijkanten
FR Fraise à chanfreiner HSS-E 120°, 3 taillants
ES Avellanador para desbarbar HSS-E 120°, 3 labios
DE HSS-E Kegelsenker 120°, 3 Schneiden
EN HSS-E Countersink 120°, 3 flute





HSS-E | NORM | 3 | 3 | 120°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	d1	Min-Max Ø	l1	d2
42.740.1040	10.4	2,5-10,4	48	6
42.740.1650	16.5	4-16,5	57	10
42.740.2050	20.5	4-20,5	59	10
42.740.2500	25	5-25	62	10
42.740.3100	31	6-31	65	12

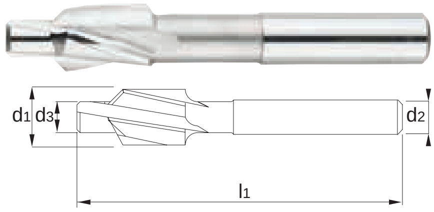
NL Verzinken keuzehulp
FR Aide à la sélection des fraises à chanfreiner
ES Ayuda para la selección de avellanadores
DE Auswahlhilfe Kegelsenker
EN Countersink selection guide

Read me

www.phantom.eu

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4

› 43.200 Phantom



NL **HSS-E Kopverzinkboor 90°, fijnpassing**
FR **Fraise à chambrer HSS-E 90°, ajustement fin**
ES **Avellanador para asientos 'Allen' HSS-E 90°, ajuste fino**
DE **HSS-E Flachsenker 90°, Senkung fein**
EN **HSS-E Counterbore 90°, fine tolerances**

HSS-E | 90° | DIN 1866 | 1

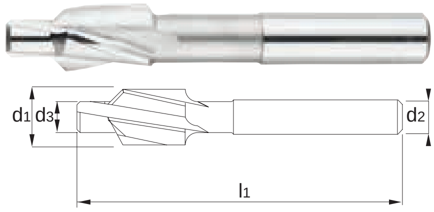
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.200.0100	1	2	1.1	45	2
43.200.0120	1,2	2.5	1.3	45	2.5
43.200.0140	1,4	2.8	1.5	45	2.8
43.200.0160	1,6	3.3	1.7	56	3.3
43.200.0180	1,8	3.8	1.9	56	3.8

Ref.	M	d1	d3	l1	d2
43.200.0200	2	4.3	2.2	56	4.3
43.200.0250	2,5	5	2.7	56	5
43.200.0300	3	6	3.2	71	6
43.200.0350	3,5	7	3.7	71	7
43.200.0400	4	8	4.3	71	8

Ref.	M	d1	d3	l1	d2
43.200.0500	5	10	5.3	80	10
43.200.0600	6	11.5	6.4	80	11.5
43.200.0800	8	15	8.4	100	12.5
43.200.1000	10	19	10.5	100	12.5

› 43.210 Phantom



NL **HSS-E Kopverzinkboor 90°, middelpassing**
FR **Fraise à chambrer HSS-E 90°, ajustement moyen**
ES **Avellanador para asientos 'Allen' HSS-E 90°, ajuste medio**
DE **HSS-E Flachsenker 90°, mittelpassung**
EN **HSS-E Counterbore 90°, medial tolerances**

HSS-E | 90° | DIN 1866 | 2

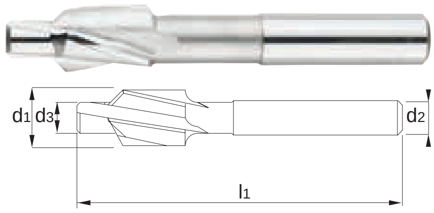
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.210.0180	1,8	3.8	1.45	46	3.8
43.210.0200	2	4.6	2.4	56	4.6
43.210.0250	2,5	5.7	2.9	56	5.7
43.210.0300	3	6.5	3.4	71	6.5

Ref.	M	d1	d3	l1	d2
43.210.0350	3,5	7.6	3.9	71	7.6
43.210.0400	4	8.6	4.5	71	8.6
43.210.0500	5	10.4	5.5	80	10.4
43.210.0600	6	12.4	6.6	80	12.4

Ref.	M	d1	d3	l1	d2
43.210.0800	8	16.4	9	100	12.5
43.210.1000	10	20.4	11	100	12.5

› 43.240 Phantom



NL **HSS-E Kopverzinkboor 90°, fijnpassing, kerngaten**
FR **Fraise à chambrer HSS-E 90°, ajustement fin, trous à tarauder**
ES **Avellanador para asientos 'Allen' HSS-E 90°, ajuste fino, agujeros para roscar**
DE **HSS-E Flachsenker 90°, Senkung fein, Kernlochsenkung**
EN **HSS-E Counterbore 90°, fine tolerances, core holes**

HSS-E | 90° | DIN 1866 | 3

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.240.0300	3	6	2.5	71	6
43.240.0350	3,5	7	2.9	71	7
43.240.0400	4	8	3.3	71	8

Ref.	M	d1	d3	l1	d2
43.240.0500	5	10	4.2	80	10
43.240.0600	6	11.5	5	80	11.5
43.240.0800	8	15	6.8	100	12.5

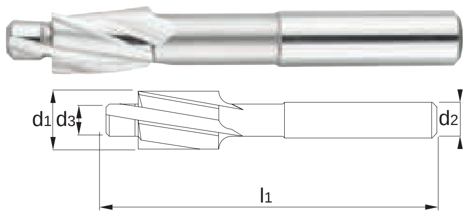
Ref.	M	d1	d3	l1	d2
43.240.1000	10	19	8.5	100	12.5

NL Kopverzinkfrees 90° middel- en fijnpassing
FR Fraise à chambrer 90° ajustement moyen et fin
ES Avellanador 'Allen' 90° ajuste medio y fino
DE Flachsenker Mittel und Feinpassung 90°
EN Counterbores medium and fine 90°

Watch me

www.phantom.eu

› 43.320 *Phantom*



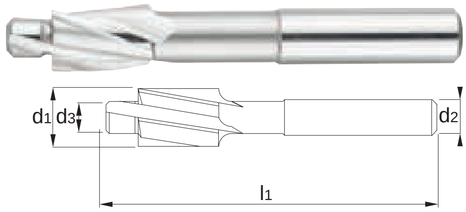
NL **HSS-E Kopverzinkboor 180°, fijnpassing**
FR **Fraise à chambrer HSS-E 180°, ajustement fin**
ES **Avellanador para asientos 'Allen' HSS-E 180°, ajuste fino**
DE **HSS-E Flachsenker 180°, Senkung fein**
EN **HSS-E Counterbore 180°, fine tolerances**

HSS-E | 180° | DIN 373 | 1

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.320.0100	1	2.2	1.1	45	2.2
43.320.0120	1,2	2.5	1.3	45	2.5
43.320.0140	1,4	2.8	1.5	45	2.8
43.320.0160	1,6	3.3	1.7	56	3.3
43.320.0170	1,7	3.8	1.8	56	3.8
43.320.0200	2	4.3	2.2	56	4.3
43.320.0230	2,3	5.2	2.5	56	5
43.320.0250	2,5	5	2.7	56	5
43.320.0260	2,6	5.5	2.8	71	5.5
43.320.0300	3	6	3.2	71	6
43.320.0350	3,5	6.5	3.7	71	6.5
43.320.0400	4	8	4.3	71	8
43.320.0500	5	10	5.3	80	10
43.320.0600	6	11	6.4	80	11
43.320.0800	8	15	8.4	100	12.5
43.320.1000	10	18	10.5	100	12.5
43.320.1200	12	20	13	100	12.5

› 43.330 *Phantom*



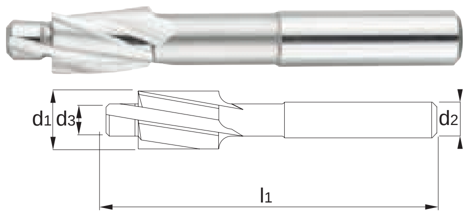
NL **HSS-E Kopverzinkboor 180°, middelpassing**
FR **Fraise à chambrer HSS-E 180°, ajustement moyen**
ES **Avellanador para asientos 'Allen' HSS-E 180°, ajuste medio**
DE **HSS-E Flachsenker 180°, mittelpassung**
EN **HSS-E Counterbore 180°, medial tolerances**

HSS-E | 180° | DIN 373 | 2

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.330.0200	2	4.3	2.4	56	4.3
43.330.0260	2,6	5.5	3	71	5.5
43.330.0300	3	6	3.4	71	6
43.330.0350	3,5	6.5	3.9	71	6.5
43.330.0400	4	8	4.5	71	8
43.330.0500	5	10	5.5	80	10
43.330.0600	6	11	6.6	80	11
43.330.0800	8	15	9	100	12.5
43.330.1000	10	18	11	100	12.5
43.330.1200	12	20	14	100	12.5

› 43.350 *Phantom*



NL **HSS-E Kopverzinkboor 180°, middelpassing, kerngaten**
FR **Fraise à chambrer HSS-E 180°, ajustement moyen, trous à tarauder**
ES **Avellanador para asientos 'Allen' HSS-E 180°, ajuste medio, agujeros para roscar**
DE **HSS-E Flachsenker 180°, mittelpassung, Kernlochsenkung**
EN **HSS-E Counterbore 180°, medial tolerances, core holes**

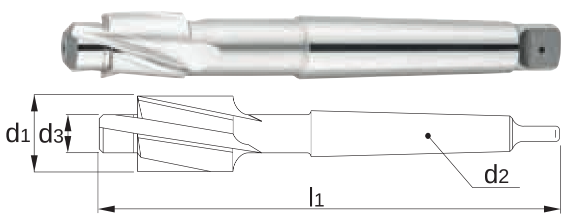
HSS-E | 180° | DIN 373 | 3

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.350.0300	3	6	2.5	71	6
43.350.0350	3,5	6.5	2.9	71	6.5
43.350.0400	4	8	3.3	71	8
43.350.0500	5	10	4.2	80	10
43.350.0600	6	11	5	80	11
43.350.0800	8	15	6.8	100	12.5
43.350.1000	10	18	8.5	100	12.5
43.350.1200	12	20	10.2	100	12.5

Search on www.phantom.eu

› 43.400 Phantom



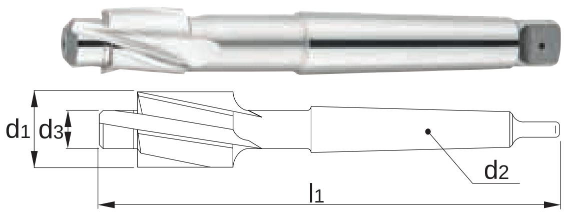
- NL HSS-E Kopverzinkboor 180°, fijnpassing, MK
- FR Fraise à chambrer HSS-E 180°, ajustement fin, CM
- ES Avellanador para asientos 'Allen' HSS-E 180°, ajuste fino, CM
- DE HSS-E Flachsenker 180°, Senkung fein, MK
- EN HSS-E Counterbore 180°, fine tolerances, MT

HSS-E | 180° | DIN 373 | DIN 228-B | 1

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.400.1000	10	18	10.5	150	MK 2
43.400.1200	12	20	13	150	MK 2
43.400.1400	14	24	15	160	MK 2
43.400.1600	16	26	17	190	MK 3
43.400.1800	18	30	19	190	MK 3
43.400.2000	20	33	21	190	MK 3
43.400.2200	22	36	23	205	MK 3
43.400.2400	24	40	25	205	MK 3
43.400.2700	27	43	30	240	MK 4
43.400.3000	30	48	33	240	MK 4

› 43.410 Phantom



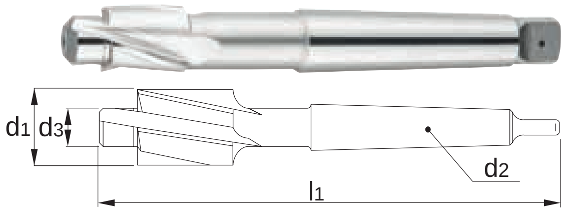
- NL HSS-E Kopverzinkboor 180°, middelpassing, MK
- FR Fraise à chambrer HSS-E 180°, ajustement moyen, CM
- ES Avellanador para asientos 'Allen' HSS-E 180°, ajuste medio, CM
- DE HSS-E Flachsenker 180°, mittelpassung, MK
- EN HSS-E Counterbore 180°, medial tolerances, MT

HSS-E | 180° | DIN 373 | DIN 228-B | 2

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	M	d1	d3	l1	d2
43.410.1000	10	18	11	150	MK 2
43.410.1200	12	20	14	150	MK 2
43.410.1400	14	24	16	160	MK 2
43.410.1600	16	26	18	190	MK 3
43.410.1800	18	30	20	190	MK 3
43.410.2000	20	33	22	190	MK 3
43.410.2200	22	36	24	205	MK 3

› 43.440 Phantom



- NL HSS-E Kopverzinkboor 180°, middelpassing, kerngaten, MK
- FR Fraise à chambrer HSS-E 180°, ajustement moyen, trous à tarauder, CM
- ES Avellanador para asientos 'Allen' HSS-E 180°, ajuste medio, agujeros para roscar, CM
- DE HSS-E Flachsenker 180°, mittelpassung, Kernlochsenkung, MK
- EN HSS-E Counterbore 180°, medial tolerances, core holes, MT

HSS-E | 180° | DIN 373 | DIN 228-B | 3

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

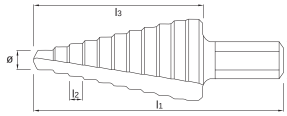
Ref.	M	d1	d3	l1	d2
43.440.1400	14	24	12	160	MK 2
43.440.1600	16	26	14	190	MK 3
43.440.1800	18	30	15.5	190	MK 3
43.440.2000	20	33	17.5	190	MK 3
43.440.2400	24	40	21	205	MK 3

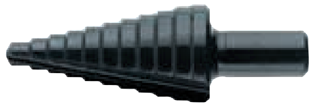
- NL Kopverzinkfrees 180° middel- en fijnpassing
- FR Fraise à chambrer 180° ajustement moyen et fin
- ES Avellanador 'Allen' 180° ajuste medio y fino
- DE Flachsenker Mittel und Feinpassung 180°
- EN Counterbores medium and fine 180°

Watch me

www.phantom.eu

› 44.100 Phantom





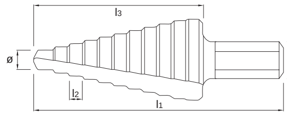
NL HSS Getrapte Plaatboor stoomontlaten
FR Foret étagé HSS vaporisé
ES Broca escalonada HSS vaporizada
DE HSS Stufenbohrer dampfangelassen
EN HSS multi diametre Step Drill steam oxide

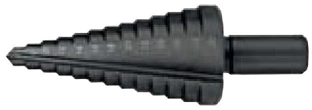
Z=2 | HSS | OX. | 118° | max. 4 mm

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27	22-30	15-20	8-12	15-20	25-30	45-50	25-40	22-28

Ref.	xØ	Ø mm	l1	l2	d2	l3
44.100.0100	9	4-5-6-7-8-9-10-11-12	64	4	10	39
44.100.0200	11	6-8-10-12-14-16-18-20-22-24-25	77	4	12	52
44.100.0300	7	6-8-10-12-14-16-18	59	4	10	34
44.100.0400	14	8-10-12-14-16-18-20-22-24-26-28-30-32-34	92	4	12	67

› 44.102 Phantom





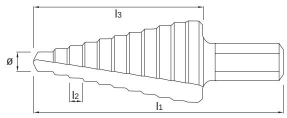
NL HSS Getrapte Plaatboor genitreerd
FR Foret étagé HSS nitruré
ES Broca escalonada HSS nitrurada
DE HSS Stufenbohrer nitriert
EN HSS multi diametre Step Drill nitrided

Z=2 | HSS | NIT. | 118° | max. 4 mm

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27	22-30	15-20	8-12	15-20	25-30	45-50	25-40	22-28

Ref.	xØ	Ø mm	l1	l2	d2	l3
44.102.0412	5	4-6-8-10-12	65	4	10	43
44.102.0420	9	4-6-8-10-12-14-16-18-20	69	4	12	44
44.102.0630	13	6-8-10-12-14-16-18-20-22-24-26-28-30	88	4	13	65
44.102.0638	12	6-9-13-16-19-21-23-26-29-32-35-38	87	4	13	63

› 44.110 Phantom

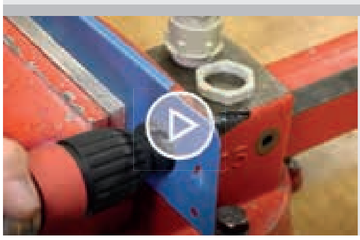


NL HSS Getrapte Plaatboor voor kabelwartels (MF), stoomontlaten
FR Foret étagé HSS pour filetages de tubes électriques (MF), vaporisé
ES Broca escalonada HSS para glándulas de cable (MF), vaporizada
DE HSS Stufenbohrer für Drüse (MF), dampfangelassen
EN HSS multi diametre Step Drill for glands (MF), steam oxide

Z=2 | HSS | MF | OX. | DIN EN 60423 | 118° | max. 4 mm

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27	22-30	15-20	8-12	15-20	25-30	45-50	25-40	22-28

Ref.	xØ	Ø mm	l1	l2	d2	l3
44.110.0500	8	8,5-10,5-12,5-16,5-20,5-25,5-32,5-40,5 (M8-M40)	77	4	12	52
44.110.0600	7	8,5-10,5-14,5-18,5-23,5-30,5-38,5 (M10-M40)	86	6	12	61
44.110.0700	13	8,5-10,5-12,5-14,5-16,5-18,5-20,5-23,5-25,5-30,5-32,5-38,5-40,5 (M10-M40)	97	4	12	72

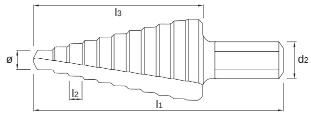


NL Trapboor in actie
FR Utiliser un foret étagé
ES Uso de la broca escalonada
DE Verwendung Stufenbohrer
EN Use of stepdrill

Watch me

www.phantom.eu

› 44.120 Phantom



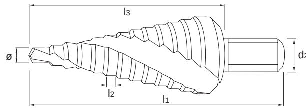
NL HSS Getrapte Plaatboor stoomontlaten, inch-maten
FR Foret étagé HSS vaporisé, tailles en pouce
ES Broca escalonada HSS vaporizada, tamaños en pulgadas
DE HSS Stufenbohrer dampfangelassen, Zollabmessungen
EN HSS multi diametre Step Drill steam oxide, imperial sizes

Z=2 | HSS | OX. | 118° | max. 4 mm

P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27	22-30	15-20	8-12	15-20	25-30	45-50	25-40	22-28

Ref.	xØ	Ø mm	Ø "	l1	l2	d2	l3
44.120.0100	13	3,2-4-4,8-5,6-6,4-7,1-7,9-8,7-9,5-10,3-11,1-11,9-12,7	1/8-5/32-3/16-7/32-1/4-9/32-5/16-11/32-3/8-13/32-7/16-15-32-1/2	81	4	10	56
44.120.0200	12	6,4-8,3-11,1-12,7-14,3-15,9-17,5-19,1-20,6-22,2-23,8-25,4	1/4-21/64-7/16-1/2-9/16-5/8-11/16-3/4-13/16-7/8-15/16-1	81	4	12	56
44.120.0300	9	6,4-7,9-9,5-11,1-12,7-14,3-15,9-17,5-19,1	1/4-5/16-3/8-7/16-1/2-9/16-5/8-11/16-3/4	67	4	12	42

› 44.130 Phantom



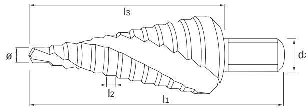
NL HSS Getrapte Plaatboor gespiraliseerd, genitreerd
FR Foret étagé HSS goujure hélicoïdale, nitruré
ES Broca escalonada HSS helicoidal, nitrurada
DE HSS Stufenbohrer spiralförmig, nitriert
EN HSS multi diametre Step Drill with spiral flute, nitrided

Z=2 | HSS | NIT. | 118° | max. 4 mm

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27	22-30	15-20	8-12	5-8	15-20	25-30	45-50	25-40	22-28

Ref.	xØ	Ø mm	l1	l2	d2	l3
44.130.0100	5	4-6-8-10-12	65	4	8	43
44.130.0200	9	4-6-8-10-12-14-16-18-20	75	4	10	53
44.130.0300	13	6-8-10-12-14-16-18-20-22-24-26-28-30	98	4	13	74

› 44.134 Phantom

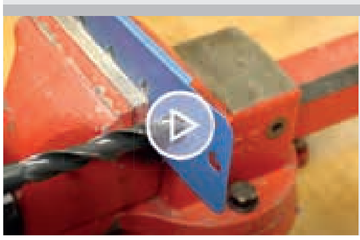


NL HSS Getrapte Plaatboor gespiraliseerd, TiAlN
FR Foret étagé HSS goujure hélicoïdale, TiAlN
ES Broca escalonada HSS helicoidal, TiAlN
DE HSS Stufenbohrer spiralförmig, TiAlN
EN HSS multi diametre Step Drill with spiral flute, TiAlN

Z=2 | HSS | TiAlN | 118° | max. 4 mm

P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27	22-30	15-20	8-12	5-8	15-20	25-30	45-50	25-40	22-28

Ref.	xØ	Ø mm	l1	l2	d2	l3
44.134.0100	5	4-6-8-10-12	65	4	8	43
44.134.0200	9	4-6-8-10-12-14-16-18-20	75	4	10	53
44.134.0300	13	6-8-10-12-14-16-18-20-22-24-26-28-30	98	4	13	74

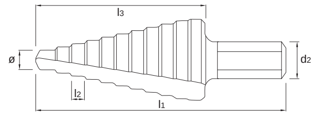


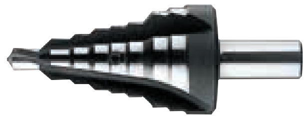
NL Trapboor vs spiraalboor
FR Foret étagé versus foret standard cylindrique
ES Broca escalonada o Broca cilíndrica
DE Stufenbohrer vs Spiralbohrer
EN Step drill vs twist drill

Watch me

www.phantom.eu

› 44.150 Phantom





44.150.9000

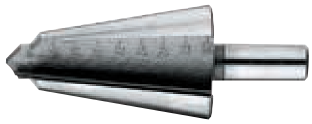
NL HSS Trappenboor verwisselbare centreerboor
FR Foret étagé HSS foret de centrage interchangeable
ES Broca escalonada HSS broca de centrar intercambiale
DE HSS Stufenbohrer auswechselbaren Anbohrern
EN HSS multi diametre step Drill with interchangeable pilot

Z=4 | HSS | 118° | max. 4 mm

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27	22-30	15-20	8-12	15-20	25-30	45-50	25-40	22-28

Ref.	xØ	Ø mm	l1	l2	d2	l3
44.150.0100	11	9-12-15-18-21-24-27-30-33-36-40	87	4	12	72
44.150.1000	12	10,5-12,5-14,5-16,5-18,5-20,5-23,5-25,5-30,5-32,5-38,5-40,5 (M10-M40)	92	4	12	77
44.150.9000		7	40	4	4	

› 44.200 Phantom



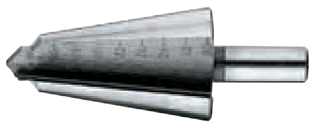
NL HSS Conische Plaatboor
FR Foret conique HSS
ES Fresa cónica HSS
DE HSS konische Blechschälbohrer
EN HSS Taper Sheet and Tube Drill

Z=2 | HSS | 118°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	N 41 Alu	N 42 Alu Si>10%	N 61 PVC
25-27	22-30	50-70	40-60	22-28

Ref.	Min-Max Ø	l1	d2	Ref.	Min-Max Ø	l1	d2
44.200.0100	3-14	62	6	44.200.0500	36-50	78	12
44.200.0200	6-20	70	8	44.200.0600	46-60	78	13
44.200.0300	16-30	75	10	44.200.0700	6-30	95	10
44.200.0400	26-40	78	12	44.200.0800	6-25,4	84	8

› 44.210 Phantom

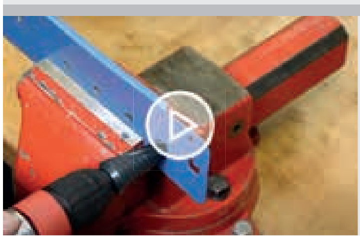


NL HSS-E Conische Plaatboor
FR Foret conique HSS-E
ES Fresa cónica HSS-E
DE HSS-E konische Blechschälbohrer
EN HSS-E Taper Sheet and Tube Drill

Z=2 | HSS-E | 118°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	M 21 INOX ≤850N/mm²	N 41 Alu	N 42 Alu Si>10%	N 61 PVC
25-27	22-30	8-12	50-70	40-60	22-28

Ref.	Min-Max Ø	l1	d2	Ref.	Min-Max Ø	l1	d2
44.210.0100	3-14	62	6	44.210.0400	26-40	78	12
44.210.0200	6-20	70	8	44.210.0700	6-30	95	10
44.210.0300	16-30	75	10				



NL Trappenboor vs conische boor
FR Foret étagé versus foret cônique
ES Broca escalonada o Fresa cónica
DE Stufenbohrer vs Blechschälbohrer
EN Step drill vs cone drill

Watch me

www.phantom.eu

› 44.220 *International Tools*

NL ECO PRO HSS Freesboor
FR Foret fraiseur HSS ECO PRO
ES Broca fresa HSS ECO PRO
DE ECO PRO HSS Fräsbohrer
EN ECO PRO HSS Sidewinder Drill

HSS | 118° | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	N 41 Alu	N 42 Alu Si>10%	N 61 PVC
25-27	22-30	50-70	40-60	22-28

Ref.	d1	d2	l1	l2	z
44.220.0600	6	6	90	50	5
44.220.0800	8	8	90	50	7

› 46.100 SHAVIV

NL Handgrepen en Onderdelen
FR Manches et accessoires
ES Mangos y Accesorios
DE Handgriffe und Einzelteile
EN Handles and Accessories

Ref.	Type	Image
46.100.0010	Mango II	
46.100.1000	Classic A	
46.100.1200	ALU	
46.100.1300	Handychuck	

› 46.120 SHAVIV

NL type B
FR type B
ES tipo B
DE Typ B
EN type B

Ref.	Type	Image	1	2	3	4	P	H	M	K	N
46.120.0250	Mango II B + B10, B20					HSS	P				N
46.120.0255	Mango II B EC + B10, B20					HSS	P				N
46.120.0260	Mango II B + B10x10					HSS	P				N
46.120.0265	Mango II B EC + B10x10					HSS	P				N
46.120.0500	UB2000 + B10					HSS	P				N
46.120.1001	B EC (Extra Close)										
46.120.1002	B										
46.120.2100	B10					HSS	P				N
46.120.2101	B10P					TiN	P		M		N
46.120.2102	B10C					VHM SC		H			N
46.120.2109	B10L					HSS	P				N
46.120.2110	B11					HSS	P				N
46.120.2120	B12					HSS	P				N
46.120.2121	B12P					TiN	P		M		N
46.120.2200	B20					HSS				K	N
46.120.2201	B20P					TiN				K	N
46.120.2250	B25					HSS	P				N
46.120.2252	B25C					VHM SC	P				N
46.120.2300	B30					HSS	P				N
46.120.2301	B30P					TiN	P		M		N
46.120.2320	B32					HSS				K	N
46.120.2500	B50					HM-TIP	P	H	M	K	N
46.120.2600	B60					HSS	P				N
46.120.2700	B70					HM-TIP	P	H	M	K	N

› 46.130 SHAVIV

NL type C
FR type C
ES tipo C
DE Typ C
EN type C

Ref.	Type	Image	1	2	3	4	P	M	K	N
46.130.0250	Mango II C + C42						P	M	K	N
46.130.1100	C									
46.130.2400	C40						P	M	K	N
46.130.2420	C42						P	M	K	N

› 46.140 SHAVIV

NL type D
FR type D
ES tipo D
DE Typ D
EN type D

Ref.	Type	Image	1	2	3	P	M	K	N
46.140.0250	Mango II D + D80		←		VHM SC	P	M	K	N
46.140.1100	D								
46.140.2800	D80		←		VHM SC	P	M	K	N
46.140.2820	D82		←		VHM SC	P	M	K	N
46.140.2850	D85		←		HSS	P	M	K	N

› 46.155 SHAVIV

NL type Multi Tool
FR type Outil universel
ES tipo herramienta universal
DE Typ Multi-Tool
EN type 2 in 1

Ref.	Type	Image	1	2	3	4	P	N
46.155.0250	Mango II M + B10, B20, B30, E100, E200, E111					HSS	P	N
46.155.1500	M							

› 46.160 SHAVIV

NL type F
FR type F
ES tipo F
DE Typ F
EN type F

Ref.	Type	Image	1	2	3	P	M	K	N
46.160.0250	Mango II F + F20		90°		HSS	P	M	K	N
46.160.0255	Mango II FR + F20		90°		HSS	P	M	K	N
46.160.0260	Mango II FRB + F20		90°		HSS	P	M	K	N
46.160.1100	F								
46.160.1105	FR								
46.160.1110	FRB								
46.160.2120	F12		90°		HSS	P	M	K	N
46.160.2200	F20		90°		HSS	P	M	K	N

› 46.180 SHAVIV

NL type Burr-Bi
FR type Burr-Bi
ES tipo Burr-Bi
DE Typ Burr-Bi
EN type Burr-Bi

Ref.	Type	Image	1	2	3	4	P	M	K	N
46.180.0250	Mango II BR + R10x2					HSS	P	M	K	N
46.180.3110	R10					HSS	P	M	K	N
46.180.3120	R20					HSS	P	M		N
46.180.3130	R30					HSS	P	M		N

› 46.300 SHAVIV

NL type E
FR type E
ES tipo E
DE Typ E
EN type E

Ref.	Type	Image	1	2	3	4	P	H	M	K	N
46.300.0250	Mango II E + E100, E200, E300					HSS	P				N
46.300.0255	Mango II E EC + E100, E200, E300					HSS	P				N
46.300.0260	Mango II E + E100x10					HSS	P				N
46.300.0265	Mango II E EC + E100x10					HSS	P				N
46.300.1000	Handle 1 + E100, E200, E300					HSS	P				N
46.300.1100	Handle 1										
46.300.1500	MB2000 + E100										
46.300.2001	E EC (Extra Close)										
46.300.2002	E										
46.300.2100	E100					HSS	P				N
46.300.2101	E100P					TiN	P		M		N
46.300.2102	E100C					VHM SC		H			N
46.300.2104	E100S					HSS-E	P		M		N
46.300.2109	E100L					HSS	P				N
46.300.2110	E110					HSS	P				N
46.300.2111	E110P					TiN	P		M		N
46.300.2150	E111					HSS	P				N
46.300.2200	E200					HSS				K	N
46.300.2201	E200P					TiN				K	N
46.300.2250	E250					HSS	P				N
46.300.2300	E300					HSS	P				N
46.300.2320	E320					HSS				K	N
46.300.2350	E350					HSS				K	N
46.300.2600	E600					HSS	P				N

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4

› 46.300 SHAVIV

Ref.	Type	Image	1	2	3	4	P	H	M	K	N
46.300.2601	E601					HSS	P				N
46.300.2720	E720						P				N

› 46.400 SHAVIV

NL **Hulpgereedschap voor gereedschapsmakers**
FR **Kit pour ajusteurs et outilleurs**
ES **Conjunto de herramientas para ajustadores**
DE **Hilfswerkzeuge für Werkzeugmacher**
EN **Auxiliary Tools for tool and die makers**

Ref.	Type	Image	1	2	3	4	H
46.400.1000	TD						H
46.400.2001	US1						H
46.400.2380	UB38						H

› 49.140 *International Tools*

NL ECO PRO Hardmetaal Set Stiftfrezen
FR Jeu de Fraises limes Carbure ECO PRO
ES Juego de Fresa rotativa Metal Duro ECO PRO
DE ECO PRO Hartmetall Satz Frässtifte
EN ECO PRO Carbide Set Burr

VHM SC | Ø6 | ECO PRO

Ref.	Ø	z	Contents
49.140.0106	10	6-UNI	Form B, C, D, F, G
49.140.0126	12	6-UNI	Form B, C, D, F, G

› 49.150 *Phantom*

NL Hardmetaal Set Stiftfrezen
FR Jeu de Fraises limes Carbure
ES Juego de Fresa rotativa Metal Duro
DE Hartmetall Satz Frässtifte
EN Carbide Set Burr

VHM SC | Ø6

Ref.	Ø	z	Contents
49.150.0101	10	1-ALU	Form B, C, D, F, G
49.150.0103	10	3-FINE	Form B, C, D, F, G
49.150.0104	10	4-DIAMOND	Form B, C, D, F, G
49.150.0106	10	6-UNI	Form B, C, D, F, G
49.150.0108	10	8-STEEL	Form B, C, D, F, G
49.150.0109	10	9-INOX	Form A, C, D, F, G
49.150.0126	12	6-UNI	Form B, C, D, F, G

› 49.152 *Phantom*

NL Hardmetaal Slotenmakers set
FR Coffret spécial serrurier Carbure
ES Juego especial cerrajero carburo
DE Hartmetall Schlüsseldienste Set
EN Carbide Locksmith set

VHM SC | Ø6

Ref.	Contents
49.152.1000	41.530.0616/0306/0406/0601 + 41.690.4606

› 49.236 Phantom

NL HP2 UNI HSS-E set Verzinkboren 42.347, 60°, 3 snijkanten
FR Jeu de fraises à chanfreiner HSS-E HP2 UNI 42.347, 60°, 3 taillants
ES Juego de avellanadores HSS-E HP2 UNI 42.347, 60°, 3 labios
DE HP2 UNI HSS-E Satz Kegelsenker 42.347, 60°, 3 Schneiden
EN HP2 UNI HSS-E Countersink set 42.347, 60°, 3 flute

NIEUW NOUVEAU NUEVO NEU

HSS-E | DIN 334-C | 3 | 3 | 60° | VARI | HP2 UNI

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	N 61 PVC
25-35 H	20-30 F	15-25 F	7-13 A	10-18 B	9-15 A	20-30 H	20-30 H	40-60 I	30-40 I	30-40 G	20-30 G	40-60 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.236.1025	42.347	10,4-12,4-16,5-20,5-25 mm			

› 49.240 International Tools

NL ECO HSS Set Verzinkboren 42.533, 90°, 3 snijkanten
FR Jeu de fraises à chanfreiner HSS ECO 42.533, 90°, 3 taillants
ES Juego de avellanadores HSS ECO 42.533, 90°, 3 labios
DE ECO HSS Satz Kegelsenker 42.533, 90°, 3 Schneiden
EN ECO HSS Countersink set 42.533, 90°, 3 flute

HSS | DIN 335-C | 3 | 3 | 90° | ECO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu
17-22 *	10-15 *	15-20 *	20-25 *	35-45 *

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.240.0630	42.533	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.240.1020	42.533	10,4-12,4-16,5-20,5 mm
49.240.0631	42.533	6,3-8,3-10,4-12,4-16,5-20,5-25 mm	49.240.1025	42.533	10,4-12,4-16,5-20,5-25 mm

› 49.242 International Tools

NL ECO PRO HSS Set Verzinkboren 42.535, 90°, 3 snijkanten
FR Jeu de fraises à chanfreiner HSS ECO PRO 42.535, 90°, 3 taillants
ES Juego de avellanadores HSS ECO PRO 42.535, 90°, 3 labios
DE ECO PRO HSS Satz Kegelsenker 42.535, 90°, 3 Schneiden
EN ECO PRO HSS Countersink set 42.535, 90°, 3 flute

HSS | DIN 335-C | 3 | 3 | 90° | ECO PRO

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20 *	8-12 *	6-10 *	10-15 *	15-20 *	30-40 *	20-25 *	15-25 *

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.242.0630	42.535	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.242.1020	42.535	10,4-12,4-16,5-20,5 mm
49.242.0631	42.535	6,3-8,3-10,4-12,4-16,5-20,5-25 mm	49.242.1025	42.535	10,4-12,4-16,5-20,5-25 mm

› 49.244 *International Tools*

NL ECO PRO HSS Set Verzinkboren 42.536, 90°, 3 snijkanten, TiN
FR Jeu de fraises à chanfreiner HSS ECO PRO 42.536, 90°, 3 taillants, TiN
ES Juego de avellanadores HSS ECO PRO 42.536, 90°, 3 labios, TiN
DE ECO PRO HSS Satz Kegelsenker 42.536, 90°, 3 Schneiden, TiN
EN ECO PRO HSS Countersink set 42.536, 90°, 3 flute, TiN

HSS	TiN	DIN 335-C	3	3	90°			ECO PRO
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20 *	8-12 *	6-10 *	5-10 *	10-15 *	15-20 *	30-40 *	20-25 *	15-25 *

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.244.0630	42.536	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.244.1020	42.536	10,4-12,4-16,5-20,5 mm
49.244.0631	42.536	6,3-8,3-10,4-12,4-16,5-20,5-25 mm	49.244.1025	42.536	10,4-12,4-16,5-20,5-25 mm

› 49.248 *International Tools*

NL ECO HSS set Verzinkboren 42.543, 90°, 3 snijkanten, 1/4" (6,35 mm)-zeskant bitopname
FR Jeu de fraises à chanfreiner HSS ECO 42.543, 90°, 3 taillants, avec queue hexagonale 1/4" (6,35 mm)
ES Juego de avellanadores HSS ECO 42.543, 90°, 3 labios, con sujeción 1/4" (6,35 mm) bit
DE ECO HSS Satz Kegelsenker 42.543, 90°, 3 Schneiden, 1/4" (6,35 mm) Hexa-Bitaufnahme
EN ECO HSS Countersink set 42.543, 90°, 3 flute, 1/4" (6,35 mm) hexagonal shank

HSS	3	90°		E6,3 1/4"		ECO	
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20 *	8-12 *	6-10 *	10-15 *	15-20 *	30-40 *	20-25 *	15-25 *

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.248.0630	42.543	6,3-8,3-10,4-12,4-16,5-20,5 mm			

› 49.250 *Phantom*

NL HSS-E Set Verzinkboren 42.500, 90°, schuin gat
FR Jeu de fraises à chanfreiner HSS-E 42.500, 90°, à trou
ES Juego de avellanadores HSS-E 42.500, 90°, con agujero
DE HSS-E Satz Kegelsenker 42.500, 90°, Querloch
EN HSS-E Countersink set 42.500, 90°, through hole

HSS-E		90°							
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	N 61 PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.250.1000	42.500	10-15-20-25-30 mm			

› 49.252 Phantom

NL **HSS-E Set Verzinkboren 42.520, 90°, 1 snijkant**
FR **Jeu de fraises à chanfreiner HSS-E 42.520, 90°, 1 dent**
ES **Juego de avellanadores HSS-E 42.520, 90°, 1 labio**
DE **HSS-E Satz Kegelsenker 42.520, 90°, 1 Schneide**
EN **HSS-E Countersink set 42.520, 90°, 1 flute**

HSS-E | 1 | 90°

P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.252.1000	42.520	10-15-20-25-30 mm			

› 49.255 Phantom

NL **HSS-E 8% Set Verzinkboren 42.550, 90°, 3 snijkanten**
FR **Jeu de fraises à chanfreiner HSS-E 8% 42.550, 90°, 3 taillants**
ES **Juego de avellanadores HSS-E 8% 42.550, 90°, 3 labios**
DE **HSS-E 8% Satz Kegelsenker 42.550, 90°, 3 Schneiden**
EN **HSS-E 8% Countersink set 42.550, 90°, 3 flute**

HSS-E 8% | DIN 335-C | 3 | 3 | 90°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC	Ni/Co
35-45 C	20-30 C	16-20 B	8-15 A	12-15 B	8-12 A	20-30 C	30-40 C	50-60 D	35-40 C	20-30 D	30-40 C	35-70 I	4-6 A

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.255.0631	42.550	6,3-10,4-16,5-20,5-25 mm			

› 49.263 Phantom

NL **HP2 UNI HSS-E set Verzinkboren 42.547, 90°, 3 snijkanten**
FR **Jeu de fraises à chanfreiner HSS-E HP2 UNI 42.547, 90°, 3 taillants**
ES **Juego de avellanadores HSS-E HP2 UNI 42.547, 90°, 3 labios**
DE **HP2 UNI HSS-E Satz Kegelsenker 42.547, 90°, 3 Schneiden**
EN **HP2 UNI HSS-E Countersink set 42.547, 90°, 3 flute**

NIEUW | NOUVEAU | NUEVO | NEU

HSS-E | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
25-35 H	20-30 F	15-25 F	7-13 A	10-18 B	9-15 A	20-30 H	20-30 H	40-60 I	30-40 I	30-40 G	20-30 G	40-60 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.263.0620	42.547	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.263.1020	42.547	10,4-12,4-16,5-20,5 mm
49.263.0625	42.547	6,3-8,3-10,4-12,4-16,5-20,5-25 mm	49.263.1025	42.547	10,4-12,4-16,5-20,5-25 mm

› 49.264 Phantom

- **NL** **HP2 UNI HSS-E set Verzinkboren 42.548, 90°, 3 snijkanten, AlTiN-X**
- **FR** **Jeu de fraises à chanfreiner HSS-E HP2 UNI 42.548, 90°, 3 taillants, AlTiN-X**
- **ES** **Juego de avellanadores HSS-E HP2 UNI 42.548, 90°, 3 labios, AlTiN-X**
- **DE** **HP2 UNI HSS-E Satz Kegelsenker 42.548, 90°, 3 Schneiden, AlTiN-X**
- **EN** **HP2 UNI HSS-E Countersink set 42.548, 90°, 3 flute, AlTiN-X**

HSS-E | AlTiN X | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

NIEUW | NOUVEAU | NUEVO | NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	S 71	S 72
≤600 N/mm^2	≤850 N/mm^2	≤1000 N/mm^2	≤1400 N/mm^2	INOX ≤850N/mm^2	INOX >850N/mm^2	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	Ni/Co	Ti
30-40 H	25-35 F	20-30 F	10-16 A	13-21 B	12-20 A	25-35 H	30-40 H	60-80 I	30-50 I	40-60 G	30-40 G	7-11 A	7-11 B

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.264.0620	42.548	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.264.1020	42.548	10,4-12,4-16,5-20,5 mm
49.264.0625	42.548	6,3-8,3-10,4-12,4-16,5-20,5-25 mm	49.264.1025	42.548	10,4-12,4-16,5-20,5-25 mm

› 49.265 Phantom

- **NL** **HP2 UNI HSS-E set Verzinkboren 42.557, 90°, 3 snijkanten, met drievlaks schacht**
- **FR** **Jeu de fraises à chanfreiner HSS-E HP2 UNI 42.557, 90°, 3 taillants, queue à trois méplats**
- **ES** **Juego de avellanadores HSS-E HP2 UNI 42.557, 90°, 3 labios, con 3 chaflanes**
- **DE** **HP2 UNI HSS-E Satz Kegelsenker 42.557, 90°, 3 Schneiden, 3-Flächen-Schaft**
- **EN** **HP2 UNI HSS-E Countersink set 42.557, 90°, 3 flute, with 3 flat surfaces**

HSS-E | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

NIEUW | NOUVEAU | NUEVO | NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm^2	≤850 N/mm^2	≤1000 N/mm^2	≤1400 N/mm^2	INOX ≤850N/mm^2	INOX >850N/mm^2	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
25-35 H	20-30 F	15-25 F	7-13 A	10-18 B	9-15 A	20-30 H	20-30 H	40-60 I	30-40 I	30-40 G	20-30 G	40-60 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.265.0620	42.557	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.265.1020	42.557	10,4-12,4-16,5-20,5 mm
49.265.0625	42.557	6,3-8,3-10,4-12,4-16,5-20,5-25 mm	49.265.1025	42.557	10,4-12,4-16,5-20,5-25 mm

› 49.266 Phantom

- **NL** **HP2 UNI HSS-E set Verzinkboren 42.558, 90°, 3 snijkanten, AlTiN-X, met drievlaks schacht**
- **FR** **Jeu de fraises à chanfreiner HSS-E HP2 UNI 42.558, 90°, 3 taillants, AlTiN-X, queue à trois méplats**
- **ES** **Juego de avellanadores HSS-E HP2 UNI 42.558, 90°, 3 labios, AlTiN-X, con mango 3 chaflanes**
- **DE** **HP2 UNI HSS-E Satz Kegelsenker 42.558, 90°, 3 Schneiden, AlTiN-X, 3-Flächen-Schaft**
- **EN** **HP2 UNI HSS-E Countersink set 42.558, 90°, 3 flute, AlTiN-X, with 3 flat surfaces**

HSS-E | AlTiN X | DIN 335-C | 3 | 3 | 90° | VARI | HP2 UNI

NIEUW | NOUVEAU | NUEVO | NEU

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	S 71	S 72
≤600 N/mm^2	≤850 N/mm^2	≤1000 N/mm^2	≤1400 N/mm^2	INOX ≤850N/mm^2	INOX >850N/mm^2	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	Ni/Co	Ti
30-40 H	25-35 F	20-30 F	10-16 A	13-21 B	12-20 A	25-35 H	30-40 H	60-80 I	30-50 I	40-60 G	30-40 G	7-11 A	7-11 B

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.266.0620	42.558	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.266.1020	42.558	10,4-12,4-16,5-20,5 mm
49.266.0625	42.558	6,3-8,3-10,4-12,4-16,5-20,5-25 mm	49.266.1025	42.558	10,4-12,4-16,5-20,5-25 mm

> 49.267 Phantom

NL HSS-E Set Vari Verzinkboren 42.566, 90°, 3 snijkanten, lang
FR Jeu de fraises à chanfreiner Vari HSS-E 42.566, 90°, 3 taillants, version longue
ES Juego de avellanadores Vari HSS-E 42.566, 90°, 3 labios, larga
DE HSS-E Satz Kegelsenker ungleichteilung 42.566, 90°, 3 Schneiden, lang
EN HSS-E Vari Countersink set 42.566, 90°, 3 flute, long

HSS-E | NORM | 3 | 3 | 90° | VARI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.267.0620	42.566	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.267.1020	42.566	10,4-12,4-16,5-20,5 mm

> 49.268 Phantom

NL HSS-E Set Vari Verzinkboren 42.567, 90°, 3 snijkanten, TiAlN, lang
FR Jeu de fraises à chanfreiner Vari HSS-E 42.567, 90°, 3 taillants, TiAlN, version longue
ES Juego de avellanadores Vari HSS-E 42.567, 90°, 3 labios, TiAlN, larga
DE HSS-E Satz Kegelsenker ungleichteilung 42.567, 90°, 3 Schneiden, TiAlN, lang
EN HSS-E Vari Countersink set 42.567, 90°, 3 flute, TiAlN, long

HSS-E | TiAlN | NORM | 3 | 3 | 90° | VARI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC	Ti
35-45 C	20-30 C	16-20 B	8-15 A	12-15 B	8-12 A	20-30 C	30-40 C	50-60 D	35-40 C	20-30 D	30-40 C	35-70 I	4-8 A

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.268.0620	42.567	6,3-8,3-10,4-12,4-16,5-20,5 mm	49.268.1020	42.567	10,4-12,4-16,5-20,5 mm

> 49.320 Phantom

NL HSS-E Set Kopverzinkboren 90°
FR Jeu de fraises à chambrer HSS-E 90°
ES Juego de avellanador para asientos 'Allen' HSS-E 90°
DE HSS-E Satz Flachsenker 90°
EN HSS-E Countersinks set 90°

HSS-E | 90° | DIN 1866 | 1 | 2 | 3

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.320.1000	43.200	1 (M3-M4-M5-M6-M8-M10)	49.320.3000	43.240	3 (M3-M4-M5-M6-M8-M10)
49.320.2000	43.210	2 (M3-M4-M5-M6-M8-M10)			

› 49.340 Phantom

NL **HSS-E Set Kopverzinkboren 180°**
FR **Jeu de fraises à chambrer HSS-E 180°**
ES **Juego de avellanador para asientos 'Allen' HSS-E 180°**
DE **HSS-E Satz Flachsenker 180°**
EN **HSS-E Countersinks set 180°**

HSS-E | 180° | DIN 373 | 1 | 2 | 3

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	N 61 PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	Type	Ø mm	Ref.	Type	Ø mm
49.340.1000	43.320	1 (M3-M4-M5-M6-M8-M10)	49.340.3000	43.350	3 (M3-M4-M5-M6-M8-M10)
49.340.2000	43.330	2 (M3-M4-M5-M6-M8-M10)			

› 49.413 Phantom

NL **HSS Set Getrapte Plaatboren gespiraliseerd, 44.130, genitreerd**
FR **Jeu de forets étagé HSS goujure hélicoïdale, 44.130, nitruré**
ES **Juego de brocas escalonada HSS helicoidal, 44.130, nitrurada**
DE **HSS Satz Stufenbohrer spiralförmig, 44.130, nitriert**
EN **HSS Set multi diametre Step Drills with spiral flute, 44.130, nitrided**

HSS | NIT.

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27	22-30	15-20	8-12	5-8	15-20	25-30	45-50	25-40	22-28

Ref.	Type	Ø mm
49.413.1000	44.130	4-12 mm, 4-20 mm, 6-30 mm

› 49.414 Phantom

NL **HSS Set Getrapte Plaatboren gespiraliseerd, 44.134, TiAlN**
FR **Jeu de forets étagé HSS goujure hélicoïdale, 44.134, TiAlN**
ES **Juego de brocas escalonada HSS helicoidal, 44.134, TiAlN**
DE **HSS Satz Stufenbohrer spiralförmig, 44.134, TiAlN**
EN **HSS Set multi diametre Step Drills with spiral flute, 44.134, TiAlN**

HSS | TiAlN

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25-27	22-30	15-20	8-12	5-8	15-20	25-30	45-50	25-40	22-28

Ref.	Type	Ø mm
49.414.1000	44.134	4-12 mm, 4-20 mm, 6-30 mm

› 49.420 Phantom

NL **HSS Set Conische Plaatboren 44.200**
FR **Jeu de forets coniques HSS 44.200**
ES **Juego de fresas cónicas escalonadas HSS 44.200**
DE **HSS Satz konische Blechschälbohrer 44.200**
EN **HSS Taper sheet and tube Drill set 44.200**

HSS

P 11	P 12	N 41	N 42	N 61
≤600 N/mm²	≤850 N/mm²	Alu	Alu Si>10%	PVC
25-27	22-30	50-70	40-60	22-28

Ref.	Type	Ø mm
49.420.1000	44.200	1 (3-14 mm), 2 (6-20 mm), 3 (16-30 mm)
49.420.3000	44.200	120 ml

› 49.600 SHAVIV

NL **Assortiment**
FR **Coffret ébavureurs et lames**
ES **Surtido**
DE **Sortiment**
EN **Assortment**

Ref.	Type	Contents
49.600.0120	Mango II	Mango II B/C + B10, B11, B20, B30, B60, B70, C40
49.600.0300	Mango II	Mango II C/E + C42, E100P, E111, E200, E300, E600, E700

NL Voedingswaardentabel (kop-)verzinkers
FR Tableau des avances pour fraises à chanfreiner (ou chambrer)
ES Tabla de avances para avellanador (para asientos ‘Allen’)
DE Vorschubtabelle Kegel- und Flachsenker
EN Feed table countersink and counterbore

P 11 ≤600 N/mm² = ISO

25-35 E — Vc = 25-35, FRC = E

	FRC								
	A	B	C	D	E	F	G	H	I
d1(mm)	f (mm/n)								
4	0,069	0,080	0,081	0,109	0,129	0,117	0,109	0,101	0,129
5	0,077	0,081	0,092	0,123	0,131	0,133	0,121	0,113	0,145
6	0,087	0,083	0,094	0,127	0,134	0,145	0,124	0,120	0,155
8	0,094	0,097	0,104	0,132	0,144	0,148	0,143	0,130	0,168
10	0,095	0,097	0,114	0,136	0,147	0,148	0,147	0,134	0,173
12	0,097	0,100	0,122	0,136	0,147	0,149	0,148	0,147	0,189
14	0,099	0,106	0,107	0,139	0,146	0,151	0,149	0,161	0,207
16	0,104	0,110	0,123	0,142	0,147	0,155	0,155	0,173	0,222
20	0,103	0,112	0,121	0,145	0,149	0,161	0,174	0,186	0,239
25	0,102	0,123	0,118	0,145	0,151	0,157	0,196	0,218	0,280
31	0,107	0,127	0,122	0,146	0,150	0,162	0,204	0,238	0,306
40	0,113	0,131	0,126	0,151	0,155	0,167	0,214	0,246	0,316
50	0,126	0,137	0,137	0,157	0,157	0,183	0,220	0,248	0,318
63	0,126	0,137	0,137	0,157	0,157	0,183	0,220	0,248	0,318

NL Toerentaltabel stiftfrezen
FR Tableau des vitesses de rotation pour fraises limes
ES Tabla de número de revoluciones para fresas rotativas
DE Drehzahltabelle Frässtifte
EN Spindle speed table burrs

	P	H	M	K	N	S
d1(mm) = Ø	n = rpm					
3	60.000 - 80.000	60.000 - 80.000	60.000 - 80.000	45.000 - 80.000	60.000 - 80.000	60.000 - 80.000
6	45.000 - 60.000	30.000 - 45.000	30.000 - 45.000	22.000 - 60.000	15.000 - 60.000	30.000 - 45.000
8	40.000 - 50.000	25.000 - 40.000	25.000 - 40.000	18.000 - 50.000	12.000 - 55.000	25.000 - 40.000
10	30.000 - 40.000	19.000 - 30.000	19.000 - 30.000	15.000 - 40.000	10.000 - 50.000	19.000 - 30.000
12	22.000 - 30.000	15.000 - 22.000	15.000 - 22.000	11.000 - 30.000	7.000 - 30.000	15.000 - 22.000
16	18.000 - 20.000	12.000 - 18.000	12.000 - 18.000	9.000 - 20.000	6.000 - 20.000	12.000 - 18.000
20	15.000 - 17.000	10.000 - 15.000	10.000 - 15.000	8.000 - 17.000	5.000 - 17.000	10.000 - 15.000

NL Toerentaltabel trappenboren
FR Tableau des vitesses de rotation pour forets coniques étagés
ES Tabla de número de revoluciones para brocas escalonadas
DE Drehzahltabelle Stufenbohrer
EN Spindle speed step drills

	P	M	N
nr.	n = rpm		
1	770	310	2600
2	390	150	1300
3	510	210	1700
4	770	310	2600
6	770	310	2600
7	440	180	1500
11	340	140	1100
12	280	110	900
14	280	110	900

NL Toerentaltabel plaatfrezen
FR Tableau des vitesses de rotation pour forets fraiseurs
ES Tabla de número de revoluciones para fresas cónicas escalonadas
DE Drehzahltabelle Fräsbohrern
EN Spindle speed taper drills

$$n = \frac{Vc \times 1000}{3{,}14 \times d1} \qquad Vc = \frac{n \times 3{,}14 \times d1}{1000}$$

	P11 P12		M21		N41 N42 N43		N61	
	HSS	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS	HSS-E
0,5-25 mm	0,1 - 2 mm		0,1 - 1 mm		0,1 - 5 mm		> 10 mm	
nr.	n = rpm							
1	400 - 500	500 - 600	300 - 400	400 - 500	1000 - 1300	1200 - 1500	2000 - 2500	2500 - 3000
2	250 - 325	300 - 400	250 - 350	325 - 400	800 - 900	900 - 1000	1500 - 1750	1700 - 2000
3	200 - 250	250 - 300	80 - 110	100 - 150	300 - 450	450 - 600	1000 - 1300	1200 - 1500
4	100 - 125	120 - 150	60 - 85	80 - 100	200 - 350	300 - 500	500 - 800	750 - 1000
5	80 - 90	90 - 100	40 - 65	60 - 80	100 - 150	150 - 200	200 - 350	300 - 500
6	50 - 75	75 - 80	20 - 30	30 - 40	80 - 110	100 - 150	150 - 250	225 - 300
7	200 - 250	250 - 300	80 - 110	100 - 150	300 - 425	400 - 600	1000 - 1300	1250 - 1500
8	250 - 325	300 - 400	250 - 325	300 - 400	800 - 900	900 - 1000	1500 - 1750	1750 - 2000

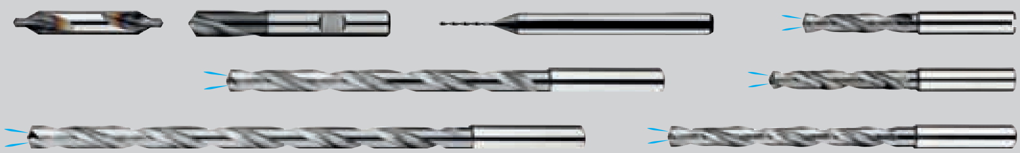
FRC
NL: Voedingscode
FR: Codification vitesse d’avance
ES: Codificación de velocidad de avance
DE: Vorschubgeschwindigkeit Codierung
EN: Feedrate code

f (mm/n)
NL: Voeding per omwenteling (mm/n)
FR: Avance par tour (mm/tr)
ES: Avance por revolucion (mm/r)
DE: Vorschub pro Umdrehung (mm/U)
EN: Feed per revolution (mm/r)

Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)
EN: Cutting speed (m/min)

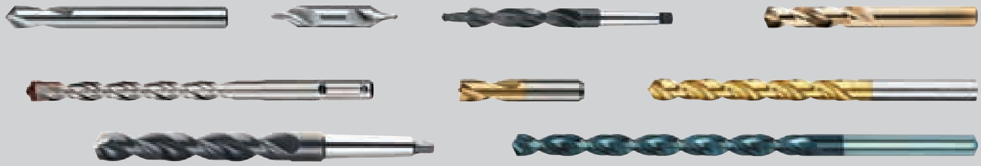
n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)
EN: Spindle speed (rpm)

NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



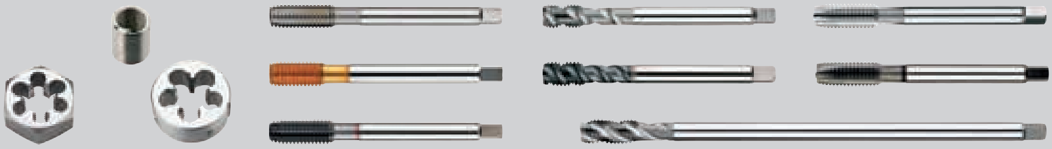
SC 1

NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



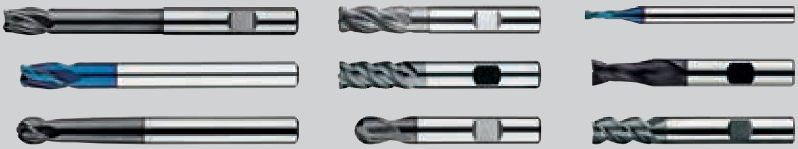
HSS(-E) 1

NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



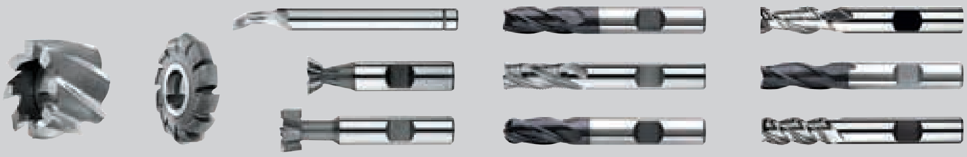
2

NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



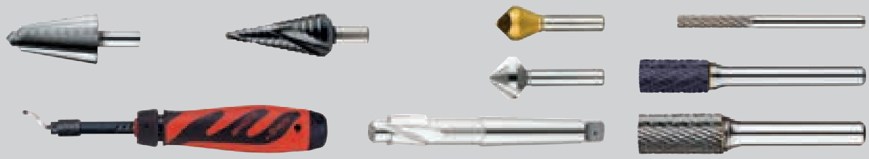
SC 3

NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



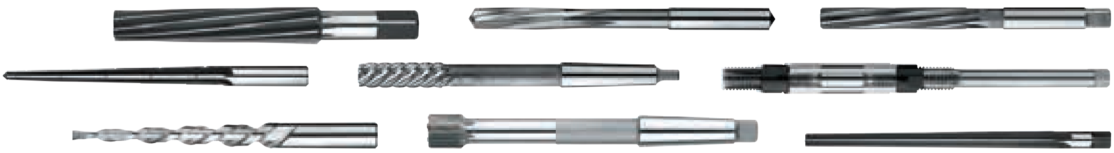
HSS-E 3

NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring



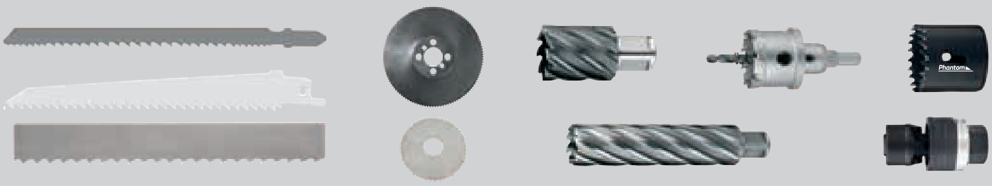
4

NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

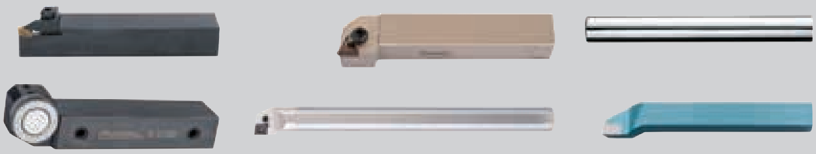


5

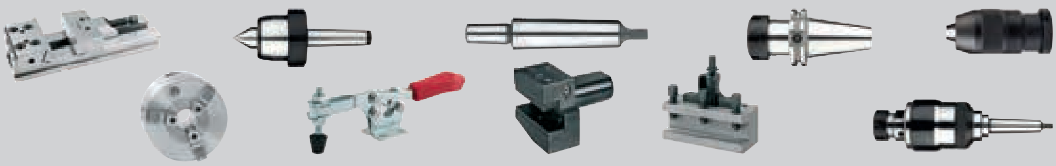
NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



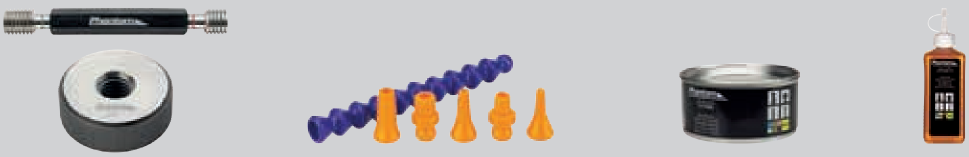
NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
HSS	HSS	HSS	HSS	HSS	HSS
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden	Carbide Tipped
MG HM	Micro-Grain volhardmetaal	Carbure micrograin	Metal duro micrograno	Micro-Grain Vollhartmetall	Micrograin tungsten carbide
AlCrN-X	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung	AlCrN-X coated
" inch	Diameter in inches	Diamètre en pouce	Diámetro en pulgadas	Durchmesser in Zoll-Masse	Diameter in inches
DIN 212-B	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm
DIN≈ 8051	DIN bij benadering	Equivalent norme DIN	Según norma DIN	Ähnlich nach DIN	Approximately DIN

	NL	FR	ES	DE	EN
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
1:10	Coniciteit	Conicité	Conicidad	Konizität	Taper
h8	Cilindrische schacht h8	Queue cylindrique h8	Mango cilíndrico h8	Zylinderschaft h8	Straight shank h8
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel	Morse Taper shank
x0,01	Oplopend met 0,01 mm	Croissant par 0,01 mm	Creciente por 0,01 mm	Ansteigend mit 0,01 mm	Increasing with 0.01 mm
H7	Passing	Tolérance	Tolerancia	Passung	Tolerance
≤ø3 - 0,000 +0,003	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser	Tolerance diameter
MT	Ruimen van Morse Konus	Pour alésage cône morse	Para escariar mango cónico	Für reiben von Morsekegel	Reaming of Mors Taper

NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**
EN **Reaming**

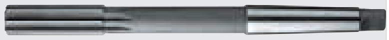
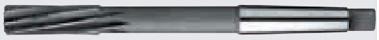
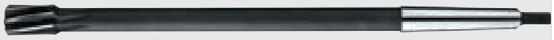
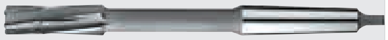
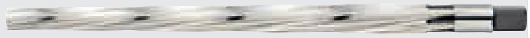
P K / H N / M S: Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K / H N / M S: Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

› 51.110	Phantom	HSS	DIN 206-B	H7	P		K	N		P. 3
› 51.170	Phantom	HSS	DIN 206-B	H7	P		K	N		P. 3
› 51.200	HUNGER	D			P		K	N		P. 4
› 51.201	HUNGER	D								P. 4
› 51.202	HUNGER	D								P. 4
› 51.210	HUNGER	E			P		K	N		P. 5
› 51.211	HUNGER	E								P. 5
› 51.212	HUNGER	E								P. 5
› 51.220	HUNGER	K			P		K	N		P. 6
› 51.221	HUNGER	K								P. 6
› 51.224	HUNGER	K								P. 6
› 51.230	HUNGER	U			P		K	N		P. 7
› 51.231	HUNGER	U								P. 7
› 51.232	HUNGER	U								P. 7
› 51.233	HUNGER	U								P. 7
› 51.234	HUNGER	U								P. 8
› 51.240	HUNGER	V			P		K	N		P. 8
› 51.241	HUNGER	V								P. 8
› 51.242	HUNGER	V								P. 8
› 51.244	HUNGER	V								P. 9
› 81.900		DIN 1814								P. 9
› 81.905		DIN 1814								P. 9
› 51.300	Phantom	HSS	DIN 212-C	H7			K	N		P. 10
› 51.310	Phantom	HSS	DIN 212-D	H7	P		K	N		P. 10
› 51.320	Phantom	HSS-E	DIN 212 B/D	H7	P	M	K	N	S	P. 10
› 51.324	Phantom	HSS-E	DIN 212 B/D	H7	P	M	K	N	S	P. 11
› 51.330	Phantom	MG HM	DIN 212 B/D	H7	P	M	K	N	S	P. 11
› 51.334	Phantom	MG HM	DIN 212-D	H7	P	M	K	N	S	P. 11
› 51.340	Phantom	HSS-E	DIN 212 B/D	P7	P	M	K	N	S	P. 12
› 51.350	Phantom	HSS-E	DIN 212 B/D	x0,01	P	M	K	N	S	P. 12
› 51.360	Phantom	MG HM	NORM	x0,01	P	M	K	N	S	P. 13
› 51.400	Phantom	HSS-E	NORM	H7	P	M	K	N	S	P. 13
› 51.420	Phantom	HSS-E	DIN 212-E	H7	P			N		P. 13

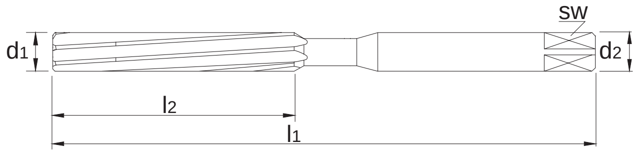
SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5

No.	Brand	Material	Standard	Tolerance	Application		Page
› 51.500	Phantom	HSS	DIN 208-A	H7	K N		P. 14
› 51.510	Phantom	HSS	DIN 208-B	H7	P K N		P. 14
› 51.520	Phantom	HSS-E	DIN 208-B	H7	P M K N S		P. 14
› 51.570	Phantom	HSS-E	DIN 208-B	H7	P M K N S		P. 15
› 51.600	Phantom	HSS-E	NORM	H7	P M K N S		P. 15
› 51.640	Phantom	HM-TIP	DIN 8094-B	H7	P M K N S		P. 16
› 51.645	Phantom	HM-TIP	DIN 8051	H7	P M K N S		P. 16
› 51.650	Phantom	HSS	DIN 219-B	H7	P K N		P. 16
› 84.410	Phantom		DIN 228-B	DIN 217			P. 17
› 51.700	Phantom	HSS	DIN 311	k11	P K N		P. 18
› 51.720	Phantom	HSS	DIN 9-A	1:50	K N		P. 18
› 51.730	Phantom	HSS	DIN 9-B	1:50	P K N		P. 18
› 51.760	Phantom	HSS	DIN 204	MT	P K N		P. 19
› 51.770	Phantom	HSS	NORM	1:10	P K N		P. 19
› 51.780	Phantom	HSS	NPT	1:16	P K N		P. 19
› 51.800	Phantom	HSS	DIN 2179	1:50	P K N		P. 20
› 51.810	Phantom	HSS	DIN 2180	1:50	P K N		P. 20
› 51.820	Phantom	HSS-E	NORM	1:20	P M K N S		P. 20
› 51.830	Phantom	HSS-E	NORM	1:20	P M N		P. 21
› 51.840	Phantom	HSS-E	NORM	1:12,5	P M K N S		P. 21
› 51.850	Phantom	HSS-E	NORM	1:12,5	P M N		P. 21
› 51.860	Phantom	HSS-E	NORM	1:10	P M K N S		P. 22
› 51.870	Phantom	HSS-E	NORM	1:10	P M N		P. 22
› 59.200	HUNGER	D			P K N		P. 23
› 59.210	HUNGER	E			P K N		P. 23
› 59.220	HUNGER	K			P K N		P. 23
› 59.230	HUNGER	U			P K N		P. 23
› 59.240	HUNGER	V			P K N		P. 23

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5

› 51.110 Phantom

NL **HSS Handruimer H7**
FR **Alésoir à main HSS H7**
ES **Escariador mano HSS H7**
DE **HSS Handreibahle H7**
EN **HSS Hand Reamer H7**



HSS | DIN 206-B | H7

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

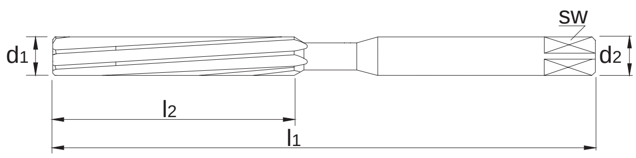
Ref.	d1	l1	l2	d2	sw
51.110.0200	2	50	25	2	1.6
51.110.0250	2.5	58	29	2.5	2
51.110.0300	3	62	31	3	2.24
51.110.0350	3.5	71	35	3.5	2.8
51.110.0400	4	76	38	4	3.15
51.110.0450	4.5	81	41	4.5	3.55
51.110.0500	5	87	44	5	4
51.110.0550	5.5	93	47	5.5	4.5
51.110.0600	6	93	47	6	4.5
51.110.0650	6.5	100	50	6.5	5
51.110.0700	7	107	54	7	5.6
51.110.0750	7.5	115	58	7.5	6.3
51.110.0800	8	115	58	8	6.3
51.110.0850	8.5	124	62	8.5	7.1
51.110.0900	9	124	62	9	7.1
51.110.0950	9.5	133	66	9.5	8
51.110.1000	10	133	66	10	8
51.110.1100	11	142	71	11	9

Ref.	d1	l1	l2	d2	sw
51.110.1200	12	152	76	12	10
51.110.1300	13	152	76	13	10
51.110.1400	14	163	81	14	11.2
51.110.1500	15	163	81	15	11.2
51.110.1600	16	175	87	16	12.5
51.110.1700	17	175	87	17	12.5
51.110.1800	18	188	93	18	14
51.110.1900	19	188	93	19	14
51.110.2000	20	201	100	20	16
51.110.2100	21	201	100	21	16
51.110.2200	22	215	107	22	18
51.110.2300	23	215	107	23	18
51.110.2400	24	231	115	24	20
51.110.2500	25	231	115	25	20
51.110.2600	26	231	115	26	20
51.110.2700	27	247	124	27	22.4
51.110.2800	28	247	124	28	22.4
51.110.2900	29	247	124	29	22.4

Ref.	d1	l1	l2	d2	sw
51.110.3000	30	247	124	30	22.4
51.110.3100	31	265	133	31	25
51.110.3200	32	265	133	32	25
51.110.3300	33	265	133	33	25
51.110.3400	34	284	142	34	28
51.110.3500	35	284	142	35	28
51.110.3600	36	284	142	36	28
51.110.3700	37	284	142	37	28
51.110.3800	38	305	152	38	31.5
51.110.3900	39	305	152	39	31.5
51.110.4000	40	305	152	40	31.5
51.110.4200	42	305	152	42	31.5
51.110.4400	44	326	163	44	35.5
51.110.4500	45	326	163	45	35.5
51.110.4600	46	326	163	46	35.5
51.110.4800	48	347	174	48	40
51.110.5000	50	347	174	50	40

› 51.170 Phantom

NL **HSS Handruimer H7, inch-maten**
FR **Alésoir à main HSS H7, tailles en pouce**
ES **Escariador mano HSS H7, tamaños en pulgadas**
DE **HSS Handreibahle H7, Zollabmessungen**
EN **HSS Hand Reamer H7, imperial sizes**



HSS | " inch | DIN 206-B | H7

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	l1	l2	d2	sw
51.170.0317	1/8	3.175	66	33	3.17
51.170.0476	3/16	4.762	87	44	4.76
51.170.0635	1/4	6.35	100	50	6.35
51.170.0794	5/16	7.937	115	58	7.94
51.170.0952	3/8	9.525	133	66	9.52
51.170.1032	13/32	10.319	133	66	10.32
51.170.1111	7/16	11.112	142	71	11.11

Ref.	d1	l1	l2	d2	sw
51.170.1270	1/2	12.7	152	76	12.7
51.170.1429	9/16	14.287	163	81	14.29
51.170.1588	5/8	15.875	175	87	15.88
51.170.1746	11/16	17.462	201	100	17.46
51.170.1905	3/4	19.05	201	100	19.05
51.170.2063	13/16	20.637	201	100	20.63
51.170.2222	7/8	22.225	215	107	22.22

Ref.	d1	l1	l2	d2	sw
51.170.2381	15/16	23.812	231	115	23.81
51.170.2540	1	25.4	231	115	25.4
51.170.2698	1.1/16	26.988	247	124	26.98
51.170.2858	1.1/8	28.575	247	124	28.58
51.170.3175	1.1/4	31.75	265	133	31.75
51.170.3810	1.1/2	38.1	305	152	38.1

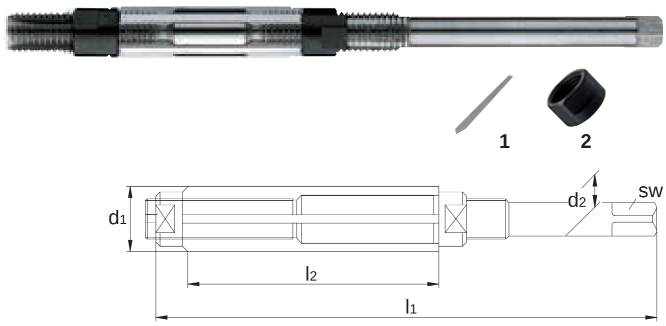
NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

Watch me

www.phantom.eu

› 51.200 HUNGER

NL HSS Verstelbare Handruimer type D
FR Alésoir expansible à main HSS type D
ES Escariador mano ajustable HSS tipo D
DE HSS Verstellbare Handreibahlen Typ D
EN HSS Adjustable Hand Reamer type D



P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	l1	l2	z	d2	sw	1	2
51.200.0640	6,4-7,2	111	32	4	3.8	3	51.201.0640	51.202.0640
51.200.0720	7,2-8	111	32	4	4.25	3.5	51.201.0640	51.202.0700
51.200.0800	8-9	111	32	5	5.2	4.3	51.201.0800	51.202.0800
51.200.0900	9-10	115	32	5	5.6	4.3	51.201.0900	51.202.0900
51.200.1000	10-11	120	35	5	6.1	4.9	51.201.1000	51.202.1000
51.200.1100	11-12	125	35	5	7.4	6.2	51.201.1100	51.202.1100
51.200.1200	12-13,5	130	42	5	8.4	6.2	51.201.1200	51.202.1200
51.200.1350	13,5-15,5	145	50	5	9.4	7	51.201.1350	51.202.1350
51.200.1550	15,5-18	165	60	5	10.4	8	51.201.1550	51.202.1550
51.200.1800	18-21	180	65	5	11.4	9	51.201.1800	51.202.1800
51.200.2100	21-24	190	70	5	13.1	10	51.201.2100	51.202.2100
51.200.2400	24-27,5	205	75	5	14.1	11	51.201.2400	51.202.2400
51.200.2750	27,5-31,5	225	80	6	16.1	12	51.201.2750	51.202.2750
51.200.3150	31,5-37	240	90	6	18.1	14.5	51.201.3150	51.202.3150
51.200.3700	37-45	285	100	6	20.1	16	51.201.3700	51.202.3700
51.200.4500	45-55	320	109	6	25.1	20	51.201.4500	51.202.4500
51.200.5500	55-65	350	120	8	30.1	24	51.201.5500	51.202.5500
51.200.6500	65-80	460	145	10	38.5	29	51.201.6500	51.202.6500
51.200.8000	80-95	490	150	10	40.5	32	51.201.8000	51.202.8000
51.200.9500	95-110	490	150	10	45.4	36	51.201.9500	51.202.9500

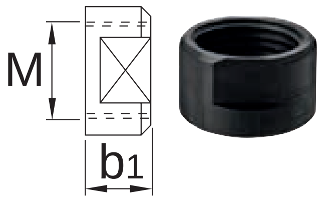
› 51.201 HUNGER

NL HSS Stel Reservemessen type D
FR Jeu de Lames de rechange HSS type D
ES Juego de cuchillas de recambio HSS tipo D
DE HSS Satz Ersatzmesser Typ D
EN HSS set of auxiliary Blades type D

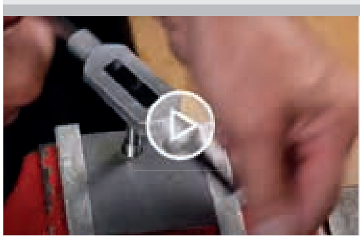
Ref.	d1	l2	NR	Ref.	d1	l2	NR	Ref.	d1	l2	NR
51.201.0640	6,4-8	32	4	51.201.1550	15,5-18	60	5	51.201.4500	45-55	109	6
51.201.0800	8-9	32	5	51.201.1800	18-21	65	5	51.201.5500	55-65	120	8
51.201.0900	9-10	32	5	51.201.2100	21-24	70	5	51.201.6500	65-80	145	10
51.201.1000	10-11	35	5	51.201.2400	24-27,5	75	5	51.201.8000	80-95	150	10
51.201.1100	11-12	35	5	51.201.2750	27,5-31,5	80	6	51.201.9500	95-110	150	10
51.201.1200	12-13,5	42	5	51.201.3150	31,5-37	90	6				
51.201.1350	13,5-15,5	50	5	51.201.3700	37-45	100	6				

› 51.202 HUNGER

NL Reservemoer type D, E, K, U, V
FR Écrou de rechange type D, E, K, U, V
ES Tuerca de recambio type D, E, K, U, V
DE Ersatzmutter type D, E, K, U, V
EN Spare Nut type D, E, K, U, V



Ref.	d1	b1	M	Ref.	d1	b1	M	Ref.	d1	b1	M
51.202.0640	6,4-7,2	8	5x0,75	51.202.1350	13,5-15,5	10	11x1	51.202.3700	37-45	16	30x2
51.202.0700	7,2-8	8	5,75x1	51.202.1550	15,5-18	10	13x1	51.202.4500	45-55	16	36x2
51.202.0800	8-9	8	6,75x1	51.202.1800	18-21	11	15x1	51.202.5500	55-65	17	44x2
51.202.0900	9-10	8	7,5x1	51.202.2100	21-24	12	17x1,5	51.202.6500	65-80	20	55x2
51.202.1000	10-11	8.5	8x1	51.202.2400	24-27,5	13	19x1,5	51.202.8000	80-95	26	65x2
51.202.1100	11-12	9	9x1	51.202.2750	27,5-31,5	14	21x2	51.202.9500	95-110	26	75x2
51.202.1200	12-13,5	9	10x1	51.202.3150	31,5-37	15	25x2				

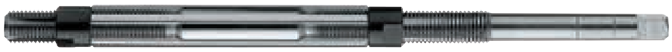


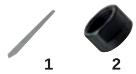
NL Gebruik verstelbare ruimer
FR Utiliser un alésoir expansible
ES Uso del escariador ajustable
DE Verwendung verstellbare Reibahle
EN Use an ajustable reamer

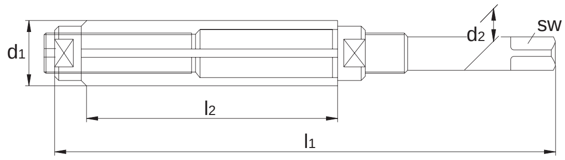
Watch me

www.phantom.eu

› 51.210 HUNGER







NL **HSS Verstelbare Handruimer extra lang, type E**
FR **Alésoir expansible à main HSS extra longue, type E**
ES **Escariador mano ajustable HSS extra larga, tipo E**
DE **HSS Verstellbare Handreibahlen extra lang, Typ E**
EN **HSS Adjustable Hand Reamer extra long, type E**

P 11	P 12	P 13	K 31	K 32	N 41	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Cu

Ref.	d1	l1	l2	z	d2	sw	1	2
51.210.1050	10,5-12	160	65	5	6.9	5.5	51.211.1050	51.212.1050
51.210.1200	12-13,5	170	70	5	8.4	6.2	51.211.1200	51.202.1200
51.210.1350	13,5-15,5	195	80	5	9.4	7	51.211.1350	51.202.1350
51.210.1550	15,5-17,5	215	90	5	10.4	8	51.211.1550	51.202.1550
51.210.1750	17,5-19,5	230	100	5	11.4	9	51.211.1750	51.212.1750
51.210.1950	19,5-21,5	240	110	5	13.1	10	51.211.1950	51.212.1950
51.210.2150	21,5-24,5	260	120	5	13.1	10	51.211.2150	51.202.2100
51.210.2450	24,5-27,5	280	130	5	14.1	11	51.211.2450	51.202.2400
51.210.2750	27,5-31,5	310	140	6	16.1	12	51.211.2750	51.202.2750
51.210.3150	31,5-37	320	150	6	18.1	14.5	51.211.3150	51.202.3150
51.210.3700	37-45	370	165	6	20.1	16	51.211.3700	51.202.3700
51.210.4500	45-55	425	180	6	25.1	20	51.211.4500	51.202.4500

› 51.211 HUNGER

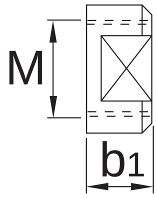
NL **HSS Stel Reservemessen type E**
FR **Jeu de Lames de rechange HSS type E**
ES **Juego de cuchillas de recambio HSS tipo E**
DE **HSS Satz Ersatzmesser Typ E**
EN **HSS set of auxiliary Blades type E**

Ref.	d1	l2	NR
51.211.1050	10,5-12	65	5
51.211.1200	12-13,5	70	5
51.211.1350	13,5-15,5	80	5
51.211.1550	15,5-17,5	90	5

Ref.	d1	l2	NR
51.211.1750	17,5-19,5	100	5
51.211.1950	19,5-21,5	110	5
51.211.2150	21,5-24,5	120	5
51.211.2450	24,5-27,5	130	5

Ref.	d1	l2	NR
51.211.2750	27,5-31,5	140	6
51.211.3150	31,5-37	150	6
51.211.3700	37-45	165	6
51.211.4500	45-55	180	6

› 51.212 HUNGER



NL **Reservemoer type E, (overige maten 51.202)**
FR **Écrou de rechange type E, (autres dimensions 51.202)**
ES **Tuerca de recambio tipo E, (otros tamaños 51.202)**
DE **Ersatzmutter Typ E, (übrige Abmessungen 51.202)**
EN **Spare Nut type E, (other dimensions 51.202)**

Ref.	d1	b1	M
51.212.1050	10,5-12	9	8,25x1

Ref.	d1	b1	M
51.212.1750	17,5-19,5	11	14x1

Ref.	d1	b1	M
51.212.1950	19,5-21,5	11	16x1,5

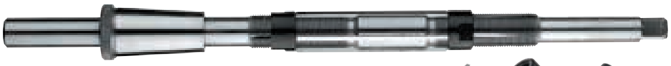
NL Wisselen messen verstelbare ruimer
FR Changer les lames d’un alésoir expansible
ES Cambiar cuchillas de un escariador ajustable
DE Wechseln Messer verstellbahre Reibahle
EN Changing blades ajustable reamer

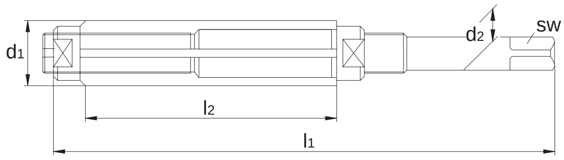
Watch me

www.phantom.eu

› 51.220 HUNGER

NL HSS Verstelbare Handruimer type K, enkelvoudige geleiding
FR Alésoir expansible à main HSS type K, guidage simple
ES Escariador mano ajustable HSS tipo K, guía simple
DE HSS Verstellbare Handreibahlen Typ K, einseitiger Führung
EN HSS Adjustable Hand Reamer type K, single guidance





P 11	P 12	P 13	K 31	K 32	N 41	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Cu

Ref.	d1	l1	l2	z	d2	sw	1	2	3 incl.
51.220.0700	7-8	175	32	4	4.25	3.5	51.201.0640	51.202.0700	51.224.0700
51.220.0800	8-9	175	32	5	5.2	4.3	51.221.0800	51.202.0800	51.224.0800
51.220.0900	9-10	175	32	5	5.6	4.3	51.221.0900	51.202.0900	51.224.0900
51.220.1000	10-11	185	35	5	6.1	4.9	51.221.1000	51.202.1000	51.224.1000
51.220.1100	11-12	195	35	5	7.4	6.2	51.221.1100	51.202.1100	51.224.1100
51.220.1200	12-13,5	215	42	5	8.4	6.2	51.221.1200	51.202.1200	51.224.1200
51.220.1350	13,5-15,5	235	50	5	9.4	7	51.221.1350	51.202.1350	51.224.1350
51.220.1550	15,5-18	265	60	5	10.4	8	51.221.1550	51.202.1550	51.224.1550
51.220.1800	18-21	290	65	5	11.4	9	51.221.1800	51.202.1800	51.224.1800
51.220.2100	21-24	310	70	5	13.1	10	51.221.2100	51.202.2100	51.224.2100
51.220.2400	24-27,5	335	75	5	14.1	11	51.221.2400	51.202.2400	51.224.2400
51.220.2750	27,5-31,5	365	80	6	16.1	12	51.221.2750	51.202.2750	51.224.2750
51.220.3150	31,5-37	400	90	6	18.1	14.5	51.221.3150	51.202.3150	51.224.3150
51.220.3700	37-45	465	100	6	20.1	16	51.221.3700	51.202.3700	51.224.3700
51.220.4500	45-55	530	109	6	25.1	20	51.221.4500	51.202.4500	51.224.4500
51.220.5500	55-65	570	120	8	30.1	24	51.221.5500	51.202.5500	51.224.5500
51.220.6500	65-80	670	145	10	38.5	29	51.201.6500	51.202.6500	51.224.6500
51.220.8000	80-95	700	150	10	40.5	32	51.201.8000	51.202.8000	51.224.8000
51.220.9500	95-110	700	150	10	45.4	36	51.201.9500	51.202.9500	51.224.9500

› 51.221 HUNGER

NL HSS Stel Reservemessen type K, (overige maten 51.201)
FR Jeu de Lames de rechange HSS type K, (autres dimensions 51.201)
ES Juego de cuchillas de recambio HSS tipo K, (otros tamaños 51.201)
DE HSS Satz Ersatzmesser Typ K, (übrige Abmessungen 51.201)
EN HSS set of auxiliary Blades type K, (other dimensions 51.201)

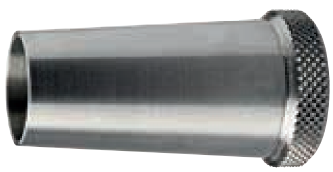
Ref.	d1	l2	NR
51.221.0700	7-8	32	5
51.221.0800	8-9	32	5
51.221.0900	9-10	32	5
51.221.1000	10-11	35	5
51.221.1100	11-12	35	5
51.221.1200	12-13,5	42	5

Ref.	d1	l2	NR
51.221.1350	13,5-15,5	50	5
51.221.1550	15,5-18	60	5
51.221.1800	18-21	65	5
51.221.2100	21-24	70	5
51.221.2400	24-27,5	75	5
51.221.2750	27,5-31,5	80	6

Ref.	d1	l2	NR
51.221.3150	31,5-37	90	6
51.221.3700	37-45	100	6
51.221.4500	45-55	109	6
51.221.5500	55-65	120	8

› 51.224 HUNGER

NL Geleidebus type K
FR Bague de guidage type K
ES Anillo de guía tipo K
DE Führungsbüchsen Typ K
EN Guidance Bush type K

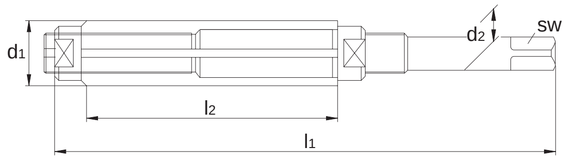


Ref.	d1
51.224.0700	7-8
51.224.0800	8-9
51.224.0900	9-10
51.224.1000	10-11
51.224.1100	11-12
51.224.1200	12-13,5
51.224.1350	13,5-15,5

Ref.	d1
51.224.1550	15,5-18
51.224.1800	18-21
51.224.2100	21-24
51.224.2400	24-27,5
51.224.2750	27,5-31,5
51.224.3150	31,5-37
51.224.3700	37-45

Ref.	d1
51.224.4500	45-55
51.224.5500	55-65
51.224.6500	65-80
51.224.8000	80-95
51.224.9500	95-110

› 51.230 HUNGER



NL HSS Verstelbare Handruimer type U, dubbele geleiding
FR Alésoir expansible à main HSS type U, guidage double
ES Escariador mano ajustable HSS tipo U, guía doble
DE HSS Verstellbare Handreibahlen Typ U, doppelter führung
EN HSS Adjustable Hand Reamer type U, double guidance

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

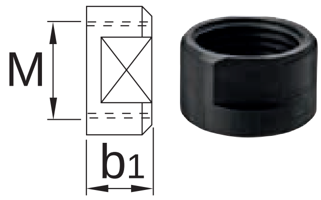
Ref.	d1	l1	l2	z	d2	sw	1	2	3	4 incl.
51.230.1200	12-13,5	250	30	5	10.3	8	51.231.1200	51.232.1200	51.233.1200	51.234.1200
51.230.1350	13,5-15,5	270	33	5	11.8	9	51.231.1350	51.232.1350	51.202.1350	51.234.1350
51.230.1550	15,5-18	295	36	5	13.8	10	51.231.1550	51.232.1550	51.233.1550	51.234.1550
51.230.1800	18-19,5	330	40	5	16.3	12	51.231.1800	51.232.1800	51.233.1800	51.234.1800
51.230.1950	19,5-21	352	44	5	17.8	13	51.231.1950	51.232.1950	51.202.1950	51.234.1950
51.230.2100	21-24,5	352	44	5	18.8	13	51.231.2100	51.232.2100	51.233.2100	51.234.2100
51.230.2450	24,5-29	385	48	6	21.8	13	51.231.2450	51.232.2450	51.233.2450	51.234.2450
51.230.2900	29-34	418	52	6	24.8	16	51.231.2900	51.232.2900	51.233.2900	51.234.2900
51.230.3400	34-39	440	54	6	29.8	18	51.231.3400	51.232.3400	51.233.3400	51.234.3400
51.230.3900	39-45	475	60	6	32.8	18	51.231.3900	51.232.3900	51.233.3900	51.234.3900
51.230.4500	45-52	500	60	6	37.8	18	51.231.4500	51.232.4500	51.233.4500	51.234.4500
51.230.5200	52-59	500	60	6	39.8	18	51.231.4500	51.232.5200	51.233.5200	51.234.5200
51.230.5900	59-66	500	60	6	39.8	18	51.231.4500	51.232.5900	51.233.5900	51.234.5900

› 51.231 HUNGER

NL HSS Stel Reservemessen type U
FR Jeu de Lames de rechange HSS type U
ES Juego de cuchillas de recambio HSS tipo U
DE HSS Satz Ersatzmesser Typ U
EN HSS set of auxiliary Blades type U

Ref.	d1	l2	NR	Ref.	d1	l2	NR	Ref.	d1	l2	NR
51.231.1200	12-13,5	30	5	51.231.1950	19,5-22,5	44	5	51.231.3400	34-39	54	6
51.231.1350	13,5-15,5	33	5	51.231.2100	21-24,5	44	5	51.231.3900	39-45	60	6
51.231.1550	15,5-18	36	5	51.231.2450	24,5-29	48	6	51.231.4500	45-52/59-66	60	6
51.231.1800	18-21	40	5	51.231.2900	29-34	52	6				

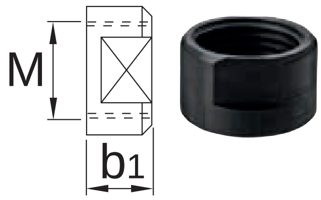
› 51.232 HUNGER



NL Reservemoer type U, groot
FR Écrou de rechange type U, grand modèle
ES Tuerca de recambio tipo U, grande
DE Ersatzmutter Typ U, groß
EN Spare Nut type U, large

Ref.	d1	b1	M	Ref.	d1	b1	M	Ref.	d1	b1	M
51.232.1200	12-13,5	9	10x1	51.232.2100	21-24,5	12	17x1,5	51.232.4500	45-52	16	36x2
51.232.1350	13,5-15,5	10	11x1	51.232.2450	24,5-29	13	20x1,5	51.232.5200	52-59	15	39x2
51.232.1550	15,5-18	10	13x1	51.232.2900	29-34	14	24x2	51.232.5900	59-66	15	50x2
51.232.1800	18-21	11	15x1	51.232.3400	34-39	14.5	28x2				
51.232.1950	19,5-22,5	11	16x1	51.232.3900	39-45	15	31x2				

› 51.233 HUNGER



NL Reservemoer type U, klein, met schaalverdeling, (overige maten 51.202)
FR Écrou de rechange type U, petit, avec graduation, (autres dimensions 51.202)
ES Tuerca de recambio tipo U, pequeño, con graduaciones, (otros tamaños 51.202)
DE Ersatzmutter Typ U, klein, mit Skala, (übrige Abmessungen 51.202)
EN Spare Nut type U, small, with graduation, (other dimensions 51.202)

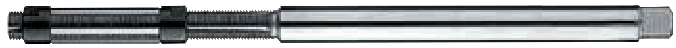
Ref.	d1	b1	M	Ref.	d1	b1	M	Ref.	d1	b1	M
51.233.1200	12-13,5	8.5	9x1	51.233.2450	24,5-29	12	19x1,5	51.233.4500	45-52	16	36x2
51.233.1550	15,5-18	9.5	12x1	51.233.2900	29-34	13	21x2	51.233.5200	52-59	15	39x2
51.233.1800	18-21	10.5	14x1	51.233.3400	34-39	14	26x2				
51.233.2100	21-24,5	11	16x1,5	51.233.3900	39-45	14.5	28x2				

› 51.234 HUNGER

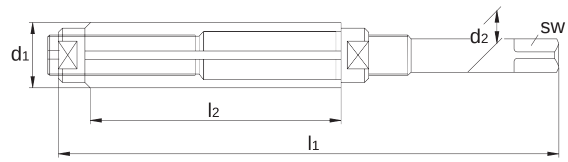
NL Geleidebus type U
FR Bague de guidage type U
ES Anillo de guía tipo U
DE Führungsbüchsen Typ U
EN Guidance Bush type U

Ref.	d1	Ref.	d1	Ref.	d1
51.234.1200	12-13,5	51.234.2100	21-24,5	51.234.4500	45-52
51.234.1350	13,5-15,5	51.234.2450	24,5-29	51.234.5200	52-59
51.234.1550	15,5-18	51.234.2900	29-34	51.234.5900	59-66
51.234.1800	18-21	51.234.3400	34-39		
51.234.1950	19,5-22,5	51.234.3900	39-45		

› 51.240 HUNGER



NL HSS Verstelbare Handruimer type V, klepgeleideruimer
FR Alésoir expansible à main HSS type V, pour guide de soupapes
ES Escariador mano ajustable HSS tipo V, para guías de válvulas
DE HSS Verstellbare Handreibahlen Typ V, für Ventilführungen
EN HSS Adjustable Hand Reamer type V, valve guide reamer



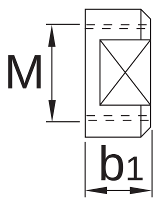
Ref.	d1	l1	l2	z	d2	sw	1	2	3 excl.
51.240.0540	5,4-6	160	28	3	5.3	4	51.241.0540	51.242.0540	51.244.0540
51.240.0590	5,9-6,5	160	28	3	5.6	4.3	51.241.0590	51.202.0640	51.244.0590
51.240.0640	6,4-7	160	28	3	6.1	4.9	51.241.0640	51.242.0640	51.244.0640
51.240.0690	6,9-7,5	160	28	3	6.6	5.5	51.241.0690	51.202.0700	51.244.0690
51.240.0740	7,4-8	165	28	3	7.1	5.5	51.241.0740	51.242.0740	51.244.0740
51.240.0790	7,9-8,5	170	28	3	7.6	6.2	51.241.0790	51.202.0800	51.244.0790
51.240.0840	8,4-9	175	28	3	8.1	6.2	51.241.0840	51.242.0840	51.244.0840
51.240.0890	8,9-9,5	180	32	4	8.6	7	51.241.0890	51.242.0890	51.244.0890
51.240.0940	9,4-10	190	32	4	9.1	7	51.241.0940	51.242.0940	51.244.0940
51.240.0990	9,9-11	200	36	5	9.6	8	51.241.0990	51.212.1050	51.244.0990
51.240.1090	10,9-12	220	36	5	10.5	8	51.241.1090	51.242.1090	51.244.1090

› 51.241 HUNGER

NL HSS Stel Reservemessen type V
FR Jeu de Lames de rechange HSS type V
ES Juego de cuchillas de recambio HSS tipo V
DE HSS Satz Ersatzmesser Typ V
EN HSS set of auxiliary Blades type V

Ref.	d1	l2	NR	Ref.	d1	l2	NR	Ref.	d1	l2	NR
51.241.0540	5,4-6	28	3	51.241.0740	7,4-8	28	3	51.241.0940	9,4-10	32	4
51.241.0590	5,9-6,5	28	3	51.241.0790	7,9-8,5	28	3	51.241.0990	9,9-11	36	5
51.241.0640	6,4-7	28	3	51.241.0840	8,4-9	28	3	51.241.1090	10,9-12	36	5
51.241.0690	6,9-7,5	28	3	51.241.0890	8,9-9,5	32	4				

› 51.242 HUNGER



NL Reservemoer type V, (overige maten 51.212)
FR Écrou de rechange type V, (autres dimensions 51.212)
ES Tuerca de recambio tipo V, (otros tamaños 51.212)
DE Ersatzmutter Typ V, (übrige Abmessungen 51.212)
EN Spare Nut type V, (other dimensions 51.212)

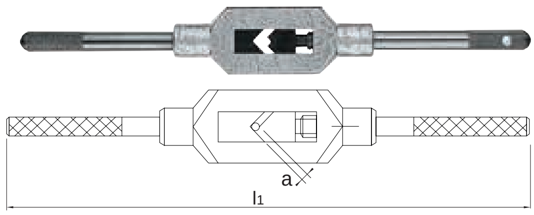
Ref.	d1	b1	M	Ref.	d1	b1	M	Ref.	d1	b1	M
51.242.0540	5,4-6	8	4,5x0,75	51.242.0840	8,4-9	8	7,25x1	51.242.0990	9,9-11	9	8,25x1
51.242.0640	6,4-7	8	5,5x0,75	51.242.0890	8,9-9,5	8.5	7,25x1	51.242.1090	10,9-12	9	8,75x1
51.242.0740	7,4-8	8	5,5x0,75	51.242.0940	9,4-10	8.5	7,75x1				

› 51.244 HUNGER

NL Geleidebus type V
FR Bague de guidage type V
ES Anillo de guía tipo V
DE Führungsbüchsen Typ V
EN Guidance Bush type V

Ref.	d1	Ref.	d1	Ref.	d1
51.244.0540	5,4-6	51.244.0740	7,4-8	51.244.0940	9,4-10
51.244.0590	5,9-6,5	51.244.0790	7,9-8,5	51.244.0990	9,9-11
51.244.0640	6,4-7	51.244.0840	8,4-9	51.244.1090	10,9-12
51.244.0690	6,9-7,5	51.244.0890	8,9-9,5		

› 81.900

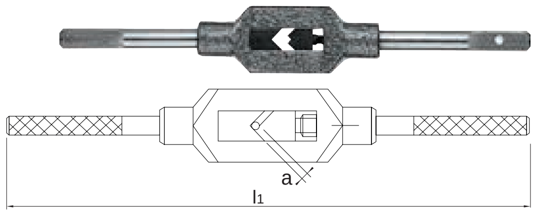


NL Verstelbaar Wringijzer, standaard kwaliteit, Zink-legering
FR Tourne à gauche expansible, qualité standard, alliage de zinc
ES Giramacho extensible, calidad estándar, aleación de cinc
DE Verstellbare Windeisen, Standard-Qualität, Zinkdruckguβ
EN Adjustable Tap Wrench, standard quality, zinc die cast

DIN
1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0000	0	M1-M6	1/16-1/4	-	125	2-5
81.900.0100	1	M1-M10	1/16-3/8	1/8	180	2-6
81.900.0150	1,5	M3-M12	1/16-1/2	1/8	200	2,5-8
81.900.0200	2	M4,5-M16	5/32-1/2	1/8	280	4-9
81.900.0300	3	M4,5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.900.0400	4	M7-M27	7/16-1	1/4-3/4	500	5,5-16
81.900.0500	5L	M9-M33	1/2-1.1/4	1/4-1	750	7-20

› 81.905



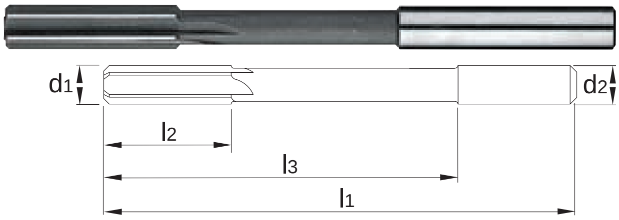
NL Verstelbaar Wringijzer, extra kwaliteit, staal
FR Tourne à gauche expansible, qualité supérieure, acier
ES Giramacho extensible, calidad superior, acero
DE Verstellbare Windeisen, Extra-Qualität, Stahl
EN Adjustable Tap Wrench, extra quality, steel

DIN
1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0000	0	M1-M6	1/16-1/4	-	130	2-5
81.905.0100	1	M1-M10	1/16-3/8	1/8	180	2-6
81.905.0150	1,5	M3-M12	1/16-1/2	1/8	200	2,5-8
81.905.0200	2	M4,5-M16	5/32-1/2	1/8	280	4-9
81.905.0300	3	M4,5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.905.0400	4	M7-M27	7/16-1	1/4-3/4	500	5,5-16
81.905.0500	5S	M9-M33	1/2-1.1/4	1/4-1	750	7-20
81.905.0600	6L	M18-M42	3/4-1.1/2	1/2-1.1/4	1000	9-25
81.905.0800	8	M27-M68	1-2.1/2	3/4-3	1250	16-40

› 51.300 Phantom

NL **HSS Machineruimer vorm C H7**
FR **Alésoir machine HSS forme C H7**
ES **Escariador máquina HSS forma C H7**
DE **HSS Maschinenreibahlen form C H7**
EN **HSS Machine Chucking Reamer form C H7**



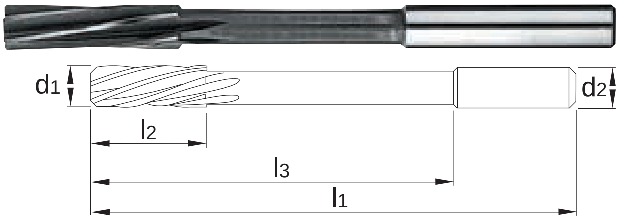
HSS | DIN 212-C | h9 | H7

K 31 GG	K 32 GGG GTS-GTW	N 51 Cu
4-5 C	6-15 D	12-20 D

Ref.	d1	l1	l2	l3	z	d2
51.300.0400	4	75	19	47	6	4
51.300.0450	4.5	80	21	52	6	4.5
51.300.0500	5	86	23	58	6	5
51.300.0550	5.5	93	26	58	6	5.6
51.300.0600	6	93	26	58	6	5.6
51.300.0650	6.5	101	28	65	6	6.3
51.300.0700	7	109	31	73	6	7.1
51.300.0800	8	117	33	81	6	8
51.300.0900	9	125	36	85	6	9
51.300.1000	10	133	38	93	6	10
51.300.1100	11	142	41	102	8	10
51.300.1200	12	151	44	111	8	10
51.300.1300	13	151	44	111	8	10
51.300.1400	14	160	47	117	8	12.5
51.300.1500	15	162	50	117	8	12.5
51.300.1600	16	170	52	125	8	12.5

› 51.310 Phantom

NL **HSS Machineruimer vorm D H7**
FR **Alésoir machine HSS forme D H7**
ES **Escariador máquina HSS forma D H7**
DE **HSS Maschinenreibahlen form D H7**
EN **HSS Machine Chucking Reamer form D H7**



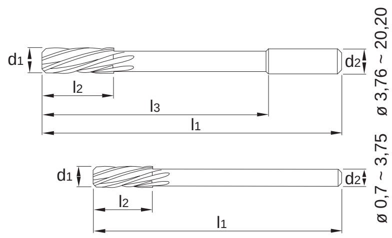
HSS | DIN 212-D | h9 | H7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
10-15 E	8-15 D	4-5 C	4-5 C	6-15 D	30-50 F	12-20 D

Ref.	d1	l1	l2	l3	z	d2
51.310.0400	4	75	19	47	6	4
51.310.0450	4.5	80	21	52	6	4.5
51.310.0500	5	86	23	58	6	5
51.310.0550	5.5	93	26	58	6	5.6
51.310.0600	6	93	26	58	6	5.6
51.310.0650	6.5	101	28	65	6	6.3
51.310.0700	7	109	31	73	6	7.1
51.310.0800	8	117	33	81	6	8
51.310.0900	9	125	36	85	6	9
51.310.1000	10	133	38	93	6	10
51.310.1100	11	142	41	102	8	10
51.310.1200	12	151	44	111	8	10
51.310.1300	13	151	44	111	8	10
51.310.1400	14	160	47	117	8	12.5
51.310.1500	15	162	50	117	8	12.5
51.310.1600	16	170	52	125	8	12.5
51.310.1700	17	175	54	130	8	14
51.310.1800	18	182	56	137	8	14
51.310.1900	19	189	58	141	10	16
51.310.2000	20	195	60	147	10	16

› 51.320 Phantom

NL **HSS-E Machineruimer vorm B/D H7**
FR **Alésoir machine HSS-E forme B/D H7**
ES **Escariador máquina HSS-E forma B/D H7**
DE **HSS-E Maschinenreibahlen form B/D H7**
EN **HSS-E Machine Chucking Reamer form B/D H7**

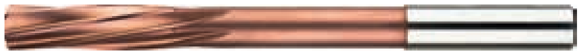


HSS-E | DIN 212 B/D | h8 | H7

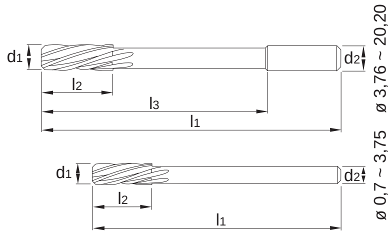
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1	l1	l2	l3	d2
51.320.0100	1	38	5		1
51.320.0150	1.5	40	8		1.5
51.320.0200	2	49	11		2
51.320.0250	2.5	57	14		2.5
51.320.0300	3	61	15		3
51.320.0350	3.5	70	18		3.5
51.320.0400	4	75	19	47	4
51.320.0450	4.5	80	21	52	4.5
51.320.0500	5	86	23	58	5
51.320.0550	5.5	93	26	58	5.6
51.320.0600	6	93	26	58	5.6
51.320.0650	6.5	101	28	65	6.3
51.320.0700	7	109	31	73	7.1
51.320.0750	7.5	109	31	73	7.1
51.320.0800	8	117	33	81	8
51.320.0850	8.5	117	33	81	8
51.320.0900	9	125	36	85	9
51.320.0950	9.5	125	36	85	9
51.320.1000	10	133	38	93	10
51.320.1050	10.5	133	38	93	10
51.320.1100	11	142	41	102	10
51.320.1150	11.5	142	41	102	10
51.320.1200	12	151	44	111	10
51.320.1250	12.5	151	44	111	10
51.320.1300	13	151	44	111	10
51.320.1350	13.5	160	47	115	12.5
51.320.1400	14	160	47	117	12.5
51.320.1450	14.5	162	50	117	12.5
51.320.1500	15	162	50	117	12.5
51.320.1600	16	170	52	125	12.5

› 51.324 *Phantom*



- NL HSS-E Machineruimer AlCrN-X vorm B/D H7
- FR Alésoir machine HSS-E AlCrN-X forme B/D H7
- ES Escariador máquina HSS-E AlCrN-X forma B/D H7
- DE HSS-E Maschinenreibahlen AlCrN-X form B/D H7
- EN HSS-E Machine Chucking Reamer AlCrN-X form B/D H7



HSS-E | AlCrN-X | DIN 212 B/D | h8 | H7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

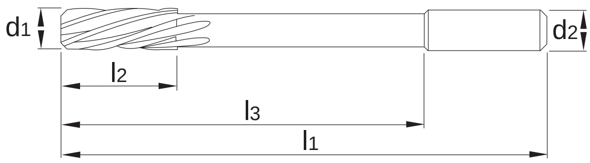
Ref.	d1	l1	l2	l3	d2
51.324.0100	1	38	5		1
51.324.0150	1.5	40	8		1.5
51.324.0200	2	49	11		2
51.324.0250	2.5	57	14		2.5
51.324.0300	3	61	15		3

Ref.	d1	l1	l2	l3	d2
51.324.0400	4	75	19	47	4
51.324.0500	5	86	23	58	5
51.324.0600	6	93	26	58	5.6
51.324.0700	7	109	31	73	7.1
51.324.0800	8	117	33	81	8

Ref.	d1	l1	l2	l3	d2
51.324.0900	9	125	36	85	9
51.324.1000	10	133	38	93	10
51.324.1200	12	151	44	111	10

› 51.330 *Phantom*

- NL volhardmetaal Machineruimer vorm B/D H7
- FR Alésoir machine carbure monobloc forme B/D H7
- ES Escariador máquina Metal Duro Integral forma B/D H7
- DE Vollhartmetall Maschinenreibahlen form B/D H7
- EN solid carbide Machine Chucking Reamer form B/D H7



MG HM | DIN 212 B/D | h7 | H7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
25-40 E	20-25 D	12-18 C	10-15 B	8-14 A	7-12 A	8-15 C	15-20 D	50-60 G	40-60 G	20-30 D	6-10 A	6-10 A

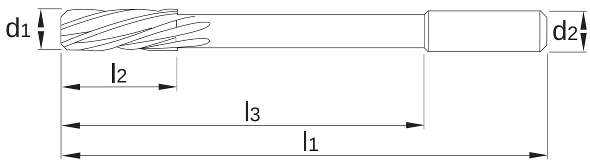
Ref.	d1	l1	l2	l3	d2
51.330.0100	1	40	8	22	1
51.330.0150	1.5	40	8	24	1.5
51.330.0200	2	49	11	31	2
51.330.0250	2.5	57	14	38	2.5

Ref.	d1	l1	l2	l3	d2
51.330.0300	3	61	15	38	3
51.330.0400	4	75	19	51	4
51.330.0500	5	86	23	60	5
51.330.0600	6	93	26	73	6

Ref.	d1	l1	l2	l3	d2
51.330.0800	8	117	33	86	8
51.330.1000	10	133	38	99	10
51.330.1200	12	151	44	106	12
51.330.1400	14	160	47	110	14

› 51.334 *Phantom*

- NL volhardmetaal Machineruimer met koelkanaal vorm D H7
- FR Alésoir machine carbure monobloc à trou d´huile forme D H7
- ES Escariador máquina Metal Duro Integral con canal de refrigeración forma D H7
- DE Vollhartmetall Maschinenreibahlen mit Innenkühlung form D H7
- EN solid carbide Machine Chucking Reamer with coolant holes form D H7



MG HM | DIN 212-D | h6 | H7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
25-40 E	20-25 D	12-18 C	10-15 B	8-14 A	7-12 A	8-15 C	15-20 D	50-60 G	40-60 G	20-30 D	6-10 A	6-10 A

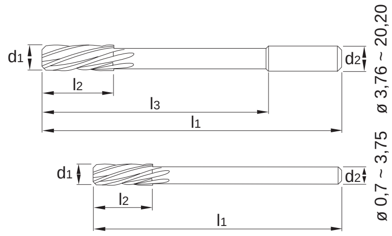
Ref.	d1	l1	l2	l3	d2
51.334.0400	4	75	19	51	4
51.334.0500	5	86	23	60	5

Ref.	d1	l1	l2	l3	d2
51.334.0600	6	93	26	73	6
51.334.0800	8	117	33	86	8

Ref.	d1	l1	l2	l3	d2
51.334.1000	10	133	38	99	10
51.334.1200	12	151	44	106	12

› 51.340 Phantom

NL HSS-E Machineruimer vorm B/D P7
FR Alésoir machine HSS-E forme B/D P7
ES Escariador máquina HSS-E forma B/D P7
DE HSS-E Maschinenreibahlen form B/D P7
EN HSS-E Machine Chucking Reamer form B/D P7



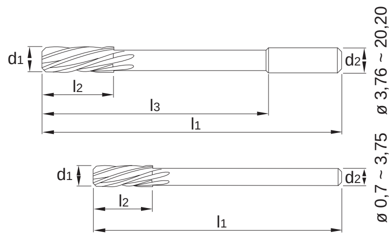
HSS-E	DIN 212 B/D	h8	P7

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1	l1	l2	l3	d2
51.340.0100	1	38	5		1
51.340.0200	2	49	11		2
51.340.0300	3	61	15		3
51.340.0400	4	75	19	47	4
51.340.0500	5	86	23	58	5
51.340.0600	6	93	26	58	5.6
51.340.0700	7	109	31	73	7.1
51.340.0800	8	117	33	81	8
51.340.0900	9	125	36	85	9
51.340.1000	10	133	38	93	10
51.340.1100	11	142	41	102	10
51.340.1200	12	151	44	111	10
51.340.1300	13	151	44	111	10
51.340.1400	14	160	47	117	12.5
51.340.1500	15	162	50	117	12.5
51.340.1600	16	170	52	125	12.5
51.340.1800	18	182	56	137	14
51.340.2000	20	195	60	147	16

› 51.350 Phantom

NL HSS-E Precisie Machineruimer vorm B/D x 0,01 mm
FR Alésoir machine de précision HSS-E forme B/D x 0,01 mm
ES Escariador máquina de precisión HSS-E forma B/D x 0,01 mm
DE HSS-E Präzisions Maschinenreibahlen form B/D x 0,01 mm
EN HSS-E Precision Machine Reamer form B/D x 0,01 mm



HSS-E	DIN 212 B/D	h8	x0,01	≤ø3	≤ø6	>ø6
				-0,000 +0,003	-0,000 +0,004	-0,000 +0,005

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1	l1	l2	l3	z	d2
51.350.0070-51.350.0079	0.7-0.79	33	5		4	0.7-0.79
51.350.0080-51.350.0105	0.8-1.05	38	5		4	0.8-1.05
51.350.0106-51.350.0132	1.06-1.32	40	5		6	1.06-1.32
51.350.0133-51.350.0150	1.33-1.5	40	8		6	1.33-1.5
51.350.0151-51.350.0170	1.51-1.7	43	9		6	1.51-1.7
51.350.0171-51.350.0190	1.71-1.9	46	10		6	1.71-1.9
51.350.0191-51.350.0212	1.91-2.12	49	11		6	1.91-2.12
51.350.0213-51.350.0236	2.13-2.36	53	12		6	2.13-2.36
51.350.0237-51.350.0265	2.37-2.65	57	14		6	2.37-2.65
51.350.0266-51.350.0300	2.66-3	61	15		6	2.66-3
51.350.0301-51.350.0335	3.01-3.35	65	16		6	3.01-3.35
51.350.0336-51.350.0375	3.36-3.75	70	18		6	3.36-3.75
51.350.0376-51.350.0425	3.76-4.25	75	19	47	6	4
51.350.0426-51.350.0475	4.26-4.75	80	21	52	6	4.5
51.350.0476-51.350.0530	4.76-5.3	86	23	58	6	5
51.350.0531-51.350.0600	5.31-6	93	26	58	6	5.6
51.350.0601-51.350.0670	6.01-6.7	101	28	65	6	6.3
51.350.0671-51.350.0750	6.71-7.5	109	31	73	6	7.1
51.350.0751-51.350.0850	7.51-8.5	117	33	81	6	8
51.350.0851-51.350.0950	8.51-9.5	125	36	85	6	9
51.350.0951-51.350.1060	9.51-10.6	133	38	93	6	10
51.350.1061-51.350.1180	10.61-11.8	142	41	102	6	10
51.350.1182-51.350.1250	11.82-12.5	151	44	111	6	10
51.350.1251-51.350.1320	12.51-13.2	151	44	111	8	10
51.350.1325-51.350.1370	13.25-13.7	160	47	115	8	12.5
51.350.1397-51.350.1400	13.97-14	160	47	117	8	12.5
51.350.1401-51.350.1500	14.01-15	162	50	117	8	12.5
51.350.1501-51.350.1600	15.01-16	170	52	125	8	12.5
51.350.1601-51.350.1700	16.01-17	175	54	130	8	14
51.350.1701-51.350.1800	17.01-18	182	56	137	8	14
51.350.1801-51.350.1900	18.01-19	189	58	141	8	16
51.350.1901-51.350.2020	19.01-20.2	195	60	147	8	16

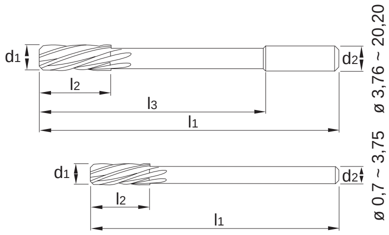
NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

Watch me

www.phantom.eu

› 51.360 Phantom

NL volhardmetaal Precisie Machineruimer vorm B/D x 0,01 mm
FR Alésoir machine de précision carbure monobloc forme B/D x 0,01 mm
ES Escariador máquina de precisión Metal Duro Integral forma B/D x 0,01 mm
DE Vollhartmetall Präzisions Maschinenreibahlen form B/D x 0,01 mm
EN solid carbide Precision Machine Reamer form B/D x 0,01 mm



MG HM | NORM | h6 | x0,01 | ≤ø3 -0,000 +0,003 | ≤ø6 -0,000 +0,004 | >ø6 -0,000 +0,005

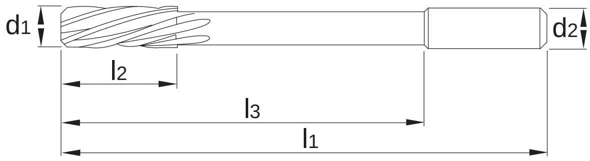
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
25-40 E	20-25 D	12-18 C	10-15 B	8-14 A	7-12 A	8-15 C	15-20 D	50-60 G	40-60 G	20-30 D	6-10 A	6-10 A

Ref.	d1	l1	l2	l3	z	d2
51.360.0070-51.360.0079	0.7-0.79	33	7		4	0.7-0.79
51.360.0080-51.360.0105	0.8-1.05	38	12		4	0.8-1.05
51.360.0106-51.360.0144	1.06-1.44	40	15		4	1.06-1.44
51.360.0145-51.360.0179	1.45-1.79	43	18		4	1.45-1.79
51.360.0180-51.360.0236	1.8-2.36	49	19		4	1.8-2.36
51.360.0237-51.360.0375	2.37-3.75	57	20		6	2.37-3.75
51.360.0376-51.360.0425	3.76-4.25	75	24	51	6	4
51.360.0426-51.360.0475	4.26-4.75	80	25	55	6	4.5
51.360.0476-51.360.0530	4.76-5.3	86	26	60	6	5
51.360.0535-51.360.0580	5.35-5.8	93	27	66	6	5.5
51.360.0581-51.360.0670	5.81-6.7	101	28	73	6	6
51.360.0675-51.360.0755	6.75-7.55	109	31	80	6	7

Ref.	d1	l1	l2	l3	z	d2
51.360.0760-51.360.0855	7.6-8.55	117	33	86	6	8
51.360.0860-51.360.0955	8.6-9.55	125	36	91	6	9
51.360.0959-51.360.1130	9.59-11.3	133	38	99	6	10
51.360.1131-51.360.1305	11.31-13.05	151	44	106	6	12
51.360.1398-51.360.1405	13.98-14.05	160	47	110	8	14
51.360.1497-51.360.1505	14.97-15.05	162	50	112	8	14
51.360.1597-51.360.1605	15.97-16.05	170	52	117	8	16
51.360.1697-51.360.1705	16.97-17.05	175	54	122	8	16
51.360.1797-51.360.1805	17.97-18.05	182	56	129	8	16
51.360.1897-51.360.1905	18.97-19.05	189	58	136	8	16
51.360.1997-51.360.2005	19.97-20.05	195	60	142	8	16

› 51.400 Phantom

NL HSS-E Machineruimer extra lang H7
FR Alésoir machine HSS-E extra long H7
ES Escariador máquina HSS-E extra larga H7
DE HSS-E Maschinenreibahlen extra lang H7
EN HSS-E Machine Chucking Reamer extra long H7



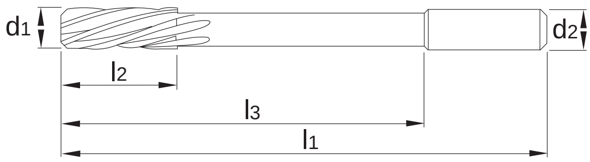
HSS-E | NORM | h8 | H7

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1	l1	l2	l3	d2
51.400.0200	2	65	14	45	2
51.400.0250	2.5	75	14	55	2.5
51.400.0300	3	90	14	70	3
51.400.0400	4	105	16	80	4
51.400.0500	5	115	16	90	5
51.400.0600	6	130	16	100	6
51.400.0700	7	140	18	110	7
51.400.0800	8	160	18	130	8
51.400.0900	9	175	18	140	9
51.400.1000	10	190	20	150	10
51.400.1100	11	200	20	160	10
51.400.1200	12	210	20	160	12

› 51.420 Phantom

NL HSS-E Machineschilruimer vorm E H7
FR Alésoir taille Gammon HSS-E forme E H7
ES Escariador máquina Gammon HSS-E forma E H7
DE HSS-E Maschinenschälreibahlen form E H7
EN HSS-E Machine Shell Reamer form E H7



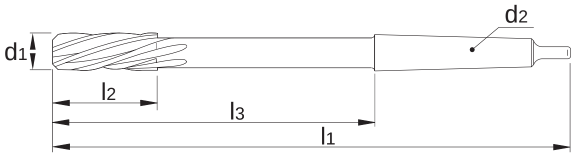
HSS-E | DIN 212-E | h8 | H7

P 11	P 12	P 13	P 14	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	Alu	Alu Si>10%	Cu
15-22 E	12-17 D	7-10 C	5-7 B	25-35 G	20-30 G	12-17 D

Ref.	d1	l1	l2	l3	d2
51.420.0300	3	61	20	42	3
51.420.0400	4	75	24	51	4
51.420.0500	5	86	26	60	5
51.420.0600	6	101	28	73	6
51.420.0700	7	109	31	80	7
51.420.0800	8	117	33	86	8
51.420.0850	8.5	117	33	84	8
51.420.0900	9	125	36	91	9
51.420.1000	10	133	38	99	10
51.420.1200	12	151	44	106	12

51.500 Phantom

NL HSS Machineruimer vorm A H7 MK
FR Alésoir machine HSS forme A H7 MK
ES Escariador máquina HSS forma A H7 MK
DE HSS Maschinenreibahlen form A H7 MK
EN HSS Machine Chucking Reamer form A H7 MK



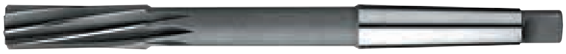
HSS | DIN 208-A | DIN 228-B | H7

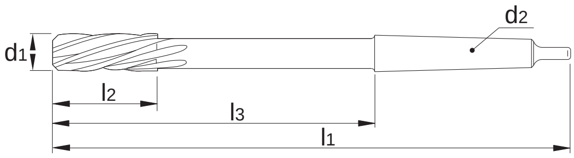
K 31	K 32	N 51
GG	GGG GTS-GTW	Cu
4-5 C	6-15 D	12-20 D

Ref.	d1	d2	l1	l2	l3	z
51.500.0500	5	MK 1	133	26	67	6
51.500.0600	6	MK 1	138	28	72	6
51.500.0700	7	MK 1	150	31	84	6
51.500.0800	8	MK 1	156	33	90	6
51.500.0900	9	MK 1	162	36	96	6
51.500.1000	10	MK 1	168	38	102	6
51.500.1100	11	MK 1	175	41	109	6
51.500.1200	12	MK 1	182	44	116	6
51.500.1300	13	MK 1	182	44	116	8
51.500.1400	14	MK 1	189	47	123	8
51.500.1500	15	MK 2	204	50	124	8
51.500.1600	16	MK 2	210	52	130	8
51.500.1700	17	MK 2	214	54	134	8
51.500.1800	18	MK 2	219	56	139	8
51.500.1900	19	MK 2	223	58	143	8
51.500.2000	20	MK 2	228	60	148	8
51.500.2100	21	MK 2	232	62	152	8
51.500.2200	22	MK 2	237	64	157	8
51.500.2300	23	MK 2	241	66	161	8
51.500.2400	24	MK 3	268	68	168	8
51.500.2500	25	MK 3	268	68	168	8
51.500.2600	26	MK 3	273	70	173	10
51.500.2800	28	MK 3	277	71	177	10
51.500.3000	30	MK 3	281	73	181	10
51.500.3100	31	MK 3	285	77	193	10
51.500.3200	32	MK 4	317	77	193	10
51.500.3300	33	MK 4	317	77	193	10
51.500.3400	34	MK 4	321	78	197	10

51.510 Phantom

NL HSS Machineruimer vorm B H7 MK
FR Alésoir machine HSS forme B H7 MK
ES Escariador máquina HSS forma B H7 MK
DE HSS Maschinenreibahlen form B H7 MK
EN HSS Machine Chucking Reamer form B H7 MK





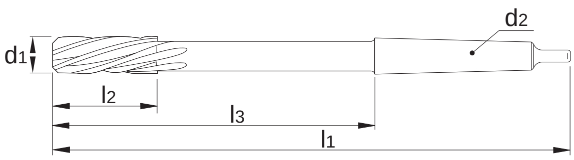
HSS | DIN 208-B | DIN 228-B | H7

P 11	P 12	P 13	K 31	K 32	N 41	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Cu
10-15 E	8-15 D	4-5 C	4-5 C	6-15 D	30-50 F	12-20 D

Ref.	d1	d2	l1	l2	l3	z
51.510.0500	5	MK 1	133	26	67	6
51.510.0600	6	MK 1	138	28	72	6
51.510.0700	7	MK 1	150	31	84	6
51.510.0800	8	MK 1	156	33	90	6
51.510.0900	9	MK 1	162	36	96	6
51.510.1000	10	MK 1	168	38	102	6
51.510.1100	11	MK 1	175	41	109	6
51.510.1200	12	MK 1	182	44	116	6
51.510.1300	13	MK 1	182	44	116	8
51.510.1400	14	MK 1	189	47	123	8
51.510.1500	15	MK 2	204	50	124	8
51.510.1600	16	MK 2	210	52	130	8
51.510.1700	17	MK 2	214	54	134	8
51.510.1800	18	MK 2	219	56	139	8
51.510.1900	19	MK 2	223	58	143	8
51.510.2000	20	MK 2	228	60	148	8
51.510.2100	21	MK 2	232	62	152	8
51.510.2200	22	MK 2	237	64	157	8
51.510.2300	23	MK 2	241	66	161	8
51.510.2400	24	MK 3	268	68	168	8
51.510.2500	25	MK 3	268	68	168	8
51.510.2600	26	MK 3	273	70	173	10
51.510.2700	27	MK 3	277	71	177	10
51.510.2800	28	MK 3	277	71	177	10
51.510.3000	30	MK 3	281	73	181	10
51.510.3100	31	MK 3	285	77	193	10
51.510.3200	32	MK 4	317	77	193	10
51.510.3400	34	MK 4	321	78	197	10

51.520 Phantom

NL HSS-E Machineruimer vorm B H7 MK
FR Alésoir machine HSS-E forme B H7 MK
ES Escariador máquina HSS-E forma B H7 MK
DE HSS-E Maschinenreibahlen form B H7 MK
EN HSS-E Machine Chucking Reamer form B H7 MK



HSS-E | DIN 208-B | DIN 228-B | H7

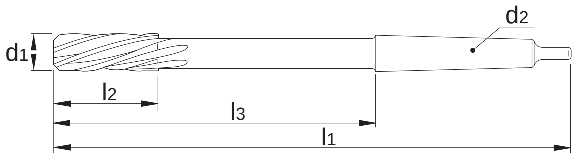
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1	d2	l1	l2	l3	z
51.520.0400	4	MK 1	120	24	54	6
51.520.0500	5	MK 1	133	26	67	6
51.520.0600	6	MK 1	138	28	72	6
51.520.0700	7	MK 1	150	31	84	6
51.520.0800	8	MK 1	156	33	90	6
51.520.0900	9	MK 1	162	36	96	6
51.520.1000	10	MK 1	168	38	102	6
51.520.1050	10.5	MK 1	168	41	109	6
51.520.1100	11	MK 1	175	41	109	6
51.520.1150	11.5	MK 1	175	41	109	6
51.520.1200	12	MK 1	182	44	116	6
51.520.1250	12.5	MK 1	182	44	116	6
51.520.1300	13	MK 1	182	44	116	8
51.520.1350	13.5	MK 1	189	47	123	8
51.520.1400	14	MK 1	189	47	123	8
51.520.1450	14.5	MK 2	204	50	124	8
51.520.1500	15	MK 2	204	50	124	8
51.520.1550	15.5	MK 2	210	52	130	8

› 51.520 Phantom

Ref.	d1	d2	l1	l2	l3	z
51.520.1600	16	MK 2	210	52	130	8
51.520.1650	16.5	MK 2	214	54	134	8
51.520.1700	17	MK 2	214	54	134	8
51.520.1750	17.5	MK 2	219	56	139	8
51.520.1800	18	MK 2	219	56	139	8
51.520.1850	18.5	MK 2	223	58	143	8
51.520.1900	19	MK 2	223	58	143	8
51.520.1950	19.5	MK 2	228	60	148	8
51.520.2000	20	MK 2	228	60	148	8
51.520.2050	20.5	MK 2	232	62	152	8
51.520.2100	21	MK 2	232	62	152	8
51.520.2150	21.5	MK 2	237	64	157	8
51.520.2200	22	MK 2	237	64	157	8
51.520.2250	22.5	MK 2	241	66	161	8
51.520.2300	23	MK 2	241	66	161	8
51.520.2400	24	MK 3	268	68	168	8
51.520.2500	25	MK 3	268	68	168	8
51.520.2600	26	MK 3	273	70	173	10
51.520.2700	27	MK 3	277	71	177	10
51.520.2800	28	MK 3	277	71	177	10
51.520.2900	29	MK 3	281	73	181	10
51.520.3000	30	MK 3	281	73	181	10
51.520.3100	31	MK 3	285	77	193	10
51.520.3200	32	MK 4	317	77	193	10
51.520.3300	33	MK 4	317	77	193	10
51.520.3400	34	MK 4	321	78	197	10
51.520.3500	35	MK 4	321	78	197	10
51.520.3600	36	MK 4	325	79	201	10
51.520.3700	37	MK 4	325	79	201	10
51.520.3800	38	MK 4	329	81	205	10
51.520.3900	39	MK 4	329	81	205	12
51.520.4000	40	MK 4	329	81	205	12
51.520.4100	41	MK 4	333	82	209	12
51.520.4200	42	MK 4	333	82	209	12
51.520.4300	43	MK 4	336	83	212	12
51.520.4400	44	MK 4	336	83	212	12
51.520.4500	45	MK 4	336	83	212	12
51.520.4600	46	MK 4	340	84	216	12
51.520.4700	47	MK 4	340	84	216	12
51.520.4800	48	MK 4	344	86	220	12
51.520.4900	49	MK 4	344	86	220	12
51.520.5000	50	MK 4	344	86	220	12

› 51.570 Phantom



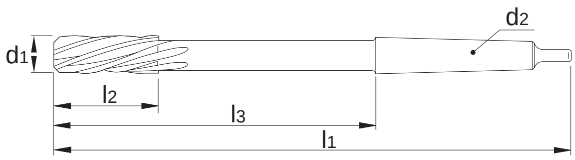
NL **HSS-E Machineruimer, inch-maten vorm B H7 MK**
FR **Alésoir machine, tailles en pouce HSS-E forme B H7 MK**
ES **Escariador máquina, tamaños en pulgadas HSS-E forma B H7 MK**
DE **HSS-E Maschinenreibahlen, Zollabmessungen form B H7 MK**
EN **HSS-E Machine Chucking Reamer, imperial sizes form B H7 MK**

HSS-E | " inch | DIN 208-B | DIN 228-B | H7

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1	d2	l1	l2	l3
51.570.0794	5/16	7.937	MK 1	156	33
51.570.0952	3/8	9.525	MK 1	168	38
51.570.1111	7/16	11.112	MK 1	182	44
51.570.1270	1/2	12.7	MK 1	182	44
51.570.1429	9/16	14.287	MK 2	204	50
51.570.1588	5/8	15.875	MK 2	210	52
51.570.1905	3/4	19.05	MK 2	223	58
51.570.2222	7/8	22.225	MK 2	237	64
51.570.2540	1	25.4	MK 3	273	70

› 51.600 Phantom



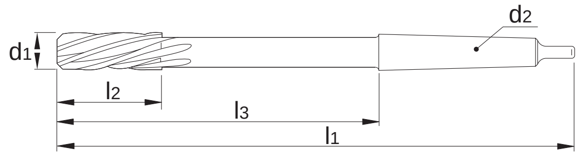
NL **HSS-E Machineruimer extra lang vorm B H7 MK**
FR **Alésoir machine HSS-E extra long forme B H7 MK**
ES **Escariador máquina HSS-E extra larga forma B H7 MK**
DE **HSS-E Maschinenreibahlen extra lang form B H7 MK**
EN **HSS-E Machine Chucking Reamer extra long form B H7 MK**

HSS-E | NORM | DIN 228-B | H7

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1	d2	l1	l2	l3	z
51.600.1300	13	MK 1	245	22	180	8
51.600.1400	14	MK 1	245	22	180	8
51.600.1500	15	MK 2	260	22	180	8
51.600.1600	16	MK 2	260	25	180	8
51.600.1800	18	MK 2	260	25	180	8
51.600.2000	20	MK 2	270	28	190	8
51.600.2200	22	MK 2	280	28	200	8
51.600.2400	24	MK 3	300	32	200	8
51.600.2500	25	MK 3	320	32	220	8
51.600.2600	26	MK 3	330	32	230	10
51.600.2800	28	MK 3	340	32	240	10
51.600.3000	30	MK 3	350	36	250	10
51.600.3200	32	MK 4	375	36	250	10
51.600.3400	34	MK 4	375	36	250	10
51.600.3600	36	MK 4	375	40	250	10
51.600.3800	38	MK 4	395	40	270	10
51.600.4000	40	MK 4	395	40	270	10

› 51.640 Phantom



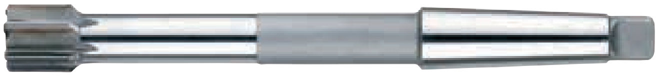
NL HM-tip Machineruimer MK vorm B H7 MK
FR Alésoir machine à plaquette carbure CM forme B H7 MK
ES Escariador máquina con punta MD CM forma B H7 MK
DE Hartmetallbestückt Machinenreibahlen MK form B H7 MK
EN Carbide Tipped Machine Chucking Reamer MT form B H7 MK

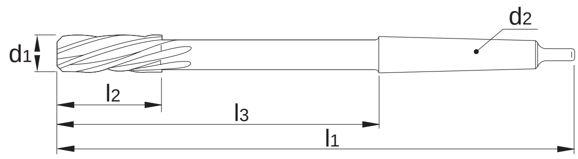
HM-TIP | DIN 8094-B | DIN 228-B | H7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
25-40 E	20-25 D	12-18 C	10-15 B	8-14 A	7-12 A	8-15 C	15-20 D	50-60 G	40-60 G	20-30 D	6-10 A	6-10 A

Ref.	d1	d2	l1	l2	l3	z
51.640.1000	10	MK 1	168	38	102	6
51.640.1200	12	MK 1	182	44	116	6
51.640.1400	14	MK 1	189	47	123	6
51.640.1500	15	MK 2	204	50	124	6
51.640.1600	16	MK 2	210	52	130	6
51.640.1800	18	MK 2	219	56	139	6
51.640.2000	20	MK 2	228	60	148	6
51.640.2200	22	MK 2	237	64	157	6
51.640.2400	24	MK 3	268	68	168	8
51.640.2500	25	MK 3	268	68	168	8
51.640.2600	26	MK 3	273	70	173	8
51.640.2800	28	MK 3	277	71	177	8
51.640.3000	30	MK 3	281	73	181	8
51.640.3500	35	MK 4	321	78	197	8

› 51.645 Phantom





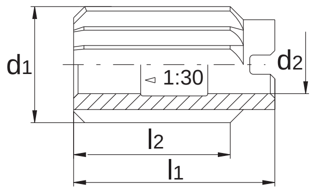
NL HM-tip Machineruimer 1% nastelbaar vorm A H7 MK
FR Alésoir machine à plaquette carbure 1% réglable forme A H7 MK
ES Escariador máquina con punta MD 1% extensible forma A H7 MK
DE Hartmetallbestückt Maschinenreibahlen 1% nachstellbar form A H7 MK
EN Carbide Tipped Machine Chucking Reamer 1% re-adjustable form A H7 MK

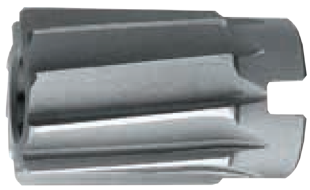
HM-TIP | DIN 8051 | DIN 228-B | H7

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
25-40 E	20-25 D	12-18 C	10-15 B	8-14 A	7-12 A	8-15 C	15-20 D	50-60 G	40-60 G	20-30 D	6-10 A	6-10 A

Ref.	d1	d2	l1	l2	l3	z
51.645.0800	8	MK 1	156	16	90	4
51.645.1000	10	MK 1	168	19	102	6
51.645.1200	12	MK 1	182	19	116	6
51.645.1300	13	MK 1	182	19	116	6
51.645.1400	14	MK 1	189	19	123	6
51.645.1500	15	MK 2	204	19	124	6
51.645.1600	16	MK 2	210	22	130	6
51.645.1800	18	MK 2	219	22	139	6
51.645.2000	20	MK 2	228	22	148	6
51.645.2500	25	MK 3	268	25	168	8

› 51.650 Phantom





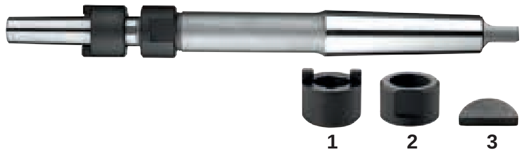
NL HSS Opsteekruimer vorm B H7
FR Alésoir machine creux HSS forme B H7
ES Escariador hueco HSS forma B H7
DE HSS Aufsteckreibahlen form B H7
EN HSS Shell Reamer form B H7

HSS | DIN 219-B | H7

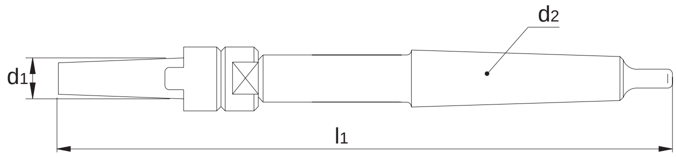
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
10-15 E	8-15 D	4-5 C	4-5 C	6-15 D	30-50 F	12-20 D

Ref.	d1	d2	l1	l2	84.410
51.650.2500	25	13	45	32	Nr. 2
51.650.2600	26	13	45	32	Nr. 2
51.650.2700	27	13	45	32	Nr. 2
51.650.2800	28	13	45	32	Nr. 2
51.650.2900	29	13	45	32	Nr. 2
51.650.3000	30	13	45	32	Nr. 2
51.650.3100	31	16	50	36	Nr. 3
51.650.3200	32	16	50	36	Nr. 3
51.650.3300	33	16	50	36	Nr. 3
51.650.3400	34	16	50	36	Nr. 3
51.650.3500	35	16	50	36	Nr. 3
51.650.3600	36	19	56	40	Nr. 4
51.650.3700	37	19	56	40	Nr. 4
51.650.3800	38	19	56	40	Nr. 4
51.650.3900	39	19	56	40	Nr. 4
51.650.4000	40	19	56	40	Nr. 4
51.650.4100	41	19	56	40	Nr. 4
51.650.4200	42	19	56	40	Nr. 4
51.650.4300	43	22	63	45	Nr. 5
51.650.4400	44	22	63	45	Nr. 5
51.650.4500	45	22	63	45	Nr. 5
51.650.4600	46	22	63	45	Nr. 5
51.650.4700	47	22	63	45	Nr. 5
51.650.4800	48	22	63	45	Nr. 5
51.650.4900	49	22	63	45	Nr. 5
51.650.5000	50	22	63	45	Nr. 5
51.650.5200	52	27	71	50	Nr. 6
51.650.5500	55	27	71	50	Nr. 6
51.650.5800	58	27	71	50	Nr. 6
51.650.6000	60	27	71	50	Nr. 6
51.650.6200	62	32	80	56	Nr. 7
51.650.6500	65	32	80	56	Nr. 7
51.650.6800	68	32	80	56	Nr. 7
51.650.7000	70	32	80	56	Nr. 7
51.650.7200	72	40	90	63	Nr. 8
51.650.7500	75	40	90	63	Nr. 8
51.650.8000	80	40	90	63	Nr. 8

› 84.410 Phantom



NL **Opsteekhouder, voor opsteekruimers DIN 219 en opsteekopboor DIN 222, MK**
FR **Arbre de montage, pour alésoirs creux DIN 219 et forets creux DIN 222, CM**
ES **Porta-escariadores, para escariadores huecos DIN 219 y brocas escariadores huecos DIN 222, CM**
DE **Aufsteckhalter, für Aufsteckreibahlen DIN 219 und Aufsteckaufbohrer DIN 222, MK**
EN **Shell Reamer Arbor, for Shell Reamers DIN 219 and Shell Core Drills DIN 222, MT**



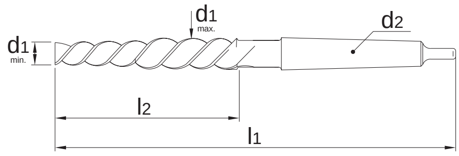
DIN 228-B | DIN 217

Ref.	Nr.	d1	l1	d2	Ø 51.650	Ø 13.350	1 incl.	2 incl.	3 excl.
84.410.0200	2	13	250	MK 3	25-30	-	84.411.0200	84.412.0200	84.413.0200
84.410.0300	3	16	261	MK 3	31-35	36-45	84.411.0300	84.412.0300	84.413.0300
84.410.0400	4	19	298	MK 4	36-42	46-52	84.411.0400	84.412.0400	84.413.0400
84.410.0500	5	22	312	MK 4	43-50	-	84.411.0500	84.412.0500	84.413.0500
84.410.0600	6	27	359	MK 5	51-60	-	84.411.0600	84.412.0600	84.413.0600
84.410.0700	7	32	376	MK 5	61-71	-	84.411.0700	84.412.0700	84.413.0700
84.410.0800	8	40	396	MK 5	72-85	-	84.411.0800	84.412.0800	84.413.0800
84.410.0900	9	50	416	MK 5	86-100	-	84.411.0900	84.412.0900	84.413.0900

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5

51.700 Phantom

NL HSS Klinknagelgatruimer tolerantie k11, MK
FR Alésoir de chaudronniers HSS tolérance k11, CM
ES Escariador de calderería HSS tolerancia k11, CM
DE HSS Nietlochreibahlen Toleranz k11, MK
EN HSS Bridge Reamer tolerance k11, MT



HSS | DIN 311 | DIN 228-B | k11

P 11	P 12	P 13	K 31	K 32	N 41	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Cu
10-15	8-15	4-5	4-5	6-15	30-50	12-20

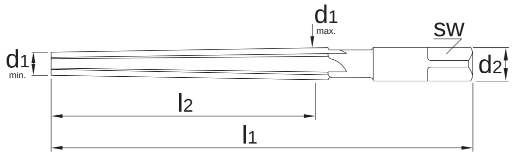
Ref.	d1 min	d1 max	l1	l2	d2
51.700.1000	7	10	171	95	MK 1
51.700.1100	7.7	11	176	100	MK 1
51.700.1200	8.4	12	199	105	MK 2
51.700.1300	9.1	13	199	105	MK 2
51.700.1400	9.8	14	209	115	MK 2
51.700.1500	10.5	15	219	125	MK 2
51.700.1600	11.2	16	229	135	MK 2
51.700.1700	11.9	17	251	135	MK 3
51.700.1800	12.6	18	261	145	MK 3

Ref.	d1 min	d1 max	l1	l2	d2
51.700.1900	13.3	19	261	145	MK 3
51.700.2000	14	20	271	155	MK 3
51.700.2100	14.7	21	271	155	MK 3
51.700.2200	15.4	22	281	165	MK 3
51.700.2300	16.1	23	281	165	MK 3
51.700.2400	16.8	24	296	180	MK 3
51.700.2500	17.5	25	296	180	MK 3
51.700.2600	18.2	26	296	180	MK 3
51.700.2800	19.6	28	311	195	MK 3

Ref.	d1 min	d1 max	l1	l2	d2
51.700.3000	21	30	311	195	MK 3
51.700.3100	21.7	31	326	210	MK 3
51.700.3200	22.4	32	354	210	MK 4
51.700.3400	23.8	34	364	220	MK 4
51.700.3700	25.9	37	364	220	MK 4
51.700.3800	26.6	38	374	230	MK 4
51.700.4000	28	40	374	230	MK 4

51.720 Phantom

NL HSS Pengatruimer coniciteit 1:50
FR Alésoir conique HSS conicité 1:50
ES Escariador cónico HSS conicidad 1:50
DE HSS Kegelreibahlen Konizität 1:50
EN HSS Taper Pin Reamer taper 1:50



HSS | DIN 9-A | 1:50

K 31	K 32	N 51
GG	GGG GTS-GTW	Cu

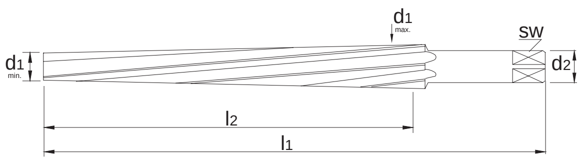
Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2	sw
51.720.0200	2	1.9	2.85	72	48	3.15	2.5
51.720.0250	2.5	2.4	3.36	68	48	3.15	2.5
51.720.0300	3	2.9	4.06	80	58	4	3.15
51.720.0400	4	3.9	5.26	93	68	5	4
51.720.0500	5	4.9	6.36	100	73	6.3	5

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2	sw
51.720.0600	6	5.9	8	135	105	8	6.3
51.720.0800	8	7.9	10.8	180	145	10	8
51.720.1000	10	9.9	13.4	215	175	12.5	10
51.720.1200	12	11.8	16	255	210	14	11.2
51.720.1400	14	13.8	18	255	210	16	12.5

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2	sw
51.720.1600	16	15.8	20.4	280	230	18	14
51.720.2000	20	19.8	24.8	310	250	22.4	18
51.720.2500	25	24.7	30.7	370	300	28	22.4
51.720.3000	30	29.7	36.1	400	320	31.5	25

51.730 Phantom

NL HSS Pengatruimer coniciteit 1:50
FR Alésoir conique HSS conicité 1:50
ES Escariador cónico HSS conicidad 1:50
DE HSS Kegelreibahlen Konizität 1:50
EN HSS Taper Pin Reamer taper 1:50



HSS | DIN 9-B | 1:50

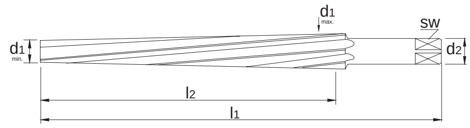
P 11	P 12	P 13	K 31	K 32	N 41	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Cu

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2	sw
51.730.0100	1	0.9	1.46	46	28	3.15	2.5
51.730.0150	1.5	1.4	2.14	57	37	3.15	2.5
51.730.0200	2	1.9	2.86	68	48	3.15	2.5
51.730.0250	2.5	2.4	3.36	68	48	3.15	2.5
51.730.0300	3	2.9	4.06	80	58	4	3.15
51.730.0400	4	3.9	5.26	93	68	5	4

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2	sw
51.730.0500	5	4.9	6.36	100	73	6.3	5
51.730.0600	6	5.9	8	135	105	8	6.3
51.730.0700	7	6.9	9	140	105	9	7.1
51.730.0800	8	7.9	10.8	180	145	10	8
51.730.0900	9	8.9	12.1	195	160	11.2	9
51.730.1000	10	9.9	13.4	215	175	12.5	10

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2	sw
51.730.1200	12	11.8	16	255	210	14	11.2
51.730.1400	14	13.8	18	260	210	18	14
51.730.1600	16	15.8	20.4	280	230	18	14
51.730.2000	20	19.8	24.8	310	250	22.4	18
51.730.2500	25	24.7	30.7	370	300	28	22.4
51.730.3000	30	29.7	36.1	400	320	31.5	25

› 51.760 Phantom



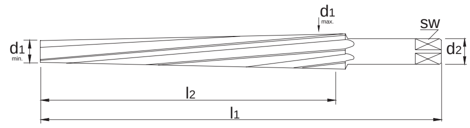
NL HSS Morse Conus Eindruimer
FR Alésoir finition pour cône morse HSS
ES Escariador para cono Morse HSS
DE HSS Kegelreibahlen für Morsekegel
EN HSS Morse Taper Finishing Reamer

HSS | DIN 204 | MT

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2	sw
51.760.0000		6.547	9.722	93	61	8	6.3
51.760.0100	1	9.571	12.863	102	66	10	8
51.760.0200	2	14.733	18.679	121	79	14	11.2
51.760.0300	3	20.01	24.829	146	96	20	16
51.760.0400	4	26.229	32.41	179	119	25	20
51.760.0500	5	37.873	45.767	222	150	31.5	25
51.760.0600	6	54.172	65.016	300	208	45	35.5

› 51.770 Phantom



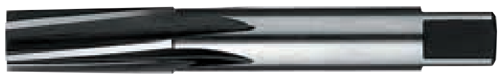
NL HSS Conische Ruimer coniciteit 1:10
FR Alésoir conique HSS conicité 1:10
ES Escariador cónico HSS conicidad 1:10
DE HSS konische NPT-Reibahlen Konizität 1:10
EN HSS Morse Taper Reamer taper 1:10

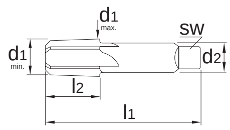
HSS | NORM | 1:10

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1 min	d1 max	l1	l2	d2	sw
51.770.0300	3	10	100	70	8	6.3
51.770.0500	5	15	140	100	12.5	10
51.770.1000	10	25	195	150	20	16
51.770.1500	15	35	250	200	28	22.4
51.770.2300	23	45	275	220	40	31.5
51.770.3000	30	55	310	250	45	35.5

› 51.780 Phantom





NL HSS Conische Ruimer NPT, voor conische boringen 1:16
FR Alésoir conique HSS NPT, pour perçage conique 1:16
ES Escariador cónico HSS NPT, para perforación cónica 1:16
DE HSS konische NPT-Reibahlen NPT, für konische Bohrungen 1:16
EN HSS Morse Taper Reamer NPT, for taper drilling 1:16

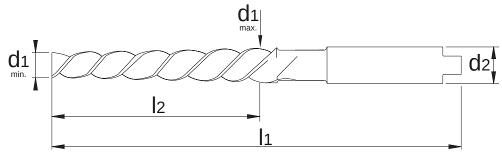
HSS | NPT | NORM | 1:16

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	Nr.	d1 min	d1 max	l1	l2	d2	sw
51.780.0794	1/16	6.1	7.68	53.98	19.05	7.94	5.9
51.780.1029	1/8	8.03	9.19	53.98	19.05	19.05	8.3
51.780.1372	1/4	10.31	11.99	61.91	26.99	14.29	10.6
51.780.1715	3/8	13.72	15.39	65.09	26.99	17.8	13.4
51.780.2134	1/2	16.89	19.08	79.38	34.93	17.5	13.1
51.780.2667	3/4	22.25	24.43	82.55	34.93	23.02	17.2
51.780.3340	1	28.02	30.78	95.25	34.45	28.5	21.4

› 51.800 Phantom

NL **HSS Pengatschilruimer coniciteit 1:50**
FR **Alésoir conique taille Gammon HSS conicité 1:50**
ES **Escariador cónico Gammon HSS conicidad 1:50**
DE **HSS Kegelschälreibahlen Konizität 1:50**
EN **HSS Taper Pin Shell Reamer taper 1:50**



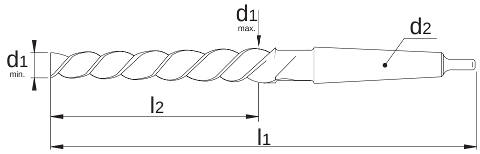
HSS | DIN 2179 | 1:50

P 11	P 12	P 13	K 31	K 32	N 41	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Cu
10-15 E	8-15 D	4-5 C	4-5 C	6-15 D	30-50 F	12-20 D

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2
51.800.0200	2	1.9	2.86	86	48	3.15
51.800.0250	2.5	2.4	3.36	86	48	3.15
51.800.0300	3	2.9	4.06	100	58	4
51.800.0400	4	3.9	5.26	112	68	5
51.800.0500	5	4.9	6.36	122	73	6.3
51.800.0600	6	5.9	8	160	105	8
51.800.0800	8	7.9	10.8	207	145	10
51.800.1000	10	9.9	13.4	245	175	12.5
51.800.1200	12	11.8	16	290	210	16

› 51.810 Phantom

NL **HSS Pengatschilruimer coniciteit 1:50, MK**
FR **Alésoir conique taille Gammon HSS conicité 1:50, CM**
ES **Escariador cónico Gammon HSS conicidad 1:50, CM**
DE **HSS Kegelschälreibahlen Konizität 1:50, MK**
EN **HSS Taper Pin Shell Reamer taper 1:50, MT**



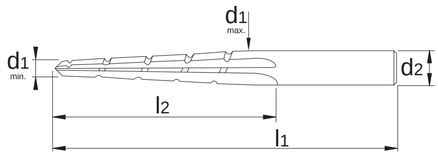
HSS | DIN 2180 | DIN 228-B | 1:50

P 11	P 12	P 13	K 31	K 32	N 41	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Cu
10-15 E	8-15 D	4-5 C	4-5 C	6-15 D	30-50 F	12-20 D

Ref.	Nr. Ø	d1 min	d1 max	l1	l2	d2
51.810.0500	5	4.9	6.36	155	73	MK 1
51.810.0600	6	5.9	8	187	105	MK 1
51.810.0800	8	7.9	10.8	227	145	MK 1
51.810.1000	10	9.9	13.4	257	175	MK 1
51.810.1200	12	11.8	16	315	210	MK 2
51.810.1600	16	15.8	20.4	335	230	MK 2
51.810.2000	20	19.8	24.8	377	250	MK 3
51.810.2500	25	24.7	30.7	427	300	MK 3
51.810.3000	30	29.7	36.1	475	320	MK 4
51.810.4000	40	39.7	46.5	495	340	MK 4

› 51.820 Phantom

NL **HSS-E Pengatruimer coniciteit 1:20**
FR **Alésoir conique HSS-E conicité 1:20**
ES **Escariador cónico HSS-E conicidad 1:20**
DE **HSS-E Kegelreibahlen Konizität 1:20**
EN **HSS-E Taper Pin Reamer taper 1:20**

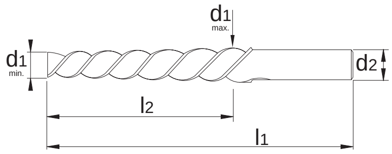


HSS-E | NORM | 1:20

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1 min	d1 max	l1	l2	d2
51.820.0100	1	2	50	20	2
51.820.0200	2	4	80	40	4
51.820.0300	3	6	110	60	6
51.820.0400	4	8	130	80	8
51.820.0500	5	10	155	100	10
51.820.0600	6	12	180	120	12
51.820.0700	7	14	200	140	14

› 51.830 *Phantom*



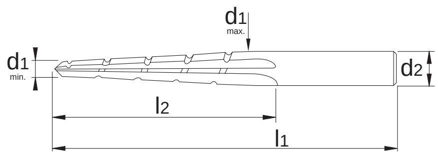
NL HSS-E Pengatschilruimer coniciteit 1:20
FR Alésoir conique taille Gammon HSS-E conicité 1:20
ES Escariador cónico Gammon HSS-E conicidad 1:20
DE HSS-E Kegelschälreibahlen Konizität 1:20
EN HSS-E Taper Pin Shell Reamer taper 1:20

HSS-E | NORM | 1:20

P 11	P 12	P 13	P 14	M 21	M 22	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	25-35 G	20-30 G	12-17 D

Ref.	d1 min	d1 max	l1	l2	d2
51.830.0300	3	6	110	60	6
51.830.0400	4	8	130	80	8
51.830.0500	5	10	155	100	10
51.830.0600	6	12	180	120	12
51.830.0700	7	14	200	140	14

› 51.840 *Phantom*



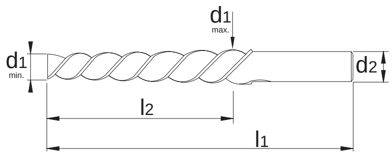
NL HSS-E Pengatruimer coniciteit 1:12,5
FR Alésoir conique HSS-E conicité 1:12,5
ES Escariador cónico HSS-E conicidad 1:12,5
DE HSS-E Kegelreibahlen Konizität 1:12,5
EN HSS-E Taper Pin Reamer taper 1:12,5

HSS-E | NORM | 1:12,5

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1 min	d1 max	l1	l2	d2
51.840.0200	2	6	100	50	6
51.840.0300	3	8	110	62	8
51.840.0400	4	10	130	75	10
51.840.0500	5	12	150	90	12

› 51.850 *Phantom*



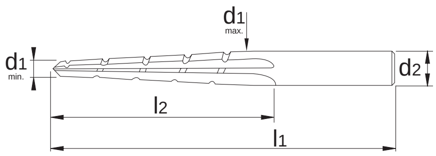
NL HSS-E Pengatschilruimer coniciteit 1:12,5
FR Alésoir conique taille Gammon HSS-E conicité 1:12,5
ES Escariador cónico Gammon HSS-E conicidad 1:12,5
DE HSS-E Kegelschälreibahlen Konizität 1:12,5
EN HSS-E Taper Pin Shell Reamer taper 1:12,5

HSS-E | NORM | 1:12,5

P 11	P 12	P 13	P 14	M 21	M 22	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	25-35 G	20-30 G	12-17 D

Ref.	d1 min	d1 max	l1	l2	d2
51.850.0200	2	6	100	50	6
51.850.0300	3	8	110	62	8
51.850.0400	4	10	130	75	10
51.850.0500	5	12	150	90	12
51.850.0600	6	14	160	100	14

› 51.860 Phantom



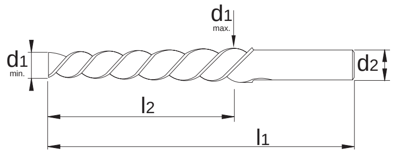
NL **HSS-E Pengatruimer coniciteit 1:10**
FR **Alésoir conique HSS-E conicité 1:10**
ES **Escariador cónico HSS-E conicidad 1:10**
DE **HSS-E Kegelreibahlen Konizität 1:10**
EN **HSS-E Taper Pin Reamer taper 1:10**

HSS-E | NORM | 1:10

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	4-5 C	6-15 D	25-35 G	20-30 G	12-17 D	2-3 A	2-3 A

Ref.	d1 min	d1 max	l1	l2	d2
51.860.0200	2	6	90	40	6
51.860.0300	3	8	100	50	8
51.860.0400	4	10	115	60	10
51.860.0500	5	12	130	70	12
51.860.0600	6	14	140	80	14

› 51.870 Phantom



NL **HSS-E Pengatschilruimer coniciteit 1:10**
FR **Alésoir conique taille Gammon HSS-E conicité 1:10**
ES **Escariador cónico Gammon HSS-E conicidad 1:10**
DE **HSS-E Kegelschälreibahlen Konizität 1:10**
EN **HSS-E Taper Pin Shell Reamer taper 1:10**

HSS-E | NORM | 1:10

P 11	P 12	P 13	P 14	M 21	M 22	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu
15-22 E	12-17 D	7-10 C	5-7 B	4-6 A	3-5 A	25-35 G	20-30 G	12-17 D

Ref.	d1 min	d1 max	l1	l2	d2
51.870.0200	2	6	90	40	6
51.870.0300	3	8	100	50	8
51.870.0400	4	10	115	60	10
51.870.0500	5	12	130	70	12
51.870.0600	6	14	140	80	14

NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me

www.phantom.eu

› 59.200 HUNGER

NL Set Verstelbare Handruimers type D
FR Jeu d'Alésoirs type D
ES Juego de escariadores mano ajustables tipo D
DE Satz Verstellbare Handreibahlen Typ D
EN Adjustable Hand Reamers set type D

Ref.	Type	Ø mm	Cassette
59.200.3150	51.200 - 11x	8-31,5	Filled

Ref.	Type	Ø mm	Cassette
59.200.4500	51.200 - 13x	8-45	Filled

› 59.210 HUNGER

NL Set Verstelbare Handruimers type E
FR Jeu d'Alésoirs type E
ES Juego de escariadores mano ajustables tipo E
DE Satz Verstellbare Handreibahlen Typ E
EN Adjustable Hand Reamers set type E

Ref.	Type	Ø mm	Cassette
59.210.3150	51.210 - 9x	10,5-31,5	Filled

Ref.	Type	Ø mm	Cassette
59.210.4500	51.210 - 11x	10,5-45	Filled

› 59.220 HUNGER

NL Set Verstelbare Handruimers type K
FR Jeu d'Alésoirs type K
ES Juego de escariadores mano ajustables tipo K
DE Satz Verstellbare Handreibahlen Typ K
EN Adjustable Hand Reamers set type K

Ref.	Type	Ø mm	Cassette
59.220.3150	51.220 - 11x	8-31,5	Filled

Ref.	Type	Ø mm	Cassette
59.220.4500	51.220 - 13x	8-45	Filled

› 59.230 HUNGER

NL Set Verstelbare Handruimers type U
FR Jeu d'Alésoirs type U
ES Juego de escariadores mano ajustables tipo U
DE Satz Verstellbare Handreibahlen Typ U
EN Adjustable Hand Reamers set type U

Ref.	Type	Ø mm	Cassette
59.230.3400	51.230 - 7x	12-34	Filled

Ref.	Type	Ø mm	Cassette
59.230.4500	51.230 - 9x	12-45	Filled

› 59.240 HUNGER

NL Set Verstelbare Handruimers type V
FR Jeu d'Alésoirs type V
ES Juego de escariadores mano ajustables tipo V
DE Satz Verstellbare Handreibahlen Typ V
EN Adjustable Hand Reamers set type V

Ref.	Type	Ø mm	Cassette
59.240.1200	51.240 - 10x	5,9-12	Filled

Ref.	Type	Ø mm	Cassette
59.240.1250	51.240 - 10x + 51.244 - 10x	5,9-12	Filled

NL Herleidingstabel passingen
FR Tableau de normalisation des tolérances
ES Tabla de normalización de las tolerancias
DE Zurückführungstabelle Passungen
EN Tolerances for hole diameters

d1 (mm)	C8	C9	C10	C11	CD7	D7	D8	D9	D10	D11	D12	E7	E8	E9	EF8	F7	F8
1	1,07	1,07	1,08	1,10	1,04	1,02	1,03	1,03	1,04	1,06	1,08	1,02	1,02	1,09	1,02	1,01	1,01
2	2,07	2,07	2,08	2,10	2,04	2,02	2,03	2,03	2,04	2,06	2,08	2,02	2,02	2,03	2,02	2,01	2,01
3	3,07	3,07	3,08	3,10	3,04	3,02	3,03	3,03	3,04	3,06	3,08	3,02	3,02	3,03	3,02	3,01	3,01
4	4,08	4,09	4,10	4,12	4,05	4,04	4,04	4,05	4,06	4,08	4,10	4,02	4,03	4,04	4,03	4,01	4,02
5	5,08	5,09	5,10	5,12	5,05	5,04	5,04	5,05	5,06	5,08	5,10	5,02	5,03	5,04	5,03	5,01	5,02
6	6,08	6,09	6,10	6,12	6,05	6,04	6,04	6,05	6,06	6,08	6,10	6,02	6,03	6,04	6,03	6,01	6,02
7	7,09	7,10	7,12	7,15	7,06	7,05	7,05	7,06	7,08	7,10	7,14	7,03	7,04	7,05	7,03	7,02	7,03
8	8,09	8,10	8,12	8,15	8,06	8,05	8,05	8,06	8,08	8,10	8,14	8,03	8,04	8,05	8,03	8,02	8,03
9	9,09	9,10	9,12	9,15	9,06	9,05	9,05	9,06	9,08	9,10	9,14	9,03	9,04	9,05	9,03	9,02	9,03
10	10,09	10,10	10,12	10,15	10,06	10,05	10,05	10,06	10,08	10,10	10,14	10,03	10,04	10,05	10,03	10,02	10,03
11	11,11	11,12	11,14	11,18	-	11,06	11,06	11,08	11,10	11,13	11,20	11,04	11,05	11,06	-	11,02	11,03
12	12,11	12,12	12,14	12,18	-	12,06	12,06	12,08	12,10	12,13	12,20	12,04	12,05	12,06	-	12,02	12,03

d1 (mm)	F9	F10	G6	G7	H5	H6	H7	H8	H9	H10	H11	H12	H13	HJ6	J7	J8	JS7
1	1,02	1,04	1,00	1,01	1,00	1,00	1,00	1,01	1,01	1,02	1,04	1,06	1,09	1,00	1,00	1,00	1,00
2	2,02	2,04	2,00	2,01	2,00	2,00	2,00	2,01	2,01	2,02	2,04	2,06	2,09	2,00	2,00	2,00	2,00
3	3,02	3,04	3,00	3,01	3,00	3,00	3,00	3,01	3,01	3,02	3,04	3,06	3,09	3,00	3,00	3,00	3,00
4	4,03	4,04	4,01	4,01	4,00	4,00	4,00	4,01	4,02	4,03	4,05	4,08	4,12	4,00	4,00	4,00	4,00
5	5,03	5,04	5,01	5,01	5,00	5,00	5,00	5,01	5,02	5,03	5,05	5,08	5,12	5,00	5,00	5,00	5,00
6	6,03	6,04	6,01	6,01	6,00	6,00	6,00	6,01	6,02	6,03	6,05	6,08	6,12	6,00	6,00	6,00	6,00
7	7,03	7,05	7,01	7,01	7,00	7,00	7,01	7,01	7,02	7,04	7,06	7,10	7,12	7,00	7,00	7,00	7,00
8	8,03	8,05	8,01	8,01	8,00	8,00	8,01	8,01	8,02	8,04	8,06	8,10	8,16	8,00	8,00	8,00	8,00
9	9,03	9,05	9,01	9,01	9,00	9,00	9,01	9,01	9,02	9,04	9,06	9,10	9,16	9,00	9,00	9,00	9,00
10	10,03	10,05	10,01	10,01	10,00	10,00	10,01	10,02	10,02	10,04	10,06	10,10	10,16	10,00	10,00	10,00	10,00
11	11,04	11,06	11,01	11,01	11,00	11,00	11,01	11,02	11,03	11,05	11,07	11,14	11,20	11,00	11,00	11,00	11,00
12	12,04	12,06	12,01	12,01	12,00	12,00	12,01	12,02	12,03	12,05	12,07	12,14	12,20	12,00	12,00	12,00	12,00

d1 (mm)	JS8	JS9	K6	K7	K8	M6	M7	M8	N6	N7	N8	P6	P7	P8	R6	R7	S6
1	1,00	1,00	-	-	0,99	-	0,99	0,99	0,99	0,99	0,99	0,99	0,99	0,99	-	0,98	0,98
2	2,00	2,00	-	-	1,99	-	1,99	1,99	1,99	1,99	1,99	1,99	1,99	1,99	-	1,98	1,98
3	3,00	3,00	-	-	2,99	-	2,99	2,99	2,99	2,99	2,99	2,99	2,99	2,99	-	2,98	2,98
4	4,00	4,00	4,00	4,00	4,00	3,99	3,99	3,99	3,99	3,99	3,99	3,99	3,99	3,98	3,98	3,98	3,98
5	5,00	5,00	5,00	5,00	5,00	4,99	4,99	4,99	4,99	4,99	4,99	4,99	4,99	4,98	4,98	4,98	4,98
6	6,00	6,00	6,00	6,00	6,00	5,99	5,99	5,99	5,99	5,99	5,99	5,99	5,99	5,98	5,98	5,98	5,98
7	7,00	7,00	-	7,00	7,00	6,99	6,99	6,99	-	6,99	6,99	6,98	6,98	6,97	6,98	6,98	6,97
8	8,00	8,00	-	8,00	8,00	7,99	7,99	7,99	-	7,99	7,99	7,98	7,98	7,97	7,98	7,98	7,97
9	9,00	9,00	-	9,00	9,00	8,99	8,99	8,99	-	8,99	8,99	8,98	8,98	8,97	8,98	8,98	8,97
10	10,00	10,00	-	10,00	10,00	9,99	9,99	9,99	-	9,99	9,99	9,98	9,98	9,97	9,98	9,98	9,97
11	11,00	11,01	-	11,00	11,00	10,99	10,99	10,99	-	10,99	10,99	10,98	10,98	10,97	10,97	10,98	10,97
12	12,00	12,01	-	12,00	12,00	11,99	11,99	11,99	-	11,99	11,99	11,98	11,98	11,97	11,97	11,98	11,97

d1 (mm)	S7	U6	U7	X7	X8	X9	Z7	Z8	Z9	Z10	ZA7	ZA8	ZA9	ZB8	ZB9
1	0,98	0,98	0,98	0,97	0,97	0,97	0,97	0,97	0,96	0,96	0,96	0,96	0,95	0,95	0,95
2	1,98	1,98	1,98	1,97	1,97	1,97	1,97	1,97	1,96	1,96	1,96	1,96	1,95	1,95	1,95
3	2,98	2,98	2,98	2,97	2,97	2,97	2,97	2,97	2,96	2,96	2,96	2,96	2,95	2,95	2,95
4	3,98	3,97	3,97	3,97	3,96	3,96	3,96	3,96	3,95	3,95	3,96	3,95	3,94	3,94	3,94
5	4,98	4,97	4,97	4,97	4,96	4,96	4,96	4,96	4,95	4,95	4,96	4,95	4,94	4,94	4,94
6	5,98	5,97	5,97	5,97	5,96	5,96	5,96	5,96	5,95	5,95	5,96	5,95	5,94	5,94	5,94
7	6,97	6,97	6,97	6,97	6,96	6,95	6,96	6,95	6,93	6,94	6,94	6,94	6,93	6,92	6,92
8	7,97	7,97	7,97	7,97	7,96	7,95	7,96	7,95	7,93	7,94	7,94	7,94	7,93	7,92	7,92
9	8,97	8,97	8,97	8,97	8,96	8,95	8,96	8,95	8,93	8,94	8,94	8,94	8,93	8,92	8,92
10	9,97	9,97	9,97	9,97	9,96	9,95	9,96	9,95	9,93	9,94	9,94	9,94	9,93	9,92	9,92
11	10,97	10,96	10,96	10,96	10,95	10,94	10,95	10,94	10,92	10,93	10,93	10,93	10,91	10,90	10,90
12	11,94	11,96	11,96	11,96	11,95	11,94	11,95	11,94	11,92	11,93	11,93	11,93	11,91	11,90	11,90

NL Voedingswaardentabel ruimers
FR Tableau des avances alésoirs
ES Tabla de avances escariadores
DE Vorschubtabelle Reibahlen
EN Feed table reamers

P 11 ≤600 N/mm² = ISO

25-35 E — Vc = 25-35 FRC = E

	FRC						
	A	B	C	D	E	F	G
d1(mm)	f (mm/n)						
1	0,07	0,07	0,07	0,07	0,07	0,07	0,08
2	0,07	0,08	0,08	0,1	0,15	0,2	0,15
6	0,1	0,09	0,1	0,12	0,15	0,22	0,18
10	0,12	0,15	0,18	0,18	0,25	0,3	0,22
15	0,15	0,2	0,2	0,18	0,25	0,35	0,35
20	0,2	0,25	0,22	0,25	0,3	0,4	0,37
25	0,25	0,27	0,25	0,3	0,35	0,4	0,37
30	0,25	0,3	0,3	0,33	0,37	0,45	0,45
40	0,3	0,35	0,35	0,4	0,45	0,5	0,5

NL Voorboormaat voor ruimen
FR Tableau de diamètre de pré-perçage pour alésage
ES Tabla de perforación previa para escariar
DE Bohrungsdurchmesser für Reiben
EN Pre-ream drill size chart

ISO	P11	P12	P13	P14	M21	M22	K31	K32	N41	N42	N51	N52	N61	S71	S72
≤ Ø 6 mm	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2	0,1 - 0,2
≤ Ø 10 mm	0,2	0,2	0,2	0,1 - 0,2	0,2	0,1 - 0,2	0,2	0,2	0,2 - 0,3	0,1 - 0,2	0,2 - 0,3	0,2	0,2	0,2	0,1 - 0,2
≤ Ø 16 mm	0,2 - 0,3	0,2 - 0,3	0,2	0,2	0,2	0,2	0,3	0,2 - 0,3	0,3 - 0,4	0,2	0,3 - 0,4	0,2 - 0,3	0,2	0,2	0,2
≤ Ø 25 mm	0,3 - 0,4	0,3 - 0,4	0,3	0,3	0,3	0,3	0,4	0,3 - 0,4	0,4 - 0,5	0,3	0,4 - 0,5	0,3	0,3	0,3	0,3
≥ Ø 25 mm	0,4 - 0,5	0,4 - 0,5	0,4 - 0,5	0,4 - 0,5	0,3 - 0,4	0,3 - 0,4	0,5	0,4 - 0,5	0,5	0,3 - 0,4	0,5	0,3 - 0,4	0,3 - 0,4	0,3 - 0,4	0,3 - 0,4

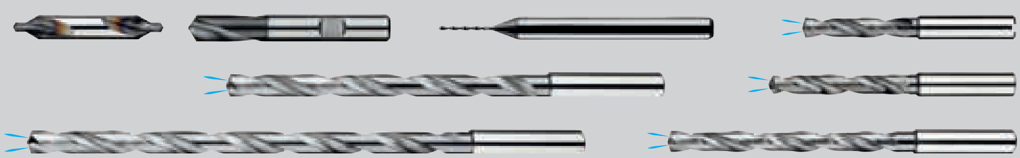
FRC
NL: Voedingscode
FR: Codification vitesse d'avance
ES: Codificación de velocidad de avance
DE: Vorschubgeschwindigkeit Codierung
EN: Feedrate code

f (mm/n)
NL: Voeding per omwenteling (mm/n)
FR: Avance par tour (mm/tr)
ES: Avance por revolucion (mm/r)
DE: Vorschub pro Umdrehung (mm/U)
EN: Feed per revolution (mm/r)

Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)
EN: Cutting speed (m/min)

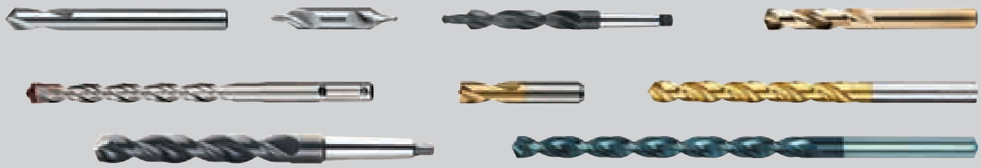
n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)
EN: Spindle speed (rpm)

NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



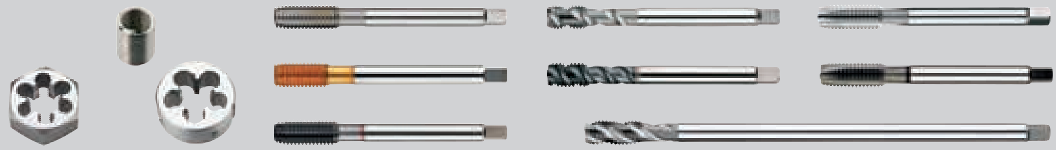
SC 1

NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



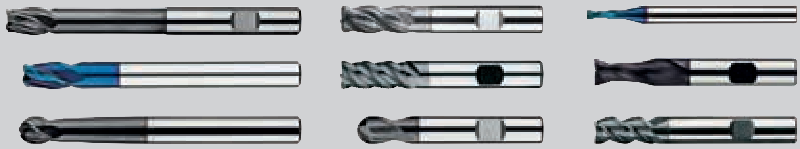
HSS(-E) 1

NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



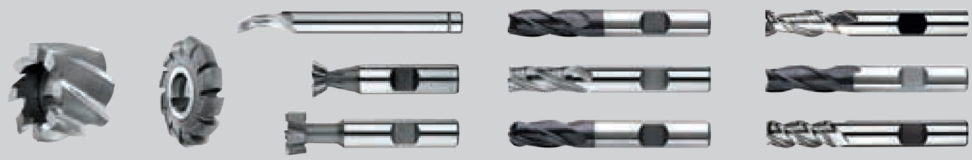
2

NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



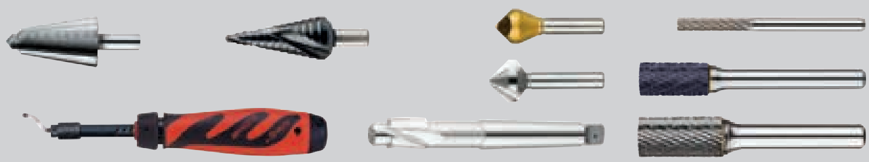
SC 3

NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



HSS-E 3

NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring

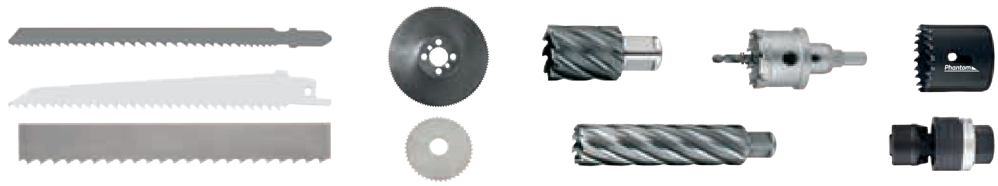


4

NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

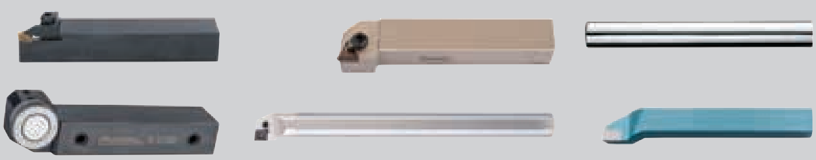
5

NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting

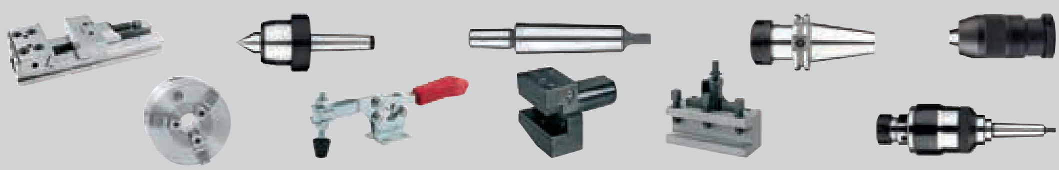


6

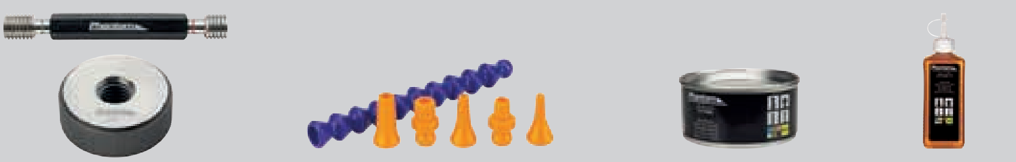
NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6

ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
HSS	HSS	HSS	HSS	HSS	HSS
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalto)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)
HSS-E 8%	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalto)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden	Carbide Tipped
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Hartmetall	Solid Carbide
CV	Hoog gelegeerd Chroom Vanadium staal	Acier hautement allié au Chrome Vanadium	Acero de alta aleación de Cromo Vanadio	Hochlegiert Chrom-Vanadium-Stahl	High alloyed Chrome Vanadium Steel
BiM HSS	HSS Bi-Metaal	Bi-métal HSS	HSS Bimetálica	HSS Bi-Metall	HSS Bi-Metall
OX.	Stoomontlaten	Vaporisé	Vaporizado	Dampfangelassen	Steam tempered
NIT.	Genitreerd	Nitruré	Nitrurado	Nitriert	Nitrated
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung	TiN coated
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung	TiAlN coated
AlCrN	AlCrN gecoat	Revêtement AlCrN	Recubrimiento AlCrN	AlCrN Beschichtung	AlCrN coated
AlCrN-X	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung	AlCrN-X coated
3	Verzinkfrees met 3 snijkanten	Fraise à chanfreiner à trois dents	Avellanador con 3 dientes	Kegelsenker mit 3 Schneiden	Countersink with three flutes, for milling applications
0,5-25 mm	Materiaaldikte	Épaisseur du matériau	Espesor de material	Materialstärke	Material thickness
Z=0	Onvertand	Sans dents	Sin dientes	Unverzahnt	Without teeth
A	Rechte tand	Denture angulaire	Forma de diente recta	Gerader Zahn	Straight tooth
B	Gebogen tand	Denture angulaire moyenne	Forma de diente gruessa	Gebogene Zahn	Cranked tooth
BW	Om en om afgeschuinde tand	Denture angulaire moyenne alternée	Forma de diente gruessa alternativa	Gebogene Zahn, jeder zweite abgeschrägt	Alternately tapered (BW)
C	Met voor- en nasnijder	Denture rectifiée et affutée	Con dientes rectificadas y afiladas	Mit Vor- und Nachschneider	With pre-cutter and post-cutter
Const.	Constante tandsteek	A pas constant	Paso constante	Konstanter Verzahnung	Constant pitch
VARI	Variabele tandsteek	A pas variable	Paso variable	Variabler Verzahnung	Variable pitch
α0°	Normale tand 0°	Angle de coupe 0°	Ángulo de corte 0°	Normaler Zahn 0°	Standard tooth 0°
Pos.	Positieve spaanhoek	Angle de coupe positif	Ángulo de corte positivo	Positivem Spannwinkel	Positive cutting edge
α 5°	Positieve spaanhoek 5°	Angle de coupe positif 5°	Ángulo de corte positivo 5°	Positivem Spannwinkel 5°	Positive cutting edge 5°
α-5°	Negatieve spaanhoek 5°	Angle de coupe négatif 5°	Ángulo de corte negativo 5°	Negativem Spannwinkel 5°	Negative cutting edge 5°
	Voor gebundeld massief materiaal	Pour matériaux pleins en paquet	Para material en barras en paquetes	Für gebündelt massiv Material	For bundled solid material
	Voor gebundelde profielen	Pour profilés en paquet	Para material de perfiles en paquetes	Für gebündelte Profile	Bundel profiel
	Stafmateriaal dun	Matériaux pleins fins	Material en barras delgado	Stangenmaterial dünn	Thin rods
	Stafmateriaal dik	Matériaux pleins épais	Material en barras grande	Stangenmaterial dick	Thick rods

	NL	FR	ES	DE	EN
	Kokerprofiel dunwandig	Profilés fins	Material de perfiles delgado	Schlauchmaterial dünn	Thin tube profile
	Kokerprofiel dikwandig	Profilés épais	Material de perfiles grande	Schlauchmaterial dick	Thick tube profile
	H-Profiel	Profil H	Perfil H	Profil H	H-Profile
	Strip	Bande	Tira	Streifen	Stripe
Ø19 WELDON	Standaard kernboor opname Weldon 19 mm	Cône fraise à carotter standard, Weldon 19 mm	Sujeción estándar fresa hueca, Weldon 19 mm	Standard Kernbohrer-aufnahme Weldon 19 mm	Standard core drill shank 19 mm
Ø19 QUICK	Snelwisselopname Quick 19 mm	Changement rapide d'outil 19 mm	Sujeción de cambio rápido 19 mm	Schnellwechsel Kernbohrer-aufnahme 19 mm	Quick change shank 19 mm
Ø18 FEIN QUICKIN	Fein Quickin kernboor opname 18 mm	Cône fraise à carotter Fein Quickin 18 mm	Sujeción Fein Quickin fresa hueca 18 mm	Fein Quickin Kernbohrer-aufnahme 18 mm	Fein QuickIN shank 18 mm
GG	Buis gietijzer	Tube fonte	Tubo fundición	Gussrohre	Cast iron pipe
	Gesloten profiel	Profil fermé	Perfil cerrado	Geschlossene Profile	Closed profile
	Contoursnedes	Pour contours	Corte perfiles	Kurvenschnitt	Curve cut
	Hardhout	Bois dur	Madera dura	Hartholz	Also suitable for hardwood
	Hogesnelheid-snedes	Coupe ultra-rapide	Corte rápido	Sehr schneller Schnitt	High-speed cut
	Keukenblad	Plan de travail	Encimera	Küchenarbeits-platten	Kitchen worktop
	Laminaat	Parquet	Laminado	Laminat	Laminate
	Gelamineerde platen	Contreplaqué filmé	Chapa laminada	Beschichtete Platten	Laminated board
	Gelijmd hout	Contreplaqué	Tableros contra-chapada	Multiplex / Tischlerplatten	Multiplex / glued wood
Cu Ni Ms Zn Al	Non ferro / aluminium	Non ferreux / aluminium	Metal no férreo / Aluminio	Buntmetall / Aluminium	Non-ferrous metals/ Aluminium
	Renovatie / Raamkozijnen	Renovation bâtiment / Châssis fenêtre	Renovación/ Marcos	Altbausanierung / Fensterrahmen	Old-building renovation / window frames
	Open profielen	Profil ouvert	Perfil abierto	Offene Profile	Open profile
	Pallets	Palette / Bois de palette	Pallet	Palettenbau	Pallet-construction
	Kunststof	Plastique	Plástico	Kunststoff	Plastics
	Multiplex	Contreplaqué	Madera contrachapada	Sperrholz	Multiplex
	Versterkt kunststof	Plastique reforce	Plásrico fortalece	Faserverstärkte Kunststoffe	Reinforced plastics
	Sandwich panelen	Contreplaquet	Material tupo Sandwich	Sandwich-Material	Sandwich material
	Dun plaatmateriaal	Matériaux plat fins	Material de chapas fino	Stahlbleche	Sheet steel
SOFT	Zacht hout / bouwhout	Bois de construction	Madera de construcción	Weich- / Konstruktionsholz	Softwood / contruction wood
	Stalen buizen	Tube en acier	Tubos en acero	Stahlrohre	Steel pipe
	Rechte snedes	Coupe droite	Corte recto	Gerader Schnitt	Straight cut
	Schone snedes	Coupe sans éclats sur la surface	Corte muy liso	Sehr sauberer Schnitt	Straight cut

NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen un Blechlocher
EN Sawing and Hole Cutting

P K H N M S — Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K H N M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

Art.	Brand	Material	Cutting depth	Coating	P	M	K	N	H	Page
› 61.090	International Tools	BiM 8% Co		ECO PRO	P	M	K	N		P. 5
› 61.105	Phantom	BiM 8% Co			P	M	K	N		P. 5
› 61.110	Phantom	BiM 8% Co			P	M	K	N		P. 6
› 61.130	Phantom	HM-TIP						N		P. 6
› 61.135	International Tools	ECO PRO								P. 7
› 61.137	International Tools	ECO PRO								P. 7
› 61.140	Phantom									P. 7
› 61.142	Phantom									P. 7
› 61.145	International Tools	ECO PRO								P. 8
› 61.147	International Tools	ECO PRO								P. 8
› 61.148	International Tools	ECO PRO								P. 8
› 61.150	Phantom									P. 8
› 61.151	Phantom									P. 9
› 61.160	Phantom									P. 9
› 61.170	Phantom									P. 9
› 61.180	Phantom									P. 9
› 61.630	Phantom	HM-TIP	0,5-5 mm		P	M	K	N		P. 10
› 61.640	Phantom									P. 10
› 61.670	Phantom	HM-TIP	0,5-12 mm		P	M	K	N		P. 10
› 61.675	Phantom									P. 11
› 61.680	Phantom	HM-TIP	0,5-12 mm		P	M	K	N		P. 11
› 61.685	Phantom									P. 11
› 62.100	Phantom	HSS-EX	0,5-30 mm		P		K	N		P. 12
› 62.104	Phantom	HSS-EX	0,5-30 mm	TiAlN	P	M	K	N		P. 12
› 62.122	Phantom	HSS-EX	0,5-30 mm	NIT.	P	M	K	N		P. 13
› 62.130	Phantom	HSS-EX	0,5-30 mm		P					P. 13
› 62.150	Phantom	HSS-EX	0,5-55 mm		P		K	N		P. 14
› 62.154	Phantom	HSS-EX	0,5-55 mm	TiAlN	P	M	K	N		P. 14
› 62.162	Phantom	HSS-EX	0,5-55 mm	NIT.	P	M	K	N		P. 15
› 62.170	Phantom	HSS-EX	0,5-80 mm		P		K	N		NEW P. 15
› 62.180	Phantom	HSS-EX	0,5-110 mm		P		K	N		P. 16
› 62.200	Phantom	HM-TIP	0,5-40 mm		P	M	K	N	H	P. 16
› 62.210	Phantom	HM-TIP	0,5-30 mm		P					P. 17
› 62.220	Phantom	HM-TIP	0,5-55 mm		P	M	K	N	H	P. 17

					P	M	K	N	S	H		
› 62.240	Phantom	HM-TIP	0,5-110 mm		P	M	K	N		H		P. 18
› 62.250	Phantom	HSS-EX	0,5-40 mm	Ø18 FEIN QUICKIN	P	M	K	N				P. 18
› 62.270	Phantom	HM-TIP	0,5-40 mm	Ø18 FEIN QUICKIN	P	M	K	N		H		P. 19
› 62.280	Phantom	HM-TIP	0,5-55 mm	Ø18 FEIN QUICKIN	P	M	K	N		H		P. 19
› 62.295	Phantom	HSS	3	90°	P	M	K	N				P. 20
› 62.300	Phantom											P. 20
› 62.310	Phantom	DIN 228-B	Ø19 WELDON	Ø32 WELDON							NEW	P. 20
› 62.320	Phantom	DIN 228-B	Ø19 WELDON	Ø32 WELDON							NEW	P. 21
› 62.322	Phantom	DIN 228-B	Ø19 WELDON								NEW	P. 21
› 62.330	Phantom	Ø19 WELDON									NEW	P. 21
› 62.340	Phantom	Ø19 WELDON	Ø32 WELDON	Ø18 FEIN QUICKIN							NEW	P. 22
› 62.350	Phantom											P. 22
› 63.200	Phantom	HSS	DIN 1837-A	A	P	M	K					P. 23
› 63.210	Phantom	HSS	+GF+	BW	P	M	K	N				P. 24
› 63.220	Phantom	VHM SC	DIN 1837-A	A	P	M	K	N	S			P. 24
› 63.250	Phantom	HSS	DIN 1838-B	B	P	M	K	N				P. 25
› 63.270	Phantom	VHM SC	DIN 1838-B	A	P	M	K	N	S			P. 26
› 63.400	Phantom	HSS	OX.	C+BW	P		K	N				P. 27
› 63.401	Phantom	HSS	TiN	C+BW	P		K	N				P. 28
› 63.410	Phantom	HSS	OX.	Z=0								P. 28
› 63.420	Phantom	HSS-E	OX.	C+BW	P	M	K	N				P. 28
› 63.424	Phantom	HSS-E	TiAlN	C+BW	P	M	K	N				P. 29
› 63.430	Phantom	HSS-E	OX.	Z=0								P. 29
› 63.450	Phantom	HM-TIP	α 5°					N				P. 29
› 63.460	Phantom	HM-TIP	α-5°					N				P. 30
› 64.150	Phantom	BiM HSS	5% Co	300mm 12"								P. 31
› 64.460	Phantom	HSS	300mm 12"	150KG								P. 31
› 64.500	Phantom											P. 32
› 64.600	Phantom											P. 33
› 64.605	Phantom											P. 33
› 64.630	Phantom											P. 34
› 66.110	Phantom	BiM HSS			P		K	N				P. 35
› 66.130	Phantom	BiM HSS	KASTO		P		K	N				P. 35
› 66.160	Phantom	BiM 8% Co	INOX		P	M	K	N				P. 36
› 66.450	Phantom	BiM 8% Co	VARI	α0°	P	M	K	N	S			P. 37

› 66.460	Phantom	BiM 8% Co	VARI, α10°	P M K N	P. 37
› 66.580	Phantom	BiM 10% Co	VARI, α15°	P M S	P. 38
› 66.700	Phantom	BiM 8% Co	VARI, α5°	P M K N S	P. 38
› 67.100	Phantom				P. 39
› 67.110	Phantom				P. 39
› 67.120	Phantom				P. 40
› 67.130	Phantom	INOX			P. 40
› 67.250	Phantom				P. 41
› 67.290	Phantom				P. 41
› 67.300	Phantom				P. 41
› 69.090	International Tools	BiM 8% Co		P M K N	P. 42
› 69.092	International Tools	BiM 8% Co		P M K N	NEW P. 42
› 69.111	Phantom	BiM 8% Co		P M K N	P. 42
› 69.112	Phantom	BiM 8% Co		P M K N	NEW P. 43
› 69.114	Phantom	BiM 8% Co		P M K N	P. 43
› 69.116	Phantom	BiM 8% Co		P M K N	NEW P. 44
› 69.130	Phantom	HM-TIP		N	P. 44
› 69.210	Phantom	HSS-EX	0,5-30 mm	P K N	P. 44
› 69.212	Phantom	HSS-EX	0,5-30 mm, NIT.	P M K N	P. 45
› 69.215	Phantom	HSS-EX	0,5-55 mm	P K N	P. 45
› 69.216	Phantom	HSS-EX	0,5-55 mm, NIT.	P M K N	P. 45
› 69.300	Phantom				NEW P. 46
› 69.710	Phantom				P. 46
› 69.712	Phantom				P. 46

› 69.790	Phantom				P. 46
› 69.795	Phantom				P. 47

› 61.090 International Tools

NL ECO PRO HSS-Co 8% Bi-Metaal Gatzaag
FR Scie cloche HSS-Co 8% Bi-métal ECO PRO
ES Corona Perforadora HSS-Co 8% Bi-Metal ECO PRO
DE ECO PRO HSS-Co 8% Bi-Metall Lochsäge
EN ECO PRO HSS-Co 8% Bi-Metal Hole saw

BiM 8% Co | VARI 4/6 | INOX | MDF | SOFT | Cu Ni Ms Zn Al | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	d1	Ref.	d1	Ref.	d1
61.090.0014	14	61.090.0041	41	61.090.0079	79
61.090.0016	16	61.090.0043	43	61.090.0083	83
61.090.0017	17	61.090.0044	44	61.090.0086	86
61.090.0019	19	61.090.0046	46	61.090.0089	89
61.090.0020	20	61.090.0048	48	61.090.0092	92
61.090.0021	21	61.090.0051	51	61.090.0095	95
61.090.0022	22	61.090.0052	52	61.090.0098	98
61.090.0024	24	61.090.0054	54	61.090.0102	102
61.090.0025	25	61.090.0057	57	61.090.0105	105
61.090.0027	27	61.090.0059	59	61.090.0108	108
61.090.0029	29	61.090.0060	60	61.090.0111	111
61.090.0030	30	61.090.0064	64	61.090.0114	114
61.090.0032	32	61.090.0065	65	61.090.0121	121
61.090.0033	33	61.090.0067	67	61.090.0127	127
61.090.0035	35	61.090.0068	68	61.090.0140	140
61.090.0037	37	61.090.0070	70	61.090.0152	152
61.090.0038	38	61.090.0073	73		
61.090.0040	40	61.090.0076	76		

› 61.105 Phantom

NL HSS-Co 8% Bi-Metaal Gatzaag
FR Scie cloche HSS-Co 8% Bi-métal
ES Corona Perforadora HSS-Co 8% Bi-Metal
DE HSS-Co 8% Bi-Metall Lochsäge
EN HSS-Co 8% Bi-Metal Hole saw

BiM 8% Co | VARI | INOX | MDF | SOFT | Cu Ni Ms Zn Al

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	d1	Ref.	d1	Ref.	d1
61.105.0014	14	61.105.0041	41	61.105.0076	76
61.105.0016	16	61.105.0043	43	61.105.0079	79
61.105.0017	17	61.105.0044	44	61.105.0083	83
61.105.0018	18	61.105.0046	46	61.105.0086	86
61.105.0019	19	61.105.0048	48	61.105.0089	89
61.105.0020	20	61.105.0049	49	61.105.0090	90
61.105.0021	21	61.105.0050	50	61.105.0092	92
61.105.0022	22	61.105.0051	51	61.105.0095	95
61.105.0024	24	61.105.0052	52	61.105.0098	98
61.105.0025	25	61.105.0054	54	61.105.0100	100
61.105.0027	27	61.105.0056	56	61.105.0102	102
61.105.0028	28	61.105.0057	57	61.105.0105	105
61.105.0029	29	61.105.0059	59	61.105.0108	108
61.105.0030	30	61.105.0060	60	61.105.0111	111
61.105.0032	32	61.105.0061	61	61.105.0114	114
61.105.0033	33	61.105.0064	64	61.105.0121	121
61.105.0034	34	61.105.0065	65	61.105.0127	127
61.105.0035	35	61.105.0067	67	61.105.0133	133
61.105.0037	37	61.105.0068	68	61.105.0140	140
61.105.0038	38	61.105.0070	70	61.105.0146	146
61.105.0040	40	61.105.0073	73	61.105.0152	152

NL Gatzaag vertanding
FR Scie cloche HSS-Co Bi-métal pour tôle fine et tube vs la scie cloche standard
ES Corona bimetalica paso grueso o Corona bimetalica paso estándar
DE BiM Lochsäge grob gegen BiM Lochsäge standard
EN BiM holesaw coarse vs BiM holesaw standard

Watch me

www.phantom.eu

› 61.110 Phantom

NL HSS-Co 8% Bi-Metaal Gatzaag voor dunne plaat en buizen
FR Scie cloche HSS-Co 8% Bi-métal pour tôle fine et tube
ES Corona Perforadora HSS-Co 8% Bi-Metal para chapa fina y tubos
DE HSS-Co 8% Bi-Metall Lochsäge für dünne Platte und Rohren
EN HSS-Co 8% Bi-Metal Hole saw For thin plates and tubes

BiM 8% Co | VARI | INOX | MDF | SOFT | Cu Ni Ms Zn Al

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	d1	Ref.	d1	Ref.	d1
61.110.0014	14	61.110.0051	51	61.110.0098	98
61.110.0016	16	61.110.0054	54	61.110.0100	100
61.110.0017	17	61.110.0057	57	61.110.0102	102
61.110.0019	19	61.110.0060	60	61.110.0105	105
61.110.0020	20	61.110.0064	64	61.110.0108	108
61.110.0021	21	61.110.0067	67	61.110.0111	111
61.110.0022	22	61.110.0068	68	61.110.0114	114
61.110.0024	24	61.110.0070	70	61.110.0121	121
61.110.0025	25	61.110.0073	73	61.110.0127	127
61.110.0027	27	61.110.0076	76	61.110.0133	133
61.110.0030	30	61.110.0079	79	61.110.0140	140
61.110.0032	32	61.110.0083	83	61.110.0152	152
61.110.0035	35	61.110.0086	86	61.110.0160	160
61.110.0038	38	61.110.0089	89	61.110.0168	168
61.110.0040	40	61.110.0090	90	61.110.0177	177
61.110.0044	44	61.110.0092	92	61.110.0210	210
61.110.0048	48	61.110.0095	95		

NL Gatzagen in actie
FR Phantom Scies Cloches best of the test!
ES Phantom Corona best of the test!
DE Lochsägen in Aktion
EN Phantom Hole Saw best of the test!

Read me

www.phantom.eu

› 61.130 Phantom

NL HM-tip Gatzaag, Multi-Purpose snijdiepte 58 mm
FR Scie cloche, Multi-Purpose à plaquette carbure profondeur de coupe 58 mm
ES Corona Perforadora, Multi-Purpose con punta MD profundidad de corte 58 mm
DE Hartmetallbestückt Lochsäge, Multi-Purpose schnittiefe 58 mm
EN Carbide Tipped Hole saw, Multi-Purpose cutting depth 58 mm

HM-TIP | MDF | Cu Ni Ms Zn Al

Ref.	d1	Ref.	d1	Ref.	d1
61.130.0014	14	61.130.0043	43	61.130.0083	83
61.130.0016	16	61.130.0044	44	61.130.0086	86
61.130.0017	17	61.130.0046	46	61.130.0089	89
61.130.0018	18	61.130.0048	48	61.130.0090	90
61.130.0019	19	61.130.0049	49	61.130.0092	92
61.130.0020	20	61.130.0051	51	61.130.0095	95
61.130.0021	21	61.130.0052	52	61.130.0098	98
61.130.0022	22	61.130.0054	54	61.130.0100	100
61.130.0024	24	61.130.0056	56	61.130.0102	102
61.130.0025	25	61.130.0057	57	61.130.0105	105
61.130.0027	27	61.130.0059	59	61.130.0108	108
61.130.0028	28	61.130.0060	60	61.130.0111	111
61.130.0029	29	61.130.0061	61	61.130.0114	114
61.130.0030	30	61.130.0064	64	61.130.0121	121
61.130.0032	32	61.130.0065	65	61.130.0127	127
61.130.0033	33	61.130.0067	67	61.130.0133	133
61.130.0035	35	61.130.0068	68	61.130.0140	140
61.130.0037	37	61.130.0070	70	61.130.0146	146
61.130.0038	38	61.130.0073	73	61.130.0152	152
61.130.0040	40	61.130.0076	76		
61.130.0041	41	61.130.0079	79		

› 61.135 *International Tools*

NL ECO PRO Universele Quick-Change Houder
FR Système de changement rapide 'Quick Change' ECO PRO
ES Husillo de cambio rápido ECO PRO
DE ECO PRO Universal Schnellweschelhalter
EN ECO PRO Universal Quick-Change holder

1 2 3 4

8,7mm 11/32" | ECO PRO

Ref.	Ø	d2	1 incl.	2 incl.	3 incl.	4 incl.
61.135.1432	14-210 mm	11/32"(8,7mm)	61.160.9566	61.148.0900	61.137.1401	61.137.3201

› 61.137 *International Tools*

NL ECO PRO Universele Quick-Change adapter
FR Adaptateur Quick Change universel ECO PRO
ES Adaptador universal de cambio rápido ECO PRO
DE ECO PRO Universeller Schnellwechseladapter
EN ECO PRO Universal Quick-Change adapter

ECO PRO

Ref.	Ø	NR
61.137.1401	14-30 mm	1
61.137.1405	14-30 mm	5
61.137.3201	32-210 mm	1
61.137.3205	32-210 mm	5

› 61.140 *Phantom*

NL Universele Quick-Change Houder
FR Système de changement rapide 'Quick Change'
ES Husillo de cambio rápido
DE Universal Schnellweschelhalter
EN Universal Quick-Change holder

1 2 3 4

8,7mm 11/32"

Ref.	Ø	d2	1 incl.	2 incl.	3 incl.	4 incl.
61.140.1432	14-210 mm	11/32"(8,7mm)	61.160.9566	61.180.0900	61.142.1401	61.142.3201

› 61.142 *Phantom*

NL Universele Quick-Change adapter
FR Adaptateur 'Quick Change' universel
ES Adaptador universal de cambio rápido
DE Universeller Schnellwechseladapter
EN Universal Quick-Change adapter

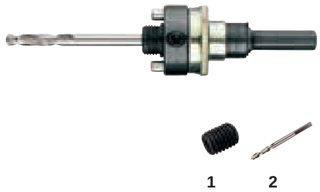
Ref.	Ø	NR
61.142.1401	14-30 mm	1
61.142.1405	14-30 mm	5
61.142.3201	32-210 mm	1
61.142.3205	32-210 mm	5

NL Quick-Change snelwisselsysteem voor gatzagen
FR Système de changement rapide 'Quick Change'
ES Quick-Change Husillo de cambio rápido
DE Quick-Change Universal Schnellweschelhalter
EN Universal Quick-Change holder for holesaws

Watch me

www.phantom.eu

› 61.145 International Tools

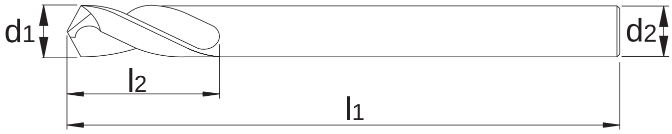


NL ECO PRO Houder voor Gatzaag 61.090
FR Arbre pour Scies cloches ECO PRO 61.090
ES Husillo para Corona perforadora ECO PRO 61.090
DE ECO PRO Halter für Lochsägen 61.090
EN ECO PRO Hole saw Arbor 61.090

11mm 7/16" | 8,7mm 11/32" | ECO PRO

Ref.	Ø	d2	1 incl.	2 incl.
61.145.0201	32-152 mm	7/16"(11mm)	61.160.9532	61.147.0600
61.145.0500	14-30 mm	11/32"(8,7mm)	61.160.9514	61.147.0600

› 61.147 International Tools

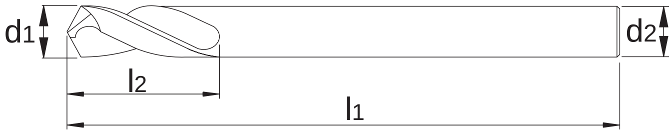


NL ECO PRO Centreerboor voor Gatzaag 61.090
FR Foret pilote ECO PRO pour Scies cloches 61.090
ES Broca guia ECO PRO para la Corona perforadora 61.090
DE ECO PRO Zentrierbohrer für Lochsäge 61.090
EN ECO PRO Centredrill for 61.090

HSS-E | ECO PRO

Ref.	Type	d1	l1
61.147.0600	HSS-E	6.35	90

› 61.148 International Tools

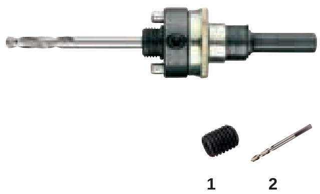


NL ECO PRO Centreerboor, Step-point voor Universele Quick-Change Houder 61.135
FR Foret pilote, Step-point ECO PRO pour système de changement rapide 'Quick Change' 61.135
ES Broca guia, Step-point ECO PRO para Husillo de cambio rápido 61.135
DE ECO PRO Zentrierbohrer, Step-point für Universal Schnellweschelhalter 61.135
EN ECO PRO Centredrill, Step-point for Universal Quick-Change holder 61.135

HSS | OX. | ECO PRO

Ref.	Type	d1	l1
61.148.0900	HSS	6.35	90

› 61.150 Phantom

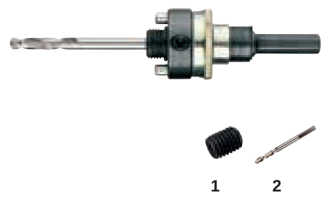


NL Houder voor Gatzaag 61.105 en 61.110
FR Arbre pour Scies cloches 61.105 et 61.110
ES Husillo para Corona perforadora 61.105 y 61.110
DE Halter für Lochsägen 61.105 und 61.110
EN Hole saw Arbor 61.105 and 61.110

SDS plus | 11mm 7/16" | 8,7mm 11/32" | Ø6,35

Ref.	Ø	d2	1 incl.	2 incl.
61.150.0100	14-30 mm	7/16"(11mm)	61.160.9514	61.170.0600
61.150.0201	32-210 mm	7/16"(11mm)	61.160.9532	61.170.0600
61.150.0400	14-30 mm	1/4"6,35mm)	61.160.9514	61.170.0601
61.150.0500	14-30 mm	11/32"(8,7mm)	61.160.9514	61.170.0600
61.150.0601	32-210 mm	11/32"(8,7mm)	61.160.9532	61.170.0600
61.150.0800	14-30 mm	SDS+	61.160.9514	61.170.0600
61.150.0901	32-210 mm	SDS+	61.160.9532	61.170.0600

› 61.151 Phantom



NL Houder voor HM-tip Gatzaag, Multi-Purpose 61.130
FR Arbre pour Scies trépans à plaquette carbure brasée, Multi-Purpose 61.130
ES Husillo para Corona perforadora punta MD, Multi-Purpose 61.130
DE Halter für HM-Bohrkrone, Multi-Purpose 61.130
EN Carbide Tipped Hole saw Arbor, Multi-Purpose 61.130

8,7mm 11/32"

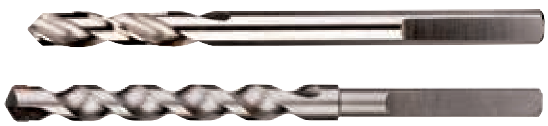
Ref.	Ø	d2	1 incl.	2 incl.	Ref.	Ø	d2	1 incl.	2 incl.
61.151.0100	14-30 mm	11/32"(8,7mm)	61.160.9514	61.170.0602	61.151.0200	32-152 mm	11/32"(8,7mm)	61.160.9532	61.170.0602

› 61.160 Phantom

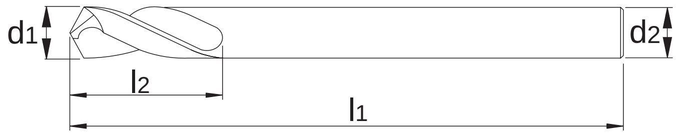
NL Toebehoren voor Gatzaag
FR Accessoires pour Scies cloches
ES Accesorios para Corona perforadora
DE Zubehör für Lochsägen
EN Hole saw Accessories

Ref.	Type	Ref.	Type	Ref.	Type
61.160.0200	MK 2 -> Hexa 11mm - 7/16"	61.160.9500	6,35 mm	61.160.9532	M8 L12 mm (32-210 mm)
61.160.3301	Hexa 11mm - 7/16" L300	61.160.9514	M8 L8 mm (14-30 mm)		

› 61.170 Phantom



NL Centreerboor voor Gatzaag 61.105, 61.110 en 61.130
FR Foret pilote pour Scies cloches 61.105, 61.110 et 61.130
ES Broca guia para la Corona perforadora 61.105, 61.110 y 61.130
DE Zentrierbohrer für Lochsäge 61.105, 61.110 und 61.130
EN Centredrill for 61.105, 61.110 and 61.130

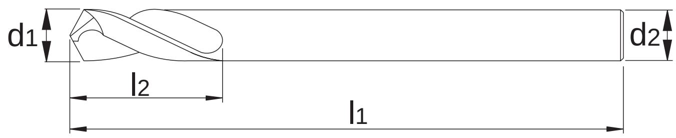


HSS-E | HM-TIP

Ref.	Type	d1	l1	61.XXX
61.170.0600	HSS-E	6.35	90	61.150
61.170.0601	HSS-E	6.35	115	61.150.0400
61.170.0602	HSS-E	6.35	110	61.151
61.170.0603	Carbide Tipped	6.35	110	61.151

› 61.180 Phantom

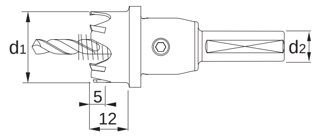
NL Centreerboor, Step-point voor Universele Quick-Change Houder 61.140
FR Foret pilote, Step-point pour système de changement rapide 'Quick Change' 61.140
ES Broca guia, Step-point para Husillo de cambio rápido 61.140
DE Zentrierbohrer, Step-point für Universal Schnellweschelhalter 61.140
EN Centredrill, Step-point for Universal Quick-Change holder 61.140

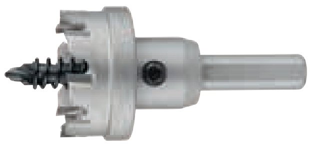


HSS | OX.

Ref.	Type	d1	l1
61.180.0900	HSS	6.35	90

› 61.630 Phantom





NL **HM-tip Gatfrees korte uitvoering 12 mm, materiaaldikte <5 mm**
FR **Scie trépan à plaquette carbure version courte 12 mm, épaisseur <5 mm**
ES **Corona fresa con punta MD versión corto 12 mm, espesor <5 mm**
DE **Hartmetallbestückt Lochfräser kurze Ausführung 12 mm, Materialdicke <5 mm**
EN **Carbide Tipped Hole saw short series 12 mm, thickness <5 mm**

HM-TIP | 0,5-5 mm | INOX

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	10	60	40	90	35	30

Ref.	d1	d2	z	Ref.	d1	d2	z	Ref.	d1	d2	z
61.630.0140	14	10	6	61.630.0225	22.5	10	6	61.630.0400	40	13	6
61.630.0150	15	10	6	61.630.0230	23	10	6	61.630.0430	43	13	6
61.630.0152	15.2	10	6	61.630.0240	24	10	6	61.630.0450	45	13	6
61.630.0160	16	10	6	61.630.0250	25	10	6	61.630.0480	48	13	6
61.630.0170	17	10	6	61.630.0260	26	10	6	61.630.0500	50	13	6
61.630.0180	18	10	6	61.630.0270	27	10	6	61.630.0550	55	13	6
61.630.0186	18.6	10	6	61.630.0280	28	10	6	61.630.0600	60	13	8
61.630.0190	19	10	6	61.630.0283	28.3	10	6	61.630.0700	70	13	8
61.630.0200	20	10	6	61.630.0300	30	10	6	61.630.0760	76	13	10
61.630.0204	20.4	10	6	61.630.0320	32	10	6	61.630.0800	80	13	12
61.630.0210	21	10	6	61.630.0350	35	13	6	61.630.0940	94	13	14
61.630.0220	22	10	6	61.630.0380	38	13	6	61.630.0960	96	13	14

› 61.640 Phantom

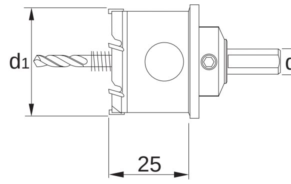
61.640.0600

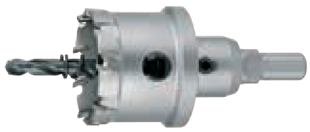
61.640.9000

NL **Toebehoren voor HM-tip Gatfrees 61.630**
FR **Accessoires pour Scies trépans à plaquette carbure brasée. 61.630**
ES **Accesorios para Corona fresa punta MD 61.630**
DE **Zubehör für HM bestückte Tieflochfräser 61.630**
EN **Carbide Tipped Hole saw Accessories 61.630**

Ref.	Description	Ref.	Description
61.640.0600	HSS Centre Drill 6x48 mm	61.640.9000	spring 8,5x20 mm

› 61.670 Phantom





NL **HM-tip Gatfrees diepgat uitvoering 25 mm, materiaaldikte <12 mm**
FR **Scie trépan à plaquette carbure profondeur de coupe 25 mm, épaisseur <12 mm**
ES **Corona fresa con punta MD profundidad de corte 25 mm, espesor <12 mm**
DE **Hartmetallbestückt Lochfräser Tiefloch-Ausführung 25 mm, Materialdicke <12 mm**
EN **Carbide Tipped Hole saw deep hole version 25 mm, thickness <12 mm**

HM-TIP | 0,5-12 mm | INOX

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	10	60	40	90	35	30

Ref.	d1	d2	z	Ref.	d1	d2	z	Ref.	d1	d2	z
61.670.0016	16	10	6	61.670.0032	32	10	6	61.670.0048	48	10	6
61.670.0017	17	10	6	61.670.0033	33	10	6	61.670.0049	49	10	6
61.670.0018	18	10	6	61.670.0034	34	10	6	61.670.0050	50	10	6
61.670.0019	19	10	6	61.670.0035	35	10	6	61.670.0051	51	10	6
61.670.0020	20	10	6	61.670.0036	36	10	6	61.670.0052	52	10	6
61.670.0021	21	10	6	61.670.0037	37	10	6	61.670.0053	53	10	6
61.670.0022	22	10	6	61.670.0038	38	10	6	61.670.0054	54	10	6
61.670.0023	23	10	6	61.670.0039	39	10	6	61.670.0055	55	10	6
61.670.0024	24	10	6	61.670.0040	40	10	6	61.670.0056	56	10	6
61.670.0025	25	10	6	61.670.0041	41	10	6	61.670.0057	57	10	6
61.670.0026	26	10	6	61.670.0042	42	10	6	61.670.0058	58	10	6
61.670.0027	27	10	6	61.670.0043	43	10	6	61.670.0060	60	10	8
61.670.0028	28	10	6	61.670.0044	44	10	6	61.670.0061	61	10	8
61.670.0029	29	10	6	61.670.0045	45	10	6	61.670.0062	62	10	8
61.670.0030	30	10	6	61.670.0046	46	10	6	61.670.0063	63	10	8
61.670.0031	31	10	6	61.670.0047	47	10	6	61.670.0064	64	10	8
61.670.0065	65	10	8	61.670.0075	75	10	10	61.670.0084	84	13	12
61.670.0066	66	10	8	61.670.0076	76	10	10	61.670.0085	85	13	12

› 61.670 Phantom

Ref.	d1	d2	z
61.670.0067	67	10	8
61.670.0068	68	10	8
61.670.0069	69	10	8
61.670.0070	70	10	8
61.670.0072	72	10	10
61.670.0074	74	10	10
61.670.0077	77	10	12
61.670.0078	78	10	12
61.670.0079	79	10	12
61.670.0080	80	13	12
61.670.0082	82	13	12
61.670.0083	83	13	12
61.670.0090	90	13	14
61.670.0092	92	13	14
61.670.0095	95	13	14
61.670.0100	100	13	14

› 61.675 Phantom

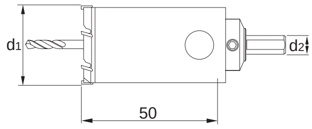
61.675.0600

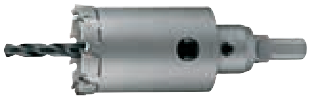
61.675.9000

NL **Toebehoren voor HM-tip Gatfrees 61.670**
FR **Accessoires pour Scies trépans à plaquette carbure brasée. 61.670**
ES **Accesorios para Corona fresa punta MD 61.670**
DE **Zubehör für HM bestückte Tieflochfräser 61.670**
EN **Carbide Tipped Hole saw Accessories 61.670**

Ref.	Description
61.675.0600	HSS Centre Drill 6x76 mm
61.675.9000	spring 8,5x35 mm

› 61.680 Phantom





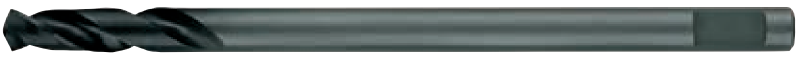
NL **HM-tip Gatfrees lange diepgat uitvoering 50 mm, materiaaldikte <12 mm**
FR **Scie trépan à plaquette carbure profondeur de coupe 50 mm, épaisseur <12 mm**
ES **Corona fresa con punta MD profundidad de corte 50 mm, espesor <12 mm**
DE **Hartmetallbestückt Lochfräser lange Tiefloch-Ausführung 50 mm, Materialdicke <12 mm**
EN **Carbide Tipped Hole saw long deep hole version 50 mm, thickness <12 mm**

HM-TIP | 0,5-12 mm | INOX

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	10	60	40	90	35	30

Ref.	d1	d2	z
61.680.0020	20	10	6
61.680.0021	21	10	6
61.680.0022	22	10	6
61.680.0023	23	10	6
61.680.0024	24	10	6
61.680.0025	25	10	6
61.680.0026	26	10	6
61.680.0027	27	10	6
61.680.0028	28	10	6
61.680.0030	30	10	6
61.680.0032	32	10	6
61.680.0033	33	10	6
61.680.0034	34	10	6
61.680.0035	35	10	6
61.680.0037	37	10	6
61.680.0038	38	10	6
61.680.0039	39	10	6
61.680.0040	40	10	6
61.680.0041	41	10	6
61.680.0042	42	10	6
61.680.0043	43	10	6
61.680.0045	45	10	6
61.680.0048	48	10	6
61.680.0050	50	10	6
61.680.0051	51	10	6
61.680.0053	53	10	6
61.680.0054	54	10	6
61.680.0055	55	10	6
61.680.0057	57	10	6
61.680.0060	60	10	8
61.680.0061	61	10	8
61.680.0062	62	10	8
61.680.0064	64	10	8
61.680.0065	65	10	8
61.680.0067	67	10	8
61.680.0070	70	10	8
61.680.0075	75	10	10
61.680.0076	76	10	10
61.680.0080	80	13	12
61.680.0090	90	13	14
61.680.0100	100	13	14

› 61.685 Phantom



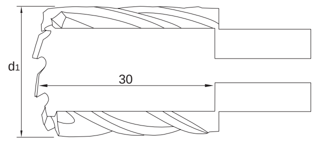
NL **HSS Centreerboor voor HM-tip Gatfrees 61.680**
FR **Foret à centrer HSS pour Scies trépans à plaquette carbure brasée 61.680**
ES **Broca de centrar para Corona fresa con punta MD 61.680**
DE **HSS Zentrierbohrer für HM bestückte Tieflochfräser 61.680**
EN **HSS Centre Drill for Carbide Tipped Hole saw 61.680**

Ref.	Description
61.685.0600	HSS 6x104 mm

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6

› 62.100 Phantom

NL HSS-EX Kernboor snijdiepte 30 mm
FR Fraise à carotter HSS-EX profondeur de coupe 30 mm
ES Fresa hueca HSS-EX profundidad de corte 30 mm
DE HSS-EX Kernbohr Schnittiefe 30 mm
EN HSS-EX Annular Cutter cutting depth 30 mm



HSS-EX | 0,5-30 mm | Ø19 WELDON

P 11	P 12	P 13	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
25	20	13	18	38	32	22	17

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.100.1200	12	62.300.0026	62.100.3000	30	62.300.0026	62.100.4800	48	62.300.0026
62.100.1300	13	62.300.0026	62.100.3100	31	62.300.0026	62.100.4900	49	62.300.0026
62.100.1400	14	62.300.0026	62.100.3200	32	62.300.0026	62.100.5000	50	62.300.0026
62.100.1500	15	62.300.0026	62.100.3300	33	62.300.0026	62.100.5100	51	62.300.0026
62.100.1600	16	62.300.0026	62.100.3400	34	62.300.0026	62.100.5200	52	62.300.0026
62.100.1700	17	62.300.0026	62.100.3500	35	62.300.0026	62.100.5300	53	62.300.0026
62.100.1800	18	62.300.0026	62.100.3600	36	62.300.0026	62.100.5400	54	62.300.0026
62.100.1900	19	62.300.0026	62.100.3700	37	62.300.0026	62.100.5500	55	62.300.0026
62.100.2000	20	62.300.0026	62.100.3800	38	62.300.0026	62.100.5600	56	62.300.0026
62.100.2100	21	62.300.0026	62.100.3900	39	62.300.0026	62.100.5700	57	62.300.0026
62.100.2200	22	62.300.0026	62.100.4000	40	62.300.0026	62.100.5800	58	62.300.0026
62.100.2300	23	62.300.0026	62.100.4100	41	62.300.0026	62.100.5900	59	62.300.0026
62.100.2400	24	62.300.0026	62.100.4200	42	62.300.0026	62.100.6000	60	62.300.0026
62.100.2500	25	62.300.0026	62.100.4300	43	62.300.0026	62.100.6100	61	62.300.0026
62.100.2600	26	62.300.0026	62.100.4400	44	62.300.0026	62.100.6200	62	62.300.0026
62.100.2700	27	62.300.0026	62.100.4500	45	62.300.0026	62.100.6300	63	62.300.0026
62.100.2800	28	62.300.0026	62.100.4600	46	62.300.0026	62.100.6400	64	62.300.0026
62.100.2900	29	62.300.0026	62.100.4700	47	62.300.0026	62.100.6500	65	62.300.0026

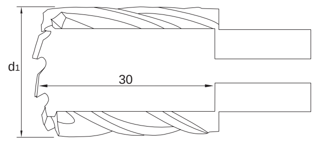
NL Kernboren keuzehulp
FR Aide à la sélection des fraises à carotter
ES Ayuda para la selección de fresas huecas
DE Auswahlhilfe Kernbohrer
EN Selection guide for annular cutters

Read me

www.phantom.eu

› 62.104 Phantom

NL HSS-EX Kernboor TiAIN, snijdiepte 30 mm
FR Fraise à carotter HSS-EX TiAIN, profondeur de coupe 30 mm
ES Fresa hueca HSS-EX TiAIN, profundidad de corte 30 mm
DE HSS-EX Kernbohr TiAIN, Schnittiefe 30 mm
EN HSS-EX Annular Cutter TiAIN, cutting depth 30 mm



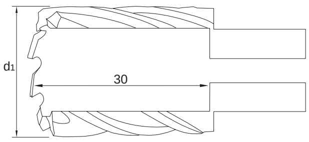
HSS-EX | TiAIN | 0,5-30 mm | Ø19 WELDON

P 11	P 12	P 13	M 21	M 22	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
25	20	13	10	4	18	38	32	22	17

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.104.1200	12	62.300.0026	62.104.2000	20	62.300.0026	62.104.2800	28	62.300.0026
62.104.1300	13	62.300.0026	62.104.2100	21	62.300.0026	62.104.3000	30	62.300.0026
62.104.1400	14	62.300.0026	62.104.2200	22	62.300.0026	62.104.3500	35	62.300.0026
62.104.1500	15	62.300.0026	62.104.2300	23	62.300.0026	62.104.4000	40	62.300.0026
62.104.1600	16	62.300.0026	62.104.2400	24	62.300.0026	62.104.4500	45	62.300.0026
62.104.1700	17	62.300.0026	62.104.2500	25	62.300.0026	62.104.5000	50	62.300.0026
62.104.1800	18	62.300.0026	62.104.2600	26	62.300.0026	62.104.5500	55	62.300.0026
62.104.1900	19	62.300.0026	62.104.2700	27	62.300.0026	62.104.6000	60	62.300.0026

› 62.122 *Phantom*

NL HSS-EX Kernboor genitreerd, snijdiepte 30 mm
FR Fraise à carotter HSS-EX nitruré, profondeur de coupe 30 mm
ES Fresa hueca HSS-EX nitrurada, profundidad de corte 30 mm
DE HSS-EX Kernbohr nitriert, Schnittiefe 30 mm
EN HSS-EX Annular Cutter nitrided, cutting depth 30 mm



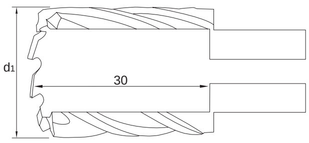
HSS-EX | NIT. | 0,5-30 mm | Ø19 WELDON

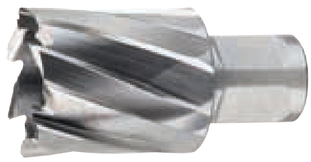
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
31	18	16	9	10	4	20	16	38	40	36	36	22

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.122.1200	12	62.300.0026	62.122.3000	30	62.300.0026	62.122.4800	48	62.300.0026
62.122.1300	13	62.300.0026	62.122.3100	31	62.300.0026	62.122.4900	49	62.300.0026
62.122.1400	14	62.300.0026	62.122.3200	32	62.300.0026	62.122.5000	50	62.300.0026
62.122.1500	15	62.300.0026	62.122.3300	33	62.300.0026	62.122.5100	51	62.300.0026
62.122.1600	16	62.300.0026	62.122.3400	34	62.300.0026	62.122.5200	52	62.300.0026
62.122.1700	17	62.300.0026	62.122.3500	35	62.300.0026	62.122.5300	53	62.300.0026
62.122.1800	18	62.300.0026	62.122.3600	36	62.300.0026	62.122.5400	54	62.300.0026
62.122.1900	19	62.300.0026	62.122.3700	37	62.300.0026	62.122.5500	55	62.300.0026
62.122.2000	20	62.300.0026	62.122.3800	38	62.300.0026	62.122.5600	56	62.300.0026
62.122.2100	21	62.300.0026	62.122.3900	39	62.300.0026	62.122.5700	57	62.300.0026
62.122.2200	22	62.300.0026	62.122.4000	40	62.300.0026	62.122.5800	58	62.300.0026
62.122.2300	23	62.300.0026	62.122.4100	41	62.300.0026	62.122.5900	59	62.300.0026
62.122.2400	24	62.300.0026	62.122.4200	42	62.300.0026	62.122.6000	60	62.300.0026
62.122.2500	25	62.300.0026	62.122.4300	43	62.300.0026	62.122.6100	61	62.300.0026
62.122.2600	26	62.300.0026	62.122.4400	44	62.300.0026	62.122.6200	62	62.300.0026
62.122.2700	27	62.300.0026	62.122.4500	45	62.300.0026	62.122.6300	63	62.300.0026
62.122.2800	28	62.300.0026	62.122.4600	46	62.300.0026	62.122.6400	64	62.300.0026
62.122.2900	29	62.300.0026	62.122.4700	47	62.300.0026	62.122.6500	65	62.300.0026

› 62.130 *Phantom*

NL HSS-EX Kernboor Rail, snijdiepte 30 mm
FR Fraise à carotter HSS-EX Rail, profondeur de coupe 30 mm
ES Fresa hueca HSS-EX Rail, profundidad de corte 30 mm
DE HSS-EX Kernbohr Rail, Schnittiefe 30 mm
EN HSS-EX Annular Cutter Rail, cutting depth 30 mm





HSS-EX | 0,5-30 mm | Ø19 WELDON

P 13	P 14
≤1000 N/mm²	≤1400 N/mm²
16	9

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.130.1800	18	62.300.0070	62.130.2400	24	62.300.0070	62.130.3000	30	62.300.0070
62.130.1900	19	62.300.0070	62.130.2500	25	62.300.0070	62.130.3100	31	62.300.0070
62.130.2000	20	62.300.0070	62.130.2600	26	62.300.0070	62.130.3200	32	62.300.0070
62.130.2200	22	62.300.0070	62.130.2700	27	62.300.0070	62.130.3400	34	62.300.0070
62.130.2300	23	62.300.0070	62.130.2800	28	62.300.0070	62.130.3600	36	62.300.0070

NL Uitleg calculatietool
FR Regardez la vidéo d'instruction de l'outil de calcul
ES Explicación de la herramienta de cálculo
DE Erläuterung Rechner
EN Calculation tool explained

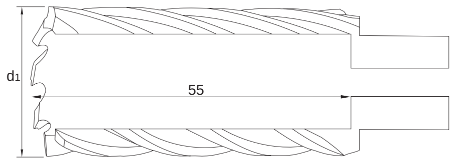
Watch me

www.phantom.eu

1 SC | 1 HSS(-E) | 2 | 3 SC | 3 HSS-E | 4 | 5 | 6

› 62.150 Phantom

NL HSS-EX Kernboor snijdiepte 55 mm
FR Fraise à carotter HSS-EX profondeur de coupe 55 mm
ES Fresa hueca HSS-EX profundidad de corte 55 mm
DE HSS-EX Kernbohr Schnittiefe 55 mm
EN HSS-EX Annular Cutter cutting depth 55 mm



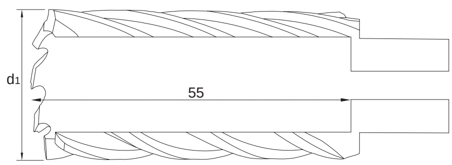
HSS-EX | 0,5-55 mm | Ø19 WELDON

P 11	P 12	P 13	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
25	20	13	18	38	32	22	17

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.150.1200	12	62.300.0050	62.150.3000	30	62.300.0050	62.150.4800	48	62.300.0050
62.150.1300	13	62.300.0050	62.150.3100	31	62.300.0050	62.150.4900	49	62.300.0050
62.150.1400	14	62.300.0050	62.150.3200	32	62.300.0050	62.150.5000	50	62.300.0050
62.150.1500	15	62.300.0050	62.150.3300	33	62.300.0050	62.150.5100	51	62.300.0050
62.150.1600	16	62.300.0050	62.150.3400	34	62.300.0050	62.150.5200	52	62.300.0050
62.150.1700	17	62.300.0050	62.150.3500	35	62.300.0050	62.150.5300	53	62.300.0050
62.150.1800	18	62.300.0050	62.150.3600	36	62.300.0050	62.150.5400	54	62.300.0050
62.150.1900	19	62.300.0050	62.150.3700	37	62.300.0050	62.150.5500	55	62.300.0050
62.150.2000	20	62.300.0050	62.150.3800	38	62.300.0050	62.150.5600	56	62.300.0050
62.150.2100	21	62.300.0050	62.150.3900	39	62.300.0050	62.150.5700	57	62.300.0050
62.150.2200	22	62.300.0050	62.150.4000	40	62.300.0050	62.150.5800	58	62.300.0050
62.150.2300	23	62.300.0050	62.150.4100	41	62.300.0050	62.150.5900	59	62.300.0050
62.150.2400	24	62.300.0050	62.150.4200	42	62.300.0050	62.150.6000	60	62.300.0050
62.150.2500	25	62.300.0050	62.150.4300	43	62.300.0050	62.150.6100	61	62.300.0050
62.150.2600	26	62.300.0050	62.150.4400	44	62.300.0050	62.150.6200	62	62.300.0050
62.150.2700	27	62.300.0050	62.150.4500	45	62.300.0050	62.150.6300	63	62.300.0050
62.150.2800	28	62.300.0050	62.150.4600	46	62.300.0050	62.150.6400	64	62.300.0050
62.150.2900	29	62.300.0050	62.150.4700	47	62.300.0050	62.150.6500	65	62.300.0050

› 62.154 Phantom

NL HSS-EX Kernboor TiAlN, snijdiepte 55 mm
FR Fraise à carotter HSS-EX TiAlN, profondeur de coupe 55 mm
ES Fresa hueca HSS-EX TiAlN, profundidad de corte 55 mm
DE HSS-EX Kernbohr TiAlN, Schnittiefe 55 mm
EN HSS-EX Annular Cutter TiAlN, cutting depth 55 mm



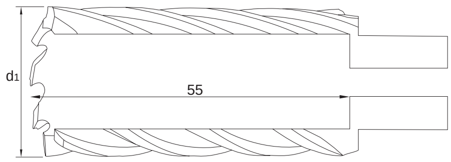
HSS-EX | TiAlN | 0,5-55 mm | Ø19 WELDON

P 11	P 12	P 13	M 21	M 21	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX ≤850N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
25	20	13	10	4	18	38	32	22	17

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.154.1200	12	62.300.0050	62.154.2000	20	62.300.0050	62.154.3200	32	62.300.0050
62.154.1300	13	62.300.0050	62.154.2100	21	62.300.0050	62.154.3500	35	62.300.0050
62.154.1400	14	62.300.0050	62.154.2200	22	62.300.0050	62.154.4000	40	62.300.0050
62.154.1500	15	62.300.0050	62.154.2400	24	62.300.0050	62.154.4500	45	62.300.0050
62.154.1600	16	62.300.0050	62.154.2500	25	62.300.0050	62.154.5000	50	62.300.0050
62.154.1700	17	62.300.0050	62.154.2600	26	62.300.0050	62.154.5500	55	62.300.0050
62.154.1800	18	62.300.0050	62.154.2800	28	62.300.0050	62.154.6000	60	62.300.0050
62.154.1900	19	62.300.0050	62.154.3000	30	62.300.0050			

› 62.162 Phantom

NL **HSS-EX Kernboor genitreerd, snijdiepte 55 mm**
FR **Fraise à carotter HSS-EX nitruré, profondeur de coupe 55 mm**
ES **Fresa hueca HSS-EX nitrurada, profundidad de corte 55 mm**
DE **HSS-EX Kernbohr nitriert, Schnittiefe 55 mm**
EN **HSS-EX Annular Cutter nitrided, cutting depth 55 mm**



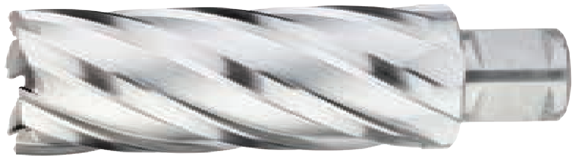
HSS-EX | NIT. | 0,5-55 mm | Ø19 WELDON

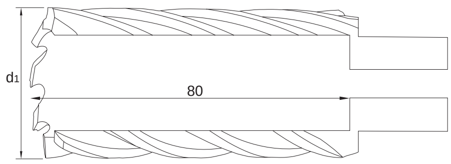
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
31	18	16	9	10	4	20	16	38	40	36	36	22

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.162.1200	12	62.300.0050	62.162.2600	26	62.300.0050	62.162.4700	47	62.300.0050
62.162.1300	13	62.300.0050	62.162.2700	27	62.300.0050	62.162.4800	48	62.300.0050
62.162.1400	14	62.300.0050	62.162.2800	28	62.300.0050	62.162.4900	49	62.300.0050
62.162.1450	14.5	62.300.0050	62.162.2900	29	62.300.0050	62.162.5000	50	62.300.0050
62.162.1500	15	62.300.0050	62.162.3000	30	62.300.0050	62.162.5100	51	62.300.0050
62.162.1550	15.5	62.300.0050	62.162.3100	31	62.300.0050	62.162.5200	52	62.300.0050
62.162.1600	16	62.300.0050	62.162.3200	32	62.300.0050	62.162.5300	53	62.300.0050
62.162.1650	16.5	62.300.0050	62.162.3300	33	62.300.0050	62.162.5400	54	62.300.0050
62.162.1700	17	62.300.0050	62.162.3400	34	62.300.0050	62.162.5500	55	62.300.0050
62.162.1750	17.5	62.300.0050	62.162.3500	35	62.300.0050	62.162.5600	56	62.300.0050
62.162.1800	18	62.300.0050	62.162.3600	36	62.300.0050	62.162.5700	57	62.300.0050
62.162.1850	18.5	62.300.0050	62.162.3700	37	62.300.0050	62.162.5800	58	62.300.0050
62.162.1900	19	62.300.0050	62.162.3800	38	62.300.0050	62.162.5900	59	62.300.0050
62.162.1950	19.5	62.300.0050	62.162.3900	39	62.300.0050	62.162.6000	60	62.300.0050
62.162.2000	20	62.300.0050	62.162.4000	40	62.300.0050	62.162.6100	61	62.300.0050
62.162.2050	20.5	62.300.0050	62.162.4100	41	62.300.0050	62.162.6200	62	62.300.0050
62.162.2100	21	62.300.0050	62.162.4200	42	62.300.0050	62.162.6300	63	62.300.0050
62.162.2200	22	62.300.0050	62.162.4300	43	62.300.0050	62.162.6400	64	62.300.0050
62.162.2300	23	62.300.0050	62.162.4400	44	62.300.0050	62.162.6500	65	62.300.0050
62.162.2400	24	62.300.0050	62.162.4500	45	62.300.0050			
62.162.2500	25	62.300.0050	62.162.4600	46	62.300.0050			

› 62.170 Phantom

NL **HSS-EX Kernboor snijdiepte 80 mm**
FR **Fraise à carotter HSS-EX profondeur de coupe 80 mm**
ES **Fresa hueca HSS-EX profundidad de corte 80 mm**
DE **HSS-EX Kernbohr Schnittiefe 80 mm**
EN **HSS-EX Annular Cutter cutting depth 80 mm**





HSS-EX | 0,5-80 mm | Ø19 WELDON

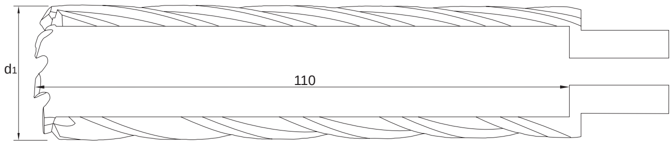
NIEUW | NOUVEAU | NUEVO | NEU

P 11	P 12	P 13	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
25	20	13	18	38	32	22	17

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.170.1800	18	62.300.0092	62.170.2400	24	62.300.0092	62.170.3000	30	62.300.0092
62.170.2000	20	62.300.0092	62.170.2600	26	62.300.0092			
62.170.2200	22	62.300.0092	62.170.2800	28	62.300.0092			

› 62.180 Phantom

NL **HSS-EX Kernboor snijdiepte 110 mm**
FR **Fraise à carotter HSS-EX profondeur de coupe 110 mm**
ES **Fresa hueca HSS-EX profundidad de corte 110 mm**
DE **HSS-EX Kernbohr Schnittiefe 110 mm**
EN **HSS-EX Annular Cutter cutting depth 110 mm**



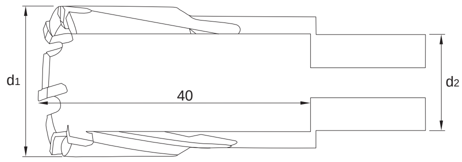
HSS-EX | 0,5-110 mm | Ø19 WELDON

P 11	P 12	P 13	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
25	20	13	18	38	32	22	17

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.180.1800	18	62.300.0100	62.180.2500	25	62.300.0100	62.180.3400	34	62.300.0100
62.180.1900	19	62.300.0100	62.180.2600	26	62.300.0100	62.180.3500	35	62.300.0100
62.180.2000	20	62.300.0100	62.180.2700	27	62.300.0100	62.180.4000	40	62.300.0100
62.180.2100	21	62.300.0100	62.180.2800	28	62.300.0100	62.180.4500	45	62.300.0100
62.180.2200	22	62.300.0100	62.180.3000	30	62.300.0100	62.180.5000	50	62.300.0100
62.180.2400	24	62.300.0100	62.180.3200	32	62.300.0100			

› 62.200 Phantom

NL **HM-tip Kernboor snijdiepte 40 mm**
FR **Fraise à carotter à plaquette carbure profondeur de coupe 40 mm**
ES **Fresa hueca con punta MD profundidad de corte 40 mm**
DE **Hartmetallbestückt Kernbohr Schnittiefe 40 mm**
EN **Carbide Tipped Annular Cutter cutting depth 40 mm**



HM-TIP | 0,5-40 mm | Ø19 WELDON

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	20	10	60	40	90	35	30

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.200.1200	12	62.300.0035	62.200.2200	22	62.300.0076	62.200.3500	35	62.300.0076
62.200.1300	13	62.300.0035	62.200.2300	23	62.300.0076	62.200.3600	36	62.300.0076
62.200.1400	14	62.300.0035	62.200.2400	24	62.300.0076	62.200.4000	40	62.300.0076
62.200.1500	15	62.300.0035	62.200.2500	25	62.300.0076	62.200.4500	45	62.300.0076
62.200.1600	16	62.300.0035	62.200.2600	26	62.300.0076	62.200.4700	47	62.300.0076
62.200.1700	17	62.300.0035	62.200.2700	27	62.300.0076	62.200.5000	50	62.300.0076
62.200.1800	18	62.300.0076	62.200.2800	28	62.300.0076	62.200.5500	55	62.300.0076
62.200.1900	19	62.300.0076	62.200.3000	30	62.300.0076	62.200.6000	60	62.300.0076
62.200.2000	20	62.300.0076	62.200.3100	31	62.300.0076			
62.200.2100	21	62.300.0076	62.200.3200	32	62.300.0076			

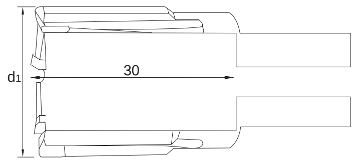
NL Wanneer HM-tip kernboor gebruiken?
FR Quand utiliser une fraise à carotter à plaquette carbure ?
ES ¿Cuándo utilizar una fresa hueca con punta MD?
DE Wann kommen HM-bestückte Kernbohrer zum Einsatz?
EN When to use a carbide tipped annular cutter?

Read me

www.phantom.eu

› 62.210 Phantom

NL HM-tip Kernboor Rail, snijdiepte 30 mm
FR Fraise à carotter à plaquette carbure Rail, profondeur de coupe 30 mm
ES Fresa hueca con punta MD Rail, profundidad de corte 30 mm
DE Hartmetallbestückt Kernbohr Rail, Schnittiefe 30 mm
EN Carbide Tipped Annular Cutter Rail, cutting depth 30 mm



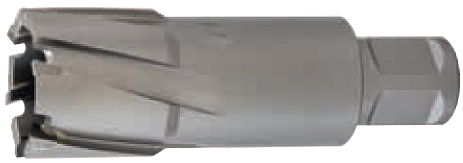
HM-TIP	0,5-30 mm	Ø19 WELDON

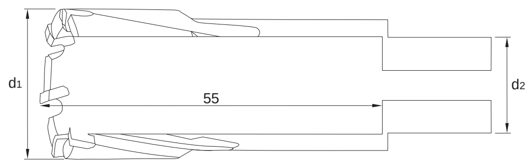
P 13	P 14	H 15
≤1000 N/mm²	≤1400 N/mm²	HRC
30	25	20

Ref.	d1	Pin
62.210.1800	18	62.300.0070
62.210.1900	19	62.300.0070
62.210.2000	20	62.300.0070
62.210.2200	22	62.300.0070
62.210.2400	24	62.300.0070
62.210.2600	26	62.300.0070
62.210.2800	28	62.300.0070
62.210.3000	30	62.300.0070
62.210.3100	31	62.300.0070
62.210.3200	32	62.300.0070
62.210.3600	36	62.300.0070

› 62.220 Phantom

NL HM-tip Kernboor snijdiepte 55 mm
FR Fraise à carotter à plaquette carbure profondeur de coupe 55 mm
ES Fresa hueca con punta MD profundidad de corte 55 mm
DE Hartmetallbestückt Kernbohr Schnittiefe 55 mm
EN Carbide Tipped Annular Cutter cutting depth 55 mm





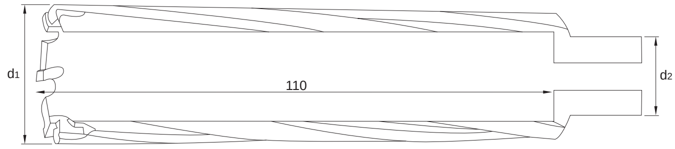
HM-TIP	0,5-55 mm	Ø19 WELDON	Ø32 WELDON

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	20	10	60	40	90	35	30

Ref.	d1	d2	Pin
62.220.1200	12	19 mm	62.300.0054
62.220.1300	13	19 mm	62.300.0054
62.220.1400	14	19 mm	62.300.0054
62.220.1500	15	19 mm	62.300.0054
62.220.1600	16	19 mm	62.300.0054
62.220.1700	17	19 mm	62.300.0054
62.220.1800	18	19 mm	62.300.0080
62.220.1900	19	19 mm	62.300.0080
62.220.2000	20	19 mm	62.300.0080
62.220.2100	21	19 mm	62.300.0080
62.220.2200	22	19 mm	62.300.0080
62.220.2300	23	19 mm	62.300.0080
62.220.2400	24	19 mm	62.300.0080
62.220.2500	25	19 mm	62.300.0080
62.220.2600	26	19 mm	62.300.0080
62.220.2700	27	19 mm	62.300.0080
62.220.2800	28	19 mm	62.300.0080
62.220.3000	30	19 mm	62.300.0080
62.220.3200	32	19 mm	62.300.0080
62.220.3500	35	19 mm	62.300.0080
62.220.3600	36	19 mm	62.300.0080
62.220.4000	40	19 mm	62.300.0080
62.220.4500	45	19 mm	62.300.0080
62.220.5000	50	19 mm	62.300.0080
62.220.5500	55	19 mm	62.300.0080
62.220.6000	60	19 mm	62.300.0080
62.220.6500	65	32 mm	62.300.0090
62.220.7000	70	32 mm	62.300.0090
62.220.7500	75	32 mm	62.300.0090
62.220.8000	80	32 mm	62.300.0090
62.220.8500	85	32 mm	62.300.0090
62.220.9000	90	32 mm	62.300.0090
62.220.9500	95	32 mm	62.300.0090
62.220.9910	100	32 mm	62.300.0090

› 62.240 Phantom

NL **HM-tip Kernboor snijdiepte 110 mm**
FR **Fraise à carotter à plaquette carbure profondeur de coupe 110 mm**
ES **Fresa hueca con punta MD profundidad de corte 110 mm**
DE **Hartmetallbestückt Kernbohr Schnittiefe 110 mm**
EN **Carbide Tipped Annular Cutter cutting depth 110 mm**



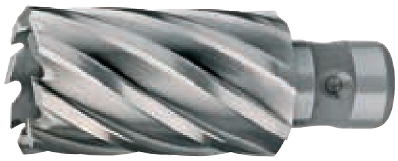
HM-TIP | 0,5-110 mm | Ø19 WELDON

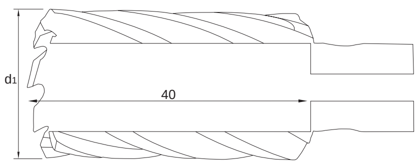
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	20	10	60	40	90	35	30

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.240.1400	14	62.300.0062	62.240.2200	22	62.300.0100	62.240.3200	32	62.300.0100
62.240.1500	15	62.300.0062	62.240.2300	23	62.300.0100	62.240.3500	35	62.300.0100
62.240.1600	16	62.300.0062	62.240.2400	24	62.300.0100	62.240.3600	36	62.300.0100
62.240.1700	17	62.300.0062	62.240.2500	25	62.300.0100	62.240.4000	40	62.300.0100
62.240.1800	18	62.300.0100	62.240.2600	26	62.300.0100	62.240.4500	45	62.300.0100
62.240.1900	19	62.300.0100	62.240.2700	27	62.300.0100	62.240.5000	50	62.300.0100
62.240.2000	20	62.300.0100	62.240.2800	28	62.300.0100	62.240.5500	55	62.300.0100
62.240.2100	21	62.300.0100	62.240.3000	30	62.300.0100	62.240.6000	60	62.300.0100

› 62.250 Phantom

NL **HSS-EX Kernboor met Fein QuickIN opname, snijdiepte 40 mm**
FR **Fraise à carotter HSS-EX Fein QuickIN, profondeur de coupe 40 mm**
ES **Fresa hueca HSS-EX con mango Fein QuickIn, profundidad de corte 40 mm**
DE **HSS-EX Kernbohr mit Fein QuickIN Aufnahme, Schnittiefe 40 mm**
EN **HSS-EX Annular Cutter with Fein QuickIN, cutting depth 40 mm**





HSS-EX | Ø18 FEIN QUICKIN | 0,5-40 mm

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
31	18	16	9	10	4	20	16	38	40	36	36	22

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.250.1200	12	62.300.0035	62.250.2100	21	62.300.0035	62.250.3000	30	62.300.0035
62.250.1300	13	62.300.0035	62.250.2200	22	62.300.0035	62.250.3200	32	62.300.0035
62.250.1400	14	62.300.0035	62.250.2300	23	62.300.0035	62.250.3500	35	62.300.0035
62.250.1500	15	62.300.0035	62.250.2400	24	62.300.0035	62.250.4000	40	62.300.0035
62.250.1600	16	62.300.0035	62.250.2500	25	62.300.0035	62.250.4500	45	62.300.0035
62.250.1700	17	62.300.0035	62.250.2600	26	62.300.0035	62.250.5000	50	62.300.0035
62.250.1800	18	62.300.0035	62.250.2700	27	62.300.0035	62.250.5500	55	62.300.0035
62.250.1900	19	62.300.0035	62.250.2800	28	62.300.0035	62.250.6000	60	62.300.0035
62.250.2000	20	62.300.0035	62.250.2900	29	62.300.0035			

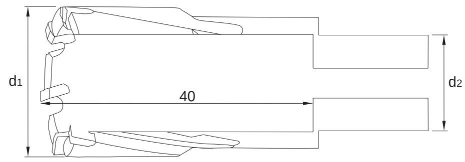
NL Kernboren keuzehulp
FR Aide à la sélection des fraises à carotter
ES Ayuda para la selección de fresas huecas
DE Auswahlhilfe Kernbohrer
EN Selection guide for annular cutters

Read me

www.phantom.eu

› 62.270 Phantom

NL **HM-tip Kernboor met Fein QuickIN opname, snijdiepte 40 mm**
FR **Fraise à carotter à plaquette carbure Fein QuickIN, profondeur de coupe 40 mm**
ES **Fresa hueca con punta MD con mango Fein QuickIn, profundidad de corte 40 mm**
DE **Hartmetallbestückt Kernbohr mit Fein QuickIN Aufnahme, Schnittiefe 40 mm**
EN **Carbide Tipped Annular Cutter with Fein QuickIN, cutting depth 40 mm**



HM-TIP | Ø18 FEIN QUICKIN | 0,5-40 mm

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	20	10	60	40	90	35	30

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.270.1200	12	62.300.0035	62.270.2100	21	62.300.0035	62.270.3000	30	62.300.0035
62.270.1300	13	62.300.0035	62.270.2200	22	62.300.0035	62.270.3200	32	62.300.0035
62.270.1400	14	62.300.0035	62.270.2300	23	62.300.0035	62.270.3500	35	62.300.0035
62.270.1500	15	62.300.0035	62.270.2400	24	62.300.0035	62.270.4000	40	62.300.0035
62.270.1600	16	62.300.0035	62.270.2500	25	62.300.0035	62.270.4500	45	62.300.0035
62.270.1700	17	62.300.0035	62.270.2600	26	62.300.0035	62.270.5000	50	62.300.0035
62.270.1800	18	62.300.0035	62.270.2700	27	62.300.0035	62.270.5500	55	62.300.0035
62.270.1900	19	62.300.0035	62.270.2800	28	62.300.0035	62.270.6000	60	62.300.0035
62.270.2000	20	62.300.0035	62.270.2900	29	62.300.0035			

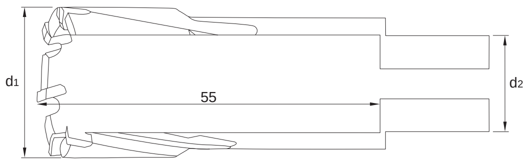
NL Wanneer HM-tip kernboor gebruiken?
FR Quand utiliser une fraise à carotter à plaquette carbure ?
ES ¿Cuándo utilizar una fresa hueca con punta MD?
DE Wann kommen HM-bestückte Kernbohrer zum Einsatz?
EN When to use a carbide tipped annular cutter?

Read me

www.phantom.eu

› 62.280 Phantom

NL **HM-tip Kernboor met Fein QuickIN opname, snijdiepte 55 mm**
FR **Fraise à carotter à plaquette carbure Fein QuickIN, profondeur de coupe 55 mm**
ES **Fresa hueca con punta MD con mango Fein QuickIn, profundidad de corte 55 mm**
DE **Hartmetallbestückt Kernbohr mit Fein QuickIN Aufnahme, Schnittiefe 55 mm**
EN **Carbide Tipped Annular Cutter with Fein QuickIN, cutting depth 55 mm**



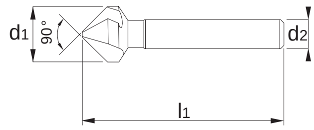
HM-TIP | Ø18 FEIN QUICKIN | 0,5-55 mm

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 52	N 62
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	20	10	60	40	90	35	30

Ref.	d1	Pin	Ref.	d1	Pin	Ref.	d1	Pin
62.280.1200	12	62.300.0050	62.280.2100	21	62.300.0050	62.280.3000	30	62.300.0050
62.280.1300	13	62.300.0050	62.280.2200	22	62.300.0050	62.280.3200	32	62.300.0050
62.280.1400	14	62.300.0050	62.280.2300	23	62.300.0050	62.280.3500	35	62.300.0050
62.280.1500	15	62.300.0050	62.280.2400	24	62.300.0050	62.280.4000	40	62.300.0050
62.280.1600	16	62.300.0050	62.280.2500	25	62.300.0050	62.280.4500	45	62.300.0050
62.280.1700	17	62.300.0050	62.280.2600	26	62.300.0050	62.280.5000	50	62.300.0050
62.280.1800	18	62.300.0050	62.280.2700	27	62.300.0050	62.280.5500	55	62.300.0050
62.280.1900	19	62.300.0050	62.280.2800	28	62.300.0050	62.280.6000	60	62.300.0050
62.280.2000	20	62.300.0050	62.280.2900	29	62.300.0050			

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6

› 62.295 Phantom



NL **HSS Verzinkboor 90°, met 2-vlaks 3/4"(19,05 mm) Weldon-opname**
FR **Fraise à chanfreiner HSS 90°, queue Weldon 3/4"(19,05 mm)**
ES **Avellanador para desbarbar HSS 90°, con sujeción Weldon 3/4"(19,05 mm)**
DE **HSS Kegelsenker 90°, mit 2-fach 3/4"(19,05 mm) Weldon-Aufnahme**
EN **HSS Countersink 90°, Weldon type 3/4"(19,05 mm)**

HSS | 3 | 90° | Ø19 WELDON

P 11	P 12	P 13	M 21	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
30	25	20	8	20	30	30	25	20

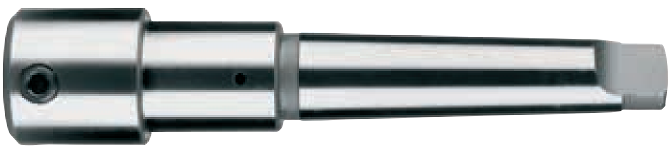
Ref.	d1	Min-Max Ø	l1	d2
62.295.0325	25	5-25	45	19 mm
62.295.0330	30	5-30	47	19 mm
62.295.0340	40	9-40	52	19 mm
62.295.0355	55	11-55	60	19 mm

› 62.300 Phantom

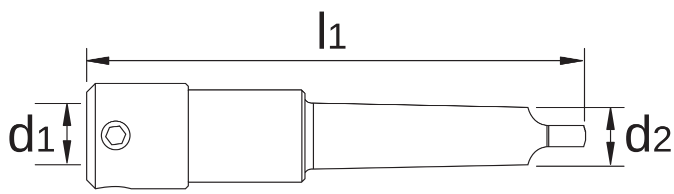
NL **Kernboor uitwerpstift**
FR **Tige d'éjection pour fraise à carotter**
ES **Expulsor para fresa hueca**
DE **Auswerferstift für Kernbohrer**
EN **Annular cutter pilot pin**

Ref.	d1	l1	62.xxx
62.300.0025	6,35/5,3 mm	77	62.100, 62.104, 62.122
62.300.0026	6,35/5,3 mm	77	62.100, 62.104, 62.122
62.300.0035	6,35/5,3 mm	90	62.200(≤17,5 mm), 62.250, 62.270
62.300.0050	6,35/5,3 mm	102	62.150, 62.154, 62.162, 62.280
62.300.0054	6,35/5,3 mm	106	62.220(≤17,5 mm)
62.300.0056	6,35/5,3 mm	116	62.200(≤17,5 mm) + 62.300.9020
62.300.0058	6,35/5,3 mm	127	62.150, 62.154, 62.162, 62.220(≤17,5 mm) + 62.300.9020
62.300.0062	6,35/5,3 mm	160	62.240(≤17,5 mm)
62.300.0070	7,98 mm	77	62.130, 62.210
62.300.0076	7,98 mm	90	62.200 (>17,5 mm)
62.300.0080	7,98 mm	103	62.220 (18-60 mm)
62.300.0086	7,98 mm	118	62.200 (>17,5 mm) + 62.300.9021
62.300.0090	7,98 mm	115	62.220 (>60 mm) / 62.200 (>17,5 mm) + 62.300.9021
62.300.0092	7,98 mm	130	62.170
62.300.0094	7,98 mm	145	62.200 (>17,5 mm) + 62.300.9150
62.300.0100	7,98 mm	160	62.180, 62.240 (>17,5 mm)
62.300.0102	7,98 mm	165	62.200 (>17,5 mm) + 62.300.9175
62.300.0108	7,98 mm	180	62.220 (>17,5 mm) + 62.300.9175
62.300.0120	7,98/6,35/5,3 mm	127	62.100, 62.104, 62.122 + 62.300.9150
62.300.0125	7,98/6,35/5,3 mm	140	62.200(≤17,5mm) + 62.300.9150
62.300.0130	7,98/6,35/5,3 mm	153	62.150, 62.154, 62.162, 62.220(≤17,5 mm) + 62.300.9150
62.300.0135	7,98/6,35/5,3 mm	165	62.200(≤17,5 mm) + 62.300.9175
62.300.0140	7,98/6,35/5,3 mm	178	62.150, 62.154, 62.162, 62.220(≤17,5 mm) + 62.300.9175

› 62.310 Phantom



NL **Kernboorhouder**
FR **Porte-fraise à carotter**
ES **Portaherramienta Fresa Hueca**
DE **Werkzeughalter für Kernbohrer**
EN **Annular cutter holder**



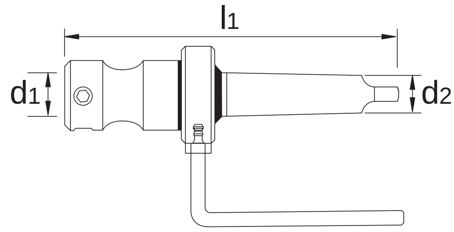
DIN 228-B | Ø19 WELDON | Ø32 WELDON

NIEUW | NOUVEAU | NUEVO | NEU

Ref.	d2	d1	l1
62.310.2195	MK 2	19 mm	162
62.310.3195	MK 3	19 mm	176
62.310.3325	MK 3	32 mm	172
62.310.4195	MK 4	19 mm	189
62.310.4325	MK 4	32 mm	204

› 62.320 Phantom

- NL Kernboorhouder met interne koeling
- FR Porte-fraise à carotter avec refroidissement
- ES Portaherramienta Fresa Hueca con refrigeración interna
- DE Werkzeughalter für Kernbohrer mit Innenkühlung
- EN Annular cutter holder with internal coolant



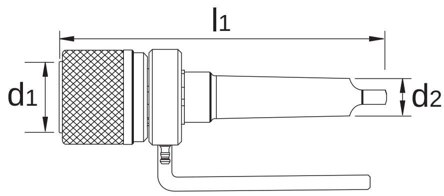
DIN 228-B | Ø19 WELDON | Ø32 WELDON

NIEUW NOUVEAU NUEVO NEU

Ref.	d2	d1	l1
62.320.2195	MK 2	19 mm	168
62.320.3195	MK 3	19 mm	187
62.320.3325	MK 3	32 mm	202
62.320.4195	MK 4	19 mm	212

› 62.322 Phantom

- NL Kernboorhouder Quick-Change met interne koeling
- FR Porte-fraise à carotter avec système de changement rapide avec refroidissement
- ES Portaherramienta Fresa Hueca con sistema de cambio rapido con refrigeración interna
- DE Schnellwechsel Werkzeughalter für Kernbohrer mit Innenkühlung
- EN Annular cutter holder Quick-Change with internal coolant



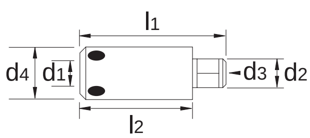
DIN 228-B | Ø19 WELDON

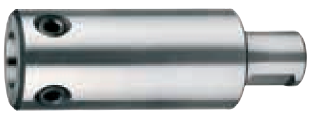
NIEUW NOUVEAU NUEVO NEU

Ref.	d2	d1	l1
62.322.2195	MK 2	19 mm	168
62.322.3195	MK 3	19 mm	185

› 62.330 Phantom

- NL Kernboor verlengstuk
- FR Rallonge pour porte-fraise à carotter
- ES Mango de extensión para fresa heuca
- DE Kernbohrer verlängerung
- EN Annular cutter extension





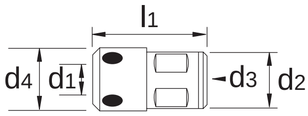
Ø19 WELDON

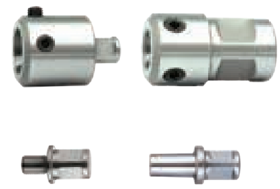
NIEUW NOUVEAU NUEVO NEU

Ref.	d2	d1	d4	l1	l2	d3	Pin
62.330.1158	19 mm	19 mm	35	74	50	7.98	Ø7,98 + 50 mm
62.330.1178	19 mm	19 mm	35	99	75	7.98	Ø7,98 + 75 mm

SC 1 | HSS(-E) 1 | 2 | SC 3 | HSS-E 3 | 4 | 5 | 6

› 62.340 Phantom

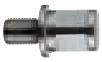
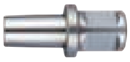
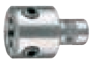
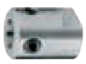




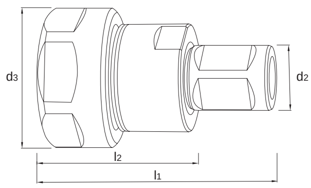
NL Kernboor adapter
FR Adaptateur pour porte-fraise à carotter
ES Adaptador para Portaherramienta Fresa Hueca
DE Adapter für Kernbohrer
EN Annular cutter adapter

Ø19 WELDON | Ø32 WELDON | Ø18 FEIN QUICKIN

NIEUW / NOUVEAU / NUEVO / NEU

Ref.	Image	d2	d1	d4	l1	d3	Pin
62.340.1328		19 mm	32 mm		73	7.98	Ø7,98 + 40 mm
62.340.1620		19 mm	1/2 - 20 UNF		43		
62.340.1720		19 mm	B16		57		
62.340.3148		32 mm	19 mm	35	63	7.98	Ø7,98 + 40 mm
62.340.4126		18 mm	19 mm	35	51	6.35	Ø6,35 + 25 mm
62.340.4128		18 mm	19 mm	35	51	7.98	Ø7,98 + 25 mm
62.340.5120		M18x6 P1,5	19 mm	35	43		

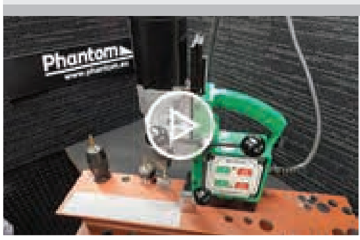
› 62.350 Phantom



NL Spantanghouder, voor kernboormachine ER
FR Mandrin porte-pinces, pour carotteuse ER
ES Portapinzas ER, para taladro magnético ER
DE Spannzangenfutter, für Kernbohrmaschine ER
EN Collet Chuck, for annular cutter machine ER

ER-25 | Ø19 WELDON

Ref.	d2	Type	Ø	l1	l2	d3	sw
62.350.1925	19 mm	ER25	1-20	70	46	42	38



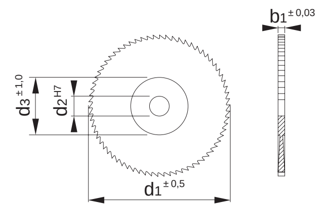
NL Unieke spantanghouder voor kleinere diameters en kort opspannen in de kernboormachine
FR Mandrin porte-pinces unique pour petits diamètres et serrage court pour perceuses magnétiques
ES Porta pinzas único para diámetros pequeños y sujeción corta para taladradoras magnéticas
DE Einzigartiges Spannzangenfutter für kleinere Durchmesser und schnelles Einspannen in die Kernbohrmaschine
EN Unique collet chuck for smaller diameters and short clamping for magnetic drilling machines

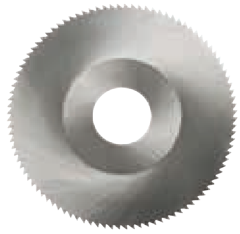
Watch me

www.phantom.eu

› 63.200 Phantom

NL HSS Metaalcirkelzaag fijn
FR Fraise-scie HSS pas fin
ES Fresa sierra circular HSS paso fino
DE HSS Metallkreissägeblätter fein
EN HSS Circular Saw Blade fine pitch





HSS | DIN 1837-A | A

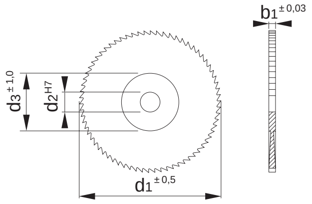
P 11	P 12	P 13	P 14	M 21	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW
30-40	25-35	15-25	15-20	10-15	25-30	20-25

Ref.	d1	b1	d2	d3	z	t
63.200.0303	32	0.3	8	14	80	1,25
63.200.0304	32	0.4	8	14	80	1,25
63.200.0305	32	0.5	8	14	80	1,25
63.200.0306	32	0.6	8	14	64	1,5
63.200.0308	32	0.8	8	14	64	1,5
63.200.0310	32	1	8	14	64	1,5
63.200.0312	32	1.2	8	14	48	2
63.200.0315	32	1.5	8	14	48	2
63.200.0316	32	1.6	8	14	48	2
63.200.0320	32	2	8	14	48	2
63.200.0358	35	0.8	13		80	1,25
63.200.0403	40	0.3	10	18	100	1,25
63.200.0404	40	0.4	10	18	100	1,25
63.200.0405	40	0.5	10	18	80	1,5
63.200.0406	40	0.6	10	18	80	1,5
63.200.0408	40	0.8	10	18	80	1,5
63.200.0410	40	1	10	18	64	2
63.200.0412	40	1.2	10	18	64	2
63.200.0415	40	1.5	10	18	64	2
63.200.0416	40	1.6	10	18	64	2
63.200.0420	40	2	10	18	48	2,5
63.200.0425	40	2.5	10	18	48	2,5
63.200.0430	40	3	10	18	48	2,5
63.200.0503	50	0.3	13	25	128	1,25
63.200.0504	50	0.4	13	25	100	1,5
63.200.0505	50	0.5	13	25	100	1,5
63.200.0506	50	0.6	13	25	100	1,5
63.200.0508	50	0.8	13	25	80	2
63.200.0510	50	1	13	25	80	2
63.200.0512	50	1.2	13	25	80	2
63.200.0515	50	1.5	13	25	64	2,5
63.200.0516	50	1.6	13	25	64	2,5
63.200.0520	50	2	13	25	64	2,5
63.200.0525	50	2.5	13	25	64	2,5
63.200.0530	50	3	13	25	48	3,25
63.200.0540	50	4	13	25	48	3,25
63.200.0603	63	0.3	16	32	128	1,5
63.200.0604	63	0.4	16	32	128	1,5
63.200.0605	63	0.5	16	32	128	1,5
63.200.0606	63	0.6	16	32	100	2
63.200.0608	63	0.8	16	32	100	2
63.200.0610	63	1	16	32	100	2
63.200.0612	63	1.2	16	32	80	2,5
63.200.0615	63	1.5	16	32	80	2,5
63.200.0616	63	1.6	16	32	80	2,5
63.200.0620	63	2	16	32	80	2,5
63.200.0625	63	2.5	16	32	64	3
63.200.0630	63	3	16	32	64	3
63.200.0640	63	4	16	32	64	3
63.200.0650	63	5	16	32	48	4
63.200.0660	63	6	16	32	48	4
63.200.0803	80	0.3	22	36	160	1,5
63.200.0804	80	0.4	22	36	160	1,5
63.200.0805	80	0.5	22	36	128	2
63.200.0806	80	0.6	22	36	128	2
63.200.0808	80	0.8	22	36	128	2
63.200.0810	80	1	22	36	100	2,5
63.200.0812	80	1.2	22	36	100	2,5
63.200.0815	80	1.5	22	36	100	2,5
63.200.0816	80	1.6	22	36	100	2,5

Ref.	d1	b1	d2	d3	z	t
63.200.0820	80	2	22	36	80	3,25
63.200.0825	80	2.5	22	36	80	3,25
63.200.0830	80	3	22	36	80	3,25
63.200.0840	80	4	22	36	64	4
63.200.0850	80	5	22	36	64	4
63.200.0860	80	6	22	36	64	4
63.200.1005	100	0.5	22	40	160	2
63.200.1006	100	0.6	22	40	160	2
63.200.1008	100	0.8	22	40	128	2,5
63.200.1010	100	1	22	40	128	2,5
63.200.1012	100	1.2	22	40	128	2,5
63.200.1015	100	1.5	22	40	100	3,25
63.200.1016	100	1.6	22	40	100	3,25
63.200.1020	100	2	22	40	100	3,25
63.200.1025	100	2.5	22	40	100	3,25
63.200.1030	100	3	22	40	80	4
63.200.1040	100	4	22	40	80	4
63.200.1050	100	5	22	40	80	4
63.200.1060	100	6	22	40	64	5
63.200.1210	125	1	22	40	160	2,5
63.200.1212	125	1.2	22	40	128	3
63.200.1215	125	1.5	22	40	128	3
63.200.1216	125	1.6	22	40	128	3
63.200.1220	125	2	22	40	128	3
63.200.1225	125	2.5	22	40	100	4
63.200.1230	125	3	22	40	100	4
63.200.1240	125	4	22	40	100	4
63.200.1250	125	5	22	40	80	5
63.200.1260	125	6	22	40	80	5
63.200.1610	160	1	32	63	160	3,25
63.200.1612	160	1.2	32	63	160	3,25
63.200.1615	160	1.5	32	63	160	3,25
63.200.1616	160	1.6	32	63	160	3,25
63.200.1620	160	2	32	63	128	4
63.200.1625	160	2.5	32	63	128	4
63.200.1630	160	3	32	63	128	4
63.200.1640	160	4	32	63	100	5
63.200.1650	160	5	32	63	100	5
63.200.1660	160	6	32	63	100	5
63.200.2010	200	1	32	63	200	3,25
63.200.2012	200	1.2	32	63	200	3,25
63.200.2015	200	1.5	32	63	160	4
63.200.2016	200	1.6	32	63	160	4
63.200.2020	200	2	32	63	160	4
63.200.2025	200	2.5	32	63	160	4
63.200.2030	200	3	32	63	128	5
63.200.2040	200	4	32	63	128	5
63.200.2050	200	5	32	63	128	5
63.200.2060	200	6	32	63	100	6,25
63.200.2520	250	2	32	63	200	4
63.200.2525	250	2.5	32	63	160	5
63.200.2530	250	3	32	63	160	5
63.200.2540	250	4	32	63	160	5
63.200.2550	250	5	32	63	128	6,25
63.200.2560	250	6	32	63	128	6,25
63.200.3125	315	2.5	40	80	200	5
63.200.3130	315	3	40	80	200	5
63.200.3140	315	4	40	80	160	6,25
63.200.3150	315	5	40	80	160	6,25
63.200.3160	315	6	40	80	160	6,25

› 63.210 Phantom

NL **HSS Metaalcirkelzaag GF/Orbitalum**
FR **Fraise-scie HSS GF/Orbitalum**
ES **Fresa sierra circular HSS GF/Orbitalum**
DE **HSS Metallkreissägeblätter GF/Orbitalum**
EN **HSS Circular Saw Blade GF/Orbitalum**



HSS | BW | +GF+

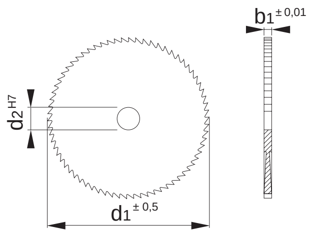
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

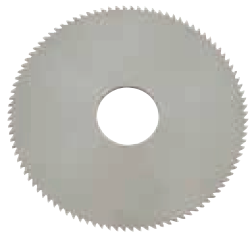
Ref.	d1	b1	d2	d3	z	t
63.210.0612	63	1.2	16	36	100	2
63.210.0616	63	1.6	16	36	44	4,5
63.210.0617	63	1.6	16	36	64	3
63.210.0618	63	1.6	16	36	80	2,5
63.210.0716	68	1.6	16	42	44	4,75
63.210.0717	68	1.6	16	42	84	2,5
63.210.0718	68	1.6	16	42	72	3

Ref.	d1	b1	d2	d3	z	t
63.210.0719	68	1.6	16	42	64	3,25
63.210.0720	68	2	16	42	44	4,75
63.210.0814	80	1.6	16	42	44	5,75
63.210.0816	80	1.6	16	42	64	4
63.210.0818	80	1.6	16	42	80	3,25
63.210.0828	80	2	16	42	80	3,25

› 63.220 Phantom

NL **Volhardmetaal Metaalcirkelzaag fijn**
FR **Fraise-scie Carbure Monobloc pas fin**
ES **Fresa sierra circular Metal Duro Integral paso fino**
DE **Vollhartmetall Metallkreissägeblätter fein**
EN **Solid carbide Circular Saw Blade fine pitch**





VHM SC | DIN 1837-A | A

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC	Ni/Co	Ti
100-200	80-160	60-120	40-80	50-100	25-60	60-120	60-120	150-600	80-300	80-300	150-600	25-60	30-60

Ref.	d1	b1	d2	z	t
63.220.0102	15	0.2	5	64	0,75
63.220.0103	15	0.3	5	64	0,75
63.220.0104	15	0.4	5	64	0,75
63.220.0105	15	0.5	5	48	1
63.220.0106	15	0.6	5	48	1
63.220.0107	15	0.7	5	48	1
63.220.0108	15	0.8	5	40	1,25
63.220.0109	15	0.9	5	40	1,25
63.220.0110	15	1	5	40	1,25
63.220.0112	15	1.2	5	40	1,25
63.220.0115	15	1.5	5	40	1,25
63.220.0116	15	1.6	5	40	1,25
63.220.0118	15	1.8	5	40	1,25
63.220.0120	15	2	5	40	1,25
63.220.0202	20	0.2	5	64	1
63.220.0203	20	0.3	5	64	1
63.220.0204	20	0.4	5	64	1
63.220.0205	20	0.5	5	48	1,25
63.220.0206	20	0.6	5	48	1,25
63.220.0207	20	0.7	5	48	1,25
63.220.0208	20	0.8	5	48	1,25
63.220.0209	20	0.9	5	40	1,5
63.220.0210	20	1	5	40	1,5
63.220.0212	20	1.2	5	40	1,5
63.220.0215	20	1.5	5	40	1,5
63.220.0216	20	1.6	5	40	1,5
63.220.0218	20	1.8	5	32	2
63.220.0220	20	2	5	32	2
63.220.0225	20	2.5	5	32	2
63.220.0230	20	3	5	32	2
63.220.0302	30	0.2	8	100	1
63.220.0303	30	0.3	8	80	1,25
63.220.0304	30	0.4	8	80	1,25
63.220.0305	30	0.5	8	80	1,25
63.220.0306	30	0.6	8	64	1,5
63.220.0307	30	0.7	8	64	1,5
63.220.0308	30	0.8	8	64	1,5
63.220.0309	30	0.9	8	64	1,5
63.220.0310	30	1	8	64	1,5

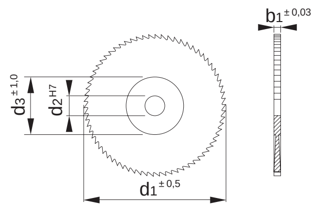
Ref.	d1	b1	d2	z	t
63.220.0312	30	1.2	8	48	2
63.220.0315	30	1.5	8	48	2
63.220.0316	30	1.6	8	48	2
63.220.0318	30	1.8	8	48	2
63.220.0320	30	2	8	48	2
63.220.0325	30	2.5	8	40	2,25
63.220.0330	30	3	8	40	2,25
63.220.0402	40	0.2	10	128	1
63.220.0403	40	0.3	10	100	1,25
63.220.0404	40	0.4	10	100	1,25
63.220.0405	40	0.5	10	80	1,5
63.220.0406	40	0.6	10	80	1,5
63.220.0407	40	0.7	10	80	1,5
63.220.0408	40	0.8	10	80	1,5
63.220.0409	40	0.9	10	64	2
63.220.0410	40	1	10	64	2
63.220.0412	40	1.2	10	64	2
63.220.0415	40	1.5	10	64	2
63.220.0416	40	1.6	10	64	2
63.220.0418	40	1.8	10	48	2,5
63.220.0420	40	2	10	48	2,5
63.220.0425	40	2.5	10	48	2,5
63.220.0430	40	3	10	48	2,5
63.220.0502	50	0.2	13	128	1,25
63.220.0503	50	0.3	13	128	1,25
63.220.0504	50	0.4	13	100	1,5
63.220.0505	50	0.5	13	100	1,5
63.220.0506	50	0.6	13	100	1,5
63.220.0507	50	0.7	13	80	2
63.220.0508	50	0.8	13	80	2
63.220.0509	50	0.9	13	80	2
63.220.0510	50	1	13	80	2
63.220.0512	50	1.2	13	80	2
63.220.0515	50	1.5	13	64	2,5
63.220.0516	50	1.6	13	64	2,5
63.220.0518	50	1.8	13	64	2,5
63.220.0520	50	2	13	64	2,5
63.220.0525	50	2.5	13	64	2,5
63.220.0530	50	3	13	48	3,25

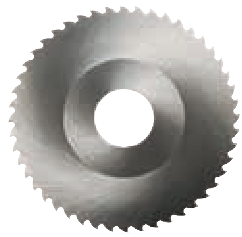
› 63.220 Phantom

Ref.	d1	b1	d2	z	t
63.220.0603	63	0.3	16	128	1,5
63.220.0604	63	0.4	16	128	1,5
63.220.0605	63	0.5	16	128	1,5
63.220.0606	63	0.6	16	100	2
63.220.0607	63	0.7	16	100	2
63.220.0608	63	0.8	16	100	2
63.220.0609	63	0.9	16	100	2
63.220.0610	63	1	16	100	2
63.220.0612	63	1.2	16	80	2,5
63.220.0615	63	1.5	16	80	2,5
63.220.0616	63	1.6	16	80	2,5
63.220.0618	63	1.8	16	80	2,5
63.220.0620	63	2	16	80	2,5
63.220.0625	63	2.5	16	64	3
63.220.0630	63	3	16	64	3
63.220.0805	80	0.5	22	128	2
63.220.0806	80	0.6	22	128	2
63.220.0808	80	0.8	22	128	2
63.220.0810	80	1	22	100	2,5
63.220.0812	80	1.2	22	100	2,5
63.220.0815	80	1.5	22	100	2,5
63.220.0816	80	1.6	22	100	2,5
63.220.0818	80	1.8	22	80	3,25
63.220.0820	80	2	22	80	3,25
63.220.0825	80	2.5	22	80	3,25
63.220.0830	80	3	22	80	3,25
63.220.1005	100	0.5	22	160	2
63.220.1006	100	0.6	22	160	2
63.220.1008	100	0.8	22	128	2,5
63.220.1010	100	1	22	128	2,5
63.220.1012	100	1.2	22	128	2,5
63.220.1015	100	1.5	22	100	3,25
63.220.1016	100	1.6	22	100	3,25
63.220.1018	100	1.8	22	100	3,25
63.220.1020	100	2	22	100	3,25
63.220.1025	100	2.5	22	100	3,25
63.220.1030	100	3	22	80	4
63.220.1208	125	0.8	22	160	2,5
63.220.1210	125	1	22	160	2,5
63.220.1212	125	1.2	22	128	3
63.220.1215	125	1.5	22	128	3
63.220.1216	125	1.6	22	128	3
63.220.1218	125	1.8	22	128	3
63.220.1220	125	2	22	128	3
63.220.1610	160	1	32	160	3,25
63.220.1612	160	1.2	32	160	3,25
63.220.1615	160	1.5	32	160	3,25
63.220.1616	160	1.6	32	160	3,25
63.220.1620	160	2	32	128	4

› 63.250 Phantom

NL HSS Metaalcirkelzaag grof
FR Fraise-scie HSS pas grossier
ES Fresa sierra circular HSS grueso
DE HSS Metallkreissägeblätter grob
EN HSS Circular Saw Blade coarse pitch





HSS | DIN 1838-B | B

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t
63.250.0505	50	0.5	13	25	48	3,25
63.250.0506	50	0.6	13	25	48	3,25
63.250.0508	50	0.8	13	25	40	4
63.250.0510	50	1	13	25	40	4
63.250.0512	50	1.2	13	25	40	4
63.250.0516	50	1.6	13	25	32	5
63.250.0520	50	2	13	25	32	5
63.250.0525	50	2.5	13	25	32	5
63.250.0530	50	3	13	25	24	6,5
63.250.0540	50	4	13	25	24	6,5
63.250.0550	50	5	13	25	24	6,5
63.250.0560	50	6	13	25	20	7,75
63.250.0605	63	0.5	16	32	64	3
63.250.0606	63	0.6	16	32	48	4
63.250.0608	63	0.8	16	32	48	4
63.250.0610	63	1	16	32	48	4
63.250.0612	63	1.2	16	32	40	5
63.250.0615	63	1.5	16	32	40	5
63.250.0616	63	1.6	16	32	40	5
63.250.0620	63	2	16	32	40	5
63.250.0625	63	2.5	16	32	32	6,25
63.250.0630	63	3	16	32	40	5
63.250.0640	63	4	16	32	32	6,25
63.250.0650	63	5	16	32	24	8,25
63.250.0660	63	6	16	32	24	8,25
63.250.0805	80	0.5	22	36	64	4
63.250.0806	80	0.6	22	36	64	4
63.250.0808	80	0.8	22	36	64	4
63.250.0810	80	1	22	36	48	5,25
63.250.0812	80	1.2	22	36	48	5,25
63.250.0815	80	1.5	22	36	48	5,25
63.250.0816	80	1.6	22	36	48	5,25
63.250.0820	80	2	22	36	40	6,25
63.250.0825	80	2.5	22	36	40	6,25
63.250.0830	80	3	22	36	40	6,25
63.250.0840	80	4	22	36	32	7,75
63.250.0850	80	5	22	36	32	7,75
63.250.0860	80	6	22	36	32	7,75
63.250.1005	100	0.5	22	40	80	4
63.250.1006	100	0.6	22	40	80	4
63.250.1008	100	0.8	22	40	64	5
63.250.1010	100	1	22	40	64	5
63.250.1012	100	1.2	22	40	64	5
63.250.1015	100	1.5	22	40	64	5
63.250.1016	100	1.6	22	40	48	6,5
63.250.1020	100	2	22	40	48	6,5
63.250.1025	100	2.5	22	40	48	6,5
63.250.1030	100	3	22	40	40	7,75
63.250.1040	100	4	22	40	40	7,75
63.250.1050	100	5	22	40	40	7,75
63.250.1060	100	6	22	40	32	9,75
63.250.1210	125	1	22	40	80	5
63.250.1212	125	1.2	22	40	64	6,25
63.250.1215	125	1.5	22	40	64	6,25
63.250.1216	125	1.6	22	40	64	6,25
63.250.1220	125	2	22	40	64	6,25
63.250.1225	125	2.5	22	40	48	8,25
63.250.1230	125	3	22	40	48	8,25
63.250.1240	125	4	22	40	48	8,25
63.250.1250	125	5	22	40	40	9,75
63.250.1260	125	6	22	40	40	9,75
63.250.1610	160	1	32	63	80	6,25
63.250.1612	160	1.2	32	63	80	6,25
63.250.1615	160	1.5	32	63	80	6,25
63.250.1616	160	1.6	32	63	80	6,25
63.250.1620	160	2	32	63	64	7,75
63.250.1625	160	2.5	32	63	64	7,75
63.250.1630	160	3	32	63	64	7,75
63.250.1640	160	4	32	63	48	10,5
63.250.1650	160	5	32	63	48	10,5
63.250.1660	160	6	32	63	48	10,5
63.250.2015	200	1.5	32	63	80	7,75
63.250.2016	200	1.6	32	63	80	7,75
63.250.2020	200	2	32	63	80	7,75

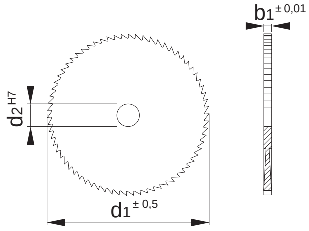
1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6

› 63.250 Phantom

Ref.	d1	b1	d2	d3	z	t
63.250.2025	200	2.5	32	63	80	7,75
63.250.2030	200	3	32	63	64	9,75
63.250.2040	200	4	32	63	64	9,75
63.250.2050	200	5	32	63	64	9,75
63.250.2060	200	6	32	63	48	13
63.250.2520	250	2	32	63	100	7,75
63.250.2525	250	2.5	32	63	80	9,75
63.250.2530	250	3	32	63	80	9,75
63.250.2540	250	4	32	63	80	9,75
63.250.2550	250	5	32	63	64	12,25
63.250.2560	250	6	32	63	64	12,25
63.250.3125	315	2.5	40	80	100	10
63.250.3130	315	3	40	80	100	10
63.250.3140	315	4	40	80	80	12,25
63.250.3150	315	5	40	80	80	12,25
63.250.3160	315	6	40	80	80	12,25

› 63.270 Phantom

NL **Volhardmetaal Metaalcirkelzaag grof**
FR **Fraise-scie Carbure Monobloc pas grossier**
ES **Fresa sierra circular Metal Duro Integral grueso**
DE **Vollhartmetall Metallkreissägeblätter grob**
EN **Solid carbide Circular Saw Blade coarse pitch**



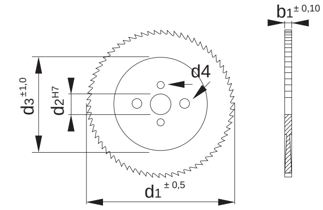
VHM SC | DIN 1838-B | B

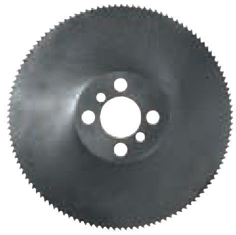
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC	Ni/Co	Ti
100-200	80-160	60-120	40-80	50-100	25-60	60-120	60-120	150-600	80-300	80-300	150-600	25-60	30-60

Ref.	d1	b1	d2	z	t
63.270.0103	15	0.3	5	20	2,25
63.270.0104	15	0.4	5	20	2,25
63.270.0105	15	0.5	5	20	2,25
63.270.0106	15	0.6	5	20	2,25
63.270.0108	15	0.8	5	20	2,25
63.270.0110	15	1	5	20	2,25
63.270.0112	15	1.2	5	20	2,25
63.270.0115	15	1.5	5	20	2,25
63.270.0120	15	2	5	20	2,25
63.270.0130	15	3	5	20	2,25
63.270.0203	20	0.3	5	20	3,25
63.270.0204	20	0.4	5	20	3,25
63.270.0205	20	0.5	5	20	3,25
63.270.0206	20	0.6	5	20	3,25
63.270.0208	20	0.8	5	20	3,25
63.270.0210	20	1	5	20	3,25
63.270.0212	20	1.2	5	20	3,25
63.270.0215	20	1.5	5	20	3,25
63.270.0220	20	2	5	20	3,25
63.270.0230	20	3	5	20	3,25
63.270.0303	30	0.3	8	30	3,25
63.270.0304	30	0.4	8	30	3,25
63.270.0305	30	0.5	8	30	3,25
63.270.0306	30	0.6	8	30	3,25
63.270.0308	30	0.8	8	24	4
63.270.0310	30	1	8	24	4
63.270.0312	30	1.2	8	24	4
63.270.0315	30	1.5	8	24	4
63.270.0320	30	2	8	24	4
63.270.0325	30	2.5	8	24	4
63.270.0330	30	3	8	24	4
63.270.0403	40	0.3	10	40	3,25
63.270.0404	40	0.4	10	40	3,25
63.270.0405	40	0.5	10	40	3,25
63.270.0406	40	0.6	10	40	3,25
63.270.0408	40	0.8	10	32	4
63.270.0410	40	1	10	32	4
63.270.0412	40	1.2	10	32	4
63.270.0415	40	1.5	10	32	4
63.270.0420	40	2	10	32	4
63.270.0425	40	2.5	10	32	4
63.270.0430	40	3	10	32	4
63.270.0504	50	0.4	13	48	3,25
63.270.0505	50	0.5	13	48	3,25
63.270.0506	50	0.6	13	48	3,25
63.270.0508	50	0.8	13	40	4
63.270.0510	50	1	13	40	4
63.270.0512	50	1.2	13	40	4
63.270.0515	50	1.5	13	32	5
63.270.0516	50	1.6	13	32	5
63.270.0520	50	2	13	32	5
63.270.0525	50	2.5	13	32	5
63.270.0530	50	3	13	24	6,5
63.270.0604	63	0.4	16	64	3
63.270.0605	63	0.5	16	64	3
63.270.0606	63	0.6	16	48	4
63.270.0608	63	0.8	16	48	4
63.270.0610	63	1	16	48	4
63.270.0612	63	1.2	16	40	5
63.270.0615	63	1.5	16	40	5
63.270.0616	63	1.6	16	40	5
63.270.0620	63	2	16	40	5
63.270.0625	63	2.5	16	32	6,25
63.270.0630	63	3	16	32	6,25
63.270.0806	80	0.6	22	64	4
63.270.0808	80	0.8	22	64	4
63.270.0810	80	1	22	48	5,25
63.270.0812	80	1.2	22	48	5,25
63.270.0815	80	1.5	22	48	5,25
63.270.0816	80	1.6	22	48	5,25
63.270.0820	80	2	22	40	6,25
63.270.0825	80	2.5	22	40	6,25
63.270.0830	80	3	22	40	6,25
63.270.1008	100	0.8	22	64	5
63.270.1010	100	1	22	64	5
63.270.1012	100	1.2	22	64	5
63.270.1015	100	1.5	22	48	6,5
63.270.1016	100	1.6	22	48	6,5
63.270.1020	100	2	22	48	6,5
63.270.1025	100	2.5	22	48	6,5
63.270.1030	100	3	22	40	7,75
63.270.1208	125	0.8	22	80	5
63.270.1210	125	1	22	80	5
63.270.1212	125	1.2	22	64	6,25
63.270.1215	125	1.5	22	64	6,25
63.270.1216	125	1.6	22	64	6,25
63.270.1220	125	2	22	64	6,25
63.270.1225	125	2.5	22	48	8,25
63.270.1230	125	3	22	48	8,25
63.270.1615	160	1.5	32	80	6,25
63.270.1616	160	1.6	32	80	6,25

› 63.400 Phantom

- NL **HSS Afkortzaag stoomontlaten**
- FR **Fraise-scie à tronçonner HSS vaporisé**
- ES **Fresa sierra circular tronzadora HSS vaporizada**
- DE **HSS Trennsägeblätter dampfangelassen**
- EN **HSS Circular Saw Blade steam oxide**





HSS | OX. | T≤4 BW | T≥5 C

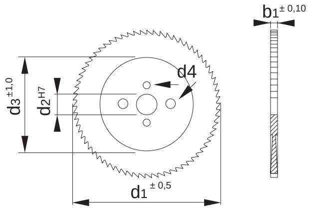
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	25-30	20-25	500-700	500-700	200-400	200-600

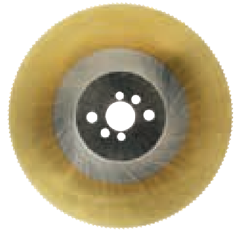
Ref.	d1	b1	d2	d3	z	t	d4
63.400.2013	200	1.8	32	90	130	5	2/8-45+2/11-63
63.400.2016	200	1.8	32	90	160	4	2/8-45+2/11-63
63.400.2018	200	1.8	32	90	180	3,5	2/8-45+2/11-63
63.400.2126	225	1.2	32	100	264	2,5	2/8-45+2/11-63+2/9-50
63.400.2209	225	2	32	90	90	8	2/8-45+2/11-63+2/9-50
63.400.2212	225	2	32	90	120	6	2/8-45+2/11-63+2/9-50
63.400.2214	225	2	32	90	140	5	2/8-45+2/11-63+2/9-50
63.400.2218	225	2	32	90	180	4	2/8-45+2/11-63+2/9-50
63.400.2222	225	2	32	90	220	3	2/8-45+2/11-63+2/9-50
63.400.2312	225	2	40	90	120	6	2/8-55+4/11-63
63.400.2318	225	2	40	90	180	4	2/8-55+4/11-63
63.400.2326	225	2	40	90	220	3	2/8-55+4/11-63
63.400.2508	250	2	32	90	80	10	2/8-45+2/11-63+2/9-50
63.400.2510	250	2	32	90	100	8	2/8-45+2/11-63+2/9-50
63.400.2512	250	2	32	90	128	6	2/8-45+2/11-63+2/9-50
63.400.2516	250	2	32	90	160	5	2/8-45+2/11-63+2/9-50
63.400.2520	250	2	32	90	200	4	2/8-45+2/11-63+2/9-50
63.400.2525	250	2	32	90	250	3	2/8-45+2/11-63+2/9-50
63.400.2566	250	2.5	32	100	160	5	2/8-45+2/11-63+2/9-50
63.400.2570	250	2.5	32	100	200	4	2/8-45+2/11-63+2/9-50
63.400.2575	250	2.5	32	100	250	3	2/8-45+2/11-63+2/9-50
63.400.2608	250	2.5	40	100	80	10	2/8-55+4/12-64
63.400.2610	250	2.5	40	100	100	8	2/8-55+4/12-64
63.400.2612	250	2.5	40	100	128	6	2/8-55+4/12-64
63.400.2616	250	2.5	40	100	160	5	2/8-55+4/12-64
63.400.2620	250	2.5	40	100	200	4	2/8-55+4/12-64
63.400.2625	250	2.5	40	100	250	3	2/8-55+4/12-64
63.400.2709	275	2.5	32	100	90	10	2/8-45+2/11-63+2/12-75
63.400.2711	275	2.5	32	100	110	8	2/8-45+2/11-63+2/12-75
63.400.2714	275	2.5	32	100	140	6	2/8-45+2/11-63+2/12-75
63.400.2718	275	2.5	32	100	180	5	2/8-45+2/11-63+2/12-75
63.400.2722	275	2.5	32	100	220	4	2/8-45+2/11-63+2/12-75
63.400.2728	275	2.5	32	100	280	3	2/8-45+2/11-63+2/12-75
63.400.2809	275	2.5	40	100	90	10	2/8-55+4/12-64
63.400.2811	275	2.5	40	100	110	8	2/8-55+4/12-64
63.400.2814	275	2.5	40	100	140	6	2/8-55+4/12-64
63.400.2818	275	2.5	40	100	180	5	2/8-55+4/12-64
63.400.2822	275	2.5	40	100	220	4	2/8-55+4/12-64
63.400.2828	275	2.5	40	100	280	3	2/8-55+4/12-64
63.400.3009	300	2.5	32	100	90	10	2/8-45+4/11-63
63.400.3012	300	2.5	32	100	120	8	2/8-45+4/11-63
63.400.3016	300	2.5	32	100	160	6	2/8-45+4/11-63
63.400.3018	300	2.5	32	100	180	5	2/8-45+4/11-63
63.400.3020	300	2.5	32	100	200	4	2/8-45+4/11-63

Ref.	d1	b1	d2	d3	z	t	d4
63.400.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.400.3030	300	2.5	32	100	300	3	2/8-45+4/11-63
63.400.3059	300	3	40	100	90	10	2/8-55+4/12-64
63.400.3062	300	3	40	100	120	8	2/8-55+4/12-64
63.400.3066	300	3	40	100	160	6	2/8-55+4/12-64
63.400.3068	300	3	40	100	180	5	2/8-55+4/12-64
63.400.3072	300	3	40	100	220	4	2/8-55+4/12-64
63.400.3080	300	3	40	100	300	3	2/8-55+4/12-64
63.400.3110	315	2.5	32	100	100	10	2/8-45+4/11-63
63.400.3112	315	2.5	32	100	120	8	2/8-45+4/11-63
63.400.3116	315	2.5	32	100	160	6	2/8-45+4/11-63
63.400.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.400.3124	315	2.5	32	100	240	4	2/8-45+4/11-63
63.400.3130	315	2.5	32	100	300	3	2/8-45+4/11-63
63.400.3160	315	2.5	40	100	100	10	2/8-55+2/12-64
63.400.3162	315	2.5	40	100	120	8	2/8-55+4/12-64
63.400.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.400.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.400.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.400.3180	315	2.5	40	100	300	3	2/8-55+4/12-64
63.400.3512	350	3	32	120	120	9	2/8-45+4/11-63
63.400.3514	350	3	32	120	140	8	2/8-45+4/11-63
63.400.3518	350	3	32	120	180	6	2/8-45+4/11-63
63.400.3522	350	3	32	120	220	5	2/8-45+4/11-63
63.400.3528	350	3	32	120	280	4	2/8-45+4/11-63
63.400.3535	350	3	32	120	350	3	2/8-45+4/11-63
63.400.3562	350	3	40	120	120	9	2/8-55+4/12-64
63.400.3564	350	3	40	120	140	8	2/8-55+4/12-64
63.400.3568	350	3	40	120	180	6	2/8-55+2/12-64
63.400.3572	350	3	40	120	220	5	2/8-55+2/12-64
63.400.3578	350	3	40	120	280	4	2/8-55+2/12-64
63.400.3585	350	3	40	120	350	3	2/8-55+4/12-64
63.400.3608	350	3	50	120	80	14	4/15-80+4/14-85
63.400.3612	350	3	50	120	120	9	4/15-80+4/14-85
63.400.3616	350	3	50	120	160	7	4/15-80+4/14-85
63.400.3622	350	3	50	120	220	5	4/15-80+4/14-85
63.400.3711	370	3	50	120	110	10	4/15-80+4/14-85
63.400.3716	370	3	50	120	160	7	4/15-80+4/14-85
63.400.3722	370	3	50	120	220	5	4/15-80+4/14-85
63.400.4008	400	3	50	120	80	16	4/15-80+4/14-85
63.400.4010	400	3	50	120	100	12	4/15-80+4/14-85
63.400.4012	400	3	50	120	120	10	4/15-80+4/14-85
63.400.4016	400	3	50	120	160	8	4/15-80+4/14-85
63.400.4020	400	3	50	120	200	6	4/15-80+4/14-85

63.401 Phantom

NL HSS Afkortzaag TiN
FR Fraise-scie à tronçonner HSS TiN
ES Fresa sierra circular tronzadora HSS TiN
DE HSS Trennsägeblätter TiN
EN HSS Circular Saw Blade TiN





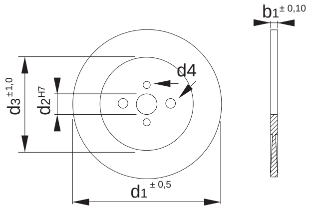
HSS | TiN | T≤4 BW | T≥5 C

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
30-40	25-35	15-25	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.401.2512	250	2	32	100	128	6	2/8-45+2/11-63+2/9-50
63.401.2516	250	2	32	100	160	5	2/8-45+2/11-63+2/9-50
63.401.2520	250	2	32	100	200	4	2/8-45+2/11-63+2/9-50
63.401.2525	250	2	32	100	250	3	2/8-45+2/11-63+2/9-50
63.401.2566	250	2.5	32	100	160	5	2/8-45+2/11-63+2/9-50
63.401.2570	250	2.5	32	100	200	4	2/8-45+2/11-63+2/9-50
63.401.2714	275	2.5	32	100	140	6	2/8-45+2/11-63+2/12-75
63.401.2718	275	2.5	32	100	180	5	2/8-45+2/11-63+2/12-75
63.401.2722	275	2.5	32	100	220	4	2/8-45+2/11-63+2/12-75
63.401.2814	275	2.5	40	100	140	6	2/8-55+4/12-64
63.401.2818	275	2.5	40	100	180	5	2/8-55+4/12-64
63.401.2822	275	2.5	40	100	220	4	2/8-55+4/12-64
63.401.3016	300	2.5	32	100	160	6	2/8-45+4/11-63
63.401.3018	300	2.5	32	100	180	5	2/8-45+4/11-63
63.401.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.401.3116	315	2.5	32	100	160	6	2/8-45+4/11-63
63.401.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.401.3124	315	2.5	32	100	240	4	2/8-45+4/11-63
63.401.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.401.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.401.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.401.3518	350	3	32	100	180	6	2/8-45+4/11-63
63.401.3522	350	3	32	100	220	5	2/8-45+4/11-63

63.410 Phantom

NL HSS Afkortzaag onvertand, stoomontlaten
FR Fraise-scie à tronçonner HSS sans dents, vaporisé
ES Fresa sierra circular tronzadora HSS sin dientes, vaporizada
DE HSS Trennsägeblätter unverzahnt, dampfangelassen
EN HSS Circular Saw Blade without teeth, steam oxide

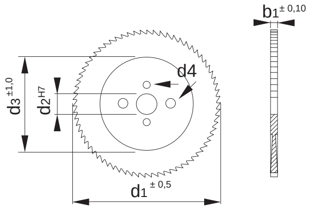


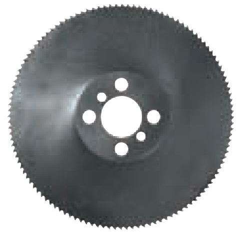
HSS | OX. | Z=0

Ref.	d1	b1	d2	d3	d4
63.410.2532	250	2	32	100	2/8-45+2/11-63+2/9-50
63.410.2540	250	2.5	40	100	2/8-55+4/12-64
63.410.2732	275	2.5	32	100	2/8-45+2/11-63+2/12-75
63.410.2740	275	2.5	40	100	2/8-55+4/12+64
63.410.3032	300	2.5	32	100	2/8-45+4/11-63
63.410.3040	300	2.5	40	100	2/8-55+2/12-64
63.410.3132	315	2.5	32	100	2/8-45+4/11-63
63.410.3140	315	2.5	40	100	2/8-55+2/12-64
63.410.3542	350	2.5	40	120	2/8-55+4/12-64
63.410.3543	350	3	40	120	2/8-55+4/12-64

63.420 Phantom

NL HSS-E Afkortzaag stoomontlaten
FR Fraise-scie à tronçonner HSS-E vaporisé
ES Fresa sierra circular tronzadora HSS-E vaporizada
DE HSS-E Trennsägeblätter dampfangelassen
EN HSS-E Circular Saw Blade steam oxide





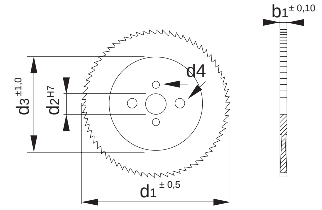
HSS-E | OX. | T≤4 BW | T≥5 C | INOX

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.420.2218	225	2	32	90	180	4	2/8-45+2/11-63+2/9-50
63.420.2222	225	2	32	90	220	3	2/8-45+2/11-63+2/9-50
63.420.2516	250	2	32	100	160	5	2/8-45+2/11-63+2/9-50
63.420.2520	250	2	32	100	200	4	2/8-45+2/11-63+2/9-50
63.420.2525	250	2	32	100	250	3	2/8-45+2/11-63+2/9-50
63.420.2714	275	2.5	32	100	140	6	2/8-45+2/11-63+2/12-75
63.420.2718	275	2.5	32	100	180	5	2/8-45+2/11-63+2/12-75
63.420.2722	275	2.5	32	100	220	4	2/8-45+2/11-63+2/12-75
63.420.2814	275	2.5	40	100	140	6	2/8-55+4/12-64
63.420.2818	275	2.5	40	100	180	5	2/8-55+4/11-63
63.420.2822	275	2.5	40	100	220	4	2/8-55+4/12-64
63.420.3018	300	2.5	32	100	180	5	2/8-45+4/11-63
63.420.3020	300	2.5	32	100	200	5	2/8-45+4/11-63
63.420.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.420.3030	300	2.5	32	100	300	3	2/8-45+4/11-63
63.420.3116	315	2.5	32	100	160	6	2/8-45+2/11-63
63.420.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.420.3124	315	2.5	32	100	240	4	2/8-45+4/11-63
63.420.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.420.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.420.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.420.3518	350	3	32	120	180	6	2/8-45+4/11-63
63.420.3522	350	3	32	120	220	5	2/8-45+4/11-63
63.420.3528	350	3	32	120	280	4	2/8-45+4/11-63

› 63.424 Phantom

NL HSS-E Afkortzaag TiAIN
FR Fraise-scie à tronçonner HSS-E TiAIN
ES Fresa sierra circular tronzadora HSS-E TiAIN
DE HSS-E Trennsägeblätter TiAIN
EN HSS-E Circular Saw Blade TiAIN



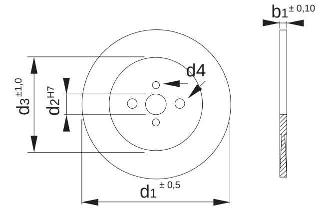
HSS-E | TiAIN | T≤4 BW | T≥5 C | INOX

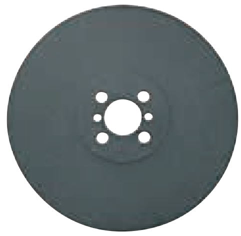
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.424.2822	275	2.5	40	100	220	4	2/8-55+4/12-64
63.424.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.424.3030	300	2.5	32	100	300	3	2/8-45+4/11-63
63.424.3116	315	2.5	32	100	160	6	2/8-45+2/11-63
63.424.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.424.3124	315	2.5	32	100	240	4	2/8-45+4/11-63
63.424.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.424.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.424.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.424.3518	350	3	32	120	180	6	2/8-45+4/11-63
63.424.3522	350	3	32	120	220	5	2/8-45+4/11-63

› 63.430 Phantom

NL HSS-E Afkortzaag onvertand, stoomontlaten
FR Fraise-scie à tronçonner HSS-E sans dents, vaporisé
ES Fresa sierra circular tronzadora HSS-E sin dientes, vaporizada
DE HSS-E Trennsägeblätter unverzahnt, dampfangelassen
EN HSS-E Circular Saw Blade without teeth, steam oxide



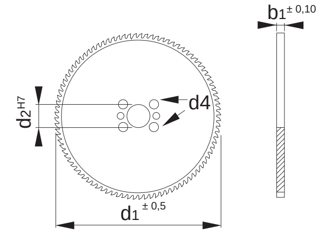


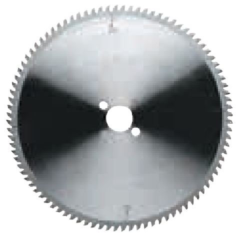
HSS-E | OX. | Z=0

Ref.	d1	b1	d2	d3	d4
63.430.2532	250	2	32	100	2/8-45+2/11-63+2/9-50
63.430.2740	275	2.5	40	100	2/8-55+4/12-64
63.430.3032	300	2.5	32	100	2/8-45+4/11-63
63.430.3040	300	2.5	40	100	2/8-55+4/12-64
63.430.3132	315	2.5	32	100	2/8-45+2/11-63
63.430.3140	315	2.5	40	100	2/8-55+4/12-64
63.430.3532	350	3	32	120	2/8-45+2/11-63
63.430.3540	350	2.5	40	120	2/8-55+4/12-64

› 63.450 Phantom

NL HM-tip Cirkelzaag positieve spaanhoek
FR Fraise-scie à plaquette carbure angle de coupe positif
ES Fresa sierra circular con punta MD ángulo de corte positivo
DE Hartmetallbestückt Kreissägeblätter mit positivem Spanwinkel
EN Carbide Tipped Circular Saw Blade slightly positive rake angle





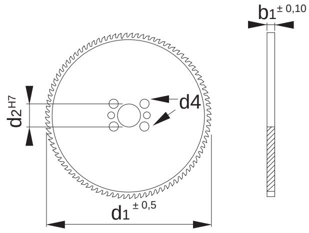
HM-TIP | α 5° | ALU

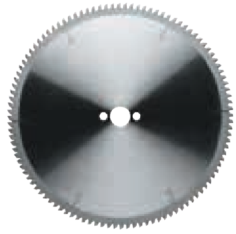
N 41	N 42
Alu	Alu Si>10%
2400-3600	1900-2800

Ref.	d1	b1	d2	z	t	d4
63.450.2032	200	3.2	32	64	10	
63.450.2532	250	3.4	32	60	13	2/11-63
63.450.2533	250	3.4	32	80	10	2/11-63
63.450.3029	300	3.4	32	72	13	2/11-63
63.450.3031	300	3.4	32	84	11	2/11-63
63.450.3032	300	3.4	32	96	10	2/11-63
63.450.3534	350	3.4	32	84	13	2/11-63
63.450.3535	350	3.4	32	96	11	2/11-63
63.450.3536	350	3.4	32	108	10	2/11-63
63.450.4030	400	4	32	96	13	2/11-63
63.450.4032	400	4	32	108	12	2/11-63

› 63.460 Phantom

NL HM-tip Cirkelzaag negatieve spaanhoek
FR Fraise-scie à plaquette carbure angle de coupe négatif
ES Fresa sierra circular con punta MD ángulo de corte negativo
DE Hartmetallbestückt Kreissägeblätter negativem Spanwinkel
EN Carbide Tipped Circular Saw Blade negative cutting edge





HM-TIP | α-5° | ALU

N 41 Alu | N 42 Alu Si>10%

2400-3600 | 1900-2800

Ref.	d1	b1	d2	z	t	d4
63.460.2032	200	3.2	32	64	10	2/11-63
63.460.2532	250	3.4	32	60	13	2/11-63
63.460.2533	250	3.4	32	80	10	2/11-63
63.460.3029	300	3.4	32	72	13	2/11-63
63.460.3031	300	3.4	32	84	11	2/11-63
63.460.3032	300	3.4	32	96	10	2/11-63

Ref.	d1	b1	d2	z	t	d4
63.460.3529	350	3.4	32	84	13	2/11-63
63.460.3531	350	3.4	32	96	11	2/11-63
63.460.3533	350	3.4	32	108	10	2/11-63
63.460.4032	400	4	32	96	13	2/11/63
63.460.4034	400	4	32	108	12	2/11/63

› 64.150 Phantom

NL HSS-Co Bi-Metaal Handzaagblad
FR Lame de scie à main HSS-Co Bi-métal
ES Hoja de sierra manual HSS-Co Bi-metal
DE HSS-Co Bi-Metall Handsägeblätter
EN HSS-Co Bi-Metal Hand Hacksaw Blade

BiM HSS | 5% Co | 300mm 12”

Ref.	TPI	t
64.150.1800	18	1,4
64.150.2400	24	1
64.150.3200	32	0,8

› 64.460 Phantom

NL HSS Metaalzaagbeugel robuuste uitvoering
FR Monture de scie à métaux HSS version Heavy Duty
ES Mango de sierra HSS versión macizo
DE HSS Metallsägebogen robuste Ausführung
EN HSS Hacksaw Bracket sturdy version

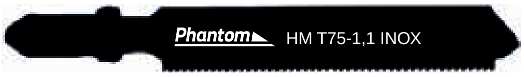
HSS | 24 TPI | 190KG | 45°-90° | 300mm 12”

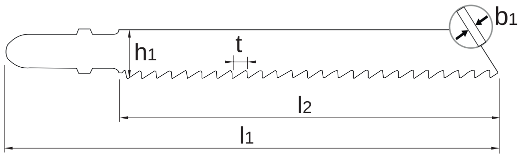
Ref.	Nr.
64.460.1001	1

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6

› 64.500 Phantom

NL Decoupeerzaag
FR Lame de scie sauteuse
ES Hojas de sierra de calar
DE Stichsägeblätter
EN Jigsaw Blade



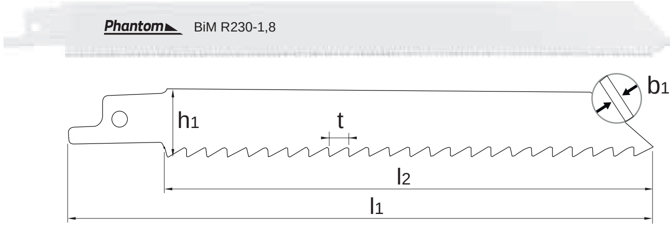


Ref.	Type	l1	l2	h1	b1	TPI	t		
64.500.0710	T75-0,9	75	50	8	1	28	0,9	BiM HSS	0,5-1,5 mm, INOX
64.500.0711	T75-1,1 HM INOX	75	50	9.5	1	24	1,1	HM	1,5-3 mm, INOX
64.500.0714	T75-1,2	75	50	8	1	21	1,2	BiM HSS	1-3 mm, INOX
64.500.0720	T75-2	75	50	8	1	12	2	BiM HSS	2,6-6 mm, INOX
64.500.0725	T75-2C	75	50	5.4	1.25	12	2	CV	2-15 mm, SOFT, MDF
64.500.0819	T80-1,9	80	55	8	1.27	13	1,9	BiM HSS	1,5-15 mm, ACRYL
64.500.1018	T100-1,2/2,5 UNI	100	75	8	1	10/21	1,2-2,5	BiM HSS	1,5-10 mm, INOX, Cu Ni Ms Zn Al, UNI
64.500.1020	T100-2G	100	75	8	1.27	12	2	BiM HSS	2-30 mm, HPL, 180°
64.500.1021	T100-2	100	75	8	1.27	12	2	BiM HSS	2-20 mm, ACRYL
64.500.1024	T100-2,5CG	100	75	8	1.27	10	2,5	CV	4-30 mm, SOFT, MDF
64.500.1025	T100-3	100	75	8	1.15	8	3	HSS	3-15 mm, Cu Ni Ms Zn Al
64.500.1026	T100-2,5G	100	75	8	1.27	10	2,5	BiM HSS	3-30 mm, MDF, HPL
64.500.1027	T100-3C	100	75	6.2	1.15	8	3	HSS	3-15 mm, Cu Ni Ms Zn Al
64.500.1028	T100-2,5NG	100	75	8	1.27	10	2,5	BiM HSS	3-45 mm, HPL
64.500.1042	T100-4G	100	75	8	1.27	6	4	BiM HSS	5-50 mm, SOFT, MDF
64.500.1150	T115-2,5/3,2G	115	90	8	1.45	8/10	2,5-3,2	CV	3-65 mm, MDF
64.500.1312	T132-1,2	132	110	8	1	21	1,2	BiM HSS	1-3 mm, Cu Ni Ms Zn Al
64.500.1313	T132-1/1,6 UNI	132	110	8	1	16/25	1-1,6	BiM HSS	1,2-6 mm, INOX, Cu Ni Ms Zn Al
64.500.1321	T132-1,8/2,5 UNI	132	110	8	1.27	10/14	1,8-2,5	BiM HSS	3-80 mm, INOX, Cu Ni Ms Zn Al, UNI
64.500.1330	T132-2/4 UNI	132	110	8	1.27	6/12	2-4	BiM HSS	3-65 mm, INOX, Cu Ni Ms Zn Al, UNI
64.500.1340	T132-4G	132	110	8	1.27	6	4	BiM HSS	5-80 mm, SOFT, MDF
64.500.1540	T150-4	150	130	8	1.25	6	4	CV	5-100 mm, SOFT, MDF
64.500.1950	T75-HM-Grit	75	50	8	1			HM	3-15 mm
64.500.2043	T100-4,3HM	100	75	8	1.25	6	4,3	HM	5-50 mm

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6

› 64.600 Phantom

NL Reciprozaag
FR Lame de scie sabre
ES Hojas de sierra de sable
DE Säbelsägeblätter
EN Sabre Saw Blade



Ref.	Type	l1	l2	h1	b1	TPI	t	Material	Application
64.600.1510	R150-1	150	130	19	0.9	25	1	BiM 8% Co	1-1,5 mm
64.600.1514	R150-1,4	150	130	19	0.9	18	1,4	BiM 8% Co	1,5-4 mm, INOX, Cu Ni Ms Zn Al
64.600.1518	R150-1,8	150	130	19	0.9	14	1,8	BiM 8% Co	2-8 mm, INOX
64.600.1519	R150-1,8 90°	150	130	25.4	0.9	14	1,8	BiM 8% Co	3-8 mm, INOX, 90°
64.600.1522	R150-1,8/2,5 UNI	150	130	19	1.27	10/14	1,8-2,5	BiM 8% Co	2-10 mm, INOX, 90°
64.600.1525	R150-2,5	150	130	19	0.9	10	2,5	BiM 8% Co	3-12 mm, Cu Ni Ms Zn Al
64.600.1540	R150-4,2C	150	130	19	1.27	6	4,2	BiM 8% Co	6-100 mm, MDF
64.600.2014	R200-1,4	200	180	19	0.9	18	1,4	BiM 8% Co	1,5-4 mm, INOX, Cu Ni Ms Zn Al
64.600.2018	R200-1,8	200	180	19	0.9	14	1,8	BiM 8% Co	2-8 mm, INOX
64.600.2023	R200-1,8/2,5 UNI	200	180	19	1.27	10/14	1,8-2,5	BiM 8% Co	2-10 mm, INOX, 90°
64.600.2025	R200-2,5	200	180	19	0.9	10	2,5	BiM 8% Co	3-12 mm, Cu Ni Ms Zn Al
64.600.2214	R230-1,4	230	210	19	0.9	18	1,4	BiM 8% Co	1,5-4 mm, INOX, Cu Ni Ms Zn Al
64.600.2218	R230-1,8	230	210	19	0.9	14	1,8	BiM 8% Co	2-8 mm, INOX
64.600.2220	R230-2	230	210	19	1.27	12	2	BiM 8% Co	2,5-10 mm
64.600.2221	R230-1,8/2,5 UNI	230	210	19	0.9	10/14	1,8-2,5	BiM 8% Co	3-10 mm, INOX, Cu Ni Ms Zn Al
64.600.2225	R230-2,5	230	210	19	0.9	10	2,5	BiM 8% Co	3-12 mm, Cu Ni Ms Zn Al
64.600.2232	R230-2,5/3,2 UNI	230	210	19	1.27	8/10	2,5-3,2	BiM 8% Co	3-18 mm, INOX, Cu Ni Ms Zn Al, MDF
64.600.2332	R230-2,5/3,2	230	210	19	1.57	8/10	2,5-3,2	BiM 8% Co	4-12 mm, 90°
64.600.2342	R230-4,2C	230	210	19	1.27	6	4,2	BiM 8% Co	6-175 mm, MDF
64.600.2356	R230-5/6,5	230	210	19	1.2	4/5	5-6,5	CV	15-190 mm, SOFT
64.600.3018	R300-1,8	300	280	19	0.9	14	1,8	BiM 8% Co	2-8 mm, INOX
64.600.3021	R300-1,8/2,5 UNI	300	280	19	0.9	10/14	1,8-2,5	BiM 8% Co	3-10 mm, INOX, Cu Ni Ms Zn Al
64.600.3025	R300-2,5	300	280	19	0.9	10	2,5	BiM 8% Co	3-12 mm, Cu Ni Ms Zn Al
64.600.3032	R300-4,2C	300	280	19	1.27	6	4,2	BiM 8% Co	6-250 mm, MDF

› 64.605 Phantom

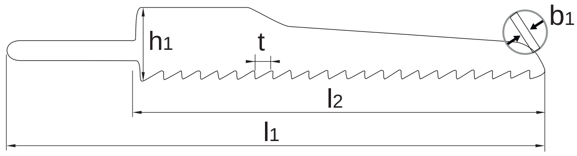
NL Hardmetaal Reciprozaag
FR Lame de scie sabre Carbure
ES Hojas de sierra de sable carburo
DE Hartmetall Säbelsägeblätter
EN carbide Sabre Saw Blade

Ref.	Type	l1	l2	h1	b1	TPI	t	Material	Application
64.605.1542	RHM150-4,2	150	130	19	0.9	6	4,2	HM	3-100 mm
64.605.3013	RHM300-1,3	300	200	46	2.97	1,4	18	HM	30-200 mm

SC 1 | HSS(-E) 1 | 2 | SC 3 | HSS-E 3 | 4 | 5 | 6

› 64.630 Phantom

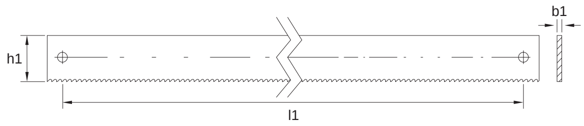
NL HSS-Co 8% Bi-Metaal Carrosseriezaag
FR Lame de scie sabre HSS-Co 8% Bi-métal
ES Hojas de sierra de sable HSS-Co 8% Bi-Metal
DE HSS-Co 8% Bi-Metall Säbelsägeblätter
EN HSS-Co 8% Bi-Metal Sabre Saw Blade



Ref.	Type	l1	l2	h1	b1	TPI	t					
64.630.1007	R100-0,7	100	75	12.3	0.65	32	0,7	BiM 8% Co	0,5-1 mm	INOX		Cu Ni Ms Zn Al
64.630.1010	R100-1	100	75	12.3	0.65	25	1	BiM 8% Co	1-2 mm	INOX		Cu Ni Ms Zn Al
64.630.1018	R100-1,8	100	75	12.3	0.65	14	1,8	BiM 8% Co	2,5-4 mm	INOX		Cu Ni Ms Zn Al

› 66.110 Phantom

NL M2 Bi-Metaal Machinezaagblad
FR Lame de scie alternative Bi-métal M2
ES Hoja de sierra de máquina Bi-metal M2
DE M2 Bi-Metall Maschinensägeblätter
EN M2 Bi-Metal Power Hacksaw Blade



BiM HSS | Const. | α0°

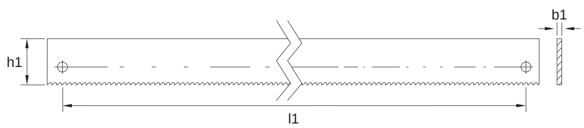
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10% | N 51 Cu | N 61 PVC

Ref.	l1	h1	b1	d1	TPI
66.110.3036	300	25	1.25	8.5	10
66.110.3037	300	25	1.25	8.5	14
66.110.3054	300	32	1.6	8.5	6
66.110.3055	300	32	1.6	8.5	8
66.110.3056	300	32	1.6	8.5	10
66.110.3514	350	25	1.25	8.5	6
66.110.3515	350	25	1.25	8.5	8
66.110.3516	350	25	1.25	8.5	10
66.110.3517	350	25	1.25	8.5	14
66.110.3534	350	32	1.6	8.5	6
66.110.3535	350	32	1.6	8.5	8
66.110.3536	350	32	1.6	8.5	10
66.110.3537	350	32	1.6	8.5	14
66.110.3553	350	38	2	10.5	4
66.110.3554	350	38	2	10.5	6
66.110.3555	350	38	2	10.5	8
66.110.3556	350	38	2	10.5	10
66.110.3557	350	38	2	10.5	14
66.110.4034	400	25	1.25	8.5	6
66.110.4035	400	25	1.25	8.5	8
66.110.4036	400	25	1.25	8.5	10
66.110.4037	400	25	1.25	8.5	14
66.110.4054	400	32	1.6	8.5	6
66.110.4055	400	32	1.6	8.5	8
66.110.4056	400	32	1.6	8.5	10
66.110.4057	400	32	1.6	8.5	14
66.110.4073	400	38	2	8.5	4
66.110.4074	400	38	2	8.5	6
66.110.4075	400	38	2	8.5	8
66.110.4076	400	38	2	8.5	10
66.110.4077	400	38	2	8.5	14
66.110.4094	400	38	2	10.5	6
66.110.4233	425	32	1.6	8.5	4
66.110.4234	425	32	1.6	8.5	6

Ref.	l1	h1	b1	d1	TPI
66.110.4504	450	30	1.5	8.5	6
66.110.4506	450	30	1.5	8.5	10
66.110.4513	450	32	1.6	8.5	4
66.110.4514	450	32	1.6	10.5	6
66.110.4515	450	32	1.6	10.5	8
66.110.4516	450	32	1.6	10.5	10
66.110.4524	450	32	1.6	8.5	6
66.110.4525	450	32	1.6	8.5	8
66.110.4526	450	32	1.6	8.5	10
66.110.4553	450	38	2	10.5	4
66.110.4554	450	38	2	10.5	6
66.110.4555	450	38	2	10.5	8
66.110.4556	450	38	2	10.5	10
66.110.5005	500	32	1.6	8.5	8
66.110.5013	500	38	2	10.5	4
66.110.5014	500	38	2	10.5	6
66.110.5015	500	38	2	10.5	8
66.110.5016	500	38	2	10.5	10
66.110.5214	525	40	2	10.5	6
66.110.5513	550	45	2.25	10.5	4
66.110.5514	550	45	2.25	10.5	6
66.110.5515	550	45	2.25	13	8
66.110.5516	550	45	2.25	13	10
66.110.6003	600	50	2.5	10.5	4
66.110.6004	600	50	2.5	10.5	6
66.110.6013	600	50	2.5	13	4
66.110.6014	600	50	2.5	13	6
66.110.6015	600	50	2.5	13	8
66.110.6016	600	50	2.5	13	10
66.110.6513	650	50	2.5	13	4
66.110.6514	650	50	2.5	13	6
66.110.6515	650	50	2.5	13	8
66.110.6516	650	50	2.5	13	10
66.110.7014	700	50	2.5	13	6

› 66.130 Phantom

NL M2 Bi-Metaal Machinezaagblad type Kasto
FR Lame de scie alternative Bi-métal M2 type Kasto
ES Hoja de sierra de máquina Bi-metal M2 tipo Kasto
DE M2 Bi-Metall Maschinensägeblätter Typ Kasto
EN M2 Bi-Metal Power Hacksaw Blade type Kasto



BiM HSS | Const. | α0° | KASTO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10% | N 51 Cu | N 61 PVC

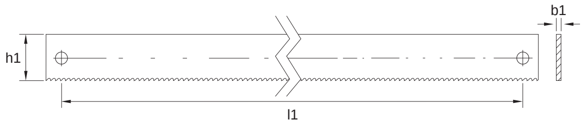
Ref.	l1	h1	b1	d1	TPI
66.130.4074	400	38	2	8.5	6
66.130.4075	400	38	2	8.5	8
66.130.4076	400	38	2	8.5	10
66.130.4553	450	38	2	8.5	4
66.130.4554	450	38	2	8.5	6
66.130.4555	450	38	2	8.5	8
66.130.4556	450	38	2	8.5	10
66.130.5513	550	45	2.25	10.5	4
66.130.5514	550	45	2.25	10.5	6
66.130.5515	550	45	2.25	10.5	8

Ref.	l1	h1	b1	d1	TPI
66.130.5516	550	45	2.25	10.5	10
66.130.5713	575	50	2.5	10.5	4
66.130.5714	575	50	2.5	10.5	6
66.130.5715	575	50	2.5	10.5	8
66.130.6533	650	50	2.5	10.5	4
66.130.6534	650	50	2.5	10.5	6
66.130.6535	650	50	2.5	10.5	8
66.130.7023	700	50	2.5	10.5	4
66.130.7024	700	50	2.5	10.5	6

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6

› 66.160 Phantom

NL **M42 Bi-Metaal Machinezaagblad**
FR **Lame de scie alternative Bi-métal M42**
ES **Hoja de sierra de máquina Bi-metal M42**
DE **M42 Bi-Metall Maschinensägeblätter**
EN **M42 Bi-Metal Power Hacksaw Blade**



BiM 8% Co | Const. | α0° | INOX

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10% | N 51 Cu | N 61 PVC

Ref.	l1	h1	b1	d1	TPI
66.160.4094	400	40	2	10.5	6
66.160.4095	400	40	2	10.5	8
66.160.4096	400	40	2	10.5	10
66.160.4097	400	40	2	10.5	14
66.160.4554	450	40	2	10.5	6
66.160.4555	450	40	2	10.5	8
66.160.4556	450	40	2	10.5	10

Ref.	l1	h1	b1	d1	TPI
66.160.5014	500	40	2	10.5	6
66.160.5015	500	40	2	8.5	8
66.160.5713	575	50	2.5	10.5	4
66.160.5714	575	50	2.5	10.5	6
66.160.7013	700	50	2.5	13	4
66.160.7014	700	50	2.5	13	6

› 66.450 *Phantom*

NL **M42 Bi-Metaal Bandzaag voor profielmateriaal**
FR **Scie à ruban Bi-métal M42 pour profilés**
ES **Sierra de cinta Bimetal M42 para materiales de perfiles**
DE **M42 Bi-Metall Sägebänder für Profilmaterial**
EN **M42 Bi-Metal Band saw for profile material**

BiM HSS | HSS-E 8% | VARI | α0°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu	S 71 Ni/Co	S 72 Ti
50-120	35-50	30-45	30-40	30-40	10-30	30-60	30-60	80-800	50-400	10-25	10-20

h1 x b1 (mm)	z=5-8/”	z=6-10/”	z=8-12/”	z=10-14/”
13 x 0,65		66.450.07....	66.450.08....	66.450.09....
13 x 0,9		66.450.17....	66.450.18....	66.450.19....
20 x 0,9	66.450.26....	66.450.27....	66.450.28....	66.450.29....
27 x 0,9	66.450.36....	66.450.37....	66.450.38....	66.450.39....
34 x 1,1	66.450.56....	66.450.57....	66.450.58....	

› 66.460 *Phantom*

NL **M42 Bi-Metaal Bandzaag voor grotere afmetingen**
FR **Scie à ruban Bi-métal M42 pour matériaux de grandes dimensions**
ES **Sierra de cinta Bi-metal M42 para materiales con dimensiones grandes**
DE **M42 Bi-Metall Sägebänder größer Abmessung**
EN **M42 Bi-Metal Band saw for large sizes**

BiM HSS | HSS-E 8% | VARI | α10°

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	N 41 Alu	N 42 Alu Si>10%
50-120	35-50	30-45	30-40	30-40	10-30	30-60	80-800	80-800

h1 x b1 (mm)	z=2-3/”	z=3-4/”	z=4-6/”
20 x 0,9			66.460.25....
27 x 0,9	66.460.33....	66.460.34....	66.460.35....
34 x 1,1	66.460.53....	66.460.54....	66.460.55....
41 x 1,3	66.460.63....	66.460.64....	66.460.65....
54 x 1,6	66.460.73....	66.460.74....	

› 66.580 Phantom

NL **M51 Bi-Metal Bandzaag voor grotere afmetingen, extra slijtvast**
FR **Scie à ruban Bi-métal M51 pour matériaux de grandes dimensions, très résistante à l'usure**
ES **Sierra de cinta Bi-metal M51 para materiales con dimensiones grandes, extra resistente al degaste**
DE **M51 BiMetall Sägebänder größer Abmessung, besonders Verschleissfest**
EN **M51 Bi-Metal Band saw for large sizes, Extra wear-resistant**

BiM HSS | 10% Co | VARI | α10°

P 11	P 12	P 13	P 14	M 21	M 22	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Ni/Co	Ti
50-120	35-50	30-45	30-40	30-40	10-30	10-25	10-20

h1 x b1 (mm)	z=3-4/"	z=4-6/"	z=5-8/"
27 x 0,9	66.580.44....	66.580.45....	66.580.46....
34 x 1,1	66.580.54....	66.580.55....	
41 x 1,3	66.580.64....	66.580.65....	

› 66.700 Phantom

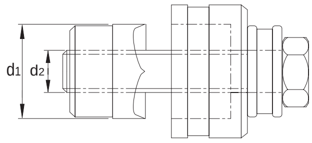
NL **HP2 UNI M42 Bi-Metaal Bandzaag universele multizaag**
FR **Scie à ruban Bi-métal M42 HP2 UNI scie multifonction**
ES **Sierra de cinta Bimetal M42 HP2 UNI sierra universal**
DE **HP2 UNI M42 Bi-Metall Sägebänder Universal-Sägeband**
EN **HP2 UNI M42 Bi-Metal Band saw universal multi-saw**

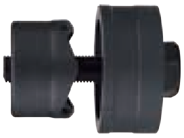
BiM HSS | HSS-E 8% | VARI | α5° | HP2 UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Cu	Ni/Co	Ti
50-120	35-50	30-45	30-40	30-40	10-30	30-60	30-60	80-800	50-400	10-25	10-20

h1 x b1 (mm)	z=3-4/"	z=4-6/"	z=5-7/"	z=7-9/"	z=8-11/"
27 x 0,9	66.700.34....	66.700.35....	66.700.36....	66.700.37....	66.700.38....
34 x 1,1	66.700.54....	66.700.55....	66.700.56....		
41 x 1,3	66.700.64....	66.700.65....	66.700.66....		
54 x 1,6	66.700.74....				

› 67.100 Phantom





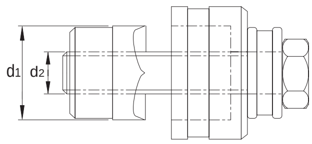
NL Gatenpons voor hand- en hydraulisch gebruik, incl. bout
FR Emporte-pièces pour usage à la main et hydraulique, boulon inclus
ES Sacabocado para uso manual e hidráulico, con tornillo
DE Blechlocher für hydraulischen Gebrauch, mit Schraube
EN Hole Puncher for hand and hydraulic use, with screw

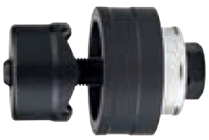

1

67.300.5000

Ref.	d1	M	PG	1 incl.	d2xL
67.100.1270	12.7	12	7	67.300.0940	9,5x40
67.100.1520	15.2		9	67.300.0940	9,5x40
67.100.1600	16.2	16		67.300.0940	9,5x40
67.100.1860	18.6		11	67.300.0940	9,5x40
67.100.2040	20.4	20	13	67.300.0940	9,5x40
67.100.2200	22			67.300.0940	9,5x40
67.100.2250	22.5		16	67.300.0940	9,5x40
67.100.2500	25			67.300.0950	9,5x50
67.100.2540	25.4	25		67.300.0950	9,5x50
67.100.2830	28.3		21	67.300.0950	9,5x50
67.100.3050	30.5			67.300.0950	9,5x50
67.100.3170	31.7			67.300.0950	9,5x50
67.100.3200	32.5	32		67.300.0950	9,5x50
67.100.3500	35			67.300.1955	19x55
67.100.3700	37		29	67.300.1955	19x55
67.100.3800	38			67.300.1955	19x55
67.100.4050	40.5	40		67.300.1955	19x55
67.100.4700	47		36	67.300.1975	19x75
67.100.5050	50.5	50		67.300.1975	19x75
67.100.5400	54		42	67.300.1975	19x75
67.100.6000	60		48	67.300.1975	19x75
67.100.6350	63.5	63		67.300.1975	19x75
67.100.7000	70			67.300.1975	19x75
67.100.7550	75.5	75		67.300.1975	19x75

› 67.110 Phantom





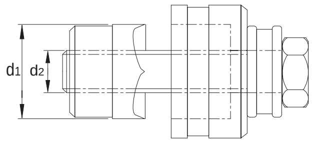
NL Gatenpons voor hand- en hydraulisch gebruik, incl. bout en lager
FR Emporte-pièces pour usage à la main et hydraulique, Boulon à roulement à billes inclus
ES Sacabocado para uso manual e hidráulico, con tornillo y rodamiento de bolas
DE Blechlocher für hydraulischen Gebrauch, mit Schraube und Kugellager
EN Hole Puncher for hand and hydraulic use, with screw and ball-bearing


1

67.300.5000

Ref.	d1	M	PG	1 incl.	d2xL
67.110.1271	12.7	12	7	67.300.0951	9,5x50
67.110.1521	15.2		9	67.300.0951	9,5x50
67.110.1601	16.2	16		67.300.0951	9,5x50
67.110.1861	18.6		11	67.300.0951	9,5x50
67.110.2041	20.4	20	13	67.300.0951	9,5x50
67.110.2201	22			67.300.0951	9,5x50
67.110.2251	22.5		16	67.300.0951	9,5x50
67.110.2501	25			67.300.0951	9,5x50
67.110.2541	25.4	25		67.300.0951	9,5x50
67.110.2831	28.3		21	67.300.0951	9,5x50
67.110.3051	30.5			67.300.0951	9,5x50
67.110.3171	31.7			67.300.0951	9,5x50
67.110.3201	32.5	32		67.300.0951	9,5x50
67.110.3501	35			67.300.1956	19x55
67.110.3701	37		29	67.300.1956	19x55
67.110.3801	38			67.300.1956	19x55
67.110.4051	40.5	40		67.300.1956	19x55
67.110.4701	47		36	67.300.1976	19x75
67.110.5051	50.5	50		67.300.1976	19x75
67.110.5401	54		42	67.300.1976	19x75
67.110.6001	60		48	67.300.1976	19x75
67.110.6351	63.5	63		67.300.1976	19x75
67.110.7001	70			67.300.1976	19x75
67.110.7551	75.5	75		67.300.1976	19x75

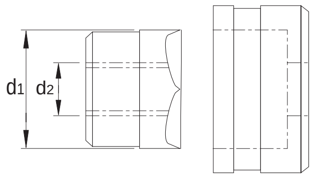
› 67.120 Phantom



NL **Gatenpons met 3-voudig splijtstempel, voor hand- en hydraulisch gebruik, incl. bout en lager**
FR **Emporte-pièces à trois pointes, pour usage à la main et hydraulique, Boulon à roulement à billes inclus**
ES **Sacabocado con punzón cortador, para uso manual e hidráulico, con tornillo y rodamiento de bolas**
DE **Blechlocher mit Spaltstempel, für hydraulischen Gebrauch, mit Schraube und Kugellager**
EN **Hole Puncher with split, for hand and hydraulic use, with screw and ball-bearing**

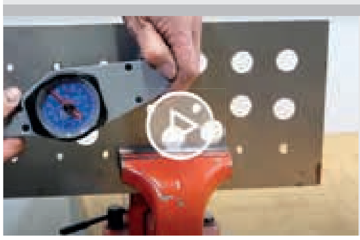
Ref.	d1	M	PG	1 incl.	d2xL	2 excl.	d2xd2
67.120.1201	12.5	12		67.300.0949	6x40	67.300.1992	19x6
67.120.1521	15.2		9	67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.1601	16.2	16		67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.1861	18.6		11	67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.2041	20.4	20	13	67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.2251	22.5		16	67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.2501	25.4	25		67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.2831	28.3		21	67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.3051	30.5			67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.3201	32.5	32		67.300.1956	19x55	67.300.1991	19x19
67.120.3701	37		29	67.300.1956	19x55	67.300.1991	19x19
67.120.4001	40.5	40		67.300.1976	19x75	67.300.1991	19x19
67.120.4701	47		36	67.300.1976	19x75	67.300.1991	19x19
67.120.5001	50.5	50		67.300.1976	19x75	67.300.1991	19x19
67.120.5401	54		42	67.300.1976	19x75	67.300.1991	19x19
67.120.6001	60		48	67.300.1976	19x75	67.300.1991	19x19
67.120.6301	63.5	63		67.300.1976	19x75	67.300.1991	19x19

› 67.130 Phantom



NL **Gatenpons met 3-voudig splijtstempel, voor hand- en hydraulisch gebruik, roestvaststaal, excl. bout**
FR **Emporte-pièces à trois pointes, pour usage à la main et hydraulique, Inox, boulon non inclus**
ES **Sacabocado con punzón cortador, para uso manual e hidráulico, acero inoxidable, sin tornillo.**
DE **Blechlocher mit Spaltstempel, für hydraulischen Gebrauch, rostfreien Stahl, ohne Schraube**
EN **Hole Puncher with split, for hand and hydraulic use, stainless steel, without screw**

Ref.	d1	M	PG	1 excl.	d2xL	2 excl.	d2xd2	3 excl.
67.130.1521	15.2		9	67.300.1110	11,1x60	67.300.1995	19x11,1	67.300.3030
67.130.1600	16.2	16		67.300.1110	11,1x60	67.300.1995	19x11,1	67.300.3030
67.130.1861	18.6		11	67.300.1110	11,1x60	67.300.1995	19x11,1	67.300.3030
67.130.2041	20.4	20	13	67.300.1110	11,1x60	67.300.1995	19x11,1	67.300.3030
67.130.2251	22.5		16	67.300.1110	11,1x60	67.300.1995	19x11,1	67.300.3030
67.130.2500	25.4	25		67.300.1110	11,1x60	67.300.1995	19x11,1	67.300.3030
67.130.2831	28.3		21	67.300.1956	19x55	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.3050	30.5			67.300.1956	19x55	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.3200	32.5	32		67.300.1956	19x55	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.3701	37		29	67.300.1956	19x55	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.4000	40.5	40		67.300.1976	19x75	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.4701	47		36	67.300.1976	19x75	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.5000	50.5	50		67.300.1976	19x75	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.5401	54		42	67.300.1976	19x75	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.6001	60		48	67.300.1976	19x75	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.6300	63.5	63		67.300.1976	19x75	67.300.1991	19x19	67.300.3000 / 67.300.3010 / 67.300.3020



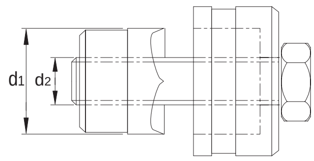
NL Gatenpons met lager vs zonder lager
FR Emporte-pièces avec roulement à billes vs emporte-pièces sans roulement à billes
ES Sacabocado con o sin rodamiento
DE Blechlocher mit Kugellager gegen ohne Kugellager
EN Hole punch with bearing vs without bearing

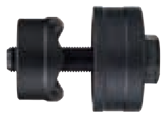
Watch me

www.phantom.eu

› 67.250 *Phantom*

NL **Gatenpons Sanitair, incl. bout, voor handgebruik**
FR **Emporte-pièces Sanitaire, boulon inclus, pour usage à la main**
ES **Sacabocado Sanitario, con tornillo, para uso manual**
DE **Blechlocher Sanitär, mit Schraube, für Handgebrauch**
EN **Hole Puncher Sanitary, with screw, for hand use**





1

Ref.	d1	1 incl.	d2xL
67.250.2830	28.3	67.300.1010	MF10x1 x 50
67.250.3170	31.7	67.300.1010	MF10x1 x 50
67.250.3500	35	67.300.1010	MF10x1 x 50

› 67.290 *Phantom*

NL **Hydraulische Handpomp**
FR **Pompe Hydraulique**
ES **Aparato Hidráulico manual**
DE **Hydraulische Handpumpe**
EN **Hydraulic Hand Pump**

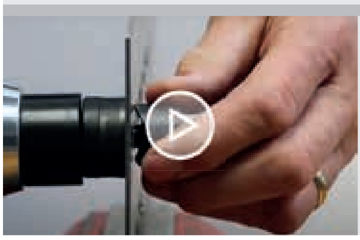
Ref.	Contents
67.290.1000	Hydraulic Hand Pump

› 67.300 *Phantom*

NL **Onderdelen en Toebehoren voor Gatenpons**
FR **Pièces détâchées et Accessoires pour Emporte-pièces**
ES **Componentes fundamentales y Accesorios para Sacabocado**
DE **Einzelteile und Zubehör für Blechlocher**
EN **Extra parts and Hole Puncher Accessories**

1 **2** **3** **4** **67.300.5000**

Ref.	Contents
67.300.0940	drawbolt 9.5 x 40
67.300.0949	drawbolt 6 x 46 with ball bearing
67.300.0950	drawbolt 9.5 x 50
67.300.0951	drawbolt 9.5 x 50 with ball bearing
67.300.1010	drawbolt MF10x1 x 50
67.300.1110	drawbolt 11,1x60 (7/16UNF) with ball bearing
67.300.1955	drawbolt 19x55 (3/4UNF)
67.300.1956	drawbolt 19x55 (3/4UNF) with ball bearing
67.300.1975	drawbolt 19 x 75
67.300.1976	drawbolt 19 x 75 with ball bearing
67.300.1991	drawbolt 19x19 hydraulic use
67.300.1992	drawbolt 19x6 for hydraulic use
67.300.1993	drawbolt 19 x 9.5 for hydraulic use
67.300.1995	drawbolt 19 x 11.1 for hydraulic use
67.300.3000	distance bush for punch tools nr. 1 10 mm Ø37x23 mm
67.300.3010	distance bush for punch tools nr. 2 16 mm Ø37x23 mm
67.300.3020	distance bush for punch tools nr. 3 23 mm Ø48x37x30 mm
67.300.3030	distance bush for punch tools nr. 4 23,5 mm Ø37x20x11,5 mm
67.300.3040	distance bush for punch tools nr. 5 38 mm Ø37x23 mm
67.300.5000	tube of grease 120 g
67.300.9000	centre drilll 11,5 mm



NL Gatenpons met hydraulische handpomp
FR Emporte-pièces avec pompe hydraulique
ES Sacabocado con aparato hidráulico
DE Blechlocher mit Hydraulik Handstanze
EN Hole punch with hand hydraulic punch driver

Watch me

www.phantom.eu

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6

› 69.090 International Tools

NL ECO PRO HSS-Co 8% Bi-Metaal Set Gatzagen 61.090
FR Jeu de Scies cloches HSS-Co 8% Bi-métal ECO PRO 61.090
ES Juego de coronas perforadoras HSS-Co 8% Bi-Metal ECO PRO 61.090
DE ECO PRO HSS-Co 8% Bi-Metall Satz Lochsägen 61.090
EN ECO PRO HSS-Co 8% Bi-Metal Hole saw set 61.090

BiM 8% Co | VARI 4/6 | INOX | MDF | SOFT | Cu Ni Ms Zn Al | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	1	2 incl.	3 incl.	4 incl.
69.090.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	61.145.0201/0500	61.147.0600	61.160.9500
69.090.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 68, 76 mm	61.145.0201/0500	61.147.0600	61.160.9500

› 69.092 International Tools

NL ECO PRO HSS-Co 8% Bi-Metaal Set Gatzagen 61.090, met Universele Quick-Change houder en adapters
FR Jeu de Scies cloches HSS-Co 8% Bi-métal ECO PRO 61.090, avec système de changement rapide 'Quick Change'arbre et adaptateurs
ES Juego de coronas perforadoras HSS-Co 8% Bi-Metal ECO PRO 61.090, con husillo de cambio rápido y adaptadores
DE ECO PRO HSS-Co 8% Bi-Metall Satz Lochsägen 61.090, mit Schnellweschelhalter und Adapters
EN ECO PRO HSS-Co 8% Bi-Metal Hole saw set 61.090, with Quick-Change holder and adapters

NIEUW | NOUVEAU | NUEVO | NEU

BiM 8% Co | VARI 4/6 | INOX | MDF | SOFT | Cu Ni Ms Zn Al | ECO PRO

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	1	2 incl.	3 incl.	4 incl.	5 incl.	6 incl.
69.092.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	61.135.1432	5x 61.137.1401	7x 61.137.3201	61.148.0900	61.160.9500
69.092.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 68, 76 mm	61.135.1432	5x 61.137.1401	7x 61.137.3201	61.148.0900	61.160.9500

› 69.111 Phantom

NL HSS-Co 8% Bi-Metaal Set Gatzagen 61.105
FR Jeu de Scies cloches HSS-Co 8% Bi-métal 61.105
ES Juego de coronas perforadoras HSS-Co 8% Bi-Metal 61.105
DE HSS-Co 8% Bi-Metall Satz Lochsägen 61.105
EN HSS-Co 8% Bi-Metal Hole saw set 61.105

BiM 8% Co | VARI | INOX | MDF | SOFT | Cu Ni Ms Zn Al

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	1	2 incl.	3 incl.	4 incl.
69.111.0900	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	61.150.0201/0500	61.170.0600	61.160.9500
69.111.0901	19, 22, 29, 35, 38, 44, 51, 57, 68 mm	61.150.0201/0500	61.170.0600	61.160.9500
69.111.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	61.150.0201/0500	61.170.0600	61.160.9500
69.111.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 68, 76 mm	61.150.0201/0500	61.170.0600	61.160.9500

› 69.112 Phantom

NIEUW NOUVEAU NUEVO NEU

NL HSS-Co 8% Bi-Metaal Set Gatzagen 61.105, met Universele Quick-Change houder en adapters
FR Jeu de Scies cloches HSS-Co 8% Bi-métal 61.105, avec système de changement rapide 'Quick Change'arbre et adaptateurs
ES Juego de coronas perforadoras HSS-Co 8% Bi-Metal 61.105, con husillo de cambio rápido y adaptadores
DE HSS-Co 8% Bi-Metall Satz Lochsägen 61.105, mit Schnellweschelhalter und Adapters
EN HSS-Co 8% Bi-Metal Hole saw set 61.105, with Quick-Change holder and adapters

BiM 8% Co | VARI | INOX | MDF | SOFT | Cu Ni Ms Zn Al

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	1	2 incl.	3 incl.	4 incl.	5 incl.	6 incl.
69.112.0900	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	61.140.1432	3x 61.142.1401	6x 61.142.3201	61.180.0900	61.160.9500
69.112.0901	19, 22, 29, 35, 38, 44, 51, 57, 68 mm	61.140.1432	3x 61.142.1401	6x 61.142.3201	61.180.0900	61.160.9500
69.112.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	61.140.1432	5x 61.142.1401	7x 61.142.3201	61.180.0900	61.160.9500
69.112.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 68, 76 mm	61.140.1432	5x 61.142.1401	7x 61.142.3201	61.180.0900	61.160.9500

› 69.114 Phantom

NL HSS-Co 8% Bi-Metaal Set Gatzagen voor dunne plaat en buizen, 61.110
FR Jeu de Scies cloches HSS-Co 8% Bi-métal pour tôle fine et tube, 61.110
ES Juego de coronas perforadoras HSS-Co 8% Bi-Metal para chapa fina y tubos, 61.110
DE HSS-Co 8% Bi-Metall Satz Lochsägen für dünne Platte und Rohren, 61.110
EN HSS-Co 8% Bi-Metal Hole saw set for thin plates and tubes, 61.110

BiM 8% Co | VARI | INOX | MDF | SOFT | Cu Ni Ms Zn Al

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	1	2 incl.	3 incl.	4 incl.
69.114.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	61.150.0201/0500	61.170.0600	61.160.9500
69.114.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 68, 76 mm	61.150.0201/0500	61.170.0600	61.160.9500

NL Gatzagen in actie
FR Phantom Scies Cloches best of the test!
ES Phantom Corona best of the test!
DE Lochsägen in Aktion
EN Phantom Hole Saw best of the test!

Read me

www.phantom.eu

69.116 Phantom

NIEUW NOUVEAU NUEVO NEU

NL HSS-Co 8% Bi-Metaal Set Gatzagen voor dunne plaat en buizen, 61.110, met Universele Quick-Change houder en adapters
FR Jeu de Scies cloches HSS-Co 8% Bi-métal pour tôle fine et tube, 61.110, avec système de changement rapide 'Quick Change'arbre et adaptateurs
ES Juego de coronas perforadoras HSS-Co 8% Bi-Metal para chapa fina y tubos, 61.110, con husillo de cambio rápido y adaptadores
DE HSS-Co 8% Bi-Metall Satz Lochsägen für dünne Platte und Rohren, 61.110, mit Schnellweschelhalter und Adapters
EN HSS-Co 8% Bi-Metal Hole saw set for thin plates and tubes, 61.110, with Quick-Change holder and adapters

BiM 8% Co | VARI | INOX | MDF | SOFT | Cu Ni Ms Zn Al

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | N 41 Alu | N 51 Cu

Ref.	1	2 incl.	3 incl.	4 incl.	5 incl.	6 incl.
69.116.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	61.140.1432	5x 61.142.1401	7x 61.142.3201	61.180.0900	61.160.9500
69.116.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 68, 76 mm	61.140.1432	5x 61.142.1401	7x 61.142.3201	61.180.0900	61.160.9500

69.130 Phantom

NL HM-tip Set Gatzagen, Multi-Purpose 61.130
FR Jeu de Scies cloches, Multi-Purpose à plaquette carbure 61.130
ES Juego de coronas perforadoras, Multi-Purpose con punta de carburo 61.130
DE Hartmetallbestückt Satz Lochsägen, Multi-Purpose 61.130
EN Carbide Tipped Hole saw set, Multi-Purpose 61.130

HM-TIP | MDF | Cu Ni Ms Zn Al

Ref.	1	2 incl.	3 incl.	4 incl.
69.130.0601	22, 29, 35, 44, 51, 65 mm	61.151.0100/0200	61.170.0602	61.170.0603
69.130.0901	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	61.151.0100/0200	61.170.0602	61.170.0603
69.130.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	61.151.0100/0200	61.170.0602	61.170.0603

69.210 Phantom

NL HSS-EX Set Kernboren snijdiepte 30 mm, 62.100
FR Jeu de Fraises à carotter HSS-EX profondeur de coupe 30 mm, 62.100
ES Juego de Fresas huecas HSS-EX profundidad de corte 30 mm, 62.100
DE HSS-EX Satz Kernbohrer Schnittiefe 30 mm, 62.100
EN HSS-EX Set Annular Cutters cutting depth 30 mm, 62.100

HSS-EX | 0,5-30 mm | Ø19 WELDON

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25	20	13	18	38	32	22	17

Ref.	Ø mm
69.210.0001	12-14-16-18-20-22 + 62.300.0026

NL Kernboren keuzehulp
FR Aide à la sélection des fraises à carotter
ES Ayuda para la selección de fresas huecas
DE Auswahlhilfe Kernbohrer
EN Selection guide for annular cutters

Read me

www.phantom.eu

› 69.212 Phantom

NL HSS-EX Set Kernboren genitreerd, snijdiepte 30 mm, 62.122
FR Jeu de Fraises à carotter HSS-EX nitruré, profondeur de coupe 30 mm, 62.122
ES Juego de Fresas huecas HSS-EX nitrurada, profundidad de corte 30 mm, 62.122
DE HSS-EX Satz Kernbohrer nitriert, Schnittiefe 30 mm, 62.122
EN HSS-EX Set Annular Cutters nitrided, cutting depth 30 mm, 62.122

HSS-EX | NIT. | 0,5-30 mm | Ø19 WELDON

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
31	18	16	9	10	4	20	16	38	40	36	36	22

Ref.	Ø mm
69.212.2001	12-14-16-18-20-22 + 62.300.0026

› 69.215 Phantom

NL HSS-EX Set Kernboren snijdiepte 55 mm, 62.150
FR Jeu de Fraises à carotter HSS-EX profondeur de coupe 55 mm, 62.150
ES Juego de Fresas huecas HSS-EX profundidad de corte 55 mm, 62.150
DE HSS-EX Satz Kernbohrer Schnittiefe 55 mm, 62.150
EN HSS-EX Set Annular Cutters cutting depth 55 mm, 62.150

HSS-EX | 0,5-55 mm | Ø19 WELDON

P 11	P 12	P 13	K 31	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	Alu	Alu Si>10%	Cu	PVC
25	20	13	18	38	32	22	17

Ref.	Ø mm
69.215.0001	14-16-18-20-22-26 + 62.300.0050

› 69.216 Phantom

NL HSS-EX Set Kernboren genitreerd, snijdiepte 55 mm, 62.162
FR Jeu de Fraises à carotter HSS-EX nitruré, profondeur de coupe 55 mm, 62.162
ES Juego de Fresas huecas HSS-EX nitrurada, profundidad de corte 55 mm, 62.162
DE HSS-EX Satz Kernbohrer nitriert, Schnittiefe 55 mm, 62.162
EN HSS-EX Set Annular Cutters nitrided, cutting depth 55 mm, 62.162

HSS-EX | NIT. | 0,5-55 mm | Ø19 WELDON

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
31	18	16	9	10	4	20	16	38	40	36	36	22

Ref.	Ø mm
69.216.2001	14-16-18-20-22-26 + 62.300.0050

› 69.300 Phantom

NL Set Spantanghouder met Spantangen voor kernboormachine
FR Coffret avec Mandrin porte-pinces et pinces ER pour carotteuse
ES Juego de Portapinzas, pinzas ER y llave para taladro magnético
DE Spannzangensätze mit Spannzangenfutter für Kernbohrmaschine
EN Set of Collets Chucks for core drilling machine

NIEUW NOUVEAU NUEVO NEU

Ref.	Ø mm
69.300.0412	82.825 (Ø 4-5-6-7-8-9-10-11-12 mm), 82.885 (M8-M10-M12-M16) + 62.350.1925

› 69.710 Phantom

NL Set met Gatenponsen voor hand- en hydraulisch gebruik, 67.110
FR Jeu d'Emporte-pièces pour usage à la main et hydraulique, 67.110
ES Jeugo de Sacabocados para uso manual e hidráulico, 67.110
DE Satz Blechlocher für hydraulischen Gebrauch, 67.110
EN Set Hole Punchers for hand and hydraulic use, 67.110

1 2 3 4

Ref.	1	2	3	4
69.710.2101	PG9, PG11, PG13, PG16, PG21	67.300.0951 (2x) 9,5x50	11.130.1000	67.300.5000

› 69.712 Phantom

NL Set met Gatenponsen met 3-voudig splijtstempel, voor hand- en hydraulisch gebruik, 67.120
FR Jeu d'Emporte-pièces à trois pointes, pour usage à la main et hydraulique, 67.120
ES Jeugo de Sacabocados con punzón cortador, para uso manual e hidráulico, 67.120
DE Satz Blechlocher mit Spaltstempel, für hydraulischen Gebrauch, 67.120
EN Set Hole Punchers with split, for hand and hydraulic use, 67.120

1 2 3 4

Ref.	1	2	3	4
69.712.3051	PG9, PG11, PG13, PG16, PG21 + 30,5	67.300.0951 (2x) 9,5x50	11.130.1000	67.300.5000
69.712.6001	PG9, PG11, PG13, PG16, PG21, PG29, PG36, PG42, PG48 + 30,5	67.300.0951 (2x) 9,5x50 - 67.300.1956 19x55 - 67.300.1976 19x75	11.130.1000	67.300.5000
69.712.7001	M12, M16, M20, M25, M32, M40	67.300.0949 6x40 - 67.300.0951 9,5x50 - 67.300.1956 19x55	11.130.1000	67.300.5000
69.712.7002	M16, M20, M25, M32, M40, M50, M63	67.300.0951 (2x) 9,5x50 - 67.300.1956 19x55 - 67.300.1976 19x75	11.130.1000	67.300.5000

› 69.790 Phantom

NL Set Hydraulische Handpomp en Gatenponsen 67.120
FR Jeu de Pompe hydraulique et d'Emporte-pièces 67.120
ES Juego de Aparato Hidráulico manual y Sacabocados 67.120
DE Satz Hydraulische Handpumpe und Blechlocher 67.120
EN Set Hydraulic Hand Pump and Hole Punchers 67.120

1 2 3 4 5

Ref.	1	2	3	4	5
69.790.1000	PG9, PG11, PG13, PG16, PG21, PG29, PG36, PG42, PG48	67.300.1993	67.300.3030	11.130.1000	67.300.5000
69.790.1200	M16, M20, M25, M32, M40	67.300.1993	67.300.3030	11.130.1000	67.300.5000

› 69.795

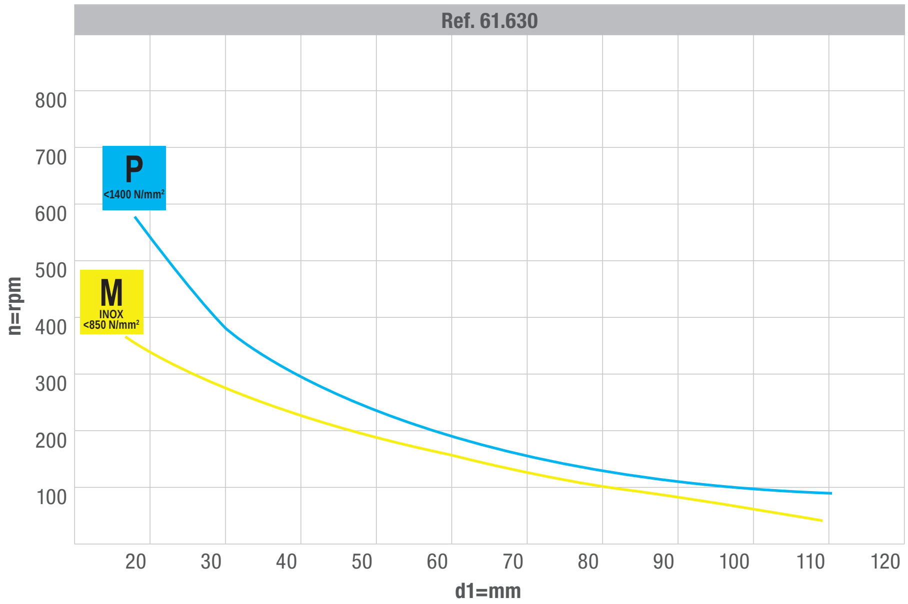
NL **Set Hydraulische Handpomp en Gatenponsen 67.130**
FR **Jeu de Pompe hydraulique et d'Emporte-pièces 67.130**
ES **Juego de Aparato Hidráulico manual y Sacabocados 67.130**
DE **Satz Hydraulische Handpumpe und Blechlocher 67.130**
EN **Set Hydraulic Hand Pump and Hole Punchers 67.130**

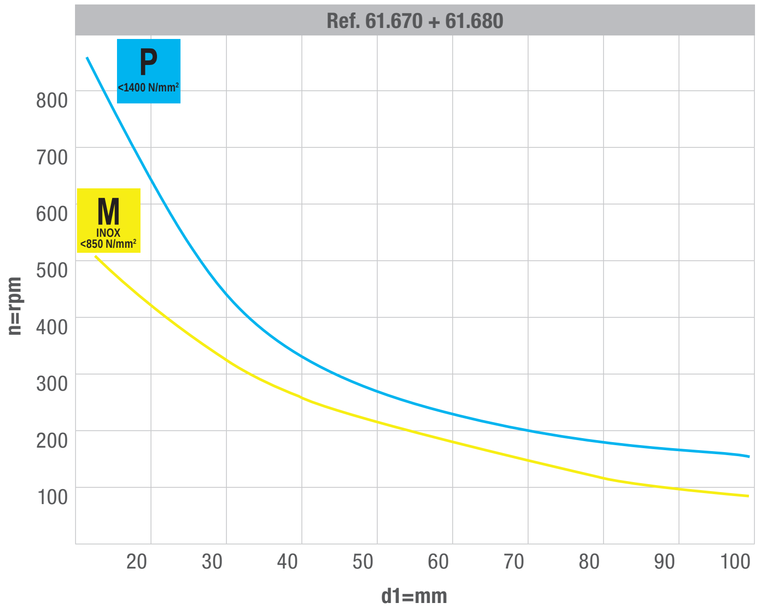
1 2 3 4 5

Ref.	1	2	3	4	5
69.795.1000	PG9, PG11, PG13, PG16, PG21, PG29, PG36, PG42	67.300.1991	67.300.3030	11.130.1150	67.300.5000
69.795.1200	M16, M20, M25, M32, M40	67.300.1991	67.300.3030	11.130.1150	67.300.5000

NL **Aanbevolen toerentallen gatzagen**
FR **Vitesses de rotation recommandées pour scies cloches**
ES **Número de revoluciones recomendados para coronas perforadoras**
DE **Drehzahlempfehlung Lochsägen**
EN **Recommended speed for hole saws**

Ref. 61.105			
	n=rpm		
d1 (mm)	P	M	N
14	620	310	940
16	550	275	825
17	520	260	775
18	480	240	720
19	480	240	690
20	425	210	635
21	410	205	610
22	390	195	585
24	360	180	530
25	350	175	525
27	325	160	480
28	310	155	465
29	300	150	450
30	285	145	425
32	275	140	410
33	260	135	390
34	255	130	380
35	250	125	375
37	235	115	350
38	230	115	345
40	215	110	315
41	210	105	315
43	200	100	295
44	195	95	290
46	185	90	280
48	180	90	270
49	175	85	260
50	170	85	255
51	165	80	250
52	165	80	250
54	160	80	240
57	150	75	225
59	145	70	220
60	140	70	215
61	135	70	210
64	135	65	205
65	135	65	205
67	130	60	195
68	130	60	190
70	125	60	185
73	120	60	180
76	115	55	170
79	110	55	165
83	105	50	155
86	100	50	145
89	95	45	145
90	95	45	140
92	95	45	140
95	90	45	135
98	90	45	135
100	85	40	130
102	85	40	130
105	80	40	120
108	80	40	120
111	75	35	110
114	75	35	105
121	70	35	100
127	65	30	90
133	65	30	90
140	60	30	85
146	55	25	80
152	55	25	80

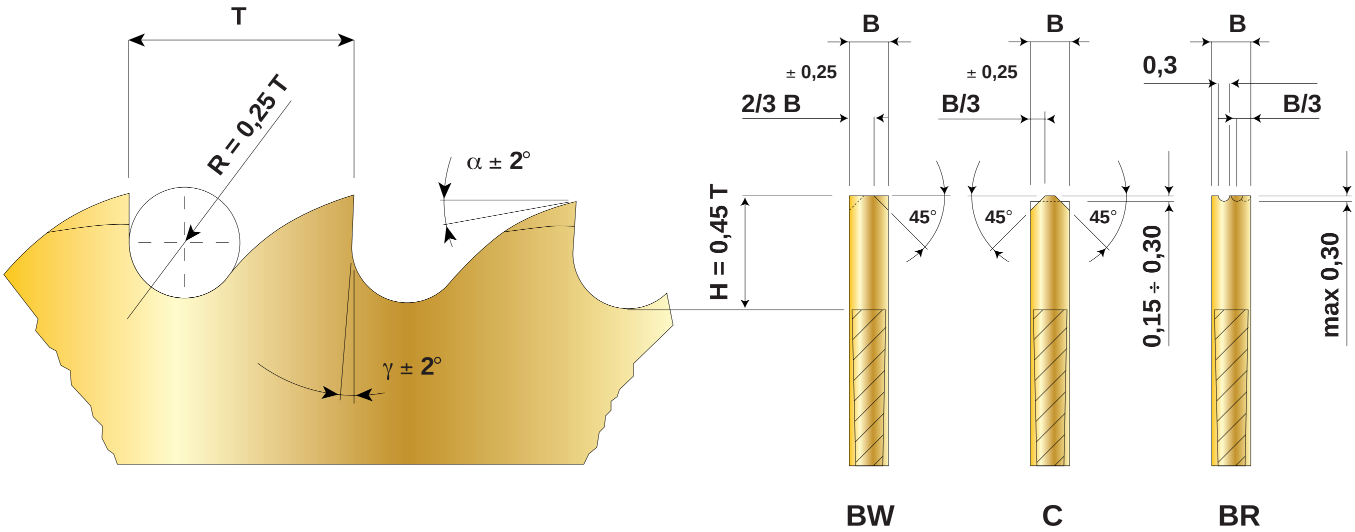




n=rpm
NL: Toerental (omw/min)
FR: Vitesse de rotation (tr/min)
ES: Número de revoluciones (rpm)
DE: Drehzahl (U/min)
EN: Rotation speed (RPM)

NL **Technische informatie afkortzagen 63.4XX**
FR **Information technique fraise-scie à tronçonner 63.4XX**
ES **Información téchnica fresa siera circular tronzadora 63.4XX**
DE **Technische informationen Trennsägeblätter 63.4XX**
EN **Technical information circular saw blades 63.4XX**

NL **Tandvormen**
FR **Formes de dents**
ES **Forme de los dientes**
DE **Zahnform**
EN **Tooth form**



B Zaagbladdikte
Épaisseur de la lame
Espesor de la sierra
Sägeblattstärke
Saw blade thickness

T Tandsteek
Pas de la dent
Paso de diente
Zahnteilung
Tooth pitch

H Tandhoogte
Hauteur de dent
Altura de diente
Zahnhöhe
Tooth height

R Spaankamer diameter
Diamètre du fond de la dent
Diametro de la garganta
Spanraumdurchmesser
Chip space diameter

g Spaanhoek
Angle d'attaque
Angulo de desprendimiento
Spanwinkel
Rake angle

a Vrijloophoek
Angle de dépouille
Angulo de desmoldeo posterior
Rückenfreiwinkel
Back clearance angle

HSS 63.400 63.401	HSS-E 63.420 63.424
g = 18° ± 2°	g = 18° ± 2°
a = 10° ± 2°	a = 10° ± 2°

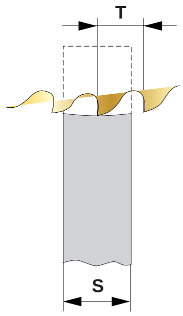
NL **Snijhoeken**
FR **Arête de coupe**
ES **Angulo de corte**
DE **Spanwinkel**
EN **Rake angle**

ISO	GR.	HSS		HSS-E	
		g8	a8	g8	a8
P	11	18°	10°		
	12	18°	10°		
	13	18°	10°	18°	10°
	14			18°	10°
M	21	18°	10°	18°	10°
	22			18°	10°
K	31	10°	6°		
	32	10°	6°		
N	41	25°	10°		
	42				
	51	20°			
	52	15°			
	61				
S	71			18°	10°
	72			18°	10°

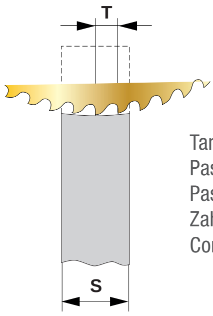
SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6

NL Tandsteek
FR Pas de dent
ES Paso de diente
DE Verzahnung
EN Tooth pitch

NL Massief materiaal
FR Matériaux pleins
ES Materiales macizos
DE Vollmaterial
EN Solid material

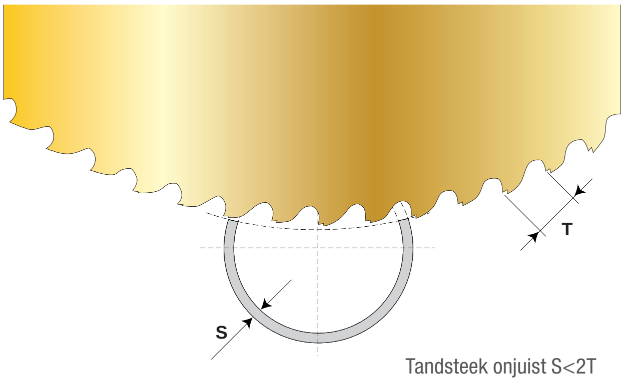


Tandsteek onjuist S<3T
Pas de la dent incorrect S<3T
Paso de diente incorrecto S<3T
Zahnteilung nicht korrekt S<3T
Incorrect tooth pitch

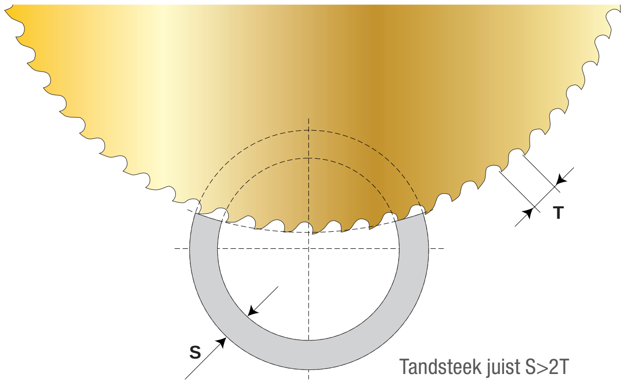


Tandsteek juist S>3T
Pas de la dent correct S>3T
Paso de diente correcto S>3T
Zahnteilung korrekt S>3T
Correct tooth pitch S>3T

NL Buis en profielen
FR Tubes et profilés
ES Tubos y perfiles
DE Rohre und Profile
EN Tubes and profiles



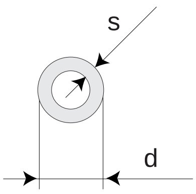
Tandsteek onjuist S<2T
Pas de la dent incorrect S<2T
Paso de diente incorrecto S<2T
Zahnteilung nicht korrekt S<2T
Incorrect tooth pitch S<2T

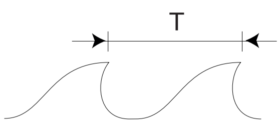


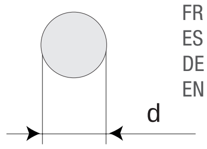
Tandsteek juist S>2T
Pas de la dent correct S>2T
Paso de diente correcto S>2T
Zahnteilung nicht korrekt S>2T
Correct tooth pitch S>2T

d (tube) fz = 0,05 ÷ 0,08 mm/Z					d (solid)	fz < 0,08 mm/Z	fz > 0,08 mm/Z
d	s	T	s	T	d	T	T
≤ 20 mm	≤ 1 mm	3	> 1 mm	4	≤ 20 mm	5,5	
≤ 30 mm	≤ 1,5 mm	5	> 1,5 mm	5,5	≤ 30 mm	7	
≤ 40 mm	≤ 2 mm	6	> 2 mm	7	≤ 40 mm	8	
≤ 50 mm	≤ 4 mm	6	> 4 mm	7	≤ 50 mm	9	
≤ 60 mm	≤ 4 mm	7	> 4 mm	8	≤ 60 mm	10	12
≤ 70 mm	≤ 3 mm	7	> 3 mm	8	≤ 70 mm	11	12
≤ 80 mm	≤ 4 mm	8	> 4 mm	10	≤ 80 mm	12	14
≤ 90 mm	≤ 4 mm	8	> 4 mm	10	≤ 90 mm	12	14
≤ 100 mm	≤ 7 mm	10	> 7 mm	12	≤ 100 mm	14	16
≤ 120 mm	≤ 5 mm	10	> 5 mm	12	≤ 120 mm	14	16
≤ 140 mm	≤ 4 mm	10	> 4 mm	12	≤ 140 mm	16	18

NL Buis en profielen
FR Tubes et profilés
ES Tubos y perfiles
DE Rohre und Profil
EN Tubes and profiles

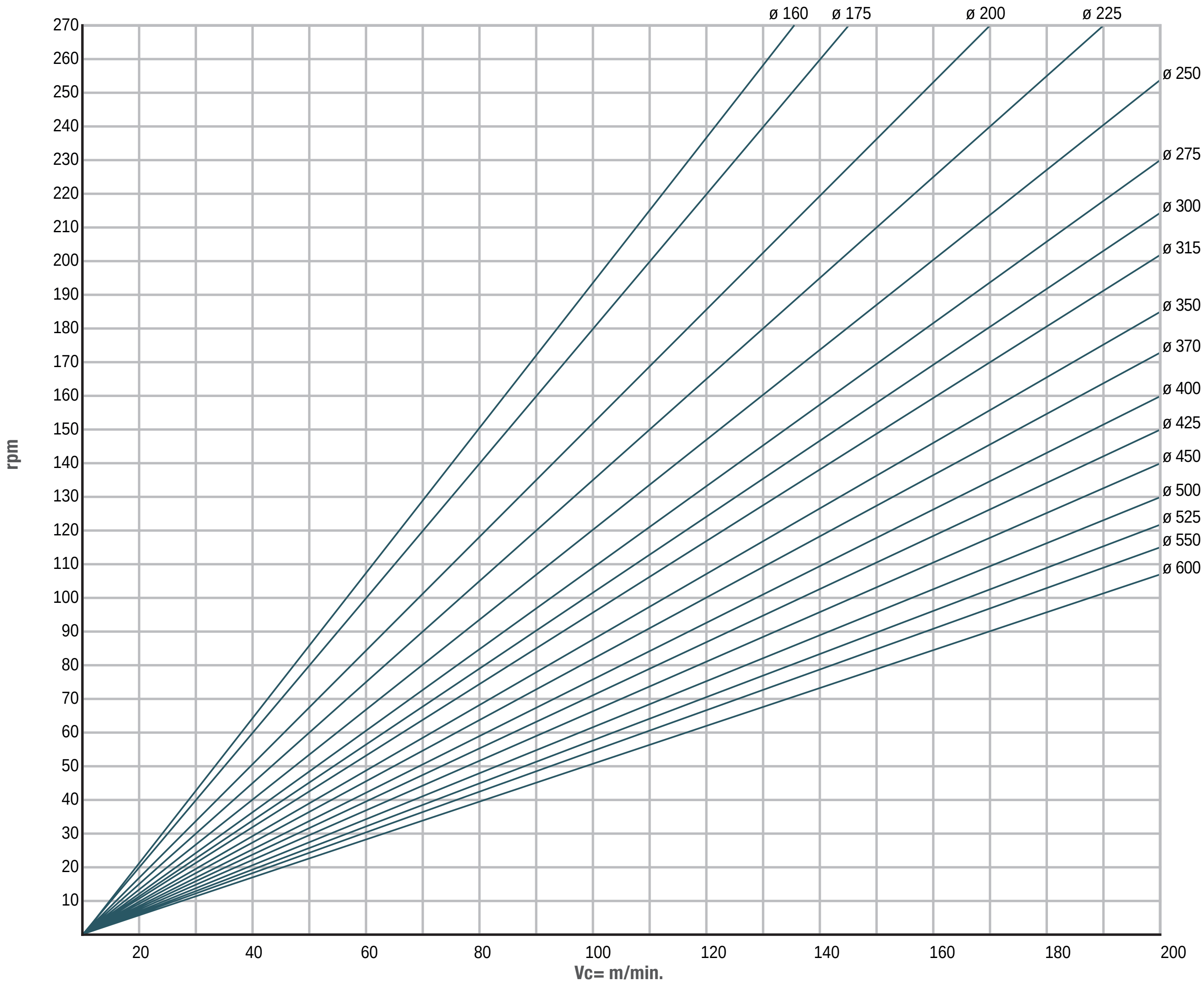




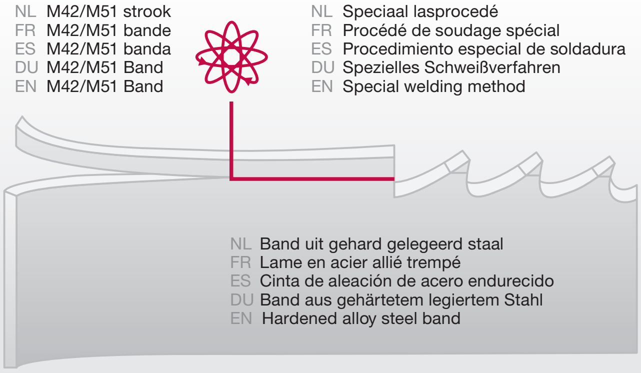


NL Massief materiaal
FR Matériaux pleins
ES Materiales macizos
DE Vollmaterial
EN Solid material

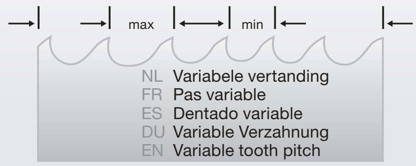
NL **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**
EN **Rotation speed table**



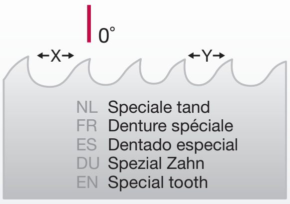
NL Tandvormen
FR Formes des dents
ES Forma de los dientes
DE Sägezahnformen
EN Tooth forms



NL Vibratie-arm zagen
FR Scies basses vibrations
ES Serrar sin vibracion
DU Vibrationsarme Sägen
EN Low vibration sawing



› 66.450



NL **BANDZAAG VOOR:**
› Profielen
› Klein stafmateriaal
GEGEVENS:
› Spaanhoek 0°

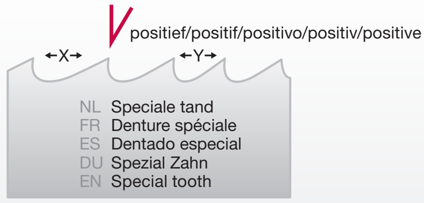
ES **SIERRA DE CINTA PARA:**
› Perfiles
› Barras de acero
DATOS:
› Ángulo de corte 0°

EN **BANDSAW FOR:**
› Profiles
› Small rod material
CHARACTERISTICS:
› Rake angle 0°

FR **SCIE À RUBAN POUR :**
› Profilés
› Matériaux pleins fins
CARACTÉRISTIQUES :
› Angle de coupe 0°

DU **SÄGEBAND FÜR:**
› Profile
› Stangenmaterial dünn
DETAILS:
› Spanwinkel 0°

› 66.460



NL **BANDZAAG VOOR:**
› Massief materiaal
› Dikwandig profiel
GEGEVENS:
› Positieve spaanhoek 10˚

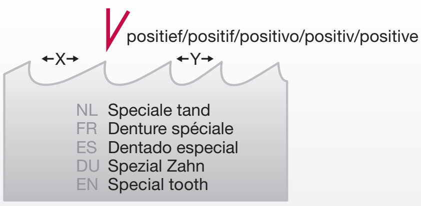
ES **SIERRA DE CINTA PARA:**
› Material macizo
› Perfiles de pared grueso
DATOS:
› Ángulo de corte positivo 10˚

EN **BANDSAW FOR:**
› Solid material
› Thick walled profiles
CHARACTERISTICS:
› 10° positive cutting angle°

FR **SCIE À RUBAN POUR :**
› Matériaux massifs
› Profilés épais
CARACTÉRISTIQUES :
› Angle de coupe positif 10°

DU **SÄGEBAND FÜR:**
› Vollmaterial
› Dickwandige profile
DETAILS:
› 10° positiver Spanwinkel

› 66.580



NL **BANDZAAG VOOR:**
› Massief materiaal
› Dikwandig profiel
GEGEVENS:
› Positieve spaanhoek 10˚

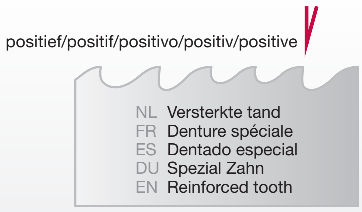
ES **SIERRA DE CINTA PARA:**
› Material macizo
› Perfiles de pared grueso
DATOS:
› Ángulo de corte positivo 10˚

EN **BANDSAW FOR:**
› Solid material
› Thick walled profiles
CHARACTERISTICS:
› 10° positive cutting angle

FR **SCIE À RUBAN POUR :**
› Matériaux massifs
› Profilés épais
CARACTÉRISTIQUES :
› Angle de coupe positif 10°

DU **SÄGEBAND FÜR:**
› Vollmaterial
› Dickwandige profile
DETAILS:
› 10° positiver Spanwinkel

› 66.700



NL **BANDZAAG VOOR:**
› Profielen
› Constructie balkstaal
GEGEVENS:
› Positieve spaanhoek 5°

ES **SIERRA DE CINTA PARA:**
› Perfiles
› Viga de acero
DATOS:
› Ángulo de corte positivo 5˚

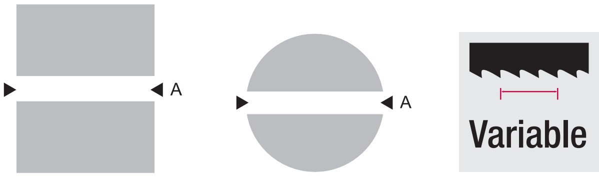
EN **BANDSAW FOR:**
› Profiles
› Steel construction beams
CHARACTERISTICS:
› 5° positive cutting angle

FR **SCIE À RUBAN POUR :**
› Profilés
› Poutrelles Aciers
CARACTÉRISTIQUES :
› Angle de coupe positif 5°

DU **SÄGEBAND FÜR:**
› Profile
› Bauträger Stahl
DETAILS:
› 5° positiver Spanwinkel

NL BANDZAGEN: Aantal tanden per inch
FR SCIES A RUBAN: Nombre de dents par pouce
ES SIERRAS DE SINTA : El Número de dientes por Pulgada
DE SAGEBANDER : Anzahl Zähne pro Zoll
EN BANDSAWS: Number of teeth per inch

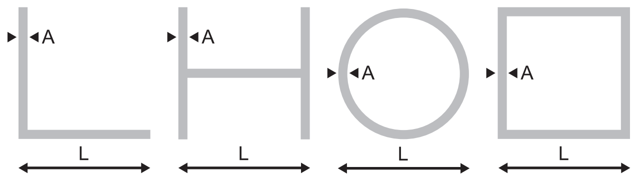
NL Massief materiaal
FR Matériau solide
ES Materiales Macizos
DE Vollmaterial
EN Solid material

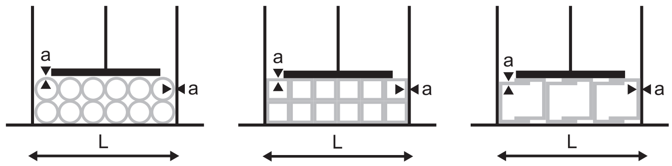


A (mm)	z = .../"	
Width of the cut 'A' in mm	Variable TPI	
0-10	10/14	
10-20	10/14	8/12*
20-30	6/10*	8/12*
30-50	6/10*	5/8*
50-60	4/6	5/8*
60-90	4/6	
90-150	3/4	
150-300	2/3	
300-500	1,4/2	
500-1000	1/1,4	
1000-2000	0,7/1	

66.700
66.580
66.450
66.460

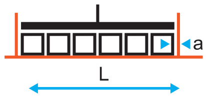
NL Profielen
FR Profilés
ES Perfiles
DE Profilen
EN Profiles





VOORBEELD/EXEMPLE/EJEMPLO/BEISPIEL/EXAMPLE

6 x ▢ 50 x 50 x 5mm



$$A = \frac{\text{a x aantal wanden/nombre des parois/numero des paredes/Anzahl Wande/number of walls}}{2}$$

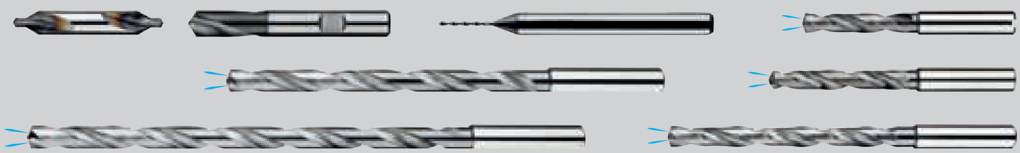
$A = \frac{5 \times 12}{2} = 30$ mm L = 6 x 50 = 300 mm

A mm \ L mm	20	40	60	80	100	120	150	200	300	400	500
2	10/14	10/14	10/14	10/14	10/14	10/14	10/14	10/14	8/12	8/12	6/10
3	10/14	10/14	10/14	10/14	10/14	10/14	8/12	8/12	6/10	6/10	5/8
4	10/14	10/14	10/14	10/14	8/12	8/12	8/12	8/12	5/8	5/8	4/6
5	10/14	10/14	10/14	10/14	8/12	8/12	8/12	6/10	5/8	5/8	4/6
6	10/14	10/14	10/14	8/12	8/12	8/12	8/12	5/8	5/8	4/6	4/6
8	10/14	10/14	8/12	8/12	8/12	6/10	6/10	5/8	4/6	4/6	4/6
10		8/12	6/10	6/10	6/10	5/8	5/8	4/6	4/6	4/6	3/4
12		8/12	6/10	6/10	5/8	5/8	4/6	4/6	4/6	3/4	3/4
15		8/12	6/10	5/8	5/8	4/6	4/6	4/6	3/4	3/4	3/4
20			6/10	5/8	4/6	4/6	4/6	3/4	3/4	3/4	2/3
30				4/6	4/6	4/6	3/4	3/4	3/4	2/3	2/3
50						3/4	3/4	3/4	2/3	2/3	2/3

* 5/8 ≈ 5/7 6/10 ≈ 7/9 8/12 ≈ 8/11

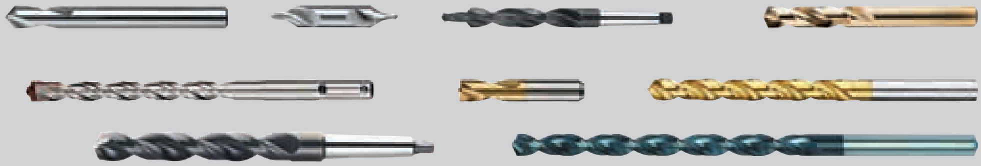
OPSPANNEN/SERRAGE/FIJACION/SPANNEN

NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



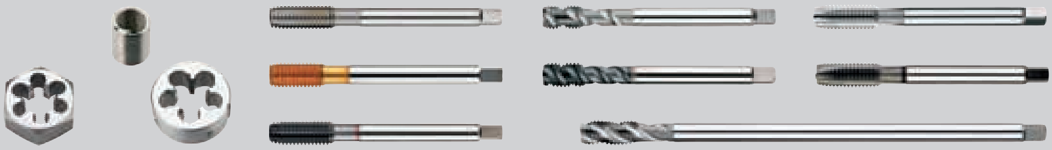
SC 1

NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



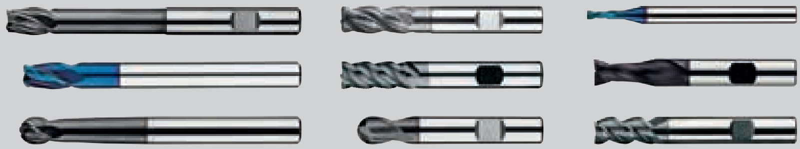
HSS(-E) 1

NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



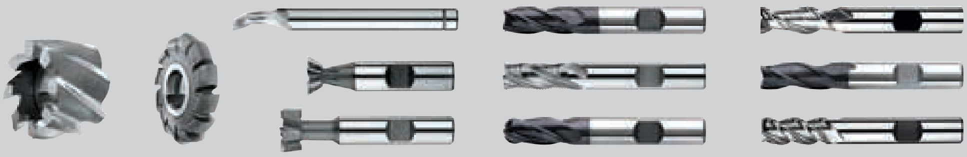
2

NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



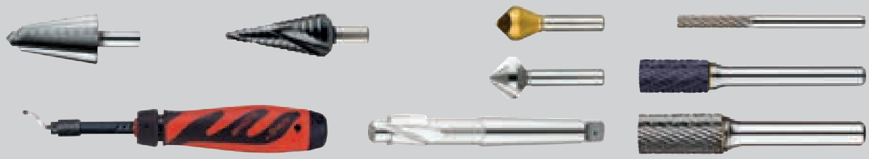
SC 3

NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



HSS-E 3

NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring

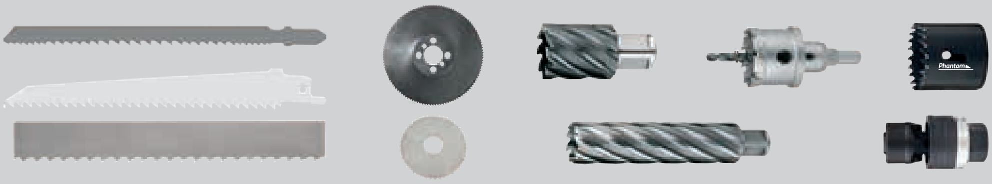


4

NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

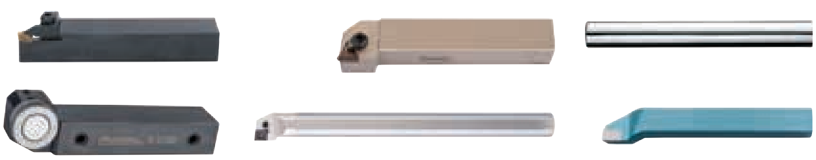
5

NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



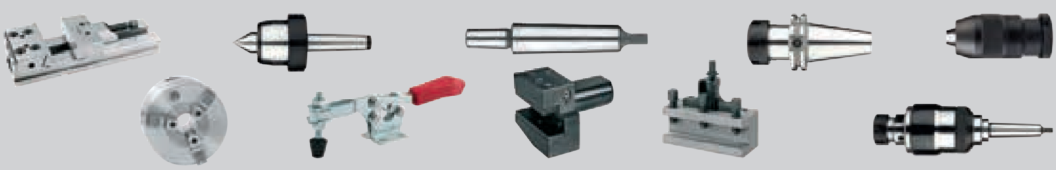
6

NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning

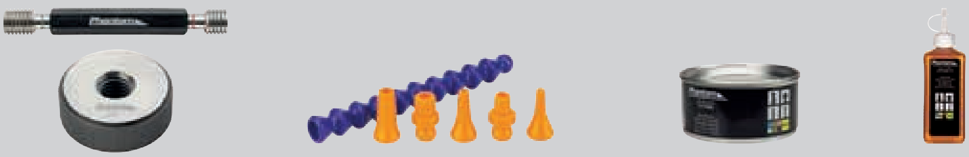


7

NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other



ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalto)	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)
10% Co	HSS-E (10% Cobalt)	HSS-E (10% Cobalt)	HSS-E (10% Cobalto)	HSS-E (10% Cobalt)	HSS-E (10% Cobalt)
MG HM	Micro-Grain volhardmetaal	Carbure micro-grain	Metal duro micrograno	Micro-Grain Voll-hartmetall	Micrograin tung-sten carbide
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden	Carbide Tipped
DIN 4964-A	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard

	NL	FR	ES	DE	EN
	Doorlopende gaten	Trou débouchant	Agujero pasante	Durchgangslöcher	Through holes
	Blinde gaten	Trou borgne	Agujero ciego	Sacklöcher	Blind holes
	Doorlopende gaten, schroefdraad	Trou débouchant, filetage	Agujero pasante, rosca	Durchgangslöcher, Gewinde	Through holes, thread
h8	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser	Tolerance diameter
0,02	Rechtheids-tolerantie	Tolérance de rectitude	Tolerancia de rectitud	Geradheitstoleranz	Straightness tolerance

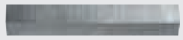
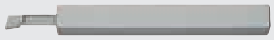
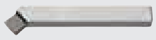
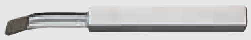
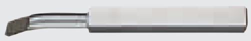
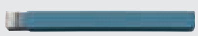
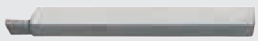
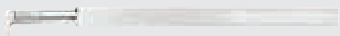
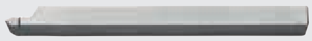
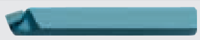
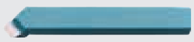
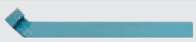
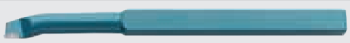
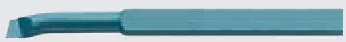
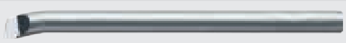
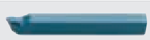
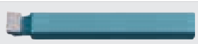
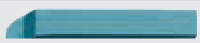
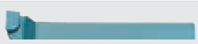
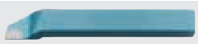
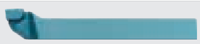
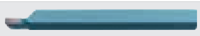
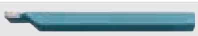
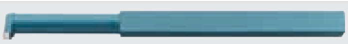
	NL	FR	ES	DE	EN
	Algemeen	**Général**	**General**	**Allgemein**	**General**
▽▽▽	Fijn/nadraaien	Tournage fin et finition	Mecanizado fino y en acabado	Feinzerspanung / Schlichten	Fine machining
▽▽	Midden	Torneage en général	Mecanizado medio	Mittlere Zerspanung	Medium machining
▽	Ruw/voordraaien	Usinage d'ébauche	Mecanizado en desbaste	Grobzerspanung	Rough machining
	Constante snedediepte	Coupe continue	Corte continuo	Glatter Schnitt	Consistent cut
	Wisselende snedediepte	Profondeur de coupe variables	Profundidad de corte variable	Wechselende Schnittiefen	Inconsistent cut
	Onderbroken snedes	Coupe interrompue	Corte interrumpido	Unterbrochener Schnitt	Interrupted cut
	Draaien	**Tournage**	**Tornear**	**Drehen**	**Turning**
a_p (mm)	Snedediepte	Profondeur de coupe	Profundidad de corte	Schnittiefe	Cutting depth
d min	Minimale diameter	Diamètre minimum	Diámetro mínimo	Minimale Durchmesser	Minimum diameter
f_n (mm)	Voeding per omwenteling	Avances par tour	Avances por revolucion	Vorschub pro Umdrehung	Feed
	Threading	**Fileter**	**Roscar**	**Gewindeschneiden**	**Drehen**
	Borgring steken	**Gorges de circlips**	**Tronzar arandelas de retención**	**Sprengringplatte stechen**	**Sprengringplatte stechen**
P (mm)	Spoed (mm)	Pas (mm)	Paso (mm)	Steigung (mm)	Pitch (mm)
P (inch)	Aantal gangen (inch)	Nombre de filets	Número de hilos	Gewindegänge	Threads per inch
x a_p	Aantal snedes	Nombre de fils	Número de cortes	Anzahl der Durchgänge	Number of cuts
m (H13)	Borgringmaat	Largeur de gorges	Tamaño del arandela de retención	Maß der Sicherungsring	Retaining ring size
	Steken	**Tronçonner**	**Tronzar**	**Stechen**	**Cut-off**
	Steekhouder	**Lame à tronçonner**	**Portaplaquite de tronzado**	**Schneidenträger**	**Parting Tool**
t max	Max. steekdiepte	Profondeur max. de tronçonnage	Profundidad de tronzado maxima	Max. Stechtiefe	Max. Cutting depth
d max	Max. steekdiameter	Diamètre max. de tronçonnage	Diametro de tronzado maximo	Max. Stechdurchmesser	Max. Cutting diameter
	Steekplaten	**Plaquette à tronçonner**	**Plaquita para tronzar**	**Stechplatten**	**Cut-off Insert**
a	Steekbreedte a	Largeur de coupe a	Anchura de corta a	Stechbreite a	Slotting width a
a_p max	Maximale snedediepte	Profondeur de coupe max.	Profundidad de corte max.	Maximale Schnittiefe	Max cutting depth
f rad	Voeding radiaal	Avance radial	Avance radial	Vorschub radial	Feed radial
f ax	Voeding axiaal	Avance axial	Avance axial	Vorschub axial	Feed axial
r	Radius	Rayon	Radio	Radius	Radius
	Kartelen	**Moleter**	**Moleteadores**	**Rändeln**	**Knurl**
P	Steek	Passe	Paso	Teilung	Pitch
	Frezen	**Fraisage**	**Fresar**	**Fräsen**	**Milling**
f_z (mm)	Voeding per tand	Avances par dent	Avances por diente	Vorschub pro Zahn	Feed per flute
	Materiaalgroepen	**Groups de matières**	**Grupos de materiales**	**Materialgruppen**	**Materialgroup**
P	Staal	Acier	Acero	Stahl	Steel
H	Geharde staalsoorten	Acier trempé	Acero templado	Gehärtete Stahlsorten	Hardened steel
M	Roestvaststaal	Inox	Acero inoxidable	Rostfreier Stahl	Inox
K	Gietijzer	Fonte	Fundición	Gusseisen	Cast iron
N	Non-Ferro metalen & kunststoffen	Métaux non-ferreux & Plastiques	Metal non-ferrosos & Plásticos	Nichteisen Legierungen & Kunststoffen	Non-Ferro & Reinforced plastics
S	Superlegeringen	Alliages super	Aleaciones súper	Superlegierungen	Nikkel and Cobalt alloys

NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning and Milling tools

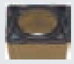
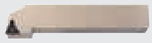
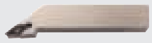
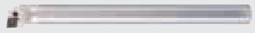
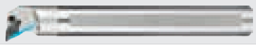
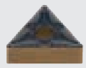
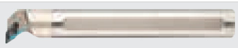
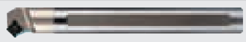
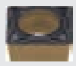
P K H N M S — Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet

P K H N M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet

P= pagina
P= page
P= página
P= Seite

› 71.110	Phantom		P. 7
› 71.130	Phantom		P. 7
› 71.140	Phantom		P. 7
› 71.150	Phantom		P. 8
› 71.160	Phantom		P. 8
› 71.270	Phantom		P. 9
› 71.400	Phantom		P. 9
› 71.410	Phantom		P. 9
› 71.420	Phantom		P. 9
› 71.440	Phantom		P. 9
› 71.470	Phantom		P. 9
› 71.500	Phantom		P. 10
› 71.510	Phantom		P. 10
› 71.520	Phantom		P. 10
› 71.530	Phantom		P. 10
› 71.550	Phantom		P. 11
› 71.570	Phantom		P. 11
› 71.600	Phantom		P. 12
› 71.605	Phantom		P. 12
› 71.610	Phantom		P. 12
› 71.615	Phantom		P. 12
› 71.620	Phantom		P. 13
› 71.640	Phantom		P. 13
› 71.650	Phantom		P. 13
› 71.670	Phantom		P. 13
› 71.680	Phantom		P. 14
› 71.690	Phantom		P. 14
› 71.695	Phantom		P. 14
› 71.700	Phantom		P. 14
› 71.705	Phantom		P. 15
› 71.710	Phantom		P. 15
› 71.715	Phantom		P. 15
› 71.730	Phantom		P. 15

› 71.750	Phantom		P. 16
› 71.760	Phantom		P. 16
› 71.770	Phantom		P. 16
› 71.780	Phantom		P. 17
› 72.121	Phantom	CKJNR/L	P. 18
› 73.105	Phantom	KNUX	P. 19
› 72.156	Phantom	CTGPR/L	P. 20
› 73.171 › 73.175 › 73.180	Phantom	TPMR TPUN TPUX	P. 21
› 72.240 › 72.245	Phantom	PCLNR/L DCLNR/L	P. 22
› 73.200 › 73.201 › 73.203 › 73.204 › 73.206	Phantom	CNMG CNMA	P. 23
› 72.265 › 72.280	Phantom	DDJNR/L PDNNR/L	P. 24
› 73.211 › 73.213	Phantom	DNMG	P. 25
› 72.325	Phantom	DSSNR/L	P. 26
› 73.241 › 73.243	Phantom	SNMG	P. 27
› 72.340	Phantom	PTGNR/L	P. 28
› 73.250 › 73.251 › 73.253	Phantom	TNMG	P. 29
› 72.385	Phantom	DWLNR/L	P. 30
› 73.291 › 73.293	Phantom	WNMG	P. 31
› 72.420	Phantom	SCLCR/L	P. 32
› 73.500 › 73.501 › 73.503 › 73.505	Phantom	CCMT CCGT	P. 33
› 72.450 › 72.455	Phantom	SDJCR/L SDNCN	P. 34
› 73.510 › 73.511 › 73.513 › 73.515	Phantom	DCMT DCGT	P. 35
› 72.461	Phantom	SRDCN	P. 36
› 73.521	Phantom	RCMT	P. 37
› 72.485	Phantom	SSSCR	P. 38

› 73.530 › 73.531 › 73.535	Phantom	SCMT SCGT		P. 39
› 72.500 › 72.505	Phantom	STFCR STGCR/L		P. 40
› 73.540 › 73.541 › 73.543 › 73.545	Phantom	TCMT TCGT		P. 41
› 72.515 › 72.520	Phantom	SVJCR/L SVVCN		P. 42
› 73.591 › 73.595	Phantom	VCMT VCGT		P. 43
› 72.540	Phantom	S-CTFPR/L		P. 44
› 73.171 › 73.175 › 73.180	Phantom	TPMR TPUN TPUX		P. 45
› 72.545 › 72.555	Phantom	S-PCLNR A-DCLNR/L		P. 46
› 73.200 › 73.201 › 73.203 › 73.204 › 73.206	Phantom	CNMG CNMA		P. 47
› 72.557	Phantom	A-DDUNR/L		P. 48
› 73.211 › 73.213	Phantom	DNMG		P. 49
› 72.565	Phantom	A-PTFNR/L		P. 50
› 73.250 › 73.251 › 73.253	Phantom	TNMG		P. 51
› 72.570	Phantom	A-PWLNR/L		P. 52
› 73.291 › 73.293	Phantom	WNMG		P. 53
› 72.585 › 72.590	Phantom	S-SCLCR A-SCLCR/L		P. 54
› 73.500 › 73.501 › 73.503 › 73.505	Phantom	CCMT CCGT		P. 55
› 72.595 › 72.600	Phantom	S-SDUCR A-SDUCR/L		P. 56
› 73.510 › 73.511 › 73.513 › 73.515	Phantom	DCMT DCGT		P. 57
› 72.610	Phantom	A-SSSCR		P. 58
› 73.530 › 73.531 › 73.535	Phantom	SCMT SCGT		P. 59

› 72.615 › 72.620	Phantom	S-STFCR A-STFCR/L	P. 60
› 73.540 › 73.541 › 73.543 › 73.545	Phantom	TCMT TCGT	P. 61
› 72.630	Phantom	A-SVUCR	P. 62
› 73.591 › 73.595	Phantom	VCMT VCGT	P. 63
› 74.101	Phantom	NL-AL	P. 64
› 74.102	Phantom	AL-LH	P. 64
› 74.125	Phantom	NVR-AVR	P. 65
› 74.126	Phantom	NVR-LH	P. 65
› 74.150	Phantom	ER 60° UNI	P. 66
› 74.151	Phantom	EL 60° UNI	P. 66
› 74.155	Phantom	IR 60° UNI	P. 66
› 74.156	Phantom	IL 60° UNI	P. 66
› 74.160	Phantom	ER 55° UNI	P. 66
› 74.165	Phantom	IR 55° UNI	P. 66
› 74.170	Phantom	ER 60° M UNI-INOX	P. 67
› 74.175	Phantom	iR 60° M UNI-INOX	P. 68
› 74.180	Phantom	ER 55° UNI	P. 69
› 74.185	Phantom	IR 55° UNI	P. 69
› 74.190	Phantom	ER 55° BSP-BSW	P. 70
› 74.195	Phantom	IR 55° BSP-BSW	P. 70
› 74.240	Phantom	ER 55° TR	P. 71
› 74.245	Phantom	IR 55° TR	P. 71
› 74.390	Phantom	ER DIN 471	P. 72
› 74.395	Phantom	IR DIN 472	P. 72
› 74.410	Phantom	FX	P. 73
› 74.480	Phantom	FX	P. 73
› 74.500	Phantom	PTNZ	P. 74
› 74.510	Phantom	EXN	P. 74
› 74.517	Phantom	EXN	P. 74

› 74.582	Phantom	EXN, EXR, EXL	P. 75
› 74.599	Phantom	RXN	P. 75
› 74.522	Phantom	EJN	P. 76
› 74.596	Phantom	DXN	P. 76
› 74.540	Phantom	EJN	P. 76
› 74.560	Phantom	EJN	P. 76
› 75.100	Phantom	M1	P. 77
› 75.103	Phantom	M2	P. 77
› 75.106	Phantom	M3	P. 77
› 75.109	Phantom	M6	P. 78
› 75.115	Phantom	M7	P. 78
› 75.121	Phantom	MCNCS	P. 78
› 75.125	Phantom	MCNC	P. 79
› 75.129	Phantom	MFCNCS	P. 79
› 75.133	Phantom	MFCNC	P. 80
› 75.158	Phantom	MFCNC 16x16	P. 81
› 75.174	Phantom	M1, M2, M3, M6, M7	P. 81
› 75.182	Phantom	MFCNCS, MFCNC 20x25 - 25x25	P. 81
› 75.197	Phantom	MCNCS, MCNC	P. 82
› 75.600	Phantom		P. 83
› 75.620	Phantom	NEW	P. 84
› 75.650	Phantom		P. 84
› 75.680	Phantom		P. 85
› 75.695	Phantom		P. 85
› 75.697	Phantom		P. 85
› 75.698	Phantom		P. 85
› 76.100	Phantom	45° SE 1204	P. 86
› 76.615	Phantom	SE 1204	P. 86
› 76.125	Phantom	45° SN 1205	P. 87
› 76.500	Phantom	SN 1205	P. 87
› 76.135	Phantom	90° XN 0806	P. 88
› 76.520	Phantom	XN 0806	P. 88
› 76.145	Phantom	90° AP 1003	P. 89
› 76.146	Phantom	90° AP 1003	P. 89

› 76.365	Phantom	APKT, APHT 1003	P. 89
› 76.155	Phantom	90° AP 1604	P. 90
› 76.156	Phantom	90° AP 1604	P. 90
› 76.366	Phantom	APKT, APHT 1604	P. 90
› 79.510	Phantom	KM1-M7	P. 91
› 79.613	Phantom	XNEX 0806	P. 91

› 71.110 *Phantom*

NL HSS-E 5% Toolbit geharde en geslepen uitvoering, rechthoekig
FR Barreau HSS-E 5% trempé et rectifié, rectangulaire
ES Cuchilla HSS-E 5% versión templada y rectificada, rectangular
DE HSS-E 5% Drehlinge gehärtete und geschliffene Ausführung, rechteckig
EN HSS-E 5% Toolbit hardened and ground, rectangular

HSS-E | 5% Co | DIN 4964-D | h13

Ref.	h1	b1	l1
71.110.0625	6	4	160
71.110.0825	8	4	160
71.110.0845	8	6	160
71.110.1023	10	4	150
71.110.1033	10	5	150
71.110.1041	10	6	100
71.110.1043	10	6	150
71.110.1055	10	8	160
71.110.1213	12	3	150
71.110.1223	12	4	150
71.110.1233	12	5	150
71.110.1243	12	6	150
71.110.1251	12	8	100
71.110.1253	12	8	150
71.110.1263	12	10	150
71.110.1441	14	6	100
71.110.1465	14	10	160
71.110.1625	16	4	160
71.110.1643	16	6	150
71.110.1653	16	8	150
71.110.1663	16	10	150
71.110.1825	18	4	160
71.110.1845	18	6	160
71.110.2057	20	8	200
71.110.2067	20	10	200
71.110.2073	20	12	150
71.110.2085	20	16	160
71.110.2545	25	6	160
71.110.2575	25	12	160
71.110.2585	25	16	160
71.110.2595	25	20	160
71.110.3047	30	6	200
71.110.3077	30	12	200
71.110.3097	30	20	200
71.110.3257	32	8	200
71.110.3287	32	16	200

› 71.130 *Phantom*

NL HSS-E 5% Toolbit geharde en geslepen uitvoering, vierkant
FR Barreau HSS-E 5% trempé et rectifié, carré
ES Cuchilla HSS-E 5% versión templada y rectificada, cuadrangular
DE HSS-E 5% Drehlinge gehärtete und geschliffene Ausführung, quadratisch
EN HSS-E 5% Toolbit hardened and ground, square

HSS-E | 5% Co | DIN 4964-B | h13

Ref.	h1	b1	l1
71.130.0410	4	4	100
71.130.0415	4	4	150
71.130.0420	4	4	200
71.130.0510	5	5	100
71.130.0610	6	6	100
71.130.0615	6	6	150
71.130.0620	6	6	200
71.130.0810	8	8	100
71.130.0815	8	8	150
71.130.0820	8	8	200
71.130.1010	10	10	100
71.130.1015	10	10	150
71.130.1020	10	10	200
71.130.1210	12	12	100
71.130.1215	12	12	150
71.130.1220	12	12	200
71.130.1415	14	14	150
71.130.1420	14	14	200
71.130.1610	16	16	100
71.130.1615	16	16	150
71.130.1620	16	16	200
71.130.1815	18	18	150
71.130.1820	18	18	200
71.130.2010	20	20	100
71.130.2015	20	20	150
71.130.2020	20	20	200
71.130.2515	25	25	150
71.130.2520	25	25	200
71.130.3020	30	30	200
71.130.3220	32	32	200

› 71.140 *Phantom*

NL HSS-E 10% Toolbit geharde en geslepen uitvoering, vierkant
FR Barreau HSS-E 10% trempé et rectifié, carré
ES Cuchilla HSS-E 10% versión templada y rectificada, cuadrangular
DE HSS-E 10% Drehlinge gehärtete und geschliffene Ausführung, quadratisch
EN HSS-E 10% Toolbit hardened and ground, square

10% Co | DIN 4964-B | h13

Ref.	h1	b1	l1
71.140.0410	4	4	100
71.140.0415	4	4	150
71.140.0420	4	4	200
71.140.0510	5	5	100
71.140.0515	5	5	150
71.140.0520	5	5	200
71.140.0610	6	6	100
71.140.0615	6	6	150
71.140.0620	6	6	200
71.140.0810	8	8	100
71.140.0815	8	8	150
71.140.0820	8	8	200
71.140.1010	10	10	100
71.140.1015	10	10	150
71.140.1020	10	10	200
71.140.1210	12	12	100
71.140.1215	12	12	150
71.140.1220	12	12	200
71.140.1415	14	14	150
71.140.1420	14	14	200
71.140.1610	16	16	100
71.140.1615	16	16	150
71.140.1620	16	16	200
71.140.1815	18	18	150
71.140.1820	18	18	200
71.140.2015	20	20	150
71.140.2020	20	20	200
71.140.2520	25	25	200

› 71.150 Phantom

NL HSS-E 5% Toolbit geharde en geslepen uitvoering, rond
FR Barreau HSS-E 5% trempé et rectifié, rond
ES Cuchilla HSS-E 5% versión templada y rectificada, redonda
DE HSS-E 5% Drehlinge gehärtete und geschliffene Ausführung, rund
EN HSS-E 5% Toolbit hardened and ground, round

HSS-E | 5% Co | DIN 4964-A | h8

Ref.	d1	l1
71.150.0410	4	100
71.150.0415	4	150
71.150.0420	4	200
71.150.0510	5	100
71.150.0515	5	150
71.150.0520	5	200
71.150.0610	6	100

Ref.	d1	l1
71.150.0615	6	150
71.150.0620	6	200
71.150.0810	8	100
71.150.0815	8	150
71.150.0820	8	200
71.150.1010	10	100
71.150.1015	10	150

Ref.	d1	l1
71.150.1020	10	200
71.150.1210	12	100
71.150.1215	12	150
71.150.1220	12	200
71.150.1415	14	150
71.150.1420	14	200
71.150.1615	16	150

Ref.	d1	l1
71.150.1620	16	200
71.150.1815	18	150
71.150.1820	18	200
71.150.2020	20	200
71.150.2520	25	200

› 71.160 Phantom

NL HSS-E 10% Toolbit geharde en geslepen uitvoering, rond
FR Barreau HSS-E 10% trempé et rectifié, rond
ES Cuchilla HSS-E 10% versión templada y rectificada, redonda
DE HSS-E 10% Drehlinge gehärtete und geschliffene Ausführung, rund
EN HSS-E 10% Toolbit hardened and ground, round

10% Co | DIN 4964-A | h8

Ref.	d1	l1
71.160.0310	3	100
71.160.0410	4	100
71.160.0415	4	150
71.160.0420	4	200
71.160.0510	5	100
71.160.0515	5	150
71.160.0520	5	200

Ref.	d1	l1
71.160.0610	6	100
71.160.0615	6	150
71.160.0620	6	200
71.160.0810	8	100
71.160.0815	8	150
71.160.0820	8	200
71.160.1010	10	100

Ref.	d1	l1
71.160.1015	10	150
71.160.1020	10	200
71.160.1210	12	100
71.160.1215	12	150
71.160.1220	12	200
71.160.1415	14	150
71.160.1420	14	200

Ref.	d1	l1
71.160.1615	16	150
71.160.1620	16	200
71.160.1815	18	150
71.160.1820	18	200
71.160.2020	20	200
71.160.2520	25	200

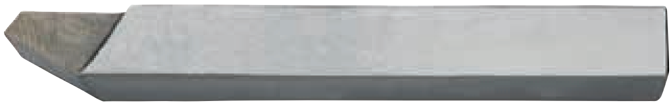
› 71.270 Phantom

NL HSS-E 10% Steekbeitel spiebaan
FR Outil à saigner HSS-E 10% rainure de clavette
ES Herramienta de tronzar HSS-E 10% chavetero
DE HSS-E 10% Stechdrehmeissel keilnut
EN HSS-E 10% Parting Off Tool keyway

10% Co | NORM

Ref.	h1	b1	l1	a	t max
71.270.2005	20	20	210	5	48
71.270.2006	20	20	210	6	60
71.270.2008	20	20	210	8	80
71.270.2507	25	25	250	7	80
71.270.2508	25	25	250	8	80

› 71.400 Phantom



NL HSS-E 10% Rechte Ruwbeitel rechts
FR Outil à charioter droit HSS-E 10% à droite
ES Herramienta de torneado recto HSS-E 10% derecha
DE HSS-E 10% Gerader Schruppdrehmeissel rechts
EN HSS-E 10% Bar Turning Tool right hand

10% Co | DIN 4951

Ref.	h1	b1	l1
71.400.1010	10	10	100
71.400.1616	16	16	140
71.400.2020	20	20	160
71.400.2525	25	25	200
71.400.3232	32	32	250

› 71.410 Phantom

NL HSS-E 10% Gebogen Ruwbeitel rechts
FR Outil à charioter courbé HSS-E 10% à droite
ES Herramienta de torneado curva HSS-E 10% derecha
DE HSS-E 10% Gebogene Schruppdrehmeissel rechts
EN HSS-E 10% Cranked Turning and Facing Tool right hand

10% Co | DIN 4952

Ref.	h1	b1	l1
71.410.0808	8	8	100
71.410.1010	10	10	100
71.410.1212	12	12	110
71.410.2020	20	20	160

› 71.420 Phantom

NL HSS-E 10% Boorbeitel rechts, voor doorlopende gaten
FR Outil à aléser HSS-E 10% à droite, pour trous débouchants
ES Herramienta de torneado interior HSS-E 10% derecha, para agujeros pasantes
DE HSS-E 10% Bohrdrehmeissel rechts, für Durchgangslöcher
EN HSS-E 10% Inside Corner Tool right hand, for through holes

10% Co | DIN 4953

Ref.	h1	b1	l1	d1 min
71.420.0606	6	6	125	11
71.420.0808	8	8	140	14
71.420.1010	10	10	160	18
71.420.1212	12	12	180	21
71.420.1616	16	16	180	27
71.420.2020	20	20	220	34
71.420.2525	25	25	250	43

› 71.440 Phantom

NL HSS-E 10% Boorbeitel rechts, voor blinde gaten
FR Outil à aléser HSS-E 10% à droite, pour trous borgnes
ES Herramienta de torneado interior HSS-E 10% derecha, para agujeros ciegos
DE HSS-E 10% Bohrdrehmeissel rechts, für Sacklöcher
EN HSS-E 10% Inside Corner Tool right hand, for blind holes

10% Co | DIN 4954

Ref.	h1	b1	l1	d1 min
71.440.0606	6	6	125	11
71.440.0808	8	8	140	14
71.440.1010	10	10	160	18
71.440.1212	12	12	180	21
71.440.2525	25	25	250	43
71.440.3232	32	32	315	52

› 71.500 *Phantom*

NL **HSS-E 10% Mesbeitel rechts**
FR **Outil couteau HSS-E 10% à droite**
ES **Herramienta para corte y acabado HSS-E 10% derecha**
DE **HSS-E 10% Seitendrehmeissel rechts**
EN **HSS-E 10% Cranked Knife Tool right hand**

10% Co | DIN 4960

Ref.	h1	b1	l1
71.500.2020	20	20	160

› 71.510 *Phantom*

NL **HSS-E 10% Vlakbeitel recht**
FR **Outil pelle HSS-E 10% droit**
ES **Herramienta de torneado para acabados HSS-E 10% recto**
DE **HSS-E 10% Flachdrehmeissel gerade**
EN **HSS-E 10% Recessing Tool straight**

10% Co | DIN 4956

Ref.	h1	b1	l1
71.510.2516	25	16	180
71.510.3220	32	20	220

› 71.520 *Phantom*

NL **HSS-E 10% Steekbeitel rechts**
FR **Outil à saigner HSS-E 10% à droite**
ES **Herramienta de tronzar HSS-E 10% derecha**
DE **HSS-E 10% Stechdrehmeissel rechts**
EN **HSS-E 10% Parting Off Tool right hand**

10% Co | DIN 4961

Ref.	h1	b1	l1	a	t max
71.520.1010	10	10	100	3	10
71.520.1212	12	12	110	3	11
71.520.1616	16	16	140	3	15
71.520.2020	20	20	160	4	16
71.520.3220	32	20	220	6	26

› 71.530 *Phantom*

NL **HSS-E 10% Binnensteekbeitel rechts**
FR **Outil à chambrer HSS-E 10% à droite**
ES **Herramienta para tronzar interior HSS-E 10% derecha**
DE **HSS-E 10% Innenhakenstechmeissel rechts**
EN **HSS-E 10% Internal Grooving Tool right hand**

10% Co | DIN 4963

Ref.	h1	b1	l1	d1 min	a	t max
71.530.2525	25	25	250	53	5	14
71.530.3232	32	32	315	68	6	16

› 71.550 Phantom

NL HSS-E 10% Buitendraadsnijbeitel rechts, 60°
FR Outil à fileter extérieur HSS-E 10% à droite, 60°
ES Herramienta para roscado exterior HSS-E 10% derecha, 60°
DE HSS-E 10% Aussengewinde-Drehmeißel rechts, 60°
EN HSS-E 10% External Threading Tool right hand, 60°

10% Co | NORM

Ref.	h1	b1	l1
71.550.1010	10	10	100
71.550.1212	12	12	125
71.550.1610	16	10	150
71.550.2012	20	12	175
71.550.3220	32	20	250

› 71.570 Phantom

NL HSS-E 10% Binnendraadsnijbeitel rechts, 60°
FR Outil à fileter intérieur HSS-E 10% à droite, 60°
ES Herramienta para roscado interior HSS-E 10% derecha, 60°
DE HSS-E 10% Innengewinde-Drehmeißel rechts, 60°
EN HSS-E 10% Internal Threading Tool right hand, 60°

10% Co | NORM

Ref.	h1	b1	l1	d1 min
71.570.0808	8	8	140	16
71.570.1010	10	10	160	20
71.570.1212	12	12	180	24
71.570.2525	25	25	300	44

› 71.600 Phantom

NL HM-tip Rechte Ruwbeitel rechts
FR Outil à charioter droit à plaquette carbure à droite
ES Herramienta de torneado recto con punta de carburo derecha
DE Hartmetallbestückt Gerader Schruppdrehmeissel rechts
EN Carbide Tipped Bar Turning Tool right hand

HM-TIP | DIN 4971 | ISO 1

Ref.	h1	b1	l1	HM
71.600.1030	10	10	90	P30
71.600.1220	12	12	100	P20
71.600.1230	12	12	100	P30
71.600.1630	16	16	110	P30
71.600.1690	16	16	110	K10
71.600.2030	20	20	125	P30
71.600.2530	25	25	140	P30
71.600.2590	25	25	140	K10
71.600.3230	32	32	170	P30
71.600.3290	32	32	170	K10

› 71.605 Phantom

NL HM-tip Rechte Ruwbeitel links
FR Outil à charioter droit à plaquette carbure à gauche
ES Herramienta de torneado recto con punta de carburo izquierda
DE Hartmetallbestückt Gerader Schruppdrehmeissel links
EN Carbide Tipped Bar Turning Tool left hand

HM-TIP | DIN 4971 | ISO 1

Ref.	h1	b1	l1	HM
71.605.1030	10	10	90	P30
71.605.1090	10	10	90	K10
71.605.1230	12	12	100	P30
71.605.1290	12	12	100	K10
71.605.1630	16	16	110	P30
71.605.1690	16	16	110	K10
71.605.2020	20	20	125	P20
71.605.2030	20	20	125	P30
71.605.2090	20	20	125	K10
71.605.2530	25	25	140	P30
71.605.3220	32	32	170	P20
71.605.3290	32	32	170	K10

› 71.610 Phantom

NL HM-tip Gebogen Ruwbeitel rechts
FR Outil à charioter courbé à plaquette carbure à droite
ES Herramienta de torneado curva con punta de carburo derecha
DE Hartmetallbestückt Gebogene Schruppdrehmeissel rechts
EN Carbide Tipped Cranked Turning and Facing Tool right hand

HM-TIP | DIN 4972 | ISO 2

Ref.	h1	b1	l1	HM
71.610.1030	10	10	90	P30
71.610.1090	10	10	90	K10
71.610.1230	12	12	100	P30
71.610.1630	16	16	110	P30
71.610.2030	20	20	125	P30
71.610.2520	25	25	140	P20
71.610.2530	25	25	140	P30
71.610.3220	32	32	170	P20
71.610.3230	32	32	170	P30
71.610.3290	32	32	170	K10

› 71.615 Phantom

NL HM-tip Gebogen Ruwbeitel links
FR Outil à charioter courbé à plaquette carbure à gauche
ES Herramienta de torneado curva con punta de carburo izquierda
DE Hartmetallbestückt Gebogene Schruppdrehmeissel links
EN Carbide Tipped Cranked Turning and Facing Tool left hand

HM-TIP | DIN 4972 | ISO 2

Ref.	h1	b1	l1	HM
71.615.1030	10	10	90	P30
71.615.1090	10	10	90	K10
71.615.1220	12	12	100	P20
71.615.1230	12	12	100	P30
71.615.1290	12	12	100	K10
71.615.1630	16	16	110	P30
71.615.2030	20	20	125	P30
71.615.2090	20	20	125	K10
71.615.2530	25	25	140	P30
71.615.2590	25	25	140	K10
71.615.3230	32	32	170	P30
71.615.3290	32	32	170	K10

› 71.620 Phantom

NL HM-tip Boorbeitel rechts, voor doorlopende gaten
FR Outil à aléser à plaquette carbure à droite, pour trous débouchants
ES Herramienta de torneado interior con punta de carburo derecha, para agujeros pasantes
DE Hartmetallbestückt Bohrdrehmeissel rechts, für Durchgangslöcher
EN Carbide Tipped Inside Corner Tool right hand, for through holes

HM-TIP | DIN 4973 | ISO 8

Ref.	h1	b1	l1	d1 min	HM
71.620.0820	8	8	125	14	P20
71.620.0830	8	8	125	14	P30
71.620.1020	10	10	150	18	P20
71.620.1030	10	10	150	18	P30
71.620.1220	12	12	180	21	P20
71.620.1230	12	12	180	21	P30
71.620.1620	16	16	210	27	P20
71.620.1630	16	16	210	27	P30
71.620.2020	20	20	250	34	P20
71.620.2030	20	20	250	34	P30
71.620.2090	20	20	250	34	K10
71.620.2530	25	25	300	43	P30
71.620.3220	32	32	355	52	P20
71.620.3230	32	32	355	52	P30

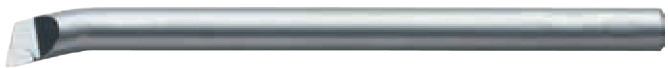
› 71.640 Phantom

NL HM-tip Boorbeitel rechts, voor doorlopende en blinde gaten
FR Outil à aléser à plaquette carbure à droite, pour trous débouchants et borgnes
ES Herramienta de torneado interior con punta de carburo derecha, para agujeros pasantes y ciegos
DE Hartmetallbestückt Bohrdrehmeissel rechts, für Durchgangslöcher und Sacklöcher
EN Carbide Tipped Inside Corner Tool right hand, for through and blind holes

HM-TIP | DIN 4974 | ISO 9

Ref.	h1	b1	l1	d1 min	HM
71.640.0830	8	8	125	14	P30
71.640.1030	10	10	150	18	P30
71.640.1220	12	12	180	21	P20
71.640.1230	12	12	180	21	P30
71.640.1630	16	16	210	27	P30
71.640.2020	20	20	250	34	P20
71.640.2030	20	20	250	34	P30
71.640.2530	25	25	300	43	P30
71.640.2590	25	25	300	43	K10
71.640.3220	32	32	355	52	P20
71.640.3230	32	32	355	52	P30
71.640.3290	32	32	355	52	K10

› 71.650 Phantom



NL HM-tip Boorbeitel rechts, voor doorlopende en blinde gaten, met cil. schacht
FR Outil à aléser à plaquette carbure à droite, pour trous débouchants et borgnes, avec queue cylindrique
ES Herramienta de torneado interior con punta de carburo derecha, para agujeros pasantes y ciegos, con mango cilíndrico
DE Hartmetallbestückt Bohrdrehmeissel rechts, für Durchgangslöcher und Sacklöcher, Zylinderschaft
EN Carbide Tipped Inside Corner Tool right hand, for through and blind holes, with straight shank

HM-TIP | DIN 4974 | ISO 9

Ref.	h1	l1	d1 min	HM
71.650.0830	8	125	14	P30
71.650.0890	8	125	14	K10
71.650.1030	10	150	18	P30
71.650.1090	10	150	18	K10
71.650.1230	12	180	21	P30
71.650.1290	12	180	21	K10
71.650.1630	16	210	27	P30
71.650.1690	16	210	27	K10
71.650.2030	20	250	34	P30
71.650.2530	25	300	43	P30
71.650.2590	25	300	43	K10
71.650.3220	32	360	50	P20

› 71.670 Phantom

NL HM-tip Puntbeitel 80°
FR Outil à retoucher à plaquette carbure 80°
ES Herramienta de cilindrar y afinar con punta de carburo 80°
DE Hartmetallbestückt Spitzdrehmeissel 80°
EN Carbide Tipped Finishing Tool, straight 80°

HM-TIP | DIN 4975 | ISO 10

Ref.	h1	b1	l1	HM
71.670.1620	16	10	110	P20
71.670.1630	16	10	110	P30
71.670.2020	20	12	125	P20
71.670.2030	20	12	125	P30
71.670.2530	25	16	140	P30
71.670.3230	32	20	170	P30

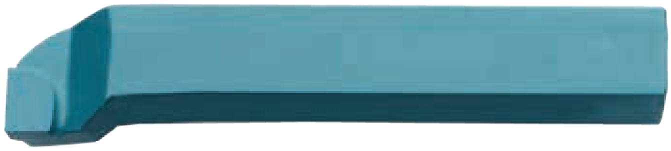
› 71.680 Phantom

NL HM-tip Vlakbeitel recht
FR Outil pelle à plaquette carbure droit
ES Herramienta de torneado para acabados con punta de carburo recto
DE Hartmetallbestückt Flachdrehmeissel gerade
EN Carbide Tipped Recessing Tool straight

HM-TIP | DIN 4976 | ISO 4

Ref.	h1	b1	l1	HM
71.680.1030	10	10	90	P30
71.680.1220	12	12	100	P20
71.680.1230	12	12	100	P30
71.680.1290	12	12	100	K10
71.680.1630	16	16	110	P30
71.680.2030	20	20	125	P30
71.680.2530	25	25	140	P30
71.680.2590	25	25	140	K10

› 71.690 Phantom



NL HM-tip Gebogen Vlakbeitel rechts
FR Outil pelle courbé à plaquette carbure à droite
ES Herramienta de torneado curva para acabados con punta de carburo derecha
DE Hartmetallbestückt Gebogene Flachdrehmeissel rechts
EN Carbide Tipped Cranked Facing Tool right hand

HM-TIP | DIN 4977 | ISO 5

Ref.	h1	b1	l1	HM
71.690.1630	16	16	110	P30
71.690.2030	20	20	125	P30
71.690.2530	25	25	140	P30
71.690.2590	25	25	140	K10
71.690.3220	32	32	170	P20
71.690.3230	32	32	170	P30

› 71.695 Phantom

NL HM-tip Gebogen Vlakbeitel links
FR Outil pelle courbé à plaquette carbure à gauche
ES Herramienta de torneado curva para acabados con punta de carburo izquierda
DE Hartmetallbestückt Gebogene Flachdrehmeissel links
EN Carbide Tipped Cranked Facing Tool left hand

HM-TIP | DIN 4977 | ISO 5

Ref.	h1	b1	l1	HM
71.695.1630	16	16	110	P30
71.695.1690	16	16	110	K10
71.695.2030	20	20	125	P30
71.695.2090	20	20	125	K10
71.695.2520	25	25	140	P20
71.695.3220	32	32	170	P20
71.695.3230	32	32	170	P30

› 71.700 Phantom

NL HM-tip Mesbeitel rechts
FR Outil couteau à plaquette carbure à droite
ES Herramienta para corte y acabado con punta de carburo derecha
DE Hartmetallbestückt Seitendrehmeissel rechts
EN Carbide Tipped Cranked Knife Tool right hand

HM-TIP | DIN 4980 | ISO 6

Ref.	h1	b1	l1	HM
71.700.1020	10	10	90	P20
71.700.1030	10	10	90	P30
71.700.1230	12	12	100	P30
71.700.1630	16	16	110	P30
71.700.1690	16	16	110	K10
71.700.2030	20	20	125	P30
71.700.2530	25	25	140	P30
71.700.3220	32	32	170	P20
71.700.3230	32	32	170	P30

› 71.705 Phantom

NL HM-tip Mesbeitel links
FR Outil couteau à plaquette carbure à gauche
ES Herramienta para corte y acabado con punta de carburo izquierda
DE Hartmetallbestückt Seitendrehmeissel links
EN Carbide Tipped Cranked Knife Tool left hand

HM-TIP | DIN 4980 | ISO 6

Ref.	h1	b1	l1	HM
71.705.1020	10	10	90	P20
71.705.1030	10	10	90	P30
71.705.1230	12	12	100	P30
71.705.1290	12	12	100	K10
71.705.1630	16	16	110	P30
71.705.2020	20	20	125	P20
71.705.2030	20	20	125	P30
71.705.2090	20	20	125	K10
71.705.2520	25	25	140	P20
71.705.2530	25	25	140	P30
71.705.3220	32	32	170	P20
71.705.3230	32	32	170	P30

› 71.710 Phantom

NL HM-tip Steekbeitel rechts
FR Outil à saigner à plaquette carbure à droite
ES Herramienta de tronzar con punta de carburo derecha
DE Hartmetallbestückt Stechdrehmeissel rechts
EN Carbide Tipped Parting Off Tool right hand

HM-TIP | DIN 4981 | ISO 7

Ref.	h1	b1	l1	a	t max	HM
71.710.1230	12	8	100	3	12	P30
71.710.1630	16	10	110	4	14	P30
71.710.2030	20	12	125	5	18	P30
71.710.2530	25	16	140	6	20	P30
71.710.3230	32	20	170	8	24	P30
71.710.3290	32	20	170	8	24	K10

› 71.715 Phantom

NL HM-tip Steekbeitel links
FR Outil à saigner à plaquette carbure à gauche
ES Herramienta de tronzar con punta de carburo izquierda
DE Hartmetallbestückt Stechdrehmeissel links
EN Carbide Tipped Parting Off Tool left hand

HM-TIP | DIN 4981 | ISO 7

Ref.	h1	b1	l1	a	t max	HM
71.715.1230	12	8	100	3	12	P30
71.715.1630	16	10	110	4	14	P30
71.715.1690	16	10	110	4	14	K10
71.715.2030	20	12	125	5	18	P30
71.715.2520	25	16	140	6	20	P20
71.715.2530	25	16	140	6	20	P30
71.715.3220	32	20	170	8	24	P20
71.715.3230	32	20	170	8	24	P30
71.715.3290	32	20	170	8	24	K10

› 71.730 Phantom

NL HM-tip Binnenkamerbeitel rechts
FR Outil à chambrer interieur à plaquette carbure à droite
ES Herramienta para ranurar interior con punta de carburo derecha
DE Hartmetallbestückt Innenhakendrehmeissel rechts
EN Carbide Tipped Internal Undercutting Tool right hand

HM-TIP | DIN 263 | ISO 11

Ref.	h1	b1	l1	d1 min	a	t max	HM
71.730.1030	10	10	140	28	3	8	P30
71.730.1220	12	10	180	32	4	10	P20
71.730.1230	12	12	180	32	4	10	P30
71.730.1290	12	12	180	32	4	10	K10
71.730.1620	16	12	210	40	5	12	P20
71.730.1630	16	16	210	40	5	12	P30
71.730.2030	20	20	250	50	6	16	P30
71.730.2090	20	20	250	50	6	16	K10
71.730.2530	25	25	300	63	8	20	P30
71.730.2590	25	25	300	63	8	20	K10
71.730.3230	32	32	355	80	10	25	P30
71.730.3290	32	32	355	80	10	25	K10

› 71.750 *Phantom*

NL HM-tip Buitendraadsnijbeitel 60°, rechts
FR Outil à fileter extérieur à plaquette carbure 60°, à droite
ES Herramienta para roscado exterior con punta de carburo 60°, derecha
DE Hartmetallbestückt Aussengewinde-Drehmeißel 60°, rechts
EN Carbide Tipped External Threading Tool 60°, right hand

HM-TIP | DIN 282 | ISO 12

Ref.	h1	b1	l1	HM
71.750.1030	10	10	90	P30
71.750.1220	12	12	100	P20
71.750.1230	12	12	100	P30
71.750.1290	12	12	100	K10
71.750.1630	16	16	110	P30
71.750.2020	20	20	125	P20
71.750.2030	20	20	125	P30
71.750.2090	20	20	125	K10
71.750.2530	25	25	140	P30
71.750.2590	25	25	140	K10

› 71.760 *Phantom*

NL HM-tip Buitendraadsnijbeitel 55°, rechts
FR Outil à fileter extérieur à plaquette carbure 55°, à droite
ES Herramienta para roscado exterior con punta de carburo 55°, derecha
DE Hartmetallbestückt Aussengewinde-Drehmeißel 55°, rechts
EN Carbide Tipped External Threading Tool 55°, right hand

HM-TIP | DIN 282 | ISO 12

Ref.	h1	b1	l1	HM
71.760.1030	10	10	90	P30
71.760.1090	10	10	90	K10
71.760.1220	12	12	100	P20
71.760.1230	12	12	100	P30
71.760.2030	20	20	125	P30
71.760.2090	20	20	125	K10
71.760.2520	25	25	140	P20
71.760.2530	25	25	140	P30

› 71.770 *Phantom*

NL HM-tip Binnendraadsnijbeitel 60°, rechts
FR Outil à fileter intérieur à plaquette carbure 60°, à droite
ES Herramienta para roscado interior con punta de carburo 60°, derecha
DE Hartmetallbestückt Innengewinde-Drehmeißel 60°, rechts
EN Carbide Tipped Internal Threading Tool 60°, right hand

HM-TIP | DIN 283

Ref.	h1	b1	l1	d1 min	HM
71.770.1030	10	10	150	28	P30
71.770.1230	12	12	180	32	P30
71.770.1620	16	16	210	40	P20
71.770.1630	16	16	210	40	P30
71.770.1690	16	16	210	40	K10
71.770.2030	20	20	250	50	P30
71.770.2090	20	20	250	50	K10
71.770.2520	25	25	300	63	P20
71.770.2530	25	25	300	63	P30
71.770.2590	25	25	300	63	K10

› 71.780 Phantom

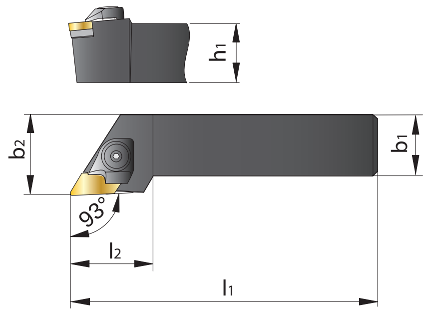
NL HM-tip Binnendraadsnijbeitel 55°, rechts
FR Outil à fileter intérieur à plaquette carbure 55°, à droite
ES Herramienta para roscado interior con punta de carburo 55°, derecha
DE Hartmetallbestückt Innengewinde-Drehmeißel 55°, rechts
EN Carbide Tipped Internal Threading Tool 55°, right hand

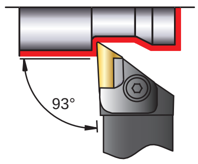
HM-TIP | DIN 283

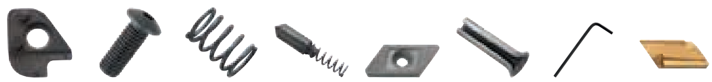
Ref.	h1	b1	l1	d1 min	HM
71.780.1030	10	10	140	28	P30
71.780.1230	12	12	160	32	P30
71.780.1290	12	12	160	32	K10
71.780.1620	16	16	180	40	P20
71.780.1630	16	16	180	40	P30
71.780.1690	16	16	180	40	K10
71.780.2020	20	20	210	50	P20
71.780.2030	20	20	210	50	P30
71.780.2090	20	20	210	50	K10
71.780.2520	25	25	300	63	P20
71.780.2530	25	25	250	63	P30

› 72.121 Phantom

NL WISSELPLAATHOUDER CKJNR/L
FR PORTE-PLAQUETTE CKJNR/L
ES PORTAPLAQUITA CKJNR/L
DE KLEMMHALTER CKJNR/L
EN TURNING TOOL HOLDER CKJNR/L



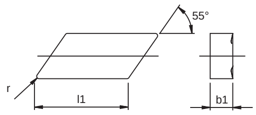




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 incl.	6 incl.	7 incl.	8 excl.
72.121.1250	CKJNR 2525-M16	25	25	32	150	35	73.998.0025	73.998.0065	73.998.0190	73.998.0335	73.998.0285	73.998.0345(B) 73.998.0343(S)	SW4	KNUX 1604..
72.121.2250	CKJNL 2525-M16	25	25	32	150	35	73.998.0026	73.998.0065	73.998.0190	73.998.0335	73.998.0286	73.998.0345(B) 73.998.0343(S)	SW4	KNUX 1604..

› 73.105 KNUX Phantom

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



KN..	l1 (mm)	b1 (mm)
16	16,0	4,76

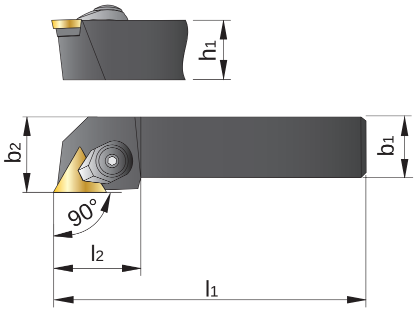
P **K**

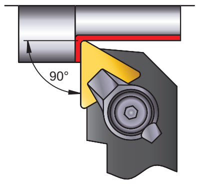
Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◓	◌	
73.105.0155	1604	0,5	ER 11	PC20	1-4	0,2-0,5		✔		✔	✔		
73.105.0205	1604	0,5	EL 11	PC20	1-4	0,2-0,5		✔		✔	✔		
73.105.0455	1604	1,0	ER 12	PC20	3-6	0,2-0,5		✔	✔	✔	✔	✔	
73.105.0465	1604	1,0	EL 12	PC20	3-6	0,2-0,5		✔	✔	✔	✔	✔	

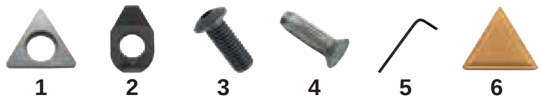
SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7

› 72.156 Phantom

NL WISSELPLAATHOUDER CTGPR/L
FR PORTE-PLAQUETTE CTGPR/L
ES PORTAPLAQUITA CTGPR/L
DE KLEMMHALTER CTGPR/L
EN TURNING TOOL HOLDER CTGPR/L



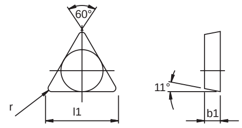




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 incl.	6 excl.
72.156.1120	CTGPR 1212-F11	12	12	16	80	16,5	-	73.998.0020(B)/ 73.998.0022(S)	73.998.0060(B)/-(S)	-	T15(B)/ SW2,5(S)	TP.. 1103..
72.156.1150	CTGPR 1616-H11	16	16	20	100	20	-	73.998.0020(B)/ 73.998.0022(S)	73.998.0060(B)/-(S)	-	T15(B)/ SW2,5(S)	TP.. 1103..
72.156.1204	CTGPR 2020-K16	20	20	25	125	28	73.998.0280(B)/73.998.0281(S)	73.998.0017	incl with 2(set)	73.998.0345(B)/ 73.998.0343(S)	T20(B)/SW3(S)	TP.. 1603..
72.156.1254	CTGPR 2525-M16	25	25	32	150	28	73.998.0280(B)/73.998.0281(S)	73.998.0017	incl with 2(set)	73.998.0345(B)/ 73.998.0343(S)	T20(B)/SW3(S)	TP.. 1603..

› 73.171 TPMR *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



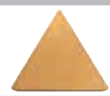
TP..	l1 (mm)	b1 (mm)
11	11,0	3,18
16	16,6	3,18

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
73.171.0150	1103	0,4	EN	PC10	0,5-2	0,05-0,15		✔		✔	✔		
73.171.0200	1103	0,8	EN	PC20	0,5-3	0,1-0,25		✔		✔	✔		
73.171.0300	1603	0,4	EN	PC10	0,5-3	0,1-0,25		✔		✔	✔		
73.171.0350	1603	0,8	EN	PC20	0,5-3	0,1-0,25		✔		✔	✔		

› 73.175 TPUN *Phantom*

P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
73.175.0450	1603	0,4	EN	PC20	0,5-3	0,1-0,25		✔		✔	✔		
73.175.0550	1603	0,8	EN	PC20	1-4	0,2-0,5		✔		✔	✔		
73.175.0650	1603	1,2	EN	PC20	1,5-5	0,1-0,3		✔	✔	✔	✔	✔	

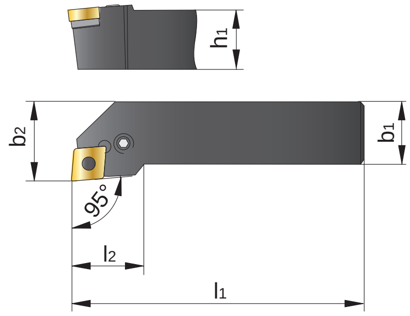
› 73.180 TPUX *Phantom*

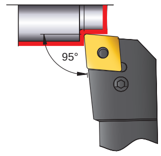
P M K N

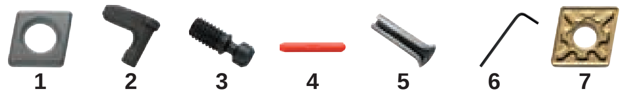
Ref.	lxd	r (mm)	Geo	Kwaliteit	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
73.180.0100	1103	0,4	FR	P25	0,5-2	0,05-0,15	✔	✔		✔			
73.180.0150	1103	0,4	FL	P25	0,5-2	0,05-0,15	✔	✔		✔			
73.180.0500	1603	0,4	FR	P25	0,5-3	0,05-0,15	✔	✔		✔			
73.180.0550	1603	0,4	FL	P25	0,5-3	0,05-0,15	✔	✔		✔			
73.180.0700	1603	0,8	FR	P25	1-4	0,2-0,5		✔		✔	✔		
73.180.0750	1603	0,8	FL	P25	1-4	0,2-0,5		✔		✔	✔		

› 72.240 Phantom

NL WISSELPLAATHOUDER PCLNR/L
FR PORTE-PLAQUETTE PCLNR/L
ES PORTAPLAQUITA PCLNR/L
DE KLEMMHALTER PCLNR/L
EN TURNING TOOL HOLDER PCLNR/L



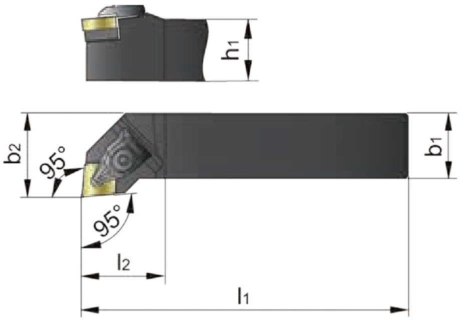


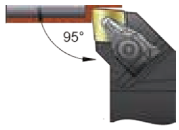


Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.	6 incl.	7 excl.
72.240.1150	PCLNR 1616-H12	16	16	20	100	26,1	73.998.0230	73.998.0100	73.998.0155	73.998.0365	73.998.0200	SW3	CN.. 1204..
72.240.1200	PCLNR 2020-K12	20	20	25	125	27,4	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	SW3	CN.. 1204..
72.240.1250	PCLNR 2525-M12	25	25	32	150	28	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	SW3	CN.. 1204..
72.240.2200	PCLNL 2020-K12	20	20	25	125	27,4	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	SW3	CN.. 1204..
72.240.2250	PCLNL 2525-M12	25	25	32	150	28	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	SW3	CN.. 1204..

› 72.245 Phantom

NL WISSELPLAATHOUDER DCLNR/L
FR PORTE-PLAQUETTE DCLNR/L
ES PORTAPLAQUITA DCLNR/L
DE KLEMMHALTER DCLNR/L
EN TURNING TOOL HOLDER DCLNR/L

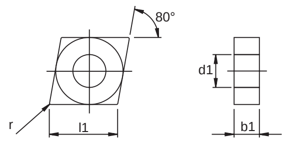




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.245.1200	DCLNR 2020-K12	20	20	25	125	32	73.998.0450(B) 73.998.0451(S)	73.998.0455(B) 73.998.0456(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	CN.. 1204..
72.245.1250	DCLNR 2525-M12	25	25	32	150	32	73.998.0450(B) 73.998.0451(S)	73.998.0455(B) 73.998.0456(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	CN.. 1204..
72.245.2200	DCLNL 2020-K12	20	20	25	125	32	73.998.0450(B) 73.998.0451(S)	73.998.0455(B) 73.998.0456(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	CN.. 1204..
72.245.2250	DCLNL 2525-M12	25	25	32	150	32	73.998.0450(B) 73.998.0451(S)	73.998.0455(B) 73.998.0456(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	CN.. 1204..

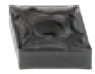
› 73.200 CNMG *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



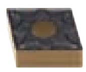
CN..	l1 (mm)	d1 (mm)	b1 (mm)
12	12,7	5,15	4,76
19	19,5	7,92	6,35

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.200.1347	1204	0,4	UF	UI20	0,6-3	0,1-0,23	✔			✔	✔		
73.200.4367	1204	0,8	UM	UI20	0,2-3	0,1-0,35		✔		✔	✔	✔	

› 73.201 CNMG *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.201.1346	1204	0,4	PF	PC20	0,2-1,5	0,05-0,25	✔			✔	✔		
73.201.1364	1204	0,8	PF	PC10	0,25-1,5	0,1-0,4	✔			✔	✔		
73.201.1366	1204	0,8	PF	PC20	0,25-1,5	0,1-0,4	✔			✔	✔		
73.201.4366	1204	0,8	PM	PC20	0,5-5,5	0,15-0,5		✔		✔	✔		
73.201.4368	1204	0,8	PM	PC30	0,5-5,5	0,15-0,5		✔		✔	✔	✔	
73.201.4376	1204	1,2	PM	PC20	0,8-5,5	0,18-0,6		✔		✔	✔	✔	
73.201.4378	1204	1,2	PM	PC30	0,8-5,5	0,18-0,6		✔		✔	✔	✔	
73.201.7368	1204	0,8	PR	PC30	1-7	0,2-0,55			✔	✔	✔	✔	

› 73.203 CNMG *Phantom*

P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.203.1347	1204	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔		
73.203.1367	1204	0,8	MF	MSI20	0,6-3	0,12-0,38	✔			✔	✔	✔	
73.203.4347	1204	0,4	MM	MSI20	0,15-2,5	0,1-0,3		✔		✔	✔		
73.203.4367	1204	0,8	MM	MSI20	0,2-3	0,1-0,35		✔		✔	✔	✔	

› 73.204 CNMA *Phantom*

P K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.204.0364	1204	0,8	EN	KC10	0,2-8	0,15-0,6		✔	✔	✔	✔		

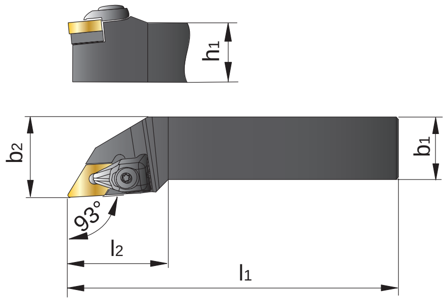
› 73.206 CNMG *Phantom*

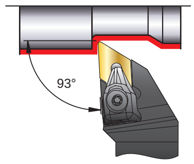
P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.206.4347	1204	0,4	SM	MSI20	0,2-3,6	0,1-0,2	✔	✔		✔	✔		

› 72.265 Phantom

NL WISSELPLAATHOUDER DDJNR/L
FR PORTE-PLAQUETTE DDJNR/L
ES PORTAPLAQUITA DDJNR/L
DE KLEMMHALTER DDJNR/L
EN TURNING TOOL HOLDER DDJNR/L

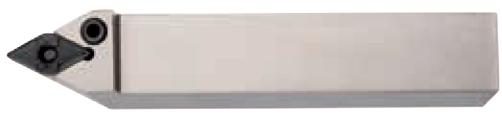


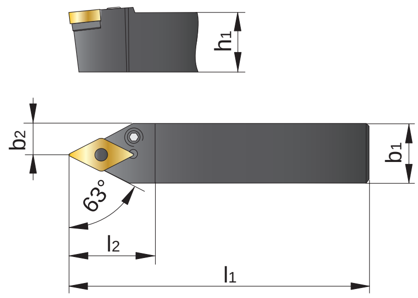


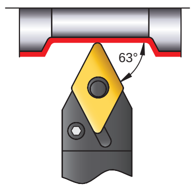
Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.
72.265.1170	DDJNR 2020-K11	20	20	25	125	40	73.998.0445(B) 73.998.0446(S)	73.998.0460(B) 73.998.0461(S)	T9IP(B)/SW4(S)	73.998.0496(B) 73.998.0030(S)	DN.. 1104..
72.265.1200	DDJNR 2020-K15	20	20	25	125	40	73.998.0450(B) 73.998.0451(S)	73.998.0465(B) 73.998.0466(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	DN.. 1506..
72.265.1250	DDJNR 2525-M15	25	25	32	150	40	73.998.0450(B) 73.998.0451(S)	73.998.0465(B) 73.998.0466(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	DN.. 1506..
72.265.2200	DDJNL 2020-K15	20	20	25	125	40	73.998.0450(B) 73.998.0451(S)	73.998.0465(B) 73.998.0466(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	DN.. 1506..
72.265.2250	DDJNL 2525-M15	25	25	32	150	40	73.998.0450(B) 73.998.0451(S)	73.998.0465(B) 73.998.0466(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	DN.. 1506..

› 72.280 Phantom

NL WISSELPLAATHOUDER PDNNR/L
FR PORTE-PLAQUETTE PDNNR/L
ES PORTAPLAQUITA PDNNR/L
DE KLEMMHALTER PDNNR/L
EN TURNING TOOL HOLDER PDNNR/L



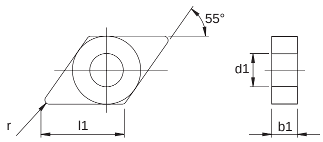




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.	6 incl.	7 excl.
72.280.1250	PDNNR 2525-M15	25	25	12,5	150	36,5	73.998.0265	73.998.0120	73.998.0150	73.998.0365	73.998.0200	SW3	DN.. 1506..
72.280.2250	PDNNL 2525-M15	25	25	12,5	150	36,5	73.998.0265	73.998.0120	73.998.0150	73.998.0365	73.998.0200	SW3	DN.. 1506..

› 73.211 DNMG *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



DN..	l1 (mm)	d1 (mm)	b1 (mm)
11	11,6	3,81	4,76
15	15,5	5,16	6,35

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◠	◌
73.211.1246	1104	0,4	PF	PC20	0,1-1,5	0,05-0,25	✔			✔	✔	
73.211.1446	1506	0,4	PF	PC20	0,1-1,5	0,05-0,25	✔			✔	✔	
73.211.4266	1104	0,8	PM	PC20	0,4-5	0,1-0,3		✔		✔	✔	
73.211.4466	1506	0,8	PM	PC20	0,5-6	0,15-0,5		✔		✔	✔	
73.211.4468	1506	0,8	PM	PC30	0,5-6	0,15-0,5		✔		✔	✔	✔
73.211.7568	1506	0,8	PR	PC30	0,8-6	0,2-0,55			✔	✔	✔	✔

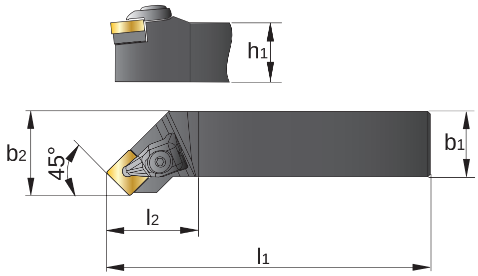
› 73.213 DNMG *Phantom*

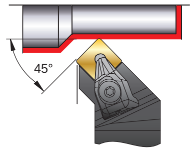
P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◠	◌
73.213.1247	1104	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.213.1447	1506	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.213.4447	1506	0,4	MM	MSI20	0,15-2	0,1-0,25		✔		✔	✔	
73.213.4467	1506	0,8	MM	MSI20	0,2-2,5	0,1-0,3		✔		✔	✔	✔

> 72.325 Phantom

NL WISSELPLAATHOUDER DSSNR/L
FR PORTE-PLAQUETTE DSSNR/L
ES PORTAPLAQUITA DSSNR/L
DE KLEMMHALTER DSSNR/L
EN TURNING TOOL HOLDER DSSNR/L

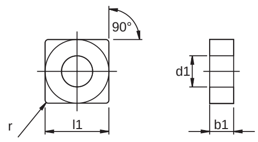




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.325.1200	DSSNR 2020 K12	20	20	25	125	35	73.998.0450(B) 73.998.0451(S)	73.998.0470(B) 73.998.0471(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	SN.. 1204..
72.325.1250	DSSNR 2525 M12	25	25	32	150	35	73.998.0450(B) 73.998.0451(S)	73.998.0470(B) 73.998.0471(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	SN.. 1204..
72.325.2200	DSSNL 2020 K12	20	20	25	125	35	73.998.0450(B) 73.998.0451(S)	73.998.0470(B) 73.998.0471(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	SN.. 1204..
72.325.2250	DSSNL 2525 M12	25	25	32	150	35	73.998.0450(B) 73.998.0451(S)	73.998.0470(B) 73.998.0471(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	SN.. 1204..

› 73.241 SNMG *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



SN..	l1 (mm)	d1 (mm)	b1 (mm)
12	12,7	5,15	4,76

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	○	○	
73.241.1346	1204	0,4	PF	PC20	0,15-1,5	0,05-0,25	✔			✔	✔		
73.241.4368	1204	0,8	PM	PC30	0,5-6	0,15-0,5		✔		✔	✔	✔	
73.241.4376	1204	1,2	PM	PC20	0,8-6	0,18-0,6		✔		✔	✔	✔	
73.241.7366	1204	0,8	PR	PC20	0,8-7	0,2-0,55			✔	✔	✔	✔	

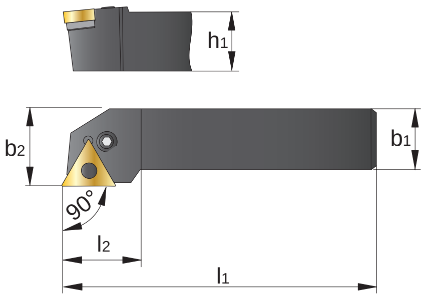
› 73.243 SNMG *Phantom*

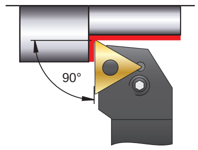
P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	○	○	
73.243.4367	1204	0,8	MM	MSI20	0,2-3	0,15-0,4		✔		✔	✔	✔	

› 72.340 Phantom

NL WISSELPLAATHOUDER PTGNR/L
FR PORTE-PLAQUETTE PTGNR/L
ES PORTAPLAQUITA PTGNR/L
DE KLEMMHALTER PTGNR/L
EN TURNING TOOL HOLDER PTGNR/L

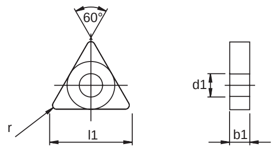




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.	6 incl.	7 excl.
72.340.1150	PTGNR 1616-H16	16	16	20	100	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..
72.340.1200	PTGNR 2020-K16	20	20	25	125	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..
72.340.1250	PTGNR 2525-M16	25	25	32	150	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..
72.340.2200	PTGNL 2020-K16	20	20	25	125	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..
72.340.2250	PTGNL 2525-M16	25	25	32	150	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..

› 73.250 TNMG *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



TN..	l1 (mm)	d1 (mm)	b1 (mm)
16	16,5	3,81	4,76
22	22,0	5,16	4,76

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◓	◌	
73.250.4567	1604	0,8	UF	UI20	0,6-3	0,12-0,38	✔			✔	✔	✔	

› 73.251 TNMG *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◓	◌	
73.251.1546	1604	0,4	PF	PC20	0,1-1,5	0,05-0,25	✔			✔	✔		
73.251.4548	1604	0,4	PM	PC30	0,4-5	0,1-0,3		✔		✔	✔	✔	
73.251.4566	1604	0,8	PM	PC20	0,5-5	0,15-0,5		✔		✔	✔		
73.251.4766	2204	0,8	PM	PC20	0,5-6,6	0,15-0,5		✔		✔	✔		
73.251.5546	1604	0,4	ER	PC20	1-3,5	0,12-0,3				✔	✔		
73.251.5566	1604	0,8	ER	PC20	1,3-3,5	0,15-0,5				✔	✔		

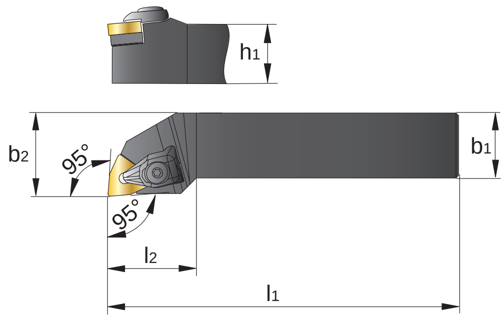
› 73.253 TNMG *Phantom*

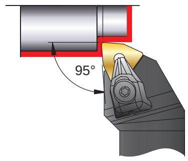
P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◓	◌	
73.253.4547	1604	0,4	MM	MSI20	0,15-3	0,1-0,3		✔		✔	✔		
73.253.4567	1604	0,8	MM	MSI20	0,2-3	0,1-0,3		✔		✔	✔	✔	

› 72.385 Phantom

NL WISSELPLAATHOUDER DWLNR/L
FR PORTE-PLAQUETTE DWLNR/L
ES PORTAPLAQUITA DWLNR/L
DE KLEMMHALTER DWLNR/L
EN TURNING TOOL HOLDER DWLNR/L



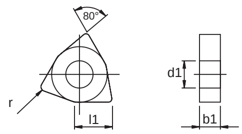


1 2 3 4 5

Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.385.1170	DWLNR 2020 K06	20	20	25	125	27	73.998.0445(B) 73.998.0446(S)	73.998.0480(B) 73.998.0481(S)	T9IP(B)/SW4(S)	73.998.0495(B) 73.998.0030(S)	WN.. 0604..
72.385.1200	DWLNR 2020 K08	20	20	25	125	34	73.998.0450(B) 73.998.0451(S)	73.998.0485(B) 73.998.0486(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	WN.. 0804..
72.385.1230	DWLNR 2525 M06	25	25	32	150	27	73.998.0445(B) 73.998.0446(S)	73.998.0480(B) 73.998.0481(S)	T9IP(B)/SW4(S)	73.998.0495(B) 73.998.0030(S)	WN.. 0604..
72.385.1250	DWLNR 2525 M08	25	25	32	150	34	73.998.0450(B) 73.998.0451(S)	73.998.0485(B) 73.998.0486(S)	T15IP(B)/SW4(S)	73.998.0497(B) 73.998.0032(S)	WN.. 0804..
72.385.2170	DWLNL 2020 K06	20	20	25	125	27	73.998.0445(B) 73.998.0446(S)	73.998.0480(B) 73.998.0481(S)	T9IP(B)/SW4(S)	73.998.0495(B) 73.998.0030(S)	WN.. 0604..
72.385.2250	DWLNL 2525 M08	25	25	32	150	34	73.998.0450(B) 73.998.0451(S)	73.998.0485(B) 73.998.0486(S)	T15IP(B)/SW4(S)	73.998.0497(B)/ 73.998.0032(S)	WN.. 0804..

› 73.291 WNMG *Phantom*

NL WISSELPLAAT
FR PLAQUETTE
ES PLAQUITA
DE WENDEPLATTE
EN INSERT



WN..	l1 (mm)	d1 (mm)	b1 (mm)
06	6,6	3,81	4,76
08	8,7	5,16	4,76

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.291.1046	0604	0,4	PF	PC20	0,1-1,5	0,05-0,3	✔			✔	✔	
73.291.1146	0804	0,4	PF	PC20	0,1-2	0,05-0,3	✔			✔	✔	
73.291.4066	0604	0,8	PM	PC20	0,5-3	0,15-0,5		✔		✔	✔	
73.291.4166	0804	0,8	PM	PC20	0,5-4	0,15-0,5		✔		✔	✔	
73.291.4168	0804	0,8	PM	PC30	0,5-4	0,15-0,5		✔		✔	✔	✔
73.291.4176	0804	1,2	PM	PC20	0,8-4	0,18-0,6		✔		✔	✔	✔

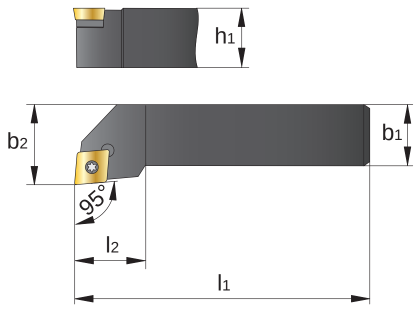
› 73.293 WNMG *Phantom*

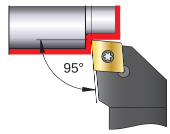
P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.293.1047	0604	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.293.1147	0804	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.293.1167	0804	0,8	MF	MSI20	0,6-3	0,12-0,38	✔			✔	✔	✔
73.293.4147	0804	0,4	MM	MSI20	0,15-2,5	0,1-0,3		✔		✔	✔	
73.293.4167	0804	0,8	MM	MSI20	0,25-3	0,1-0,35		✔		✔	✔	✔

› 72.420 Phantom

NL **WISSELPLAATHOUDER SCLCR/L**
FR **PORTE-PLAQUETTE SCLCR/L**
ES **PORTAPLAQUITA SCLCR/L**
DE **KLEMMHALTER SCLCR/L**
EN **TURNING TOOL HOLDER SCLCR/L**

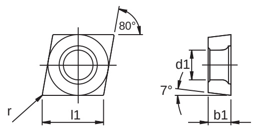




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.420.1080	SCLCR 0808-D06	8	8	10	60	9	-	-	73.998.0080(B) 73.998.0081(S)	T8(B)/ T7(S)	CC.. 0602.
72.420.1100	SCLCR 1010-E06	10	10	12	70	9	-	-	73.998.0080(B) 73.998.0081(S)	T8(B)/ T7(S)	CC.. 0602.
72.420.1120	SCLCR 1212-F09	12	12	16	80	15	-	-	73.998.0070(B) 73.998.0096(S)	T15	CC.. 09T3..
72.420.1160	SCLCR 1616-H09	16	16	20	100	17	73.998.0320 (B)/ - (S)	73.998.0355	73.998.0070(B) 73.998.0096(S)	T15	CC.. 09T3..
72.420.1200	SCLCR 2020-K09	20	20	25	125	17	73.998.0320 (B)/ - (S)	73.998.0355	73.998.0070(B) 73.998.0096(S)	T15	CC.. 09T3..
72.420.1240	SCLCR 2020-K12	20	20	25	125	20	73.998.0325(B) 73.998.0326(S)	73.998.0356(B) 73.998.0357(S)	73.998.0072(B) 73.998.0092(S)	T15	CC.. 1204..
72.420.1300	SCLCR 2525-M12	25	25	32	150	20	73.998.0325(B) 73.998.0326(S)	73.998.0356(B) 73.998.0357(S)	73.998.0072(B) 73.998.0092(S)	T15	CC.. 1204..
72.420.2080	SCLCL 0808-D06	8	8	10	60	9	-	-	73.998.0080(B) 73.998.0081(S)	T8(B)/ T7(S)	CC.. 0602.
72.420.2100	SCLCL 1010-E06	10	10	12	70	9	-	-	73.998.0080(B) 73.998.0081(S)	T8(B)/ T7(S)	CC.. 0602.
72.420.2120	SCLCL 1212-F09	12	12	16	80	15	-	-	73.998.0070(B) 73.998.0096(S)	T15	CC.. 09T3..
72.420.2160	SCLCL 1616-H09	16	16	20	100	17	73.998.0320 (B)/ - (S)	73.998.0355	73.998.0070(B) 73.998.0096(S)	T15	CC.. 09T3..
72.420.2200	SCLCL 2020-K09	20	20	25	125	17	73.998.0320 (B)/ - (S)	73.998.0355	73.998.0070(B) 73.998.0096(S)	T15	CC.. 09T3..

› 73.500 CCMT *Phantom*

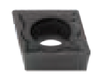
NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



CC..	l1 (mm)	d1 (mm)	b1 (mm)
06	6,4	2,80	2,38
09	9,7	4,40	3,97
12	12,4	5,50	4,76

P M K S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌
73.500.4045	0602	0,4	UM	UI10	0,2-2,4	0,06-0,17		✔		✔	✔	
73.500.4047	0602	0,4	UM	UI20	0,2-2,4	0,06-0,17		✔		✔	✔	
73.500.4145	09T3	0,4	UM	UI10	0,25-3	0,08-0,23		✔		✔	✔	
73.500.4147	09T3	0,4	UM	UI20	0,25-3	0,08-0,23		✔		✔	✔	
73.500.4167	09T3	0,8	UM	UI20	0,5-3	0,1-0,4		✔		✔	✔	✔
73.500.4367	1204	0,8	UM	UI20	0,6-3,6	0,12-0,45		✔		✔	✔	✔



› 73.501 CCMT *Phantom*

P M K

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌
73.501.1026	0602	0,2	PF	PC20	0,06-1,7	0,03-0,11	✔			✔	✔	
73.501.1046	0602	0,4	PF	PC20	0,1-1,7	0,05-0,17	✔			✔	✔	
73.501.1146	09T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔	
73.501.1166	09T3	0,8	PF	PC20	0,15-2	0,08-0,45	✔			✔	✔	
73.501.4046	0602	0,4	PM	PC20	0,2-2,4	0,06-0,17		✔		✔	✔	
73.501.4146	09T3	0,4	PM	PC20	0,25-3	0,08-0,23		✔		✔	✔	
73.501.4166	09T3	0,8	PM	PC20	0,5-3	0,1-0,4		✔		✔	✔	
73.501.4346	1204	0,4	PM	PC20	0,3-3,6	0,09-0,27		✔		✔	✔	
73.501.4366	1204	0,8	PM	PC20	0,6-3,6	0,12-0,45		✔		✔	✔	

› 73.503 CCMT *Phantom*

P M S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌
73.503.1047	0602	0,4	MF	MSI20	0,1-1,7	0,05-0,17	✔			✔	✔	
73.503.1147	09T3	0,4	MF	MSI20	0,11-2	0,06-0,23	✔			✔	✔	
73.503.1167	09T3	0,8	MF	MSI20	0,15-2	0,08-0,45	✔			✔	✔	✔
73.503.4147	09T3	0,4	MM	MSI20	0,25-3	0,08-0,23		✔		✔	✔	
73.503.4167	09T3	0,8	MM	MSI20	0,5-3	0,1-0,4		✔		✔	✔	✔
73.503.4367	1204	0,8	MM	MSI20	0,6-3,6	0,12-0,45		✔		✔	✔	✔

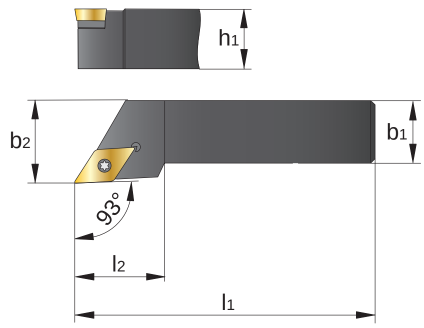
› 73.505 CCGT *Phantom*

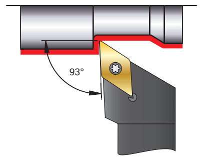
N

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌
73.505.4020	0602	0,2	NM	K10	0,05-3	0,05-0,12	✔	✔		✔	✔	
73.505.4040	0602	0,4	NM	K10	0,1-3	0,1-0,2		✔		✔	✔	
73.505.4140	09T3	0,4	NM	K10	0,1-5	0,1-0,22		✔		✔	✔	
73.505.4160	09T3	0,8	NM	K10	0,1-5	0,15-0,45		✔	✔	✔	✔	✔

› 72.450 Phantom

NL WISSELPLAATHOUDER SDJCR/L
FR PORTE-PLAQUETTE SDJCR/L
ES PORTAPLAQUITA SDJCR/L
DE KLEMMHALTER SDJCR/L
EN TURNING TOOL HOLDER SDJCR/L

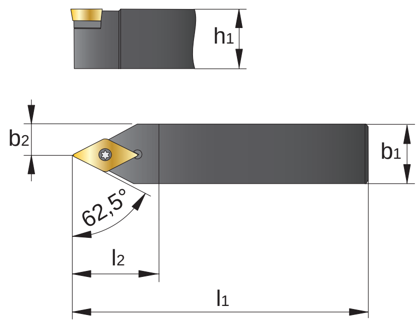


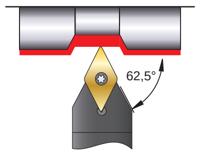


Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.450.1100	SDJCR 1010-E07	10	10	12	70	13	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.450.1120	SDJCR 1212-F07	12	12	16	80	14,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.450.1160	SDJCR 1616-H11	16	16	20	100	20	73.998.0290(B)/73.998.0291(S)	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	DC.. 11T3..
72.450.1200	SDJCR 2020-K11	20	20	25	125	20,5	73.998.0290(B)/73.998.0291(S)	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	DC.. 11T3..
72.450.2100	SDJCL 1010-E07	10	10	12	70	13	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.450.2120	SDJCL 1212-F07	12	12	16	80	14,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.450.2160	SDJCL 1616-H11	16	16	20	100	20	73.998.0290(B)/73.998.0291(S)	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	DC.. 11T3..
72.450.2200	SDJCL 2020-K11	20	20	25	125	20,5	73.998.0290(B)/73.998.0291(S)	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	DC.. 11T3..

› 72.455 Phantom

NL WISSELPLAATHOUDER SDNCN
FR PORTE-PLAQUETTE SDNCN
ES PORTAPLAQUITA SDNCN
DE KLEMMHALTER SDNCN
EN TURNING TOOL HOLDER SDNCN

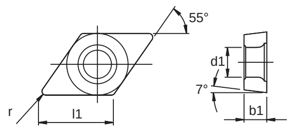




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.455.1100	SDNCN 1010-E07	10	10	5	70	10	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.455.1120	SDNCN 1212-F07	12	12	6	80	12	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.455.1160	SDNCN 1616-H11	16	16	8	100	18	73.998.0290(B)/73.998.0291(S)	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	DC.. 11T3..
72.455.1200	SDNCN 2020-K11	20	20	10	125	21	73.998.0290(B)/73.998.0291(S)	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	DC.. 11T3..

› 73.510 DCMT *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



DC..	l1 (mm)	d1 (mm)	b1 (mm)
07	7,7	2,80	2,38
11	11,6	4,40	3,97

P M K S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.510.4047	0702	0,4	UM	UI20	0,19-2,25	0,06-0,17		✔		✔	✔	
73.510.4247	11T3	0,4	UM	UI20	0,25-3	0,08-0,23		✔		✔	✔	
73.510.4267	11T3	0,8	UM	UI20	0,5-3	0,1-0,4		✔		✔	✔	✔

› 73.511 DCMT *Phantom*

P M K

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.511.1046	0702	0,4	PF	PC20	0,08-1,5	0,05-0,17	✔			✔	✔	
73.511.1246	11T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔	
73.511.4046	0702	0,4	PM	PC20	0,19-2,25	0,06-0,17		✔		✔	✔	
73.511.4066	0702	0,8	PM	PC20	0,38-2,25	0,08-0,35		✔		✔	✔	
73.511.4246	11T3	0,4	PM	PC20	0,25-3	0,08-0,23		✔		✔	✔	
73.511.4266	11T3	0,8	PM	PC20	0,5-3	0,1-0,4		✔		✔	✔	

› 73.513 DCMT *Phantom*

P M S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.513.1247	11T3	0,4	MF	MSI20	0,11-2	0,06-0,23	✔			✔	✔	
73.513.4047	0702	0,4	MM	MSI20	0,19-2,25	0,06-0,17		✔		✔	✔	
73.513.4247	11T3	0,4	MM	MSI20	0,25-3	0,08-0,23		✔		✔	✔	
73.513.4267	11T3	0,8	MM	MSI20	0,5-3	0,1-0,4		✔		✔	✔	✔

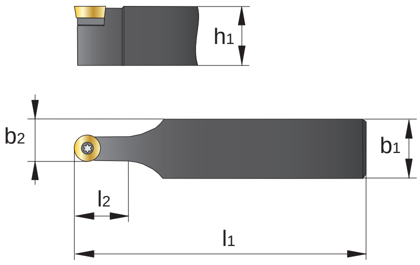
› 73.515 DCGT *Phantom*

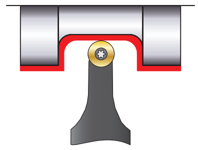
N

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.515.4020	0702	0,2	NM	K10	0,05-3	0,05-0,12	✔	✔		✔	✔	
73.515.4240	11T3	0,4	NM	K10	0,1-5	0,1-0,22		✔		✔	✔	
73.515.4260	11T3	0,8	NM	K10	0,1-5	0,15-0,5		✔	✔	✔	✔	✔

› 72.461 Phantom

NL WISSELPLAATHOUDER SRDCN
FR PORTE-PLAQUETTE SRDCN
ES PORTAPLAQUITA SRDCN
DE KLEMMHALTER SRDCN
EN TURNING TOOL HOLDER SRDCN

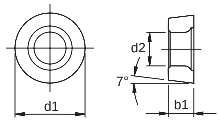




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.461.1200	SRDCN 2020-K08	20	20	15	125	20	-	-	73.998.0090	T8	RCMT 0803
72.461.1201	SRDCN 2020-K10	20	20	15	125	22	73.998.0292	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	RCMT 10T3
72.461.1250	SRDCN 2525-M10	25	25	17,5	150	22	73.998.0292	73.998.0355	73.998.0070(B)/73.998.0071(S)	T15	RCMT 10T3
72.461.1253	SRDCN 2525-M12	25	25	185	150	28	73.998.0293	73.998.0355	73.998.0071	T15	RCMT 1204

› 73.521 RCMT Phantom

NL WISSELPLAAT
FR PLAQUETTE
ES PLAQUITA
DE WENDEPLATTE
EN INSERT



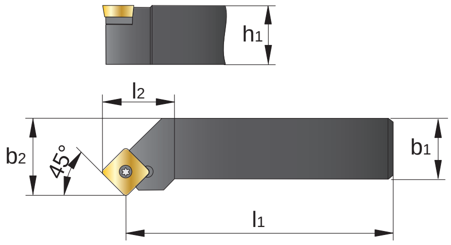
RC..	d1 (mm)	d2 (mm)	b1 (mm)
0803	8,0	3,40	3,18
1003	10,0	3,40	3,18
10T3	10,0	4,40	3,97
1204	12,0	4,40	4,76

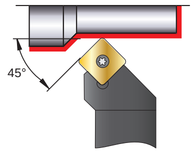
P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	○	○
73.521.4106	0803	4	PM	PC20	0,8-3,2	0,1-0,8		✔		✔	✔	✔
73.521.4206	1003	5	PM	PC20	1-4	0,12-1		✔		✔	✔	✔
73.521.4236	10T3	5	PM	PC20	1-4	0,12-1		✔		✔	✔	✔
73.521.4306	1204	6	PM	PC20	1,2-4,8	0,2-1,8		✔		✔	✔	✔

72.485 Phantom

NL WISSELPLAATHOUDER SSSCR
FR PORTE-PLAQUETTE SSSCR
ES PORTAPLAQUITA SSSCR
DE KLEMMHALTER SSSCR
EN TURNING TOOL HOLDER SSSCR



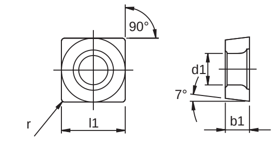


1 2 3 4 5

Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.485.1120	SSSCR 1212-F09	12	12	16	80	18	-	-	73.998.0070(B) 73.998.0096(S)	T15	SC.T 09T3..
72.485.1160	SSSCR 1616-H09	16	16	20	100	20	73.998.0295(B)/-(S)	73.998.0355	73.998.0070(B) 73.998.0096(S)	T15	SC.T 09T3..
72.485.1240	SSSCR 2020-K12	20	20	25	125	25	73.998.0296(B) 73.998.0297(S)	73.998.0356(B) 73.998.0357(S)	73.998.0072(B) 73.998.0092(S)	T15	SC.T 1204..
72.485.1300	SSSCR 2525-M12	25	25	32	150	25	73.998.0296(B) 73.998.0297(S)	73.998.0356(B) 73.998.0357(S)	73.998.0072(B) 73.998.0092(S)	T15	SC.T 1204..

› 73.530 SCMT *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



SC..	l1 (mm)	d1 (mm)	b1 (mm)
09	9,5	4,40	3,97
12	12,7	5,60	4,76

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽				
73.530.4147	09T3	0,4	UM	UI20	0,25-3	0,06-0,23		✔		✔	✔		
73.530.4167	09T3	0,8	UM	UI20	0,5-3	0,1-0,4		✔		✔	✔	✔	
73.530.4367	1204	0,8	UM	UI20	0,6-3,6	0,12-0,45		✔		✔	✔	✔	

› 73.531 SCMT *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽				
73.531.1146	09T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔		
73.531.4166	09T3	0,8	PM	PC20	0,5-3	0,1-0,4		✔		✔	✔	✔	
73.531.4366	1204	0,8	PM	PC20	0,6-3,6	0,12-0,45		✔		✔	✔	✔	

› 73.535 SCGT *Phantom*

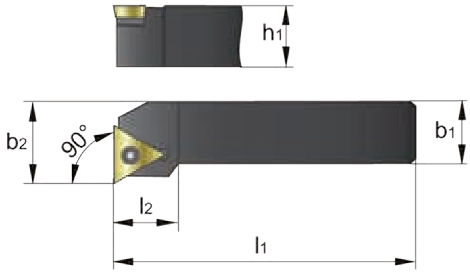
N

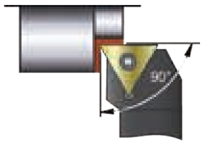
Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽				
73.535.4140	09T3	0,4	NM	K10	0,1-4	0,1-0,26		✔		✔	✔		
73.535.4160	09T3	0,8	NM	K10	0,1-5	0,15-0,4		✔	✔	✔	✔	✔	

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7

› 72.500 Phantom

NL WISSELPLAATHOUDER STFCR
FR PORTE-PLAQUETTE STFCR
ES PORTAPLAQUITA STFCR
DE KLEMMHALTER STFCR
EN TURNING TOOL HOLDER STFCR

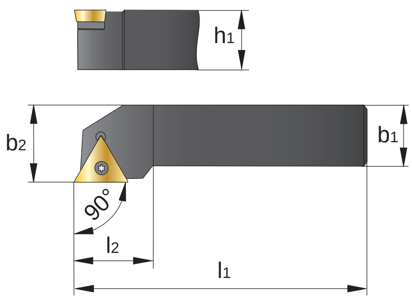


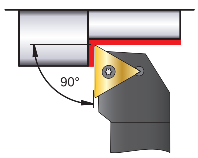


Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.500.1120	STFCR 1212-F11	12	12	16	80	15	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	TC.. 1102..
72.500.1160	STFCR 1616-H16	16	16	20	100	20	73.998.0300(B)/73.998.0301(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	TC.. 16T3..
72.500.1200	STFCR 2020-K16	20	20	25	125	20	73.998.0300(B)/73.998.0301(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	TC.. 16T3..

› 72.505 Phantom

NL WISSELPLAATHOUDER STGCR/L
FR PORTE-PLAQUETTE STGCR/L
ES PORTAPLAQUITA STGCR/L
DE KLEMMHALTER STGCR/L
EN TURNING TOOL HOLDER STGCR/L

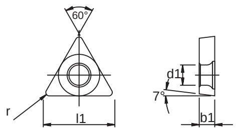




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.505.1120	STGCR 1212-F11	12	12	16	80	15	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	TC.. 1102..
72.505.1160	STGCR 1616-H16	16	16	20	100	22	73.998.0300(B)/73.998.0301(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	TC.. 16T3..
72.505.1200	STGCR 2020-K16	20	20	25	125	22	73.998.0300(B)/73.998.0301(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	TC.. 16T3..
72.505.1240	STGCR 2525-M16	25	25	32	150	22	73.998.0300(B)/73.998.0301(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	TC.. 16T3..
72.505.2160	STGCL 1616-H16	16	16	20	100	22	73.998.0300(B)/73.998.0301(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	TC.. 16T3..

› 73.540 TCMT *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



TC..	l1 (mm)	d1 (mm)	b1 (mm)
11	11,6	2,80	2,38
16	16,0	4,40	3,97

P M K S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.540.4567	16T3	0,8	UM	UI20	0,5-3	0,1-0,45		✔		✔	✔	✔	

› 73.541 TCMT *Phantom*

P M K

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.541.1266	1102	0,8	PF	PC20	0,13-1,7	0,07-0,26	✔			✔	✔		
73.541.1546	16T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔		
73.541.4246	1102	0,4	PM	PC20	0,21-2,5	0,06-0,19		✔		✔	✔		
73.541.4566	16T3	0,8	PM	PC20	0,5-3	0,1-0,45		✔		✔	✔		

› 73.543 TCMT *Phantom*

P M S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.543.1247	1102	0,4	MF	MSI20	0,1-1,7	0,05-0,19	✔			✔	✔		
73.543.1547	16T3	0,4	MF	MSI20	0,11-2	0,06-0,23	✔			✔	✔		
73.543.4247	1102	0,4	MM	MSI20	0,21-2,5	0,06-0,19		✔		✔	✔		
73.543.4567	16T3	0,8	MM	MSI20	0,5-3	0,1-0,45		✔		✔	✔	✔	

› 73.545 TCGT *Phantom*

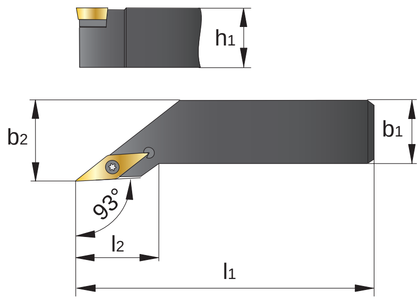
N

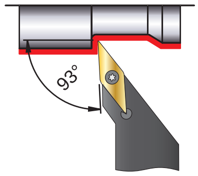
Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.545.4240	1102	0,4	NM	K10	0,1-4	0,1-0,2		✔		✔	✔		
73.545.4540	16T3	0,4	NM	K10	0,1-5,5	0,1-0,2		✔		✔	✔		
73.545.4560	16T3	0,8	NM	K10	0,1-5,5	0,15-0,5		✔	✔	✔	✔	✔	

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7

› 72.515 Phantom

NL **WISSELPLAATHOUDER SVJCR/L**
FR **PORTE-PLAQUETTE SVJCR/L**
ES **PORTAPLAQUITA SVJCR/L**
DE **KLEMMHALTER SVJCR/L**
EN **TURNING TOOL HOLDER SVJCR/L**

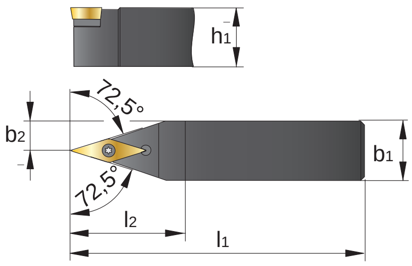


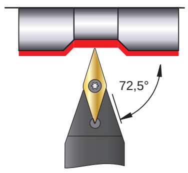


Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.515.1160	SVJCR 1616-H11	16	16	20	100	21,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.T 1103..
72.515.1200	SVJCR 2020-K11	20	20	25	125	23	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.T 1103..
72.515.1201	SVJCR 2020-K16	20	20	25	125	29,5	73.998.0305	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	VC.T 1604..
72.515.1250	SVJCR 2525-M16	25	25	32	150	32,5	73.998.0305	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	VC.T 1604..
72.515.2160	SVJCL 1616-H11	16	16	20	100	21,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.T 1103..
72.515.2200	SVJCL 2020-K11	20	20	25	125	23	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.T 1103..
72.515.2250	SVJCL 2525-M16	25	25	32	150	32,5	73.998.0305	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	VC.T 1604..

› 72.520 Phantom

NL **WISSELPLAATHOUDER SVVCN**
FR **PORTE-PLAQUETTE SVVCN**
ES **PORTAPLAQUITA SVVCN**
DE **KLEMMHALTER SVVCN**
EN **TURNING TOOL HOLDER SVVCN**

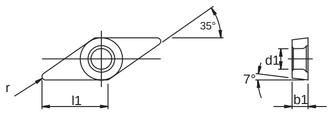




Ref.	Type	h1	b1	b2	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.520.1160	SVVCN 1616-H11	16	16	8	100	25	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.T 1103..
72.520.1200	SVVCN 2020-K11	20	20	10	125	32	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.T 1103..
72.520.1250	SVVCN 2525-M16	25	25	12,5	150	40	73.998.0305	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	VC.T 1604..

› 73.591 VCMT *Phantom*

NL WISSELPLAAT
FR PLAQUETTE
ES PLAQUITA
DE WENDEPLATTE
EN INSERT



VC..	l1 (mm)	d1 (mm)	b1 (mm)
11	11,0	2,80	3,18
16	16,6	4,40	4,76

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.591.1226	1103	0,2	PF	PC20	0,07-1,5	0,03-0,13	✔			✔	✔		
73.591.1246	1103	0,4	PF	PC20	0,1-1,5	0,05-0,2	✔			✔	✔		
73.591.1546	1604	0,4	PF	PC20	0,1-1,8	0,05-0,2	✔			✔	✔		
73.591.4546	1604	0,4	PM	PC20	0,23-2,7	0,07-0,2		✔		✔	✔		
73.591.4566	1604	0,8	PM	PC20	0,45-2,7	0,09-0,27		✔		✔	✔		

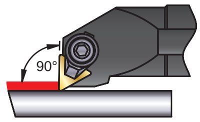
› 73.595 VCGT *Phantom*

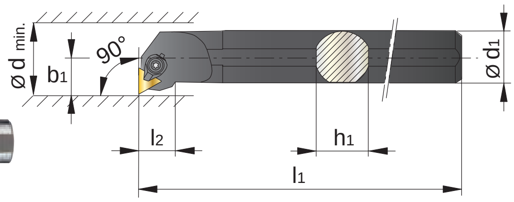
N

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.595.4220	1103	0,2	NM	K10	0,05-3	0,05-0,12	✔	✔		✔	✔		
73.595.4240	1103	0,4	NM	K10	0,05-3	0,1-0,25		✔		✔	✔		

› 72.540 Phantom

NL **WISSELPLAATHOUDER S-CTFPR/L**
FR **PORTE-PLAQUETTE S-CTFPR/L**
ES **PORTAPLAQUITA S-CTFPR/L**
DE **KLEMMHALTER S-CTFPR/L**
EN **TURNING TOOL HOLDER S-CTFPR/L**

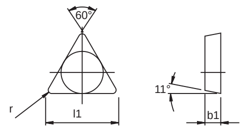




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 incl.	6 excl.
72.540.1122	S12M-CTFPR 11	11	9	17	12	150	25	-	73.998.0020(B) 73.998.0022(S)	73.998.0060(B)/-(S)	-	T15(B)/SW2,5(S)	TP.. 1103..
72.540.1160	S16R-CTFPR 11	15	11	21	16	200	15	-	73.998.0020(B) 73.998.0022(S)	73.998.0060(B)/-(S)	-	T15(B)/SW2,5(S)	TP.. 1103..
72.540.1200	S20S-CTFPR 11	18	13	25	20	250	15	-	73.998.0020(B) 73.998.0022(S)	73.998.0060(B)/-(S)	-	T15(B)/SW2,5(S)	TP.. 1103..
72.540.1250	S25T-CTFPR 16	23	17	31,5	25	300	20	73.998.0280	73.998.0010(B) 73.998.0018(S)	73.998.0055(B)/-(S)	73.998.0345	T20(B)/SW3(S)	TP.. 1603..
72.540.1320	S32U-CTFPR 16	30	22	40	32	350	20	73.998.0280	73.998.0010(B) 73.998.0017(S)	73.998.0055(B)/-(S)	73.998.0345	T20(B)/SW3(S)	TP.. 1603..
72.540.2160	S16R-CTFPL 11	15	11	21	16	200	15	-	73.998.0020(B) 73.998.0022(S)	73.998.0060(B)/-(S)	-	T15(B)/SW2,5(S)	TP.. 1103..
72.540.2200	S20S-CTFPL 11	18	13	25	20	250	15	-	73.998.0020(B) 73.998.0022(S)	73.998.0060(B)/-(S)	-	T15(B)/SW2,5(S)	TP.. 1103..
72.540.2250	S25T-CTFPL 16	23	17	31,5	25	300	20	73.998.0280	73.998.0010(B) 73.998.0018(S)	73.998.0055(B)/-(S)	73.998.0345	T20(B)/SW3(S)	TP.. 1603..

› 73.171 TPMR *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



TP..	l1 (mm)	b1 (mm)
11	11,0	3,18
16	16,6	3,18

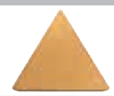
P M K

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.171.0150	1103	0,4	EN	PC10	0,5-2	0,05-0,15		✔		✔	✔	
73.171.0200	1103	0,8	EN	PC20	0,5-3	0,1-0,25		✔		✔	✔	
73.171.0300	1603	0,4	EN	PC10	0,5-3	0,1-0,25		✔		✔	✔	
73.171.0350	1603	0,8	EN	PC20	0,5-3	0,1-0,25		✔		✔	✔	

› 73.175 TPUN *Phantom*

P M S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.175.0450	1603	0,4	EN	PC20	0,5-3	0,1-0,25		✔		✔	✔	
73.175.0550	1603	0,8	EN	PC20	1-4	0,2-0,5		✔		✔	✔	
73.175.0650	1603	1,2	EN	PC20	1,5-5	0,1-0,3		✔	✔	✔	✔	✔



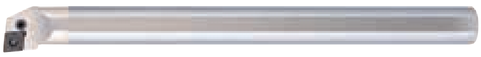
› 73.180 TPUX *Phantom*

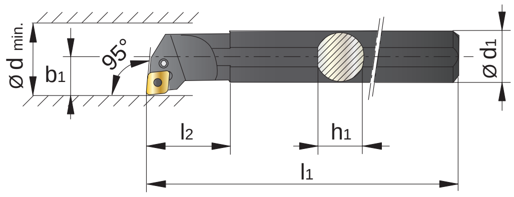
P M K N

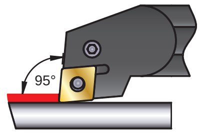
Ref.	Ixd	r (mm)	Geo	Kwaliteit	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.180.0100	1103	0,4	FR	P25	0,5-2	0,05-0,15	✔	✔		✔		
73.180.0150	1103	0,4	FL	P25	0,5-2	0,05-0,15	✔	✔		✔		
73.180.0500	1603	0,4	FR	P25	0,5-3	0,05-0,15	✔	✔		✔		
73.180.0550	1603	0,4	FL	P25	0,5-3	0,05-0,15	✔	✔		✔		
73.180.0700	1603	0,8	FR	P25	1-4	0,2-0,5		✔		✔	✔	
73.180.0750	1603	0,8	FL	P25	1-4	0,2-0,5		✔		✔	✔	

› 72.545 Phantom

NL WISSELPLAATHOUDER S-PCLNR
FR PORTE-PLAQUETTE S-PCLNR
ES PORTAPLAQUITA S-PCLNR
DE KLEMMHALTER S-PCLNR
EN TURNING TOOL HOLDER S-PCLNR



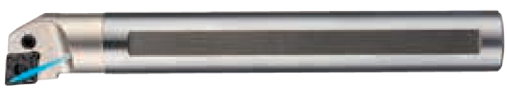


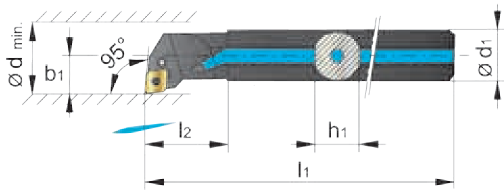


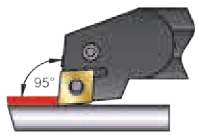
Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.	6 incl.	7 excl.
72.545.1250	S25T-PCLNR 12	23	17	32	25	300	40	73.998.0230	73.998.0100	73.998.0155	73.998.0365	73.998.0200	SW3	CN.. 1204..
72.545.1320	S32U-PCLNR 12	30	22	40	32	350	50	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	SW3	CN.. 1204..
72.545.1400	S40V-PCLNR 12	38	27	50	40	400	60	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	SW3	CN.. 1204..

› 72.550 Phantom

NL WISSELPLAATHOUDER A-PCLNR/L
FR PORTE-PLAQUETTE A-PCLNR/L
ES PORTAPLAQUITA A-PCLNR/L
DE KLEMMHALTER A-PCLNR/L
EN TURNING TOOL HOLDER A-PCLNR/L



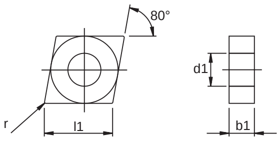




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.	6 incl.	7 excl.
72.550.1250	A25R-PCLNR 12	23	17	31	25	200	40	73.998.0230	73.998.0100	73.998.0155	73.998.0365	73.998.0200	SW3	CNM. 1204..
72.550.1320	A32S-PCLNR 12	30	22	39	32	250	50	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	SW3	CNM. 1204..

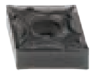
› 73.200 CNMG *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



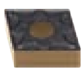
CN..	l1 (mm)	d1 (mm)	b1 (mm)
12	12,7	5,15	4,76
19	19,5	7,92	6,35

P M K S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.200.1347	1204	0,4	UF	UI20	0,6-3	0,1-0,23	✔			✔	✔		
73.200.4367	1204	0,8	UM	UI20	0,2-3	0,1-0,35		✔		✔	✔	✔	

› 73.201 CNMG *Phantom*

P M K

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.201.1346	1204	0,4	PF	PC20	0,2-1,5	0,05-0,25	✔			✔	✔		
73.201.1364	1204	0,8	PF	PC10	0,25-1,5	0,1-0,4	✔			✔	✔		
73.201.1366	1204	0,8	PF	PC20	0,25-1,5	0,1-0,4	✔			✔	✔		
73.201.4366	1204	0,8	PM	PC20	0,5-5,5	0,15-0,5		✔		✔	✔		
73.201.4368	1204	0,8	PM	PC30	0,5-5,5	0,15-0,5		✔		✔	✔	✔	
73.201.4376	1204	1,2	PM	PC20	0,8-5,5	0,18-0,6		✔		✔	✔	✔	
73.201.4378	1204	1,2	PM	PC30	0,8-5,5	0,18-0,6		✔		✔	✔	✔	
73.201.7368	1204	0,8	PR	PC30	1-7	0,2-0,55			✔	✔	✔	✔	

› 73.203 CNMG *Phantom*

P M S

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.203.1347	1204	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔		
73.203.1367	1204	0,8	MF	MSI20	0,6-3	0,12-0,38	✔			✔	✔	✔	
73.203.4347	1204	0,4	MM	MSI20	0,15-2,5	0,1-0,3		✔		✔	✔		
73.203.4367	1204	0,8	MM	MSI20	0,2-3	0,1-0,35		✔		✔	✔	✔	

› 73.204 CNMA *Phantom*

P K

Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.204.0364	1204	0,8	EN	KC10	0,2-8	0,15-0,6		✔	✔	✔	✔		

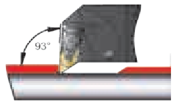
› 73.206 CNMG *Phantom*

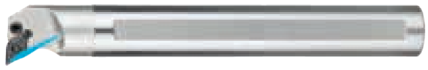
P M S

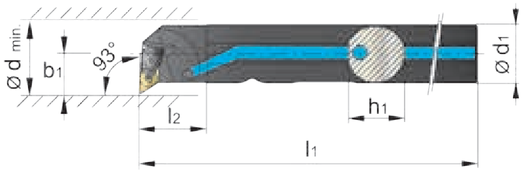
Ref.	Ixd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
73.206.4347	1204	0,4	SM	MSI20	0,2-3,6	0,1-0,2	✔	✔		✔	✔		

› 72.557 Phantom

NL **WISSELPLAATHOUDER A-DDUNR/L**
FR **PORTE-PLAQUETTE A-DDUNR/L**
ES **PORTAPLAQUITA A-DDUNR/L**
DE **KLEMMHALTER A-DDUNR/L**
EN **TURNING TOOL HOLDER A-DDUNR/L**



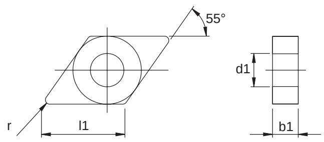




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.	6 incl.	7 excl.
72.557.1252	A25R-PDUNR 11	23	17	31	25	200	40	73.998.0261	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	DN.. 1104..
72.557.1324	A32S-PDUNR 15	30	22	39	32	250	50	73.998.0265	73.998.0120	73.998.0155	73.998.0365	73.998.0200	SW3	DN.. 1506..
72.557.1404	A40T-PDUNR 15	37	27	48	40	300	60	73.998.0265	73.998.0120	73.998.0155	73.998.0365	73.998.0200	SW3	DN.. 1506..

› 73.211 DNMG *Phantom*

NL WISSELPLAAT
FR PLAQUETTE
ES PLAQUITA
DE WENDEPLATTE
EN INSERT



DN..	l1 (mm)	d1 (mm)	b1 (mm)
11	11,6	3,81	4,76
15	15,5	5,16	6,35

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◯	◌
73.211.1246	1104	0,4	PF	PC20	0,1-1,5	0,05-0,25	✔			✔	✔	
73.211.1446	1506	0,4	PF	PC20	0,1-1,5	0,05-0,25	✔			✔	✔	
73.211.4266	1104	0,8	PM	PC20	0,4-5	0,1-0,3		✔		✔	✔	
73.211.4466	1506	0,8	PM	PC20	0,5-6	0,15-0,5		✔		✔	✔	
73.211.4468	1506	0,8	PM	PC30	0,5-6	0,15-0,5		✔		✔	✔	✔
73.211.7568	1506	0,8	PR	PC30	0,8-6	0,2-0,55			✔	✔	✔	✔

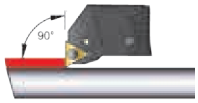
› 73.213 DNMG *Phantom*

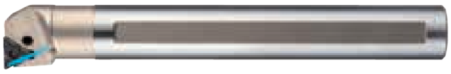
P M S

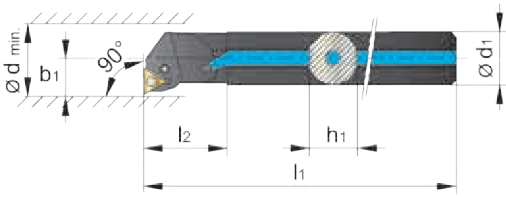
Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◯	◌
73.213.1247	1104	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.213.1447	1506	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.213.4447	1506	0,4	MM	MSI20	0,15-2	0,1-0,25		✔		✔	✔	
73.213.4467	1506	0,8	MM	MSI20	0,2-2,5	0,1-0,3		✔		✔	✔	✔

› 72.565 Phantom

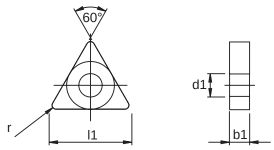
NL **WISSELPLAATHOUDER A-PTFNR/L**
FR **PORTE-PLAQUETTE A-PTFNR/L**
ES **PORTAPLAQUITA A-PTFNR/L**
DE **KLEMMHALTER A-PTFNR/L**
EN **TURNING TOOL HOLDER A-PTFNR/L**







Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.	5 incl.	6 incl.	7 excl.
72.565.1250	A25R-PTFNR 16	23	17	32	25	200	17,5	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..
72.565.1320	A32S-PTFNR 16	30	22	40	32	250	18	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..
72.565.2250	A25R-PTFNL 16	23	17	32	25	200	17,5	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..
72.565.2320	A32S-PTFNL 16	30	22	40	32	250	18	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	SW2,5	TNM. 1604..



TN..	l1 (mm)	d1 (mm)	b1 (mm)
16	16,5	3,81	4,76
22	22,0	5,16	4,76

› 73.250 TNMG *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
73.250.4567	1604	0,8	UF	UI20	0,6-3	0,12-0,38	✔			✔	✔	✔	

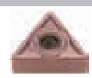
› 73.251 TNMG *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
73.251.1546	1604	0,4	PF	PC20	0,1-1,5	0,05-0,25	✔			✔	✔		
73.251.4548	1604	0,4	PM	PC30	0,4-5	0,1-0,3		✔		✔	✔	✔	
73.251.4566	1604	0,8	PM	PC20	0,5-5	0,15-0,5		✔		✔	✔		
73.251.4766	2204	0,8	PM	PC20	0,5-6,6	0,15-0,5		✔		✔	✔		
73.251.5546	1604	0,4	ER	PC20	1-3,5	0,12-0,3				✔	✔		
73.251.5566	1604	0,8	ER	PC20	1,3-3,5	0,15-0,5				✔	✔		

› 73.253 TNMG *Phantom*

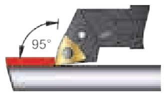
P M S

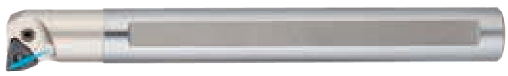
Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
73.253.4547	1604	0,4	MM	MSI20	0,15-3	0,1-0,3		✔		✔	✔		
73.253.4567	1604	0,8	MM	MSI20	0,2-3	0,1-0,3		✔		✔	✔	✔	

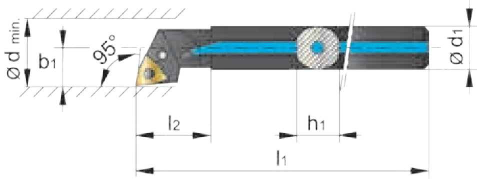
SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7

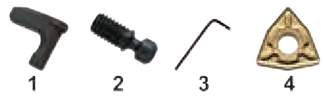
› 72.570 Phantom

NL WISSELPLAATHOUDER A-PWLNR/L
FR PORTE-PLAQUETTE A-PWLNR/L
ES PORTAPLAQUITA A-PWLNR/L
DE KLEMMHALTER A-PWLNR/L
EN TURNING TOOL HOLDER A-PWLNR/L





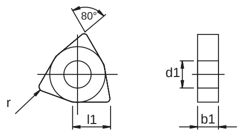




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 excl.
72.570.1200	A20Q-PWLNR 06	19	13	25	20	180	19,5	73.998.0135	73.998.0167	SW2	WN.. 0604..

› 73.291 WNMG *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



WN..	l1 (mm)	d1 (mm)	b1 (mm)
06	6,6	3,81	4,76
08	8,7	5,16	4,76

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.291.1046	0604	0,4	PF	PC20	0,1-1,5	0,05-0,3	✔			✔	✔	
73.291.1146	0804	0,4	PF	PC20	0,1-2	0,05-0,3	✔			✔	✔	
73.291.4066	0604	0,8	PM	PC20	0,5-3	0,15-0,5		✔		✔	✔	
73.291.4166	0804	0,8	PM	PC20	0,5-4	0,15-0,5		✔		✔	✔	
73.291.4168	0804	0,8	PM	PC30	0,5-4	0,15-0,5		✔		✔	✔	✔
73.291.4176	0804	1,2	PM	PC20	0,8-4	0,18-0,6		✔		✔	✔	✔

› 73.293 WNMG *Phantom*

P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌
73.293.1047	0604	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.293.1147	0804	0,4	MF	MSI20	0,6-3	0,1-0,23	✔			✔	✔	
73.293.1167	0804	0,8	MF	MSI20	0,6-3	0,12-0,38	✔			✔	✔	✔
73.293.4147	0804	0,4	MM	MSI20	0,15-2,5	0,1-0,3		✔		✔	✔	
73.293.4167	0804	0,8	MM	MSI20	0,25-3	0,1-0,35		✔		✔	✔	✔

NL Productvergelijker op phantom.eu
FR Comparateur de produits sur Phantom.eu
ES Comparador de productos en phantom.eu
DE Produktvergleich auf phantom.eu
EN Product comparator on phantom.eu

Watch me

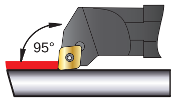
www.phantom.eu

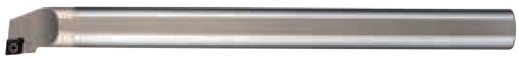
SC 1 | HSS(-E) 1 | 2 | SC 3 | HSS-E 3 | 4 | 5 | 6 | 7

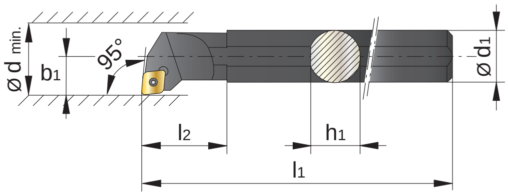
1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7

› 72.585 Phantom

NL WISSELPLAATHOUDER S-SCLCR
FR PORTE-PLAQUETTE S-SCLCR
ES PORTAPLAQUITA S-SCLCR
DE KLEMMHALTER S-SCLCR
EN TURNING TOOL HOLDER S-SCLCR



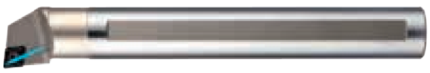


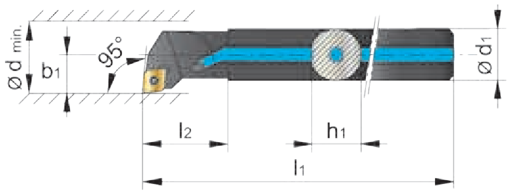


Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 excl.
72.585.1080	S08K-SCLCR 06	7	5	11	8	125	8	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.585.1100	S10M-SCLCR 06	9	7	13	10	150	10	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.585.1120	S12M-SCLCR 06	11	9	16	12	150	10	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.585.1160	S16R-SCLCR 09	15	11	20	16	200	16	73.998.0075(B)/73.998.0094(S)	T15	CC.. 09T3..
72.585.1200	S20S-SCLCR 09	18	13	25	20	250	16	73.998.0075(B)/73.998.0094(S)	T15	CC.. 09T3..
72.585.1250	S25T-SCLCR 09	23	17	32	25	300	16	73.998.0070(B)/73.998.0096(S)	T15	CC.. 09T3..

› 72.590 Phantom

NL WISSELPLAATHOUDER A-SCLCR/L
FR PORTE-PLAQUETTE A-SCLCR/L
ES PORTAPLAQUITA A-SCLCR/L
DE KLEMMHALTER A-SCLCR/L
EN TURNING TOOL HOLDER A-SCLCR/L

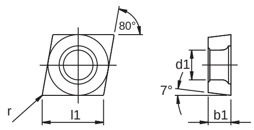




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 excl.
72.590.1080	A08F-SCLCR 06	7,5	5	11	8	80	8	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.590.1100	A10H-SCLCR 06	9,5	7	13	10	100	10	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.590.1120	A12K-SCLCR 06	11,5	9	16	12	125	10	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.590.1160	A16M-SCLCR 09	15,5	11	20	16	150	16	73.998.0075(B)/73.998.0094(S)	T15	CC.. 09T3..
72.590.1200	A20Q-SCLCR 09	19	13	25	20	180	16	73.998.0074(B)/73.998.0094(S)	T15	CC.. 09T3..
72.590.1250	A25R-SCLCR 09	24	17	31,5	25	200	16	73.998.0074(B)/73.998.0094(S)	T15	CC.. 09T3..
72.590.2080	A08F-SCLCL 06	7,5	5	11	8	80	8	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.590.2100	A10H-SCLCL 06	9,5	7	13	10	100	10	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.590.2120	A12K-SCLCL 06	11,5	9	16	12	125	10	73.998.0085(B)/73.998.0086(S)	T8(B)/ T7(S)	CC.. 0602.
72.590.2160	A16M-SCLCL 09	15,5	11	20	16	150	16	73.998.0075(B)/73.998.0094(S)	T15	CC.. 09T3..

› 73.500 CCMT *Phantom*

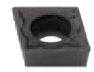
NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



CC..	l1 (mm)	d1 (mm)	b1 (mm)
06	6,4	2,80	2,38
09	9,7	4,40	3,97
12	12,4	5,50	4,76

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◠	◌
73.500.4045	0602	0,4	UM	UI10	0,2-2,4	0,06-0,17		✔		✔	✔	
73.500.4047	0602	0,4	UM	UI20	0,2-2,4	0,06-0,17		✔		✔	✔	
73.500.4145	09T3	0,4	UM	UI10	0,25-3	0,08-0,23		✔		✔	✔	
73.500.4147	09T3	0,4	UM	UI20	0,25-3	0,08-0,23		✔		✔	✔	
73.500.4167	09T3	0,8	UM	UI20	0,5-3	0,1-0,4		✔		✔	✔	✔
73.500.4367	1204	0,8	UM	UI20	0,6-3,6	0,12-0,45		✔		✔	✔	✔



› 73.501 CCMT *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◠	◌
73.501.1026	0602	0,2	PF	PC20	0,06-1,7	0,03-0,11	✔			✔	✔	
73.501.1046	0602	0,4	PF	PC20	0,1-1,7	0,05-0,17	✔			✔	✔	
73.501.1146	09T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔	
73.501.1166	09T3	0,8	PF	PC20	0,15-2	0,08-0,45	✔			✔	✔	
73.501.4046	0602	0,4	PM	PC20	0,2-2,4	0,06-0,17		✔		✔	✔	
73.501.4146	09T3	0,4	PM	PC20	0,25-3	0,08-0,23		✔		✔	✔	
73.501.4166	09T3	0,8	PM	PC20	0,5-3	0,1-0,4		✔		✔	✔	
73.501.4346	1204	0,4	PM	PC20	0,3-3,6	0,09-0,27		✔		✔	✔	
73.501.4366	1204	0,8	PM	PC20	0,6-3,6	0,12-0,45		✔		✔	✔	

› 73.503 CCMT *Phantom*

P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◠	◌
73.503.1047	0602	0,4	MF	MSI20	0,1-1,7	0,05-0,17	✔			✔	✔	
73.503.1147	09T3	0,4	MF	MSI20	0,11-2	0,06-0,23	✔			✔	✔	
73.503.1167	09T3	0,8	MF	MSI20	0,15-2	0,08-0,45	✔			✔	✔	✔
73.503.4147	09T3	0,4	MM	MSI20	0,25-3	0,08-0,23		✔		✔	✔	
73.503.4167	09T3	0,8	MM	MSI20	0,5-3	0,1-0,4		✔		✔	✔	✔
73.503.4367	1204	0,8	MM	MSI20	0,6-3,6	0,12-0,45		✔		✔	✔	✔

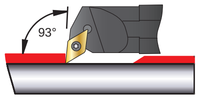
› 73.505 CCGT *Phantom*

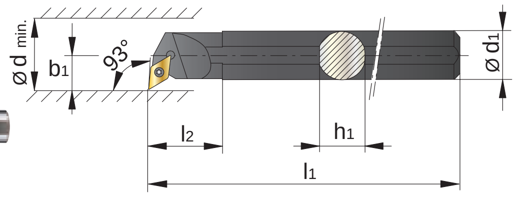
N

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◠	◌
73.505.4020	0602	0,2	NM	K10	0,05-3	0,05-0,12	✔	✔		✔	✔	
73.505.4040	0602	0,4	NM	K10	0,1-3	0,1-0,2		✔		✔	✔	
73.505.4140	09T3	0,4	NM	K10	0,1-5	0,1-0,22		✔		✔	✔	
73.505.4160	09T3	0,8	NM	K10	0,1-5	0,15-0,45		✔	✔	✔	✔	✔

› 72.595 Phantom

NL WISSELPLAATHOUDER S-SDUCR
FR PORTE-PLAQUETTE S-SDUCR
ES PORTAPLAQUITA S-SDUCR
DE KLEMMHALTER S-SDUCR
EN TURNING TOOL HOLDER S-SDUCR

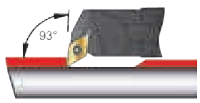


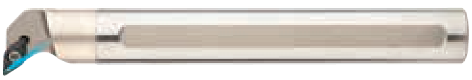


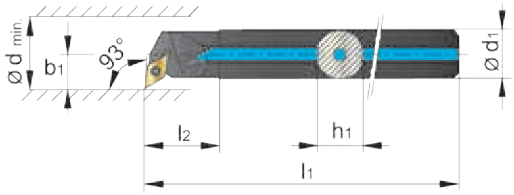
Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.595.1120	S12Q-SDUCR 07	11	9	16	12	180	12,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.595.1160	S16R-SDUCR 07	14,5	11	20	16	200	16,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.595.1200	S20S-SDUCR 11	18	13	25	20	250	20,5	-	-	73.998.0075(B)/73.998.0094(S)	T15	DC.. 11T3..
72.595.1250	S25T-SDUCR 11	23	17	32	25	300	26	73.998.0290(B)/-(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	DC.. 11T3..

› 72.600 Phantom

NL WISSELPLAATHOUDER A-SDUCR/L
FR PORTE-PLAQUETTE A-SDUCR/L
ES PORTAPLAQUITA A-SDUCR/L
DE KLEMMHALTER A-SDUCR/L
EN TURNING TOOL HOLDER A-SDUCR/L



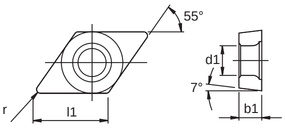




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.600.1120	A12K-SDUCR 07	11,5	9	17	12	125	12,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.600.1160	A16M-SDUCR 07	15,5	11	21	16	150	16,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.600.1200	A20Q-SDUCR 11	19	13	25	20	180	21	-	-	73.998.0075(B)/73.998.0094(S)	T15	DC.. 11T3..
72.600.1250	A25R-SDUCR 11	24	17	31,5	25	200	26	73.998.0290(B)/-(S)	73.998.0355	73.998.0070(B)/73.998.0096(S)	T15	DC.. 11T3..
72.600.2120	A12K-SDUCL 07	11,5	9	12	17	125	12,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.600.2160	A16M-SDUCL 07	15,5	11	16	21	150	16,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	DC.. 0702..
72.600.2200	A20Q-SDUCL 11	19	13	25	20	180	21	-	-	73.998.0075(B)/73.998.0094(S)	T15	DC.. 11T3..

› 73.510 DCMT *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



DC..	l1 (mm)	d1 (mm)	b1 (mm)
07	7,7	2,80	2,38
11	11,6	4,40	3,97

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◐	◌
73.510.4047	0702	0,4	UM	UI20	0,19-2,25	0,06-0,17		✔		✔	✔	
73.510.4247	11T3	0,4	UM	UI20	0,25-3	0,08-0,23		✔		✔	✔	
73.510.4267	11T3	0,8	UM	UI20	0,5-3	0,1-0,4		✔		✔	✔	✔

› 73.511 DCMT *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◐	◌
73.511.1046	0702	0,4	PF	PC20	0,08-1,5	0,05-0,17	✔			✔	✔	
73.511.1246	11T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔	
73.511.4046	0702	0,4	PM	PC20	0,19-2,25	0,06-0,17		✔		✔	✔	
73.511.4066	0702	0,8	PM	PC20	0,38-2,25	0,08-0,35		✔		✔	✔	
73.511.4246	11T3	0,4	PM	PC20	0,25-3	0,08-0,23		✔		✔	✔	
73.511.4266	11T3	0,8	PM	PC20	0,5-3	0,1-0,4		✔		✔	✔	

› 73.513 DCMT *Phantom*

P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◐	◌
73.513.1247	11T3	0,4	MF	MSI20	0,11-2	0,06-0,23	✔			✔	✔	
73.513.4047	0702	0,4	MM	MSI20	0,19-2,25	0,06-0,17		✔		✔	✔	
73.513.4247	11T3	0,4	MM	MSI20	0,25-3	0,08-0,23		✔		✔	✔	
73.513.4267	11T3	0,8	MM	MSI20	0,5-3	0,1-0,4		✔		✔	✔	✔

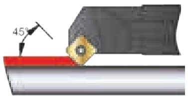
› 73.515 DCGT *Phantom*

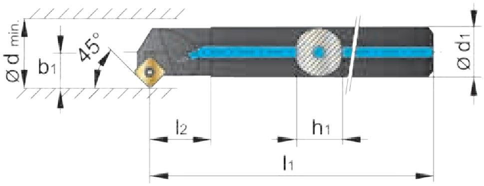
N

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◐	◌
73.515.4020	0702	0,2	NM	K10	0,05-3	0,05-0,12	✔	✔		✔	✔	
73.515.4240	11T3	0,4	NM	K10	0,1-5	0,1-0,22		✔		✔	✔	
73.515.4260	11T3	0,8	NM	K10	0,1-5	0,15-0,5		✔	✔	✔	✔	✔

› 72.610 Phantom

NL **WISSELPLAATHOUDER A-SSSCR**
FR **PORTE-PLAQUETTE A-SSSCR**
ES **PORTAPLAQUITA A-SSSCR**
DE **KLEMMHALTER A-SSSCR**
EN **TURNING TOOL HOLDER A-SSSCR**

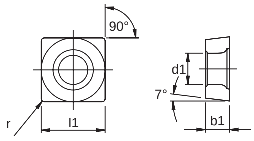




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 excl.
72.610.1160	A16M-SSSCR 09	16	11	21	16	150	129	73.998.0075(B)/73.998.0094(S)	T15	SC.. 09T3..
72.610.1200	A20Q-SSSCR 09	19	13	25	20	180	132	73.998.0075(B)/73.998.0094(S)	T15	SC.. 09T3..

› 73.530 SCMT *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



SC..	l1 (mm)	d1 (mm)	b1 (mm)
09	9,5	4,40	3,97
12	12,7	5,60	4,76

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◯	◌	
73.530.4147	09T3	0,4	UM	UI20	0,25-3	0,06-0,23		✔		✔	✔		
73.530.4167	09T3	0,8	UM	UI20	0,5-3	0,1-0,4		✔		✔	✔	✔	
73.530.4367	1204	0,8	UM	UI20	0,6-3,6	0,12-0,45		✔		✔	✔	✔	

› 73.531 SCMT *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◯	◌	
73.531.1146	09T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔		
73.531.4166	09T3	0,8	PM	PC20	0,5-3	0,1-0,4		✔		✔	✔	✔	
73.531.4366	1204	0,8	PM	PC20	0,6-3,6	0,12-0,45		✔		✔	✔	✔	

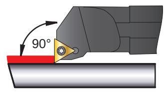
› 73.535 SCGT *Phantom*

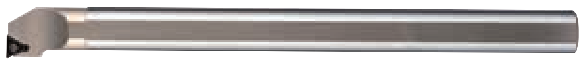
N

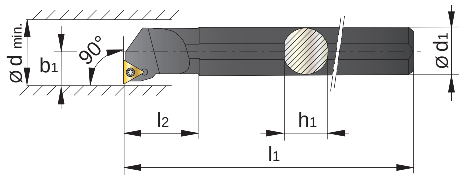
Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◯	◌	
73.535.4140	09T3	0,4	NM	K10	0,1-4	0,1-0,26		✔		✔	✔		
73.535.4160	09T3	0,8	NM	K10	0,1-5	0,15-0,4		✔	✔	✔	✔	✔	

› 72.615 *Phantom*

NL WISSELPLAATHOUDER S-STFCR
FR PORTE-PLAQUETTE S-STFCR
ES PORTAPLAQUITA S-STFCR
DE KLEMMHALTER S-STFCR
EN TURNING TOOL HOLDER S-STFCR





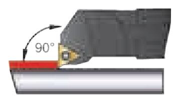


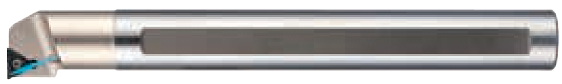
1 2 3

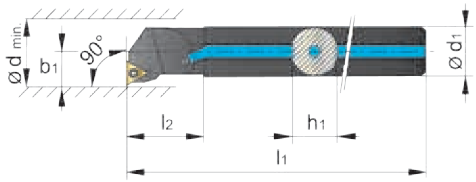
Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.615.1160	S16R-STFCR 11	15	11	21	16	200	13	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	TC.. 1102..
72.615.1200	S20S-STFCR 11	18	13	25	20	250	13	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	TC.. 1102..

› 72.620 *Phantom*

NL WISSELPLAATHOUDER A-STFCR/L
FR PORTE-PLAQUETTE A-STFCR/L
ES PORTAPLAQUITA A-STFCR/L
DE KLEMMHALTER A-STFCR/L
EN TURNING TOOL HOLDER A-STFCR/L





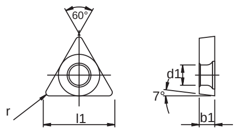


1 2 3

Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.620.1120	A12K-STFCR 11	12	9	17	12	125	13	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	TC.. 1102..
72.620.1160	A16M-STFCR 11	16	11	21	16	150	13	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	TC.. 1102..
72.620.1200	A20Q-STFCR 11	19	13	25	20	180	13	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	TC.. 1102..

› 73.540 TCMT *Phantom*

NL WISSELPLAAT
FR PLAQUETTE
ES PLAQUITA
DE WENDEPLATTE
EN INSERT



TC..	l1 (mm)	d1 (mm)	b1 (mm)
11	11,6	2,80	2,38
16	16,0	4,40	3,97

P M K S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌	
73.540.4567	16T3	0,8	UM	UI20	0,5-3	0,1-0,45		✔		✔	✔	✔	

› 73.541 TCMT *Phantom*

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌	
73.541.1266	1102	0,8	PF	PC20	0,13-1,7	0,07-0,26	✔			✔	✔		
73.541.1546	16T3	0,4	PF	PC20	0,11-2	0,06-0,23	✔			✔	✔		
73.541.4246	1102	0,4	PM	PC20	0,21-2,5	0,06-0,19		✔		✔	✔		
73.541.4566	16T3	0,8	PM	PC20	0,5-3	0,1-0,45		✔		✔	✔		

› 73.543 TCMT *Phantom*

P M S

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌	
73.543.1247	1102	0,4	MF	MSI20	0,1-1,7	0,05-0,19	✔			✔	✔		
73.543.1547	16T3	0,4	MF	MSI20	0,11-2	0,06-0,23	✔			✔	✔		
73.543.4247	1102	0,4	MM	MSI20	0,21-2,5	0,06-0,19		✔		✔	✔		
73.543.4567	16T3	0,8	MM	MSI20	0,5-3	0,1-0,45		✔		✔	✔	✔	

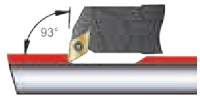
› 73.545 TCGT *Phantom*

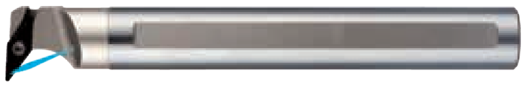
N

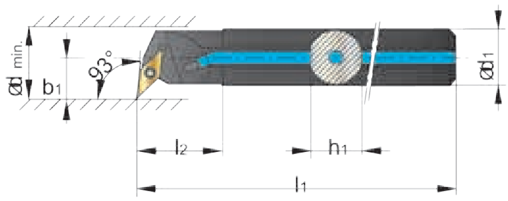
Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	◒	◌	
73.545.4240	1102	0,4	NM	K10	0,1-4	0,1-0,2		✔		✔	✔		
73.545.4540	16T3	0,4	NM	K10	0,1-5,5	0,1-0,2		✔		✔	✔		
73.545.4560	16T3	0,8	NM	K10	0,1-5,5	0,15-0,5		✔	✔	✔	✔	✔	

› 72.630 Phantom

NL **WISSELPLAATHOUDER A-SVUCR**
FR **PORTE-PLAQUETTE A-SVUCR**
ES **PORTAPLAQUITA A-SVUCR**
DE **KLEMMHALTER A-SVUCR**
EN **TURNING TOOL HOLDER A-SVUCR**



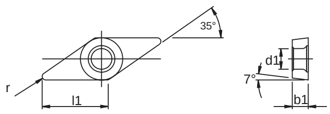




Ref.	Type	h1	b1	d min.	d1	l1	l2	1 incl.	2 incl.	3 incl.	4 incl.	5 excl.
72.623.1160	A16M-SVUCR 11	15,5	11	21	16	150	16,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.. 1103..
72.623.1200	A20Q-SVUCR 11	19	13	25	20	180	20,5	-	-	73.998.0080(B)/73.998.0081(S)	T8(B)/ T7(S)	VC.. 1103..
72.623.1254	A25R-SVUCR 16	23	17	31	25	200	40	73.998.0305	73.998.0335	73.998.0070(B)/73.998.0096(S)	T15	VC.. 1604..

› 73.591 VCMT *Phantom*

NL **WISSELPLAAT**
FR **PLAQUETTE**
ES **PLAQUITA**
DE **WENDEPLATTE**
EN **INSERT**



VC..	l1 (mm)	d1 (mm)	b1 (mm)
11	11,0	2,80	3,18
16	16,6	4,40	4,76

P M K

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌
73.591.1226	1103	0,2	PF	PC20	0,07-1,5	0,03-0,13	✔			✔	✔	
73.591.1246	1103	0,4	PF	PC20	0,1-1,5	0,05-0,2	✔			✔	✔	
73.591.1546	1604	0,4	PF	PC20	0,1-1,8	0,05-0,2	✔			✔	✔	
73.591.4546	1604	0,4	PM	PC20	0,23-2,7	0,07-0,2		✔		✔	✔	
73.591.4566	1604	0,8	PM	PC20	0,45-2,7	0,09-0,27		✔		✔	✔	

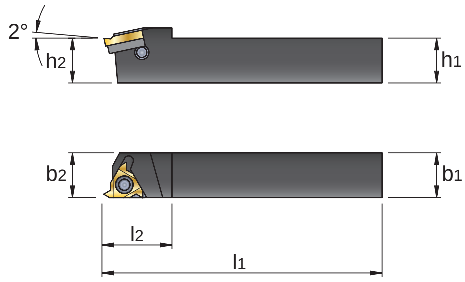
› 73.595 VCGT *Phantom*

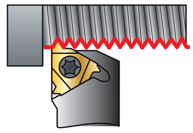
N

Ref.	lxd	r (mm)	Geo	HM	a_p (mm)	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌
73.595.4220	1103	0,2	NM	K10	0,05-3	0,05-0,12	✔	✔		✔	✔	
73.595.4240	1103	0,4	NM	K10	0,05-3	0,1-0,25		✔		✔	✔	

› 74.101 Phantom

NL DRAADSNIJHOUDER, UITWENDIG, NL EN AL, RECHTS
FR OUTIL A FILETER, EXTERIEUR, NL ET AL, A DROITE
ES PORTAPLAQUITA PARA ROSCAR, EXTERIOR, NL Y AL, DCHA
DE KLEMMHALTER, AUSEN, NL UND AL, RECHTS
EN HSS-E 10% INTERNAL GROOVING TOOL RIGHT HAND

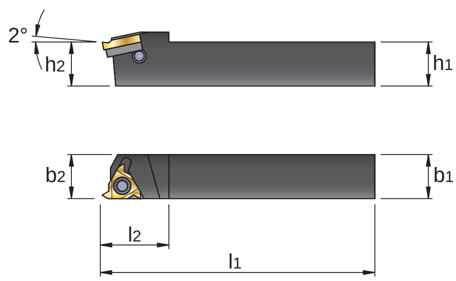


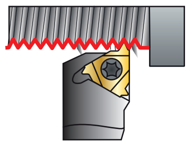


Ref.	Type	h1	h2	b1	b2	l1	l2	1 incl.	2 excl.	3 excl.	4 incl.	5 incl.	6 incl.	7 excl.
74.101.1230	NL 1212-16	12	12	12	16	83,2	22	-	-	-	-	74.398.0105	T10	16ER
74.101.1630	AL 1616-16	16	16	16	16	100	20,5	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	T10	16ER
74.101.2030	AL 2020-16	20	20	20	20	128,6	30	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	T10	16ER
74.101.2530	AL 2525-16	25	25	25	25	153,6	30	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	T10	16ER
74.101.2540	AL 2525-22	25	25	25	25	175,7	36	74.398.0200	74.398.0225	-	74.398.0135	74.398.0120	T20	22ER
74.101.3230	AL 3232-16	32	32	32	32	173,6	30	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	T10	16ER
74.101.3240	AL 3232-22	32	32	32	32	175,7	36	74.398.0200	74.398.0225	-	74.398.0135	74.398.0120	T20	22ER

› 74.102 Phantom

NL DRAADSNIJHOUDER, UITWENDIG, AL, LINKS
FR OUTIL A FILETER, EXTERIEUR, AL, À GAUCHE
ES PORTAPLAQUITA PARA ROSCAR, EXTERIOR, AL, LIZQUIERDA
DE KLEMMHALTER, AUSEN, AL, LINKS
EN THREADING TOOL HOLDER, EXTERNAL, NL AND AL, LEFT HAND

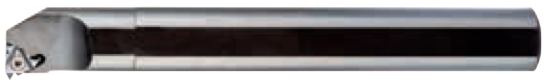


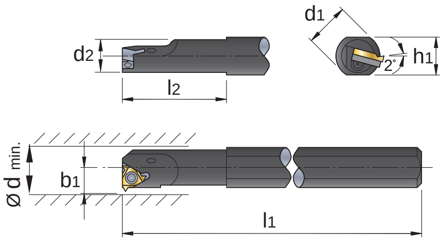


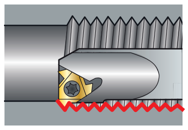
Ref.	Type	h1	h2	b1	b2	l1	l2	1 incl.	2 excl.	3 excl.	4 incl.	5 incl.	6 incl.	7 excl.
74.102.2030	AL 2020-16LH	20	20	20	20	128,6	30	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	T10	16EL

› 74.125 *Phantom*

NL DRAADSNIJHOUDER, INWENDIG, NVR EN AVR, RECHTS
FR OUTIL A FILETER, INTERIEUR, NVR ET AVR, A DROITE
ES PORTAPLAQUITA PARA ROSCAR, INTERIOR, NVR Y AVR, DCHA
DE KLEMMHALTER, INNEN, NVR UND AVR, RECHTS
EN THREADING TOOL HOLDER, INTERNAL, NVR AND AVR, RIGHT HAND



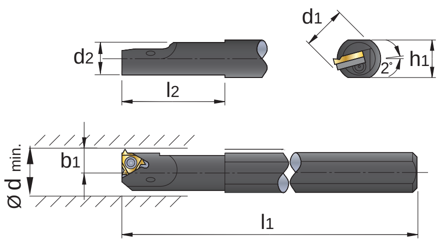


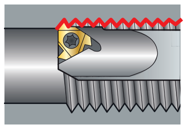


Ref.	Type	d1	h1	l1	d2	l2	b1	d min	1 incl.	2 excl.	3 excl.	4 incl.	5 incl.	6 incl.	7 excl.
74.125.1020	NVR 10-11	20	18	180	10	25	7,3	13	-	-	-	-	74.398.0100	T8	11IR
74.125.1330	NVR 13-16	20	18	180	12,7	32	8,9	17	-	-	-	-	74.398.0105	T10	16IR
74.125.1630	NVR 16-16	20	18	180	16	40	11,5	20	-	-	-	-	74.398.0105	T10	16IR
74.125.2030	AVR 20-16	20	18	180	24,6	40	13,4	24	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	T10	16IR
74.125.2230	AVR 25-16	25	22,6	200	25	45	16,1	29	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	T10	16IR
74.125.2530	AVR 25-16	32	29	250	25	60	16,3	29	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	T10	16IR
74.125.2540	AVR 25-22	32	29	250	32	60	17,4	32	74.398.0290	74.398.0315	-	74.398.0135	74.398.0120	T20	22IR
74.125.3230	AVR 32-16	32	29	250	32	60	19,6	36	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	T10	16IR
74.125.3240	AVR 32-22	40	29	250	40	60	21,5	39	74.398.0290	74.398.0315	-	74.398.0135	74.398.0120	T20	22IR
74.125.4030	AVR 40-16	40	36	300	40	60	23,8	44	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	T10	16IR

› 74.126 *Phantom*

NL DRAADSNIJHOUDER, INWENDIG, NVR EN AVR, LINKS
FR OUTIL A FILETER, INTERIEUR, NVR ET AVR, À GAUCHE
ES PORTAPLAQUITA PARA ROSCAR, INTERIOR, NVR Y AVR, LIZQUIERDA
DE KLEMMHALTER, INNEN, NVR UND AVR, LINKS
EN THREADING TOOL HOLDER, INTERNAL, NVR AND AVR, LEFT HAND

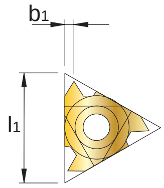




Ref.	Type	d1	h1	l1	d2	l2	b1	d min	1 incl.	2 excl.	3 excl.	4 incl.	5 incl.	6 incl.	7 excl.
74.126.1630	NVR 16-16LH	20	18	180	16	40	11,5	20	-	-	-	-	74.398.0105	T10	16IL

› 74.150 ER 60° UNI

Phantom



NL DRAADSNIJWISSELPLAAT, DEELPROFIEL
FR PLAQUETTE A FILETER, PROFIL PARTIEL
ES PLAQUITA PARA ROSCAR, PERFIL PARCIAL
DE GEWINDESCHNEIDPLATTE, TEILPROFIL
EN THREADING INSERT, PARTIAL PROFILE, EXTERNAL

P M K N S

Ref.	Type	HM	l1	b1	P (mm)	P (Inch)	ap (mm)
74.150.0220	16ER AG60	UI20	16	1,7	0,5-3	48-8	0,08-0,33
74.150.0240	16ER G60	UI20	16	1,7	1,75-3	14-8	0,08-0,33
74.150.0270	22ER N60	UI20	22	2,5	3,5-5	7-5	0,19-0,42

› 74.151 EL 60° UNI

Phantom

P M K N S

Ref.	Type	HM	l1	b1	P (mm)	P (Inch)	ap (mm)
74.151.0220	16EL AG60	UI20	16	1,7	0,5-3	48-8	0,08-0,33

› 74.155 IR 60° UNI

Phantom

P M K N S

Ref.	Type	HM	l1	b1	P (mm)	P (Inch)	ap (mm)
74.155.0070	11IR A60	UI20	11	0,9	0,5-1,5	48-16	0,08-0,25
74.155.0220	16IR AG60	UI20	16	1,7	0,5-3	48-8	0,08-0,33
74.155.0240	16IR G60	UI20	16	1,7	1,75-3	14-8	0,08-0,33
74.155.0270	22IR N60	UI20	22	2,5	3,5-5	7-8	0,19-0,42

› 74.156 IL 60° UNI

Phantom

P M K N S

Ref.	Type	HM	l1	b1	P (mm)	P (Inch)	ap (mm)
74.156.0220	16IL AG60	UI20	16	1,7	0,5-3	48-8	0,08-0,33

› 74.160 ER 55° UNI

Phantom

P M K N S

Ref.	Type	HM	l1	b1	P (mm)	P (Inch)	ap (mm)
74.160.0220	16ER AG55	UI20	16	1,7	0,5-3	48-8	0,08-0,33
74.160.0270	22ER N55	UI20	22	2,5	3,5-5	7-5	0,19-0,42

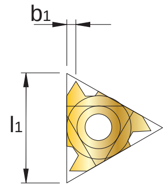
› 74.165 IR 55° UNI

Phantom

P M K N S

Ref.	Type	HM	l1	b1	P (mm)	P (Inch)	ap (mm)
74.165.0070	11IR A55	UI20	11	0,9	0,5-1,5	48-16	0,08-0,25
74.165.0220	16IR AG55	UI20	16	1,7	0,5-3	48-8	0,08-0,33
74.165.0270	22IR N55	UI20	22	2,5	3,5-5	7-5	0,19-0,42

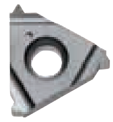
› 74.170 ER 60° M UNI-INOX *Phantom*



NL **DRAADSNIJWISSELPLAAT, VOLPROFIEL**
FR **PLAQUETTE A FILETER, PROFIL PLEIN**
ES **PLAQUITA PARA ROSCAR, PERFIL COMPLETO**
DE **GEWINDESCHNEIDPLATTE, VOLLPROFIL**
EN **THREADING INSERT METRIC COARSE, FULL PROFILE, EXTERNAL**

P M K N S

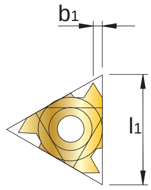
Ref.	Type	HM	l1	b1	P (mm)	ap [mm]	x ap (mm)
74.170.0720	16ER 0,5ISO	UI20	16	0,4	0,5	0,08-0,12	4-6
74.170.0730	16ER 0,5ISO	MSI20	16	0,4	0,5	0,08-0,12	4-6
74.170.0800	16ER 0,7ISO	UI20	16	0,6	0,7	0,1-0,18	4-7
74.170.0870	16ER 0,75ISO	UI20	16	0,6	0,75	0,1-0,18	4-7
74.170.0875	16ER 0,8ISO	UI20	16	0,7	0,8	0,1-0,18	4-6
74.170.0970	16ER 1,0ISO	UI20	16	0,7	1	0,12-0,25	4-8
74.170.0990	16ER 1,0ISO	MSI20	16	0,7	1	0,12-0,25	4-8
74.170.1020	16ER 1,25ISO	UI20	16	0,9	1,25	0,13-0,25	5-9
74.170.1040	16ER 1,25ISO	MSI20	16	0,9	1,25	0,13-0,25	5-9
74.170.1070	16ER 1,5ISO	UI20	16	1	1,5	0,15-0,25	6-10
74.170.1090	16ER 1,5ISO	MSI20	16	1	1,5	0,15-0,25	6-10
74.170.1120	16ER 1,75ISO	UI20	16	1,2	1,75	0,15-0,25	7-12
74.170.1140	16ER 1,75ISO	MSI20	16	1,2	1,75	0,15-0,25	7-12
74.170.1170	16ER 2,0ISO	UI20	16	1,3	2	0,16-0,28	7-12
74.170.1190	16ER 2,0ISO	MSI20	16	1,3	2	0,16-0,28	7-12
74.170.1220	16ER 2,5ISO	UI20	16	1,5	2,5	0,18-0,32	8-14
74.170.1240	16ER 2,5ISO	MSI20	16	1,5	2,5	0,19-0,33	8-14
74.170.1270	16ER 3,0ISO	UI20	16	1,6	3	0,19-0,33	9-16
74.170.1290	16ER 3,0ISO	MSI20	16	1,6	3	0,19-0,33	9-16
74.170.1320	22ER 3,5ISO	UI20	22	2,3	3,5	0,2-0,35	10-18
74.170.1370	22ER 4,0ISO	UI20	22	2,3	4	0,22-0,36	11-18
74.170.1420	22ER 4,5ISO	UI20	22	2,4	4,5	0,24-0,4	11-19
74.170.1470	22ER 5,0ISO	UI20	22	2,5	5	0,25-0,42	12-20
74.170.1520	22ER 6,0ISO	UI20	22	2,7	6	0,3-0,5	12-20



> 74.175 IR 60° M UNI-INOX

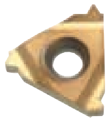
Phantom

NL Draadsnijwisselplaat, volprofiel
FR Plaquette a fileter, profil plein
ES Plaquita para roscar, perfil completo
DE Gewindeschneidplatte, Vollprofil
EN Threading Insert Metric Coarse 60°, full profile, internal



P M K N S

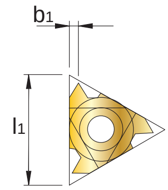
Ref.	Type	HM	l1	b1	P (mm)	ap [mm]	x ap (mm)
74.175.0175	11IR 0,5ISO	UI20	11	0,4	0,5	0,08-0,12	4-6
74.175.0320	11IR 0,75ISO	UI20	11	0,6	0,75	0,1-0,18	4-7
74.175.0420	11IR 1,0ISO	UI20	11	0,7	1	0,12-0,25	4-8
74.175.0470	11IR 1,25ISO	UI20	11	0,9	1,25	0,14-0,25	5-9
74.175.0520	11IR 1,5ISO	UI20	11	1	1,5	0,15-0,25	6-10
74.175.0530	11IR 1,5ISO	MSI20	11	1	1,5	0,15-0,25	6-9
74.175.0570	11IR 1,75ISO	UI20	11	1,1	1,75	0,15-0,25	7-12
74.175.0610	11IR 2,0ISO	UI20	11	1,1	2	0,16-0,28	7-12
74.175.0650	11IR 2,5ISO	UI20	11	1,1	2,5	0,18-0,32	8-14
74.175.0720	16IR 0,5ISO	UI20	16	0,4	0,5	0,08-0,12	4-6
74.175.0970	16IR 1,0ISO	UI20	16	0,7	1	0,12-0,25	4-8
74.175.0990	16IR 1,0ISO	MSI20	16	0,7	1	0,12-0,25	4-7
74.175.1020	16IR 1,25ISO	UI20	16	0,9	1,25	0,12-0,25	5-9
74.175.1040	16IR 1,25ISO	MSI20	16	0,9	1,25	0,14-0,25	5-8
74.175.1070	16IR 1,5ISO	UI20	16	1	1,5	0,14-0,25	6-10
74.175.1090	16IR 1,5ISO	MSI20	16	1	1,5	0,15-0,25	6-9
74.175.1120	16IR 1,75ISO	UI20	16	1,2	1,75	0,15-0,25	7-12
74.175.1140	16IR 1,75ISO	MSI20	16	1,2	1,75	0,15-0,25	7-11
74.175.1175	16IR 2,0ISO	UI20	16	1,3	2	0,16-0,28	7-12
74.175.1190	16IR 2,0ISO	MSI20	16	1,3	2	0,16-0,28	7-11
74.175.1220	16IR 2,5ISO	UI20	16	1,5	2,5	0,18-0,32	8-14
74.175.1240	16IR 2,5ISO	MSI20	16	1,5	2,5	0,18-0,32	8-12
74.175.1270	16IR 3,0ISO	UI20	16	1,6	3	0,19-0,33	9-16
74.175.1300	16IR 3,5ISO	UI20	16	1,9	3,5	0,2-0,35	10-18
74.175.1320	22IR 3,5ISO	UI20	22	2,3	3,5	0,2-0,35	10-18
74.175.1370	22IR 4,0ISO	UI20	22	2,3	4	0,22-0,36	11-18
74.175.1420	22IR 4,5ISO	UI20	22	2,4	4,5	0,24-0,4	11-19
74.175.1470	22IR 5,0ISO	UI20	22	2,3	5	0,25-0,42	12-20



› 74.180 ER 55° UN

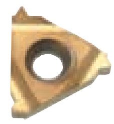
Phantom

NL **Draadsnijwisselplaat, volprofiel**
FR **Plaquette a fileter, profil plein**
ES **Plaquita para roscar, perfil completo**
DE **Gewindeschneidplatte, Vollprofil**
EN **Threading Insert UN 60°, full profile, external**



P M K N S

Ref.	Type	HM	l1	b1	P (Inch)	ap [mm]	x ap (mm)
74.180.1370	16ER 20UN	UI20	16	0,9	20	0,12-0,25	5-9
74.180.1420	16ER 18UN	UI20	16	1	18	0,12-0,25	5-9
74.180.1470	16ER 16UN	UI20	16	1,1	16	0,14-0,25	6-10
74.180.1520	16ER 14UN	UI20	16	1,2	14	0,15-0,25	7-12
74.180.1570	16ER 13UN	UI20	16	1,3	13	0,15-0,25	7-12
74.180.1620	16ER 12UN	UI20	16	1,4	12	0,15-0,25	7-12
74.180.1770	16ER 10UN	UI20	16	1,5	10	0,16-0,28	8-14
74.180.1870	16ER 8UN	UI20	16	1,7	8	0,18-0,32	8-14

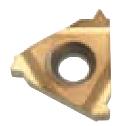


› 74.185 IR 55° UN

Phantom

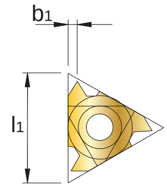
P M K N S

Ref.	Type	HM	l1	b1	P (Inch)	ap [mm]	x ap (mm)
74.185.0620	11IR 20UN	UI20	16	0,9	20	0,12-0,25	5-9
74.185.0670	11IR 18UN	UI20	16	1	18	0,12-0,25	5-9
74.185.1470	16IR 16UN	UI20	16	1,1	16	0,14-0,25	6-10
74.185.1520	16IR 14UN	UI20	16	1,2	14	0,15-0,25	7-12
74.185.1570	16IR 13UN	UI20	16	1,3	13	0,15-0,25	7-12
74.185.1620	16IR 12UN	UI20	16	1,4	12	0,15-0,25	7-12
74.185.1770	16IR 10UN	UI20	16	1,5	10	0,16-0,28	8-14
74.185.1870	16IR 8UN	UI20	16	1,7	8	0,18-0,32	8-14



› 74.190 ER 55° BSP-BSW

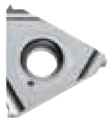
Phantom



NL Draadsnijwisselplaat, volprofiel
FR Plaquette à fileter, profil plein
ES Plaquita para roscar, perfil completo
DE Gewindeschneidplatte, Vollprofil
EN Threading Insert BSW/BSF/BSP 55°, full profile, external

P M K N S

Ref.	Type	HM	l1	b1	P (Inch)	ap [mm]	x ap (mm)
74.190.1270	16ER 28W	UI20	16	0,7	28	0,1-0,18	4-7
74.190.1520	16ER 19W	UI20	16	1	19	0,12-0,25	5-9
74.190.1570	16ER 18W	UI20	16	1	18	0,14-0,25	5-9
74.190.1620	16ER 16W	UI20	16	1,1	16	0,15-0,25	5-9
74.190.1670	16ER 14W	UI20	16	1,2	14	0,15-0,25	7-12
74.190.1690	16ER 14W	MSI20	16	1,2	14	0,15-0,25	7-12
74.190.1720	16ER 12W	UI20	16	1,4	12	0,15-0,25	7-12
74.190.1770	16ER 11W	UI20	16	1,5	11	0,16-0,28	7-12
74.190.1780	16ER 11W	MSI20	16	1,5	11	0,16-0,28	7-12
74.190.1820	16ER 10W	UI20	16	1,5	10	0,16-0,28	8-14
74.190.1870	16ER 9W	UI20	16	1,7	9	0,16-0,28	8-14

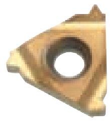


› 74.195 IR 55° BSP-BSW

Phantom

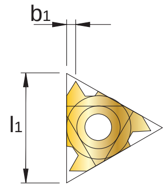
P M K N S

Ref.	Type	HM	l1	b1	P (Inch)	ap [mm]	x ap (mm)
74.195.0420	11IR 28W	UI20	11	0,7	28	0,1-0,18	4-7
74.195.0670	11IR 19W	UI20	11	1	19	0,12-0,25	5-9
74.195.0720	11IR 18W	UI20	11	1	18	0,14-0,25	5-9
74.195.0770	11IR 16W	UI20	11	1,1	16	0,15-0,25	6-10
74.195.0820	11IR 14W	UI20	11	1,1	14	0,15-0,25	7-12
74.195.1470	16IR 19W	UI20	16	1	19	0,12-0,25	5-9
74.195.1520	16IR 18W	UI20	16	1	18	0,14-0,25	5-9
74.195.1570	16IR 16W	UI20	16	1,1	16	0,15-0,25	6-10
74.195.1620	16IR 14W	UI20	16	1,2	14	0,15-0,25	7-12
74.195.1670	16IR 12W	UI20	16	1,4	12	0,15-0,25	7-12
74.195.1720	16IR 11W	UI20	16	1,5	11	0,16-0,28	7-12
74.195.1770	16IR 10W	UI20	16	1,5	10	0,16-0,28	8-14
74.195.1820	16IR 9W	UI20	16	1,7	9	0,16-0,28	8-14



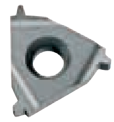
› 74.240 ER 55° TR

Phantom



NL **Draadsnijwisselplaat Trapezium volprofiel, uitwendig**
FR **Plaquette à fileter Trapèze profil plein, extérieur**
ES **Plaquita para roscar Trapecio perfil completoo, exterior**
DE **Drehplatte Trapezmodel Vollprofil, außen**
EN **Threading Insert Trapezoidal full profile, external**

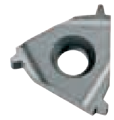
P

Ref.	Type	HM	l1	b1	P (Inch)	ap [mm]	x ap (mm)	
74.240.1050	16ER 1,5TR	P30	16	1,1	1,5	0,15-0,25	6	
74.240.1150	16ER 2,0TR	P30	16	1,3	2	0,16-0,28	8	
74.240.1250	16ER 3,0TR	P30	16	1,5	3	0,19-0,33	12	
74.240.1370	22ER 4,0TR	P30	22	1,9	4	0,22-0,36	13	
74.240.1450	22ER 5,0TR	P30	22	2,5	5	0,25-0,42	14	

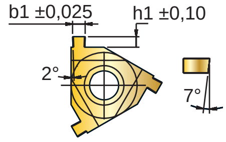
› 74.245 IR 55° TR

Phantom

P

Ref.	Type	HM	l1	b1	P (Inch)	ap [mm]	x ap (mm)	
74.245.1050	16IR 1,5TR	P30	16	1,1	1,5	0,15-0,25	6	
74.245.1150	16IR 2,0TR	P30	16	1,3	2	0,16-0,28	8	
74.245.1250	16IR 3,0TR	P30	16	1,5	3	0,19-0,33	12	
74.245.1370	22IR 4,0TR	P30	22	1,9	4	0,22-0,36	13	
74.245.1450	22IR 5,0TR	P30	22	2,5	5	0,25-0,42	14	

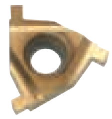
› 74.390 ER DIN 471 Phantom



NL **Borgringwisselplaat**
FR **Plaquette pour gorges de circlips**
ES **Plaquita para arandelas de retencion**
DE **Schneidplatte**
EN **Retainer Ring Grooving Insert external**

P M K N

Ref.	Type	HM	l1	h1	b1	m H13
74.390.0070	16ER 1,10-1,30 UI20	UI20	16	1,3	1,19	1,1
74.390.0170	16ER 1,30-1,50 UI20	UI20	16	1,5	1,39	1,3
74.390.0220	16ER 1,60-1,85 UI20	UI20	16	1,8	1,69	1,6
74.390.0270	16ER 1,85-2,00 UI20	UI20	16	2	1,94	1,85
74.390.0320	16ER 2,15-1,50 UI20	UI20	16	1,5	2,24	2,15

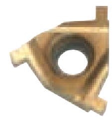


› 74.395 IR DIN 472 Phantom

NL **Borgringwisselplaat**
FR **Plaquette pour gorges de circlips**
ES **Plaquita para arandelas de retencion**
DE **Schneidplatte**
EN **Retainer Ring Grooving Insert internal**

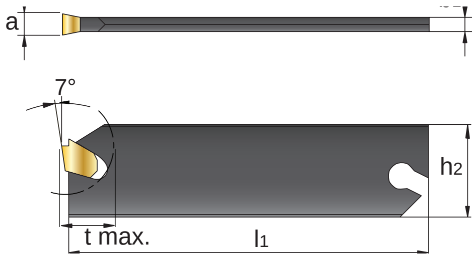
P M K N

Ref.	Type	HM	l1	h1	b1	m H13
74.395.0070	16IR 1,10-1,30 UI20	UI20	16	1,3	1,19	1,1
74.395.0170	16IR 1,30-1,50 UI20	UI20	16	1,5	1,39	1,3
74.395.0220	16IR 1,60-1,85 UI20	UI20	16	1,8	1,69	1,6
74.395.0270	16IR 1,85-2,00 UI20	UI20	16	2	1,94	1,85
74.395.0320	16IR 2,15-1,50 UI20	UI20	16	1,5	2,24	2,15



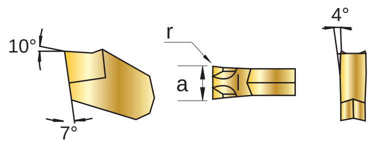
› 74.410 *Phantom*

NL Steekplaathouder FX, uitwendig
FR Lame à tronçonner FX, exterieur
ES Portaplaquita de tronzado FX, exterior
DE Stechklinge FX, ausen
EN Parting Tool, external



Ref.	h2	b1	l1	t max	1 excl.
74.4100300	26	2,4	110	40	FX3
74.4100400	26	3,2	110	40	FX4
74.4101300	32	2,4	150	40	FX3
74.4101400	32	3,2	150	40	FX4
74.4101500	32	4,3	150	60	FX5

› 74.480 FX *Phantom*



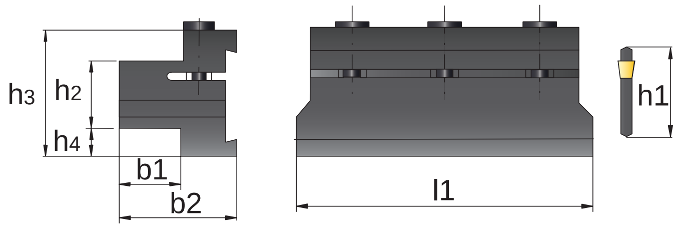
NL Steekplaat
FR Plaquette à tronçonner
ES Plaquita para tronzar
DE Stechplatte
EN Cut-off Insert

P M K

Ref.	a [mm]	r	Geo	HM	f_n (mm)	▽▽▽	▽▽	▽	○	⊖	◌	
74.480.3001	3,1	0,2	UM	UI30	0,05-0,12		✔		✔	✔	✔	
74.480.4001	4,1	0,2	UM	UI30	0,05-0,15		✔		✔	✔	✔	
74.480.5001	5,1	0,2	UM	UI30	0,05-0,18		✔		✔	✔	✔	

› 74.500 Phantom

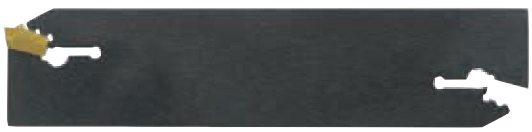
NL **Basishouder PTNZ**
FR **Bloc PTNZ**
ES **Bloque PTNZ**
DE **Grundhalter PTNZ**
EN **Tool Holder PTNZ**

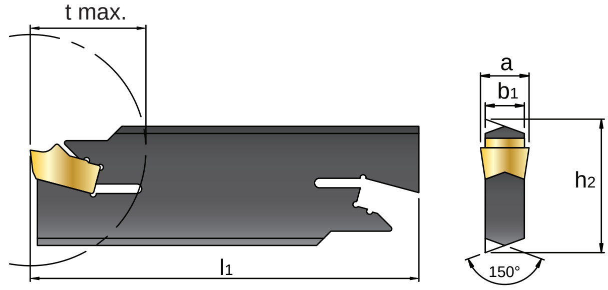


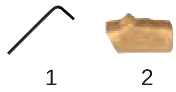
Ref.	Type	h1	h2	h3	h4	b1	b2	l1	1 incl.	2 incl.
74.500.1626	PTNZ 16-26	26	16	39	12	16	29	90	74.998.0005	SW5
74.500.2026	PTNZ 20-26	26	20	39	8	20	33	90	74.998.0005	SW5
74.500.2532	PTNZ 25-32	32	25	48	8	20	36	110	74.998.0005	SW5
74.500.2032	PTNZ 20-32	32	20	48	13	20	36	100	74.998.0005	SW5

› 74.510 Phantom

NL **Steekplaathouder EXN, uitwendig**
FR **Lame à tronçonner EXN, exterieur**
ES **Portaplaquita de tronzado EXN, exterior**
DE **Stechklinge EXN, ausen**
EN **Parting Tool, EX/RX, external**



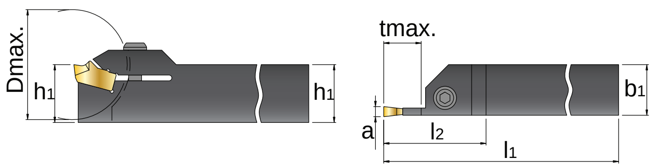


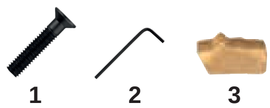


Ref.	Type	h2	l1	a	b1	t max	1 incl.	2 excl.
74.5100200	26-2,2	26	110	2,2	1,8	25	74.998.0016	EXN 2,2
74.5100300	26-3	26	110	3	2,4	40	74.998.0016	EX . 3 - RXN 3
74.5100400	26-4	26	110	4	3	40	74.998.0016	EX . 4 - RXN 4
74.5101300	32-3	32	150	3	2,4	50	74.998.0016	EX . 3 - RXN 3
74.5101400	32-4	32	150	4	3	50	74.998.0016	EX . 4 - RXN 4
74.5101500	32-5	32	110	5	4,4	60	74.998.0016	EX . 5 - RXN 5

› 74.517 Phantom

NL **Steekplaathouder EXN, uitwendig**
FR **Lame à tronçonner EXN, extérieur**
ES **Portaplaquita de tronzado EXN, exterior**
DE **Stechhalter EXN, ausen**
EN **Parting Tool, EX/RX, external**

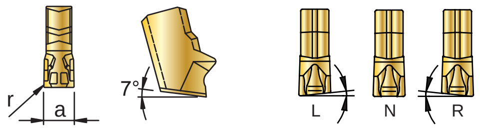




Ref.	Type	l1	a	t max	h1	b1	l2	d max	1 incl.	2 incl.	3 excl.
74.5171122	R1212-2,2	91	2,2	11	12	12	25	22	74.998.0019	SW5	EXN 2,2
74.5171162	R1616-2,2	95	2,2	16	16	12	29	32	74.998.0019	SW5	EXN 2,2
74.5171163	R1616-3	95	3	16	16	12	29	32	74.998.0019	SW5	EX . 3 - RXN 3
74.5171203	R2020-3	150	3	21	20	16	35	42	74.998.0021	SW5	EX . 3 - RXN 3
74.5171204	R2020-4	150	4	21	20	16	35	42	74.998.0021	SW5	EX . 4 - RXN 4
74.5171253	R2525-3	150	3	21	25	20	35	42	74.998.0021	SW5	EX . 3 - RXN 3
74.5171254	R2525-4	150	4	21	25	20	35	42	74.998.0021	SW5	EX . 4 - RXN 4
74.5172203	L2020-3	150	3	21	20	16	35	42	74.998.0021	SW5	EX . 3 - RXN 3
74.5172253	L2525-3	150	3	21	25	20	35	42	74.998.0021	SW5	EX . 3 - RXN 3

› 74.582 EX Phantom

NL Steekplaat, enkel
FR Plaquette à tronçonner, simple
ES Plaquita para tronzar, simple
DE Stechplatte, nur
EN Cut-off Insert single-sided



P M K

Ref.	Type	a [mm]	r	Geo	HM	f_n (mm)	▽▽▽	▽▽	▽	○		
74.582.2000	EXN	2,2	0,2	NM	K10	0,05-0,09		✔		✔		
74.582.2003	EXN	2,2	0,2	PM	UI30	0,05-0,09		✔		✔		
74.582.3000	EXN	3	0,2	NM	K10	0,05-0,12		✔		✔		
74.582.3001	EXN	3	0,2	MM	UI30	0,05-0,12		✔		✔		
74.582.3003	EXN	3	0,2	PM	UI30	0,05-0,12		✔		✔		
74.582.3008	EXR	3	0,2	PM	UI30	0,05-0,12		✔		✔		
74.582.3012	EXL	3	0,2	PM	UI30	0,05-0,12		✔		✔		
74.582.4001	EXN	4	0,2	MM	UI30	0,05-0,15		✔		✔		
74.582.4003	EXN	4	0,2	PM	UI30	0,05-0,15		✔		✔		
74.582.4008	EXR	4	0,2	PM	UI30	0,05-0,15		✔		✔		
74.582.4012	EXL	4	0,2	PM	UI30	0,05-0,15		✔		✔		
74.582.5003	EXN	5	0,3	PM	UI30	0,05-0,18		✔		✔		

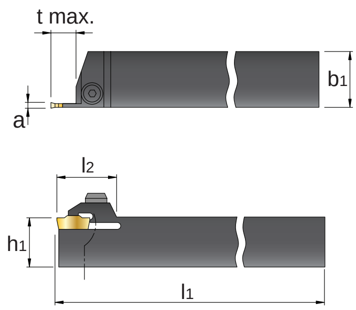
› 74.599 RXN Phantom

P M K

Ref.	Type	a [mm]	r	Geo	HM	f_n (mm)	▽▽▽	▽▽	▽	○		
74.599.3003	RXN	3	1,5	PM	UI30	0,05-0,09		✔		✔		
74.599.4003	RXN	4	2	PM	UI30	0,05-0,09		✔		✔		
74.599.5003	RXN	5	2,5	PM	UI30	0,05-0,09		✔		✔		

› 74.522 Phantom

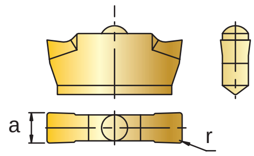
NL Steekplaathouder EJN, uitwendig
FR Lame à tronçonner EJN, extérieur
ES Portaplaquita de tronzado EJN, exterior
DE Stechhalter EJN, außen
EN Parting Tool, external



Ref.	Type	h1	b1	l1	l2	a	t max	1 incl.	2 incl.	3 excl.
74.522.1163	R1616-3-4	16	16	100	30	3-4	12	74.998.0019	SW5	DXN 3 - DXN 4
74.522.1203	R2020-3	20	20	120	30	3-4	12	74.998.0021	SW5	DXN 3 - DXN 4
74.522.1253	R2525-3	25	25	120	30	3-4	12	74.998.0021	SW5	DXN 3 - DXN 4

› 74.596 DXN Phantom

NL Steekplaat, dubbel
FR Plaquette à tronçonner, double
ES Plaquita para tronzar, doble
DE Stechplatte, doppelseitig
EN Parting Tool, external

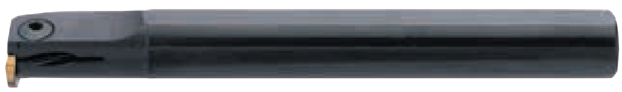


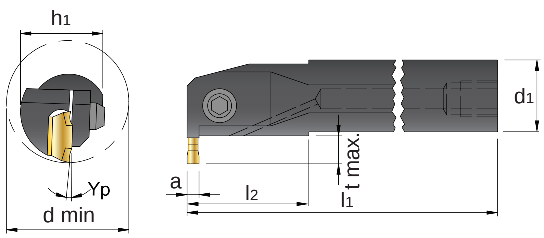
P M

Ref.	a [mm]	r	HM	f_n (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
75.596.3003	3	0,15	PC30	0,05-0,12	0,05-0,09		✔		✔			
75.596.4003	4	0,2	PC30	0,05-0,15	0,05-0,09		✔		✔			

› 74.540 Phantom

NL Steekplaathouder EJN, inwendig
FR Lame à tronçonner EJN, intérieur
ES Portaplaquita de tronzado EJN, interior
DE Stechhalter EJN, innen
EN Parting Tool, internal

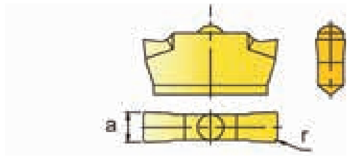




Ref.	Type	h1	d1	l1	l2	a	t max	d min	1 incl.	2 incl.	3 excl.
74.540.2003	R20-3-4	18	20	200	30	3-4	5	16,5	74.998.0031	T20	EJN 3 - EJN 4
74.540.2503	R25-3-4	23	25	200	50	3-4	5	25	74.998.0032	SW5+Rivet	EJN 3 - EJN 4

› 74.560 Phantom

NL Steekplaat, dubbel
FR Plaquette à tronçonner, double
ES Plaquita para tronzar, doble
DE Stechplatte, doppelseitig
EN Cut-off Insert double-sided

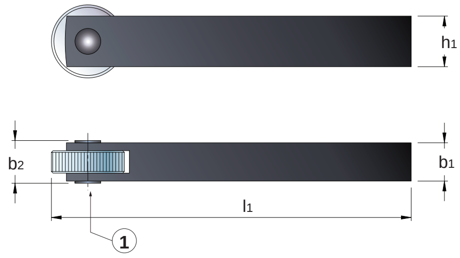


P M

Ref.	a [mm]	r	HM	f_n (mm)	f_n (mm)	▽▽▽	▽▽	▽	○			
74.560.3003	3	0,15	PC30	0,05-0,12	0,05-0,09		✔		✔			
74.560.4003	4	0,2	PC30	0,05-0,15	0,05-0,09		✔		✔			

› 75.100 Phantom

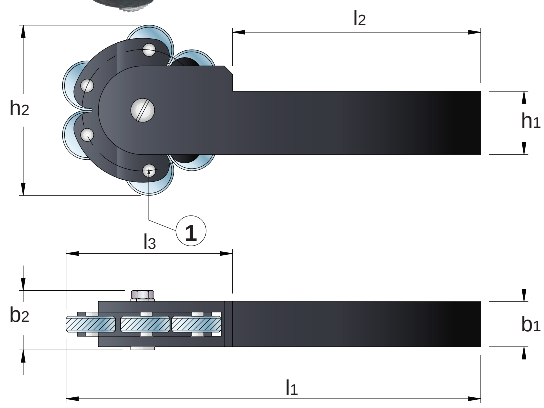
NL Drukkartelrolhouder, type M1
FR Outils de moletage par déformation, type M1
ES Moleteadores por deformación, tipo M1
DE Rändelhalter zur Verformung, Typ M1
EN Pressure knurlingtool type M1



Ref.	Type	Ø mm	l1	b1	b2	h1	1
75.100.1000	M1	8-200	112	14	19	14	75.290.0100
75.100.1160	M1	8-200	112	16	19	16	75.290.0100

› 75.103 Phantom

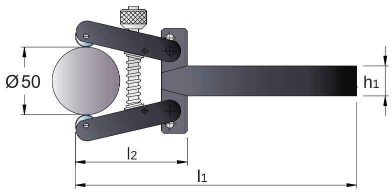
NL Drukkartelrolhouder, type M2
FR Outils de moletage par déformation, type M2
ES Moleteadores por deformación, tipo M2
DE Rändelhalter zur Verformung, Typ M2
EN Pressure knurlingtool type M2

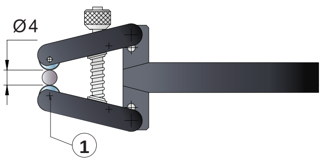


Ref.	Type	Ø mm	l1	l2	l3	b1	b2	h1	h2	1
75.103.1000	M2	8-200	180	72	108	25	30	25	62	75.290.0201

› 75.106 Phantom

NL Drukkartelrolhouder, type M3
FR Outils de moletage par déformation, type M3
ES Moleteadores por deformación, tipo M3
DE Rändelhalter zur Verformung, Typ M3
EN Pressure knurlingtool Type M3

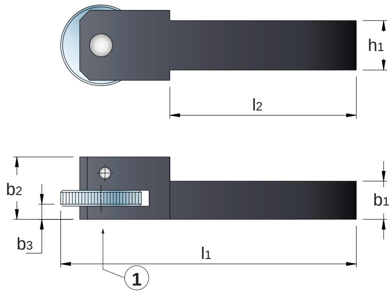




Ref.	Type	Ø mm	l1	l2	b2	h1	1
75.106.1000	M3	4-50	220	87	25	18	75.290.0301

› 75.109 Phantom

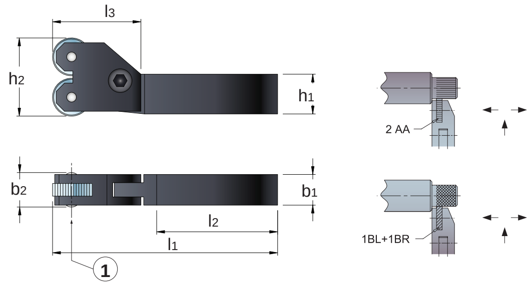
NL **Drukkartelrolhouder, type M6**
FR **Outils de moletage par déformation, type M6**
ES **Moleteadores por deformación, tipo M6**
DE **Rändelhalter zur Verformung, Typ M6**
EN **Pressure knurlingtool Type M6**



Ref.	Type	Ø mm	l1	l2	b1	b2	b3	h1	1
75.109.1010	M6-2008-10	5-200	108	80	10	20	2.5	10	75.290.0600
75.109.1212	M6-2008-12	5-200	108	80	12	20	2.5	12	75.290.0600
75.109.1414	M6-2008-14	5-200	108	80	14	20	2.5	14	75.290.0600
75.109.1616	M6-2008-16	5-200	108	80	16	20	2.5	16	75.290.0600
75.109.2020	M6-2008-20	5-200	108	80	20	20	2.5	20	75.290.0600

› 75.115 Phantom

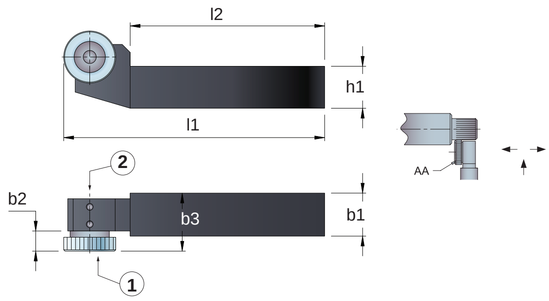
NL **Drukkartelrolhouder, type M7**
FR **Outils de moletage par déformation, type M7**
ES **Moleteadores por deformación, tipo M7**
DE **Rändelhalter zur Verformung, Typ M7**
EN **Pressure knurlingtool type M7**



Ref.	Type	Ø mm	l1	l2	l3	b1	b2	h1	h2	1
75.115.1000	M7	8-200	162	115	42	18	18	25	42	75.290.0301

› 75.121 Phantom

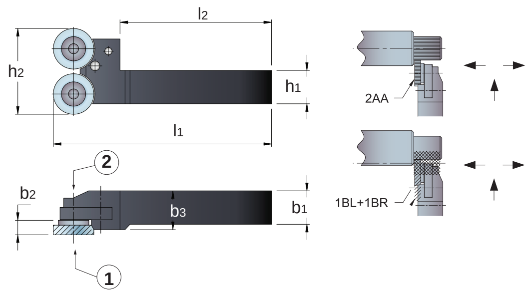
NL **Drukkartelrolhouder, type MCNCS**
FR **Outils de moletage par déformation, type MCNCS**
ES **Moleteadores por deformación, tipo MCNCS**
DE **Rändelhalter zur Verformung, Typ MCNCS**
EN **Pressure knurlingtool type MCNCS**



Ref.	Type	Ø mm	l1	l2	b1	b3	b2	h1	1	2
75.121.2520	MCNCS	8-200	150	125	25	32	10	20	75.290.0902	75.290.1001
75.121.2532	MCNCS	8-200	150	125	25	32	10	25	75.290.0902	75.290.1001

› 75.125 Phantom

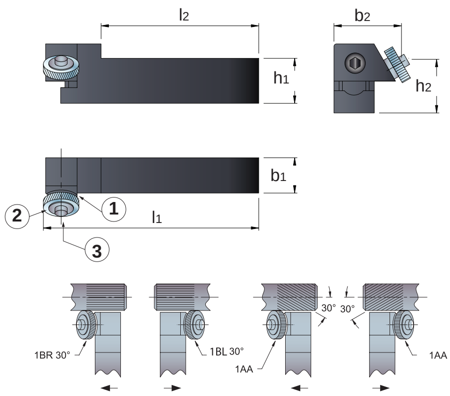
NL Drukkartelrolhouder, type MCNC
FR Outils de moletage par déformation, type MCNC
ES Moleteadores por deformación, tipo MCNC
DE Rändelhalter zur Verformung, Typ MCNC
EN Pressure knurlingtool type MCNCS



Ref.	Type	Ø mm	l1	l2	b1	b2	b3	h1	h2	1	2
75.125.2025	MCNC	8-200	150	112	25	32	55	20	55	75.290.1002	75.290.1001
75.125.2525	MCNC	8-200	150	112	25	32	55	25	55	75.290.1002	75.290.1001

› 75.129 Phantom

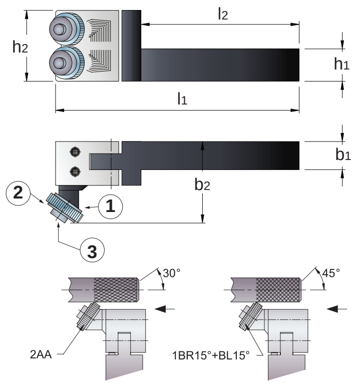
NL Freeskartelrolhouder, type MFCNCS
FR Outils de moletage par coupe, type MFCNCS
ES Moleteadores por corte, tipo MFCNCS
DE Rändelfräshalter, Typ MFCNCS
EN Cut-knurling tool type MFCNCS



Ref.	Type	Ø mm	l1	l2	b1	b2	h1	h2	1	2	3
75.129.2025	MFCNCS	5-250	150	114	25	39	20	20	75.290.1101	75.290.1400	75.290.1600
75.129.2525	MFCNCS	5-250	150	114	25	39	25	25	75.290.1101	75.290.1400	75.290.1600

› 75.133 Phantom

NL **Freeskartelrolhouder, type MFCNC**
FR **Outils de moletage par coupe, type MFCNC**
ES **Moleteadores por corte, tipo MFCNC**
DE **Rändelfräshalter, Typ MFCNC**
EN **Cut-knurling tool type MFCNC**



Ref.	Type	Ø mm	l1	l2	b1	b2	h1	h2	1	2	3
75.133.1616	MFCNC	4-50	120	78	16	44	16	35	75.290.1201	75.290.1300	75.290.1500
75.133.2025	MFCNC	5-250	165	112	25	63	20	50	75.290.1101	75.290.1400	75.290.1600
75.133.2525	MFCNC	5-250	165	112	25	63	25	50	75.290.1101	75.290.1400	75.290.1600

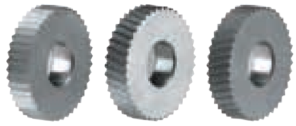
NL Keuzehulp snijolie en smeermiddelen
FR Aide à la sélection des huiles de coupe et lubrifiants
ES Ayuda para la selección de aceites de corte y lubricantes
DE Auswahlhilfe Schneidöl und Schmiermittel
EN Selection Guide for Cutting Oils and Lubricants

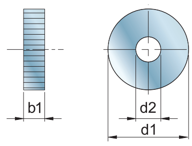
Read me

www.phantom.eu

› 75.158 *Phantom*

NL **HSS-Co Frees Kartelrol, MFCNC 16x16**
FR **Molette de fraisage HSS-Co, MFCNC 16x16**
ES **Moleta de corte HSS-Co, MFCNC 16x16**
DE **HSS-Co Rändelfräsräder, MFCNC 16x16**
EN **HSS-Co Cut Knurl MFCNC 16x16**


AA BR15 BL15

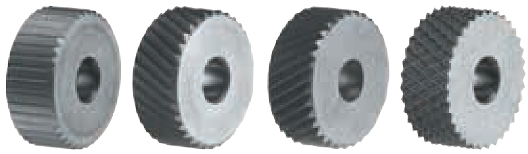


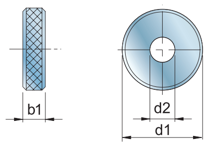
Ref.	Type	d1	d2	b1	t
75.158.1010	AA 14,5E3	14.5	5	3	1
75.158.2010	BL15 14,5E3	14.5	5	3	1

Ref.	Type	d1	d2	b1	t
75.158.3010	BR15 14,5E3	14.5	5	3	1

› 75.174 *Phantom*

NL **HSS-Co Druk-Kartelrol, M1, M2, M3, M6, M7**
FR **Molette pour moletage par déformation HSS-Co, M1, M2, M3, M6, M7**
ES **Moleta de deformación HSS-Co, M1, M2, M3, M6, M7**
DE **HSS-Co Rändelräder, M1, M2, M3, M6, M7**
EN **HSS-Co Pressure knurl M1, M2, M3, M6, M7**


AA BR30 BL30 GE30

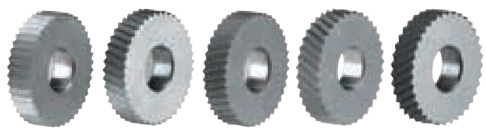


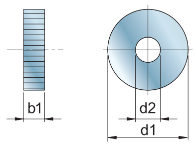
Ref.	Type	d1	d2	b1	t
75.174.1006	AA 20E8	20	6	8	0,6
75.174.1008	AA 20E8	20	6	8	0,8
75.174.1010	AA 20E8	20	6	8	1
75.174.1012	AA 20E8	20	6	8	1,2
75.174.1016	AA 20E8	20	6	8	1,6
75.174.1020	AA 20E8	20	6	8	2
75.174.4006	BR30 20E8	20	6	8	0,6
75.174.4008	BR30 20E8	20	6	8	0,8
75.174.4010	BR30 20E8	20	6	8	1
75.174.4012	BR30 20E8	20	6	8	1,2
75.174.4016	BR30 20E8	20	6	8	1,6
75.174.4018	BR30 20E8	20	6	8	1,8
75.174.4020	BR30 20E8	20	6	8	2

Ref.	Type	d1	d2	b1	t
75.174.5006	BL30 20E8	20	6	8	0,6
75.174.5008	BL30 20E8	20	6	8	0,8
75.174.5010	BL30 20E8	20	6	8	1
75.174.5012	BL30 20E8	20	6	8	1,2
75.174.5016	BL30 20E8	20	6	8	1,6
75.174.5018	BL30 20E8	20	6	8	1,8
75.174.5020	BL30 20E8	20	6	8	2
75.174.6006	GE30 20E8	20	6	8	0,6
75.174.6008	GE30 20E8	20	6	8	0,8
75.174.6010	GE30 20E8	20	6	8	1
75.174.6012	GE30 20E8	20	6	8	1,2
75.174.6016	GE30 20E8	20	6	8	1,6
75.174.6020	GE30 20E8	20	6	8	2

› 75.182 *Phantom*

NL **HSS-Co Frees Kartelrol, MFCNCS, MFCNC 20x25 - 25x25**
FR **Molette de fraisage HSS-Co, MFCNCS, MFCNC 20x25 - 25x25**
ES **Moleta de corte HSS-Co, MFCNCS, MFCNC 20x25 - 25x25**
DE **HSS-Co Rändelfräsräder, MFCNCS, MFCNC 20x25 - 25x25**
EN **HSS-Co Cut Knurl MFCNCS, MFCNC 20x25 - 25x25**


AA BR15 BL15 BR30 BL30

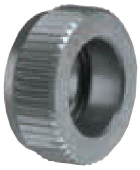


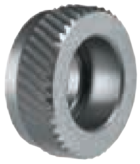
Ref.	Type	d1	d2	b1	t
75.182.1005	AA 21,5E5	21.5	8	5	0,5
75.182.1006	AA 21,5E5	21.5	8	5	0,6
75.182.1008	AA 21,5E5	21.5	8	5	0,8
75.182.1010	AA 21,5E5	21.5	8	5	1
75.182.1012	AA 21,5E5	21.5	8	5	1,2
75.182.1016	AA 21,5E5	21.5	8	5	1,6
75.182.1020	AA 21,5E5	21.5	8	5	2
75.182.2006	BR15 21,5E5	21.5	8	5	0,6
75.182.2008	BR15 21,5E5	21.5	8	5	0,8
75.182.2010	BR15 21,5E5	21.5	8	5	1
75.182.2012	BR15 21,5E5	21.5	8	5	1,2
75.182.2016	BR15 21,5E5	21.5	8	5	1,6
75.182.2020	BR15 21,5E5	21.5	8	5	2
75.182.3006	BL15 21,5E5	21.5	8	5	0,6
75.182.3008	BL15 21,5E5	21.5	8	5	0,8
75.182.3010	BL15 21,5E5	21.5	8	5	1

Ref.	Type	d1	d2	b1	t
75.182.3012	BL15 21,5E5	21.5	8	5	1,2
75.182.3016	BL15 21,5E5	21.5	8	5	1,6
75.182.3020	BL15 21,5E5	21.5	8	5	2
75.182.4005	BR30 21,5E5	21.5	8	5	0,5
75.182.4006	BR30 21,5E5	21.5	8	5	0,6
75.182.4008	BR30 21,5E5	21.5	8	5	0,8
75.182.4010	BR30 21,5E5	21.5	8	5	1
75.182.4012	BR30 21,5E5	21.5	8	5	1,2
75.182.4016	BR30 21,5E5	21.5	8	5	1,6
75.182.4020	BR30 21,5E5	21.5	8	5	2
75.182.5006	BL30 21,5E5	21.5	8	5	0,6
75.182.5008	BL30 21,5E5	21.5	8	5	0,8
75.182.5010	BL30 21,5E5	21.5	8	5	1
75.182.5012	BL30 21,5E5	21.5	8	5	1,2
75.182.5016	BL30 21,5E5	21.5	8	5	1,6
75.182.5020	BL30 21,5E5	21.5	8	5	2

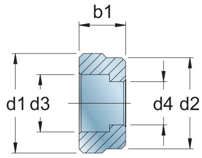
› 75.197 Phantom

NL **HSS-Co Druk-Kartelrol, MCNCS, MCNC**
FR **Molette pour moletage par déformation HSS-Co, MCNCS, MCNC**
ES **Moleta de deformación HSS-Co, MCNCS, MCNC**
DE **HSS-Co Rändelräder, MCNCS, MCNC**
EN **HSS-Co Pressure knurl MCNCS, MCNC**


AA


BR30


BL30

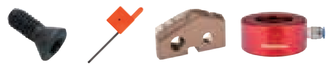


Ref.	Type	d1	d2	d3	d4	b1	t
75.197.1006	AA 25D11	25	22	15	11	10	6
75.197.1008	AA 25D11	25	22	15	11	10	0,8
75.197.1010	AA 25D11	25	22	15	11	10	1
75.197.1012	AA 25D11	25	22	15	11	10	1,2
75.197.1016	AA 25D11	25	22	15	11	10	1,6
75.197.1020	AA 25D11	25	22	15	11	10	2
75.197.4006	BR30 25D11	25	22	15	11	10	0,6
75.197.4008	BR30 25D11	25	22	15	11	10	0,8
75.197.4010	BR30 25D11	25	22	15	11	10	1

Ref.	Type	d1	d2	d3	d4	b1	t
75.197.4012	BR30 25D11	25	22	15	11	10	1,2
75.197.4016	BR30 25D11	25	22	15	11	10	1,6
75.197.4020	BR30 25D11	25	22	15	11	10	2
75.197.5006	BL30 25D11	25	22	15	11	10	0,6
75.197.5008	BL30 25D11	25	22	15	11	10	0,8
75.197.5010	BL30 25D11	25	22	15	11	10	1
75.197.5012	BL30 25D11	25	22	15	11	10	1,2
75.197.5016	BL30 25D11	25	22	15	11	10	1,6
75.197.5020	BL30 25D11	25	22	15	11	10	2

› 75.600 Phantom

NL **Phantom Wisselplaatboor, gespiraliseerd, Morse Konus**
FR **Foret à plaquettes indexables, goujure hélicoïdale, queue cône morse**
ES **Broca de plaquita indexable, helicoidal, cono Morse**
DE **Wendeplattenbohrer, spiralförmig, Morse Kegel**
EN **Insert drill, with spiral flute, Morse taper**


1 2 3 4

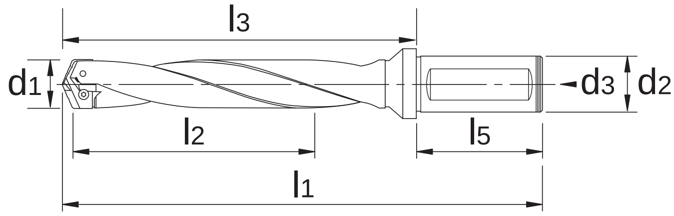
DIN 228-B

Ref.	d1	l2	l3	l4	l1	d3	d2	1 incl.	2 incl.	3 excl.	4 excl.
75.600.0406	12,98-15,49	89	110	146	218	NPT 1/16	MK 2	75.698.0400	T8	Gr.00	75.695.0000
75.600.0408	12,98-15,49	114	135	172	244	NPT 1/16	MK 2	75.698.0400	T8	Gr.00	75.695.0000
75.600.0412	12,98-15,49	178	199	235	307	NPT 1/16	MK 2	75.698.0400	T8	Gr.00	75.695.0000
75.600.0505	15,50-17,85	89	110	146	218	NPT 1/16	MK 2	75.698.0500	T8	Gr.05	75.695.0000
75.600.0507	15,50-17,85	114	135	172	244	NPT 1/16	MK 2	75.698.0500	T8	Gr.05	75.695.0000
75.600.0511	15,50-17,85	178	199	235	307	NPT 1/16	MK 2	75.698.0500	T8	Gr.05	75.695.0000
75.600.1009	17,86-21,99	172	200	244	334	NPT 1/8	MK 3	75.698.1000	T9	Gr.10	75.695.1200
75.600.1011	17,86-21,99	219	251	295	385	NPT 1/8	MK 3	75.698.1000	T9	Gr.10	75.695.1200
75.600.1013	17,86-21,99	273	302	346	436	NPT 1/8	MK 3	75.698.1000	T9	Gr.10	75.695.1200
75.600.1018	17,86-21,99	363	395	439	529	NPT 1/8	MK 3	75.698.1000	T9	Gr.10	75.695.1200
75.600.1507	22,00-24,60	172	200	244	334	NPT 1/8	MK 3	75.698.1000	T9	Gr.15	75.695.1200
75.600.1509	22,00-24,60	219	251	295	385	NPT 1/8	MK 3	75.698.1000	T9	Gr.15	75.695.1200
75.600.1512	22,00-24,60	273	302	346	436	NPT 1/8	MK 3	75.698.1000	T9	Gr.15	75.695.1200
75.600.1515	22,00-24,60	363	395	439	529	NPT 1/8	MK 3	75.698.1000	T9	Gr.15	75.695.1200
75.600.2007	24,61-29,99	137	216	262	375	NPT 1/8	MK 4	75.698.2000	T15	Gr.20	75.695.1200
75.600.2009	24,61-29,99	238	267	313	426	NPT 1/8	MK 4	75.698.2000	T15	Gr.20	75.695.1200
75.600.2010	24,61-29,99	289	318	364	477	NPT 1/8	MK 4	75.698.2000	T15	Gr.20	75.695.1200
75.600.2015	24,61-29,99	400	429	475	588	NPT 1/8	MK 4	75.698.2000	T15	Gr.20	75.695.1200
75.600.2506	30,00-35,50	187	216	269	383	NPT 1/8	MK 4	75.698.2000	T15	Gr.25	75.695.2300
75.600.2508	30,00-35,50	289	318	371	484	NPT 1/8	MK 4	75.698.2000	T15	Gr.25	75.695.2300
75.600.2512	30,00-35,50	400	429	482	595	NPT 1/8	MK 4	75.698.2000	T15	Gr.25	75.695.2300
75.600.3005	35,51-41,99	210	241	295	408	NPT 1/4	MK 4	75.698.3400	T20	Gr.30	75.695.2300
75.600.3009	35,51-41,99	349	381	435	548	NPT 1/4	MK 4	75.698.3400	T20	Gr.30	75.695.2300
75.600.3505	42,00-47,99	210	241	295	408	NPT 1/4	MK 4	75.698.3400	T20	Gr.35	75.695.2300
75.600.3508	42,00-47,99	349	381	435	548	NPT 1/4	MK 4	75.698.3400	T20	Gr.35	75.695.2300
75.600.4004	48,00-55,99	232	267	321	465	NPT 1/4	MK 5	75.698.3400	T20	Gr.40	75.695.4000
75.600.4008	48,00-55,99	422	457	511	656	NPT 1/4	MK 5	75.698.3400	T20	Gr.40	75.695.4000
75.600.4504	56,00-65,09	232	267	321	465	NPT 1/4	MK 5	75.698.3400	T20	Gr.45	75.695.4000
75.600.4507	56,00-65,09	422	547	511	656	NPT 1/4	MK 5	75.698.3400	T20	Gr.45	75.695.4000
75.600.5004	63,50-76,99	273	318	389	532	NPT 1/2	MK 5	75.998.5800	T25	Gr.50	75.695.5800
75.600.5007	63,50-76,99	464	508	579	722	NPT 1/2	MK 5	75.998.5800	T25	Gr.50	75.695.5800

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7

› 75.620 Phantom

NL Wisselplaatboor, gespiraliseerd, Cilindrisch met plat vlak
FR Foret à plaquettes indexables, goujure hélicoïdale, mango cilíndrico con 1 plano
ES Broca de plaquita indexable, helicoidal, Cilíndrico con 1 plano
DE Wendeplattenbohrer, spiralförmig, Zylinderschaft mit Mitnahmefläche
EN Insert drill, with spiral flute, Cylindrical with flat



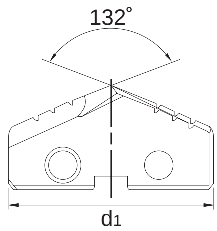
ISO 9766

NIEUW NOUVEAU NUEVO NEU

Ref.	d1	l2	l3	l4	l1	d3	d2	l5	1 incl.	2 incl.	3 excl.
75.620.0406	12,98-15,49	89	118	142	168	NPT 1/8	20 mm	50	75.698.0400	T8	Gr.00
75.620.0407	12,98-15,49	114	143	146	193	NPT 1/8	20 mm	50	75.698.0400	T8	Gr.00
75.620.0411	12,98-15,49	178	206	209	256	NPT 1/8	20 mm	50	75.698.0400	T8	Gr.00
75.620.0505	15,50-17,85	89	118	142	168	NPT 1/8	20 mm	50	75.698.0500	T8	Gr.05
75.620.0506	15,50-17,85	114	143	146	193	NPT 1/8	20 mm	50	75.698.0500	T8	Gr.05
75.620.0510	15,50-17,85	178	206	209	256	NPT 1/8	20 mm	50	75.698.0500	T8	Gr.05
75.620.1005	17,86-21,99	118	155	158	211	NPT 1/8	25 mm	56	75.698.1000	T9	Gr.10
75.620.1008	17,86-21,99	168	206	209	262	NPT 1/8	25 mm	56	75.698.1000	T9	Gr.10
75.620.1010	17,86-21,99	219	256	262	312	NPT 1/8	25 mm	56	75.698.1000	T9	Gr.10
75.620.1505	22,00-24,60	118	155	158	211	NPT 1/8	25 mm	56	75.698.1000	T9	Gr.15
75.620.1509	22,00-24,60	219	256	262	312	NPT 1/8	25 mm	56	75.698.1000	T9	Gr.15
75.620.1511	22,00-24,60	270	307	311	363	NPT 1/8	25 mm	56	75.698.1000	T9	Gr.15
75.620.2005	24,61-29,99	137	179	183	239	NPT 1/4	32 mm	60	75.698.2000	T15	Gr.20
75.620.2010	24,61-29,99	289	332	335	392	NPT 1/4	32 mm	60	75.698.2000	T15	Gr.20
75.620.2505	30,00-35,50	187	230	234	290	NPT 1/4	32 mm	60	75.698.2000	T15	Gr.25
75.620.2508	30,00-35,50	289	332	335	392	NPT 1/4	32 mm	60	75.698.2000	T15	Gr.25
75.620.3005	35,51-41,99	210	262	267	332	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.30
75.620.3008	35,51-41,99	349	364	368	434	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.30
75.620.3503	42,00-47,99	165	218	222	288	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.35
75.620.3505	42,00-47,99	260	313	332	383	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.35
75.620.4004	48,00-55,99	232	281	286	351	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.40
75.620.4006	48,00-55,99	350	399	404	469	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.40
75.620.4504	56,00-65,09	232	281	286	351	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.45
75.620.4505	56,00-65,09	350	399	404	469	NPT 1/4	40 mm	70	75.698.3400	T20	Gr.45

› 75.650 Phantom

NL UNI HSS-E PM Boorwisselplaat AlCrN
FR Plaquette de perçage indexable HSS-E PM UNI AlCrN
ES Plaquita HSS-E PM UNI AlCrN
DE UNI HSS-E PM Bohrer wendeplatte AlCrN
EN UNI HSS-E PM Drilling insert AlCrN



HSS-E PM | AlCrN | 132° | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	<1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC	GFK/CFK	Ni/Co	Ti
40-80 C	35-70 C	30-50 B	20-35 B	18-32 A	15-25 A	40-70 C	30-60 C	100-200 B	100-150 C	60-80 C	40-50 C	50-75 B	50-90 C	50-90 C	8-12 A	10-14 A

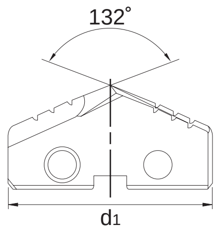
Ref.	d1	Type	Ref.	d1	Type	Ref.	d1	Type
75.650.1300	13	Gr.00	75.650.2200	22	Gr.15	75.650.4000	40	Gr.30
75.650.1350	13.5	Gr.00	75.650.2300	23	Gr.15	75.650.4100	41	Gr.30
75.650.1400	14	Gr.00	75.650.2400	24	Gr.15	75.650.4200	42	Gr.35
75.650.1450	14.5	Gr.00	75.650.2500	25	Gr.20	75.650.4300	43	Gr.35
75.650.1500	15	Gr.00	75.650.2600	26	Gr.20	75.650.4400	44	Gr.35
75.650.1550	15.5	Gr.05	75.650.2700	27	Gr.20	75.650.4500	45	Gr.35
75.650.1600	16	Gr.05	75.650.2800	28	Gr.20	75.650.4600	46	Gr.35
75.650.1650	16.5	Gr.05	75.650.2900	29	Gr.20	75.650.4700	47	Gr.35
75.650.1700	17	Gr.05	75.650.3000	30	Gr.25	75.650.4800	48	Gr.40
75.650.1750	17.5	Gr.05	75.650.3100	31	Gr.25	75.650.4900	49	Gr.40
75.650.1800	18	Gr.10	75.650.3200	32	Gr.25	75.650.5000	50	Gr.40
75.650.1850	18.5	Gr.10	75.650.3300	33	Gr.25	75.650.5100	51	Gr.40
75.650.1900	19	Gr.10	75.650.3400	34	Gr.25	75.650.5200	52	Gr.40
75.650.1950	19.5	Gr.10	75.650.3500	35	Gr.25	75.650.5300	53	Gr.40
75.650.2000	20	Gr.10	75.650.3600	36	Gr.30	75.650.5400	54	Gr.40
75.650.2050	20.5	Gr.10	75.650.3700	37	Gr.30	75.650.5500	55	Gr.40
75.650.2100	21	Gr.10	75.650.3800	38	Gr.30	75.650.5600	56	Gr.45
75.650.2150	21.5	Gr.10	75.650.3900	39	Gr.30	75.650.5700	57	Gr.45

› 75.650 Phantom

Ref.	d1	Type
75.650.5800	58	Gr.45
75.650.5900	59	Gr.45
75.650.6000	60	Gr.45
75.650.6100	61	Gr.45
75.650.6200	62	Gr.45
75.650.6300	63	Gr.45
75.650.6400	64	Gr.45
75.650.6500	65	Gr.45
75.650.6600	66	Gr.50
75.650.6800	68	Gr.50
75.650.7000	70	Gr.50
75.650.7200	72	Gr.50
75.650.7400	74	Gr.50
75.650.7600	76	Gr.50

› 75.680 Phantom

NL UNI hardmetaal Boorwisselplaat AlCrN
FR Plaquette de perçage indexable Carbure UNI AlCrN
ES Plaquita MD UNI AlCrN
DE UNI Hartmetall Bohrer wendeplatte AlCrN
EN UNI carbide Drilling insert AlCrN



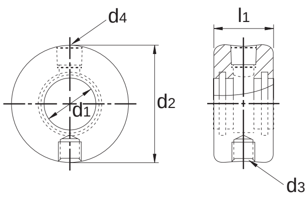
HM | AlCrN | 132° | UNI

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	<1000 N/mm²	<1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC	GFK/CFK	Ni/Co	Ti
80-130 C	70-95 C	50-75 B	35-50 B	35-65 A	25-50 A	80-140 C	60-120 C	250-450 B	250-450 C	70-90 C	80-120 C	70-110 B	50-90 C	50-90 C	16-25 A	20-35 A

Ref.	d1	Type
75.680.1300	13	Gr.00
75.680.1350	13.5	Gr.00
75.680.1400	14	Gr.00
75.680.1450	14.5	Gr.00
75.680.1500	15	Gr.00
75.680.1550	15.5	Gr.05
75.680.1600	16	Gr.05
75.680.1650	16.5	Gr.05
75.680.1700	17	Gr.05
75.680.1750	17.5	Gr.05
75.680.1800	18	Gr.10
75.680.1850	18.5	Gr.10
75.680.1900	19	Gr.10
75.680.1950	19.5	Gr.10
75.680.2000	20	Gr.10
75.680.2050	20.5	Gr.10
75.680.2100	21	Gr.10
75.680.2200	22	Gr.15
75.680.2300	23	Gr.15
75.680.2400	24	Gr.15
75.680.2500	25	Gr.20
75.680.2600	26	Gr.20
75.680.2700	27	Gr.20
75.680.2800	28	Gr.20
75.680.2900	29	Gr.20
75.680.3000	30	Gr.25
75.680.3100	31	Gr.25
75.680.3200	32	Gr.25
75.680.3300	33	Gr.25
75.680.3400	34	Gr.25
75.680.3500	35	Gr.25

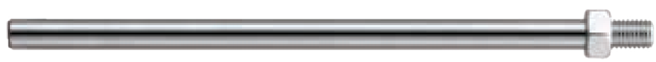
› 75.695 Phantom

NL Koelmiddelring voor wisselplaatboor
FR bague de refroidissement pour forets à plaquettes indexables
ES Anillo refrigerante para broca de plaquita
DE Kühlmittelring für Wendeplattenbohrer
EN Coolant ring for insert drill



Ref.	Type	d1	d2	d3	d4	l1
75.695.0000	Gr. 00-05	19.05	44.45	M8	NPT 1/8	22.23
75.695.1200	Gr. 10-20	25.4	53.97	M8	NPT 1/8	28.57
75.695.2300	Gr. 25-35	31.75	63.5	M10	NPT 1/4	34.92
75.695.4000	Gr. 40-45	44.45	76.2	M10	NPT 1/4	34.92
75.695.5800	Gr.50	57.15	95.27	M12	NPT 1/2	44.45

› 75.697 Phantom



NL Blokkeerstang
FR Barre de blocage
ES Barra de bloqueo
DE Sperrbalken
EN Blocking bar

Ref.	Type	d1	l1
75.697.0120	Gr. 00-20	M8	250
75.697.2340	Gr. 25-45	M10	250
75.697.5780	Gr.50	M12	250

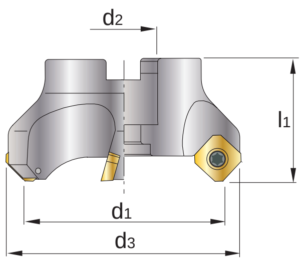
› 75.698 Phantom

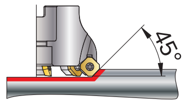
NL torx schroef, Wisselplaatboor
FR vis torx, Foret à plaquettes indexables
ES tornillo torx, Broca de plaquita indexable
DE Torx-Schraube, Wendeplattenbohrer
EN torx screw, Insert drill

Ref.	Type	Contents
75.698.0400	Gr.00	M2,5X5,6 T8
75.698.0500	Gr.05	M2,5X6,9 T8
75.698.1000	Gr. 10-15	M3X7,5 T9
75.698.2000	Gr. 20-25	M4X10 T15
75.698.3400	Gr. 30-45	M5X14 T20
75.698.5800	Gr.50	M6X19 T25

› 76.100 Phantom

NL **Vlakfrees, 45° SEHT 1204**
FR **Fraise à chanfreiner à 45° SEHT 1204**
ES **Fresa de planear, 45° SEHT 1204**
DE **Planfräser, 45° SEHT 1204**
EN **45° Approach Face Mill SEHT**



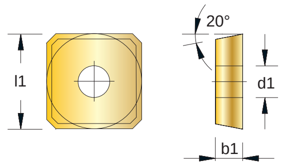


1 2 3

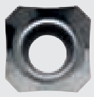
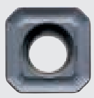
Ref.	d1	d2	d3	l1	z	1 incl.	2 incl.	3 excl.
76.100.0050	50	22	63	40	4	73.998.0650	T20	SEH.. 1204
76.100.0063	63	22	76	40	5	73.998.0650	T20	SEH.. 1204
76.100.0080	80	27	93	50	6	73.998.0650	T20	SEH.. 1204
76.100.0100	100	32	113	50	7	73.998.0650	T20	SEH.. 1204

› 76.615 Phantom

NL **Wisselplaat SEHT 1204**
FR **Plaquette SEHT 1204**
ES **Plaquita SEHT 1204**
DE **Wendeplatte SEHT 1204**
EN **Insert SEHT**

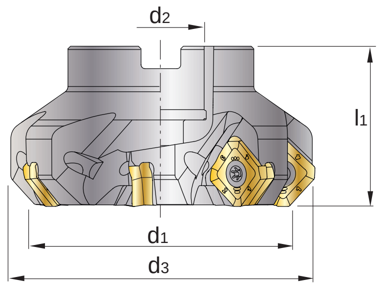


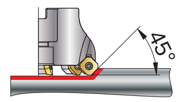
SE..	l1(mm)	d1(mm)	b1(mm)
12	12,7	5,50	4,76

Ref.	Ixb	Geo	HM		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.615.0150	1204	ALU	K10		6	0,1-0,5				N		
76.615.0200	1204	AFSN	PI20		6	0,1-0,35	P					
76.615.0250	1204	AFSN	UI30		6	0,1-0,35	P	M	K		S	

› 76.125 Phantom

NL Vlakfrees, 45° SNHX 1205
FR Fraise à chanfreiner à 45° SN 1205
ES Fresa de planear, 45° SN 1205
DE Planfräser, 45° SN 1205
EN 45° Approach Face Mill SN 1205

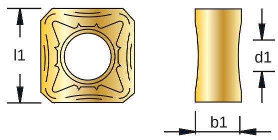




Ref.	d1	d2	d3	l1	z	1 incl.	2 incl.	3 excl.
76.125.0050	50	22	63	40	4	73.998.0640	T15	SNHX 1205
76.125.0063	63	22	76	40	6	73.998.0640	T15	SNHX 1205
76.125.0080	80	27	93	50	7	73.998.0640	T15	SNHX 1205
76.125.0100	100	32	113	50	8	73.998.0640	T15	SNHX 1205
76.125.0125	125	40	138	63	10	73.998.0640	T15	SNHX 1205

› 76.500 Phantom

NL Wisselplaat SNHX 1205
FR Plaquette SNHX 1205
ES Plaquita SNHX 1205
DE Wendeplatte SNHX 1205
EN Insert SNHX 1205

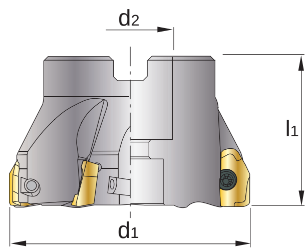


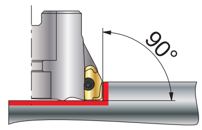
SN.X	l1(mm)	d1(mm)	b1(mm)
12	12,7	6,0	5,49

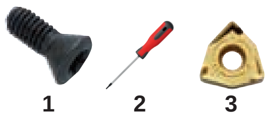
Ref.	lxb	Geo	HM		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.500.0200	1205	AN	PI20		6	0,15-0,45	P		K			
76.500.0250	1205	AN	UI30		6	0,15-0,45	P	M	K		S	

› 76.135 Phantom

NL **Hoekfrees, 90° XNEX 0806**
FR **Outil à surfacer, 90° XNEX 0806**
SP **Fresa de Escuadrado, 90° XNEX 0806**
DE **Winkel 90° XNEX 0806**
EN **Carbide Insert SNHX 0806**



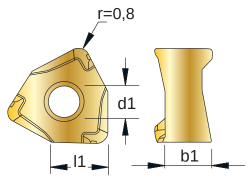




Ref.	d1	d2	l1	z	1 incl.	2 incl.	3 excl.
76.135.0055	50	22	40	5	73.998.0640	T15	XNEX 0806
76.135.0063	63	22	40	6	73.998.0640	T15	XNEX 0806
76.135.0080	80	27	50	7	73.998.0640	T15	XNEX 0806
76.135.0100	100	32	50	8	73.998.0640	T15	XNEX 0806

› 76.520 Phantom

NL **Wisselplaat XNEX 0806**
FR **Plaquette XNEX 0806**
ES **Plaquita XNEX 0806**
DE **Wendeplatte XNEX 0806**
EN **Insert XNEX 0806**

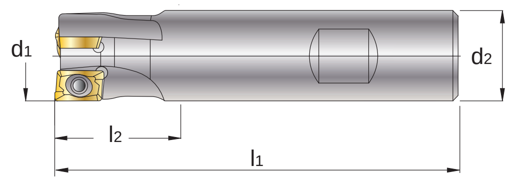


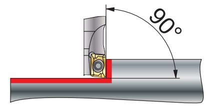
XN.X	l1(mm)	d1(mm)	b1(mm)
08	7,5	4,5	6,56

Ref.	lxb	Geo	HM		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.520.0200	80608		PI20		7	0,08-0,4	P		K			
76.520.0250	80608		UI30		7	0,08-0,4	P	M	K		S	

› 76.145 Phantom

NL Schachtfrees, 90° APKT 1003
FR Fraise à plaquettes, 90° APKT 1003
ES Fresa integral, 90° APKT 1003
DE Schaftfräser, 90° APKT 1003
EN Indexable End Mill, 90° APKT 1003

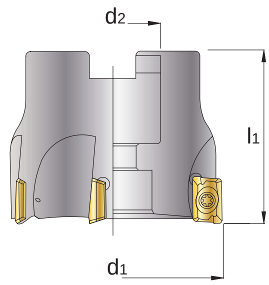


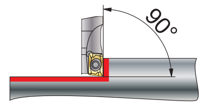


Ref.	d1	d2	l1	l2	z	1 incl.	2 incl.	3 excl.
76.145.0016	16	16	85	26	2	73.998.0600	T8	AP.T 1003
76.145.0020	20	20	90	28	3	73.998.0600	T8	AP.T 1003
76.145.0025	25	25	95	30	4	73.998.0600	T8	AP.T 1003
76.145.0032	32	25	95	35	5	73.998.0600	T8	AP.T 1003

› 76.146 Phantom

NL Hoekfrees, 90° APKT 1003
FR Outil à surfacer, 90° APKT 1003
ES Fresa de Escuadrado, 90° APKT 1003
DE Winkel 90° APKT 1003
EN Shell milling cutter, 90° APKT 1003

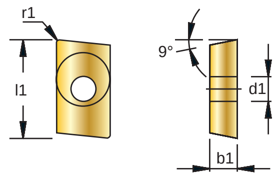




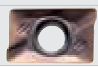
Ref.	d1	d2	l1	z	1 incl.	2 incl.	3 excl.
76.1460.040	40	16	40	6	73.998.0600	T8	AP.T 1003
76.1460.050	50	22	40	7	73.998.0600	T8	AP.T 1003

› 76.365 Phantom

NL Wisselplaat APKT, APHT 1003
FR Plaquette APKT, APHT 1003
ES Plaquita APKT, APHT 1003
DE Wendeplatte APKT, APHT 1003
EN SC Carbide Insert APKT, APHT 1003

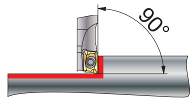


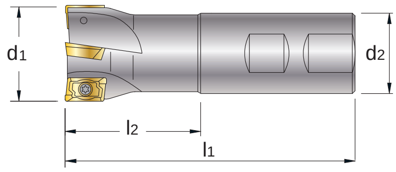
APKT	l1(mm)	d1(mm)	b1(mm)	r1(mm)
10	10,5	2,80	3,50	0,5

Ref.	lxb	Geo	HM		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.365.0150	1003	ALU	K10		10	0,1-0,5				N		
76.365.0200	1003	PDR	PI20		10	0,08-0,3	P		K			
76.365.0250	1003	PDR	UI30		10	0,08-0,3	P	M	K		S	

› 76.155 Phantom

NL Schachtfrees, 90° APKT 1604
FR Fraise à plaquettes, 90° APKT 1604
ES Fresa integral, 90° APKT 1604
DE Schaftfräser, 90° APKT 1604
EN Indexable End Mill, 90° APKT 1604

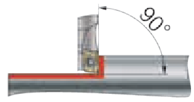


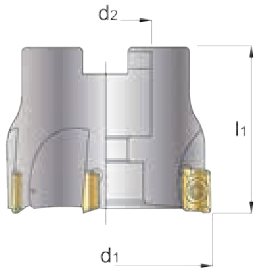


Ref.	d1	d2	l1	l2	z	1 incl.	2 incl.	3 excl.
76.155.0025	25	20	100	44	2	73.998.0610	T15	AP.T 1604
76.155.0032	32	25	110	44	3	73.998.0630	T15	AP.T 1604

› 76.156 Phantom

NL Hoekfrees, 90° APKT 1604
FR Outil à surfacer, 90° APKT 1604
ES Fresa de Escuadrado, 90° APKT 1604
DE Winkel 90° APKT 1604
EN Shell milling cutter, 90° APKT 1604

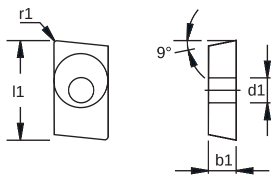




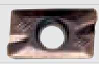
Ref.	d1	d2	l1	z	1 incl.	2 incl.	3 excl.
76.156.0040	40	16	40	4	73.998.0630	T15	AP.T 1604
76.156.0050	50	22	40	5	73.998.0630	T15	AP.T 1604
76.156.0063	63	22	40	6	73.998.0630	T15	AP.T 1604

› 76.366 Phantom

NL Wisselplaat APKT, APHT 1604
FR Plaquette APKT, APHT 1604
ES Plaquita APKT, APHT 1604
DE Wendeplatte APKT, APHT 1604
EN SC Carbide Insert APKT, APHT 1604



APKT	l1 (mm)	d1 (mm)	b1 (mm)	r1 (mm)
16	17,0	4,40	5,26	0,8

Ref.	lxb	Geo	HM		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.366.0150	1604	ALU	K10		15	0,1-0,5				N		
76.366.0200	1604	PDR	PI20		15	0,1-0,4	P		K			
76.366.0250	1604	PDR	UI30		15	0,1-0,4	P	M	K		S	

› 79.510 Phantom

NL **Set Kartelen**
FR **Assortiment d'outils à moleter**
ES **Juego de herramientas para moletear**
DE **Satz Rändelwerkzeuge**
EN **Knurling set**

Ref.	Type	Contents
79.510.1000	KM1-M7	1x M7 1x M12 1x BR30-BL30-AA (0.8) 1x BR30-BL30-AA (1.2) 1x BR30-BL30-AA(1.6)

› 79.613 Phantom

NL **Set Hoekfrees, 90°, incl. wisselplaten XNEX 0806**
FR **Jeu Outil à surfacer, 90°, incl. plaquettes XNEX 0806**
ES **Juego de Fresa de Escuadrado, 90°, con plaquitas XNEX 0806**
DE **Satz Winkel 90°, inkl. Wendeplatten XNEX 0806**
EN **Set Shell milling cutter, 90°, incl. carbide inserts XNEX 0806**

Ref.	Contents
79.613.1020	Ø100 mm + 80 x PI20
79.613.1025	Ø100 mm + 80 x UI30
79.613.5020	Ø50 mm Z4 + 40 x PI20
79.613.5025	Ø50 mm Z4 + 40 x UI30
79.613.5520	Ø50 mm Z5 + 50 x PI20
79.613.5525	Ø50 mm Z5 + 50 x UI30
79.613.6320	Ø63 mm + 60 x PI20
79.613.6325	Ø63 mm + 60 x UI30
79.613.8020	Ø80 mm + 70 x PI20
79.613.8025	Ø80 mm + 70 x UI30

NL Snijsnelheden draaien
FR Vitesse de coupe de tournage
ES Velocidades de corte para tornear
DE Schnittgeschwindigkeit Drehen
EN Cutting speeds Turning

ISO	Gr.	HM								
		UI10	UI20	P25	PC10	PC20	PC30	MSI20	KC10	K10
		Vc (m/min)								
P	11	130-225	120-220	100-140	180-270	170-240	120-210	130-230	220-400	
P	12	130-225	120-220	100-140	180-270	170-240	120-210	130-230	200-320	100-250
P	13	130-225	120-220	100-140	180-270	170-240	120-210	130-230	200-320	100-250
P	14			60-100	120-205	110-185	75-175			
H	15									
M	21	105-205	95-195			65-220	65-210	105-205		
M	22	100-195	90-185			55-210	50-200	100-195		
K	31				110-330	100-230			190-330	
K	32				110-250	105-220			135-265	
N	41									375-2400
N	42									375-1500
N	51									375-630
N	52									375-630
N	61									80-180
S	71	40-110	35-105					45-115		
S	72	45-120	40-115					50-125		

NL Snijsnelheden steken
FR Vitesse de coupe de tronçonnage
ES Velocidades de corte para tronzar
DE Schnittgeschwindigkeit Stechen
EN Cutting speeds, parting

ISO	Gr.	HM		
		K10	PC30	UI30
		Vc (m/min)		
P	11		90-200	50-150
P	12		70-160	50-140
P	13		70-160	50-140
P	14		50-130	40-130
H	15			
M	21		60-80	50-110
M	22			40-110
K	31		50-140	70-150
K	32		40-120	50-140
N	41	80-250		
N	42	60-200		
N	51	100-180		
N	52	100-180		
N	61	100-210		
S	71			15-50
S	72			20-80

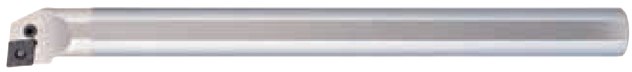
NL Snijsnelheden draadsnijden
FR Vitesse de coupe de filetage
ES Velocidades de corte para roscar
DE Schnittgeschwindigkeit Gewindeschneiden
EN Cutting speed, threadcutting

ISO	Gr.	HM		
		UI20	MSI20	P30
		Vc (m/min)		
P	11	115-190		70-130
P	12	85-145		70-120
P	13	85-145		70-120
P	14	70-120		50-80
H	15	45-60		
M	21	70-140	70-160	75-110
M	22	40-110	40-120	30-80
K	31	70-130		
K	32	125-160		
N	41	100-365		
N	42	200-400		
N	51	80-225		70-170
N	52	80-225		70-170
N	61			
S	71	20-30	20-40	
S	72	50-70	50-80	

NL Snijsnelheden frezen
FR Vitesse de coupe de fraisage
ES Velocidades de corte para fresar
DE Schnittgeschwindigkeit Fräsen
EN Cutting speeds, milling

ISO	Gr.	HM		
		K10	PI20	UI30
		Vc (m/min)		
P	11		150-230	130-160
P	12		140-220	120-150
P	13		140-220	120-150
P	14		130-180	100-130
H	15			
M	21			80-110
M	22			70-100
K	31			110-220
K	32			80-170
N	41	100-2000		
N	42			
N	51			
N	52			
N	61	100-210		
S	71			30-80
S	72			40-100

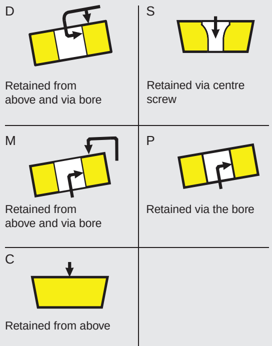
NL ISO Wisselplaathouder inwendig draaien
FR Porte-plaquette ISO tournage intérieur
ES Portaplaquita ISO torneado interior
DE ISO Klemmhalter innen drehen
EN ISO Turning tool, internal



Shank version

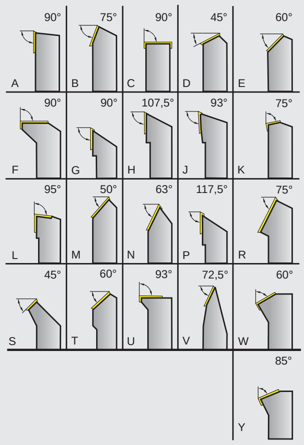
- E As C with coolant hole
- F As C with anti-vibration system
- G As C with coolant hole and anti-vibration system
- H Heavy metal
- J Heavy metal with coolant hole
- S Steel shank
- A Steel shank with coolant hole
- B Steel shank with anti-vibration system
- D Steel shank with coolant hole and anti-vibration system
- C Carbide shank with steel head

Clamping method

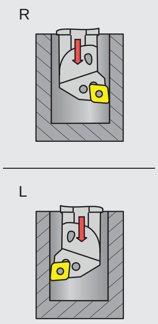


- D Retained from above and via bore
- S Retained via centre screw
- M Retained from above and via bore
- P Retained via the bore
- C Retained from above
- X Special version

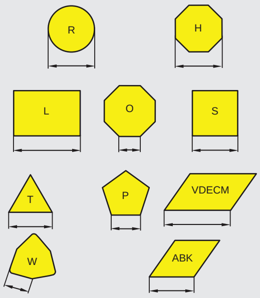
Style



Cutting direction



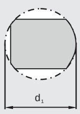
Cutting edge length



S	32	U - P	C	L	N	R	12

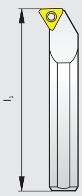
Shank Ø

d_1 mm
08
10
12
16
20
25
32
40
50
60



Tool length

l_1 mm	
80	F
100	H
110	J
125	K
140	L
150	M
160	N
170	P
180	Q
200	R
250	S
300	T
350	U
400	V
450	W
500	Y
Special length	X

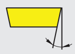


Insert shape

Included angle		35°	V
		55°	D
		75°	E
		80°	C
		86°	M
Included angle		55°	K
		82°	B
		85°	A

Other shapes				
90°	L		–	R
108°	P		90°	S
120°	H		60°	T
135°	O		80°	W

Clearance angle

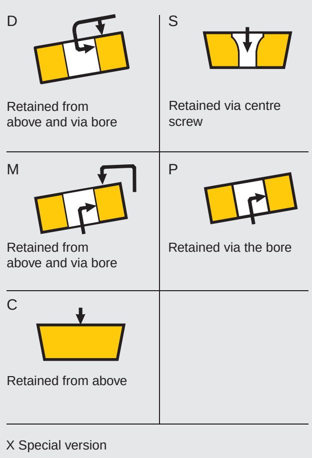


3°	A	25°	F
5°	B	30°	G
7°	C	0°	N
15°	D	11°	P
20°	E		

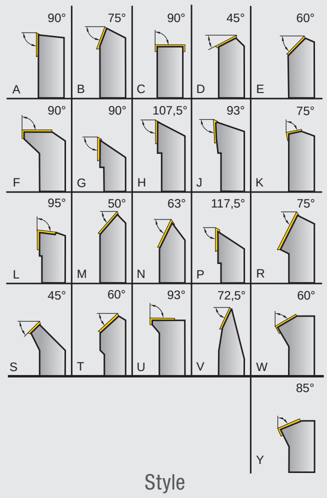
Clearance angles not included within the standard for which particular information is necessary } O

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7

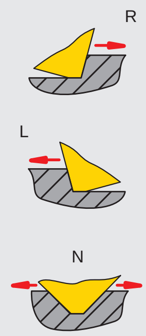
NL ISO Wisselplaathouder uitwendig draaien
FR Porte-plaquette ISO tournage extérieur
ES Portaplaquita ISO torneado exterior
DE ISO Klemmhalter außen drehen
EN ISO Turning tool, external



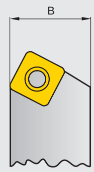
Clamping method



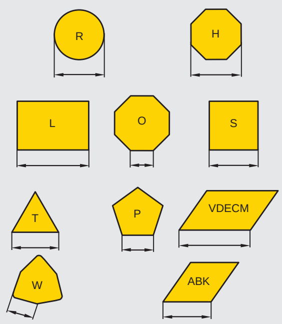
Style



Cutting direction



Shank width



Cutting edge length

P	C	L	N	R 25	25 - M	12

Insert shape

Included angle				35°	V
				55°	D
				75°	E
				80°	C
				86°	M
Included angle				55°	K
				82°	B
				85°	A
Other shapes	90°	L		–	R
	108°	P		90°	S
	120°	H		60°	T
	135°	O		80°	W

Clearance angle

3°	A	25°	F
5°	B	30°	G
7°	C	0°	N
15°	D	11°	P
20°	E		

Clearance angles not included within the standard for which particular information is necessary } O

Shank height

Tool holder

Cartridge

Round shank

00

Tool length

l_1 mm		l_1 mm	
32	A	160	N
40	B	170	P
50	C	180	Q
60	D	200	R
70	E	250	S
80	F	300	T
90	G	350	U
100	H	400	V
110	J	450	W
125	K	500	Y
140	L	Special	X
150	M		

NL ISO Wisselplaten
FR Plaquettes ISO
ES Plaquitas ISO
DE ISO Wendeplatten
EN ISO Inserts

Insert shape

Included angle	35°	V
	55°	D
	75°	E
	80°	C
	86°	M
Included angle	55°	K
	82°	B
	85°	A
Other shapes	90°	L
	108°	P
	120°	H
	135°	O
	–	R
	90°	S
	60°	T
	80°	W

Clearance angle

3°	A	25°	F
5°	B	30°	G
7°	C	0°	N
15°	D	11°	P
20°	E		

Clearance angles not included within the standard for which particular information is necessary } O

Tolerances

	d ±	m ±	s ±
A	0,025	0,005	0,025
F	0,013	0,005	0,025
C	0,025	0,013	0,025
H	0,013	0,013	0,025
E	0,025	0,025	0,025
G	0,025	0,025	0,13
J	0,05-0,15*	0,005	0,025
K	0,05-0,15*	0,013	0,025
L	0,05-0,15*	0,025	0,025
M	0,05-0,15*	0,08-0,20	0,13
N	0,05-0,15*	0,08-0,20	0,025
U	0,08-0,25*	0,13-0,38	0,13

Form of top surface

N	
R	
F	
A	
M, P	
G, P	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special version

Cutting edge length

d mm	
06	16
08	20
10	25
12	32

mm	Inch	mm	mm
06	5/32	3,96	03
09	7/32	5,56	05
11	1/4	6,35	06
16	3/8	9,52	09
22	1/2	12,7	12
27	5/8	15,8	15
33	3/4	19,0	19
44	1	25,4	25

Insert thickness

Inch	mm	Index
1/16	1,59	01
3/32	2,38	02
1/8	3,18	03
5/32	3,97	T3
3/16	4,76	04
7/32	5,56	05
1/4	6,35	06
5/16	7,94	07
3/8	9,52	09

Corner radius

Code	Corner radius mm
00	≤ 0,05
01	0,1
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
24	2,4
32	3,2

RN 00
RC MO

C	N	M	G	12	04	08

NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewindedrehen**
EN **Thread cutting**

Insert size

mm	Inch	mm
09	7/32	5,56
11	1/4	6,35
16	3/8	9,52
22	1/2	12,7
27	5/8	15,8

Type of Insert

E	External
I	Internal
EI	Ex- & Internal

RH/LH Insert

R	Right Hand
L	Left Hand

Pitch

Full Profile - Pitch Range

mm	tpi
0.35-25.0	72-1

Partial Profile - Pitch Range

	mm	tpi
A	0.5-1.5	48-16
AG	0.5-3.0	48-8
G	1.75-3.0	14-8
N	3.5-5.0	7-5

Thread Standard

Particial Profile	
60º	60º Particial profile
55º	55º Particial profile
Full Profile	
ISO	ISO Metric
UN	American UN
W	Whitworth BSW/BSP
TR	Trapez

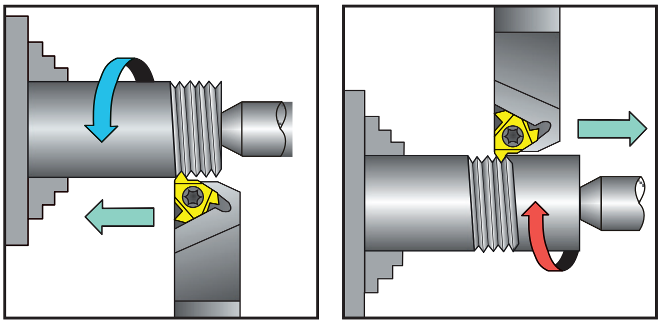
Chipbreaker

B	With chipbreaker
-	Without

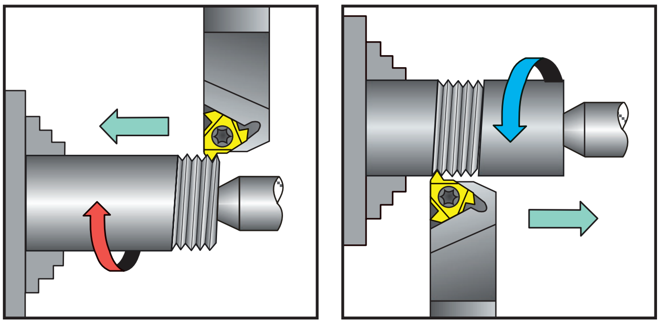
16	E	R	175	ISO	B

NL **Schroefdraadsnij methodes**
FR **Méthodes de filetage en tournage**
ES **Métodos de torneado de roscas**
DE **Gewindedrehverfahren**
EN **Screw thread cutting methods**

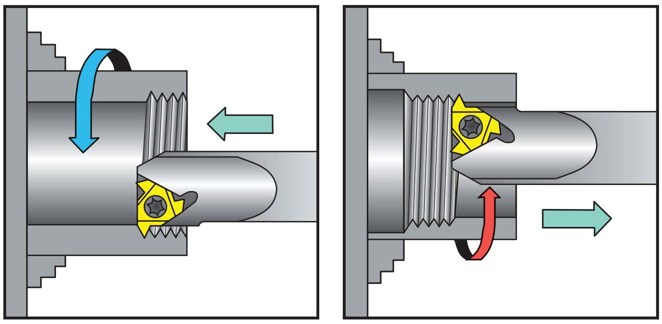
External RH Thread



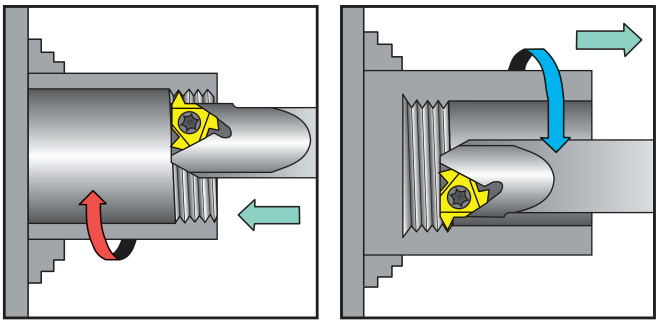
External LH Thread



Internal RH Thread

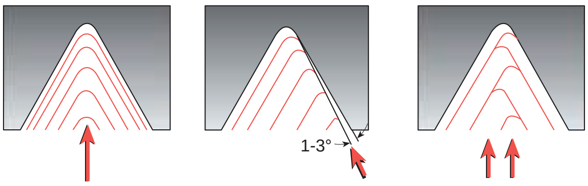


Internal LH Thread

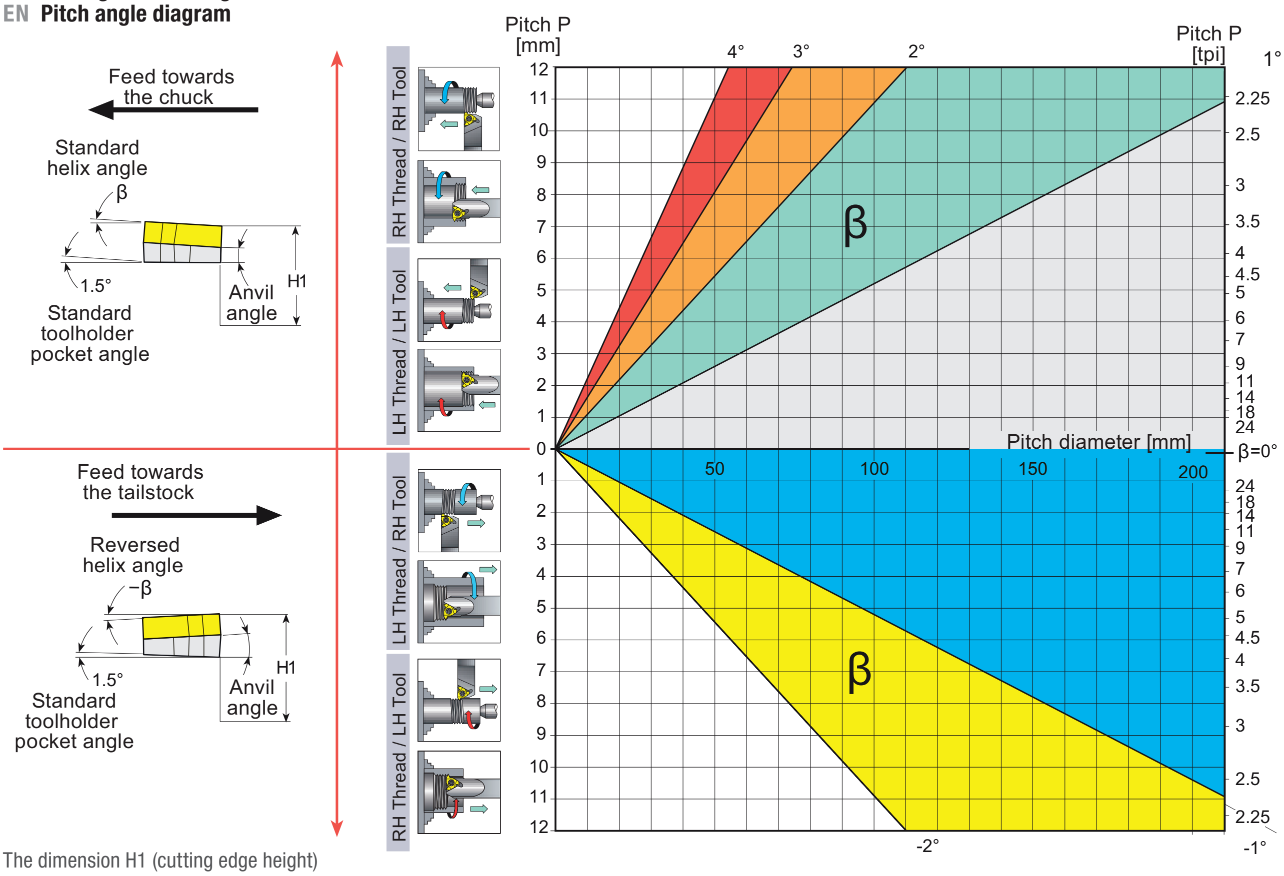


NL **Invoer methoden**
FR **Méthode angle d'attaque**
ES **Métodos de ataque de la rosca**
DE **Gewindezustellverfahren**
EN **Infeed methods**

Radial Infeed — Flank Infeed (modified) — Alternate Flank Infeed



NL **Schroefdraadhelingshoek diagram**
FR **Diagramme de l'angle d'hélice**
ES **Diagrama del ángulo de hélice**
DE **Teilungswinkel Diagramm**
EN **Pitch angle diagram**



The dimension H1 (cutting edge height)
remains constant with every insert / anvil combination.

NL **Onderlegplaten**
FR **Sous-plaquettes**
ES **Placa base**
DE **Unterlegplatten**
EN **Shims**

Resultant Helix Angle		ß	3.5°	2.5°	1.5°	0.5°	0°	-0.5°	-1.5°
Insert Size		Holder	Ordering Code						
IC	L mm				Standard				
3/8"	16	ER / IL	743980170	743980175	743980165	74398180	-	743980190	743980195
		EL / IR	743980265	743980270	743980260	743980275	-	743980280	743980285
1/2"	22	ER / IL	743980205	743980210	743980200	743980215	-	743980220	743980225
		EL / IR	743980295	743980300	743980290	743980305	-	743980310	743980315
3/8" Groove	16	ER / IL	-	-	-	-	743980400	-	-
		EL / IR	-	-	-	-	743980500	-	-

NL **ISO Wisselplaten**
FR **Plaquettes ISO**
ES **Plaquitas ISO**
DE **ISO Wendeplatten**
EN **ISO inserts**

Insert shape

A	85°
B	82°
K	55°
H	120°
L	90°
O	135°
P	108°
C	80°
D	55°
E	75°
M	86°
V	35°
R	-
S	90°
T	60°
W	80°

X Special shapes

Clearance angle

	α
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special version

Tolerances

	d [±mm]	m [±mm]	s [±mm]	d=6.35/9.52	d=12.7	d=15.8/19.05
A	.025	.005	.025	●	●	●
C	.025	.013	.025	●	●	●
E	.025	.025	.025	●	●	●
F	.013	.005	.025	●	●	●
G	.025	.025	.13	●	●	●
H	.013	.013	.025	●	●	●
J	.05	.005	.025	●		
	.08	.005	.025		●	
	.10	.005	.025			●
K	.05	.013	.025	●		
	.08	.013	.025		●	
	.10	.013	.025			●

	d [±mm]	m [±mm]	s [±mm]	d=6.35/9.52	d=12.7	d=15.8/19.05
M	.05	.08	.13	●		
	.08	.13	.13		●	
	.10	.15	.13			●
N	.05	.08	.025	●		
	.08	.13	.025		●	
	.10	.15	.025			●
U	.08	.13	.13	●		
	.13	.20	.13		●	
	.18	.27	.13			●

Form of top surface

A
F
G
M
N
Q
R
T
U
W
X Special shapes

Cutting edge length

A T/V C/S H L R W

Insert shape

d[mm]	A	T/V	C/S	H	L	R	W	O
5.00	-	-	-	-	-	05	-	-
5.56	-	09	05	-	08	-	03	-
6.00	-	-	-	-	-	06	-	-
6.35	-	11	06	03	10	-	04	02
6.65	10	-	-	-	-	-	-	-
7.94	-	-	07	-	-	-	-	-
8.00	-	-	-	-	-	08	-	-
9.00	-	-	-	-	12	-	-	-
9.52	-	16	09	05	15	-	06	04
9.57	15	-	-	-	-	-	-	-
10.00	-	-	-	-	-	10	-	-
12.00	-	-	-	-	-	12	-	-
12.70		22	12	07	20		08	05
15.87		27	15	09			10	06
16.00						16		
16.74			16					
19.05		33	19	11			13	07
20.00						20		

Insert thickness

	s [mm]
01	1.59
T1	1.98
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

Facet corner radius

1st sign

	κ_r
A	45°
D	60°
E	75°
F	85°
P	90°
Z	Others

2nd sign

	α'_n
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Others

Radius

	r (mm)
M0*	
02	0.2
04	0.4
08	0.8
12	1.2

* Shape R only

Cutting edge

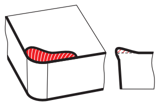
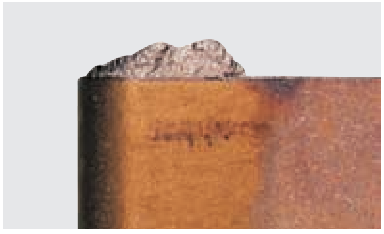
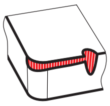
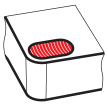
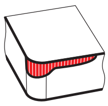
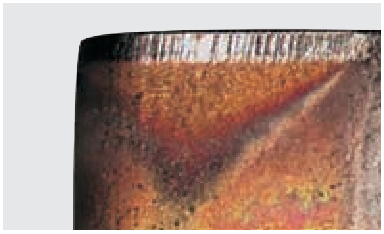
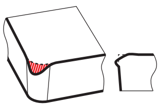
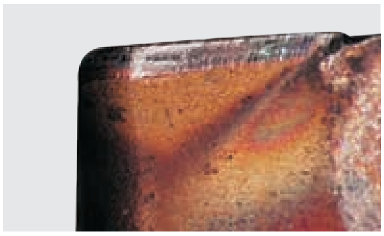
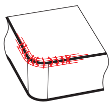
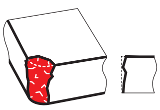
F Sharp
E Honed
S Chamfered and honed
T Chamfered

Cutting direction

R
L
N

S	E	H	T	12	03	AE	SN

NL **Slijtage soorten**
FR **Types d’usure**
ES **Tipos de desgaste**
DE **Verschleißarten**
EN **Types of wear**

	Built-up edge (Adhesive wear)	
	Notching (Adhesive/Mechanic)	
	Crater (Chemical wear)	
	Flank wear (Abrasive wear)	
	Plastic deformation (Thermal wear)	
	Thermal cracks (Thermal wear)	
	Breakage (Mechanic wear)	

NL Maatregelen bij draaiproblemen
FR Problèmes de tournage et solutions
ES Problemas de torneado y soluciones
DE Maßnahmen bei Drehproblemen
EN Measures & solutions for turning problems

Type of problem														
Build up edge	Notching	Cratering	Flank wear	Plastic deformation	Breakage	Edge chipping	Surface quality	Vibration	Formation of burrs and pips	Long chips (tangled swarf)	Short chips (fragmented chips)	Corrective measures		
↑	↓	↓	↓	↓			↑	↓				Cutting speed		Cutting values
			■							↑	↓	Feed rate		Cutting values
		↓				↓			↓			Feed - center area		Cutting values
↓		↓	■	■		↑		■	↓	↓		Chip groove	↓ R M F ↑	Selection of inserts
			↑	↑		↑			↓			Corner radius	Larger ↓↑ smaller	Selection of inserts
		↑	↑	↑	↓	↓						Cutting material	wear resistance ↓↑ toughness	Selection of inserts
			■	■	■	■	■					Clamping of tool		General creteria
			■	■	■	■	■					Clamping of workpiece		General creteria
□			□	□			□		□	□		Coolant		General creteria

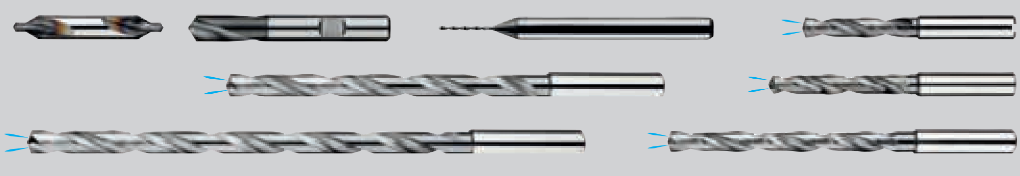
↑ Raise, increase ↓ Avoid, reduce ■ Check, optimize □ Use

NL **Maatregelen bij freesproblemen**
FR **Problèmes de fraisage et solutions**
ES **Problemas de fresado y soluciones**
DE **Maßnahmen bei Fräsproblemen**
EN **Measures & solutions for milling problems**

Type of problem: Build up edge	Notching	Cratering	Flank wear	Plastic deformation	Thermal cracks	Breakage	Edge chipping	Bad workpiece surface	Chattering vibration	Edge chipping on the workpiece	Corrective measures
↑	↓	↓	↓	↓	↓		↑	↑	■		Cutting speed
↑	↓	↓	↑	↓	↓	↓	↓	↓	■		Feed rate per tooth
	↑				■	↑	↑				Thoughness of cutting material
		↑	↑	↑ ■							Wear resistance of cutting material
■	↓				↓				↓	↓	Approach angle
↑ ■	■			↑ ■		■	■		↑		Rake angle
■	↑						↑	↓		↓	Cutting edge facet
						↑	↑	↑			Stability
								↑	↑		Precision of axial & radial run-out
			■	■		■	■			■	Wear of cutting edge
↑	↑	↑		■	↑			■			Cooling, chipremoval
	■					■	■	■	■	↓	Dept of cut

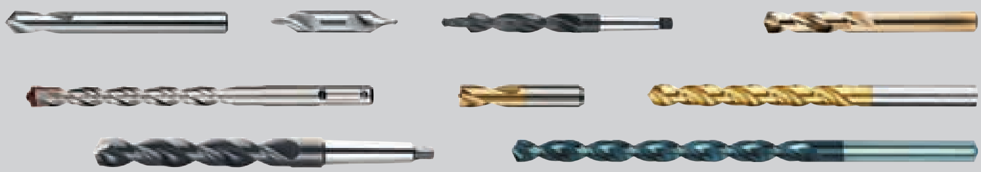
↑ Raise, increase ↓ Lower, decrease ■ Check, optimize

NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



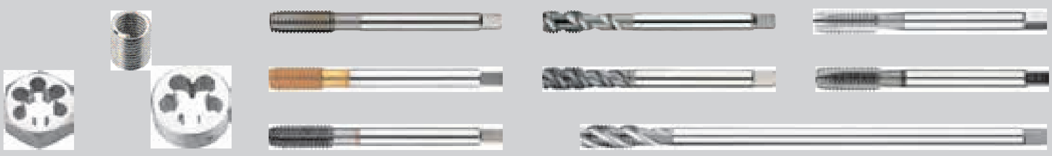
SC 1

NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



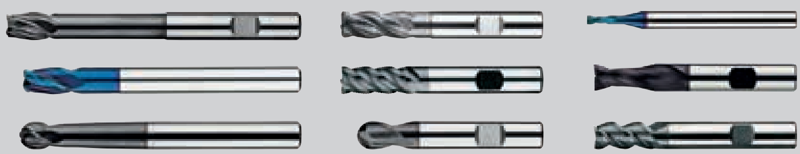
2

NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



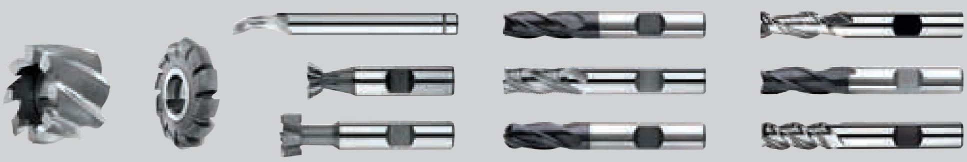
SC 3

NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



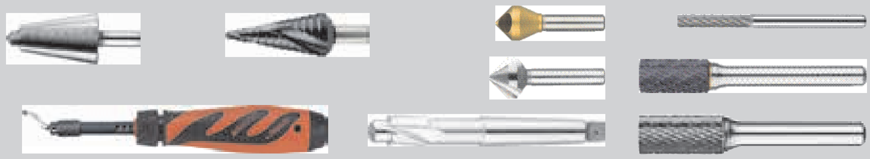
HSS-E 3

NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



4

NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring

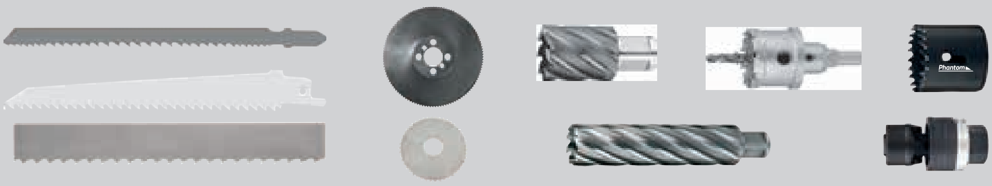


5

NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

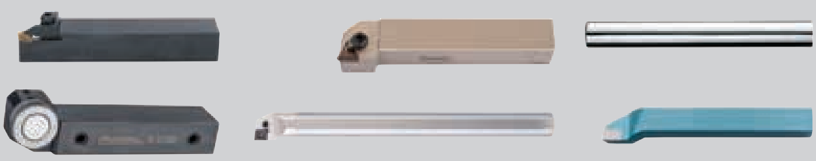
6

NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



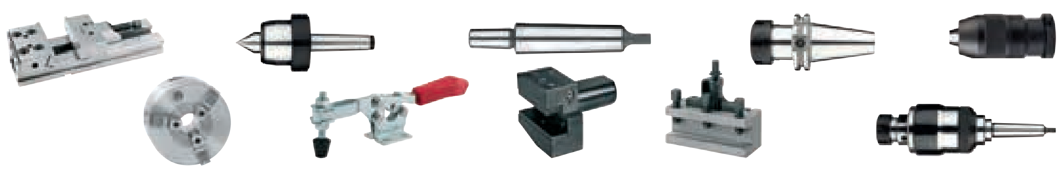
7

NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



8

NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



NL Overig
FR Autres
ES Otros
DE Übrig
EN Other

ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
DIN 225	DIN norm	Norme DIN	Norma DIN	DIN Norm	DIN norm
NORM	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm	Factory standard
DIN 1835-B	Voor cilindrische schacht met Weldon vlak	Pour queue cylindrique avec méplat type Weldon	Para mango cilíndrico con plano de arrastre tipo Weldon	Für Zylinderschaft mit Mitnahmeflache Tyo Weldon	Straight shank with Weldon
DIN 6535-HA	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft	Straight shank
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel	Morse Taper shank
ER	ER Spantangen volgens DIN 6499	Pinces ER selon DIN 6499	Pinzas ER según DIN 6499	ER Spannzangen gemäss DIN 6499	Collets ER according to DIN 6499
B1	Uitvoering VDI-houder	Type Porte-Outils VDI	Tipo portaherramientas VDI	Ausführung VDI-Halter	Type VDI holder
P	Met pendelinrichting	Avec système pendulaire	Con sistema pendular	Mit Pendelsystem	With pendular system
AUTO REVERSAL	Omkeerinrichting	Avec dispositif d'inversion	Con dispositivo de inversión	Mit Umkehrvorrichtung	With pendular system
C T	Druk- en trekcompensatie	Compensation de pression et de traction	Compensación de presión y de tracción	Ausgleich für Druck und Zug	Push and pull compensation
	Links-rechts-draaiend	Rotation à droite et à gauche	Giro derechas e izquierdas	Links-Rechts drehen	Left/right rotation
SECURITY LOCK	Met spankrachtborging	Avec trou de serrage	Con agujero de fijación	Mit Spannkraftsicherung	With security locking ring
BAJO-NET	Bajonet opname	Fixation baïonnette	Fijación bayoneta	Bajonet Aufnahme	Bajonet mount
CAM-LOCK	Camlock opname	Fixation Camlock	Fijación Camlock	Camlock Aufnahme	Camlock mount
TYPE XP	Precisie uitvoering	Version de précision	Versión de precisión	Präzisionausführung	Precision version

	NL	FR	ES	DE	EN
SK	Opname volgens DIN 2080	A queue selon DIN 2080	Con cono según DIN 2080	Aufnahme gemäß DIN 2080	With shank according to DIN 2080
SK	Opname volgens DIN 69871	A queue selon DIN 69871	Con cono según DIN 69871	Aufnahme gemäß DIN 69871	With shank according to DIN 69871
MAS-BT	Opname volgens MAS 403-BT	A queue selon MAS 403-BT	Con cono según MAS 403-BT	Aufnahme gemäß MAS 403-BT	With shank according to MAS 403-BT
VDI	Opname volgens DIN 69880	A queue selon DIN 69880	Con cono según DIN 69880	Aufnahme gemäß DIN 69880	With shank according to DIN 69880
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft	Straight shank
TYPE A	Standaard uitvoering	Version standard	Versión estándar	Standard Ausfürung	Standard version
AT3	Tolerantieklasse AT3	Classe de tolérance AT3	Clase de tolerancia AT3	Toleranzklasse AT3	Tolerance class AT3
0,005	Rondloopnauwkeurig 0,005 mm	Concentricitée 0,005 mm	Concentricidad 0,005 mm	Rundlaufgegauigkeit 0,005 mm	Integrated run-out 0.005 mm
	Klopvaste uitvoering	Tenue aux percussions	Resistente a percusiones	Schlagfester Ausführung	Hammer drilling
110 Nm	Maximale spankracht 110 Nm	Couple de serrage maximal 110 Nm	Fijación máxima 110 Nm	Maximalspannkraft 110 Nm	Maximum clamping force 110 Nm
	Tandkranssleutel	Clé pour mandrin porte-forets	Llave para portabrocas	Schlüssel für Zahnkranzbohrfutter	Key for drill chuck
	Spansleutel	Clé de mandrin	Llave de apriete	Spannschlüssel	Chuck key
G6,3 12.000 RPM	Balanceerklasse G6,3	Classe d'équilibrage G6,3	Clase de equilibración G6,3	Ausgewuchtet G6,3	Balance class G6.3
F7	Tolerantie boringsdiameter	Tolérance d'alésage	Tolerancia de escariado	Toleranz Borungsdurchmesser	Tolerances
n6	Tolerantie buitenmaat	Tolérance du diamètre externe	Tolerancia diámetro externo	Toleranz Aussendurchmesser	Tolerances

NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping

P K H N M S: Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K H N M S: Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

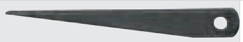
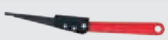
› 81.130	Phantom					P. 11
› 81.140	Phantom					P. 11
› 81.150	Phantom					P. 11
› 81.180	Phantom					P. 11
› 81.181	Phantom					P. 12
› 81.182	Phantom				M SDS+ HEX	P. 12
› 81.200	Phantom	TYPE A				P. 12
› 81.210	Phantom	TYPE A		SECURITY LOCK		P. 13
› 81.230	Phantom	TYPE P		0,04		P. 13
› 81.250	Phantom	TYPE XP		0,04		P. 13
› 81.300	Phantom	TYPE XP	DIN 228-B	0,04		P. 14
› 81.303	Phantom	TYPE XP	SK	0,04		P. 14
› 81.304	Phantom	TYPE XP	SK	0,04		P. 15
› 81.306	Phantom	TYPE XP	MAS-BT	0,04		P. 15
› 81.320	Phantom	TYPE XPF	SK	0,05		P. 15
› 81.330	Phantom	TYPE XPF	MAS-BT	0,05		P. 16
› 81.343	Phantom	TYPE XPB	SK	0,05	NEW	P. 16
› 81.354	Phantom	TYPE XPS	SK	0,02	NEW	P. 16
› 81.356	Phantom	TYPE XPS	MAS-BT	0,02	NEW	P. 17
› 81.357	Phantom	TYPE XPS	HSK-A	0,02	NEW	P. 17
› 81.412	Phantom					P. 17
› 81.413	Phantom	TYPE XP				P. 17
› 81.414	Phantom	TYPE XP				P. 18
› 81.450	BISON		DIN 228-B			P. 19
› 81.460	BISON					P. 19
› 81.462	BISON					P. 19
› 81.463	BISON					P. 19
› 81.464	BISON					P. 20
› 81.510	AKON					P. 20
› 81.511	AKON					P. 20
› 81.520	AKON					P. 20

SC 1 | HSS(-E) 1 | 2 | SC 3 | HSS-E 3 | 4 | 5 | 6 | 7 | 8

› 81.521	AKON				P. 20
› 81.523	AKON			NEW	P. 21
› 81.530	AKON		DIN 228-B		P. 21
› 81.531	AKON		DIN 228-B		P. 21
› 81.540	Phantom	AUTO REVERSAL	DIN 228-B	C T	P. 22
› 81.545	Phantom	AUTO REVERSAL		C T	P. 22
› 81.570	Phantom		DIN 228-B		P. 23
› 81.602	Phantom		DIN 6535-HB	C T	P. 23
› 81.610	Phantom		DIN 228-B	C T	P. 23
› 81.613	Phantom		SK	C T	P. 24
› 81.614	Phantom		SK	C T	P. 24
› 81.616	Phantom		MAS-BT	C T	P. 25
› 81.625	Phantom				P. 25
› 81.633	Phantom				P. 25
› 81.634	Phantom				P. 26
› 81.636	Phantom				P. 26
› 81.637	Phantom				P. 26
› 81.639	Phantom				P. 26
› 81.641	Phantom				P. 27
› 81.651	Phantom				P. 27
› 81.653	Phantom				P. 27
› 81.654	Phantom				P. 27
› 81.655	Phantom				P. 28
› 81.656	Phantom				P. 28
› 81.657	Phantom				P. 28
› 81.684	Phantom	ER	SK	MICRO C T	P. 28
› 81.686	Phantom	ER	MAS-BT	MICRO C T	P. 29
› 81.687	Phantom	ER	HSK-A	MICRO C T	P. 29
› 81.700	International Tools	AUTO REVERSAL		C T	P. 30
› 81.710	International Tools				P. 30
› 81.900		DIN 1814			P. 31
› 81.905		DIN 1814			P. 31
› 81.910					P. 31
› 81.920	International Tools				P. 32
› 81.930					P. 32

› 81.935					P. 32
› 81.938					P. 32
› 81.950		DIN 377			P. 33
› 81.990	International Tools	E6,3 1/4"			NEW P. 33
› 82.153	Phantom	DIN 1835-B	SK	DIN 6359	P. 34
› 82.154	Phantom	DIN 1835-B	SK	DIN 6359	P. 34
› 82.156	Phantom	DIN 1835-B	MAS-BT	DIN 6359	P. 35
› 82.157	Phantom	DIN 1835-B	HSK-A	DIN 6359	P. 35
› 82.159	Phantom	DIN 6359			P. 36
› 82.214	Phantom		SK	M	P. 36
› 82.216	Phantom		MAS-BT	M	P. 36
› 82.217	Phantom		HSK-A	M	P. 37
› 82.251	International Tools		DIN 228-A	DIN 6357	P. 38
› 82.253	Phantom		SK	DIN 6357	P. 38
› 82.264	Phantom		SK	DIN 6357	P. 38
› 82.266	Phantom		MAS-BT	DIN 6357	P. 39
› 82.267	Phantom		HSK-A	DIN 6357	P. 40
› 82.321	Phantom		DIN 228-A	DIN 6358	P. 40
› 82.323	Phantom		SK	DIN 6358	P. 40
› 82.324	Phantom		SK	DIN 6358	P. 41
› 82.326	Phantom		MAS-BT	DIN 6358	P. 41
› 82.327	Phantom		HSK-A	DIN 6358	P. 42
› 82.424	Phantom		SK		P. 42
› 82.426	Phantom		MAS-BT		P. 43
› 82.427	Phantom		HSK-A		P. 43
› 82.452	Phantom			DIN 6367	P. 43
› 82.460	Phantom			DIN 6368	P. 43
› 82.470	Phantom			DIN 6366	P. 44
› 82.480	Phantom			DIN 2084-B	P. 44
› 82.509	Phantom	ER		ISO 15488	P. 45
› 82.510	Phantom	ER		ISO 15488	P. 45
› 82.511	International Tools	ER	DIN 228-A	ISO 15488	P. 45
› 82.513	Phantom	ER	SK	ISO 15488	P. 45
› 82.514	Phantom	ER	SK	ISO 15488	P. 46
› 82.516	Phantom	ER	MAS-BT	ISO 15488	P. 46

› 82.517	Phantom	ER	HSK-A	ISO 15488	P. 47
› 82.580	Phantom	ER		P	NEW P. 47
› 82.811	Phantom	ER-11	DIN 6499-B	0,015	P. 47
› 82.816	Phantom	ER-16	DIN 6499-B	0,015	P. 48
› 82.817	Phantom	ER-16	DIN 6499-B	0,005	P. 48
› 82.820	Phantom	ER-20	DIN 6499-B	0,015	P. 48
› 82.825	Phantom	ER-25	DIN 6499-B	0,015	P. 49
› 82.826	Phantom	ER-25	DIN 6499-B	0,005	P. 49
› 82.832	Phantom	ER-32	DIN 6499-B	0,015	P. 49
› 82.833	Phantom	ER-32	DIN 6499-B	0,005	P. 50
› 82.840	Phantom	ER-40	DIN 6499-B	0,015	P. 50
› 82.841	Phantom	ER-40	DIN 6499-B	0,005	P. 50
› 82.880	Phantom	ER-16	DIN 6499	0,015	P. 51
› 82.885	Phantom	ER-25	DIN 6499	0,015	P. 51
› 82.916	Phantom	ER-16	DIN 6499	0,008	P. 51
› 82.917	Phantom	ER-16	DIN 6499	0,008	P. 51
› 82.918	Phantom	ER-16	DIN 6499	0,008	P. 52
› 82.925	Phantom	ER-25	DIN 6499	0,008	P. 52
› 82.926	Phantom	ER-25	DIN 6499	0,008	P. 52
› 82.927	Phantom	ER-25	DIN 6499	0,008	P. 52
› 82.932	Phantom	ER-32	DIN 6499	0,008	P. 53
› 82.933	Phantom	ER-32	DIN 6499	0,008	P. 53
› 82.934	Phantom	ER-32	DIN 6499	0,008	P. 53
› 82.940	Phantom	ER-40	DIN 6499	0,008	P. 54
› 82.941	Phantom	ER-40	DIN 6499	0,008	P. 54
› 82.942	Phantom	ER-40	DIN 6499	0,008	P. 54
› 82.960	Phantom	ER	DIN 6499		P. 54
› 82.965	Phantom	ER	DIN 6499		P. 55
› 82.990	Phantom	ER	DIN 6499		P. 55
› 82.993	Phantom	ER	DIN 6499		P. 55
› 83.624	Phantom		SK	G6,3 15.000 RPM	P. 55
› 83.626	Phantom		MAS-BT	G6,3 15.000 RPM	P. 56
› 83.627	Phantom		HSK-A	G6,3 20.000 RPM	P. 56
› 83.629	Phantom				P. 56
› 83.691	Phantom				P. 56

› 84.100	International Tools		DIN 228-B	DIN 2185		P. 57
› 84.110	International Tools		DIN 228-B	DIN 2187		P. 57
› 84.120	International Tools		DIN 228-B			P. 57
› 84.170	International Tools	B	DIN 228-B	DIN 238		P. 58
› 84.171	International Tools	J	DIN 228-B			P. 58
› 84.172	International Tools		DIN 228-B			P. 58
› 84.173	Phantom	B	SK	DIN 238		P. 59
› 84.203	Phantom	DIN 228-B	SK	DIN 6383		P. 59
› 84.204	Phantom	DIN 228-B	SK	DIN 6383		P. 59
› 84.206	Phantom	DIN 228-B	MAS-BT	DIN 6383		P. 59
› 84.410	Phantom		DIN 228-B	DIN 217		P. 60
› 84.411	Phantom					P. 60
› 84.412	Phantom					P. 60
› 84.413	Phantom					P. 60
› 84.600	International Tools	DIN 228-B	SK	MAS-BT		P. 61
› 84.610	International Tools		DIN 228-B	DIN 317		P. 61
› 84.620	International Tools		DIN 228-B			P. 61
› 84.745	International Tools		DIN 228-A			P. 62
› 84.750	Phantom	ISO 7388-3	MAS-BT	45°		P. 62
› 84.751	Phantom	ISO 7388-3	MAS-BT	30°		P. 62
› 84.752	Phantom	ISO 7388-3	MAS-BT	90°		P. 62
› 84.760	Phantom	ISO 7388-3 AD	SK			P. 63
› 84.770	Phantom	ISO 7388-3 AF	SK			P. 63
› 84.775	Phantom	ISO 7388-3 UD	SK			P. 63
› 84.780	Phantom	OTT-15°	SK	MAS-BT		P. 63
› 84.789	Phantom		HSK-A			P. 63
› 84.790	Phantom		HSK-A			P. 64
› 84.791	Phantom		HSK-A			P. 64
› 84.872	Phantom	DIN 172-A	n6	F7		P. 65
› 84.873	Phantom	DIN 172-A	n6	F7		P. 65
› 84.874	Phantom	DIN 172-A	n6	F7		P. 65
› 84.879	Phantom	DIN 179-A	n6	F7		P. 66
› 84.880	Phantom	DIN 179-A	n6	F7		P. 66
› 84.881	Phantom	DIN 179-A	n6	F7		P. 66
› 84.908	Phantom	DIN 69880	0,04	VDI		P. 67

› 84.909	Phantom	DIN 69880	0,02	VDI	NEW P. 67
› 84.910	Phantom	DIN 69880	B1	VDI	P. 67
› 84.911	Phantom	DIN 69880	B2	VDI	P. 68
› 84.912	Phantom	DIN 69880	B3	VDI	P. 68
› 84.913	Phantom	DIN 69880	B4	VDI	P. 69
› 84.920	Phantom	DIN 69880	C1	VDI	P. 69
› 84.921	Phantom	DIN 69880	C2	VDI	P. 70
› 84.922	Phantom	DIN 69880	C3	VDI	P. 70
› 84.923	Phantom	DIN 69880	C4	VDI	P. 71
› 84.950	Phantom	DIN 69880	E1	VDI	P. 71
› 84.951	Phantom	DIN 69880	E2	VDI	P. 72
› 84.955	Phantom	DIN 69880	F1	VDI	P. 72
› 84.958	Phantom	DIN 69880	E4	VDI	P. 73
› 84.961	Phantom	DIN 69880		VDI	P. 73
› 84.970	Phantom	DIN 69880	E2		P. 73
› 84.984	Phantom				P. 74
› 85.050	Phantom				P. 75
› 85.051	Phantom				P. 75
› 85.052	Phantom				P. 76
› 85.053	Phantom				P. 76
› 85.058	Phantom				P. 76
› 85.059	Phantom				P. 77
› 85.062	Phantom				P. 77
› 85.100	International Tools				P. 78
› 85.110	International Tools				P. 78
› 85.120	International Tools				P. 78
› 85.130	International Tools				P. 78
› 85.140	International Tools				P. 79
› 85.150	International Tools				P. 79
› 85.210	Phantom				P. 79
› 85.215	Phantom				P. 80
› 85.220	Phantom				P. 80
› 85.225	Phantom				P. 80
› 85.230	Phantom				P. 81
› 85.232	Phantom				P. 81

85.280	Phantom			P. 81
85.410	BISON	DIN 6350		P. 82
85.420	BISON	DIN 6350		P. 82
85.421	BISON	DIN 55026-B		P. 83
85.422	BISON	DIN 55027	BAJO-NET	P. 83
85.423	BISON	DIN 55029	CAM-LOCK	P. 83
85.500	BISON	DIN 6350		P. 84
85.510	BISON	DIN 6350		P. 84
85.600	BISON			P. 84
85.602	BISON	DIN 55027	BAJO-NET	P. 85
85.603	BISON	DIN 55029	CAM-LOCK	P. 85
85.670	BISON	DIN 6351		P. 85
85.801	BISON			P. 86
85.802	BISON			P. 86
85.805	BISON			P. 87
85.811	BISON			P. 87
85.812	BISON			P. 87
85.813	BISON			P. 88
85.820	BISON			P. 88
85.821	BISON			P. 88
85.823	BISON			P. 89
85.840	BISON			P. 89
85.850	BISON			P. 89
85.851	BISON			P. 90
85.855	BISON			P. 90
85.856	BISON			P. 90
85.866	BISON			P. 91
85.868	BISON			P. 91
85.890	BISON			P. 91
85.961	BISON	DIN 55027	BAJO-NET	P. 91
85.962	BISON	DIN 55029	CAM-LOCK	P. 92
85.992	BISON			P. 92
85.993	BISON			P. 92
87.110	BISON			P. 93
87.250	BISON			P. 93

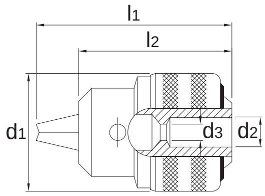
› 87.400	BISON		P. 94
› 88.150	BISON		P. 94
› 88.152	International Tools		P. 94
› 88.154	International Tools		P. 95
› 88.170	BISON		P. 95
› 88.200	BISON		P. 95
› 88.205	BISON		P. 96
› 88.230	BISON		P. 96
› 88.237	International Tools		P. 97
› 88.250	BISON		P. 97
› 88.260	BISON		P. 98
› 88.270	BISON		P. 98
› 88.318	BISON		P. 98
› 88.340	Phantom		P. 99
› 88.350	Phantom		P. 99
› 88.407	BISON		P. 99
› 88.430	BISON		P. 100
› 88.431	BISON		P. 100
› 88.432	BISON		P. 100
› 88.433	BISON		P. 101
› 88.434	BISON		P. 101
› 88.440	TORAX		P. 101
› 88.470	TORAX		P. 102
› 88.472	TORAX		P. 102
› 88.474	TORAX		P. 102
› 88.475	TORAX		P. 102
› 88.476	TORAX		P. 103
› 88.477	TORAX		P. 103
› 88.478	TORAX		P. 103
› 88.600	Phantom	DIN 787	P. 104
› 88.605	Phantom	DIN 6379	P. 104
› 88.610	Phantom	DIN 508	P. 105
› 88.612	Phantom	DIN 508-L	P. 105
› 88.613	Phantom	DIN 508-R	P. 106
› 88.614	Phantom		P. 106

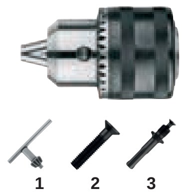
› 88.615	Phantom	DIN 6323	P. 106
› 88.616	Phantom	DIN 6322-A	P. 106
› 88.617	Phantom	DIN 6322-B	P. 107
› 88.618	Phantom		P. 107
› 88.630	Phantom	DIN 6330-B	P. 107
› 88.631	Phantom	DIN 6331	P. 107
› 88.632	Phantom	DIN 6334	P. 108
› 88.640	Phantom	DIN 6340	P. 108
› 88.641	Phantom	DIN 6319-C	P. 108
› 88.642	Phantom	DIN 6319-D	P. 108
› 88.643	Phantom	DIN 6319-G	P. 109
› 88.650	Phantom	DIN 6314	P. 109
› 88.655	Phantom	DIN 6314-Z	P. 109
› 88.660	Phantom	DIN 6315-B	P. 109
› 88.665	Phantom	DIN 6315-GN	P. 110
› 88.670	Phantom	DIN 6315-C	P. 110
› 88.675	Phantom	DIN 6316	P. 110
› 88.700	Phantom	DIN 6314-T	P. 110
› 88.705	Phantom	DIN 6314-AT	P. 111
› 88.710	Phantom	DIN 6316-T	P. 111
› 88.750	Phantom	DIN 6318	P. 111
› 88.780	Phantom		P. 111
› 88.800	Phantom		P. 112
› 88.805	Phantom		P. 112
› 88.810	Phantom		P. 112
› 88.900	TORAX		P. 113
› 88.902	TORAX		P. 113
› 88.904	TORAX		P. 113
› 88.910	TORAX		P. 114
› 88.912	TORAX		P. 114
› 88.914	TORAX		P. 114
› 88.920	TORAX		P. 115
› 88.921	TORAX		P. 115
› 88.924	TORAX		P. 115
› 88.928	TORAX		P. 116

› 88.935	TORAX		P. 116
› 88.936	TORAX		P. 116
› 88.940	TORAX		P. 116
› 88.965	TORAX		P. 117
› 88.966	TORAX		P. 117
› 88.991	TORAX		P. 117
› 88.994	TORAX		P. 118
› 88.860	International Tools		P. 119
› 88.870	International Tools		P. 119
› 89.250	Phantom	DIN 6499-B, ER, 0,015	P. 119
› 89.252	Phantom	DIN 6499-B, ER, 0,005	P. 120
› 89.260	Phantom	DIN 6499, ER, 0,008	P. 120
› 89.262	Phantom	DIN 6499, ER, 0,008	P. 120
› 89.264	Phantom	DIN 6499, ER, 0,008	P. 121
› 89.282	Phantom	DIN 6499-B, ER, 0,015	P. 121
› 89.878	Phantom		P. 121

› 81.130 *Phantom*

NL Tandkransboorhouder, met sleutel
FR Mandrin de perçage à couronne dentée, avec clé
ES Portabroca, con llave
DE Zahnkranzbohrfutter, mit Schlüssel
EN Keyed Chuck, with key

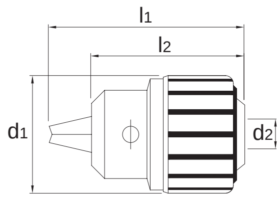


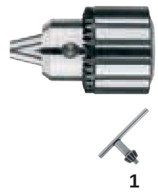


Ref.	Ø	d2	d1	d3	l1	l2	1 incl.	2 excl.	3 excl.
81.130.0810	0,8-6,5	B10	30		55	44	81.150.1400	-	-
81.130.0820	0,8-6,5	3/8"-24 UNF	30	5.5	55	44	81.150.1400	81.182.0510	-
81.130.1020	1-10	3/8"-24 UNF	33	5.5	60	50	81.150.1400	81.182.0510	-
81.130.1025	1-10	1/2"-20 UNF	33	6.5	60	50	81.150.1400	81.182.0610	81.182.1330
81.130.1312	1,5-13	B12	43		73	59	81.150.0200	-	-
81.130.1320	1,5-13	3/8"-24 UNF	43	5.5	73	59	81.150.0200	81.182.0510	-
81.130.1325	1,5-13	1/2"-20 UNF	43	6.5	73	59	81.150.0200	81.182.0610	81.182.1330
81.130.1616	3-16	B16	54		85	66	81.150.0300	-	-
81.130.1625	3-16	1/2"-20 UNF	54	6.5	85	66	81.150.0300	81.182.0610	81.182.1330
81.130.1630	3-16	5/8"-16 UN	54		85	66	81.150.0300	-	-

› 81.140 *Phantom*

NL Tandkransboorhouder, met sleutel, verzwaarde uitvoering
FR Mandrin de perçage à couronne dentée, avec clé, version extra renforcée
ES Portabroca, con llave, versión extra macizo
DE Zahnkranzbohrfutter, mit Schlüssel, extra stabile Ausführung
EN Keyed Chuck, with key, extra heavy duty version

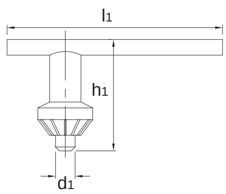




Ref.	Ø	d2	d1	l1	l2	1 incl.
81.140.1091	1-10	J1	37	60	51	81.150.0200
81.140.1092	1-10	J2	37	60	51	81.150.0200
81.140.1316	1,5-13	B16	46	77	62	81.150.2200
81.140.1396	1,5-13	J6	46	77	62	81.150.2200
81.140.1618	1-16	B18	57	95	77	81.150.0300
81.140.1693	1-16	J3	57	95	77	81.150.0300
81.140.2022	5-20	B22	65	110	85	81.150.2300
81.140.2093	5-20	J3	65	110	85	81.150.2300

› 81.150 *Phantom*

NL Sleutel voor Tandkransboorhouder
FR Clé pour Mandrin de perçage à couronne dentée
ES Llave para Portabroca
DE Schlüssel für Zahnkranzbohrfutter
EN Key for Keyed Chuck

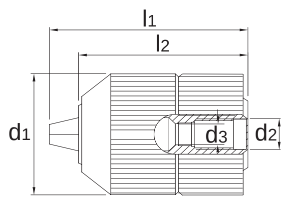


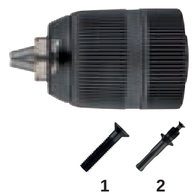
Ref.	Type	d1	z	h1	l1
81.150.0200	S2/K34	6	12	40	80
81.150.0300	S10/K3	8	11	47	85
81.150.1400	S14/KG	6	11	32	55

Ref.	Type	d1	z	h1	l1
81.150.2100	CK4	5.5	12	35	60
81.150.2200	S17/K2	6.3	11	45	90
81.150.2300	S13/K4	9.5	12	70	132

› 81.180 *Phantom*

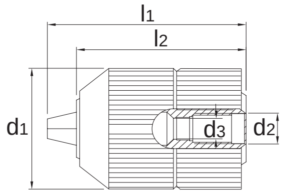
NL Snelspanboorhouder
FR Mandrin porte-forets auto-serrant
ES Portabroca cierre automático
DE Schnellspannbohrfutter
EN Keyless Drill Chuck





Ref.	Ø	d2	d3	d1	l2	l1	Watt Max.	1 incl.	2 excl.
81.180.1020	1-10	3/8"-24 UNF	5.5	41	54	64	400	81.182.0510	-
81.180.1325	2-13	1/2"-20 UNF	6.5	46	66	81	1000	81.182.0610	81.182.1330

› 81.181 Phantom



NL Snelspanboorhouder, in metalen uitvoering
FR Mandrin porte-forets auto-serrant, en métal
ES Portabroca cierre automático, en metal
DE Schnellspannbohrfutter, in Metallausführung
EN Keyless Drill Chuck, in metal

Ref.	Ø	d2	d3	d1	l2	l1	Watt Max.	1 incl.	2 excl.
81.181.1020	1-10	3/8"-24 UNF	5.5	40.4	56	65.5	1000	81.182.0510	-
81.181.1320	2-13	3/8"-24 UNF	5.5	42.5	68	75	1000	81.182.0510	-
81.181.1325	2-13	1/2"-20 UNF	6.5	42.5	68	75	1000	81.182.0610	81.182.1330

› 81.182 Phantom

NL Toebehoren voor Boorhouders, bout voor boorhouders (links), SDS boorstift
FR Accessoires pour Mandrins porte-forets, boulon (filetage à gauche), Adaptateur SDS
ES Accesorios para Portabrocas, tornillo para portabrocas (a la izquierda), Adaptador SDS
DE Zubehör für Bohrfutter, Schraube für Bohrkopf (links), SDS Bohrstift
EN Accessories for Drill Chucks, bolt for drill chucks (left), SDS Adaptor

SDS plus
E6,3 1/4"

Ref.	Description
81.182.0510	M5 x 0.8
81.182.0610	M6 x 1

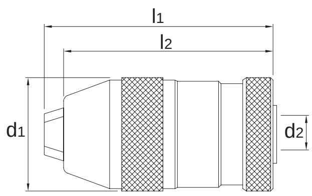
Ref.	Description
81.182.1330	1/2" -20 UNF -> SDS+
81.182.1354	Hex. 1/4" -> 3/8"-24 UNF

NL Demonteren en monteren boorkop accuboormachine
FR Démonter et monter un mandrin sur une perceuse-visseuse
ES Montar y desmontar un portabrocas en un atornillador
DE Demontieren und montieren Bohrfutter Akkubohrmachine
EN Remove and mounting drillchuck on a cordless drilling machine

Watch me

www.phantom.eu

› 81.200 Phantom

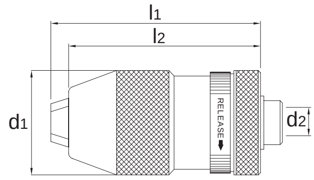


NL Zelfspannende Boorhouder, type A
FR Mandrin de perçage auto-serrant, type A
ES Portabroca cierre automático, tipo A
DE Selbstspannende Bohrfutter, Typ A
EN Industrial Keyless Chuck, type A

TYPE A

Ref.	Ø	d2	d1	l1	l2	Type	1
81.200.0810	0,8-8	B10	33	70	65	8A	81.412.0800
81.200.0812	0,8-8	B12	33	70	65	8A	81.412.0800
81.200.1012	0,8-10	B12	39	80	73	10A	81.412.0800
81.200.1016	0,8-10	B16	39	80	73	10A	81.412.0800
81.200.1020	0,8-10	3/8"-24 UNF	39	80	73	10A	81.412.0800
81.200.1092	0,8-10	J2	39	80	73	10A	81.412.0800
81.200.1094	0,8-10	J33	39	80	73	10A	81.412.0800
81.200.1312	1-13	B12	44	95	86	13A	81.412.1300
81.200.1316	1-13	B16	47	102	92	13A	81.412.1300
81.200.1320	2-13	3/8"-24 UNF	44	95	86	13A	81.412.0800
81.200.1325	2-13	1/2"-20 UNF	44	95	86	13A	81.412.0800
81.200.1392	1-13	J2	44	95	86	13A	81.412.1300
81.200.1396	1-13	J6	44	95	86	13A	81.412.1300
81.200.1616	3-16	B16	51	105	95	16A	81.412.1300
81.200.1618	3-16	B18	51	115	102	16A	81.412.1300
81.200.1625	3-16	1/2"-20 UNF	51	115	102	16A	81.412.1300
81.200.1630	3-16	5/8"-16 UN	51	115	102	16A	81.412.1300
81.200.1696	3-16	J6	51	115	102	16A	81.412.1300
81.200.1762	5-20	B18	64	140	127	20A	81.412.1600
81.200.1828	5-20	B22	64	140	127	20A	81.412.1600
81.200.1894	5-20	J3	64	140	127	20A	81.412.1600

› 81.210 *Phantom*



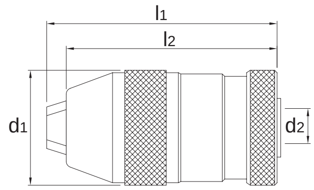

1

NL **Zelfspannende Boorhouder, klopvast, met spankrachtborging, type A**
FR **Mandrin de perçage auto-serrant, tenue aux percussions, avec trou de serrage, type A**
ES **Portabroca cierre automático, para taladros de percusión, sistema de autoapriete, con cierre de seguridad, tipo A**
DE **Selbstspannende Bohrfutter, schlagfest, mit Spannkraftsicherung, Typ A**
EN **Industrial Keyless Chuck, knock resistant, with security locking ring, type A**

TYPE A | SECURITY LOCK

Ref.	Ø	d2	d1	l1	l2	Type	1
81.210.1330	1-13	1/2"-20 UNF	44	100	92	13A	81.412.0800

› 81.230 *Phantom*



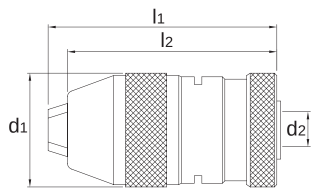

1

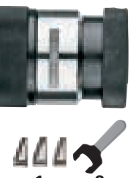
NL **Zelfspannende Precisieboorhouder, verzwaarde uitvoering, type P**
FR **Mandrin de perçage de précision auto-serrant, version extra renforcée, type P**
ES **Portabroca de precisión, cierre automático, versión extra macizo, tipo P**
DE **Selbstspannende Präzisionsbohrfutter, extra stabile Ausführung, Typ P**
EN **High Precision Keyless Chuck, extra heavy duty version, type P**

TYPE P | 0,04

Ref.	Ø	d2	d1	l1	l2	Type	1
81.230.0812	0,3-8	B12	38	74	67	8P	81.412.0800
81.230.1016	0,5-10	B16	43	89	81	10P	81.412.1000
81.230.1316	1-13	B16	49	103	91	13P	81.412.1300
81.230.1616	3-16	B16	55	107	95	16P	81.412.1600
81.230.1618	3-16	B18	55	107	95	16P	81.412.1600

› 81.250 *Phantom*



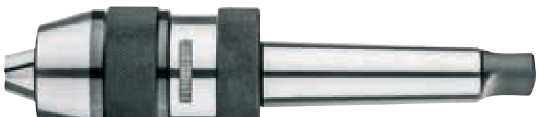

1 2

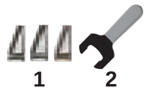
NL **Zelfspannende Precisieboorhouder, verzwaarde uitvoering, type XP**
FR **Mandrin de perçage de précision auto-serrant, version extra renforcée, type XP**
ES **Portabroca de precisión, cierre automático, versión extra macizo, tipo XP**
DE **Selbstspannende Präzisionsbohrfutter, extra stabile Ausführung, Typ XP**
EN **High Precision Keyless Chuck, extra heavy duty version, type XP**

TYPE XP | 0,04

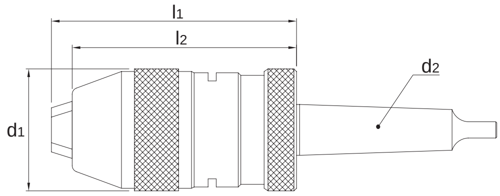
Ref.	Ø	d2	d1	l1	l2	Type	1	2 incl.
81.250.1316	1-13	B16	49	103	91	13XP	81.412.1300	81.413.1300
81.250.1616	3-16	B16	55	107	95	16XP	81.412.1600	81.413.1600
81.250.1618	3-16	B18	55	107	95	16XP	81.412.1600	81.413.1600

› 81.300 Phantom





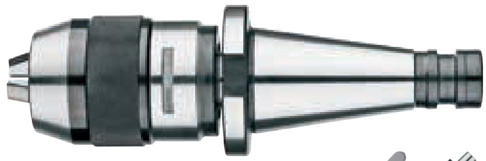
NL **Zelfspannende Precisieboorhouder, type XP, DIN 228-B**
FR **Mandrin de perçage de précision auto-serrant, type XP, DIN 228-B**
ES **Portabroca de precisión, cierre automático, tipo XP, DIN 228-B**
DE **Selbstspannende Präzisionsbohrfutter, Typ XP, DIN 228-B**
EN **High Precision Keyless Chuck, type XP, DIN 228-B**



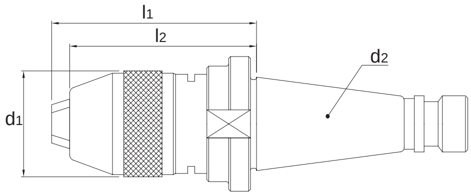
DIN 228-B | TYPE XP | 0,04

Ref.	Ø	d2	d1	l1	l2	Type	1	2 incl.
81.300.0208	0,3-8	MK 2	38	72	65	8XP	81.412.0800	81.413.0800
81.300.0213	1-13	MK 2	48	92	80	13XP	81.412.1300	81.413.1300
81.300.0313	1-13	MK 3	48	92	80	13XP	81.412.1300	81.413.1300
81.300.0316	3-16	MK 3	54	96	85	16XP	81.412.1600	81.413.1600
81.300.0413	1-13	MK 4	48	92	80	13XP	81.412.1300	81.413.1300
81.300.0416	3-16	MK 4	54	96	85	16XP	81.412.1600	81.413.1600

› 81.303 Phantom

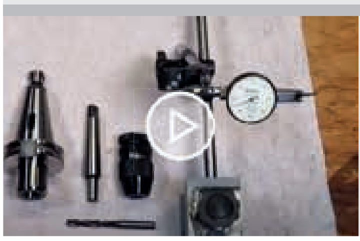


NL **Zelfspannende Precisieboorhouder, type XP, DIN 2080**
FR **Mandrin de perçage de précision auto-serrant, type XP, DIN 2080**
ES **Portabroca de precisión, cierre automático, tipo XP, DIN 2080**
DE **Selbstspannende Präzisionsbohrfutter, Typ XP, DIN 2080**
EN **High Precision Keyless Chuck, type XP, DIN 2080**



DIN 2080 | AD | SK | AT3 | HRc $58^{\pm2}$ | TYPE XP | 0,04

Ref.	Ø	d2	d1	l1	l2	Type	1	2 incl.	3
81.303.4013	1-13	SK40	48	89	78	13XP	81.412.1300	81.413.1300	81.414.1300
81.303.4016	3-16	SK40	55	101	90	16XP	81.412.1600	81.413.1600	81.414.1640
81.303.5013	1-13	SK50	48	101	90	13XP	81.412.1300	81.413.1300	81.414.1300
81.303.5016	3-16	SK50	55	83	72	16XP	81.412.1600	81.413.1600	81.414.1650



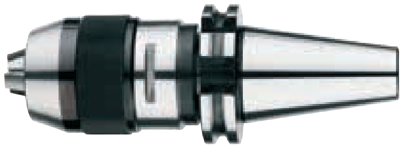
NL Rondloopnauwkeurigheid boorkop
FR Porte-outil de précision
ES Precisión de portabrocas
DE Rundlaufgenauigkeit Bohrfutter
EN Accuracy drill chuck

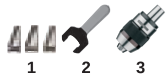
Watch me

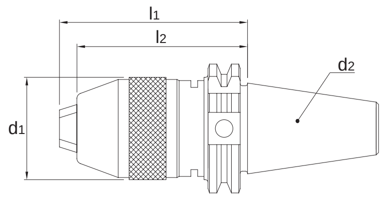
www.phantom.eu

› 81.304 *Phantom*

NL Zelfspannende Precisieboorhouder, type XP, ISO 7388-1 (DIN 69871)
FR Mandrin de perçage de précision auto-serrant, type XP, ISO 7388-1 (DIN 69871)
ES Portabroca de precisión, cierre automático, tipo XP, ISO 7388-1 (DIN 69871)
DE Selbstspannende Präzisionsbohrfutter, Typ XP, ISO 7388-1 (DIN 69871)
EN High Precision Keyless Chuck, type XP, ISO 7388-1 (DIN 69871)





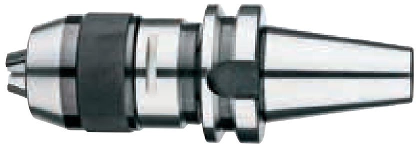


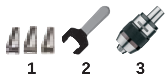
ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc 58±2 | TYPE XP | 0,04

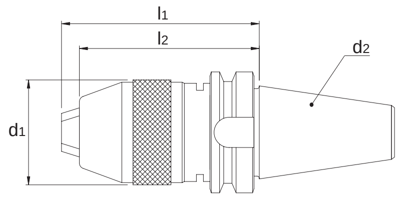
Ref.	Ø	d2	d1	l1	l2	Type	1	2 incl.	3
81.304.4013	1-13	SK40	48	91	80	13XP	81.412.1300	81.413.1300	81.414.1300
81.304.4016	3-16	SK40	55	108	97	16XP	81.412.1600	81.413.1600	81.414.1640
81.304.5013	1-13	SK50	48	89	78	13XP	81.412.1300	81.413.1300	81.414.1300
81.304.5016	3-16	SK50	55	89	76	16XP	81.412.1600	81.413.1600	81.414.1650

› 81.306 *Phantom*

NL Zelfspannende Precisieboorhouder, type XP, ISO 7388-2 (MAS-BT)
FR Mandrin de perçage de précision auto-serrant, type XP, ISO 7388-2 (MAS-BT)
ES Portabroca de precisión, cierre automático, tipo XP, ISO 7388-2 (MAS-BT)
DE Selbstspannende Präzisionsbohrfutter, Typ XP, ISO 7388-2 (MAS-BT)
EN High Precision Keyless Chuck, type XP, ISO 7388-2 (MAS-BT)





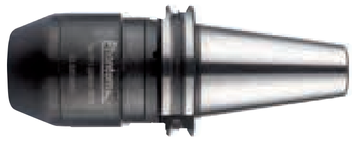


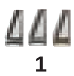
ISO 7388-2 | J (A) | MAS-BT | AT3 | HRc 58±2 | TYPE XP | 0,04

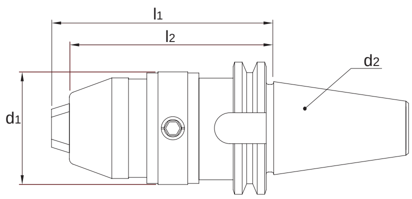
Ref.	Ø	d2	d1	l1	l2	Type	1	2 incl.	3
81.306.4013	1-13	BT40	48	97	86	13XP	81.412.1300	81.413.1300	81.414.1300
81.306.4016	3-16	BT40	55	116	105	16XP	81.412.1600	81.413.1600	81.414.1640
81.306.5013	1-13	BT50	48	108	97	13XP	81.412.1300	81.413.1300	81.414.1300
81.306.5016	3-16	BT50	55	106	95	16XP	81.412.1600	81.413.1600	81.414.1650

› 81.320 *Phantom*

NL Ultra Precisieboorhouder, type XPF, compleet met spansleutel, ISO 7388-1 (DIN 69871)
FR Mandrin de perçage de ultra haute précision auto-serrant, type XPF, avec clé de serrage, ISO 7388-1 (DIN 69871)
ES Portabroca de precisión super alta, tipo XPF, se suministra con llave de apriete, ISO 7388-1 (DIN 69871)
DE Ultra-Präzisionsbohrfutter, Typ XPF, Komplett mit Spannschlüssel, ISO 7388-1 (DIN 69871)
EN Super High Precision Keyless Chuck, type XPF, with chuck key, ISO 7388-1 (DIN 69871)







ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc 58±2 | TYPE XPF | 0,05

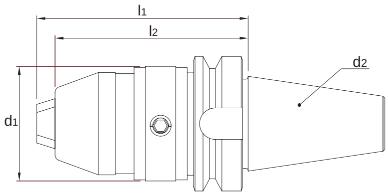
Ref.	Ø	d2	d1	l1	l2	Type	1
81.320.0413	1-13	SK40	54	100	91	13XPF	81.412.1300
81.320.0416	3-16	SK40	57	101	94	16XPF	81.412.1600
81.320.5016	3-16	SK50	57	107	96	16XPF	81.412.1600

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8

› 81.330 Phantom

1

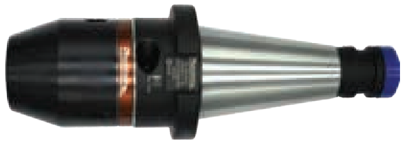
- NL Ultra Precisieboorhouder, type XPF, compleet met spansleutel, ISO 7388-2 (MAS-BT)
- FR Mandrin de perçage de ultra haute précision auto-serrant, type XPF, avec clé de serrage, ISO 7388-2 (MAS-BT)
- ES Portabroca de precisión super alta, tipo XPF, se suministra con llave de apriete, ISO 7388-2 (MAS-BT)
- DE Ultra-Präzisionsbohrfutter, Typ XPF, Komplett mit Spannschlüssel, ISO 7388-2 (MAS-BT)
- EN Super High Precision Keyless Chuck, type XPF, with chuck key, ISO 7388-2 (MAS-BT)



ISO 7388-2 | J (A) | MAS-BT | AT3 | HRc 58±2 | TYPE XPF | 0,05

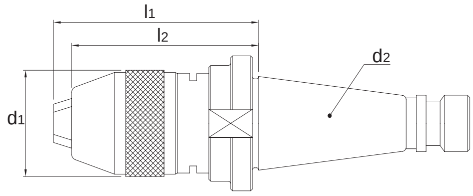
Ref.	Ø	d2	d1	l1	l2	Type	1
81.330.0413	1-13	BT40	54	105	96	13XPF	81.412.1300
81.330.0416	3-16	BT40	57	106	99	16XPF	81.412.1600
81.330.4013	1-13	BT40	57	110	99	13XPF	81.412.1300
81.330.4016	3-16	BT40	57	112	101	16XPF	81.412.1600

› 81.343 Phantom



1

- NL Ultra Precisieboorhouder, type XPB, DIN 2080
- FR Mandrin de perçage de ultra haute précision auto-serrant, type XPB, DIN 2080
- ES Portabroca de precisión super alta, type XPB, DIN 2080
- DE Ultra-Präzisionsbohrfutter, type XPB, DIN 2080
- EN Super High Precision Keyless Chuck, type XPB, DIN 2080

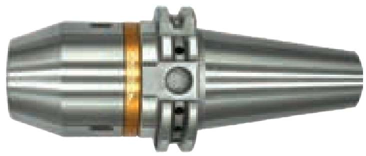


DIN 2080 | A | SK | AT3 | 0,05 | G6,3 15.000 RPM | 0,02

NIEUW NOUVEAU NUEVO NEU

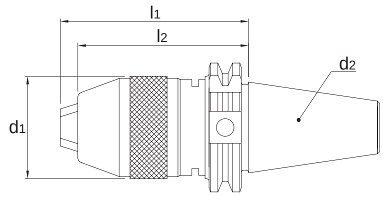
Ref.	Ø	d2	d1	l1	l2	Type	1
81.343.4016	1-16	SK40	50	95.5	85	16XPB	81.412.1600
81.343.5016	1-16	SK50	50	95.5	85	16XPB	81.412.1600

› 81.354 Phantom



1

- NL Ultra Precisieboorhouder, type XPS, ISO 7388-1 (DIN 69871)
- FR Mandrin de perçage de ultra haute précision auto-serrant, type XPS, ISO 7388-1 (DIN 69871)
- ES Portabroca de precisión super alta, type XPS, ISO 7388-1 (DIN 69871)
- DE Ultra-Präzisionsbohrfutter, type XPS, ISO 7388-1 (DIN 69871)
- EN Super High Precision Keyless Chuck, type XPS, ISO 7388-1 (DIN 69871)



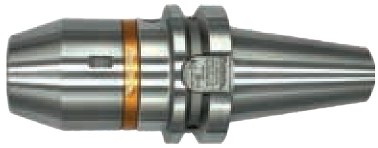
ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc 58±2 | RFID | 40 BAR | G2,5 25.000 RPM | 0,02

NIEUW NOUVEAU NUEVO NEU

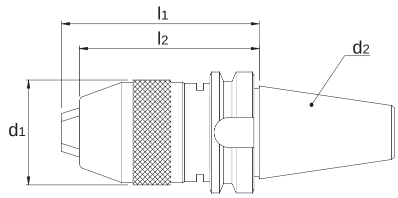
Ref.	Ø	d2	d1	l1	l2	Type	1
81.354.4016	1-16	SK40	50	90	80	16XPS	81.412.1600
81.354.5016	1-16	SK50	50	90	80	16XPS	81.412.1600

› 81.356 Phantom

NL Ultra Precisieboorhouder, type XPS, ISO 7388-2 (MAS-BT)
FR Mandrin de perçage de ultra haute précision auto-serrant, type XPS, ISO 7388-2 (MAS-BT)
ES Portabroca de precisión super alta, type XPS, ISO 7388-2 (MAS-BT)
DE Ultra-Präzisionsbohrfutter, type XPS, ISO 7388-2 (MAS-BT)
EN Super High Precision Keyless Chuck, type XPS, ISO 7388-2 (MAS-BT)




1



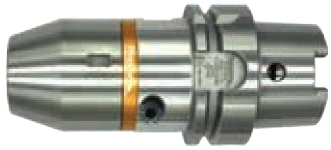
ISO 7388-2 | JD (AD) | MAS-BT | AT3 | HRc 58±2 | 40 BAR | G2,5 25.000 RPM | 0,02

NIEUW NOUVEAU NUEVO NEU

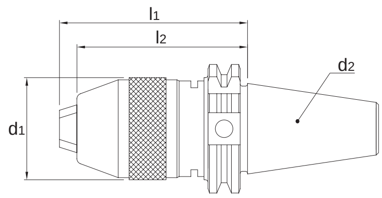
Ref.	Ø	d2	d1	l1	l2	Type	1
81.356.4016	1-16	BT40	50	104	95	16XPS	81.412.1600
81.356.5016	1-16	BT50	50	116	106	16XPS	81.412.1600

› 81.357 Phantom

NL Ultra Precisieboorhouder, type XPS, ISO 12164 (DIN 69893)
FR Mandrin de perçage de ultra haute précision auto-serrant, type XPS, ISO 12164 (DIN 69893)
ES Portabroca de precisión super alta, type XPS, ISO 12164 (DIN 69893)
DE Ultra-Präzisionsbohrfutter, type XPS, ISO 12164 (DIN 69893)
EN Super High Precision Keyless Chuck, type XPS, ISO 12164 (DIN 69893)




1



ISO 12164 | A | HSK-A | AT3 | HRc 58±2 | RFID | 40 BAR | G2,5 25.000 RPM | 0,02

NIEUW NOUVEAU NUEVO NEU

Ref.	Ø	d2	d1	l1	l2	Type	1
81.357.6016	1-16	HSK63A	50	114	104	16XPS	81.412.1600

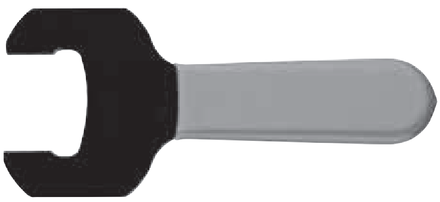
› 81.412 Phantom

NL Reservebekken
FR Mors de rechange
ES Garras de recambio
DE Ersatzbacken
EN Auxiliary jaws

Ref.	Ø	Type
81.412.0600	0,3-6,5	6,5P-6,5XP
81.412.0800	0,3-13	8(X)P-8A-10A-13A
81.412.1000	0,5-10	10P-10XP
81.412.1300	1-16	13(X)P(F)-13A-16A
81.412.1600	3-20	16(X)P(F)-20A

› 81.413 Phantom

NL Spansleutel, voor XP
FR Clé pour vis de serrage, pour type XP
ES Llave para tornillo de fijación, para tipo XP
DE Spannschlüssel, für Typ XP
EN Wrench for Draw-in Bolts, for type XP



TYPE XP

Ref.	Type	l1	sw
81.413.0600	6,5XP	140	27
81.413.0800	8XP	165	28
81.413.1000	10XP	165	34
81.413.1300	13XP	165	37
81.413.1600	16XP	165	43

› 81.414 Phantom

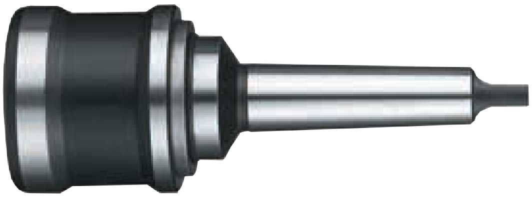
NL **Reserveboorhouder, XP voor 81.303, 81.304, 81.306 en 81.308**
FR **Mandrin de rechange, XP pour 81.303, 81.304, 81.306 et 81.308**
ES **Portabroca de recambio, XP para 81.303, 81.304, 81.306 y 81.308**
DE **Ersatzbohrfutter, XP für 81.303, 81.304, 81.306 und 81.308**
EN **Spare Drill Chuck, XP for 81.303, 81.304, 81.306 and 81.308**

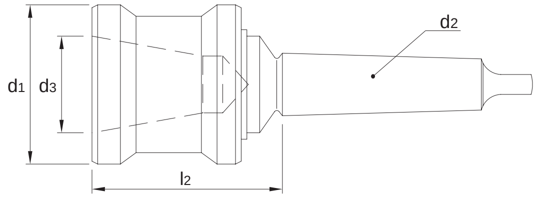
TYPE XP | 0,04

Ref.	Ø	Type
81.414.0800	0,3-8	8XP
81.414.1300	1-13	13XP
81.414.1640	3-16	16XP/40
81.414.1650	3-16	16XP/50

› 81.450 BISON

NL type 1721, Snelwisselhouder, DIN 228-B
FR type 1721, Porte-douilles à changement rapide, DIN 228-B
ES tipo 1721, Torreta de cambio rápido', DIN 228-B
DE Typ 1721, Schnellwechselfutter, DIN 228-B
EN type 1721, Quick-Change Holder, DIN 228-B



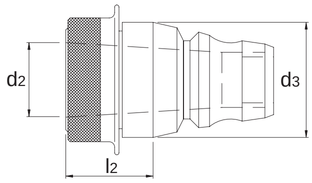


DIN 228-B

Ref.	d2	d3	d1	l2
81.450.0240	MK 2	40	65	82.5
81.450.0340	MK 3	40	65	81
81.450.0440	MK 4	40	65	80
81.450.0451	MK 4	51.5	83	102
81.450.0551	MK 5	51.5	83	98.5

› 81.460 BISON

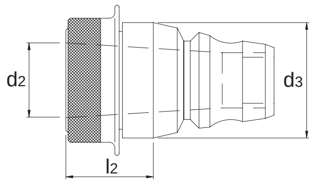
NL type 5216, Inzethuls, met inwendige MK, voor 81.450
FR type 5216, Douille d'accouplement, avec CM intérieur, pour 81.450
ES tipo 5216, Manguito de unión, con CM interior, para 81.450
DE Typ 5216, Einsätze, mit innerem MK, für 81.450
EN type 5216, Quick-Change Adapter, with MT seat, for 81.450



Ref.	d2	d3	l2
81.460.4001	MK 1	40	29
81.460.4002	MK 2	40	29
81.460.4003	MK 3	40	47
81.460.5101	MK 1	51.5	34
81.460.5102	MK 2	51.5	34
81.460.5103	MK 3	51.5	34
81.460.5104	MK 4	51.5	57

› 81.462 BISON

NL type 5219, Inzethuls, met inwendige MK en pendelsysteem voor ruimers, voor 81.450
FR type 5219, Douille d'accouplement, avec CM intérieur et système pendulaire pour alésoirs, pour 81.450
ES tipo 5219, Manguito de unión, con CM interior y sistema pendular para escariadores, para 81.450
DE Typ 5219, Einsätze, mit innerem MK und Pendelsystem für Reibahlen, für 81.450
EN type 5219, Quick-Change Adapter, with MT seat and usable for changing reamers, for 81.450

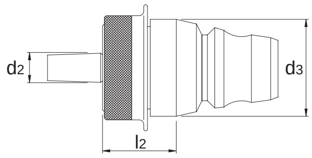


P

Ref.	d2	d3	l2
81.462.4002	MK 2	40	29
81.462.4003	MK 3	40	47

› 81.463 BISON

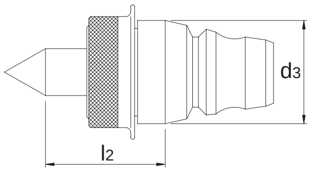
NL type 5366, Inzethuls, met uitwendige boorhouderopname, voor 81.450
FR type 5366, Douille d'accouplement, avec connecteur porte-forets externe, pour 81.450
ES tipo 5366, Manguito de unión, con conector portabrocas exterior, para 81.450
DE Typ 5366, Einsätze, mit auswendige Bohrfutteraufnahme, für 81.450
EN type 5366, Quick-Change Adapter, with external drill chuck connector, for 81.450



Ref.	d2	d3	l2
81.463.4012	B12	40	32.5
81.463.4016	B16	40	34
81.463.5116	B16	51.5	39

› 81.464 BISON

NL type 5367, Inzethuls, met uitwendige 60° centreerpunt, voor 81.450
FR type 5367, Douille d'accouplement, avec pointe à centrer externe de 60°, pour 81.450
ES tipo 5367, Manguito de unión, con punta de centrado exterior de 60°, para 81.450
DE Typ 5367, Einsätze, mit äußerer Zentrierspitze 60°, für 81.450
EN type 5367, Quick-Change Adapter, with external centre point of 60°, for 81.450



Ref.	d3	l2
81.464.4000	40	61

› 81.510 AKON

NL Snijplaathouderset
FR Coffret porte-filières machine
ES Juego de portacojinetes
DE Schneideisenhaltersatz
EN Workpiece Holder set

Ref.	Nr.	1	2
81.510.0100	1	M1-M6	16x5, 20x5, 20x7

Ref.	Nr.	1	2
81.510.0300	3	M16-M24	45x14, 45x18, 55x16, 55x22

› 81.511 AKON

NL Snijplaathouderset, Snelwisselhouder
FR Coffret porte-filières machine, Porte-douilles à changement rapide
ES Juego de portacojinetes, Torreta de cambio rápido'
DE Schneideisenhaltersatz, Schnellwechselfutter
EN Workpiece Holder set, Quick-Change Holder

Ref.	Nr.	1	2
81.511.0200	2	M3-M14	20x7, 25x9, 30x11, 38x14

Ref.	Nr.	1	2

› 81.520 AKON

NL Tap- en Snijplaathouderset
FR Coffret porte-tarauds et porte-filières machine
ES Juego de Portamachos y Portacojinetes
DE Gewindebohrer und Schneideisenhaltersatz
EN Tap- and Workpiece Holder set

Ref.	Nr.	1	2	3
81.520.0100	1	M1-M6	M1-M6	16x5, 20x5, 20x7

Ref.	Nr.	1	2	3
81.520.0300	3	M16-M24	M4-M24	45x14, 45x18, 55x16, 55x22

› 81.521 AKON

NL Snelwisselhouder, Tap- en Snijplaathouderset
FR Porte-douilles à changement rapide, Coffret porte-tarauds et porte-filières machine
ES Torreta de cambio rápido', Juego de Portamachos y Portacojinetes
DE Schnellwechselfutter, Gewindebohrer und Schneideisenhaltersatz
EN Quick-Change Holder, Tap- and Workpiece Holder set

Ref.	Nr.	1	2	3
81.521.0200	2	M3-M14	M3-M16	20x7, 25x9, 30x11, 38x14

Ref.	Nr.	1	2	3

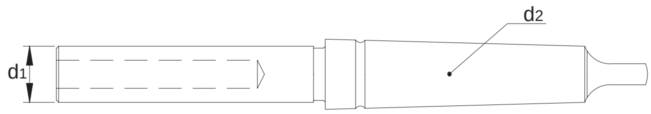
› 81.523 AKON

NIEUW NOUVEAU NUEVO NEU

NL Snelwisselhouder met taphouder
FR Porte-douilles à changement rapide avec mandrin à tarauder porte-douilles
ES Torreta de cambio rápido' con portamachos de cambio rápido
DE Schnellwechselfutter mit Gewindeschneidfutter
EN Quick-Change Holder with Quick Change Tap Chuck

Ref.	2	Ref.	2
81.523.0200	M3-M16		

› 81.530 AKON

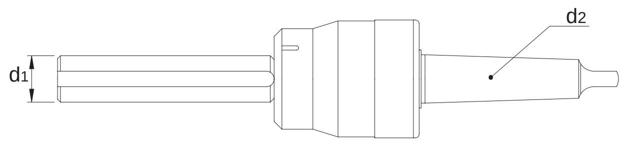


NL Opsteekdoorn, DIN 228-B
FR Mandrin support pour porte-tarauds et porte-filières, DIN 228-B
ES Espiga para portamachos y porta terrajas, DIN 228-B
DE Aufsteckdorne, DIN 228-B
EN Mandrel for Die and Tap Holders with adjustable torque coupling, DIN 228-B

DIN 228-B

Ref.	Nr.	d2	d1	Ref.	Nr.	d2	d1
81.530.0101	1	MK 1	12	81.530.0203	2	MK 3	20
81.530.0102	1	MK 2	12	81.530.0204	2	MK 4	20
81.530.0103	1	MK 3	12	81.530.0303	3	MK 3	25
81.530.0202	2	MK 2	20	81.530.0304	3	MK 4	25

› 81.531 AKON



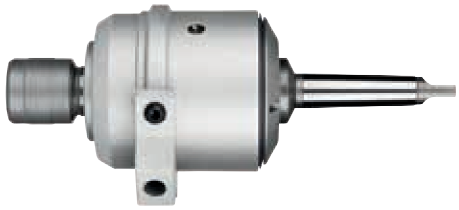
NL Opsteekdoorn, met instelbare slipkoppeling, DIN 228-B
FR Mandrin support pour porte-tarauds et porte-filières, à réglage de couple par friction, DIN 228-B
ES Espiga para portamachos y porta terrajas, con ajuste de par por fricción, DIN 228-B
DE Aufsteckdorne, mit einstellbarer Rutschkupplung, DIN 228-B
EN Mandrel for Die and Tap Holders with adjustable torque coupling, with adjustable torque coupling, DIN 228-B

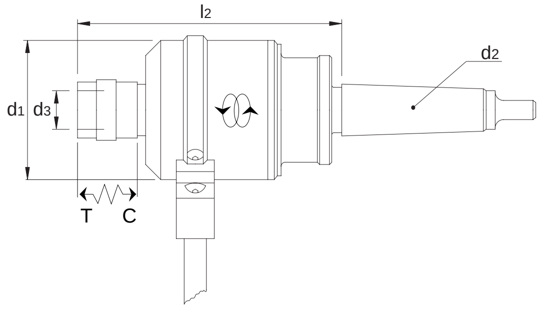
DIN 228-B

Ref.	Nr.	d2	d1	Ref.	Nr.	d2	d1
81.531.0202	2	MK 2	20	81.531.0304	3	MK 4	25
81.531.0203	2	MK 3	20				

› 81.540 Phantom

NL Tapapparaat, met omkeerinrichting, met druk- en trekcompensatie, voor gebruik met tapinzetstukken, DIN 228-B
FR Appareil à tarauder, dispositif d'inversion, à compensation de pression et de traction, pour douilles porte-tarauds, DIN 228-B
ES Aparato roscador, con dispositivo de inversión, con compensación de presión y de tracción, para casquillos de roscado, DIN 228-B
DE Gewindeschneidmaschinen, mit Umkehrvorrichtung, mit Zug-und Druckausgleich, Für den Gebrauch mit Gewindebohrereinsatzstück, DIN 228-B
EN Tapping Unit, with reversing arrangement, with push and pull compensation, for usage with bushes for tapping, DIN 228-B





DIN 228-B | AUTO REVERSAL | C T

Ref.	d2	d3	d1	l2	ø	1	2	T	C
81.540.0212	MK 2	19	72	135	Gr. 1 - M2-M12	81.633/81.634	81.653/81.654	7	3
81.540.0320	MK 3	31	83	171	Gr. 2 - M6-M20	81.636/81.637	81.656/81.657	10	4

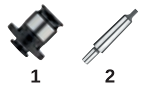
NL Moment tapkop instellen
FR Régler le couple d'un appareil à tarauder
ES Ajustar el embrague
DE Einstellen Drehmoment Gewindeschneidapparat
EN Ajustable torque tapping head

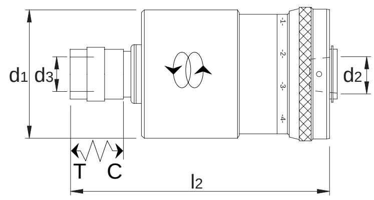
Watch me

www.phantom.eu

› 81.545 Phantom

NL Tapapparaat, met omkeerinrichting, met druk- en trekcompensatie, met instelbare slipkoppeling, voor gebruik met tapinzetstukken
FR Appareil à tarauder, dispositif d'inversion, à compensation de pression et de traction, à réglage de couple par friction, pour douilles porte-tarauds
ES Aparato roscador, con dispositivo de inversión, con compensación de presión y de tracción, con ajuste de par por fricción, para casquillos de roscado
DE Gewindeschneidmaschinen, mit Umkehrvorrichtung, mit Zug-und Druckausgleich, mit einstellbarer Rutschkupplung, Für den Gebrauch mit Gewindebohrereinsatzstück
EN Tapping Unit, with reversing arrangement, with push and pull compensation, with adjustable torque coupling, for usage with bushes for tapping





AUTO REVERSAL | C T

Ref.	d2	d3	d1	l2	ø	1	2 excl.	T	C
81.545.0007	J33	13	53	127	Gr. 0 - M2-M6	81.651	84.171	7	3
81.545.0012	J6	19	68	155	Gr. 1 - M2-M12	81.653/81.654	84.171	7	3
81.545.0020	M20	26	83	197	Gr. 1,5 - M8-M20	81.655	84.172	10	4

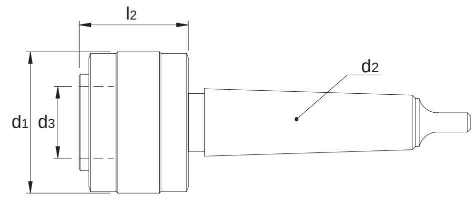
NL Gebruik tapapparaat met omkeermechanisme
FR Utilisation d'un appareil à tarauder à dispositif d'inversion
ES Uso de un aparato de roscar con dispositivo de inversión
DE Gebrauch Gewindeschneidapparat mit Umkehrvorrichtung
EN Use of self-reversing tapping head

Watch me

www.phantom.eu

› 81.570 Phantom

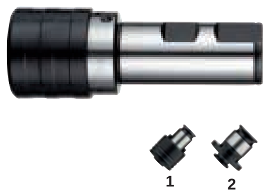
NL Taphouder, zonder axiale compensatie, voor gebruik met tapinzetstukken, DIN 228-B
FR Mandrin à tarauder porte-douilles, sans compensation axiale, pour douilles porte-tarauds, DIN 228-B
ES Portamachos de cambio rápido, sin compensación axial, para casquillos de roscado, DIN 228-B
DE Gewindeschneidfutter, Ohne axialen Ausgleich, Für den Gebrauch mit Gewindebohrereinsatzstück, DIN 228-B
EN Quick Change Tap Chuck, without axial compensation, for usage with bushes for tapping, DIN 228-B



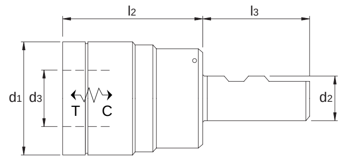
DIN 228-B

Ref.	d2	d3	d1	l2	Ø	1	2
81.570.0212	MK 2	19	33	45	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654
81.570.0220	MK 2	31	50	61	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657
81.570.0312	MK 3	19	33	45	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654
81.570.0320	MK 3	31	50	61	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657

› 81.602 Phantom



NL Taphouder, met druk- en trekcompensatie, Weldon, voor gebruik met tapinzetstukken
FR Mandrin à tarauder porte-douilles, à compensation de pression et de traction, Weldon, pour douilles porte-tarauds
ES Portamachos de cambio rápido, con compensación de presión y de tracción, Weldon, para casquillos de roscado
DE Gewindeschneidfutter, mit Zug-und Druckausgleich, Weldon, Für den Gebrauch mit Gewindebohrereinsatzstück
EN Quick Change Tap Chuck, with push and pull compensation, Weldon, for usage with bushes for tapping

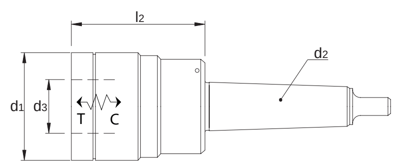


DIN 6535-HB | C T

Ref.	d2	d3	d1	l2	l3	Ø	1	2	T	C
81.602.2012	20	19	38	41	50	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	9	9
81.602.2512	25	19	38	41	56	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	9	9
81.602.2520	25	31	55	63	56	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	15	15
81.602.3212	32	19	38	41	61	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	9	9
81.602.3233	32	48	79	97	61	Gr. 3 - M14-M45	81.639	-	24	24
81.602.4020	40	31	55	63	72	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	15	15
81.602.4033	40	48	79	97	72	Gr. 3 - M14-M45	81.639	-	24	24

› 81.610 Phantom

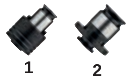
NL Taphouder, met druk- en trekcompensatie, voor gebruik met tapinzetstukken, DIN 228-B
FR Mandrin à tarauder porte-douilles, à compensation de pression et de traction, pour douilles porte-tarauds, DIN 228-B
ES Portamachos de cambio rápido, con compensación de presión y de tracción, para casquillos de roscado, DIN 228-B
DE Gewindeschneidfutter, mit Zug-und Druckausgleich, Für den Gebrauch mit Gewindebohrereinsatzstück, DIN 228-B
EN Quick Change Tap Chuck, with push and pull compensation, for usage with bushes for tapping, DIN 228-B



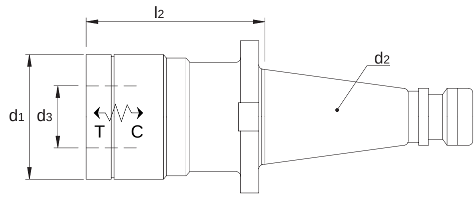
DIN 228-B | C T

Ref.	d2	d3	d1	l2	Ø	1	2	T	C
81.610.0212	MK 2	19	38	47	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	7.5	7.5
81.610.0312	MK 3	19	38	47	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	7.5	7.5
81.610.0320	MK 3	31	55	71	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	12.5	12.5
81.610.0420	MK 4	31	55	72	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	12.5	12.5
81.610.0433	MK 4	48	79	105	Gr. 3 - M14-M45	81.639	-	20	20
81.610.0548	MK 5	60	96	117	Gr. 4 - M39-M60	81.641	-	22.5	22.5

› 81.613 Phantom



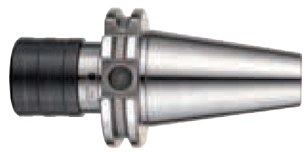
NL Taphouder, met druk- en trekcompensatie, DIN 2080, voor gebruik met tapinzetstukken
FR Mandrin à tarauder porte-douilles, à compensation de pression et de traction, DIN 2080, pour douilles porte-tarauds
ES Portamachos de cambio rápido, con compensación de presión y de tracción, DIN 2080, para casquillos de roscado
DE Gewindeschneidfutter, mit Zug-und Druckausgleich, DIN 2080, Für den Gebrauch mit Gewindebohrereinsatzstück
EN Quick Change Tap Chuck, with push and pull compensation, DIN 2080, for usage with bushes for tapping

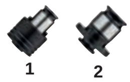


DIN 2080 | A | SK | AT3 | HRc $58^{\pm 2}$ | C T

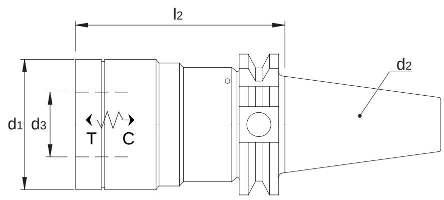
Ref.	d2	d3	d1	l2	Ø	1	2	T	C
81.613.3012	SK30	19	38	51	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	9	9
81.613.3020	SK30	31	55	86	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	15	15
81.613.4012	SK40	19	38	53	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	9	9
81.613.4020	SK40	31	55	77	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	15	15
81.613.4033	SK40	48	79	118	Gr. 3 - M14-M45	81.639	-	24	24
81.613.5020	SK50	31	55	79	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	15	15
81.613.5033	SK50	48	79	125	Gr. 3 - M14-M45	81.639	-	24	24

› 81.614 Phantom





NL Taphouder, met druk- en trekcompensatie, voor gebruik met tapinzetstukken, ISO 7388-1 (DIN 69871)
FR Mandrin à tarauder porte-douilles, à compensation de pression et de traction, pour douilles porte-tarauds, ISO 7388-1 (DIN 69871)
ES Portamachos de cambio rápido, con compensación de presión y de tracción, para casquillos de roscado, ISO 7388-1 (DIN 69871)
DE Gewindeschneidfutter, mit Zug-und Druckausgleich, Für den Gebrauch mit Gewindebohrereinsatzstück, ISO 7388-1 (DIN 69871)
EN Quick Change Tap Chuck, with push and pull compensation, for usage with bushes for tapping, ISO 7388-1 (DIN 69871)



ISO 7388-1 | DIN 69871 | A | SK | AT3 | HRc $58^{\pm 2}$ | RFID | C T

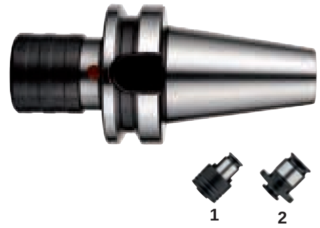
Ref.	d2	d3	d1	l2	Ø	1	2	T	C
81.614.4012	SK40	19	38	60	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	7.5	7.5
81.614.4020	SK40	31	55	98	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	12.5	12.5
81.614.4033	SK40	48	79	151	Gr. 3 - M14-M45	81.639	-	20	20
81.614.5012	SK50	19	38	60	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	7.5	7.5
81.614.5020	SK50	31	55	84	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	12.5	12.5
81.614.5033	SK50	48	79	139	Gr. 3 - M14-M45	81.639	-	20	20
81.614.5048	SK50	60	96	152	Gr. 4 - M39-M60	81.641	-	22.5	22.5

NL Tappotje in taphouder
FR Monter une douille porte-tarauds dans un mandrin à tarauder porte-douilles
ES Sujetar un casquillo en un portamachos
DE Gewindebohrereinsatzstück im Gewindescheidapparat
EN Tap adapter in quickcange tapholder

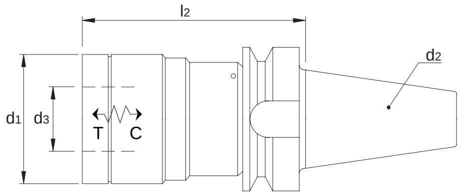
Watch me

www.phantom.eu

› 81.616 Phantom



NL Taphouder, met druk- en trekcompensatie, voor gebruik met tapinzetstukken, ISO 7388-2 (MAS-BT)
FR Mandrin à tarauder porte-douilles, à compensation de pression et de traction, pour douilles porte-taraudes, ISO 7388-2 (MAS-BT)
ES Portamachos de cambio rápido, con compensación de presión y de tracción, para casquillos de roscado, ISO 7388-2 (MAS-BT)
DE Gewindeschneidfutter, mit Zug-und Druckausgleich, Für den Gebrauch mit Gewindebohrereinsatzstück, ISO 7388-2 (MAS-BT)
EN Quick Change Tap Chuck, with push and pull compensation, for usage with bushes for tapping, ISO 7388-2 (MAS-BT)

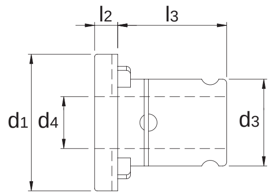


ISO 7388-2 | J (A) | MAS-BT | AT3 | HRc $58^{\pm2}$ | C T

Ref.	d2	d3	d1	l2	Ø	1	2	T	C
81.616.4012	BT40	19	38	67.5	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	7.5	7.5
81.616.4020	BT40	31	55	94.5	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	12.5	12.5
81.616.4033	BT40	48	79	164.5	Gr. 3 - M14-M45	81.639	-	22.5	22.5
81.616.5012	BT50	19	38	77	Gr. 1 - M2-M14	81.633/81.634	81.653/81.654	7.5	7.5
81.616.5020	BT50	31	55	102.5	Gr. 2 - M6-M27	81.636/81.637	81.656/81.657	12.5	12.5
81.616.5033	BT50	48	79	142.5	Gr. 3 - M14-M45	81.639	-	20	20
81.616.5048	BT50	60	96	164.5	Gr. 4 - M39-M60	81.641	-	22.5	22.5

› 81.625 Phantom

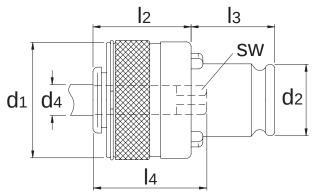
NL Reduceerbus, voor het reduceren van tapinzetstukken
FR Douille de réduction, pour réduction de douilles
ES Casquillo de reducción, para la reducción de casquillos de roscado
DE Reduzierhülse, zur Reduzierung- Gewindeeinsatz
EN Quick Change Reducing Adapter, for reducing quick change adapters



Ref.	d3	d4	d1	l2	l3
81.625.0201	31	19	48	5	35
81.625.0302	48	31	70	6	55.5
81.625.0402	60	31	92	13	63
81.625.0403	60	48	92	13	63

› 81.633 Phantom

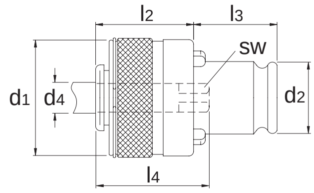
NL Tapinzetstuk met ratel, DIN, Gr. 1
FR Douille porte-tarauds avec limiteur de couple, DIN, Taille 1
ES Casquillo de roscado con embrague de seguridad, DIN, Tam. 1
DE Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Gr. 1
EN Quick Change Tap Adapter with overload clutch, DIN, Size 1



Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.633.0201	M2	DIN 371	2.8	2.1	32	19	25	21.5	25
81.633.0301	M3	DIN 371	3.5	2.7	32	19	25	21.5	25
81.633.0351	M3,5	DIN 371	4	3	32	19	25	21.5	25
81.633.0401	M4	DIN 371	4.5	3.4	32	19	25	21.5	25
81.633.0406	M4	DIN 376	2.8	2.1	32	19	25	21.5	25
81.633.0501	M5	DIN 371	6	4.9	32	19	25	21.5	25
81.633.0506	M5	DIN 376	3.5	2.7	32	19	25	21.5	25
81.633.0601	M6	DIN 371	6	4.9	32	19	25	21.5	25
81.633.0606	M6	DIN 376	4.5	3.4	32	19	25	21.5	25
81.633.0801	M8	DIN 371	8	6.2	32	19	25	21.5	25
81.633.0806	M8	DIN 376	6	4.9	32	19	25	21.5	25
81.633.1001	M10	DIN 371	10	8	32	19	25	21.5	25
81.633.1006	M10	DIN 376	7	5.5	32	19	25	21.5	25
81.633.1206	M12	DIN 376	9	7	32	19	25	21.5	25
81.633.1406	M14	DIN 376	11	9	32	19	25	21.5	25

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8

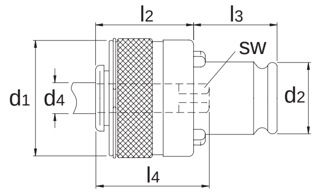
› 81.634 Phantom



NL Tapinzetstuk met ratel, ISO, Gr. 1
FR Douille porte-tarauds avec limiteur de couple, ISO, Taille 1
ES Casquillo de roscado con embrague de seguridad, ISO, Tam. 1
DE Gewindebohrereinsatzstück mit Sicherheitskupplung, ISO, Gr. 1
EN Quick Change Tap Adapter with overload clutch, ISO, Size 1

Ref.	M	d4	sw	d1	d2	l2	l3	l4
81.634.0300	M3	3.15	2.5	32	19	25	21.5	25
81.634.0400	M4	4	3.15	32	19	25	21.5	25
81.634.0500	M5	5	4	32	19	25	21.5	25
81.634.0600	M6	6.3	5	32	19	25	21.5	25

› 81.636 Phantom



NL Tapinzetstuk met ratel, DIN, Gr. 2
FR Douille porte-tarauds avec limiteur de couple, DIN, Taille 2
ES Casquillo de roscado con embrague de seguridad, DIN, Tam. 2
DE Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Gr. 2
EN Quick Change Tap Adapter with overload clutch, DIN, Size 2

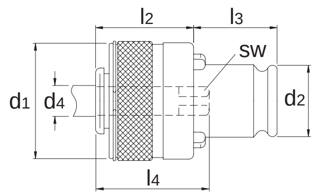
Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.636.0601	M6	DIN 371	6	4.9	50	31	34	35	34
81.636.0801	M8	DIN 371	8	6.2	50	31	34	35	34
81.636.0806	M8	DIN 376	6	4.9	50	31	34	35	34
81.636.1001	M10	DIN 371	10	8	50	31	34	35	34
81.636.1006	M10	DIN 376	7	5.5	50	31	34	35	34
81.636.1206	M12	DIN 376	9	7	50	31	34	35	34
81.636.1406	M14	DIN 376	11	9	50	31	34	35	34
81.636.1606	M16	DIN 376	12	9	50	31	34	35	34
81.636.1806	M18	DIN 376	14	11	50	31	34	35	34
81.636.2006	M20	DIN 376	16	12	50	31	34	35	34
81.636.2206	M22	DIN 376	18	14.5	50	31	34	35	34
81.636.2406	M24	DIN 376	18	14.5	50	31	34	35	34
81.636.2706	M27	DIN 376	20	16	50	31	34	35	34

NL Tap in tappotje monteren en demonteren
FR Monter et démonter un taraud dans une douille porte-tarauds
ES Montar y desmontar un macho en un casquillo de roscado
DE Gewindebohrer montieren und demontieren im Gewindebohrereinsatzstück
EN Mounting tap in quickchange adapter

Watch me

www.phantom.eu

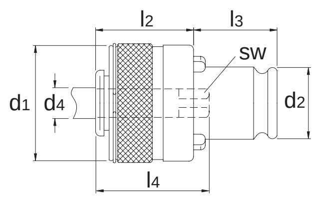
› 81.637 Phantom



NL Tapinzetstuk met ratel, ISO, Gr. 2
FR Douille porte-tarauds avec limiteur de couple, ISO, Taille 2
ES Casquillo de roscado con embrague de seguridad, ISO, Tam. 2
DE Gewindebohrereinsatzstück mit Sicherheitskupplung, ISO, Gr. 2
EN Quick Change Tap Adapter with overload clutch, ISO, Size 2

Ref.	M	d4	sw	d1	d2	l2	l3	l4
81.637.0600	M6	6.3	5	50	31	34	35	34
81.637.1206	M12	9	7.1	50	31	34	35	34
81.637.1400	M14	11.2	9	50	31	34	35	34
81.637.1600	M16	12.5	10	50	31	34	35	34
81.637.1800	M18	14	11.2	50	31	34	35	34
81.637.2000	M20	14	11.2	50	31	34	35	34
81.637.2200	M22	16	12.5	50	31	34	35	34

› 81.639 Phantom



NL Tapinzetstuk met ratel, DIN, Gr. 3
FR Douille porte-tarauds avec limiteur de couple, DIN, Taille 3
ES Casquillo de roscado con embrague de seguridad, DIN, Tam. 3
DE Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Gr. 3
EN Quick Change Tap Adapter with overload clutch, DIN, Size 3

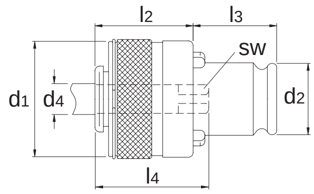
Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.639.1406	M14	DIN 376	11	9	72	48	45	55.5	45
81.639.1606	M16	DIN 376	12	9	72	48	45	55.5	45
81.639.1806	M18	DIN 376	14	11	72	48	45	55.5	45
81.639.2006	M20	DIN 376	16	12	72	48	45	55.5	45
81.639.2206	M22	DIN 376	18	14.5	72	48	45	55.5	45
81.639.2406	M24	DIN 376	18	14.5	72	48	45	55.5	45
81.639.2706	M27	DIN 376	20	16	72	48	45	55.5	45

› 81.639 Phantom

Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.639.3006	M30	DIN 376	22	18	72	48	45	55.5	45
81.639.3306	M33	DIN 376	25	20	72	48	45	55.5	45
81.639.3606	M36	DIN 376	28	22	72	48	45	55.5	45
81.639.3906	M39	DIN 376	32	24	72	48	45	55.5	45
81.639.4206	M42	DIN 376	32	24	72	48	45	55.5	45
81.639.4506	M45	DIN 376	36	29	72	48	45	55.5	45

› 81.641 Phantom

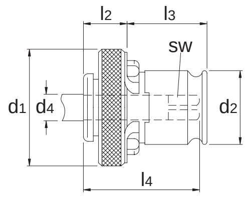
NL Tapinzetstuk met ratel, DIN, Gr. 4
FR Douille porte-tarauds avec limiteur de couple, DIN, Taille 4
ES Casquillo de roscado con embrague de seguridad, DIN, Tam. 4
DE Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Gr. 4
EN Quick Change Tap Adapter with overload clutch, DIN, Size 4



Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.641.3906	M39	DIN 376	32	24	95	60	68	63	68
81.641.4206	M42	DIN 376	32	26	95	60	68	63	68
81.641.4506	M45	DIN 376	36	29	95	60	68	63	68
81.641.4806	M48	DIN 376	36	29	95	60	68	63	68
81.641.5206	M52	DIN 376	40	32	95	60	68	63	68
81.641.5606	M56	DIN 376	45	35	95	60	68	63	68
81.641.6006	M60	DIN 376	45	35	95	60	68	63	68

› 81.651 Phantom

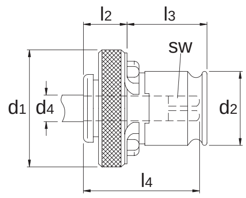
NL Tapinzetstuk zonder ratel, DIN, Gr. 0
FR Douille porte-tarauds sans limiteur de couple, DIN, Taille 0
ES Casquillo de roscado sin embrague de seguridad, DIN, Tam. 0
DE Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Gr. 0
EN Quick Change Tap Adapter without overload clutch, DIN, Size 0



Ref.	d4	sw	d1	d2	l2	l3	l4
81.651.0201	2.8	2.1	22	13	7	19.5	15
81.651.0301	3.5	2.7	22	13	7	19.5	15
81.651.0351	4	3	22	13	7	19.5	15
81.651.0401	4.5	3.4	22	13	7	19.5	15
81.651.0601	6	4.9	22	13	7	19.5	15

› 81.653 Phantom

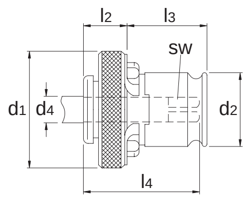
NL Tapinzetstuk zonder ratel, DIN, Gr. 1
FR Douille porte-tarauds sans limiteur de couple, DIN, Taille 1
ES Casquillo de roscado sin embrague de seguridad, DIN, Tam. 1
DE Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Gr. 1
EN Quick Change Tap Adapter without overload clutch, DIN, Size 1



Ref.	d4	sw	d1	d2	l2	l3	l4
81.653.0301	3.5	2.7	30	19	7	21.5	17
81.653.0351	4	3	30	19	7	21.5	17
81.653.0401	4.5	3.4	30	19	7	21.5	17
81.653.0506	3.5	2.7	30	19	7	21.5	17
81.653.0601	6	4.9	30	19	7	21.5	17
81.653.0606	4.5	3.4	30	19	7	21.5	17
81.653.0801	8	6.2	30	19	7	21.5	17
81.653.1001	10	8	30	19	7	21.5	17
81.653.1006	7	5.5	30	19	7	21.5	17
81.653.1206	9	7	30	19	7	21.5	17

› 81.654 Phantom

NL Tapinzetstuk zonder ratel, ISO, Gr. 1
FR Douille porte-tarauds sans limiteur de couple, ISO, Taille 1
ES Casquillo de roscado sin embrague de seguridad, ISO, Tam. 1
DE Gewindebohrereinsatzstück ohne Sicherheitskupplung, ISO, Gr. 1
EN Quick Change Tap Adapter without overload clutch, ISO, Size 1

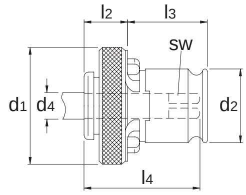


Ref.	d4	sw	d1	d2	l2	l3	l4
81.654.0300	3.15	2.5	30	19	7	21.5	17
81.654.0400	4	3.15	30	19	7	21.5	17
81.654.0500	5	4	30	19	7	21.5	17
81.654.0600	6.3	5	30	19	7	21.5	17

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8

› 81.655 Phantom

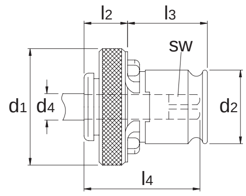
NL Tapinzetstuk zonder ratel, DIN, Gr. 1,5
FR Douille porte-tarauds sans limiteur de couple, DIN, Taille 1,5
ES Casquillo de roscado sin embrague de seguridad, DIN, Tam. 1,5
DE Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Gr. 1,5
EN Quick Change Tap Adapter without overload clutch, DIN, Size 1,5



Ref.	d4	sw	d1	d2	l2	l3	l4
81.655.0801	8	6.2	40	26	15	32	23
81.655.0806	6	4.9	40	26	15	32	23
81.655.1001	10	8	40	26	15	32	23
81.655.1006	7	5.5	40	26	15	32	23
81.655.1206	9	7	40	26	15	32	23
81.655.1406	11	9	40	26	15	32	23
81.655.1606	12	9	40	26	15	32	23
81.655.1806	14	11	40	26	15	32	23
81.655.2006	16	12	40	26	15	32	23

› 81.656 Phantom

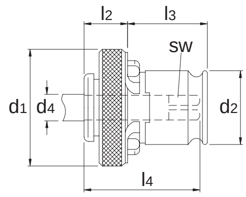
NL Tapinzetstuk zonder ratel, DIN, Gr. 2
FR Douille porte-tarauds sans limiteur de couple, DIN, Taille 2
ES Casquillo de roscado sin embrague de seguridad, DIN, Tam. 2
DE Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Gr. 2
EN Quick Change Tap Adapter without overload clutch, DIN, Size 2



Ref.	d4	sw	d1	d2	l2	l3	l4
81.656.0601	6	4.9	46	31	11	35	30
81.656.0801	8	6.2	46	31	11	35	30
81.656.0806	6	4.9	46	31	11	35	30
81.656.1001	10	8	46	31	11	35	30
81.656.1006	7	5.5	46	31	11	35	30
81.656.1206	9	7	46	31	11	35	30
81.656.1406	11	9	46	31	11	35	30
81.656.1606	12	9	46	31	11	35	30
81.656.1806	14	11	46	31	11	35	30
81.656.2006	16	12	46	31	11	35	30

› 81.657 Phantom

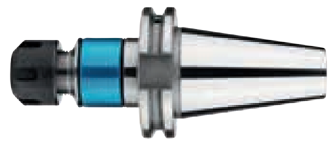
NL Tapinzetstuk zonder ratel, ISO, Gr. 2
FR Douille porte-tarauds sans limiteur de couple, ISO, Taille 2
ES Casquillo de roscado sin embrague de seguridad, ISO, Tam. 2
DE Gewindebohrereinsatzstück ohne Sicherheitskupplung, ISO, Gr. 2
EN Quick Change Tap Adapter without overload clutch, ISO, Size 2

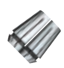


Ref.	d4	sw	d1	d2	l2	l3	l4
81.657.0600	6.3	5	46	31	11	35	30
81.657.1400	11.2	9	46	31	11	35	30
81.657.1600	12.5	10	46	31	11	35	30
81.657.1800	14	11.2	46	31	11	35	30
81.657.2000	14	11.2	46	31	11	35	30

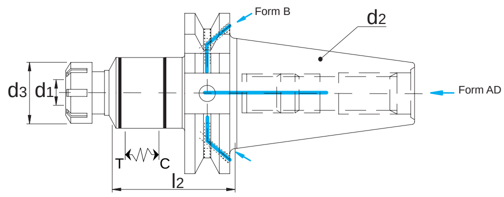
› 81.684 Phantom

NL Synchro Taphouder voor ER spantangen (met vierkant), ISO 7388-1 (DIN 69871)
FR Mandrin à tarauder Synchro pour utilisation avec pinces ER (avec carré d'entraînement), ISO 7388-1 (DIN 69871)
ES Portamachos Synchro para uso con ER pinzas (con cuadrado interior), ISO 7388-1 (DIN 69871)
DE Synchro Gewindeschneidfutter für ER-Spannzangen (mit Vierkant), ISO 7388-1 (DIN 69871)
EN Synchro Tapping Holder for usage with ER collets (with square socket), ISO 7388-1 (DIN 69871)





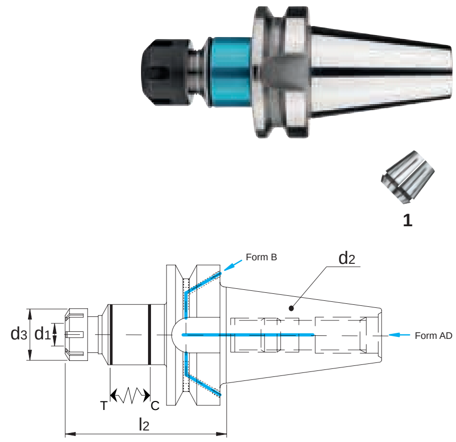
1



ISO 7388-1 | DIN 69871 | AD/AF (AD/B) | SK | AT3 | HRc 58±2 | RFID | ISO 15488 | DIN 6499 | ER | MICRO C T | G2,5 25.000 RPM

Ref.	d2	d1	Ø	l2	d3	T	C	1 excl.
81.684.4016	SK40	ER16	1-10	79	32	0.5	0.5	82.880
81.684.4025	SK40	ER25	3,5-16	84	42	0.5	0.5	82.885
81.684.5025	SK50	ER25	3,5-16	84	42	0.5	0.5	82.885

› 81.686 *Phantom*

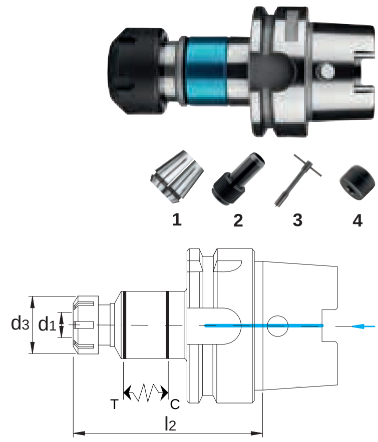


NL Synchro Taphouder voor ER spantangen (met vierkant), ISO 7388-2 (MAS-BT)
FR Mandrin à tarauder Synchro pour utilisation avec pinces ER (avec carré d’entraînement), ISO 7388-2 (MAS-BT)
ES Portamachos Synchro para uso con ER pinzas (con cuadrado interior), ISO 7388-2 (MAS-BT)
DE Synchro Gewindeschneidfutter für ER-Spannzangen (mit Vierkant), ISO 7388-2 (MAS-BT)
EN Synchro Tapping Holder for usage with ER collets (with square socket), ISO 7388-2 (MAS-BT)

ISO 7388-2 | JD/JF (AD/B) | MAS-BT | AT3 | HRc 58±2 | ISO 15488 | DIN 6499 | ER | MICRO C T

Ref.	d2	d1	Ø	l2	d3	T	C	1 excl.
81.686.4016	BT40	ER16	1-10	79	32	0.5	0.5	82.880
81.686.4025	BT40	ER25	3,5-16	89	42	0.5	0.5	82.885
81.686.5025	BT50	ER25	3,5-16	110	42	0.5	0.5	82.885

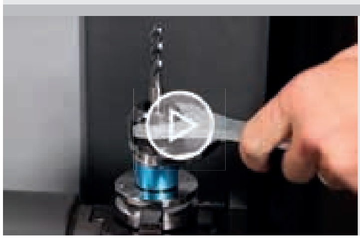
› 81.687 *Phantom*



NL Synchro Taphouder voor ER spantangen (met vierkant), ISO 12164 (DIN 69893)
FR Mandrin à tarauder Synchro pour utilisation avec pinces ER (avec carré d’entraînement), ISO 12164 (DIN 69893)
ES Portamachos Synchro para uso con ER pinzas (con cuadrado interior), ISO 12164 (DIN 69893)
DE Synchro Gewindeschneidfutter für ER-Spannzangen (mit Vierkant), ISO 12164 (DIN 69893)
EN Synchro Tapping Holder for usage with ER collets (with square socket), ISO 12164 (DIN 69893)

ISO 12164 | A | HSK-A | AT3 | HRc 58±2 | RFID | ISO 15488 | DIN 6499 | ER | MICRO C T | G2,5 25.000 RPM

Ref.	d2	d1	Ø	l2	d3	T	C	1 excl.	2 excl.	3 excl.	4 excl.
81.687.0631	HSK63A	ER16	1-10	89	32	0.5	0.5	82.880	84.790.1800	84.791.1800	84.789.1800
81.687.0632	HSK63A	ER25	3,5-16	94	42	0.5	0.5	82.885	84.790.1800	84.791.1800	84.789.1800
81.687.1002	HSK100A	ER25	3,5-16	101	42	0.5	0.5	82.885	84.790.1800	84.791.1800	84.789.1800



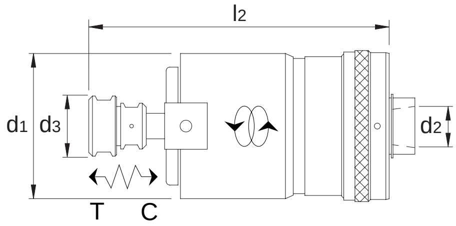
NL Demonteren tap en spantang uit synchrohouder
FR Démonter un taraud et une pince d’un mandrin à tarauder synchro
ES Desmontar macho y pinza de un portamachos Synchro
DE Demontieren Gewindebohrer und Spannzange aus Synchro Gewindeschneidhalter
EN Remove tap and collet from synchro-toolholder

Watch me

www.phantom.eu

› 81.700 International Tools

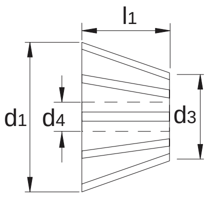
NL ECO PRO Tapapparaat met omkeerinrichting, met druk- en trek-compensatie, met instelbare slipkoppeling
FR Appareil à tarauder ECO PRO dispositif d'inversion, à compensation de pression et de traction, à réglage de couple par friction
ES Aparato roscador ECO PRO con dispositivo de inversión, con com-pensación de presión y de tracción, con ajuste de par por fricción
DE ECO PRO Gewindeschneidmaschinen mit Umkehrvorrichtung, mit Zug-und Druckausgleich, mit einstellbarer Rutschkupplung
EN ECO PRO Tapping Unit with reversing arrangement, with push and pull compensation, with adjustable torque coupling



C T | AUTO REVERSAL | ECO PRO

Ref.	Ø	d2	d1	d3	l2	x:y	RPM	Release	1 incl.	2 excl.
81.700.0070	M2-M7	B16	54	23	129.5	1:2.4	1500	3.5	81.710.0204/0407	84.170
81.700.0120	M5-M12	B16	74	28	156	1:2,2	1000	4	81.710.0510/0712	84.170
81.700.0200	M8-M20	B22	89	38	205.5	1:2,3	600	6	81.710.0814/1620	84.170

› 81.710 International Tools

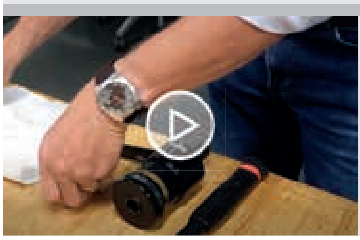


NL ECO PRO Rubberflex spantang voor 81.700
FR Pince de serrage Rubberflex ECO PRO pour 81.700
ES Pinza de sujeción Rubberflex ECO PRO parra 81.700
DE ECO PRO Rubberflex-Spannzangen für 81.700
EN ECO PRO Rubberflex collet for 81.700

ECO PRO

Ref.	d1	d3	d4	l1	M	Ø
81.710.0204	13.3	4.5	2.5	11	M2-M4	2,5-4,5
81.710.0407	13.3	6.5	4.5	11	M4-M7	4,5-6,5
81.710.0510	20.5	6.5	3.5	13	M5-M10	3,5-6,5

Ref.	d1	d3	d4	l1	M	Ø
81.710.0712	20.5	10	6.5	13	M7-M12	6,5-10
81.710.0814	28.5	10	4.5	15	M8-M14	4,5-10
81.710.1620	28.5	13	7	15	M16-M20	7,0-13



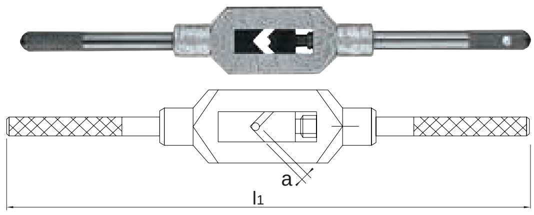
NL Montage boorhouderstift in tapkop
FR Monter un abre de mandrin de perçage dans un appareil à tarauder
ES Sujetar una espiga en un portamachos
DE Montieren Bohrfutteraufnahme im Gewindeschneidhalter
EN Mounting arbor into tapping head

Watch me

www.phantom.eu

› 81.900

NL Verstelbaar Wringijzer, standaard kwaliteit, Zink-legering
FR Tourne à gauche expansible, qualité standard, alliage de zinc
ES Giramacho extensible, calidad estándar, aleación de cinc
DE Verstellbare Windeisen, Standard-Qualität, Zinkdruckguß
EN Adjustable Tap Wrench, standard quality, zinc die cast

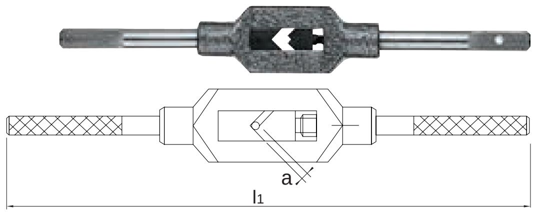


DIN 1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0000	0	M1-M6	1/16-1/4	-	125	2-5
81.900.0100	1	M1-M10	1/16-3/8	1/8	180	2-6
81.900.0150	1,5	M3-M12	1/16-1/2	1/8	200	2,5-8
81.900.0200	2	M4,5-M16	5/32-1/2	1/8	280	4-9
81.900.0300	3	M4,5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.900.0400	4	M7-M27	7/16-1	1/4-3/4	500	5,5-16
81.900.0500	5L	M9-M33	1/2-1.1/4	1/4-1	750	7-20

› 81.905

NL Verstelbaar Wringijzer, extra kwaliteit, staal
FR Tourne à gauche expansible, qualité supérieure, acier
ES Giramacho extensible, calidad superior, acero
DE Verstellbare Windeisen, Extra-Qualität, Stahl
EN Adjustable Tap Wrench, extra quality, steel

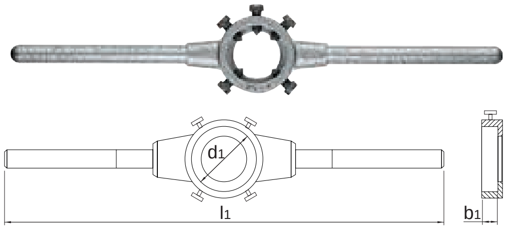


DIN 1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0000	0	M1-M6	1/16-1/4	-	130	2-5
81.905.0100	1	M1-M10	1/16-3/8	1/8	180	2-6
81.905.0150	1,5	M3-M12	1/16-1/2	1/8	200	2,5-8
81.905.0200	2	M4,5-M16	5/32-1/2	1/8	280	4-9
81.905.0300	3	M4,5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.905.0400	4	M7-M27	7/16-1	1/4-3/4	500	5,5-16
81.905.0500	5S	M9-M33	1/2-1.1/4	1/4-1	750	7-20
81.905.0600	6L	M18-M42	3/4-1.1/2	1/2-1.1/4	1000	9-25
81.905.0800	8	M27-M68	1-2.1/2	3/4-3	1250	16-40

› 81.910

NL Snijplaathouder, standaard kwaliteit, Zink-legering
FR Porte-filières, qualité standard, alliage de zinc
ES Portaterraja, calidad estándar, aleación de cinc
DE Schneideisenhalter, Standard-Qualität, Zinkdruckguß
EN Die Stock, standard quality, zinc die cast



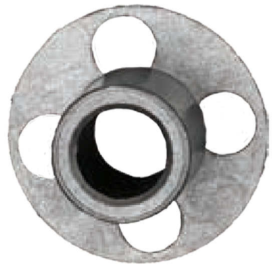
DIN EN 22568 | DIN 225 | DIN EN 24230 | DIN EN 24231 | ISO 2568

Ref.	d1	b1	l1
81.910.1605	16	5	160
81.910.2005	20	5	200
81.910.2007	20	7	200
81.910.2509	25	9	224
81.910.3011	30	11	280
81.910.3810	38	10	315
81.910.3814	38	14	315
81.910.4514	45	14	450
81.910.4518	45	18	450
81.910.5516	55	16	560
81.910.5522	55	22	560
81.910.6518	65	18	630
81.910.6525	65	25	630
81.910.7520	75	20	800
81.910.7530	75	30	800
81.910.9022	90	22	900
81.910.9036	90	36	900
81.910.9122	105	22	1000
81.910.9136	105	36	1000
81.910.9222	120	22	1100
81.910.9236	120	36	1100
81.910.9322	130	22	1100
81.910.9336	130	36	1100
81.910.9422	140	22	1200
81.910.9522	150	22	1200
81.910.9622	160	22	1300

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8

› 81.920 *International Tools*

NL **ECO PRO Snijplaat geleider**
FR **Guide filières ECO PRO**
ES **Guía para cojinetes ECO PRO**
DE **ECO PRO Schneideisenführung**
EN **ECO PRO Round die guide**

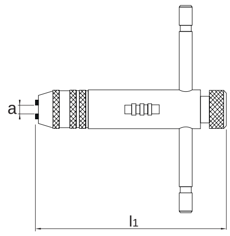


M MF

Ref.	d1
81.920.0300	M3
81.920.0400	M4
81.920.0500	M5
81.920.0600	M6
81.920.0800	M8
81.920.1000	M10
81.920.1200	M12

› 81.930

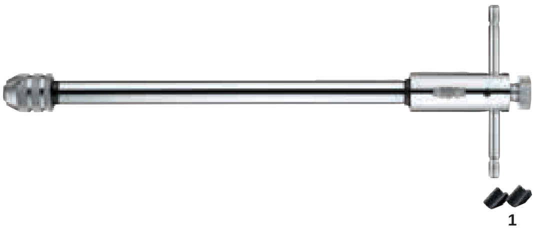
NL **Rateltapkruk**
FR **Porte-tarauds à cliquet**
ES **Giromacho en T con carraca**
DE **Werkzeughalter mit Knarre**
EN **T-handle tap Wrench**

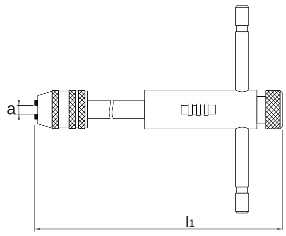


Ref.	Nr.	M	BSW	BSP	a	l1	1
81.930.0100	1	M3-M10	1/8-3/8	-	2,4-5,5	85	81.938.0100
81.930.0200	2	M5-M12	7/32-1/2	1/8	4,5-7	100	81.938.0200

› 81.935

NL **Rateltapkruk, lang**
FR **Porte-tarauds à cliquet, version longue**
ES **Giromacho en T con carraca, larga**
DE **Werkzeughalter mit Knarre, lang**
EN **T-handle tap Wrench, long**





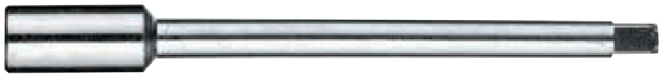
Ref.	Nr.	M	BSW	BSP	a	l1	1
81.935.1000	10	M3-M10	1/8-3/8		2,4-5,5	250	81.938.0100
81.935.2000	20	M5-M12	7/32-1/2	1/8	4,5-7	300	81.938.0200

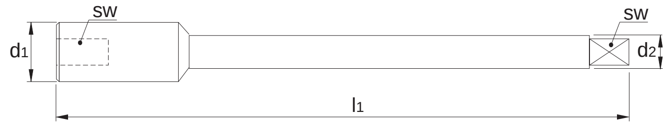
› 81.938

NL **Set Reservebekken voor rateltapkruk**
FR **Jeu de Becs de rechange pour Porte-tarauds à cliquet**
ES **juego de Mordazas de recambio para Giromacho en T con carraca**
DE **Satz Ersatzbacken für Werkzeughalter mit Knarre**
EN **Auxiliary Jaws set for Tap Wrench**

Ref.	Nr.	Type
81.938.0100	1	Nr.1 + Nr.10
81.938.0200	2	Nr.2 + Nr.20

› 81.950 *Phantom*





- **NL** **Tapverlengstuk**
- **FR** **Rallonge pour tarauds**
- **ES** **Prolongador de machos**
- **DE** **Gewindebohrer Verlängerung**
- **EN** **Extension Sleeve**

DIN 377

Ref.	sw	M	BSW	BSP	l1	d1	d2
81.950.0210	2.1	M1-M2,6	1/16-3/32		60	5	2.5
81.950.0240	2.4				70	6	3
81.950.0270	2.7	M3	1/8		80	7	3.5
81.950.0300	3	M3,5			90	7	4
81.950.0340	3.4	M4	5/32		95	8	4.5
81.950.0380	3.8				100	9	5
81.950.0430	4.3				105	10	5.5
81.950.0490	4.9	M4,5-M8	3/16-5/16		110	11	6.5
81.950.0550	5.5	M9-M10	3/8	1/16-1/8	115	12	7
81.950.0620	6.2	M11	7/16		120	14	8
81.950.0700	7	M12	1/2		125	15	9
81.950.0800	8				125	17	10
81.950.0900	9	M13-M16	9/16-5/8	1/4-3/8	130	19	11.2
81.950.1000	10				140	21	12.5
81.950.1100	11	M18	11/16-3/4		150	23	14
81.950.1200	12	M20		1/2	155	25	16
81.950.1300	13				165	27	17
81.950.1450	14.5	M22-M24	7/8-15/16	5/8	175	29	19
81.950.1600	16	M27	1	3/4	180	30	20
81.950.1800	18	M30	1.1/8	7/8	200	33	22.4
81.950.2000	20	M33	1.1/4	-	210	36	25
81.950.2200	22	M36	1.3/8	1.1/8	220	38	29
81.950.2400	24	M39-M42	1.1/2-1.5/8	1.1/4	235	42	32
81.950.2600	26				250	45	34.5
81.950.2900	29	M45-M48	1.3/4-1.7/8	1.3/8-2	265	50	38.5
81.950.3200	32	M52	2	2.1/4	285	55	42.5

› 81.990 *International Tools*

- **NL** **ECO Bithouder, magnetisch 1/4″ (6,35 mm)-zeskant bitopname**
- **FR** **Porte-embout, magnétique ECO avec queue hexagonale 1/4″ (6,35 mm)**
- **ES** **Portapuntas, magnético ECO con sujeción 1/4″ (6,35 mm) bit**
- **DE** **ECO Bithalter, magnetisch 1/4″ (6,35 mm) Hexa-Bitaufnahme**
- **EN** **ECO Bit holder, magnetic 1/4″ (6,35 mm) hexagonal shank**

E6,3 1/4″ ECO

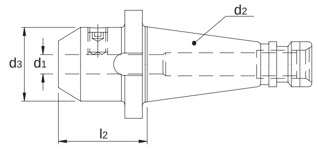
NIEUW NOUVEAU NUEVO NEU

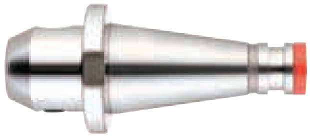
Ref.	l1
81.990.0635	60

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8

› 82.153 Phantom

NL **Weldonhouder, DIN 2080**
FR **Porte-outils, DIN 2080**
ES **Portaherramientas Weldon, DIN 2080**
DE **Weldon-Halter, DIN 2080**
EN **End Mill Holder (Weldon), DIN 2080**





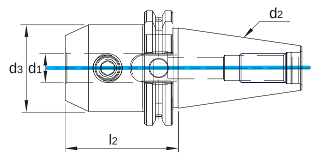

1

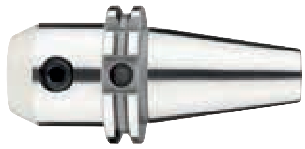
DIN 2080 | AD | SK | AT3 | HRc $58^{\pm 2}$ | DIN 6359 | DIN 1835-B | 0,005

Ref.	d2	d1	l2	d3	M	1 incl.
82.153.3006	SK30	6	40	25	M12	82.159.0600
82.153.3008	SK30	8	40	28	M12	82.159.0800
82.153.3010	SK30	10	40	35	M12	82.159.1000
82.153.3012	SK30	12	40	42	M12	82.159.1200
82.153.3016	SK30	16	50	48	M12	82.159.1400
82.153.3020	SK30	20	63	52	M12	82.159.1600
82.153.4006	SK40	6	50	25	M16	82.159.0600
82.153.4008	SK40	8	50	28	M16	82.159.0800
82.153.4010	SK40	10	50	35	M16	82.159.1000
82.153.4012	SK40	12	50	42	M16	82.159.1200
82.153.4016	SK40	16	63	48	M16	82.159.1400
82.153.4020	SK40	20	63	52	M16	82.159.1600
82.153.4025	SK40	25	80	65	M16	82.159.1800
82.153.4032	SK40	32	80	72	M16	82.159.2000
82.153.5006	SK50	6	63	25	M24	82.159.0600
82.153.5008	SK50	8	63	28	M24	82.159.0800
82.153.5010	SK50	10	63	35	M24	82.159.1000
82.153.5012	SK50	12	63	42	M24	82.159.1200
82.153.5014	SK50	14	63	44	M24	82.159.1200
82.153.5016	SK50	16	63	48	M24	82.159.1400
82.153.5020	SK50	20	63	52	M24	82.159.1600
82.153.5025	SK50	25	80	65	M24	82.159.1800
82.153.5032	SK50	32	80	72	M24	82.159.2000
82.153.5040	SK50	40	90	80	M24	82.159.2000

› 82.154 Phantom

NL **Weldonhouder, ISO 7388-1 (DIN 69871)**
FR **Porte-outils, ISO 7388-1 (DIN 69871)**
ES **Portaherramientas Weldon, ISO 7388-1 (DIN 69871)**
DE **Weldon-Halter, ISO 7388-1 (DIN 69871)**
EN **End Mill Holder (Weldon), ISO 7388-1 (DIN 69871)**





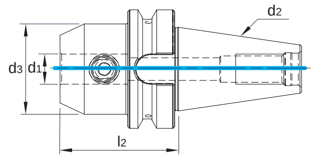

1

ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc $58^{\pm 2}$ | RFID | DIN 6359 | DIN 1835-B | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	M	1 incl.
82.154.4061	SK40	6	50	25	M16	82.159.0600
82.154.4062	SK40	6	100	25	M16	82.159.0600
82.154.4066	SK40	6	160	25	M16	82.159.0600
82.154.4081	SK40	8	50	28	M16	82.159.0800
82.154.4082	SK40	8	100	28	M16	82.159.0800
82.154.4086	SK40	8	160	28	M16	82.159.0800
82.154.4101	SK40	10	50	35	M16	82.159.1000
82.154.4102	SK40	10	100	35	M16	82.159.1000
82.154.4106	SK40	10	160	35	M16	82.159.1000
82.154.4121	SK40	12	50	42	M16	82.159.1200
82.154.4122	SK40	12	100	42	M16	82.159.1200
82.154.4126	SK40	12	160	42	M16	82.159.1200
82.154.4141	SK40	14	50	44	M16	82.159.1200
82.154.4142	SK40	14	100	44	M16	82.159.1200
82.154.4146	SK40	14	160	44	M16	82.159.1200
82.154.4161	SK40	16	63	48	M16	82.159.1400
82.154.4162	SK40	16	100	48	M16	82.159.1400
82.154.4166	SK40	16	160	48	M16	82.159.1400
82.154.4181	SK40	18	63	50	M16	82.159.1400
82.154.4182	SK40	18	100	50	M16	82.159.1400
82.154.4186	SK40	18	160	50	M16	82.159.1400
82.154.4201	SK40	20	63	52	M16	82.159.1600
82.154.4202	SK40	20	100	52	M16	82.159.1600
82.154.4206	SK40	20	160	52	M16	82.159.1600
82.154.4252	SK40	25	100	65	M16	82.159.1800
82.154.4256	SK40	25	160	65	M16	82.159.1800
82.154.4322	SK40	32	100	72	M16	82.159.2000
82.154.4326	SK40	32	160	72	M16	82.159.2000
82.154.4402	SK40	40	115	80	M16	82.159.2000
82.154.5006	SK50	6	63	25	M24	82.159.0600
82.154.5008	SK50	8	63	28	M24	82.159.0800
82.154.5010	SK50	10	63	35	M24	82.159.1000
82.154.5061	SK50	6	63	25	M24	82.159.0600
82.154.5062	SK50	6	100	25	M24	82.159.0600
82.154.5066	SK50	6	160	25	M24	82.159.0600
82.154.5081	SK50	8	63	28	M24	82.159.0800
82.154.5082	SK50	8	100	28	M24	82.159.0800
82.154.5086	SK50	8	160	28	M24	82.159.0800
82.154.5101	SK50	10	63	35	M24	82.159.1000
82.154.5102	SK50	10	100	35	M24	82.159.1000
82.154.5106	SK50	10	160	35	M24	82.159.1000
82.154.5121	SK50	12	63	42	M24	82.159.1200
82.154.5122	SK50	12	100	42	M24	82.159.1200
82.154.5126	SK50	12	160	42	M24	82.159.1200
82.154.5141	SK50	14	63	44	M24	82.159.1200
82.154.5142	SK50	14	100	44	M24	82.159.1200
82.154.5146	SK50	14	160	44	M24	82.159.1200
82.154.5161	SK50	16	63	48	M24	82.159.1400
82.154.5162	SK50	16	100	48	M24	82.159.1400
82.154.5166	SK50	16	160	48	M24	82.159.1400
82.154.5181	SK50	18	63	50	M24	82.159.1400
82.154.5182	SK50	18	100	50	M24	82.159.1400
82.154.5186	SK50	18	160	50	M24	82.159.1400
82.154.5201	SK50	20	63	52	M24	82.159.1600
82.154.5202	SK50	20	100	52	M24	82.159.1600
82.154.5206	SK50	20	160	52	M24	82.159.1600
82.154.5251	SK50	25	80	65	M24	82.159.1800
82.154.5252	SK50	25	100	65	M24	82.159.1800
82.154.5256	SK50	25	160	65	M24	82.159.1800
82.154.5322	SK50	32	100	72	M24	82.159.2000
82.154.5326	SK50	32	160	72	M24	82.159.2000
82.154.5404	SK50	40	120	80	M24	82.159.2000
82.154.5406	SK50	40	160	80	M24	82.159.2000

› 82.156 *Phantom*

NL **Weldonhouder, ISO 7388-2 (MAS-BT)**
FR **Porte-outils, ISO 7388-2 (MAS-BT)**
ES **Portaherramientas Weldon, ISO 7388-2 (MAS-BT)**
DE **Weldon-Halter, ISO 7388-2 (MAS-BT)**
EN **End Mill Holder (Weldon), ISO 7388-2 (MAS-BT)**



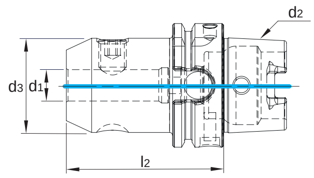
1

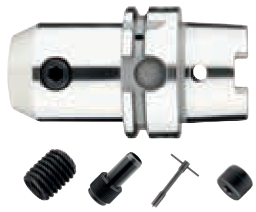
ISO 7388-2 | JD (AD) | MAS-BT | AT3 | HRc $58^{\pm 2}$ | DIN 6359 | DIN 1835-B | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	M	1 incl.
82.156.4061	BT40	6	50	25	M16	82.159.0600
82.156.4062	BT40	6	100	25	M16	82.159.0600
82.156.4066	BT40	6	160	25	M16	82.159.0600
82.156.4081	BT40	8	50	28	M16	82.159.0800
82.156.4082	BT40	8	100	28	M16	82.159.0800
82.156.4086	BT40	8	160	28	M16	82.159.0800
82.156.4101	BT40	10	63	35	M16	82.159.1000
82.156.4102	BT40	10	100	35	M16	82.159.1000
82.156.4106	BT40	10	160	35	M16	82.159.1000
82.156.4121	BT40	12	63	42	M16	82.159.1200
82.156.4122	BT40	12	100	42	M16	82.159.1200
82.156.4126	BT40	12	160	42	M16	82.159.1200
82.156.4141	BT40	14	63	44	M16	82.159.1200
82.156.4142	BT40	14	100	44	M16	82.159.1200
82.156.4146	BT40	14	160	44	M16	82.159.1200
82.156.4161	BT40	16	63	48	M16	82.159.1400
82.156.4162	BT40	16	100	48	M16	82.159.1400
82.156.4166	BT40	16	160	48	M16	82.159.1400
82.156.4181	BT40	18	63	50	M16	82.159.1400
82.156.4182	BT40	18	100	50	M16	82.159.1400
82.156.4186	BT40	18	160	50	M16	82.159.1400
82.156.4201	BT40	20	63	52	M16	82.159.1600
82.156.4202	BT40	20	100	52	M16	82.159.1600
82.156.4206	BT40	20	160	52	M16	82.159.1600
82.156.4252	BT40	25	90	65	M16	82.159.1800
82.156.4256	BT40	25	160	65	M16	82.159.1800
82.156.4322	BT40	32	100	72	M16	82.159.2000
82.156.4326	BT40	32	160	72	M16	82.159.2000
82.156.4402	BT40	40	105	80	M16	82.159.2000
82.156.5006	BT50	6	63	25	M24	82.159.0600
82.156.5014	BT50	14	80	44	M24	82.159.1200
82.156.5061	BT50	6	63	25	M24	82.159.0600
82.156.5062	BT50	6	100	25	M24	82.159.0600
82.156.5066	BT50	6	160	25	M24	82.159.0600
82.156.5081	BT50	8	63	28	M24	82.159.0800
82.156.5082	BT50	8	100	28	M24	82.159.0800
82.156.5086	BT50	8	160	28	M24	82.159.0800
82.156.5101	BT50	10	80	35	M24	82.159.1000
82.156.5102	BT50	10	100	35	M24	82.159.1000
82.156.5106	BT50	10	160	35	M24	82.159.1000
82.156.5121	BT50	12	80	42	M24	82.159.1200
82.156.5122	BT50	12	100	42	M24	82.159.1200
82.156.5126	BT50	12	160	42	M24	82.159.1200
82.156.5141	BT50	14	80	44	M24	82.159.1200
82.156.5142	BT50	14	100	44	M24	82.159.1200
82.156.5146	BT50	14	160	44	M24	82.159.1200
82.156.5161	BT50	16	80	48	M24	82.159.1400
82.156.5162	BT50	16	100	48	M24	82.159.1400
82.156.5166	BT50	16	160	48	M24	82.159.1400
82.156.5181	BT50	18	80	50	M24	82.159.1400
82.156.5182	BT50	18	100	50	M24	82.159.1400
82.156.5186	BT50	18	160	50	M24	82.159.1400
82.156.5201	BT50	20	80	52	M24	82.159.1600
82.156.5202	BT50	20	100	52	M24	82.159.1600
82.156.5206	BT50	20	160	52	M24	82.159.1600
82.156.5252	BT50	25	100	65	M24	82.159.1800
82.156.5256	BT50	25	160	65	M24	82.159.1800
82.156.5322	BT50	32	105	72	M24	82.159.2000
82.156.5326	BT50	32	160	72	M24	82.159.2000
82.156.5402	BT50	40	115	80	M24	82.159.2000
82.156.5406	BT50	40	160	80	M24	82.159.2000

› 82.157 *Phantom*

NL **Weldonhouder, ISO 12164 (DIN 69893)**
FR **Porte-outils, ISO 12164 (DIN 69893)**
ES **Portaherramientas Weldon, ISO 12164 (DIN 69893)**
DE **Weldon-Halter, ISO 12164 (DIN 69893)**
EN **End Mill Holder (Weldon), ISO 12164 (DIN 69893)**





1 2 3 4

ISO 12164 | A | HSK-A | AT3 | HRc $58^{\pm 2}$ | RFID | DIN 6359 | DIN 1835-B | 0,005 | G6,3 20.000 RPM

Ref.	d2	d1	l2	d3	M	1 incl.	2 excl.	3 excl.	4 excl.
82.157.6061	HSK63A	6	65	25	M18X1	82.159.0600	84.790.1800	84.791.1800	84.789.1800
82.157.6062	HSK63A	6	100	25	M18X1	82.159.0600	84.790.1800	84.791.1800	84.789.1800
82.157.6066	HSK63A	6	160	25	M18X1	82.159.0600	84.790.1800	84.791.1800	84.789.1800
82.157.6081	HSK63A	8	65	28	M18X1	82.159.0800	84.790.1800	84.791.1800	84.789.1800
82.157.6082	HSK63A	8	100	28	M18X1	82.159.0800	84.790.1800	84.791.1800	84.789.1800
82.157.6086	HSK63A	8	160	28	M18X1	82.159.0800	84.790.1800	84.791.1800	84.789.1800
82.157.6101	HSK63A	10	65	35	M18X1	82.159.1000	84.790.1800	84.791.1800	84.789.1800
82.157.6102	HSK63A	10	100	35	M18X1	82.159.1000	84.790.1800	84.791.1800	84.789.1800
82.157.6106	HSK63A	10	160	35	M18X1	82.159.1000	84.790.1800	84.791.1800	84.789.1800
82.157.6121	HSK63A	12	80	42	M18X1	82.159.1200	84.790.1800	84.791.1800	84.789.1800
82.157.6122	HSK63A	12	100	42	M18X1	82.159.1200	84.790.1800	84.791.1800	84.789.1800
82.157.6126	HSK63A	12	160	42	M18X1	82.159.1200	84.790.1800	84.791.1800	84.789.1800
82.157.6141	HSK63A	14	80	44	M18X1	82.159.1200	84.790.1800	84.791.1800	84.789.1800
82.157.6142	HSK63A	14	100	44	M18X1	82.159.1200	84.790.1800	84.791.1800	84.789.1800
82.157.6146	HSK63A	14	160	44	M18X1	82.159.1200	84.790.1800	84.791.1800	84.789.1800
82.157.6161	HSK63A	16	80	48	M18X1	82.159.1400	84.790.1800	84.791.1800	84.789.1800
82.157.6162	HSK63A	16	100	48	M18X1	82.159.1400	84.790.1800	84.791.1800	84.789.1800
82.157.6166	HSK63A	16	160	48	M18X1	82.159.1400	84.790.1800	84.791.1800	84.789.1800
82.157.6181	HSK63A	18	80	50	M18X1	82.159.1400	84.790.1800	84.791.1800	84.789.1800
82.157.6201	HSK63A	20	80	52	M18X1	82.159.1600	84.790.1800	84.791.1800	84.789.1800
82.157.6202	HSK63A	20	100	52	M18X1	82.159.1600	84.790.1800	84.791.1800	84.789.1800
82.157.6206	HSK63A	20	160	52	M18X1	82.159.1600	84.790.1800	84.791.1800	84.789.1800
82.157.6252	HSK63A	25	110	65	M18X1	82.159.1800	84.790.1800	84.791.1800	84.789.1800
82.157.6254	HSK63A	25	125	65	M18X1	82.159.1800	84.790.1800	84.791.1800	84.789.1800
82.157.6256	HSK63A	25	160	65	M18X1	82.159.1800	84.790.1800	84.791.1800	84.789.1800
82.157.6322	HSK63A	32	110	72	M18X1	82.159.2000	84.790.1800	84.791.1800	84.789.1800
82.157.6326	HSK63A	32	160	72	M18X1	82.159.2000	84.790.1800	84.791.1800	84.789.1800

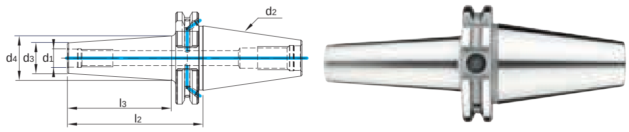
› 82.159 Phantom

NL **Spanbout, voor Weldonhouder**
FR **Vis Allen, pour porte-outils Weldon**
ES **Tornillo de fijación, para portaherramientas Weldon**
DE **Spannschrauben, für Weldon-Halter**
EN **Clamping bolt, for end mill holder (Weldon)**

DIN 6359

Ref.	Type	M	Ref.	Type	M	Ref.	Type	M
82.159.0600	6	M6 L9	82.159.1200	12+14	M12 L14	82.159.1800	25	M18x2 L20
82.159.0800	8	M8 L9	82.159.1400	16+18	M14 L16	82.159.2000	32+40	M20x2 L20
82.159.1000	10	M10 L12	82.159.1600	20	M16 L16	82.159.2001	40	M20x2 L20

› 82.214 Phantom

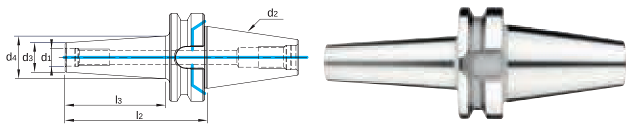


NL **Opschroef opname, ISO 7388-1 (DIN 69871)**
FR **Mandrin pour fraises à queue filetée, ISO 7388-1 (DIN 69871)**
ES **Portafresas con mango roscado, ISO 7388-1 (DIN 69871)**
DE **Einschraubfräseraufnahme, ISO 7388-1 (DIN 69871)**
EN **Adapter for milling cutters with threaded end, ISO 7388-1 (DIN 69871)**

ISO 7388-1 | DIN 69871 | AD/AF (AD/B) | SK | AT3 | HRc $58^{\pm 2}$ | RFID | 0,005 | G2,5 25.000 RPM

Ref.	d2	d1	l2	l3	d3	d4	M
82.214.4061	SK40	M6	44	25	10	13	M16
82.214.4062	SK40	M6	69	50	10	20	M16
82.214.4063	SK40	M6	94	75	10	23	M16
82.214.4081	SK40	M8	44	25	13	15	M16
82.214.4082	SK40	M8	69	50	13	23	M16
82.214.4083	SK40	M8	94	75	13	23	M16
82.214.4084	SK40	M8	119	100	13	25	M16
82.214.4101	SK40	M10	44	25	18	20	M16
82.214.4102	SK40	M10	69	50	18	23	M16
82.214.4103	SK40	M10	94	75	18	28	M16
82.214.4104	SK40	M10	119	100	18	32	M16
82.214.4121	SK40	M12	44	25	21	24	M16
82.214.4122	SK40	M12	69	50	21	24	M16
82.214.4123	SK40	M12	94	75	21	31	M16
82.214.4124	SK40	M12	119	100	21	33	M16
82.214.4125	SK40	M12	144	125	21	36	M16
82.214.4161	SK40	M16	44	25	29	29	M16
82.214.4162	SK40	M16	69	50	29	34	M16
82.214.4163	SK40	M16	94	75	29	34	M16
82.214.4164	SK40	M16	119	100	29	36	M16
82.214.4165	SK40	M16	144	125	29	40	M16
82.214.5082	SK50	M8	69	50	13	23	M24
82.214.5084	SK50	M8	119	100	13	25	M24
82.214.5086	SK50	M8	169	150	13	30	M24
82.214.5102	SK50	M10	69	50	18	23	M24
82.214.5104	SK50	M10	119	100	18	32	M24
82.214.5106	SK50	M10	169	150	18	36.5	M24
82.214.5122	SK50	M12	69	50	21	24	M24
82.214.5124	SK50	M12	119	100	21	33	M24
82.214.5126	SK50	M12	169	150	21	40	M24
82.214.5162	SK50	M16	69	50	29	34	M24
82.214.5164	SK50	M16	119	100	29	36	M24
82.214.5166	SK50	M16	169	150	29	42.5	M24

› 82.216 Phantom



NL **Opschroef opname, ISO 7388-2 (MAS-BT)**
FR **Mandrin pour fraises à queue filetée, ISO 7388-2 (MAS-BT)**
ES **Portafresas con mango roscado, ISO 7388-2 (MAS-BT)**
DE **Einschraubfräseraufnahme, ISO 7388-2 (MAS-BT)**
EN **Adapter for milling cutters with threaded end, ISO 7388-2 (MAS-BT)**

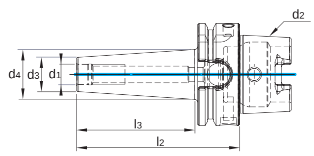
ISO 7388-2 | JD/JF (AD/B) | MAS-BT | AT3 | HRc $58^{\pm 2}$ | 0,005 | G2,5 25.000 RPM

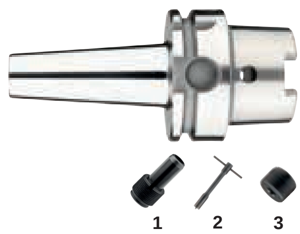
Ref.	d2	d1	l2	l3	d3	d4	M
82.216.4061	BT40	M6	52	25	10	13	M16
82.216.4062	BT40	M6	77	50	10	20	M16
82.216.4063	BT40	M6	102	75	10	23	M16
82.216.4081	BT40	M8	52	25	13	15	M16
82.216.4082	BT40	M8	77	50	13	23	M16
82.216.4083	BT40	M8	102	75	13	23	M16

› 82.216 *Phantom*

Ref.	d2	d1	l2	l3	d3	d4	M
82.216.4084	BT40	M8	127	100	13	25	M16
82.216.4101	BT40	M10	52	25	18	20	M16
82.216.4102	BT40	M10	77	50	18	23	M16
82.216.4103	BT40	M10	102	75	18	28	M16
82.216.4104	BT40	M10	127	100	18	32	M16
82.216.4121	BT40	M12	52	25	21	24	M16
82.216.4122	BT40	M12	77	50	21	24	M16
82.216.4123	BT40	M12	102	75	21	31	M16
82.216.4124	BT40	M12	127	100	21	33	M16
82.216.4125	BT40	M12	152	125	21	36	M16
82.216.4161	BT40	M16	52	25	29	29	M16
82.216.4162	BT40	M16	77	50	29	34	M16
82.216.4163	BT40	M16	102	75	29	34	M16
82.216.4164	BT40	M16	127	100	29	36	M16
82.216.4165	BT40	M16	152	125	29	40	M16
82.216.4166	BT40	M16	177	150	29	42.5	M16
82.216.5082	BT50	M8	88	50	13	23	M24
82.216.5084	BT50	M8	138	100	13	25	M24
82.216.5086	BT50	M8	188	150	13	30	M24
82.216.5102	BT50	M10	88	50	18	23	M24
82.216.5104	BT50	M10	138	100	18	32	M24
82.216.5106	BT50	M10	188	150	18	36.5	M24
82.216.5122	BT50	M12	88	50	21	24	M24
82.216.5124	BT50	M12	138	100	21	33	M24
82.216.5126	BT50	M12	188	150	21	40	M24
82.216.5162	BT50	M16	88	50	29	34	M24
82.216.5164	BT50	M16	138	100	29	36	M24
82.216.5166	BT50	M16	188	150	29	42.5	M24

› 82.217 *Phantom*



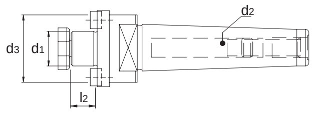


NL **Opschroef opname, ISO 12164 (DIN 69893)**
FR **Mandrin pour fraises à queue filetée, ISO 12164 (DIN 69893)**
ES **Portafresas con mango roscado, ISO 12164 (DIN 69893)**
DE **Einschraubfräseraufnahme, ISO 12164 (DIN 69893)**
EN **Adapter for milling cutters with threaded end, ISO 12164 (DIN 69893)**

ISO 12164 | A | HSK-A | AT3 | HRc 58±2 | RFID | 0,005 | G2,5 25.000 RPM

Ref.	d2	d1	l2	l3	d3	d4	M	1 excl.	2 excl.	3 excl.
82.217.6061	HSK63A	M6	51	25	10	13	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6081	HSK63A	M8	51	25	13	15	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6082	HSK63A	M8	76	50	13	23	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6083	HSK63A	M8	101	75	13	23	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6084	HSK63A	M8	126	100	13	25	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6102	HSK63A	M10	76	50	18	23	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6103	HSK63A	M10	101	75	18	28	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6104	HSK63A	M10	126	100	18	32	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6122	HSK63A	M12	76	50	21	24	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6123	HSK63A	M12	101	75	21	31	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6124	HSK63A	M12	126	100	21	33	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6162	HSK63A	M16	76	50	29	34	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6163	HSK63A	M16	101	75	29	34	M18X1	84.790.1800	84.791.1800	84.789.1800
82.217.6164	HSK63A	M16	126	100	29	36	M18X1	84.790.1800	84.791.1800	84.789.1800

› 82.251 *International Tools*

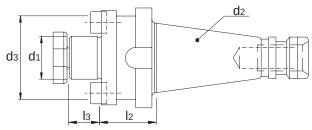


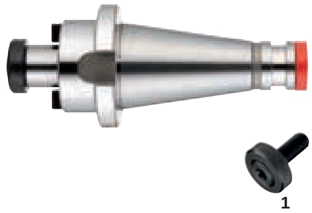
NL ECO PRO Opsteekfreeshouder voor frezen met dwarsspiebaan, MK volgens DIN 228-A
FR Mandrin porte-fraises pour fraises avec tenons ECO PRO, CM selon DIN 228-A
ES Portafresa para fresas con chavetas frontales ECO PRO, CM según DIN 228-A
DE ECO PRO Aufsteckfräserdorne für Fräser mit Quernut, MK nach DIN 228-A
EN ECO PRO Shell Mill Adapter for Milling cutters with driving slot, MT according to DIN 228-A

DIN 228-A | DIN 6357 | ECO PRO

Ref.	d2	d1	l2	d3	M	1 incl.
82.251.0216	MK 2	16	17	38	M10	82.452.0800
82.251.0222	MK 2	22	19	48	M10	82.452.1000
82.251.0316	MK 3	16	17	38	M12	82.452.0800
82.251.0322	MK 3	22	19	48	M12	82.452.1000
82.251.0416	MK 4	16	17	38	M16	82.452.0800
82.251.0422	MK 4	22	19	48	M16	82.452.1000
82.251.0427	MK 4	27	21	58	M16	82.452.1200

› 82.253 *Phantom*



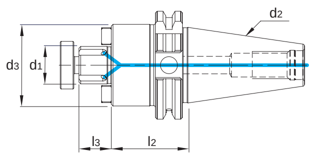


NL Opsteekfreeshouder voor frezen met dwarsspiebaan, DIN 2080
FR Mandrin porte-fraises pour fraises avec tenons, DIN 2080
ES Portafresa para fresas con chavetas frontales, DIN 2080
DE Aufsteckfräserdorne für Fräser mit Quernut, DIN 2080
EN Shell Mill Adapter for Milling cutters with driving slot, DIN 2080

DIN 2080 | AD | SK | AT3 | HRc $58^{\pm2}$ | DIN 6357 | 0,005

Ref.	d2	d1	l2	d3	l3	M	1 incl.
82.253.4161	SK40	16	30	38	17	M16	82.452.0800
82.253.4221	SK40	22	30	48	19	M16	82.452.1000
82.253.4271	SK40	27	30	58	21	M16	82.452.1200
82.253.4321	SK40	32	30	78	24	M16	82.452.1600
82.253.4401	SK40	40	30	88	27	M16	82.452.2000
82.253.5221	SK50	22	35	48	19	M24	82.452.1000
82.253.5271	SK50	27	35	58	21	M24	82.452.1200
82.253.5321	SK50	32	40	78	24	M24	82.452.1600
82.253.5401	SK50	40	33	88	27	M24	82.452.2000

› 82.264 *Phantom*



NL Opsteekfreeshouder voor frezen met dwarsspiebaan, ISO 7388-1 (DIN 69871)
FR Mandrin porte-fraises pour fraises avec tenons, ISO 7388-1 (DIN 69871)
ES Portafresa para fresas con chavetas frontales, ISO 7388-1 (DIN 69871)
DE Aufsteckfräserdorne für Fräser mit Quernut, ISO 7388-1 (DIN 69871)
EN Shell Mill Adapter for Milling cutters with driving slot, ISO 7388-1 (DIN 69871)

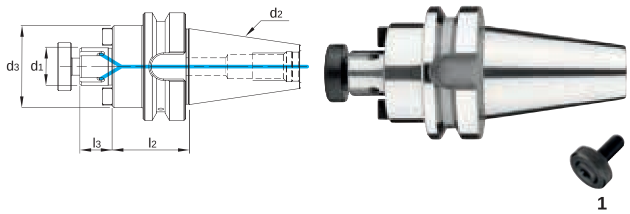
ISO 7388-1 | DIN 69871 | AD/AF (AD/B) | SK | AT3 | HRc $58^{\pm2}$ | RFID | DIN 6357 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	l3	M	1 incl.
82.264.4161	SK40	16	45	38	17	M16	82.452.0800
82.264.4162	SK40	16	100	38	17	M16	82.452.0800
82.264.4166	SK40	16	160	38	17	M16	82.452.0800
82.264.4221	SK40	22	45	48	19	M16	82.452.1000
82.264.4222	SK40	22	100	48	19	M16	82.452.1000
82.264.4226	SK40	22	160	48	19	M16	82.452.1000
82.264.4271	SK40	27	50	58	21	M16	82.452.1200
82.264.4272	SK40	27	100	58	21	M16	82.452.1200
82.264.4276	SK40	27	160	58	21	M16	82.452.1200
82.264.4321	SK40	32	55	78	24	M16	82.452.1600
82.264.4322	SK40	32	100	78	24	M16	82.452.1600
82.264.4326	SK40	32	160	78	24	M16	82.452.1600
82.264.4401	SK40	40	55	88	27	M16	82.452.2000
82.264.5161	SK50	16	45	38	17	M24	82.452.0800
82.264.5162	SK50	16	100	38	17	M24	82.452.0800
82.264.5166	SK50	16	160	38	17	M24	82.452.0800
82.264.5221	SK50	22	45	48	19	M24	82.452.1000

› 82.264 Phantom

Ref.	d2	d1	l2	d3	l3	M	1 incl.
82.264.5222	SK50	22	100	48	19	M24	82.452.1000
82.264.5226	SK50	22	160	48	19	M24	82.452.1000
82.264.5271	SK50	27	45	58	21	M24	82.452.1200
82.264.5272	SK50	27	100	58	21	M24	82.452.1200
82.264.5276	SK50	27	160	58	21	M24	82.452.1200
82.264.5321	SK50	32	50	78	24	M24	82.452.1600
82.264.5322	SK50	32	100	78	24	M24	82.452.1600
82.264.5326	SK50	32	160	78	24	M24	82.452.1600
82.264.5401	SK50	40	55	88	27	M24	82.452.2000
82.264.5402	SK50	40	100	88	27	M24	82.452.2000
82.264.5406	SK50	40	160	88	27	M24	82.452.2000

› 82.266 Phantom

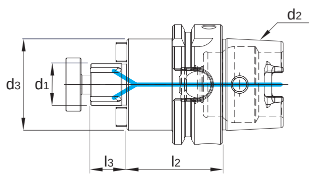


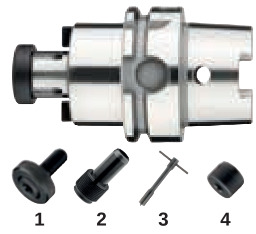
NL **Opsteekfreeshouder voor frezen met dwarsspiebaan, ISO 7388-2 (MAS-BT)**
FR **Mandrin porte-fraises pour fraises avec tenons, ISO 7388-2 (MAS-BT)**
ES **Portafresa para fresas con chavetas frontales, ISO 7388-2 (MAS-BT)**
DE **Aufsteckfräserdorne für Fräser mit Quernut, ISO 7388-2 (MAS-BT)**
EN **Shell Mill Adapter for Milling cutters with driving slot, ISO 7388-2 (MAS-BT)**

ISO 7388-2 | JD/JF (AD/B) | MAS-BT | AT3 | HRc $58^{\pm 2}$ | DIN 6357 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	l3	M	1 incl.
82.266.4161	BT40	16	45	38	17	M16	82.452.0800
82.266.4162	BT40	16	100	38	17	M16	82.452.0800
82.266.4166	BT40	16	160	38	17	M16	82.452.0800
82.266.4221	BT40	22	45	48	19	M16	82.452.1000
82.266.4222	BT40	22	100	48	19	M16	82.452.1000
82.266.4226	BT40	22	160	48	19	M16	82.452.1000
82.266.4271	BT40	27	45	58	21	M16	82.452.1200
82.266.4272	BT40	27	100	58	21	M16	82.452.1200
82.266.4276	BT40	27	160	58	21	M16	82.452.1200
82.266.4321	BT40	32	50	78	24	M16	82.452.1600
82.266.4322	BT40	32	100	78	24	M16	82.452.1600
82.266.4326	BT40	32	160	78	24	M16	82.452.1600
82.266.4401	BT40	40	55	88	27	M16	82.452.2000
82.266.4402	BT40	40	100	88	27	M16	82.452.2000
82.266.4406	BT40	40	160	88	27	M16	82.452.2000
82.266.5161	BT50	16	60	38	17	M24	82.452.0800
82.266.5162	BT50	16	100	38	17	M24	82.452.0800
82.266.5166	BT50	16	160	38	17	M24	82.452.0800
82.266.5221	BT50	22	60	48	19	M24	82.452.1000
82.266.5222	BT50	22	100	48	19	M24	82.452.1000
82.266.5226	BT50	22	160	48	19	M24	82.452.1000
82.266.5271	BT50	27	60	58	21	M24	82.452.1200
82.266.5272	BT50	27	100	58	21	M24	82.452.1200
82.266.5276	BT50	27	160	58	21	M24	82.452.1200
82.266.5321	BT50	32	60	78	24	M24	82.452.1600
82.266.5322	BT50	32	100	78	24	M24	82.452.1600
82.266.5326	BT50	32	160	78	24	M24	82.452.1600
82.266.5401	BT50	40	60	88	27	M24	82.452.2000
82.266.5402	BT50	40	100	88	27	M24	82.452.2000

› 82.267 Phantom



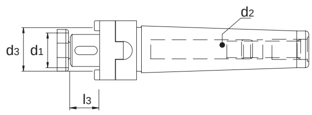


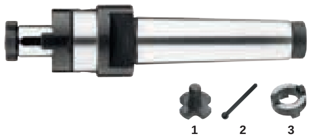
NL Opsteekfreeshouder voor frezen met dwarsspiebaan, ISO 12164 (DIN 69893)
FR Mandrin porte-fraises pour fraises avec tenons, ISO 12164 (DIN 69893)
ES Portafresa para fresas con chavetas frontales, ISO 12164 (DIN 69893)
DE Aufsteckfräserdorne für Fräser mit Quernut, ISO 12164 (DIN 69893)
EN Shell Mill Adapter for Milling cutters with driving slot, ISO 12164 (DIN 69893)

ISO 12164 | A | HSK-A | AT3 | HRc 58±2 | RFID | DIN 6357 | 0,005 | G6,3 20.000 RPM

Ref.	d2	d1	l2	d3	l3	M	1 incl.	2 excl.	3 excl.	4 excl.
82.267.6161	HSK63A	16	45	38	17	M18X1	82.452.0800	84.790.1800	84.791.1800	84.789.1800
82.267.6162	HSK63A	16	100	38	17	M18X1	82.452.0800	84.790.1800	84.791.1800	84.789.1800
82.267.6166	HSK63A	16	160	38	17	M18X1	82.452.0800	84.790.1800	84.791.1800	84.789.1800
82.267.6221	HSK63A	22	50	48	19	M18X1	82.452.1000	84.790.1800	84.791.1800	84.789.1800
82.267.6222	HSK63A	22	100	48	19	M18X1	82.452.1000	84.790.1800	84.791.1800	84.789.1800
82.267.6226	HSK63A	22	160	48	19	M18X1	82.452.1000	84.790.1800	84.791.1800	84.789.1800
82.267.6271	HSK63A	27	55	58	21	M18X1	82.452.1200	84.790.1800	84.791.1800	84.789.1800
82.267.6272	HSK63A	27	100	58	21	M18X1	82.452.1200	84.790.1800	84.791.1800	84.789.1800
82.267.6276	HSK63A	27	160	58	21	M18X1	82.452.1200	84.790.1800	84.791.1800	84.789.1800
82.267.6321	HSK63A	32	60	78	24	M18X1	82.452.1600	84.790.1800	84.791.1800	84.789.1800
82.267.6401	HSK63A	40	65	88	27	M18X1	82.452.2000	84.790.1800	84.791.1800	84.789.1800

› 82.321 Phantom



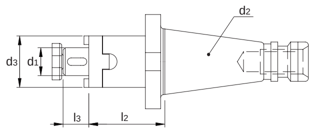


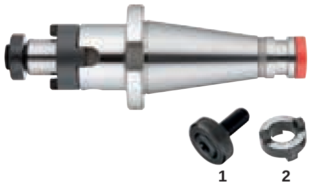
NL Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, MK volgens DIN 228-A
FR Mandrin porte-fraises combiné pour fraises avec rainure de clavette et tenons, CM selon DIN 228-A
ES Portafresa combinado para fresas con ranura longitudinal y transversal, CM según DIN 228-A
DE Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, MK nach DIN 228-A
EN Combination Shell Mill Adapter for Milling cutters vertically- and horizontally mounted, MT according to DIN 228-A

DIN 6358 | DIN 228-A | AT3

Ref.	d2	d1	d3	l3	M	1 incl.	2 excl.	3 incl.
82.321.3131	MK 3	13	28	12	M12	82.450.0600	82.460.0600	-
82.321.3161	MK 3	16	32	17	M12	82.450.0800	82.460.0800	82.470.1600
82.321.3221	MK 3	22	40	19	M12	82.450.1000	82.460.1000	82.470.2200

› 82.323 Phantom



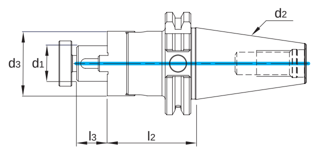


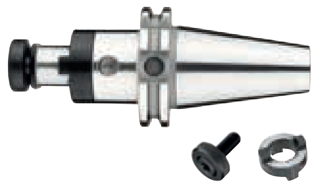
NL Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, DIN 2080
FR Mandrin porte-fraises combiné pour fraises avec rainure de clavette et tenons, DIN 2080
ES Portafresa combinado para fresas con ranura longitudinal y transversal, DIN 2080
DE Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, DIN 2080
EN Combination Shell Mill Adapter for Milling cutters vertically- and horizontally mounted, DIN 2080

DIN 2080 | AD | SK | AT3 | HRc 58±2 | DIN 6358 | 0,005

Ref.	d2	d1	l2	d3	l3	M	1 incl.	2 incl.
82.323.3016	SK30	16	35	32	17	M12	82.452.0800	82.470.1600
82.323.3022	SK30	22	35	40	19	M12	82.452.1000	82.470.2200
82.323.3027	SK30	27	35	48	21	M12	82.452.1200	82.470.2700
82.323.3032	SK30	32	50	58	24	M12	82.452.1600	82.470.3200
82.323.4016	SK40	16	52	32	17	M16	82.452.0800	82.470.1600
82.323.4022	SK40	22	52	40	19	M16	82.452.1000	82.470.2200
82.323.4027	SK40	27	52	48	21	M16	82.452.1200	82.470.2700
82.323.4032	SK40	32	52	58	24	M16	82.452.1600	82.470.3200
82.323.4040	SK40	40	52	70	27	M16	82.452.2000	82.470.4000
82.323.5016	SK50	16	55	32	17	M24	82.452.0800	82.470.1600
82.323.5022	SK50	22	55	40	19	M24	82.452.1000	82.470.2200
82.323.5027	SK50	27	55	48	21	M24	82.452.1200	82.470.2700
82.323.5032	SK50	32	55	58	24	M24	82.452.1600	82.470.3200
82.323.5040	SK50	40	55	70	27	M24	82.452.2000	82.470.4000

› 82.324 Phantom



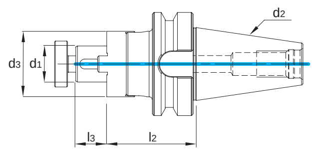


NL **Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, ISO 7388-1 (DIN 69871)**
FR **Mandrin porte-fraises combiné pour fraises avec rainure de clavette et tenons, ISO 7388-1 (DIN 69871)**
ES **Portafresa combinado para fresas con ranura longitudinal y transversal, ISO 7388-1 (DIN 69871)**
DE **Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, ISO 7388-1 (DIN 69871)**
EN **Combination Shell Mill Adapter for Milling cutters vertically- and horizontally mounted, ISO 7388-1 (DIN 69871)**

ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc $58^{\pm 2}$ | RFID | DIN 6358 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	l3	M	1 incl.	2 incl.
82.324.4161	SK40	16	55	32	17	M16	82.452.0800	82.470.1600
82.324.4162	SK40	16	100	32	17	M16	82.452.0800	82.470.1600
82.324.4166	SK40	16	160	32	17	M16	82.452.0800	82.470.1600
82.324.4221	SK40	22	55	40	19	M16	82.452.1000	82.470.2200
82.324.4222	SK40	22	100	40	19	M16	82.452.1000	82.470.2200
82.324.4226	SK40	22	160	40	19	M16	82.452.1000	82.470.2200
82.324.4271	SK40	27	55	48	21	M16	82.452.1200	82.470.2700
82.324.4272	SK40	27	100	48	21	M16	82.452.1200	82.470.2700
82.324.4276	SK40	27	160	48	21	M16	82.452.1200	82.470.2700
82.324.4321	SK40	32	60	58	24	M16	82.452.1600	82.470.3200
82.324.4322	SK40	32	100	58	24	M16	82.452.1600	82.470.3200
82.324.4326	SK40	32	160	58	24	M16	82.452.1600	82.470.3200
82.324.4401	SK40	40	60	70	27	M16	82.452.2000	82.470.4000
82.324.4402	SK40	40	100	70	27	M16	82.452.2000	82.470.4000
82.324.4406	SK40	40	160	70	27	M16	82.452.2000	82.470.4000
82.324.5016	SK50	16	55	32	17	M24	82.452.0800	82.470.1600
82.324.5032	SK50	32	55	58	24	M24	82.452.1600	82.470.3200
82.324.5161	SK50	16	55	32	17	M24	82.452.0800	82.470.1600
82.324.5162	SK50	16	100	32	17	M24	82.452.0800	82.470.1600
82.324.5166	SK50	16	160	32	17	M24	82.452.0800	82.470.1600
82.324.5221	SK50	22	55	40	19	M24	82.452.1000	82.470.2200
82.324.5222	SK50	22	100	40	19	M24	82.452.1000	82.470.2200
82.324.5226	SK50	22	160	40	19	M24	82.452.1000	82.470.2200
82.324.5271	SK50	27	55	48	21	M24	82.452.1200	82.470.2700
82.324.5272	SK50	27	100	48	21	M24	82.452.1200	82.470.2700
82.324.5276	SK50	27	160	48	21	M24	82.452.1200	82.470.2700
82.324.5321	SK50	32	55	58	24	M24	82.452.1600	82.470.3200
82.324.5322	SK50	32	100	58	24	M24	82.452.1600	82.470.3200
82.324.5326	SK50	32	160	58	24	M24	82.452.1600	82.470.3200
82.324.5401	SK50	40	55	70	27	M24	82.452.2000	82.470.4000
82.324.5402	SK50	40	100	70	27	M24	82.452.2000	82.470.4000
82.324.5406	SK50	40	160	70	27	M24	82.452.2000	82.470.4000

› 82.326 Phantom



NL **Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, ISO 7388-2 (MAS-BT)**
FR **Mandrin porte-fraises combiné pour fraises avec rainure de clavette et tenons, ISO 7388-2 (MAS-BT)**
ES **Portafresa combinado para fresas con ranura longitudinal y transversal, ISO 7388-2 (MAS-BT)**
DE **Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, ISO 7388-2 (MAS-BT)**
EN **Combination Shell Mill Adapter for Milling cutters vertically- and horizontally mounted, ISO 7388-2 (MAS-BT)**

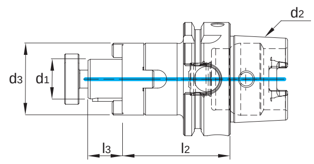
ISO 7388-2 | JD (AD) | MAS-BT | AT3 | HRc $58^{\pm 2}$ | DIN 6358 | 0,005 | G6,3 15.000 RPM

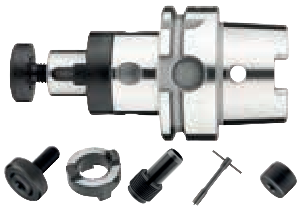
Ref.	d2	d1	l2	d3	l3	M	1 incl.	2 incl.
82.326.4161	BT40	16	55	32	17	M16	82.452.0800	82.470.1600
82.326.4162	BT40	16	100	32	17	M16	82.452.0800	82.470.1600
82.326.4166	BT40	16	160	32	17	M16	82.452.0800	82.470.1600
82.326.4221	BT40	22	55	40	19	M16	82.452.1000	82.470.2200
82.326.4222	BT40	22	100	40	19	M16	82.452.1000	82.470.2200
82.326.4226	BT40	22	160	40	19	M16	82.452.1000	82.470.2200
82.326.4271	BT40	27	55	48	21	M16	82.452.1200	82.470.2700
82.326.4272	BT40	27	100	48	21	M16	82.452.1200	82.470.2700
82.326.4276	BT40	27	160	48	21	M16	82.452.1200	82.470.2700
82.326.4321	BT40	32	60	58	24	M16	82.452.1600	82.470.3200
82.326.4322	BT40	32	100	58	24	M16	82.452.1600	82.470.3200
82.326.4326	BT40	32	160	58	24	M16	82.452.1600	82.470.3200
82.326.4401	BT40	40	60	70	27	M16	82.452.2000	82.470.4000
82.326.5022	BT50	22	70	40	19	M24	82.452.1000	82.470.2200
82.326.5027	BT50	27	70	48	21	M24	82.452.1200	82.470.2700
82.326.5032	BT50	32	70	58	24	M24	82.452.1600	82.470.3200
82.326.5040	BT50	40	70	70	27	M24	82.452.2000	82.470.4000

› 82.326 Phantom

Ref.	d2	d1	l2	d3	l3	M	1 incl.	2 incl.
82.326.5161	BT50	16	70	32	17	M24	82.452.0800	82.470.1600
82.326.5162	BT50	16	100	32	17	M24	82.452.0800	82.470.1600
82.326.5166	BT50	16	160	32	17	M24	82.452.0800	82.470.1600
82.326.5221	BT50	22	70	40	19	M24	82.452.1000	82.470.2200
82.326.5222	BT50	22	100	40	19	M24	82.452.1000	82.470.2200
82.326.5226	BT50	22	160	40	19	M24	82.452.1000	82.470.2200
82.326.5271	BT50	27	70	48	21	M24	82.452.1200	82.470.2700
82.326.5272	BT50	27	100	48	21	M24	82.452.1200	82.470.2700
82.326.5276	BT50	27	160	48	21	M24	82.452.1200	82.470.2700
82.326.5321	BT50	32	70	58	24	M24	82.452.1600	82.470.3200
82.326.5322	BT50	32	100	58	24	M24	82.452.1600	82.470.3200
82.326.5326	BT50	32	160	58	24	M24	82.452.1600	82.470.3200
82.326.5401	BT50	40	70	70	27	M24	82.452.2000	82.470.4000
82.326.5402	BT50	40	100	70	27	M24	82.452.2000	82.470.4000
82.326.5406	BT50	40	160	70	27	M24	82.452.2000	82.470.4000

› 82.327 Phantom





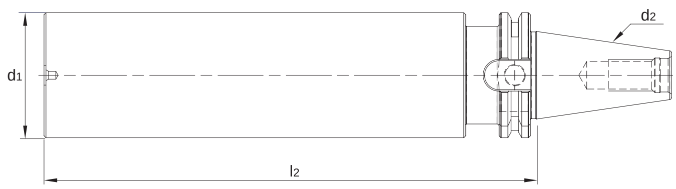
1 2 3 4 5

NL **Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, ISO 12164 (DIN 69893)**
FR **Mandrin porte-fraises combiné pour fraises avec rainure de clavette et tenons, ISO 12164 (DIN 69893)**
ES **Portafresa combinado para fresas con ranura longitudinal y transversal, ISO 12164 (DIN 69893)**
DE **Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, ISO 12164 (DIN 69893)**
EN **Combination Shell Mill Adapter for Milling cutters vertically- and horizontally mounted, ISO 12164 (DIN 69893)**

ISO 12164 | A | HSK-A | AT3 | HRc 58±2 | RFID | DIN 6358 | 0,005 | G6,3 20.000 RPM

Ref.	d2	d1	l2	d3	l3	M	1 incl.	2 incl.	3 excl.	4 excl.	5 excl.
82.327.6161	HSK63A	16	60	32	17	M18X1	82.452.0800	82.470.1600	84.790.1800	84.791.1800	84.789.1800
82.327.6162	HSK63A	16	100	32	17	M18X1	82.452.0800	82.470.1600	84.790.1800	84.791.1800	84.789.1800
82.327.6166	HSK63A	16	160	32	17	M18X1	82.452.0800	82.470.1600	84.790.1800	84.791.1800	84.789.1800
82.327.6221	HSK63A	22	60	40	19	M18X1	82.452.1000	82.470.2200	84.790.1800	84.791.1800	84.789.1800
82.327.6222	HSK63A	22	100	40	19	M18X1	82.452.1000	82.470.2200	84.790.1800	84.791.1800	84.789.1800
82.327.6226	HSK63A	22	160	40	19	M18X1	82.452.1000	82.470.2200	84.790.1800	84.791.1800	84.789.1800
82.327.6271	HSK63A	27	60	48	21	M18X1	82.452.1200	82.470.2700	84.790.1800	84.791.1800	84.789.1800
82.327.6272	HSK63A	27	100	48	21	M18X1	82.452.1200	82.470.2700	84.790.1800	84.791.1800	84.789.1800
82.327.6276	HSK63A	27	160	48	21	M18X1	82.452.1200	82.470.2700	84.790.1800	84.791.1800	84.789.1800
82.327.6321	HSK63A	32	65	58	24	M18X1	82.452.1600	82.470.3200	84.790.1800	84.791.1800	84.789.1800
82.327.6401	HSK63A	40	70	22	27	M18X1	82.452.2000	82.470.4000	84.790.1800	84.791.1800	84.789.1800

› 82.424 Phantom



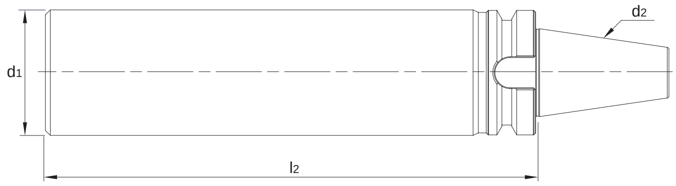
NL **Halfbewerkte gereedschapshouder, ISO 7388-1 (DIN 69871)**
FR **Mandrin porte-outils non fini, ISO 7388-1 (DIN 69871)**
ES **Pieza en bruto, ISO 7388-1 (DIN 69871)**
DE **Werkzeughalter-Rohling, ISO 7388-1 (DIN 69871)**
EN **Tool Blank, ISO 7388-1 (DIN 69871)**

ISO 7388-1 | DIN 69871 | A | SK | AT3 | HRc 58±2 | RFID

Ref.	d2	d1	l2	M
82.424.4063	SK40	63	250	M16
82.424.5080	SK50	97	315	M24

› 82.426 Phantom

- NL Halfbewerkte gereedschapshouder, ISO 7388-2 (MAS-BT)
- FR Mandrin porte-outils non fini, ISO 7388-2 (MAS-BT)
- ES Pieza en bruto, ISO 7388-2 (MAS-BT)
- DE Werkzeughalter-Rohling, ISO 7388-2 (MAS-BT)
- EN Tool Blank, ISO 7388-2 (MAS-BT)

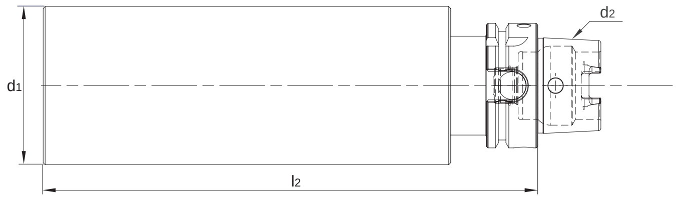


ISO 7388-2 | J (A) | MAS-BT | AT3 | HRc $58^{\pm2}$

Ref.	d2	d1	l2	M
82.426.4063	BT40	63	250	M16
82.426.5080	BT50	97	315	M24

› 82.427 Phantom

- NL Halfbewerkte gereedschapshouder, ISO 12164 (DIN 69893)
- FR Mandrin porte-outils non fini, ISO 12164 (DIN 69893)
- ES Pieza en bruto, ISO 12164 (DIN 69893)
- DE Werkzeughalter-Rohling, ISO 12164 (DIN 69893)
- EN Tool Blank, ISO 12164 (DIN 69893)



ISO 12164 | A | HSK-A | AT3 | HRc $58^{\pm2}$ | RFID

Ref.	d2	d1	l2	M
82.427.6080	HSK63A	80	250	M18X1

› 82.452 Phantom

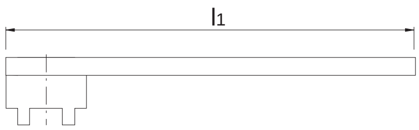
- NL Aantrekschroef, voor opsteekhouder
- FR Vis de serrage, pour arbre de montage
- ES Tornillo de fijación, para adaptador morse
- DE Anzugsschrauben, für Aufsteckhalter
- EN Draw-in bolt, for Arbor

DIN 6367

Ref.	M	d1
82.452.0800	M8	20
82.452.1000	M10	28
82.452.1200	M12	35
82.452.1600	M16	42
82.452.2000	M20	52

› 82.460 Phantom

- NL Spansleutel, voor opsteekhouder
- FR Clé pour vis de serrage, pour arbre de montage
- ES Llave para tornillo de fijación, para adaptador morse
- DE Spannschlüssel, für Aufsteckhalter
- EN Wrench for Draw-in Bolts, for Arbor



DIN 6368

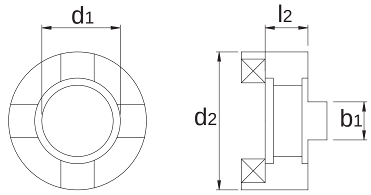
Ref.	M	Type	l1
82.460.0600	M6	13	160
82.460.0800	M8	16	180
82.460.1000	M10	22	200
82.460.1200	M12	27	225
82.460.1600	M16	32	250
82.460.2000	M20	40	280
82.460.2400	M24	50	315

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8

› 82.470 Phantom

NL Meeneemring, voor opsteekhouder
FR Bague de déblocage, pour arbre de montage
ES Arandela de arrastre, para adaptador morse
DE Mitnehmerringe, für Aufsteckhalter
EN Driver, for Arbor

DIN 6366

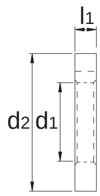


Ref.	d1	l2	b1	d2
82.470.1600	16	10	8	32
82.470.2200	22	12	10	40
82.470.2700	27	12	12	48
82.470.3200	32	14	14	58
82.470.4000	40	14	16	70

› 82.480 Phantom

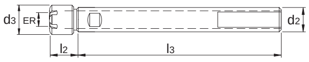
NL Freesdoornring
FR Entretoise pour mandrins porte-fraises
ES Separador para portafresas
DE Fräsdornring
EN Milling Arbor Ring

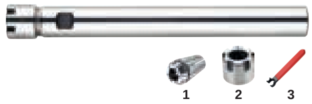
DIN 2084-B



Ref.	d1	d2	l1
82.480.1601	16	25	1
82.480.1602	16	25	2
82.480.1603	16	25	3
82.480.1606	16	25	6
82.480.1610	16	25	10
82.480.1620	16	25	20
82.480.1630	16	25	30
82.480.2201	22	33	1
82.480.2202	22	33	2
82.480.2203	22	33	3
82.480.2206	22	33	6
82.480.2210	22	33	10
82.480.2220	22	33	20
82.480.2230	22	33	30
82.480.2701	27	39	1
82.480.2702	27	39	2
82.480.2703	27	39	3
82.480.2706	27	39	6
82.480.2710	27	39	10
82.480.2720	27	39	20
82.480.2730	27	39	30
82.480.3201	32	45	1
82.480.3202	32	45	2
82.480.3203	32	45	3
82.480.3206	32	45	6
82.480.3210	32	45	10
82.480.3220	32	45	20
82.480.3230	32	45	30
82.480.4001	40	54	1
82.480.4002	40	54	2
82.480.4003	40	54	3
82.480.4006	40	54	6
82.480.4010	40	54	10
82.480.4020	40	54	20
82.480.4030	40	54	30
82.480.5001	50	67	1
82.480.5002	50	67	2
82.480.5003	50	67	3
82.480.5006	50	67	6
82.480.5010	50	67	10
82.480.5020	50	67	20
82.480.5030	50	67	30

› 82.509 *Phantom*



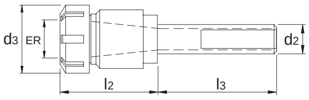


NL **ER Spantanghouder, cilindrisch, Mini-moer**
FR **Mandrin porte-pinces ER, forme cylindrique, Mini-écrou**
ES **Portapinzas ER, cilíndrico, Mini-tuerca**
DE **ER-Spannzangenfutter, Zylinderform, Mini-spannmutter**
EN **ER Collet Chuck, cylindrical, Mini-nut**

ISO 15488 | DIN 6499 | ER

Ref.	d2	Type	Ø	l2	l3	d3	1 excl.	2 incl.	3 excl.
82.509.1611	16 mm	ER11	1-7	19	160	16	ER11	82.965.1100	82.993.1100
82.509.2016	20 mm	ER16	1-12	31	160	22	ER16	82.965.1600	82.993.1600
82.509.2520	25 mm	ER20	1-14	28	160	28	ER20	82.965.2000	82.993.2000
82.509.2525	25 mm	ER25	1-20	40	160	42	ER25	82.965.2500	82.993.2500

› 82.510 *Phantom*

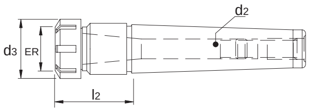


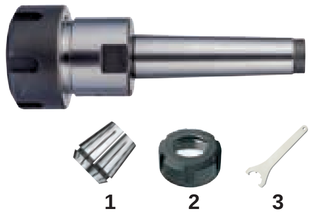
NL **ER Spantanghouder, cilindrisch**
FR **Mandrin porte-pinces ER, forme cylindrique**
ES **Portapinzas ER, cilíndrico**
DE **ER-Spannzangenfutter, Zylinderform**
EN **ER Collet Chuck, cylindrical**

ISO 15488 | DIN 6499 | ER

Ref.	d2	Type	Ø	l2	l3	d3	1 excl.	2 incl.	3 excl.
82.510.3232	32 mm	ER32	2-20	48	70	50	ER32	82.960.3200	82.990.3200

› 82.511 *International Tools*

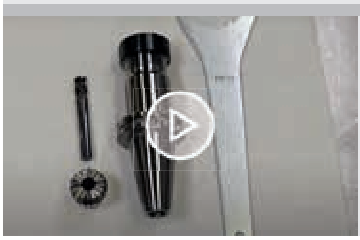




NL **ECO PRO ER Spantanghouder, MK volgens DIN 228-A**
FR **Mandrin porte-pinces ER, CM selon DIN 228-A ECO PRO**
ES **Portapinzas ER, CM según DIN 228-A ECO PRO**
DE **ECO PRO ER-Spannzangenfutter, MK nach DIN 228-A**
EN **ECO PRO ER Collet Chuck, MT according to DIN 228-A**

DIN 228-A | ISO 15488 | DIN 6499 | ER | ECO PRO

Ref.	d2	Type	Ø	l2	d3	M	1 excl.	2 incl.	3 excl.
82.511.0225	MK 2	ER25	1-20	50	42	M10	ER25	82.960.2500	82.990.2500
82.511.0332	MK 3	ER32	2-20	70	50	M12	ER32	82.960.3200	82.990.3200
82.511.0432	MK 4	ER32	2-20	65	50	M16	ER32	82.960.3200	82.990.3200

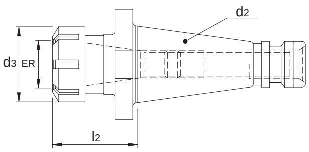


NL Montage frees in ER spantanghouder
FR Montage d'une fraise dans un mandrin porte-pinces ER
ES Sujetar una fresa en un portapinzas ER
DE Montieren Fräser im ER Spannzanghalter
EN Mounting end mill into ER collet chuck

Watch me

www.phantom.eu

› 82.513 *Phantom*



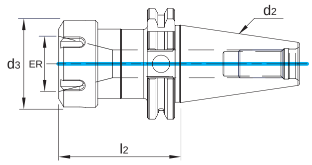
NL **ER Spantanghouder, DIN 2080**
FR **Mandrin porte-pinces ER, DIN 2080**
ES **Portapinzas ER, DIN 2080**
DE **ER-Spannzangenfutter, DIN 2080**
EN **ER Collet Chuck, DIN 2080**

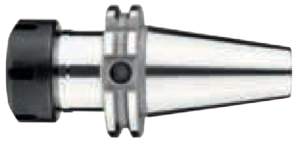
DIN 2080 | AD | SK | AT3 | HRc 58±2 | ISO 15488 | DIN 6499 | ER | 0,005

Ref.	d2	Type	Ø	l2	d3	M	1 excl.	2 incl.	3 excl.
82.513.3065	SK30	ER32	2-20	50	50	M12	ER32	82.960.3200	82.990.3200
82.513.4053	SK40	ER25	1-20	50	42	M16	ER25	82.960.2500	82.990.2500
82.513.4063	SK40	ER32	2-20	50	50	M16	ER32	82.960.3200	82.990.3200
82.513.4071	SK40	ER40	3-30	80	63	M16	ER40	82.960.4000	82.990.4000
82.513.5071	SK50	ER40	3-30	63	63	M24	ER40	82.960.4000	82.990.4000

› 82.514 Phantom

NL ER Spantanghouder, ISO 7388-1 (DIN 69871)
FR Mandrin porte-pinces ER, ISO 7388-1 (DIN 69871)
ES Portapinzas ER, ISO 7388-1 (DIN 69871)
DE ER-Spannzangenfutter, ISO 7388-1 (DIN 69871)
EN ER Collet Chuck, ISO 7388-1 (DIN 69871)



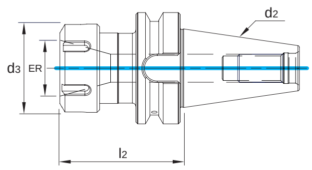


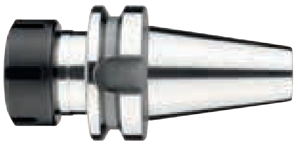
ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc 58±2 | RFID | ISO 15488 | DIN 6499 | ER | 0,005 | G6,3 15.000 RPM

Ref.	d2	Type	Ø	l2	d3	M	1 excl.	2 incl.	3 excl.
82.514.4161	SK40	ER16	1-12	70	32	M16	ER16	82.960.1600	82.990.1600
82.514.4162	SK40	ER16	1-12	100	32	M16	ER16	82.960.1600	82.990.1600
82.514.4166	SK40	ER16	1-12	160	32	M16	ER16	82.960.1600	82.990.1600
82.514.4251	SK40	ER25	1-20	70	42	M16	ER25	82.960.2500	82.990.2500
82.514.4252	SK40	ER25	1-20	100	42	M16	ER25	82.960.2500	82.990.2500
82.514.4256	SK40	ER25	1-20	160	42	M16	ER25	82.960.2500	82.990.2500
82.514.4321	SK40	ER32	2-20	70	50	M16	ER32	82.960.3200	82.990.3200
82.514.4322	SK40	ER32	2-20	100	50	M16	ER32	82.960.3200	82.990.3200
82.514.4326	SK40	ER32	2-20	160	50	M16	ER32	82.960.3200	82.990.3200
82.514.4401	SK40	ER40	3-30	70	63	M16	ER40	82.960.4000	82.990.4000
82.514.4402	SK40	ER40	3-30	100	63	M16	ER40	82.960.4000	82.990.4000
82.514.4406	SK40	ER40	3-30	160	63	M16	ER40	82.960.4000	82.990.4000
82.514.5162	SK50	ER16	1-12	100	32	M24	ER16	82.960.1600	82.990.1600
82.514.5166	SK50	ER16	1-12	160	32	M24	ER16	82.960.1600	82.990.1600
82.514.5251	SK50	ER25	1-20	70	42	M24	ER25	82.960.2500	82.990.2500
82.514.5252	SK50	ER25	1-20	100	42	M24	ER25	82.960.2500	82.990.2500
82.514.5256	SK50	ER25	1-20	160	42	M24	ER25	82.960.2500	82.990.2500
82.514.5321	SK50	ER32	2-20	70	50	M24	ER32	82.960.3200	82.990.3200
82.514.5322	SK50	ER32	2-20	100	50	M24	ER32	82.960.3200	82.990.3200
82.514.5326	SK50	ER32	2-20	160	50	M24	ER32	82.960.3200	82.990.3200
82.514.5401	SK50	ER40	3-30	80	63	M24	ER40	82.960.4000	82.990.4000
82.514.5402	SK50	ER40	3-30	100	63	M24	ER40	82.960.4000	82.990.4000
82.514.5406	SK50	ER40	3-30	160	63	M24	ER40	82.960.4000	82.990.4000

› 82.516 Phantom

NL ER Spantanghouder, ISO 7388-2 (MAS-BT)
FR Mandrin porte-pinces ER, ISO 7388-2 (MAS-BT)
ES Portapinzas ER, ISO 7388-2 (MAS-BT)
DE ER-Spannzangenfutter, ISO 7388-2 (MAS-BT)
EN ER Collet Chuck, ISO 7388-2 (MAS-BT)



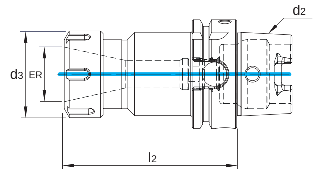


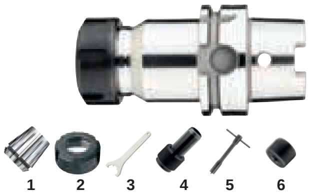
ISO 7388-2 | JD (AD) | MAS-BT | AT3 | HRc 58±2 | ISO 15488 | DIN 6499 | ER | 0,005 | G6,3 15.000 RPM

Ref.	d2	Type	Ø	l2	d3	M	1 excl.	2 incl.	3 excl.
82.516.4161	BT40	ER16	1-12	70	32	M16	ER16	82.960.1600	82.990.1600
82.516.4162	BT40	ER16	1-12	100	32	M16	ER16	82.960.1600	82.990.1600
82.516.4166	BT40	ER16	1-12	160	32	M16	ER16	82.960.1600	82.990.1600
82.516.4251	BT40	ER25	1-20	70	42	M16	ER25	82.960.2500	82.990.2500
82.516.4252	BT40	ER25	1-20	100	42	M16	ER25	82.960.2500	82.990.2500
82.516.4256	BT40	ER25	1-20	160	42	M16	ER25	82.960.2500	82.990.2500
82.516.4321	BT40	ER32	2-20	70	50	M16	ER32	82.960.3200	82.990.3200
82.516.4322	BT40	ER32	2-20	100	50	M16	ER32	82.960.3200	82.990.3200
82.516.4326	BT40	ER32	2-20	160	50	M16	ER32	82.960.3200	82.990.3200
82.516.4401	BT40	ER40	3-30	70	63	M16	ER40	82.960.4000	82.990.4000
82.516.4402	BT40	ER40	3-30	100	63	M16	ER40	82.960.4000	82.990.4000
82.516.4406	BT40	ER40	3-30	160	63	M16	ER40	82.960.4000	82.990.4000
82.516.5162	BT50	ER16	1-12	100	32	M24	ER16	82.960.1600	82.990.1600
82.516.5166	BT50	ER16	1-12	160	32	M24	ER16	82.960.1600	82.990.1600
82.516.5251	BT50	ER25	1-20	80	42	M24	ER25	82.960.2500	82.990.2500
82.516.5252	BT50	ER25	1-20	100	42	M24	ER25	82.960.2500	82.990.2500
82.516.5256	BT50	ER25	1-20	160	42	M24	ER25	82.960.2500	82.990.2500
82.516.5321	BT50	ER32	2-20	80	50	M24	ER32	82.960.3200	82.990.3200
82.516.5322	BT50	ER32	2-20	100	50	M24	ER32	82.960.3200	82.990.3200
82.516.5326	BT50	ER32	2-20	160	50	M24	ER32	82.960.3200	82.990.3200
82.516.5401	BT50	ER40	3-30	80	63	M24	ER40	82.960.4000	82.990.4000
82.516.5402	BT50	ER40	3-30	100	63	M24	ER40	82.960.4000	82.990.4000
82.516.5406	BT50	ER40	3-30	160	63	M24	ER40	82.960.4000	82.990.4000

› 82.517 Phantom

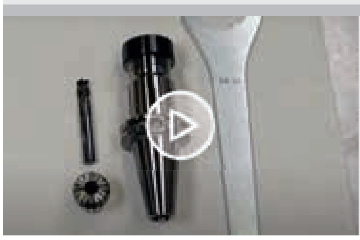
NL ER Spantanghouder, ISO 12164 (DIN 69893)
FR Mandrin porte-pinces ER, ISO 12164 (DIN 69893)
ES Portapinzas ER, ISO 12164 (DIN 69893)
DE ER-Spannzangenfutter, ISO 12164 (DIN 69893)
EN ER Collet Chuck, ISO 12164 (DIN 69893)





ISO 12164 | A | HSK-A | AT3 | HRc 58±2 | RFID | ISO 15488 | DIN 6499 | ER | 0,005 | G6,3 20.000 RPM

Ref.	d2	Type	Ø	l2	d3	1 excl.	2 incl.	3 excl.	4 excl.	5 excl.	6 excl.
82.517.6252	HSK63A	ER25	1-20	100	42	ER25	82.960.2500	82.990.2500	84.790.1800	84.791.1800	84.789.1800
82.517.6256	HSK63A	ER25	1-20	160	42	ER25	82.960.2500	82.990.2500	84.790.1800	84.791.1800	84.789.1800
82.517.6322	HSK63A	ER32	2-20	100	50	ER32	82.960.3200	82.990.3200	84.790.1800	84.791.1800	84.789.1800
82.517.6326	HSK63A	ER32	2-20	160	50	ER32	82.960.3200	82.990.3200	84.790.1800	84.791.1800	84.789.1800
82.517.6404	HSK63A	ER40	3-30	120	63	ER40	82.960.4000	82.990.4000	84.790.1800	84.791.1800	84.789.1800
82.517.6406	HSK63A	ER40	3-30	160	63	ER40	82.960.4000	82.990.4000	84.790.1800	84.791.1800	84.789.1800



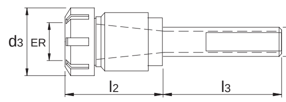
NL Voor betere rondloop, montage frees in ER spantanghouder met tikken
FR Montage d'une fraise dans un mandrin porte-pinces ER
ES Sujetar una fresa en un portapinzas ER
DE Montieren Fräser im ER Spannzanghalter mit klopfen
EN Mounting end mill into ER collet chuck with ticking

Watch me

www.phantom.eu

› 82.580 Phantom

NL Zelfcentrerende, ER Spantanghouder, cilindrisch
FR Concentriques, Mandrin porte-pinces ER, forme cylindrique
ES Autocentrantes, Portapinzas ER, cilíndrico
DE Selbstzentrierende, ER-Spannzangenfutter, Zylinderform
EN Self-centering, ER Collet Chuck, cylindrical



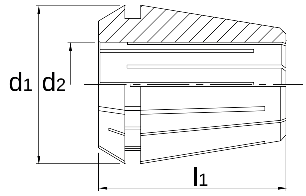
P | ISO 15488 | DIN 6499 | ER

NIEUW NOUVEAU NUEVO NEU

Ref.	d2	Type	Ø	l2	l3	d3	1 excl.	2 incl.	3 excl.
82.580.1616	16 mm	ER16	1-12	44	46	22	ER16	82.965.1600	82.993.1600
82.580.3232	32 mm	ER32	2-20	58	50	50	ER32	82.960.3200	82.990.3200

› 82.811 Phantom

NL Spantang ER 11 4008E, standaard, 15 µm
FR Pince ER 11 4008E, standard, 15 µm
ES Pinza ER 11 4008E, estándar, 15 µm
DE Spannzange ER 11 4008E, standard, 15 µm
EN Collet ER 11 4008E, standard, 15 µm



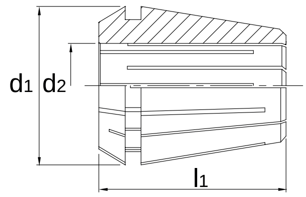
ER-11 | DIN 6499-B | 0,015

Ref.	Type	d2	Ø	d1	l1
82.811.0100	ER11	1	1-0,5	11.6	18
82.811.0150	ER11	1.5	1,5-1	11.6	18
82.811.0200	ER11	2	2-1,5	11.6	18
82.811.0250	ER11	2.5	2-2,5	11.6	18
82.811.0300	ER11	3	2,5-3	11.6	18
82.811.0350	ER11	3.5	3-3,5	11.6	18
82.811.0400	ER11	4	3,5-4	11.6	18

Ref.	Type	d2	Ø	d1	l1
82.811.0450	ER11	4.5	4-4,5	11.6	18
82.811.0500	ER11	5	4,5-5	11.6	18
82.811.0550	ER11	5.5	5,5-5	11.6	18
82.811.0600	ER11	6	6-5,5	11.6	18
82.811.0650	ER11	6.5	6-6,5	11.6	18
82.811.0700	ER11	7	7-6,5	11.6	18

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8

› 82.816 Phantom

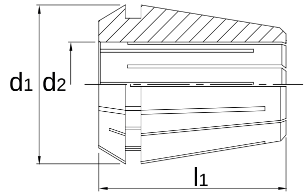


NL **Spantang ER 16 426E, standaard, 15 µm**
FR **Pince ER 16 426E, standard, 15 µm**
ES **Pinza ER 16 426E, estándar, 15 µm**
DE **Spannzange ER 16 426E, standard, 15 µm**
EN **Collet ER 16 426E, standard, 15 µm**

ER-16 | DIN 6499-B | 0,015

Ref.	Type	d2	Ø	d1	l1
82.816.0100	ER16	1	1-0,5	17	27
82.816.0150	ER16	1.5	1,5-1	17	27
82.816.0200	ER16	2	2-1,5	17	27
82.816.0250	ER16	2.5	2-2,5	17	27
82.816.0300	ER16	3	2-3	17	27
82.816.0400	ER16	4	3-4	17	27
82.816.0500	ER16	5	5-4	17	27
82.816.0600	ER16	6	6-5	17	27
82.816.0700	ER16	7	7-6	17	27
82.816.0800	ER16	8	8-7	17	27
82.816.0900	ER16	9	9-8	17	27
82.816.1000	ER16	10	9-10	17	27
82.816.1200	ER16	12	12-11	17	27

› 82.817 Phantom



NL **Spantang ER 16 426E, Ultra precies, 5 µm**
FR **Pince ER 16 426E, Ultra précis, 5 µm**
ES **Pinza ER 16 426E, Ultrapreciso, 5 µm**
DE **Spannzange ER 16 426E, Ultrapräzise, 5 µm**
EN **Collet ER 16 426E, Ultra precise, 5 µm**

ER-16 | DIN 6499-B | 0,005

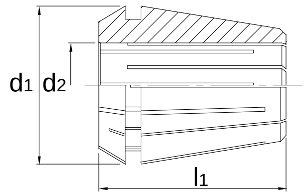
Ref.	Type	d2	Ø	d1	l1
82.817.0100	ER16	1	1-0,5	17	27
82.817.0150	ER16	1.5	1,5-1	17	27
82.817.0200	ER16	2	2-1,5	17	27
82.817.0300	ER16	3	3-2,5	17	27
82.817.0400	ER16	4	4-3,5	17	27
82.817.0500	ER16	5	5-4,5	17	27
82.817.0600	ER16	6	6-5,5	17	27
82.817.0700	ER16	7	7-6,5	17	27
82.817.0800	ER16	8	8-7,5	17	27
82.817.0900	ER16	9	9-8,5	17	27
82.817.1000	ER16	10	10-9,5	17	27

NL Keuzehulp spangtangen
FR Pinces ER Phantom selon DIN 6499 B / ISO 15488 B
ES Ayuda para la selección de pinzas
DE Auswahlhilfe Spannzange
EN Selection guide for collets

Read me

www.phantom.eu

› 82.820 Phantom

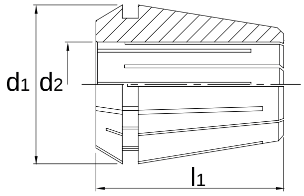


NL **Spantang ER 20 428E, standaard, 15 µm**
FR **Pince ER 20 428E, standard, 15 µm**
ES **Pinza ER 20 428E, estándar, 15 µm**
DE **Spannzange ER 20 428E, standard, 15 µm**
EN **Collet ER 20 428E, standard, 15 µm**

ER-20 | DIN 6499-B | 0,015

Ref.	Type	d2	Ø	d1	l1
82.820.0100	ER20	1	1-0,5	21	31
82.820.0150	ER20	1.5	1,5-1	21	31
82.820.0200	ER20	2	2-1,5	21	31
82.820.0250	ER20	2.5	2-2,5	21	31
82.820.0300	ER20	3	2-3	21	31
82.820.0400	ER20	4	3-4	21	31
82.820.0500	ER20	5	5-4	21	31
82.820.0600	ER20	6	6-5	21	31
82.820.0700	ER20	7	7-6	21	31
82.820.0800	ER20	8	8-7	21	31
82.820.0900	ER20	9	9-8	21	31
82.820.1000	ER20	10	9-10	21	31
82.820.1100	ER20	11	11-10	21	31
82.820.1200	ER20	12	12-11	21	31
82.820.1300	ER20	13	13-12	21	31

› 82.825 Phantom



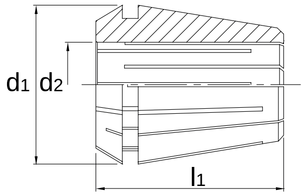
NL **Spantang ER 25 430E, standaard, 15 µm**
FR **Pince ER 25 430E, standard, 15 µm**
ES **Pinza ER 25 430E, estándar, 15 µm**
DE **Spannzange ER 25 430E, standard, 15 µm**
EN **Collet ER 25 430E, standard, 15 µm**

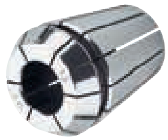
ER-25 | DIN 6499-B | 0,015

Ref.	Type	d2	ø	d1	l1
82.825.0100	ER25	1	1-0,5	26	35
82.825.0150	ER25	1.5	1,5-1	26	35
82.825.0200	ER25	2	2-1,5	26	35
82.825.0250	ER25	2.5	2-2,5	26	35
82.825.0300	ER25	3	2-3	26	35
82.825.0400	ER25	4	3-4	26	35
82.825.0500	ER25	5	5-4	26	35
82.825.0600	ER25	6	6-5	26	35
82.825.0700	ER25	7	7-6	26	35
82.825.0800	ER25	8	8-7	26	35
82.825.0900	ER25	9	9-8	26	35

Ref.	Type	d2	ø	d1	l1
82.825.1000	ER25	10	9-10	26	35
82.825.1100	ER25	11	11-10	26	35
82.825.1200	ER25	12	12-11	26	35
82.825.1300	ER25	13	13-12	26	35
82.825.1400	ER25	14	14-13	26	35
82.825.1500	ER25	15	15-14	26	35
82.825.1600	ER25	16	16-15	26	35
82.825.1700	ER25	17	17-16	26	35
82.825.1800	ER25	18	18-17	26	35
82.825.1900	ER25	19	19-18	26	35
82.825.2000	ER25	20	20-19	26	35

› 82.826 Phantom





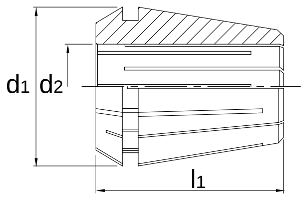
NL **Spantang ER 25 430E, Ultra precies, 5 µm**
FR **Pince ER 25 430E, Ultra précis, 5 µm**
ES **Pinza ER 25 430E, Ultrapreciso, 5 µm**
DE **Spannzange ER 25 430E, Ultrapräzise, 5 µm**
EN **Collet ER 25 430E, Ultra precise, 5 µm**

ER-25 | DIN 6499-B | 0,005

Ref.	Type	d2	ø	d1	l1
82.826.0100	ER25	1	1-0,5	26	35
82.826.0150	ER25	1.5	1,5-1	26	35
82.826.0200	ER25	2	2-1,5	26	35
82.826.0300	ER25	3	3-2,5	26	35
82.826.0400	ER25	4	4-3,5	26	35
82.826.0500	ER25	5	5-4,5	26	35
82.826.0600	ER25	6	6-5,5	26	35
82.826.0700	ER25	7	7-6,5	26	35
82.826.0800	ER25	8	8-7,5	26	35

Ref.	Type	d2	ø	d1	l1
82.826.0900	ER25	9	9-8,5	26	35
82.826.1000	ER25	10	10-9,5	26	35
82.826.1100	ER25	11	11-10,5	26	35
82.826.1200	ER25	12	12-11,5	26	35
82.826.1300	ER25	13	13-12,5	26	35
82.826.1400	ER25	14	14-13,5	26	35
82.826.1500	ER25	15	15-14,5	26	35
82.826.1600	ER25	16	16-15,5	26	35

› 82.832 Phantom



NL **Spantang ER 32 470E, standaard, 15 µm**
FR **Pince ER 32 470E, standard, 15 µm**
ES **Pinza ER 32 470E, estándar, 15 µm**
DE **Spannzange ER 32 470E, standard, 15 µm**
EN **Collet ER 32 470E, standard, 15 µm**

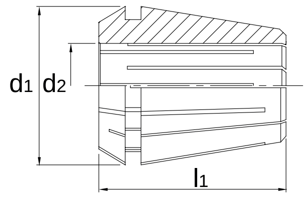
ER-32 | DIN 6499-B | 0,015

Ref.	Type	d2	ø	d1	l1
82.832.0200	ER32	2	2-1,5	33	40
82.832.0300	ER32	3	2-3	33	40
82.832.0400	ER32	4	3-4	33	40
82.832.0500	ER32	5	5-4	33	40
82.832.0600	ER32	6	6-5	33	40
82.832.0700	ER32	7	7-6	33	40
82.832.0800	ER32	8	8-7	33	40
82.832.0900	ER32	9	9-8	33	40
82.832.1000	ER32	10	9-10	33	40
82.832.1100	ER32	11	11-10	33	40

Ref.	Type	d2	ø	d1	l1
82.832.1200	ER32	12	12-11	33	40
82.832.1300	ER32	13	13-12	33	40
82.832.1400	ER32	14	14-13	33	40
82.832.1500	ER32	15	15-14	33	40
82.832.1600	ER32	16	16-15	33	40
82.832.1700	ER32	17	17-16	33	40
82.832.1800	ER32	18	18-17	33	40
82.832.1900	ER32	19	19-18	33	40
82.832.2000	ER32	20	20-19	33	40

› 82.833 Phantom

NL **Spantang ER 32 470E, Ultra precies, 5 µm**
FR **Pince ER 32 470E, Ultra précis, 5 µm**
ES **Pinza ER 32 470E, Ultrapreciso, 5 µm**
DE **Spannzange ER 32 470E, Ultrapräzise, 5 µm**
EN **Collet ER 32 470E, Ultra precise, 5 µm**

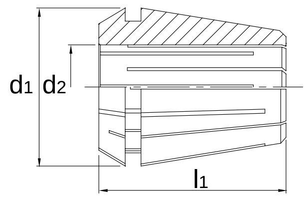


ER-32 | DIN 6499-B | 0,005

Ref.	Type	d2	Ø	d1	l1
82.833.0200	ER32	2	2-1,5	33	40
82.833.0300	ER32	3	3-2,5	33	40
82.833.0400	ER32	4	4-3,5	33	40
82.833.0500	ER32	5	5-4,5	33	40
82.833.0600	ER32	6	6-5,5	33	40
82.833.0700	ER32	7	7-6,5	33	40
82.833.0800	ER32	8	8-7,5	33	40
82.833.0900	ER32	9	9-8,5	33	40
82.833.1000	ER32	10	10-9,5	33	40
82.833.1100	ER32	11	11-10,5	33	40
82.833.1200	ER32	12	12-11,5	33	40
82.833.1300	ER32	13	13-12,5	33	40
82.833.1400	ER32	14	14-13,5	33	40
82.833.1500	ER32	15	15-14,5	33	40
82.833.1600	ER32	16	16-15,5	33	40
82.833.1700	ER32	17	17-16,5	33	40
82.833.1800	ER32	18	18-17,5	33	40
82.833.1900	ER32	19	19-18,5	33	40
82.833.2000	ER32	20	20-19,5	33	40

› 82.840 Phantom

NL **Spantang ER 40 472E, standaard, 15 µm**
FR **Pince ER 40 472E, standard, 15 µm**
ES **Pinza ER 40 472E, estándar, 15 µm**
DE **Spannzange ER 40 472E, standard, 15 µm**
EN **Collet ER 40 472E, standard, 15 µm**

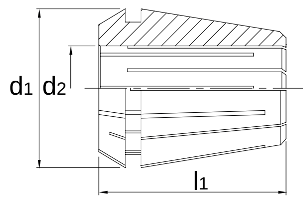


ER-40 | DIN 6499-B | 0,015

Ref.	Type	d2	Ø	d1	l1
82.840.0300	ER40	3	2-3	41	46
82.840.0400	ER40	4	3-4	41	46
82.840.0500	ER40	5	5-4	41	46
82.840.0600	ER40	6	6-5	41	46
82.840.0700	ER40	7	7-6	41	46
82.840.0800	ER40	8	8-7	41	46
82.840.0900	ER40	9	9-8	41	46
82.840.1000	ER40	10	9-10	41	46
82.840.1100	ER40	11	11-10	41	46
82.840.1200	ER40	12	12-11	41	46
82.840.1300	ER40	13	13-12	41	46
82.840.1400	ER40	14	14-13	41	46
82.840.1500	ER40	15	15-14	41	46
82.840.1600	ER40	16	16-15	41	46
82.840.1700	ER40	17	17-16	41	46
82.840.1800	ER40	18	18-17	41	46
82.840.1900	ER40	19	19-18	41	46
82.840.2000	ER40	20	20-19	41	46
82.840.2100	ER40	21	21-20	41	46
82.840.2200	ER40	22	22-21	41	46
82.840.2300	ER40	23	23-22	41	46
82.840.2400	ER40	24	24-23	41	46
82.840.2500	ER40	25	25-24	41	46
82.840.2600	ER40	26	26-25	41	46
82.840.2700	ER40	27	27-26	41	46
82.840.2800	ER40	28	28-27	41	46
82.840.2900	ER40	29	29-28	41	46
82.840.3000	ER40	30	30-29	41	46

› 82.841 Phantom

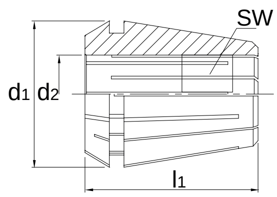
NL **Spantang ER 40 472E, Ultra precies, 5 µm**
FR **Pince ER 40 472E, Ultra précis, 5 µm**
ES **Pinza ER 40 472E, Ultrapreciso, 5 µm**
DE **Spannzange ER 40 472E, Ultrapräzise, 5 µm**
EN **Collet ER 40 472E, Ultra precise, 5 µm**



ER-40 | DIN 6499-B | 0,005

Ref.	Type	d2	Ø	d1	l1
82.841.0300	ER40	3	3-2,5	41	46
82.841.0400	ER40	4	4-3,5	41	46
82.841.0500	ER40	5	5-4,5	41	46
82.841.0600	ER40	6	6-5,5	41	46
82.841.0700	ER40	7	7-6,5	41	46
82.841.0800	ER40	8	8-7,5	41	46
82.841.0900	ER40	9	9-8,5	41	46
82.841.1000	ER40	10	10-9,5	41	46
82.841.1100	ER40	11	11-10,5	41	46
82.841.1200	ER40	12	12-11,5	41	46
82.841.1300	ER40	13	13-12,5	41	46
82.841.1400	ER40	14	14-13,5	41	46
82.841.1500	ER40	15	15-14,5	41	46
82.841.1600	ER40	16	16-15,5	41	46
82.841.1700	ER40	17	17-16,5	41	46
82.841.1800	ER40	18	18-17,5	41	46
82.841.1900	ER40	19	19-18,5	41	46
82.841.2000	ER40	20	20-19,5	41	46
82.841.2100	ER40	21	21-20,5	41	46
82.841.2200	ER40	22	22-21,5	41	46
82.841.2300	ER40	23	23-22,5	41	46
82.841.2400	ER40	24	24-23,5	41	46
82.841.2500	ER40	25	25-24,5	41	46
82.841.2600	ER40	26	26-25,5	41	46
82.841.2700	ER40	27	27-26,5	41	46
82.841.2800	ER40	28	28-27,5	41	46
82.841.2900	ER40	29	29-28,5	41	46
82.841.3000	ER40	30	30-29,5	41	46

› 82.880 *Phantom*

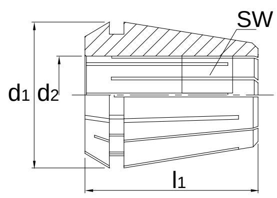


NL **Spantang ER 16G 426G, voor tappen, 15 µm**
FR **Pince ER 16G 426G, pour tarauds, 15 µm**
ES **Pinza ER 16G 426G, para machos, 15 µm**
DE **Spannzange ER 16G 426G, für Maschinengewindebohrer, 15 µm**
EN **Collet ER 16G 426G, for taps, 15 µm**

ER-16 | DIN 6499 | 0,015

Ref.	Type	d2	sw	d1	l1
82.880.0350	ER16G	3.5	2.7	17	27
82.880.0400	ER16G	4	3	17	27
82.880.0450	ER16G	4.5	3.4	17	27
82.880.0500	ER16G	5	4	17	27
82.880.0600	ER16G	6	4.9	17	27
82.880.0630	ER16G	6.3	5	17	27
82.880.0700	ER16G	7	5.5	17	27
82.880.0800	ER16G	8	6.2	17	27
82.880.0900	ER16G	9	7.1	17	27
82.880.1000	ER16G	10	8	17	27

› 82.885 *Phantom*

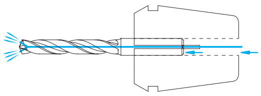


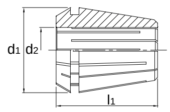
NL **Spantang ER 25G 430G, voor tappen, 15 µm**
FR **Pince ER 25G 430G, pour tarauds, 15 µm**
ES **Pinza ER 25G 430G, para machos, 15 µm**
DE **Spannzange ER 25G 430G, für Maschinengewindebohrer, 15 µm**
EN **Collet ER 25G 430G, for taps, 15 µm**

ER-25 | DIN 6499 | 0,015

Ref.	Type	d2	sw	d1	l1
82.885.0350	ER25G	3.5	2.7	26	35
82.885.0400	ER25G	4	3	26	35
82.885.0450	ER25G	4.5	3.4	26	35
82.885.0500	ER25G	5	4	26	35
82.885.0550	ER25G	5.5	4.3	26	35
82.885.0600	ER25G	6	4.9	26	35
82.885.0630	ER25G	6.3	5	26	35
82.885.0700	ER25G	7	5.5	26	35
82.885.0800	ER25G	8	6.2	26	35
82.885.0900	ER25G	9	7	26	35
82.885.1000	ER25G	10	8	26	35
82.885.1100	ER25G	11	9	26	35
82.885.1120	ER25G	11.2	9	26	35
82.885.1200	ER25G	12	9	26	35

› 82.916 *Phantom*



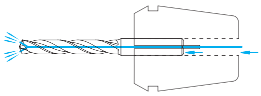


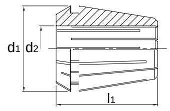
NL **Spantang ER 16 425E, rubber afgedicht, 8 µm**
FR **Pince ER 16 425E, caoutchouc scellé, 8 µm**
ES **Pinza ER 16 425E, sellado de goma, 8 µm**
DE **Spannzange ER 16 425E, Gummi abgedichtet, 8 µm**
EN **Collet ER 16 425E, rubber sealed, 8 µm**

ER-16 | DIN 6499 | 0,008 | 40 BAR

Ref.	Type	d2	Ø	d1	l1
82.916.0300	ER16	3	3h10	17	27
82.916.0400	ER16	4	4h10	17	27
82.916.0600	ER16	6	6h10	17	27
82.916.0800	ER16	8	8h10	17	27
82.916.1000	ER16	10	10h10	17	27

› 82.917 *Phantom*





NL **Spantang ER 16 425E, staal afgedicht, 8 µm**
FR **Pince ER 16 425E, acier scellé, 8 µm**
ES **Pinza ER 16 425E, acero sellado, 8 µm**
DE **Spannzange ER 16 425E, Stahl versiegelt, 8 µm**
EN **Collet ER 16 425E, steel sealed, 8 µm**

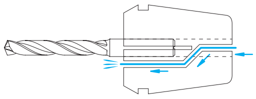
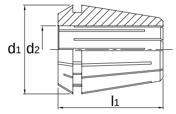
ER-16 | DIN 6499 | 0,008 | 120 BAR

Ref.	Type	d2	Ø	d1	l1
82.917.0300	ER16	3	3h10	17	27
82.917.0400	ER16	4	4h10	17	27
82.917.0600	ER16	6	6h10	17	27
82.917.0800	ER16	8	8h10	17	27
82.917.1000	ER16	10	10h10	17	27

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8

1 SC | 1 HSS(-E) | 2 | 3 SC | 3 HSS-E | 4 | 5 | 6 | 7 | 8

› 82.918 Phantom

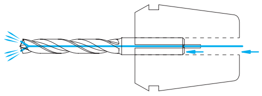
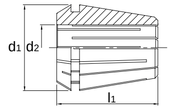



NL **Spantang ER 16 425E, Coolant Jet, 8 µm**
FR **Pince ER 16 425E, Coolant Jet, 8 µm**
ES **Pinza ER 16 425E, Coolant Jet, 8 µm**
DE **Spannzange ER 16 425E, Coolant Jet, 8 µm**
EN **Collet ER 16 425E, Coolant Jet, 8 µm**

ER-16 | DIN 6499 | 0,008 | 40 BAR

Ref.	Type	d2	Ø	d1	l1
82.918.0300	ER16	3	3h10	17	27
82.918.0400	ER16	4	4h10	17	27
82.918.0500	ER16	5	5h10	17	27
82.918.0600	ER16	6	6h10	17	27
82.918.0700	ER16	7	7h10	17	27

› 82.925 Phantom

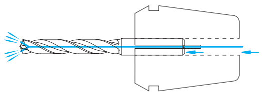
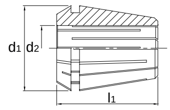



NL **Spantang ER 25 429E, rubber afgedicht, 8 µm**
FR **Pince ER 25 429E, caoutchouc scellé, 8 µm**
ES **Pinza ER 25 429E, sellado de goma, 8 µm**
DE **Spannzange ER 25 429E, Gummi abgedichtet, 8 µm**
EN **Collet ER 25 429E, rubber sealed, 8 µm**

ER-25 | DIN 6499 | 0,008 | 40 BAR

Ref.	Type	d2	Ø	d1	l1
82.925.0300	ER25	3	3h10	26	35
82.925.0400	ER25	4	4h10	26	35
82.925.0600	ER25	6	6h10	26	35
82.925.0800	ER25	8	8h10	26	35
82.925.1000	ER25	10	10h10	26	35
82.925.1200	ER25	12	12h10	26	35
82.925.1400	ER25	14	14h10	26	35
82.925.1600	ER25	16	16h10	26	35

› 82.926 Phantom

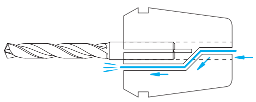
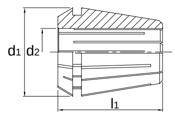



NL **Spantang ER 25 429E, staal afgedicht, 8 µm**
FR **Pince ER 25 429E, acier scellé, 8 µm**
ES **Pinza ER 25 429E, acero sellado, 8 µm**
DE **Spannzange ER 25 429E, Stahl versiegelt, 8 µm**
EN **Collet ER 25 429E, steel sealed, 8 µm**

ER-25 | DIN 6499 | 0,008 | 120 BAR

Ref.	Type	d2	Ø	d1	l1
82.926.0300	ER25	3	3h10	26	35
82.926.0400	ER25	4	4h10	26	35
82.926.0600	ER25	6	6h10	26	35
82.926.0800	ER25	8	8h10	26	35
82.926.1000	ER25	10	10h10	26	35
82.926.1200	ER25	12	12h10	26	35
82.926.1400	ER25	14	14h10	26	35
82.926.1600	ER25	16	16h10	26	35

› 82.927 Phantom

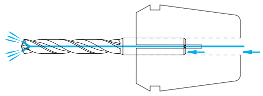
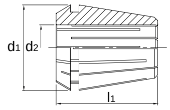



NL **Spantang ER 25 429E, Coolant Jet, 8 µm**
FR **Pince ER 25 429E, Coolant Jet, 8 µm**
ES **Pinza ER 25 429E, Coolant Jet, 8 µm**
DE **Spannzange ER 25 429E, Coolant Jet, 8 µm**
EN **Collet ER 25 429E, Coolant Jet, 8 µm**

ER-25 | DIN 6499 | 0,008 | 40 BAR

Ref.	Type	d2	Ø	d1	l1
82.927.0300	ER25	3	3h10	26	35
82.927.0400	ER25	4	4h10	26	35
82.927.0500	ER25	5	5h10	26	35
82.927.0600	ER25	6	6h10	26	35
82.927.0700	ER25	7	7h10	26	35
82.927.0800	ER25	8	8h10	26	35
82.927.0900	ER25	9	9h10	26	35
82.927.1000	ER25	10	10h10	26	35
82.927.1100	ER25	11	11h10	26	35
82.927.1200	ER25	12	12h10	26	35
82.927.1300	ER25	13	13h10	26	35
82.927.1400	ER25	14	14h10	26	35

› 82.932 Phantom

NL Spantang ER 32 469E, rubber afgedicht, 8 µm
FR Pince ER 32 469E, caoutchouc scellé, 8 µm
ES Pinza ER 32 469E, sellado de goma, 8 µm
DE Spannzange ER 32 469E, Gummi abgedichtet, 8 µm
EN Collet ER 32 469E, rubber sealed, 8 µm

ER-32 | DIN 6499 | 0,008 | 40 BAR

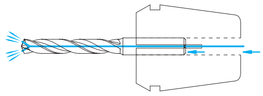
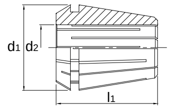
Ref.	Type	d2	Ø	d1	l1	Ref.	Type	d2	Ø	d1	l1
82.932.0300	ER32	3	3h10	33	40	82.932.1200	ER32	12	12h10	33	40
82.932.0400	ER32	4	4h10	33	40	82.932.1400	ER32	14	14h10	33	40
82.932.0600	ER32	6	6h10	33	40	82.932.1600	ER32	16	16h10	33	40
82.932.0800	ER32	8	8h10	33	40	82.932.1800	ER32	18	18h10	33	40
82.932.1000	ER32	10	10h10	33	40	82.932.2000	ER32	20	20h10	33	40

NL Keuzehulp spangtangen
FR Pinces ER Phantom selon DIN 6499 B / ISO 15488 B
ES Ayuda para la selección de pinzas
DE Auswahlhilfe Spannzange
EN Selection guide for collets

Read me

www.phantom.eu

› 82.933 Phantom

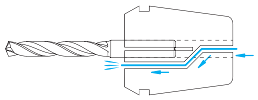
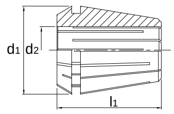



NL Spantang ER 32 469E, staal afgedicht, 8 µm
FR Pince ER 32 469E, acier scellé, 8 µm
ES Pinza ER 32 469E, acero sellado, 8 µm
DE Spannzange ER 32 469E, Stahl versiegelt, 8 µm
EN Collet ER 32 469E, steel sealed, 8 µm

ER-32 | DIN 6499 | 0,008 | 120 BAR

Ref.	Type	d2	Ø	d1	l1	Ref.	Type	d2	Ø	d1	l1
82.933.0300	ER32	3	3h10	33	40	82.933.1200	ER32	12	12h10	33	40
82.933.0400	ER32	4	4h10	33	40	82.933.1400	ER32	14	14h10	33	40
82.933.0600	ER32	6	6h10	33	40	82.933.1600	ER32	16	16h10	33	40
82.933.0800	ER32	8	8h10	33	40	82.933.1800	ER32	18	18h10	33	40
82.933.1000	ER32	10	10h10	33	40	82.933.2000	ER32	20	20h10	33	40

› 82.934 Phantom

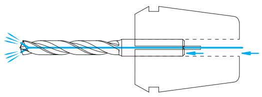
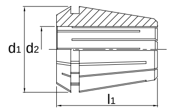
NL Spantang ER 32 469E, Coolant Jet, 8 µm
FR Pince ER 32 469E, Coolant Jet, 8 µm
ES Pinza ER 32 469E, Coolant Jet, 8 µm
DE Spannzange ER 32 469E, Coolant Jet, 8 µm
EN Collet ER 32 469E, Coolant Jet, 8 µm

ER-32 | DIN 6499 | 0,008 | 40 BAR

Ref.	Type	d2	Ø	d1	l1	Ref.	Type	d2	Ø	d1	l1
82.934.0300	ER32	3	3h10	33	40	82.934.1200	ER32	12	12h10	33	40
82.934.0400	ER32	4	4h10	33	40	82.934.1300	ER32	13	13h10	33	40
82.934.0500	ER32	5	5h10	33	40	82.934.1400	ER32	14	14h10	33	40
82.934.0600	ER32	6	6h10	33	40	82.934.1500	ER32	15	15h10	33	40
82.934.0700	ER32	7	7h10	33	40	82.934.1600	ER32	16	16h10	33	40
82.934.0800	ER32	8	8h10	33	40	82.934.1700	ER32	17	17h10	33	40
82.934.0900	ER32	9	9h10	33	40	82.934.1800	ER32	18	18h10	33	40
82.934.1000	ER32	10	10h10	33	40	82.934.1900	ER32	19	19h10	33	40
82.934.1100	ER32	11	11h10	33	40	82.934.2000	ER32	20	20h10	33	40

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8

› 82.940 Phantom

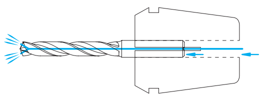
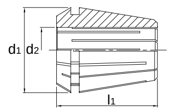



NL **Spantang ER 40 471E, rubber afgedicht, 8 µm**
FR **Pince ER 40 471E, caoutchouc scellé, 8 µm**
ES **Pinza ER 40 471E, sellado de goma, 8 µm**
DE **Spannzange ER 40 471E, Gummi abgedichtet, 8 µm**
EN **Collet ER 40 471E, rubber sealed, 8 µm**

ER-40 | DIN 6499 | 0,008 | 40 BAR

Ref.	Type	d2	Ø	d1	l1
82.940.0300	ER40	3	3h10	41	46
82.940.0400	ER40	4	4h10	41	46
82.940.0600	ER40	6	6h10	41	46
82.940.0800	ER40	8	8h10	41	46
82.940.1000	ER40	10	10h10	41	46
82.940.1200	ER40	12	12h10	41	46
82.940.1400	ER40	14	14h10	41	46
82.940.1600	ER40	16	16h10	41	46
82.940.1800	ER40	18	18h10	41	46
82.940.2000	ER40	20	20h10	41	46

› 82.941 Phantom

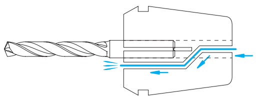
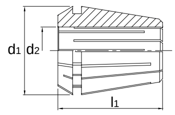



NL **Spantang ER 40 471E, staal afgedicht, 8 µm**
FR **Pince ER 40 471E, acier scellé, 8 µm**
ES **Pinza ER 40 471E, acero sellado, 8 µm**
DE **Spannzange ER 40 471E, Stahl versiegelt, 8 µm**
EN **Collet ER 40 471E, steel sealed, 8 µm**

ER-40 | DIN 6499 | 0,008 | 120 BAR

Ref.	Type	d2	Ø	d1	l1
82.941.0300	ER40	3	3h10	41	46
82.941.0400	ER40	4	4h10	41	46
82.941.0600	ER40	6	6h10	41	46
82.941.0800	ER40	8	8h10	41	46
82.941.1000	ER40	10	10h10	41	46
82.941.1200	ER40	12	12h10	41	46
82.941.1400	ER40	14	14h10	41	46
82.941.1600	ER40	16	16h10	41	46
82.941.1800	ER40	18	18h10	41	46
82.941.2000	ER40	20	20h10	41	46

› 82.942 Phantom

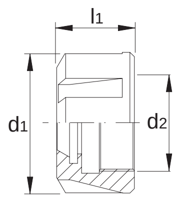



NL **Spantang ER 40 471E, Coolant Jet, 8 µm**
FR **Pince ER 40 471E, Coolant Jet, 8 µm**
ES **Pinza ER 40 471E, Coolant Jet, 8 µm**
DE **Spannzange ER 40 471E, Coolant Jet, 8 µm**
EN **Collet ER 40 471E, Coolant Jet, 8 µm**

ER-40 | DIN 6499 | 0,008 | 40 BAR

Ref.	Type	d2	Ø	d1	l1
82.942.0400	ER40	4	4h10	41	46
82.942.0500	ER40	5	5h10	41	46
82.942.0600	ER40	6	6h10	41	46
82.942.0700	ER40	7	7h10	41	46
82.942.0800	ER40	8	8h10	41	46
82.942.0900	ER40	9	9h10	41	46
82.942.1000	ER40	10	10h10	41	46
82.942.1100	ER40	11	11h10	41	46
82.942.1200	ER40	12	12h10	41	46
82.942.1300	ER40	13	13h10	41	46
82.942.1400	ER40	14	14h10	41	46
82.942.1500	ER40	15	15h10	41	46
82.942.1600	ER40	16	16h10	41	46
82.942.1700	ER40	17	17h10	41	46
82.942.1800	ER40	18	18h10	41	46
82.942.1900	ER40	19	19h10	41	46
82.942.2000	ER40	20	20h10	41	46
82.942.2100	ER40	21	21h10	41	46
82.942.2200	ER40	22	22h10	41	46
82.942.2300	ER40	23	23h10	41	46
82.942.2400	ER40	24	24h10	41	46
82.942.2500	ER40	25	25h10	41	46

› 82.960 Phantom



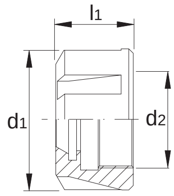
NL **Moer voor Spantanghouder**
FR **Ecrou pour Mandrin porte-pinces**
ES **Tuerca para Portapinzas**
DE **Muttern für Spannzangenfutter**
EN **Nut for Collet Chuck**

ER | DIN 6499

Ref.	Type	d1	d2	l1
82.960.1600	ER16	32	M22x1,5	17.5
82.960.2500	ER25	42	M32x1,5	20
82.960.3200	ER32	50	M40x1,5	22.5
82.960.4000	ER40	63	M50x1,5	25.5

› 82.965 *Phantom*

NL **Mini-moer, ER**
FR **Mini-écrou, ER**
ES **Mini-tuerca, ER**
DE **Mini-spannmutter, ER**
EN **Mini-nut, ER**



ER | DIN 6499

Ref.	Type	d1	d2	l1
82.965.1100	ER11	16	M13x0,75	12
82.965.1600	ER16	22	M22x1,5	18
82.965.2000	ER20	28	M24x1	19
82.965.2500	ER25	35	M32x1,5	20

› 82.990 *Phantom*

NL **Sleutel voor Spantangmoer**
FR **Clé pour écrou de mandrins à pinces**
ES **Llave para Tuerca para portapinzas**
DE **Schlüssel für Spannzangenmuttern**
EN **Key for Collet Nut**

ER | DIN 6499

Ref.	Type
82.990.1600	ER16
82.990.2500	ER25
82.990.3200	ER32
82.990.4000	ER40

› 82.993 *Phantom*

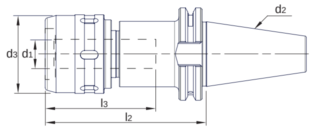
NL **Sleutel voor Spantangmoer mini, ER**
FR **Clé pour Ecrou de mandrins à pinces mini, ER**
ES **Llave para Tuerca para portapinzas mini, ER**
DE **Schlüssel für Spannzangenmuttern mini, ER**
EN **Key for Collet Nut mini, ER**

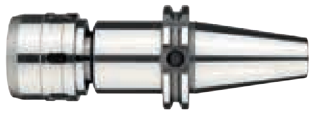
ER | DIN 6499

Ref.	Type
82.993.1100	ER11
82.993.1600	ER16
82.993.2000	ER20
82.993.2500	ER25

› 83.624 *Phantom*

NL **Krachtspan opname, ISO 7388-1 (DIN 69871)**
FR **Mandrin à grande force de serrage, ISO 7388-1 (DIN 69871)**
ES **Portaherramientas de gran apriete, ISO 7388-1 (DIN 69871)**
DE **Kraftspannfutter, ISO 7388-1 (DIN 69871)**
EN **Power chuck, ISO 7388-1 (DIN 69871)**



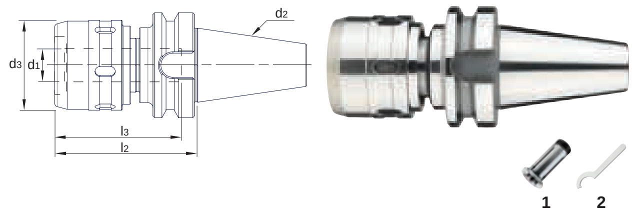


1 2

ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc $58^{\pm 2}$ | RFID | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	Ø	l2	l3	d3	M	1 excl.	2 incl.
83.624.4202	SK40	20	3-16	105	70	54	M16	83.691.2xx1	83.629.0200
83.624.4322	SK40	32	6-25	105	100	72	M16	83.691.3xx1	83.629.0320
83.624.5202	SK50	20	3-16	105	70	54	M24	83.691.2xx1	83.629.0200
83.624.5322	SK50	32	6-25	105	100	72	M24	83.691.3xx1	83.629.0320

> 83.626 Phantom

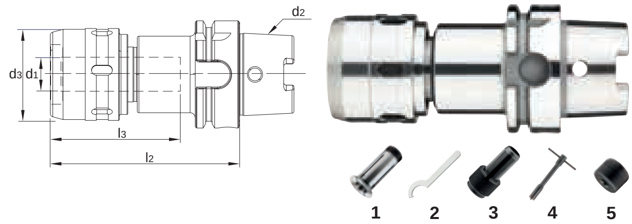


NL Krachtspan opname, ISO 7388-2 (MAS-BT)
FR Mandrin à grande force de serrage, ISO 7388-2 (MAS-BT)
ES Portaherramientas de gran apriete, ISO 7388-2 (MAS-BT)
DE Kraftspannfutter, ISO 7388-2 (MAS-BT)
EN Power chuck, ISO 7388-2 (MAS-BT)

ISO 7388-2 | JD (AD) | MAS-BT | AT3 | HRc $58^{\pm2}$ | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	Ø	l2	l3	d3	M	1 excl.	2 incl.
83.626.4201	BT40	20	3-16	80	70	54	M16	83.691.2xx1	83.629.0200
83.626.4322	BT40	32	6-25	90	100	72	M16	83.691.3xx1	83.629.0320
83.626.5202	BT50	20	3-16	105	70	54	M24	83.691.2xx1	83.629.0200
83.626.5322	BT50	32	6-25	105	100	72	M24	83.691.3xx1	83.629.0320

> 83.627 Phantom



NL Krachtspan opname, ISO 12164 (DIN 69893)
FR Mandrin à grande force de serrage, ISO 12164 (DIN 69893)
ES Portaherramientas de gran apriete, ISO 12164 (DIN 69893)
DE Kraftspannfutter, ISO 12164 (DIN 69893)
EN Power chuck, ISO 12164 (DIN 69893)

ISO 12164 | A | HSK-A | AT3 | HRc $58^{\pm2}$ | RFID | 0,005 | G6,3 20.000 RPM

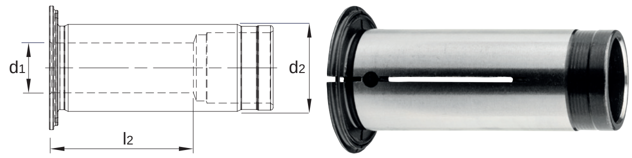
Ref.	d2	d1	Ø	l2	l3	d3	M	1 excl.	2 incl.	3 excl.	4 excl.	5 excl.
83.627.6202	HSK63A	20	3-16	105	70	54	M18X1	83.691.2xx1	83.629.0200	84.790.1800	84.791.1800	84.789.1800
83.627.6324	HSK63A	32	6-25	130	100	72	M18X1	83.691.3xx1	83.629.0320	84.790.1800	84.791.1800	84.789.1800

> 83.629 Phantom

NL Krachtspan opname, sleutel
FR Mandrin à grande force de serrage, clé
ES Portaherramientas de gran apriete, llave
DE Kraftspannfutter, Schlüssel
EN Power chuck, key

Ref.	Type	Ref.	Type
83.629.0200	20	83.629.0320	32

> 83.691 Phantom

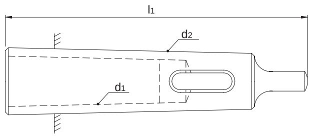


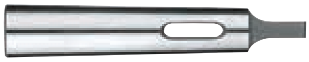
NL Reduceerhuls, voor, Krachtspan opname
FR Douille de réduction, pour, Mandrin à grande force de serrage
ES Casquillo de reducción, para, Portaherramientas de gran apriete
DE Reduzierhülsen, für, Kraftspannfutter
EN Reducing Bush, for, Power chuck

Ref.	d2	d1	l2
83.691.2061	20	6	25
83.691.2081	20	8	30
83.691.2101	20	10	33
83.691.2121	20	12	34
83.691.2141	20	14	34
83.691.2161	20	16	40
83.691.3061	32	6	25
83.691.3081	32	8	25

Ref.	d2	d1	l2
83.691.3101	32	10	33
83.691.3121	32	12	34
83.691.3141	32	14	34
83.691.3161	32	16	40
83.691.3181	32	18	40
83.691.3201	32	20	40
83.691.3251	32	25	42

› 84.100 *International Tools*



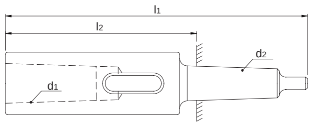


NL **ECO PRO Boorhuls (Reduceerhuls) MK x MK**
FR **Douille (de réduction) ECO PRO CM x CM**
ES **Casquillo (Casquillo de reducción) ECO PRO CM x CM**
DE **ECO PRO Bohrhülse (Reduzierhülse) MK x MK**
EN **ECO PRO Morse Taper Sleeve (Reducing Bush) MT x MT**

DIN 228-B | DIN 2185 | ECO PRO

Ref.	d2	d1	l1
84.100.0100	MK 1	MK 0	85
84.100.0201	MK 2	MK 1	92
84.100.0301	MK 3	MK 1	99
84.100.0302	MK 3	MK 2	112
84.100.0401	MK 4	MK 1	124
84.100.0402	MK 4	MK 2	124
84.100.0403	MK 4	MK 3	140
84.100.0501	MK 5	MK 1	156
84.100.0502	MK 5	MK 2	156
84.100.0503	MK 5	MK 3	156
84.100.0504	MK 5	MK 4	171
84.100.0602	MK 6	MK 2	218
84.100.0603	MK 6	MK 3	218
84.100.0604	MK 6	MK 4	218
84.100.0605	MK 6	MK 5	218

› 84.110 *International Tools*

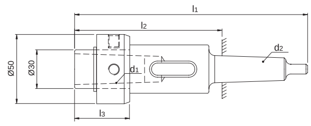


NL **ECO PRO Verlengde Boorhuls MK x MK**
FR **Douille allongée ECO PRO CM x CM**
ES **Casquillo de prolongación ECO PRO CM x CM**
DE **ECO PRO Verlängerte Bohrhülsen MK x MK**
EN **ECO PRO Extended Morse Taper Sleeve MT x MT**

DIN 228-B | DIN 2187 | ECO PRO

Ref.	d2	d1	l1	l2
84.110.0101	MK 1	MK 1	145	83
84.110.0102	MK 1	MK 2	160	91
84.110.0103	MK 1	MK 3	183	121
84.110.0201	MK 2	MK 1	160	85
84.110.0202	MK 2	MK 2	175	100
84.110.0203	MK 2	MK 3	196	112
84.110.0204	MK 2	MK 4	221	146
84.110.0301	MK 3	MK 1	175	81
84.110.0302	MK 3	MK 2	194	100
84.110.0303	MK 3	MK 3	215	121
84.110.0304	MK 3	MK 4	240	137
84.110.0305	MK 3	MK 5	275	181
84.110.0401	MK 4	MK 1	200	76
84.110.0402	MK 4	MK 2	215	97.5
84.110.0403	MK 4	MK 3	240	122.5
84.110.0404	MK 4	MK 4	265	147.5
84.110.0405	MK 4	MK 5	300	172
84.110.0502	MK 5	MK 2	247	145
84.110.0503	MK 5	MK 3	268	118.5
84.110.0504	MK 5	MK 4	300	150.5
84.110.0505	MK 5	MK 5	335	185.5

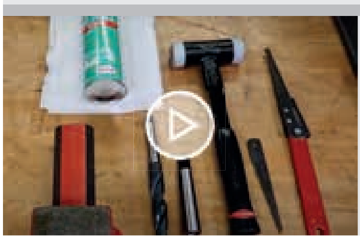
› 84.120 *International Tools*



NL **ECO PRO Boorhouder, voor boren met inwendige koeling MK x MK**
FR **Mandrin porte-forets, pour forets à lubrification interne ECO PRO CM x CM**
ES **Portabroca, para brocas con refrigeración interna ECO PRO CM x CM**
DE **ECO PRO Bohrfutter, für Bohrer mit Innenkühlung MK x MK**
EN **ECO PRO Drill Chuck, for drills with internal cooling MT x MT**

DIN 228-B | ECO PRO

Ref.	d2	d1	l1	l2	l3
84.120.0202	MK 2	MK 2	175	100	38.5
84.120.0203	MK 2	MK 3	196	121	47.5
84.120.0302	MK 3	MK 2	194	100	38.5
84.120.0303	MK 3	MK 3	216	122	47.5
84.120.0402	MK 4	MK 2	240	122.5	38.5
84.120.0403	MK 4	MK 3	240	122.5	47.5

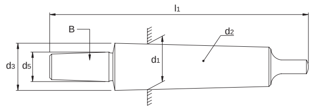


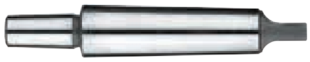
NL Monteren boor met Morse Konus in een verloophuls
FR Monter un foret cône morse dans une douille de réduction
ES Sujetar una broca Cono Morse en un casquillo de redución
DE Montieren von Morse Kegel Bohrer im Reduzierhülse
EN Mounting MT drill in adapter sleeve

Watch me

www.phantom.eu

84.170 International Tools



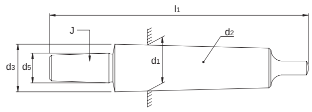


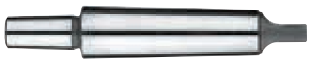
NL ECO PRO Boorhouderstift MK en B-opname DIN 238
FR Arbre de mandrin de perçage ECO PRO CM et cône B selon DIN 238
ES Espiga para portabrocas ECO PRO CM y con sujeción B DIN 238
DE ECO PRO Bohrfutterkegel MK und B-Aufnahme DIN 238
EN ECO PRO Drill Chuck Arbor MT and B Taper DIN 238

DIN 228-B | DIN 238 | ECO PRO

Ref.	d2	B	l1	d1	d5	d3
84.170.0110	MK 1	B10	86	12.065	10.095	12.22
84.170.0112	MK 1	B12	90	12.065	12.065	12.22
84.170.0116	MK 1	B16	96	12.065	15.733	12.22
84.170.0118	MK 1	B18	104	12.065	17.78	12.22
84.170.0210	MK 2	B10	105	17.78	10.095	18
84.170.0212	MK 2	B12	105	17.78	12.065	18
84.170.0216	MK 2	B16	112	17.78	15.733	18
84.170.0218	MK 2	B18	119	17.78	17.78	18
84.170.0222	MK 2	B22	128	17.78	21.793	18
84.170.0312	MK 3	B12	124	23.825	12.065	24.1
84.170.0316	MK 3	B16	130	23.825	15.733	24.1
84.170.0318	MK 3	B18	138	23.825	17.78	24.1
84.170.0322	MK 3	B22	147	23.825	21.793	24.1
84.170.0416	MK 4	B16	156	31.267	15.733	31.6
84.170.0418	MK 4	B18	164	31.267	17.78	31.6
84.170.0422	MK 4	B22	176	31.267	21.793	31.6
84.170.0516	MK 5	B16	188	44.399	15.733	44.7
84.170.0518	MK 5	B18	198	44.399	17.78	44.7
84.170.0522	MK 5	B22	207	44.399	21.793	44.7

84.171 International Tools



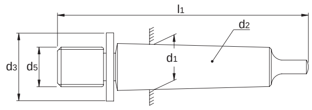


NL ECO PRO Boorhouderstift MK- en J-opname
FR Arbre de mandrin de perçage ECO PRO CM et cône J
ES Espiga para portabrocas ECO PRO CM y cono J
DE ECO PRO Bohrfutterkegel MK- und J-Aufnahme
EN ECO PRO Drill Chuck Arbor MT and J taper

DIN 228-B | ECO PRO

Ref.	d2	J	l1	d1	d5	d3
84.171.0101	MK 1	J1	83.8	12.065	9.754	12.22
84.171.0102	MK 1	J2	90.5	12.065	14.199	12.22
84.171.0103	MK 1	J3	100.5	12.065	20.599	12.22
84.171.0201	MK 2	J1	102.5	17.78	9.754	18
84.171.0202	MK 2	J2	106	17.78	14.199	18
84.171.0203	MK 2	J3	112.5	17.78	20.599	18
84.171.0206	MK 2	J6	107	17.78	17.17	18
84.171.0233	MK 2	J33	107	17.78	15.85	18
84.171.0302	MK 3	J2	127	23.825	14.199	24.1
84.171.0303	MK 3	J3	131.5	23.825	20.599	24.1
84.171.0306	MK 3	J6	129	23.825	17.17	24.1
84.171.0333	MK 3	J33	126	23.825	15.85	24.1
84.171.0403	MK 4	J3	160.5	31.267	20.599	31.6
84.171.0406	MK 4	J6	155	31.267	17.17	31.6

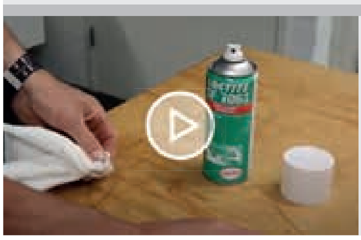
84.172 International Tools



NL ECO PRO Boorhouderstift MK en UNF-UN-M-draadopname
FR Arbre de mandrin de perçage ECO PRO CM et filetage UNF-UN-M
ES Espiga para portabrocas ECO PRO CM y sujeción con rosca UNF-UN-M
DE ECO PRO Bohrfutterkegel MK und UNF-UN-M-Gewindeaufnahme
EN ECO PRO Drill Chuck Arbor MT and UNF-UN-M-thread

DIN 228-B | ECO PRO

Ref.	d2	d5	l1	d1	d3
84.172.0212	MK 2	1/2"-20 UNF	104	17.78	18
84.172.0305	MK 3	5/8"-16 UN	122	23.825	24.1
84.172.0320	MK 3	M20	125	23.825	24.1
84.172.0420	MK 4	M20	150	31.267	31.6



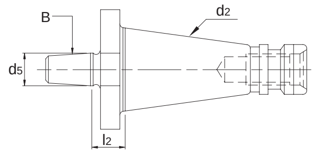
NL Montage boorhouderstift in boorhouder
FR Monter un abre de mandrin de perçage
ES Sujetar una espiga en un portabrocas
DE Montieren Bohrfutteraufnahme im Bohrfutter
EN Mounting arbor into drill chuck

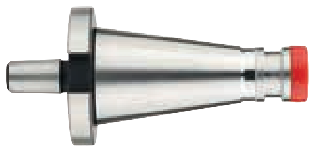
Watch me

www.phantom.eu

› 84.173 Phantom

NL Boorhouderstift, DIN 2080, B-opname DIN 238
FR Arbre de mandrin de perçage, DIN 2080, cône B selon DIN 238
ES Espiga para portabrocas, DIN 2080, con sujeción B DIN 238
DE Bohrfutterkegel, DIN 2080, B-Aufnahme DIN 238
EN Drill Chuck Arbor, DIN 2080, B Taper DIN 238



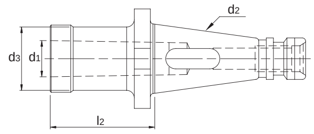


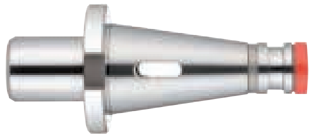
DIN 2080 | A | SK | AT3 | HRc 58±2 | DIN 238 | 0,005

Ref.	d2	B	d5	l2
84.173.3016	SK30	B16	15.733	17
84.173.4012	SK40	B12	12.065	15
84.173.4016	SK40	B16	15.733	17

› 84.203 Phantom

NL Verloophuls voor MK opname, DIN 2080
FR Adapteur pour queues cône morse, DIN 2080
ES Reductor a Morse, DIN 2080
DE Reduzierhülsen für MK Aufnahme, DIN 2080
EN Adapter for Morse Taper shanks, DIN 2080



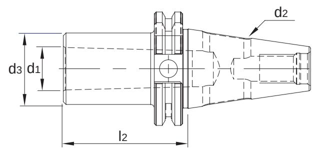


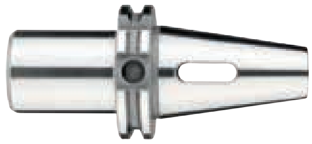
DIN 2080 | AD | SK | AT3 | HRc 58±2 | DIN 6383 | DIN 228-B | 0,005

Ref.	d2	d1	l2	d3
84.203.3001	SK30	MK 1	50	25
84.203.3002	SK30	MK 2	50	32
84.203.3003	SK30	MK 3	75	40
84.203.4001	SK40	MK 1	50	25
84.203.4002	SK40	MK 2	50	32
84.203.4003	SK40	MK 3	65	40
84.203.4004	SK40	MK 4	95	48
84.203.5001	SK50	MK 1	45	25
84.203.5002	SK50	MK 2	60	32
84.203.5003	SK50	MK 3	65	40
84.203.5004	SK50	MK 4	70	48
84.203.5005	SK50	MK 5	105	63

› 84.204 Phantom

NL Verloophuls voor MK opname, ISO 7388-1 (DIN 69871)
FR Adapteur pour queues cône morse, ISO 7388-1 (DIN 69871)
ES Reductor a Morse, ISO 7388-1 (DIN 69871)
DE Reduzierhülsen für MK Aufnahme, ISO 7388-1 (DIN 69871)
EN Adapter for Morse Taper shanks, ISO 7388-1 (DIN 69871)



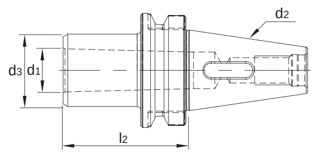


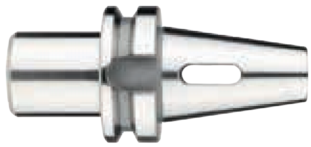
ISO 7388-1 | DIN 69871 | AD | SK | AT3 | HRc 58±2 | RFID | DIN 6383 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3
84.204.4001	SK40	MK 1	50	25
84.204.4002	SK40	MK 2	50	32
84.204.4003	SK40	MK 3	70	40
84.204.4004	SK40	MK 4	95	48
84.204.5001	SK50	MK 1	45	25
84.204.5002	SK50	MK 2	60	32
84.204.5003	SK50	MK 3	65	40
84.204.5004	SK50	MK 4	95	48
84.204.5005	SK50	MK 5	105	63

› 84.206 Phantom

NL Verloophuls voor MK opname, ISO 7388-2 (MAS-BT)
FR Adapteur pour queues cône morse, ISO 7388-2 (MAS-BT)
ES Reductor a Morse, ISO 7388-2 (MAS-BT)
DE Reduzierhülsen für MK Aufnahme, ISO 7388-2 (MAS-BT)
EN Adapter for Morse Taper shanks, ISO 7388-2 (MAS-BT)

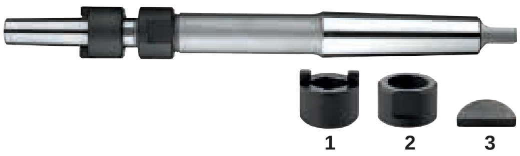


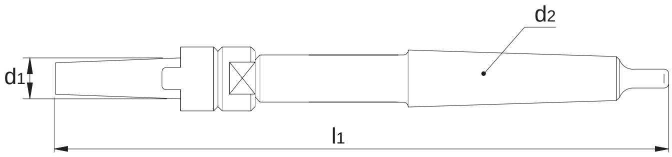


ISO 7388-2 | JD (AD) | MAS-BT | AT3 | HRc 58±2 | DIN 6383 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3
84.206.4001	BT40	MK 1	50	25
84.206.4002	BT40	MK 2	50	32
84.206.4003	BT40	MK 3	70	40
84.206.4004	BT40	MK 4	95	48
84.206.5001	BT50	MK 1	45	25
84.206.5002	BT50	MK 2	60	32
84.206.5003	BT50	MK 3	65	40
84.206.5004	BT50	MK 4	95	48
84.206.5005	BT50	MK 5	105	63

› 84.410 Phantom





NL **Opsteekhouder, voor opsteekruimers DIN 219 en opsteekopboor DIN 222, MK**
FR **Arbre de montage, pour alésoirs creux DIN 219 et forets creux DIN 222, CM**
ES **Porta-escariadores, para escariadores huecos DIN 219 y brocas escariadores huecos DIN 222, CM**
DE **Aufsteckhalter, für Aufsteckreibahlen DIN 219 und Aufsteckaufbohrer DIN 222, MK**
EN **Shell Reamer Arbor, for Shell Reamers DIN 219 and Shell Core Drills DIN 222, MT**

DIN 228-B | DIN 217

Ref.	Nr.	d1	l1	d2	Ø 51.650	Ø 13.350	1 incl.	2 incl.	3 excl.
84.410.0200	2	13	250	MK 3	25-30	-	84.411.0200	84.412.0200	84.413.0200
84.410.0300	3	16	261	MK 3	31-35	36-45	84.411.0300	84.412.0300	84.413.0300
84.410.0400	4	19	298	MK 4	36-42	46-52	84.411.0400	84.412.0400	84.413.0400
84.410.0500	5	22	312	MK 4	43-50	-	84.411.0500	84.412.0500	84.413.0500
84.410.0600	6	27	359	MK 5	51-60	-	84.411.0600	84.412.0600	84.413.0600
84.410.0700	7	32	376	MK 5	61-71	-	84.411.0700	84.412.0700	84.413.0700
84.410.0800	8	40	396	MK 5	72-85	-	84.411.0800	84.412.0800	84.413.0800
84.410.0900	9	50	416	MK 5	86-100	-	84.411.0900	84.412.0900	84.413.0900

› 84.411 Phantom

NL **Meeneemring voor Opsteekhouder**
FR **Bague de déblocage pour arbre de montage**
ES **Arandela de arrastre para porta-escariadores**
DE **Mitnehmerringe für Aufsteckhalter**
EN **Driver for Shell Reamer Arbor**

Ref.	Nr.	Ref.	Nr.
84.411.0200	2	84.411.0600	6
84.411.0300	3	84.411.0700	7
84.411.0400	4	84.411.0800	8
84.411.0500	5	84.411.0900	9

› 84.412 Phantom

NL **Afdrukmoer voor Opsteekhouder**
FR **Écrou de déblocage pour arbre de montage**
ES **Tuerca de extracción para porta-escariadores**
DE **Abdrückmutter für Aufsteckhalter**
EN **Draw-off Nut for Shell Reamer Arbor**

Ref.	Nr.	Ref.	Nr.
84.412.0200	2	84.412.0600	6
84.412.0300	3	84.412.0700	7
84.412.0400	4	84.412.0800	8
84.412.0500	5	84.412.0900	9

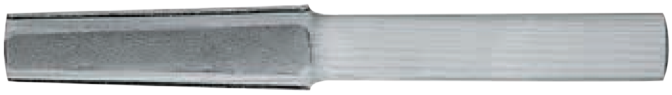
› 84.413 Phantom

NL **Spie voor Opsteekhouder**
FR **Clavette demi-ronde pour arbre de montage**
ES **Chaveta para porta-escariadores**
DE **Keil für Aufsteckhalter**
EN **Washer for Shell Reamer Arbor**

Ref.	Nr.	Ref.	Nr.
84.413.0200	2	84.413.0600	6
84.413.0300	3	84.413.0700	7
84.413.0400	4	84.413.0800	8
84.413.0500	5	84.413.0900	9

› 84.600 International Tools

NL ECO PRO Conusreiniger
FR Nettoie-cônes ECO PRO
ES Limpiaconos ECO PRO
DE ECO PRO Kegelreiniger
EN ECO PRO Cleaner for Collet Chucks

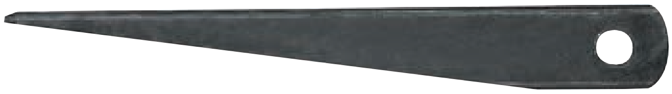


ECO PRO

Ref.	d2	Ref.	d2
84.600.0100	MK 1	84.600.0500	MK 5
84.600.0200	MK 2	84.600.3000	SK/BT 30
84.600.0300	MK 3	84.600.4000	SK/BT 40
84.600.0400	MK 4	84.600.5000	SK/BT 50

› 84.610 International Tools

NL ECO PRO Conusuitdrijver
FR Chasse-cônes ECO PRO
ES Cuña expulsora ECO PRO
DE ECO PRO Kegelaustreiber
EN ECO PRO Drill Drift



DIN 317 ECO PRO

Ref.	Nr.	Ø	l1	Ref.	Nr.	Ø	l1
84.610.0100	1	MK1+2	140	84.610.0400	4	MK4	225
84.610.0300	3	MK3	190	84.610.0500	5	MK5+6	265

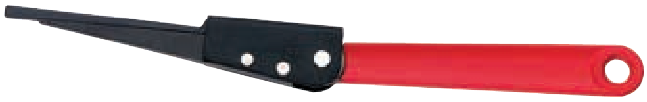
NL Morse Konus met lip uitdrijven met spie
FR Expulser un cône morse à lèvres avec un chasse-cône
ES Expulsar cono morse con cuña expulsora
DE Morse Kegel mit Austreiblappen lössen mit Austreiber
EN Morse taper with lip remove with drive tang

Watch me

www.phantom.eu

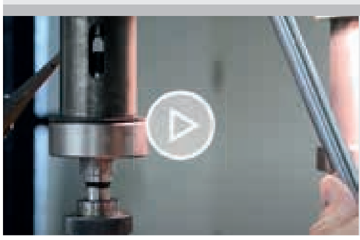
› 84.620 International Tools

NL ECO PRO Conusuitdrijver
FR Chasse-cônes ECO PRO
ES Cuña expulsora ECO PRO
DE ECO PRO Kegelaustreiber
EN ECO PRO Drill Drift



DIN 228-B ECO PRO

Ref.	Nr.	Ø	l1	Ref.	Nr.	Ø	l1
84.620.0100	1	MK1-3	317	84.620.0200	2	MK4-6	380

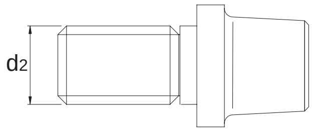


NL Morse conus met lip uitdrijven met automatische spie
FR Expluser un cône morse à lèvres avec un chasse-cône automatique
ES Expulsar cono morse con cuña expulsora automática
DE Morse Kegel mit Austreiblappen lössen mit halbautomatischer Austreiber
EN Morse taper with lip remove with automatic drive tang

Watch me

www.phantom.eu

› 84.745 International Tools

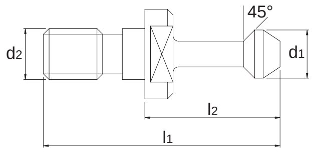


NL ECO PRO MK Uitdrijflip
FR Tenons à visser CM ECO PRO
ES Tornillo de expulsión ECO PRO
DE ECO PRO Einschraubbare MK Austreiblappen
EN ECO PRO MT Drift tangs to screw in

DIN 228-A | ECO PRO

Ref.	Type	d2
84.745.1000	MK 2	M10
84.745.1200	MK 3	M12
84.745.1600	MK 4	M16

› 84.750 Phantom

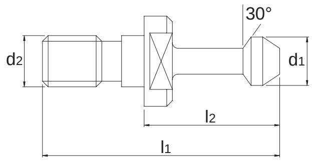


NL Aantrekbout, met O-ring, 45°, (JD = doorboorde uitvoering)
FR Tirette, à joint torique, 45°, (JD = version avec trou pour lubrification)
ES Tirante, con junta O, 45°, (JD = versión con agujero para refrigeración)
DE Anzugsbolzen, mit O-Ring, 45°, (JD = durchbohrte Ausführung)
EN Pull-stud, with O-ring, 45°, (JD = drilled version)

ISO 7388-3 | JD | JF | MAS-BT | 45°

Ref.	Type	d2	Form	d1	l1	l2
84.750.1600	BT 40	M16	JF	15	60	35
84.750.1601	BT 40	M16	JD	15	60	35
84.750.2400	BT 50	M24	JF	23	85	45
84.750.2401	BT 50	M24	JD	23	85	45

› 84.751 Phantom

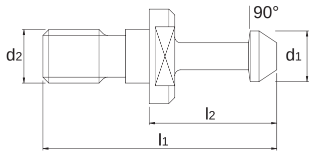


NL Aantrekbout, met O-ring, 30°, (JD = doorboorde uitvoering)
FR Tirette, à joint torique, 30°, (JD = version avec trou pour lubrification)
ES Tirante, con junta O, 30°, (JD = versión con agujero para refrigeración)
DE Anzugsbolzen, mit O-Ring, 30°, (JD = durchbohrte Ausführung)
EN Pull-stud, with O-ring, 30°, (JD = drilled version)

ISO 7388-3 | JD | JF | MAS-BT | 30°

Ref.	Type	d2	Form	d1	l1	l2
84.751.1600	BT 40	M16	JF	15	60	35
84.751.1601	BT 40	M16	JD	15	60	35
84.751.2400	BT 50	M24	JF	23	85	45
84.751.2401	BT 50	M24	JD	23	85	45

› 84.752 Phantom



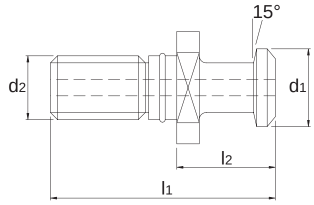
NL Aantrekbout, met O-ring, 90°, (JD = doorboorde uitvoering)
FR Tirette, à joint torique, 90°, (JD = version avec trou pour lubrification)
ES Tirante, con junta O, 90°, (JD = versión con agujero para refrigeración)
DE Anzugsbolzen, mit O-Ring, 90°, (JD = durchbohrte Ausführung)
EN Pull-stud, with O-ring, 90°, (JD = drilled version)

ISO 7388-3 | JD | JF | MAS-BT | 90°

Ref.	Type	d2	d1	l1	l2
84.752.1600	BT 40	M16	15	60	35
84.752.1601	BT 40	M16	15	60	35
84.752.2400	BT 50	M24	23	85	45
84.752.2401	BT 50	M24	23	85	45

› 84.760 Phantom

NL Aantrekbout, met O-ring, doorboorde uitvoering
FR Tirette, à joint torique, version avec trou pour lubrification
ES Tirante, con junta O, versión con agujero para refrigeración
DE Anzugsbolzen, mit O-Ring, Durchbohrte Ausführung
EN Pull-stud, with O-ring, drilled version

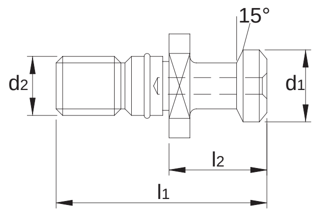


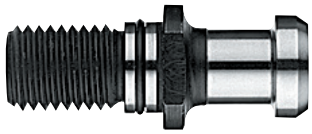
ISO 7388-3 | AD | DIN 69872-A | SK

Ref.	Type	d2	d1	l1	l2
84.760.1600	SK 40	M16	19	54	26
84.760.2400	SK 50	M24	28	74	34

› 84.770 Phantom

NL Aantrekbout, met O-ring, niet-doorboorde uitvoering
FR Tirette, à joint torique, version sans trou pour lubrification
ES Tirante, con junta O, versión sin agujero para refrigeración
DE Anzugsbolzen, mit O-Ring, Nicht-Durchbohrte Ausführung
EN Pull-stud, with O-ring, non-drilled version



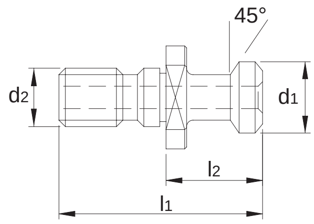


ISO 7388-3 | AF | DIN 69872-B | SK

Ref.	Type	d2	d1	l1	l2
84.770.1600	SK 40	M16	19	54	26
84.770.2400	SK 50	M24	28	74	34

› 84.775 Phantom

NL Aantrekbout, met O-ring, doorboorde uitvoering
FR Tirette, à joint torique, version avec trou pour lubrification
ES Tirante, con junta O, versión con agujero para refrigeración
DE Anzugsbolzen, mit O-Ring, Durchbohrte Ausführung
EN Pull-stud, with O-ring, drilled version

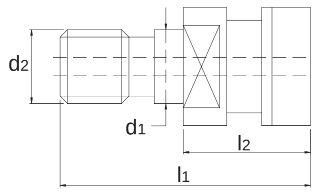


ISO 7388-3 | UD | SK

Ref.	Type	d2	d1	l1	l2
84.775.1600	SK 40	M16	18.9	44.5	16.4
84.775.2400	SK 50	M24	29	65.5	25.5

› 84.780 Phantom

NL Aantrekbout systeem OTT, DIN 2080
FR Tirette système OTT, DIN 2080
ES Tirante sistema OTT, DIN 2080
DE Anzugsbolzen System OTT, DIN 2080
EN Pull-stud OTT system, DIN 2080



OTT-15° | SK | MAS-BT

Ref.	Type	d2	d1	l1	l2
84.780.1600	SK/BT 40	M16	17	55	25
84.780.2400	SK/BT 50	M24	25	63	25

› 84.789 Phantom

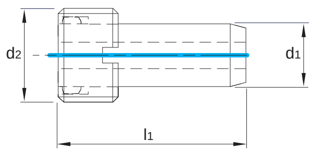
NL Koelvloeistofplug, HSK
FR Bouchon pour tube de liquide de refroidissement, HSK
ES Enchufe del tubo de refrigerante, HSK
DE Kühlmittelrohrstopfen, HSK
EN Coolant tube plug, HSK

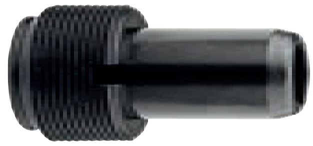
HSK-A

Ref.	Type	M
84.789.1800	HSK63	18x1

› 84.790 Phantom

NL Koelpijp, HSK
FR Tube à réfrigerant, HSK
ES Tubo de refrigerante, HSK
DE Kühlschmierstoffrohr, HSK
EN Coolant pipe, HSK



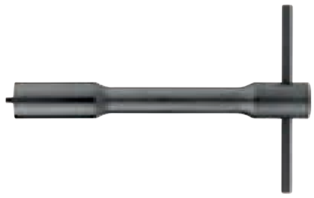


A | HSK-A

Ref.	Type	d2	d1	l1
84.790.1800	HSK63	M18X1	12	34.5

› 84.791 Phantom

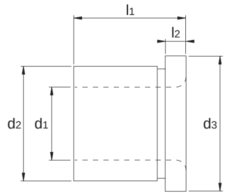
NL Koelpijp sleutel, HSK
FR Clé pour tube à réfrigerant, HSK
ES Llave para tubo de refrigerante, HSK
DE Schlüssel für Kühlschmierstoffrohr, HSK
EN Spanner for coolant pipe, HSK



A | HSK-A

Ref.	Type
84.791.1800	HSK63

› 84.872 Phantom



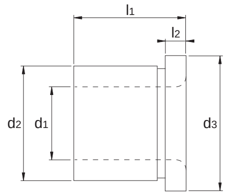
NL Boorbus, korte uitvoering, met kraag
FR Canon de perçage, version courte, à collerette
ES Casquillo guía broca, versión corto, con valona
DE Bohrbuchsen, kurze Ausführung, mit Kragen
EN Drill Bush, short series, headed

DIN 172-A | n6 | F7

Ref.	d1	d2	d3	l1	l2
84.872.0120-84.872.0180	1.2-1.8	4	7	6	2
84.872.0190-84.872.0260	1.9-2.6	5	8	6	2
84.872.0270-84.872.0330	2.7-3.3	6	9	8	2.5
84.872.0340-84.872.0400	3.4-4	7	10	8	2.5
84.872.0410-84.872.0500	4.1-5	8	11	8	2.5
84.872.0510-84.872.0600	5.1-6	10	13	10	3
84.872.0610-84.872.0800	6.1-8	12	15	10	3
84.872.0810-84.872.1000	8.1-10	15	18	12	3

Ref.	d1	d2	d3	l1	l2
84.872.1010-84.872.1200	10.1-12	18	22	12	4
84.872.1210-84.872.1500	12.1-15	22	26	16	4
84.872.1525-84.872.1800	15.25-18	26	30	16	4
84.872.1825-84.872.2200	18.25-22	30	34	20	5
84.872.2225-84.872.2600	22.25-26	35	39	20	5
84.872.2625-84.872.3000	26.25-30	42	46	25	5
84.872.3025-84.872.3500	30.25-35	48	52	25	5
84.872.3550-84.872.4000	35.5-40	55	59	30	5

› 84.873 Phantom



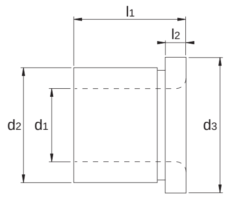
NL Boorbus, middellange uitvoering, met kraag
FR Canon de perçage, version longue, à collerette
ES Casquillo guía broca, versión larga, con valona
DE Bohrbuchsen, mittellange Ausführung, mit Kragen
EN Drill Bush, long version, headed

DIN 172-A | F7 | n6

Ref.	d1	d2	d3	l1	l2
84.873.0120-84.873.0180	1.2-1.8	4	7	9	2
84.873.0190-84.873.0260	1.9-2.6	5	8	9	2
84.873.0270-84.873.0330	2.7-3.3	6	9	12	2.5
84.873.0340-84.873.0400	3.4-4	7	10	12	2.5
84.873.0410-84.873.0500	4.1-5	8	11	12	2.5
84.873.0510-84.873.0600	5.1-6	10	13	16	3
84.873.0610-84.873.0800	6.1-8	12	15	16	3

Ref.	d1	d2	d3	l1	l2
84.873.0810-84.873.1000	8.1-10	15	18	20	3
84.873.1020-84.873.1200	10.2-12	18	22	20	4
84.873.1225-84.873.1500	12.25-15	22	26	28	4
84.873.1525-84.873.1800	15.25-18	26	30	28	4
84.873.1825-84.873.2000	18.25-20	30	34	36	5
84.873.3400	34	48	52	45	5

› 84.874 Phantom



NL Boorbus, extra lange uitvoering, met kraag
FR Canon de perçage, version extra longue, à collerette
ES Casquillo guía broca, versión extra larga, con valona
DE Bohrbuchsen, extra lange Ausführung, mit Kragen
EN Drill Bush, extra long series, headed

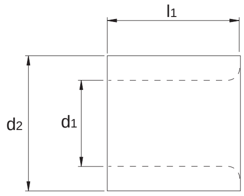
DIN 172-A | n6 | F7

Ref.	d1	d2	d3	l1	l2
84.874.0300	3	6	9	16	2.5
84.874.0350	3.5	7	10	16	2.5
84.874.0400	4	7	10	16	2.5
84.874.0450	4.5	8	11	16	2.5
84.874.0500	5	8	11	16	2.5
84.874.0550	5.5	10	13	20	3
84.874.0600	6	10	13	20	3
84.874.0650	6.5	12	15	20	3
84.874.0700	7	12	15	20	3

Ref.	d1	d2	d3	l1	l2
84.874.0750	7.5	12	15	20	3
84.874.0800	8	12	15	20	3
84.874.0850	8.5	15	18	25	3
84.874.0900	9	15	18	25	3
84.874.0950	9.5	15	18	25	3
84.874.1000	10	15	18	25	3
84.874.1050	10.5	18	22	25	4
84.874.1100	11	18	22	25	4
84.874.1150	11.5	18	22	25	4

Ref.	d1	d2	d3	l1	l2
84.874.1200	12	18	22	25	4
84.874.1250	12.5	22	26	36	4
84.874.1300	13	22	26	36	4
84.874.1350	13.5	22	26	36	4
84.874.1400	14	22	26	36	4
84.874.1450	14.5	22	26	36	4
84.874.1500	15	22	26	36	4
84.874.1550	15.5	26	30	36	4
84.874.1600	16	26	30	36	4

› 84.879 *Phantom*



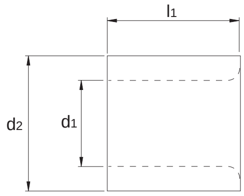
NL Boorbus, korte uitvoering
FR Canon de perçage, version courte
ES Casquillo guía broca, versión corto
DE Bohrbuchsen, kurze Ausführung
EN Drill Bush, short series

DIN 179-A | F7 | n6

Ref.	d1	d2	l1
84.879.0120-84.879.0180	1.2-1.8	4	6
84.879.0190-84.879.0260	1.9-2.6	5	6
84.879.0270-84.879.0330	2.7-3.3	6	8
84.879.0340-84.879.0400	3.4-4	7	8
84.879.0410-84.879.0500	4.1-5	8	8
84.879.0510-84.879.0600	5.1-6	10	10
84.879.0610-84.879.0800	6.1-8	12	10
84.879.0810-84.879.1000	8.1-10	15	12
84.879.1010-84.879.1200	10.1-12	18	12
84.879.1210-84.879.1500	12.1-15	22	16

Ref.	d1	d2	l1
84.879.1525-84.879.1800	15.25-18	26	16
84.879.1825-84.879.2200	18.25-22	30	20
84.879.2225-84.879.2600	22.25-26	35	20
84.879.2625-84.879.3000	26.25-30	42	25
84.879.3025-84.879.3500	30.25-35	48	25
84.879.3550-84.879.4200	35.5-42	55	30
84.879.4300-84.879.4800	43-48	62	30
84.879.4900-84.879.5500	49-55	70	30
84.879.6000	60	78	35
84.879.6500	65	85	35

› 84.880 *Phantom*



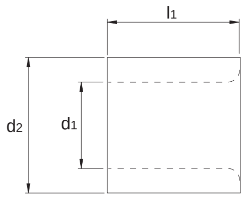
NL Boorbus, middellange uitvoering
FR Canon de perçage, version longue
ES Casquillo guía broca, versión larga
DE Bohrbuchsen, mittellange Ausführung
EN Drill Bush, long version

DIN 179-A | n6 | F7

Ref.	d1	d2	l1
84.880.0120-84.880.0180	1.2-1.8	4	9
84.880.0190-84.880.0260	1.9-2.6	5	9
84.880.0270-84.880.0330	2.7-3.3	6	12
84.880.0340-84.880.0400	3.4-4	7	12
84.880.0410-84.880.0500	4.1-5	8	12
84.880.0510-84.880.0600	5.1-6	10	16
84.880.0610-84.880.0800	6.1-8	12	16

Ref.	d1	d2	l1
84.880.0810-84.880.1000	8.1-10	15	20
84.880.1020-84.880.1200	10.2-12	18	20
84.880.1225-84.880.1500	12.25-15	22	28
84.880.1525-84.880.1800	15.25-18	26	28
84.880.1825-84.880.2000	18.25-20	30	36
84.880.2500	25	35	36

› 84.881 *Phantom*



NL Boorbus, extra lange uitvoering
FR Canon de perçage, version extra longue
ES Casquillo guía broca, versión extra larga
DE Bohrbuchsen, extra lange Ausführung
EN Drill Bush, extra long series

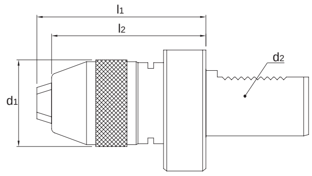
DIN 179-A | F7 | n6

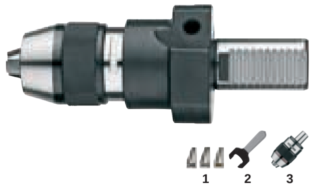
Ref.	d1	d2	l1
84.881.0300	3	6	16
84.881.0350	3.5	7	16
84.881.0400	4	7	16
84.881.0450	4.5	8	16
84.881.0500	5	8	16
84.881.0550	5.5	10	20
84.881.0600	6	10	20
84.881.0650	6.5	12	20
84.881.0700	7	12	20
84.881.0750	7.5	12	20

Ref.	d1	d2	l1
84.881.0780	7.8	12	20
84.881.0800	8	12	20
84.881.0850	8.5	15	25
84.881.0900	9	15	25
84.881.0950	9.5	15	25
84.881.1000	10	15	25
84.881.1050	10.5	18	25
84.881.1100	11	18	25
84.881.1150	11.5	18	25
84.881.1200	12	18	25

Ref.	d1	d2	l1
84.881.1250	12.5	22	36
84.881.1300	13	22	36
84.881.1350	13.5	22	36
84.881.1400	14	22	36
84.881.1450	14.5	22	36
84.881.1500	15	22	36
84.881.1550	15.5	26	36
84.881.1600	16	26	36
84.881.1650	16.5	26	36
84.881.3200	32	48	56

› 84.908 Phantom



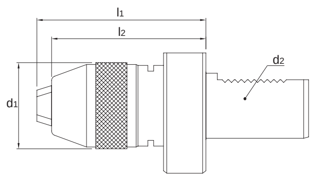


NL Zelfspannende Precisieboorhouder, type XP, DIN 69880 VDI
FR Mandrin de perçage de précision auto-serrant, type XP, DIN 69880 VDI
ES Portabroca de precisión, cierre automático, tipo XP, DIN 69880 VDI
DE Selbstspannende Präzisionsbohrfutter, Typ XP, DIN 69880 VDI
EN High Precision Keyless Chuck, type XP, DIN 69880 VDI

DIN 69880 | TYPE XP | VDI | 0,04

Ref.	Ø	d2	d1	l1	l2	Type	1	2 incl.	3
84.908.3013	1-13	VDI30	48	105	94	13XP	81.412.1300	81.413.1300	81.414.1300
84.908.4013	1-13	VDI40	48	92	85	13XP	81.412.1300	81.413.1300	81.414.1300
84.908.4016	3-16	VDI40	55	96	85	16XP	81.412.1600	81.413.1600	81.414.1640

› 84.909 Phantom



NL Ultra Precisieboorhouder, type XPS, DIN 69880 VDI
FR Mandrin de perçage de ultra haute précision auto-serrant, type XPS, DIN 69880 VDI
ES Portabroca de precisión super alta, type XPS, DIN 69880 VDI
DE Ultra-Präzisionsbohrfutter, type XPS, DIN 69880 VDI
EN Super High Precision Keyless Chuck, type XPS, DIN 69880 VDI

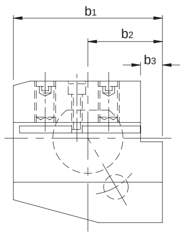
DIN 69880 | TYPE XPS | VDI | 0,02

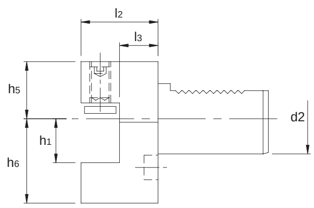
NIEUW | NOUVEAU | NUEVO | NEU

Ref.	Ø	d2	d1	l1	l2	Type	1
84.909.3016	1-16	VDI30	50	100	89.5	16XPS	81.412.1600
84.909.4016	1-16	VDI40	50	100	89.5	16XPS	81.412.1600

› 84.910 Phantom

NL VDI-houder DIN 69880, uitvoering B1, radiaal, rechts
FR Porte outils VDI DIN 69880, version B1, radial, à droite
ES Portaherramientas VDI DIN 69880, versión B1, radial, a derecha
DE VDI-Halter DIN 69880, Ausführung B1, radial, rechts
EN VDI-Tool Holder DIN 69880, type B1, radial, right hand



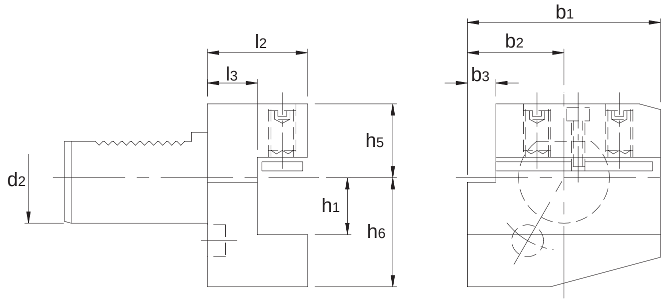


DIN 69880 | B1 | VDI

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
84.910.3024	VDI30	40	22	20	28	38	70	35	10
84.910.4024	VDI40	44	22	25	32.5	48	85	42.5	12.5
84.910.5035	VDI50	55	30	32	35	60	100	50	16

› 84.911 Phantom

NL **VDI-houder DIN 69880, uitvoering B2, radiaal, links**
FR **Porte outils VDI DIN 69880, version B2, radial, à gauche**
ES **Portaherramientas VDI DIN 69880, versión B2, radial, a la izquierda**
DE **VDI-Halter DIN 69880, Ausführung B2, radial, links**
EN **VDI-Tool Holder DIN 69880, type B2, radial, left hand**



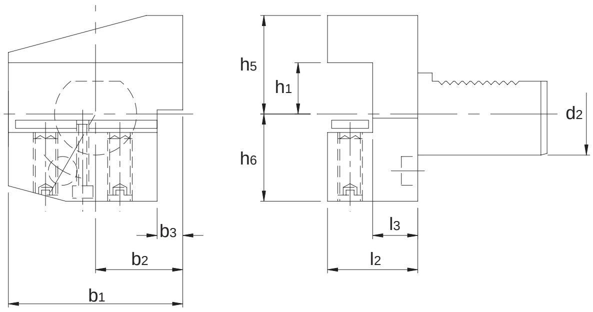
DIN 69880 | B2 | VDI

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
84.911.3024	VDI30	40	22	20	28	38	70	35	10
84.911.4024	VDI40	44	22	25	32.5	48	85	42.5	12.5

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
84.911.5035	VDI50	55	30	32	35	60	100	50	16

› 84.912 Phantom

NL **VDI-houder DIN 69880, uitvoering B3, radiaal, rechts**
FR **Porte outils VDI DIN 69880, version B3, radial, à droite**
ES **Portaherramientas VDI DIN 69880, versión B3, radial, a derecha**
DE **VDI-Halter DIN 69880, Ausführung B3, radial, rechts**
EN **VDI-Tool Holder DIN 69880, type B3, radial, right hand**



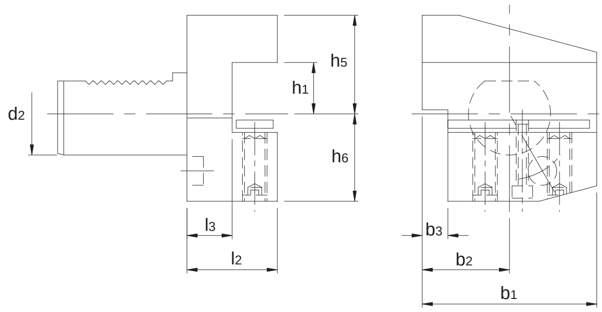
DIN 69880 | B3 | VDI

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
84.912.3024	VDI30	40	22	20	38	35	70	35	10
84.912.4024	VDI40	44	22	25	48	42.5	85	42.5	12.5

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
84.912.5035	VDI50	55	30	32	60	50	100	50	16

› 84.913 Phantom

NL VDI-houder DIN 69880, uitvoering B4, radiaal, links
FR Porte outils VDI DIN 69880, version B4, radial, à gauche
ES Portaherramientas VDI DIN 69880, versión B4, radial, a la izquierda
DE VDI-Halter DIN 69880, Ausführung B4, radial, links
EN VDI-Tool Holder DIN 69880, type B4, radial, left hand

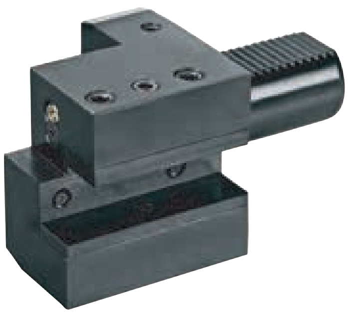


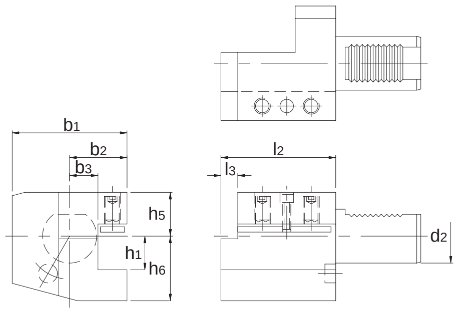
DIN 69880 | B4 | VDI

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
84.913.3024	VDI30	40	22	20	38	35	70	35	10
84.913.4024	VDI40	44	22	25	48	42.5	85	42.5	12.5
84.913.5035	VDI50	55	30	32	60	50	100	50	16

› 84.920 Phantom

NL VDI-houder DIN 69880, uitvoering C1, axiaal, rechts
FR Porte outils VDI DIN 69880, version C1, axial, à droite
ES Portaherramientas VDI DIN 69880, versión C1, axial, a derecha
DE VDI-Halter DIN 69880, Ausführung C1, axial, rechts
EN VDI-Tool Holder DIN 69880, type C1, axial, right hand



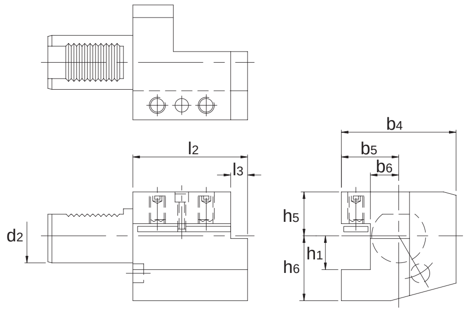


DIN 69880 | C1 | VDI

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
84.920.3027	VDI30	70	10	20	28	38	70	35	17
84.920.4028	VDI40	85	12.5	25	32.5	48	85	42.5	21
84.920.5031	VDI50	100	16	32	35	60	100	50	26

› 84.921 Phantom

NL VDI-houder DIN 69880, uitvoering C2, axiaal, links
FR Porte outils VDI DIN 69880, version C2, axial, à gauche
ES Portaherramientas VDI DIN 69880, versión C2, axial, a la izquierda
DE VDI-Halter DIN 69880, Ausführung C2, axial, links
EN VDI-Tool Holder DIN 69880, type C2, axial, left hand

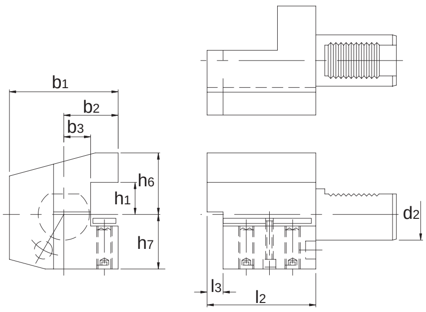


DIN 69880 | C2 | VDI

Ref.	d2	l2	l3	h1	h5	h6	b4	b5	b6
84.921.3027	VDI30	70	10	20	28	38	70	41	23
84.921.4029	VDI40	85	12.5	25	32.5	48	85	47.5	25.5
84.921.5031	VDI50	100	16	32	35	60	100	55	30.5

› 84.922 Phantom

NL VDI-houder DIN 69880, uitvoering C3, axiaal, rechts
FR Porte outils VDI DIN 69880, version C3, axial, à droite
ES Portaherramientas VDI DIN 69880, versión C3, axial, a derecha
DE VDI-Halter DIN 69880, Ausführung C3, axial, rechts
EN VDI-Tool Holder DIN 69880, type C3, axial, right hand

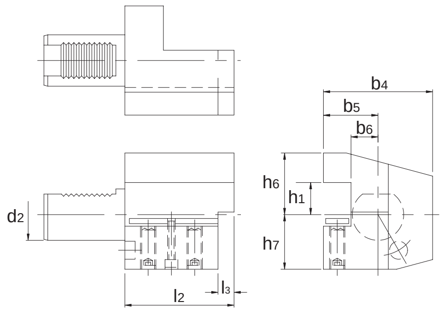


DIN 69880 | C3 | VDI

Ref.	d2	l2	l3	h1	h6	h7	b1	b2	b3
84.922.3027	VDI30	70	10	20	38	35	70	35	17
84.922.4028	VDI40	85	12.5	25	48	42.5	85	42.5	21
84.922.5031	VDI50	100	16	32	60	50	100	50	26

› 84.923 Phantom

NL **VDI-houder DIN 69880, uitvoering C4, axiaal, links**
FR **Porte outils VDI DIN 69880, version C4, axial, à gauche**
ES **Portaherramientas VDI DIN 69880, versión C4, axial, a la izquierda**
DE **VDI-Halter DIN 69880, Ausführung C4, axial, links**
EN **VDI-Tool Holder DIN 69880, type C4, axial, left hand**

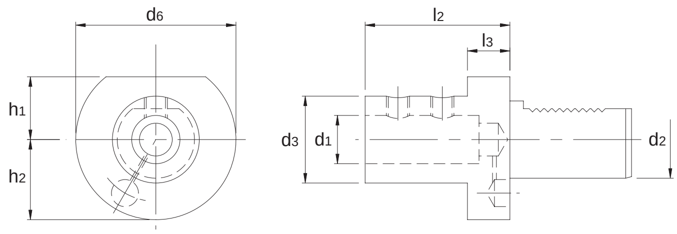


DIN 69880 | C4 | VDI

Ref.	d2	l2	l3	b4	b5	b6	h1	h6	h7
84.923.3027	VDI30	70	10	70	35	17	20	35	38
84.923.4029	VDI40	85	12.5	85	42.5	21	25	42.5	48
84.923.5031	VDI50	100	16	100	50	26	32	50	60

› 84.950 Phantom

NL **VDI-houder DIN 69880, uitvoering E1, voor volboren**
FR **Porte outils VDI DIN 69880, version E1, pour forets à plaquettes**
ES **Portaherramientas VDI DIN 69880, versión E1, para Brocas con plaquitas**
DE **VDI-Halter DIN 69880, Ausführung E1, für Vollbohren**
EN **VDI-Tool Holder DIN 69880, type E1, for mill drills**

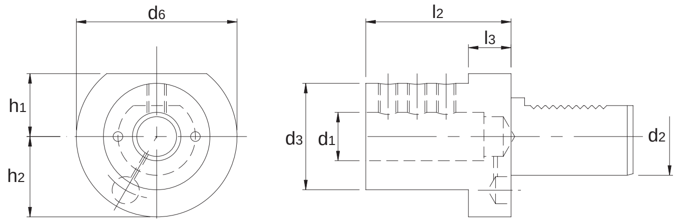


DIN 69880 | E1 | VDI

Ref.	d2	d1	d3	d6	h1	h2	l2	l3
84.950.3016	VDI30	16	36	68	28	30	64	22
84.950.3020	VDI30	20	40	68	28	30	67	22
84.950.3025	VDI30	25	45	68	28	30	71	22
84.950.3032	VDI30	32	52	68	28	30	75	22
84.950.4016	VDI40	16	36	83	32.5		64	22
84.950.4020	VDI40	20	40	83	32.5		67	22
84.950.4025	VDI40	25	45	83	32.5		75	22
84.950.4032	VDI40	32	52	83	32.5		75	22
84.950.4040	VDI40	40	60	83	32.5		90	22
84.950.5016	VDI50	16	40	98	35		66	30
84.950.5020	VDI50	20	40	98	35		66	30
84.950.5025	VDI50	25	45	98	35		80	30
84.950.5032	VDI50	32	52	98	35		80	30
84.950.5040	VDI50	40	65	98	35		90	30
84.950.5050	VDI50	50	75	98	35		100	30

› 84.951 Phantom

NL VDI-houder DIN 69880, uitvoering E2, voor cilindrische opname
FR Porte outils VDI DIN 69880, version E2, pour queues cylindriques
ES Portaherramientas VDI DIN 69880, versión E2, para mangos cilíndricos
DE VDI-Halter DIN 69880, Ausführung E2, für zylindrische Aufnahme
EN VDI-Tool Holder DIN 69880, type E2, for straight shanks



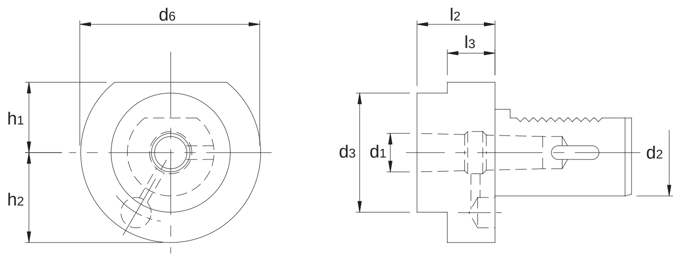
DIN 69880 | E2 | VDI

Ref.	d2	d1	d3	d6	h1	h2	l2	l3
84.951.3008	VDI30	8	55	68	28	30	60	22
84.951.3010	VDI30	10	55	68	28	30	60	22
84.951.3012	VDI30	12	55	68	28	30	60	22
84.951.3016	VDI30	16	55	68	28	30	60	22
84.951.3020	VDI30	20	55	68	28	30	60	22
84.951.3025	VDI30	25	55	68	28	30	60	22
84.951.3032	VDI30	32	55	68	28	30	75	22
84.951.4008	VDI40	8	55	83	32.5		75	22
84.951.4010	VDI40	10	55	83	32.5		75	22
84.951.4012	VDI40	12	55	83	32.5		75	22
84.951.4016	VDI40	16	55	83	32.5		75	22

Ref.	d2	d1	d3	d6	h1	h2	l2	l3
84.951.4020	VDI40	20	55	83	32.5		75	22
84.951.4025	VDI40	25	55	83	32.5		75	22
84.951.4032	VDI40	32	83	83	32.5		75	22
84.951.4040	VDI40	40	83	83	32.5		90	22
84.951.5012	VDI50	12	68	98	35		90	30
84.951.5016	VDI50	16	68	98	35		90	30
84.951.5020	VDI50	20	68	98	35		90	30
84.951.5025	VDI50	25	68	98	35		90	30
84.951.5032	VDI50	32	68	98	35		90	30
84.951.5040	VDI50	40	98	98	35		90	30
84.951.5050	VDI50	50	98	98	35		100	30

› 84.955 Phantom

NL VDI-houder DIN 69880, uitvoering F1, voor MK volgens DIN 228-B
FR Porte outils VDI DIN 69880, version F1, pour CM selon DIN 228-B
ES Portaherramientas VDI DIN 69880, versión F1, para CM según DIN 228-B
DE VDI-Halter DIN 69880, Ausführung F1, für MK nach DIN 228-B
EN VDI-Tool Holder DIN 69880, type F1, for MT according to DIN 228-B

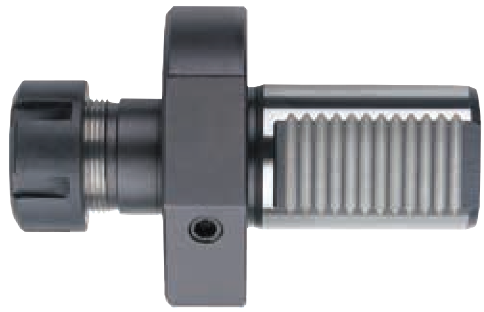


DIN 69880 | F1 | VDI

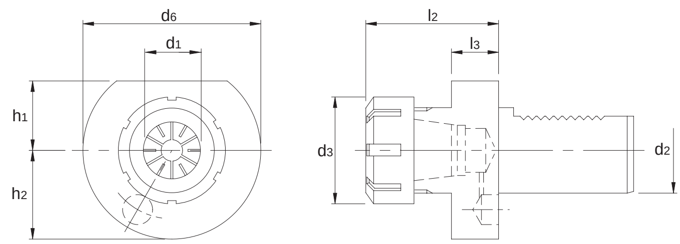
Ref.	d2	d1	d3	l2	l3	d6	h1	h2
84.955.3001	VDI30	MK 1		27		68	28	30
84.955.3002	VDI30	MK 2		27		68	28	30
84.955.3003	VDI30	MK 3	58	40	22	68	28	30
84.955.4002	VDI40	MK 2	55	36	22	83	32.5	
84.955.4003	VDI40	MK 3	55	36	22	83	32.5	

Ref.	d2	d1	d3	l2	l3	d6	h1	h2
84.955.4004	VDI40	MK 4	68	80	22	83	32.5	
84.955.5002	VDI50	MK 2	55	36	30	98	35	
84.955.5003	VDI50	MK 3	58	36	30	98	35	
84.955.5004	VDI50	MK 4	68	50	30	98	35	
84.955.5005	VDI50	MK 5	75	72	30	98	35	

› 84.958 Phantom



NL VDI-houder DIN 69880, uitvoering E4, spantanghouder
FR Porte outils VDI DIN 69880, version E4, mandrin porte-pinces
ES Portaherramientas VDI DIN 69880, versión E4, portapinzas
DE VDI-Halter DIN 69880, Ausführung E4, Spannzangenfutter
EN VDI-Tool Holder DIN 69880, type E4, collet holder



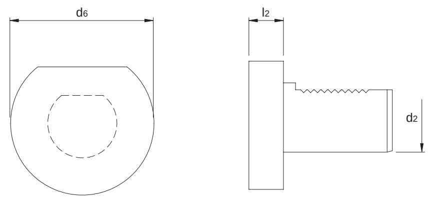
DIN 69880 | E4 | VDI

Ref.	d2	d1	d6	d3	h1	l2	l3	h2	Ø
84.958.3025	VDI30	ER25	68	42	28	57	22	34	2-16
84.958.3032	VDI30	ER32	68	50	28	75	22	34	2-20
84.958.3040	VDI30	ER40	68	63	28	75	22	34	3-26
84.958.4025	VDI40	ER25	83	42	32.5	75	22	41.5	2-16

Ref.	d2	d1	d6	d3	h1	l2	l3	h2	Ø
84.958.4032	VDI40	ER32	83	50	32.5	75	22	41.5	2-20
84.958.4040	VDI40	ER40	83	63	32.5	75	22	41.5	3-26
84.958.5040	VDI50	ER40	98	63	35	75	30	49	3-26

› 84.961 Phantom

NL Afstopplug, VDI-houder DIN 69880
FR Bouchon de protection, Porte outils VDI DIN 69880
ES Tapón de protección, Portaherramientas VDI DIN 69880
DE Verschlussstopfen, VDI-Halter DIN 69880
EN Protection Steel Plug, VDI-Tool Holder DIN 69880



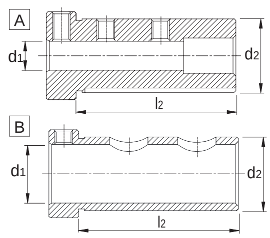
DIN 69880 | VDI

Ref.	d2	l2	d6
84.961.3068	VDI30	20	68
84.961.4083	VDI40	20	83

Ref.	d2	l2	d6
84.961.5098	VDI50	20	98

› 84.970 Phantom

NL Reduceerhuls, voor VDI-houder DIN 69880 E2
FR Douille de réduction, pour porte-outils VDI DIN 69880 E2
ES Casquillo de reducción, para Portaherramientas VDI DIN 69880 E2
DE Reduzierhülsen, für VDI-Halter DIN 69880 E2
EN Reducing Bush, for VDI-Tool Holder DIN 69880 E2



DIN 69880 | E2

Ref.	d1	d2	l2	A, B
84.970.2506	6	25	46	A
84.970.2508	8	25	50	A
84.970.2510	10	25	50	A
84.970.2512	12	25	50	A
84.970.2516	16	25	50	B
84.970.3208	8	32	59	A
84.970.3210	10	32	59	A
84.970.3212	12	32	59	A

Ref.	d1	d2	l2	A, B
84.970.3216	16	32	59	A
84.970.3220	20	32	59	B
84.970.3225	25	32	59	B
84.970.4012	12	40	69	A
84.970.4016	16	40	69	A
84.970.4020	20	40	69	A
84.970.4025	25	40	69	B
84.970.4032	32	40	69	B

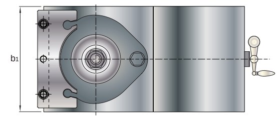
› 84.984 **Phantom**

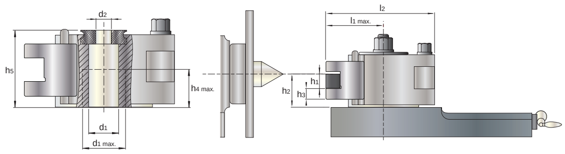
NL **Koelkanaal kogel, voor VDI-houder**
FR **Gicleurs pour l'alimentation en refroidissement, pour porte-outils VDI**
ES **Boquillas para suministro de refrigeración, per Supporto VDI**
DE **Spritzdüsen für Kühlmittelzufuhr, für VDI-Halter**
EN **Sprayer nozzles for cooling, for VDI-Tool Holder**

Ref.	d1	d2
84.984.0012	12	M6
84.984.0014	14	M8

› 85.050 Phantom

NL Snelwissel-Basishouder, type K
FR Mandrin de base à serrage rapide, type K
ES Torreta de precisión para herramientas de torno con cambio rápido, tipo K
DE Schnellwechsel- Grundhalter, Typ K
EN Basic quick-change holder, type K

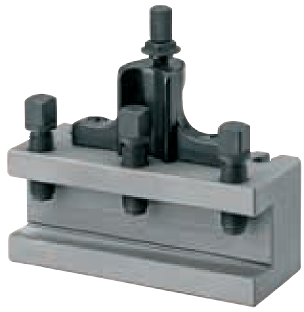


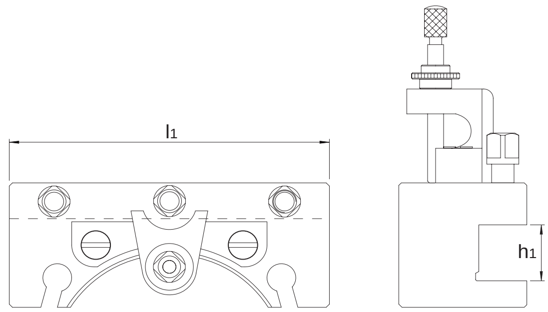


Ref.	Type	d1	d1 max	d2	h1	h2 min	h2 max	h3	h4 max	h5	l1 max	l2	b1
85.050.0000	Aa	13		10	12	18	26	6		37	30	70	80
85.050.1000	A	20	35	10	16	24.5	39.5	8.5	35	56	48	100	100
85.050.3000	B	32	40	16	25	37	58.5	12	45	79	71	150	150
85.050.4000	C	40	55	16	32	47	93	15	75	110	90	200	180
85.050.5000	D1	40	65	22	40	60	103	20	75	122	112	230	200

› 85.051 Phantom

NL Snelwissel-Draaibeitelhouder, type D
FR Porte-outils de tournage à serrage rapide, type D
ES Soporte de cambio Rápido, para exteriores, herramientas de torno, tipo D
DE Schnellwechsel-Drehstahlhalter, Typ D
EN Quick-change lathe tool holder, type D



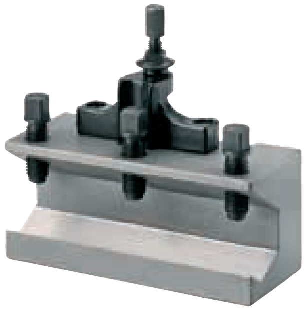


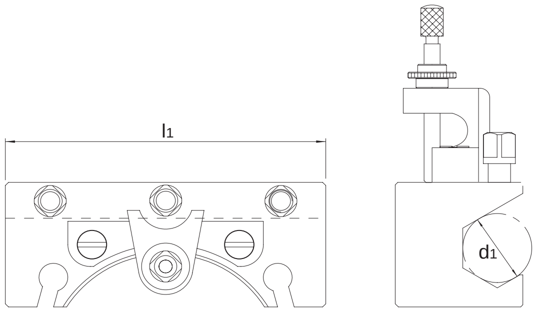
Ref.	Quick change holder	Type	l1	h1
85.051.0120	AaD 1250	Aa	50	12
85.051.1167	AD 1675	A	75	16
85.051.1169	AD 1690	A	90	16
85.051.1207	AD 2075	A	75	20
85.051.1209	AD 2090	A	90	20
85.051.3252	BD 25120	B	120	25
85.051.3254	BD 25140	B	140	25
85.051.3322	BD 32120	B	120	32
85.051.3324	BD 32140	B	140	32

Ref.	Quick change holder	Type	l1	h1
85.051.4325	CD 32150	C	150	32
85.051.4327	CD 32170	C	170	32
85.051.4405	CD 40150	C	150	40
85.051.4407	CD 40170	C	170	40
85.051.4457	CD 45170	C	170	45
85.051.5400	D1D 40180	D1	180	40
85.051.5500	D1D 50180	D1	180	50
85.051.5630	D1D 63180	D1	180	63

› 85.052 Phantom

NL Snelwissel-Boorbeitelhouder, type B
FR Porte-outils d'alésage à serrage rapide, type B
ES Soporte de cambio Rápido, para interiores exagonal, tipo, tipo B
DE Schnellwechsel-Bohrstangenhalter, Typ B
EN Quick-change boring tool holder, type B



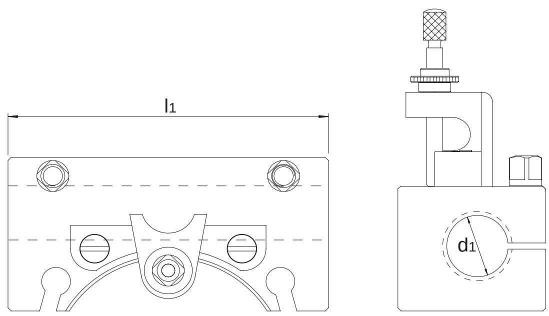


Ref.	Quick change holder	Type	l1	d1
85.052.0120	AaH 1250	Aa	50	12
85.052.1200	AH 2085	A	85	20
85.052.3320	BH 32130	B	130	32

Ref.	Quick change holder	Type	l1	d1
85.052.4400	CH 40160	C	160	40
85.052.5630	D1BH 63180	D1	180	63

› 85.053 Phantom

NL Snelwissel-Boorbaarhouder, type BS
FR Porte-barre d'alésage à serrage rapide, type BS
ES Soporte de cambio Rápido, para interiores cilíndrico, type BS
DE Schnellwechsel-Halter mit zylindrischer Bohrung, type BS
EN Quick-change boring bar holder, type BS

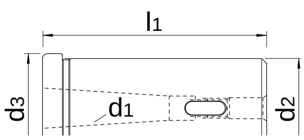


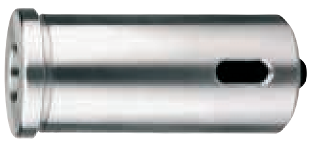
Ref.	Quick change holder	Type	l1	d1
85.053.0150	AaJ 1550	Aa	50	15
85.053.1300	AJ 3080	A	85	30
85.053.3400	BJ 40120	B	130	40

Ref.	Quick change holder	Type	l1	d1
85.053.4400	CJ 40160	C	160	40
85.053.4500	CJ 50160	C	160	50
85.053.5630	D1J 63180	D1	180	63

› 85.058 Phantom

NL Morseconushuls, type H
FR Douille avec cône morse, type H
ES Casquillo para cono Morse, tipo H
DE Konusbuchse, Typ H
EN Morse taper bush, type H



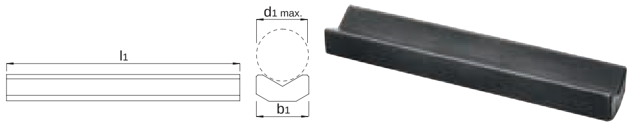


Ref.	Type	d1	d2
85.058.1010	A	MK 1	30
85.058.1020	A	MK 2	30
85.058.3020	B + C40	MK 2	40
85.058.3030	B + C40	MK 3	40

Ref.	Type	d1	d2
85.058.3040	B + C40	MK 4	40
85.058.4030	C	MK 3	50
85.058.4040	C	MK 4	50
85.058.5050	D1	MK 5	63

› 85.059 Phantom

NL **Inlegprisma, type P**
FR **Mors, type P**
ES **Garra de ajuste, tipo P**
DE **V-Block, Typ P**
EN **V-block, type P**



Ref.	Type	d1 max	l1	b1
85.059.1140	A	14	85	16
85.059.3200	B	20	130	22
85.059.4250	C	25	160	30
85.059.4320	C	32	160	38

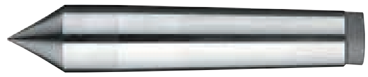
› 85.062 Phantom

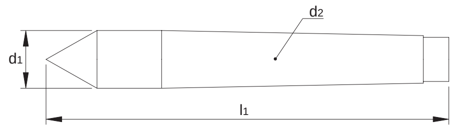
NL **Onderdelen en Toebehoren**
FR **Pièces détachées et Accessoires**
ES **Componentes fundamentales y Accesorios**
DE **Einzelteile und Zubehör**
EN **Extra parts and Accessories**

Ref.	Type	Nr.	d1	P	l2	sw
85.062.0002	Aa	7				
85.062.0006	Aa	8	5	0.8	20	5
85.062.0008	Aa	9+10	4	0.7	25	
85.062.0012	Aa	5				
85.062.0014	Aa	6				5
85.062.0024	Aa	2				
85.062.1002	A	7				
85.062.1006	A	8	7	1	25	8
85.062.1008	A	9+10	5	0.8	35	
85.062.1012	A	5				
85.062.1014	A	6				8
85.062.1024	A	2				
85.062.3002	B	7				
85.062.3006	B	8	11	1.5	30	10
85.062.3008	B	9+10	7	1	57	
85.062.3012	B	5				
85.062.3014	B	6				10
85.062.3024	B	2				
85.062.4002	C	7				
85.062.4006	C + D1	8	14	1.5	40	14
85.062.4008	C	9+10	9	1.25	65	
85.062.4012	C	5				
85.062.4014	C	6				14
85.062.4024	C	2				
85.062.5002	D1	7				
85.062.5008	D1	9+10	12	1.75	80	
85.062.5012	D1	5				
85.062.5014	D1	6				14
85.062.5024	D1	2				

› 85.100 International Tools

NL ECO PRO Vast Center 60°, MK
FR Contre-pointe fixe ECO PRO 60°, CM
ES Contrapunto fijo ECO PRO 60°, CM
DE ECO PRO Feste Zentrierspitzen 60°, MK
EN ECO PRO Dead Centre 60°, MT



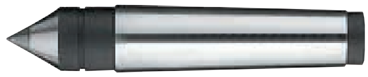


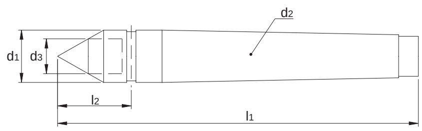
ECO PRO

Ref.	d2	d1	l1
85.100.0100	MK 1	12.2	80
85.100.0200	MK 2	18	100
85.100.0300	MK 3	24.1	125
85.100.0400	MK 4	31.6	160
85.100.0500	MK 5	44.7	200
85.100.0600	MK 6	63.8	270

› 85.110 International Tools

NL ECO PRO Vast Center met HM-punt, 60°, MK
FR Contre-pointe fixe ECO PRO à pointe carbure, 60°, CM
ES Contrapunto fijo ECO PRO con punta de MD, 60°, CM
DE ECO PRO Feste Zentrierspitzen mit HM-Spitze, 60°, MK
EN ECO PRO Dead Centre with Carbide Tip, 60°, MT



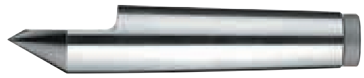


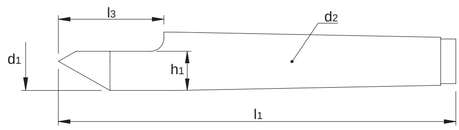
ECO PRO

Ref.	d2	d1	d3	l2	l1
85.110.0100	MK 1	12.2	7	16	80
85.110.0200	MK 2	18	7	21	100
85.110.0300	MK 3	24.1	11	27	125
85.110.0400	MK 4	31.6	14	31.2	160
85.110.0500	MK 5	44.7	18	45	200
85.110.0600	MK 6	63.8	18	62	270

› 85.120 International Tools

NL ECO PRO Vast Center 60°, met uitgediepte punt, MK
FR Contre-pointe fixe ECO PRO 60°, avec pointe approfondie, CM
ES Contrapunto fijo ECO PRO 60°, con media punta rebajada, CM
DE ECO PRO Feste Zentrierspitzen 60°, mit verdünnter Spitze, MK
EN ECO PRO Dead Centre 60°, half point, MT



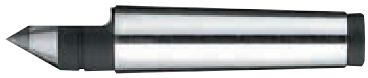


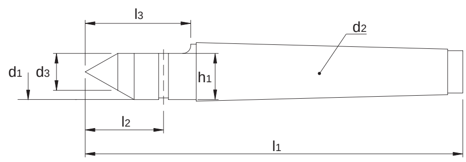
ECO PRO

Ref.	d2	d1	h1	l3	l1
85.120.0100	MK 1	12.2	7.6	22	80
85.120.0200	MK 2	18	11	30	100
85.120.0300	MK 3	24.1	15.05	38	125
85.120.0400	MK 4	31.6	20.8	50	160
85.120.0500	MK 5	44.7	29.35	63	200
85.120.0600	MK 6	63.8	41.9	79	270

› 85.130 International Tools

NL ECO PRO Vast Center 60°, met uitgediepte HM-punt, MK
FR Contre-pointe fixe ECO PRO 60°, avec pointe carbure approfondie, CM
ES Contrapunto fijo ECO PRO 60°, con media punta rebajada de MD, CM
DE ECO PRO Feste Zentrierspitzen 60°, mit verdünnter HM-Spitze, MK
EN ECO PRO Dead Centre 60°, half point with Carbide Tip, MT

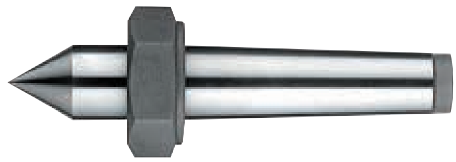


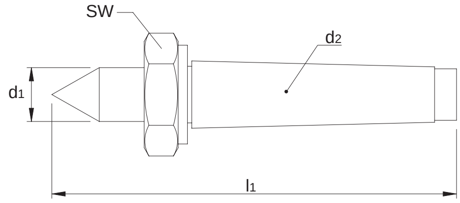


ECO PRO

Ref.	d2	d1	d3	h1	l2	l3	l1
85.130.0100	MK 1	12.2	7.6	7.6	16	22	80
85.130.0200	MK 2	18	7	12.8	21	30	100
85.130.0300	MK 3	24.1	11	18.05	27	38	125
85.130.0400	MK 4	31.6	14	23.3	31.2	50	160
85.130.0500	MK 5	44.7	18	31.85	45	63	200
85.130.0600	MK 6	63.8	41.9	41.9	62	79	270

› 85.140 International Tools



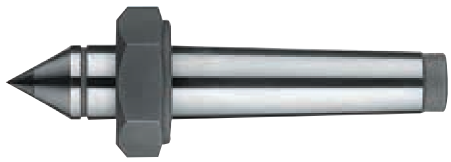


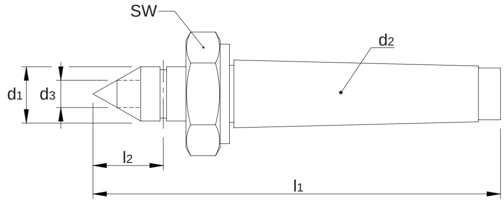
- NL ECO PRO Vast Center 60°, met afdrukmoer, MK
- FR Contre-pointe fixe ECO PRO 60°, avec écrou de déblocage, CM
- ES Contrapunto fijo ECO PRO 60°, con tuerca de extracción, CM
- DE ECO PRO Feste Zentrierspitzen 60°, mit Abdrückmutter, MK
- EN ECO PRO Dead Centre 60°, with draw-off nut, MT

ECO PRO

Ref.	d2	d1	sw	l1
85.140.0100	MK 1	12.1	24	80
85.140.0200	MK 2	17.8	32	100
85.140.0300	MK 3	23.8	41	125
85.140.0400	MK 4	31.3	55	160
85.140.0500	MK 5	44.4	75	200

› 85.150 International Tools



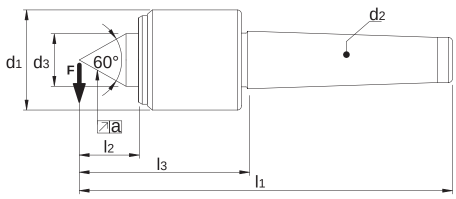


- NL ECO PRO Vast Center met HM-punt, 60°, met afdrukmoer, MK
- FR Contre-pointe fixe ECO PRO à pointe carbure, 60°, avec écrou de déblocage, CM
- ES Contrapunto fijo ECO PRO con punta de MD, 60°, con tuerca de extracción, CM
- DE ECO PRO Feste Zentrierspitzen mit HM-Spitze, 60°, mit Abdrückmutter, MK
- EN ECO PRO Dead Centre with Carbide Tip, 60°, with draw-off nut, MT

ECO PRO

Ref.	d2	d1	d3	sw	l2	l1
85.150.0200	MK 2	18	8	32	21	100
85.150.0300	MK 3	24.1	12	41	27	125
85.150.0400	MK 4	31.3	15	55	31.2	160
85.150.0500	MK 5	44.4	18	75	45	200

› 85.210 Phantom

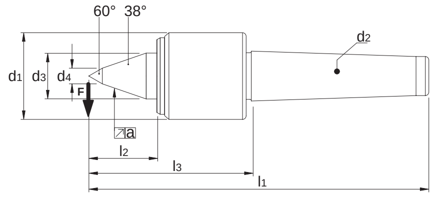


- NL Medium Duty Meedraaiend Center , MK
- FR Medium Duty Contre-pointe à grande capacité, CM
- ES Contrapunto giratorio de gran capacidad, a media carga, CM
- DE Mitlaufende Medium Duty Drehbankspitze, MK
- EN Medium Duty Live Centre with differential load and high RPM, MT

Ref.	d2	d1	d3	l1	l2	l3	F (kg)	RPM	Tol.
85.210.0200	MK 2	34	15	131.5	19	67.5	200	7000	0,005
85.210.0300	MK 3	34	15	148.5	19	67.5	400	7000	0,005
85.210.0400	MK 4	42	20	183.5	25	81	800	6300	0,005
85.210.0500	MK 5	68	32	248.5	41	119	1600	4300	0,01

› 85.215 *Phantom*

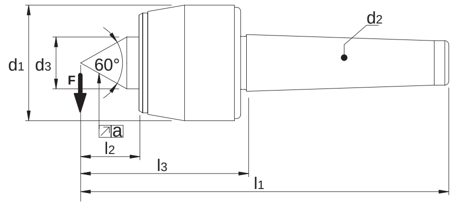
NL **Medium Duty Meedraaiend Center , met verlengde punt, MK**
FR **Medium Duty Contre-pointe à grande capacité, avec pointe allongée, CM**
ES **Contrapunto giratorio de gran capacidad, a media carga, punta extendida, CM**
DE **Mitlaufende Medium Duty Drehbankspitze, mit Spitzenverlängerung, MK**
EN **Medium Duty Live Centre with differential load and high RPM, with extended tip, MT**



Ref.	d2	d1	d3	d4	l1	l2	l3	F (kg)	RPM	Tol.
85.215.0200	MK 2	34	15	10	141.5	29	77.5	170	7000	0,008
85.215.0300	MK 3	34	15	11	159.5	30	78.5	340	7000	0,008
85.215.0400	MK 4	42	20	13	196.5	38	94	700	6300	0,008
85.215.0500	MK 5	68	32	14	260.5	53	131	1400	4300	0,01

› 85.220 *Phantom*

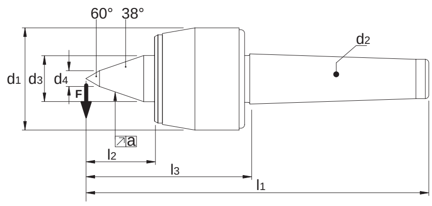
NL **Heavy Duty Meedraaiend Center, MK**
FR **Heavy Duty Contre-pointe à grande capacité, CM**
ES **Contrapunto giratorio de grand capacidad, CM**
DE **Mitlaufende Heavy Duty Drehbankspitze, MK**
EN **Live Centre with differential load and high RPM, MT**



Ref.	d2	d1	d3	l1	l2	l3	F (kg)	RPM	Tol.
85.220.0200	MK 2	46	20	139.5	25	75.5	200	7000	0,005
85.220.0300	MK 3	62	28	179.5	34	98.5	500	5000	0,005
85.220.0400	MK 4	68	32	208.5	41	106	800	3800	0,005
85.220.0500	MK 5	87	38	263.5	51	134	2000	3000	0,005
85.220.0600	MK 6	102	50	341	57.5	159	3500	2600	0,01

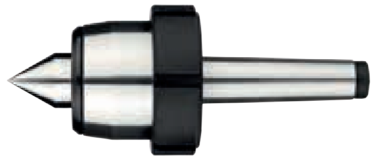
› 85.225 *Phantom*

NL **Heavy Duty Meedraaiend Kopieercenter, met verlengde punt, MK**
FR **Contre-pointe pour machines à copier, de grande capacité avec charge différentielle, avec pointe allongée, CM**
ES **Contrapunto giratorio copiador de gran capacidad, punta extendida, CM**
DE **Mitlaufende Heavy Duty Drehbankspitze mit verlängerter Spitze, mit Spitzenverlängerung, MK**
EN **Extended Live Centre with differential load and high RPM, with extended tip, MT**

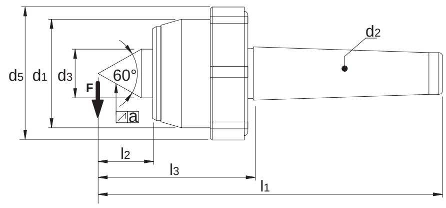


Ref.	d2	d1	d3	d4	l1	l2	l3	F (kg)	RPM	Tol.
85.225.0200	MK 2	46	20	10	149.5	35	85.5	140	7000	0,005
85.225.0300	MK 3	62	28	12	196.5	51	115.5	400	5000	0,005
85.225.0400	MK 4	68	32	14	222	54.5	119.5	500	3800	0,005
85.225.0500	MK 5	87	38	16	277.5	65	148	1200	3000	0,005
85.225.0600	MK 6	102	40	18	364.5	81	182.5	2500	2600	0,01

› 85.230 Phantom

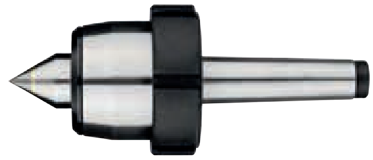


NL Heavy Duty Meedraaiend Center, met afdrukmoer, MK
FR Heavy Duty Contre-pointe à grande capacité, avec écrou de déblocage, CM
ES Contrapunto giratorio de grand capacidad, con tuerca de extracción, CM
DE Mitlaufende Heavy Duty Drehbankspitze, mit Abdrückmutter, MK
EN Live Centre with differential load and high RPM, with draw-off nut, MT

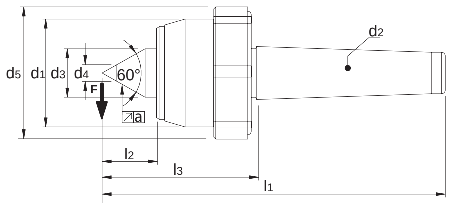


Ref.	d2	d1	d3	d5	l1	l2	l3	F (kg)	RPM	Tol.
85.230.0200	MK 2	44	20	61	139.5	25	75.5	200	7000	0,005
85.230.0300	MK 3	60	28	75	179.5	34	98.5	500	5000	0,005
85.230.0400	MK 4	66	32	83	208.5	41	106	800	3800	0,005
85.230.0500	MK 5	65	38	104	263.5	51	134	2000	3000	0,005
85.230.0600	MK 6	100	50	122	341	57.5	159	3500	2600	0,01

› 85.232 Phantom

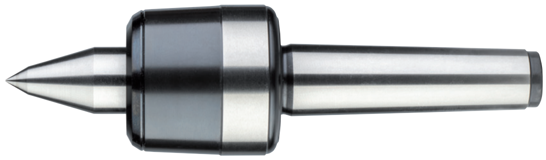


NL Heavy Duty Meedraaiend Center met HM-punt, met afdrukmoer, MK
FR Heavy Duty Contre-pointe à grande capacité avec pointe carbure, avec écrou de déblocage, CM
ES Contrapunto giratorio de gran capacidad, para alta carga, con punta de MD, con tuerca de extracción, CM
DE Mitlaufende Heavy Duty Drehbankspitze mit HM-Spitze, mit Abdrückmutter, MK
EN Heavy Duty Live Centre with differential load and high RPM with Carbide Tip, with draw-off nut, MT

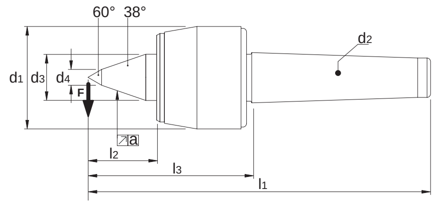


Ref.	d2	d1	d3	d4	d5	l1	l2	l3	F (kg)	RPM	Tol.
85.232.0200	MK 2	44	20	11	61	139.5	25	75.5	120	7000	0,005
85.232.0300	MK 3	60	28	14	75	179.5	34	98.5	360	5000	0,005
85.232.0400	MK 4	66	32	14	83	108.5	41	106	500	3800	0,005
85.232.0500	MK 5	85	38	18	104	263.5	51	134	1000	3000	0,005
85.232.0600	MK 6	100	50	18	122	341	57.5	159	1800	2600	0,01

› 85.280 Phantom



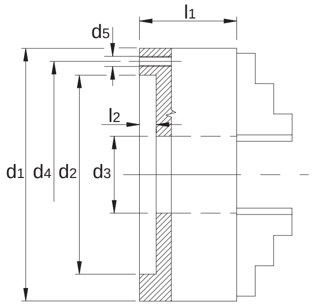
NL Heavy Duty Meedraaiend Kopieercenter, met verlengde punt, MK
FR Contre-pointe pour machines à copier, de grande capacité avec charge différentielle, avec pointe allongée, CM
ES Contrapunto giratorio copiador de gran capacidad, punta extendida, CM
DE Mitlaufende Heavy Duty Drehbankspitze mit verlängerter Spitze, mit Spitzenverlängerung, MK
EN Extended Live Centre with differential load and high RPM, with extended tip, MT

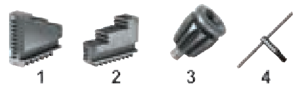


Ref.	d2	d1	d3	d4	l1	l2	l3	F (kg)	RPM	Tol.
85.280.0300	MK 3	49	22	10	174	38	85	400	5000	0,003
85.280.0400	MK 4	63	30	11	207	46	98	800	4000	0,003
85.280.0500	MK 5	85	35	18	266	64	128	1750	3500	0,004
85.280.0600	MK 6	110	50	15	355	75	173	1800	2400	0,01

› 85.410 BISON

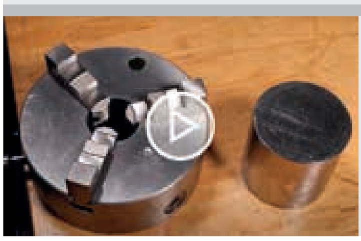
NL Zelfcentrerende Drie-Klauwplaat, gietijzer, type 3204
FR Mandrin à 3 mors concentriques, Fonte, type 3204
ES Plato de sujeción autocentrador de 3 garras, fundición, tipo 3204
DE Selbstzentrierende Dreibackenfutter, Gusseisen, Typ 3204
EN 3-Jaw Self-Centring Scroll Chuck, cast iron, type 3204





DIN
6350

Ref.	d1	l1	l2	d2	d3	d4	d5	1 incl.	2 incl.	3 incl.	4 incl.
85.410.0080	80	44	3	56	16	67	3x M6	85.850.0080	85.855.0080	85.866.0080	85.890.0100
85.410.0100	100	50	3	70	20	83	3x M8	85.850.0100	85.855.0100	85.868.0100	85.890.0200
85.410.0125	125	56	4	95	32	108	3x M8	85.850.0125	85.855.0125	85.868.0125	85.890.0200
85.410.0160	160	64.5	4	125	42	140	6x M10	85.850.0160	85.855.0160	85.868.0160	85.890.0300
85.410.0200	200	75	4	160	55	176	6x M10	85.850.0200	85.855.0200	85.868.0200	85.890.0300
85.410.0250	250	85	5	200	76	224	6x M12	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.410.0315	315	94	5	260	103	286	6x M16	85.850.0315	85.855.0315	85.868.0315	85.890.0400
85.410.0400	400	105	5	330	136	362	6x M16	85.850.0400	85.855.0400	85.868.0400	85.890.0500
85.410.0500	500	120	5	420	190	458	6x M16	85.850.0500	85.855.0500	85.868.0500	85.890.0600
85.410.0630	630	135	7	545	252	586	6x M16	85.850.0630	85.855.0630	85.868.0630	85.890.0600



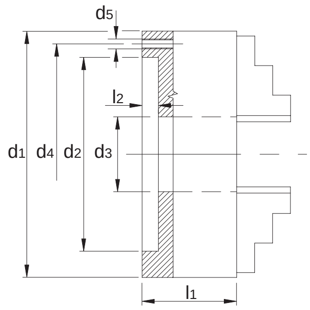
NL Verschillende materialen klemmen in 3 klauwplaat
FR Serrer une pièce dans un mandrin à 3 mors
ES Fijar materiales en un plato de 3 garras
DE Verschiedene Materialen spannen im 3-Backenfutter
EN Clamping material in 3-jaw chuck

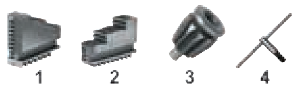
Watch me

www.phantom.eu

› 85.420 BISON

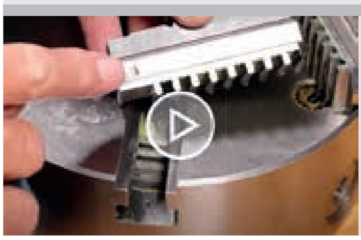
NL Zelfcentrerende Drie-Klauwplaat, staal, type 3504
FR Mandrin à 3 mors concentriques, acier, type 3504
ES Plato de sujeción autocentrador de 3 garras, acero, tipo 3504
DE Selbstzentrierende Dreibackenfutter, stahl, Typ 3504
EN 3-Jaw Self-Centring Scroll Chuck, steel, type 3504





DIN
6350

Ref.	d1	l1	l2	d2	d3	d4	d5	1 incl.	2 incl.	3 incl.	4 incl.
85.420.0080	80	44	3	56	16	67	3x M6	85.850.0080	85.855.0080	85.868.0080	85.890.0100
85.420.0100	100	50	3	70	20	83	3x M8	85.850.0100	85.855.0100	85.868.0100	85.890.0200
85.420.0125	125	59.5	4	95	35	108	3x M8	85.850.0125	85.855.0125	85.868.0125	85.890.0200
85.420.0160	160	68	4	125	42	140	6x M10	85.850.0160	85.855.0160	85.868.0160	85.890.0300
85.420.0200	200	78	4	160	55	176	6x M10	85.850.0200	85.855.0200	85.868.0200	85.890.0300
85.420.0250	250	89	5	200	76	224	6x M12	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.420.0315	315	96.2	5	260	103	286	6x M16	85.850.0315	85.855.0315	85.868.0315	85.890.0400
85.420.0400	400	108	5	330	136	362	6x M16	85.850.0400	85.855.0400	85.868.0400	85.890.0500



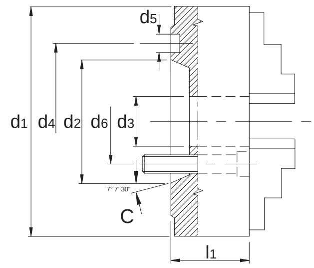
NL Demonteren en monteren bekken 3 klauwplaat
FR Le démontage et montage des mors monoblocs d'un mandrin 3 mors
ES Montar y desmontar garras de un plato 3 garras
DE Demontieren und montieren Backen 3-Backenfutter
EN Remove jaws from 3-jaw chuck

Watch me

www.phantom.eu

› 85.421 BISON

NL Zelfcentrerende Drie-Klauwplaat, staal, type 3514
FR Mandrin à 3 mors concentriques, acier, type 3514
ES Plato de sujeción autocentrador de 3 garras, acero, tipo 3514
DE Selbstzentrierende Dreibackenfutter, stahl, Typ 3514
EN 3-Jaw Self-Centring Scroll Chuck, steel, type 3514

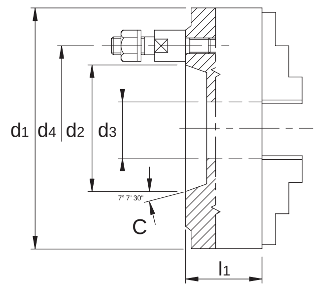


DIN 55026-B

Ref.	d1	C	l1	d2	d3	d4	d5	d6	1 incl.	2 incl.	3 incl.	4 incl.
85.421.1605	160	5	68	82.56	42	104.8	19.6	61.9	85.850.0160	85.855.0160	85.868.0160	85.890.0300
85.421.2005	200	5	78	82.56	42	104.8	19.6	61.9	85.850.0200	85.855.0200	85.868.0200	85.890.0300
85.421.2006	200	6	78	106.37	55	133.4	19.6	82.6	85.850.0200	85.855.0200	85.868.0200	85.890.0300
85.421.2505	250	5	89	82.56	76	104.8	19.6	61.9	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.421.2506	250	6	89	106.37	55	133.4	19.6	82.6	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.421.2508	250	8	89	139.71	76	171.4	19.6	111.1	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.421.3106	315	6	96.2	106.37	103	133.4	19.6	82.6	85.850.0315	85.855.0315	85.868.0315	85.890.0400
85.421.3108	315	8	96.2	139.71	80	171.4	19.6	111.1	85.850.0315	85.855.0315	85.868.0315	85.890.0400
85.421.4008	400	8	108	139.71	136	171.4	19.6	111.1	85.850.0400	85.855.0400	85.868.0400	85.890.0500
85.421.4011	400	11	108	196.86	130	235	19.6	165.1	85.850.0400	85.855.0400	85.868.0400	85.890.0500

› 85.422 BISON

NL Zelfcentrerende Drie-Klauwplaat, staal, type 3534
FR Mandrin à 3 mors concentriques, acier, type 3534
ES Plato de sujeción autocentrador de 3 garras, acero, tipo 3534
DE Selbstzentrierende Dreibackenfutter, stahl, Typ 3534
EN 3-Jaw Self-Centring Scroll Chuck, steel, type 3534

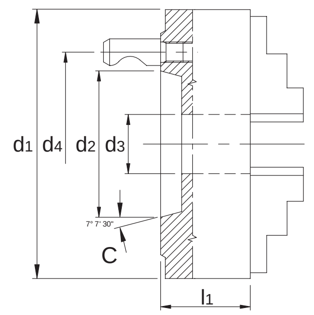


DIN 55027 | BAJO-NET

Ref.	d1	C	l1	d2	d3	d4	1 incl.	2 incl.	3 incl.	4 incl.	5 incl.
85.422.1203	125	3	59.5	53.97	32	75	85.850.0125	85.855.0125	85.868.0125	89.890.0200	85.992.0300 (3x)
85.422.1204	125	4	59.5	63.51	32	85	85.850.0125	85.855.0125	85.868.0125	85.890.0200	85.992.0400 (3x)
85.422.1604	160	4	68	63.51	42	85	85.850.0160	85.855.0160	85.868.0160	85.890.0300	85.992.0400 (3x)
85.422.1605	160	5	68	82.56	42	104.8	85.850.0160	85.855.0160	85.868.0160	85.890.0300	85.992.0500 (4x)
85.422.2005	200	5	78	82.56	55	104.8	85.850.0200	85.855.0200	85.868.0200	85.890.0300	85.992.0500 (4x)
85.422.2006	200	6	78	106.37	55	133.4	85.850.0200	85.855.0200	85.868.0200	85.890.0300	85.992.0600 (4x)
85.422.2506	250	6	89	106.37	76	133.4	85.850.0250	85.855.0250	85.868.0250	85.890.0400	85.992.0600 (4x)
85.422.3106	315	6	96.2	106.37	103	133.4	85.850.0315	85.855.0315	85.868.0315	85.890.0400	85.992.0600 (4x)
85.422.3108	315	8	96.2	139.71	103	171.4	85.850.0315	85.855.0315	85.868.0315	85.890.0400	85.992.0800 (4x)
85.422.3111	315	11	111.7	196.86	103	235	85.850.0315	85.855.0315	85.868.0315	85.890.0400	85.992.1100 (6x)
85.422.4008	400	8	108	139.71	136	171.4	85.850.0400	85.855.0400	85.868.0400	85.890.0500	85.992.0800 (4x)
85.422.4011	400	11	108	196.86	136	235	85.850.0400	85.855.0400	85.868.0400	85.890.0500	85.992.1100 (6x)

› 85.423 BISON

NL Camlock, Zelfcentrerende Drie-Klauwplaat, staal, type 3544
FR Camlock, Mandrin à 3 mors concentriques, acier, type 3544
ES Camlock, Plato de sujeción autocentrador de 3 garras, acero, tipo 3544
DE Camlock, Selbstzentrierende Dreibackenfutter, stahl, Typ 3544
EN Camlock, 3-Jaw Self-Centring Scroll Chuck, steel, type 3544



DIN 55029 | CAM-LOCK

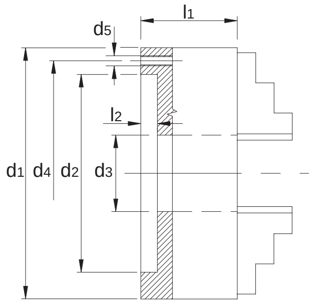
Ref.	d1	C	l1	d2	d3	d4	1 incl.	2 incl.	3 incl.	4 incl.	5 incl.
85.423.1203	125	3	59.5	53.97	32	70.6	85.850.0125	85.855.0125	85.868.0125	85.890.0200	85.993.0300 (3x)
85.423.1204	125	4	59.5	63.51	32	82.6	85.850.0125	85.855.0125	85.868.0125	85.890.0200	85.993.0400 (3x)
85.423.1604	160	4	68	63.51	42	82.6	85.850.0160	85.855.0160	85.868.0160	85.890.0300	85.993.0400 (3x)
85.423.1605	160	5	68	82.56	42	104.8	85.850.0160	85.855.0160	85.868.0160	85.890.0300	85.993.0500 (6x)
85.423.2004	200	4	78	63.51	55	82.6	85.850.0200	85.855.0200	85.868.0200	85.890.0300	85.993.0400 (3x)
85.423.2005	200	5	78	82.56	55	104.8	85.850.0200	85.855.0200	85.868.0200	85.890.0300	85.993.0500 (6x)
85.423.2006	200	6	78	106.37	55	133.4	85.850.0200	85.855.0200	85.868.0200	85.890.0300	85.993.0600 (6x)
85.423.2506	250	6	89	106.37	76	133.4	85.850.0250	85.855.0250	85.868.0250	85.890.0400	85.993.0600 (6x)
85.423.2508	250	8	89	139.71	76	171.4	85.850.0250	85.855.0250	85.868.0250	85.890.0400	85.993.0800 (6x)

› 85.423 BISON

Ref.	d1	C	l1	d2	d3	d4	1 incl.	2 incl.	3 incl.	4 incl.	5 incl.
85.423.3106	315	6	96.2	106.37	103	133.4	85.850.0315	85.855.0315	85.868.0315	85.890.0400	85.993.0600 (6x)
85.423.3108	315	8	96.2	139.71	103	171.4	85.850.0315	85.855.0315	85.868.0315	85.890.0400	85.993.0800 (6x)
85.423.3111	315	11	111.7	196.86	103	235	85.850.0315	85.855.0315	85.868.0315	85.890.0400	85.993.1100 (6x)
85.423.4008	400	8	108	139.71	136	171.4	85.850.0400	85.855.0400	85.868.0400	85.890.0500	85.993.0800 (6x)
85.423.4011	400	11	108	196.86	136	235	85.850.0400	85.855.0400	85.868.0400	85.890.0500	85.993.1100 (6x)

› 85.500 BISON

NL Zelfcentrerende Vier-Klauwplaat, gietijzer, type 3604
FR Mandrin à 4 mors concentriques, Fonte, type 3604
ES Plato de sujeción autocentrador de 4 garras, fundición, tipo 3604
DE Selbstzentrierende Vierbackenfutter, Gusseisen, Typ 3604
EN 4-Jaw Self-Centring Scroll Chuck, cast iron, type 3604

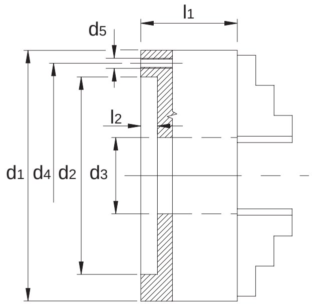


DIN 6350

Ref.	d1	l1	l2	d2	d3	d4	d5	1 incl.	2 incl.	3 incl.	4 incl.
85.500.0125	125	56	4	95	32	108	3x M8	85.851.0125	85.856.0125	85.866.0100	85.890.0200
85.500.0160	160	64.5	4	125	42	140	6x M10	85.851.0160	85.856.0160	85.866.0100	85.890.0300
85.500.0200	200	75	4	160	55	176	6x M10	85.851.0200	85.856.0200	85.866.0100	85.890.0300
85.500.0250	250	85	5	200	76	224	6x M12	85.851.0250	85.856.0250	85.866.0100	85.890.0400
85.500.0400	400	105	5	330	136	362	6x M16	85.851.0400	85.856.0400	85.866.0100	85.890.0500
85.500.0500	500	120	5	420	190	458	6x M16	85.851.0500	85.856.0500	85.866.0100	85.890.0600

› 85.510 BISON

NL Zelfcentrerende Vier-Klauwplaat, staal, type 3704
FR Mandrin à 4 mors concentriques, acier, type 3704
ES Plato de sujeción autocentrador de 4 garras, acero, tipo 3704
DE Selbstzentrierende Vierbackenfutter, stahl, Typ 3704
EN 4-Jaw Self-Centring Scroll Chuck, steel, type 3704

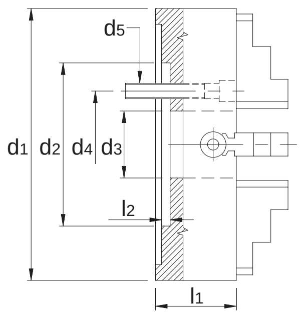


DIN 6350

Ref.	d1	l1	l2	d2	d3	d4	d5	1 incl.	2 incl.	3 incl.	4 incl.
85.510.0100	100	50	3	70	20	83	3x M8	85.851.0100	85.856.0100	85.866.0100	85.890.0200
85.510.0125	125	59.5	4	95	35	108	3x M8	85.851.0125	85.856.0125	85.866.0100	85.890.0200
85.510.0160	160	68	4	125	42	140	6x M10	85.851.0160	85.856.0160	85.866.0100	85.890.0300
85.510.0200	200	78	4	160	55	176	6x M10	85.851.0200	85.856.0200	85.866.0100	85.890.0300
85.510.0250	250	89	5	200	76	224	6x M12	85.851.0250	85.856.0250	85.866.0100	85.890.0400
85.510.0315	315	96.2	5	260	103	286	6x M16	85.851.0315	85.856.0315	85.866.0100	85.890.0400
85.510.0400	400	108	5	330	136	362	6x M16	85.851.0400	85.856.0400	85.866.0100	85.890.0500

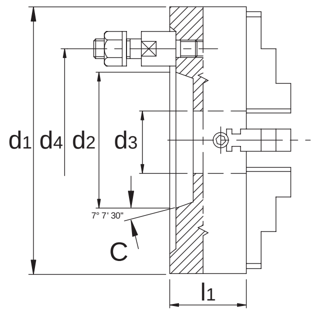
› 85.600 BISON

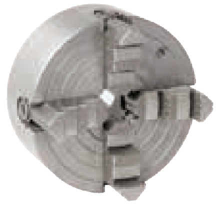
NL Onafhankelijke Vier-Klauwplaat, diam. 85-160 mm staal type 4306, vanaf diam. 200 mm gietijzer type 4304
FR Mandrin à 4 mors indépendants, diam. 85-160 mm acier type 4306, à partir du diam. 200 mm fonte type 4304
ES Plato de 4 garras independientes, diám. 85-160 mm acero tipo 4306, desde diám. 200 mm fundición tipo 4304
DE 4-Backenfutter einzeln spannend, durchm. 85-160 mm Stahl Typ 4306, ab durchm. 200 mm Gusseisen type 4304
EN 4-Jaw Independent Flat Back Chuck, diam. 85-160 mm steel type 4306, from diam. 200 mm cast iron type 4304



Ref.	d1	l1	l2	d2	d3	d4	d5	Bison
85.600.0100	100	40	2.5	79.38	25	54	4x M8	4306
85.600.0125	130	43	2.5	69.85	26	54	4x M8	4306
85.600.0160	156	43	2.5	82.55	42	69.85	4x M10	4306
85.600.0200	200	80	5	110	50	82.6	4x M10	4304
85.600.0315	315	95	7	175	80	133.4	4x M16	4304
85.600.0400	400	102	10	200	100	171.4	4x M16	4304
85.600.0500	500	120	12	270	125	235	4x M20	4304
85.600.0630	630	140	12	270	160	235	4x M20	4304

› 85.602 BISON





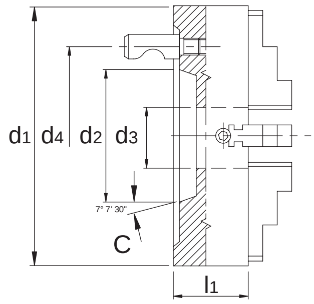
1

NL **Onafhankelijke Vier-Klauwplaat, gietijzer, type 4334**
FR **Mandrin à 4 mors indépendants, Fonte, type 4334**
ES **Plato de 4 garras independientes, fundición, tipo 4334**
DE **4-Backenfutter einzeln spannend, Gusseisen, Typ 4334**
EN **4-Jaw Independent Flat Back Chuck, cast iron, type 4334**

DIN 55027 | BAJO-NET

Ref.	d1	C	l1	d2	d3	d4	1 incl.
85.602.2004	200	4	80	63.526	50	85	85.992.0400 (3x)
85.602.2005	200	5	80	82.578	50	104.8	85.992.0500 (4x)
85.602.2006	200	6	80	106.39	50	133.4	85.992.0600 (4x)
85.602.2506	250	6	85	106.39	65	133.4	85.992.0600 (4x)
85.602.2508	250	8	85	139.734	65	171.4	85.992.0800 (4x)
85.602.3106	315	6	95	106.39	80	133.4	85.992.0600 (4x)
85.602.3108	315	8	95	139.734	80	171.4	85.992.0800 (4x)
85.602.3111	315	11	95	196.887	80	235	85.992.1100 (6x)
85.602.4006	400	6	105	106.39	100	133.4	85.992.0600 (4x)
85.602.4008	400	8	105	139.734	100	171.4	85.992.0800 (4x)
85.602.4011	400	11	105	196.887	100	235	85.992.1100 (6x)
85.602.5008	500	8	120	139.734	125	171.4	85.992.0800 (4x)
85.602.5011	500	11	120	196.887	125	235	85.992.1100 (6x)

› 85.603 BISON



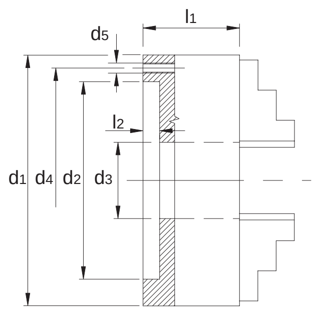
1

NL **Camlock, Onafhankelijke Vier-Klauwplaat, gietijzer, type 4344**
FR **Camlock, Mandrin à 4 mors indépendants, Fonte, type 4344**
ES **Camlock, Plato de 4 garras independientes, fundición, tipo 4344**
DE **Camlock, 4-Backenfutter einzeln spannend, Gusseisen, Typ 4344**
EN **Camlock, 4-Jaw Independent Flat Back Chuck, cast iron, type 4344**

DIN 55029 | CAM-LOCK

Ref.	d1	C	l1	d2	d3	d4	1 incl.
85.603.2004	200	4	80	63.526	50	82.6	85.993.0400(3x)
85.603.2005	200	5	80	82.578	50	104.8	85.993.0500(6x)
85.603.2006	200	6	80	106.39	50	133.4	85.993.0600(6x)
85.603.2505	250	5	85	82.578	65	104.8	85.993.0500(6x)
85.603.2508	250	8	85	139.734	65	171.4	85.993.0800(6x)
85.603.3106	315	6	95	106.39	80	133.4	85.993.0600(6x)
85.603.3108	315	8	95	139.734	80	171.4	85.993.0800(6x)
85.603.4008	400	8	105	139.734	100	171.4	85.993.0800(6x)
85.603.4011	400	11	105	196.887	100	235	85.993.1100(6x)
85.603.5008	500	8	120	139.734	125	171.4	85.993.0800(6x)
85.603.5011	500	11	120	196.887	125	235	85.993.1100(6x)
85.603.8015	800	15					

› 85.670 BISON



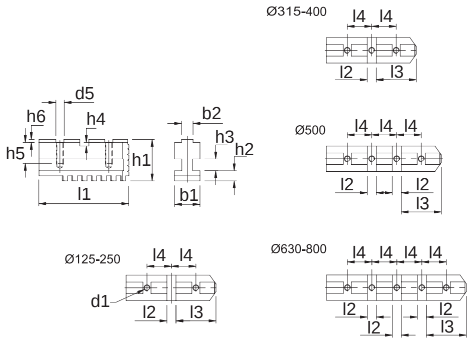
NL **Gecombineerde Vier-Klauwplaat (Westcott), gietijzer, type 4605**
FR **Mandrin à 4 mors combinés (Westcott), Fonte, type 4605**
ES **Plato de 4 garras combinado (Westcott), fundición, tipo 4605**
DE **Kombinierte Vierbackenfutter (Westcott), Gusseisen, Typ 4605**
EN **4-Jaw Combined Clamping Chuck (Westcott), cast iron, type 4605**

DIN 6351

Ref.	d1	l1	l2	d2	d3	d4	d5
85.670.0200	200	96	5.5	160	55	176	6x M10
85.670.0250	250	102	6	200	76	224	6x M12
85.670.0315	315	117	6	260	103	286	6x M16

› 85.801 BISON

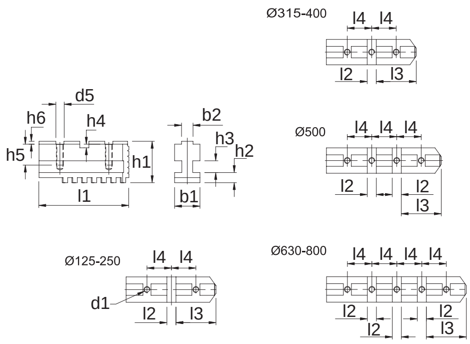
NL **Harde Grondbekken, set à 3 stuks, voor 3-klauwplaat type 32**, 35****
FR **Jeu de semelles, Jeu de 3 pièces, pour mandrin à 3 mors type 32**, 35****
ES **Garras duras, juego de 3 piezas, Para plato de 3 garras tipo 32**, 35****
DE **Harte Grundbacken, Satz von 3 Stück, für 3-Backenfutter Typ 32**, 35****
EN **Hard Master Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 32**, 35****



Ref.	d1	l1	b1	h1	h2	h3	b2	l2	l3	h4	l4	h5	d5	h6
85.801.0125	125	54	20	28	8	8	7.94	12.69	22.6	4	16	13.5	M8	3.2
85.801.0160	160	65	20	29	8	8	7.94	12.69	28.6	4	19.05	14	M10	3.2
85.801.0200	200	79	25	33	9	10	7.94	12.69	34.9	4	22.25	14	M10	3.2
85.801.0250	250	92	28	36	11	12	12.7	19.04	39.7	4	27	16	M12	3.2
85.801.0315	315	110	32	40	12.7	12	12.7	19.04	47.6	4	31.75	16	M12	3.2
85.801.0400	400	130	36	49	15	14	12.7	19.04	57.1	7.2	38.1	22	M16	3.2
85.801.0500	500	166	40	54	16	14	12.7	19.04	57.1	7.2	38.1	32.5	M20	3.2
85.801.0630	630	210	50	54.5	16	14	12.7	19.04	57.1	7.2	38.1	32.5	M20	3.2

› 85.802 BISON

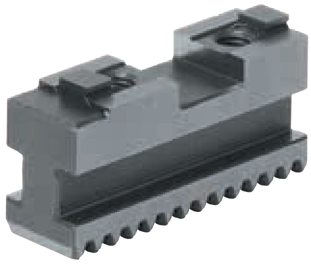
NL **Harde Grondbekken, set à 4 stuks, voor 4-klauwplaat type 36**, 37****
FR **Jeu de semelles, Jeu de 4 pièces, pour mandrin à 4 mors type 36**, 37****
ES **Garras duras, juego de 4 piezas, Para plato de 4 garras tipo 36**, 37****
DE **Harte Grundbacken, Satz von 4 Stück, für 4-Backenfutter Typ 36**, 37****
EN **Hard Master Jaws, set of 4 pieces, for 4-Jaw Clamping Chuck type 36**, 37****

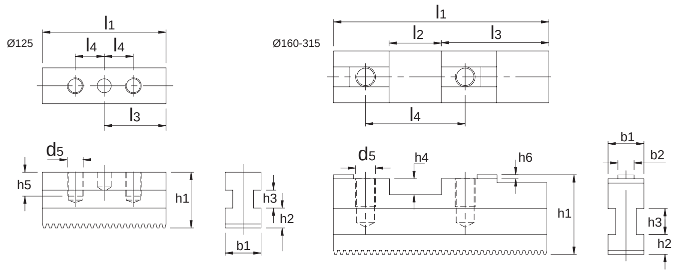


Ref.	d1	l1	b1	h1	h2	h3	b2	l2	l3	h4	l4	h5	d5	h6
85.802.0125	125	54	20	28	8	8	7.94	12.69	22.6	4	16	13.5	M8	3.2
85.802.0160	160	65	20	29	8	8	7.94	12.69	28.6	4	19.05	14	M10	3.2
85.802.0200	200	79	25	33	9	10	7.94	12.69	34.9	4	22.25	14	M10	3.2
85.802.0250	250	92	28	36	11	12	12.7	19.04	39.7	4	27	16	M12	3.2
85.802.0400	400	130	36	49	15	14	12.7	19.04	57.1	7.2	38.1	22	M16	3.2
85.802.0500	500	166	40	54	16	14	12.7	19.04	57.1	7.2	38.1	32.5	M20	3.2

› 85.805 BISON

NL Harde Grondbekken, set à 3 stuks, voor 3-klauwplaat type 3404
FR Jeu de semelles, Jeu de 3 pièces, pour mandrin à 3 mors type 3404
ES Garras duras, juego de 3 piezas, Para plato de 3 garras tipo 3404
DE Harte Grundbacken, Satz von 3 Stück, für 3-Backenfutter Typ 3404
EN Hard Master Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 3404

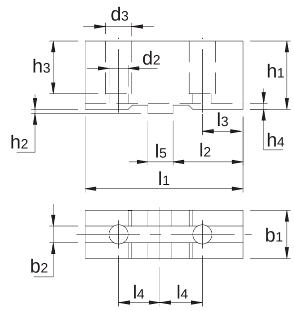




Ref.	d1	l1	b1	h1	h2	h3	b2	l2	l3	h4	l4	h5	d5	h6
85.805.0125	125	51.5	14	21.5	6.5	7		5	25.75	3	10	10	M6	
85.805.0160	160	65	20	26.5	7.5	9	8	18	28	5	32	12	M8	2.5
85.805.0200	200	85	22	28.5	8	9	10	20	42	5.5	40	12	M8	2.5
85.805.0250	250	87.5	26	36	10	11	12	20	41.5	5.5	40	17	M12	3
85.805.0315	315	125	32	42	12	14	12	26	69	7	54	17	M12	3

› 85.811 BISON

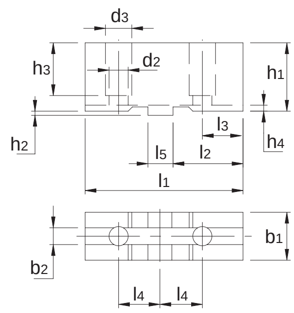
NL Zachte Opschroefbekken, set à 3 stuks, voor 3-klauwplaat type 32**, 35**
FR Jeu de mors doux rapportés, Jeu de 3 pièces, pour mandrin à 3 mors type 32**, 35**
ES Garras de acoplado blandas, juego de 3 piezas, Para plato de 3 garras tipo 32**, 35**
DE Weiche Aufschraubbacken, Satz von 3 Stück, für 3-Backenfutter Typ 32**, 35**
EN Soft Top Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 32**, 35**



Ref.	d1	l1	b1	h1	b2	h2	h4	l5	l2	d2	d3	h3	l4	l3
85.811.0125	125	64	22	38.5	7.95	4	3.2	12.69	25	9	15	26	16	15
85.811.0160	160	78	25	41.5	7.95	4	3.2	12.69	34	11	18	29	19.05	21
85.811.0200	200	90	27	43.5	7.95	4	3.2	12.69	40	11	18	31	22.25	24
85.811.0250	250	106	32.5	51.5	12.71	4	3.2	19.04	45	14	20	36	27	27.5
85.811.0315	315	120	37	55	12.71	4	3.2	19.04	53	14	20	40	31.75	30.7
85.811.0400	400	140	42	64.5	12.71	4	6.3	19.04	63	18	26	45.5	38.1	34.4
85.811.0500	500	140	42	74.5	12.71	4	6.3	19.04	63	22	33	56	38.1	34.4
85.811.0630	630	160	52	82	12.71	4	6.3	19.04	63	22	33	64	38.1	34.4

› 85.812 BISON

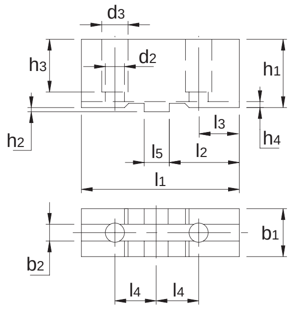
NL Zachte Opschroefbekken, set à 4 stuks, voor 4-klauwplaat type 36**, 37**
FR Jeu de mors doux rapportés, Jeu de 4 pièces, pour mandrin à 4 mors type 36**, 37**
ES Garras de acoplado blandas, juego de 4 piezas, Para plato de 4 garras tipo 36**, 37**
DE Weiche Aufschraubbacken, Satz von 4 Stück, für 4-Backenfutter Typ 36**, 37**
EN Soft Top Jaws, set of 4 pieces, for 4-Jaw Clamping Chuck type 36**, 37**



Ref.	d1	l1	b1	h1	b2	h2	h4	l5	l2	d2	d3	h3	l4	l3
85.812.0125	125	64	22	38.5	7.95	4	3.2	12.69	25	9	15	26	16	15
85.812.0160	160	78	25	41.5	7.95	4	3.2	12.69	34	11	18	29	19.05	21
85.812.0200	200	90	27	43.5	7.95	4	3.2	12.69	40	11	18	31	22.25	24
85.812.0250	250	106	32.5	51.5	12.71	4	3.2	19.04	45	14	20	38	27	27.5
85.812.0315	315	120	37	55	12.71	4	3.2	19.04	53	14	20	40	31.75	30.7
85.812.0400	400	140	42	64.5	12.71	4	6.3	19.04	63	18	26	45.5	38.1	34.4
85.812.0500	500	140	42	74.5	12.71	4	6.3	19.04	63	22	33	56	38.1	34.4

› 85.813 BISON

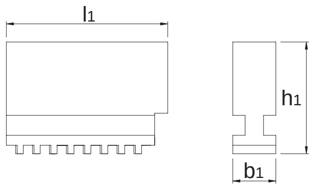
NL **Zachte Opschroefbekken, set à 3 stuks, voor 3-klauwplaat type 3404**
FR **Jeu de mors doux rapportés, Jeu de 3 pièces, pour mandrin à 3 mors type 3404**
ES **Garras de acoplado blandas, juego de 3 piezas, Para plato de 3 garras tipo 3404**
DE **Weiche Aufschraubbacken, Satz von 3 Stück, für 3-Backenfutter Typ 3404**
EN **Soft Top Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 3404**



Ref.	d1	l1	b1	h1	b2	h2	l2	l5	d2	d3	h3	l4
85.813.0125	125	55	20	30	14	1.5	25	5	6.4	10.4	24	20
85.813.0160	160	85	20	40	8	3	42	18	8.4	13.5	26.5	32
85.813.0250	250	125	30	55	12	3.5	70	20	13	19	41	40

› 85.820 BISON

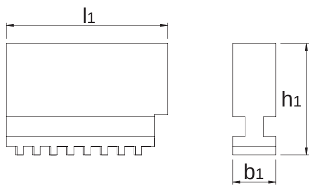
NL **Zachte Blokbekken, set à 3 stuks, voor 3-klauwplaat type 32**, 35****
FR **Jeu de mors doux monoblocs, Jeu de 3 pièces, pour mandrin à 3 mors type 32**, 35****
ES **Garras blandas, juego de 3 piezas, Para plato de 3 garras tipo 32**, 35****
DE **Weiche Blockbacken, Satz von 3 Stück, für 3-Backenfutter Typ 32**, 35****
EN **Soft Solid Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 32**, 35****



Ref.	d1	l1	b1	h1
85.820.0080	80	32	11	28
85.820.0100	100	42	15	32
85.820.0125	125	51	20	40
85.820.0160	160	70	20	53
85.820.0200	200	85	25	54
85.820.0250	250	105	28	63
85.820.0315	315	125	32	73
85.820.0400	400	145	36	92

› 85.821 BISON

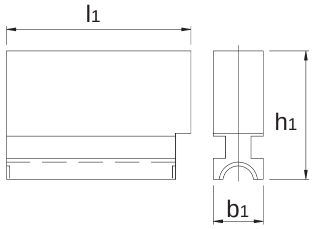
NL **Zachte Blokbekken, set à 4 stuks, voor 4-klauwplaat type 36**, 37****
FR **Jeu de mors doux monoblocs, Jeu de 4 pièces, pour mandrin à 4 mors type 36**, 37****
ES **Garras blandas, juego de 4 piezas, Para plato de 4 garras tipo 36**, 37****
DE **Weiche Blockbacken, Satz von 4 Stück, für 4-Backenfutter Typ 36**, 37****
EN **Soft Solid Jaws, set of 4 pieces, for 4-Jaw Clamping Chuck type 36**, 37****



Ref.	d1	l1	b1	h1
85.821.0100	100	42	15	32
85.821.0125	125	51	20	40
85.821.0160	160	70	20	53
85.821.0200	200	85	25	54
85.821.0250	250	105	28	63
85.821.0315	315	125	32	73
85.821.0400	400	145	36	92
85.821.0500	500	180	40	100

› 85.823 BISON

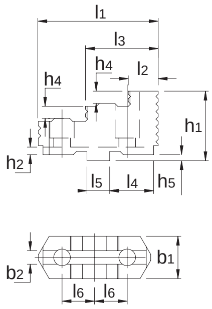
NL Zachte Blokbekken, set à 4 stuks, voor 4-klauwplaat type 4605
FR Jeu de mors doux monoblocs, Jeu de 4 pièces, pour mandrin à 4 mors type 4605
ES Garras blandas, juego de 4 piezas, Para plato de 4 garras tipo 4605
DE Weiche Blockbacken, Satz von 4 Stück, für 4-Backenfutter Typ 4605
EN Soft Solid Jaws, set of 4 pieces, for 4-Jaw Clamping Chuck type 4605



Ref.	d1	l1	b1	h1
85.823.0200	200	85	25	58
85.823.0250	250	91	28	61
85.823.0315	315	125	32	73

› 85.840 BISON

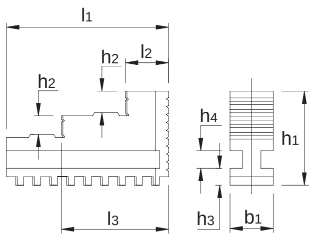
NL Harde Omkeerbare Opzetbekken, set à 3 stuks, voor 3-klauwplaat type 32**, 35**
FR Mors rapportés durs réversibles, Jeu de 3 pièces, pour mandrin à 3 mors type 32**, 35**
ES Garras superiores reversibles duras, juego de 3 piezas, Para plato de 3 garras tipo 32**, 35**
DE Harte, umkehrbare Aufsatzbacken, Satz von 3 Stück, für 3-Backenfutter Typ 32**, 35**
EN Hard Reversible Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 32**, 35**

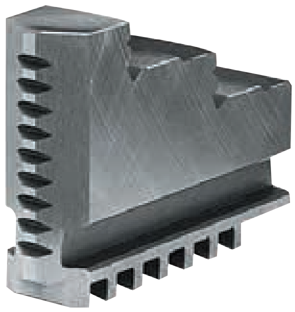


Ref.	d1	l1	b1	h1	b2	h2	h5	l5	l4	l2	l3	l6	h4
85.840.0125	125	56	22	38.5	7.95	4	3.2	12.69	22.6	14.5	35	16	8
85.840.0160	160	67	25	41.5	7.95	4	3.2	12.69	28.6	18	41.5	19.05	8.5
85.840.0200	200	80	27	43.5	7.95	4	3.2	12.69	34.9	21.5	51	22.25	9.5
85.840.0250	250	95	32.5	51.5	12.71	4	3.2	19.04	39.7	24.5	59	27	12
85.840.0400	400	127	42	64.5	12.71	4	6.3	19.04	57.1	27	76.5	38.1	13.5
85.840.0500	500	127	42	74.5	12.71	4	6.3	19.04	57.1	50	88	38.1	17
85.840.0630	630	127	52	82	12.71	4	6.3	19.04	57.1	51	89	38.1	21

› 85.850 BISON

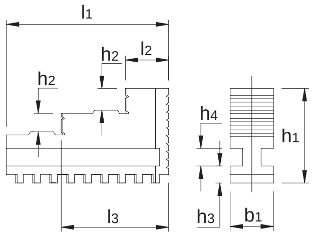
NL Harde naar buiten getrapte Bekken (Boorbekken), set à 3 stuks, voor 3-klauwplaat type 32**, 35**
FR Mors durs à l'endroit, Jeu de 3 pièces, pour mandrin à 3 mors type 32**, 35**
ES Garras duras exteriores, juego de 3 piezas, Para plato de 3 garras tipo 32**, 35**
DE Harte, nach außen gestufte Backen (Bohrbacken), Satz von 3 Stück, für 3-Backenfutter Typ 32**, 35**
EN Hard Solid Outside Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 32**, 35**

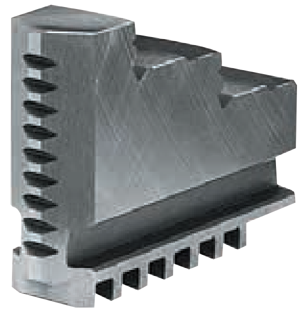




Ref.	d1	l1	b1	h1	h3	h4	h2	l2	l3
85.850.0080	80	32	11	28	6	6	6	9.5	21
85.850.0100	100	42	15	32	6	6	7	12	27.5
85.850.0125	125	51	20	40	8	8	8	13	33.5
85.850.0160	160	70	20	53	8	8	10	22	47.5
85.850.0200	200	85	25	54	10	10	12	23	57
85.850.0250	250	105	28	63	11	12	14	28	69.5
85.850.0315	315	125	32	73	12.7	12	18	34.5	83
85.850.0400	400	145	36	92	15	14	22	36	99
85.850.0500	500	180	40	100	16	14	26	50	119.5
85.850.0630	630	225	50	110	16	14	28	66	149

› 85.851 BISON

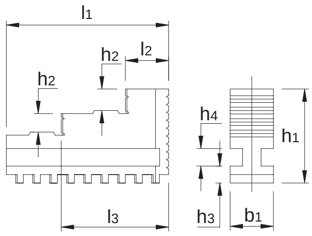


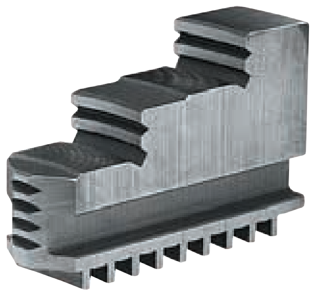


NL **Harde naar buiten getrapte Bekken (Boorbekken), set à 4 stuks, voor 4-klauwplaat type 36**, 37****
FR **Mors durs à l'endroit, Jeu de 4 pièces, pour mandrin à 4 mors type 36**, 37****
ES **Garras duras exteriores, juego de 4 piezas, Para plato de 4 garras tipo 36**, 37****
DE **Harte, nach außen gestufte Backen (Bohrbacken), Satz von 4 Stück, für 4-Backenfutter Typ 36**, 37****
EN **Hard Solid Outside Jaws, set of 4 pieces, for 4-Jaw Clamping Chuck type 36**, 37****

Ref.	d1	l1	b1	h1	h3	h4	h2	l2	l3
85.851.0100	100	42	15	32	6	6	7	12	27.5
85.851.0125	125	51	20	40	8	8	8	13	33.5
85.851.0160	160	70	20	53	8	8	10	22	47.5
85.851.0200	200	85	25	54	10	10	12	23	57
85.851.0250	250	105	28	63	11	12	14	28	69.5
85.851.0315	315	125	32	73	12.7	12	18	34.5	83
85.851.0400	400	145	36	92	15	14	22	36	99
85.851.0500	500	180	40	100	16	14	26	50	119.5

› 85.855 BISON

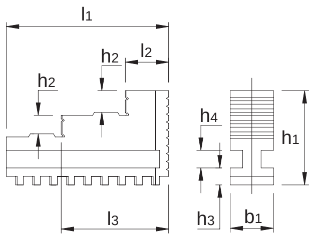


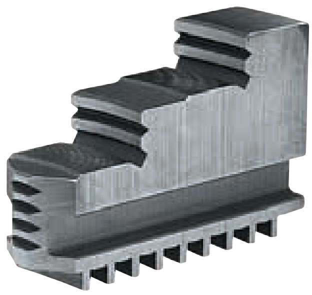


NL **Harde naar binnen getrapte Bekken (Draaibekken), set à 3 stuks, voor 3-klauwplaat type 32**, 35****
FR **Mors durs à l'envers, Jeu de 3 pièces, pour mandrin à 3 mors type 32**, 35****
ES **Garras duras interiores, juego de 3 piezas, Para plato de 3 garras tipo 32**, 35****
DE **Harte, nach innen gestufte Backen (Drehbacken), Satz von 3 Stück, für 3-Backenfutter Typ 32**, 35****
EN **Hard Solid Inside Jaws, set of 3 pieces, for 3-Jaw Clamping Chuck type 32**, 35****

Ref.	d1	l1	b1	h1	h3	h4	h2	l2	l3
85.855.0080	80	32	11	28	6	6	6	9.5	21
85.855.0100	100	42	15	32	6	6	7	11	27
85.855.0160	160	70	20	53	8	8	10	19	45
85.855.0200	200	85	25	54	10	10	12	23	57
85.855.0250	250	105	28	63	11	12	14	28	69.5
85.855.0315	315	125	32	73	12.7	12	18	34.5	83
85.855.0400	400	145	36	92	15	14	22	36	99
85.855.0500	500	180	40	100	16	14	26	50	119.5
85.855.0630	630	225	50	110	16	14	28	66	149

› 85.856 BISON





NL **Harde naar binnen getrapte Bekken (Draaibekken), set à 4 stuks, voor 4-klauwplaat type 36**, 37****
FR **Mors durs à l'envers, Jeu de 4 pièces, pour mandrin à 4 mors type 36**, 37****
ES **Garras duras interiores, juego de 4 piezas, Para plato de 4 garras tipo 36**, 37****
DE **Harte, nach innen gestufte Backen (Drehbacken), Satz von 4 Stück, für 4-Backenfutter Typ 36**, 37****
EN **Hard Solid Inside Jaws, set of 4 pieces, for 4-Jaw Clamping Chuck type 36**, 37****

Ref.	d1	l1	b1	h1	h3	h4	h2	l2	l3
85.856.0100	100	42	15	32	6	6	7	11	27
85.856.0125	125	51	20	40	8	8	8	13	33.5
85.856.0160	160	70	20	53	8	8	10	19	45
85.856.0200	200	85	25	54	10	10	12	23	57
85.856.0250	250	105	28	63	11	12	14	28	69.5
85.856.0315	315	125	32	73	12.7	12	18	34.5	83
85.856.0400	400	145	36	92	15	14	22	36	99
85.856.0500	500	180	40	100	16	14	26	50	119.5

› 85.866 BISON

NL Rondsel, voor gietijzeren klauwplaat type 32**, 36**, 4605
FR Pignon, pour mandrin fonte type 32**, 36**, 4605
ES Piñón, Para plato de sujeción fundición tipo 32**, 36**, 4605
DE Ritzel, für gusseisen Backenfutter Typ 32**, 36**, 4605
EN Pinion, for cast iron Clamping Chuck type 32**, 36**, 4605

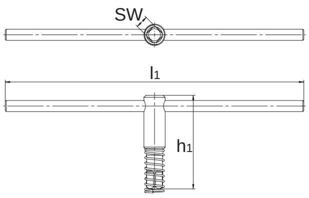
Ref.	d1	sw	Ref.	d1	sw
85.866.0080	80	6	85.866.0250	250	14
85.866.0100	100	9	85.866.0315	315	14
85.866.0125	125	9	85.866.0400	400	17
85.866.0160	160	11	85.866.0500	500	19
85.866.0200	200	11	85.866.0630	630	19

› 85.868 BISON

NL Rondsel, voor stalen klauwplaat type 35**, 37**
FR Pignon, pour mandrin acier type 35**, 37**
ES Piñón, Para plato de sujeción acero tipo 35**, 37**
DE Ritzel, für Stahlen Backenfutter Typ 35**, 37**
EN Pinion, for steel Clamping Chuck type 35**, 37**

Ref.	d1	sw	Ref.	d1	sw
85.868.0125	125	9	85.868.0250	250	14
85.868.0160	160	11	85.868.0315	315	14
85.868.0200	200	11	85.868.0400	400	17

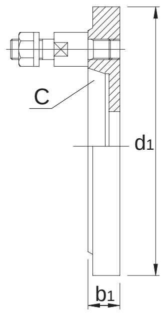
› 85.890 BISON



NL Klauwplaatsleutel
FR Clé à mandrin
ES Llave para platos
DE Spannschlüssel
EN Safety Wrench

Ref.	Nr.	sw	l1	h1	Ø	Ref.	Nr.	sw	l1	h1	Ø
85.890.0100	1	6	100	60	80	85.890.0400	4	14	310	100	250/315
85.890.0200	2	9	140	60	100/125	85.890.0500	5	17	400	120	400
85.890.0300	3	11	215	80	160/200	85.890.0600	6	19	450	140	500/630

› 85.961 BISON

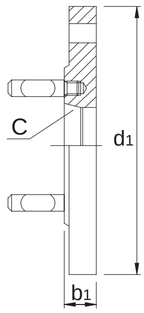


NL Klauwplaatflens, gietijzer, Halfbewerkte gereedschapshouder, type 8232, ISO 702-3 (DIN 55027 Bajonet)
FR Faux-plateau, Fonte, Mandrin porte-outils non fini, type 8232, ISO 702-3 (DIN 55027 Baïonnette)
ES Contraplato, fundición, Pieza en bruto, tipo 8232, ISO 702-3 (DIN 55027 bayoneta)
DE Spannfutterflansche, Gusseisen, Werkzeughalter-Rohling, Typ 8232, ISO 702-3 (DIN 55027 Bajonet)
EN Adapter Plate, cast iron, Tool Blank, type 8232, ISO 702-3 (DIN 55027 Bajonet)

DIN 55027 | BAJO-NET

Ref.	d1	C	b1	Ref.	d1	C	b1
85.961.1003	102	3	18	85.961.2508	253	8	46
85.961.1203	127	3	19.5	85.961.3106	318	6	33
85.961.1204	127	4	19.5	85.961.3108	318	8	55
85.961.1603	162	3	24	85.961.3111	318	11	47
85.961.1604	162	4	24	85.961.4008	405	8	43
85.961.1605	162	5	24	85.961.4011	405	11	47
85.961.2004	203	4	38	85.961.5011	505	11	45
85.961.2005	203	5	38	85.961.6311	635	11	45
85.961.2006	203	6	33	85.961.6315	635	15	56
85.961.2506	253	6	50				

› 85.962 BISON



NL **Klauwplaatflens, gietijzer, Halfbewerkte gereedschapshouder, type 8242, ISO 702-2 (DIN 55029 Camlock)**
FR **Faux-plateau, Fonte, Mandrin porte-outils non fini, type 8242, ISO 702-2 (DIN 55029 Camlock)**
ES **Contraplato, fundición, Pieza en bruto, tipo 8242, ISO 702-2 (DIN 55029 Camlock)**
DE **Spannfutterflansche, Gusseisen, Werkzeughalter-Rohling, Typ 8242, ISO 702-2 (DIN 55029 Camlock)**
EN **Adapter Plate, cast iron, Tool Blank, type 8242, ISO 702-2 (DIN 55029 Camlock)**

DIN 55029 | CAM-LOCK

Ref.	d1	C	b1	Ref.	d1	C	b1
85.962.1003	102	3	28	85.962.2006	203	6	35
85.962.1203	127	3	26	85.962.2506	253	6	49
85.962.1204	127	4	26	85.962.2508	253	8	49
85.962.1603	162	3	26	85.962.3108	318	8	55
85.962.1604	162	4	29	85.962.3111	318	11	55
85.962.1605	162	5	29	85.962.4011	405	11	75
85.962.2004	203	4	44	85.962.5008	505	8	46
85.962.2005	203	5	50	85.962.6315	635	15	60

› 85.992 BISON

NL **Klauwplaatpen, voor ISO 702-3 (DIN 55027 Bajonet)**
FR **Tenon de fixation, pour ISO 702-3 (DIN 55027 Baïonnette)**
ES **Tornillo de fijación, para ISO 702-3 (DIN 55027 bayoneta)**
DE **Camloc Bolzen, für ISO 702-3 (DIN 55027 Bajonet)**
EN **Mounting Bolt, for ISO 702-3 (DIN 55027 Bajonet)**

Ref.	C	d1	NR	Ref.	C	d1	NR
85.992.0300	3	M10x34	3	85.992.0600	6	M12x50	4
85.992.0400	4	M10x39	3	85.992.0800	8	M16x60	4
85.992.0500	5	M10x43	4	85.992.1100	11	M20x75	6

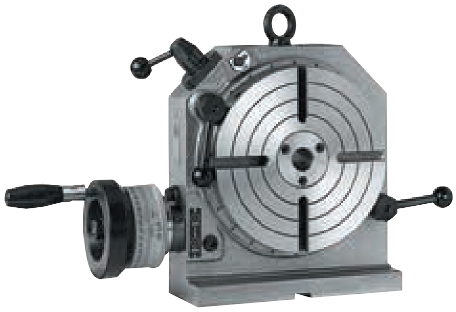
› 85.993 BISON

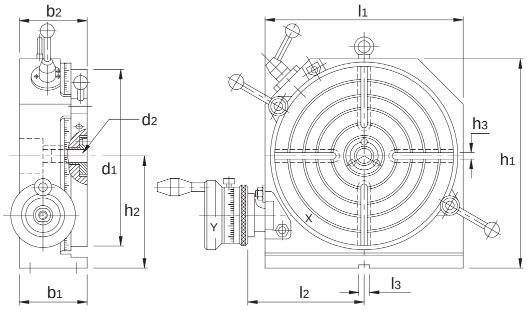
NL **Klauwplaatpen, voor ISO 702-2 (DIN 55029 Camlock)**
FR **Tenon de fixation, pour ISO 702-2 (DIN 55029 Camlock)**
ES **Tornillo de fijación, para ISO 702-2 (DIN 55029 Camlock)**
DE **Camloc Bolzen, für ISO 702-2 (DIN 55029 Camlock)**
EN **Mounting Bolt, for ISO 702-2 (DIN 55029 Camlock)**

Ref.	C	d1	NR	Ref.	C	d1	NR
85.993.0300	3	M10x1x35	3	85.993.0600	6	M16x1,5x49	6
85.993.0400	4	M10x1x37	3	85.993.0800	8	M20x1,5x55,5	6
85.993.0500	5	M12x1x43	6	85.993.1100	11	M22x1,5x67	6

› 87.110 BISON

NL Rondverdeeltafel, type 5859
FR Plateau diviseur, type 5859
ES Plato divisor, tipo 5859
DE Rundtische, Typ 5859
EN Rotary Table, type 5859

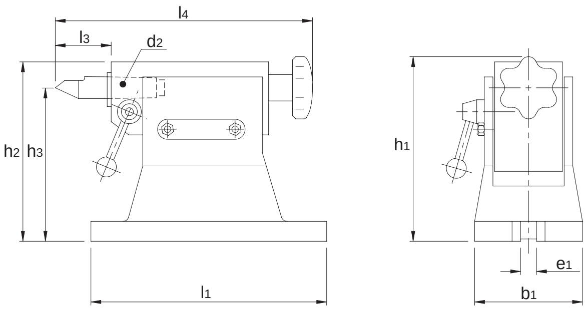




Ref.	d1	x:y	h1	l1	b1	l3	h2	h3	b2	l2	d2
87.110.0160	160	1:60	225	200	90	14	125	10	96	127	MK 3
87.110.0200	200	1:60	270	240	95	14	150	10	98	147	MK 3
87.110.0250	250	1:90	318	285	115	18	175	12	115	175	MK 3
87.110.0320	320	1:90	374	348	115	18	200	12	120	207	MK 3
87.110.0400	400	1:90	465	430	125	18	250	14	135	248	MK 4

› 87.250 BISON

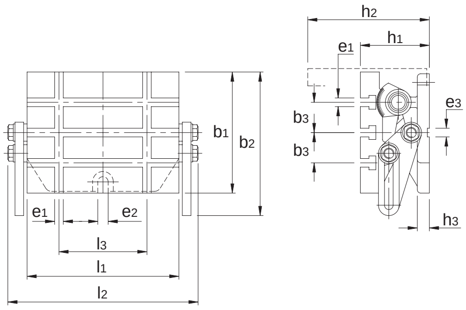
NL Tegencenter, type 5819
FR Contre-pointe, type 5819
ES Contrapunto, tipo 5819
DE Reitstock, Typ 5819
EN Tailstock, type 5819



Ref.	h3	l1	b1	h1 max	e1 (H7)	l3	h2	l4	d2
87.250.0100	95-130	195	100	183	14	40-70	155	335	MK 2
87.250.0125	130-170	250	120	223	18	50-90	200	409	MK 3
87.250.0160	170-200	280	142	253	18	50-90	230	433	MK 3
87.250.0200	220-250	300	164	303	18	60-100	285	465	MK 4

› 87.400 BISON

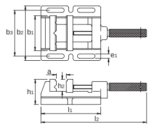
NL Zwenkbare Opspantafel, type 5150
FR Table de bridage articulée, type 5150
ES Mesa de fijación basculante, tipo 5150
DE Schwenkbare Spanntische, Typ 5150
EN Swivel Angle Plate, type 5150

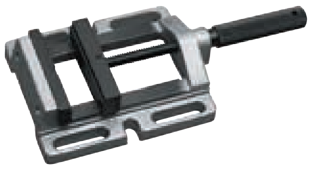


Ref.	b1	l1	l2	b2	b3	e1 N6	l3	e2	h1	h2	h3	e3
87.400.0200	200	250	324	236	50	12	126	18	111	201	22	16
87.400.0250	250	315	405	306	63	14	160	18	127	252	25	18

› 88.150 BISON

NL Boorklem, type 6543
FR Étau machine, type 6543
ES Mordaza para taladros, tipo 6543
DE Bohrschraubstock, Typ 6543
EN Drilling Machine Vise, type 6543

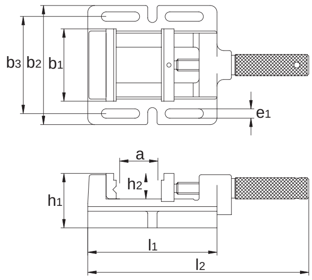


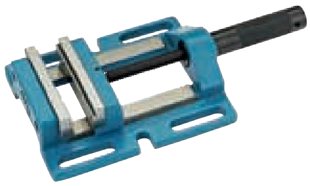


Ref.	b1	b2	b3	a max	l1	l2	h1	h2	e1	Max daN
88.150.0120	120	176	148	120	212	360	64	30	13	650
88.150.0150	150	208	178	150	262	442	66	38	13	800

› 88.152 International Tools

NL ECO PRO Boorklem
FR Étau machine ECO PRO
ES Mordaza para taladros ECO PRO
DE ECO PRO Bohrschraubstock
EN ECO PRO Drilling Machine Vise



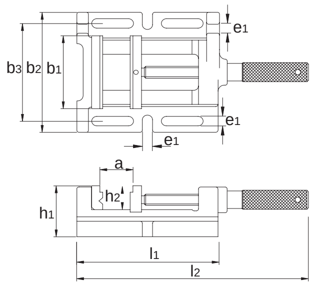


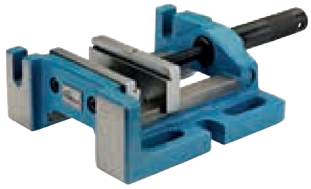
ECO PRO

Ref.	b1	b2	b3	a max	l1	l2	h1	h2	e1
88.152.0085	85	143	105	70	157	238	54	30	12,5
88.152.0100	100	152	126	95	176	280	60	30	14
88.152.0120	120	178	149	105	220	340	60	35	14
88.152.0150	150	195	166	140	229	380	77	39	15

› 88.154 International Tools

NL ECO PRO Boorklem met 3 opspanmogelijkheden
FR Étau machine ECO PRO 3 positions
ES Mordaza para taladros ECO PRO 3 posiciones
DE ECO PRO Bohrschraubstock mit 3 Aufspannmöglichkeiten
EN ECO PRO Drilling Machine Vise with 3 positions



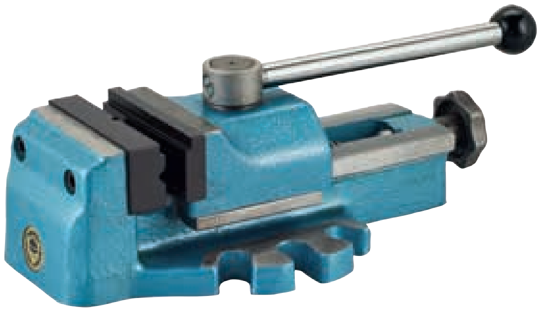


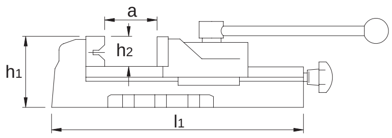
ECO PRO

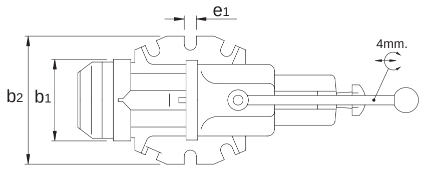
Ref.	b1	b2	b3	a max	l1	l2	h1	h2	e1
88.154.0100	100	158	124	95	189	275	64	30	13

› 88.170 BISON

NL Snelspanmachineklem, type 6542
FR Étau à came à serrage rapide, type 6542
ES Mordaza mecánica de fijación rápida, tipo 6542
DE Schnellspann-Bohrerschraubstöcke, Typ 6542
EN Clamp Machine Vise, type 6542



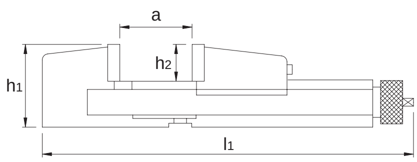


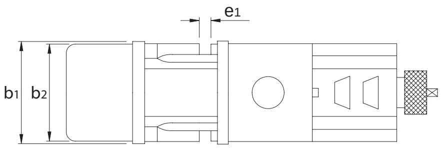


Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.170.0080	80	140	70	220	80	30	14	800
88.170.0100	100	165	80	270	100	35	14	1200

› 88.200 BISON

NL Snelspanmachineklem, type 6517
FR Étau à came à serrage rapide, type 6517
ES Mordaza mecánica de fijación rápida, tipo 6517
DE Schnellspann-Bohrerschraubstöcke, Typ 6517
EN Clamp Machine Vise, type 6517

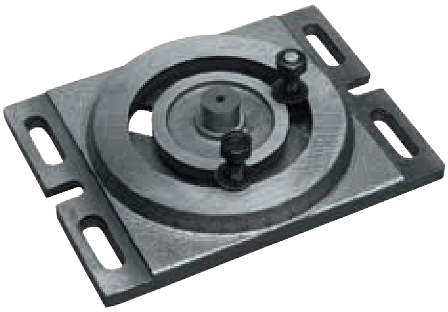


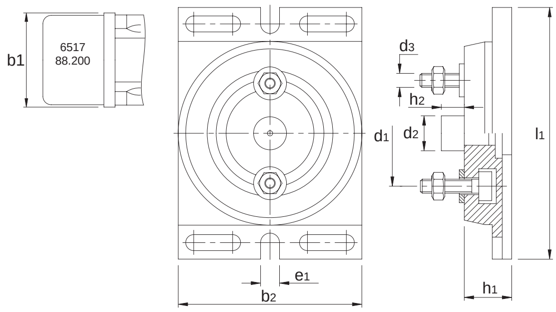


Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.200.0125	125	122	103	405	160	40	14	2500
88.200.0160	160	156	125	505	200	50	18	4200
88.200.0200	200	194	150	666	250	63	18	6200

› 88.205 BISON

NL Draaiplaat, type 6587, met gradenverdeling, voor snelspanmachineklem 88.200
FR Base tournante, type 6587, avec graduation des degrés, pour étaux machine 88.200
ES Base giratoria, tipo 6587, con graduación, para mordazas mecánicas de fijación rápida 88.200
DE Dreibackenfutter, Typ 6587, mit Gradeinteilung, Für Maschinenschraubstöcke 88.200
EN Swivel Base, type 6587, with graduation, for machine vises 88.200

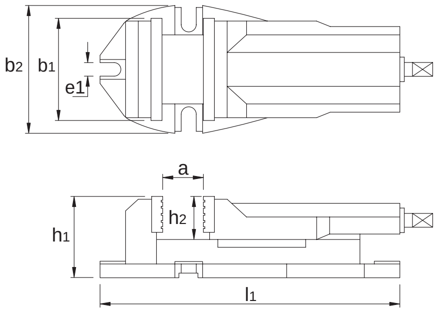




Ref.	b1	b2	d1	h1	l1	d3	d2	h2	e1 N6
88.205.0125	125	175	103	28	236	M12	25	18	14
88.205.0160	160	224	130	34	294	M16	30	20	18

› 88.230 BISON

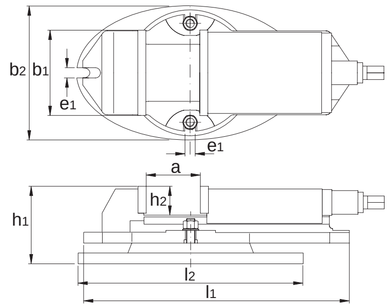
NL Machinespanklem, type 6512
FR Étau de fraisage, type 6512
ES Mordaza mecánica, tipo 6512
DE Maschinenschraubstöcke, Typ 6512
EN Machine Vise, type 6512



Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.230.0100	100	156	84	294	80	32	14	2500
88.230.0125	125	156	100	347	95	40	14	3500
88.230.0160	160	193	121	423	125	50	18	4000
88.230.0200	200	256	147	515	160	63	18	5500
88.230.0250	250	316	174	615	200	80	22	6200

› 88.237 International Tools

NL ECO PRO Machinespanklem met draaiplaat
FR Étau de fraisage avec base tournante ECO PRO
ES Mordaza mecánica con base giratoria ECO PRO
DE ECO PRO Maschinenschraubstöcke mit Drehplatte
EN ECO PRO Machine Vise with swivel base

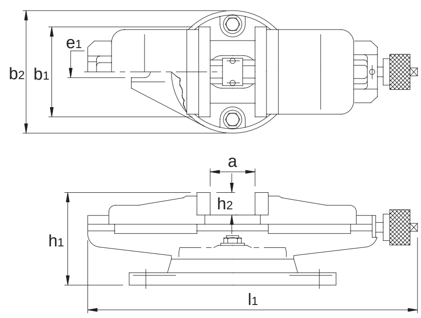


ECO PRO

Ref.	b1	b2	a max	l1	l2	h1	h2	e1 N6
88.237.0050	50	102	50	175	148	80	25	11
88.237.0075	75	140	75	257	198	101	33	14
88.237.0100	100	175	100	310	244	122	40	14
88.237.0125	125	210	125	354	275	141	47	16
88.237.0150	150	240	150	385	300	148	50	16

› 88.250 BISON

NL Centrisch spannende Machinespanklem, type 6531
FR Étau de fraisage à serrage concentrique, type 6531
ES Mordaza mecánica concéntrica, tipo 6531
DE Zentrisch spannende Maschinenschraubstöcke, Typ 6531
EN Self-Centering Machine Vise, type 6531

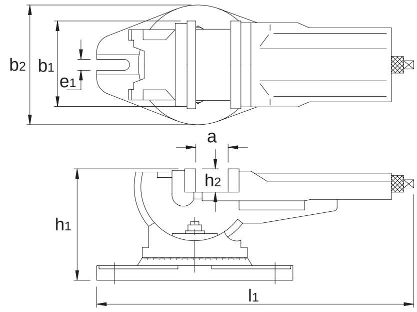


Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.250.0125	125	168	136	458	100	40	14	3500
88.250.0160	160	212	169	534	125	50	14	4000
88.250.0200	200	286	185	591	160	63	18	5500

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8

› 88.260 BISON

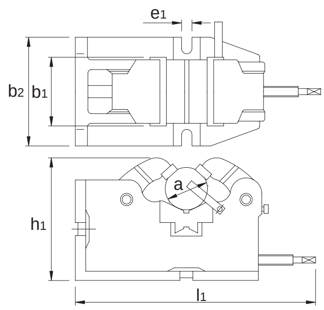
NL Draai- en Zwenkbare Machineklem, type 6530
FR Etau orientable 2 axes, type 6530
ES Mordaza mecánica basculante y giratoria, tipo 6530
DE Dreh- und schwenkbare Maschinenschraubstöcke, Typ 6530
EN Two Angle Swivel Machine Vise, type 6530



Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.260.0100	100	144	145	372	80	32	14	2500
88.260.0125	125	168	169	437	100	40	17	3500
88.260.0160	160	212	195	492	125	50	18	4000

› 88.270 BISON

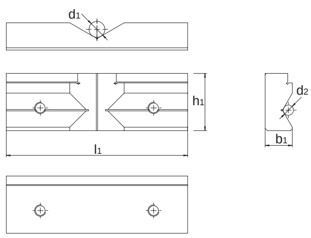
NL Assenspanklem, type 6546
FR Etau auto centreur, type 6546
ES Mordaza mecánica para ejes, tipo 6546
DE Klemme für Wellen, Typ 6546
EN Shank Holding Machine Vise, type 6546



Ref.	b1	b2	h1	l1	a max	e1 N6	Max daN
88.270.0100	100	180	170	305	10-63	18	1000
88.270.0125	125	200	235	405	15-100	18	1500

› 88.318 BISON

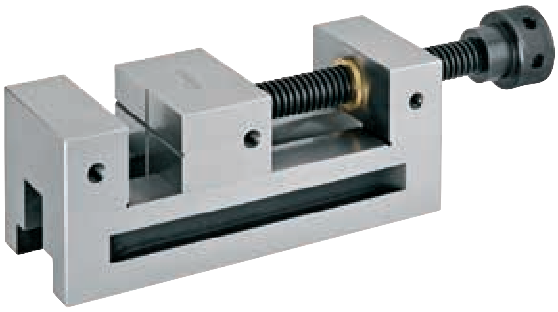
NL Set Prismabekken voor machinespanklem artikelnr. 88.200
FR Jeu Mors pour étau de fraisage n° article 88.200
ES Juego de Garras con ranurado para mordaza mecánica n° artículo 88.200
DE Satz Prismabacken für Maschinenschraubstöcke Artikel-Nr. 88.200
EN Set Clamping Inserts for Machine Vise article nr. 88.200

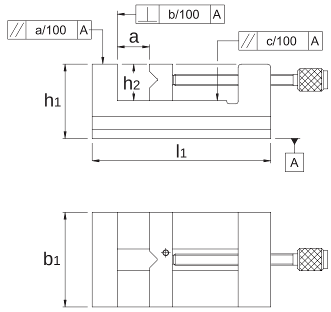


Ref.	l1	h1	b1	d1	d2	Bison
88.318.0160	160	50.4	24	10-35	18-80	6517, 6518
88.318.0200	200	63.4	30	14-44	22-100	6517, 6518

› 88.340 Phantom

NL Precisie Slijpklem
FR Etau de précision
ES Mordaza de precisión
DE Präzisions-Schleifschraubstöcke
EN Precision Vise

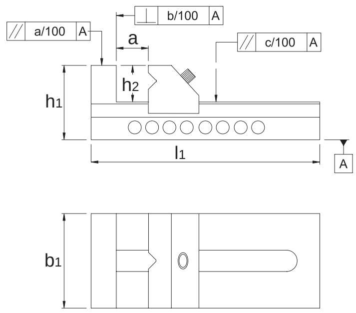




Ref.	b1	l1	h1	h2	a max	Tol. a	Tol. b	Tol. c
88.340.0050	50	155	50	25	65	0.005	0.005	0.005
88.340.0063	63	190	65	32	85	0.005	0.005	0.005
88.340.0080	80	220	84	40	100	0.005	0.005	0.005
88.340.0100	100	260	95	45	125	0.007	0.005	0.005

› 88.350 Phantom

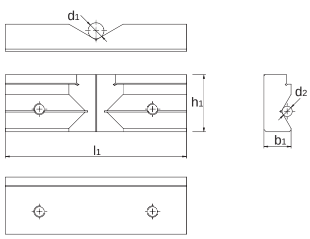
NL Precisie Slijpklem, met spanbout aan bovenzijde en snelverstelling
FR Etau de précision, Mors avec système de positionnement rapide
ES Mordaza de precisión, con perno a parte encima y cambio rápido
DE Präzisions-Schleifschraubstöcke, mit Spannbolzen oben und Schnellverstellung
EN Precision Vise, with movable jaw and clamping bolt



Ref.	b1	l1	h1	h2	a max	Tol. a	Tol. b	Tol. c
88.350.0026	26	65.4	29	9.15	22	0.007	0.005	0.005
88.350.0036	36	100	45	20	40	0.005	0.005	0.005
88.350.0050	50	140	50	25	65	0.005	0.005	0.005
88.350.0073	73	190	67	35	100	0.005	0.005	0.005
88.350.0100	100	245	90	45	125	0.005	0.005	0.005
88.350.0125	125	285	100	50	160	0.007	0.005	0.005

› 88.407 BISON

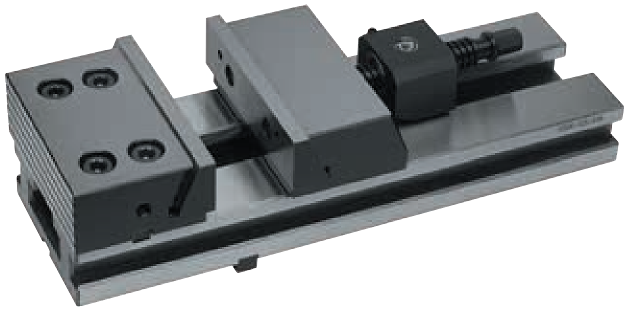
NL Set Prismabekken voor machinespanklem type 6512,6530, 6537
FR Jeu Mors pour étau de fraisage type 6512,6530, 6537
ES Juego de Garras con ranurado para mordaza mecánica tipo 6512,6530, 6537
DE Satz Prismabacken für Maschinenschraubstöcke Typ 6512,6530, 6537
EN Set Clamping Inserts for Machine Vise type 6512,6530, 6537

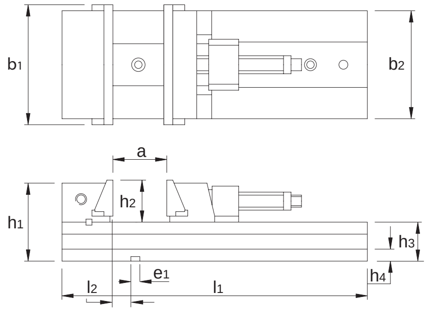


Ref.	l1	h1	b1	d1	d2	Bison
88.407.0100	100	32	18	6-24	12-48	6512, 6530, 6537
88.407.0125	125	40.4	22	8-30	15-60	6512, 6530, 6537
88.407.0160	160	50.4	24	10-35	18-80	6512, 6530, 6531, 6537, 6522, 6515, 6516
88.407.0200	200	63.4	30	14-44	22-100	6512, 6530, 6531, 6537, 6522, 6515, 6516

› 88.430 BISON

NL Modulaire Precisie Machinespanklem, type 6620
FR Étau modulaire de haute précision, type 6620
ES Mordaza mecánica modular de alta precisión, tipo 6620
DE Modulare Präzisions-Maschinenschraubstöcke, Typ 6620
EN Modular Precision Vise, type 6620

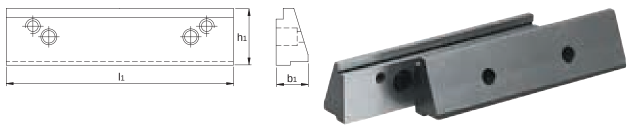




Ref.	b1	b2	l1	l2	h1	h2	h3	h4	a max	e1 N6	Max. daN
88.430.1033	100	85	320	12	65	30	35	13	165	12	2000
88.430.1234	125	105	335	18	82	40	42	15	165	12	3000
88.430.1543	150	140	425	21.2	102	50	52	18	210	18	4100
88.430.1548	150	140	475	21.2	102	50	52	18	260	18	4100
88.430.2054	200	165	535	38.07	121	60	61	20	260	18	4500
88.430.2059	200	165	585	38.07	121	60	61	20	310	18	4500
88.430.2064	200	165	635	38.07	121	60	61	20	360	18	4500

› 88.431 BISON

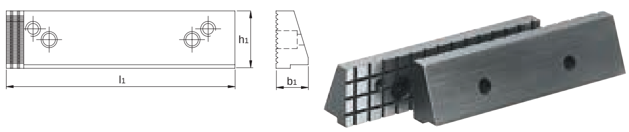
NL Set Getrapte Bekken voor Modulaire Precisie Machinespanklem type 6620
FR Jeu Mors avec méplat pour étau modulaire de haute précision type 6620
ES Juego de Garras escalonada para Mordaza mecánica modular de alta precisión tipo 6620
DE Satz Stufenbacke für Modulare Präzisions-Maschinenschraubstöcke Typ 6620
EN Set Step jaw plate for Modular Precision Vise type 6620



Ref.	l1	h1	b1	Bison
88.431.0125	125	32	18	6620
88.431.0150	150	42	24	6620
88.431.0200	200	50	30	6620

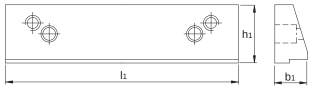
› 88.432 BISON

NL Set Gegroefde bekken voor Modulaire Precisie Machinespanklem type 6620
FR Jeu Mors rainurés pour étau modulaire de haute précision type 6620
ES Juego de Garras ranuradas para Mordaza mecánica modular de alta precisión tipo 6620
DE Satz Gerillten Backen für Modulare Präzisions-Maschinenschraubstöcke Typ 6620
EN Set Grooved vise grips for Modular Precision Vise type 6620



Ref.	l1	h1	b1	Bison
88.432.0100	100	23	15	6620
88.432.0125	125	32	18	6620
88.432.0150	150	42	24	6620
88.432.0200	200	50	30	6620

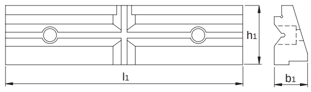
› 88.433 BISON



NL Set Gladde bekken voor Modulaire Precisie Machinespanklem type 6620
FR Jeu Mors lisses pour étau modulaire de haute précision type 6620
ES Juego de Garras lisas para Mordaza mecánica modular de alta precisión tipo 6620
DE Satz Glatte Backen für Modulare Präzisions-Maschinenschraubstöcke Typ 6620
EN Set Smooth vise grips for Modular Precision Vise type 6620

Ref.	l1	h1	b1	Bison
88.433.0100	100	23	15	6620
88.433.0125	125	32	18	6620
88.433.0150	150	42	24	6620
88.433.0200	200	50	30	6620

› 88.434 BISON

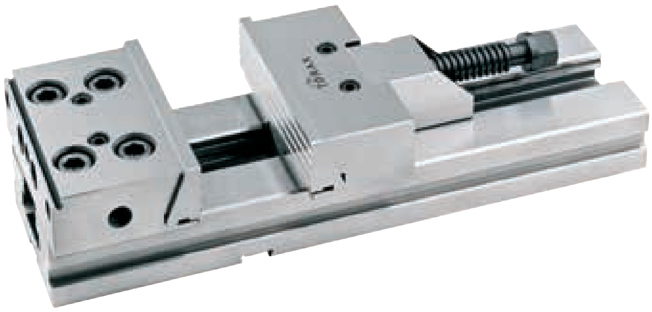


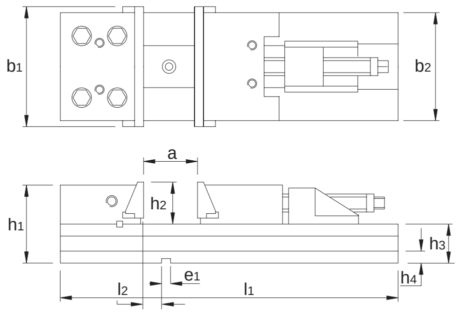
NL Set Prismabekken voor Modulaire Precisie Machinespanklem type 6620
FR Jeu Mors pour étau modulaire de haute précision type 6620
ES Juego de Garras con ranurado para Mordaza mecánica modular de alta precisión tipo 6620
DE Satz Prismabacken für Modulare Präzisions-Maschinenschraubstöcke Typ 6620
EN Set Clamping Inserts for Modular Precision Vise type 6620

Ref.	l1	h1	b1	Bison
88.434.0125	125	32	18	6620
88.434.0150	150	42	24	6620
88.434.0200	200	50	30	6620

› 88.440 TORAX

NL Precisie Machinespanklem
FR Étau de fraisage de précision
ES Mordaza mecánica de precisión
DE Präzisionsschraubstöcke
EN Precision Compact Vise



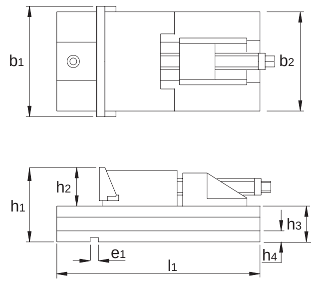


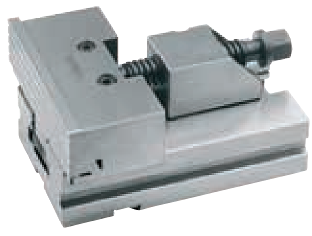
Ref.	b1	b2	l1	l2	h1	h2	h3	h4	a max	e1 N6	Max. daN
88.440.1027	100	75	270	25.61	65	30	35	15	100	16	3000
88.440.1234	125	95	345	25.61	80	40	40	15	150	16	3000
88.440.1542	150	125	420	25.61	100	50	50	20	200	16	5000
88.440.1552	150	125	520	25.61	100	50	50	20	300	16	5000
88.440.1745	175	145	455	25.61	118	60	58	20	200	16	6000
88.440.1755	175	145	555	25.61	118	60	58	20	300	16	6000
88.440.1765	175	145	655	25.61	118	60	58	20	400	16	6000
88.440.1775	175	145	755	25.61	118	60	58	20	500	16	6000
88.440.2059	200	170	595	25.61	135	65	70	26	300	16	10000
88.440.2069	200	170	695	25.61	135	65	70	26	400	16	10000
88.440.2079	200	170	795	25.61	135	65	70	26	500	16	10000
88.440.3063	300	195	635	25.61	158	80	78	26	300	16	12000
88.440.3073	300	195	735	25.61	158	80	78	26	400	16	12000
88.440.3083	300	195	835	25.61	158	80	78	26	500	16	12000
88.440.3093	300	195	935	25.61	158	80	78	26	600	16	12000

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8

› 88.470 TORAX

NL Beweegbare Precisie Machinespanklem
FR Étau machine mobile de précision
ES Mordaza mecánica de alta precisión rotativa
DE Bewegbare Präzisions Maschinenklemme
EN Movable Precision Machine Vise



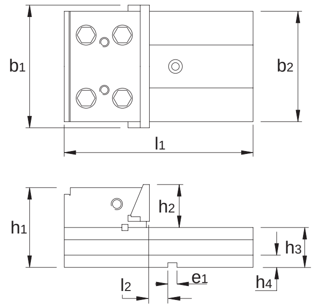


Ref.	b1	b2	h1	h2	h3	h4	l1	e1 N6
88.470.1250	125	95	80	40	40	15	160	16
88.470.1500	150	125	100	50	50	20	230	16

Ref.	b1	b2	h1	h2	h3	h4	l1	e1 N6
88.470.1750	175	145	118	60	58	20	240	16
88.470.2000	200	170	135	65	70	26	300	16

› 88.472 TORAX

NL Vaste Precisie Machinespanklem
FR Étau machine fixe de précision
ES Mordaza Mecánica de precisión fija
DE Präzisions Maschinenschraubstöcke
EN Fixed Precision Machine Vise

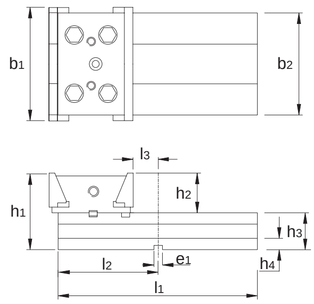


Ref.	b1	b2	h1	h2	h3	h4	l1	l2	e1 N6
88.472.1250	125	95	80	40	40	15	160	25.61	16
88.472.1500	150	125	100	50	50	20	230	25.61	16

Ref.	b1	b2	h1	h2	h3	h4	l1	l2	e1 N6
88.472.1750	175	145	118	60	58	20	240	25.61	16
88.472.2000	200	170	135	65	70	26	300	25.61	16

› 88.474 TORAX

NL Vaste Dubbele Precisie Machinespanklem
FR Étau machine fixe double de précision
ES Mordaza Mecánica de doble precisión fija
DE Präzisions Maschinenschraubstock mit Doppelspannung
EN Fixed Double Precision Machine Vise

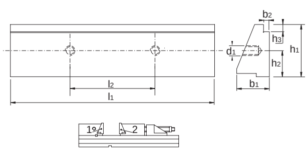


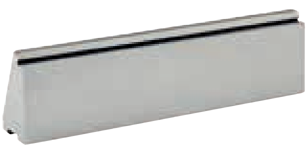
Ref.	b1	b2	h1	h2	h3	h4	l1	l2	l3	e1 N6
88.474.1250	125	95	80	40	40	15	160	71	33.6	16
88.474.1500	150	125	100	50	50	20	230	122.5	33.6	16

Ref.	b1	b2	h1	h2	h3	h4	l1	l2	l3	e1 N6
88.474.1750	175	145	118	60	58	20	240	79	33.6	16
88.474.2000	200	170	135	65	70	26	300	155	33.6	16

› 88.475 TORAX

NL Getrapte Bek voor precisie machinespanklem 88.440, 88.470 en 88.472
FR Mors avec méplat pour étau de haute précision 88.440, 88.470 et 88.472
ES Garra escalonada para mordaza mécanica de alta precisión 88.440, 88.470 y 88.472
DE Trat Back für Präzisionsschraubstöcke 88.440, 88.470 und 88.472
EN Step jaw plate for Precision Vise 88.440, 88.470 and 88.472





Ref.	l1	h1	b1	l2	h2	d1	b2	h3	Type
88.475.1002	100	24.5	14	20	10	M6	3	5	1
88.475.1004	100	24.5	14	62	10	M6	3	5	2
88.475.1202	125	32	19	32	15	M8	3	5	1
88.475.1204	125	32	19	80	15	M8	3	5	2
88.475.1502	150	40	24	50	19	M8	5	5	1

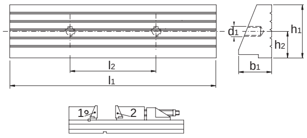
Ref.	l1	h1	b1	l2	h2	d1	b2	h3	Type
88.475.1504	150	40	24	90	19	M8	5	5	2
88.475.1702	175	43	24	50	20.5	M8	5	5	1
88.475.1704	175	43	24	116	20.5	M8	4	5	2
88.475.2002	200	53	30	76	25.5	M10	5	10	1
88.475.2004	200	53	30	138	25.5	M10	5	10	2

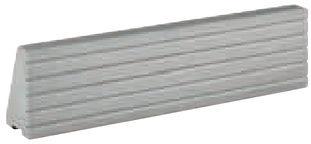
NL Opspannen product in precisieklem
FR Serrer une pièce dans un étau de précision
ES Sujetar un producto en una mordaza de precisión
DE Einspannen von Werkstücken im präzision Maschineschraubstock
EN Clamping material in precision vice

Watch me

www.phantom.eu

› 88.476 TORAX

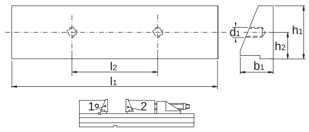


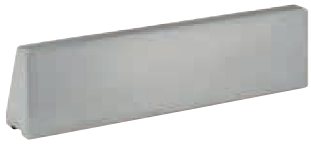


NL **Standaard Gegroefde Bek voor precisie machinespanklem 88.440, 88.470 en 88.472**
FR **Mors rainuré standard pour étau de haute précision 88.440, 88.470 et 88.472**
ES **Garra ranurada para mordaza mecanica de alta precisión 88.440, 88.470 y 88.472**
DE **Gerillt Back für Präzisionsschraubstöcke 88.440, 88.470 und 88.472**
EN **Grooved jaw plate for Precision Vise 88.440, 88.470 and 88.472**

Ref.	l1	h1	b1	l2	h2	d1	Type
88.476.1002	100	24.5	14	20	10	M6	1
88.476.1004	100	24.5	14	62	10	M6	2
88.476.1202	125	32	19	32	15	M8	1
88.476.1204	125	32	19	80	15	M8	2
88.476.1502	150	40	24	50	19	M8	1
88.476.1504	150	40	24	90	19	M8	2
88.476.1702	175	43	24	50	20.5	M8	1
88.476.1704	175	43	24	116	20.5	M8	2
88.476.2002	200	53	30	76	25.5	M10	1
88.476.2004	200	53	30	138	25.5	M10	2
88.476.3002	300	63	35	90	30.5	M10	1
88.476.3004	300	63	35	181	30.5	M10	2

› 88.477 TORAX

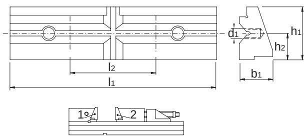


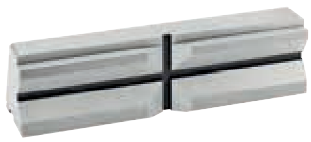


NL **Gladde Bek voor precisie machinespanklem, 88.440, 88.470 en 88.472**
FR **Mors lisse pour étau de haute précision 88.440, 88.470 et 88.472**
ES **Garra lisa para mordaza mecánica de alta precisión 88.440, 88.470 y 88.472**
DE **Glatte Back für Präzisionsschraubstöcke 88.440, 88.470 und 88.472**
EN **Smooth jaw plate for Precision Vise 88.440, 88.470 and 88.472**

Ref.	l1	h1	b1	l2	h2	d1	Type
88.477.1002	100	24.5	14	20	10	M6	1
88.477.1004	100	24.5	14	62	10	M6	2
88.477.1202	125	32	19	32	15	M8	1
88.477.1204	125	32	19	80	15	M8	2
88.477.1502	150	40	24	50	19	M8	1
88.477.1504	150	40	24	90	19	M8	2
88.477.1702	175	43	24	50	20.5	M8	1
88.477.1704	175	43	24	116	20.5	M8	2
88.477.2002	200	53	30	76	25.5	M10	1
88.477.2004	200	53	30	138	25.5	M10	2
88.477.3002	300	63	35	90	30.5	M10	1
88.477.3004	300	63	35	181	30.5	M10	2

› 88.478 TORAX





NL **Prismabek voor precisie machinespanklem, 88.440, 88.470 en 88.472**
FR **Mors prismatique pour étau de haute précision 88.440, 88.470 et 88.472**
ES **Garra prismatica para mordaza mecánica de alta precisión 88.440, 88.470 y 88.472**
DE **Prisma Back für Präzisionsschraubstöcke 88.440, 88.470 und 88.472**
EN **Vee jaw plate for Precision Vise 88.440, 88.470 and 88.472**

Ref.	l1	h1	b1	l2	h2	d1	Type
88.478.1004	100	24.5	14	62	10	M6	2
88.478.1204	125	32	19	80	15	M8	2
88.478.1504	150	40	24	90	19	M8	2
88.478.1704	175	43	24	116	20.5	M8	2
88.478.2004	200	53	30	138	25.5	M10	2

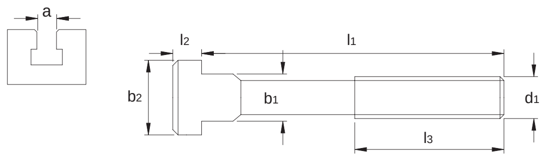
NL Neerdrukwerking bekken precisie machineklem en spanwijdte
FR Montage des mors sur un étau de précision
ES Acción de amarre-descendente, garras de mordaza de precisión
DE Niederzugwirkung Spannbacken präzision Machineschraubstock
EN Pull down action jaws precision vice

Watch me

www.phantom.eu

88.600 Phantom

NL **T-Gleufbout, kwaliteit 8.8**
FR **Boulon en T, qualité de résistance 8.8**
ES **Tensor para ranuras T, calidad 8.8**
DE **T-Nutenschrauben, Qualität 8.8**
EN **Bolt for T-slots, quality 8.8**

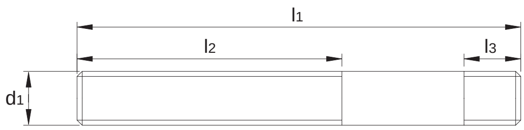


DIN
787

Ref.	a	d1	l1	l3	b1	l2	b2
88.600.1004	10	M10	40	30	9.7	6	15
88.600.1006	10	M10	63	45	9.7	6	15
88.600.1010	10	M10	100	60	9.7	6	15
88.600.1205	12	M12	50	35	11.5	7	18
88.600.1206	12	M12	63	40	11.5	7	18
88.600.1208	12	M12	80	55	11.5	7	18
88.600.1210	12	M12	100	63	11.5	7	18
88.600.1212	12	M12	125	75	11.5	7	18
88.600.1216	12	M12	160	100	11.5	7	18
88.600.1220	12	M12	200	120	11.5	7	18
88.600.1405	14	M12	50	35	13.5	8	22
88.600.1406	14	M12	63	40	13.5	8	22
88.600.1408	14	M12	80	55	13.5	8	22
88.600.1410	14	M12	100	63	13.5	8	22
88.600.1412	14	M12	125	75	13.5	8	22
88.600.1416	14	M12	160	100	13.5	8	22
88.600.1420	14	M12	200	120	13.5	8	22
88.600.1606	16	M14	63	45	15.5	9	25
88.600.1610	16	M14	100	63	15.5	9	25
88.600.1616	16	M14	160	100	15.5	9	25
88.600.1620	16	M14	200	120	15.5	9	25
88.600.1625	16	M14	250	160	15.5	9	25
88.600.1706	16	M16	63	45	15.5	9	25
88.600.1708	16	M16	80	55	15.5	9	25
88.600.1710	16	M16	100	63	15.5	9	25
88.600.1716	16	M16	160	100	15.5	9	25
88.600.1720	16	M16	200	125	15.5	9	25
88.600.1725	16	M16	250	160	15.5	9	25
88.600.1806	18	M16	63	45	17.5	10	28
88.600.1808	18	M16	80	55	17.5	10	28
88.600.1810	18	M16	100	63	17.5	10	28
88.600.1816	18	M16	160	100	17.5	10	28
88.600.1820	18	M16	200	125	17.5	10	28
88.600.1825	18	M16	250	160	17.5	10	28
88.600.2008	20	M20	80	55	19.5	12	32
88.600.2010	20	M20	100	63	19.5	12	32
88.600.2012	20	M20	125	85	19.5	12	32
88.600.2016	20	M20	160	110	19.5	12	32
88.600.2020	20	M20	200	125	19.5	12	32
88.600.2025	20	M20	250	160	19.5	12	32
88.600.2031	20	M20	315	180	19.5	12	32
88.600.2208	22	M20	80	55	21.5	14	35
88.600.2210	22	M20	100	63	21.5	14	35
88.600.2212	22	M20	125	85	21.5	14	35
88.600.2216	22	M20	160	100	21.5	14	35
88.600.2220	22	M20	200	125	21.5	14	35
88.600.2225	22	M20	250	160	21.5	14	35
88.600.2231	22	M20	315	180	21.5	14	35
88.600.2410	24	M24	100	70	23.5	16	40
88.600.2412	24	M24	125	85	23.5	16	40
88.600.2416	24	M24	160	110	23.5	16	40
88.600.2420	24	M24	200	125	23.5	16	40
88.600.2425	24	M24	250	160	23.5	16	40
88.600.2431	24	M24	315	180	23.5	16	40
88.600.2440	24	M24	400	250	23.5	16	40
88.600.2810	28	M24	100	70	27.5	18	44
88.600.2812	28	M24	125	85	27.5	18	44
88.600.2816	28	M24	160	110	27.5	18	44
88.600.2820	28	M24	200	125	27.5	18	44
88.600.2825	28	M24	250	160	27.5	18	44
88.600.2831	28	M24	315	180	27.5	18	44
88.600.2840	28	M24	400	250	27.5	18	44

88.605 Phantom

NL **Draadeind, kwaliteit 8.8**
FR **Goujon, qualité de résistance 8.8**
ES **Tensor sin cabeza, calidad 8.8**
DE **Stiftschrauben, Qualität 8.8**
EN **Stud, quality 8.8**



DIN
6379

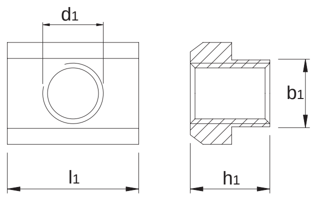
Ref.	d1	l1	l2	l3
88.605.0604	M6	40	20	9
88.605.0606	M6	60	37	9
88.605.0607	M6	70	50	9
88.605.0608	M6	80	60	9
88.605.0804	M8	40	20	11
88.605.0806	M8	63	40	11
88.605.0808	M8	85	55	11
88.605.0810	M8	100	63	11
88.605.0812	M8	125	75	11
88.605.1005	M10	50	25	13
88.605.1008	M10	80	50	13
88.605.1010	M10	100	63	13
88.605.1012	M10	125	75	13
88.605.1014	M10	140	80	13
88.605.1016	M10	160	100	13
88.605.1205	M12	50	25	15
88.605.1206	M12	63	32	15
88.605.1208	M12	80	50	15
88.605.1210	M12	100	63	15
88.605.1212	M12	125	75	15
88.605.1216	M12	160	100	15
88.605.1220	M12	200	125	15
88.605.1406	M14	63	32	17
88.605.1410	M14	100	50	17
88.605.1412	M14	125	75	17
88.605.1416	M14	160	100	17
88.605.1420	M14	200	125	17
88.605.1425	M14	250	160	17
88.605.1606	M16	63	32	19
88.605.1608	M16	80	50	19
88.605.1610	M16	100	63	19
88.605.1612	M16	125	75	19
88.605.1616	M16	160	100	19
88.605.1620	M16	200	125	19
88.605.1625	M16	250	160	19
88.605.1631	M16	315	180	19
88.605.1808	M18	80	50	23
88.605.1810	M18	100	63	23
88.605.1812	M18	125	75	23
88.605.1816	M18	160	100	23
88.605.1820	M18	200	125	23
88.605.1825	M18	250	160	23
88.605.1831	M18	315	180	23
88.605.2008	M20	80	32	27
88.605.2010	M20	100	63	27
88.605.2012	M20	125	75	27
88.605.2016	M20	160	100	27
88.605.2020	M20	200	125	27
88.605.2025	M20	250	160	27
88.605.2031	M20	315	180	27
88.605.2040	M20	400	250	27
88.605.2210	M22	100	45	31

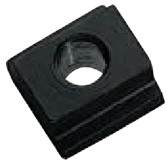
› 88.605 Phantom

Ref.	d1	l1	l2	l3
88.605.2212	M22	125	75	31
88.605.2216	M22	160	100	31
88.605.2220	M22	200	125	31
88.605.2225	M22	250	160	31
88.605.2231	M22	315	180	31
88.605.2240	M22	400	250	31
88.605.2410	M24	100	45	35
88.605.2412	M24	125	75	35
88.605.2416	M24	160	100	35
88.605.2420	M24	200	125	35
88.605.2425	M24	250	160	35
88.605.2431	M24	315	180	35
88.605.2440	M24	400	250	35
88.605.2450	M24	500	315	35
88.605.2712	M27	125	75	39
88.605.2716	M27	160	100	39
88.605.2720	M27	200	125	39
88.605.2725	M27	250	160	39
88.605.2731	M27	315	180	39
88.605.2740	M27	400	250	39
88.605.2750	M27	500	315	39
88.605.3012	M30	125	55	43
88.605.3016	M30	160	100	43
88.605.3020	M30	200	125	43
88.605.3025	M30	250	160	43
88.605.3031	M30	315	180	43
88.605.3040	M30	400	250	43
88.605.3050	M30	500	315	43
88.605.3616	M36	160	80	51
88.605.3620	M36	200	125	51
88.605.3625	M36	250	160	51
88.605.3631	M36	315	200	51
88.605.3640	M36	400	250	51
88.605.3650	M36	500	315	51

› 88.610 Phantom

NL T-Gleufmoer, kwaliteit 10
FR Ecrou en T, qualité de résistance 10
ES Cabeza-T, calidad 10
DE Muttern für T-Nuten, Qualität 10
EN T-Nut, quality 10



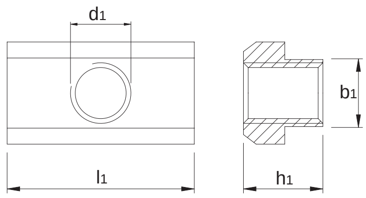


DIN
508

Ref.	a	d1	l1	h1	b1
88.610.0806	8	M6	13	10	7.7
88.610.1008	10	M8	15	12	9.7
88.610.1208	12	M8	18	14	11.7
88.610.1210	12	M10	18	14	11.7
88.610.1410	14	M10	22	16	13.7
88.610.1412	14	M12	22	16	13.7
88.610.1612	16	M12	25	18	15.7
88.610.1614	16	M14	25	18	15.7
88.610.1812	18	M12	28	20	17.7
88.610.1814	18	M14	28	20	17.7
88.610.1816	18	M16	28	20	17.7
88.610.2016	20	M16	32	24	19.7
88.610.2018	20	M18	32	24	19.7
88.610.2216	22	M16	35	28	21.7
88.610.2220	22	M20	35	28	21.7
88.610.2420	24	M20	40	32	23.7
88.610.2422	24	M22	40	32	23.7
88.610.2820	28	M20	44	36	27.7
88.610.2824	28	M24	44	36	27.7
88.610.3224	32	M24	50	40	31.5
88.610.3227	32	M27	50	40	31.5
88.610.3624	36	M24	54	44	35.5
88.610.3630	36	M30	54	44	35.5
88.610.4236	42	M36	65	52	41.6

› 88.612 Phantom

NL T-Gleufmoer, lange uitvoering, kwaliteit 10
FR Ecrou en T allongé, qualité de résistance 10
ES Cabeza-T, versión larga, calidad 10
DE Muttern für T-Nuten, langes Modell, Qualität 10
EN Extended T-Nut, quality 10



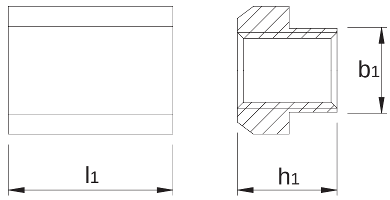
DIN
508-L

Ref.	a	d1	l1	h1	b1
88.612.1008	10	M8	30	12	9.7
88.612.1210	12	M10	36	14	11.7
88.612.1412	14	M12	44	16	13.7
88.612.1614	16	M14	50	18	15.7
88.612.1816	18	M16	56	20	17.7
88.612.2018	20	M18	64	24	19.7
88.612.2220	22	M20	70	28	21.7
88.612.2422	24	M22	80	32	23.7
88.612.2824	28	M24	88	36	27.7
88.612.3227	32	M27	100	40	31.5
88.612.3630	36	M30	108	44	35.5

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8

› 88.613 Phantom

NL T-Gleufmoer, onbewerkt
FR Ecrou en T borgne
ES Cabeza-T en bruto
DE T-Nutenstein, Rohling
EN Blank for T-Nuts



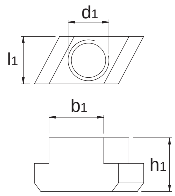
DIN
508-R

Ref.	a	l1	h1	b1
88.613.1000	10	15	12	9.7
88.613.1200	12	18	14	11.7
88.613.1400	14	22	16	13.7
88.613.1600	16	25	18	15.7
88.613.1800	18	28	20	17.7
88.613.2000	20	32	24	19.7

Ref.	a	l1	h1	b1
88.613.2200	22	35	28	21.7
88.613.2400	24	40	32	23.7
88.613.2800	28	44	36	27.7
88.613.3200	32	50	40	31.5
88.613.3600	36	54	44	35.5

› 88.614 Phantom

NL T-Gleufmoer, systeem “Rhombus”
FR Ecrou en T, système “Rhombus”
ES Cabeza-T, sistema “Romboidal”
DE Muttern für T-Nuten, System “Rhombus”
EN T-Nut, system “Rhombus”

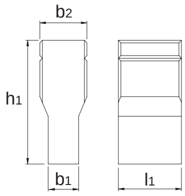


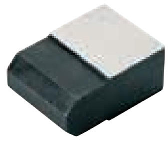
Ref.	a	d1	l1	h1	b1
88.614.1008	10	M8	15	12	9.7
88.614.1210	12	M10	18	14	11.7
88.614.1412	14	M12	22	16	13.7
88.614.1614	16	M14	25	18	15.7

Ref.	a	d1	l1	h1	b1
88.614.1816	18	M16	28	20	17.7
88.614.2220	22	M20	32	24	21.7
88.614.2824	28	M24	35	28	27.7

› 88.615 Phantom

NL T-Gleufsteen, inzetgehard en geslepen
FR Lardon percé en T, trempé et rectifié
ES Regletas en T, templado y rectificado
DE T-Nutensteine, Gehärtet und geschliffen
EN T-Block, carburized and ground





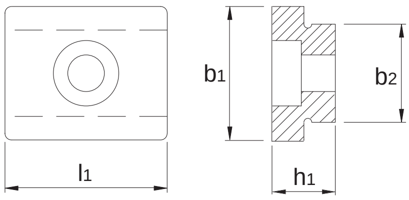
DIN
6323

Ref.	b1	b2	h1	l1
88.615.1012	10	12	12	20
88.615.1212	12	12	28.6	20
88.615.1220	12	20	14	32
88.615.1420	14	20	14	32
88.615.1620	16	20	14	32
88.615.1820	18	20	14	32

Ref.	b1	b2	h1	l1
88.615.2020	20	20	45.5	32
88.615.2220	22	20	50.5	40
88.615.2420	24	20	55.5	40
88.615.2820	28	20	61.5	40
88.615.3620	36	20	76.5	50

› 88.616 Phantom

NL T-Gleufsteen, inzetgehard en geslepen
FR Lardon percé en T, trempé et rectifié
ES Regletas en T, templado y rectificado
DE T-Nutensteine, Gehärtet und geschliffen
EN T-Block, carburized and ground

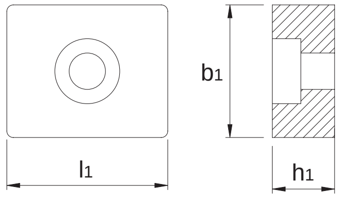


DIN
6322-A

Ref.	b1	b2	h1	l1
88.616.1000	10	20	10	22
88.616.1200	12	20	10	22
88.616.1400	14	20	10	25
88.616.1600	16	20	10	25
88.616.1800	18	20	10	25

Ref.	b1	b2	h1	l1
88.616.2200	22	20	12	32
88.616.2400	24	20	12	32
88.616.2800	28	20	12	32
88.616.3600	36	20	12	32

› 88.617 Phantom

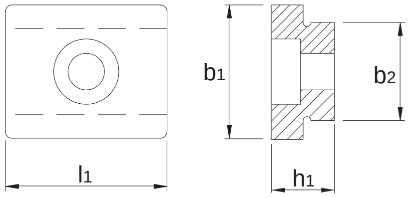


NL T-Gleufsteen, inzetgehard en geslepen
FR Lardon percé en T, trempé et rectifié
ES Regletas en T, templado y rectificado
DE T-Nutensteine, Gehärtet und geschliffen
EN T-Block, carburized and ground

DIN 6322-B

Ref.	b1	h1	l1
88.617.1000	10	8	20
88.617.1200	12	8	20
88.617.1400	14	10	22
88.617.1600	16	10	22
88.617.1800	18	10	22
88.617.2000	20	10	22
88.617.2200	22	12	32
88.617.2400	24	12	32

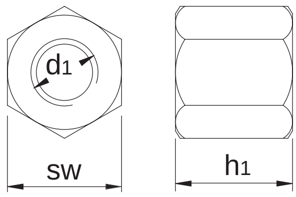
› 88.618 Phantom



NL T-Gleufsteen, voor machinespanklemmen 88.440, 88.470, 88.472
FR Lardon percé en T, pour étau 88.440, 88.470, 88.472
ES Regletas en T, para mordaza mécanica 88.440, 88.470, 88.472
DE T-Nutensteine, für Präzisionsschraubstöcke 88.440, 88.470, 88.472
EN T-Block, for vises 88.440, 88.470, 88.472

Ref.	b1	b2	h1	l1
88.618.1200	12	16	10	25
88.618.1400	14	16	10	25
88.618.1600	16	16	10	25
88.618.1800	18	16	10	25
88.618.2000	20	16	12	25
88.618.2200	22	16	12	25
88.618.2400	24	16	12	25
88.618.2800	28	16	12	25
88.618.3600	36	16	12	25

› 88.630 Phantom

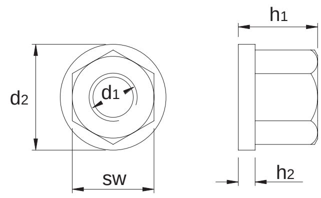


NL Hoge Moer (1,5x diam.), kwaliteit 10
FR Ecrou Haut (1,5x diam.), qualité de résistance 10
ES Tuerca alargada alta (1,5x diám.), calidad 10
DE Sechskantmuttern, hoch (1,5 x durchm.), Qualität 10
EN Extension Nut (1.5x diam.), quality 10

DIN 6330-B

Ref.	d1	h1	sw
88.630.0600	M6	8	10
88.630.0800	M8	12	13
88.630.1000	M10	15	17
88.630.1200	M12	18	19
88.630.1400	M14	21	22
88.630.1600	M16	24	24
88.630.1800	M18	27	27
88.630.2000	M20	30	30
88.630.2200	M22	33	32
88.630.2400	M24	36	36
88.630.2700	M27	40	41
88.630.3000	M30	45	46
88.630.3600	M36	54	55

› 88.631 Phantom



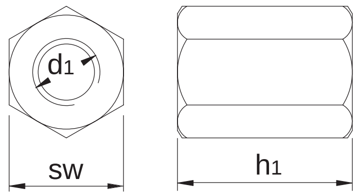
NL Kraagmoer, kwaliteit 10
FR Ecrou à collet, qualité de résistance 10
ES Tuerca hexogonal con collar, calidad 10
DE Sechskantmuttern mit Bund, Qualität 10
EN Collar Nut, quality 10

DIN 6331

Ref.	d1	sw	h1	d2	h2
88.631.0600	M6	10	9	14	3
88.631.0800	M8	13	12	18	3.5
88.631.1000	M10	17	15	22	4
88.631.1200	M12	19	18	25	4
88.631.1400	M14	22	21	28	4.5
88.631.1600	M16	24	24	31	5
88.631.1800	M18	27	27	34	5
88.631.2000	M20	30	30	37	6
88.631.2200	M22	32	33	40	6
88.631.2400	M24	36	36	45	6
88.631.2700	M27	41	40	51	8
88.631.3000	M30	46	45	58	8

› 88.632 Phantom

NL Verlengmoer (3x diam.), kwaliteit 10
FR Ecrou allongé haut (3x diam.), qualité de résistance 10
ES Tuerca alargada alta (3x diám.), calidad 10
DE Verlängerungsmuttern (3x durchm.), Qualität 10
EN Extension Nut (3x diam.), quality 10



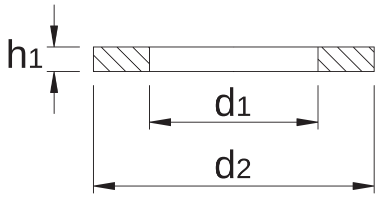
DIN
6334

Ref.	d1	h1	sw
88.632.0600	M6	18	10
88.632.0800	M8	24	13
88.632.1000	M10	30	17
88.632.1200	M12	36	19
88.632.1400	M14	42	22
88.632.1600	M16	48	24

Ref.	d1	h1	sw
88.632.1800	M18	54	27
88.632.2000	M20	60	30
88.632.2200	M22	66	32
88.632.2400	M24	72	36
88.632.2700	M27	81	41
88.632.3000	M30	90	46

› 88.640 Phantom

NL Onderlegschijf
FR Rondelle
ES Arandela
DE Unterlegscheiben
EN Washer



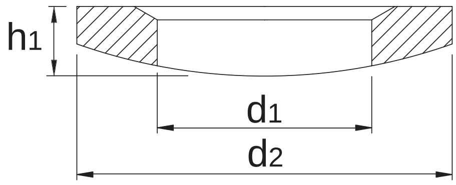
DIN
6340

Ref.	M	d1	d2	h1
88.640.0600	M6	6.4	17	3
88.640.0800	M8	8.5	23	4
88.640.1000	M10	10.5	28	4
88.640.1200	M12	13	35	5
88.640.1400	M14	15	40	5
88.640.1600	M16	17	45	6
88.640.1800	M18	19	45	6

Ref.	M	d1	d2	h1
88.640.2000	M20	21	50	6
88.640.2200	M22	23	50	7
88.640.2400	M24	25	60	8
88.640.2700	M27	28	60	8
88.640.3000	M30	31	65	10
88.640.3600	M36	38	80	12

› 88.641 Phantom

NL Kogelschijf
FR Rondelle sphérique
ES Disco esférico
DE Kugelscheiben
EN Spherical Seat Washer



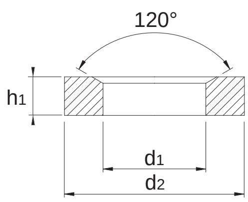
DIN
6319-C

Ref.	M	d1	d2	h1
88.641.0800	M8	8.4	17	3.2
88.641.1000	M10	10.5	21	4
88.641.1200	M12	13	24	4.6
88.641.1400	M14	15	28	5

Ref.	M	d1	d2	h1
88.641.1600	M16	17	30	5.3
88.641.2000	M20	21	36	6.3
88.641.2400	M24	25	44	8.2
88.641.3000	M30	31	56	11.2

› 88.642 Phantom

NL Kegelschijf, hol
FR Rondelle articulée, cémentée
ES Cazoleta cónica, cementada
DE Kegelpfannen, hohl
EN Cone Pully, hollow



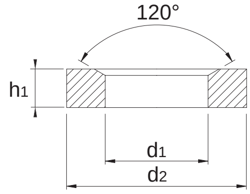
DIN
6319-D

Ref.	M	d1	d2	h1
88.642.0800	M8	9.6	17	3.5
88.642.1000	M10	12	21	4.2
88.642.1200	M12	14.2	24	5
88.642.1400	M14	16.5	28	5.6

Ref.	M	d1	d2	h1
88.642.1600	M16	19	30	6.2
88.642.2000	M20	23.2	36	7.5
88.642.2400	M24	28	44	9.5
88.642.3000	M30	35	56	12

› 88.643 *Phantom*

NL Kegelschijf
FR Rondelle articulée
ES Cazoleta cónica
DE Kegelpfannen
EN Cone Pully

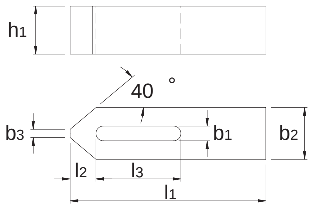


DIN
6319-G

Ref.	M	d1	d2	h1	Ref.	M	d1	d2	h1
88.643.0800	M8	9.6	23	5	88.643.1600	M16	19	45	7
88.643.1000	M10	12	28	5	88.643.2000	M20	23.2	50	8
88.643.1200	M12	14.2	35	6	88.643.2400	M24	28	60	10
88.643.1400	M14	16.5	40	6	88.643.3000	M30	35	68	10

› 88.650 *Phantom*

NL Spanijzer, vlak
FR Bride droite
ES Brida plana
DE Flache Spanneisen
EN Plain Clamp

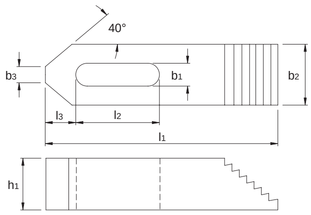


DIN
6314

Ref.	b1	l1	h1	M	b2	b3	l2	l3
88.650.0705	7	50	10	M6	20	8	10	20
88.650.0906	9	60	12	M8	25	10	13	22
88.650.1108	11	80	15	M10	30	12	15	30
88.650.1408	14	80	20	M12, M14	40	14	21	30
88.650.1410	14	100	20	M12, M14	40	14	21	40
88.650.1412	14	125	20	M12, M14	40	14	21	50
88.650.1810	18	100	25	M16, M18	50	18	26	40
88.650.1812	18	125	25	M16, M18	50	18	26	45
88.650.1816	18	160	25	M16, M18	50	18	26	65
88.650.2216	22	160	30	M20, M22	60	22	30	80
88.650.2220	22	200	30	M20, M22	60	22	30	80
88.650.2225	22	250	30	M20, M22	60	22	30	100
88.650.2616	26	160	30	M24	70	26	35	60
88.650.2620	26	200	30	M24	70	26	35	80
88.650.2625	26	250	30	M24	70	26	35	105
88.650.3425	34	250	40	M30	80	34	45	100
88.650.3431	34	315	50	M30	80	34	45	130

› 88.655 *Phantom*

NL Spanijzer, vertand
FR Bride droite pour cales crénelées
ES Brida dentada
DE Spanneisen mit Treppenzähnen
EN Step Clamp

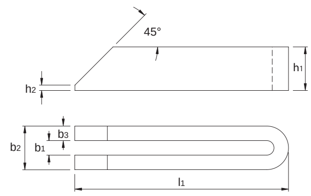


DIN
6314-Z

Ref.	b1	l1	h1	M	b2	b3	l2	l3
88.655.0705	7	50	10	M6	20	8	10	20
88.655.0906	9	60	12	M8	25	10	13	22
88.655.1108	11	80	15	M10	30	12	15	30
88.655.1410	14	100	20	M12, M14	40	14	21	40
88.655.1812	18	125	25	M16, M18	50	18	26	45
88.655.2216	22	160	30	M20, M22	60	22	30	60
88.655.2620	26	200	30	M24	70	26	35	80

› 88.660 *Phantom*

NL Spanbeugel, afgeschuind
FR Bride à fourche simple
ES Brida horquilla
DE Abgeschrägte Gabelspanneisen
EN Forked Clamp Tapered

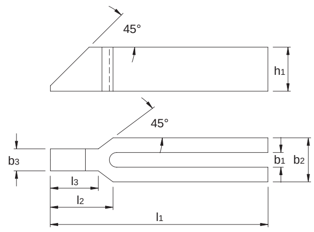


DIN
6315-B

Ref.	b1	l1	M	h1	b2	b3	h2
88.660.0706	7	60	M6	12	12	6	3
88.660.0908	9	80	M8	25	15	8	4
88.660.1110	11	100	M10	31	20	10	5
88.660.1412	14	125	M12, M14	38	25	12	6
88.660.1416	14	160	M12, M14	38	25	12	6
88.660.1420	14	200	M12, M14	38	25	12	6
88.660.1816	18	160	M16, M18	48	30	15	8
88.660.1820	18	200	M16, M18	48	30	15	8
88.660.1825	18	250	M16, M18	48	40	15	8
88.660.2220	22	200	M20, M22	52	40	15	10
88.660.2225	22	250	M20, M22	52	40	15	10
88.660.2231	22	315	M20, M22	52	40	20	10
88.660.2620	26	200	M24	66	40	20	10
88.660.2625	26	250	M24	66	40	20	10
88.660.2631	26	315	M24	66	40	20	10
88.660.3425	34	250	M30	74	50	20	12
88.660.3431	34	315	M30	74	50	20	12
88.660.3440	34	400	M30	74	50	20	12

› 88.665 Phantom

NL Spanijzer met neus
FR Bride avec nez
ES Brida con nariz
DE Spanneisen mit Nase
EN Forked Clamp with Shoe



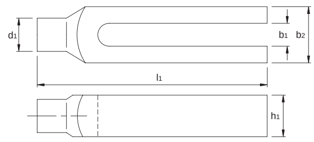
DIN
6315-GN

Ref.	b1	l1	h1	M	b2	b3	l2	l3
88.665.0910	9	100	15	M8	30	16	32	18
88.665.1112	11	125	20	M10	30	20	38	24
88.665.1416	14	160	25	M12, M14	40	24	47	30
88.665.1420	14	200	25	M12, M14	40	24	47	30
88.665.1816	18	160	30	M16, M18	50	28	57	36
88.665.1820	18	200	30	M16, M18	50	28	57	36
88.665.1825	18	250	30	M16, M18	50	28	57	36

Ref.	b1	l1	h1	M	b2	b3	l2	l3
88.665.2220	22	200	40	M20, M22	60	35	68	45
88.665.2225	22	250	40	M20, M22	60	35	68	45
88.665.2231	22	315	40	M20, M22	60	35	68	45
88.665.2625	26	250	40	M24	70	43	83	56
88.665.2631	26	315	40	M24	70	43	83	56
88.665.3431	34	315	50	M30	80	50	88	56
88.665.3440	34	400	50	M30	80	50	88	56

› 88.670 Phantom

NL Spanijzer met ronde neus
FR Bride avec nez rond
ES Brida con espiga redonda
DE Spanneisen mit Kugel-Nase
EN Forked Clamp with pin end



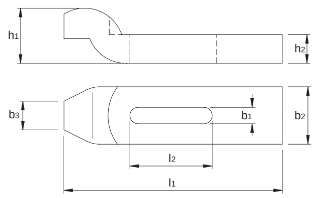
DIN
6315-C

Ref.	b1	l1	d1	M	b2	h1
88.670.0708	7	80	12	M6	19	15
88.670.0910	9	100	12	M8	25	15
88.670.1112	11	125	16	M10	31	20
88.670.1416	14	160	20	M12, M14	38	25

Ref.	b1	l1	d1	M	b2	h1
88.670.1820	18	200	24	M16, M18	48	30
88.670.2225	22	250	30	M20, M22	62	40
88.670.2631	26	315	38	M24	66	40
88.670.3440	34	400	45	M27, M30	74	50

› 88.675 Phantom

NL Spanijzer, gebogen
FR Bride contre-coudée
ES Brida acodada
DE Spanneisen, gekröpft
EN Single Goose-Neck Clamp



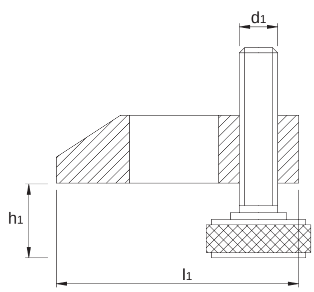
DIN
6316

Ref.	b1	l1	M	h1	b2	b3	h2
88.675.0908	9	80	M8	25	25	12	12
88.675.1110	11	100	M10	30	32	15	15
88.675.1412	14	125	M12, M14	40	40	20	20
88.675.1812	18	125	M16, M18	50	50	25	25
88.675.1816	18	160	M16, M18	50	50	25	25

Ref.	b1	l1	M	h1	b2	b3	h2
88.675.2216	22	160	M20	60	70	30	30
88.675.2220	22	200	M20	60	70	30	30
88.675.2620	26	200	M24	70	80	35	35
88.675.2625	26	240	M24	70	80	35	35
88.675.3431	34	315	M30	80	100	40	50

› 88.700 Phantom

NL Spanijzer, verstelbaar
FR Bride expansible
ES Brida regulable
DE Verstellbares Spanneisen
EN Adjustable Clamp



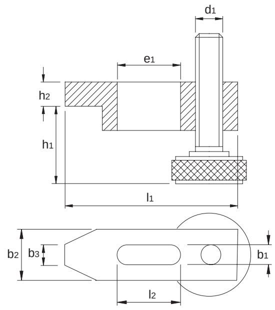
DIN
6314-T

Ref.	e1 N6	l1	d1	h1	M
88.700.1108	11	80	M10	8-27	M10
88.700.1410	14	100	M12	10-34	M12, M14
88.700.1812	18	125	M16	13-41	M16, M18

Ref.	e1 N6	l1	d1	h1	M
88.700.2216	22	160	M20	16-55	M20, M22
88.700.2620	26	200	M24	20-60	M24

› 88.705 *Phantom*

NL Spanijzer, verstelbaar
FR Bride expansible
ES Brida regulable
DE Verstellbares Spanneisen
EN Adjustable Clamp

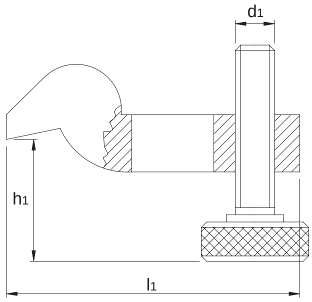


DIN
6314-AT

Ref.	e1 N6	l1	d1	h1	h2	M
88.705.1108	10	80	M10	11-30	14	M10
88.705.1410	14	100	M12	16-40	14	M12, M14
88.705.1812	18	125	M16	22-50	16	M16, M18
88.705.2216	22	160	M20	26-65	20	M20, M22

› 88.710 *Phantom*

NL Spanijzer, verstelbaar
FR Bride expansible
ES Brida regulable
DE Verstellbares Spanneisen
EN Adjustable Clamp

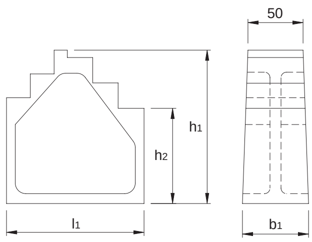


DIN
6316-T

Ref.	e1 N6	l1	d1	h1	M
88.710.1110	11	100	M10	23-42	M10
88.710.1412	14	125	M12	30-53	M12, M14
88.710.1816	18	160	M16	38-65	M16, M18
88.710.2220	22	200	M20	46-83	M20, M22

› 88.750 *Phantom*

NL Getrapte bok
FR Cale étagée
ES Calzos de escalera
DE Treppenblöcke
EN Step Block

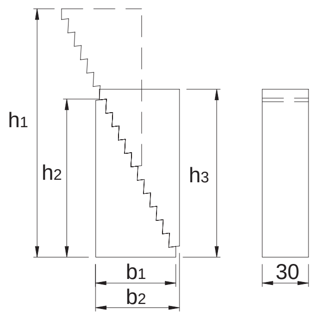


DIN
6318

Ref.	l1	b1	h2	h1
88.750.0095	55	50	57.5	95
88.750.0140	60	100	102.5	140
88.750.0215	70	110	177.5	215

› 88.780 *Phantom*

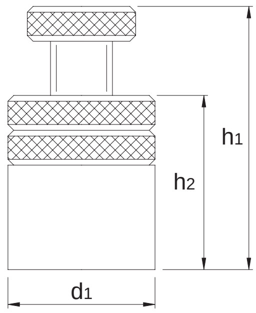
NL Getrapte verhoging, type 6500
FR Cale crénelée, type 6500
ES Calzo universal, tipo 6500
DE Spannunterlagen, Typ 6500
EN Universal Block, type 6500



Ref.	b2	h1	h2	b1	h3
88.780.0050	25	50	36	22	40
88.780.0100	35	100	70	33	74
88.780.0190	60	190	120	60	124

› 88.800 Phantom

NL Vijzel, type 6400
FR Vérin de calage et d'alignement, type 6400
ES Gato de apuntalamiento y alineado, tipo 6400
DE Höhen-Richtschraubbock, Typ 6400
EN Adjustable Vertical Jack, type 6400

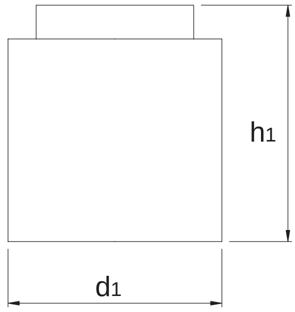


Ref.	Type	d1	h2	h1
88.800.0100	1	28	30	45
88.800.0200	2	38	45	65
88.800.0300	3	45	65	95
88.800.0400	4	60	90	140

Ref.	Type	d1	h2	h1
88.800.0500	5	80	125	190
88.800.0600	6	100	190	280
88.800.0700	7	100	275	500

› 88.805 Phantom

NL Onderzetstuk voor Vijzel
FR Rallonge pour Vérin de calage et d'alignement
ES Alargo para Gato de apuntalamiento y alineado
DE Distanzstücke für Höhen-Richtschraubbock
EN Supplements for Adjustable Vertical Jack

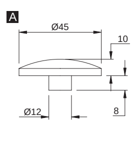


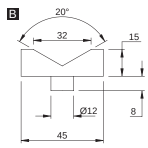
Ref.	Type	d1	h1
88.805.0101	1	28	15
88.805.0102	1	28	30
88.805.0103	1	28	60
88.805.0201	2	38	20
88.805.0202	2	38	40
88.805.0203	2	38	80
88.805.0301	3	45	30

Ref.	Type	d1	h1
88.805.0302	3	45	60
88.805.0303	3	45	100
88.805.0401	4	60	50
88.805.0402	4	60	100
88.805.0501	5	80	65
88.805.0502	5	100	130

› 88.810 Phantom

NL Opzetelement voor Vijzel
FR Tête pour Vérin de calage et d'alignement
ES Cabeza para Gato de apuntalamiento y alineado
DE Strukturelement für Höhen-Richtschraubbock
EN Screw jack for Adjustable Vertical Jack



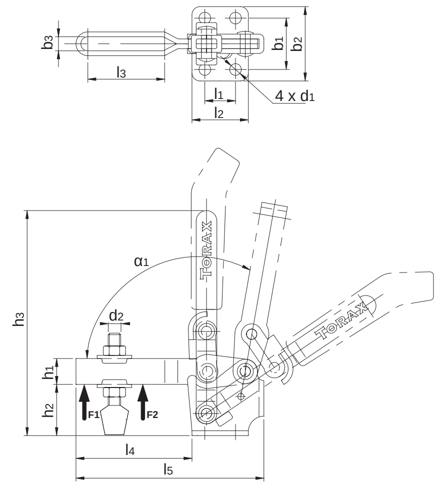


Ref.	Type
88.810.0100	A

Ref.	Type
88.810.0200	B

› 88.900 TORAX

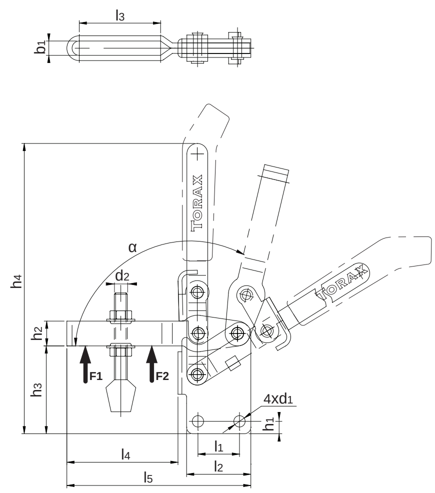
NL Verticale Snelspanklem, met horizontale voet
FR Sauterelle verticale, à pied horizontal
ES Grapas Rapidas vertical, con base horizontal
DE Vertikale Spannklemme, mit waagerechtem Fuß
EN Vertical Clamp, with horizontal foot



Ref.	Nr.	b1	l1	d1	b2	l2	b3	h1	h2	h3	l3	l4	l5	α1	F1	F2	d2
88.900.0000	Gr. 0	23.8	15.9	4.4	33.3	25.4	5	8	18.8	76.1	21	26	54.2	100°	0.5	0.7	M4 x 25
88.900.0100	Gr. 1	27	12.7	5.2	39.7	25.4	6.4	9.8	22.7	97.3	21	33	64	100°	0.8	1.1	M6 x 44
88.900.0300	Gr. 3	31.8	19	7.2	46	34.9	8.7	16	31.8	140	47.6	71.4	116	100°	1.4	2.5	M8 x 63
88.900.0400	Gr. 4	45.3	31.8	8.7	64.3	49.2	11	19	44	202	49.2	85.1	140.9	105°	2	3	M10 x 85
88.900.0500	Gr. 5	45.2	31.8	8.7	64.2	50.8	13.4	23	51	225	79.4	125.4	176.2	100° - 135°	3	5	M12 x 100
88.900.0600	Gr. 6	69.8	50.8	12.3	95.2	76.2	16.7	32	82.6	305	114	153	229.2	100° - 140°	3.5	5.5	M16 x 150

› 88.902 TORAX

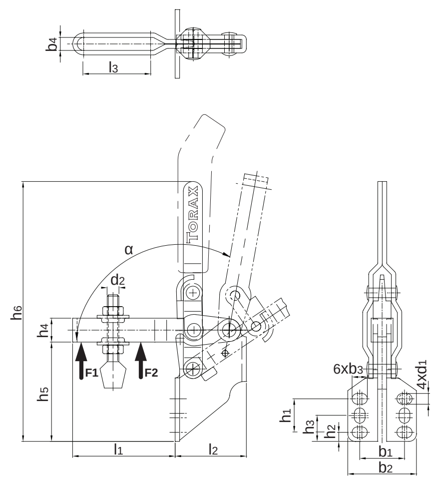
NL Verticale Snelspanklem, met verticale voet
FR Sauterelle verticale, à pied vertical
ES Grapas Rapidas vertical, con base vertical
DE Vertikale Spannklemme, mit vertikalem Fuß
EN Vertical Clamp, with vertical foot



Ref.	Nr.	h1	l1	d1	l2	b1	h2	h3	h4	l3	l4	l5	α1	F1	F2	d2
88.902.0000	Gr. 0	4.75	15.9	4.4	25.4	5	8	30.1	87.4	21	26	54.2	100°	0.8	1.1	M4 x 25
88.902.0100	Gr. 1	6.4	12.7	5.2	25.4	6.4	9.8	34.6	109		32.9	64	100°	0.8	1.1	M6 x 44
88.902.0300	Gr. 3	7.1	19	7.2	34.9	8.7	16	46.9	154	47.6	71.4	116	100°	1.4	2.5	M8 x 63
88.902.0400	Gr. 4	9.5	31.8	8.7	49.2	11	19	67.3	222	62.5	85.1	140.9	105°	2	3	M10 x 85
88.902.0500	Gr. 5	9.5	31.8	8.7	50.8	13.4	22.5	67	241	79.4	125.4	176.2	100° - 135°	3	5	M12 x 100
88.902.0600	Gr. 6	12.7	50.8	12.3	76.2	16.7	31.8	115.2	338	90	153	229.2	100° - 140°	3.5	5.5	M16 x 150

› 88.904 TORAX

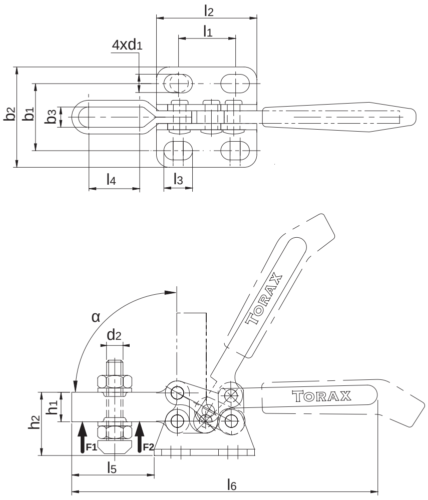
NL Verticale Snelspanklem, met haakse hoek
FR Sauterelle verticale, à angle perpendiculaire
ES Grapas Rapidas vertical, con ángulo perpendicular
DE Vertikale Spannklemme, mit rechtwinkliger Erstellung
EN Vertical Clamp, with right angle

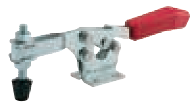


Ref.	Nr.	b1	h1	d1	b2	b3	b4	h2	h3	h4	h5	h6	l1	l2	l3	α1	F1	F2	d2
88.904.0100	Gr. 1	20	14	4.8	30		8.4	7.5		10	44.8	119	36	34.2	22.9	90°	0.8	1.1	M4 x 25
88.904.0300	Gr. 3	30	22.4	7.2	46	10.2	8.7	6.1	17.3	16	66.6	174	68.2	47.7	47.6	100°	1.4	25	M8 x 63

› 88.910 TORAX

NL Horizontale Snelspanklem, met horizontale voet
FR Sauterelle horizontale, à pied horizontal
ES Grapas Rapidas horizontal, con base horizontal
DE Horizontaler Spannklemme, mit waagerechtem Fuß
EN Horizontal Clamp, with horizontal foot

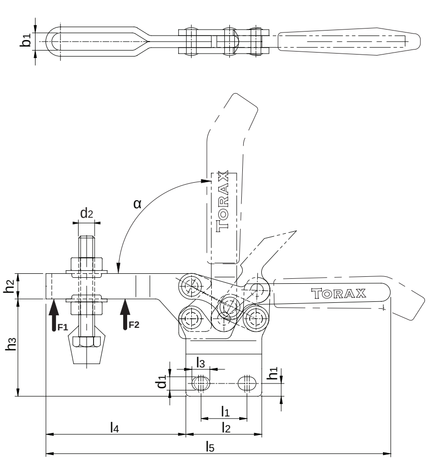


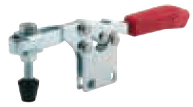


Ref.	Nr.	b1	l1	b2	l2	l3	b3	h1	h2	l4	l5	l6	α1	F1	F2	d1	d2
88.910.0000	Gr. 0	15.9	13.5	23.8	23.8	6.8	4.8	7	15	11	19.6	77	90°	0.25	0.4	4.4	M4 x 25
88.910.0200	Gr. 2	22	27	36	37	6	7.4	12.7	38.1	35	56.2	142	85°	1	1.2	5.2	M6 x 44
88.910.0300	Gr. 3	22.2	23.1	35	38	9	8.7	12.7	47.6	44	70	168	90°	1.8	2.5	6.7	M8 x 63
88.910.0500	Gr. 5	41.3	41.3	57.2	57.1		11	19	63.5	78	107	292	85°	3	5	8.3	M10 x 85

› 88.912 TORAX

NL Horizontale Snelspanklem, met verticale voet
FR Sauterelle horizontale, à pied vertical
ES Grapas Rapidas horizontal, con base vertical
DE Horizontaler Spannklemme, mit vertikalem Fuß
EN Horizontal Clamp, with vertical foot

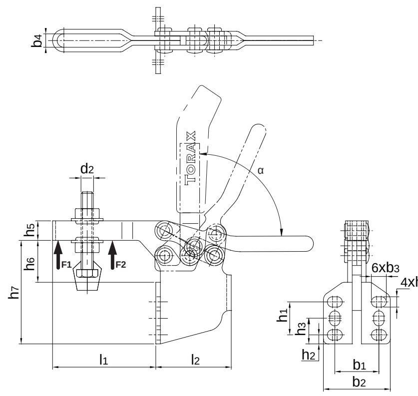




Ref.	Nr.	h1	l1	d1	l3	l2	b1	h2	h3	l4	l5	α1	F1	F2	d2
88.912.0000	Gr. 0	3.95	13.5	4.4	6.8	23.8	4.8	7	16.1	19.6	77	90°	0.25	0.4	M4 x 25
88.912.0200	Gr. 2	7	27	5.2	6	37	7.4	12.7	37.9	56.2	142	85°	1	1.2	M6 x 44
88.912.0300	Gr. 3	6.4	23.1	6.7	9	38	8.7	12.7	48.7	70	168	90°	1.8	2.5	M8 x 63

› 88.914 TORAX

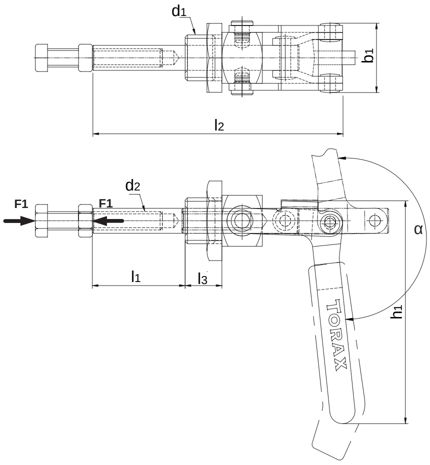
NL Horizontale Snelspanklem, met haakse hoek
FR Sauterelle horizontale, à angle perpendiculaire
ES Grapas Rapidas horizontal, con ángulo perpendicular
DE Horizontaler Spannklemme, mit rechtwinkliger Erstellung
EN Horizontal Clamp, with right angle



Ref.	Nr.	b1	h1	b3	h4	b2	b4	h2	h3	h5	h6	h7	l1	l2	α1	F1	F2	d2
88.914.0200	Gr. 2	22	20.4	8.2	5.2	36	7.4	6.1	16.3	12.7	17.2	62.2	53.25	44	85°	1	1.2	M6 x 44
88.914.0300	Gr. 3	28.6	21.4	9.7	6.7	43.4	8.7	5.85	16.55	12.7	27.2	67.2	67	49	90°	1.8	2.5	M8 x 63

› 88.920 TORAX

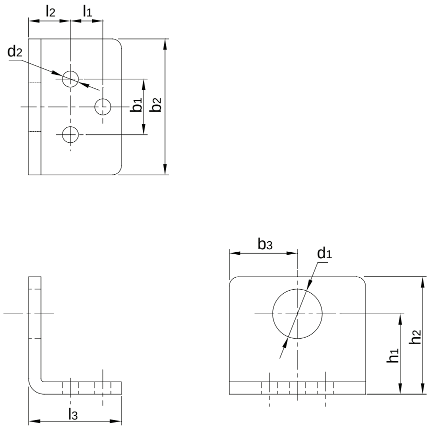
NL Schuifstang Snelspanklem, zonder voet
FR Sauterelle à tige coulissante, sans pied
ES Grapas Rapidas Barra corredera, sin base
DE Spannklemme mit Schiebestange, ohne Fuß
EN Clamp Telescopic arm, without foot

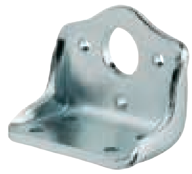


Ref.	Nr.	l1	l2	b1	d1	h1	l3	α1	F1	d2
88.920.0200	Gr. 2	21	64.2	24	M16 x 1,5	75	12.7	180°	2	M6 x 1 x 25
88.920.0300	Gr. 3	39.7	115	31	M20 x 1,5	98	15.9	180°	2.5	M8 x 1,25 x 35
88.920.0500	Gr. 5	70.3	171	39	M27 x 2	137	22.3	180°	4.5	M10 x 1,5 x 40

› 88.921 TORAX

NL Haakse voet voor Schuifstang
FR Pied perpendiculaire pour tige coulissante
ES Base perpendicular para Barra corredera
DE Winkelfuß für Schubstange
EN Right-angled foot for Telescopic arm

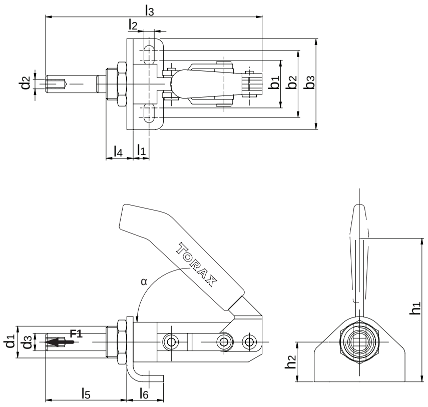




Ref.	Nr.	l1	b1	h1	l2	b2	b3	d1	d2	h2	l3
88.921.0200	Gr. 2	10.5	18	26	13.5	44	22	16	5.2	38	30
88.921.0300	Gr. 3	19	41.3	33.3	14.4	69.9	34.95	20	5.6	52.4	41.3
88.921.0500	Gr. 5	31.8	45.2	37	21	76	38	27	8.5	62	62

› 88.924 TORAX

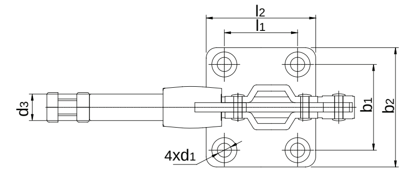
NL Schuifstang Snelspanklem, met voet
FR Sauterelle à tige coulissante, à pied
ES Grapas Rapidas Barra corredera, con base
DE Spannklemme mit Schiebestange, mit Fuß
EN Clamp Telescopic arm, with foot

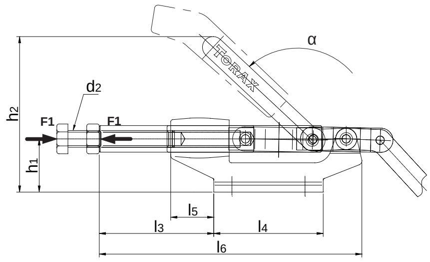


Ref.	Nr.	l1	b1	b2	l2	b3	h1	h2	l3	l4	l5	l6	d1	d3	α1	F1	d2
88.924.0300	Gr. 3	30	10	42	6.5	57	85	25	136	17	51	23	M20 x 1,5	11	190°	2.5	M6 x 1
88.924.0500	Gr. 5	30	13	45	8.5	64	120	30	173	22	59.5	30	M24 x 1,5	16	185°	4.5	M10 x 1,5

› 88.928 TORAX

NL Schuifstang Snelspanklem, met voet, zware uitvoering
FR Sauterelle à tige coulissante, à pied, version extra lourde
ES Grapas Rapidas Barra corredera, con base, versión macizo
DE Spannklemme mit Schiebestange, mit Fuß, schwere Ausführung
EN Clamp Telescopic arm, with foot, heavy duty version

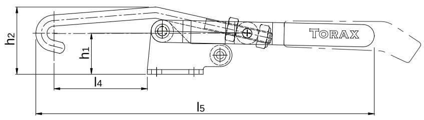


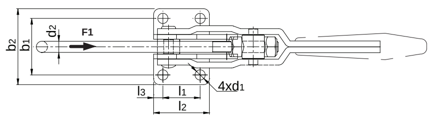


Ref.	Nr.	b1	l1	b2	l2	h1	h2	d1	d3	l3	l4	l5	l6	α1	F1	d2
88.928.0300	Gr. 3	41.1	35	57.2	52.4	25.4	74.2	6.7	12.7	54.8	52.4	20.6	125	190°	4	M8 x 1,25
88.928.0500	Gr. 5	41.1	41.1	57.2	58.8	31.8	93.5	8.3	16	81	58.8	31.8	163	185°	10	M10 x 1,5
88.928.0700	Gr. 7	50.8	50.8	71.4	73.2	44.4	131.6	8.3	19.2	119.8	73.2	50.8	235	185°	25	M12 x 1,75

› 88.935 TORAX

NL Sluitspanner, zonder tegenhouder
FR Collier de serrage, sans bras support
ES Pasador de cierre, sin contrasoporte
DE Beckenendlage, ohne Gegenhalter
EN Locking clamp, without tailstock





Ref.	Nr.	b1	l1	d1	b2	l2	h1	h2	d2	l4	l5	l3	F1
88.935.0100	Gr. 1	35	19	5.6	49.2	38.1	19	36.5	8	58.4	210.2	12.7	2
88.935.0300	Gr. 3	49.2	31.8	8.7	65.7	47.6	35.1	57.3	9.5	79.4	288	7.9	3
88.935.0500	Gr. 5	60.3	28.6	10.3	85.7	54	46	66.7	12.7	76.2	335.2	12.7	5

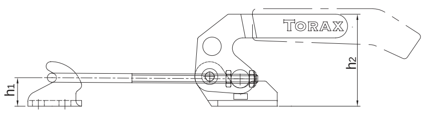
› 88.936 TORAX

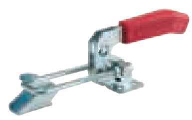
NL Tegenhouder, voor 88.935
FR Bras support, pour 88.935
ES Contrasoporte, para 88.935
DE Gegenhalter, für 88.935
EN Tailstock, for 88.935

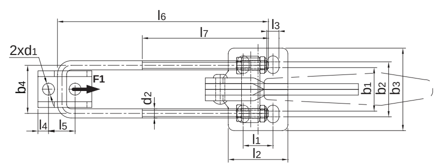
Ref.	Nr.
88.936.1100	Gr. 1
88.936.1300	Gr. 3
88.936.1500	Gr. 5

› 88.940 TORAX

NL Sluitspanner, met voet en tegenhouder
FR Collier de serrage, à pied et bras support
ES Pasador de cierre, con base y contrasoporte
DE Beckenendlage, mit Fuß und Gegenhalter
EN Locking clamp, with foot and tailstock



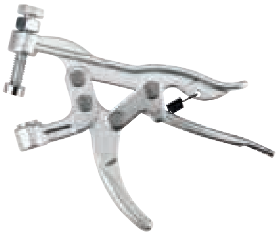


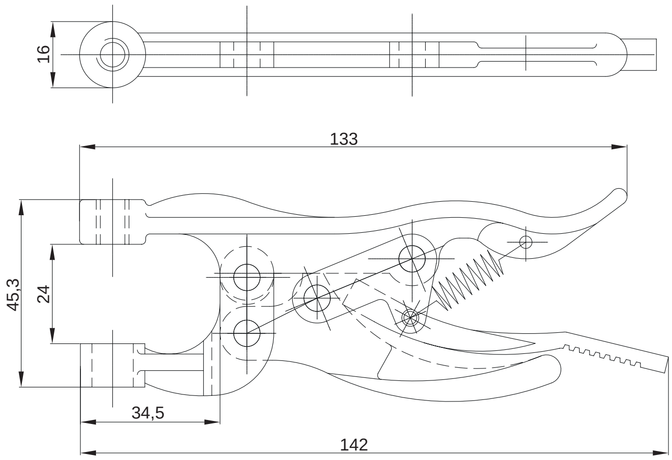


Ref.	Nr.	b1	l1	b2	l2	b3	l3	b4	l4	l5	d1	h1	h2	l6	l7	F1	d2
88.940.0200	Gr. 2	19	13	24	26	36	5.2	21	4.6	11.6	5.2	12.5	40.3	92	55	1.6	M4
88.940.0300	Gr. 3	25	19	32	35	48	6.5	28.5	17.7	14	6.4	21	59	114	60	3.2	M6
88.940.0500	Gr. 5	36	32	45	51	60	8.5	44.5	8	19	8.5	24.2	82.3	152	60	7	M8

› 88.965 TORAX

NL Klemtang
FR Pince de bridage
ES Pinza de sujeción
DE Schweißer zange
EN Toggle plier

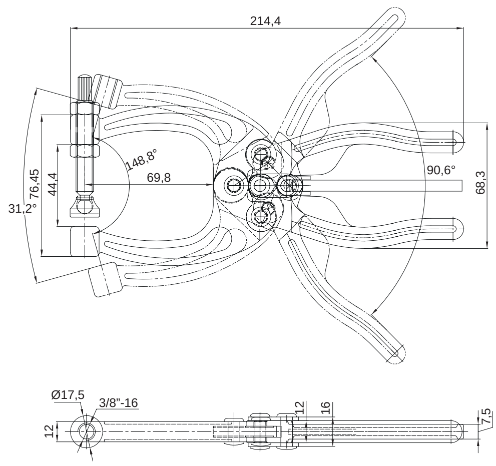




Ref.	Nr.
88.965.0200	Gr.1

› 88.966 TORAX

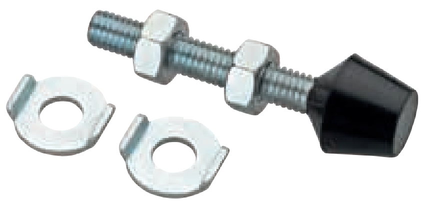
NL Klemtang groot
FR Pince de bridage grand modèle
ES Pinza de sujeción grande
DE Schweißer zange groß
EN Toggle plier large



Ref.	Nr.
88.966.0320	Gr.1

› 88.991 TORAX

NL Bout met kunststof voet
FR Boulon à pied plastique
ES Perno con base sintética
DE Bolzen mit Kunststoffplatte
EN Bolt with plastic foot



Ref.	d1
88.991.1025	M4x25
88.991.1042	M4X42
88.991.3044	M6x44
88.991.3051	M6x51
88.991.4063	M8x63
88.991.4085	M10x85
88.991.6100	M12x100

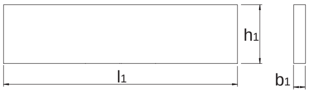
› 88.994 TORAX

NL **Klemplaat**
FR **Plaque de serrage**
ES **Placa de fijación**
DE **Klemmplatte**
EN **Clamp plate**

Ref.	d1
88.994.0010	8-M4
88.994.0020	1/4-M6
88.994.0040	5/16-M8
88.994.0050	3/8-M10
88.994.0060	1/2-M12
88.994.0080	5/8-M16

› 88.860 *International Tools*

NL ECO PRO Set Parallelvlakstukken
FR Jeu de Cales parallèles ECO PRO
ES Juego Bases paralelas ECO PRO
DE ECO PRO Satz Parallelunterlagen
EN ECO PRO Set of Parallel Supports

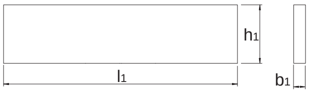


ECO PRO

Ref.	Nr. Ø	l1	h1xb1
88.860.0100	20	100	5-10-15-20 (2 mm) / 6-11-16-21 (3 mm) / 7-12-17-22 (4 mm)/4-13-18-23 (5 mm) / 9-13-19-24 (6 mm)
88.860.0125	24	125	11-16-21-26-31-36 (8 mm) / 13-18-23-28-33-38 (10 mm) / 14-20-25-30-35-40 (12 mm) / 17-22-27-32-37-42 (14 mm)
88.860.0150	24	150	11-16-21-26-31-36 (8 mm) / 13-18-23-28-33-38 (10 mm) / 14-20-25-30-35-40 (12 mm) / 17-22-27-32-37-42 (14 mm)

› 88.870 *International Tools*

NL ECO PRO Set Parallelvlakstukken
FR Jeu de Cales parallèles ECO PRO
ES Juego Bases paralelas ECO PRO
DE ECO PRO Satz Parallelunterlagen
EN ECO PRO Set of Parallel Supports



ECO PRO

Ref.	Nr. Ø	l1	h1xb1
88.870.0104	8	100	10-14-18-22-26-30-34-38-42 (4 mm)
88.870.0128	8	120	12-17-22-25-28-32-36-38 (8 mm)
88.870.0164	9	160	10-14-18-22-26-30-34-38-42 (4 mm)
88.870.0168	8	160	12-17-22-25-28-32-36-38 (8 mm)
88.870.0208	8	200	17-22-26-28-32-36-38-42 (8 mm)

› 89.250 *Phantom*

NL Set Spantangen, standaard kwaliteit, 15 µm
FR Jeu de Pinces, qualité standard, 15 µm
ES Juego de Pinzas, calidad estándar, 15 µm
DE Satz Spannzangen, Standard-Qualität, 15 µm
EN Set of Collets, standard quality, 15 µm

DIN 6499-B | ER | 0,015

Ref.	NR	Type	Ø
89.250.1600	10	ER16	1-10
89.250.2500	15	ER25	2-16
89.250.3200	18	ER32	3-20
89.250.4000	23	ER40	4-26

› 89.252 Phantom

NL Set Spantangen, Ultra precies, 5 µm
FR Jeu de Pinces, Ultra précis, 5 µm
ES Juego de Pinzas, Ultrapreciso, 5 µm
DE Satz Spannzangen, Ultrapräzise, 5 µm
EN Set of Collets, Ultra precise, 5 µm

DIN 6499-B | ER | 0,005

Ref.	NR	Type	Ø
89.252.1600	10	ER16	1-10
89.252.2500	15	ER25	2-16
89.252.3200	18	ER32	3-20
89.252.4000	23	ER40	4-26

› 89.260 Phantom

NL Set Spantangen, rubber afgedicht, 8 µm
FR Jeu de Pinces, caoutchouc scellé, 8 µm
ES Juego de Pinzas, sellado de goma, 8 µm
DE Satz Spannzangen, Gummi abgedichtet, 8 µm
EN Set of Collets, rubber sealed, 8 µm

DIN 6499 | ER | 0,008 | 40 BAR

Ref.	NR	Type	Ø
89.260.1600	5	ER16	3,4,6,8,10
89.260.2500	8	ER25	3,4,6,8,10,12,14,16
89.260.3200	10	ER32	3,4,6,8,10,12,14,16,18,20
89.260.4000	10	ER40	3,4,6,8,10,12,14,16,18,20

› 89.262 Phantom

NL Set Spantangen, staal afgedicht, 8 µm
FR Jeu de Pinces, acier scellé, 8 µm
ES Juego de Pinzas, acero sellado, 8 µm
DE Satz Spannzangen, Stahl versiegelt, 8 µm
EN Set of Collets, steel sealed, 8 µm

DIN 6499 | ER | 0,008 | 120 BAR

Ref.	NR	Type	Ø
89.262.1600	5	ER16	3,4,6,8,10
89.262.2500	8	ER25	3,4,6,8,10,12,14,16
89.262.3200	10	ER32	3,4,6,8,10,12,14,16,18,20
89.262.4000	10	ER40	3,4,6,8,10,12,14,16,18,20

› 89.264 *Phantom*

NL Set Spantangen, Coolant Jet, 8 µm
FR Jeu de Pinces, Coolant Jet, 8 µm
ES Juego de Pinzas, Coolant Jet, 8 µm
DE Satz Spannzangen, Coolant Jet, 8 µm
EN Set of Collets, Coolant Jet, 8 µm

DIN 6499 | ER | 0,008 | 40 BAR

Ref.	NR	Type	Ø
89.264.1600	5	ER16	3,4,6,8,10
89.264.2500	8	ER25	3,4,6,8,10,12,14,16
89.264.3200	10	ER32	3,4,6,8,10,12,14,16,18,20
89.264.4000	9	ER40	4,6,8,10,12,14,16,18,20

› 89.282 *Phantom*

NL Set Spantanghouder met Spantangen
FR Coffret avec Mandrin porte-pinces et pinces ER
ES Juego de Portapinzas, pinzas y llave
DE Spannzangensätze mit Spannzangenfutter
EN Set of Collets Chucks

DIN 6499-B | ER | 0,015

Ref.	1	2	3	4
89.282.0225	MK2 - ER25	-	ER25 Ø 6-10-12-16	82.990.2500
89.282.0332	MK3 - ER32	-	ER32 Ø6-10-12-16-20	82.990.3200
89.282.0432	MK4 - ER32	-	ER32 Ø6-10-12-16-20	82.990.3200
89.282.3032	-	SK30 - ER32	ER32 Ø6-10-12-16-20	82.990.3200
89.282.4032	-	SK40 - ER32	ER32 Ø6-10-12-16-20	82.990.3200

› 89.878 *Phantom*

NL Set Opstopblokken
FR Jeu de Cales crénelées
ES Juego Calzos universales
DE Satz Füllblock
EN Set of Universal Blocks

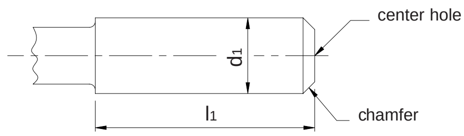
Ref.	Type
89.878.1000	8 x 25-50 mm, 8 x 35-100 mm, 4 x 60-190 mm

NL **Vergelijking Hardheid**
FR **Comparaison de la dureté**
ES **Comparación de dureza**
DE **Vergleich der Härte**
EN **Hardness comparison**

Dimensions in mm			
(N/mm²)	HRc	HB30	HV10
240		71	75
255		76	80
270		81	85
285		86	90
305		90	95
320		95	100
335		100	105
350		105	110
370		109	115
385		114	120
400		119	125
415		124	130
430		128	135
450		133	140
465		138	145
480		143	150
495		147	155
510		152	160
530		157	165
545		162	170
560		166	175
575		171	180
595		176	185
610		181	190
625		185	195
640		190	200
660		195	205
675		199	210
690		204	215
705		209	220
720		214	225
740		219	230
755		223	235
770		228	240
785		233	245
800	22	238	250
820	23	242	255
835	24	247	260
860	25	255	268
870	26	258	272
900	27	266	280

Dimensions in mm			
(N/mm²)	HRc	HB30	HV10
920	28	273	287
940	29	278	293
970	30	287	302
995	31	295	310
1020	32	301	317
1050	33	311	327
1080	34	319	336
1110	35	328	345
1140	36	337	355
1170	37	346	364
1200	38	354	373
1230	39	363	382
1260	40	372	392
1300	41	383	403
1330	42	393	413
1360	43	402	423
1400	44	413	434
1440	45	424	446
1480	46	435	458
1530	47	449	473
1570	48	460	484
1620	49	472	497
1680	50	488	514
1730	51	501	527
1790	52	517	544
1845	53	532	560
1910	54	549	578
1980	55	567	596
2050	56	584	615
2140	57	607	639
2180	58	622	655
	59		675
	60		698
	61		720
	62		745
	63		773
	64		800
	65		829
	66		864
	67		900
	68		940

DIN 1835



NL **Cilindrische schacht**
FR **Queue cylindrique**
ES **Mango cilíndrico**
DE **Zylinderschaft**
EN **Cylindrical shank**

Dimensions in mm	
d_1 h6	l_1 +2 0
3	28
4	28
5	28
6	36
8	36

Dimensions in mm	
d_1 h6	l_1 +2 0
10	40
12	45
16	48
20	50
25	56

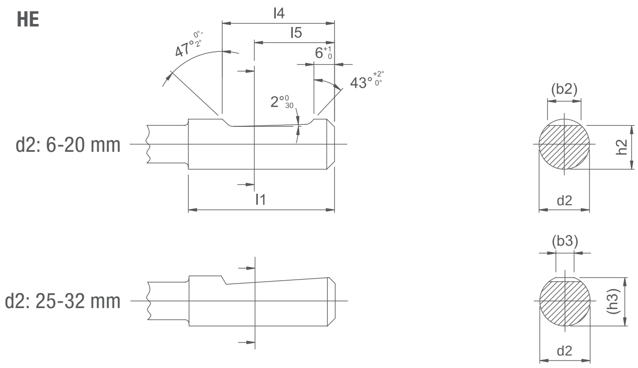
Dimensions in mm	
d_1 h6	l_1 +2 0
32	60
40	70
50	80
63	90

DIN 6535 HA/HE

NL **Cilindrische schacht DIN 6535**
FR **Queue cylindrique DIN 6535**
ES **Mango cilíndrico DIN 6535**
DE **Zylinderschaft DIN 6535**
EN **Cylindrical shank DIN 6535**

HA

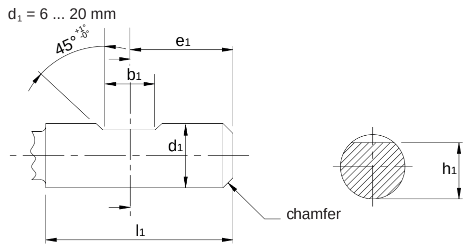
HE



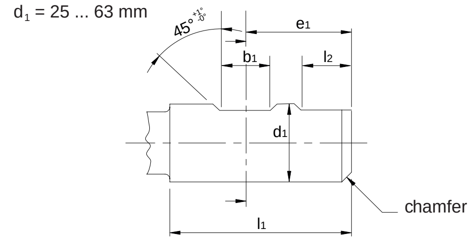
d2	(b2) h1	(b3)	h2	(h3)	l1 +2 0	l4 0 -1	l5	r2
6	4,3		5,1		36	25	18	1,2
8	5,5		6,9					
10	7,1		8,5		40	28	20	
12	8,2		10,4		45	33	22,5	
14	8,1		12,7					
16	10,1		14,2		48	36	24	1,6
18	10,8		16,2					
20	11,4		18,2		50	38	25	
25	13,5	9,3	23,0	24,1	56	44	32	

DIN 6536 HB

NL **Cilindrische schacht “Weldon”**
FR **Queue cylindrique “Weldon”**
ES **Mango cilíndrico “Weldon”**
DE **Zylinderschaft “Weldon”**
EN **Cylindrical shank “Weldon”**



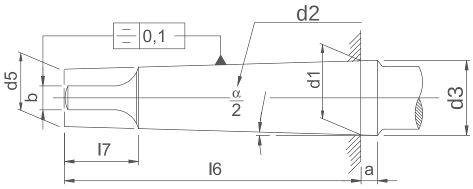
Dimensions in mm					
d_1 h6	b_1 +0.05 0	e_1 0 -1	h_1 h11	l_1 +2 0	l_2 +1 0
6	4.2	18	4.8	36	-
8	5.5	18	6.6	36	-
10	7	20	8.4	40	-
12	8	22.5	10.4	45	-
16	10	24	14.2	48	-
20	11	25	18.2	50	-

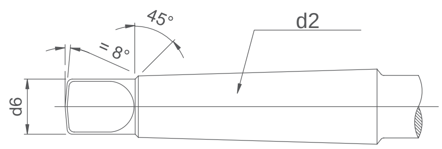


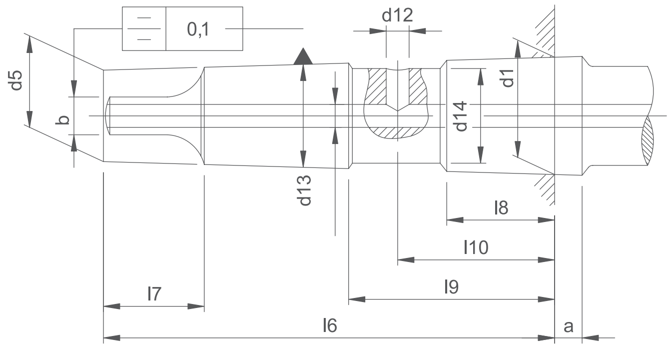
Dimensions in mm					
d_1 h6	b_1 +0.05 0	e_1 0 -1	h_1 h11	l_1 +2 0	l_2 +1 0
25	12	32	23	56	17
32	14	36	30	60	19
40	14	40	38	70	19

NL **Morsekonus opname volgens DIN 228 Form B**
FR **Attachements cône morse selon DIN 228 Forme B**
ES **Sujeciones con cono morse según DIN 228 Forma B**
DE **Morsekegel-aufnahme nach DIN 228 Form B**
EN **Morse taper according to DIN 228 Form B**

NL **Form BK, met inwendig koelkanaal**
FR **Forme BK, avec trou d´huile interne**
ES **Forma BK, con canal de refrigeración interno**
DE **Form BK, mit innerem Kühlkanal**
EN **Form BK, with internal cooling**



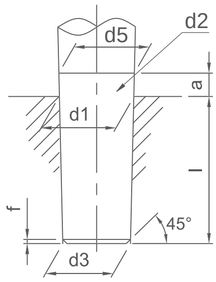


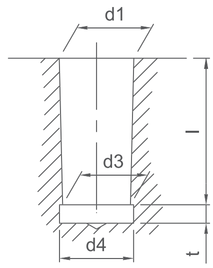


d2	a	b h13	d1	d3	d5	d6	d12	d13 -0,1	d14 0 -0,1	l6	l7	l8	l9	l10	$\frac{\alpha}{2}$
MK 0	3,0	3,9	9,045	9,2	6,1	6,0				56,5	10,5				1°29'27"
MK 1	3,5	5,2	12,065	12,2	9,0	8,7				62,0	13,5				1°25'43"
MK 2	5,0	6,3	17,780	18,0	14,0	13,5	4,2	4,2	15,0	75,0	16,0	20,0	34,0	27,0	1°25'50"
MK 3	5,0	7,9	23,825	24,1	19,1	18,5	5,0	5,0	21,0	94,0	20,0	29,0	43,0	36,0	1°26'16"
MK 4	6,5	11,9	31,267	31,6	25,2	24,5	6,8	6,8	28,0	117,5	24,0	39,0	55,0	47,0	1°29'15"
MK 5	6,5	15,9	44,399	44,7	36,5	35,7	8,5	8,5	40,0	149,5	29,0	51,0	69,0	60,0	1°30'26"
MK 6	8,0	19,0	63,348	63,8	52,4	51,0	10,2	10,2	56,0	210,0	40,0	81,0	99,0	90,0	1°29'36"

NL **Boorstift-opnames volgens DIN 238**
FR **Attachements pour mandrin porte-forets selon DIN 238**
ES **Sujeción espiga para portabrocas según DIN 238**
DE **Bohrfutterkegel-Aufnahmen nach DIN 238**
EN **Drill chuck mountings to DIN 238**

d2	a	d1	d5	d3	d4	f	l	t
B6	3	6,35	6,5	5,85	6,5	0,5	10	3
B10	3,5	10,094	10,3	9,4	9,8	1	14,5	3,5
B12	3,5	12,065	12,2	11,1	11,5	1,	18,5	3,5
B16	5	15,733	16,0	14,5	15,0	1,5	24,0	4,0
B18	5	17,780	18,0	16,2	16,8	1,5	25,0	4,0
B18 short	5	17,431	18,0	16,2	16,8	1,5	25,0	4,0
B22	5	21,793	22,0	19,8	20,5	2,0	40,5	4,5
B25	5	23,825	24,1	21,3	22,0	2,0	50,5	4,5





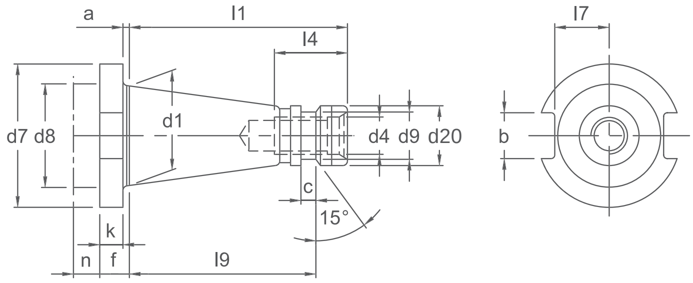
NL Instelmomenten van tapinzetstukken met ratel (Nm)
FR Tableau des réglages pour les têtes à tarauder à limiteur de couple (Nm)
ES Tabla de los momentos torsor para casquillos para roscado con embrague de seguridad (Nm)
DE Einstellmomente von Gewindebohrereinsatzstück mit Sicherheitskupplung (Nm)
EN Setting torques of tap insert with safety coupling (Nm)

M	Gr. 1	Gr. 2	Gr. 3
M2	0,6		
M3	1		
M3,5	1,5 - 2		
M4	2-3		
M5	5-6		
M6-M7	7-9	7-9	
M8-M9	16-19	16-19	
M10-M11	27-30	27-30	
M12	37-40	37-40	37-40
M14	37-40	50-53	50-53
M16	37-40	55-58	55-58
M18		85-90	85-90
M20		100-106	100-106
M22		100-106	110-115
M24		100-106	140-150
M27		100-106	150-160
M30			240-250
M33			260-270
M36			260-270
M39			260-270

NL Tabel aantrekmoment voor ER spantangen
FR Tableau de couple de serrage pour pinces ER
ES Tabla de embrague para pinzas ER
DE Tabelle der Anzugsmoment für ER-Spannzangen
EN Table of tightening torque for ER collets

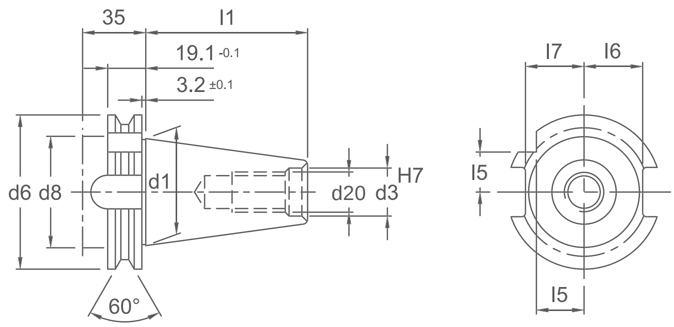
Type of Collet Chuck	Collet Nut	Shank-Ø	Max. tightening torque [Nm]	Max. transmittable torque [Nm] (For smallest shaft dimension h6)	Max. rpm
ER11	M14 x 0.75	0.5 - 2.5	7	< 1.0	40000
		3.0 - 7.0	10	2.5 - 10.0	
ER16	M22 x 1.50	0.5 - 1.0	10	< 1.0	40000
		1.5 - 3.5	25 - 30	1.0 - 3.0	
		4.0 - 10.0	50 - 55	10.0 - 55.0	
ER20	M25 x 1.50	1.5 - 2.0	15	1.0 - 2.0	40000
		2.5 - 6.5	30 - 35	2.5 - 15.0	
		7.0 - 13.0	50 - 55	26.0 - 60.0	
ER25	M32 x 1.50	1.0 - 3.0	25 - 30	1.0 - 3.0	35000
		3.5 - 6.5	35 - 40	4.0 - 15.0	
		7.0 - 16.0	55 - 60	38.0 - 130.0	
ER25	M40 x 1.50	1.5 - 3.0	30 - 35	1.0 - 4.0	35000
		3.5 - 6.5	55 - 60	6.0 - 25.0	
		7.0 - 20.0	110 - 120	55.0 - 250.0	
ER40	M50 x 1.50	2.0 - 7.0	60 - 70	3.0 - 25.0	25000
		8.0 - 11.0	100 - 110	35.0 - 50.0	
		12.0 - 26.0	140 - 150	85.0 - 250.0	

NL SK-opname volgens DIN 2080
FR Attachements SA selon DIN 2080
ES Sujeción SA según DIN 2080
DE SK-Aufnahmen nach DIN 2080
EN SK mounting according to DIN 2080



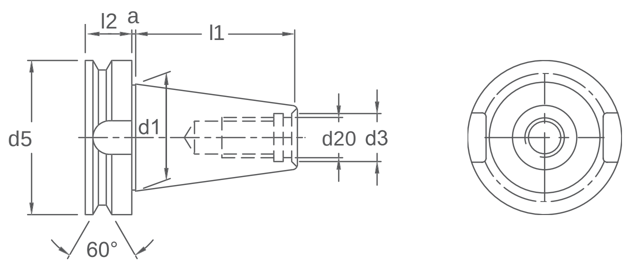
d2	d1	a	b	d20	d4	d7	d8	l1	l4	l7	l9	d9	c	k	f	n
SK 30	31,75	1,6	16,1	17,4	M12	50	36	68,4	24	16,2				8	9,5	9
SK 40	44,45	1,6	16,1	25,3	M16	63	50	93,4	32	22,5	82	21,1	7	10	11,1	11
SK 50	69,85	3,2	25,7	39,6	M24	97,5	78	126,8	47	35,3	115	32	13	12	15,1	16
SK 60	107,95	3,2	25,7	60,2	M30	156	136	206,8	59	60				16	19,1	16

NL SK-opname volgens DIN 69871-A / ISO7388-1
FR Attachements SK selon DIN 69871-A / ISO7388-1
ES Sujeción SK según DIN 69871-A / ISO7388-1
DE SK-Aufnahmen nach DIN 69871-A / ISO7388-1
EN SK mounting according to DIN 69871-A / ISO7388-1



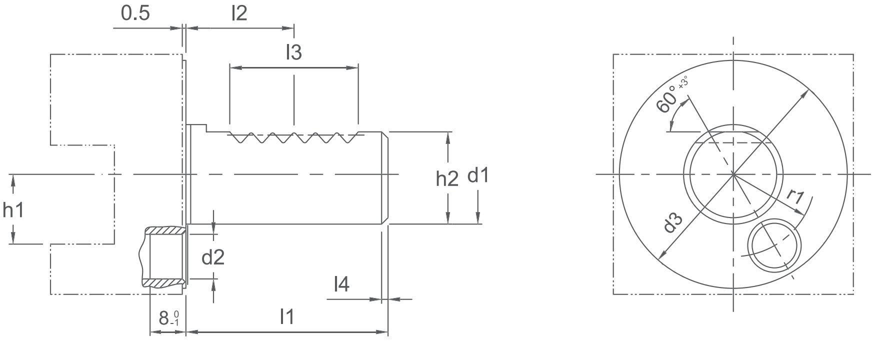
d2	d1	d20	d3	d6	d8	l1	l5	l6	l7
SK 30	31,75	M12	13	50,00	45	47,8	15,00	16,40	19,00
SK 40	44,45	M16	17	63,55	50	68,40	18,50	22,80	25,00
SK 45	57,15	M20	21	82,55	63	82,70	24,00	29,10	31,30
SK 50	69,85	M24	25	97,50	80	101,75	30,00	35,50	37,70

NL BT-Opname volgens MAS 403-BT
FR Attachements BT selon MAS 403-BT
ES Sujeción BT según MAS 403-BT
DE BT-Aufnahmen nach MAS 403-BT
EN BT mounting according to MAS 403-BT



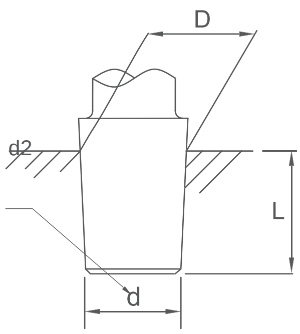
d2	d1	l1	a	l2	d20	d3	d5
BT 30	31,75	48,4	2	22	M12	12,5	46
BT 35	38,1	56,5	2	22	M12	13	53
BT 40	44,45	65,4	2	27	M16	17	63
BT 45	57,15	82,8	3	33	M20	21	85
BT 50	69,85	101,8	3	38	M24	25	100

NL **VDI-opnames volgens DIN 69880**
FR **Porte-outils VDI selon DIN 69880**
ES **Portaherramientas VDI según DIN 69880**
DE **VDI-Aufnahmen nach DIN 69880**
EN **VDI mounting according to DIN 69880**



d1 h6	l1 +0,3	d2	Tol.	d3	h1 max	h2 +0,1	l2 +0,05	l3 min	l4 1	r1 +0,02
16	32	8	H6	40	12	15	12,7	16	2	14,5
20	40	10	H6	50	16	18	21,7	24	2	18
25	48	10	H6	58	16	23,5	21,7	24	2	21
30	55	14	H8	68	20	27	29,7	40	2	25
40	63	14	H8	83	25	36	29,7	40	3	32
50	78	16	H8	98	32	45	35,7	48	3	37
60	94	16	H8	123	32	55	43,7	56	4	48

JACOBS



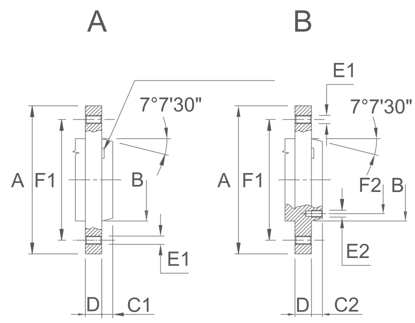
NL **Boorstift-opnames volgens Jacobs**
FR **Attachements pour mandrin porte-forets selon Jacobs**
ES **Sujeción espiga para portabrocas según Jacobs**
DE **Bohrfutterkegel-Aufnahmen nach Jacobs**
EN **Drill chuck mounting according to Jacobs**

d2	D	d	L	Con. (%)
J1	9,754	8,469	16,669	7,709
J2 short	13,940	12,386	19,050	8,155
J2	14,199	12,386	22,225	8,155
J33	15,850	14,327	25,400	6,350
J6	17,170	15,852	25,400	5,191
J3	20,599	18,951	30,956	5,325

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8

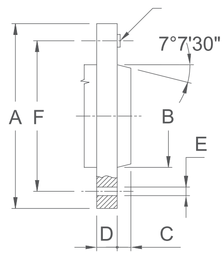
NL Machinespilneuzen volgens DIN 55026 (bevestiging van voren)
FR Broches de machine selon DIN 55026 (fixation par l'avant)
ES Cabezales de torno según DIN 55026 (montaje delantero)
DE Maschinenspindeln nach DIN 55026 (Befestigung von vorne)
EN Machine spindles according to DIN 55026 (fastening from the front)

Nr.	A	B max.	C1	C2	D	E1	F1	E2	F2
3	9212	53,983	11	-	16	3xM10	70,6	-	-
4	108	63,251	11	-	20	11xM10	82,6	-	-
5	133	82,753	13	14,288	22	11xM10	104,8	8xM10	61,9
6	165	106,385	14	15,875	25	11xM12	133,4	8xM12	82,6
8	210	139,731	16	17,462	28	11xM16	171,4	8xM16	111,1
11	280	196,883	18	19,05	35	11xM20 (11xM18)	235	8xM20 (8xM18)	165,1
15	380	285,791	19	20,638	42	12xM24 (12xM22)	330,2	11xM24 (11xM22)	247,6
20	520	412,795	21	22,225	48	12xM24	463,6	11xM24	398,3



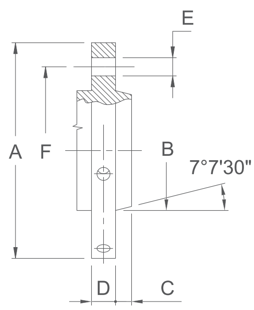
NL Machinespilneuzen met Bajonetbevestiging volgens DIN 55027
FR Broches de machine avec fixation Baïonnette selon DIN 55027
ES Cabezales de torno con fijación Bayoneta según DIN 55027
DE Maschinenspindeln mit Bajonet-Befestigung nach DIN 55027
EN Machine spindles with bayonet fixing according to DIN 55027

Bajonet						
Nr.	A	B max.	C	D	E	F
3	102	53,983	11	16	3 x 21	75
4	112	63,251	11	20	3 x 21	85
5	135	82,573	13	22	4 x 21	104,8
6	170	106,385	14	25	4 x 23	133,4
8	220	139,731	16	28	4 x 29	171,4
11	290	196,883	18	35	6 x 36	235
15	400	285,791	19	42	6 x 43	330,2
20	540	412,795	21	48	6 x 43	463,6



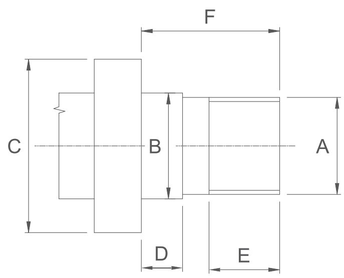
NL Machinespilneuzen met Camlockbevestiging volgens DIN 55029
FR Broches de machine avec fixation Camlock selon DIN 55029
ES Cabezales de torno con fijación Camlock según DIN 55029
DE Maschinenspindeln mit Camlock-Befestigung nach DIN 55029
EN Machine spindles with camlock fastening according to DIN 55029

Camlock						
Nr.	A	B max.	C	D	E	F
3	92	53,983	11	32	3 x 15,1	70,6
4	117	63,251	11	34	3 x 16,7	82,6
5	146	82,573	13	38	6 x 19,8	104,8
6	181	106,385	14	45	6 x 23	133,4,
8	225	139,731	16	50	6 x 31	171,4
11	298	196,883	18	60	6 x 36	235
15	403	285,791	19	70	6 x 35,7	330,2



NL Machinespilneuzen met draad volgens DIN 800
FR Broches de machine avec filetage selon DIN 800
ES Cabezales de torno con roscado según DIN 800
DE Maschinenspindeln mit Gewinde nach DIN 800
EN Machine spindles with thread according to DIN 800

M					
A	Bg5	C min.	D	E	F
M20	21	30	6,3	10	20
M24	25	36	8	12	24
M33	34	50	9	14	30
M39	40	56	10	16	35
M45	46	67	11	18	40
M52	55	80	12	20	45
M60	62	90	14	22	50
M76x6	78	112	16	30	63
M105x6	106	150	20	40	80



NL Machinespilneuzen volgens ANSI B 5.9
FR Broches de machine selon ANSI B 5.9
ES Cabezales de torno según ANSI B 5.9
DE Maschinenspindeln nach ANSI B 5.9
EN Machine spindles according to ANSI B 5.9

A1								
Nr.	A	B max.	C -0,025	D	E1	F1	E2	F2
5	133,4	82,275	14,288	22,2	11 x 7/16-14 UNC	104,8	8 x 7/16-14 UNC	61,9
6	165,1	106,390	15,875	25,4	11 x 1/2-13 UNC	133,4	8 x 1/2-13 UNC	82,6
8	209,5	139,735	17,462	28,6	11 x 5/8-11 UNC	171,4	8 x 5/8-11 UNC	111,1
11	279,4	196,885	19,05	34,9	11 x 3/4-10 UNC	235	8 x 3/4-10 UNC	165,1
15	381	285,8	20,638	41,3	12 x 7/8-9 UNC	330,2	11 x 7/8-9 UNC	247,6

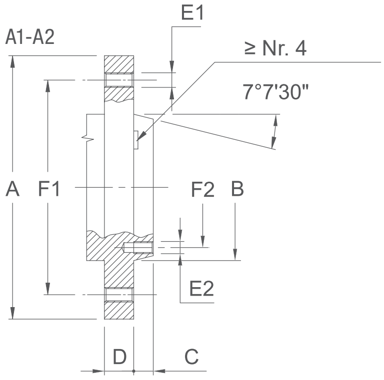
A2						
Nr.	A	B max.	C -0,025	D	E1	F1
3	92,1	53,985	11,1	15,9	3 x 7/15-14 UNC	70,66
4	108	63,525	11,1	19	11 x 7/16-14 UNC	82,55
5	133,4	82,575	12,7,	22,2	11 x 7/16-14 UNC	104,8
6	165,1	106,39	14,3	25,4	11 x 1/2-13 UNC	133,4
8	209,5	139,735	15,9	28,6	11 x 5/8-11 UNC	171,4
11	279,4	196,885	17,5	34,9	11 x 3/4-10 UNC	235
15	381	285,8	19	41,3	12 x 7/8-9 UNC	330,2

B1								
Nr.	A	B max.	C -0,025	D	G	F1	E2	F2
5	133,4	82,275	14,288	22,2	11 x 7/16-14 UNC	104,8	8 x 7/16-14 UNC	61,9
6	165,1	106,390	15,875	25,4	11 x 1/2-13 UNC	133,4	8 x 1/2-13 UNC	82,6
8	209,5	139,735	17,462	28,6	11 x 5/8-11 UNC	171,4	8 x 5/8-11 UNC	111,1
11	279,4	196,885	19,05	34,9	11 x 3/4-10 UNC	235	8 x 3/4-10 UNC	165,1
15	381	285,8	20,638	41,3	12 x 7/8-9 UNC	330,2	11 x 7/8-9 UNC	247,6

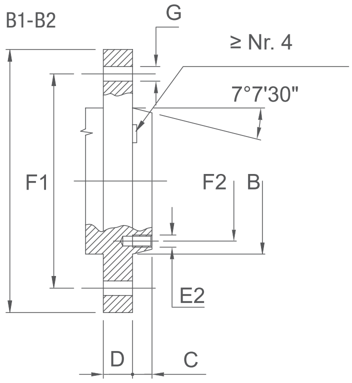
B2						
Nr.	A	B max.	C	D	G	F1
3	92,1	53,985	11,1	15,9	3 x 11,9	70,66
4	108	63,525	11,1	19	11 x 11,9	82,55
5	133,4	82,575	12,7,	22,2	11 x 11,9	104,8
6	165,1	106,39	14,3	25,4	11 x 13,5	133,4
8	209,5	139,735	15,9	28,6	11 x 16,7	171,4
11	279,4	196,885	17,5	34,9	11 x 20,2	235
15	381	285,8	19	41,3	12 x 23,4	330,2

Type L, con. 7 : 24					
Nr.	A	B + 0,051	C	D	E
L00	3 3/4-6 UNS	69,850	50,800	14,288	9, 525 x 9,525 x 38, 1
L0	4 1/2-6 UNS	82,550	60,325	15,875	9,525 x 9,525 x 44,45
L1	6 - 6 UNS	104,775	73,025	19,050	15,875 x 15,875 x 60,32
L2	7 3/4-5 UNS	133,350	85,725	25,400	19,05 x 19,05 x 73,02
L3	10 3/8-4 UNS	165,100	94,425	28,575	25,4 x 25,4 x 82,55

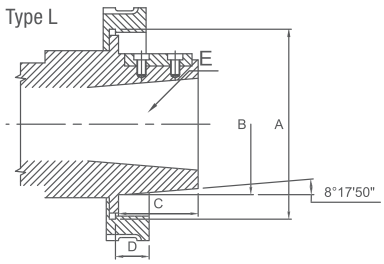
A1-A2



B1-B2

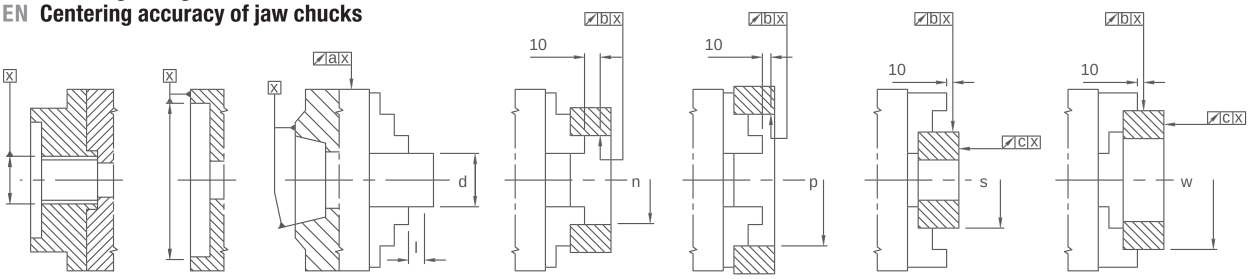


Type L



REF. **85.410, 85.420, 85.421, 85.422, 85.423, 85.450, 85.500, 85.510**

NL Centreernauwkeurigheid voor klauwplaten
FR Tolérance de centrage pour les mandrins
ES Tolerancia de centrado para los platos de garras
DE Zentriergenauigkeit von Backenfutter
EN Centering accuracy of jaw chucks



Ø	80 - 85	100 - 110	125 - 140	160	200	250	315	400	500	630	800
d	10	10	18	18	30	30	52	53	75	75	160
	-	14	25	30	40	53	75	100	100	125	200
	14	18	30	40	53	75	100	125	125	160	250
l	40	40	60	60	80	80	120	120	160	160	160
n	40	40	50	50	80	80	125	125	200	200	325
p	60	75	100	135	162	200	252	282	282	325	500
s	35	50	62	88	96	150	210	250	300	400	400
w + 85.855	63	80	100	100	160	160	250	250	400	400	500
w + 85.840	-	-	120	150	185	225	300	350	400	400	500

NL Centreernauwkeurigheid voor stalen en gietijzeren klauwplaten 80 - 400 mm
FR Tolérance de centrage pour les mandrins en acier et en fonte 80 - 400 mm
ES Tolerancia de centrado para los platos de garras de acero y de fundición 80 - 400 mm
DE Zentriergenauigkeit von Stahl- und Gusseisenbackenfutter 80 - 400 mm
EN Centring accuracy of steel and cast iron jaw chucks 80 - 400 mm

	Tol. (mm)				
	85 - 100	125- 160	200 - 250	315	400
a	0,020	0,030	0,040	0,050	0,060
b	0,025	0,035	0,045	0,055	0,065
c	0,015	0,020	0,025	0,030	0,030

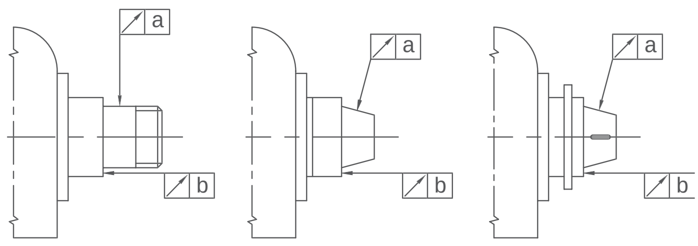
NL Centreernauwkeurigheid voor gietijzeren klauwplaten 500 - 800 mm
FR Tolérance de centrage pour les mandrins en fonte 500 - 800 mm
ES Tolerancia de centrado para los platos de garras de fundición 500 - 800 mm
DE Zentriergenauigkeit von Gusseisenbackenfutter 500 - 800 mm
EN Centring accuracy of cast iron jaw chucks 500 - 800 mm

	Tol. (mm)		
	500	630	800
a	0,10	0,10	0,15
b	0,075	0,10	0,15
c	0,05	0,05	0,06

REF. **85.410, 85.420, 85.422, 85.423, 85.500, 85.510**

NL Centreernauwkeurigheid machinespilneuzen
FR Tolérance de centrage broches de machine
ES Tolerancia de centrado cabezales de torno
DE Zentriergenauigkeit Maschinenspindeln
EN Centring accuracy machine spindles

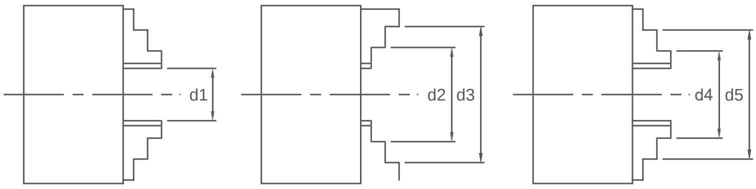
	Tol. (mm)	
	80 - 160	200 - 800
a	0,003 mm	0,005 mm
b	0,003 mm	0,005 mm



100x45

REF. 85.410, 85.420, 85.422, 85.423, 85.500, 85.510

NL Spanbereik voor klauwplaten met vaste bekken
FR Capacité de serrage des mandrins avec mors fixes
ES Capacidad de fujición de platos de garras con garra fija
DE Spannbereich von Backenfutter mit fester Backen
EN Clamping range of jaw chucks with fixed jaws



	Ø (mm)													
	80	85	100	110	125	140	160	200	250	315	400	500	630	800
d1	2 - 27	2 - 40	3 - 33	3 - 33	3 - 50	3 - 50	3 - 64	4 - 90	5 - 118	5 - 131	10 - 180	20 - 235	30 - 335	150 - 482
d2	25 - 50	32 - 70	36 - 62	32 - 62	39 - 83	39 - 83	50 - 107	60 - 145	77 - 188	90 - 215	103 - 272	140 - 357	180 - 487	302 - 634
d3	45 - 71	64 - 102	62 - 93	62 - 93	80 - 125	80 - 125	98 - 160	130 - 200	160 - 250	190 - 315	230 - 400	276 - 500	345 - 630	468 - 800
d4	22 - 46	22 - 60	25 - 56	25 - 56	34 - 74	34 - 74	42 - 100	52 - 135	62 - 174	78 - 200	85 - 252	120 - 335	160 - 465	282 - 614
d5	45 - 69	54 - 92	56 - 87	56 - 87	72 - 115	72 - 115	94 - 154	120 - 202	145 - 256	172 - 299	210 - 380	245 - 476	325 - 630	448 - 780

NL Spanbereik voor klauwplaten met gedeelde bekken
FR Capacité de serrage des mandrins avec mors réglables
ES Capacidad de fujición de platos de garras con garra movil
DE Spannbereich von Backenfutter mit geteilte Backen
EN Clamping range of jaw chucks with split jaws

	Ø (mm)									
	125	140	160	200	250	315	400	500	630	800
d1	3 - 50	3 - 50	3 - 64	4 - 90	5 - 118	5 - 131	10 - 180	20 - 235	30 - 335	150 - 482
d2	52 - 96	52 - 96	62 - 121	72 - 156	86 - 197	103 - 226	127 - 294	110 - 400	120 - 570	240 - 724
d3	95 - 125	95 - 125	115 - 160	133 - 200	160 - 250	190 - 315	230 - 400	190 - 500	200 - 630	316 - 800
d4	34 - 76	34 - 76	42 - 97	50 - 130	58 - 165	65 - 182	72 - 228	120 - 410	140 - 590	252 - 736
d5	75 - 118	75 - 118	88 - 146	105 - 190	125 - 135	145 - 265	165 - 329	200 - 485	210 - 665	328 - 812

NL Maximaal toegestane toerental (omw/min)
FR Vitesse de rotation maximale (tour/min)
ES Número de revoluciones máximo (rev/min)
DE Zulässige Höchstdrezahl (U/min)
EN Maximum permissible speed (rpm)

	n = rpm										
Ref.	80 - 85	100 - 110	125	140 - 160	200	250	315	400	500	630	800
85.410 (3200)	4000	3500	3200	3000	2500	2000	1500	1000	700	500	300
85.500 (3600)	4000	3500	3200	3000	2500	2000	1500	1000	700	500	300
85.420 85.422, 85.423	6000	5200	4800	4500	4000	3500	2800	2000			
85.510 (3700)	6000	5200	4800	4500	4000	3500	2800	2000			

NL Draaimoment aan sleutel (Nm)
FR Couple de rotation de clé (Nm)
ES Par de apriete (Nm)
DE Drehmoment am Schlüssel (Nm)
EN Torque on the key (Nm)

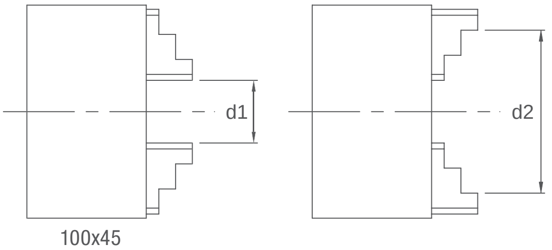
	Ø (mm)										
	80 - 85	100 - 110	125	140 - 160	200	250	315	400	500	630	800
Nm	35	50	75	120	160	180	200	280	360	460	500

NL Totale spankracht (daN) voor klauwplaten
FR Force de serrage totale (daN) pour serrage des mandrins
ES Fuerza de sujeción total (daN) para platos de garras
DE Gesamtspannkraft (daN) für Backenfutter
EN Total clamping force (daN) for jaw chuck

	Ø (mm)										
	80 - 85	100 - 110	125	140 - 160	200	250	315	400	500	630	800
daN	1000	1700	2400	3100	3700	4600	5500	6500	7200	8000	9000

REF. 85.600, 85.602

NL Spanbereik voor klauwplaten met omkeerbekken
FR Capacité de serrage des mandrins avec mors réversibles
ES Capacidad de fujición de platos con garras reversibles
DE Spannbereich von Backenfutter mit Umkehrbacken
EN Clamping range of jaw chucks with reversible jaws



	Ø (mm)							
	85	**100**	**125**	**150**	**160**	**200**	**250**	**315**
d1	3	3	8	8	8	10	10	15
d2	85	100	125	150	160	200	250	315
	350	**400**	**500**	**630**	**800**	**915**	**1000**	**1250**
d1	15	20	45	50	50	120	170	170
d2	350	400	500	630	800	915	1000	1250

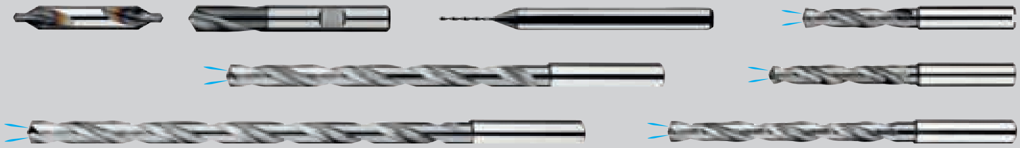
NL Maximaal toegestane toerental voor stalen klauwplaten (omw/min) - voor symmetrisch ingespannen werkstukken
FR Vitesse de rotation maximale pour les mandrins en acier (tour/min) - pour le serrage concentrique des pièces
ES Número de revoluciones máximo para los platos de garras de acero (rev/min) - para la sujeción concéntrica de las piezas
DE Zulässige Höchstdrezahl von Stahlbackenfutter (U/min) - für symmetrisch gespannte Werkstücke
EN Maximum permissible rpm of steel jaw chucks - for symmetrically clamped workpieces

n = rpm							
85	**100**	**125**	**150**	**160**	**200**	**250**	**315**
4000	3800	3500	3200	3200	2500	2000	1500
350	**400**	**500**	**630**	**800**	**915**	**1000**	**1250**
1500	1100	700	550	450	200	200	150

NL Maximaal toegestane toerental voor gietijzeren klauwplaten (omw/min) - voor symmetrisch ingespannen werkstukken
FR Vitesse de rotation maximale pour les mandrins en fonte (tour/min) - pour le serrage concentrique des pièces
ES Número de revoluciones máximo para los platos de garras de fundición (rev/min) - para la sujeción concéntrica de las piezas
DE Zulässige Höchstdrezahl von Gusseisenbackenfutterr (U/min) - für symmetrisch gespannte Werkstücke
EN Maximum permissible rpm of cast iron jaw chucks - for symmetrically clamped workpieces

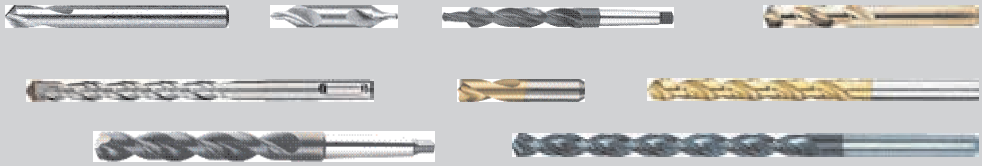
n = rpm							
85	**100**	**125**	**150**	**160**	**200**	**250**	**315**
					1800	1500	1200
350	**400**	**500**	**630**	**800**	**915**	**1000**	**1250**
1200	800	500	400	300	150	150	100

NL VHM Boren
FR Forets Carbure Monobloc
ES Brocas Metal Duro
DE VHM Bohrer
EN Solid Carbide Drilling



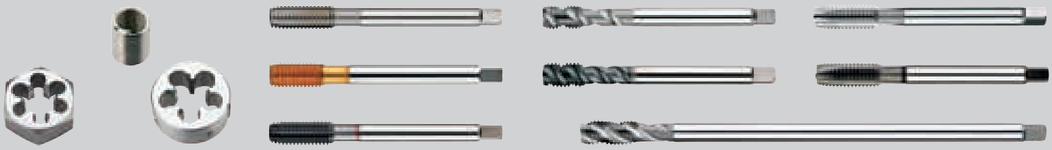
SC 1

NL HSS Boren en HSS-E Boren
FR Forets HSS et HSS-E
ES Brocas HSS y HSS-E
DE HSS-Bohrer und HSS-E Bohrer
EN HSS and HSS-E Drilling



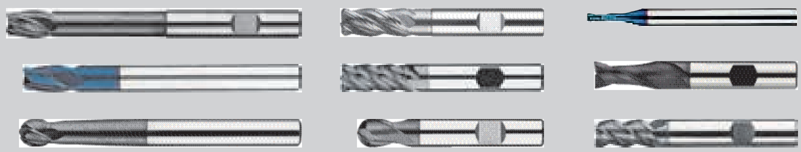
HSS(-E) 1

NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden
EN Thread Cutting



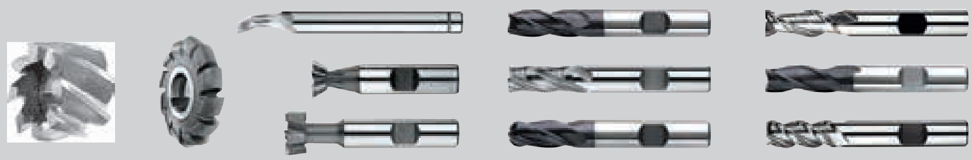
2

NL VHM Frezen
FR Fraises Carbure Monobloc
ES Fresas Metal Duro
DE VHM Fräser
EN Solid Carbide Milling



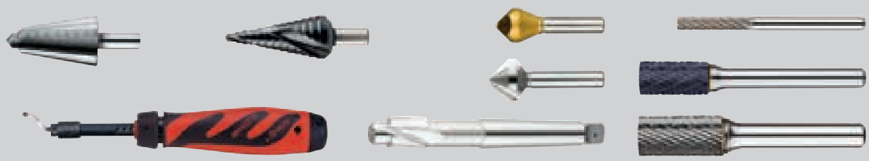
SC 3

NL HSS-E Frezen
FR Fraises HSS-E
ES Fresas HSS-E
DE HSS-E Fräser
EN HSS-E Milling



HSS-E 3

NL Verzinken en Ontbramen
FR Chanfreinage et Ebavurage
ES Avellanar y Desbarbar
DE Senker und Entgrater
EN Countersinking and Deburring

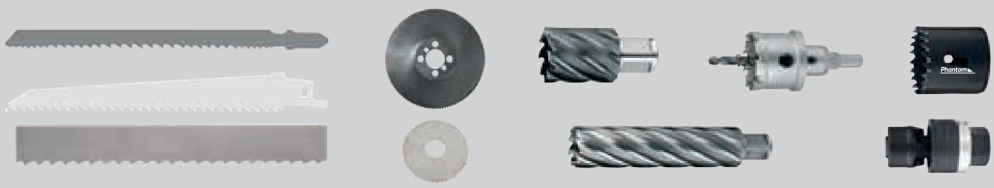


4

NL Ruimen
FR Alésage
ES Escariar
DE Reibahlen
EN Reaming

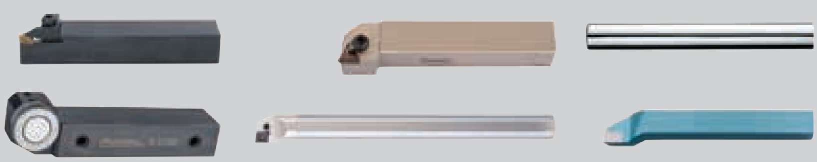
5

NL Zagen en Ponsen
FR Sciage et Poinçonnage
ES Serrar y Punzonar
DE Sägen und Blechlocher
EN Sawing and Hole Cutting



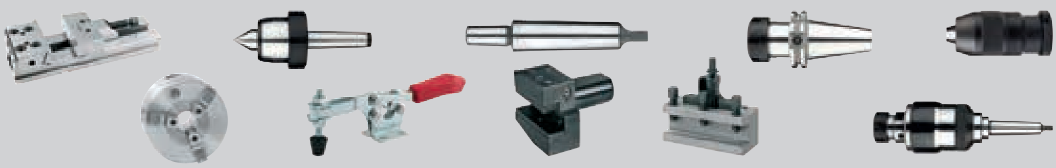
6

NL Draaien
FR Tournage
ES Tornear
DE Dreh- und Fräswerkzeuge
EN Turning



7

NL Spannen
FR Serrage et Bridage
ES Fijar y Sujetar
DE Spannwerkzeuge
EN Clamping



8

NL Overig
FR Autres
ES Otros
DE Übrig
EN Other

ETC. 9

ICONEN ICONES ICONOS PIKTOGRAMME ICONS

	NL	FR	ES	DE	EN
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl	For stainless steel
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium	For aluminium
UNI	HP2 Universeel	Universel	Universal	Universal	Universal
1/2”	Koelmiddelslang 1/2”	Tuyau pour réfrigérant 1/2”	Sistema de man-gueras 1/2”	Kühlmittel-schlauch 1/2”	Coolant hose 1/2”
1/4”	Koelmiddelslang 1/4”	Tuyau pour réfrigérant 1/4”	Sistema de man-gueras 1/4”	Kühlmittel-schlauch 1/4”	Coolant hose 1/4”
15 l/min	Doorstroomhoe-veelheid: 15 liter/min	Débit: env. 15 l/min	Caudal: aprox. 15 litros/min	Fördermenge: 15 l / min	Rate of flow approx 15 liters/ min
28 l/min	Doorstroomhoe-veelheid: 28 liter/min	Débit: env. 28 l/min	Caudal: aprox. 28 litros/min	Fördermenge: 28 l / min	Rate of flow approx 28 liters/ min
max. 6 bar	Bedrijfsdruk max. 6 bar	Pression de service max. 120 bars	Presión de servicio máx. 120 bar	Betriebsdruck max. 120 bar	Operating pressure max. 120 bar
	Olie	Huile	Petróleo	Öl	Oil
	Op plantaardige basis	À base d'huile végétale	Base vegetal	Auf pflanzlicher Basis	Vegetable based

NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**
EN **Other**

P K / H N / M S — Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet / Very adequate

P K / H N / M S — Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet / Adequate

P= pagina
P= page
P= página
P= Seite

› 90.105	Phantom	UNI	P M K N S	P. 3
› 90.110	Phantom	UNI	P M K N S	P. 3
› 90.120	Phantom	ALU	N	P. 3
› 90.130	Phantom	INOX	P M K N S	P. 4
› 90.140	Phantom	UNI	P M K N S	P. 4
› 90.145	Phantom	UNI	P M K N S	P. 4
› 90.150	Phantom	INOX	P M K N S	P. 4
› 90.170	Phantom	UNI	P M K N S	P. 5
› 90.180	Phantom	UNI	P M K N S	P. 5
› 90.210	Phantom	UNI	P M K N S	P. 5
› 90.510	Phantom	1/4"		P. 6
› 90.520	Phantom	1/2"		P. 7
› 91.200	Phantom	M		P. 8
› 91.205	Phantom	M		P. 8
› 91.206	Phantom	M		P. 8
› 91.210	Phantom	MF		P. 8
› 91.215	Phantom	MF		P. 9
› 91.216	Phantom	MF		P. 9
› 91.220	Phantom	UNC		P. 9
› 91.225	Phantom	UNC		P. 9
› 91.226	Phantom	UNC		P. 10
› 91.230	Phantom	UNF		P. 10
› 91.235	Phantom	UNF		P. 10
› 91.236	Phantom	UNF		P. 10

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8
ETC.
9

› 91.250	Phantom	BSP G		P. 10
› 91.255	Phantom	BSP G		P. 11
› 91.256	Phantom	BSP G		P. 11
› 91.270	Phantom	NPT		P. 11
› 91.275	Phantom	NPT		P. 11

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4
5
6
7
8
ETC.
9

› 90.105 *Phantom*

- **NL** **Universal Snijolie EP (Extreme Pressure), chloor- en siliconvrij, op plantaardige basis**
- **FR** **Huile de coupe Universal EP (Haute Pression), sans chlore, à base d'huile végétale**
- **ES** **Aceite de corte Universal EP (Alta Presión), sin cloro, base vegatal**
- **DE** **Universal Schneidöl EP (Hochdruck), Chlor- und Silikonfrei, auf pflanzlicher Basis**
- **EN** **Universal Cutting oil EP (Extreme Pressure), chlorine-free, vegetable based**

UNI

Ref.	Contents
90.105.0250	250 ml

Ref.	Contents
90.105.0251	Box with 10 pcs

› 90.110 *Phantom*

- **NL** **Universal Snijolie EP (Extreme Pressure), chloor- en siliconvrij, op mineraaloliebasis**
- **FR** **Huile de coupe Universal EP (Haute Pression), sans chlore, à base d'huile minérale**
- **ES** **Aceite de corte Universal EP (Alta Presión), sin cloro, base de aceite mineral**
- **DE** **Universal Schneidöl EP (Hochdruck), Chlor- und Silikonfrei, auf Mineralölbasis**
- **EN** **Universal Cutting oil EP (Extreme Pressure), chlorine-free, mineral oil based**

UNI

Ref.	Contents
90.110.0250	250 ml
90.110.0251	Box with 10 pcs
90.110.5005	5 l
90.110.5010	10 l

Ref.	Contents
90.110.5025	25 l
90.110.5060	60 l
90.110.5200	200 l

› 90.120 *Phantom*

- **NL** **Non-Ferro Snijolie EP (Extreme Pressure), chloor- en siliconvrij, op mineraaloliebasis**
- **FR** **Huile de coupe Non-Ferro EP (Haute Pression), sans chlore, à base d'huile minérale**
- **ES** **Aceite de corte Non-Ferro EP (Alta Presión), sin cloro, base de aceite mineral**
- **DE** **Nicht-Eisen Schneidöl EP (Hochdruck), Chlor- und Silikonfrei, auf Mineralölbasis**
- **EN** **Non-Ferro Cutting oil EP (Extreme Pressure), chlorine-free, mineral oil based**

ALU

Ref.	Contents
90.120.0250	250 ml
90.120.0251	Box with 10 pcs
90.120.5005	5 l
90.120.5010	10 l

Ref.	Contents
90.120.5025	25 l
90.120.5060	60 l
90.120.5200	200 l

› 90.130 Phantom

NL Heavy Duty Snijolie EP (Extreme Pressure), chloor- en silicoonvrij, op mineraaloliebasis
FR Huile de coupe Heavy Duty EP (Haute Pression), sans chlore, à base d'huile minérale
ES Aceite de corte Heavy Duty EP (Alta Presión), sin cloro, base de aceite mineral
DE Heavy Duty Schneidöl EP (Hochdruck), Chlor- und Silikonfrei, auf Mineralölbasis
EN Heavy Duty Cutting oil EP (Extreme Pressure), chlorine-free, mineral oil based

INOX

Ref.	Contents	Ref.	Contents
90.130.0250	250 ml	90.130.5025	25 l
90.130.0251	Box with 10 pcs	90.130.5060	60 l
90.130.5005	5 l	90.130.5200	200 l
90.130.5010	10 l		

› 90.140 Phantom

NL Universal Snijolie spray EP (Extreme Pressure), chloor- en silicoonvrij, op plantaardige basis
FR Universal Huile de coupe spray EP (Haute Pression), sans chlore, à base d'huile végétale
ES Universal Aceite de corte pulverizador EP (Alta Presión), sin cloro, base vegatal
DE Universal Schneidöl Spray EP (Extreme Pressure), Chlor- und Silikonfrei, auf pflanzlicher Basis
EN Universal Cutting oil spray EP (Extreme Pressure), chlorine-free, vegetable based

UNI

Ref.	Contents	Ref.	Contents
90.140.0400	400 ml	90.140.0401	12 x 400 ml

› 90.145 Phantom

NL Universal Snijolie-schuim, chloor-, zwavel- en mineraalolievrij
FR Huile de coupe Universal sous forme de mousse, sans chlore, ni soufre ni huile minérale
ES Aceite de corte Universal en espuma, sin cloro, azufre y aceite mineral
DE Universal Schneidöl-Schaum, Chlor-, Schwevel und Mineralölfrei
EN Universal Cutting oil foam, chlorine- and mineral oil free

UNI

Ref.	Contents	Ref.	Contents
90.145.0400	400 ml	90.145.0401	12 x 400 ml

› 90.150 Phantom

NL Extreme Snijpasta, chloor- en silicoonvrij
FR Pâte de coupe Extrême, sans chlore
ES Pasta de corte Extreme, sin cloro
DE Hochleistungs-Schneidpaste, Chlor- und Silikonfrei
EN Extreme Cutting paste, chlorine-free

INOX

Ref.	Contents	Ref.	Contents
90.150.0250	250 gr.	90.150.2500	2,5 kg.
90.150.0251	10 x 250 gr.	90.150.5000	5 kg.

› 90.170 Phantom

NL **Snijwas EP (Extreme Pressure), chloorvrij**
FR **Pâte de coupe EP (Haute Pression), sans chlore**
ES **Cera de corte EP (Alta Presión), sin cloro**
DE **Wachsstift EP (Extreme Pressure), chlorfreier**
EN **Cutting wax EP (Extreme Pressure), chlorine free**

UNI

Ref.	Contents	Ref.	Contents
90.170.0300	300 gr	90.170.0301	50 x 300 gr

NL Keuzehulp snijolie en smeermiddelen
FR Aide à la sélection des huiles de coupe et lubrifiants
ES Ayuda para la selección de aceites de corte y lubricantes
DE Auswahlhilfe Schneidöl und Schmiermittel
EN Selection Guide for Cutting Oils and Lubricants

Read me

www.phantom.eu

› 90.180 Phantom

NL **Micro Doseer Vloeistof EP (Extreme Pressure), chloor- en mineraaloliefvrij, op plantaardige basis**
FR **Huile pour micro lubrification EP (Haute Pression), sans chlore et sans huile minérale, à base d'huile végétale**
ES **Líquido microdosificador EP (Alta Presión), exento de cloro y aceites minerales, base vegatal**
DE **Mikro-dosierflüssigkeit EP (Extreme Pressure), Chlor- und Mineralölfreier, auf pflanzlicher Basis**
EN **Micro dosing liquid EP (Extreme Pressure), chlorine- and mineral oil free, vegetable based**

UNI

Ref.	Contents
90.180.5005	5 l

› 90.210 Phantom

NL **UNI Multi Cooling Concentrate, chloor- en silicoonvrij, secundair aminevrij en nitrietvrij**
FR **UNI Multi Cooling Concentrate, sans chlore, exempt d'amine secondaire et de nitrite**
ES **UNI Multi Cooling Concentrate, sin cloro, sin amina secundaria y sin nitritos**
DE **UNI Hochleistungs- Kühlsmier- Konzentrat, Chlor- und Silikonfrei, sekundäre Amin-frei und Nitrit-frei**
EN **UNI Multi Cooling Concentrate, chlorine-free, secondary amine-free and nitrite-free**

UNI

Ref.	Contents
90.210.0050	5 l
90.210.0051	4 x 5 l

SC 1
HSS(-E) 1
2
SC 3
HSS-E 3
4
5
6
7
8
ETC.
9

› 90.510 Phantom

NL **Cool-Loc 1/4", Koelmiddelslang**
FR **Cool-Loc 1/4", Tuyau pour réfrigérant**
ES **Cool-Loc 1/4", Sistema de mangueras**
DE **Cool-Loc 1/4", Kühlmittelschlauch**
EN **Cool-Loc 1/4", Coolant hose**

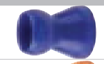
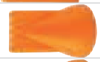
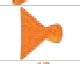
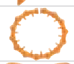
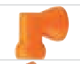
1/4" | max. 6 bar | 15 l/min

Ref.	NL	FR	ES	DE	EN	#
90.510.1028	Segmenten, lengte 280 mm	Segments, 280 mm	Segmentos largo=280 mm	Segmenten länge 280 mm	segments length 280 mm	20x
90.510.2015	Ronde spuitmond 1,5 mm	Buse ronde 1,5 mm	Tobera redonda 1,5 mm	Runde Düse 1,5 mm	round nozzle 1.5 mm	4x
90.510.2030	Ronde spuitmond 3 mm	Buse ronde 3 mm	Tobera redonda 3 mm	Runde Düse 3 mm	round nozzle 3 mm	4x
90.510.2060	Ronde spuitmond 6 mm	Buse ronde 6 mm	Tobera redonda 6 mm	Runde Düse 6 mm	round nozzle 6 mm	4x
90.510.2115	Spuitmond 90° 1,5 mm	Buse 90 ° 1,5 mm	Tobera 90° 1,5 mm	Düse 90° 1,5 mm	nozzle 90° 1.5 mm	4x
90.510.2130	Spuitmond 90° 3 mm	Buse 90 ° 3 mm	Tobera 90° 3 mm	Düse 90° 3 mm	nozzle 90° 3 mm	4x
90.510.2160	Spuitmond 90° 6 mm	Buse 90 ° 6 mm	Tobera 90° 6 mm	Düse 90° 6 mm	nozzle 90° 6 mm	4x
90.510.2190	Douchespuitmond 90°	Buse de douche 90°	Tobera de ducha 90°	Duschkopf 90°	shower nozzle 90°	2x
90.510.2307	Spuitmond 7 x Ø 1 mm	Buse 7x Ø 1 mm	Tobera 7 x Ø 1 mm	Düse 7 x Ø 1 mm	nozzle 7 x 1 mm	4x
90.510.2325	Platte spuitmond 25 x 1 mm	Buse plate 25x1 mm	Tobera plana 25 x 1 mm	Flachdüse 25 x 1 mm	flat nozzle 25 x 1 mm	2x
90.510.2412	Platte spuitmond 12 x 1,5 mm	Buse plate 25x1 mm	Tobera plana 12 x 1,5 mm	Flachdüse 12 x 1,5 mm	flat nozzle 12 x 1.5 mm	4x
90.510.2600	Ringsysteem (15x) en afsluitkap	Système de bague (15x) et bouchon	Sistema de anillo (15x) y tapa de cierre	Ringsysteem (15x) und Schlusskappe	ring system (15x)	1x
90.510.3000	Koppelingsstuk	Raccord	Conexión	Kupplung	coupling	4x
90.510.3050	Afsluitkap	Bouchon	Tapa de cierre	Schlusskappe	cap	4x
90.510.3100	Verlengstuk lengte 93 mm	Rallonge 93 mm	Expendedor largo 93 mm	Verlängerung 93 mm	extension piece 93 mm	4x
90.510.3150	Klemring met schroef	Bague de serrage m/vis	Abrazadera de aro con tornillo	Klemmring mit Schraube	hose clamp with thread	4x
90.510.3170	Haaks verbindingsstuk	Bague de serrage m/vis	Conexión angular	Winkelverbindungs-stücke	right-angled coupling	2x
90.510.3200	Y-verbindingsstuk	Raccord Y	Y-distribuidor	Y-Verbindungsstücke	Y coupling	2x
90.510.3220	T-verbindingsstuk	Pièce en T	Unión en T	T-Verbindungsstücke	T piece	2x
90.510.4080	Adapter NPT 1/8" buitendraad	Adaptateur NPT filetage externe 1/8"	Tobera de conexión NPT 1/8" rosca externa	Adapter NPT 1/8" Aussengewinde	adapter NPT 1/8" male	4x
90.510.4140	Adapter NPT 1/4" buitendraad	Adaptateur NPT filetage externe 1/4"	Tobera de conexión NPT 1/4" rosca externa	Adapter NPT 1/4" Aussengewinde	adapter NPT 1/4" male	4x
90.510.4270	Aadapter NPT 1/8" binnendraad	1/8 Raccord de réduc-tion NPT	Tobera de conexión 1/8" NPT rosca interna	Adapter NPT 1/8" Innengewinde	1/8" NPT reducing adapter	4x
90.510.4680	Adapter SAE 3/8" binnendraad	Adaptateur SAE filetage interne 3/8	Tobera de conexión SAE 3/8" rosca interna	Adapter SAE 3/8" Innengewinde	adapter SAE 3/8 female	4x
90.510.5000	Kraan buitendraad NPT 1/4"	Robinet filetage externe NPT 1/4	Llave de cierre rosca externa NPT 1/4"	Hahn Aussengewinde NPT 1/4"	valve male NPT 1/4"	2x
90.510.5040	Kraan segmentaansluiting	Robinet Raccord de segment	Tubo flexible articulado con llave de cierre	Hahn Segmentanschluss	valve segment connector	2x
90.510.8000	Montagetang	Pince de montage	Tenazas de montaje	Montagezange	wrench	1x
90.510.9000	Basisset: 10 segmenten, adapter NPT 1/8" buitendraad, adapter NPT 1/4" buitendraad, spuitmond 90° 1,5 - 3 - 6 mm	Kit de base: 10 Segments, Adaptateur NPT filetage externe 1/8", Adaptateur NPT filetage externe 1/4", Buse 90° 1,5 - 3 - 6 mm	Juego de base consiste de: 10 segmentos, Tobera de conexion NPT 1/8" rosca externa, Tobera de conexion NPT 1/8" rosca externa, Tobera 90° Ø 1,5 - 3 - 6	Basissatz bestehend aus: 10 Segmenten, Adapter NPT 1/8" Aussengewinde, Adapter NPT 1/4" Aussengewinde, Düse 90° 1,5 - 3 - 6 mm	basic set with segments, adapter NPT 1/8" male, adapter NPT 1/4" male, shower nozzle 1,5 - 3 - 6 mm	1x
90.510.9210	Spuitmondset 90°	Kit pour buse 90°	Juego de Toberas 90°	Düsensatz 90°	nozzle set 90°	4x

› 90.520 Phantom

NL **Cool-Loc 1/2", Koelmiddelslang**
FR **Cool-Loc 1/2", Tuyau pour réfrigérant**
ES **Cool-Loc 1/2", Sistema de mangueras**
DE **Cool-Loc 1/2", Kühlmittelschlauch**
EN **Cool-Loc 1/2", Coolant hose**

1/2"	max. 6 bar	28 l/min

Ref.	NL	FR	ES	DE	EN	#	
90.520.1028	Segmenten, lengte 280 mm	Segments, 280 mm	Segmentos largo=280 mm	Segmenten länge 280 mm	segments 280 mm	14x	
90.520.2060	Ronde spuitmond 6 mm	Buse ronde 6 mm	Tobera redonda 6 mm	Runddüse 6 mm	round nozzle 6 mm	4x	
90.520.2090	Ronde spuitmond 9 mm	Buse ronde 9 mm	Tobera redonda 9 mm	Runddüse 9 mm	round nozzle 9 mm	4x	
90.520.2095	Ronde spuitmond 12 mm	Buse ronde 12 mm	Tobera redonda 12 mm	Runddüse 12 mm	round nozzle 12 mm	4x	
90.520.2160	Spuitmond 90° 6 mm	Buse 90° 6 mm	Tobera 90° 6 mm	Düse 90° 6 mm	nozzle 90° 6 mm	4x	
90.520.2190	Spuitmond 90° 9 mm	Buse 90° 9 mm	Tobera 90° 9 mm	Düse 90° 9 mm	nozzle 90° 9 mm	4x	
90.520.2220	Spuitmond 90° 12 mm	Buse 90° 12 mm	Tobera 90° 12 mm	Düse 90° 12 mm	nozzle 90° 12 mm	4x	
90.520.2290	Douchespuitmond 90°	Buse de douche 90°	Tobera de ducha 90°	Duschkopf 90°	shower nozzle 90°	2x	
90.520.2307	Platte spuitmond 5 x Ø 3 mm	Buse plate 5 x Ø 3 mm	Tobera plana 5 x Ø 3 mm	Flachdüse 5 x Ø 3 mm	flat nozzle 5 x Ø 3 mm	4x	
90.520.2310	Platte spuitmond 5 x Ø 2 mm	Buse plate 5 x Ø 2 mm	Tobera plana 5 x Ø 2 mm	Flachdüse 5 x Ø 2 mm	flat nozzle 7 x Ø 0,8 mm	4x	
90.520.2318	Platte spuitmond 18 x 2 mm	Buse plate 18 x 2 mm	Tobera plana 18 x 2 mm	Flachdüse 18 x 2 mm	flat nozzle 18 x 2 mm	4x	
90.520.2320	Platte spuitmond 18 x 3 mm	Buse plate 18 x 3 mm	Tobera plana 18 x 3 mm	Flachdüse 18 x 3 mm	flat nozzle 18 x 3 mm	4x	
90.520.2332	Platte spuitmond 32 mm	Buse plate 32 mm	Tobera plana 32 mm	Flachdüse 32 mm	flat nozzle 32 mm	2x	
90.520.2363	Platte spuitmond 63 mm	Buse plate 63 mm	Tobera plana 63 mm	Flachdüse 63 mm	flat nozzle 63 mm	2x	
90.520.2600	Ringsysteem (14x) en afsluitkap	Système de bague (14x) et bouchon	Sistema de anillo (14x) y tapa de cierre	Ringsysteem (14x) und Schlusskappe	ring system (14x)	1x	
90.520.3000	Koppelingsstuk	Raccord	Pieza de conexión	Kupplung	connecting piece	4x	
90.520.3050	Afsluitkap	Bouchon	Tapa de cierre	Schlusskappe	cap	4x	
90.520.3100	Verlengstuk lengte 96 mm	Rallonge 96 mm	Expendedor largo 96 mm	Verlängerung 96 mm	extension piece 96 mm	4x	
90.520.3170	Haaks verbindingsstuk	Raccord à angle droit	Conexión angular	Winkelverbindungs-stücke	right-angled coupling	2x	
90.520.3200	Y-verbindingsstuk	Raccord Y	Y-distribuidor	Y-Verbindungsstücke	Y coupling	2x	
90.520.3220	T-verbindingsstuk	Pièce en T	Unión en T	T-Verbindungsstücke	T piece	2x	
90.520.4080	Adapter NPT 3/8" buitendraad	Adaptateur NPT filetage externe 3/8"	Tobera de conexión NPT 3/8" rosca externa	Adapter NPT 3/8" Aussengewinde	adapter NPT 3/8" male	4x	
90.520.4140	Adapter NPT 1/2" buitendraad	Adaptateur NPT filetage externe 1/2"	Tobera de conexión NPT 1/2" rosca externa	Adapter NPT 1/2" Aussengewinde	adapter NPT 1/2" male	4x	
90.520.4270	Adapter NPT 1/4" binnendraad	Adaptateur NPT filetage externe 1/4"	Tobera de conexión NPT 1/4" rosca interna	Adapter NPT 1/4" Innengewinde	reducing adapter 1/2" > 1/4"	2x	
90.520.4280	Y-verloopstuk 1/4"	1/4" Raccord de réduction Y	Y-reducción 1/4"	Y-Verbindungsstücke 1/4"	1/2" > 2x 1/4" Y reducing adapter	2x	
90.520.5000	Kraan buitendraad NPT 1/2"	Robinet filetage externe NPT 1/2"	Llave de cierre rosca externa NPT 1/2"	Hahn Aussengewinde NPT 1/2"	valve male NPT 1/2"	2x	
90.520.5040	Kraan segmentaansluiting	Robinet Raccord de segment	Tubo flexible articulado con llave de cierre	Hahn Segmentan-schluss	valve segment con-nector	2x	
90.520.8000	Montagetang	Pince de montage	Tenazas de montaje	Montagezange	wrench	1x	
90.520.9000	Basisset bestaat uit: 7 segmenten,adapter NPT 3/8" buitendraad, adapter NPT 1/2" buitendraad,spuitmond 6 - 9 - 12 mm	Kit de base: 7 Segments, Adaptateur NPT filetage externe 3/8", Adaptateur NPT filetage externe 1/2", Buse 6 - 9 - 12 mm	Juego de base consiste de: 7 segmentos, Tobera de conexión NPT 3/8" rosca externa, Tobera de conexión NPT 1/2" rosca externa, Tobera Ø 6 - 9 - 12 mm	Basissatz bestehend aus: 7 Segmenten, Adapter NPT 3/8" Aussengewinde, Adapter NPT 1/2" Aussengewinde, Düse 6 - 9 - 12 mm	basic set with 7 segments, adapter NPT 3/8" male, adapter NPT 1/2" male, shower nozzle 6 - 9 - 12 mm	1x	

SC 1 · HSS(-E) 1 · 2 · SC 3 · HSS-E 3 · 4 · 5 · 6 · 7 · 8 · ETC. · 9

› 91.200 *Phantom*

NL **Draadpenkaliber, goed- en afkeur, Metrisch, 6H**
FR **Tampon de filetage, entre et n'entre pas, Métrique, 6H**
ES **Tampón de rosca, pasa y no pasa, Métrica, 6H**
DE **Gewinde-Grenzlehrdorn, Gut- und Ausschuss, Metrisch, 6H**
EN **Thread plug gauge, go and no go, Metric Coarse, 6H**

Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
91.200.0300	M3	0.5	91.200.1200	M12	1.75	91.200.2400	M24	3
91.200.0400	M4	0.7	91.200.1400	M14	2	91.200.2700	M27	3
91.200.0500	M5	0.8	91.200.1600	M16	2	91.200.3000	M30	3.5
91.200.0600	M6	1	91.200.1800	M18	2.5	91.200.3300	M33	3.5
91.200.0800	M8	1.25	91.200.2000	M20	2.5	91.200.3600	M36	4
91.200.1000	M10	1.5	91.200.2200	M22	2.5			

› 91.205 *Phantom*

NL **Draadringkaliber, goedkeur, Metrisch, 6g**
FR **Bague filetée, entre, Métrique, 6g**
ES **Anillo, pasa, Métrica, 6g**
DE **Gut-GewindeLehrring, Metrisch, 6g**
EN **Thread plug ring, go, Metric Coarse, 6g**

Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
91.205.0300	M3	0.5	91.205.1200	M12	1.75	91.205.2400	M24	3
91.205.0400	M4	0.7	91.205.1400	M14	2	91.205.2700	M27	3
91.205.0500	M5	0.8	91.205.1600	M16	2	91.205.3000	M30	3.5
91.205.0600	M6	1	91.205.1800	M18	2.5	91.205.3300	M33	3.5
91.205.0800	M8	1.25	91.205.2000	M20	2.5	91.205.3600	M36	4
91.205.1000	M10	1.5	91.205.2200	M22	2.5			

› 91.206 *Phantom*

NL **Draadringkaliber, afkeur, Metrisch, 6g**
FR **Bague filetée, n'entre pas, Métrique, 6g**
ES **Anillo, no pasa, Métrica, 6g**
DE **AusschuβGewindeLehrring, Metrisch, 6g**
EN **Thread plug ring, no go, Metric Coarse, 6g**

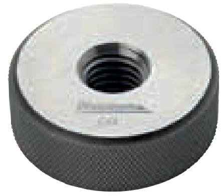
Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
91.206.0300	M3	0.5	91.206.1200	M12	1.75	91.206.2400	M24	3
91.206.0400	M4	0.7	91.206.1400	M14	2	91.206.2700	M27	3
91.206.0500	M5	0.8	91.206.1600	M16	2	91.206.3000	M30	3.5
91.206.0600	M6	1	91.206.1800	M18	2.5	91.206.3300	M33	3.5
91.206.0800	M8	1.25	91.206.2000	M20	2.5	91.206.3600	M36	4
91.206.1000	M10	1.5	91.206.2200	M22	2.5			

› 91.210 *Phantom*

NL **Draadpenkaliber, goed- en afkeur, Metrisch Fijn, 6H**
FR **Tampon de filetage, entre et n'entre pas, Métrique Fin, 6H**
ES **Tampón de rosca, pasa y no pasa, Métrica Fina, 6H**
DE **Gewinde-Grenzlehrdorn, Gut- und Ausschuss, Metrisch Fein, 6H**
EN **Thread plug gauge, go and no go, Metric Fine, 6H**

Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
91.210.0505	MF5	0.5	91.210.1215	MF12	1.5	91.210.2415	MF24	1.5
91.210.0605	MF6	0.5	91.210.1410	MF14	1	91.210.2420	MF24	2
91.210.0607	MF6	0.75	91.210.1412	MF14	1.25	91.210.2515	MF25	1.5
91.210.0807	MF8	0.75	91.210.1415	MF14	1.5	91.210.2715	MF27	1.5
91.210.0810	MF8	1	91.210.1610	MF16	1	91.210.2720	MF27	2
91.210.1007	MF10	0.75	91.210.1615	MF16	1.5	91.210.3015	MF30	1.5
91.210.1010	MF10	1	91.210.1810	MF18	1	91.210.3020	MF30	2
91.210.1012	MF10	1.25	91.210.1815	MF18	1.5	91.210.3215	MF32	1.5
91.210.1210	MF12	1	91.210.2015	MF20	1.5	91.210.3315	MF33	1.5
91.210.1212	MF12	1.25	91.210.2215	MF22	1.5	91.210.3320	MF33	2

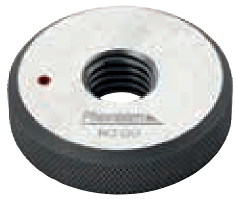
› 91.215 Phantom



NL Draadringkaliber, goedkeur, Metrisch Fijn, 6g
FR Bague filetée, entre, Métrique Fin, 6g
ES Anillo, pasa, Métrica Fina, 6g
DE Gut-GewindeLehrring, Metrisch Fein, 6g
EN Thread plug ring, go, Metric Fine, 6g

Ref.	d1	P
91.215.0505	MF5	0.5
91.215.0605	MF6	0.5
91.215.0607	MF6	0.75
91.215.0807	MF8	0.75
91.215.0810	MF8	1
91.215.1007	MF10	0.75
91.215.1010	MF10	1
91.215.1012	MF10	1.25
91.215.1210	MF12	1
91.215.1212	MF12	1.25
91.215.1215	MF12	1.5
91.215.1410	MF14	1
91.215.1412	MF14	1.25
91.215.1415	MF14	1.5
91.215.1610	MF16	1
91.215.1615	MF16	1.5
91.215.1810	MF18	1
91.215.1815	MF18	1.5
91.215.2015	MF20	1.5
91.215.2215	MF22	1.5
91.215.2415	MF24	1.5
91.215.2420	MF24	2
91.215.2515	MF25	1.5
91.215.2715	MF27	1.5
91.215.2720	MF27	2
91.215.3015	MF30	1.5
91.215.3020	MF30	2
91.215.3215	MF32	1.5
91.215.3315	MF33	1.5
91.215.3320	MF33	2

› 91.216 Phantom



NL Draadringkaliber, afkeur, Metrisch Fijn, 6g
FR Bague filetée, n'entre pas, Métrique Fin, 6g
ES Anillo, no pasa, Métrica Fina, 6g
DE AusschußGewindeLehrring, Metrisch Fein, 6g
EN Thread plug ring, no go, Metric Fine, 6g

Ref.	d1	P
91.216.0505	MF5	0.5
91.216.0605	MF6	0.5
91.216.0607	MF6	0.75
91.216.0807	MF8	0.75
91.216.0810	MF8	1
91.216.1007	MF10	0.75
91.216.1010	MF10	1
91.216.1012	MF10	1.25
91.216.1210	MF12	1
91.216.1212	MF12	1.25
91.216.1215	MF12	1.5
91.216.1410	MF14	1
91.216.1412	MF14	1.25
91.216.1415	MF14	1.5
91.216.1610	MF16	1
91.216.1615	MF16	1.5
91.216.1810	MF18	1
91.216.1815	MF18	1.5
91.216.2015	MF20	1.5
91.216.2215	MF22	1.5
91.216.2415	MF24	1.5
91.216.2420	MF24	2
91.216.2515	MF25	1.5
91.216.2715	MF27	1.5
91.216.2720	MF27	2
91.216.3015	MF30	1.5
91.216.3020	MF30	2
91.216.3215	MF32	1.5
91.216.3315	MF33	1.5
91.216.3320	MF33	2

› 91.220 Phantom

NL Draadpenkaliber, goed- en afkeur, UNC, 2B
FR Tampon de filetage, entre et n'entre pas, UNC, 2B
ES Tampón de rosca, pasa y no pasa, UNC, 2B
DE Gewinde-Grenzlehrdorn, Gut- und Ausschuss, UNC, 2B
EN Thread plug gauge, go and no go, UNC, 2B

Ref.	d1	TPI
91.220.0284	UNC Nr. 4	40
91.220.0350	UNC Nr. 6	32
91.220.0416	UNC Nr. 8	32
91.220.0482	UNC Nr. 10	24
91.220.0635	UNC 1/4	20
91.220.0794	UNC 5/16	18
91.220.0952	UNC 3/8	16
91.220.1270	UNC 1/2	13
91.220.1588	UNC 5/8	11
91.220.1905	UNC 3/4	10
91.220.2540	UNC 1	8

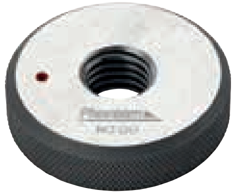
› 91.225 Phantom

NL Draadringkaliber, goedkeur, UNC, 2A
FR Bague filetée, entre, UNC, 2A
ES Anillo, pasa, UNC, 2A
DE Gut-GewindeLehrring, UNC, 2A
EN Thread plug ring, go, UNC, 2A

Ref.	d1	TPI
91.225.0284	UNC Nr. 4	40
91.225.0350	UNC Nr. 6	32
91.225.0416	UNC Nr. 8	32
91.225.0482	UNC Nr. 10	24
91.225.0635	UNC 1/4	20
91.225.0794	UNC 5/16	18
91.225.0952	UNC 3/8	16
91.225.1270	UNC 1/2	13
91.225.1588	UNC 5/8	11
91.225.1905	UNC 3/4	10
91.225.2540	UNC 1	8

1 SC | 1 HSS(-E) | 2 | 3 SC | 3 HSS-E | 4 | 5 | 6 | 7 | 8 | ETC. | 9

› 91.226 Phantom



NL **Draadringkaliber, afkeur, UNC, 2A**
FR **Bague filetée, n'entre pas, UNC, 2A**
ES **Anillo, no pasa, UNC, 2A**
DE **AusschuβGewindeLehrring, UNC, 2A**
EN **Thread plug ring, no go, UNC, 2A**

Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.226.0284	UNC Nr. 4	40	91.226.0635	UNC 1/4	20	91.226.1588	UNC 5/8	11
91.226.0350	UNC Nr. 6	32	91.226.0794	UNC 5/16	18	91.226.1905	UNC 3/4	10
91.226.0416	UNC Nr. 8	32	91.226.0952	UNC 3/8	16	91.226.2540	UNC 1	8
91.226.0482	UNC Nr. 10	24	91.226.1270	UNC 1/2	13			

› 91.230 Phantom

NL **Draadpenkaliber, goed- en afkeur, UNF, 2B**
FR **Tampon de filetage, entre et n'entre pas, UNF, 2B**
ES **Tampón de rosca, pasa y no pasa, UNF, 2B**
DE **Gewinde-Grenzlehrdorn, Gut- und Ausschuss, UNF, 2B**
EN **Thread plug gauge, go and no go, UNF, 2B**

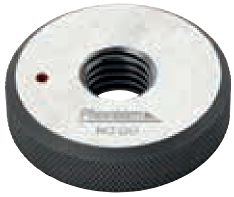
Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.230.0285	UNF Nr. 4	48	91.230.0794	UNF 5/16	24	91.230.1588	UNF 5/8	18
91.230.0350	UNF Nr. 6	40	91.230.0952	UNF 3/8	24	91.230.1905	UNF 3/4	16
91.230.0416	UNF Nr. 8	36	91.230.1111	UNF 7/16	20	91.230.2540	UNF 1	12
91.230.0482	UNF Nr. 10	32	91.230.1270	UNF 1/2	20			
91.230.0635	UNF 1/4	28	91.230.1429	UNF 9/16	18			

› 91.235 Phantom

NL **Draadringkaliber, goedkeur, UNF, 2A**
FR **Bague filetée, entre, UNF, 2A**
ES **Anillo, pasa, UNF, 2A**
DE **Gut-GewindeLehrring, UNF, 2A**
EN **Thread plug ring, go, UNF, 2A**

Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.235.0482	UNF Nr. 10	32	91.235.1111	UNF 7/16	20	91.235.1905	UNF 3/4	16
91.235.0635	UNF 1/4	28	91.235.1270	UNF 1/2	20	91.235.2540	UNF 1	12
91.235.0794	UNF 5/16	24	91.235.1429	UNF 9/16	18			
91.235.0952	UNF 3/8	24	91.235.1588	UNF 5/8	18			

› 91.236 Phantom



NL **Draadringkaliber, afkeur, UNF, 2A**
FR **Bague filetée, n'entre pas, UNF, 2A**
ES **Anillo, no pasa, UNF, 2A**
DE **AusschuβGewindeLehrring, UNF, 2A**
EN **Thread plug ring, no go, UNF, 2A**

Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.236.0482	UNF Nr. 10	32	91.236.1111	UNF 7/16	20	91.236.1905	UNF 3/4	16
91.236.0635	UNF 1/4	28	91.236.1270	UNF 1/2	20	91.236.2540	UNF 1	12
91.236.0794	UNF 5/16	24	91.236.1429	UNF 9/16	18			
91.236.0952	UNF 3/8	24	91.236.1588	UNF 5/8	18			

› 91.250 Phantom

NL **Draadpenkaliber, goed- en afkeur, G (BSP)**
FR **Tampon de filetage, entre et n'entre pas, G (BSP)**
ES **Tampón de rosca, pasa y no pasa, G (BSP)**
DE **Gewinde-Grenzlehrdorn, Gut- und Ausschuss, G (BSP)**
EN **Thread plug gauge, go and no go, G (BSP)**

Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.250.0973	G 1/8	28	91.250.2096	G 1/2	14	91.250.3325	G 1	11
91.250.1316	G 1/4	19	91.250.2291	G 5/8	14			
91.250.1666	G 3/8	19	91.250.2644	G 3/4	14			

› 91.255 Phantom

NL **Draadringkaliber, goedkeur, G (BSP)**
FR **Bague filetée, entre, G (BSP)**
ES **Anillo, pasa, G (BSP)**
DE **Gut-GewindeLehrring, G (BSP)**
EN **Thread plug ring, go, G (BSP)**

Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.255.0973	BSP 1/8	28	91.255.2096	BSP 1/2	14	91.255.3325	BSP 1	11
91.255.1316	BSP 1/4	19	91.255.2291	BSP 5/8	14			
91.255.1666	BSP 3/8	19	91.255.2644	BSP 3/4	14			

› 91.256 Phantom

NL **Draadringkaliber, afkeur, G (BSP)**
FR **Bague filetée, n'entre pas, G (BSP)**
ES **Anillo, no pasa, G (BSP)**
DE **AusschuβGewindeLehrring, G (BSP)**
EN **Thread plug ring, no go, G (BSP)**

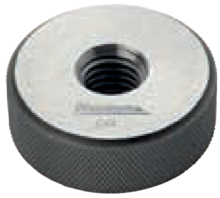
Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.256.0973	BSP 1/8	28	91.256.2096	BSP 1/2	14	91.256.3325	BSP 1	11
91.256.1316	BSP 1/4	19	91.256.2291	BSP 5/8	14			
91.256.1666	BSP 3/8	19	91.256.2644	BSP 3/4	14			

› 91.270 Phantom

NL **Draadpenkaliber, NPT**
FR **Tampon de filetage, NPT**
ES **Tampón de rosca, NPT**
DE **Gewinde-Lehrdorn, NPT**
EN **Thread plug gauge, NPT**

Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.270.1029	NPT 1/8	27	91.270.1715	NPT 3/8	18	91.270.2667	NPT 3/4	14
91.270.1372	NPT 1/4	18	91.270.2134	NPT 1/2	14	91.270.3340	NPT 1	11.5

› 91.275 Phantom



NL **Draadringkaliber, NPT**
FR **Bague filetée, NPT**
ES **Anillo, NPT**
DE **GewindeLehrring, NPT**
EN **Thread plug ring, NPT**

Ref.	d1	TPI	Ref.	d1	TPI	Ref.	d1	TPI
91.275.1029	NPT 1/8	27	91.275.1715	NPT 3/8	18	91.275.2667	NPT 3/4	14
91.275.1372	NPT 1/4	18	91.275.2134	NPT 1/2	14	91.275.3340	NPT 1	11.5

NL Maak favorietenlijsten naar keuze (b.v. medewerker en/of machine)
FR Créez les listes de favoris de votre choix (ex. : employés et/ou machine)
ES Cree las listas de favoritos que desee (por ejemplo, por empleado y/o por máquina)
DE Erstellen Sie Favoritenlisten Ihrer Wahl (z.B. Mitarbeiter und/oder Maschine)
EN Create favourite lists of your choice (e.g. per employee and/or per machine)

www.phantom.eu

International Tools
SMART METAL TOOLS FOR YOU

EASY AND FAST

HOLE SAW WITH QUICK CHANGE

EN | Quick change for easy change and fast sawing

NL | Quick change voor eenvoudig wisselen en snel zagen

FR | Arbe de changement Quick change pour un remplacement rapide de la scie cloche et un sciage rapide

ES | Sistema de cambio rápido para un cambio fácil y rápido

DE | Quick change für einfaches Wechseln und schnelles Schneiden

VIEW OUR FULL RANGE AT PHANTOM.EU

PHANTOM.EU OFFERS YOU

- 24/7 technical advice and ordering
- Real time stock visibility
- 98,5% stock availability
- Personal advice Monday-Friday from 8.00h until 18.00h
- Orders placed before 19.00h are shipped the same day

Phantom

International Tools

Van Ommen

Voorste Kerkweg 4 | 7361 ET Beekbergen | The Netherlands

NL
+31 (0) 55 506 76 00
verkoop@vanommen.nl

BE
+31 55 506 76 00
verkoop@vanommen.nl

DE
+31 55 506 76 80
verkauf@vanommen.nl

FR
+31 55 506 76 80
N° vert gratuit : 00800-74268661
ventes@vanommen.nl

EN
+31 55 506 76 80
sales@vanommen.nl

ES
+31 55 506 76 80
llamada gratuita: 00800-74268661
ventas@vanommen.nl

phantom.eu