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ISO ■	ISO ☐	NL	FR	ES	DE
P 11 ≤600 N/mm²	P 11 ≤600 N/mm²	**Ongelegeerd en gelegeerd staal ≤600 N/mm²** 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)	**Aciers non-alliés ou faiblement alliés ≤600 N/mm²** 1.0037 (A37), 1.0038 (E 24-2 Ne), 1.00402 (1C20), 1.1178 (1C30)	**Acero no aleado ≤600 N/mm²** 1.0037 (S235JR), 1.0038 (S235JR G2), 1.0402 (F.112), 1.1178 (C30E)	**Unlegierter und legierter Stahl ≤600 N/mm²** 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)
P 12 ≤850 N/mm²	P 12 ≤850 N/mm²	**Ongelegeerd en gelegeerd staal 600 - 850 N/mm²** 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/mm²** 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/mm²** 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/mm²** 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/mm²	P 13 ≤1000 N/mm²	**Gelegeerd staal 850 - 1000 N/mm²** 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/mm²** 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/mm²** 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/mm²** 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/mm²	P 14 ≤1400 N/mm²	**Gelegeerd staal 1000 - 1400 N/mm²** 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/mm²** 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/mm²** 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/mm²** 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)
M 21 INOX ≤850N/mm²	M 21 INOX ≤850N/mm²	**Roestvaststaal, INOX ≤850 N/mm²** 1.4005 (X12CrS13), 1.4104 (X14CrMos17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	**Aciers Inoxydables ≤850 N/mm²** 1.4005 (Z11CF13), 1.4104 (Z13CF17), 1.4105 (Z8CF17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	**Acero inoxidable ≤850 N/mm²** 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/mm²** 1.4005 (X12CrS13), 1.4104 (X14CrMos17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)
M 22 INOX >850N/mm²	M 22 INOX >850N/mm²	**Roestvaststaal, INOX >850 N/mm²** 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	**Aciers Inoxydables >850 N/mm²** 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	**Acero inoxidable >850 N/mm²** 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/mm²** 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)
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)
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)
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)
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)
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 (CuZn39Pb3), 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)
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
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
N 62 GFK/CFK	N 62 GFK/CFK	**Versterkte kunststoffen** GFK, CFK	**Plastiques réenforcés** GFK, CFK	**Plásticos reforzados** GFK, CFK	**Verstärkte Kunststoffe** 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
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)

Phantom

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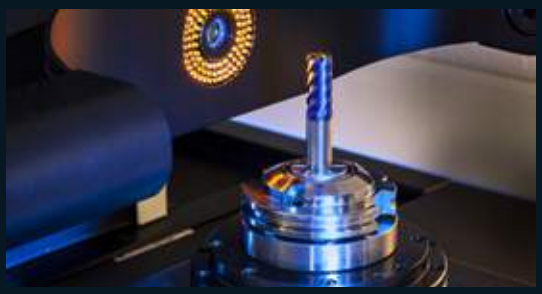

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INTERNATIONAL TOOLS

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Met een uitgebreid en zeer prijsconcurrerend assortiment biedt International Tools u een aantrekkelijk aanbod boren, tappen en verzinkfrezen in gangbare maten.
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Grâce à une large gamme avec des prix très concurrentiels, International Tools vous propose des forets et tarauds attractifs dans les dimensions les plus courantes. Pour une utilisation universelle et disponibles sur stock.

El amplio catálogo con precios competitivos de International Tools le ofrece una selección atractiva de brocas, machos y avellanadores de tamaños habituales. Para uso universal y disponibles en stock.

Mit seinem breiten und sehr preisbewussten Programm verfügt International Tools über ein attraktives Angebot universell einsetzbarer Bohrer und Gewindebohrer in gängigen Maßen, die ab Lager lieferbar sind.

TORAX

Kwaliteit spangereedschap

Une marque de qualité pour les outils de serrage et bridage

Una marca de calidad para herramientas de sujeción y de fijación

Qualitäts Spannwerkzeuge



De spangereedschappen van Torax voldoen aan alle kwaliteits-eisen van moderne machineparken. Torax spangereed-schappen hebben relevanthoge rondloopnauwkeurigheden en kleine toleranties. Met dit kwaliteitsmerk voor het spannen van gereedschappen en werkstukken voor de verspanende industrie, is uiterste precisie gegarandeerd.

Les outils de serrage de la marque Torax répondent à toutes les exigences de qualités des parcs de machines modernes.
Les outils Torax disposent d'un niveau de précision élevé et de faibles tolérances. Grâce au niveau de qualité proposé, vous êtes assurés d'une qualité de serrage fiable et de haute qualité pour le serrage de pièces pour l'industrie.

Las herramientas de sujeción de Torax cumplen con todos los requisitos de calidad de los equipos de maquinaria modernos. Con esta marca de calidad para la fijación de herramientas y piezas para la industria de mecanizado se garantiza una precisión óptima. Las herramientas de mecanizado tienen donde sea necesario una gran concentricidad y tolerancias bajas. Por supuesto, también se garantiza la transmisión de potencia y la fuerza de apriete. Así, se asegurará un mecanizado fiable y de alta calidad.

Die Spannwerkzeuge von Torax erfüllen selbstverständlich alle Qualitätsanforderungen an einen modernen Maschinenpark. Spannwerkzeuge von Torax zeichnen sich dort, wo es darauf ankommt, durch hohe Rundlaufgenauigkeiten und nur kleine Toleranzen aus.Dadurch können Sie sich auf die Zuverlässigkeit und hochwertige Qualität der Spannwerkzeuge verlassen.

Phantom

THERE'S NO END TO WHAT YOU CAN DO.

Betrouwbaar, innovatief en A-kwaliteit
Un produit d'excellente qualité
Una prestigiosa marca de primera calidad
Zuverlässig, innovativ und höchster Qualität



Phantom is het A-merk van absolute topkwaliteit voor verspanende gereedschappen ten behoeve van metaalbewerking. U heeft keuze uit maar liefst 20.000 gereedschappen voor algemene metaalbewerking en moderne precisietechniek. Het assortiment is zeer compleet en bestaat uit verspanend gereedschap in alle soorten en maten, ook de meest bijzondere. Met Phantom heeft u topkwaliteit in handen en zijn uw mogelijkheden werkelijk onbegrensd. U bent verzekerd van precisie en hoge standtijden. Daardoor kunnen wij gerust stellen dat u met Phantom werkelijk ieder verspaningsvraagstuk aan kunt.

Les produits de la marque Phantom sont des produits à haute valeur ajoutée technique pour l'usinage des métaux. Notre gamme comporte plus de 20.000 références qui vous permettront de réaliser quasiment toutes les opérations d'usinage avec des produits bénéficiant des dernières avancées technologiques. Notre catalogue dispose d'un choix d'outils extrêmement large, de toutes les formes, de toutes les dimensions et pour toutes les applications. Vous avez donc accès à des produits d'excellente qualité qui vous offrent des possibilités sans limites. Pour cette raison, nous pouvons en toute sécurité vous assurer que vous serez en mesure, avec les produits Phantom, de maîtriser et de répondre à l'ensemble de vos opérations d'usinage, des plus simples aux plus complexes.

Phantom es una prestigiosa marca de herramientas de mecanizado para el procesamiento de metal de alta calidad. Puede elegir entre nada menos que 20.000 herramientas para el procesamiento general de metal y una moderna técnica de precisión. El surtido es muy completo y consta de herramientas de mecanizado de todo tipo y tamaño. Con Phantom tiene garantizada la calidad y unas posibilidades de trabajo verdaderamente ilimitadas. Precisión y larga vida útil garantizadas. Las ilimitadas se miden en fábrica y se prueban con equipos de última tecnología. Esto nos permite asegurarle que con Phantom es posible mecanizar todo aquello que necesita.

Phantom ist die A-Marke für zerspanende Werkzeuge, die für die Metallbearbeitung geeignet sind. Sie können von bis zu 20.000 Werkzeuge wählen für den allegemeinen Maschinenbau und moderne Feinmechanik. Der Bereich ist sehr komplett und umfasst Bearbeitungswerkzeuge aller Formen und Größen, auch die besonderen. Phantom hat eine Top Qualität, mit grenzenlosen Möglichkeiten und Optionen. Hier ist Präzision und eine lange Lebensdauer gewährleistet. Sie sind Präzision gewährleistet und lange Lebensdauer. Daher können wir Ihnen versprechen, das unsere Marke Phantom, für alle Ihre Probleme eine Lösung findet.



Phantom

WWW.PHANTOM.EU

THERE'S NO END TO WHAT YOU CAN DO.



Phantom is het A-merk voor verspanende gereedschappen voor metaalbewerking. U hebt keuze uit 25.000 gereedschappen voor algemene metaalbewerking en moderne precisietechniek.

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- Vinden wat u zoekt
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Phantom es la marca líder de máxima calidad para el mecanizado de herramientas. Tenemos disponibles en stock 25.000 herramientas para mecanizado general de metales y modernas técnicas de precisión.

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- Búsqueda fácil

Les produits de la marque Phantom sont des produits à haute valeur ajoutée technique pour l'usinage des métaux. Notre gamme comporte plus de 25.000 références qui vous permettront de réaliser quasiment toutes les opérations d'usinage avec des produits bénéficiant des dernières avancées technologiques.

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Das Phantom-Programm bietet eine Auswahl von mindestens 25.000 Werkzeugen für die allgemeine Metallbearbeitung und Feinwerktechnik.

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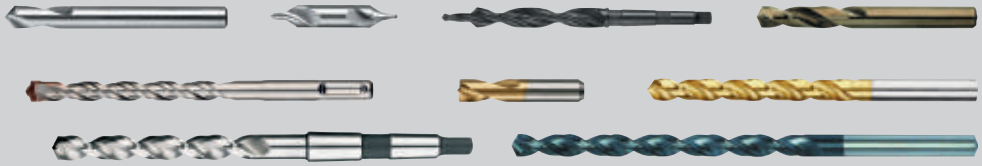
NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



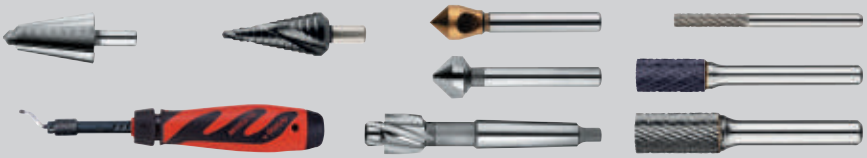
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



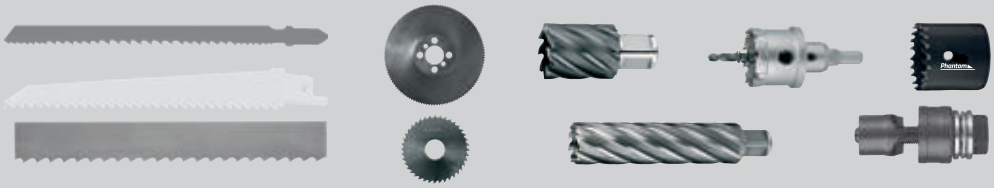
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
VHM SC	Volhardmetaal	Carbure Monobloc	Metal Duro integral	Vollhartmetall
MG HM	Micro-Grain volhardmetaal	Carbure Micrograin	Metal Duro Micro-Grano	Micro-Grain Vollhartmetall
TiAIN	TiAN gecoat	Revêtement TiAIN	Recubrimiento TiAIN	TiAIN Beschichtung
DLC	DLC gecoat	Revêtement DLC	Recubrimiento DLC	DLC Beschichtung
DIN 6537-K	DIN norm	Norme DIN	Norma DIN	DIN Norm
Phantom	Phantom norm	Norme Phantom	Norma Phantom	Werksnorm
3xD	Max. boordiepte	Profondeur max. de perçage	Profundidad máx. de perforacion	Max. Bohrtiefe
N	Type N, standaard spiraaluitvoering	Type N, hélice standard	Tipo N, Versión helicoidal estándar	Type N, standard Spiralwinkel
>N	Spiraalhoek sterker dan standaard	Hélice plus rapide que standard	Ángulo de hélice más rápido que estándar	Spiralwinkel starker wie Standard
h6	Cilindrische schacht h6	Queue cylindrique h6	Mango cilíndrico h6	Zylinderschaft h6
DIN 6535-HA	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft
DIN 6535-HB	Cilindrische schacht met Weldon vlak	Queue cylindrique avec méplat type Weldon	Mango cilíndrico con plano de arrastre tipo Weldon	Zylinderschaft mit Mitnahmeflache Typ Weldon
DIN 6535-HE	Cilindrische schacht met Whistle-Notch	Queue cylindrique avec Whistle-Notch	Mango cilíndrico con Whistle-Notch	Zylinderschaft mit Whistle-Notch

	NL	FR	ES	DE
	Meervlaks-kruis-aanslijping	Affûtage multi-pentes	Afilado multi facetas	Mehrflachs-Kreuzanschliff
	Phantom VHM-aanslijping	Affûtage Carbure Phantom	Afilado metal duro Phantom	Phantom VHM-Anschliff
	HM-Tip	Foret pointe carb. mét.	Broca punta MD	HM-Schneiden
	Boor met 3 snijkanten	Foret à 3 lèvres	Broca con 3 facetas	Bohrer mit 3 Schneiden
	Koelkanaal	A trous d'huile	Canal de refrigeración	Mit Kühlkanal
140°	Tophoek	Angle au sommet	Ángulo de la punta	Spitzenwinkel
h7	Boortolerantie	Tolérance du perçage	Tolerancia de taladrar	Bohrtoleranz
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium
UNI	Universeel	Universel	Universal	Universal
60°	Uitvoering centreergat	Angle de lamage	Versión ángulo avellanado	Ausführung Zentrierloch
90°	Centreerhoek	Point de centrage	Ángulo de centrar	Zentrierspitze

NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**

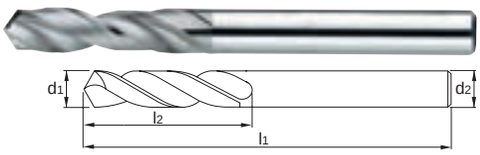
P K Bij uitstek geschikt
H N Très approprié
M S Muy adecuado
Ideal geeignet

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

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				K	N						P. 3
› 11.245	Phantom	DIN 6537-L	5xD		P		K			H			NEW	P. 3
› 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. 4
› 11.253	Phantom	DIN 6537-K	3xD	UNI	P	M	K	N	S	H				P. 5
› 11.254	Phantom	DIN 6537-K	3xD	UNI	P	M	K	N	S	H				P. 5
› 11.259	Phantom	DIN 6537-K	3xD	ALU				N						P. 6
› 11.262	Phantom	DIN 6537-K	3xD	INOX	P	M			S					P. 6
› 11.270	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H				P. 7
› 11.271	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H				P. 8
› 11.273	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H				P. 8
› 11.274	Phantom	DIN 6537-L	5xD	UNI	P	M	K	N	S	H				P. 9
› 11.279	Phantom	DIN 6537-L	5xD	ALU				N						P. 9
› 11.282	Phantom	DIN 6537-L	5xD	INOX	P	M			S					P. 10
› 11.286	Phantom		5xD							H				P. 10
› 11.295	Phantom		8xD	UNI	P	M	K	N	S	H				P. 11
› 11.296	Phantom		8xD	UNI	P	M	K	N	S	H				P. 11
› 11.305	Phantom		10xD	UNI	P	M	K	N	S	H				P. 11
› 11.310	Phantom		15xD	UNI	P	M	K	N	S	H				P. 12
› 11.360	Phantom				P	M	K	N	S	H				P. 12
› 11.650	Phantom	DIN 338	8xD		P	M	K	N	S					P. 13
› 11.654	Phantom	DIN 338	8xD		P	M	K	N	S					P. 13
› 13.814	Phantom				P	M								P. 13
› 15.144	Phantom	60°	DIN 333-A		P	M								P. 14
› 15.624	Phantom	90°	DIN 6535-HB		P	M	K	N	S	H				P. 14
› 15.724	Phantom	120°	DIN 6535-HB		P	M	K	N	S	H				P. 14

› 11.200 Phantom



NL **VHM-MG Spiraalboor**
FR **Foret Carbure MG**
ES **Broca MD-MG**
DE **VHM-MG Spiralbohrer**

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

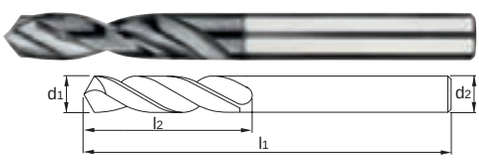
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	N 62	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	GFK/CFK	Ni/Co	Ti
70-80 D	50-80 D	50-70 D	25-80 B	20-25 D	20-25 C	72-90 D	70-80 D	160-200 G	120-150 F	120-180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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 **VHM-MG Spiraalboor TiAlN**
FR **Foret Carbure MG TiAlN**
ES **Broca MD-MG TiAlN**
DE **VHM-MG Spiralbohrer TiAlN**

MG HM | TiAlN | DIN 6539 | 3xD | 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	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

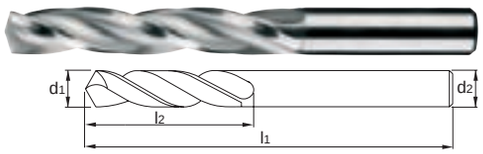
Ref.	d1	d2	l1	l2
11.204.0100	1	1	26	6
11.204.0150	1.5	1.5	32	9
11.204.0200	2	2	38	12
11.204.0250	2.5	2.5	43	14
11.204.0300	3	3	46	16
11.204.0350	3.5	3.5	52	20
11.204.0400	4	4	55	22
11.204.0420	4.2	4.2	55	22
11.204.0450	4.5	4.5	58	24
11.204.0500	5	5	62	26

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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

19:00 ▶ 24h

› 11.240 Phantom



NL **VHM-MG Spiraalboor 3 snijkanten**
FR **Foret Carbure MG 3 taillants**
ES **Broca MD-MG 3 labios**
DE **VHM-MG Spiralbohrer 3 Schneiden**

MG HM | DIN 6539 | 3xD | N | h6 | 150°

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

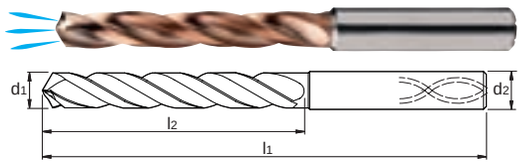
50-70 C | 80-100 F | 70-80 F | 180-200 G | 120-150 F | 160-180 F | 120-180 E

Ref.	d1	d2	l1	l2	z
11.240.0300	3	3	46	16	3
11.240.0310	3.1	3.1	49	18	3
11.240.0320	3.2	3.2	49	18	3
11.240.0330	3.3	3.3	49	18	3
11.240.0340	3.4	3.4	52	20	3
11.240.0350	3.5	3.5	52	20	3
11.240.0360	3.6	3.6	52	20	3
11.240.0370	3.7	3.7	52	20	3
11.240.0380	3.8	3.8	55	22	3
11.240.0390	3.9	3.9	55	22	3
11.240.0400	4	4	55	22	3
11.240.0410	4.1	4.1	55	22	3
11.240.0420	4.2	4.2	55	22	3
11.240.0430	4.3	4.3	58	24	3
11.240.0440	4.4	4.4	58	24	3
11.240.0450	4.5	4.5	58	24	3
11.240.0460	4.6	4.6	58	24	3
11.240.0470	4.7	4.7	58	24	3
11.240.0480	4.8	4.8	62	26	3
11.240.0490	4.9	4.9	62	26	3
11.240.0500	5	5	62	26	3
11.240.0510	5.1	5.1	62	26	3
11.240.0520	5.2	5.2	62	26	3
11.240.0530	5.3	5.3	62	26	3
11.240.0540	5.4	5.4	66	28	3
11.240.0550	5.5	5.5	66	28	3
11.240.0560	5.6	5.6	66	28	3
11.240.0570	5.7	5.7	66	28	3

Ref.	d1	d2	l1	l2	z
11.240.0580	5.8	5.8	66	28	3
11.240.0590	5.9	5.9	66	28	3
11.240.0600	6	6	66	28	3
11.240.0610	6.1	6.1	70	31	3
11.240.0620	6.2	6.2	70	31	3
11.240.0630	6.3	6.3	70	31	3
11.240.0640	6.4	6.4	70	31	3
11.240.0650	6.5	6.5	70	31	3
11.240.0660	6.6	6.6	70	31	3
11.240.0670	6.7	6.7	70	31	3
11.240.0680	6.8	6.8	74	34	3
11.240.0690	6.9	6.9	74	34	3
11.240.0700	7	7	74	34	3
11.240.0710	7.1	7.1	74	34	3
11.240.0720	7.2	7.2	74	34	3
11.240.0730	7.3	7.3	74	34	3
11.240.0740	7.4	7.4	74	34	3
11.240.0750	7.5	7.5	74	34	3
11.240.0760	7.6	7.6	79	37	3
11.240.0770	7.7	7.7	79	37	3
11.240.0780	7.8	7.8	79	37	3
11.240.0790	7.9	7.9	79	37	3
11.240.0800	8	8	79	37	3
11.240.0810	8.1	8.1	79	37	3
11.240.0820	8.2	8.2	79	37	3
11.240.0830	8.3	8.3	79	37	3
11.240.0840	8.4	8.4	79	37	3
11.240.0850	8.5	8.5	79	37	3

Ref.	d1	d2	l1	l2	z
11.240.0860	8.6	8.6	84	40	3
11.240.0870	8.7	8.7	84	40	3
11.240.0880	8.8	8.8	84	40	3
11.240.0890	8.9	8.9	84	40	3
11.240.0900	9	9	84	40	3
11.240.0910	9.1	9.1	84	40	3
11.240.0920	9.2	9.2	84	40	3
11.240.0930	9.3	9.3	84	40	3
11.240.0950	9.5	9.5	84	40	3
11.240.0960	9.6	9.6	89	43	3
11.240.0970	9.7	9.7	89	43	3
11.240.0980	9.8	9.8	89	43	3
11.240.0990	9.9	9.9	89	43	3
11.240.1000	10	10	89	43	3
11.240.1020	10.2	10.2	89	43	3
11.240.1050	10.5	10.5	89	43	3
11.240.1100	11	11	95	47	3
11.240.1150	11.5	11.5	95	47	3
11.240.1200	12	12	102	51	3
11.240.1250	12.5	12.5	102	51	3
11.240.1300	13	13	102	51	3
11.240.1350	13.5	13.5	107	54	3
11.240.1400	14	14	107	54	3
11.240.1450	14.5	14.5	111	56	3
11.240.1500	15	15	111	56	3
11.240.1550	15.5	15.5	115	58	3
11.240.1600	16	16	115	58	3

› 11.245 Phantom



NL **VHM-MG High-Feed Spiraalboor 5xD met koelkanaal, AlCrN-X, 3 snijkanten**
FR **Foret Carbure 5xD MG High-Feed à trou d´huile, AlCrN-X, 3 taillants**
ES **Broca 5xD MD-MG High-Feed con canal de refrigeración, AlCrN-X, 3 labios**
DE **VHM-MG High-Feed Spiralbohrer 5xD mit Innenkühlung, AlCrN-X, 3 Schneiden**

NIEUW NOUVEAU NUEVO NEU

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

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | H 15 HRC | K 31 GG | K 32 GGG GTS-GTW

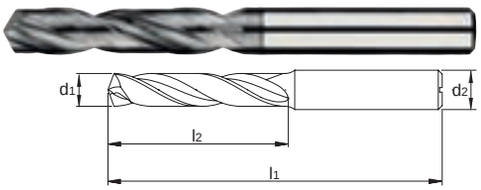
120-130 K | 90-140 K | 90-110 K | 70-85 J | 35-55 D | 80-110 K | 100-120 L

Ref.	d1	d2	l1	l2	z
11.245.0500	5	6	82	35	3
11.245.0510	5.1	6	82	35	3
11.245.0520	5.2	6	82	35	3
11.245.0530	5.3	6	82	35	3
11.245.0550	5.5	6	82	35	3
11.245.0580	5.8	6	82	35	3
11.245.0600	6	6	82	35	3
11.245.0650	6.5	8	91	43	3

Ref.	d1	d2	l1	l2	z
11.245.0680	6.8	8	91	43	3
11.245.0700	7	8	91	43	3
11.245.0800	8	8	91	43	3
11.245.0850	8.5	10	103	49	3
11.245.0900	9	10	103	49	3
11.245.1000	10	10	103	49	3
11.245.1020	10.2	12	118	56	3
11.245.1050	10.5	12	118	56	3

Ref.	d1	d2	l1	l2	z
11.245.1100	11	12	118	56	3
11.245.1200	12	12	118	56	3
11.245.1300	13	14	124	60	3
11.245.1400	14	14	124	60	3
11.245.1500	15	16	133	63	3
11.245.1600	16	16	133	63	3

› 11.250 Phantom



NL **UNI VHM-MG Spiraalboor 3xD TiAIN, 30-45 HRc**
FR **Foret UNI Carbure MG 3xD TiAIN, 30-45 HRc**
ES **Broca UNI MD-MG 3xD TiAIN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 3xD TiAIN, 30-45 HRc**

MG HM | TiAIN | DIN 6537-K | 3xD | h6 | DIN 6535-HA | 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 41 Alu | S 71 Ni/Co

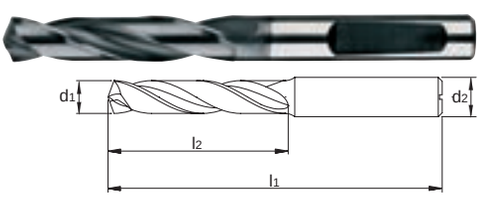
120-130 G | 65-145 F | 55-110 F | 45-100 C | 25-45 C | 50-55 C | 35-45 C | 155-210 H | 125-155 G | 50-60 E | 22-25 D

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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
11.250.1050	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 VHM-MG Spiraalboor 3xD TiAIN, 30-45 HRc**
FR **Foret UNI Carbure MG 3xD TiAIN, 30-45 HRc**
ES **Broca UNI MD-MG 3xD TiAIN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 3xD TiAIN, 30-45 HRc**

MG HM | TiAIN | DIN 6537-K | 3xD | h6 | DIN 6535-HE | 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

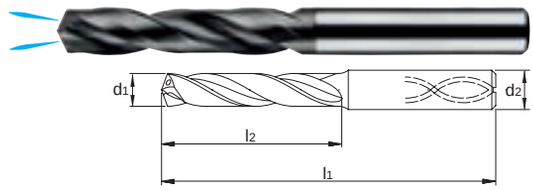
120-130 G | 65-145 F | 55-110 F | 45-100 C | 25-45 C | 50-55 C | 35-45 C | 155-210 H | 125-155 G | 60-180 G | 22-25 D

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
11.251.1020	10.2	12	102	55
11.251.1050	10.5	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
11.251.1600	16	16	115	65

› 11.253 Phantom



NL **UNI VHM-MG Spiraalboor 3xD met koelkanaal, TiAlN, 30-45 HRc**
FR **Foret UNI Carbure MG 3xD à trou d´huile, TiAlN, 30-45 HRc**
ES **Broca UNI MD-MG 3xD con canal de refrigeración, TiAlN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 3xD mit Innenkühlung, TiAlN, 30-45 HRc**

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

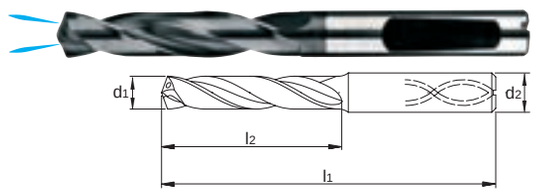
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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
11.253.1230	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	18.8	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 VHM-MG Spiraalboor 3xD met koelkanaal, TiAlN, 30-45 HRc**
FR **Foret UNI Carbure MG 3xD à trou d´huile, TiAlN, 30-45 HRc**
ES **Broca UNI MD-MG 3xD con canal de refrigeración, TiAlN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 3xD mit Innenkühlung, TiAlN, 30-45 HRc**

MG HM | TiAlN | DIN 6537-K | 3xD | h6 | DIN 6535-HE | 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

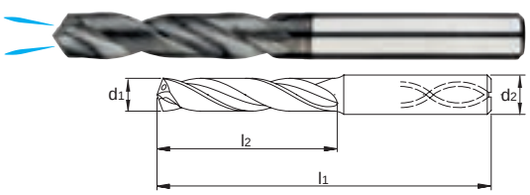
Ref.	d1	d2	l1	l2
11.254.0380	3.8	6	66	24
11.254.0390	3.9	6	66	24
11.254.0400	4	6	66	24
11.254.0410	4.1	6	66	24
11.254.0420	4.2	6	66	24
11.254.0430	4.3	6	66	24
11.254.0440	4.4	6	66	24
11.254.0450	4.5	6	66	24

Ref.	d1	d2	l1	l2
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
11.254.0510	5.1	6	66	28
11.254.0520	5.2	6	66	28
11.254.0530	5.3	6	66	28

› 11.254 Phantom

Ref.	d1	d2	l1	l2
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
11.254.0580	5.8	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
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
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
11.254.1600	16	16	115	65
11.254.1700	17	18	123	73
11.254.1800	18	18	123	73
11.254.1900	19	20	131	79
11.254.2000	20	20	131	79

› 11.259 Phantom



NL **VHM-MG Spiraalboor 3xD met koelkanaal, DLC, Aluminium**
FR **Foret Carbure MG 3xD à trou d´huile, DLC, Aluminium**
ES **Broca MD-MG 3xD con canal de refrigeración, DLC, Aluminio**
DE **VHM-MG Spiralbohrer 3xD mit Innenkühlung, DLC, Aluminium**

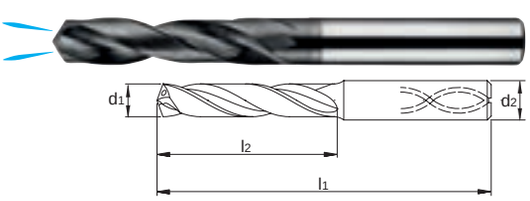
MG HM | DLC | DIN 6537-K | 3xD | h6 | DIN 6535-HA | 118° | m7 | ALU

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
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
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 **VHM-MG Spiraalboor 3xD met koelkanaal, TiAlN, roestvaststaal**
FR **Foret Carbure MG 3xD à trou d´huile, TiAlN, Inox**
ES **Broca MD-MG 3xD con canal de refrigeración, TiAlN, acero inoxidable**
DE **VHM-MG Spiralbohrer 3xD mit Innenkühlung, TiAlN, rostfreien Stahl**

MG HM | TiAlN | DIN 6537-K | 3xD | h6 | DIN 6535-HA | 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

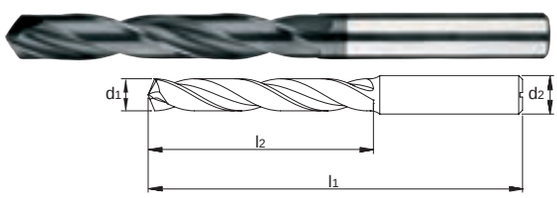
130-145 G | 80-125 F | 65-145 F | 60-105 C | 72-80 C | 60-80 C | 30-35 B

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
11.262.0360	3.6	6	62	20
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
11.262.0430	4.3	6	66	24
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
11.262.0500	5	6	66	28
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 Phantom

Ref.	d1	d2	l1	l2
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	41
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
11.262.1200	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



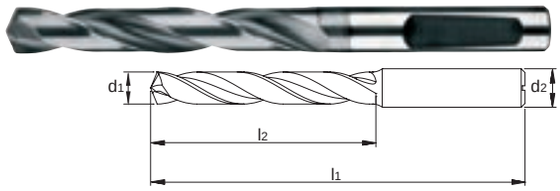
NL **UNI VHM-MG Spiraalboor 5xD TiAlN, 30-45 HRc**
FR **Foret UNI Carbure MG 5xD TiAlN, 30-45 HRc**
ES **Broca UNI MD-MG 5xD TiAlN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 5xD TiAlN, 30-45 HRc**

MG HM | TiAlN | DIN 6537-L | 5xD | h6 | DIN 6535-HA | 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 VHM-MG Spiraalboor 5xD TiAIN, 30-45 HRc**
FR **Foret UNI Carbure MG 5xD TiAIN, 30-45 HRc**
ES **Broca UNI MD-MG 5xD TiAIN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 5xD TiAIN, 30-45 HRc**

MG HM | TiAIN | DIN 6537-L | 5xD | h6 | DIN 6535-HE | 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

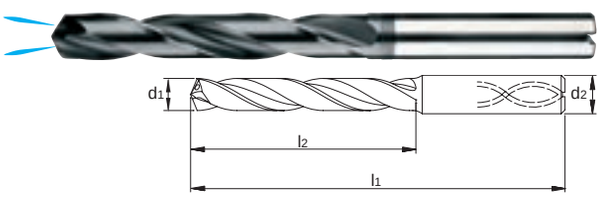
120-130 G | 65-145 F | 55-110 F | 45-100 C | 25-45 C | 50-55 C | 35-45 C | 155-210 H | 125-155 G | 60-180 G | 22-25 D

Ref.	d1	d2	l1	l2
11.271.0300	3	6	66	28
11.271.0330	3.3	6	66	28
11.271.0350	3.5	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
11.271.0450	4.5	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

Ref.	d1	d2	l1	l2
11.271.0600	6	6	82	44
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	61
11.271.1050	10.5	12	118	71
11.271.1100	11	12	118	71
11.271.1150	11.5	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

› 11.273 Phantom



NL **UNI VHM-MG Spiraalboor 5xD met koelkanaal, TiAIN, 30-45 HRc**
FR **Foret UNI Carbure MG 5xD à trou d´huile, TiAIN, 30-45 HRc**
ES **Broca UNI MD-MG 5xD con canal de refrigeración, TiAIN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 5xD mit Innenkühlung, TiAIN, 30-45 HRc**

MG HM | TiAIN | DIN 6537-L | 5xD | h6 | DIN 6535-HA | 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

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
11.273.0330	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
11.273.0370	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

Ref.	d1	d2	l1	l2
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
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
11.273.0760	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

Ref.	d1	d2	l1	l2
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
11.273.0960	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
11.273.1020	10.2	12	118	71
11.273.1030	10.3	12	118	71
11.273.1050	10.5	12	118	71
11.273.1080	10.8	12	118	71
11.273.1100	11	12	118	71
11.273.1150	11.5	12	118	71
11.273.1180	11.8	12	118	71
11.273.1200	12	12	118	71
11.273.1230	12.3	14	124	77
11.273.1250	12.5	14	124	77
11.273.1280	12.8	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
11.273.1550	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

19:00 ▶ 🛒 ▶ 24h

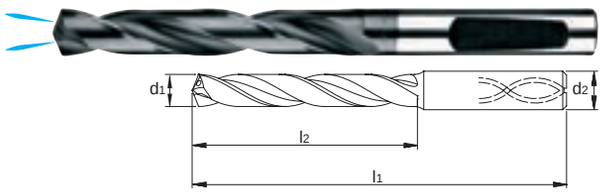
› 11.273 Phantom

Ref.	d1	d2	l1	l2
11.273.1750	17.5	18	143	93
11.273.1780	17.8	18	143	93
11.273.1800	18	18	143	93

Ref.	d1	d2	l1	l2
11.273.1850	18.5	20	153	101
11.273.1880	18.8	20	153	101
11.273.1900	19	20	153	101

Ref.	d1	d2	l1	l2
11.273.1950	19.5	20	153	101
11.273.1980	19.8	20	153	101
11.273.2000	20	20	153	101

› 11.274 Phantom



NL **UNI VHM-MG Spiraalboor 5xD met koelkanaal, TiAlN, 30-45 HRc**
FR **Foret UNI Carbure MG 5xD à trou d´huile, TiAlN, 30-45 HRc**
ES **Broca UNI MD-MG 5xD con canal de refrigeración, TiAlN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 5xD mit Innenkühlung, TiAlN, 30-45 HRc**

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

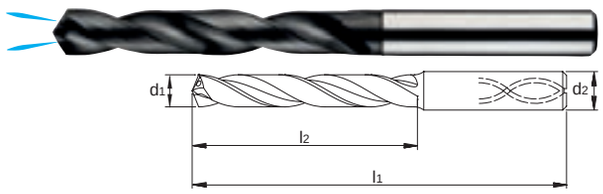
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 51	S 71
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	Ni/Co
130-145 G	80-170 F	65-145 F	60-105 C	35-55 C	55-60 C	35-45 C	160-210 I	130-140 H	80-220 G	30-35 D

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
11.274.0410	4.1	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

Ref.	d1	d2	l1	l2
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	5	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

Ref.	d1	d2	l1	l2
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
11.274.1050	10.5	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 **VHM-MG Spiraalboor 5xD met koelkanaal, DLC, Aluminium**
FR **Foret Carbure MG 5xD à trou d´huile, DLC, Aluminium**
ES **Broca MD-MG 5xD con canal de refrigeración, DLC, Aluminio**
DE **VHM-MG Spiralbohrer 5xD mit Innenkühlung, DLC, Aluminium**

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

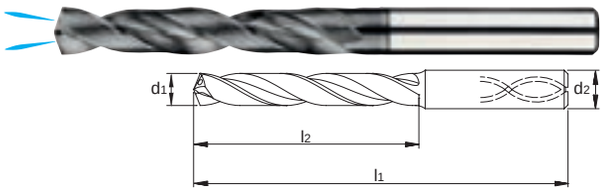
N 41	N 42	N 43	N 51
Alu	Alu Si>10%	Mg	Cu
250-310 I	220-260 I	200-280 H	80-310 G

Ref.	d1	d2	l1	l2
11.279.0300	3	6	66	28
11.279.0320	3.2	6	66	28
11.279.0330	3.3	6	66	28
11.279.0350	3.5	6	66	28
11.279.0400	4	6	74	36
11.279.0410	4.1	6	74	36
11.279.0420	4.2	6	74	36
11.279.0450	4.5	6	74	36
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
11.279.0540	5.4	6	82	44
11.279.0550	5.5	6	82	44
11.279.0580	5.8	6	82	44
11.279.0600	6	6	82	44
11.279.0610	6.1	8	91	53

Ref.	d1	d2	l1	l2
11.279.0620	6.2	8	91	53
11.279.0650	6.5	8	91	53
11.279.0660	6.6	8	91	53
11.279.0680	6.8	8	91	53
11.279.0700	7	8	91	53
11.279.0750	7.5	8	91	53
11.279.0780	7.8	8	91	53
11.279.0800	8	8	91	53
11.279.0820	8.2	10	103	61
11.279.0850	8.5	10	103	61
11.279.0880	8.8	10	103	61
11.279.0900	9	10	103	61
11.279.0950	9.5	10	103	61
11.279.0980	9.8	10	103	61
11.279.1000	10	10	103	61
11.279.1020	10.2	12	118	71
11.279.1050	10.5	12	118	71

Ref.	d1	d2	l1	l2
11.279.1080	10.8	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
11.279.1380	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 **VHM-MG Spiraalboor 5xD met koelkanaal, TiAlN, roestvaststaal**
FR **Foret Carbure MG 5xD à trou d´huile, TiAlN, Inox**
ES **Broca MD-MG 5xD con canal de refrigeración, TiAlN, acero inoxidable**
DE **VHM-MG Spiralbohrer 5xD mit Innenkühlung, TiAlN, rostfreien Stahl**

MG HM | TiAlN | DIN 6537-L | 5xD | h6 | DIN 6535-HA | 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

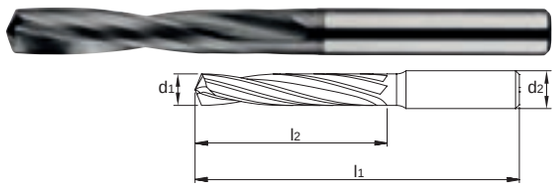
130-145 G | 80-125 F | 65-145 F | 60-105 C | 72-80 C | 60-80 C | 30-35 B

Ref.	d1	d2	l1	l2
11.282.0200	2	4	57	21
11.282.0250	2.5	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

Ref.	d1	d2	l1	l2
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
11.282.0620	6.2	8	91	53
11.282.0630	6.3	8	91	53
11.282.0650	6.5	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
11.282.0750	7.5	8	91	53
11.282.0780	7.8	8	91	53
11.282.0800	8	8	91	53
11.282.0850	8.5	10	103	61
11.282.0860	8.6	10	103	61
11.282.0880	8.8	10	103	61
11.282.0900	9	10	103	61
11.282.0920	9.2	10	103	61
11.282.0950	9.5	10	103	61
11.282.0980	9.8	10	103	61

Ref.	d1	d2	l1	l2
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 **VHM-MG Spiraalboor 5xD TiAlN, gehard staal, 45-70 HRc**
FR **Foret Carbure MG 5xD TiAlN, métaux durs, 45-70 HRc**
ES **Broca MD-MG 5xD TiAlN, aceros duros, 45-70 HRc**
DE **VHM-MG Spiralbohrer 5xD TiAlN, harte Stähle, 45-70 HRc**

MG HM | TiAlN | Phantom | 5xD | h6 | DIN 6535-HA | 140° | h7

H 15 HRC

10-22 A

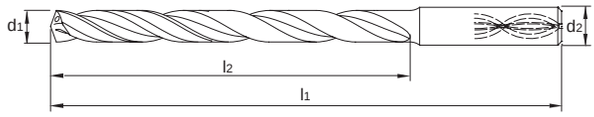
Ref.	d1	d2	l1	l2
11.286.0300	3	3	46	16
11.286.0350	3.5	4	50	20
11.286.0400	4	4	52	22
11.286.0450	4.5	6	68	28
11.286.0500	5	6	72	32
11.286.0550	5.5	6	75	35

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 VHM-MG Spiraalboor 8xD met koelkanaal, TiAlN, 30-45 HRc**
FR **Foret UNI Carbure MG 8xD à trou d´huile, TiAlN, 30-45 HRc**
ES **Broca UNI MD-MG 8xD con canal de refrigeración, TiAlN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 8xD mit Innenkühlung, TiAlN, 30-45 HRc**

MG HM | TiAlN | Phantom | 8xD | h6 | DIN 6535-HA | 140° | m7 | 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 51 Cu | S 71 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

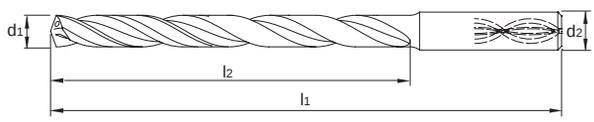
Ref.	d1	d2	l1	l2
11.295.0300	3	6	72	34
11.295.0330	3.3	6	72	34
11.295.0350	3.5	6	72	34
11.295.0400	4	6	81	43
11.295.0420	4.2	6	81	43
11.295.0450	4.5	6	81	43
11.295.0500	5	6	95	57
11.295.0550	5.5	6	95	57
11.295.0600	6	6	95	57
11.295.0650	6.5	8	114	76
11.295.0680	6.8	8	114	76

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 VHM-MG Spiraalboor 8xD met koelkanaal, TiAlN, 30-45 HRc**
FR **Foret UNI Carbure MG 8xD à trou d´huile, TiAlN, 30-45 HRc**
ES **Broca UNI MD-MG 8xD con canal de refrigeración, TiAlN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 8xD mit Innenkühlung, TiAlN, 30-45 HRc**

MG HM | TiAlN | Phantom | 8xD | h6 | DIN 6535-HE | 140° | m7 | 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 51 Cu | S 71 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

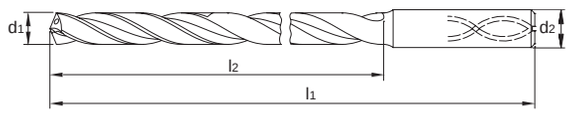
Ref.	d1	d2	l1	l2
11.296.0400	4	6	81	43
11.296.0420	4.2	6	81	43
11.296.0450	4.5	6	81	43
11.296.0500	5	6	95	57
11.296.0550	5.5	6	95	57
11.296.0600	6	6	95	57
11.296.0650	6.5	8	114	76
11.296.0680	6.8	8	114	76
11.296.0700	7	8	114	76
11.296.0750	7.5	8	114	76

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 VHM-MG Spiraalboor 10xD met koelkanaal, TiAlN, 30-45 HRc**
FR **Foret UNI Carbure MG 10xD à trou d´huile, TiAlN, 30-45 HRc**
ES **Broca UNI MD-MG 10xD con canal de refrigeración, TiAlN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 10xD mit Innenkühlung, TiAlN, 30-45 HRc**

MG HM | TiAlN | Phantom | 10xD | h6 | DIN 6535-HA | 140° | h7 | 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 51 Cu | S 71 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

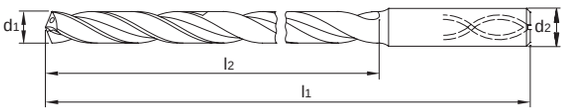
Ref.	d1	d2	l1	l2
11.305.0650	6.5	8	126	86
11.305.0680	6.8	8	132	92
11.305.0700	7	8	132	92
11.305.0750	7.5	8	139	99
11.305.0800	8	8	145	105
11.305.0850	8.5	10	156	112
11.305.0900	9	10	162	118
11.305.0950	9.5	10	170	123
11.305.1000	10	10	176	132

Ref.	d1	d2	l1	l2
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 VHM-MG Spiraalboor 15xD met koelkanaal, TiAIN, 30-45 HRc**
FR **Foret UNI Carbure MG 15xD à trou d´huile, TiAIN, 30-45 HRc**
ES **Broca UNI MD-MG 15xD con canal de refrigeración, TiAIN, 30-45 HRc**
DE **UNI VHM-MG Spiralbohrer 15xD mit Innenkühlung, TiAIN, 30-45 HRc**



MG HM | TiAIN | Phantom | 15xD | h6 | DIN 6535-HA | 140° | h7 | 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 51 Cu | S 71 Ni/Co

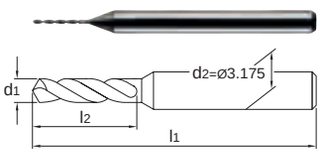
130-145 E | 80-170 F | 65-145 F | 60-105 B | 55-60 B | 35-45 D | 160-210 H | 130-160 G | 80-220 F | 30-35 C

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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

› 11.360 Phantom



NL **VHM-MG Microboor**
FR **Micro-foret Carbure MG**
ES **Micro-broca MD-MG**
DE **VHM-MG Kleinstbohrer**

MG HM | Phantom | 118° | - 0,000 +0,005

P 11 ≤600 N/mm² | P 12 ≤850 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 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

45-50 E | 25-50 D | 20-65 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	9.5

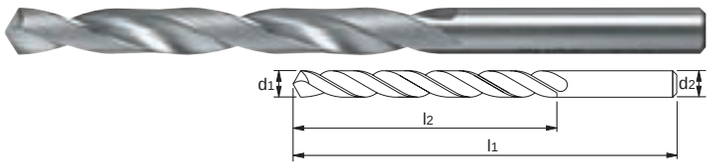
Ref.	d1	d2	l1	l2
11.360.0090	0.9	3.175	38	9.5
11.360.0100	1	3.175	38	10.5
11.360.0110	1.1	3.175	38	10.5
11.360.0120	1.2	3.175	38	10.5
11.360.0130	1.3	3.175	38	12
11.360.0140	1.4	3.175	38	12

Ref.	d1	d2	l1	l2
11.360.0150	1.5	3.175	38	12
11.360.0160	1.6	3.175	38	12
11.360.0170	1.7	3.175	38	12
11.360.0180	1.8	3.175	38	12
11.360.0190	1.9	3.175	38	12
11.360.0200	2	3.175	38	12

19:00 24h

› 11.650 Phantom

NL **VHM-MG Spiraalboor**
FR **Foret Carbure MG**
ES **Broca MD-MG**
DE **VHM-MG Spiralbohrer**



MG HM | DIN 338 | 8xD | 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	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

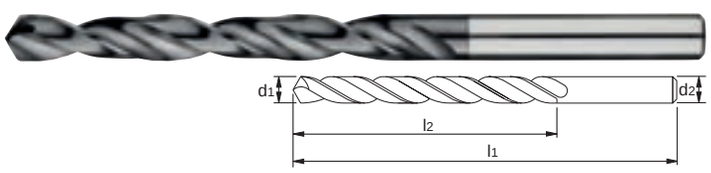
Ref.	d1	d2	l1	l2
11.650.0100	1	1	34	12
11.650.0110	1.1	1.1	36	14
11.650.0120	1.2	1.2	38	16
11.650.0130	1.3	1.3	38	16
11.650.0140	1.4	1.4	40	18
11.650.0150	1.5	1.5	40	18
11.650.0160	1.6	1.6	43	20
11.650.0170	1.7	1.7	43	20
11.650.0180	1.8	1.8	46	22
11.650.0190	1.9	1.9	46	22
11.650.0200	2	2	49	24
11.650.0210	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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
11.650.0700	7	7	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
11.650.0950	9.5	9.5	125	81
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
11.650.1200	12	12	151	101

› 11.654 Phantom

NL **VHM-MG Spiraalboor TiAlN**
FR **Foret Carbure MG TiAlN**
ES **Broca MD-MG TiAlN**
DE **VHM-MG Spiralbohrer TiAlN**



MG HM | TiAlN | DIN 338 | 8xD | 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	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

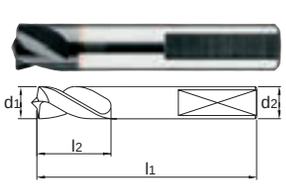
Ref.	d1	d2	l1	l2
11.654.0100	1	1	34	12
11.654.0150	1.5	1.5	40	18
11.654.0200	2	2	49	24
11.654.0250	2.5	2.5	57	30
11.654.0300	3	3	61	33
11.654.0330	3.3	3.3	65	36
11.654.0350	3.5	3.5	70	39

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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

› 13.814 Phantom

NL **VHM Puntlasboor TiAlN, 3 snijkanten**
FR **Foret à dépointer Carbure TiAlN, 3 taillants**
ES **Broca para puntos de soldadura MD TiAlN, 3 labios**
DE **VHM Bohrer zum Bohren von Punktschweißstellen TiAlN, 3 Schneiden**



VHM SC | TiAlN

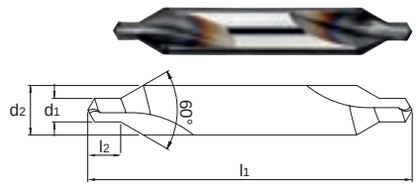
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²
75-85 *	60-70 *	55-65 *	30-40 *	20-35 *	18-30 *

Ref.	d1	d2	l1	l2
13.814.0645	6	6	45	15

Ref.	d1	d2	l1	l2
13.814.0845	8	8	45	15

Ref.	d1	d2	l1	l2
13.814.1045	10	10	45	15

› 15.144 Phantom



NL **VHM-MG Centreerboor TiAlN, 60°**
FR **Foret à centrer Carbure MG TiAlN, 60°**
ES **Broca de centrar MD-MG TiAlN, 60°**
DE **VHM-MG Zentrierbohrer TiAlN, 60°**

MG HM | TiAlN | 60° | DIN 333-A

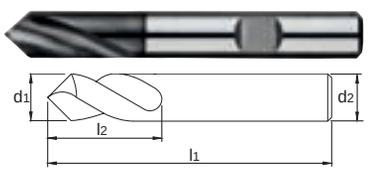
P 11	P 12	P 13	P 14	H 15	M 21
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²
100-110 D	65-105 D	82-95 D	32-95 B	10-20 C	20-45 B

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 **VHM-MG NC-Centreerboor TiAlN, 90°**
FR **Foret à pointer NC Carbure MG TiAlN, 90°**
ES **Broca de puntear NC MD-MG TiAlN, 90°**
DE **VHM-MG NC Anbohrer TiAlN, 90°**

MG HM | TiAlN | 90° | h6 | DIN 6535-HB

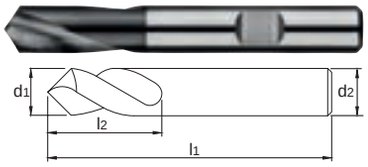
P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 61	S 71	S 72
≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
70-80 F	34-70 F	25-35 B	10-28 A	14-22 E	15-20 E	72-90 D	70-80 D	90-140 G	80-100 F	120-180 E	120-150 G	8-10 B	15-20 E

Ref.	d1	d2	l1	l2
15.624.0200	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
15.624.1600	16	16	75	29
15.624.2000	20	20	100	35

› 15.724 Phantom



NL **VHM-MG NC-Centreerboor TiAlN, 120°**
FR **Foret à pointer NC Carbure MG TiAlN, 120°**
ES **Broca de puntear NC MD-MG TiAlN, 120°**
DE **VHM-MG NC Anbohrer TiAlN, 120°**

MG HM | TiAlN | 120° | h6 | 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
15.724.0200	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
15.724.1600	16	16	75	29
15.724.2000	20	20	100	35

NL **Voedingswaardentabel**
FR **Tableau des avances**
ES **Tabla de avances**
DE **Vorschubtabelle**

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

NL **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**

$$n = \frac{Vc \times 1000}{3{,}14 \times d1} \qquad Vc = \frac{n \times 3{,}14 \times d1}{1000}$$

	Vc (m/min)																	
	5	8	10	12	15	20	25	30	35	40	50	60	70	80	90	100	110	120
d1 (mm)	n = rpm																	
1	1592	2546	3183	3820	4775	6366	7958	9549	11141	12732	15915	19099	22282	25465	28648	31831	35014	38197
1,5	1061	1698	2122	2546	3183	4244	5305	6366	7427	8588	10610	12732	14854	16977	19099	21221	23343	25465
2	796	1273	1592	1910	2387	3183	3937	4775	5570	6366	7958	9549	11141	12732	14324	15915	17507	19099
2,5	637	1019	1273	1528	1910	2546	3183	3820	4456	5093	6366	7639	8913	10186	11459	12732	14006	15279
3	531	849	1061	1273	1592	2122	2653	3183	2714	4244	5305	6366	7427	8488	9549	10610	11671	12732
3,5	455	728	909	1091	1364	1819	2274	2728	3183	3638	4547	5457	6366	7276	8185	9095	10004	10913
4	398	637	796	955	1194	1592	1989	2387	2785	3183	3979	4775	5570	6366	7162	7958	8754	9549
4,5	354	566	707	849	1061	1415	1768	2122	2476	2829	3537	4244	4951	5659	6366	7074	7781	8488
5	318	509	637	764	955	1273	1592	1910	2228	2546	3183	3820	4456	5093	5730	6366	7003	7639
5,5	289	463	579	694	868	1157	1447	1739	2026	2315	2894	3472	4051	4630	5209	5787	6366	6945
6	265	424	531	637	796	1061	1326	1592	1857	2122	2653	3183	3714	4244	4775	5305	5836	6366
7	227	364	455	546	682	909	1137	1364	1592	1819	2274	2728	3183	3638	4093	4547	5002	5457
8	199	318	398	477	597	796	995	1194	1393	1592	1989	2387	2785	3183	3581	3979	4377	4775
9	177	283	354	424	531	707	884	1061	1238	1415	1768	2122	2476	2829	3183	3537	3890	4244
10	159	255	318	382	477	637	796	955	1114	1273	1592	1910	2228	2546	2865	3183	3501	3820
11	145	321	289	347	434	579	723	868	1013	1157	1447	1736	2026	2315	2604	2894	3183	3472
12	133	212	265	318	398	531	663	796	928	1061	1326	1592	1857	2122	2387	2653	2918	3183
13	122	196	245	294	367	490	612	735	857	979	1224	1469	1714	1959	2204	2449	2693	2938
14	114	182	227	273	341	455	568	682	796	909	1137	1364	1592	1819	2046	2274	2501	2728
15	106	170	212	255	318	424	531	637	743	849	1061	1273	1485	1698	1910	2122	2334	2546
16	99	159	199	239	298	398	497	597	696	796	995	1194	1393	1592	1790	1989	2188	2387
18	88	141	177	212	265	354	442	361	619	707	884	1061	1238	1415	1592	1768	1945	2122
20	80	127	159	191	239	318	398	477	557	637	796	955	1114	1273	1432	1592	1751	1910

FRC
NL: Voedingscode
FR: Codification vitesse d'avance
ES: Codificación de velocidad de avance
DE: Vorschubgeschwindigkeit Codierung

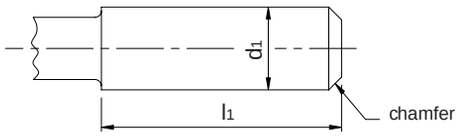
f (mm/n)
NL: Voeding per omwenteling (mm/n)
FR: Avance par tour (mm/tr)
ES: Avance por revolucion (mm/r)
DE: Vorschub pro Umdrehung (mm/U)

Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)

n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)

DIN 6535 HA

NL **Cilindrische schacht**
FR **Queue cylindrique**
ES **Mango cilíndrico**
DE **Zylinderschaft**



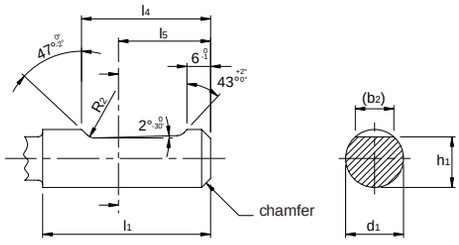
Dimensions in mm	
d_1 h8	l_1 +2 0
3	28
4	28
5	28
6	36
8	36

Dimensions in mm	
d_1 h8	l_1 +2 0
10	40
12	45
16	48
20	50
25	56

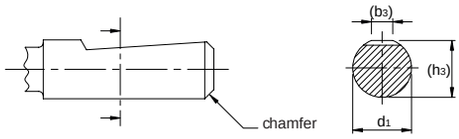
Dimensions in mm	
d_1 h8	l_1 +2 0
32	60
40	70
50	80
63	90

DIN 6535 HE

NL **Cilindrische schacht “Whistle-Notch”**
FR **Queue cylindrique “Whistle-Notch”**
ES **Mango cilíndrico “Whistle-Notch”**
DE **Zylinderschaft “Whistle-Notch”**



d_1 = 6 to 20 mm								
d_1 h6	(b_2) ≈	(b_3)	h_2 h11	(h_3)	l_1 +2 0	l_4 0 -1	l_1 nom. size	r_2 min.
6	4.3	-	5.1	-	36	25	18	1.2
8	5.5	-	6.9	-	36	25	18	1.2
10	7.1	-	8.5	-	40	28	20	1.2
12	8.2	-	10.4	-	45	33	22.5	1.2
14	8.1	-	12.7	-	45	33	22.5	1.2
16	10.1	-	14.2	-	48	36	24	1.6
18	10.8	-	16.2	-	48	36	24	1.6
20	11.4	-	18.2	-	50	38	25	1.6



d_1 = 25 to 32 mm								
d_1 h6	(b_2) ≈	(b_3)	h_2 h11	(h_3)	l_1 +2 0	l_4 0 -1	l_1 nom. size	r_2 min.
25	13.6	9.3	23.0	24.1	56	44	32	1.6
32	15.5	9.9	30.0	31.2	60	48	35	1.6

NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



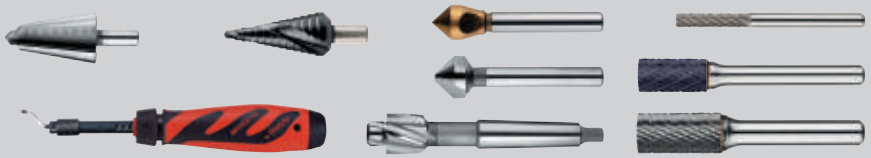
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



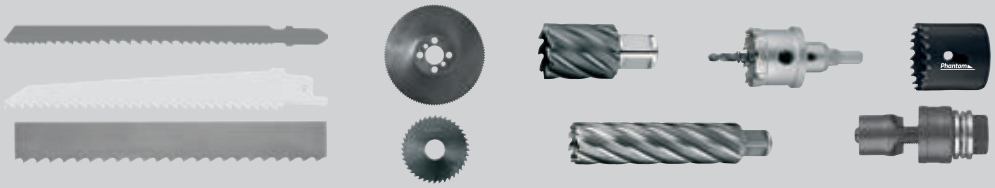
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



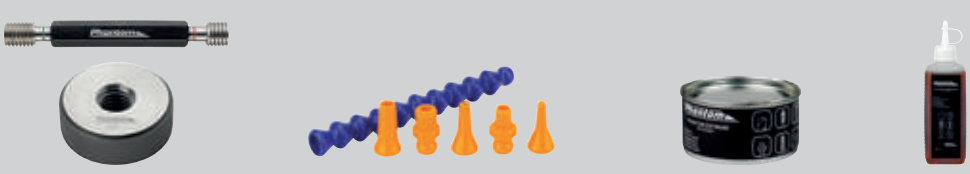
NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
HSS	HSS	HSS	HSS	HSS
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalto)	HSS-E (5% Cobalt)
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden
HM	Hardmetaal	Carbure monobloc	Metal duro integral	Hartmetall
CV	Hoog gelegeerd Chroom Vanadium staal	Acier hautement allié au Chrome Vanadium	Acero de alta aleación de Cromo Vanadio	Hochlegiert Chrom-Vanadium-Stahl
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung
AlCrN	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung
DIN 338	DIN norm	Norme DIN	Norma DIN	DIN Norm
Phantom	Phantom Norm	Norme Phantom	Norma Phantom	Werksnorm
3xD	Max. boordiepte	Profondeur max. de perçage	Profundidad máx. de perforacion	Max. Bohrtiefe
N	Type N, standaard spiraaluitvoering	Type N, hélice standard	Tipo N, Versión helicoidal estándar	Type N, standard Spiralwinkel
>N	Spiraalhoek sterker dan standaard	Hélice plus rapide que standard	Ángulo de hélice más rápido que estándar	Spiralwinkel starker wie Standard
H	Type H, flauwe spiraalhoek	Type H, hélice lente	Tipo H, Ángulo de hélice lento	Type H, flache Spiralwinkel
W	Type W, sterke spiraalhoek	Type W, hélice rapide	Tipo W, Ángulo de hélice rápido	Type W, starke Spiralwinkeln
TS	Type TS, Tiefloch-spiraal	Type TS, goujure large	Tipo TS, Hélice para perforación profunda	Type TS, Tiefloch Spiral
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft
Ø10	Afgedraaide schacht	Queue réduite	Mango rebajado	Abgedrehtem Zylinderschaft
	Schacht zeskant	Queue hexagonale	Mango hexagonal	Sechskantschaft
1/4"	Bitopname (1/4")	Queue hexagonale 1/4" (6,35 mm)	Mango hexagonal 1/4" (6,35 mm)	Bitaufname (1/4")
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel
1:50	Coniciteit	Conicité	Conicidad	Konizität
	Standaard boorpunt	Affûtage standard	Afilado normal	Standard Bohrerspitze
	Kruisaanslijping	Affûtage en croix	Afilado en Cruz	Kreuzanschliff
	S-aanslijping	Affûtage en S	Afilado en S	S-Anschliff
	Viervlaks-aanslijping	Affûtage 4 pentes	Afilado 4 facetas	Vierflachs-Anschliff

	NL	FR	ES	DE
	Met verdunde punt	Ame amincie	Con alma delgada	Ausgedünde Spitze
	Aanslijping 3-lippenboor	Affûtage à 3 lèvres	Afilado con 3 labios	Aufbohrer-anschliff
	HM-Snijkanten	A plaquettes carbure brasées	Punta Metal Duro	HM-Schneiden
1	Fijnpassing	Ajustement fin	Ajuste fino	Senkung fein
2	Middelpassing	Ajustement moyen	Ajuste medio	Senkung mittel
	Koelkanaal	A trous d'huile	Canal de refrigeración	Mit Kühlkanal
118°	Tophoek	Angle au sommet	Ángulo de la punta	Spitzenwinkel
B	Form B (met centreerpunt)	Forme B (avec pointe de centrage)	Forma B (con punta de centrado)	Form B (mit Zentrierspitze)
	Met Lewis centreerpunt	Avec pointe de centrage Lewis	Con punta de centrado Lewis	mit Lewis Zentrierspitze
90°	Hoek 90°	Angle 90°	Ángulo 90°	Winkel 90°
180°	Hoek 180°	Angle 180°	Ángulo 180°	Winkel 180°
60°	Uitvoering centreergat	Angle de lamage	Versión ángulo avellanado	Ausführung Zentrierloch
60°	Centreerboor met kraag	Foret à centrer à bourrelet de renfort	Broca de centrar con valona	Zentrierbohrer mit Kragen
60°	Centreerboor met radius	Foret à centrer à rayon	Broca de centrar con radio	Zentrierbohrer mit Radius
60° 120°	Centreerboor met dubbele hoek	Foret à centrer à centre protégé	Broca de centrar con chaflan	Zentrierbohrer mit Schutzsenkung
90°	Centreerhoek	Point de centrage	Ángulo de centrar	Zentrierspitze
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium
HP2 UNI	HP2 Universeel	Haute Perfor-mance Universel	Alta Rendimiento Universal	HP2 Universal
	Ook voor hardhout	Aussi pour bois dur	También para madera dura	Auch für Hartholz
	Linkssnijdend	Coupe à gauche	Corte a izquierda	Linksschneidend
SDS plus	SDS-PLUS	SDS-PLUS	SDS-PLUS	SDS-PLUS
SDS max	SDS-MAX	SDS-MAX	SDS-MAX	SDS-MAX
Z=2	2 Snijkanten	À 2 lèvres	Con 2 facetas	2 Schneiden
Z=4	4 Snijkanten	À 4 lèvres	Con 4 facetas	4 Schneiden
	Volgens PGM-keurmerk	Conformément à la directive PGM	Según la directiva PGM	Gemäß PGM-vorschriften

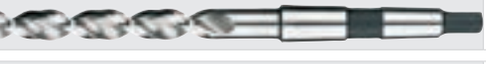
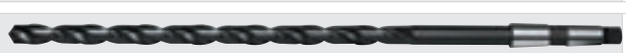
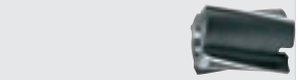
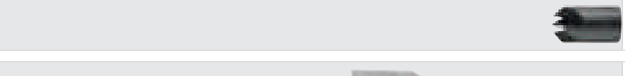
NL **HSS en HSS-E Boren**
FR **Forets HSS et HSS-E**
ES **Brocas HSS y HSS-E**
DE **HSS und HSS-E Bohrer**

P K Bij uitstek geschikt
H N Très approprié
M S Muy adecuado
Ideal geeignet

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

P= pagina
P= page
P= página
P= Seite

› 11.100	INTERNATIONAL TOOLS	HSS	DIN 1897		P		K							P. 6
› 11.130	Phantom	HSS	DIN 1897		P	M	K	N						P. 6
› 11.145	Phantom	HSS			P	M	K	N						P. 7
› 11.160	Phantom	HSS-E	DIN 1897		P	M	K	N						P. 7
› 11.161	Phantom	HSS-E	DIN 1897		P	M	K	N						P. 7
› 11.167	Phantom	HSS-E	DIN 1897	INOX	P	M	K	N	S					P. 8
› 11.168	Phantom	HSS-E	DIN 1897	HP2 UNI	P	M	K	N						P. 8
› 11.174	Phantom	HSS-E	DIN 1897		P	M	K							P. 9
› 11.340	Phantom	HSS-E PM	DIN 1899 A		P	M	K	N						P. 10
› 11.400	INTERNATIONAL TOOLS	HSS	DIN 338		P		K							P. 11
› 11.410	INTERNATIONAL TOOLS	HSS	Ø10		P		K							P. 11
› 11.413	INTERNATIONAL TOOLS	HSS	Ø13		P		K							P. 12
› 11.415	INTERNATIONAL TOOLS	HSS-E	Ø13		P	M	K	N						P. 12
› 11.416	INTERNATIONAL TOOLS	HSS	DIN 338	ECO	P		K	N						NEW P. 12
› 11.420	INTERNATIONAL TOOLS	HSS	DIN 338	ECO PRO	P		K	N						P. 13
› 11.426	INTERNATIONAL TOOLS	HSS	DIN 338	ECO	P		K	N						NEW P. 14
› 11.430	INTERNATIONAL TOOLS	HSS	DIN 338	ECO PRO	P		K	N						P. 14
› 11.450	Phantom	HSS	DIN 338		P	M	K	N						P. 15
› 11.451	Phantom	HSS	DIN 338		P	M	K	N						P. 16
› 11.490	INTERNATIONAL TOOLS	HSS-E	DIN 338		P	M	K	N						P. 17
› 11.500	Phantom	HSS-E	DIN 338		P	M	K	N						P. 18
› 11.501	Phantom	HSS-E	DIN 338		P	M	K	N						P. 18
› 11.568	Phantom	HSS-E	DIN 338	HP2 UNI	P	M	K	N						P. 19
› 11.600	Phantom	HM-TIP	DIN 338		P	M	K	N	S	H				P. 19
› 11.700	Phantom	HSS	DIN 338	H				N						P. 20
› 11.710	Phantom	HSS	DIN 338	ALU				N						P. 21
› 11.760	Phantom	HSS-E	DIN 338	INOX	P	M			S					P. 21
› 11.764	Phantom	HSS-E	DIN 338	INOX	P	M			S					P. 22
› 11.770	Phantom	HSS-E	DIN 338		P	M	K	N						P. 23
› 11.774	Phantom	HSS-E	DIN 338		P	M	K	N						P. 23
› 11.810	INTERNATIONAL TOOLS	HSS	DIN 340		P		K							P. 24
› 11.815	Phantom	HSS	DIN 340		P	M	K	N						P. 24

› 11.820	Phantom	HSS-E	DIN 340	INOX	P	M				S				P. 25
› 11.840	Phantom	HM-TIP	DIN 340		P	M	K	N	S	H				P. 25
› 11.850	Phantom	HSS	DIN 340	TS	P			N						P. 25
› 11.860	Phantom	HSS	DIN 340	TS	P		K	N						P. 26
› 11.870	Phantom	HSS-E	DIN 340	TS	P	M	K	N						P. 26
› 11.874	Phantom	HSS-E	DIN 340	TS	P	M	K	N						P. 27
› 11.890	Phantom	HSS			P	M	K	N						P. 27
› 11.900	Phantom	HSS	DIN 1869		P		K	N						P. 28
› 11.920	Phantom	HSS	DIN 1869		P		K	N						P. 28
› 12.150	Phantom	HSS-E		DIN 228-B	P									P. 29
› 12.400	INTERNATIONAL TOOLS	HSS	DIN 345	DIN 228-B	P		K							P. 29
› 12.420	INTERNATIONAL TOOLS	HSS		DIN 228-B	P		K							P. 30
› 12.440	Phantom	HSS	DIN 345	DIN 228-B	P	M	K	N						P. 30
› 12.480	Phantom	HSS		DIN 228-B	P	M	K	N						P. 31
› 12.500	Phantom	HSS-E	DIN 345	DIN 228-B	P	M	K	N						P. 31
› 12.520	Phantom	HSS-E	DIN 345	DIN 228-B	P	M	K	N						P. 32
› 12.600	Phantom	HM-TIP	DIN 345	DIN 228-B	P	M	K	N	S	H				P. 32
› 12.800	Phantom	HSS	DIN 341	DIN 228-B	P	M	K	N						P. 32
› 12.840	Phantom	HSS	DIN 228-B		P	M	K	N						P. 33
› 12.860	Phantom	HSS	DIN 228-B		P	M	K	N						P. 33
› 12.900	Phantom	HSS	DIN 1870	DIN 228-B	P	M	K	N						P. 34
› 12.920	Phantom	HSS-E	DIN 1870	DIN 228-B	P	M		N						P. 34
› 13.200	Phantom	HSS	DIN 1898 A	1:50	P									P. 35
› 13.300	Phantom	HSS	DIN 344		P	M		N						P. 35
› 13.320	Phantom	HSS	DIN 343		P	M		N						P. 35
› 13.350	Phantom	HSS	DIN 222		P	M		N						P. 36
› 84.410	TORAX	DIN 217												P. 36
› 13.603	Phantom	CV		B										P. 37
› 13.606	Phantom	CV												P. 37
› 13.610	Phantom	CV		¼"										P. 37
› 13.615	Phantom			¼"										P. 37
› 13.640	Phantom	CV												P. 38

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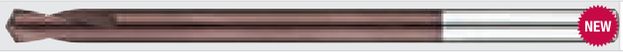
› 13.650	Phantom	CV								P. 38
› 13.680	Phantom	HM		PU						P. 38
› 13.700	Phantom	HM	DIN 8039	PU						P. 39
› 13.710	Phantom	HM		PU						P. 39
› 13.720	Phantom	HM		PU						P. 39
› 13.730	Phantom	HM		PU						P. 39
› 13.740	Phantom	HM	Z=2	SDS plus						P. 40
› 13.744	Phantom	HM	Z=4	SDS plus						P. 40
› 13.750	Phantom	HM		SDS max						P. 40
› 13.765	Phantom	HM		SDS plus						P. 41
› 13.766	Phantom	HM								P. 41
› 13.770	Phantom			SDS plus						P. 42
› 13.775	Phantom			SDS max						P. 42
› 13.790	Phantom	HM		¼"						P. 43
› 13.800	Phantom	HSS-E								P. 43
› 13.801	Phantom	HSS-E								P. 43
› 15.100	Phantom	HSS	DIN 333-A	60°	P		K	N		P. 44
› 15.120	Phantom	HSS-E	DIN 333-A	60°	P	M	K	N		P. 44
› 15.124	Phantom	HSS-E	DIN 333-A	60°	P	M	K	N		P. 44
› 15.150	Phantom	HSS-E		60°	P	M	K	N		P. 45
› 15.200	Phantom	HSS-E	DIN 333-W	60°	P		K	N		P. 45
› 15.250	Phantom	HSS-E	DIN 333-R	60°	P		K	N		P. 45
› 15.380	Phantom	HSS	NFE 66064	60° 120°	P		K	N		P. 46
› 15.500	Phantom	HSS		90°	P		K	N		P. 46
› 15.600	Phantom	HSS-E		90°	P	M	K	N		P. 46
› 15.604	Phantom	HSS-E		90°	P	M	K	N		P. 47
› 15.611	Phantom	HSS-E		90°	P	M	K	N		P. 47
› 15.640	Phantom	HSS-E		90°	P	M	K	N		P. 47
› 15.644	Phantom	HSS-E		90°	P	M	K	N	NEW	P. 48
› 15.650	Phantom	HSS-E	DIN 228-B	90°	P	M	K	N		P. 48
› 15.700	Phantom	HSS-E		120°	P	M	K	N		P. 48

› 15.704	Phantom	HSS-E		120°	P	M	K	N		P. 49
› 15.740	Phantom	HSS-E		120°	P	M	K	N		P. 49
› 15.744	Phantom	HSS-E		120°	P	M	K	N	 NEW	P. 49
› 15.820	Phantom	HSS-E	DIN 332-2	60°	P	M	K	N		P. 50
› 15.840	Phantom	HSS-E	DIN 332-2	60°	P	M	K	N		P. 50
› 15.880	Phantom	HSS-E		90°	P	M	K	N		P. 50
› 16.100	Phantom	HSS-E		90°	P	M	K	N		P. 51
› 16.120	Phantom	HSS-E		90°	P	M	K	N		P. 51
› 16.200	Phantom	HSS		90°	P	M	K	N		P. 51
› 16.220	Phantom	HSS	DIN 8374	90°	P	M	K	N		P. 51
› 16.250	Phantom	HSS	DIN 8378	90°	P	M	K	N		P. 52
› 16.300	Phantom	HSS	DIN 8375	90°	P	M	K	N		P. 52
› 16.350	Phantom	HSS	DIN 8379	90°	P	M	K	N		P. 52
› 16.500	Phantom	HSS-E		180°	P	M	K	N		P. 52
› 16.600	Phantom	HSS	DIN 8376	180°	P	M	K	N		P. 53
› 16.700	Phantom	HSS	DIN 8377	180°	P	M	K	N		P. 53
› 16.730	Phantom	HSS		180°	P	M	K	N		P. 53
› 19.100	Phantom									P. 54
› 19.105										P. 54
› 19.113	Phantom	HSS	DIN 1897		P	M	K	N		P. 54
› 19.116	Phantom	HSS-E	DIN 1897		P	M	K	N		P. 55
› 19.120	INTERNATIONAL TOOLS	HSS	DIN 338	ECO	P		K	N	NEW 	P. 55
› 19.124	INTERNATIONAL TOOLS	HSS	DIN 338	ECO PRO	P		K	N	NEW 	P. 56
› 19.130	INTERNATIONAL TOOLS	HSS	DIN 338	ECO	P		K	N	NEW 	P. 56
› 19.134	INTERNATIONAL TOOLS	HSS	DIN 338	ECO PRO	P		K	N	NEW 	P. 57
› 19.143	INTERNATIONAL TOOLS	HSS	DIN 338	ECO PRO	P		K	N		P. 57

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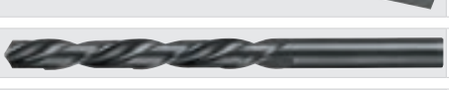
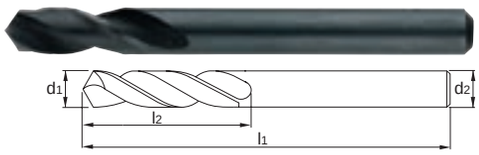
› 19.144	INTERNATIONAL TOOLS	HSS	DIN 338		P		K						P. 57
› 19.145	Phantom	HSS	DIN 338		P	M	K	N					P. 58
› 19.146	Phantom	HSS	DIN 338		P	M	K	N					P. 58
› 19.149	INTERNATIONAL TOOLS	HSS-E	DIN 338		P	M	K	N					P. 58
› 19.150	Phantom	HSS-E	DIN 338		P	M	K	N					P. 59
› 19.156	Phantom	HSS-E	DIN 338	UNI	P	M	K	N					P. 59
› 19.160	Phantom	HM-TIP	DIN 338		P	M	K	N	S	H			P. 59
› 19.171	Phantom	HSS	DIN 338					N					P. 60
› 19.176	Phantom	HSS-E	DIN 338	INOX		M			S				P. 60
› 19.360	INTERNATIONAL TOOLS	CV		B									P. 60
› 19.361	INTERNATIONAL TOOLS	CV		¼"									P. 61
› 19.370	Phantom	HM	DIN 8039	PU									P. 61
› 19.372	Phantom	HM		PU									P. 61
› 19.374	Phantom	HM	Z=2	SDS plus									P. 62
› 19.377	Phantom			SDS plus									P. 62
› 19.540	Phantom	HSS	DIN 333-A	60°									P. 62
› 19.914	Phantom	HSS	DIN 338		P	M	K	N					P. 63
› 19.951	Phantom	HSS		60°	P		K	N					P. 63
› 19.956	Phantom	HSS-E		90°	P	M	K	N					P. 63
› 19.957	Phantom	HSS-E		120°	P	M	K	N					P. 64

› 11.100 INTERNATIONAL TOOLS



NL **HSS Spiraalboor gewalst**
FR **Foret HSS laminé**
ES **Broca HSS laminada**
DE **HSS Spiralbohrer Gewalzt**

HSS | DIN 1897 | N | 118°

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

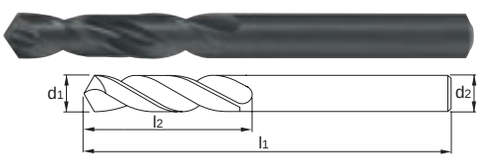
20-25 E | 20-25 E | 15-20 D | 15-20 E | 25-30 E

Ref.	d1	d2	l1	l2
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
11.100.0300	3	3	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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
11.100.0700	7	7	74	34
11.100.0750	7.5	7.5	74	34
11.100.0800	8	8	79	37

› 11.130 Phantom



NL **HSS Spiraalboor**
FR **Foret HSS**
ES **Broca HSS**
DE **HSS Spiralbohrer**

HSS | DIN 1897 | 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 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

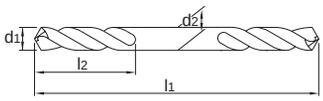
Ref.	d1	d2	l1	l2
11.130.0100	1	1	26	6
11.130.0110	1.1	1.1	28	7
11.130.0120	1.2	1.2	30	8
11.130.0130	1.3	1.3	30	8
11.130.0140	1.4	1.4	32	9
11.130.0150	1.5	1.5	32	9
11.130.0160	1.6	1.6	34	10
11.130.0170	1.7	1.7	34	10
11.130.0180	1.8	1.8	36	11
11.130.0190	1.9	1.9	36	11
11.130.0200	2	2	38	12
11.130.0210	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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**

HSS | Phantom | 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

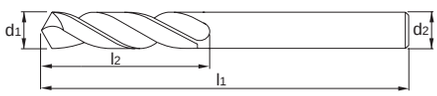
Ref.	d1	d2	l1	l2
11.145.0200	2	2	38	7.5
11.145.0250	2.5	2.5	43	9.5
11.145.0300	3	3	46	10.6
11.145.0320	3.2	3.2	49	11.2
11.145.0330	3.3	3.3	49	11.2
11.145.0350	3.5	3.5	52	12.5

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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

› 11.160 Phantom





NL **HSS-E Spiraalboor**
FR **Foret HSS-E**
ES **Broca HSS-E**
DE **HSS-E Spiralbohrer**

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

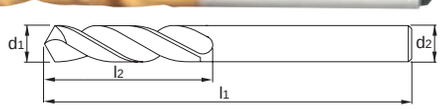
Ref.	d1	d2	l1	l2
11.160.0100	1	1	26	6
11.160.0150	1.5	1.5	32	9
11.160.0200	2	2	38	12
11.160.0210	2.1	2.1	38	12
11.160.0220	2.2	2.2	40	13
11.160.0230	2.3	2.3	40	13
11.160.0240	2.4	2.4	43	14
11.160.0250	2.5	2.5	43	14
11.160.0260	2.6	2.6	43	14
11.160.0270	2.7	2.7	46	16
11.160.0280	2.8	2.8	46	16
11.160.0290	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

Ref.	d1	d2	l1	l2
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
11.160.0460	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

Ref.	d1	d2	l1	l2
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
11.160.0620	6.2	6.2	70	31
11.160.0640	6.4	6.4	70	31
11.160.0650	6.5	6.5	70	31
11.160.0680	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
11.160.1050	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**

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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

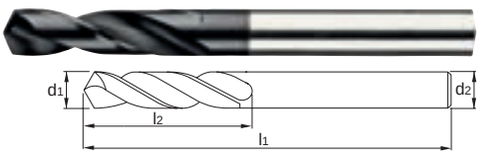
› 11.161 Phantom

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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**

HSS-E | TiAlN | DIN 1897 | >N | 130° | 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 52 CuAlFe | S 71 Ni/Co | S 72 Ti

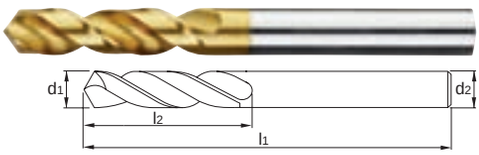
42-48 F | 36-48 F | 30-42 E | 16-24 D | 18-22 E | 17-20 D | 40-45 G | 35-40 G | 15-20 E | 5-8 B | 8-12 C

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

Ref.	d1	d2	l1	l2
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
11.167.0510	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
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 HP2 UNI HSS-E TiN**
ES **Broca HP2 UNI HSS-E TiN**
DE **HP2 UNI HSS-E Spiralbohrer TiN**

HSS-E | TiN | DIN 1897 | >N | 118° | 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 43 Mg | N 51 Cu | N 52 CuAlFe | N 61 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

Ref.	d1	d2	l1	l2
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

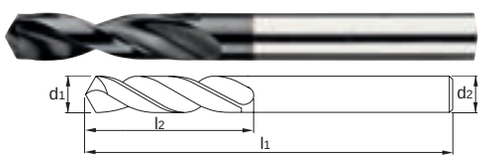
Ref.	d1	d2	l1	l2
11.168.0340	3.4	3.4	52	20
11.168.0350	3.5	3.5	52	20
11.168.0360	3.6	3.6	52	20
11.168.0370	3.7	3.7	52	20
11.168.0380	3.8	3.8	55	22
11.168.0390	3.9	3.9	55	22
11.168.0400	4	4	55	22
11.168.0410	4.1	4.1	55	22
11.168.0420	4.2	4.2	55	22
11.168.0430	4.3	4.3	58	24
11.168.0440	4.4	4.4	58	24
11.168.0450	4.5	4.5	58	24

19:00 ▶ 24h

› 11.168 Phantom

Ref.	d1	d2	l1	l2
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
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	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

› 11.174 Phantom



NL **HSS-E Spiraalboor TiAlN, (productieboor)**
FR **Foret HSS-E TiAlN, (foret à haut rendement)**
ES **Broca HSS-E TiAlN, (broca de gran rendimiento)**
DE **HSS-E Spiralbohrer TiAlN, (Produktionsbohrer)**

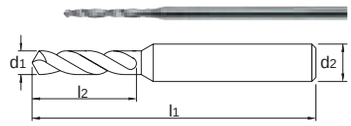
HSS-E | TiAlN | DIN 1897 | <3 | ≥3 | 130°

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 Spiraalboor**
FR **Micro-foret HSS-E PM**
ES **Micro-Broca HSS-E PM**
DE **HSS-E PM Kleinstbohrer**



HSS-E PM | DIN 1899 A | 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
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

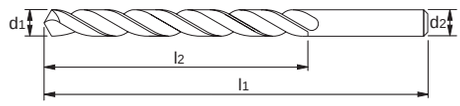
Ref.	d1	d2	l1	l2
11.340.0020	0.2	1	25	1.5
11.340.0030	0.3	1	25	1.9
11.340.0040	0.4	1	25	3
11.340.0050	0.5	1	25	3.4
11.340.0060	0.6	1	25	3.9

Ref.	d1	d2	l1	l2
11.340.0070	0.7	1	25	4.8
11.340.0080	0.8	1.5	25	5.3
11.340.0090	0.9	1.5	25	6
11.340.0100	1	1.5	25	6.8
11.340.0110	1.1	1.5	25	7.6

Ref.	d1	d2	l1	l2
11.340.0120	1.2	1.5	25	8.5
11.340.0130	1.3	1.5	25	8.5
11.340.0140	1.4	1.5	25	9.5

› 11.400 INTERNATIONAL TOOLS





NL **HSS Spiraalboor gewalst**
FR **Foret HSS laminé**
ES **Broca HSS laminada**
DE **HSS Spiralbohrer Gewalzt**

HSS | DIN 338 | N | 118°

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

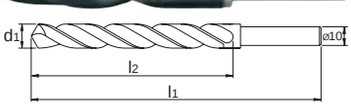
Ref.	d1	d2	l1	l2
11.400.0100	1	1	34	12
11.400.0110	1.1	1.1	36	14
11.400.0120	1.2	1.2	38	16
11.400.0130	1.3	1.3	38	16
11.400.0140	1.4	1.4	40	18
11.400.0150	1.5	1.5	40	18
11.400.0160	1.6	1.6	43	20
11.400.0170	1.7	1.7	43	20
11.400.0180	1.8	1.8	46	22
11.400.0190	1.9	1.9	46	22
11.400.0200	2	2	49	24
11.400.0210	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

› 11.410 INTERNATIONAL TOOLS





NL **HSS Spiraalboor gewalst, schacht 10 mm**
FR **Foret HSS laminé, queue 10 mm**
ES **Broca HSS laminada, mango 10 mm**
DE **HSS Spiralbohrer Gewalzt, Schaft 10 mm**

HSS | Ø10 | 118°

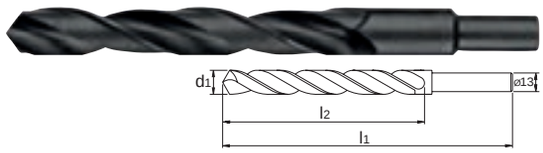
P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	l1	l2
11.410.1050	10.5	133	87
11.410.1100	11	142	94
11.410.1150	11.5	142	94
11.410.1200	12	151	101

Ref.	d1	l1	l2
11.410.1250	12.5	151	101
11.410.1300	13	151	101
11.410.1350	13.5	160	108
11.410.1400	14	160	108

Ref.	d1	l1	l2
11.410.1450	14.5	169	114
11.410.1500	15	169	114
11.410.1550	15.5	178	120
11.410.1600	16	178	120

› 11.413 INTERNATIONAL TOOLS



NL **HSS Spiraalboor gewalst, schacht 13 mm**
FR **Foret HSS laminé, queue 13 mm**
ES **Broca HSS laminada, mango 13 mm**
DE **HSS Spiralbohrer Gewalzt, Schaft 13 mm**

HSS | Ø13 | 118°

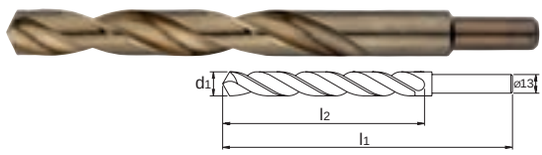
P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	l1	l2
11.413.1350	13.5	160	108
11.413.1400	14	160	108
11.413.1450	14.5	169	114
11.413.1500	15	169	114
11.413.1550	15.5	178	120
11.413.1600	16	178	120
11.413.1650	16.5	184	125
11.413.1700	17	184	125

Ref.	d1	l1	l2
11.413.1750	17.5	191	130
11.413.1800	18	191	130
11.413.1850	18.5	198	135
11.413.1900	19	198	135
11.413.1950	19.5	205	140
11.413.2000	20	205	140
11.413.2100	21	208	145
11.413.2200	22	208	150

Ref.	d1	l1	l2
11.413.2300	23	213	155
11.413.2400	24	222	160
11.413.2500	25	222	160
11.413.2600	26	227	165
11.413.2700	27	232	170
11.413.2800	28	232	170
11.413.2900	29	237	175
11.413.3000	30	237	175

› 11.415 INTERNATIONAL TOOLS



NL **HSS-E Spiraalboor schacht 13 mm**
FR **Foret HSS-E queue 13 mm**
ES **Broca HSS-E mango 13 mm**
DE **HSS-E Spiralbohrer Schaft 13 mm**

HSS-E | Ø13 | 135°

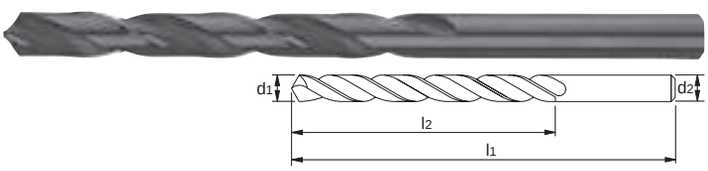
P 11	P 12	P 13	M 21	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	14-18 D	30-35 F	24-30 F	30-40 E	8-15 C

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

Ref.	d1	l1	l2
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

Ref.	d1	l1	l2
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 ECO HSS**
ES **Broca ECO HSS**
DE **ECO HSS Spiralbohrer**

NIEUW NOUVEAU NUEVO NEU

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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
11.416.0520	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

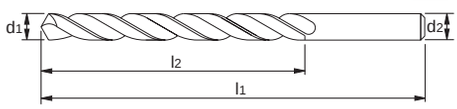
19:00 ▶ 24h

› 11.416 INTERNATIONAL TOOLS

Ref.	d1	d2	l1	l2
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 ECO PRO HSS**
ES **Broca ECO PRO HSS**
DE **ECO PRO HSS Spiralbohrer**

HSS | DIN 338 | N | 118° | ECO PRO

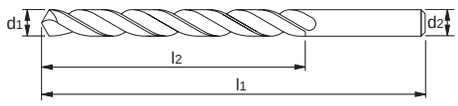
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	45-50 E	35-40 G	25-40 D	22-28 D

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
11.420.1210	12.1	12.1	151	101
11.420.1220	12.2	12.2	151	101
11.420.1230	12.3	12.3	151	101
11.420.1240	12.4	12.4	151	101
11.420.1250	12.5	12.5	151	101
11.420.1260	12.6	12.6	151	101
11.420.1270	12.7	12.7	151	101
11.420.1280	12.8	12.8	151	101
11.420.1290	12.9	12.9	151	101
11.420.1300	13	13	151	101

› 11.426 INTERNATIONAL TOOLS

NL **ECO HSS Spiraalboor**
FR **Foret ECO HSS**
ES **Broca ECO HSS**
DE **ECO HSS Spiralbohrer**





NIEUW NOUVEAU NUEVO NEU

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.	d1	d2	l1	l2
11.426.0100	1	1	34	12
11.426.0110	1.1	1.1	36	14
11.426.0120	1.2	1.2	38	16
11.426.0130	1.3	1.3	38	16
11.426.0140	1.4	1.4	40	18
11.426.0150	1.5	1.5	40	18
11.426.0160	1.6	1.6	43	20
11.426.0170	1.7	1.7	43	20
11.426.0180	1.8	1.8	46	22
11.426.0190	1.9	1.9	46	22
11.426.0200	2	2	49	24
11.426.0210	2.1	2.1	49	24
11.426.0220	2.2	2.2	53	27
11.426.0230	2.3	2.3	53	27
11.426.0240	2.4	2.4	57	30
11.426.0250	2.5	2.5	57	30
11.426.0260	2.6	2.6	57	30
11.426.0270	2.7	2.7	61	33
11.426.0280	2.8	2.8	61	33
11.426.0290	2.9	2.9	61	33
11.426.0300	3	3	61	33
11.426.0310	3.1	3.1	65	36
11.426.0320	3.2	3.2	65	36
11.426.0330	3.3	3.3	65	36
11.426.0340	3.4	3.4	70	39
11.426.0350	3.5	3.5	70	39
11.426.0360	3.6	3.6	70	39
11.426.0370	3.7	3.7	70	39
11.426.0380	3.8	3.8	75	43
11.426.0390	3.9	3.9	75	43
11.426.0400	4	4	75	43
11.426.0410	4.1	4.1	75	43
11.426.0420	4.2	4.2	75	43
11.426.0430	4.3	4.3	80	47
11.426.0440	4.4	4.4	80	47
11.426.0450	4.5	4.5	80	47
11.426.0460	4.6	4.6	80	47
11.426.0470	4.7	4.7	80	47
11.426.0480	4.8	4.8	86	52
11.426.0490	4.9	4.9	86	52
11.426.0500	5	5	86	52

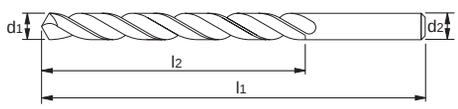
Ref.	d1	d2	l1	l2
11.426.0510	5.1	5.1	86	52
11.426.0520	5.2	5.2	86	52
11.426.0530	5.3	5.3	86	52
11.426.0540	5.4	5.4	93	57
11.426.0550	5.5	5.5	93	57
11.426.0560	5.6	5.6	93	57
11.426.0570	5.7	5.7	93	57
11.426.0580	5.8	5.8	93	57
11.426.0590	5.9	5.9	93	57
11.426.0600	6	6	93	57
11.426.0610	6.1	6.1	101	63
11.426.0620	6.2	6.2	101	63
11.426.0630	6.3	6.3	101	63
11.426.0640	6.4	6.4	101	63
11.426.0650	6.5	6.5	101	63
11.426.0660	6.6	6.6	101	63
11.426.0670	6.7	6.7	101	63
11.426.0680	6.8	6.8	109	69
11.426.0690	6.9	6.9	109	69
11.426.0700	7	7	109	69
11.426.0710	7.1	7.1	109	69
11.426.0720	7.2	7.2	109	69
11.426.0730	7.3	7.3	109	69
11.426.0740	7.4	7.4	109	69
11.426.0750	7.5	7.5	109	69
11.426.0760	7.6	7.6	117	75
11.426.0770	7.7	7.7	117	75
11.426.0780	7.8	7.8	117	75
11.426.0790	7.9	7.9	117	75
11.426.0800	8	8	117	75
11.426.0810	8.1	8.1	117	75
11.426.0820	8.2	8.2	117	75
11.426.0830	8.3	8.3	117	75
11.426.0840	8.4	8.4	117	75
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

Ref.	d1	d2	l1	l2
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
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
11.426.1030	10.3	10.3	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
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
11.426.1290	12.9	12.9	151	101
11.426.1300	13	13	151	101

› 11.430 INTERNATIONAL TOOLS

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





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.	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

Ref.	d1	d2	l1	l2
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

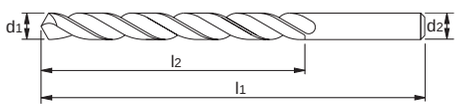
Ref.	d1	d2	l1	l2
11.430.0300	3	3	61	33
11.430.0310	3.1	3.1	65	36
11.430.0320	3.2	3.2	65	36
11.430.0330	3.3	3.3	65	36
11.430.0340	3.4	3.4	70	39
11.430.0350	3.5	3.5	70	39
11.430.0360	3.6	3.6	70	39
11.430.0370	3.7	3.7	70	39
11.430.0380	3.8	3.8	75	43
11.430.0390	3.9	3.9	75	43

› 11.430 INTERNATIONAL TOOLS

Ref.	d1	d2	l1	l2
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
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
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

› 11.450 Phantom





NL **HSS Spiraalboor**
FR **Foret HSS**
ES **Broca HSS**
DE **HSS Spiralbohrer**

HSS | DIN 338 | N | ≥1 | 118°

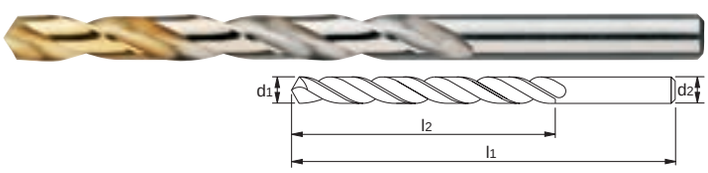
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

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
11.450.0410	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
11.450.0560	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 Phantom

Ref.	d1	d2	l1	l2
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
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
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
11.450.1525	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
11.450.1700	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
11.450.1900	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 recubrimiento TiN en la punta**
DE **HSS Spiralbohrer TiN-Tip**

HSS | TiN | DIN 338 | N | ≥2 | 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.	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
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
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
11.451.0520	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 Phantom

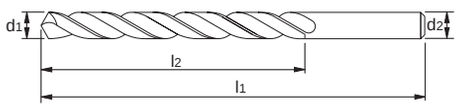
Ref.	d1	d2	l1	l2
11.451.0940	9.4	9.4	125	81
11.451.0950	9.5	9.5	125	81
11.451.0960	9.6	9.6	133	87
11.451.0970	9.7	9.7	133	87
11.451.0980	9.8	9.8	133	87
11.451.0990	9.9	9.9	133	87
11.451.1000	10	10	133	87
11.451.1010	10.1	10.1	133	87
11.451.1020	10.2	10.2	133	87
11.451.1030	10.3	10.3	133	87
11.451.1040	10.4	10.4	133	87
11.451.1050	10.5	10.5	133	87
11.451.1060	10.6	10.6	133	87

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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

› 11.490 INTERNATIONAL TOOLS





NL **HSS-E Spiraalboor**
FR **Foret HSS-E**
ES **Broca HSS-E**
DE **HSS-E Spiralbohrer**

HSS-E | DIN 338 | N | >3 | 135°

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 51 Cu | N 52 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

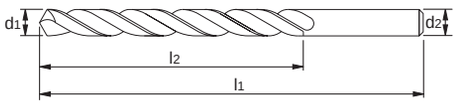
Ref.	d1	d2	l1	l2
11.490.0100	1	1	34	12
11.490.0110	1.1	1.1	36	14
11.490.0120	1.2	1.2	38	16
11.490.0130	1.3	1.3	38	16
11.490.0140	1.4	1.4	40	18
11.490.0150	1.5	1.5	40	18
11.490.0160	1.6	1.6	43	20
11.490.0170	1.7	1.7	43	20
11.490.0180	1.8	1.8	46	22
11.490.0190	1.9	1.9	46	22
11.490.0200	2	2	49	24
11.490.0210	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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
11.490.1020B	10.2	10.2	133	87
11.490.1050	10.5	10.5	133	87
11.490.1050B	10.5	10.5	133	87
11.490.1100	11	11	142	94
11.490.1150	11.5	11.5	142	94
11.490.1150B	11.5	11.5	142	94
11.490.1200	12	12	151	101
11.490.1250	12.5	12.5	151	101
11.490.1250B	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**

HSS-E | DIN 338 | N | ≥2 | 135°

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 51 Cu | N 52 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

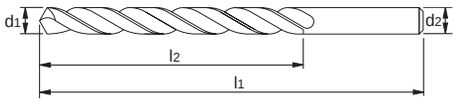
Ref.	d1	d2	l1	l2
11.500.0100	1	1	34	12
11.500.0110	1.1	1.1	36	14
11.500.0120	1.2	1.2	38	16
11.500.0130	1.3	1.3	38	16
11.500.0140	1.4	1.4	40	18
11.500.0150	1.5	1.5	40	18
11.500.0160	1.6	1.6	43	20
11.500.0170	1.7	1.7	43	20
11.500.0180	1.8	1.8	46	22
11.500.0190	1.9	1.9	46	22
11.500.0200	2	2	49	24
11.500.0210	2.1	2.1	49	24
11.500.0220	2.2	2.2	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
11.500.0280	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
11.500.0330	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
11.500.0380	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
11.500.0430	4.3	4.3	80	47
11.500.0440	4.4	4.4	80	47
11.500.0450	4.5	4.5	80	47

Ref.	d1	d2	l1	l2
11.500.0460	4.6	4.6	80	47
11.500.0470	4.7	4.7	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
11.500.0530	5.3	5.3	86	52
11.500.0540	5.4	5.4	93	57
11.500.0550	5.5	5.5	93	57
11.500.0560	5.6	5.6	93	57
11.500.0570	5.7	5.7	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
11.500.0630	6.3	6.3	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
11.500.0680	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
11.500.0730	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
11.500.0780	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

Ref.	d1	d2	l1	l2
11.500.0820	8.2	8.2	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
11.500.0880	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
11.500.0930	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
11.500.0980	9.8	9.8	133	87
11.500.0990	9.9	9.9	133	87
11.500.1000	10	10	133	87
11.500.1020	10.2	10.2	133	87
11.500.1050	10.5	10.5	133	87
11.500.1100	11	11	142	94
11.500.1150	11.5	11.5	142	94
11.500.1200	12	12	151	101
11.500.1250	12.5	12.5	151	101
11.500.1300	13	13	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
11.500.1550	15.5	15.5	178	120
11.500.1600	16	16	178	120
11.500.1750	17.5	17.5	191	130
11.500.1800	18	18	191	130

› 11.501 Phantom





NL **HSS-E Spiraalboor TiN**
FR **Foret HSS-E TiN**
ES **Broca HSS-E TiN**
DE **HSS-E Spiralbohrer TiN**

HSS-E | TiN | DIN 338 | N | ≥2 | 135°

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 51 Cu | N 52 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
11.501.0100	1	1	34	12
11.501.0150	1.5	1.5	40	18
11.501.0200	2	2	49	24
11.501.0250	2.5	2.5	57	30
11.501.0300	3	3	61	33
11.501.0320	3.2	3.2	65	36
11.501.0330	3.3	3.3	65	36
11.501.0350	3.5	3.5	70	39
11.501.0400	4	4	75	43
11.501.0420	4.2	4.2	75	43
11.501.0450	4.5	4.5	80	47

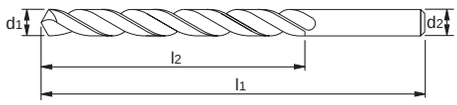
Ref.	d1	d2	l1	l2
11.501.0500	5	5	86	52
11.501.0520	5.2	5.2	86	52
11.501.0550	5.5	5.5	93	57
11.501.0600	6	6	93	57
11.501.0650	6.5	6.5	101	63
11.501.0680	6.8	6.8	109	69
11.501.0700	7	7	109	69
11.501.0750	7.5	7.5	109	69
11.501.0800	8	8	117	75
11.501.0850	8.5	8.5	117	75
11.501.0900	9	9	125	81

Ref.	d1	d2	l1	l2
11.501.0950	9.5	9.5	125	81
11.501.1000	10	10	133	87
11.501.1020	10.2	10.2	133	87
11.501.1050	10.5	10.5	133	87
11.501.1100	11	11	142	94
11.501.1150	11.5	11.5	142	94
11.501.1200	12	12	151	101
11.501.1250	12.5	12.5	151	101
11.501.1300	13	13	151	101
11.501.1350	13.5	13.5	160	108
11.501.1400	14	14	160	108

19:00 ▶ 24h

› 11.568 Phantom





NL **HP2 UNI HSS-E Spiraalboor TiN**
FR **Foret HP2 UNI HSS-E TiN**
ES **Broca HP2 UNI HSS-E TiN**
DE **HP2 UNI HSS-E Spiralbohrer 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

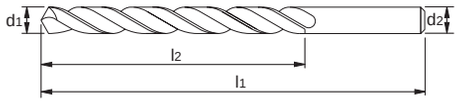
Ref.	d1	d2	l1	l2
11.568.0100	1	1	34	12
11.568.0110	1.1	1.1	36	14
11.568.0120	1.2	1.2	38	16
11.568.0130	1.3	1.3	38	16
11.568.0140	1.4	1.4	40	18
11.568.0150	1.5	1.5	40	18
11.568.0160	1.6	1.6	43	20
11.568.0170	1.7	1.7	43	20
11.568.0180	1.8	1.8	46	22
11.568.0190	1.9	1.9	46	22
11.568.0200	2	2	49	24
11.568.0210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

Ref.	d1	d2	l1	l2
11.568.0450	4.5	4.5	80	47
11.568.0460	4.6	4.6	80	47
11.568.0470	4.7	4.7	80	47
11.568.0480	4.8	4.8	86	52
11.568.0490	4.9	4.9	86	52
11.568.0500	5	5	86	52
11.568.0510	5.1	5.1	86	52
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
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

Ref.	d1	d2	l1	l2
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
11.568.0900	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
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 pointe carb. mét.**
ES **Broca punta MD**
DE **HM-Schneiden Spiralbohrer**

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

Ref.	d1	d2	l1	l2
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
11.600.0640	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 Phantom

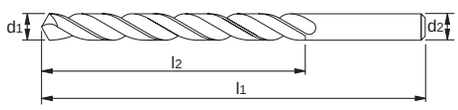
Ref.	d1	d2	l1	l2
11.600.0680	6.8	6.8	109	69
11.600.0690	6.9	6.9	109	69
11.600.0700	7	7	109	69
11.600.0710	7.1	7.1	109	69
11.600.0720	7.2	7.2	109	69
11.600.0730	7.3	7.3	109	69
11.600.0740	7.4	7.4	109	69
11.600.0750	7.5	7.5	109	69
11.600.0760	7.6	7.6	117	75
11.600.0770	7.7	7.7	117	75
11.600.0780	7.8	7.8	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
11.600.0830	8.3	8.3	117	75

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 messing, brons en zink**
FR **Foret HSS laiton, bronze et zinc**
ES **Broca HSS latón, bronce y cinc**
DE **HSS Spiralbohrer speziell für die Bearbeitung von Messing, Bronze und Zink**

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

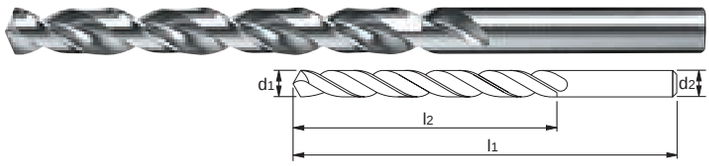
Ref.	d1	d2	l1	l2
11.700.0430	4.3	4.3	80	47
11.700.0440	4.4	4.4	80	47
11.700.0450	4.5	4.5	80	47
11.700.0460	4.6	4.6	80	47
11.700.0470	4.7	4.7	80	47
11.700.0480	4.8	4.8	86	52
11.700.0490	4.9	4.9	86	52
11.700.0500	5	5	86	52
11.700.0510	5.1	5.1	86	52
11.700.0520	5.2	5.2	86	52
11.700.0530	5.3	5.3	86	52
11.700.0540	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

Ref.	d1	d2	l1	l2
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
11.700.1050	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

19:00 ▶ 24h

› 11.710 Phantom

NL **HSS Spiraalboor Aluminium**
FR **Foret HSS Aluminium**
ES **Broca HSS Aluminio**
DE **HSS Spiralbohrer 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

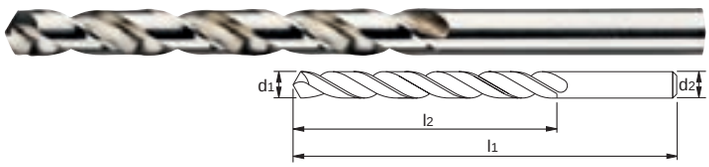
Ref.	d1	d2	l1	l2
11.710.0100	1	1	34	12
11.710.0110	1.1	1.1	36	14
11.710.0120	1.2	1.2	38	16
11.710.0130	1.3	1.3	38	16
11.710.0140	1.4	1.4	40	18
11.710.0150	1.5	1.5	40	18
11.710.0160	1.6	1.6	43	20
11.710.0170	1.7	1.7	43	20
11.710.0180	1.8	1.8	46	22
11.710.0190	1.9	1.9	46	22
11.710.0200	2	2	49	24
11.710.0210	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

Ref.	d1	d2	l1	l2
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
11.710.0550	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

Ref.	d1	d2	l1	l2
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**



HSS-E | DIN 338 | >N | 130° | INOX

P 14 ≤1400 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co | S 72 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

Ref.	d1	d2	l1	l2
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

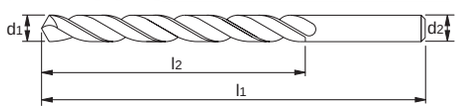
Ref.	d1	d2	l1	l2
11.760.0440	4.4	4.4	80	47
11.760.0450	4.5	4.5	80	47
11.760.0460	4.6	4.6	80	47
11.760.0470	4.7	4.7	80	47
11.760.0480	4.8	4.8	86	52
11.760.0490	4.9	4.9	86	52
11.760.0500	5	5	86	52
11.760.0510	5.1	5.1	86	52
11.760.0520	5.2	5.2	86	52
11.760.0530	5.3	5.3	86	52
11.760.0540	5.4	5.4	93	57
11.760.0550	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 Phantom

Ref.	d1	d2	l1	l2
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
11.760.1700	17	17	184	125
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**

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

P 14 ≤1400 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 NiCo | S 72 Ti

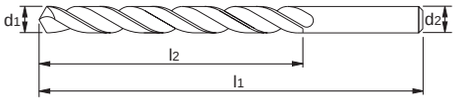
28-34 E | 17-22 D | 16-20 C | 8-10 A | 12-16 B

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

19:00 ▶ 24h

› 11.770 Phantom





NL **HSS-E Spiraalboor**
FR **Foret HSS-E**
ES **Broca HSS-E**
DE **HSS-E Spiralbohrer**

HSS-E | DIN 338 | >N | <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

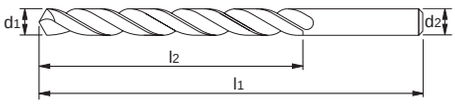
Ref.	d1	d2	l1	l2
11.770.0200	2	2	49	24
11.770.0250	2.5	2.5	57	30
11.770.0300	3	3	61	33
11.770.0310	3.1	3.1	65	36
11.770.0320	3.2	3.2	65	36
11.770.0330	3.3	3.3	65	36
11.770.0340	3.4	3.4	70	39
11.770.0350	3.5	3.5	70	39
11.770.0360	3.6	3.6	70	39
11.770.0370	3.7	3.7	70	39
11.770.0380	3.8	3.8	75	43
11.770.0390	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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
11.770.0800	8	8	117	75
11.770.0850	8.5	8.5	117	75
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 TiAlN**
FR **Foret HSS-E TiAlN**
ES **Broca HSS-E TiAlN**
DE **HSS-E Spiralbohrer TiAlN**

HSS-E | TiAlN | DIN 338 | >N | <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
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

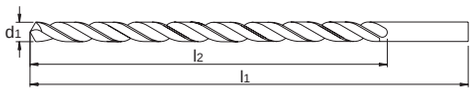
Ref.	d1	d2	l1	l2
11.774.0560	5.6	5.6	93	57
11.774.0600	6	6	93	57
11.774.0650	6.5	6.5	101	63
11.774.0680	6.8	6.8	109	69
11.774.0690	6.9	6.9	109	69
11.774.0700	7	7	109	69
11.774.0750	7.5	7.5	109	69
11.774.0800	8	8	117	75
11.774.0850	8.5	8.5	117	75
11.774.0860	8.6	8.6	125	81
11.774.0870	8.7	8.7	125	81
11.774.0900	9	9	125	81

Ref.	d1	d2	l1	l2
11.774.0950	9.5	9.5	125	81
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

› 11.810 INTERNATIONAL TOOLS



NL **HSS Spiraalboor gewalst**
FR **Foret HSS laminé**
ES **Broca HSS laminada**
DE **HSS Spiralbohrer Gewalzt**



HSS | DIN 340 | N | 118°

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

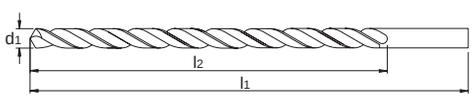
20-25 E | 20-25 E | 15-20 D | 15-20 E | 25-30 E

Ref.	d1	d2	l1	l2
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
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
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

› 11.815 Phantom



NL **HSS Spiraalboor**
FR **Foret HSS**
ES **Broca HSS**
DE **HSS Spiralbohrer**



HSS | DIN 340 | N | 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

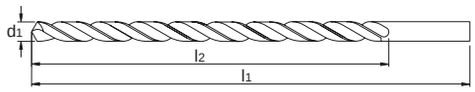
Ref.	d1	d2	l1	l2
11.815.0100	1	1	56	33
11.815.0110	1.1	1.1	60	37
11.815.0120	1.2	1.2	65	41
11.815.0130	1.3	1.3	65	41
11.815.0140	1.4	1.4	70	45
11.815.0150	1.5	1.5	70	45
11.815.0160	1.6	1.6	76	50
11.815.0170	1.7	1.7	76	50
11.815.0180	1.8	1.8	80	53
11.815.0190	1.9	1.9	80	53
11.815.0200	2	2	85	56
11.815.0210	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
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
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
11.815.1050	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

19:00 ▶ 🛒 ▶ 24h

› 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**



HSS-E | DIN 340 | >N | 130° | INOX

P 14 ≤1400 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co | S 72 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

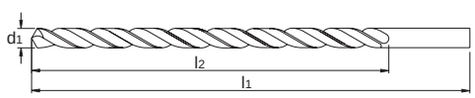
Ref.	d1	d2	l1	l2
11.820.0500	5	5	132	87
11.820.0510	5.1	5.1	132	87
11.820.0520	5.2	5.2	132	87
11.820.0550	5.5	5.5	139	91
11.820.0600	6	6	139	91
11.820.0650	6.5	6.5	148	97
11.820.0670	6.7	6.7	148	97
11.820.0680	6.8	6.8	156	102
11.820.0700	7	7	156	102
11.820.0750	7.5	7.5	156	102
11.820.0800	8	8	165	109
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 pointe carb. mét.**
ES **Broca punta MD**
DE **HM-Schneiden Spiralbohrer**



NIEUW | NOUVEAU | NUEVO | NEU

HM-TIP | DIN 340 | N | 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 * | 15-20 * | 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

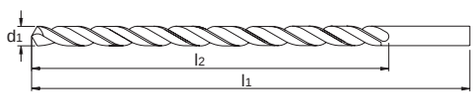
Ref.	d1	d2	l1	l2
11.840.0510	5.1	5.1	132	87
11.840.0520	5.2	5.2	132	87
11.840.0550	5.5	5.5	139	91
11.840.0600	6	6	139	91
11.840.0610	6.1	6.1	148	97
11.840.0620	6.2	6.2	148	97
11.840.0630	6.3	6.3	148	97
11.840.0640	6.4	6.4	148	97
11.840.0650	6.5	6.5	148	97
11.840.0700	7	7	156	102
11.840.0750	7.5	7.5	156	102
11.840.0800	8	8	165	109
11.840.0850	8.5	8.5	165	109
11.840.0900	9	9	175	115
11.840.0950	9.5	9.5	175	115

Ref.	d1	d2	l1	l2
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**
FR **Foret HSS**
ES **Broca HSS**
DE **HSS Spiralbohrer**



HSS | DIN 340 | >N | TS | 130°

P 11 ≤600 N/mm² | N 41 Alu | N 43 Mg | N 61 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

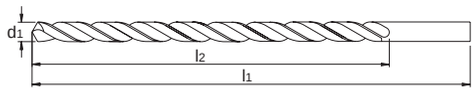
Ref.	d1	d2	l1	l2
11.850.0550	5.5	5.5	139	91
11.850.0600	6	6	139	91
11.850.0650	6.5	6.5	148	97
11.850.0700	7	7	156	102
11.850.0800	8	8	165	109

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**
FR **Foret HSS**
ES **Broca HSS**
DE **HSS Spiralbohrer**



HSS | DIN 340 | >N | TS | <3 | ≥3 | 130°

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 42 Alu Si>10% | N 52 CuAlFe | N 61 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
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
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

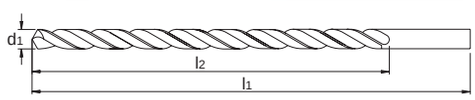
Ref.	d1	d2	l1	l2
11.860.0440	4.4	4.4	126	82
11.860.0450	4.5	4.5	126	82
11.860.0460	4.6	4.6	126	82
11.860.0470	4.7	4.7	126	82
11.860.0480	4.8	4.8	132	87
11.860.0490	4.9	4.9	132	87
11.860.0500	5	5	132	87
11.860.0510	5.1	5.1	132	87
11.860.0520	5.2	5.2	132	87
11.860.0530	5.3	5.3	132	87
11.860.0540	5.4	5.4	139	91
11.860.0550	5.5	5.5	139	91
11.860.0560	5.6	5.6	139	91
11.860.0570	5.7	5.7	139	91
11.860.0580	5.8	5.8	139	91
11.860.0590	5.9	5.9	139	91
11.860.0600	6	6	139	91
11.860.0610	6.1	6.1	148	97
11.860.0620	6.2	6.2	148	97
11.860.0630	6.3	6.3	148	97
11.860.0640	6.4	6.4	148	97
11.860.0650	6.5	6.5	148	97
11.860.0660	6.6	6.6	148	97
11.860.0670	6.7	6.7	148	97
11.860.0680	6.8	6.8	156	102
11.860.0690	6.9	6.9	156	102

Ref.	d1	d2	l1	l2
11.860.0700	7	7	156	102
11.860.0710	7.1	7.1	156	102
11.860.0720	7.2	7.2	156	102
11.860.0730	7.3	7.3	156	102
11.860.0740	7.4	7.4	156	102
11.860.0750	7.5	7.5	156	102
11.860.0760	7.6	7.6	165	109
11.860.0770	7.7	7.7	165	109
11.860.0780	7.8	7.8	165	109
11.860.0790	7.9	7.9	165	109
11.860.0800	8	8	165	109
11.860.0850	8.5	8.5	165	109
11.860.0900	9	9	175	115
11.860.0950	9.5	9.5	175	115
11.860.1000	10	10	184	121
11.860.1020	10.2	10.2	184	121
11.860.1050	10.5	10.5	184	121
11.860.1100	11	11	195	128
11.860.1150	11.5	11.5	195	128
11.860.1200	12	12	205	134
11.860.1250	12.5	12.5	205	134
11.860.1300	13	13	205	134
11.860.1400	14	14	214	140
11.860.1500	15	15	220	144
11.860.1600	16	16	227	149

› 11.870 Phantom



NL **HSS-E Spiraalboor**
FR **Foret HSS-E**
ES **Broca HSS-E**
DE **HSS-E Spiralbohrer**



HSS-E | DIN 340 | >N | TS | <3 | ≥3 | 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 51 Cu | N 52 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
11.870.0200	2	2	85	56
11.870.0250	2.5	2.5	95	62
11.870.0300	3	3	100	66
11.870.0330	3.3	3.3	106	69
11.870.0350	3.5	3.5	112	73
11.870.0400	4	4	119	78
11.870.0420	4.2	4.2	119	78
11.870.0450	4.5	4.5	126	82
11.870.0500	5	5	132	87

Ref.	d1	d2	l1	l2
11.870.0550	5.5	5.5	139	91
11.870.0600	6	6	139	91
11.870.0650	6.5	6.5	148	97
11.870.0680	6.8	6.8	156	102
11.870.0700	7	7	156	102
11.870.0750	7.5	7.5	156	102
11.870.0800	8	8	165	109
11.870.0850	8.5	8.5	165	109
11.870.0900	9	9	175	115

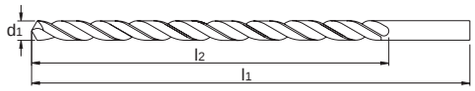
Ref.	d1	d2	l1	l2
11.870.0950	9.5	9.5	175	115
11.870.1000	10	10	184	121
11.870.1020	10.2	10.2	184	121
11.870.1050	10.5	10.5	184	121
11.870.1100	11	11	195	128
11.870.1150	11.5	11.5	195	128
11.870.1200	12	12	205	134
11.870.1250	12.5	12.5	205	134
11.870.1300	13	13	205	134

19:00 ▶ 🛒 ▶ 24h

› 11.874 Phantom



NL **HSS-E Spiraalboor TiAlN**
FR **Foret HSS-E TiAlN**
ES **Broca HSS-E TiAlN**
DE **HSS-E Spiralbohrer TiAlN**



HSS-E | TiAlN | DIN 340 | >N | TS | <3 | ≥3 | 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 52 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
11.874.0200	2	2	85	56
11.874.0250	2.5	2.5	95	62
11.874.0300	3	3	100	66
11.874.0330	3.3	3.3	106	69
11.874.0350	3.5	3.5	112	73
11.874.0400	4	4	119	78
11.874.0420	4.2	4.2	119	78
11.874.0450	4.5	4.5	126	82
11.874.0500	5	5	132	87

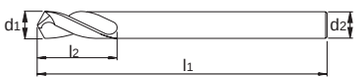
Ref.	d1	d2	l1	l2
11.874.0550	5.5	5.5	139	91
11.874.0600	6	6	139	91
11.874.0650	6.5	6.5	148	97
11.874.0680	6.8	6.8	156	102
11.874.0700	7	7	156	102
11.874.0750	7.5	7.5	156	102
11.874.0800	8	8	165	109
11.874.0850	8.5	8.5	165	109
11.874.0900	9	9	175	115

Ref.	d1	d2	l1	l2
11.874.0950	9.5	9.5	175	115
11.874.1000	10	10	184	121
11.874.1020	10.2	10.2	184	121
11.874.1050	10.5	10.5	184	121
11.874.1100	11	11	195	128
11.874.1150	11.5	11.5	195	128
11.874.1200	12	12	205	134

› 11.890 Phantom



NL **HSS Dakdekkersboor**
FR **Foret pour couvreurs HSS**
ES **Broca para tejados HSS**
DE **HSS Blechschälbohrer**



HSS | Phantom | 135°

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
11.890.4910	4.9	4.9	100	30
11.890.4915	4.9	4.9	150	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

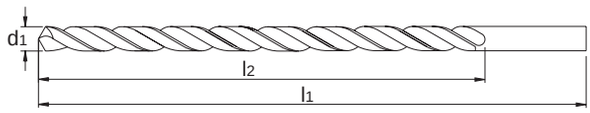
Ref.	d1	d2	l1	l2
11.890.5121	5.1	5.1	210	30
11.890.5310	5.3	5.3	100	30
11.890.5315	5.3	5.3	150	30
11.890.5321	5.3	5.3	210	30
11.890.5510	5.5	5.5	100	30
11.890.5515	5.5	5.5	150	30
11.890.5521	5.5	5.5	210	30
11.890.5707	5.7	5.7	70	30

Ref.	d1	d2	l1	l2
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**





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
11.900.0501	5	5	195	135
11.900.0503	5	5	245	170

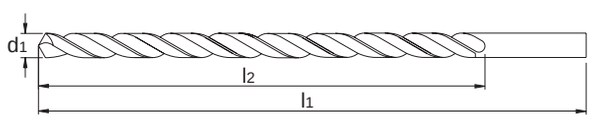
Ref.	d1	d2	l1	l2
11.900.0551	5.5	5.5	205	140
11.900.0553	5.5	5.5	260	180
11.900.0601	6	6	205	140
11.900.0603	6	6	260	180
11.900.0651	6.5	6.5	215	150
11.900.0653	6.5	6.5	275	190
11.900.0701	7	7	225	155
11.900.0703	7	7	290	200
11.900.0751	7.5	7.5	225	155
11.900.0753	7.5	7.5	290	200
11.900.0801	8	8	240	165
11.900.0803	8	8	305	210

Ref.	d1	d2	l1	l2
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**
FR **Foret HSS**
ES **Broca HSS**
DE **HSS Spiralbohrer**





HSS | DIN 1869 | >N | 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

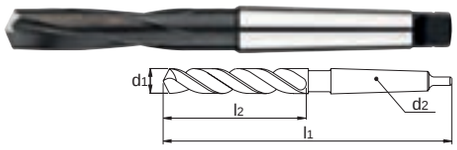
Ref.	d1	d2	l1	l2
11.920.0201	2	2	125	85
11.920.0251	2.5	2.5	140	95
11.920.0301	3	3	150	100
11.920.0303	3	3	190	130
11.920.0305	3	3	240	160
11.920.0351	3.5	3.5	165	115
11.920.0353	3.5	3.5	210	145
11.920.0355	3.5	3.5	265	180
11.920.0401	4	4	175	120
11.920.0403	4	4	220	150
11.920.0405	4	4	280	190
11.920.0407	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

Ref.	d1	d2	l1	l2
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
11.920.0651	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

Ref.	d1	d2	l1	l2
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

› 12.150 Phantom

NL **HSS-E Spiraalboor Hardox, MK**
FR **Foret HSS-E Hardox, CM**
ES **Broca HSS-E Hardox, CM**
DE **HSS-E Spiralbohrer Hardox, MK**



HSS-E | Phantom | DIN 228-B | 130°

P 14 ≤1400 N/mm²

4-15 C

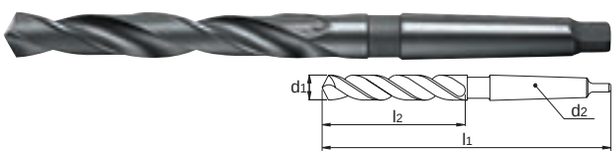
Ref.	d1	d2	l1	l2
12.150.1000	10	MK 1	131	50
12.150.1050	10.5	MK 1	131	50
12.150.1100	11	MK 1	136	55
12.150.1200	12	MK 2	157	59
12.150.1250	12.5	MK 2	157	59
12.150.1300	13	MK 2	157	59
12.150.1400	14	MK 2	161	63
12.150.1500	15	MK 2	164	66

Ref.	d1	d2	l1	l2
12.150.1600	16	MK 2	168	70
12.150.1700	17	MK 2	171	73
12.150.1800	18	MK 2	175	77
12.150.1900	19	MK 3	201	80
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

Ref.	d1	d2	l1	l2
12.150.2400	24	MK 3	219	98
12.150.2500	25	MK 3	219	98
12.150.2600	26	MK 3	224	103
12.150.2800	28	MK 4	256	107
12.150.3000	30	MK 4	261	112
12.150.3200	32	MK 4	271	122
12.150.3400	34	MK 4	277	128

› 12.400 INTERNATIONAL TOOLS

NL **HSS Spiraalboor gewalst, MK**
FR **Foret HSS laminé, CM**
ES **Broca HSS laminada, CM**
DE **HSS Spiralbohrer Gewalzt, MK**



HSS | DIN 345 | N | DIN 228-B | 118°

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

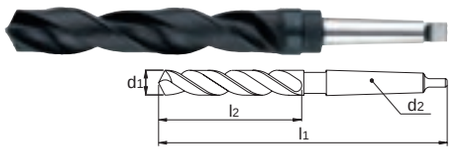
20-25 E | 20-25 E | 15-20 D | 15-20 E | 25-30 E

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
12.400.1000	10	MK 1	168	87
12.400.1050	10.5	MK 1	168	87
12.400.1100	11	MK 1	175	94
12.400.1150	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
12.400.1700	17	MK 2	223	125
12.400.1750	17.5	MK 2	228	130
12.400.1800	18	MK 2	228	130
12.400.1850	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

Ref.	d1	d2	l1	l2
12.400.2200	22	MK 2	248	150
12.400.2250	22.5	MK 2	253	155
12.400.2300	23	MK 2	253	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
12.400.2600	26	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
12.400.2900	29	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
12.400.3150	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
12.400.3550	35.5	MK 4	339	190

Ref.	d1	d2	l1	l2
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
12.400.4800	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

› 12.420 INTERNATIONAL TOOLS



NL **HSS Spiraalboor gewalst, met verjongde MK**
FR **Foret HSS laminé, à queue CM réduite**
ES **Broca HSS laminada, con CM rebajado**
DE **HSS Spiralbohrer Gewalzt, mit kleinerem MK**

HSS | Phantom | 118°

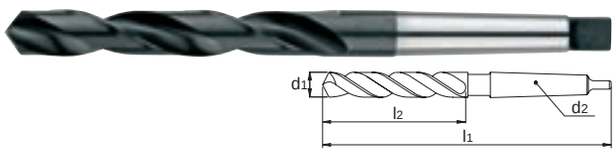
P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
20-25 E	20-25 E	15-20 D	15-20 E	25-30 E

Ref.	d1	d2	l1	l2
12.420.2400	24	MK 2	262	160
12.420.2500	25	MK 2	262	160
12.420.2600	26	MK 2	267	165
12.420.2700	27	MK 2	272	170
12.420.2800	28	MK 2	272	170
12.420.2900	29	MK 2	277	175
12.420.3000	30	MK 2	277	175
12.420.3100	31	MK 2	282	180
12.420.3200	32	MK 3	310	185

Ref.	d1	d2	l1	l2
12.420.3300	33	MK 3	310	185
12.420.3400	34	MK 3	315	190
12.420.3500	35	MK 3	315	190
12.420.3600	36	MK 3	320	195
12.420.3700	37	MK 3	320	195
12.420.3800	38	MK 3	325	200
12.420.3900	39	MK 3	325	200
12.420.4000	40	MK 3	325	200
12.420.4100	41	MK 3	330	205

Ref.	d1	d2	l1	l2
12.420.4200	42	MK 3	330	205
12.420.4300	43	MK 3	335	210
12.420.4400	44	MK 3	335	210
12.420.4500	45	MK 3	335	210
12.420.4600	46	MK 3	340	215
12.420.4700	47	MK 3	340	215
12.420.4800	48	MK 3	345	220
12.420.4900	49	MK 3	345	220
12.420.5000	50	MK 3	345	220

› 12.440 Phantom



NL **HSS Spiraalboor MK**
FR **Foret HSS CM**
ES **Broca HSS CM**
DE **HSS Spiralbohrer MK**

HSS | 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
12.440.0500	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
12.440.0750	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 2	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

Ref.	d1	d2	l1	l2
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 3	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

Ref.	d1	d2	l1	l2
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 4	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

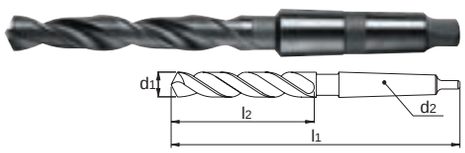
› 12.440 Phantom

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 5	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

Ref.	d1	d2	l1	l2
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 queue CM renforcée**
ES **Broca HSS con mango CM reforzado**
DE **HSS Spiralbohrer mit verstärktem MK**

HSS | DIN 346 | N | ≥12 | 118°

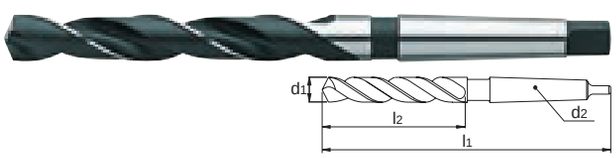
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	d1	d2	l1	l2
12.480.1100	11	MK 2	175	94
12.480.1200	12	MK 2	182	101
12.480.1300	13	MK 2	182	101
12.480.1400	14	MK 3	189	108
12.480.1700	17	MK 3	223	125

Ref.	d1	d2	l1	l2
12.480.1800	18	MK 3	228	130
12.480.1900	19	MK 3	233	135
12.480.2000	20	MK 3	238	140
12.480.2100	21	MK 3	243	145
12.480.2200	22	MK 3	248	150

Ref.	d1	d2	l1	l2
12.480.2300	23	MK 4	253	155
12.480.2600	26	MK 4	286	165
12.480.2800	28	MK 4	291	170
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**

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

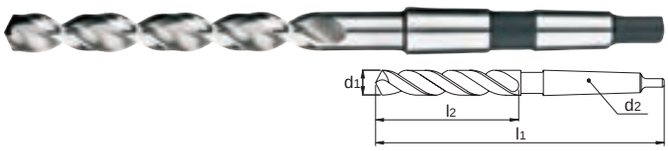
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Cu	CuAlFe
28-35 E	30-36 E	20-27 E	12-20 D	14-18 D	10-15 C	30-35 F	24-30 F	30-40 E	8-15 C

Ref.	d1	d2	l1	l2
12.500.0700	7	MK 1	150	69
12.500.0800	8	MK 1	156	75
12.500.0900	9	MK 1	162	81
12.500.1000	10	MK 1	168	87
12.500.1100	11	MK 1	175	94
12.500.1200	12	MK 1	182	101
12.500.1250	12.5	MK 1	182	101
12.500.1300	13	MK 1	182	101
12.500.1350	13.5	MK 1	189	108
12.500.1400	14	MK 2	189	108
12.500.1450	14.5	MK 2	212	114
12.500.1500	15	MK 2	212	114
12.500.1550	15.5	MK 2	218	120
12.500.1600	16	MK 2	218	120
12.500.1650	16.5	MK 2	223	125
12.500.1700	17	MK 2	223	125
12.500.1750	17.5	MK 2	228	130
12.500.1800	18	MK 2	228	130

Ref.	d1	d2	l1	l2
12.500.1850	18.5	MK 2	233	135
12.500.1900	19	MK 2	233	135
12.500.1950	19.5	MK 2	238	140
12.500.2000	20	MK 2	238	140
12.500.2050	20.5	MK 2	243	145
12.500.2100	21	MK 2	243	145
12.500.2150	21.5	MK 2	248	150
12.500.2200	22	MK 2	248	150
12.500.2250	22.5	MK 2	253	155
12.500.2300	23	MK 3	253	155
12.500.2350	23.5	MK 3	276	155
12.500.2400	24	MK 3	281	160
12.500.2450	24.5	MK 3	281	160
12.500.2500	25	MK 3	281	160
12.500.2550	25.5	MK 3	286	165
12.500.2600	26	MK 3	286	165
12.500.2650	26.5	MK 3	286	165
12.500.2700	27	MK 3	291	170

Ref.	d1	d2	l1	l2
12.500.2750	27.5	MK 3	291	170
12.500.2800	28	MK 3	291	170
12.500.2850	28.5	MK 3	296	175
12.500.2900	29	MK 3	296	175
12.500.2950	29.5	MK 3	296	175
12.500.3000	30	MK 3	296	175
12.500.3100	31	MK 4	301	180
12.500.3200	32	MK 4	334	185
12.500.3300	33	MK 4	334	185
12.500.3400	34	MK 4	339	190
12.500.3500	35	MK 4	339	190
12.500.3600	36	MK 4	344	195
12.500.3700	37	MK 4	344	195
12.500.3800	38	MK 4	349	200
12.500.3900	39	MK 4	349	200
12.500.4000	40	MK 4	349	200

› 12.520 Phantom



NL **HSS-E Spiraalboor MK**
FR **Foret HSS-E CM**
ES **Broca HSS-E CM**
DE **HSS-E Spiralbohrer MK**

HSS-E | DIN 345 | >N | TS | DIN 228-B | 130°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	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 Si>10%	Mg	Cu	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

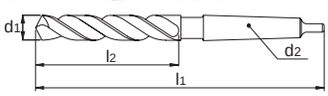
Ref.	d1	d2	l1	l2
12.520.1000	10	MK 1	168	87
12.520.1050	10.5	MK 1	168	87
12.520.1100	11	MK 1	175	94
12.520.1150	11.5	MK 1	175	94
12.520.1200	12	MK 1	182	101
12.520.1250	12.5	MK 1	182	101
12.520.1300	13	MK 1	182	101
12.520.1350	13.5	MK 1	189	108
12.520.1400	14	MK 2	189	108

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 3	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 pointe carb. mét. CM**
ES **Broca punta MD CM**
DE **HM-Schneiden Spiralbohrer MK**

HM-TIP | DIN 345 | DIN 228-B | 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 *

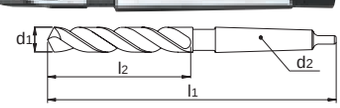
Ref.	d1	d2	l1	l2
12.600.1000	10	MK 1	168	87
12.600.1050	10.5	MK 1	168	87
12.600.1100	11	MK 1	175	94
12.600.1150	11.5	MK 1	175	94
12.600.1200	12	MK 1	182	101
12.600.1250	12.5	MK 1	182	101
12.600.1300	13	MK 1	182	101
12.600.1350	13.5	MK 1	189	108
12.600.1400	14	MK 2	189	108
12.600.1450	14.5	MK 2	212	114
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

Ref.	d1	d2	l1	l2
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 3	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
12.600.2600	26	MK 3	286	165
12.600.2650	26.5	MK 3	286	165

Ref.	d1	d2	l1	l2
12.600.2700	27	MK 3	291	170
12.600.2750	27.5	MK 3	291	170
12.600.2800	28	MK 3	291	170
12.600.2850	28.5	MK 3	296	175
12.600.2900	29	MK 3	296	175
12.600.2950	29.5	MK 3	296	175
12.600.3000	30	MK 3	296	175
12.600.3100	31	MK 4	301	180
12.600.3200	32	MK 4	334	185
12.600.3300	33	MK 4	334	185
12.600.3400	34	MK 4	339	190
12.600.3500	35	MK 4	339	190
12.600.3600	36	MK 4	344	195
12.600.3700	37	MK 4	344	195
12.600.3800	38	MK 4	349	200
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**

HSS | 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

Ref.	d1	d2	l1	l2
12.800.1300	13	MK 1	215	134
12.800.1350	13.5	MK 1	223	142
12.800.1400	14	MK 2	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

Ref.	d1	d2	l1	l2
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

19:00 ▶ 🛒 ▶ 24h

› 12.800 Phantom

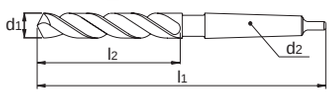
Ref.	d1	d2	l1	l2
12.800.1900	19	MK 2	269	171
12.800.1950	19.5	MK 2	275	177
12.800.2000	20	MK 2	275	177
12.800.2050	20.5	MK 2	282	184
12.800.2100	21	MK 2	282	184
12.800.2150	21.5	MK 2	289	191
12.800.2200	22	MK 2	289	191
12.800.2250	22.5	MK 2	296	198
12.800.2300	23	MK 3	296	198

Ref.	d1	d2	l1	l2
12.800.2350	23.5	MK 3	319	198
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 4	360	239
12.800.2400	24	MK 3	327	206
12.800.2500	25	MK 3	327	206

Ref.	d1	d2	l1	l2
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**

HSS | Phantom | 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

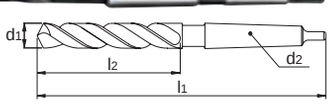
Ref.	d1	d2	l1	l2
12.840.1000	10	MK 2	233	116
12.840.1100	11	MK 2	242	125
12.840.1200	12	MK 2	251	134
12.840.1300	13	MK 2	251	134
12.840.1400	14	MK 2	259	142

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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**

HSS | Phantom | 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
12.860.1000	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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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**



HSS | 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
12.900.1005	10	MK 1	500	400
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
12.900.1205	12	MK 1	500	400
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
12.900.1405	14	MK 1	500	400
12.900.1407	14	MK 1	650	500
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
12.900.1505	15	MK 2	600	475
12.900.1507	15	MK 2	725	600
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
12.900.1603	16	MK 2	445	295

Ref.	d1	d2	l1	l2
12.900.1605	16	MK 2	600	475
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
12.900.1705	17	MK 2	600	475
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
12.900.1805	18	MK 2	600	475
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
12.900.1905	19	MK 2	600	475
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
12.900.2005	20	MK 2	600	475
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
12.900.2105	21	MK 2	600	475
12.900.2201	22	MK 2	405	270
12.900.2203	22	MK 2	515	345
12.900.2205	22	MK 2	600	475
12.900.2301	23	MK 2	405	270
12.900.2303	23	MK 2	515	345

Ref.	d1	d2	l1	l2
12.900.2305	23	MK 2	600	475
12.900.2401	24	MK 3	440	290
12.900.2403	24	MK 3	555	365
12.900.2405	24	MK 3	600	475
12.900.2501	25	MK 3	440	290
12.900.2503	25	MK 3	555	365
12.900.2505	25	MK 3	600	475
12.900.2601	26	MK 3	440	290
12.900.2603	26	MK 3	555	365
12.900.2605	26	MK 3	600	475
12.900.2701	27	MK 3	460	305
12.900.2801	28	MK 3	460	305
12.900.2803	28	MK 3	580	385
12.900.2805	28	MK 3	600	475
12.900.2901	29	MK 3	460	305
12.900.3001	30	MK 3	460	305
12.900.3003	30	MK 3	580	385
12.900.3005	30	MK 3	600	475
12.900.3201	32	MK 4	505	320
12.900.3203	32	MK 4	635	410
12.900.3501	35	MK 4	530	340
12.900.3503	35	MK 4	600	450
12.900.3801	38	MK 4	555	360
12.900.3803	38	MK 4	600	475
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

› 12.920 Phantom

NL **HSS-E Spiraalboor MK**
FR **Foret HSS-E CM**
ES **Broca HSS-E CM**
DE **HSS-E Spiralbohrer MK**



HSS-E | DIN 1870 | >N | 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

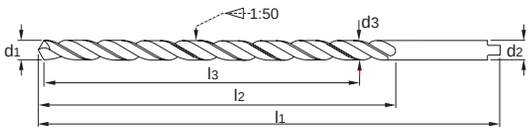
Ref.	d1	d2	l1	l2
12.920.1451	14.5	MK 2	340	220
12.920.1501	15	MK 2	340	220
12.920.1502	15	MK 2	425	275
12.920.1551	15.5	MK 2	355	230
12.920.1601	16	MK 2	355	230
12.920.1602	16	MK 2	445	295
12.920.1651	16.5	MK 2	355	230
12.920.1701	17	MK 2	355	230
12.920.1751	17.5	MK 2	370	245

Ref.	d1	d2	l1	l2
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**



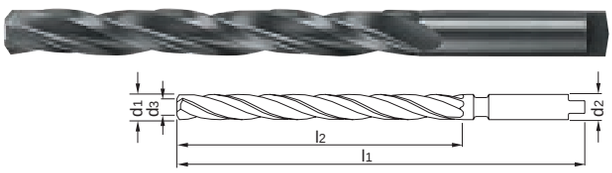
HSS | DIN 1898 A | 1:50 | 118°

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm²

Ref.	nr.	d1	d3	d2	l1	l2	l3
13.200.0300	3	2.84	4.25	4	100	63	58
13.200.0400	4	3.78	5.45	5	112	74	68
13.200.0500	5	4.7	6.58	6.3	122	81	73

Ref.	nr.	d1	d3	d2	l1	l2	l3
13.200.0600	6	5.71	8.25	8	160	114	105
13.200.0800	8	7.64	11.11	10	207	157	145
13.200.1000	10	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**

HSS | DIN 344

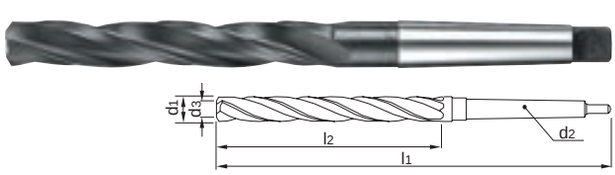
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | N 41 Alu

Ref.	d1	l1	l2	d2	d3
13.300.0480	4.8	108	74	4.8	3.2
13.300.0500	5	108	74	5	3.2
13.300.0580	5.8	116	80	5.8	3.9
13.300.0600	6	116	80	6	3.9
13.300.0680	6.8	133	93	6.8	4.5
13.300.0700	7	133	93	7	4.5
13.300.0780	7.8	142	100	7.8	5.2
13.300.0800	8	142	100	8	5.2

Ref.	d1	l1	l2	d2	d3
13.300.0880	8.8	151	107	8.8	5.8
13.300.0900	9	151	107	9	5.8
13.300.0980	9.8	162	116	9.8	6.5
13.300.1000	10	162	116	10	6.5
13.300.1075	10.75	173	125	10.75	7.1
13.300.1100	11	173	125	11	7.1
13.300.1175	11.75	184	134	11.75	7.8
13.300.1200	12	184	134	12	7.8

Ref.	d1	l1	l2	d2	d3
13.300.1275	12.75	184	134	12.75	8.4
13.300.1300	13	184	134	13	8.4
13.300.1375	13.75	194	142	13.75	9.1
13.300.1400	14	194	142	14	9
13.300.1475	14.75	202	147	14.75	9.7
13.300.1500	15	202	147	15	9.7
13.300.1575	15.75	211	153	15.75	10.4
13.300.1600	16	211	153	16	10.4

› 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 MK**

HSS | DIN 343 | DIN 228-B

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | N 41 Alu

Ref.	d1	d2	d3	l1	l2
13.320.0780	7.8	MK 1	5.2	156	75
13.320.0800	8	MK 1	5.2	156	75
13.320.0880	8.8	MK 1	5.8	162	81
13.320.0900	9	MK 1	5.8	162	81
13.320.0980	9.8	MK 1	6.5	168	87
13.320.1000	10	MK 1	6.5	168	87
13.320.1075	10.75	MK 1	7.1	175	94
13.320.1100	11	MK 1	7.1	175	94
13.320.1175	11.75	MK 1	7.8	182	101
13.320.1200	12	MK 1	7.8	182	101
13.320.1275	12.75	MK 1	8.4	182	101
13.320.1300	13	MK 1	8.4	182	101
13.320.1375	13.75	MK 1	9.1	189	108
13.320.1400	14	MK 1	9.1	189	108
13.320.1475	14.75	MK 2	9.7	212	114
13.320.1500	15	MK 2	9.7	212	114
13.320.1575	15.75	MK 2	10.4	218	120
13.320.1600	16	MK 2	10.4	218	120
13.320.1675	16.75	MK 2	11	223	125

Ref.	d1	d2	d3	l1	l2
13.320.1700	17	MK 2	11	223	125
13.320.1775	17.75	MK 2	11.7	228	130
13.320.1800	18	MK 2	11.7	228	130
13.320.1870	18.7	MK 2	12.3	233	135
13.320.1900	19	MK 2	12.3	233	135
13.320.1970	19.7	MK 2	13	238	140
13.320.2000	20	MK 2	13	238	140
13.320.2070	20.7	MK 2	13.6	243	145
13.320.2100	21	MK 2	13.6	243	145
13.320.2170	21.7	MK 2	14.3	248	150
13.320.2200	22	MK 2	14.3	248	150
13.320.2270	22.7	MK 2	15	253	155
13.320.2300	23	MK 2	15	253	155
13.320.2370	23.7	MK 3	15.6	281	160
13.320.2400	24	MK 3	15.6	281	160
13.320.2470	24.7	MK 3	16.3	281	160
13.320.2500	25	MK 3	16.3	281	160
13.320.2570	25.7	MK 3	17	286	165
13.320.2600	26	MK 3	17	286	165

Ref.	d1	d2	d3	l1	l2
13.320.2670	26.7	MK 3	17.6	291	170
13.320.2700	27	MK 3	17.6	291	170
13.320.2770	27.7	MK 3	18.3	291	170
13.320.2800	28	MK 3	18.3	291	170
13.320.2870	28.7	MK 3	19	296	175
13.320.2900	29	MK 3	19	296	175
13.320.2970	29.7	MK 3	19.5	296	175
13.320.3000	30	MK 3	19.5	296	175
13.320.3060	30.6	MK 3	20	301	180
13.320.3100	31	MK 3	20	301	180
13.320.3160	31.6	MK 4	21	334	185
13.320.3200	32	MK 4	21	334	185
13.320.3260	32.6	MK 4	21.5	334	185
13.320.3300	33	MK 4	21.5	334	185
13.320.3360	33.6	MK 4	22	339	190
13.320.3400	34	MK 4	22	339	190
13.320.3460	34.6	MK 4	23	339	190
13.320.3500	35	MK 4	23	339	190
13.320.3560	35.6	MK 4	23.5	344	195

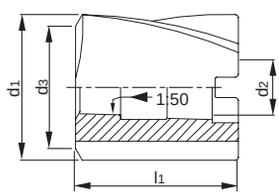
13.320 Phantom

Ref.	d1	d2	d3	l1	l2
13.320.3600	36	MK 4	23.5	344	195
13.320.3660	36.6	MK 4	24	344	195
13.320.3700	37	MK 4	24	344	195
13.320.3760	37.6	MK 4	24.5	349	200
13.320.3800	38	MK 4	24.5	349	200
13.320.3860	38.6	MK 4	25	349	200
13.320.3900	39	MK 4	25	349	200
13.320.3960	39.6	MK 4	26	349	200
13.320.4000	40	MK 4	26	349	200
13.320.4060	40.6	MK 4	26.5	354	205
13.320.4100	41	MK 4	26.5	354	205
13.320.4160	41.6	MK 4	27	354	205
13.320.4200	42	MK 4	27	354	205
13.320.4260	42.6	MK 4	28	359	210
13.320.4300	43	MK 4	28	359	210
13.320.4360	43.6	MK 4	28.5	359	210
13.320.4400	44	MK 4	28.5	359	210
13.320.4460	44.6	MK 4	29	359	210
13.320.4500	45	MK 4	29	359	210
13.320.4560	45.6	MK 4	30	364	215
13.320.4600	46	MK 4	30	364	215
13.320.4660	46.6	MK 4	30.5	364	215
13.320.4700	47	MK 4	30.5	364	215
13.320.4760	47.6	MK 4	31	369	220
13.320.4800	48	MK 4	31	369	220
13.320.4860	48.6	MK 4	32	369	220
13.320.4900	49	MK 4	32	369	220
13.320.4960	49.6	MK 4	32.5	369	220
13.320.5000	50	MK 4	32.5	369	220

› 13.350 Phantom

NL **HSS Opsteekopboor**
FR **Foret creux HSS**
ES **Broca escariador hueco HSS**
DE **HSS Aufsteckaufbohrer**





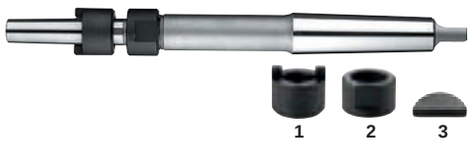
HSS | DIN 222

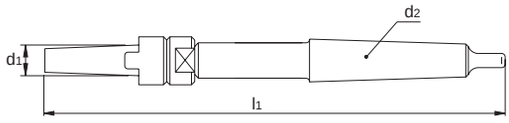
P 11	P 12	P 13	M 21	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	Alu
28-35 C	18-22 C	14-22 C	8-12 B	40-45 C

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

› 84.410 TORAX

NL **Opsteekhouder, DIN 217, voor opsteekruimers DIN 219 en opsteekopboor DIN 222, MK**
FR **Arbre de montage, DIN 217, pour alésoirs creux DIN 219 et forets creux DIN 222, CM**
ES **Porta-escariadores, DIN 217, para escariadores huecos DIN 219 y brocas escariadores huecos DIN 222, CM**
DE **Aufsteckhalter, DIN 217, für Aufsteckreibahlen DIN 219 und Aufsteckaufbohrer DIN 222, MK**





DIN 217

Ref.	Nr.	d1	l1	d2	Ø 51.650	Ø 13.350	1	2	3
84.410.0200	2	13	250	MK 3	25-30	25-35	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	53-62	84.411.0500	84.412.0500	84.413.0500
84.410.0600	6	27	359	MK 5	51-60	63-75	84.411.0600	84.412.0600	84.413.0600
84.410.0700	7	32	376	MK 5	61-71	76-90	84.411.0700	84.412.0700	84.413.0700
84.410.0800	8	40	396	MK 5	72-85	91-100	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**

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 Opsteekverzinkfrees 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°**

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**

CV | ¼″

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**



¼″

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 Gestellbohrer Typ Lewis**



CV

Ref.	d1	l1	l2	Ref.	d1	l1	l2	Ref.	d1	l1	l2
13.640.0823	8	235	150	13.640.1646	16	460	390	13.640.2546	25	460	390
13.640.0846	8	460	390	13.640.1823	18	235	150	13.640.2623	26	235	140
13.640.1023	10	235	150	13.640.1846	18	460	390	13.640.2646	26	460	390
13.640.1046	10	460	390	13.640.2023	20	235	150	13.640.2823	28	235	140
13.640.1223	12	235	150	13.640.2046	20	460	390	13.640.2846	28	460	390
13.640.1246	12	460	390	13.640.2223	22	235	145	13.640.3023	30	235	135
13.640.1423	14	235	150	13.640.2246	22	460	390	13.640.3046	30	460	390
13.640.1446	14	460	390	13.640.2423	24	235	145	13.640.3223	32	235	135
13.640.1523	15	235	150	13.640.2446	24	460	390	13.640.3246	32	460	390
13.640.1623	16	235	150	13.640.2523	25	235	140				

› 13.650 Phantom

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



CV 118°

Ref.	d1	l1	d2	Ref.	d1	l1	d2	Ref.	d1	l1	d2
13.650.0804	8	400	6	13.650.1406	14	600	8	13.650.2006	20	600	10
13.650.0806	8	600	6	13.650.1408	14	800	8	13.650.2008	20	800	10
13.650.1004	10	400	8	13.650.1604	16	400	10	13.650.2204	22	400	12
13.650.1006	10	600	8	13.650.1606	16	600	10	13.650.2206	22	600	12
13.650.1008	10	800	8	13.650.1608	16	800	10	13.650.2404	24	400	12
13.650.1204	12	400	8	13.650.1804	18	400	10	13.650.2406	24	600	12
13.650.1206	12	600	8	13.650.1806	18	600	10	13.650.2604	26	400	12
13.650.1208	12	800	8	13.650.1808	18	800	10	13.650.2606	26	600	12
13.650.1404	14	400	8	13.650.2004	20	400	10	13.650.3006	30	600	12

› 13.680 Phantom



NL **Allround Spiraalboor HM-tip, voor hout, steen en staal**
FR **Foret multi-matériaux à plaq.carb. brasées, pour bois, pierre et acier**
ES **Broca multiuso punta MD, para madera, piedra y acero**
DE **Allround Spiralbohrer HM bestückt, für Holz, Stein und Stahl**

PU HM

Ref.	d1	l1	d2	Ref.	d1	l1	d2	Ref.	d1	l1	d2
13.680.0400	4	75	3.5	13.680.0600	6	100	5.5	13.680.1000	10	120	9.5
13.680.0500	5	85	4.5	13.680.0800	8	120	7.5				

19:00 ▶ 24h

› 13.700 Phantom



NL **HM-tip Steenboor**
FR **Foret à pierre pointe carb. mét.**
ES **Broca para piedra punta MD**
DE **HM-Schneiden Steinbohrer**

PU | HM | DIN 8039

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

› 13.710 Phantom

NL **HM-tip Steenboor lang**
FR **Foret à pierre pointe carb. mét. long**
ES **Broca para piedra punta MD larga**
DE **HM-Schneiden Steinbohrer lang**



PU | HM

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

› 13.720 Phantom



NL **SUPER HM-tip Betonboor**
FR **Foret Béton SUPER pointe carb. mét.**
ES **Broca para hormigón SUPER punta MD**
DE **SUPER HM-Schneiden Betonbohrer**

PU | HM

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

› 13.730 Phantom



NL **SUPER HM-tip Betonboor lang**
FR **Foret Béton SUPER pointe carb. mét. long**
ES **Broca para hormigón SUPER punta MD larga**
DE **SUPER HM-Schneiden Betonbohrer lang**

PU | HM

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

› 13.740 Phantom



NL **SDS-PLUS HM-tip Hamerboor met 2 snijkanten**
FR **Foret Béton SDS-PLUS pointe carb. mét. à 2 taillants**
ES **Broca martillo SDS-PLUS punta MD con 2 labios**
DE **SDS-PLUS HM-Schneiden Hammerbohrer mit 2 Schneiden**

SDS plus | Z=2 | HM | STONE CRAFT

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 **SDS-PLUS HM-tip Hamerboor met 4 snijkanten**
FR **Foret Béton SDS-PLUS pointe carb. mét. à 4 taillants**
ES **Broca martillo SDS-PLUS punta MD con 4 labios**
DE **SDS-PLUS HM-Schneiden Hammerbohrer mit 4 Schneiden**

SDS plus | Z=4 | HM | STONE CRAFT

Ref.	d1	l1	l2
13.744.0511	5	110	50
13.744.0516	5	160	100
13.744.0611	6	110	50
13.744.0616	6	160	100
13.744.0621	6	210	150
13.744.0811	8	110	50
13.744.0816	8	160	100
13.744.0821	8	210	150
13.744.0826	8	260	200

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
13.744.1216	12	160	100
13.744.1221	12	210	150
13.744.1226	12	260	200
13.744.1416	14	160	100
13.744.1421	14	210	150

Ref.	d1	l1	l2
13.744.1426	14	260	200
13.744.1516	15	160	100
13.744.1616	16	160	100
13.744.1621	16	210	150
13.744.1626	16	260	200
13.744.1825	18	250	200
13.744.2025	20	250	200
13.744.2225	22	250	200
13.744.2525	25	250	200

› 13.750 Phantom



NL **SDS-MAX HM-tip Hamerboor**
FR **Foret Béton SDS-MAX pointe carb. mét.**
ES **Broca martillo SDS-MAX punta MD**
DE **SDS-MAX HM-Schneiden Hammerbohrer**

SDS max | Z=2 | Z=4 | HM | STONE CRAFT

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
13.750.1534	15	340	200	2
13.750.1554	15	540	400	2
13.750.1634	16	340	200	4
13.750.1654	16	540	400	4
13.750.1692	16	920	800	4
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

Ref.	d1	l1	l2	z
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	29	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

Ref.	d1	l1	l2	z
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 **SDS-PLUS HM-tip Dozenboor**
FR **Couronne-Trépan SDS-PLUS pointe carb. mét.**
ES **Corona de taladrado SDS-PLUS punta MD**
DE **SDS-PLUS HM-Schneiden Hohlbohrer**



SDS plus **HM**

Ref.	d1	l1	z
13.765.0040	40	85	4
13.765.0050	50	85	6

Ref.	d1	l1	z
13.765.0068	68	85	6
13.765.0080	80	85	6

› 13.766 Phantom

NL **Toebehoren voor Dozenboor**
FR **Accessoires pour Couronne-Trépan**
ES **Accesorios para Corona de taladrado**
DE **Zubehör für Hohlbohrer**



13.766.0080



13.766.0300



13.766.0400



13.766.0500



13.766.0811

Ref.	d1	l1	Type
13.766.0040	40		
13.766.0050	50		
13.766.0068	68		

Ref.	d1	l1	Type
13.766.0080	80		
13.766.0300	11.85	95	
13.766.0400		110	SDS-PLUS

Ref.	d1	l1	Type
13.766.0500		220	SDS-PLUS
13.766.0811	8	110	

› 13.770 Phantom

NL **SDS-PLUS Beitel**
FR **Burin SDS-PLUS**
ES **Cincel SDS-PLUS**
DE **SDS-PLUS Meißel**



SDS plus

Ref.	b1	l1
13.770.1010	250	
13.770.1510	250	20

Ref.	b1	l1
13.770.2010	250	40
13.770.2510	250	50

Ref.	b1	l1
13.770.8010	250	22
13.770.8510	250	22

› 13.775 Phantom

NL **SDS-MAX Beitel**
FR **Burin SDS-MAX**
ES **Cincel SDS-MAX**
DE **SDS-MAX Meißel**



SDS max

Ref.	b1	l1
13.775.1010	280	
13.775.1020	400	
13.775.1510	280	25

Ref.	b1	l1
13.775.1515	400	25
13.775.1520	600	25
13.775.2010	400	50

Ref.	b1	l1
13.775.8010	300	26
13.775.8510	380	35

19:00 ▶ 24h

› 13.790 Phantom



NL **HM-tip Boor voor keramiek en glas**
FR **Foret Spécial pointe carb. mét. pour céramique et verre**
ES **Broca vidrio punta MD para vidrio y cerámico**
DE **HM-Schneiden Glasbohrer für Keramik und Glas**

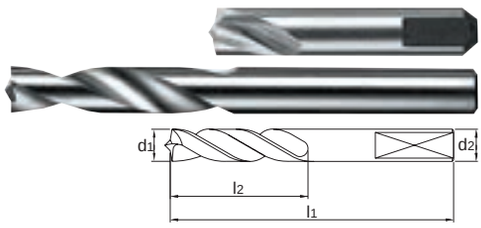
¼″

Ref.	d1	l1
13.790.0300	3	65
13.790.0400	4	65

Ref.	d1	l1
13.790.0500	5	65
13.790.0600	6	65

Ref.	d1	l1
13.790.0800	8	105
13.790.1000	10	110

› 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**

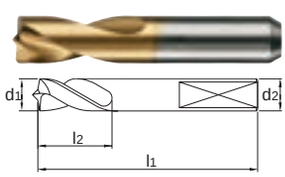
HSS-E

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
28-35 *	30-36 *	20-27 *	12-20 *	14-18 *	10-15 *

Ref.	d1	d2	l1	l2
13.800.0844	8	8	44	23

Ref.	d1	d2	l1	l2
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**

HSS-E TiN

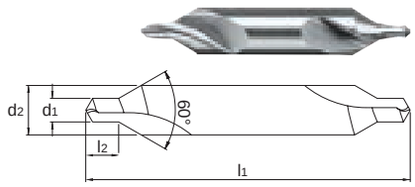
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²
28-35 *	30-36 *	20-27 *	12-20 *	14-18 *	10-15 *

Ref.	d1	d2	l1	l2
13.801.0644	6	6	44	16
13.801.0666	6	6	66	28

Ref.	d1	d2	l1	l2
13.801.0844	8	8	44	23
13.801.0879	8	8	79	37

Ref.	d1	d2	l1	l2
13.801.1089	10	10	89	43

› 15.100 Phantom



NL **HSS Centreerboor 60°**
FR **Foret à centrer HSS 60°**
ES **Broca de centrar HSS 60°**
DE **HSS Zentrierbohrer 60°**

HSS | 60° | DIN 333-A | NFE 66051-A

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

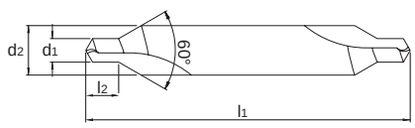
Ref.	d1	d2	l1	l2
15.100.0531	0.5	3.15	25	0,6-0,9
15.100.0735	0.75	3.5	35	1,0-1,3
15.100.0831	0.8	3.15	25	1,0-1,3
15.100.1031	1	3.15	31	1,3-1,7
15.100.1040	1	4	35	1,3-1,7
15.100.1231	1.25	3.15	31	1,6-2,0
15.100.1240	1.25	4	35	1,6-2,0
15.100.1550	1.5	5	40	2,0-2,6
15.100.1640	1.6	4	35	2,0-2,6
15.100.1650	1.6	5	40	2,0-2,6
15.100.2050	2	5	40	2,5-3,1

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 Centreerboor 60°**
FR **Foret à centrer HSS-E 60°**
ES **Broca de centrar HSS-E 60°**
DE **HSS-E Zentrierbohrer 60°**

HSS-E | 60° | DIN 333-A | NFE 66051-A

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

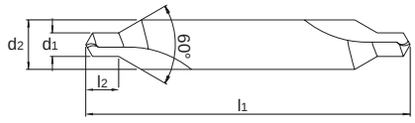
Ref.	d1	d2	l1	l2
15.120.0735	0.75	3.5	35	1,0-1,3
15.120.1040	1	4	35	1,3-1,7
15.120.1231	1.25	3.15	31	1,6-2,0
15.120.1550	1.5	5	40	2,0-2,6
15.120.1640	1.6	4	35	2,0-2,6

Ref.	d1	d2	l1	l2
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	5,0-4,6

Ref.	d1	d2	l1	l2
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 Centreerboor TiAlN, 60°**
FR **Foret à centrer HSS-E TiAlN, 60°**
ES **Broca de centrar HSS-E TiAlN, 60°**
DE **HSS-E Zentrierbohrer TiAlN, 60°**

HSS-E | TiAlN | 60° | DIN 333-A

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
15.124.1231	1.25	3.15	31	1,6-2,0

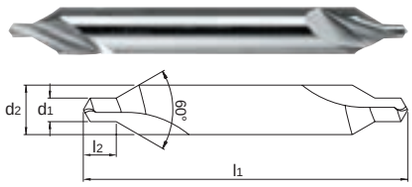
Ref.	d1	d2	l1	l2
15.124.1640	1.6	4	35	2,0-2,6
15.124.2050	2	5	40	2,5-3,1
15.124.2563	2.5	6.3	45	3,1-3,8
15.124.3180	3.15	8	50	3,9-4,6

Ref.	d1	d2	l1	l2
15.124.4010	4	10	55	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

19:00 ▶ 🛒 ▶ 24h

› 15.150 Phantom

NL **HSS-E Centreerboor 60°, lang**
FR **Foret à centrer HSS-E 60°, long**
ES **Broca de centrar HSS-E 60°, larga**
DE **HSS-E Zentrierbohrer 60°, lang**



HSS-E | 60° | Phantom

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

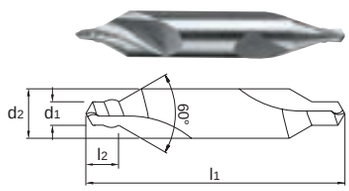
Ref.	d1	d2	l1	l2
15.150.0753	0.75	3.5	60	1,0-1,3
15.150.0756	0.75	3.5	120	1,0-1,3
15.150.1003	1	4	60	1,3-1,7
15.150.1005	1	4	100	1,3-1,7
15.150.1006	1	4	120	1,3-1,7
15.150.1007	1	4	150	1,3-1,7
15.150.1503	1.5	5	60	2,0-2,6
15.150.1505	1.5	5	100	2,0-2,6
15.150.1506	1.5	5	120	2,0-2,6
15.150.1507	1.5	5	150	2,0-2,6
15.150.2004	2	6	80	2,5-3,1
15.150.2005	2	6	100	2,5-3,1

Ref.	d1	d2	l1	l2
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	2,5-3,8
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

Ref.	d1	d2	l1	l2
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
15.150.4005	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 Centreerboor met kraag, 60°**
FR **Foret à centrer HSS à collerette, 60°**
ES **Broca de centrar HSS con valona, 60°**
DE **HSS Zentrierbohrer mit Kragen, 60°**



HSS | 60° | DIN 333-W

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

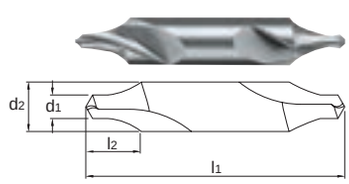
Ref.	d1	d2	l1	l2
15.200.0530	0.5	3	31	0,6-0,9
15.200.0531	0.5	3.15	25	0,6-0,9
15.200.1031	1	3.15	31	1,3-1,7
15.200.1040	1	4	35	1,3-1,7
15.200.1231	1.25	3.15	31	1,6-2,0
15.200.1240	1.25	4	35	1,6-2,0
15.200.1550	1.5	5	40	2,0-2,6
15.200.1640	1.6	4	35	2,0-2,6
15.200.1650	1.6	5	40	2,0-2,6
15.200.2050	2	5	40	2,5-3,1

Ref.	d1	d2	l1	l2
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 Centreerboor met radius, 60°**
FR **Foret à centrer HSS à rayon, 60°**
ES **Broca de centrar HSS con radio, 60°**
DE **HSS Zentrierbohrer mit Radius, 60°**



HSS | 60° | DIN 333-R

P 11	P 13	K 31	K 32	N 42	N 43	N 51	N 61
≤600 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	PVC
20-25 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	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

Ref.	d1	d2	l1	l2	r
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
15.250.3080	3	8	50	8,0-8,5	8
15.250.3090	3	10	55	8,9-9,4	10

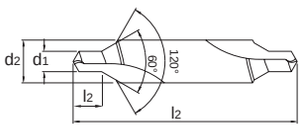
› 15.250 Phantom

Ref.	d1	d2	l1	l2	r
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

Ref.	d1	d2	l1	l2	r
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

› 15.380 Phantom





NL **HSS Centreerboor met dubbele hoek, 60°, 120°**
FR **Foret à centrer HSS à centre protégé, 60°, 120°**
ES **Broca de centrar HSS con chaflan, 60°, 120°**
DE **HSS Zentrierbohrer mit Schutzsenkung, 60°, 120°**

HSS 60° 120° NFE 66064

P 11 ≤600 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 | N 61 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

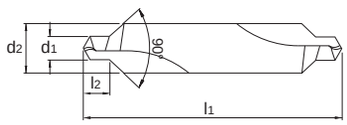
Ref.	d1	d2	l1	l2
15.380.0740	0.75	4	35	1,3-1,7
15.380.1060	1	6	45	2,0-2,6
15.380.1550	1.5	5	40	2,0-2,6
15.380.1580	1.5	8	50	2,5-3,1
15.380.2060	2	6	45	2,5-3,1
15.380.2090	2	10	55	3,1-3,8
15.380.2580	2.5	8	50	3,1-3,8

Ref.	d1	d2	l1	l2
15.380.2592	2.5	12	63	3,9-4,6
15.380.3080	3	8	50	3,9-4,6
15.380.3090	3	10	55	3,9-4,6
15.380.3094	3	14	69	5,0-5,9
15.380.4010	4	10	55	5,0-5,9
15.380.4012	4	12	63	5,0-5,9
15.380.4016	4	16	71	5,0-5,9

Ref.	d1	d2	l1	l2
15.380.4018	4	18	77	6,3-7,2
15.380.5012	5	12	63	6,3-7,2
15.380.5014	5	14	69	6,3-7,2
15.380.5018	5	18	77	8,0-8,9
15.380.6025	6	25	100	1,0-1,3

› 15.500 Phantom





NL **HSS Centreerboor 90°**
FR **Foret à centrer HSS 90°**
ES **Broca de centrar HSS 90°**
DE **HSS Zentrierbohrer 90°**

HSS 90°

P 11 ≤600 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 42 Alu Si>10% | N 43 Mg | N 51 Cu | N 61 PVC

20-25 E | 16-22 F | 25-30 E | 20-25 D | 60-70 E | 45-50 E | 25-40 E | 18-28 E

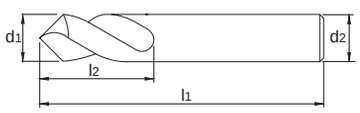
Ref.	d1	d2	l1	l2
15.500.0735	0.75	3.5	35	1,0-1,3
15.500.1040	1	4	35	1.3-1.7
15.500.1550	1.5	5	40	2,0-2,6
15.500.2060	2	6	45	2,5-3,1

Ref.	d1	d2	l1	l2
15.500.2580	2.5	8	50	3,1-3,8
15.500.3080	3	8	50	3,9-4,6
15.500.3090	3	10	55	3,9-4,6
15.500.4010	4	10	55	5,0-5,9

Ref.	d1	d2	l1	l2
15.500.4012	4	12	63	5,0-5,9
15.500.5012	5	12	63	6,3-7,2
15.500.5014	5	14	69	6,3-7,2
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°**

HSS-E 90°

P 11 ≤600 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 | N 52 CuAlFe | N 61 PVC

25-30 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 | 18-28 E

Ref.	d1	d2	l1	l2
15.600.0200	2	2	49	8
15.600.0300	3	3	50	10
15.600.0400	4	4	52	12
15.600.0500	5	5	60	15
15.600.0600	6	6	66	20

Ref.	d1	d2	l1	l2
15.600.0800	8	8	79	25
15.600.1000	10	10	89	25
15.600.1200	12	12	102	30
15.600.1400	14	14	115	35
15.600.1600	16	16	115	35

Ref.	d1	d2	l1	l2
15.600.1800	18	18	130	40
15.600.2000	20	20	131	40
15.600.2500	25	25	138	45

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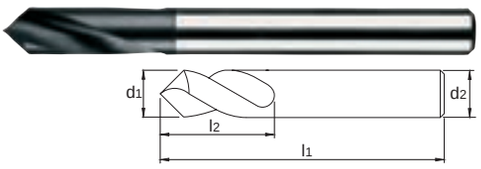
› 15.604 Phantom



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°**

HSS-E | TiAlN | 90°

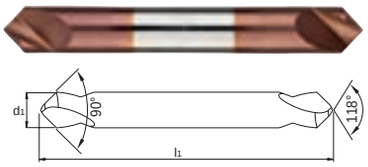
P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

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

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
15.604.1800	18	18	130	40
15.604.2000	20	20	131	40
15.604.2500	25	25	138	45

› 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°**

HSS-E | 90° | AlCrN-X

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

Ref.	d1	d2	l1	l2
15.611.0800	8	8	65	12
15.611.1000	10	10	75	15
15.611.1200	12	12	85	18

Ref.	d1	d2	l1	l2
15.611.1600	16	16	90	24
15.611.2000	20	20	100	29

› 15.640 Phantom



NL **HSS-E NC-Centreerboor 90°, lang**
FR **Foret à pointer NC HSS-E 90°, long**
ES **Broca de puntear NC HSS-E 90°, larga**
DE **HSS-E NC Anbohrer 90°, lang**

HSS-E | 90°

P 11	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	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 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

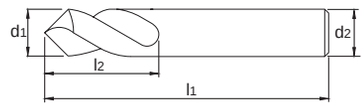
Ref.	d1	d2	l1	l2
15.640.0800	8	8	140	25
15.640.1000	10	10	170	25
15.640.1200	12	12	170	30

Ref.	d1	d2	l1	l2
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°, long**
ES **Broca de puntear NC HSS-E TiAlN, 90°, larga**
DE **HSS-E NC Anbohrer TiAlN, 90°, lang**



NIEUW / NOUVEAU / NUEVO / NEU

HSS-E | TiAlN | 90°

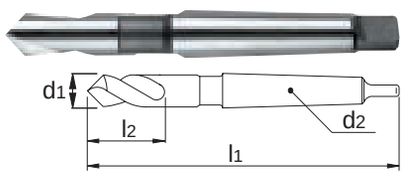
P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 42	N 43	N 51	N 52
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Mg	Cu	CuAlFe
35-45 E	25-45 E	20-25 F	10-20 D	10-15 C	40-45 E	30-40 D	75-100 E	60-80 E	40-45 D	20-25 D

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

Ref.	d1	d2	l1	l2
15.644.0800	8	8	140	25
15.644.1000	10	10	170	25
15.644.1200	12	12	170	30

Ref.	d1	d2	l1	l2
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**

HSS-E | 90° | DIN 228-B

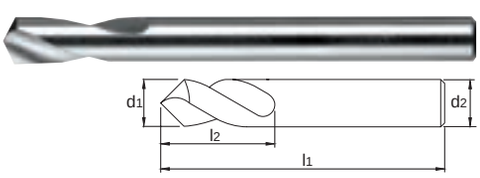
P 11	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 52	N 61
≤600 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	45-50 E	30-40 E	10-15 D	18-28 E

Ref.	d1	l1	l2	d2
15.650.1600	16	148	35	2

Ref.	d1	l1	l2	d2
15.650.2000	20	148	40	2

Ref.	d1	l1	l2	d2
15.650.2500	25	171	45	3

› 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°**

HSS-E | 120°

P 11	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	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 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

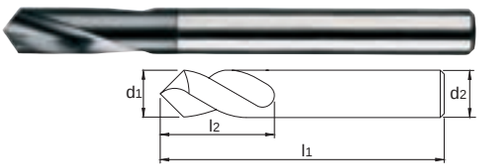
Ref.	d1	d2	l1	l2
15.700.0800	8	8	79	25
15.700.1000	10	10	89	25
15.700.1200	12	12	102	30
15.700.1400	14	14	115	35
15.700.1600	16	16	115	35

Ref.	d1	d2	l1	l2
15.700.1800	18	18	130	40
15.700.2000	20	20	131	40
15.700.2500	25	25	138	45

19:00 ▶ 24h

› 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°**



HSS-E | TiAlN | 120°

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

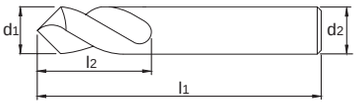
Ref.	d1	d2	l1	l2
15.704.0800	8	8	79	25
15.704.1000	10	10	89	25
15.704.1200	12	12	102	30
15.704.1600	16	16	115	35

Ref.	d1	d2	l1	l2
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°, long**
ES **Broca de puntear NC HSS-E 120°, larga**
DE **HSS-E NC Anbohrer 120°, lang**





HSS-E | 120°

P 11	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	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	CuAlFe	PVC
25-30 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

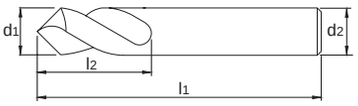
Ref.	d1	d2	l1	l2
15.740.0800	8	8	140	25
15.740.1000	10	10	170	25
15.740.1200	12	12	170	30

Ref.	d1	d2	l1	l2
15.740.1600	16	16	200	35
15.740.2000	20	20	200	40

› 15.744 Phantom

NL **HSS-E NC-Centreerboor TiAlN, 120°, lang**
FR **Foret à pointer NC HSS-E TiAlN, 120°, long**
ES **Broca de puntear NC HSS-E TiAlN, 120°, larga**
DE **HSS-E NC Anbohrer TiAlN, 120°, lang**





NIEUW | NOUVEAU | NUEVO | NEU

HSS-E | TiAlN | 120°

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

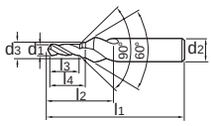
Ref.	d1	d2	l1	l2
15.744.0400	4	4	100	12
15.744.0500	5	5	120	15
15.744.0600	6	6	140	20

Ref.	d1	d2	l1	l2
15.744.0800	8	8	140	25
15.744.1000	10	10	170	25
15.744.1200	12	12	170	30

Ref.	d1	d2	l1	l2
15.744.1600	16	16	200	35
15.744.2000	20	20	200	40

› 15.820 Phantom





NL **HSS-E Centreerboor 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°**

HSS-E | 60° | DIN 332-2

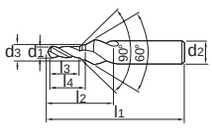
P 11	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

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

Ref.	M	d1	d3	l1	l2	l4	l3	d2
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 Centreerboor 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°**

HSS-E | 60° | DIN 332-2

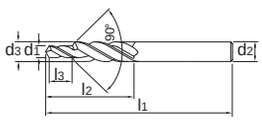
P 11	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

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 NC-Kerngatboor voor tapgaten, 90°**
FR **Foret étagé HSS-E pour trous à tarauder, 90°**
ES **Broca escalonada NC HSS-E para pretaladros con centraje, 90°**
DE **HSS-E NC Kernlochbohrer für Gewindelöcher, 90°**

HSS-E | 90°

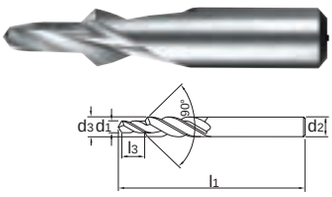
P 11	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 E	16-22 F	8-10 D	6-8 C	25-30 E	20-25 D	60-70 E	50-80 E	30-40 E	10-15 D

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

19:00 ▶ 🛒 ▶ 24h

› 16.100 Phantom



NL **HSS-E Meerfasenboor 90°**
FR **Foret étagé HSS-E 90°**
ES **Broca bidiametral HSS-E 90°**
DE **HSS-E Mehrfasenstufenbohrer 90°**

HSS-E | 90° | N

P 11 ≤600 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 | N 52 CuAlFe

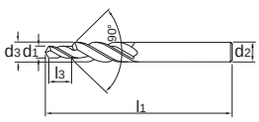
25-30 E | 16-22 F | 8-10 D | 6-8 C | 25-30 E | 20-25 D | 60-70 E | 50-80 E | 30-40 E | 10-15 D

Ref.	M	d3	d1	l1	l3	d2
16.100.0200	2	4.6	2.2	45	6	4.6
16.100.0250	2.5	5.7	2.7	45	7	5.7
16.100.0300	3	6.5	3.2	45	9	6.5
16.100.0400	4	8.6	4.3	50	11	8.6

Ref.	M	d3	d1	l1	l3	d2
16.100.0500	5	10.4	5.3	55	13	10.4
16.100.0600	6	12.4	6.4	63	15	12.4
16.100.0800	8	16.4	8.4	100	19	12.5
16.100.1000	10	20.4	10.5	110	23	12.5

› 16.120 Phantom





NL **HSS-E Meerfasenboor 90°**
FR **Foret étagé HSS-E 90°**
ES **Broca bidiametral HSS-E 90°**
DE **HSS-E Mehrfasenstufenbohrer 90°**

HSS-E | 90° | N

P 11 ≤600 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 | N 52 CuAlFe

25-30 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

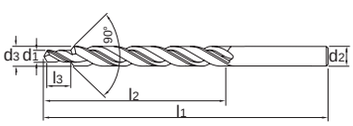
Ref.	M	d3	d1	l1	l3	d2
16.120.0400	4	8.6	4.3	110	30	8.6
16.120.0500	5	10.4	5.3	110	30	10.4

Ref.	M	d3	d1	l1	l3	d2
16.120.0600	6	12.4	6.4	110	30	12.4
16.120.0800	8	16.4	8.4	110	30	12.5

Ref.	M	d3	d1	l1	l3	d2
16.120.1000	10	20.4	10.5	110	30	12.5

› 16.200 Phantom





NL **HSS Meerfasenboor 90°**
FR **Foret étagé HSS 90°**
ES **Broca bidiametral HSS 90°**
DE **HSS Mehrfasenstufenbohrer 90°**

HSS | 90° | 2

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

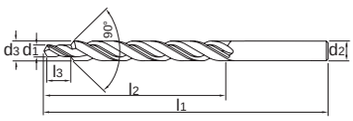
Ref.	M	d3	d1	l1	l3	d2
16.200.0300	3	6.6	3.4	101	9	6.6
16.200.0400	4	9	4.5	125	11	9

Ref.	M	d3	d1	l1	l3	d2
16.200.0500	5	11	5.5	142	13	11
16.200.0600	6	13	6.6	151	15	13

Ref.	M	d3	d1	l1	l3	d2
16.200.0800	8	17.2	9	191	19	17.2

› 16.220 Phantom





NL **HSS Meerfasenboor 90°**
FR **Foret étagé HSS 90°**
ES **Broca bidiametral HSS 90°**
DE **HSS Mehrfasenstufenbohrer 90°**

HSS | 90° | DIN 8374 | N | 1

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

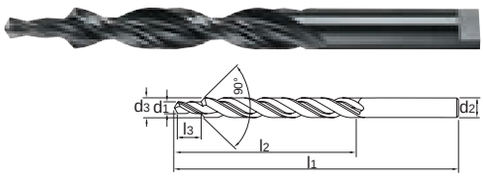
25-27 F | 22-30 F | 15-20 E | 8-12 D | 15-20 E | 25-30 E | 45-50 G | 25-40 D | 22-28 D

Ref.	M	d3	d1	l1	l3	d2
16.220.0300	3	6	3.2	93	9	6
16.220.0400	4	8	4.3	117	11	8

Ref.	M	d3	d1	l1	l3	d2
16.220.0500	5	10	5.3	133	13	10
16.220.0600	6	11.5	6.4	142	15	11.5

Ref.	M	d3	d1	l1	l3	d2
16.220.0800	8	15	8.4	169	19	15
16.220.1000	10	19	10.5	198	23	19

› 16.250 Phantom



NL **HSS Meerfasenboor 90°**
FR **Foret étagé HSS 90°**
ES **Broca bidiametral HSS 90°**
DE **HSS Mehrfasenstufenbohrer 90°**

HSS | 90° | DIN 8378 | N

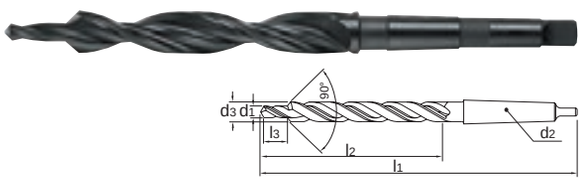
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d3	d1	l1	l3	d2
16.250.0300	3	3.4	2.5	70	8.8	3.4
16.250.0400	4	4.5	3.3	80	11.4	4.5
16.250.0500	5	5.5	4.2	93	13.6	5.5

Ref.	M	d3	d1	l1	l3	d2
16.250.0600	6	6.6	5	101	16.5	6.6
16.250.0800	8	9	6.8	125	21	9
16.250.1000	10	11	8.5	142	25.5	11

Ref.	M	d3	d1	l1	l3	d2
16.250.1200	12	13.5	10.2	160	30	13.5

› 16.300 Phantom



NL **HSS Meerfasenboor 90°, MK**
FR **Foret étagé HSS 90°, CM**
ES **Broca bidiametral HSS 90°, CM**
DE **HSS Mehrfasenstufenbohrer 90°, MK**

HSS | 90° | DIN 8375 | N | DIN 228-B

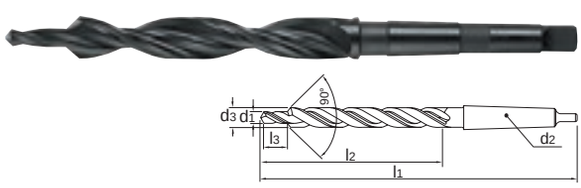
P 11	P 12	P 13	M 21	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	8-12 D	15-20 E	25-30 E	45-50 G	25-40 D	22-28 D

Ref.	M	d3	d1	l1	l2	l3	d2
16.300.0500	5	11	5.5	175	94	13	MK 1
16.300.0600	6	13	6.6	182	101	15	MK 1

Ref.	M	d3	d1	l1	l2	l3	d2
16.300.0800	8	17.2	9	228	130	19	MK 2
16.300.1000	10	21.5	11	248	150	23	MK 2

Ref.	M	d3	d1	l1	l2	l3	d2

› 16.350 Phantom



NL **HSS Meerfasenboor 90°, MK**
FR **Foret étagé HSS 90°, CM**
ES **Broca bidiametral HSS 90°, CM**
DE **HSS Mehrfasenstufenbohrer 90°, MK**

HSS | 90° | DIN 8379 | N | DIN 228-B

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

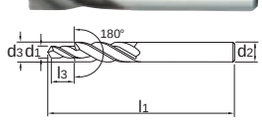
Ref.	M	d3	d1	l1	l2	l3	d2
16.350.0800	8	9	6.8	162	81	21	MK 1
16.350.1000	10	11	8.5	175	94	25.5	MK 1
16.350.1200	12	13.5	10.2	189	108	30	MK 1

Ref.	M	d3	d1	l1	l2	l3	d2
16.350.1400	14	15.5	12	218	120	34.5	MK 2
16.350.1600	16	17.5	14	228	130	38.5	MK 2
16.350.1800	18	20	15.5	238	140	43.5	MK 2

Ref.	M	d3	d1	l1	l2	l3	d2
16.350.2000	20	22	17.5	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°**

HSS-E | 180°

P 11	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 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	d3	d1	l1	l3	d2
16.500.0300	3	6	3.4	45	9	6
16.500.0400	4	8	4.5	50	11	8
16.500.0500	5	10	5.5	55	13	10

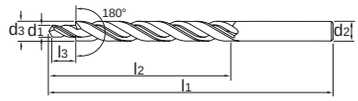
Ref.	M	d3	d1	l1	l3	d2
16.500.0600	6	11	6.6	63	15	11
16.500.0800	8	15	9	100	19	12.5
16.500.1000	10	18	11	110	23	12.5

Ref.	M	d3	d1	l1	l3	d2
16.500.1200	12	20	14	110	28	12.5

19:00 ▶ 🛒 ▶ 24h

› 16.600 Phantom





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

HSS | 180° | DIN 8376 | N

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

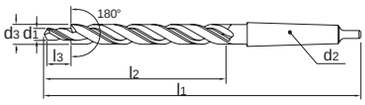
Ref.	M	d3	d1	l1	l3	d2
16.600.0300	3	6	3.4	93	9	6
16.600.0400	4	8	4.5	117	11	8

Ref.	M	d3	d1	l1	l3	d2
16.600.0500	5	10	5.5	133	13	10
16.600.0600	6	11	6.6	142	15	11

Ref.	M	d3	d1	l1	l3	d2
16.600.0800	8	15	9	169	19	15
16.600.1000	10	18	11	191	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**

HSS | 180° | DIN 8377 | N | DIN 228-B

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

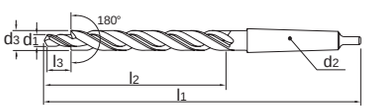
Ref.	M	d3	d1	l1	l2	l3	d2
16.700.0500	5	10	5.5	168	87	13	MK 1
16.700.0600	6	11	6.6	175	94	15	MK 1
16.700.0800	8	15	9	212	114	19	MK 2

Ref.	M	d3	d1	l1	l2	l3	d2
16.700.1000	10	18	11	228	130	23	MK 2
16.700.1200	12	20	13.5	238	140	27	MK 2
16.700.1400	14	24	15.5	281	160	31	MK 3

Ref.	M	d3	d1	l1	l2	l3	d2
16.700.1600	16	26	17.5	286	165	35	MK 3
16.700.1800	18	30	20	296	175	39	MK 3
16.700.2000	20	33	22	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**

HSS | 180° | N | DIN 228-B

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	d3	d1	l1	l2	l3	d2
16.730.0800	8	13.5	8.4	189	108	20	MK 1
16.730.1000	10	16.5	10.5	223	125	24	MK 2

Ref.	M	d3	d1	l1	l2	l3	d2
16.730.1200	12	19	13	233	135	28	MK 2
16.730.1400	14	23	15	253	155	32	MK 2

Ref.	M	d3	d1	l1	l2	l3	d2
16.730.1600	16	25	17	281	160	36	MK 3

› 19.100 Phantom

NL **Borencassette leeg**
FR **Coffret de Forets vide**
ES **Estuche de brocas vacío**
DE **Bohrerkassetten Leer**



Ref.	Ø mm
19.100.1050	1-10 mm x 0,5 mm
19.100.1350	1-13 mm x 0,5 mm

Ref.	Ø mm
19.100.1602	6-10 mm x 0,1 mm
19.100.1605	1-5,9 mm x 0,1 mm

› 19.105 Phantom

NL **Borenstandaard leeg, MK**
FR **Présentoir pour Forets vide, CM**
ES **Expositor para brocas vacío, CM**
DE **Werkbankständer Leer, MK**



Ref.	Contents	xØ
19.105.3500	MK 1-MK 2-MK 3	25
19.105.9351	MK 1-MK 2-MK 3	10

Ref.	Contents	xØ
19.105.9352	MK 1	4
19.105.9353	MK 2	4

› 19.113 Phantom

NL **HSS Borencassette**
FR **Coffret de Forets HSS**
ES **Estuche de brocas HSS**
DE **HSS Bohrerkassetten**



HSS | DIN 1897 | N | 118°

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

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

› 19.116 Phantom

NL **HSS-E Borencassette**
FR **Coffret de Forets HSS-E**
ES **Estuche de brocas HSS-E**
DE **HSS-E Bohrerkassetten**



HSS-E | DIN 1897 | N | 135°

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

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

› 19.120 INTERNATIONAL TOOLS

NL **ECO HSS Set Spiraalboren**
FR **Jeu de Forets ECO HSS**
ES **Juego de brocas ECO HSS**
DE **ECO HSS Satz Spiralbohrer**



A B

HSS | DIN 338 | N | 118° | ECO

NIEUW NOUVEAU NUEVO NEU

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

Ref.	Type	Ø 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 **Jeu de Forets ECO PRO HSS**
ES **Juego de brocas ECO PRO HSS**
DE **ECO PRO HSS Satz Spiralbohrer**



A B

HSS | DIN 338 | N | 118° | ECO PRO

NIEUW NOUVEAU NUEVO NEU

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
19.124.1300	11.420	1-13 mm x 0,5 mm

Ref.	Type	Ø mm
19.124.6000	11.420	1-10 mm x 0,5 mm (170x)

› 19.130 INTERNATIONAL TOOLS

NL **ECO HSS Set Spiraalboren**
FR **Jeu de Forets ECO HSS**
ES **Juego de brocas ECO HSS**
DE **ECO HSS Satz Spiralbohrer**


A B

NIEUW NOUVEAU NUEVO NEU

HSS | DIN 338 | N | >3 | 118° | ECO

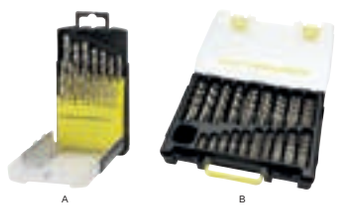
P 11	P 12	P 13	K 31	K 32	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu Si>10%	Cu	PVC
25-27 F	22-30 F	15-20 E	15-20 E	25-30 E	35-40 G	25-40 D	22-28 D

Ref.	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**
FR **Jeu de Forets ECO PRO HSS**
ES **Juego de brocas ECO PRO HSS**
DE **ECO PRO HSS Satz Spiralbohrer**


A B

NIEUW NOUVEAU NUEVO NEU

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.	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)

› 19.143 INTERNATIONAL TOOLS

NL **ECO PRO HSS Borencassette**
FR **Coffret de Forets ECO PRO HSS**
ES **Estuche de brocas ECO PRO HSS**
DE **ECO PRO HSS Bohrerkassetten**



HSS | DIN 338 | N | 118° | ECO PRO

Ref.	Type	Ø mm
19.143.6100	11.430	1-13 mm x 0,5 mm + 3,3- 4,2 mm (220x)

› 19.144 INTERNATIONAL TOOLS



NL **HSS Borencassette gewalst**
FR **Coffret de Forets HSS laminé**
ES **Estuche de brocas HSS laminada**
DE **HSS Bohrerkassetten Gewalzt**

HSS | DIN 338 | N | 118°

Ref.	Type	Ø mm
19.144.1002	11.400	1-10 mm x 0,5 mm
19.144.1302	11.400	1-13 mm x 0,5 mm

Ref.	Type	Ø mm
19.144.6001	11.400	1-10 mm x 0,5 mm (170x)
19.144.6100	11.400	1-13 mm x 0,5 mm + 3,3- 4,2 mm (220x)

› 19.145 Phantom



NL **HSS Borencassette**
FR **Coffret de Forets HSS**
ES **Estuche de brocas HSS**
DE **HSS Bohrerkassetten**

HSS | DIN 338 | N | 118°

Ref.	Type	Ø mm
19.145.1000	11.450	1-10 mm x 0,5 mm
19.145.1150	11.450	1-10,5 mm x 0,5 mm + 3,3 - 4,2 - 6,8 - 10,2
19.145.1300	11.450	1-13 mm x 0,5 mm
19.145.1590	11.450	1-5,9 mm x 0,1 mm

Ref.	Type	Ø mm
19.145.1600	11.450	6-10 mm x 0,1 mm
19.145.6000	11.450	1-10 mm x 0,5 mm (170x)
19.145.6100	11.450	1-13 mm x 0,5 mm + 3,3- 4,2 mm (220x)

› 19.146 Phantom



NL **HSS Borencassette TiN-tip**
FR **Coffret de Forets HSS avec revêtement TiN sur la partie utile**
ES **Estuche de brocas HSS con recubrimiento TiN en la punta**
DE **HSS Bohrerkassetten TiN-Tip**

HSS | TiN | DIN 338 | N | 118°

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

Ref.	Type	Ø mm
19.146.1300	11.451	1-13 mm x 0,5 mm

› 19.149 INTERNATIONAL TOOLS

NL **HSS-E Borencassette**
FR **Coffret de Forets HSS-E**
ES **Estuche de brocas HSS-E**
DE **HSS-E Bohrerkassetten**



HSS-E | DIN 338 | N | 135°

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

Ref.	Type	Ø 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 Borencassette**
FR **Coffret de Forets HSS-E**
ES **Estuche de brocas HSS-E**
DE **HSS-E Bohrerkassetten**



PCD | HSS-E | DIN 338 | N | 135°

Ref.	Type	Ø mm
19.150.1000	11.500	1-10 mm x 0,5 mm
19.150.1150	11.500	1-10,5 mm x 0,5 mm + 3,3 - 4,2 - 6,8 - 10,2
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

Ref.	Type	Ø 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)

› 19.156 Phantom

NL **HP2 UNI HSS-E Borencassette TiN**
FR **Coffret de Forets HP2 UNI HSS-E TiN**
ES **Estuche de brocas HP2 UNI HSS-E TiN**
DE **HP2 UNI HSS-E Bohrerkassetten TiN**



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

Ref.	Type	Ø mm
19.156.1000	11.568	1-10 mm x 0,5 mm

Ref.	Type	Ø mm
19.156.1300	11.568	1-13 mm x 0,5 mm

› 19.160 Phantom

NL **HM-tip Borencassette**
FR **Coffret de Forets pointe carb. mét.**
ES **Estuche de brocas punta MD**
DE **HM-Schneiden Bohrerkassetten**



HM-TIP | DIN 338 | N

Ref.	Type	Ø mm
19.160.0300	11.600	3-4-5-6-8-10 mm

Ref.	Type	Ø mm

› 19.171 Phantom

NL **HSS Borencassette**
FR **Coffret de Forets HSS**
ES **Estuche de brocas HSS**
DE **HSS Bohrerkassetten**



HSS | DIN 338 | W | 130°

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

Ref.	Type	Ø 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 Borencassette**
FR **Coffret de Forets HSS-E**
ES **Estuche de brocas HSS-E**
DE **HSS-E Bohrerkassetten**



HSS-E | DIN 338 | >N | 130° | INOX

Ref.	Type	Ø mm
19.176.1000	11.760	1-10 mm x 0,5 mm
19.176.1150	11.760	1-10,5 x 0,5 mm + 3,3 - 4,2 - 6,8 - 10,2

Ref.	Type	Ø mm
19.176.1300	11.760	1-13 mm x 0,5 mm

› 19.360 INTERNATIONAL TOOLS

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**



CV B

Ref.	Type	Ø mm
19.360.0100	13.600	4, 5, 6, 8, 10 mm

Ref.	Type	Ø mm

› 19.361 INTERNATIONAL TOOLS

NL **CV Set Speedboren**
FR **Jeu de Mèches plates Acier spécial (Chrome)**
ES **Juego de brocas planas Cromo Vanadium**
DE **CV Satz Speedbohrer**



CV ¼"

Ref.	Type	Ø mm
19.361.0100	13.610	12, 14, 16, 18, 20, 22 mm

Ref.	Type	Ø mm

› 19.370 Phantom

NL **HM-tip set Steenboren**
FR **Jeu de Forets à pierre pointe carb. mét.**
ES **Juego de brocas para piedra punta MD**
DE **HM-Schneiden Satz Steinbohrer**



PU HM DIN 8039

Ref.	Type	Ø mm
19.370.0100	13.700	3, 4, 5, 6, 7, 8, 9, 10 mm

Ref.	Type	Ø mm

› 19.372 Phantom

NL **HM-tip Set Betonboren**
FR **Jeu de Forets à béton pointe carb. mét.**
ES **Juego de brocas para hormigón punta MD**
DE **HM-Schneiden Satz Betonbohrer**



PU HM

Ref.	Type	Ø mm
19.372.0100	13.720	3, 4, 5, 6, 7, 8, 9, 10 mm

Ref.	Type	Ø mm

› 19.374 Phantom

NL **HM-tip Set Hamerboren**
FR **Assortiment Forets à béton pointe carb. mét.**
ES **Juego de brocas martillo punta MD**
DE **HM-Schneiden Satz Hammerbohrer**



SDS plus Z=2 HM

Ref.	Type	Ø mm
19.374.0100	13.740	5x160, 6x160, 8x160, 10x160 mm
19.374.1000	13.740	5x110 (5x), 6x160 (5x), 8x160 (5x), 10x160 (5x), 12x160 (5x), 8x210 (5x), 10x210 (5x), 12x210 mm (5x)

› 19.377 Phantom

NL **SDS-PLUS Set Beitels**
FR **Jeu de Burins SDS-PLUS**
ES **Juego de Cincel SDS-PLUS**
DE **SDS-PLUS Satz Meißel**


13.770.1010


13.770.1510


13.770.2010

SDS plus

Ref.	Type	Ø mm
19.377.0100	13.770	13.770.1010-13.770.1510-13.770.2010

Ref.	Type	Ø mm

› 19.540 Phantom

NL **HSS Set Centreerboren**
FR **Jeu de Forets à centrer HSS**
ES **Juego de brocas de centrar HSS**
DE **HSS Satz Zentrierbohrer**



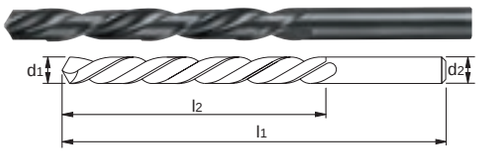
HSS | 60° | DIN 333-A | NFE 66051-A

Ref.	Type	Ø mm
19.540.0000	15.100	NFE 66051A 0,5x3 (5) - 1x4 (5) - 1,5x5 (5) - 2x6 (5) - 2,5x8 (5) - 3x10 (4)- 4x12 (1)
19.540.0001	15.100	DIN 333A (ISO) 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 (ISO) 4x1 (3x) - 5x1,5 (3x) - 6x2 (3x) - 8x2,5 (3x) - 10x3 (2x) - 12x4 (1x)

19:00 ▶ 🛒 ▶ 24h

› 19.914 Phantom

NL **HSS Spiraalboor links**
FR **Foret HSS gauche**
ES **Broca HSS izquierda**
DE **HSS Spiralbohrer links**



HSS | DIN 338 | N | 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

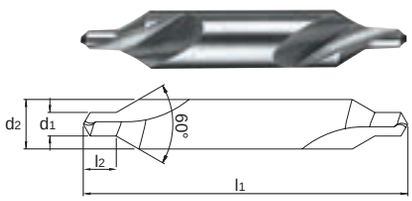
Ref.	d1	d2	l1	l2
19.914.0100	1	1	34	12
19.914.0150	1.5	1.5	40	18
19.914.0200	2	2	49	24
19.914.0250	2.5	2.5	57	30
19.914.0300	3	3	61	33
19.914.0350	3.5	3.5	70	39
19.914.0400	4	4	75	43

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 Centreerboor links, 60°**
FR **Foret à centrer HSS gauche, 60°**
ES **Broca de centrar HSS izquierda, 60°**
DE **HSS Zentrierbohrer links, 60°**



HSS | 60°

P 11 ≤600 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 42 Alu Si>10% | N 43 Mg | N 51 Cu | N 61 PVC

20-25 E | 16-22 F | 25-30 E | 20-25 D | 60-70 E | 45-50 E | 25-40 E | 18-28 E

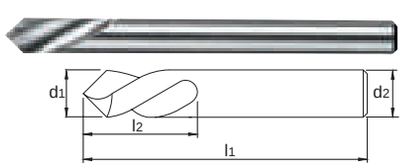
Ref.	d1	d2	l1	l2
19.951.0531	0.5	3.15	25	0,6-0,9
19.951.0735	0.75	3.5	35	1,0-1,3
19.951.1040	1	4	35	1,3-1,7
19.951.1550	1.5	5	40	2,0-2,6
19.951.1640	1.6	4	35	2,0-2,6

Ref.	d1	d2	l1	l2
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

Ref.	d1	d2	l1	l2
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 gauche, 90°**
ES **Broca de puntear NC HSS-E izquierda, 90°**
DE **HSS-E NC Anbohrer links, 90°**



HSS-E | 90°

P 11 ≤600 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 | N 52 CuAlFe

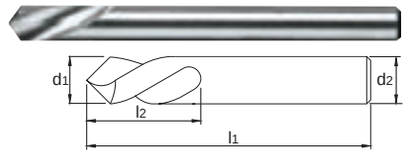
25-30 E | 16-22 F | 8-10 D | 6-8 C | 25-30 E | 20-25 D | 60-70 E | 50-80 E | 30-40 E | 10-15 D

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

Ref.	d1	d2	l1	l2
19.956.0600	6	6	66	20
19.956.0800	8	8	79	25
19.956.1000	10	10	89	25

Ref.	d1	d2	l1	l2
19.956.1200	12	12	102	30

› 19.957 Phantom



NL **HSS-E NC-Centreerboor links, 120°**
FR **Foret à pointer NC HSS-E gauche, 120°**
ES **Broca de puntear NC HSS-E izquierda, 120°**
DE **HSS-E NC Anbohrer links, 120°**

HSS-E | 120°

P 11	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52
≤600 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe
25-30 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

Ref.	d1	d2	l1	l2
19.957.0600	6	6	66	20
19.957.0800	8	8	79	25
19.957.1000	10	10	89	25

Ref.	d1	d2	l1	l2
19.957.1200	12	12	102	30

19:00 ▶ 24h

NL **Voedingswaardentabel**
FR **Tableau des avances**
ES **Tabla de avances**
DE **Vorschubtabelle**

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
38	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250
45	0,250	0,310	0,400	0,500	0,630	0,800	1,000	1,250	1,250
58	0,315	0,400	0,500	0,630	0,800	1,000	1,250	1,600	1,600

NL **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**

$$n = \frac{Vc \times 1000}{3{,}14 \times d1} \qquad Vc = \frac{n \times 3{,}14 \times d1}{1000}$$

Vc (m/min)																		
	5	8	10	12	15	20	25	30	35	40	50	60	70	80	90	100	110	120
d1 (mm)	n = rpm																	
1	1592	2546	3183	3820	4775	6366	7958	9549	11141	12732	15915	19099	22282	25465	28648	31831	35014	38197
1,5	1061	1698	2122	2546	3183	4244	5305	6366	7427	8588	10610	12732	14854	16977	19099	21221	23343	25465
2	796	1273	1592	1910	2387	3183	3937	4775	5570	6366	7958	9549	11141	12732	14324	15915	17507	19099
2,5	637	1019	1273	1528	1910	2546	3183	3820	4456	5093	6366	7639	8913	10186	11459	12732	14006	15279
3	531	849	1061	1273	1592	2122	2653	3183	2714	4244	5305	6366	7427	8488	9549	10610	11671	12732
3,5	455	728	909	1091	1364	1819	2274	2728	3183	3638	4547	5457	6366	7276	8185	9095	10004	10913
4	398	637	796	955	1194	1592	1989	2387	2785	3183	3979	4775	5570	6366	7162	7958	8754	9549
4,5	354	566	707	849	1061	1415	1768	2122	2476	2829	3537	4244	4951	5659	6366	7074	7781	8488
5	318	509	637	764	955	1273	1592	1910	2228	2546	3183	3820	4456	5093	5730	6366	7003	7639
5,5	289	463	579	694	868	1157	1447	1739	2026	2315	2894	3472	4051	4630	5209	5787	6366	6945
6	265	424	531	637	796	1061	1326	1592	1857	2122	2653	3183	3714	4244	4775	5305	5836	6366
7	227	364	455	546	682	909	1137	1364	1592	1819	2274	2728	3183	3638	4093	4547	5002	5457
8	199	318	398	477	597	796	995	1194	1393	1592	1989	2387	2785	3183	3581	3979	4377	4775
9	177	283	354	424	531	707	884	1061	1238	1415	1768	2122	2476	2829	3183	3537	3890	4244
10	159	255	318	382	477	637	796	955	1114	1273	1592	1910	2228	2546	2865	3183	3501	3820
11	145	321	289	347	434	579	723	868	1013	1157	1447	1736	2026	2315	2604	2894	3183	3472
12	133	212	265	318	398	531	663	796	928	1061	1326	1592	1857	2122	2387	2653	2918	3183
13	122	196	245	294	367	490	612	735	857	979	1224	1469	1714	1959	2204	2449	2693	2938
14	114	182	227	273	341	455	568	682	796	909	1137	1364	1592	1819	2046	2274	2501	2728
15	106	170	212	255	318	424	531	637	743	849	1061	1273	1485	1698	1910	2122	2334	2546
16	99	159	199	239	298	398	497	597	696	796	995	1194	1393	1592	1790	1989	2188	2387
18	88	141	177	212	265	354	442	361	619	707	884	1061	1238	1415	1592	1768	1945	2122
20	80	127	159	191	239	318	398	477	557	637	796	955	1114	1273	1432	1592	1751	1910
22	72	116	145	174	217	289	362	434	506	579	723	868	1013	1157	1302	1447	1592	1736
24	66	106	133	159	199	265	332	398	464	531	663	796	928	1061	1194	1326	1459	1592
25	64	102	127	153	191	255	318	382	446	509	637	764	891	1019	1146	1273	1401	1528
26	61	98	122	147	184	245	306	367	428	490	612	735	857	979	1102	1224	1347	1469
28	57	91	114	136	171	227	284	341	398	455	568	682	796	909	1023	1137	1251	1364
30	53	85	106	127	159	212	265	318	371	424	531	637	743	849	955	1061	1167	1273
35	45	73	91	109	136	182	227	273	318	364	455	546	637	728	819	909	1000	1091
40	40	64	80	95	119	159	199	239	279	318	398	477	557	637	716	796	875	955
45	35	57	71	85	106	141	177	212	248	283	354	424	495	566	637	707	778	849
50	32	51	64	76	95	127	159	191	223	255	318	382	446	509	573	637	700	764
55	29	46	58	69	87	116	145	174	203	231	289	347	405	463	521	579	637	694
60	27	42	53	64	80	106	133	159	186	212	265	318	371	424	477	531	584	637

FRC
NL: Voedingscode
FR: Codification vitesse d'avance
ES: Codificación de velocidad de avance
DE: Vorschubgeschwindigkeit Codierung

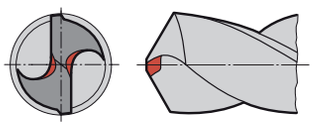
f (mm/n)
NL: Voeding per omwenteling (mm/n)
FR: Avance par tour (mm/tr)
ES: Avance por revolucion (mm/r)
DE: Vorschub pro Umdrehung (mm/U)

Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)

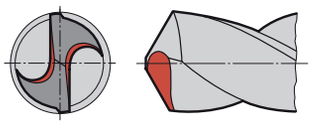
n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)

DIN 1412

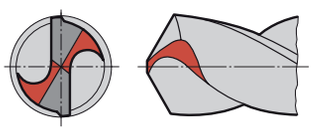
NL **Boorpunten volgens DIN 1412**
FR **Affûtage des forets selon DIN 1412**
ES **Afilado de brocas según DIN 1412**
DE **Anschliffformen DIN 1412**



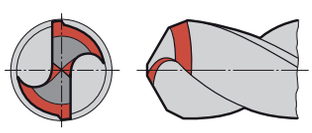
Form A
NL **Uitgedunde punt**
FR **Pointe amincie**
ES **Con alma delgado**
DE **Ausgespitzte Querschneide**



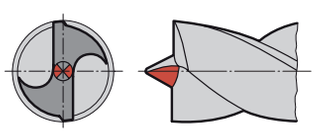
Form B
NL **Uitgedunde punt met gecorrigeerde hoofdsnijkant**
FR **Pointe amincie avec correction des lèvres**
ES **Con alma delgado, corregido**
DE **Ausgespitzte Querschneide mit korrigierte Haupschneide**



Form C
NL **Kruisaanslijping**
FR **Affûtage en croix**
ES **Afilado en cruz**
DE **Kreuzanschliff**



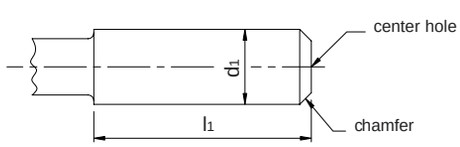
Form D
NL **Boorpunt voor grijs gietijzer**
FR **Affûtage pour fonte grise**
ES **Filo para fundición gris**
DE **Anschliff für Grauguss**



Form E
NL **Centreerpunt**
FR **Pointe centrale pour forets à tôle**
ES **Punta de centraje**
DE **Zentrumspitze**

DIN 1835

NL **Cilindrische schacht**
FR **Queue cylindrique**
ES **Mango cilíndrico**
DE **Zylinderschaft**



Dimensions in mm	
d_1 h8	l_1 +2 0
3	28
4	28
5	28
6	36
8	36

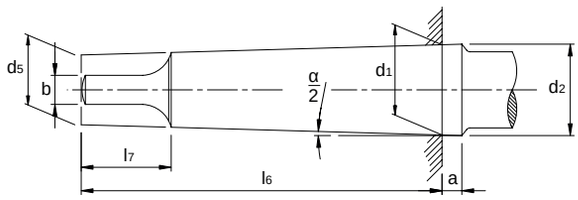
Dimensions in mm	
d_1 h8	l_1 +2 0
10	40
12	45
16	48
20	50
25	56

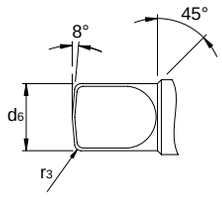
Dimensions in mm	
d_1 h8	l_1 +2 0
32	60
40	70
50	80
63	90

19:00 ▶ 🛒 ▶ 24h

DIN 228

NL **Morse Konus DIN 228**
FR **Cône morse DIN 228**
ES **Mango cónico DIN 228**
DE **Morsekegel DIN 228**





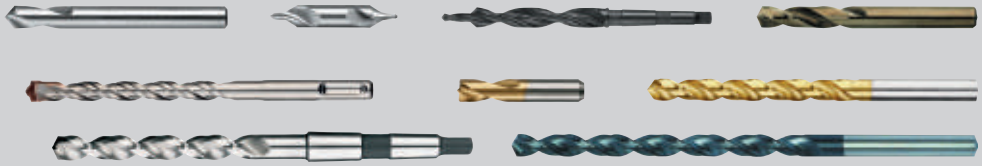
Dimensions in mm												
shank to DIN 228 form B size	a	limiting dim.	b	d_1	d ≈2	d ≈5	d_6 max.	l_6 0 -1	l_7 max.	r_2 max.	r ≈3	a/2
MK 1	3.5	+1.4 0	5.2	12.065	12.2	9.0	8.7	62	13.5	5	1.2	1°25′43″
MK 2	5.0	+1.4 0	6.3	17.780	18.0	14.0	13.5	75	16	6	1.6	1°25′50″
MK 3	5.0	+1.7 0	7.9	23.825	24.1	19.1	18.5	94	20	7	2	1°26′16″
MK 4	6.5	+1.9 0	11.9	31.267	31.6	25.2	24.5	117.5	24	8	2.5	1°29′15″
MK 5	6.5	+1.9 0	15.9	44.399	44.7	36.5	35.7	149.5	29	10	3	1°30′26″



NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



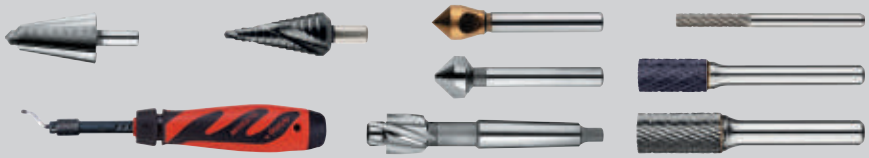
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



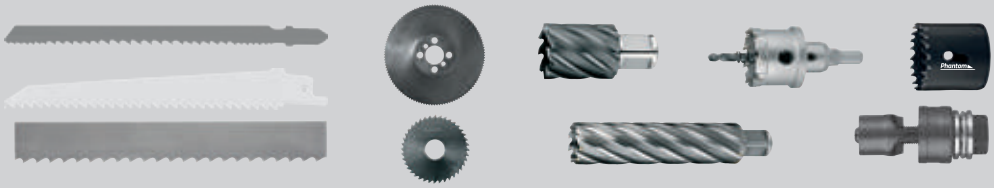
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
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 PM	PowderMetal HSS-E (5% Cobalt)	Acier rapide fritté de haute qualité	Acero rápido pulvimetalúrgico	Pulvermetall HSS-E (5% Cobalt)
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Hartmetall
MG HM	Micro-Grain volhardmetaal	Carbure micrograin	Metal duro micrograno	Micro-Grain Vollhartmetall
M	Metrisch	Metrique	Métrica	Metrisch
MF	Metrisch Fijn	Métrique pas fin	Métrica Fina	Metrisch Fein
UNC	UNC schroefdraad	Filetage UNC	Rosca UNF	UNF Gewinde
UNF	UNF schroefdraad	Filetage UNF	Norma DIN	DIN Norm
NFE 66103	NFE 66103	NFE 66103	NFE 66103	NFE 66103
UN-8	Unified schroefdraad	Filetage UN-8	Rosca UN-8	Unified Gewinde
BA	British Association schroefdraad	Filetage BA	Rosca BA	British Association Gewinde
BSC FG	British Standard Cycle schroefdraad	Filetage BSC (pour bicyclettes)	Rosca BSC (para bicicletas)	British Standard Cycle (Fahrradgewinde)
BSF	British Standard Whit-worth, Fijne schroefdraad	Filetage BSF, pas fin	Rosca BSF, paso fino	British Standard Whit-worth, Feingewinde
BSP G	British Standard Pipe (Gasdraad)	Filetage BSP(Gaz)	Rosca BSP (Gas)	British Standard Pipe (Gasgewinde)
BSPP Rp	BSP Parallel schroefdraad (drukdicht)	Filetage BSPP Gaz (Paral-lèle, étanche à la pression)	Rosca BSPP Paralelo (estanco a la presión)	BSP Parallel Gewinde (druckdicht)
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)
BSW	British Standard Whit-worth schroefdraad	Filetage BSW	Rosca BSW	British Standard Whitworth Gewinde
NPT	National Pipe Taper schroefdraad	Filetage NPT	Rosca NPT	National Pipe Taper Gewinde
NPTF	National Pipe Taper Fuel schroefdraad	Filetage NPTF	Rosca NPTF	National Pipe Taper Fuel Gewinde
Tr	Trapezium schroefdraad	Filetage Trapèze	Rosca Trapezoidal	Trapezgewinde (Regel)
PG	Panzerrohr-Gewinde	Filetage PG	Rosca PG	Panzerrohr-Gewinde
EG	EG (Phan-Coil)	EG (Phan-Coil)	EG (Phan-Coil)	EG (Phan-Coil)
Phan-Coil	Schroefdraad-reparatie	Réparation de filetage	Reparar de rosca	Gewindereparatur
60°	Tophoek schroefdraad	Angle au sommet	Ángulo de punta de la rosca	Flankenwinkel
NIT.	Genitreerd	Nitruré	Nitrurado	Nitriert
OX.	Stoomontlaten	Vaporisé	Vaporizado	Dampfangelassen
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung
TiCN	TiCN gecoat	Revêtement TiCN	Recubrimiento TiCN	TiCN Beschicht-ung

	NL	FR	ES	DE
HARD LUBE	HARDLUBE-gecoat	Revêtement HARDLUBE	Recubrimiento HARDLUBE	HARDLUBE Beschichtung
DIN 371	DIN norm	Norme DIN	Norma DIN	DIN Norm
NFE 66103	NFE norm	Norme NFE	Norma NFE	NFE Norm
ISO 529	ISO norm	Norme ISO	Norma ISO	ISO Norm
Phantom	Phantom Norm	Norme Phantom	Norma Phantom	Werksnorm
2,5xD	Max. draadlengte	Profondeur max. de taraudage	Profundidad máx. de roscar	Max. Gewindelänge
	Eindsnijder	Taraud finisseur	Macho de acabado	Fertigschneider
	Set a 3 stuks	Jeu de 3 pièces	Juego de 3 piezas	Satz von 3 Stück
	Voor handgebruik	Pour usage à la main	Para uso manual	für Handgebrauch
1:16	Coniciteit	Conicité	Conicidad	Konizität
38°	Spiraalhoek	Angle d'hélice	Angulo de hélice	Spiralwinkel
Form B	Met schilaansnijding	Coupe GUN	Con entrada corregida (GUN)	Schälanschnitt
2,5	Aantal gangen aansnijding	Nombre de filets	Número de hilos	Anzahl Gangen Anschnitt
	Draad teruglopend na de 5e gang	Tronqués après le 5ème filet	Roasca rebajada a partir de 5° hilo	Rücklaufend nach dem 5. Gang
	Schilaansnijding snijplaten	Entrée GUN	Entrada corregida (GUN)	Schälanschnitt Schneideisen
	Koelkanaal	A trous d'huile	Canal de refrigeración	Mit Kühlkanal
	Doorlopende gaten	Trou débouchant	Agujero pasante	Durchgangslöcher
	Blinde gaten	Trou borgne	Agujero ciego	Sacklöcher
2 xD	Max. draadlengte 2xD	Profondeur max. du filetage 2xD	Profundidad máx. de roscar 2xD	Max. Gewin-delänge 2xD
1,5 xD	Max. draadlengte 1,5xD	Profondeur max. du filetage 1,5xD	Profundidad máx. de roscar 1,5xD	Max. Gewindelän-ge 1,5xD
2B	Tolerantie 2B	Tolérance 2B	Tolerancia 2B	Toleranz 2B
+0,1 +0,2	Overmaats	Surcoté	Sobremedida	Übermass
INOX	T.b.v. roestvast-staal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium
GG GGG	Voor gietijzer	Pour fonte	Para fundición	Für Gusseisen
UNI	Universeel	Universel	Universal	Universal High Performance
HP2 UNI	High Performance Universeel	Haute Perfor-mance Universel	Alta Rendimiento Universal	High Performance Universal
	Linkssnijdend	Coupe à gauche	Corte a izquierda	Linksschneidend
	Viervlaks-aan-slijping	Affûtage 4 pentes	Afilado 4 facetas	Vierflachs-Anschliff

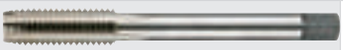
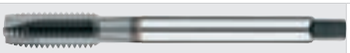
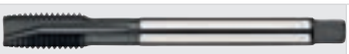
NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**

P K Bij uitstek geschikt
H N Très approprié
M S Muy adecuado
Ideal geeignet

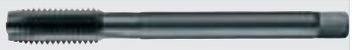
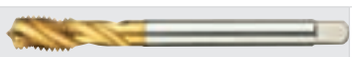
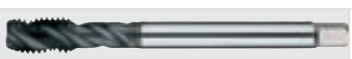
P K Beperkt geschikt
H N Approprié
M S Adecuado
Eingeschränkt geeignet

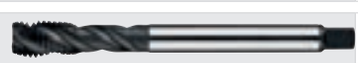
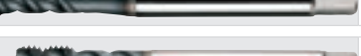
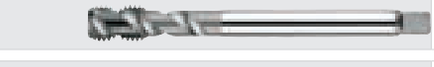
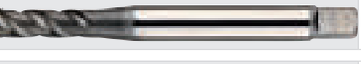
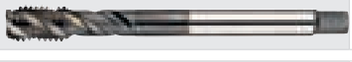
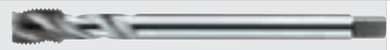
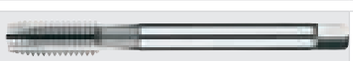
P= pagina
P= page
P= página
P= Seite

› 21.100	Phantom	M	ISO 529		P M K N		P. 10
› 21.110	Phantom	M	ISO 529		P M K N		P. 10
› 21.140	INTERNATIONAL TOOLS	M	DIN 352		P M K N		P. 11
› 21.150	Phantom	M	DIN 352	INOX	P M K N		P. 11
› 21.163	Phantom	M	ISO 529	+0,1 +0,2	P M K N		P. 11
› 21.200	Phantom	MF	ISO 529		P M K N		P. 12
› 21.240	INTERNATIONAL TOOLS	MF	DIN 2181		P M K N		P. 12
› 21.300	Phantom	UNC	ISO 529		P M K N		P. 13
› 21.350	Phantom	UNF	ISO 529		P M K N		P. 13
› 21.392		UN-8			P M K N		P. 14
› 21.400	Phantom	BSP G			P M K N		P. 14
› 21.404	INTERNATIONAL TOOLS	BSP G			P M K N		P. 14
› 21.410	Phantom	BSPT Rc			P M K N		P. 15
› 21.420	Phantom	BSW	ISO 529		P M K N		P. 15
› 21.430	Phantom	BSF	ISO 529		P M K N		P. 16
› 21.500	Phantom	NPT			P M K N		P. 16
› 21.600	Phantom	PG			P M K N		P. 16
› 21.812	Phantom	M	Phan-Coil		P M K N		P. 17
› 21.822	Phantom	MF	Phan-Coil		P M K N		P. 17
› 21.832	Phantom	UNC	Phan-Coil		P M K N		P. 17

› 21.840	Phantom	UNF	Phan-Coil	P	M	K	N						P. 17
› 81.900													P. 18
› 81.905													P. 18
› 81.930													P. 18
› 81.935													P. 18
› 81.950													P. 19
› 22.195	INTERNATIONAL TOOLS	M	DIN 371	P		K	N						P. 20
› 22.196	INTERNATIONAL TOOLS	M	DIN 376	P		K	N						P. 20
› 22.197	INTERNATIONAL TOOLS	M	DIN 371	P	M	K	N						P. 20
› 22.198	INTERNATIONAL TOOLS	M	DIN 376	P	M	K	N						P. 20
› 22.200	Phantom	M	DIN 371	P	M	K	N	S					P. 21
› 22.201	Phantom	M	DIN 376	P	M	K	N	S					P. 21
› 22.205	Phantom	M	ISO 529	P		K	N						P. 21
› 22.208	Phantom	M	ISO 529	P		K	N						P. 22
› 22.220	Phantom	M	DIN 371	P	M	K							P. 22
› 22.221	Phantom	M	DIN 376	P	M	K							P. 22
› 22.240	Phantom	M	DIN 371	P	M	K	N	S					P. 23
› 22.241	Phantom	M	DIN 376	P	M	K	N	S					P. 23
› 22.252	Phantom	M	DIN 371	P		K	N	S					P. 23
› 22.253	Phantom	M	DIN 376	P		K	N	S					P. 23
› 22.268	Phantom	M	DIN 371	P	M	K	N	S					P. 24
› 22.269	Phantom	M	DIN 376	P	M	K	N	S					P. 24
› 22.350	Phantom	M		P	M	K	N	S					P. 24
› 22.351	Phantom	M		P	M	K	N	S					P. 25
› 22.500	Phantom	M	DIN 371	P	M								P. 25
› 22.501	Phantom	M	DIN 376	P	M								P. 25
› 22.504	Phantom	M	DIN 371	P	M								P. 26
› 22.505	Phantom	M	DIN 376	P	M								P. 26
› 22.530	Phantom	M	DIN 371	P			N	S					P. 26
› 22.531	Phantom	M	DIN 376	P			N	S					P. 27
› 22.550	Phantom	M	DIN 371				N						P. 27

19:00 ▸ 24h

› 22.595	INTERNATIONAL TOOLS	M	DIN 371	P	M							P. 27
› 22.596	INTERNATIONAL TOOLS	M	DIN 376	P	M							P. 28
› 22.600	Phantom	M	DIN 371	P	M							P. 28
› 22.601	Phantom	M	DIN 376	P	M							P. 28
› 22.604	Phantom	M	DIN 371	P	M							P. 29
› 22.605	Phantom	M	DIN 376	P	M							P. 29
› 22.610	Phantom	M	DIN 371	P	M							P. 29
› 22.611	Phantom	M	DIN 376	P	M							P. 30
› 22.650	Phantom	M	DIN 371			K						P. 30
› 22.651	Phantom	M	DIN 376			K						P. 30
› 22.700	Phantom	M	DIN 371	P			N					P. 30
› 22.701	Phantom	M	DIN 376	P			N					P. 31
› 22.705	Phantom	M		P			N					P. 31
› 22.720	Phantom	M	DIN 371				N					P. 31
› 22.721	Phantom	M	DIN 376				N					P. 32
› 22.895	Phantom	M	Phan-Coil	P		K	N					P. 32
› 23.150	Phantom	M	DIN 371	P		K	N					P. 33
› 23.151	Phantom	M	DIN 376	P		K	N					P. 33
› 23.295	INTERNATIONAL TOOLS	M	DIN 371	P		K	N					P. 33
› 23.296	INTERNATIONAL TOOLS	M	DIN 376	P		K	N					P. 34
› 23.297	INTERNATIONAL TOOLS	M	DIN 371	P	M	K	N					P. 34
› 23.298	INTERNATIONAL TOOLS	M	DIN 376	P	M	K	N					P. 34
› 23.300	Phantom	M	DIN 371	P	M	K	N	S				P. 35
› 23.301	Phantom	M	DIN 376	P	M	K	N	S				P. 35
› 23.305	Phantom	M	ISO 529	P		K	N					P. 35
› 23.324	Phantom	M	DIN 371	P	M	K	N	S				P. 36
› 23.325	Phantom	M	DIN 376	P	M	K	N	S				P. 36
› 23.352	Phantom	M	DIN 371	P		K	N	S				P. 36
› 23.353	Phantom	M	DIN 376	P		K	N	S				P. 36
› 23.368	Phantom	M	DIN 371	P	M	K	N	S				P. 37
› 23.369	Phantom	M	DIN 376	P	M	K	N	S				P. 37

› 23.370	Phantom	M		P	M	K	N	S						P. 37
› 23.371	Phantom	M		P	M	K	N	S						P. 38
› 23.400	Phantom	M	DIN 371	P	M									P. 38
› 23.401	Phantom	M	DIN 376	P	M									P. 38
› 23.404	Phantom	M	DIN 371	P	M									P. 39
› 23.405	Phantom	M	DIN 376	P	M									P. 39
› 23.430	Phantom	M	DIN 371	P				S						P. 39
› 23.431	Phantom	M	DIN 376	P				S						P. 40
› 23.440	Phantom	M		P	M		N		H					P. 40
› 23.445	INTERNATIONAL TOOLS	M	DIN 371	P	M									P. 40
› 23.446	INTERNATIONAL TOOLS	M	DIN 376	P	M									P. 41
› 23.450	Phantom	M	DIN 371	P	M			S						P. 41
› 23.451	Phantom	M	DIN 376	P	M			S						P. 41
› 23.454	Phantom	M	DIN 371	P	M			S						P. 42
› 23.455	Phantom	M	DIN 376	P	M			S						P. 42
› 23.480	Phantom	M	DIN 371	P			N							P. 42
› 23.481	Phantom	M	DIN 376	P			N							P. 42
› 23.500	Phantom	M	DIN 371				N							P. 43
› 23.501	Phantom	M	DIN 376				N							P. 43
› 23.585	Phantom	M	Phan-Coil	P		K	N							P. 43
› 23.615	INTERNATIONAL TOOLS	MF	DIN 374	P		K	N							P. 44
› 23.620	Phantom	MF	DIN 374	P	M	K	N	S						P. 44
› 23.625	Phantom	MF		P		K	N							P. 45
› 23.668	Phantom	MF	DIN 374	P	M	K	N	S					 NEW	P. 45
› 23.750	Phantom	MF		P	M		N	S						P. 45
› 23.835	INTERNATIONAL TOOLS	MF	DIN 374	P		K	N							P. 46
› 23.840	Phantom	MF	DIN 374	P	M	K	N	S						P. 46
› 23.868	Phantom	MF	DIN 374	P	M	K	N	S					 NEW	P. 46
› 24.120	Phantom	UNC	DIN 371	P	M	K	N	S						P. 47
› 24.121	Phantom	UNC	DIN 376	P	M	K	N	S						P. 47
› 24.125	Phantom	UNC	ISO 529	P		K	N							P. 47

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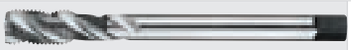
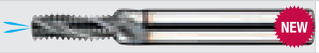
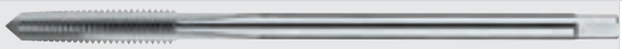
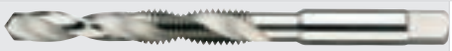
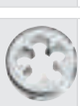
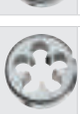
› 24.340	Phantom	UNC	DIN 371	P	M	K	N	S		P. 48
› 24.341	Phantom	UNC	DIN 376	P	M	K	N	S		P. 48
› 24.520	Phantom	UNF	DIN 371	P	M	K	N	S		P. 48
› 24.521	Phantom	UNF	DIN 376	P	M	K	N	S		P. 49
› 24.525	Phantom	UNF	ISO 529	P		K	N			P. 49
› 24.740	Phantom	UNF	DIN 371	P	M	K	N	S		P. 49
› 24.741	Phantom	UNF	DIN 376	P	M	K	N	S		P. 50
› 24.991	Phantom	UNEF	DIN 374	P	M	K	N			P. 50
› 25.095	INTERNATIONAL TOOLS	BSP G	DIN 5156	P		K	N			P. 50
› 25.100	Phantom	BSP G	DIN 5156	P		K	N			P. 51
› 25.105	Phantom	BSP G	NFE 66103	P		K	N			P. 51
› 25.160	Phantom	BSP G	DIN 5156	P	M					P. 51
› 25.295	INTERNATIONAL TOOLS	BSP G	DIN 5156	P		K	N			P. 52
› 25.300	Phantom	BSP G	DIN 5156	P		K	N			P. 52
› 25.360	Phantom	BSP G	DIN 5156	P	M					P. 52
› 25.480	Phantom	BSPT Rc	DIN 5156	P	M	K	N			P. 53
› 25.500	Phantom	BSPP Rp	DIN 5156	P	M	K	N			P. 53
› 25.520	Phantom	BSW	DIN 371	P		K	N			P. 53
› 25.521	Phantom	BSW	DIN 376	P		K	N			P. 54
› 25.525	Phantom	BSW	NFE 66103	P		K	N			P. 54
› 25.640	Phantom	BSW	DIN 2182	P		K	N			P. 54
› 25.641	Phantom	BSW	DIN 2183	P		K	N			P. 55
› 25.720	Phantom	BSF	DIN 371	P		K	N			P. 55
› 25.721	Phantom	BSF	DIN 376	P		K	N			P. 55
› 25.760	Phantom	BSC FG		P		K	N			P. 56
› 25.820	Phantom	NPT	DIN 374	P		K	N			P. 56
› 25.840	Phantom	NPTF	DIN 374	P		K	N			P. 56
› 25.900	Phantom	PG	DIN 40433	P		K	N			P. 57
› 25.950	Phantom	Tr		P		K	N			P. 57
› 26.100	Phantom	M	DIN 371	P			N			P. 58
› 26.101	Phantom	M	DIN 376	P			N			P. 58

› 26.110	Phantom	M	DIN 371		P	M		N							P. 58
› 26.111	Phantom	M	DIN 376		P	M									P. 58
› 26.160	Phantom	M	DIN 371		P	M		N							P. 59
› 26.161	Phantom	M	DIN 376		P	M		N							P. 59
› 26.310	Phantom	M	DIN 376		P	M	K	N						 NEW	P. 59
› 26.316	Phantom	M	DIN 376		P	M	K	N	S	H				 NEW	P. 60
› 26.384	Phantom	M	DIN 376		P	M	K	N	S	H				 NEW	P. 60
› 26.500	Phantom	M			P		K	N							P. 60
› 26.700	Phantom	M			P			N							P. 61
› 27.100	INTERNATIONAL TOOLS	M	DIN EN 22568		P		K	N							P. 62
› 27.110	INTERNATIONAL TOOLS	M			P		K	N							P. 62
› 27.120	Phantom	M	DIN EN 22568		P	M		N							P. 62
› 27.150	Phantom	M	DIN EN 22568		P	M		N	S						P. 63
› 27.175	Phantom	M	DIN EN 22568					N							P. 63
› 27.200	INTERNATIONAL TOOLS	MF	DIN EN 22568		P		K	N							P. 63
› 27.220	Phantom	MF	DIN EN 22568		P	M		N							P. 64
› 27.300	INTERNATIONAL TOOLS	UNC	DIN EN 22568		P		K	N							P. 64
› 27.320	Phantom	UNC	DIN EN 22568		P	M		N							P. 65
› 27.400	INTERNATIONAL TOOLS	UNF	DIN EN 22568		P		K	N							P. 65
› 27.420	Phantom	UNF	DIN EN 22568		P	M		N							P. 65
› 27.470	Phantom	UNEF	DIN EN 22568		P	M		N							P. 66
› 27.500	INTERNATIONAL TOOLS	BSP G	DIN EN 24230		P		K	N							P. 66
› 27.520	Phantom	BSP G	DIN EN 24230		P	M		N							P. 66

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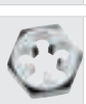
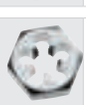
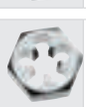
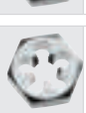
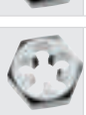
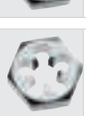
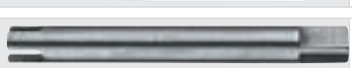
› 27.525	Phantom	BSP G	DIN EN 24230				N				P. 67
› 27.530	Phantom	BSPT Rc	DIN EN 24230		P	M	N				P. 67
› 27.550	INTERNATIONAL TOOLS	BSW	DIN EN 22568		P		K	N			P. 67
› 27.560	Phantom	BSW	DIN EN 22568		P	M	N				P. 68
› 27.575	Phantom	BSF	DIN EN 22568		P	M	N				P. 68
› 27.580	Phantom	BA	DIN EN 22568		P	M	N				P. 68
› 27.590	Phantom	BSC FG	DIN EN 22568		P	M	N				P. 69
› 27.600	Phantom	NPT	DIN EN 24230		P	M	N				P. 69
› 27.610	Phantom	NPTF	DIN EN 24230		P	M	N				P. 69
› 27.650	Phantom	PG	DIN EN 40434		P	M	N				P. 70
› 81.910											P. 70
› 27.700	INTERNATIONAL TOOLS	M	DIN 382								P. 71
› 27.750	INTERNATIONAL TOOLS	MF	DIN 382								P. 71
› 27.800	INTERNATIONAL TOOLS	UNC	DIN 382								P. 71
› 27.840	INTERNATIONAL TOOLS	UNF	DIN 382								P. 72
› 27.900	INTERNATIONAL TOOLS	BSP G	DIN 382								P. 72
› 27.940	INTERNATIONAL TOOLS	BSW	DIN 382								P. 72
› 27.980	Phantom	NPT	DIN 382								P. 72
› 28.800	INTERNATIONAL TOOLS										P. 73
› 28.810	INTERNATIONAL TOOLS										P. 73
› 28.830	Phantom	M	Phan-Coil								P. 74

› 28.831	Phantom	MF	Phan-Coil		P. 74
› 28.832	Phantom	UNC	Phan-Coil		P. 74
› 28.833	Phantom	UNF	Phan-Coil		P. 75
› 28.860	Phantom				P. 75
› 28.865	Phantom				P. 75
› 28.870	Phantom	M	Phan-Coil		P. 76
› 28.871	Phantom	MF	Phan-Coil		P. 76
› 28.872	Phantom	UNC	Phan-Coil		P. 77
› 28.880	Phantom	M	Phan-Coil		P. 77
› 29.100	INTERNATIONAL TOOLS				P. 78
› 29.120	INTERNATIONAL TOOLS				P. 78
› 29.195	INTERNATIONAL TOOLS				P. 79
› 29.200	INTERNATIONAL TOOLS				P. 79
› 29.220					P. 79
› 29.240					P. 80
› 29.250	Phantom				P. 80
› 29.260	Phantom				P. 81
› 29.280					P. 81
› 29.295	INTERNATIONAL TOOLS				P. 81
› 29.300	INTERNATIONAL TOOLS				P. 82
› 29.910	Phantom	M	ISO 529		P. 83
› 29.950	Phantom	M	P M K N S	 NEW	P. 83

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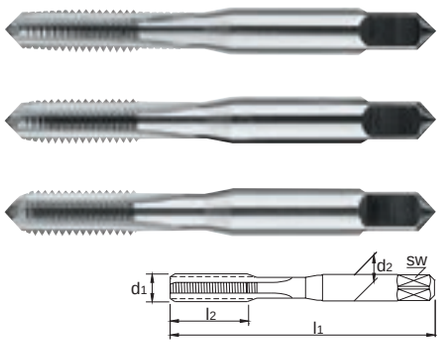
› 29.951	Phantom	M			P	M	K	N	S	 NEW		P. 83
› 29.960	Phantom	MF			P	M	K	N	S	 NEW		P. 84
› 29.969	Phantom	BSC FG										P. 84
› 29.970	INTERNATIONAL TOOLS	M		DIN EN 22568	P		K	N				P. 84
› 29.972	INTERNATIONAL TOOLS	MF		DIN EN 22568	P		K	N				P. 85
› 29.975	Phantom	UNC		DIN EN 22568	P	M		N				P. 85
› 29.978	Phantom	UNF		DIN EN 22568	P	M		N				P. 85
› 29.985	INTERNATIONAL TOOLS	BSP G		DIN EN 24230	P		K	N				P. 86
› 29.989	Phantom	BSC FG		DIN EN 22568	P	M		N				P. 86
› 29.990	INTERNATIONAL TOOLS	M		DIN 382								P. 86

› 21.100 Phantom

NL **HSS Handtappen Metrisch**
FR **Tarauds à main HSS Métrique**
ES **Machos mano HSS Métrica**
DE **HSS Handgewindebohrer Metrisch**



HSS | M | 60° | NFE 66103 | ISO 529 | 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

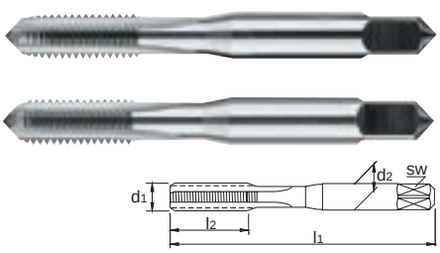
Ref.	d1	P	l1	l2	d2	sw
21.100.0160	M1,6	0.35	28	9	3	2.35
21.100.0200	M2	0.4	41	8	2.5	2
21.100.0220	M2,2	0.45	44.5	8	2.8	2.24
21.100.0250	M2,5	0.45	44.5	9.5	2.8	2.24
21.100.0260	M2,6	0.45	44.5	9.5	2.8	2.24
21.100.0300	M3	0.5	48	11	3.15	2.5
21.100.0350	M3,5	0.6	50	13	3.55	2.8
21.100.0400	M4	0.7	53	13	4	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
21.100.4800	M48	5	187	67	31.5	25
21.100.5200	M52	5	200	70	35.5	28

› 21.110 Phantom

NL **HSS Handtappen Metrisch**
FR **Tarauds à main HSS Métrique**
ES **Machos mano HSS Métrica**
DE **HSS Handgewindebohrer Metrisch**



HSS | M | 60° | NFE 66103 | ISO 529 | 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
21.110.0600	M6	1	66	19	6.3	5

Ref.	d1	P	l1	l2	d2	sw
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
21.110.1400	M14	2	95	30	11.2	9
21.110.1600	M16	2	102	32	12.5	10

Ref.	d1	P	l1	l2	d2	sw
21.110.1800	M18	2.5	112	37	14	11.2
21.110.2000	M20	2.5	112	37	14	11.2
21.110.2400	M24	3	130	45	18	14
21.110.2700	M27	3	135	45	20	16
21.110.3000	M30	3.5	138	48	20	16

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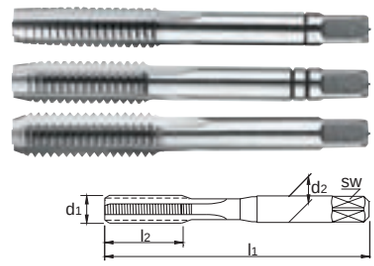
› 21.140 INTERNATIONAL TOOLS

NL **HSS Handtappen Metrisch**
FR **Tarauds à main HSS Métrique**
ES **Machos mano HSS Métrica**
DE **HSS Handgewindebohrer Metrisch**



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

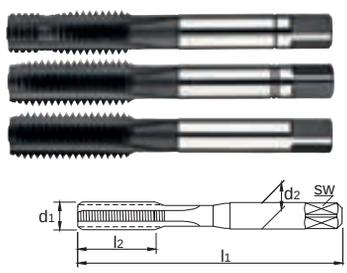
Ref.	d1	P	l1	l2	d2	sw
21.140.0300	M3	0.5	40	11	3.5	2.7
21.140.0400	M4	0.7	45	13	4.5	3.4
21.140.0500	M5	0.8	50	16	6	4.9
21.140.0600	M6	1	50	19	6	4.9
21.140.0800	M8	1.25	56	22	6	4.9

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	29	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	40	14	11

Ref.	d1	P	l1	l2	d2	sw
21.140.2000	M20	2.5	95	40	16	12
21.140.2200	M22	2.5	100	40	18	14.5
21.140.2400	M24	3	110	50	18	14.5
21.140.2700	M27	3	110	50	20	16
21.140.3000	M30	3.5	132	56	22	18

› 21.150 Phantom

NL **HSS-E Handtappen Metrisch, stoomontlaten, Nr. 1: met geleiding**
FR **Tarauds à main HSS-E Métrique, vaporisé, N° 1: avec guidage**
ES **Machos mano HSS-E Métrica, vaporizado, N° 1: con guía**
DE **HSS-E Handgewindebohrer Metrisch, dampfangelassen, Nr. 1: mit einfacher Führung**



HSS-E | M | 60° | OX. | DIN 352 | ISO 2 6H | INOX

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

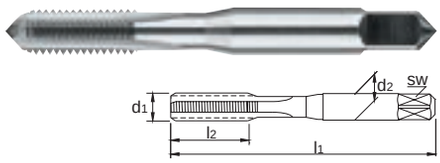
Ref.	d1	P	l1	l2	d2	sw
21.150.0300	M3	0.5	40	11	3.5	2.7
21.150.0400	M4	0.7	45	13	4.5	3.4
21.150.0500	M5	0.8	50	16	6	4.9

Ref.	d1	P	l1	l2	d2	sw
21.150.0600	M6	1	50	19	6	4.9
21.150.0800	M8	1.25	56	20	6	4.9
21.150.1000	M10	1.5	70	22	7	5.5

Ref.	d1	P	l1	l2	d2	sw
21.150.1200	M12	1.75	75	24	9	7

› 21.163 Phantom

NL **HSS Eindsnijder Metrisch, Overmaats**
FR **Taraud finisseur HSS Métrique, surcoté**
ES **Macho de acabado HSS Métrica, sobremedida**
DE **HSS Fertigschneider Metrisch, Übermaß**



HSS | M | 60° | NFE 66103 | ISO 529 | ISO 2 6H | +0,1 +0,2

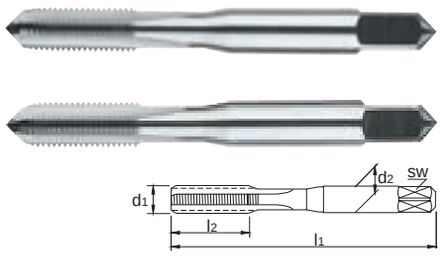
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

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

Ref.	d1	P	l1	l2	d2	sw
21.163.1220	M12+0,2	1.75	89	29	9	7.1
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**
FR **Tarauds à main HSS Métrique Fin**
ES **Machos mano HSS Métrica Fina**
DE **HSS Handgewindebohrer Metrisch Fein**



HSS | MF | 60° | NFE 66103 | ISO 529 | 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

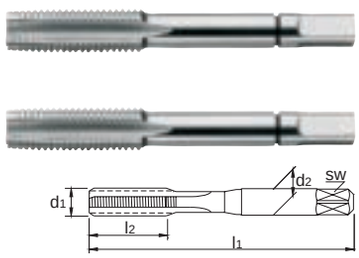
Ref.	d1	P	l1	l2	d2	sw
21.200.0303	MF3	0.35	48	11	3.15	2.5
21.200.0405	MF4	0.5	53	13	4	3.15
21.200.0505	MF5	0.5	58	16	5	4
21.200.0605	MF6	0.5	66	19	6.3	5
21.200.0607	MF6	0.75	66	19	6.3	5
21.200.0707	MF7	0.75	66	19	7.1	5.6
21.200.0807	MF8	0.75	72	22	8	6.3
21.200.0810	MF8	1	72	22	8	6.3
21.200.0910	MF9	1	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

Ref.	d1	P	l1	l2	d2	sw
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	102	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

Ref.	d1	P	l1	l2	d2	sw
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
21.200.3015	MF30	1.5	127	37	20	16
21.200.3020	MF30	2	127	37	20	16
21.200.3320	MF33	2	137	37	22.4	18

› 21.240 INTERNATIONAL TOOLS

NL **HSS Handtappen Metrisch Fijn**
FR **Tarauds à main HSS Métrique Fin**
ES **Machos mano HSS Métrica Fina**
DE **HSS Handgewindebohrer Metrisch Fein**



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
21.240.0405	MF4	0.5	45	10	4.5	3.4
21.240.0505	MF5	0.5	50	12	6	4.9
21.240.0607	MF6	0.75	50	14	6	4.9
21.240.0807	MF8	0.75	50	19	6	4.9
21.240.0810	MF8	1	56	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

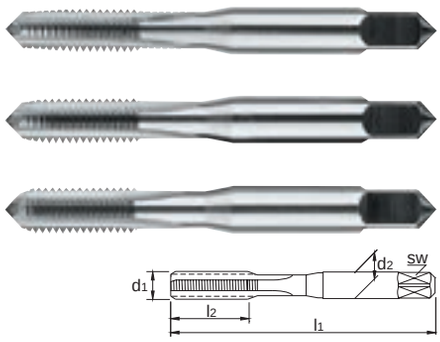
Ref.	d1	P	l1	l2	d2	sw
21.240.1212	MF12	1.25	70	22	9	7
21.240.1215	MF12	1.5	70	22	9	7
21.240.1410	MF14	1	70	22	11	9
21.240.1412	MF14	1.25	70	22	11	9
21.240.1415	MF14	1.5	70	22	11	9
21.240.1615	MF16	1.5	70	22	12	9
21.240.1810	MF18	1	80	22	14	11
21.240.1815	MF18	1.5	80	22	14	11

Ref.	d1	P	l1	l2	d2	sw
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

19:00 ▶ 24h

› 21.300 Phantom

NL **HSS Handtappen UNC**
FR **Tarauds à main HSS UNC**
ES **Machos mano HSS UNC**
DE **HSS Handgewindebohrer UNC**



HSS | UNC | 60° | NFE 66104 | ISO 529 | 2B

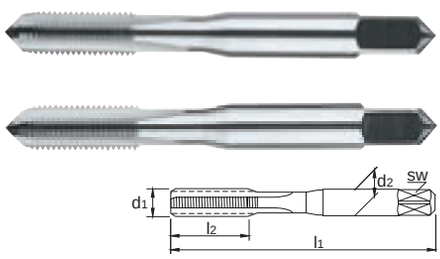
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
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	P	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

› 21.350 Phantom

NL **HSS Handtappen UNF**
FR **Tarauds à main HSS UNF**
ES **Machos mano HSS UNF**
DE **HSS Handgewindebohrer UNF**



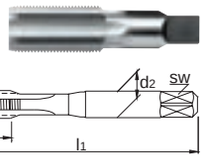
HSS | UNF | 60° | NFE 66104 | ISO 529 | 2B

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	P	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	P	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
21.350.2541	UNF 1	14	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

› 21.392 Phantom



NL **HSS Eindsnijder UN-8**
FR **Taraud finisseur HSS UN-8**
ES **Macho de acabado HSS UN-8**
DE **HSS Fertigschneider UN-8**

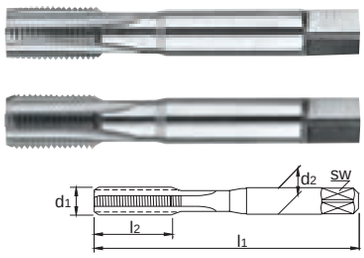
HSS | UN-8 | 60° | Phantom

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
21.392.2858	UN 1.1/8	8	138	48	20	16
21.392.3175	UN 1.1/4	8	151	51	20.4	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	P	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 BSP (Gasdraad)**
FR **Tarauds à main HSS BSP (pas gaz)**
ES **Machos mano HSS BSP (gas)**
DE **HSS Handgewindebohrer BSP (Rohrgewinde)**

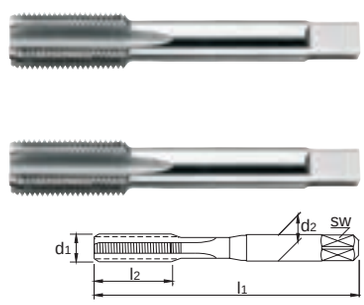
HSS | BSP G | 55° | Phantom

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
21.400.0973	BSP 1/8	28	59	15	8	6.3
21.400.1316	BSP 1/4	19	67	19	11	8
21.400.1666	BSP 3/8	19	75	21	12.5	10
21.400.2096	BSP 1/2	14	87	26	16	12.5
21.400.2291	BSP 5/8	14	91	26	18	14
21.400.2644	BSP 3/4	14	96	28	20	16

Ref.	d1	P	l1	l2	d2	sw
21.400.3020	BSP 7/8	14	102	29	22.4	18
21.400.3325	BSP 1	11	109	33	25	20
21.400.4191	BSP 1.1/4	11	119	39	31.5	25.5
21.400.4780	BSP 1.1/2	11	125	37	35.5	28
21.400.5375	BSP 1.3/4	11	132	39	35.5	28
21.400.5961	BSP 2	11	140	41	40	31.5

› 21.404 INTERNATIONAL TOOLS



NL **HSS Handtappen BSP (Gasdraad)**
FR **Tarauds à main HSS BSP (pas gaz)**
ES **Machos mano HSS BSP (gas)**
DE **HSS Handgewindebohrer BSP (Rohrgewinde)**

HSS | BSP G | 55°

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

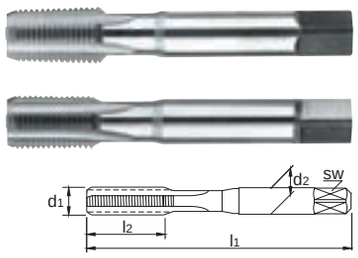
Ref.	d1	P	l1	l2	d2	sw
21.404.0973	BSP 1/8	28	63	20	7	5.5
21.404.1316	BSP 1/4	19	70	22	11	9
21.404.1666	BSP 3/8	19	70	22	12	9

Ref.	d1	P	l1	l2	d2	sw
21.404.2096	BSP 1/2	14	80	22	16	12
21.404.2644	BSP 3/4	14	90	22	20	16
21.404.3325	BSP 1	11	100	25	25	20

19:00 ▶ 🛒 ▶ 24h

› 21.410 Phantom

NL **HSS Handtappen BSPT (Rc)**
FR **Tarauds à main HSS BSPT (Rc)**
ES **Machos mano HSS BSPT (Rc)**
DE **HSS Handgewindebohrer BSPT (Rc)**



HSS | BSPT Rc | 55° | Phantom

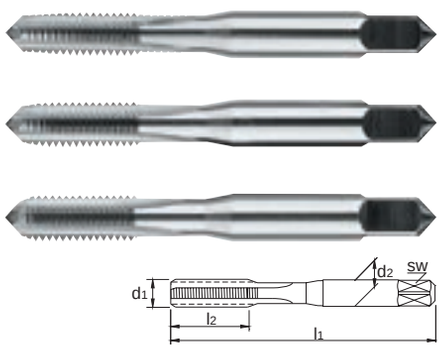
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.410.0973	BSPT 1/8	28	59	15	8	6.3
21.410.1316	BSPT 1/4	19	67	19	10	8
21.410.1666	BSPT 3/8	19	75	21	12.5	10

Ref.	d1	P	l1	l2	d2	sw
21.410.2096	BSPT 1/2	14	87	26	16	12.5
21.410.2644	BSPT 3/4	14	96	28	20	16

› 21.420 Phantom

NL **HSS Handtappen BSW (Whitworth)**
FR **Tarauds à main HSS BSW (Whitworth)**
ES **Machos mano HSS BSW (Whitworth)**
DE **HSS Handgewindebohrer BSW (Whitworth)**



HSS | BSW | 55° | NFE 66104 | ISO 529

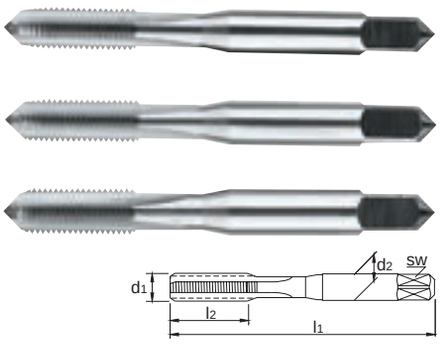
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.420.0317	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

Ref.	d1	P	l1	l2	d2	sw
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**
FR **Tarauds à main HSS BSF**
ES **Machos mano HSS BSF**
DE **HSS Handgewindebohrer BSF**



HSS | BSF | 55° | NFE 66104 | ISO 529

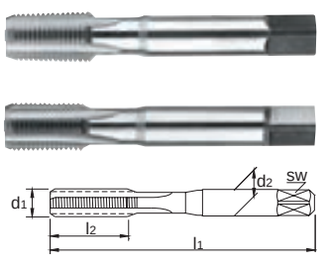
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.430.0476	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

Ref.	d1	P	l1	l2	d2	sw
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**
FR **Tarauds à main HSS NPT**
ES **Machos mano HSS NPT**
DE **HSS Handgewindebohrer NPT**



HSS | NPT | 60° | Phantom

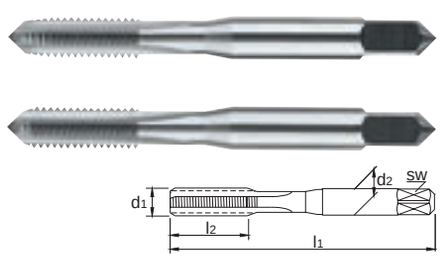
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.500.0794	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

Ref.	d1	P	l1	l2	d2	sw
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**
FR **Tarauds à main HSS PG**
ES **Machos mano HSS PG**
DE **HSS Handgewindebohrer PG**



HSS | PG | 80° | Phantom

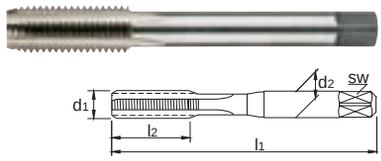
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.600.0700	PG 7	20	89	29	9	7.1
21.600.0900	PG 9	18	95	30	12.2	10
21.600.1100	PG 11	18	112	37	14	11.2

Ref.	d1	P	l1	l2	d2	sw
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

19:00 ▶ 24h

› 21.812 Phantom



NL **HSS Eindsnijder Metrisch, voor Phan-Coil**
FR **Taraud finisseur HSS Métrique, pour Phan-Coil**
ES **Macho de acabado HSS Métrica, para Phan-Coil**
DE **HSS Fertigschneider Metrisch, für Phan-Coil**

HSS | EG | M | 60° | Phan-Coil

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

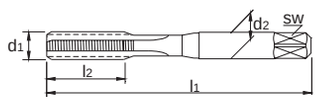
Ref.	d1	P	l1	l2	d2	sw
21.812.0400	M4	0.7	58	16	5.6	4.5
21.812.0500	M5	0.8	66	19	6.3	5
21.812.0600	M6	1	72	22	5.6	5

Ref.	d1	P	l1	l2	d2	sw
21.812.0800	M8	1.25	80	24	8	6.3
21.812.1000	M10	1.5	89	29	9	7.1
21.812.1200	M12	1.75	95	30	11.2	9

Ref.	d1	P	l1	l2	d2	sw
21.812.1600	M16	2	112	37	14	11.2

› 21.822 Phantom





NL **HSS Eindsnijder Metrisch Fijn, voor Phan-Coil**
FR **Taraud finisseur HSS Métrique Fin, pour Phan-Coil**
ES **Macho de acabado HSS Métrica Fina, para Phan-Coil**
DE **HSS Fertigschneider Metrisch Fein, für Phan-Coil**

HSS | EG | MF | 60° | Phan-Coil

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

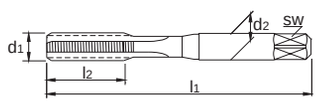
Ref.	d1	P	l1	l2	d2	sw
21.822.0810	M8	1	80	24	8	6.3
21.822.1010	M10	1	89	29	8	7.1
21.822.1025	M10	1.25	89	29	9	7.1

Ref.	d1	P	l1	l2	d2	sw
21.822.1215	M12	1.5	95	30	11.2	9
21.822.1415	M14	1.5	102	32	12.5	10
21.822.1615	M16	1.5	104	34	14	11.2

Ref.	d1	P	l1	l2	d2	sw
21.822.1815	M18	1.5	104	34	14	11.2

› 21.832 Phantom





NL **HSS Eindsnijder UNC, voor Phan-Coil**
FR **Taraud finisseur HSS UNC, pour Phan-Coil**
ES **Macho de acabado HSS UNC, para Phan-Coil**
DE **HSS Fertigschneider UNC, für Phan-Coil**

HSS | EG | UNC | 60° | Phan-Coil

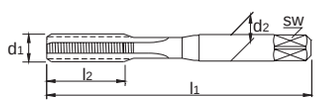
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.832.0482	UNC Nr. 10	24	71	25	6.3	5
21.832.0635	UNC 1/4	20	70	23	6.3	5
21.832.0794	UNC 5/16	18	80	24	8	6.3

Ref.	d1	P	l1	l2	d2	sw
21.832.0952	UNC 3/8	16	89	24	9	7
21.832.1270	UNC 1/2	13	102	32	11.2	9
21.832.1588	UNC 5/8	11	112	37	14	11

› 21.840 Phantom





NL **HSS Eindsnijder UNF, voor Phan-Coil**
FR **Taraud finisseur HSS UNF, pour Phan-Coil**
ES **Macho de acabado HSS UNF, para Phan-Coil**
DE **HSS Fertigschneider UNF, für Phan-Coil**

HSS | EG | UNF | 60° | Phan-Coil

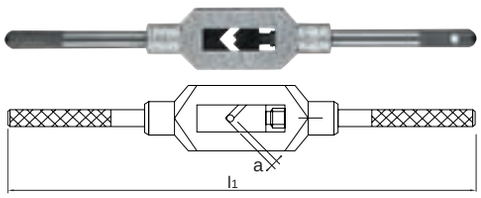
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	d1	P	l1	l2	d2	sw
21.840.0482	UNC Nr. 10	32	66	19	6.3	5
21.840.0635	UNC 1/4	28	72	22	6.3	5
21.840.0794	UNC 5/16	24	80	25	8	6.3

Ref.	d1	P	l1	l2	d2	sw
21.840.0952	UNC 3/8	24	89	29	9	7.1
21.840.1270	UNC 1/2	20	102	32	12.5	10
21.840.1588	UNC 5/8	18	112	37	14	11.2

› 81.900 Phantom

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**



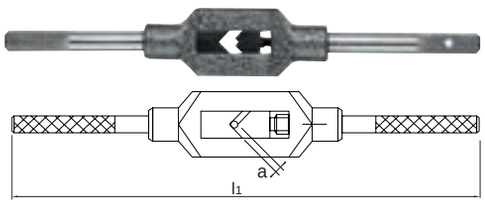
DIN 1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0000	0	M1-M8	1/16-1/4	-	125	2,1-4,9
81.900.0100	1	M1-M10	1/16-3/8	1/8	180	2,1-5,5
81.900.0150	1,5	M1-M12	1/16-1/2	1/8	200	2,1-7
81.900.0200	2	M3,5-M12	5/32-1/2	1/8	280	3-8

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.900.0400	4	M11-M27	7/16-1	1/4-3/4	500	6,2-16
81.900.0500	5L	M13-M32	1/2-1.1/4	1/4-1	750	7-20

› 81.905 Phantom

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**



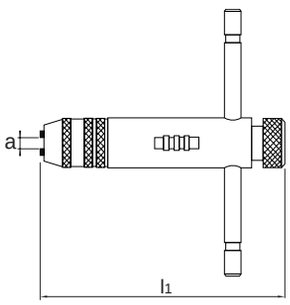
DIN 1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0000	0	M1-M8	1/16-1/4	-	130	2,1-4,9
81.905.0100	1	M1-M10	1/16-3/8	1/8	180	2,1-5,5
81.905.0150	1,5	M1-M12	1/16-1/2	1/8	200	2,1-7
81.905.0200	2	M3,5-M12	5/32-1/2	1/8	280	3-8
81.905.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0400	4	M11-M27	7/16-1	1/4-3/4	500	6,2-16
81.905.0500	5S	M13-M32	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	11-24
81.905.0800	8	M25-M64	1-2.1/2	3/4-3	1250	16-40

› 81.930 Phantom

NL **Rateltapkrukje**
FR **Porte-tarauds à cliquet**
ES **Giromacho en T con carraca**
DE **Werkzeughalter mit Knarre**



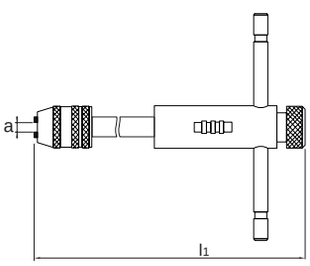


Ref.	Nr.	M	BSW	BSP	a	l1	1
81.930.0100	1	M3-M10	1/8-3/8		2,4-5,5	85	81.938.0100
81.930.0200	2	M5-M12	7/32-1/2	1/8	4,5-7	100	81.938.0200

› 81.935 Phantom

NL **Rateltapkrukje, lang**
FR **Porte-tarauds à cliquet, long**
ES **Giromacho en T con carraca, larga**
DE **Werkzeughalter mit Knarre, lang**



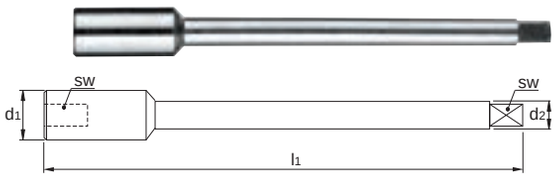


Ref.	Nr.	M	BSW	BSP	a	l1	1
81.935.1000	10	M3-M10	1/8-3/8	2,4-5,5	250	81.938.0100	
81.935.2000	20	M5-M12	7/32-1/2	4,5-7	300	81.938.0200	1/8

19:00 ▶ 24h

› 81.950 Phantom

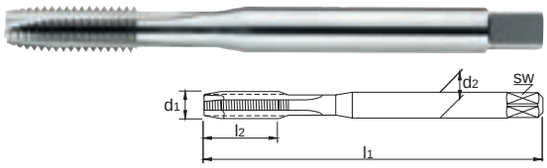
NL **Tapverlengstuk**
FR **Rallonge pour tarauds**
ES **Prolongador de machos**
DE **Gewindebohrer Verlängerung**



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	115	12	7	1/16-1/8
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	130	19	11.2	1/4-3/8
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		155	25	16	1/2
81.950.1300	13			165	27	17	
81.950.1450	14.5	M22-M24	7/8-15/16	175	29	19	5/8
81.950.1600	16	M27	1	180	30	20	3/4
81.950.1800	18	M30	1.1/8	200	33	22.4	7/8
81.950.2000	20	M33	1.1/4	210	36	25	-
81.950.2200	22	M36	1.3/8	220	38	29	1.1/8
81.950.2400	24	M39-M42	1.1/2-1.5/8	235	42	32	1.1/4
81.950.2600	26			250	45	34.5	
81.950.2900	29	M45-M48	1.3/4-1.7/8	265	50	38.5	1.3/8-2
81.950.3200	32	M52	2	285	55	42.5	2.1/4

› 22.195 INTERNATIONAL TOOLS



NL **HSS-E Machinetap Metrisch**
FR **Taraud machine HSS-E Métrique**
ES **Macho máquina HSS-E Métrica**
DE **HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 371 | 3xD | Form B | 3,5-6 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | N 41 Alu

15-20 | 12-18 | 10-15 | 25-35

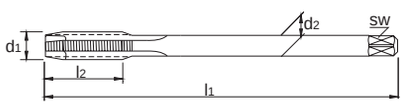
Ref.	d1	P	l1	l2	d2	sw
22.195.0200	M2	0.4	45	8	2.8	2.1
22.195.0300	M3	0.5	56	11	3.5	2.7
22.195.0400	M4	0.7	63	13	4.5	3.4

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 **HSS-E Machinetap Metrisch**
FR **Taraud machine HSS-E Métrique**
ES **Macho máquina HSS-E Métrica**
DE **HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 376 | 3xD | Form B | 3,5-6 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | N 41 Alu

15-20 | 12-18 | 10-15 | 25-35

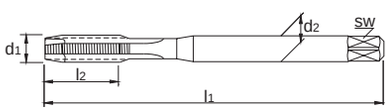
Ref.	d1	P	l1	l2	d2	sw
22.196.1000	M10	1.5	100	24	7	5.5
22.196.1200	M12	1.75	110	29	9	7
22.196.1400	M14	2	110	30	11	9

Ref.	d1	P	l1	l2	d2	sw
22.196.1600	M16	2	110	32	12	9
22.196.2000	M20	2.5	140	34	16	12
22.196.2200	M22	2.5	140	38	18	14.5

Ref.	d1	P	l1	l2	d2	sw
22.196.2400	M24	3	160	38	18	14.5

› 22.197 INTERNATIONAL TOOLS





NL **HSS-E Machinetap Metrisch, TiN**
FR **Taraud machine HSS-E Métrique, TiN**
ES **Macho máquina HSS-E Métrica, TiN**
DE **HSS-E Maschinengewindebohrer Metrisch, TiN**

HSS-E | M | 60° | TiN | DIN 371 | 3xD | Form B | 3,5-6 | ISO 2 6H | 6HX

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

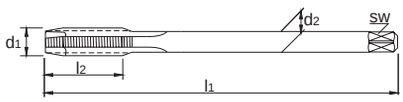
Ref.	d1	P	l1	l2	d2	sw
22.197.0300	M3	0.5	56	6	3.5	2.7
22.197.0400	M4	0.7	63	12	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.197.0500	M5	0.8	70	13	6	4.9
22.197.0600	M6	1	80	15	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.197.0800	M8	1.25	90	18	8	6.2
22.197.1000	M10	1.5	100	20	10	8

› 22.198 INTERNATIONAL TOOLS





NL **HSS-E Machinetap Metrisch, TiN**
FR **Taraud machine HSS-E Métrique, TiN**
ES **Macho máquina HSS-E Métrica, TiN**
DE **HSS-E Maschinengewindebohrer Metrisch, TiN**

HSS-E | M | 60° | TiN | DIN 376 | 3xD | Form B | 3,5-6 | ISO 2 6H | 6HX

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

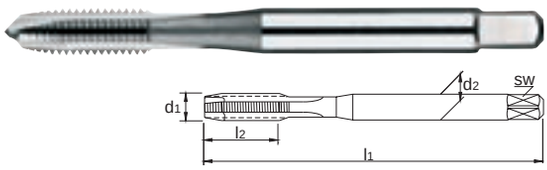
Ref.	d1	P	l1	l2	d2	sw
22.198.1200	M12	1.75	110	23	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

19:00 ▶ 24h

› 22.200 Phantom



NL **UNI HSS-E Machinetap Metrisch**
FR **Taraud machine UNI HSS-E Métrique**
ES **Macho máquina UNI HSS-E Métrica**
DE **UNI HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 371 | 3xD | Form B | 4-5 | ISO 2 6H | UNI

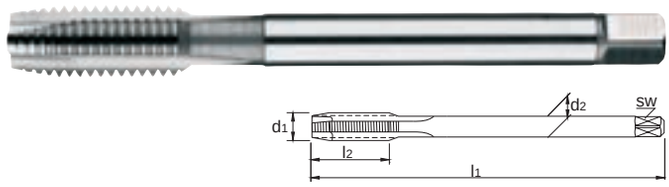
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.200.0100	M1	0.25	40	6	2.5	2.1
22.200.0110	M1,1	0.25	40	6	2.5	2.1
22.200.0120	M1,2	0.25	40	6	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

Ref.	d1	P	l1	l2	d2	sw
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	13	4	3

Ref.	d1	P	l1	l2	d2	sw
22.200.0400	M4	0.7	63	13	4.5	3.4
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
22.200.1000	M10	1.5	100	24	10	8

› 22.201 Phantom



NL **UNI HSS-E Machinetap Metrisch**
FR **Taraud machine UNI HSS-E Métrique**
ES **Macho máquina UNI HSS-E Métrica**
DE **UNI HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 376 | 3xD | Form B | 4-5 | ISO 2 6H | UNI

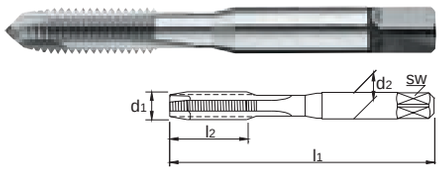
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
22.201.0300	M3	0.5	56	13	2.2	0
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
22.201.0800	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	29	9	7

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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

› 22.205 Phantom



NL **HSS Machinetap Metrisch**
FR **Taraud machine HSS Métrique**
ES **Macho máquina HSS Métrica**
DE **HSS Maschinengewindebohrer Metrisch**

HSS | M | 60° | ISO 529 | 2xD | Form B | 5 | ISO 2 6H

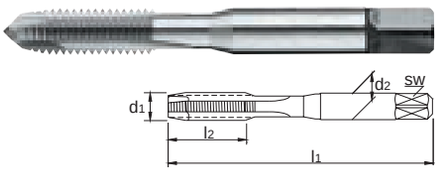
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
22.205.0200	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	4.5	3.15
22.205.0450	M4,5	0.75	58	16	5	4
22.205.0500	M5	0.8	58	16	5	4

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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

› 22.208 Phantom



NL **HSS Machinetap Metrisch, Overmaats**
FR **Taraud machine HSS Métrique, surcoté**
ES **Macho máquina HSS Métrica, sobremedida**
DE **HSS Maschinengewindebohrer Metrisch, Übermaß**

HSS | M | 60° | ISO 529 | 2xD | Form B | 5 | ISO 2 6H | +0,1 +0,2

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 52 CuAlFe

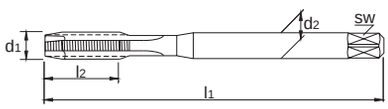
12-17 | 10-15 | 7-12 | 3-6 | 15-20 | 5-12

Ref.	d1	P	l1	l2	d2	sw
22.208.0510	M5+0,1	0.8	58	16	5	4
22.208.0610	M6+0,1	1	66	19	6.3	5
22.208.0620	M6+0,2	1	66	19	6.3	5
22.208.0820	M8+0,2	1.25	72	22	8	6.3
22.208.1020	M10+0,2	1.5	80	24	10	8

Ref.	d1	P	l1	l2	d2	sw
22.208.1220	M12+0,2	1.75	89	29	9	7.1
22.208.1420	M14+0,2	2	95	30	11.2	9
22.208.1610	M16+0,1	2	102	32	12.5	10
22.208.1620	M16+0,2	2	102	32	12.5	10

› 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**

HSS-E | M | 60° | OX. | DIN 371 | 3xD | Form B | 4-5 | 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

15-20 | 10-20 | 6-10 | 7-10 | 10-15 | 5-8

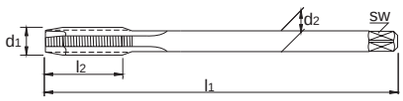
Ref.	d1	P	l1	l2	d2	sw
22.220.0200	M2	0.4	45	8	2.8	2.1
22.220.0220	M2,2	0.45	45	9	2.8	2.1
22.220.0230	M2,3	0.4	45	9	2.8	2.1
22.220.0250	M2,5	0.45	50	9	2.8	2.1
22.220.0260	M2,6	0.45	50	9	2.8	2.1

Ref.	d1	P	l1	l2	d2	sw
22.220.0300	M3	0.5	56	11	3.5	2.7
22.220.0350	M3,5	0.6	56	13	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

Ref.	d1	P	l1	l2	d2	sw
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

› 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**

HSS-E | M | 60° | OX. | DIN 376 | 3xD | Form B | 4-5 | 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

15-20 | 10-20 | 6-10 | 7-10 | 10-15 | 5-8

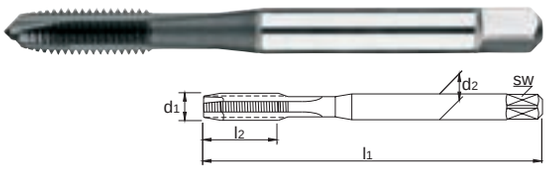
Ref.	d1	P	l1	l2	d2	sw
22.221.0300	M3	0.5	56	13	2.2	0
22.221.0400	M4	0.7	63	13	2.8	2.1
22.221.0500	M5	0.8	70	16	3.5	2.7
22.221.0600	M6	1	80	19	4.5	3.4
22.221.0800	M8	1.25	90	22	6	4.9
22.221.0900	M9	1.25	90	22	7	5.5

Ref.	d1	P	l1	l2	d2	sw
22.221.1000	M10	1.5	100	24	7	5.5
22.221.1200	M12	1.75	110	29	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

Ref.	d1	P	l1	l2	d2	sw
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

19:00 ▶ 🛒 ▶ 24h

› 22.240 Phantom



NL **UNI HSS-E Machinetap Metrisch, TiCN**
FR **Taraud machine UNI HSS-E Métrique, TiCN**
ES **Macho máquina UNI HSS-E Métrica, TiCN**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, TiCN**

HSS-E | M | 60° | TiCN | DIN 371 | 3xD | Form B | 4-5 | 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
22.240.0300	M3	0.5	56	11	3.5	2.7
22.240.0400	M4	0.7	63	13	4.5	3.4

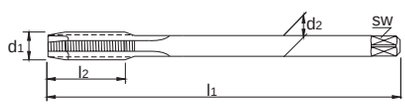
Ref.	d1	P	l1	l2	d2	sw
22.240.0500	M5	0.8	70	16	6	4.9
22.240.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.240.0800	M8	1.25	90	22	8	6.2
22.240.1000	M10	1.5	100	24	10	8

› 22.241 Phantom



NL **UNI HSS-E Machinetap Metrisch, TiCN**
FR **Taraud machine UNI HSS-E Métrique, TiCN**
ES **Macho máquina UNI HSS-E Métrica, TiCN**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, TiCN**



HSS-E | M | 60° | TiCN | DIN 376 | 3xD | Form B | 4-5 | 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
22.241.1200	M12	1.75	110	29	9	7
22.241.1400	M14	2	110	30	11	9

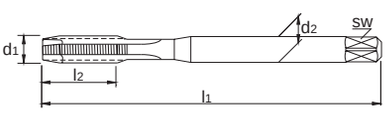
Ref.	d1	P	l1	l2	d2	sw
22.241.1600	M16	2	110	32	12	9
22.241.2000	M20	2.5	140	34	16	12

Ref.	d1	P	l1	l2	d2	sw

› 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**



HSS-E PM | M | 60° | TiCN | DIN 371 | 3xD | Form B | 4-5 | 6HX

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
22.252.0300	M3	0.5	56	11	3.5	2.7
22.252.0400	M4	0.7	63	13	4.5	3.4

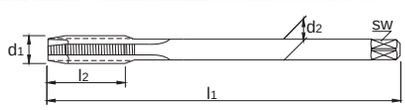
Ref.	d1	P	l1	l2	d2	sw
22.252.0500	M5	0.8	70	15	6	4.9
22.252.0600	M6	1	80	17	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.252.0800	M8	1.25	90	20	8	6.2
22.252.1000	M10	1.5	100	22	10	8

› 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**



HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | Form B | 4-5 | 6HX

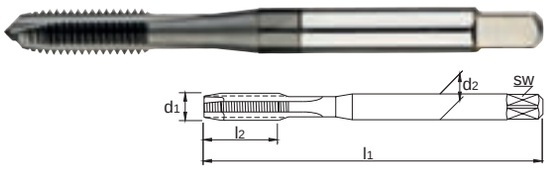
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	S 71 Ni/Co	S 72 Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw
22.253.1200	M12	1.75	110	24	9	7

Ref.	d1	P	l1	l2	d2	sw
22.253.1600	M16	2	110	27	12	9

Ref.	d1	P	l1	l2	d2	sw
22.253.2000	M20	2.5	140	32	16	12

› 22.268 Phantom



NL **HP2 UNI HSS-E PM Machinetap Metrisch, HARDLUBE**
FR **Taraud machine HP2 UNI HSS-E PM Métrique, HARDLUBE**
ES **Macho máquina HP2 UNI HSS-E PM Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**

HSS-E PM | M | 60° | HARD LUBE | DIN 371 | 3xD | Form B | 4-5 | 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

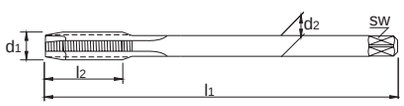
Ref.	d1	P	l1	l2	d2	sw
22.268.0500	M5	0.8	70	16	6	4.9
22.268.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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 HP2 UNI HSS-E PM Métrique, HARDLUBE**
ES **Macho máquina HP2 UNI HSS-E PM Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**



HSS-E PM | M | 60° | HARD LUBE | DIN 376 | 3xD | Form B | 4-5 | 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

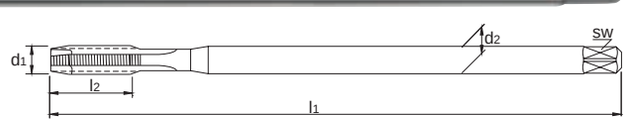
Ref.	d1	P	l1	l2	d2	sw
22.269.1200	M12	1.75	110	29	9	7
22.269.1400	M14	2	110	30	11	9

Ref.	d1	P	l1	l2	d2	sw
22.269.1600	M16	2	110	32	12	9
22.269.2000	M20	2.5	140	34	16	12

› 22.350 Phantom

NL **UNI HSS-E Machinetap Metrisch, lange**
FR **Taraud machine UNI HSS-E Métrique, long**
ES **Macho máquina UNI HSS-E Métrica, largo**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, lange**





HSS-E | M | 60° | Phantom | 3xD | Form B | 4-5 | 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
22.350.0400	M4	0.7	126	13	4.5	3.4
22.350.0500	M5	0.8	140	15	6	4.9

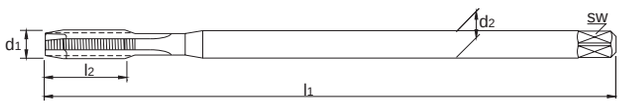
Ref.	d1	P	l1	l2	d2	sw
22.350.0600	M6	1	160	17	6	4.9
22.350.0800	M8	1.25	180	20	8	6.2

19:00 ▶ 24h

› 22.351 Phantom

NL **UNI HSS-E Machinetap Metrisch, lange**
FR **Taraud machine UNI HSS-E Métrique, long**
ES **Macho máquina UNI HSS-E Métrica, largo**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, lange**





HSS-E | M | 60° | Phantom | 3xD | Form B | 4-5 | 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

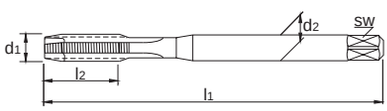
Ref.	d1	P	l1	l2	d2	sw
22.351.0800	M8	1.25	180	20	6	4.9
22.351.1000	M10	1.5	200	22	7	5.5

Ref.	d1	P	l1	l2	d2	sw
22.351.1200	M12	1.75	220	24	9	7
22.351.1600	M16	2	220	32	12	9

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E PM | M | 60° | OX. | DIN 371 | 3xD | Form B | 4-5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 22 INOX >850N/mm²

10-15 | 6-10 | 4-6

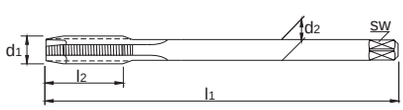
Ref.	d1	P	l1	l2	d2	sw
22.500.0300	M3	0.5	56	11	3.5	2.7
22.500.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.500.0500	M5	0.8	70	16	6	4.9
22.500.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E PM | M | 60° | OX. | DIN 376 | 3xD | Form B | 4-5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 22 INOX >850N/mm²

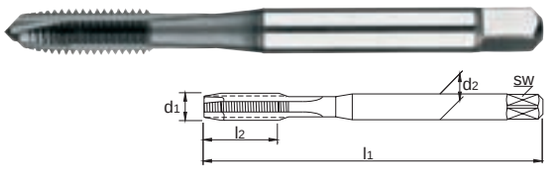
10-15 | 6-10 | 4-6

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	29	9	7
22.501.1400	M14	2	110	30	11	9

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E PM | M | 60° | TiCN | DIN 371 | 3xD | Form B | 4-5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 22 INOX >850N/mm²

10-15 | 6-10 | 4-6

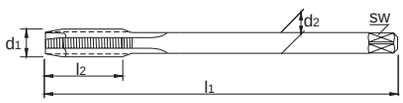
Ref.	d1	P	l1	l2	d2	sw
22.504.0300	M3	0.5	56	11	3.5	2.7
22.504.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.504.0500	M5	0.8	70	16	6	4.9
22.504.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | Form B | 4-5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 22 INOX >850N/mm²

10-15 | 6-10 | 4-6

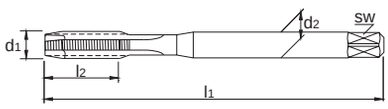
Ref.	d1	P	l1	l2	d2	sw
22.505.1200	M12	1.75	110	29	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 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, vaporizado**
DE **HSS-E PM Maschinengewindebohrer Metrisch, Titanium- und Nickellegierungen, dampfangelassen**

HSS-E PM | M | OX. | DIN 371 | 3xD | Form B | 4-5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 52 CuAlFe | S 71 NiCo | S 72 Ti

6-10 | 3-5 | 3-5 | 2-15 | 4-15

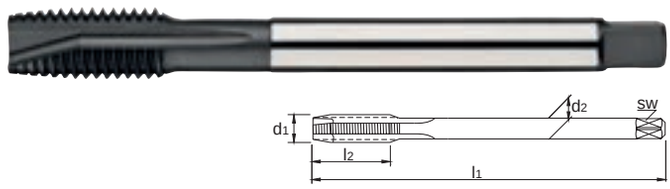
Ref.	d1	P	l1	l2	d2	sw
22.530.0300	M3	0.5	56	11	3.5	2.7
22.530.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.530.0500	M5	0.8	70	16	6	4.9
22.530.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.530.0800	M8	1.25	90	22	8	6.2
22.530.1000	M10	1.5	100	24	10	8

19:00 ▶ 24h

› 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, vaporizado**
DE **HSS-E PM Maschinengewindebohrer Metrisch, Titanium- und Nickellegierungen, dampfangelassen**

HSS-E PM | M | 60° | OX. | DIN 376 | 3xD | Form B | 4-5 | 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

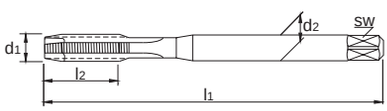
Ref.	d1	P	l1	l2	d2	sw
22.531.1200	M12	1.75	110	29	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 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**

HSS-E | M | 60° | DIN 371 | 2xD | Form B | 2,5 | ISO 2 6H

N 51 Cu | N 52 CuAlFe

15-35 | 3-5

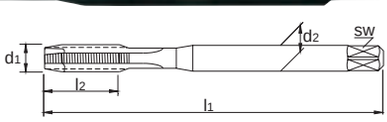
Ref.	d1	P	l1	l2	d2	sw
22.550.0300	M3	0.5	56	11	3.5	2.7
22.550.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.550.0500	M5	0.8	70	16	6	4.9
22.550.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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 **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**

HSS-E | M | 60° | OX. | DIN 371 | 3xD | Form B | 4-6 | ISO 2 6H | 6HX | INOX

P 11 ≤600 N/mm² | M 21 INOX ≤850N/mm²

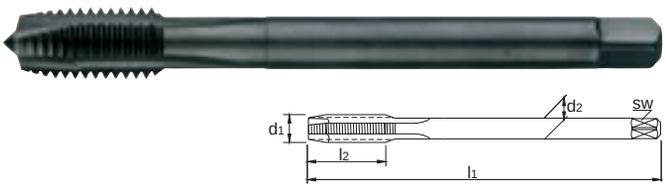
15-20 | 7-10

Ref.	d1	P	l1	l2	d2	sw
22.595.0300	M3	0.5	56	9	3.5	2.7
22.595.0400	M4	0.7	63	12	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.595.0500	M5	0.8	70	13	6	4.9
22.595.0600	M6	1	80	15	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.595.0800	M8	1.25	90	18	8	6.2
22.595.1000	M10	1.5	100	20	10	8

› 22.596 INTERNATIONAL TOOLS



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**

HSS-E | M | 60° | OX. | DIN 376 | 3xD | Form B | 4-6 | ISO 2 6H | 6HX | INOX

P 11 ≤600 N/mm² | M 21 INOX ≤850N/mm²

15-20 | 7-10

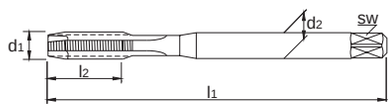
Ref.	d1	P	l1	l2	d2	sw
22.596.1200	M12	1.75	110	23	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 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**

HSS-E PM | M | 60° | OX. | DIN 371 | 3xD | Form B | 4-5 | 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

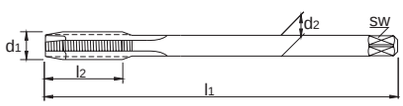
Ref.	d1	P	l1	l2	d2	sw
22.600.0300	M3	0.5	56	11	3.5	2.7
22.600.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.600.0500	M5	0.8	70	16	6	4.9
22.600.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E PM | M | 60° | OX. | DIN 376 | 3xD | Form B | 4-5 | 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

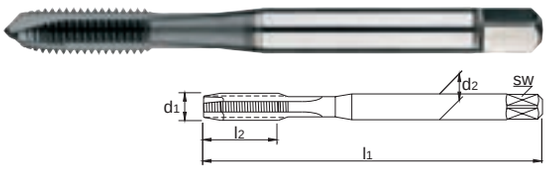
Ref.	d1	P	l1	l2	d2	sw
22.601.0800	M8	1.25	90	22	6	4.9
22.601.1000	M10	1.5	100	24	7	5.5
22.601.1200	M12	1.75	110	29	9	7
22.601.1400	M14	2	110	30	11	9

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

19:00 ▶ 24h

› 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**

HSS-E PM | M | 60° | TiCN | DIN 371 | 3xD | Form B | 4-5 | 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

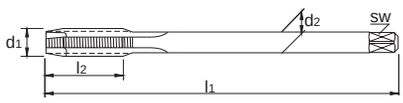
Ref.	d1	P	l1	l2	d2	sw
22.604.0200	M2	0.4	45	8	2.8	2.1
22.604.0250	M2,5	0.45	50	9	2.8	2.1
22.604.0300	M3	0.5	56	11	3.5	2.7

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**

HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | Form B | 4-5 | 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

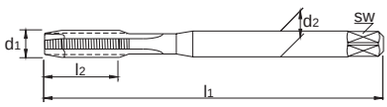
Ref.	d1	P	l1	l2	d2	sw
22.605.1200	M12	1.75	110	29	9	7
22.605.1400	M14	2	110	30	11	9

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

› 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**

HSS-E PM | M | 60° | TiCN | DIN 371 | 3xD | Form B | 4-5 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co | S 72 Ti

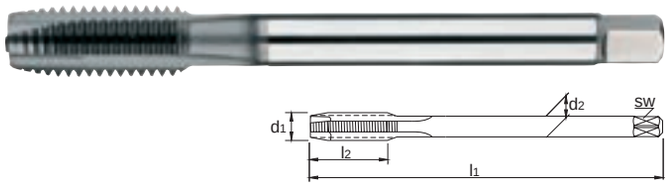
15-20 | 15-20 | 7-10 | 4-10 | 4-12 | 4-12

Ref.	d1	P	l1	l2	d2	sw
22.610.0200	M2	0.4	45	9	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

Ref.	d1	P	l1	l2	d2	sw
22.610.0400	M4	0.7	63	13	4.5	3.4
22.610.0500	M5	0.8	70	15	6	4.9
22.610.0600	M6	1	80	17	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.610.0800	M8	1.25	90	20	8	6.2
22.610.1000	M10	1.5	100	22	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**

HSS-E PM | M | 60° | TiCN | DIN 376 | 3xD | Form B | 4,5 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co | S 72 Ti

15-20 | 15-20 | 7-10 | 4-10 | 4-12 | 4-12

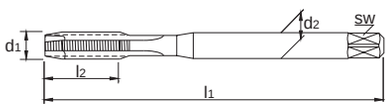
Ref.	d1	P	l1	l2	d2	sw
22.611.1200	M12	1.75	110	24	9	7

Ref.	d1	P	l1	l2	d2	sw
22.611.1600	M16	2	110	27	12	9

Ref.	d1	P	l1	l2	d2	sw
22.611.2000	M20	2.5	140	32	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**

HSS-E | M | 60° | NIT. | DIN 371 | 2xD | 2,5 | 6HX | GG GGG

K 31 GG | K 32 GGG GTS-GTW

10-15 | 5-8

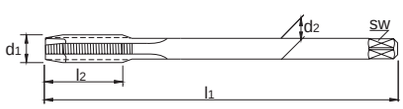
Ref.	d1	P	l1	l2	d2	sw
22.650.0300	M3	0.5	56	11	3.5	2.7
22.650.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.650.0500	M5	0.8	70	16	6	4.9
22.650.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E | M | 60° | NIT. | DIN 376 | 2xD | 2,5 | 6HX | GG GGG

K 31 GG | K 32 GGG GTS-GTW

10-15 | 5-8

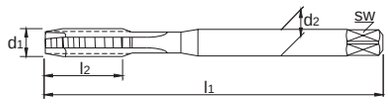
Ref.	d1	P	l1	l2	d2	sw
22.651.0800	M8	1.25	90	22	6	4.9
22.651.1000	M10	1.5	100	24	7	5.5
22.651.1200	M12	1.75	110	29	9	7

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E | M | 60° | DIN 371 | 3xD | Form B | 4-5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² | N 41 Alu | N 51 Cu

15-20 | 10-35 | 8-12

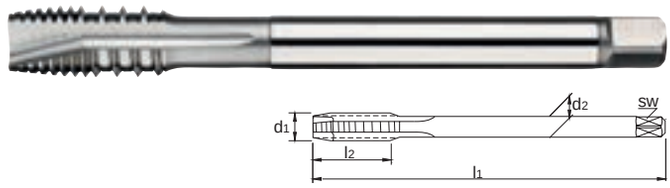
Ref.	d1	P	l1	l2	d2	sw
22.700.0300	M3	0.5	56	11	3.5	2.7
22.700.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
22.700.0500	M5	0.8	70	16	6	4.9
22.700.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.700.0800	M8	1.25	90	22	8	6.2
22.700.1000	M10	1.5	100	24	10	8

19:00 ▶ 24h

› 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**

HSS-E | M | 60° | DIN 376 | 3xD | Form B | 4-5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² | N 41 Alu | N 51 Cu

15-20 | 10-35 | 8-12

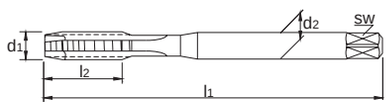
Ref.	d1	P	l1	l2	d2	sw
22.701.0800	M8	1.25	90	22	6	4.9

Ref.	d1	P	l1	l2	d2	sw
22.701.1000	M10	1.5	100	24	7	5.5

Ref.	d1	P	l1	l2	d2	sw
22.701.1200	M12	1.75	110	29	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**

HSS | M | 2xD | Form B | 5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² | N 41 Alu | N 51 Cu

12-17 | 15-20 | 5-12

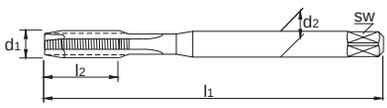
Ref.	d1	P	l1	l2	d2	sw
22.705.0200	M2	0.4	41	8	2.5	2
22.705.0250	M2,5	0.45	44	9.5	2.8	2.24
22.705.0300	M3	0.5	48	11	3.15	2.5
22.705.0400	M4	0.7	53	13	4.5	3.15
22.705.0500	M5	0.8	58	16	5	4
22.705.0600	M6	1	66	19	6.3	5

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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%**

HSS-E | M | 60° | NIT. | DIN 371 | 3xD | Form B | 5 | ISO 2 6H | ALU

N 42 Alu Si>10%

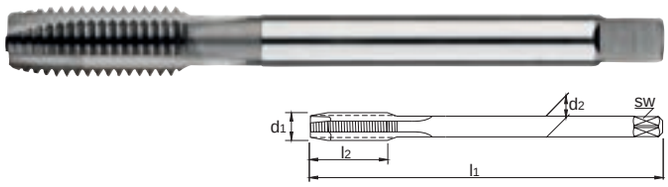
10-15

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

Ref.	d1	P	l1	l2	d2	sw
22.720.0500	M5	0.8	70	16	6	4.9
22.720.0600	M6	1	80	19	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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%**

HSS-E | M | 60° | NIT. | DIN 376 | 3xD | Form B | 5 | ISO 2 6H | ALU

N 42 — Alu Si>10%

10-15

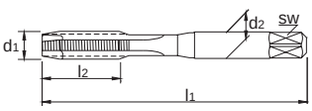
Ref.	d1	P	l1	l2	d2	sw
22.721.1200	M12	1.75	110	29	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 22.895 Phantom





NL **HSS Machinetap Metrisch, voor Phan-Coil**
FR **Taraud machine HSS Métrique, pour Phan-Coil**
ES **Macho máquina HSS Métrica, para Phan-Coil**
DE **HSS Maschinengewindebohrer Metrisch, für Phan-Coil**

HSS | EG | M | 60° | NFE 66103 | Phan-Coil | 2xD | Form B | 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

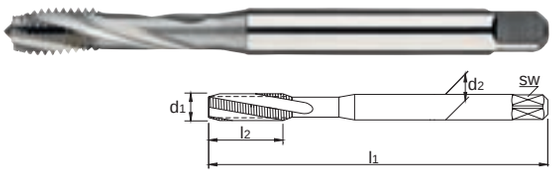
Ref.	d1	P	l1	l2	d2	sw
22.895.0300	M3	0.5	53	13	4	3.15
22.895.0400	M4	0.7	58	16	5	4
22.895.0500	M5	0.8	66	19	6.3	5

Ref.	d1	P	l1	l2	d2	sw
22.895.0600	M6	1	72	22	8	6.3
22.895.0800	M8	1.25	80	22	10	8
22.895.1000	M10	1.5	89	29	9	7.1

Ref.	d1	P	l1	l2	d2	sw
22.895.1200	M12	1.75	95	30	11.2	9
22.895.1400	M14	2	102	32	12.5	10

19:00 ▶ 24h

› 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**

HSS-E | M | 60° | DIN 371 | 2,5xD | 20° | Form C | 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

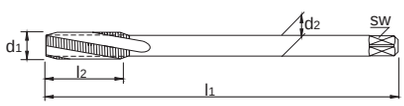
Ref.	d1	P	l1	l2	d2	sw
23.150.0300	M3	0.5	56	11	3.5	2.7
23.150.0400	M4	0.7	63	13	4.5	3.4
23.150.0500	M5	0.8	70	16	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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**

HSS-E | M | 60° | DIN 376 | 2,5xD | 20° | Form C | 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

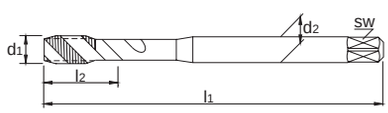
Ref.	d1	P	l1	l2	d2	sw
23.151.0600	M6	1	80	19	4.5	3.4
23.151.0800	M8	1.25	90	22	6	4.9
23.151.1000	M10	1.5	100	24	7	5.5
23.151.1200	M12	1.75	110	29	9	7
23.151.1400	M14	2	110	30	11	9

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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

› 23.295 INTERNATIONAL TOOLS





NL **HSS-E Machinetap Metrisch**
FR **Taraud machine HSS-E Métrique**
ES **Macho máquina HSS-E Métrica**
DE **HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 371 | 2xD | 35° | Form C | 2-3 | ISO 2 6H

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	25-35

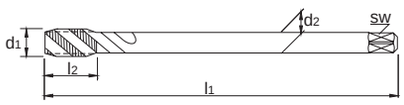
Ref.	d1	P	l1	l2	d2	sw
23.295.0200	M2	0.4	45	6	2.8	2.1
23.295.0300	M3	0.5	56	5	3.5	2.7
23.295.0400	M4	0.7	63	7	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.295.0500	M5	0.8	70	8	6	4.9
23.295.0600	M6	1	80	10	6	4.9
23.295.0800	M8	1.25	90	13	8	6.2

Ref.	d1	P	l1	l2	d2	sw
23.295.1000	M10	1.5	100	15	10	8

› 23.296 INTERNATIONAL TOOLS





NL **HSS-E Machinetap Metrisch**
FR **Taraud machine HSS-E Métrique**
ES **Macho máquina HSS-E Métrica**
DE **HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 376 | 2xD | 35° | Form C | 2-3 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | N 41 Alu

15-20 | 12-18 | 10-15 | 25-35

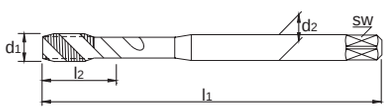
Ref.	d1	P	l1	l2	d2	sw
23.296.1000	M10	1.5	100	15	7	5.5
23.296.1200	M12	1.75	110	18	9	7
23.296.1400	M14	2	110	20	11	9

Ref.	d1	P	l1	l2	d2	sw
23.296.1600	M16	2	110	20	12	9
23.296.2000	M20	2.5	140	25	16	12
23.296.2200	M22	2.5	140	25	18	14.5

Ref.	d1	P	l1	l2	d2	sw
23.296.2400	M24	3	160	30	18	14.5

› 23.297 INTERNATIONAL TOOLS





NL **HSS-E Machinetap Metrisch, TiN**
FR **Taraud machine HSS-E Métrique, TiN**
ES **Macho máquina HSS-E Métrica, TiN**
DE **HSS-E Maschinengewindebohrer Metrisch, TiN**

HSS-E | M | 60° | TiN | DIN 371 | 2xD | 35° | Form C | 2-3 | ISO 2 6H

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

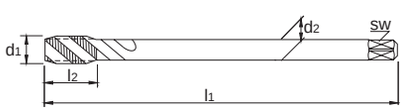
Ref.	d1	P	l1	l2	d2	sw
23.297.0300	M3	0.5	56	5	2.2	0
23.297.0400	M4	0.7	63	7	2.8	2.1

Ref.	d1	P	l1	l2	d2	sw
23.297.0500	M5	0.8	70	8	3.5	2.7
23.297.0600	M6	1	80	10	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.297.0800	M8	1.25	90	13	6	4.9
23.297.1000	M10	1.5	100	15	7	5.5

› 23.298 INTERNATIONAL TOOLS





NL **HSS-E Machinetap Metrisch, TiN**
FR **Taraud machine HSS-E Métrique, TiN**
ES **Macho máquina HSS-E Métrica, TiN**
DE **HSS-E Maschinengewindebohrer Metrisch, TiN**

HSS-E | M | 60° | TiN | DIN 376 | 2xD | 35° | Form C | 2-3 | ISO 2 6H

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

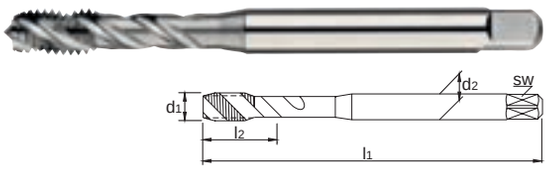
Ref.	d1	P	l1	l2	d2	sw
23.298.1200	M12	1.75	110	18	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

19:00 ▶ 24h

› 23.300 Phantom



NL **UNI HSS-E Machinetap Metrisch**
FR **Taraud machine UNI HSS-E Métrique**
ES **Macho máquina UNI HSS-E Métrica**
DE **UNI HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 371 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H | UNI

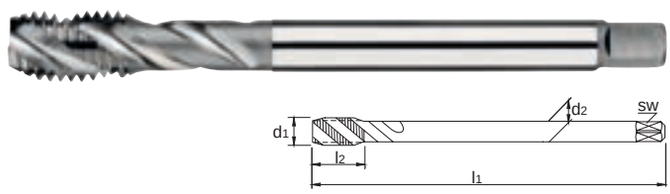
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.300.0200	M2	0.4	45	4	2.8	2.1
23.300.0220	M2,2	0.45	45	4.5	2.8	2.1
23.300.0230	M2,3	0.4	45	4	2.8	2.1
23.300.0250	M2,5	0.45	50	4	2.8	2.1
23.300.0260	M2,6	0.45	50	4	2.8	2.1

Ref.	d1	P	l1	l2	d2	sw
23.300.0300	M3	0.5	56	6	3.5	2.7
23.300.0350	M3,5	0.6	56	6	4	3
23.300.0400	M4	0.7	63	7	4.5	3.4
23.300.0500	M5	0.8	70	8	6	4.9
23.300.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.300.0700	M7	1	80	10	7	5.5
23.300.0800	M8	1.25	90	12.5	8	6.2
23.300.1000	M10	1.5	100	15	10	8

› 23.301 Phantom



NL **UNI HSS-E Machinetap Metrisch**
FR **Taraud machine UNI HSS-E Métrique**
ES **Macho máquina UNI HSS-E Métrica**
DE **UNI HSS-E Maschinengewindebohrer Metrisch**

HSS-E | M | 60° | DIN 376 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H | UNI

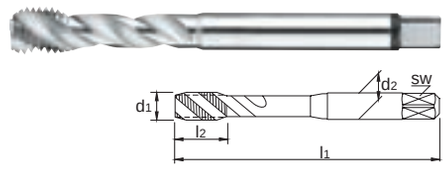
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.301.0600	M6	1	80	8	4.5	3.4
23.301.0800	M8	1.25	90	10	6	4.9
23.301.0900	M9	1.25	90	12.5	7	5.5
23.301.1000	M10	1.5	100	15	7	5.5
23.301.1200	M12	1.75	110	17.5	9	7

Ref.	d1	P	l1	l2	d2	sw
23.301.1400	M14	2	110	20	11	9
23.301.1600	M16	2	110	20	12	9
23.301.1800	M18	2.5	125	25	14	11
23.301.2000	M20	2.5	140	25	16	12
23.301.2200	M22	2.5	140	25	18	14.5

Ref.	d1	P	l1	l2	d2	sw
23.301.2400	M24	3	160	30	18	14.5
23.301.2700	M27	3	160	30	20	16
23.301.3000	M30	3.5	180	45	22	18
23.301.3300	M33	3.5	180	35	25	20
23.301.3600	M36	4	200	40	28	22

› 23.305 Phantom



NL **HSS Machinetap Metrisch**
FR **Taraud machine HSS Métrique**
ES **Macho máquina HSS Métrica**
DE **HSS Maschinengewindebohrer Metrisch**

HSS | M | 60° | ISO 529 | 2xD | 40° | Form C | 2,5 | ISO 2 6H

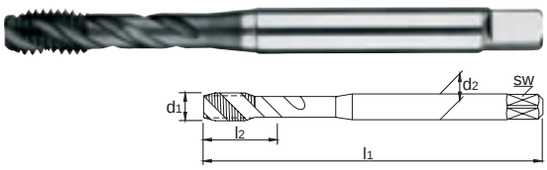
P 11	P 12	K 31	K 32	N 41	N 52
≤600 N/mm²	≤850 N/mm²	GG	GGG GTS-GTW	Alu	CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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

› 23.324 Phantom



NL **UNI HSS-E Machinetap Metrisch, TiCN**
FR **Taraud machine UNI HSS-E Métrique, TiCN**
ES **Macho máquina UNI HSS-E Métrica, TiCN**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, TiCN**

HSS-E	M	60°	TiCN	DIN 371	2,5xD	40°		Form C	2,5	ISO 2 6H	UNI

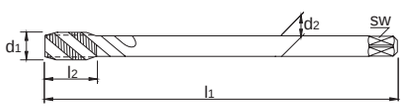
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.324.0300	M3	0.5	56	6	3.5	2.7
23.324.0400	M4	0.7	63	7	4.5	3.4
23.324.0500	M5	0.8	70	8	6	4.9
23.324.0600	M6	1	80	10	6	4.9
23.324.0800	M8	1.25	90	12.5	8	6.2
23.324.1000	M10	1.5	100	15	10	8

› 23.325 Phantom



NL **UNI HSS-E Machinetap Metrisch, TiCN**
FR **Taraud machine UNI HSS-E Métrique, TiCN**
ES **Macho máquina UNI HSS-E Métrica, TiCN**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, TiCN**



HSS-E	M	60°	TiCN	DIN 376	2,5xD	40°		Form C	2,5	ISO 2 6H	UNI

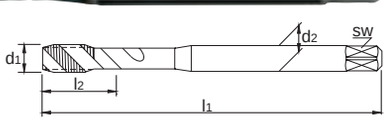
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
23.325.1200	M12	1.75	110	17.5	9	7
23.325.1400	M14	2	110	20	11	9
23.325.1600	M16	2	110	20	12	9
23.325.2000	M20	2.5	140	25	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**



HSS-E PM	M	60°	TiCN	DIN 371	2,5xD	40°		Form C	2,5	6HX

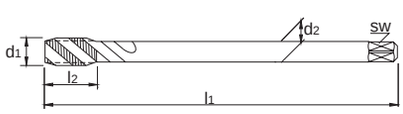
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	S 71 Ni/Co	S 72 Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

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	15	6	4.9
23.352.0600	M6	1	80	17	6	4.9
23.352.0800	M8	1.25	90	20	8	6.2
23.352.1000	M10	1.5	100	22	10	8

› 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**



HSS-E PM	M	60°	TiCN	DIN 376	2,5xD	40°		Form C	2,5	6HX

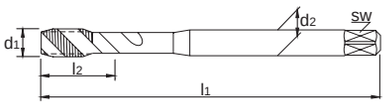
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 51 Cu	S 71 Ni/Co	S 72 Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw
23.353.1200	M12	1.75	110	24	9	7
23.353.1600	M16	2	110	27	12	9
23.353.2000	M20	2.5	140	32	16	12

19:00 ▶ 🛒 ▶ 24h

› 23.368 Phantom





NL **HP2 UNI HSS-E PM Machinetap Metrisch, HARDLUBE**
FR **Taraud machine HP2 UNI HSS-E PM Métrique, HARDLUBE**
ES **Macho máquina HP2 UNI HSS-E PM Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**

HSS-E PM | M | 60° | HARD LUBE | DIN 371 | 2,5xD | 50° | Form C | 2-2,5 | 6HX | 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% | S 71 Ni/Co | S 72 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

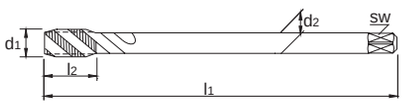
Ref.	d1	P	l1	l2	d2	sw
23.368.0300	M3	0.5	56	6	3.5	2.7
23.368.0400	M4	0.7	63	7	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.368.0500	M5	0.8	70	8	6	4.9
23.368.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.368.0800	M8	1.25	90	12.5	8	6.2
23.368.1000	M10	1.5	100	15	10	8

› 23.369 Phantom





NL **HP2 UNI HSS-E PM Machinetap Metrisch, HARDLUBE**
FR **Taraud machine HP2 UNI HSS-E PM Métrique, HARDLUBE**
ES **Macho máquina HP2 UNI HSS-E PM Métrica, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**

HSS-E PM | M | 60° | HARD LUBE | DIN 376 | 2,5xD | 50° | Form C | 2-2,5 | 6HX | 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% | S 71 Ni/Co | S 72 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	17.5	9	7
23.369.1400	M14	2	110	20	11	9

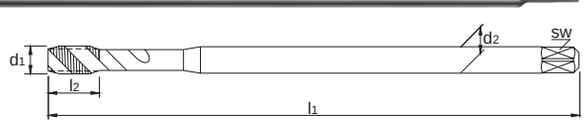
Ref.	d1	P	l1	l2	d2	sw
23.369.1600	M16	2	110	20	12	9
23.369.2000	M20	2.5	140	25	16	12

Ref.	d1	P	l1	l2	d2	sw

› 23.370 Phantom

NL **UNI HSS-E Machinetap Metrisch, lange**
FR **Taraud machine UNI HSS-E Métrique, long**
ES **Macho máquina UNI HSS-E Métrica, largo**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, lange**





HSS-E | M | 60° | Phantom | 2,5xD | 40° | Form C | 2,5 | 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
23.370.0400	M4	0.7	126	7	4.5	3.4
23.370.0500	M5	0.8	140	8	6	4.9

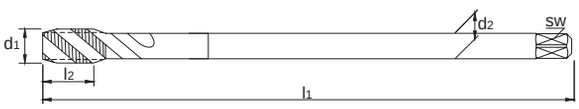
Ref.	d1	P	l1	l2	d2	sw
23.370.0600	M6	1	160	10	6	4.9
23.370.0800	M8	1.25	180	12.5	8	6.2

Ref.	d1	P	l1	l2	d2	sw

› 23.371 Phantom

NL **UNI HSS-E Machinetap Metrisch, lange**
FR **Taraud machine UNI HSS-E Métrique, long**
ES **Macho máquina UNI HSS-E Métrica, largo**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, lange**





HSS-E | M | 60° | Phantom | 2,5xD | 40° | Form C | 2,5 | 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
23.371.0800	M8	1.25	180	12	6	4.9
23.371.1000	M10	1.5	200	15	10	8

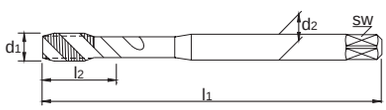
Ref.	d1	P	l1	l2	d2	sw
23.371.1200	M12	1.75	220	17.5	9	7
23.371.1600	M16	2	220	20	12	9

Ref.	d1	P	l1	l2	d2	sw
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**





HSS-E PM | M | 60° | DIN 371 | 2,5xD | 40° | Form C | 2,5 | 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
23.400.0300	M3	0.5	56	6	3.5	2.7
23.400.0400	M4	0.7	63	7	4.5	3.4

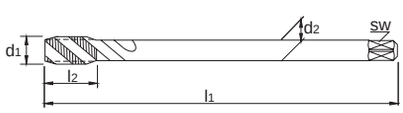
Ref.	d1	P	l1	l2	d2	sw
23.400.0500	M5	0.8	70	8	6	4.9
23.400.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.400.0800	M8	1.25	90	12.5	8	6.2
23.400.1000	M10	1.5	100	15	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**





HSS-E PM | M | 60° | DIN 376 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 22 INOX >850N/mm²

10-15 | 6-10 | 4-6

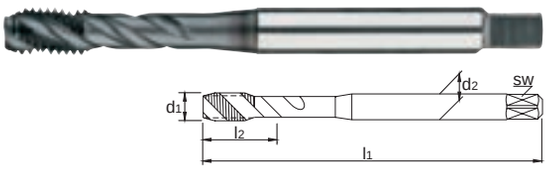
Ref.	d1	P	l1	l2	d2	sw
23.401.0800	M8	1.25	90	10	6	4.9
23.401.1000	M10	1.5	100	15	7	5.5
23.401.1200	M12	1.75	110	17.5	9	7
23.401.1400	M14	2	110	20	11	9

Ref.	d1	P	l1	l2	d2	sw
23.401.1600	M16	2	110	20	12	9
23.401.1800	M18	2.5	125	25	14	11
23.401.2000	M20	2.5	140	25	16	12
23.401.2200	M22	2.5	140	25	18	14.5

Ref.	d1	P	l1	l2	d2	sw
23.401.2400	M24	3	160	30	18	14.5
23.401.2700	M27	3	160	30	20	16
23.401.3000	M30	3.5	180	45	22	18

19:00 ▶ 🛒 ▶ 24h

› 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**

HSS-E PM | M | 60° | TiCN | DIN 371 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 22 INOX >850N/mm²

10-15 | 6-10 | 4-6

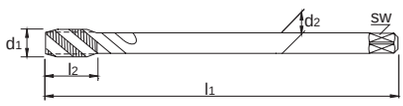
Ref.	d1	P	l1	l2	d2	sw
23.404.0300	M3	0.5	56	6	3,5	0
23.404.0400	M4	0.7	63	7	4,5	2.1

Ref.	d1	P	l1	l2	d2	sw
23.404.0500	M5	0.8	70	8	6	2.7
23.404.0600	M6	1	80	10	6	3.4

Ref.	d1	P	l1	l2	d2	sw
23.404.0800	M8	1.25	90	12.5	8	4.9
23.404.1000	M10	1.5	100	15	10	5.5

› 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**

HSS-E PM | M | 60° | TiCN | DIN 376 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | M 22 INOX >850N/mm²

10-15 | 6-10 | 4-6

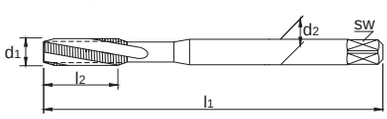
Ref.	d1	P	l1	l2	d2	sw
23.405.1200	M12	1.75	110	17.5	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 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**

HSS-E PM | M | 60° | OX. | DIN 371 | 2,5xD | 40° | Form C | 3 | ISO 2 6H

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 52 CuAlFe | S 71 Ni/Co | S 72 Ti

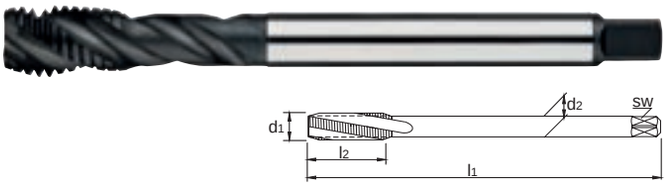
6-10 | 3-5 | 3-5 | 2-15 | 4-15

Ref.	d1	P	l1	l2	d2	sw
23.430.0400	M4	0.7	63	7	4.5	3.4
23.430.0500	M5	0.8	70	8	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.430.0600	M6	1	80	10	6	4.9
23.430.0800	M8	1.25	90	12.5	8	6.2

Ref.	d1	P	l1	l2	d2	sw
23.430.1000	M10	1.5	100	15	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**

HSS-E PM | M | 60° | OX. | DIN 376 | 2,5xD | 7 40° | Form C | 3 | 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

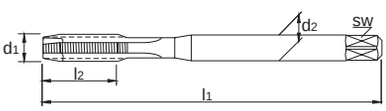
Ref.	d1	P	l1	l2	d2	sw
23.431.1200	M12	1.75	110	17.5	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 23.440 Phantom





NL **VHM-MG Machinetap Metrisch, TiCN, 50-60 HRc**
FR **Taraud machine Carbure MG Métrique, TiCN, 50-60 HRc**
ES **Macho máquina MD-MG Métrica, TiCN, 50-60 HRc**
DE **VHM-MG Maschinengewindebohrer Metrisch, TiCN, 50-60 HRc**

MG HM | M | 60° | TiCN | DIN 371 | 2xD | Form C | 2,5 | 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

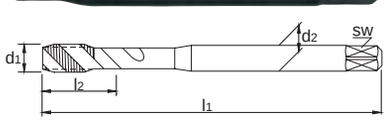
Ref.	d1	P	l1	l2	d2	sw
23.440.0300	M3	0.5	56	11	3.5	2.7
23.440.0400	M4	0.7	63	13	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.440.0500	M5	0.8	70	15	6	4.9
23.440.0600	M6	1	80	17	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.440.0800	M8	1.25	90	20	8	6.2
23.440.1000	M10	1.5	100	22	10	8

› 23.445 INTERNATIONAL TOOLS





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**

HSS-E | M | 60° | OX. | DIN 371 | 2xD | 7 35° | Form C | 2-3 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | M 21 INOX ≤850N/mm²

15-20 | 7-10

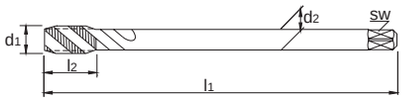
Ref.	d1	P	l1	l2	d2	sw
23.445.0300	M3	0.5	56	5	3.5	2.7
23.445.0400	M4	0.7	63	7	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.445.0500	M5	0.8	70	8	6	4.9
23.445.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.445.0800	M8	1.25	90	13	8	6.2
23.445.1000	M10	1.5	100	15	10	8

› 23.446 INTERNATIONAL TOOLS





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**

HSS-E | M | 60° | OX. | DIN 376 | 2xD | 35° | Form C | 2-3 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | M 21 INOX ≤850N/mm²

15-20 | 7-10

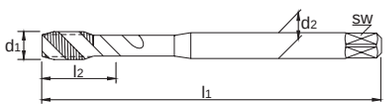
Ref.	d1	P	l1	l2	d2	sw
23.446.1200	M12	1.75	110	18	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 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**

HSS-E | M | 60° | OX. | DIN 371 | 2,5xD | 45° | Form C | 2,5 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co

15-20 | 15-20 | 7-10 | 5-8 | 2-8

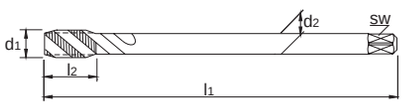
Ref.	d1	P	l1	l2	d2	sw
23.450.0300	M3	0.5	56	6	3.5	2.7
23.450.0400	M4	0.7	63	7	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.450.0500	M5	0.8	70	8	6	4.9
23.450.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.450.0800	M8	1.25	90	12.5	8	6.2
23.450.1000	M10	1.5	100	15	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**

HSS-E | M | 60° | OX. | DIN 376 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co

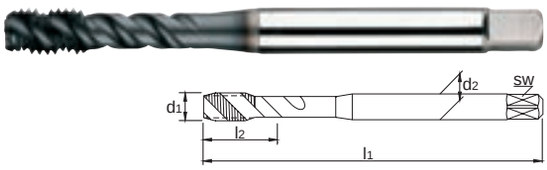
15-20 | 15-20 | 7-10 | 5-8 | 2-8

Ref.	d1	P	l1	l2	d2	sw
23.451.0800	M8	1.25	90	10	6	4.9
23.451.1000	M10	1.5	100	15	7	5.5
23.451.1200	M12	1.75	110	17.5	9	7
23.451.1400	M14	2	110	20	11	9
23.451.1600	M16	2	110	20	12	9
23.451.1800	M18	2.5	125	25	14	11

Ref.	d1	P	l1	l2	d2	sw
23.451.2000	M20	2.5	140	25	16	12
23.451.2200	M22	2.5	140	25	18	14.5
23.451.2400	M24	3	160	30	18	14.5
23.451.2700	M27	3	160	30	20	16
23.451.3000	M30	3.5	180	35	22	18
23.451.3300	M33	3.5	180	40	25	20

Ref.	d1	P	l1	l2	d2	sw
23.451.3600	M36	4	200	45	28	22
23.451.3900	M39	4	200	50	32	24
23.451.4200	M42	4.5	200	56	32	24
23.451.4500	M45	4.5	220	67	36	29
23.451.4800	M48	5	250	67	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**

HSS-E PM | M | 60° | TiCN | DIN 371 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co

15-20 | 15-20 | 7-10 | 5-8 | 2-8

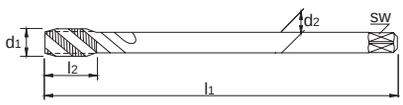
Ref.	d1	P	l1	l2	d2	sw
23.454.0200	M2	0.4	45	4	2.8	2.1
23.454.0250	M2,5	0.45	50	4	2.8	2.1
23.454.0300	M3	0.5	56	6	3.5	2.7

Ref.	d1	P	l1	l2	d2	sw
23.454.0400	M4	0.7	63	7	4.5	3.4
23.454.0500	M5	0.8	70	8	6	4.9
23.454.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.454.0800	M8	1.25	90	12.5	8	6.2
23.454.1000	M10	1.5	100	15	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**

HSS-E PM | M | 60° | TiCN | DIN 376 | 2,5xD | 40° | Form C | 2,5 | ISO 2 6H | INOX

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | M 21 INOX ≤850N/mm² | M 22 INOX >850N/mm² | S 71 Ni/Co

15-20 | 15-20 | 7-10 | 5-8 | 2-8

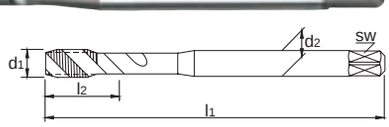
Ref.	d1	P	l1	l2	d2	sw
23.455.1200	M12	1.75	110	17.5	9	7

Ref.	d1	P	l1	l2	d2	sw
23.455.1600	M16	2	110	20	12	9

Ref.	d1	P	l1	l2	d2	sw
23.455.2000	M20	2.5	140	25	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**

HSS-E | M | 60° | DIN 371 | 2,5xD | 45° | Form C | 2,5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² | N 41 Alu | N 42 Alu Si>10% | N 51 Cu

15-20 | 10-35 | 10-20 | 8-12

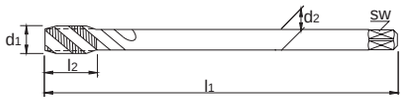
Ref.	d1	P	l1	l2	d2	sw
23.480.0300	M3	0.5	56	6	3.5	2.7
23.480.0400	M4	0.7	63	7	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.480.0500	M5	0.8	70	8	6	4.9
23.480.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.480.0800	M8	1.25	90	12.5	8	6.2
23.480.1000	M10	1.5	100	15	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**

HSS-E | M | 60° | DIN 376 | 2,5xD | 45° | Form C | 2,5 | ISO 2 6H | ALU

P 11 ≤600 N/mm² | N 41 Alu | N 42 Alu Si>10% | N 51 Cu

15-20 | 10-35 | 10-20 | 8-12

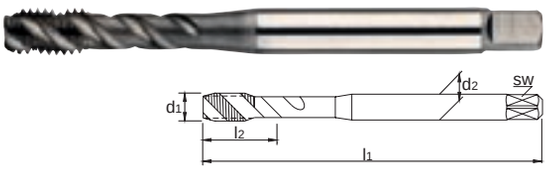
Ref.	d1	P	l1	l2	d2	sw
23.481.0800	M8	1.25	90	10	6	4.9
23.481.1000	M10	1.5	100	15	7	5.5

Ref.	d1	P	l1	l2	d2	sw
23.481.1200	M12	1.75	110	17.5	9	7
23.481.1400	M14	2	110	20	11	9

Ref.	d1	P	l1	l2	d2	sw
23.481.1600	M16	2	110	20	12	9

19:00 ▶ 24h

› 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%**

HSS-E | M | 60° | NIT. | DIN 371 | 2,5xD | 45° | Form C | 2,5 | ISO 2 6H | ALU

N 42 Alu Si>10%

10-15

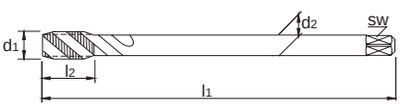
Ref.	d1	P	l1	l2	d2	sw
23.500.0300	M3	0.5	56	6	3.5	2.7
23.500.0400	M4	0.7	63	7	4.5	3.4

Ref.	d1	P	l1	l2	d2	sw
23.500.0500	M5	0.8	70	8	6	4.9
23.500.0600	M6	1	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.500.0800	M8	1.25	90	12.5	8	6.2
23.500.1000	M10	1.5	100	15	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%**

HSS-E | M | 60° | NIT. | DIN 376 | 2,5xD | 45° | Form C | 2,5 | ISO 2 6H | ALU

N 42 Alu Si>10%

10-15

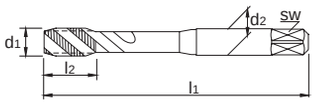
Ref.	d1	P	l1	l2	d2	sw
23.501.1200	M12	1.75	110	17.5	9	7

Ref.	d1	P	l1	l2	d2	sw

Ref.	d1	P	l1	l2	d2	sw

› 23.585 Phantom





NL **HSS Machinetap Metrisch, voor Phan-Coil**
FR **Taraud machine HSS Métrique, pour Phan-Coil**
ES **Macho máquina HSS Métrica, para Phan-Coil**
DE **HSS Maschinengewindebohrer Metrisch, für Phan-Coil**

HSS | EG | M | 60° | NFE 66103 | Phan-Coil | 2xD | 40° | Form C | 2,5 | 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

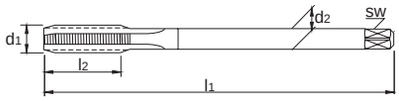
Ref.	d1	P	l1	l2	d2	sw
23.585.0300	M3	0.5	63	7	4.5	3.4
23.585.0400	M4	0.7	70	8	6	4.9
23.585.0500	M5	0.8	80	10	6	4.9

Ref.	d1	P	l1	l2	d2	sw
23.585.0600	M6	1	90	12.5	8	6.2
23.585.0800	M8	1.25	100	15	10	8
23.585.1000	M10	1.5	110	17.5	9	7

Ref.	d1	P	l1	l2	d2	sw
23.585.1200	M12	1.75	110	20	11	9

› 23.615 INTERNATIONAL TOOLS





NL **HSS-E Machinetap Metrisch Fijn**
FR **Taraud machine HSS-E Métrique Fin**
ES **Macho máquina HSS-E Métrica Fina**
DE **HSS-E Maschinengewindebohrer Metrisch Fein**

HSS-E | MF | 60° | DIN 374 | 1,5xD | Form B | 3,5-6 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | N 41 Alu

15-20 | 12-18 | 10-15 | 23-35

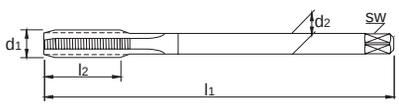
Ref.	d1	P	l1	l2	d2	sw
23.615.0505	MF5	0.5	70	12	3.5	2.7
23.615.0605	MF6	0.5	80	14	4.5	3.4
23.615.0607	MF6	0.75	80	14	4.5	3.4
23.615.0807	MF8	0.75	80	19	6	4.9
23.615.0810	MF8	1	90	22	6	4.9
23.615.1007	MF10	0.75	90	20	7	5.5
23.615.1010	MF10	1	90	20	7	5.5
23.615.1012	MF10	1.25	100	24	7	5.5
23.615.1210	MF12	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 UNI HSS-E Métrique Fin**
ES **Macho máquina UNI HSS-E Métrica Fina**
DE **UNI HSS-E Maschinengewindebohrer Metrisch Fein**

HSS-E | MF | 60° | DIN 374 | 3xD | Form B | 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
23.620.0807	MF8	0.75	80	13	6	4.9
23.620.0810	MF8	1	90	20	6	4.9
23.620.0910	MF9	1	90	20	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
23.620.1210	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
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

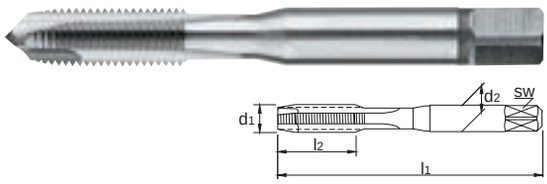
Ref.	d1	P	l1	l2	d2	sw
23.620.1610	MF16	1	100	22	12	9
23.620.1615	MF16	1.5	100	22	12	9
23.620.1810	MF18	1	110	25	14	11
23.620.1815	MF18	1.5	110	25	14	11
23.620.1820	MF18	2	125	30	14	11
23.620.2010	MF20	1	125	25	16	12
23.620.2015	MF20	1.5	125	25	16	12
23.620.2020	MF20	2	140	32	16	12
23.620.2210	MF22	1	125	25	18	14.5
23.620.2215	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
23.620.2515	MF25	1.5	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
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

Ref.	d1	P	l1	l2	d2	sw
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

19:00 ▶ 🛒 ▶ 24h

› 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**



HSS | MF | 60° | 2xD | Form B | 5 | ISO 2 6H

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
23.625.0403	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
23.625.0607	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

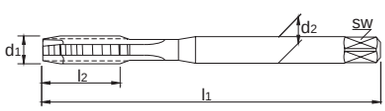
Ref.	d1	P	l1	l2	d2	sw
23.625.1010	MF10	1	80	24	10	8
23.625.1012	MF10	1.25	80	24	10	8
23.625.1110	MF11	1	85	25	8	6.3
23.625.1112	MF11	1.25	85	25	8	6.3
23.625.1205	MF12	0.5	89	29	9	7.1
23.625.1207	MF12	0.75	89	29	9	7.1
23.625.1210	MF12	1	89	29	9	7.1
23.625.1215	MF12	1.5	89	29	9	7.1
23.625.1307	MF13	0.75	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

Ref.	d1	P	l1	l2	d2	sw
23.625.1520	MF15	2	95	30	11.2	9
23.625.1607	MF16	0.75	102	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 HP2 UNI HSS-E PM Métrique Fin, HARDLUBE**
ES **Macho máquina HP2 UNI HSS-E PM Métrica Fina, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch Fein, HARDLUBE**





NIEUW | NOUVEAU | NUEVO | NEU

HSS-E PM | MF | 60° | HARD LUBE | DIN 374 | 3xD | Form B | 4-5 | ISO 2 6H | 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% | S 71 Ni/Co | S 72 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

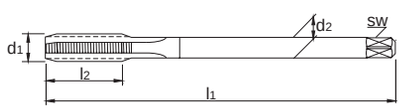
Ref.	d1	P	l1	l2	d2	sw
23.668.1215	MF12	1.5	100	22	9	7
23.668.1410	MF14	1	100	22	11	9
23.668.1415	MF14	1.5	100	22	11	9
23.668.1615	MF16	1.5	100	22	12	9
23.668.1815	MF18	1.5	110	25	14	11

Ref.	d1	P	l1	l2	d2	sw
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**
FR **Taraud machine HSS-E PM Métrique Fin, vaporisé**
ES **Macho máquina HSS-E PM Métrica Fina, vaporizado**
DE **HSS-E PM Maschinengewindebohrer Metrisch Fein, dampfangelassen**





HSS-E PM | MF | 60° | OX. | DIN 374 | 3xD | Form B | 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

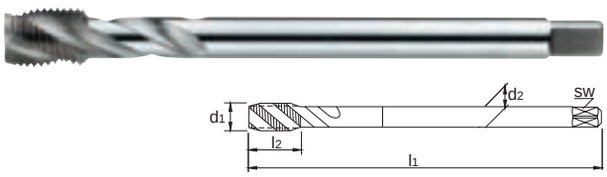
15-20 | 10-20 | 6-10 | 7-10 | 4-8 | 25-35 | 10-20 | 15-35 | 4-8 | 4-8

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 **HSS-E Machinetap Metrisch Fijn**
FR **Taraud machine HSS-E Métrique Fin**
ES **Macho máquina HSS-E Métrica Fina**
DE **HSS-E Maschinengewindebohrer Metrisch Fein**

HSS-E | MF | 60° | DIN 374 | 2xD | 35° | Form C | 2-3 | ISO 2 6H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | N 41 Alu

15-20 | 12-18 | 10-15 | 23-35

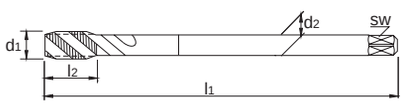
Ref.	d1	P	l1	l2	d2	sw
23.835.0810	MF8	1	90	10	6	4.9
23.835.1010	MF10	1	90	12	7	5.5
23.835.1012	MF10	1.25	100	12	7	5.5
23.835.1210	MF12	1	100	14	9	7

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 UNI HSS-E Métrique Fin**
ES **Macho máquina UNI HSS-E Métrica Fina**
DE **UNI HSS-E Maschinengewindebohrer Metrisch Fein**

HSS-E | MF | 60° | DIN 374 | 2,5xD | 40° | Form C | 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

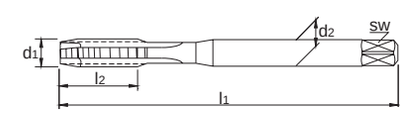
Ref.	d1	P	l1	l2	d2	sw
23.840.0810	MF8	1	90	20	6	4.9
23.840.1010	MF10	1	90	16	7	5.5
23.840.1012	MF10	1.25	100	22	7	5.5
23.840.1210	MF12	1	100	22	9	7
23.840.1212	MF12	1.25	100	22	9	7
23.840.1215	MF12	1.5	100	22	9	7
23.840.1410	MF14	1	100	22	11	9

Ref.	d1	P	l1	l2	d2	sw
23.840.1412	MF14	1.25	100	22	11	9
23.840.1415	MF14	1.5	100	22	11	9
23.840.1615	MF16	1.5	100	22	12	9
23.840.1815	MF18	1.5	110	25	14	11
23.840.2015	MF20	1.5	125	25	16	12
23.840.2215	MF22	1.5	125	25	18	14.5
23.840.2415	MF24	1.5	140	28	18	14.5

Ref.	d1	P	l1	l2	d2	sw
23.840.2615	MF26	1.5	140	20	18	14.5
23.840.2715	MF27	1.5	140	20	20	16
23.840.2720	MF27	2	140	20	20	16
23.840.2815	MF28	1.5	140	20	20	16
23.840.3015	MF30	1.5	150	22	22	18
23.840.3020	MF30	2	150	22	22	18

› 23.868 Phantom





NL **HP2 UNI HSS-E PM Machinetap Metrisch Fijn, HARDLUBE**
FR **Taraud machine HP2 UNI HSS-E PM Métrique Fin, HARDLUBE**
ES **Macho máquina HP2 UNI HSS-E PM Métrica Fina, HARDLUBE**
DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch Fein, HARDLUBE**

NIEUW | NOUVEAU | NUEVO | NEU

HSS-E PM | MF | 60° | HARD LUBE | DIN 374 | 2,5xD | 50° | Form C | 2-2,5 | 6HX | 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% | S 71 Ni/Co | S 72 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

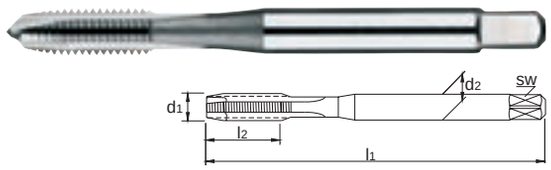
Ref.	d1	P	l1	l2	d2	sw
23.868.1215	MF12	1.5	100	22	9	7
23.868.1412	MF14	1.25	100	22	11	9
23.868.1415	MF14	1.5	100	22	11	9
23.868.1615	MF16	1.5	100	22	12	9
23.868.1815	MF18	1.5	110	25	14	11

Ref.	d1	P	l1	l2	d2	sw
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

19:00 ▶ 24h

› 24.120 Phantom

NL **UNI HSS-E Machinetap UNC**
FR **Taraud machine UNI HSS-E UNC**
ES **Macho máquina UNI HSS-E UNC**
DE **UNI HSS-E Maschinengewindebohrer UNC**



HSS-E | UNC | 60° | DIN 371 | 3xD | Form B | 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

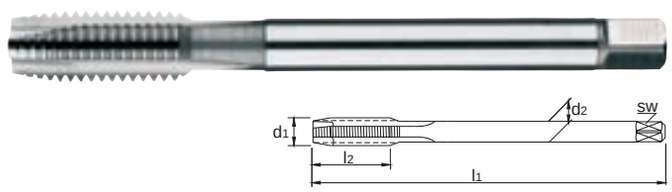
15-20 | 10-20 | 6-10 | 7-10 | 10-15 | 10-15 | 25-35 | 10-20 | 15-35 | 2-8 | 2-8

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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 UNI HSS-E UNC**
ES **Macho máquina UNI HSS-E UNC**
DE **UNI HSS-E Maschinengewindebohrer UNC**



HSS-E | UNC | 60° | DIN 376 | 3xD | Form B | 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

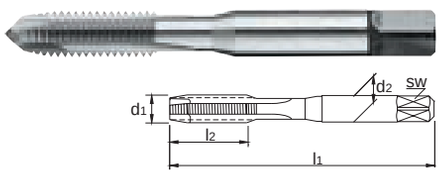
15-20 | 10-20 | 6-10 | 7-10 | 10-15 | 10-15 | 25-35 | 10-20 | 15-35 | 2-8 | 2-8

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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**



HSS | UNC | 60° | NFE 66104 | ISO 529 | 2,5xD | Form B | 2,5 | 2B

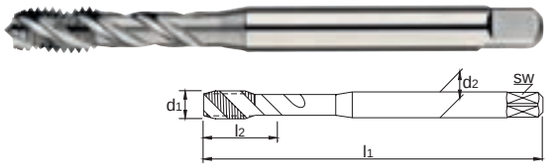
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 32 GGG GTS-GTW | N 41 Alu | N 52 CuAlFe

12-17 | 10-15 | 3-6 | 15-20 | 5-12

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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 UNI HSS-E UNC**
ES **Macho máquina UNI HSS-E UNC**
DE **UNI HSS-E Maschinengewindebohrer UNC**

HSS-E | UNC | 60° | DIN 371 | 2,5xD | 40° | Form C | 2,5 | 2B | UNI

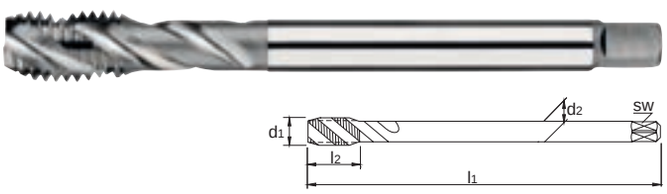
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | M 21 INOX ≤850N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10% | N 51 Cu | S 71 Ni/Co | S 72 Ti

15-20 | 10-20 | 6-10 | 7-10 | 10-15 | 10-15 | 25-35 | 10-20 | 15-35 | 2-8 | 2-8

Ref.	d1	P	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	P	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 UNI HSS-E UNC**
ES **Macho máquina UNI HSS-E UNC**
DE **UNI HSS-E Maschinengewindebohrer UNC**

HSS-E | UNC | 60° | DIN 376 | 2,5xD | 40° | Form C | 2,5 | 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

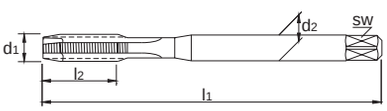
Ref.	d1	P	l1	l2	d2	sw
24.341.1111	UNC 7/16	14	100	15	8	6.2
24.341.1270	UNC 1/2	13	110	18	9	7
24.341.1429	UNC 9/16	12	110	20	11	9
24.341.1588	UNC 5/8	11	110	20	12	9

Ref.	d1	P	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 UNI HSS-E UNF**
ES **Macho máquina UNI HSS-E UNF**
DE **UNI HSS-E Maschinengewindebohrer UNF**



HSS-E | UNF | 60° | DIN 371 | 3xD | Form B | 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

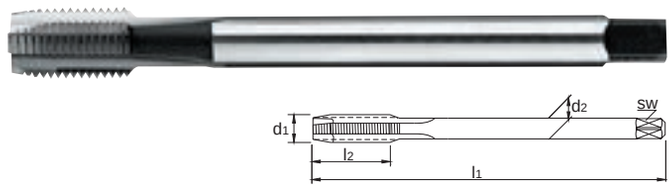
Ref.	d1	P	l1	l2	d2	sw
24.520.0285	UNF Nr. 4	48	56	11	3.5	2.7
24.520.0317	UNF Nr. 5	44	56	11	3.5	2.7
24.520.0350	UNF Nr. 6	40	56	13	4	3
24.520.0416	UNF Nr. 8	36	63	13	4.5	3.4
24.520.0482	UNF Nr. 10	32	70	16	6	4.9

Ref.	d1	P	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

19:00 ▶ 24h

› 24.521 Phantom

NL **UNI HSS-E Machinetap UNF**
FR **Taraud machine UNI HSS-E UNF**
ES **Macho máquina UNI HSS-E UNF**
DE **UNI HSS-E Maschinengewindebohrer UNF**



HSS-E | UNF | 60° | DIN 376 | 3xD | Form B | 5 | 2B | UNI

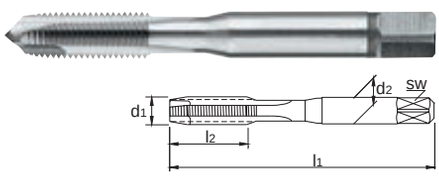
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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**



HSS | UNF | 60° | NFE 66104 | ISO 529 | 2,5xD | Form B | 5 | 2B

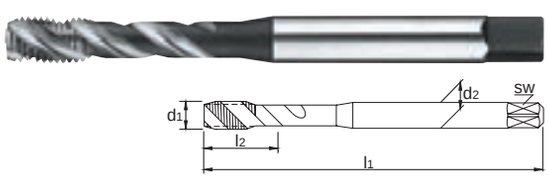
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	3-6	15-20	5-12

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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
24.525.2541	UNF 1	14	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 UNI HSS-E UNF**
ES **Macho máquina UNI HSS-E UNF**
DE **UNI HSS-E Maschinengewindebohrer UNF**



HSS-E | UNF | 60° | DIN 371 | 2,5xD | 40° | Form C | 2,5 | 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

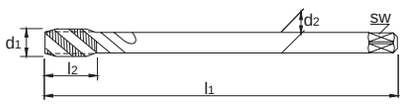
Ref.	d1	P	l1	l2	d2	sw
24.740.0285	UNF Nr. 4	48	56	5	3.5	2.7
24.740.0317	UNF Nr. 5	44	56	6	3.5	2.7
24.740.0350	UNF Nr. 6	40	56	6	4	3
24.740.0416	UNF Nr. 8	36	63	7	4.5	3.4
24.740.0482	UNF Nr. 10	32	70	8	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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 UNI HSS-E UNF**
ES **Macho máquina UNI HSS-E UNF**
DE **UNI HSS-E Maschinengewindebohrer UNF**





HSS-E | UNF | 60° | DIN 376 | 2,5xD | 40° | Form C | 2,5 | 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

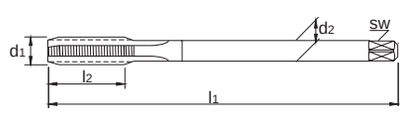
Ref.	d1	P	l1	l2	d2	sw
24.741.1111	UNF 7/16	20	100	15	8	6.2
24.741.1270	UNF 1/2	20	110	18	9	7
24.741.1429	UNF 9/16	18	110	20	11	9
24.741.1588	UNF 5/8	18	110	20	12	9

Ref.	d1	P	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**





HSS-E | UNEF | 60° | DIN 374 | 1,5xD | Form B | 4 | 2B

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

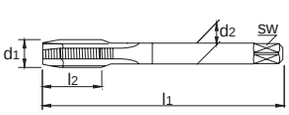
Ref.	d1	P	l1	l2	d2	sw
24.991.0635	UNEF 1/4	32	80	16	7	5.5
24.991.0794	UNEF 5/16	32	90	18	8	6.2
24.991.0952	UNEF 3/8	32	90	16	7	5.5
24.991.1111	UNEF 7/16	28	100	16	9	7
24.991.1270	UNEF 1/2	28	100	16	9	7

Ref.	d1	P	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 **HSS-E Machinetap BSP (Gasdraad)**
FR **Taraud machine HSS-E BSP (pas gaz)**
ES **Macho máquina HSS-E BSP (gas)**
DE **HSS-E Maschinengewindebohrer BSP (Rohrgewinde)**





HSS-E | BSP G | 55° | DIN 5156 | 1,5xD | Form B | 3,5-6

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | N 41 Alu

15-20 | 12-18 | 10-15 | 23-35

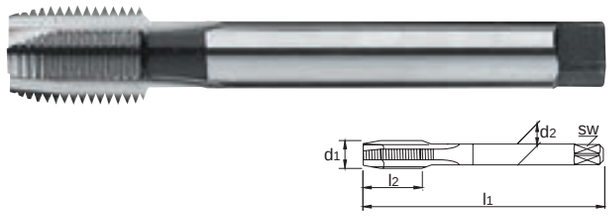
Ref.	d1	P	l1	l2	d2	sw
25.095.0973	BSP 1/8	28	90	20	7	5.5
25.095.1316	BSP 1/4	19	100	22	11	9
25.095.1666	BSP 3/8	19	100	22	12	9

Ref.	d1	P	l1	l2	d2	sw
25.095.2096	BSP 1/2	14	125	22	16	12
25.095.2644	BSP 3/4	14	140	22	20	16
25.095.3325	BSP 1	11	160	25	25	20

19:00 ▶ 24h

› 25.100 Phantom

NL **HSS-E Machinetap BSP (Gasdraad)**
FR **Taraud machine HSS-E BSP (pas gaz)**
ES **Macho máquina HSS-E BSP (gas)**
DE **HSS-E Maschinengewindebohrer BSP (Rohrgewinde)**



HSS-E | BSP G | 55° | DIN 5156 | 3xD | Form B | 5

P 11	P 12	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
15-20	10-20	5-15	10-35	10-20	8-35	20-30

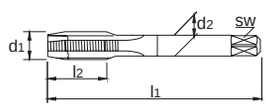
Ref.	d1	P	l1	l2	d2	sw
25.100.0973	BSP 1/8	28	90	16	7	5.5
25.100.1316	BSP 1/4	19	100	22	11	9
25.100.1666	BSP 3/8	19	100	22	12	9
25.100.2096	BSP 1/2	14	125	25	16	12
25.100.2291	BSP 5/8	14	125	25	18	14.5
25.100.2644	BSP 3/4	14	140	28	20	16

Ref.	d1	P	l1	l2	d2	sw
25.100.3020	BSP 7/8	14	150	28	22	18
25.100.3325	BSP 1	11	160	30	25	20
25.100.3790	BSP 1.1/8	11	170	30	28	22
25.100.4191	BSP 1.1/4	11	170	30	32	24
25.100.4780	BSP 1.1/2	11	190	32	36	29

› 25.105 Phantom

NL **HSS Machinetap BSP (Gasdraad)**
FR **Taraud machine HSS BSP (pas gaz)**
ES **Macho máquina HSS BSP (gas)**
DE **HSS Maschinengewindebohrer BSP (Rohrgewinde)**





HSS | BSP G | 55° | NFE 66103 | 2,5xD | Form B | 5

P 11	P 12	K 32	N 41
≤600 N/mm²	≤850 N/mm²	GGG GTS-GTW	Alu
12-17	10-15	3-6	15-20

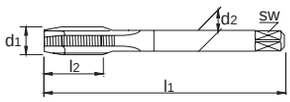
Ref.	d1	P	l1	l2	d2	sw
25.105.0973	BSP 1/8	28	80	24	10	8
25.105.1316	BSP 1/4	19	89	29	9	7.1
25.105.1666	BSP 3/8	19	102	32	12.5	10
25.105.2096	BSP 1/2	14	112	37	14	11.2
25.105.2291	BSP 5/8	14	118	38	16	12.5
25.105.2644	BSP 3/4	14	127	37	20	16

Ref.	d1	P	l1	l2	d2	sw
25.105.3020	BSP 7/8	14	137	37	22.4	18
25.105.3325	BSP 1	11	127	37	22.4	18
25.105.4191	BSP 1.1/4	11	149	39	28	22.4
25.105.4780	BSP 1.1/2	11	169	45	31.5	25
25.105.5375	BSP 1.3/4	11	175	45	35.5	28
25.105.5961	BSP 2	11	193	43	40	31.5

› 25.160 Phantom

NL **HSS-E Machinetap BSP (Gasdraad), stoomontlaten, roestvaststaal**
FR **Taraud machine HSS-E BSP (pas gaz), vaporisé, Inox**
ES **Macho máquina HSS-E BSP (gas), vaporizado, acero inoxidable**
DE **HSS-E Maschinengewindebohrer BSP (Rohrgewinde), dampfangelassen, rostfreien Stahl**





HSS-E | BSP G | 55° | OX. | DIN 5156 | 2xD | Form B | 3,5 | 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	P	l1	l2	d2	sw
25.160.0973	BSP 1/8	28	90	16	7	5.5
25.160.1316	BSP 1/4	19	100	22	11	9

Ref.	d1	P	l1	l2	d2	sw
25.160.1666	BSP 3/8	19	100	22	12	9
25.160.2096	BSP 1/2	14	125	25	16	12

› 25.295 INTERNATIONAL TOOLS





NL **HSS-E Machinetap BSP (Gasdraad)**
FR **Taraud machine HSS-E BSP (pas gaz)**
ES **Macho máquina HSS-E BSP (gas)**
DE **HSS-E Maschinengewindebohrer BSP (Rohrgewinde)**

HSS-E | BSP G | 55° | DIN 5156 | 2xD | 7° 35° | Form C | 2-3

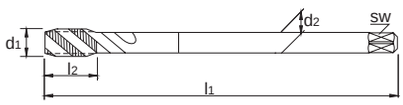
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	23-35

Ref.	d1	P	l1	l2	d2	sw
25.295.0973	BSP 1/8	28	90	20	7	5.5
25.295.1316	BSP 1/4	19	100	22	11	9
25.295.1666	BSP 3/8	19	100	22	12	9

Ref.	d1	P	l1	l2	d2	sw
25.295.2096	BSP 1/2	14	125	22	16	12
25.295.2644	BSP 3/4	14	140	22	20	16
25.295.3325	BSP 1	11	160	25	25	20

› 25.300 Phantom





NL **HSS-E Machinetap BSP (Gasdraad)**
FR **Taraud machine HSS-E BSP (pas gaz)**
ES **Macho máquina HSS-E BSP (gas)**
DE **HSS-E Maschinengewindebohrer BSP (Rohrgewinde)**

HSS-E | BSP G | 55° | DIN 5156 | 2,5xD | 7° 40° | Form C | 2,5

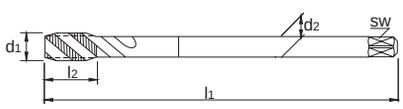
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
15-20	10-20	5-15	10-35	10-20	8-35	20-30

Ref.	d1	P	l1	l2	d2	sw
25.300.0973	BSP 1/8	28	90	16	7	5.5
25.300.1316	BSP 1/4	19	100	22	11	9
25.300.1666	BSP 3/8	19	100	22	12	9
25.300.2096	BSP 1/2	14	125	25	16	12
25.300.2291	BSP 5/8	14	125	25	18	14.5
25.300.2644	BSP 3/4	14	140	28	20	16

Ref.	d1	P	l1	l2	d2	sw
25.300.3020	BSP 7/8	14	150	28	22	18
25.300.3325	BSP 1	11	160	30	25	20
25.300.3790	BSP 1.1/8	11	170	30	28	22
25.300.4191	BSP 1.1/4	11	170	30	32	24
25.300.4780	BSP 1.1/2	11	190	32	36	29

› 25.360 Phantom





NL **HSS-E Machinetap BSP (Gasdraad), stoomontlaten, roestvaststaal**
FR **Taraud machine HSS-E BSP (pas gaz), vaporisé, Inox**
ES **Macho máquina HSS-E BSP (gas), vaporizado, acero inoxidable**
DE **HSS-E Maschinengewindebohrer BSP (Rohrgewinde), dampfangelassen, rostfreien Stahl**

HSS-E | BSP G | 55° | OX. | DIN 5156 | 2,5xD | 7° 40° | Form C | 2,5 | 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

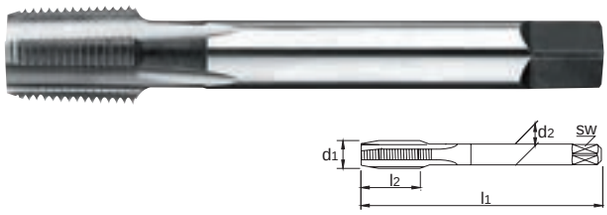
Ref.	d1	P	l1	l2	d2	sw
25.360.0973	BSP 1/8	28	90	16	7	5.5
25.360.1316	BSP 1/4	19	100	22	11	9

Ref.	d1	P	l1	l2	d2	sw
25.360.1666	BSP 3/8	19	100	22	12	9
25.360.2096	BSP 1/2	14	125	25	16	12

19:00 ▶ 🛒 ▶ 24h

› 25.480 Phantom

NL **HSS-E Machinetap BSPT (Rc)**
FR **Taraud machine HSS-E BSPT (Rc)**
ES **Macho máquina HSS-E BSPT (Rc)**
DE **HSS-E Maschinengewindebohrer BSPT (Rc)**



HSS-E | BSPT Rc | 55° | DIN 5156 | Form C | 2,5

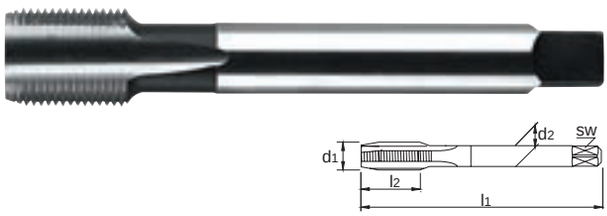
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	7-10	5-8	10-15	25-35

Ref.	d1	P	l1	l2	d2	sw
25.480.0973	BSPT 1/8	28	90	16	7	5.5
25.480.1316	BSPT 1/4	19	100	22	11	9
25.480.1666	BSPT 3/8	19	100	22	12	9

Ref.	d1	P	l1	l2	d2	sw
25.480.2096	BSPT 1/2	14	125	25	16	12
25.480.2644	BSPT 3/4	14	140	28	20	16
25.480.3325	BSPT 1	11	160	30	25	20

› 25.500 Phantom

NL **HSS-E Machinetap BSPP (Rp)**
FR **Taraud machine HSS-E BSPP (Rp)**
ES **Macho máquina HSS-E BSPP (Rp)**
DE **HSS-E Maschinengewindebohrer BSPP (Rp)**



HSS-E | BSPP Rp | 55° | DIN 5156 | ISO 228-1 | 2 xD | 1,5 xD | Form C | 2,5

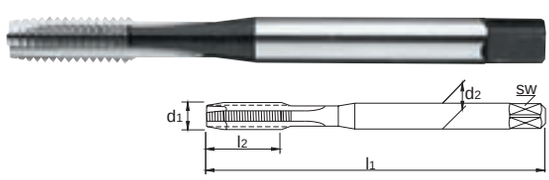
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	N 41 Alu
15-20	12-18	10-15	7-10	5-8	10-15	25-35

Ref.	d1	P	l1	l2	d2	sw
25.500.0973	BSPP 1/8	28	90	16	7	5.5
25.500.1316	BSPP 1/4	19	100	22	11	9
25.500.1666	BSPP 3/8	19	100	22	12	9

Ref.	d1	P	l1	l2	d2	sw
25.500.2096	BSPP 1/2	14	125	25	16	12
25.500.2644	BSPP 3/4	14	140	28	20	16
25.500.3325	BSPP 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)**



HSS-E | BSW | 55° | DIN 371 | 3xD | Form B | 5

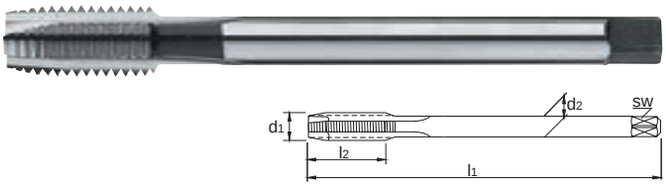
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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	10	8

› 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)**



HSS-E | BSW | 55° | DIN 376 | 3xD | Form B | 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

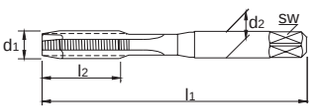
Ref.	d1	P	l1	l2	d2	sw
25.521.1111	BSW 7/16	14	100	22	8	6.2
25.521.1270	BSW 1/2	12	110	24	9	7
25.521.1429	BSW 9/16	12	110	26	11	9
25.521.1588	BSW 5/8	11	110	27	12	9

Ref.	d1	P	l1	l2	d2	sw
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	18	14.5

› 25.525 Phantom

NL **HSS Machinetap BSW (Whitworth)**
FR **Taraud machine HSS BSW (Whitworth)**
ES **Macho máquina HSS BSW (Whitworth)**
DE **HSS Maschinengewindebohrer BSW (Whitworth)**





HSS | BSW | 55° | NFE 66103 | 2,5xD | Form B | 5

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

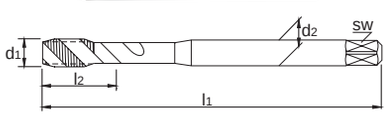
Ref.	d1	P	l1	l2	d2	sw
25.525.0317	BSW 1/8	40	50	13	3.55	2.8
25.525.0476	BSW 3/16	24	58	16	5	4
25.525.0635	BSW 1/4	20	66	19	7.1	5
25.525.0952	BSW 3/8	16	80	24	10	8
25.525.1111	BSW 7/16	14	85	25	8	6.3

Ref.	d1	P	l1	l2	d2	sw
25.525.1270	BSW 1/2	12	89	29	9	7.1
25.525.1905	BSW 3/4	10	112	37	14	11.2
25.525.2222	BSW 7/8	9	118	38	16	12.5
25.525.2540	BSW 1	8	130	45	18	14

› 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)**





HSS-E | BSW | 55° | DIN 2182 | 2,5xD | 40° | Form C | 2,5

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

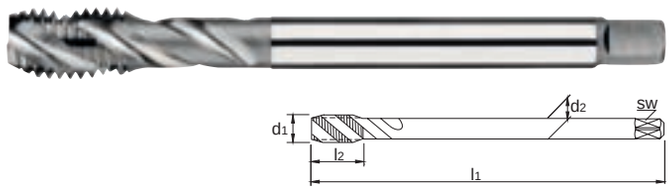
Ref.	d1	P	l1	l2	d2	sw
25.640.0317	BSW 1/8	40	56	5	3.5	2.7
25.640.0397	BSW 5/32	32	63	7	4.5	3.4
25.640.0476	BSW 3/16	24	70	8	6	4.9

Ref.	d1	P	l1	l2	d2	sw
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

19:00 ▶ 24h

› 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)**



HSS-E | BSW | 55° | DIN 2183 | 2,5xD | 40° | Form C | 2,5

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

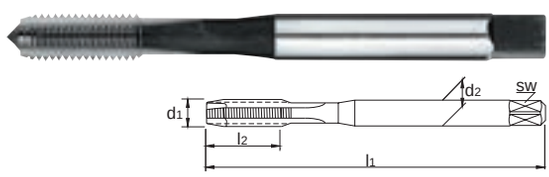
15-20 | 10-20 | 5-15 | 10-35 | 15-35

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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	18	14.5

› 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**



HSS-E | BSF | 55° | DIN 371 | 2 xD | 1,5 xD | Form C | 2,5

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

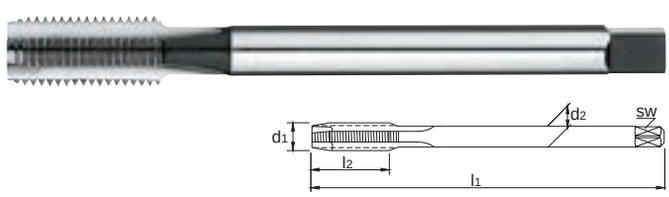
15-20 | 10-20 | 5-15 | 10-35 | 15-35

Ref.	d1	P	l1	l2	d2	sw
25.720.0635	BSF 1/4	26	80	17	7	5.5

Ref.	d1	P	l1	l2	d2	sw
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**



HSS-E | BSF | 55° | DIN 376 | 2 xD | 1,5 xD | Form C | 2,5

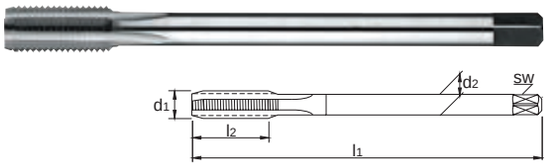
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

15-20 | 10-20 | 5-15 | 10-35 | 15-35

Ref.	d1	P	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

Ref.	d1	P	l1	l2	d2	sw
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 BSC, FG (Rijwieldraad)**
FR **Taraud machine HSS-E BSC, FG (filetage bicyclette)**
ES **Macho máquina HSS-E BSC, FG (rosca bicicleta)**
DE **HSS-E Maschinengewindebohrer BSC, FG (Fahrradgewinde)**

HSS-E | BSC FG | 60° | DIN 79012 | 2 xD | 1,5 xD | Form C | 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

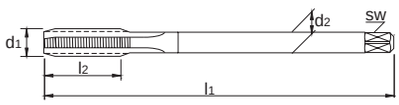
Ref.	d1	P	l1	l2	d2	sw
25.760.0635	BSC 1/4	26	80	16	6	4.9
25.760.0790	BSC 5/16	26	90	16	8	6.2
25.760.0950	BSC 3/8	26	90	16	7	5.5

Ref.	d1	P	l1	l2	d2	sw
25.760.1430	BSC 9/16	20	100	11	11	9
25.760.2540	BSC 1	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**



HSS-E | NPT | 60° | DIN 374 | 1:16 | Form C | 2,5

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

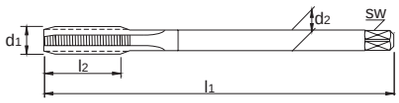
Ref.	d1	P	l1	l2	d2	sw
25.820.0794	NPT 1/16	27	90	14	6	4.9
25.820.1029	NPT 1/8	27	90	20	7	5.5
25.820.1372	NPT 1/4	18	100	22	11	9
25.820.1715	NPT 3/8	18	110	22	12	9
25.820.2134	NPT 1/2	14	140	25	16	12

Ref.	d1	P	l1	l2	d2	sw
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**



HSS-E | NPTF | 60° | DIN 374 | 1:16 | Form C | 2,5

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

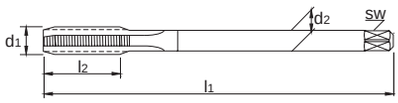
Ref.	d1	P	l1	l2	d2	sw
25.840.0794	NPTF 1/16	27	90	14	6	4.9
25.840.1029	NPTF 1/8	27	90	20	7	5.5
25.840.1372	NPTF 1/4	18	100	22	11	9
25.840.1715	NPTF 3/8	18	110	22	12	9

Ref.	d1	P	l1	l2	d2	sw
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

19:00 ▶ 24h

› 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**

HSS-E | PG | 80° | DIN 40433 | Form C | 2,5

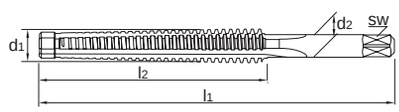
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	Nr.	P	l1	l2	d2	sw
25.900.0700	PG 7	7	20	100	22	9	7
25.900.0900	PG 9	9	18	100	22	12	9
25.900.1100	PG 11	11	18	110	25	14	11
25.900.1350	PG 13.5	13.5	18	125	25	16	12

Ref.	d1	Nr.	P	l1	l2	d2	sw
25.900.1600	PG 16	16	18	125	25	18	14.5
25.900.2100	PG 21	21	16	150	28	22	18
25.900.2900	PG 29	29	16	170	30	28	22
25.900.3600	PG 36	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)**

HSS-E | Tr | 30° | DIN 103 | 2xD | 7H

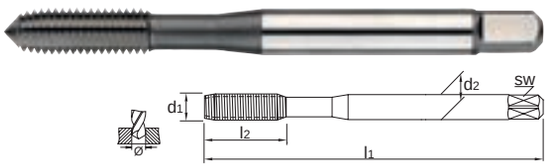
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

Ref.	d1	l1	P	l2	d2	sw
25.950.1203	Tr 12	145	3	90	9	7
25.950.1403	Tr 14	150	3	92	10	8
25.950.1404	Tr 14	200	4	135	10	8
25.950.1604	Tr 16	195	4	120	12	9

Ref.	d1	l1	P	l2	d2	sw
25.950.1804	Tr 18	200	4	125	14	11
25.950.2004	Tr 20	205	4	130	16	12
25.950.2205	Tr 22	240	5	145	17	13
25.950.2405	Tr 24	245	5	150	19	14.5

Ref.	d1	l1	P	l2	d2	sw
25.950.2605	Tr 26	250	5	155	21	16
25.950.2805	Tr 28	255	5	160	23	18

› 26.100 Phantom



NL **HSS-E Roltap Metrisch, genitreerd**
FR **Taraud à réfouler HSS-E Métrique, nitruré**
ES **Macho de laminación HSS-E Métrica, nitrurado**
DE **HSS-E Gewindeformer Metrisch, nitriert**

HSS-E | M | 60° | NIT. | DIN 371 | 3xD | Form C | 3 | 6HX

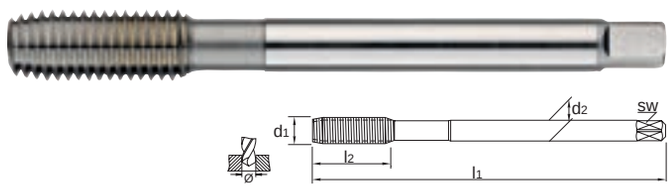
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | N 41 Alu | N 42 Alu Si>10% | N 51 Cu

15-25 | 10-20 | 10-35 | 10-20 | 15-35

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.100.0200	M2	0.4	45	8	2.1	2.8	1.8
26.100.0250	M2,5	0.45	50	9	2.1	2.8	2.3
26.100.0300	M3	0.5	56	11	2.7	3.5	2.8
26.100.0400	M4	0.7	63	13	3.4	4.5	3.7

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.100.0500	M5	0.8	70	16	4.9	6	4.6
26.100.0600	M6	1	80	19	4.9	6	5.5
26.100.0800	M8	1.25	90	22	6.2	8	7.4
26.100.1000	M10	1.5	100	24	8	10	9.3

› 26.101 Phantom



NL **HSS-E Roltap Metrisch, genitreerd**
FR **Taraud à réfouler HSS-E Métrique, nitruré**
ES **Macho de laminación HSS-E Métrica, nitrurado**
DE **HSS-E Gewindeformer Metrisch, nitriert**

HSS-E | M | 60° | NIT. | DIN 376 | 3xD | Form C | 3 | 6HX

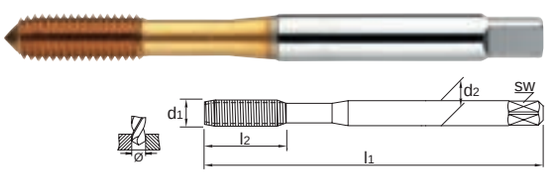
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | N 41 Alu | N 42 Alu Si>10% | N 51 Cu

15-25 | 10-20 | 10-35 | 10-20 | 15-35

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.101.1200	M12	1.75	110	29	7	9	11.2

Ref.	d1	P	l1	l2	sw	d2	Ø mm

› 26.110 Phantom



NL **HSS-E Roltap Metrisch, TiN**
FR **Taraud à réfouler HSS-E Métrique, TiN**
ES **Macho de laminación HSS-E Métrica, TiN**
DE **HSS-E Gewindeformer Metrisch, TiN**

HSS-E | M | 60° | TiN | DIN 371 | 3xD | Form C | 3 | 6HX

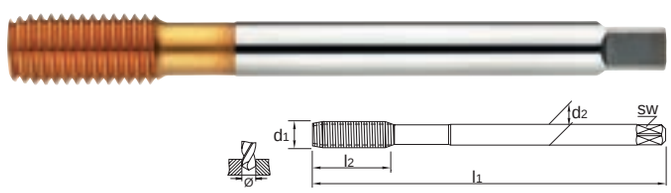
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | M 21 INOX ≤850N/mm² | N 41 Alu | N 42 Alu Si>10% | N 51 Cu

15-25 | 10-20 | 7-10 | 10-35 | 10-20 | 15-35

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.110.0200	M2	0.4	45	8	2.1	2.8	1.8
26.110.0250	M2,5	0.45	50	9	2.1	2.8	2.3
26.110.0300	M3	0.5	56	11	2.7	3.5	2.8
26.110.0400	M4	0.7	63	13	3.4	4.5	3.7

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.110.0500	M5	0.8	70	16	4.9	6	4.6
26.110.0600	M6	1	80	19	4.9	6	5.5
26.110.0800	M8	1.25	90	22	6.2	8	7.4
26.110.1000	M10	1.5	100	24	8	10	9.3

› 26.111 Phantom



NL **HSS-E Roltap Metrisch, TiN**
FR **Taraud à réfouler HSS-E Métrique, TiN**
ES **Macho de laminación HSS-E Métrica, TiN**
DE **HSS-E Gewindeformer Metrisch, TiN**

HSS-E | M | 60° | TiN | DIN 376 | 3xD | Form C | 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

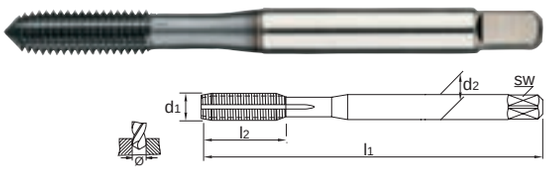
15-25 | 10-20 | 7-10 | 10-35 | 10-20 | 15-35

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.111.1200	M12	1.75	110	29	7	9	11.2

Ref.	d1	P	l1	l2	sw	d2	Ø mm

19:00 ▶ 24h

› 26.160 Phantom



NL **HSS-E Roltap met smeergroef, Metrisch, TiCN**
FR **Taraud à réfouler 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**

HSS-E | M | 60° | TiCN | DIN 371 | 3xD | Form C | 3 | 6HX

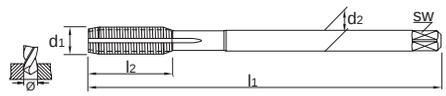
P 11	P 12	M 21	M 22	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu
15-25	10-20	7-10	4-8	10-35	10-20	15-35

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.160.0300	M3	0.5	56	11	2.7	3.5	2.8
26.160.0400	M4	0.7	63	13	3.4	4.5	3.7
26.160.0500	M5	0.8	70	16	4.9	6	4.6

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.160.0600	M6	1	80	19	4.9	6	5.5
26.160.0800	M8	1.25	90	22	6.2	8	7.4
26.160.1000	M10	1.5	100	24	8	10	9.3

› 26.161 Phantom





NL **HSS-E Roltap met smeergroef, Metrisch, TiCN**
FR **Taraud à réfouler 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**

HSS-E | M | 60° | TiCN | DIN 376 | 3xD | Form C | 3 | 6HX

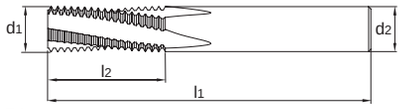
P 11	P 12	M 21	M 22	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	Alu	Alu Si>10%	Cu
15-25	10-20	7-10	4-8	10-35	10-20	15-35

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.161.1200	M12	1.75	110	29	7	9	11.2
26.161.1400	M14	2	110	26	9	11	13
26.161.1600	M16	2	110	26	9	12	15

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.161.1800	M18	2.5	125	30	11	14	16.8
26.161.2000	M20	2.5	140	32	12	16	18.8

› 26.310 Phantom





NIEUW | NOUVEAU | NUEVO | NEU

NL **VHM-MG Draadfrees 2xD**
FR **Fraise à fileter Carbure MG 2xD**
ES **Fresa de roscado MD-MG 2xD**
DE **VHM-MG Gewindefräser 2xD**

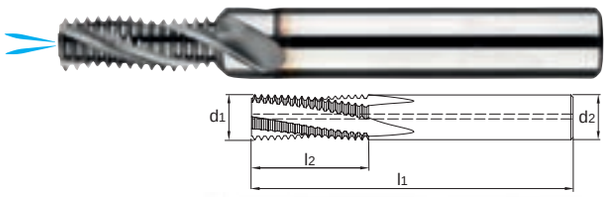
MG HM | M | 60° | 2xD | DIN 6535-HA

P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	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	PVC
60-80 D	60-80 D	80-90 D	60-70 C	50-60 C	40-50 C	100-110 D	110-120 E	220-240 F	200-230 F	120-140 E	200-300 E

Ref.	M	P	d1	l1	l2	d2	Ø mm	z
26.310.0600	M6	1	4.8	54	13.5	6	5	3
26.310.0800	M8	1.25	6.4	62	18.1	8	6.8	3
26.310.1000	M10	1.5	7.95	74	21.8	10	8.5	3
26.310.1200	M12	1.75	9.95	74	25.4	10	10.2	4

Ref.	M	P	d1	l1	l2	d2	Ø mm	z
26.310.1400	M14	2	11.2	90	31	12	14	4
26.310.1600	M16	2	12.8	90	35	14	14	4
26.310.2000	M20	2.5	14.95	102	41.3	16	17.5	4

› 26.316 Phantom



NL **VHM-MG Draadfrees 2xD met koelkanaal, TiCN**
FR **Fraise à fileter Carbure MG 2xD à trou d´huile, TiCN**
ES **Fresa de roscado MD-MG 2xD con canal de refrigeración, TiCN**
DE **VHM-MG Gewindefräser 2xD mit Innenkühlung, TiCN**

NIEUW NOUVEAU NUEVO NEU

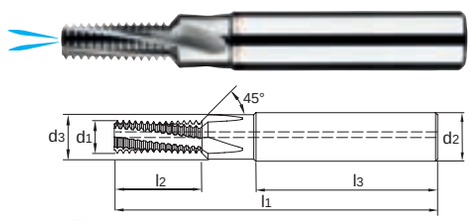
MG HM | M | 60° | TiCN | 2xD | DIN 6535-HA

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 D	100-120 D	80-100 D	90-100 C	20-30 A	55-65 C	50-60 C	100-120 D	110-130 E	220-260 F	240-250 F	130-150 E	30-40 A	40-50 A	40-50 A

Ref.	M	P	d1	l1	l2	d2	Ø mm	z
26.316.0600	M6	1	4.8	54	13.5	6	5	3
26.316.0800	M8	1.25	6.4	62	18.1	8	6.8	3
26.316.1000	M10	1.5	7.95	74	21.8	10	8.5	3
26.316.1200	M12	1.75	9.95	74	25.4	10	10.2	4

Ref.	M	P	d1	l1	l2	d2	Ø mm	z
26.316.1400	M14	2	11.2	90	31	12	12	4
26.316.1600	M16	2	12.8	90	35	14	14	4
26.316.2000	M20	2.5	14.95	102	41.3	16	17.5	4

› 26.384 Phantom



NL **VHM-MG Draadfrees 2xD met koelkanaal, TiCN, met fase**
FR **Fraise à fileter Carbure MG 2xD à trou d´huile, TiCN, avec chanfrein**
ES **Fresa de roscado MD-MG 2xD con canal de refrigeración, TiCN, con escalonado de avellanar**
DE **VHM-MG Gewindefräser 2xD mit Innenkühlung, TiCN, mit Fase**

NIEUW NOUVEAU NUEVO NEU

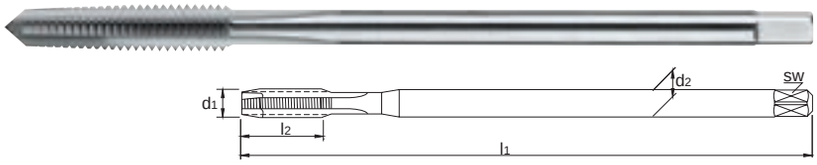
MG HM | M | 60° | 90° | TiCN | 2xD | DIN 6535-HA

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
≤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
80-110 D	100-120 D	80-100 D	90-100 C	20-30 A	55-65 C	50-60 C	100-120 D	110-130 E	220-260 F	240-250 F	130-150 E	30-40 A

Ref.	M	P	d1	l1	l2	l3	d2	d3	Ø mm	z
26.384.0300	M3	0.5	2.3	48	6.8	36	6	3.4	2.5	3
26.384.0400	M4	0.7	3	48	8.8	36	6	4.5	3.3	3
26.384.0500	M5	0.8	4	54	10.8	36	6	5.5	4.2	3
26.384.0600	M6	1	4.8	62	13.5	36	8	6.6	5	3

Ref.	M	P	d1	l1	l2	l3	d2	d3	Ø mm	z
26.384.0800	M8	1.25	6.4	74	18.1	40	10	9	6.8	3
26.384.1000	M10	1.5	7.95	80	21.8	45	12	11	8.5	4
26.384.1200	M12	1.75	9.95	90	25.4	45	14	13.5	10.2	4
26.384.1600	M16	2	12.8	102	35	48	18	17.5	14	4

› 26.500 Phantom



NL **HSS Machinemoertap Metrisch**
FR **taraud à l'enfilade HSS Métrique**
ES **Macho para tuercas HSS Métrica**
DE **HSS Maschinen Muttergewindebohrer Metrisch**

HSS | M | 60° | 12 | 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

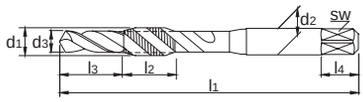
Ref.	d1	P	l1	l2	d2	sw
26.500.0400	M4	0.7	100	20	2.9	2.3
26.500.0500	M5	0.8	110	20	3.7	3
26.500.0600	M6	1	120	27	4.5	3.5

Ref.	d1	P	l1	l2	d2	sw
26.500.0800	M8	1.25	135	32	6.2	5
26.500.1000	M10	1.5	150	38	7.6	6

19:00 ▶ 24h

› 26.700 Phantom





NL **HSS Combi-boortap Metrisch**
FR **Foret taraudeur HSS Métrique**
ES **Broca-Macho HSS Métrica**
DE **HSS Kombi-Gewindebohrer Metrisch**

HSS | M | 60° | ISO 2 6H

P 11 ≤800 N/mm² | N 41 Alu | N 42 Alu Si>10%

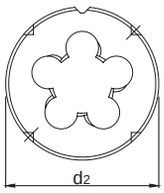
12-20 | 15-25 | 18-25

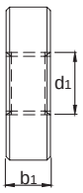
Ref.	d1	P	l1	l2	l3	d2	d3	sw
26.700.0300	M3	0.5	56	11	12	3	2.5	2.4
26.700.0400	M4	0.7	63	14	15	4	3.3	3
26.700.0500	M5	0.8	71	18	15	5	4.2	3.8
26.700.0600	M6	1	80	22	15	6	5	4.9

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	8
26.700.1200	M12	1.75	115	35	30	12	10.2	9

› 27.100 INTERNATIONAL TOOLS

NL **HSS Ronde Snijplaat Metrisch**
FR **Filière ronde HSS Métrique**
ES **Terraja esférica HSS Métrica**
DE **HSS Runde Schneideisen Metrisch**







HSS | M | 60° | DIN EN 22568 | 6g

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%

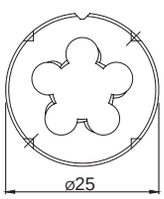
Ref.	d1	P	d2	b1
27.100.0200	M2	0.4	16	5
27.100.0250	M2,5	0.45	16	5
27.100.0300	M3	0.5	20	5
27.100.0400	M4	0.7	20	5
27.100.0500	M5	0.8	20	7
27.100.0600	M6	1	20	7
27.100.0700	M7	1	25	9

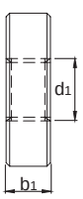
Ref.	d1	P	d2	b1
27.100.0800	M8	1.25	25	9
27.100.1000	M10	1.5	30	11
27.100.1200	M12	1.75	38	14
27.100.1400	M14	2	38	14
27.100.1600	M16	2	45	18
27.100.1800	M18	2.5	45	18
27.100.2000	M20	2.5	45	18

Ref.	d1	P	d2	b1
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 **HSS Ronde Snijplaat Metrisch, 25 mm**
FR **Filière ronde HSS Métrique, 25 mm**
ES **Terraja esférica HSS Métrica, 25 mm**
DE **HSS Runde Schneideisen Metrisch, 25 mm**







HSS | M | 60° | 6g

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%

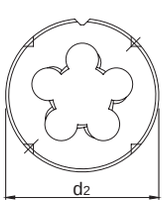
Ref.	d1	P	d2	b1
27.110.0300	M3	0.5	25	9
27.110.0400	M4	0.7	25	9
27.110.0500	M5	0.8	25	9

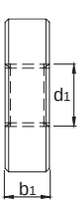
Ref.	d1	P	d2	b1
27.110.0600	M6	1	25	9
27.110.0800	M8	1.25	25	9
27.110.1000	M10	1.5	25	9

Ref.	d1	P	d2	b1
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**







HSS | M | 60° | DIN EN 22568 | ≥M3 | 6g

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	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

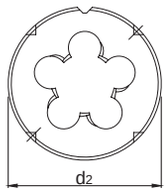
Ref.	d1	P	d2	b1
27.120.0400	M4	0.7	20	5
27.120.0500	M5	0.8	20	7
27.120.0600	M6	1	20	7
27.120.0700	M7	1	25	9
27.120.0800	M8	1.25	25	9
27.120.0900	M9	1.25	25	9
27.120.1000	M10	1.5	30	11
27.120.1100	M11	1.5	30	11
27.120.1200	M12	1.75	38	14
27.120.1400	M14	2	38	14
27.120.1600	M16	2	45	18
27.120.1800	M18	2.5	45	18

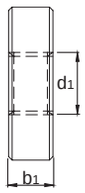
Ref.	d1	P	d2	b1
27.120.2000	M20	2.5	45	18
27.120.2200	M22	2.5	55	22
27.120.2400	M24	3	55	22
27.120.2700	M27	3	65	25
27.120.3000	M30	3.5	65	25
27.120.3300	M33	3.5	65	25
27.120.3600	M36	4	65	25
27.120.3900	M39	4	75	30
27.120.4200	M42	4.5	75	30
27.120.4500	M45	4.5	90	36
27.120.4800	M48	5	90	36
27.120.5200	M52	5	90	36

19:00 ▶ 24h

› 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**







HSS-E PM | M | 60° | DIN EN 22568 | 6g

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% | S 72 Ti

10-14 | 6-10 | 5-8 | 5-8 | 4-6 | 4-6 | 8-12 | 5-8

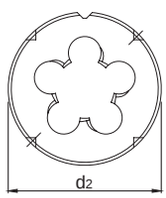
Ref.	d1	P	d2	b1
27.150.0200	M2	0.4	16	5
27.150.0250	M2,5	0.45	16	5
27.150.0300	M3	0.5	20	5
27.150.0350	M3,5	0.6	20	5
27.150.0400	M4	0.7	20	5
27.150.0500	M5	0.8	20	7

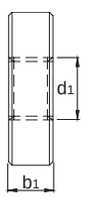
Ref.	d1	P	d2	b1
27.150.0600	M6	1	20	7
27.150.0700	M7	1	25	9
27.150.0800	M8	1.25	25	9
27.150.1000	M10	1.5	30	11
27.150.1200	M12	1.75	38	14
27.150.1400	M14	2	38	14

Ref.	d1	P	d2	b1
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**







HSS | M | 60° | DIN EN 22568 | 6g

N 51 Cu | N 52 CuAlFe

11-15 | 5-18

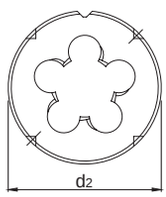
Ref.	d1	P	d2	b1
27.175.0300	M3	0.5	20	5
27.175.0400	M4	0.7	20	5
27.175.0500	M5	0.8	20	7

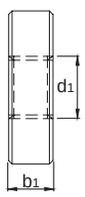
Ref.	d1	P	d2	b1
27.175.0600	M6	1	20	7
27.175.0800	M8	1.25	25	9
27.175.1000	M10	1.5	30	11

Ref.	d1	P	d2	b1
27.175.1200	M12	1.75	38	14

› 27.200 INTERNATIONAL TOOLS

NL **HSS Ronde Snijplaat Metrisch Fijn**
FR **Filière ronde HSS Métrique Fin**
ES **Terraja esférica HSS Métrica Fina**
DE **HSS Runde Schneideisen Metrisch Fein**







HSS | MF | 60° | DIN EN 22568 | 6g

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%

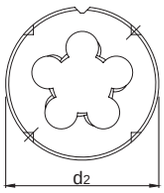
Ref.	d1	P	d2	b1
27.200.0403	MF4	0.35	20	5
27.200.0405	MF4	0.5	20	5
27.200.0505	MF5	0.5	20	5
27.200.0605	MF6	0.5	20	5
27.200.0607	MF6	0.75	20	7
27.200.0707	MF7	0.75	25	9
27.200.0805	MF8	0.5	25	9
27.200.0807	MF8	0.75	25	9
27.200.0810	MF8	1	25	9
27.200.0910	MF9	1	25	9
27.200.1007	MF10	0.75	30	11
27.200.1010	MF10	1	30	11

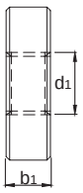
Ref.	d1	P	d2	b1
27.200.1012	MF10	1.25	30	11
27.200.1210	MF12	1	38	10
27.200.1212	MF12	1.25	38	10
27.200.1215	MF12	1.5	38	10
27.200.1310	MF13	1	38	10
27.200.1410	MF14	1	38	10
27.200.1412	MF14	1.25	38	10
27.200.1415	MF14	1.5	38	10
27.200.1510	MF15	1	38	10
27.200.1610	MF16	1	45	14
27.200.1615	MF16	1.5	45	14
27.200.1810	MF18	1	45	14

Ref.	d1	P	d2	b1
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**







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

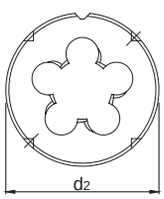
Ref.	d1	P	d2	b1
27.220.0303	MF3	0.35	20	5
27.220.0403	MF4	0.35	20	5
27.220.0405	MF4	0.5	20	5
27.220.0505	MF5	0.5	20	5
27.220.0605	MF6	0.5	20	5
27.220.0607	MF6	0.75	20	7
27.220.0707	MF7	0.75	25	9
27.220.0805	MF8	0.5	25	9
27.220.0807	MF8	0.75	25	9
27.220.0810	MF8	1	25	9
27.220.0907	MF9	0.75	25	9
27.220.0910	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

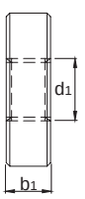
Ref.	d1	P	d2	b1
27.220.1510	MF15	1	38	10
27.220.1515	MF15	1.5	38	10
27.220.1607	MF16	0.75	45	14
27.220.1610	MF16	1	45	14
27.220.1612	MF16	1.25	45	14
27.220.1615	MF16	1.5	45	14
27.220.1810	MF18	1	45	14
27.220.1812	MF18	1.25	45	14
27.220.1815	MF18	1.5	45	14
27.220.1820	MF18	2	45	14
27.220.2010	MF20	1	45	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

Ref.	d1	P	d2	b1
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 **HSS Ronde Snijplaat UNC**
FR **Filière ronde HSS UNC**
ES **Terraja esférica HSS UNC**
DE **HSS Runde Schneideisen UNC**







HSS | UNC | 60° | DIN EN 22568 | 2A

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
27.300.0635	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

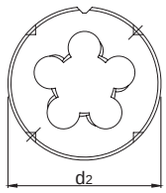
Ref.	d1	P	d2	b1
27.300.1270	UNC 1/2	13	38	14
27.300.1429	UNC 9/16	12	38	14
27.300.1588	UNC 5/8	11	45	18
27.300.1905	UNC 3/4	10	45	18

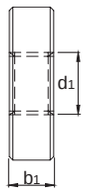
Ref.	d1	P	d2	b1
27.300.2222	UNC 7/8	9	55	22
27.300.2540	UNC 1	8	55	22

19:00 ▶ 24h

› 27.320 Phantom

NL **HSS Ronde Snijplaat UNC, schilaansnijding**
FR **Filière ronde HSS UNC, coupe gun**
ES **Terraja esférica HSS UNC, entrada corregida (gun)**
DE **HSS Runde Schneideisen UNC, Schälanschnitt**







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

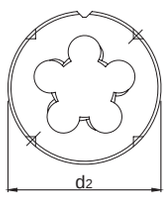
Ref.	d1	P	d2	b1
27.320.0284	UNC Nr. 4	40	16	5
27.320.0317	UNC Nr. 5	40	20	5
27.320.0350	UNC Nr. 6	32	20	7
27.320.0416	UNC Nr. 8	32	20	7
27.320.0482	UNC Nr. 10	24	20	7
27.320.0548	UNC Nr. 12	24	20	7
27.320.0635	UNC 1/4	20	20	7

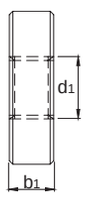
Ref.	d1	P	d2	b1
27.320.0794	UNC 5/16	18	25	9
27.320.0952	UNC 3/8	16	30	11
27.320.1111	UNC 7/16	14	30	11
27.320.1270	UNC 1/2	13	38	14
27.320.1429	UNC 9/16	12	38	14
27.320.1588	UNC 5/8	11	45	18
27.320.1905	UNC 3/4	10	45	18

Ref.	d1	P	d2	b1
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 **HSS Ronde Snijplaat UNF**
FR **Filière ronde HSS UNF**
ES **Terraja esférica HSS UNF**
DE **HSS Runde Schneideisen UNF**







HSS | UNF | 60° | DIN EN 22568 | 2A

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%

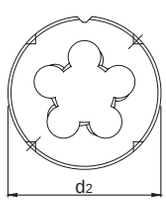
Ref.	d1	P	d2	b1
27.400.0635	UNF 1/4	28	20	7
27.400.0794	UNF 5/16	24	25	9
27.400.0952	UNF 3/8	24	30	11
27.400.1111	UNF 7/16	20	30	11

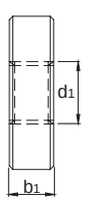
Ref.	d1	P	d2	b1
27.400.1270	UNF 1/2	20	38	10
27.400.1429	UNF 9/16	18	38	10
27.400.1588	UNF 5/8	18	45	14
27.400.1905	UNF 3/4	16	45	14

Ref.	d1	P	d2	b1
27.400.2222	UNF 7/8	14	55	16
27.400.2540	UNF 1	12	55	16
27.400.2541	UNF 1	14	55	16

› 27.420 Phantom

NL **HSS Ronde Snijplaat UNF, schilaansnijding**
FR **Filière ronde HSS UNF, coupe gun**
ES **Terraja esférica HSS UNF, entrada corregida (gun)**
DE **HSS Runde Schneideisen UNF, Schälanschnitt**







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

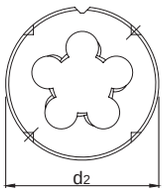
Ref.	d1	P	d2	b1
27.420.0185	UNF Nr. 1	72	16	5
27.420.0218	UNF Nr. 2	64	16	5
27.420.0252	UNF Nr. 3	56	16	5
27.420.0284	UNF Nr. 4	48	16	5
27.420.0317	UNF Nr. 5	44	20	5
27.420.0350	UNF Nr. 6	40	20	5
27.420.0416	UNF Nr. 8	36	20	7
27.420.0482	UNF Nr. 10	32	20	7

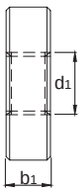
Ref.	d1	P	d2	b1
27.420.0548	UNF Nr. 12	28	20	7
27.420.0635	UNF 1/4	28	20	7
27.420.0794	UNF 5/16	24	25	9
27.420.0952	UNF 3/8	24	30	11
27.420.1111	UNF 7/16	20	30	11
27.420.1270	UNF 1/2	20	38	10
27.420.1429	UNF 9/16	18	38	10
27.420.1588	UNF 5/8	18	45	14

Ref.	d1	P	d2	b1
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 UNEF, schilaansnijding**
FR **Filière ronde HSS UNEF, coupe gun**
ES **Terraja esférica HSS UNEF, entrada corregida (gun)**
DE **HSS Runde Schneideisen UNEF, Schälanschnitt**







HSS | UNEF | 60° | DIN EN 22568 | 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

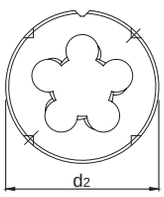
Ref.	d1	P	d2	b1
27.470.0635	UNEF 1/4	32	20	7
27.470.0794	UNEF 5/16	32	25	9
27.470.0952	UNEF 3/8	32	30	11
27.470.1111	UNEF 7/16	28	30	11

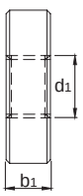
Ref.	d1	P	d2	b1
27.470.1270	UNEF 1/2	28	38	10
27.470.1429	UNEF 9/16	24	38	10
27.470.1588	UNEF 5/8	24	45	14
27.470.1905	UNEF 3/4	20	45	14

Ref.	d1	P	d2	b1
27.470.2222	UNEF 7/8	20	55	16
27.470.2540	UNEF 1	20	55	16

› 27.500 INTERNATIONAL TOOLS

NL **HSS Ronde Snijplaat BSP (Gasdraad)**
FR **Filière ronde HSS BSP (pas gaz)**
ES **Terraja esférica HSS BSP (gas)**
DE **HSS Runde Schneideisen BSP (Rohrgewinde)**







HSS | BSP G | 55° | DIN EN 24230 | 2A

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%

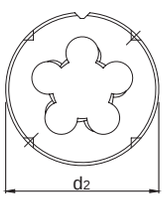
Ref.	d1	P	d2	b1
27.500.0973	BSP 1/8	28	30	11
27.500.1316	BSP 1/4	19	38	10
27.500.1666	BSP 3/8	19	45	14
27.500.2096	BSP 1/2	14	45	14

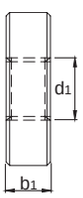
Ref.	d1	P	d2	b1
27.500.2291	BSP 5/8	14	55	16
27.500.2644	BSP 3/4	14	55	16
27.500.3020	BSP 7/8	14	65	18
27.500.3325	BSP 1	11	65	18

Ref.	d1	P	d2	b1
27.500.4191	BSP 1.1/4	11	75	20
27.500.4780	BSP 1.1/2	11	90	22
27.500.5961	BSP 2	11	105	22

› 27.520 Phantom

NL **HSS Ronde Snijplaat BSP (Gasdraad), schilaansnijding**
FR **Filière ronde HSS BSP (pas gaz), coupe gun**
ES **Terraja esférica HSS BSP (gas), entrada corregida (gun)**
DE **HSS Runde Schneideisen BSP (Rohrgewinde), Schälanschnitt**







HSS | BSP G | 55° | DIN EN 24230 | DIN EN 24231

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	P	d2	b1
27.520.0973	BSP 1/8	28	30	11
27.520.1316	BSP 1/4	19	38	10
27.520.1666	BSP 3/8	19	45	14
27.520.2096	BSP 1/2	14	45	14
27.520.2291	BSP 5/8	14	55	16

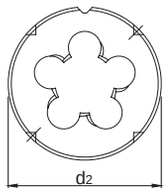
Ref.	d1	P	d2	b1
27.520.2644	BSP 3/4	14	55	16
27.520.3020	BSP 7/8	14	65	18
27.520.3325	BSP 1	11	65	18
27.520.3790	BSP 1.1/8	11	75	20
27.520.4191	BSP 1.1/4	11	75	20

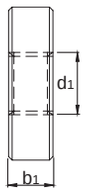
Ref.	d1	P	d2	b1
27.520.4432	BSP 1.3/8	11	90	22
27.520.4780	BSP 1.1/2	11	90	22
27.520.5375	BSP 1.3/4	11	90	22
27.520.5961	BSP 2	11	105	22

19:00 ▶ 24h

› 27.525 Phantom

NL **HSS Ronde Snijplaat BSP (Gasdraad), schilaansnijding, gelept, Messing**
FR **Filière ronde HSS BSP (pas gaz), coupe gun, filets rodés, laiton**
ES **Terraja esférica HSS BSP (gas), entrada corregida (gun), lapeada, latón**
DE **HSS Runde Schneideisen BSP (Rohrgewinde), Schälanschnitt, geläppt, Messing**







HSS | BSP G | 55° | DIN EN 24231

N 51 Cu 11-15 | N 52 CuAlFe 5-18

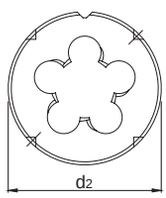
Ref.	d1	P	d2	b1
27.525.0973	BSP 1/8	28	30	11
27.525.1316	BSP 1/4	19	38	10

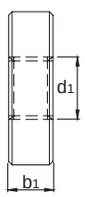
Ref.	d1	P	d2	b1
27.525.1666	BSP 3/8	19	45	14
27.525.2096	BSP 1/2	14	45	14

Ref.	d1	P	d2	b1

› 27.530 Phantom

NL **HSS Ronde Snijplaat BSPT (Rc), schilaansnijding**
FR **Filière ronde HSS BSPT (Rc), coupe gun**
ES **Terraja esférica HSS BSPT (Rc), entrada corregida (gun)**
DE **HSS Runde Schneideisen BSPT (Rc), Schälanschnitt**







HSS | BSPT Rc | 55° | DIN EN 24230 | 1:16

P 11 ≤600 N/mm² 10-14 | P 12 ≤850 N/mm² 6-10 | P 13 ≤1000 N/mm² 5-8 | M 21 INOX ≤850N/mm² 4-6 | N 41 Alu 15-25

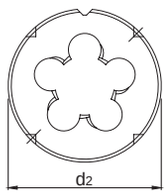
Ref.	d1	P	d2	b1
27.530.0973	BSPT 1/8	28	30	11
27.530.1316	BSPT 1/4	19	38	14

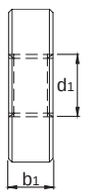
Ref.	d1	P	d2	b1
27.530.1666	BSPT 3/8	19	45	14
27.530.2096	BSPT 1/2	14	45	18

Ref.	d1	P	d2	b1
27.530.2644	BSPT 3/4	14	55	22
27.530.3325	BSPT 1	11	65	25

› 27.550 INTERNATIONAL TOOLS

NL **HSS Ronde Snijplaat BSW (Whitworth)**
FR **Filière ronde HSS BSW (Whitworth)**
ES **Terraja esférica HSS BSW (Whitworth)**
DE **HSS Runde Schneideisen BSW (Whitworth)**







HSS | BSW | 55° | DIN EN 22568

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%

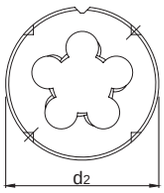
Ref.	d1	P	d2	b1
27.550.0317	BSW 1/8	40	20	5
27.550.0476	BSW 3/16	24	20	7
27.550.0635	BSW 1/4	20	20	7
27.550.0794	BSW 5/16	18	25	9

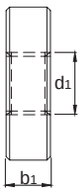
Ref.	d1	P	d2	b1
27.550.0952	BSW 3/8	16	30	11
27.550.1111	BSW 7/16	14	30	11
27.550.1270	BSW 1/2	12	38	14
27.550.1429	BSW 9/16	12	38	14

Ref.	d1	P	d2	b1
27.550.1588	BSW 5/8	11	45	18
27.550.1905	BSW 3/4	10	45	18
27.550.2222	BSW 7/8	9	55	22
27.550.2540	BSW 1	8	55	22

› 27.560 Phantom

NL **HSS Ronde Snijplaat BSW (Whitworth), schilaansnijding**
FR **Filière ronde HSS BSW (Whitworth), coupe gun**
ES **Terraja esférica HSS BSW (Whitworth), entrada corregida (gun)**
DE **HSS Runde Schneideisen BSW (Whitworth), Schälanschnitt**







HSS | BSW | 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

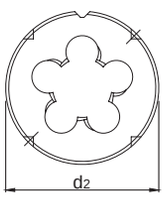
Ref.	d1	P	d2	b1
27.560.0317	BSW 1/8	40	20	5
27.560.0397	BSW 5/32	32	20	5
27.560.0476	BSW 3/16	24	20	7
27.560.0635	BSW 1/4	20	20	7
27.560.0794	BSW 5/16	18	25	9
27.560.0952	BSW 3/8	16	30	11

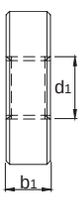
Ref.	d1	P	d2	b1
27.560.1111	BSW 7/16	14	30	11
27.560.1270	BSW 1/2	12	38	14
27.560.1429	BSW 9/16	12	38	14
27.560.1588	BSW 5/8	11	45	18
27.560.1905	BSW 3/4	10	45	18
27.560.2222	BSW 7/8	9	55	22

Ref.	d1	P	d2	b1
27.560.2540	BSW 1	8	55	22
27.560.3175	BSW 1.1/4	7	65	25
27.560.3493	BSW 1.3/8	6	65	25
27.560.3810	BSW 1.1/2	6	75	30

› 27.575 Phantom

NL **HSS Ronde Snijplaat BSF, schilaansnijding**
FR **Filière ronde HSS BSF, coupe gun**
ES **Terraja esférica HSS BSF, entrada corregida (gun)**
DE **HSS Runde Schneideisen BSF, Schälanschnitt**







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

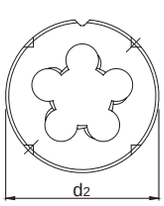
Ref.	d1	P	d2	b1
27.575.0476	BSF 3/16	32	20	7
27.575.0635	BSF 1/4	26	20	7
27.575.0794	BSF 5/16	22	25	9
27.575.0952	BSF 3/8	20	30	11

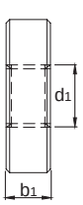
Ref.	d1	P	d2	b1
27.575.1111	BSF 7/16	18	30	11
27.575.1270	BSF 1/2	16	38	10
27.575.1429	BSF 9/16	16	38	10
27.575.1588	BSF 5/8	14	45	14

Ref.	d1	P	d2	b1
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

› 27.580 Phantom

NL **HSS Ronde Snijplaat BA, schilaansnijding**
FR **Filière ronde HSS BA, coupe gun**
ES **Terraja esférica HSS BA, entrada corregida (gun)**
DE **HSS Runde Schneideisen BA, Schälanschnitt**







HSS | BA | 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	P	d2	b1
27.580.0000	BA 0	1	20	7
27.580.0100	BA 1	0.9	20	7
27.580.0200	BA 2	0.81	20	7
27.580.0300	BA 3	0.73	20	5

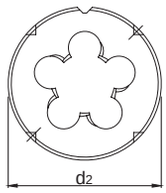
Ref.	d1	P	d2	b1
27.580.0400	BA 4	0.66	20	5
27.580.0500	BA 5	0.59	20	5
27.580.0600	BA 6	0.53	16	5
27.580.0700	BA 7	0.48	16	5

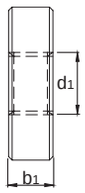
Ref.	d1	P	d2	b1
27.580.0800	BA 8	0.43	16	5
27.580.0900	BA 9	0.39	16	5
27.580.1000	BA 10	0.35	16	5

19:00 ▶ 24h

› 27.590 Phantom

NL **HSS Ronde Snijplaat BSC, FG (Rijwieldraad), schilaansnijding**
FR **Filière ronde HSS BSC, FG (filetage bicyclette), coupe gun**
ES **Terraja esférica HSS BSC, FG (rosca bicicleta), entrada corregida (gun)**
DE **HSS Runde Schneideisen BSC, FG (Fahrradgewinde), Schälanschnitt**







HSS | BSC FG | 60° | 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

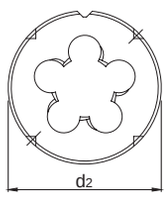
Ref.	d1	P	d2	b1
27.590.0635	BSC 1/4	26	20	7
27.590.0790	BSC 5/16	26	25	9

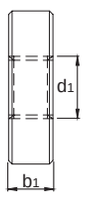
Ref.	d1	P	d2	b1
27.590.0950	BSC 3/8	26	30	11
27.590.1430	BSC 9/16	20	38	10

Ref.	d1	P	d2	b1
27.590.2540	BSC 1	24	55	16

› 27.600 Phantom

NL **HSS Ronde Snijplaat NPT, schilaansnijding**
FR **Filière ronde HSS NPT, coupe gun**
ES **Terraja esférica HSS NPT, entrada corregida (gun)**
DE **HSS Runde Schneideisen NPT, Schälanschnitt**







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

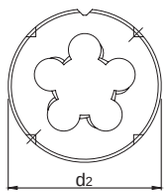
Ref.	d1	P	d2	b1
27.600.0794	NPT 1/16	27	25	9
27.600.1029	NPT 1/8	27	30	11
27.600.1372	NPT 1/4	18	38	14
27.600.1715	NPT 3/8	18	45	14

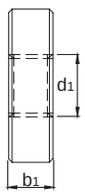
Ref.	d1	P	d2	b1
27.600.2134	NPT 1/2	14	45	18
27.600.2667	NPT 3/4	14	55	22
27.600.3340	NPT 1	11.5	65	25
27.600.4216	NPT 1.1/4	11.5	75	26

Ref.	d1	P	d2	b1
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 NPTF, schilaansnijding**
FR **Filière ronde HSS NPTF, coupe gun**
ES **Terraja esférica HSS NPTF, entrada corregida (gun)**
DE **HSS Runde Schneideisen NPTF, Schälanschnitt**







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

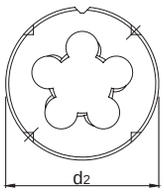
Ref.	d1	P	d2	b1
27.610.0794	NPTF 1/16	27	25	9
27.610.1029	NPTF 1/8	27	30	11
27.610.1372	NPTF 1/4	18	38	14

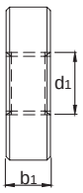
Ref.	d1	P	d2	b1
27.610.1715	NPTF 3/8	18	45	14
27.610.2134	NPTF 1/2	14	45	18
27.610.2667	NPTF 3/4	14	55	22

Ref.	d1	P	d2	b1
27.610.3340	NPTF 1	11.5	65	25

› 27.650 Phantom

NL **HSS Ronde Snijplaat PG, schilaansnijding**
FR **Filière ronde HSS PG, coupe gun**
ES **Terraja esférica HSS PG, entrada corregida (gun)**
DE **HSS Runde Schneideisen PG, Schälanschnitt**







HSS | PG | 80° | DIN EN 40434

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

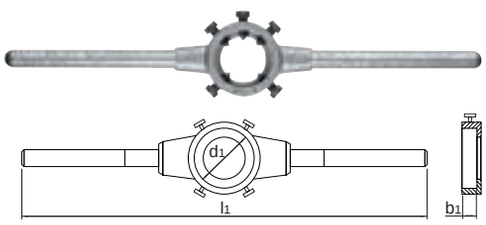
Ref.	d1	P	d2	b1
27.650.0700	PG 7	20	38	10
27.650.0900	PG 9	18	38	10
27.650.1100	PG 11	18	45	14
27.650.1350	PG 13.5	18	45	14

Ref.	d1	P	d2	b1
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

Ref.	d1	P	d2	b1
27.650.4200	PG 42	16	105	22
27.650.4800	PG 48	16	105	22

› 81.910 Phantom

NL **Snijplaathouder**
FR **Porte-filières**
ES **Portaterraja**
DE **Schneideisenhalter**



DIN 225

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

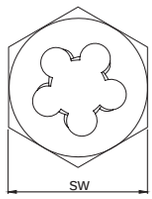
Ref.	d1	b1	l1
81.910.5516	55	16	560
81.910.5522	55	22	560
81.910.6518	65	18	630
81.910.6525	65	25	630
81.910.7520	75	20	800
81.910.7530	75	30	800
81.910.9022	90	22	900
81.910.9036	90	36	900
81.910.9122	105	22	1000

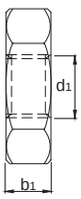
Ref.	d1	b1	l1
81.910.9136	105	36	1000
81.910.9222	120	22	1100
81.910.9236	120	36	1100
81.910.9322	130	22	1100
81.910.9336	130	36	1100
81.910.9422	140	22	1200
81.910.9522	150	22	1200
81.910.9622	160	22	1300

19:00 ▶ 🛒 ▶ 24h

› 27.700 INTERNATIONAL TOOLS

NL **HSS Zeskante Snijmoer Metrisch**
FR **Filière hexagonale HSS Métrique**
ES **Terraja hexagonal HSS Métrica**
DE **HSS Sechskant Schneideisen Metrisch**







HSS | M | 60° | DIN 382 | 6g

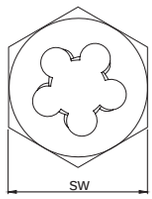
Ref.	d1	P	sw	b1
27.700.0300	M3	0.5	19	5
27.700.0400	M4	0.7	19	5
27.700.0500	M5	0.8	19	7
27.700.0600	M6	1	19	7
27.700.0700	M7	1	22	9
27.700.0800	M8	1.25	22	9
27.700.0900	M9	1.25	22	9
27.700.1000	M10	1.5	27	11

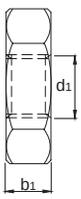
Ref.	d1	P	sw	b1
27.700.1200	M12	1.75	36	14
27.700.1400	M14	2	36	14
27.700.1600	M16	2	41	18
27.700.1800	M18	2.5	41	18
27.700.2000	M20	2.5	41	18
27.700.2200	M22	2.5	50	22
27.700.2400	M24	3	50	22
27.700.2700	M27	3	60	25

Ref.	d1	P	sw	b1
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 **HSS Zeskante Snijmoer Metrisch Fijn**
FR **Filière hexagonale HSS Métrique Fin**
ES **Terraja hexagonal HSS Métrica Fina**
DE **HSS Sechskant Schneideisen Metrisch Fein**







HSS | MF | 60° | DIN 382 | 6g

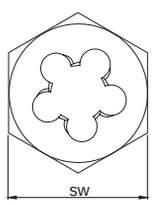
Ref.	d1	P	sw	b1
27.750.0303	MF3	0.35	19	5
27.750.0403	MF4	0.35	19	5
27.750.0505	MF5	0.5	19	5
27.750.0605	MF6	0.5	19	5
27.750.0607	MF6	0.75	19	5
27.750.0805	MF8	0.5	22	9
27.750.0807	MF8	0.75	22	9
27.750.0810	MF8	1	22	9
27.750.1005	MF10	0.5	27	11
27.750.1007	MF10	0.75	27	11
27.750.1010	MF10	1	27	11
27.750.1012	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

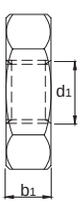
Ref.	d1	P	sw	b1
27.750.1815	MF18	1.5	41	14
27.750.1820	MF18	2	41	14
27.750.2010	MF20	1	41	14
27.750.2012	MF20	1.25	41	14
27.750.2015	MF20	1.5	41	14
27.750.2020	MF20	2	41	14
27.750.2212	MF22	1.25	50	16
27.750.2215	MF22	1.5	50	16
27.750.2220	MF22	2	50	16
27.750.2415	MF24	1.5	50	16
27.750.2420	MF24	2	50	16
27.750.2515	MF25	1.5	50	16
27.750.2520	MF25	2	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

Ref.	d1	P	sw	b1
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	18
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	20
27.750.4215	MF42	1.5	70	20
27.750.4220	MF42	2	70	20
27.750.4230	MF42	3	70	20
27.750.4515	MF45	1.5	85	22
27.750.4530	MF45	3	85	22
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	22
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 **HSS Zeskante Snijmoer UNC**
FR **Filière hexagonale HSS UNC**
ES **Terraja hexagonal HSS UNC**
DE **HSS Sechskant Schneideisen UNC**







HSS | UNC | 60° | DIN 382 | 2A

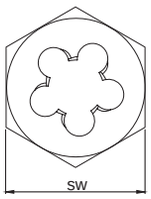
Ref.	d1	P	sw	b1
27.800.0635	UNC 1/4	20	19	7
27.800.0794	UNC 5/16	18	22	9
27.800.0952	UNC 3/8	16	27	11
27.800.1111	UNC 7/16	14	27	11
27.800.1270	UNC 1/2	13	36	14

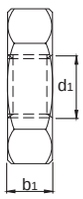
Ref.	d1	P	sw	b1
27.800.1429	UNC 9/16	12	36	14
27.800.1588	UNC 5/8	11	41	18
27.800.1905	UNC 3/4	10	41	18
27.800.2222	UNC 7/8	9	50	22
27.800.2540	UNC 1	8	50	22

Ref.	d1	P	sw	b1
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 **HSS Zeskante Snijmoer UNF**
FR **Filière hexagonale HSS UNF**
ES **Terraja hexagonal HSS UNF**
DE **HSS Sechskant Schneideisen UNF**







HSS | UNF | 60° | DIN 382 | 2A

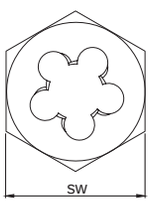
Ref.	d1	P	sw	b1
27.840.0635	UNF 1/4	28	19	7
27.840.0794	UNF 5/16	24	22	9
27.840.0952	UNF 3/8	24	27	11
27.840.1111	UNF 7/16	20	27	11
27.840.1270	UNF 1/2	20	36	10

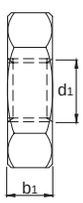
Ref.	d1	P	sw	b1
27.840.1429	UNF 9/16	18	36	10
27.840.1588	UNF 5/8	18	41	14
27.840.1905	UNF 3/4	16	41	14
27.840.2222	UNF 7/8	14	50	16
27.840.2540	UNF 1	12	50	16

Ref.	d1	P	sw	b1
27.840.2541	UNF 1	14	50	16
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 **HSS Zeskante Snijmoer BSP (Gasdraad)**
FR **Filière hexagonale HSS BSP (pas gaz)**
ES **Terraja hexagonal HSS BSP (gas)**
DE **HSS Sechskant Schneideisen BSP (Rohrgewinde)**







HSS | BSP G | 55° | DIN 382

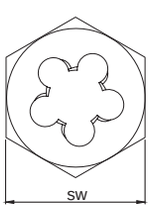
Ref.	d1	P	sw	b1
27.900.0973	BSP 1/8	28	27	11
27.900.1316	BSP 1/4	19	36	10
27.900.1666	BSP 3/8	19	41	14
27.900.2096	BSP 1/2	14	41	14
27.900.2291	BSP 5/8	14	50	16
27.900.2644	BSP 3/4	14	50	16

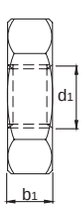
Ref.	d1	P	sw	b1
27.900.3020	BSP 7/8	14	60	18
27.900.3325	BSP 1	11	60	18
27.900.3790	BSP 1.1/8	11	70	20
27.900.4191	BSP 1.1/4	11	70	20
27.900.4432	BSP 1.3/8	11	85	22
27.900.4780	BSP 1.1/2	11	85	22

Ref.	d1	P	sw	b1
27.900.5375	BSP 1.3/4	11	85	22
27.900.5961	BSP 2	11	100	22
27.900.7518	BSP 2.1/2	11	120	22
27.900.8788	BSP 3	11	130	22

› 27.940 INTERNATIONAL TOOLS

NL **HSS Zeskante Snijmoer BSW (Whitworth)**
FR **Filière hexagonale HSS BSW (Whitworth)**
ES **Terraja hexagonal HSS BSW (Whitworth)**
DE **HSS Sechskant Schneideisen BSW (Whitworth)**







HSS | BSW | 55° | DIN 382

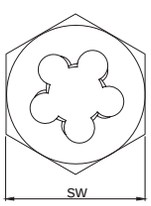
Ref.	d1	P	sw	b1
27.940.0317	BSW 1/8	40	19	5
27.940.0476	BSW 3/16	24	19	7
27.940.0635	BSW 1/4	20	19	7
27.940.0794	BSW 5/16	18	22	9
27.940.0952	BSW 3/8	16	27	11
27.940.1111	BSW 7/16	14	27	11

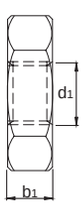
Ref.	d1	P	sw	b1
27.940.1270	BSW 1/2	12	36	14
27.940.1588	BSW 5/8	11	41	18
27.940.1905	BSW 3/4	10	41	18
27.940.2222	BSW 7/8	9	50	22
27.940.2540	BSW 1	8	50	22
27.940.2858	BSW 1.1/8	7	60	25

Ref.	d1	P	sw	b1
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**







HSS | NPT | 60° | DIN 382 | 1:16

Ref.	d1	P	sw	b1
27.980.1029	NPT 1/8	27	27	11
27.980.1372	NPT 1/4	18	36	14
27.980.1715	NPT 3/8	18	41	14

Ref.	d1	P	sw	b1
27.980.2134	NPT 1/2	14	41	18
27.980.2667	NPT 3/4	14	60	18
27.980.3340	NPT 1	11.5	60	25

Ref.	d1	P	sw	b1
27.980.4216	NPT 1.1/4	11.5	70	30
27.980.4826	NPT 1.1/2	11.5	85	27

19:00 ▶ 🛒 ▶ 24h

› 28.800 INTERNATIONAL TOOLS



NL **Draadeinduithaler**
FR **Extracteurs de vis, goujons et tubes cassés**
ES **Extractor de tornillos rotos**
DE **Schraubenausdreher**

Ref.	Nr.	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

Ref.	Nr.	M
28.800.0500	5	M14-18
28.800.0600	6	M18-24
28.800.0700	7	M24-33
28.800.0800	8	M33-45

› 28.810 INTERNATIONAL TOOLS



NL **Tapeinduithaler**
FR **Extracteur de tarauds**
ES **Extractor de machos rotos**
DE **Gewindekronen**

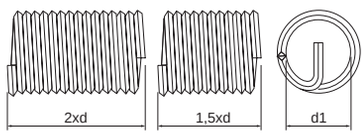
Ref.	M	"	z
28.810.0302	3	1/8	2
28.810.0403	4	5/32	3
28.810.0502	5	3/16	2
28.810.0503	5	3/16	3
28.810.0603	6	1/4	3
28.810.0604	6	1/4	4
28.810.0803	8	5/16	3
28.810.0804	8	5/16	4
28.810.1003	10	3/8	3
28.810.1004	10	3/8	4

Ref.	M	"	z
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

› 28.830 Phantom

NL **Phan-Coil RVS Schroefdraad inzetstukken Metrisch**
FR **Phan-Coil Filets rapportés Inox Métrique**
ES **Phan-Coil Filetes insertos acero inoxidable Métrica**
DE **Phan-Coil rostfreien Stahl Gewindeeinsätze Metrisch**





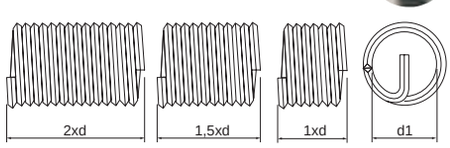
EG **M** **Phan-Coil**

Ref.	d1	P	Max. x d1	Ø mm	Packed per
28.830.2040	M4	0.7	1.5	4.2	50
28.830.2050	M5	0.8	1.5	5.2	50
28.830.2060	M6	1	1.5	6.3	50
28.830.2080	M8	1.25	1.5	6.3	50
28.830.2100	M10	1.5	1.5	10.4	25
28.830.2120	M12	1.75	1.5	12.4	15
28.830.2160	M16	2	1.5	16.5	5
28.830.4040	M4	0.7	2	4.2	50
28.830.4050	M5	0.8	2	5.2	50
28.830.4060	M6	1	2	6.3	50
28.830.4080	M8	1.25	2	8.3	50
28.830.4100	M10	1.5	2	10.4	25
28.830.4120	M12	1.75	2	12.4	15
28.830.4160	M16	2	2	16.5	5

› 28.831 Phantom

NL **Phan-Coil RVS Schroefdraad inzetstukken Metrisch Fijn**
FR **Phan-Coil Filets rapportés Inox Métrique Fin**
ES **Phan-Coil Filetes insertos acero inoxidable Métrica Fina**
DE **Phan-Coil rostfreien Stahl Gewindeeinsätze Metrisch Fein**





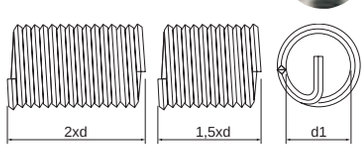
EG **MF** **Phan-Coil**

Ref.	d1	P	Max. x d1	Ø mm	Packed per
28.831.0102	MF10	1	1	10.3	25
28.831.0103	MF10	1.25	1	10.3	25
28.831.0124	MF12	1.5	1	12.4	15
28.831.0144	MF14	1.5	1	14.4	5
28.831.0164	MF16	1.5	1	16.4	5
28.831.0184	MF18	1.5	1	18.4	3
28.831.2082	MF8	1	1.5	8.3	50
28.831.2102	MF10	1	1.5	10.3	25
28.831.2103	MF10	1.25	1.5	10.3	25
28.831.2124	MF12	1.5	1.5	12.4	15
28.831.2144	MF14	1.5	1.5	14.4	5
28.831.2164	MF16	1.5	1.5	16.4	5
28.831.2184	MF18	1.5	1.5	18.4	3
28.831.4103	MF10	1.25	2	10.3	25
28.831.4124	MF12	1.5	2	12.4	15
28.831.4144	MF14	1.5	2	14.4	5

› 28.832 Phantom

NL **Phan-Coil RVS Schroefdraad inzetstukken UNC**
FR **Phan-Coil Filets rapportés Inox UNC**
ES **Phan-Coil Filetes insertos acero inoxidable UNC**
DE **Phan-Coil rostfreien Stahl Gewindeeinsätze UNC**





EG **UNC** **Phan-Coil**

Ref.	d1	P	Max. x d1	Ø mm	Packed per
28.832.2048	UNC Nr. 10	24	1.5	5.1	50
28.832.2063	UNC 1/4	20	1.5	6.7	25
28.832.2079	UNC 5/16	18	1.5	8.3	20
28.832.2095	UNC 3/8	16	1.5	9.9	10
28.832.2127	UNC 1/2	13	1.5	13.2	5
28.832.2158	UNC 5/8	11	1.5	16.4	3
28.832.4048	UNC Nr. 10	24	2	5.1	50
28.832.4063	UNC 1/4	20	2	6.7	25

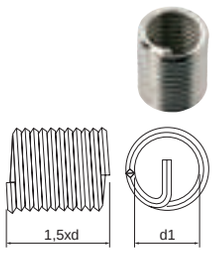
19:00 ▸ 24h

› 28.832 Phantom

Ref.	d1	P	Max. x d1	Ø mm	Packed per
28.832.4079	UNC 5/16	18	2	8.3	20
28.832.4095	UNC 3/8	16	2	9.9	10
28.832.4127	UNC 1/2	13	2	13.2	5
28.832.4158	UNC 5/8	11	2	16.4	3

› 28.833 Phantom

NL **Phan-Coil RVS Schroefdraad inzetstukken UNF**
FR **Phan-Coil Filets rapportés Inox UNF**
ES **Phan-Coil Filetes insertos acero inoxidable UNF**
DE **Phan-Coil rostfreien Stahl Gewindeeinsätze UNF**



EG | UNF | Phan-Coil

Ref.	d1	P	Max. x d1
28.833.2048	UNF Nr. 10	32	
28.833.2063	UNF 1/4	28	1.5
28.833.2079	UNF 5/16	24	1.5
28.833.2095	UNF 3/8	24	1.5
28.833.2127	UNF 1/2	20	1.5
28.833.2158	UNF 5/8	18	1.5

› 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**



Phan-Coil

Ref.	Nr.	d1
28.860.0025	25	M4x0,7
28.860.0030	30	UNC Nr. 10-24
28.860.0035	35	M5x0,8
28.860.0040	40	M6x1
28.860.0045	45	UNC 1/4"-20
28.860.0055	55	M8x1,25 - MF8x1 - UNC 5/16"-18
28.860.0065	65	UNC 3/8"-16

Ref.	Nr.	d1
28.860.0070	70	M10x1,25 - MF10x1 - MF10x1,25
28.860.0080	80	M12x1,75 - MF12x1,5
28.860.0085	85	UNC 1/2"-13
28.860.0090	90	MF14x1,5
28.860.0095	95	M16x2 - MF16x1,5 - UNC 5/8"-11
28.860.0100	100	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**



Phan-Coil

Ref.	Nr.	d1
28.865.0025	25	M4x0,7
28.865.0030	30	UNC Nr. 10-24
28.865.0035	35	M5x0,8
28.865.0040	40	M6x1
28.865.0045	45	UNC 1/4"-20
28.865.0055	55	M8x1,25 - MF8x1 - UNC 5/16"-18
28.865.0065	65	UNC 3/8"-16

Ref.	Nr.	d1
28.865.0070	70	M10x1,25 - MF10x1 - MF10x1,25
28.865.0080	80	M12x1,75 - MF12x1,5
28.865.0085	85	UNC 1/2"-13
28.865.0090	90	MF14x1,5
28.865.0095	95	M16x2 - MF16x1,5 - UNC 5/8"-11
28.865.0100	100	MF18x1,5

› 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**





EG | M | Phan-Coil

Ref.	d1	P	1	2	3	4	5
28.870.0040	M4	0.7	4,2 mm	21.812.0400	28.860.0025	28.865.0025	1,5xD (5), 2xD (5)
28.870.0050	M5	0.8	5,2 mm	21.812.0500	28.860.0035	28.865.0035	1,5xD (5), 2xD (5)
28.870.0060	M6	1	6,3 mm	21.812.0600	28.860.0040	28.865.0040	1,5xD (5), 2xD (5)
28.870.0080	M8	1.25	8,3 mm	21.812.0800	28.860.0055	28.865.0055	1,5xD (5), 2xD (5)
28.870.0100	M10	1.5	10,4 mm	21.812.1000	28.860.0070	28.8650.070	1,5xD (5), 2xD (5)
28.870.0120	M12	1.75	12,4 mm	21.812.1200	28.860.0080	28.865.0080	1,5xD (3), 2xD (3)
28.870.0160	M16	2	16,5 mm	21.812.1600	28.860.0095	28.865.0095	1xD (1), 1,5xD (2), 2xD (2)

› 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**





EG | MF | Phan-Coil

Ref.	d1	P	1	2	3	4	5
28.871.0082	MF8	1	8,3	21.822.0810	28.860.0055	28.865.0055	1,5xD (5)
28.871.0102	MF10	1	10,3	21.822.1010	28.860.0070	28.865.0070	1,5xD (5)
28.871.0103	MF10	1.25	10,3	21.822.1025	28.860.0070	28.865.0070	1,5xD (5)
28.871.0124	MF12	1.5	12,4	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**



EG | UNC | Phan-Coil

Ref.	d1	P	1	2	3	4	5
28.872.0048	UNC Nr. 10	24	5,1	21.832.0482	28.860.0030	28.865.0030	1,5xD (5), 2xD (5)
28.872.0063	UNC 1/4	20	6,7	21.832.0635	28.860.0045	28.865.0045	1,5xD (5), 2xD (5)
28.872.0079	UNC 5/16	18	8,3	21.832.0794	28.860.0055	28.865.0055	1,5xD (5), 2xD (5)
28.872.0095	UNC 3/8	16	9,9	21.832.0952	28.860.0065	28.865.0065	1,5xD (5), 2xD (5)
28.872.0127	UNC 1/2	13	13,2	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)**



EG | M | Phan-Coil

Ref.	Contents	1	2	3	4	5
28.880.1000	M5x0,8	5,2	21.812.0500	28.860.0035	28.865.0035	1,5xD (4), 2xD (4)
	M6x1	6,3	21.812.0600	28.860.0040	28.865.0040	1,5xD (4), 2xD (4)
	M8x1,25	8,3	21.812.0800	28.860.0055	28.865.0055	1,5xD (4), 2xD (4)
	M10x1,5	10,4	21.812.1000	28.860.0070	28.865.0070	1,5xD (3), 2xD (3)
	M12x1,75	12,4	21.812.1200	28.860.0080	28.865.0080	1,5xD (3), 2xD (3)

› 29.100 INTERNATIONAL TOOLS

NL **Set Draadsnijden**
FR **Jeu de Taraudage**
ES **Juego de roscar**
DE **Satz Gewindeschneiden**



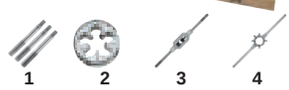


Ref.	1	2	3	4	5	6	7
29.100.1000	M3-4-5-6-8-10-12	M3-4-5-6-8-10-12	2,5-3,3-4,2-5-6,8-8,5-10,2	1 + 2	1 + 2	20x5 + 20x7 + 25x9 + 30/11 + 38/14	2,7-3,4-4,9-5,5-7
29.100.2000	M3-4-5-6-8-10-12	M3-4-5-6-8-10-12	2,5-3,3-4,2-5-6,8-8,5-10,2	1,5	1	25x9	-

› 29.120 INTERNATIONAL TOOLS

NL **Set Draadsnijden**
FR **Jeu de Taraudage**
ES **Juego de roscar**
DE **Satz Gewindeschneiden**

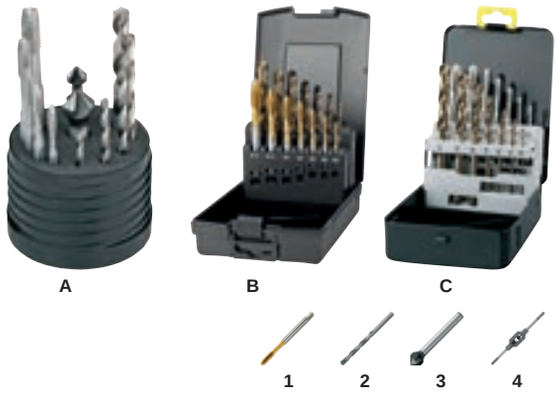




Ref.	1	2	3	4
29.120.0001	M3-4-5-6-8-10-12-14	M3-4-5-6-8-10-12-14	2	20x5, 20x7, 25x9, 30x11, 38x14
29.120.0002	M3-4-5-6-8-10-12-14-16-18-20-22-24	M3-4-5-6-8-10-12-14-16-18-20-22-24	0+2+4	20x5, 20x7, 25x9, 30x11, 38x14, 45x18, 55x22
29.120.0003	M5-6-8-10-12-14-16-18-20-22-24-27-30	M5-6-8-10-12-14-16-18-20-22-24-27-30	1+3+5	20x7, 25x9, 30x11, 38x14, 45x18, 55x22. 65x25
29.120.0004	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	0+2+4	20x7, 25x9, 30x11, 38x14, 45x18, 55x22
29.120.0005	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	2+4	20x7, 25x9, 30x11, 38x10, 45x14, 55x16
29.120.0006	BSP 1/8-1/4-1/2-5/8-3/4-1	BSP 1/8-1/4-1/2-5/8-3/4-1	3+5	30x11, 38x10, 45x14, 55x16, 65x18
29.120.0007	MF 6x0,75-8x0,75-8x1-10x1-12x1,5-14x1,5-16x1,5-18x1,5-20x1,5	MF 6x0,75-8x0,75-8x1-10x1-12x1,5-14x1,5-16x1,5-18x1,5-20x1,5	1+3	20x7, 25x9, 30x11, 38x10, 45x14
29.120.0009	NPT 1/4-3/8-1/2-3/4-1	NPT 1/4-3/8-1/2-3/4-1	3+5	38x14, 45x14, 45x18, 55x22, 65x25

› 29.195 INTERNATIONAL TOOLS

NL **Set Draadsnijden (combinatie)**
FR **Jeu de Taraudage (combinaison)**
ES **Juego de roscar (combinación)**
DE **Satz Gewindeschneiden (Kombination)**



Ref.	1	2	3	4	A, B, C
29.195.1000	22.195/22.196: M3-4-5-6-8-10-12				C
29.195.1250	22.197/22.198: M3-4-5-6-8-10-12				C
29.195.1500	22.595/22.596: M3-4-5-6-8-10-12				C
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			C
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			C
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
29.195.5000	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

› 29.200 INTERNATIONAL TOOLS

NL **Set Draadsnijden**
FR **Jeu de Taraudage**
ES **Juego de roscar**
DE **Satz Gewindeschneiden**



Ref.	1	2	3	4
29.200.0200	M3-4-5-6-8-10-12	M3-4-5-6-8-10-12	1.5	25x9
29.200.0300	BSW 1/8-3/16-1/4-5/16-3/8-7/16-1/2	BSW 1/8-3/16-1/4-5/16-3/8-7/16-1/2	1.5	25x9

› 29.220 Phantom

NL **Set Draadsnijden**
FR **Jeu de Taraudage**
ES **Juego de roscar**
DE **Satz Gewindeschneiden**



Ref.	1	2
29.220.0001	21.140: M3-4-5-6-8-10-12	
29.220.0002	21.140: M3-4-5-6-8-10-12	11.400: 2,5-3,3-4,2-5-6,8-8,5-10,2
29.220.0003	21.100: M3-4-5-6-8-10-12	

› 29.240 Phantom

NL **Set Draadsnijden leeg**
FR **Jeu de Taraudage vide**
ES **Juego de roscar vacío**
DE **Satz Gewindeschneiden Leer**



Ref.	1	2
29.240.0002	DIN 352: M3-4-5-6-8-10-12	DIN 338: 2,5-3,3-4,2-5-6,8-8,5-10,2
29.240.0003	ISO: M3-4-5-6-8-10-12	
29.240.0004	DIN 371: M3-4-5-6-8-10 + DIN 376: M12	
29.240.0006	DIN 376: M3-4-5-6-8-10-12	
29.240.0007	DIN 376: M3-4-5-6-8-10-12	DIN 338: 2,5-3,3-4,2-5-6,8-8,5-10,2
29.240.0008	ISO: M3-4-5-6-8-10-12	
29.240.0013	Phan-Coil: EG M3-4-5-6-8-10-12	

› 29.250 Phantom

NL **Set Draadsnijden**
FR **Jeu de Taraudage**
ES **Juego de roscar**
DE **Satz Gewindeschneiden**



A



B



1

Ref.	1	A, B
29.250.2000	22.200/22.201: M3-4-5-6-8-10-12	A
29.250.2100	22.201: M3-4-5-6-8-10-12	B
29.250.2150	22.205: M3-4-5-6-8-10-12	B
29.250.2500	22.268/22.269: M3-4-5-6-8-10-12	A
29.250.2700	22.700/22.701: M3-4-5-6-8-10-12	A
29.250.2705	22.705: M3-4-5-6-8-10-12	B
29.250.3300	23.300/23.301: M3-4-5-6-8-10-12	A
29.250.3450	23.450/23.451: M3-4-5-6-8-10-12	A

19:00 24h

› 29.260 Phantom

NL **Set Draadsnijden (combinatie)**
FR **Jeu de Taraudage (combinaison)**
ES **Juego de roscar (combinación)**
DE **Satz Gewindeschneiden (Kombination)**



A



B



C



1 2 3

Ref.	1	2		A, B, C
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
29.260.2000	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
29.260.2200	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
29.260.2240	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
29.260.2500	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
29.260.2700	22.700/22.701: M3-4-5-6-8-10-12	11.710: 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
29.260.3450	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
29.260.3480	23.480/23.481: M3-4-5-6-8-10-12	11.710: 2,5-3,3-4,2-5-6,8-8,5-10,2		B

› 29.280 Phantom

NL **Set Snijplaten**
FR **Jeu de Filières**
ES **juego de Terraja esférica**
DE **Satz Schneideisen**





1

Ref.	Type	1
29.280.1000	I.T. 27.100	M3-4-5-6-8-10-12-14-16-20
29.280.2000	PHANTOM 27.120	M3-4-5-6-8-10-12-14-16-20

› 29.295 INTERNATIONAL TOOLS

NL **Set Draadsnijden**
FR **Jeu de Taraudage**
ES **Juego de roscar**
DE **Satz Gewindeschneiden**





1

Ref.	1
29.295.1000	23.295: M3-4-5-6-8-10-12

› 29.300 INTERNATIONAL TOOLS

NL **Set Draadeinduithalers**
FR **Jeu d'extracteurs, goujons et tubes cassés**
ES **Juego de extractores de tornillos rotos**
DE **Satz Schraubenausdreher**



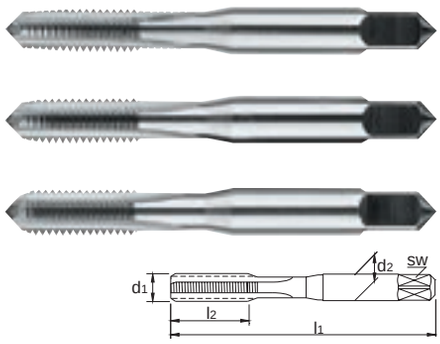
1

Ref.	1
29.300.0100	1-5
29.300.0200	1-6

19:00 ▶ 24h

› 29.910 Phantom

NL **HSS Handtappen Metrisch, links**
FR **Tarauds à main HSS Métrique, gauche**
ES **Machos mano HSS Métrica, izquierda**
DE **HSS Handgewindebohrer Metrisch, links**



HSS | M | 60° | NFE 66103 | ISO 529 | ISO 2 6H

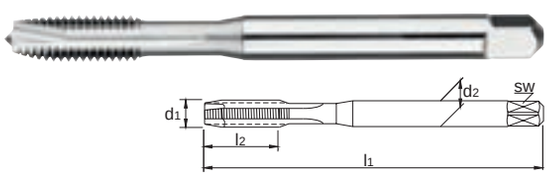
Ref.	d1	P	l1	l2	d2	sw
29.910.0300	M3	0.5	48	11	3.15	2.5
29.910.0400	M4	0.7	53	13	4	3.15
29.910.0500	M5	0.8	58	16	5	4
29.910.0600	M6	1	66	19	6.3	5

Ref.	d1	P	l1	l2	d2	sw
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

Ref.	d1	P	l1	l2	d2	sw
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 UNI HSS-E Métrique, gauche**
ES **Macho máquina UNI HSS-E Métrica, a la izquierda**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, links**



NIEUW | NOUVEAU | NUEVO | NEU

HSS-E | 60° | DIN 371 | 3xD | M | Form B | 4-5 | ISO 2 6H | UNI

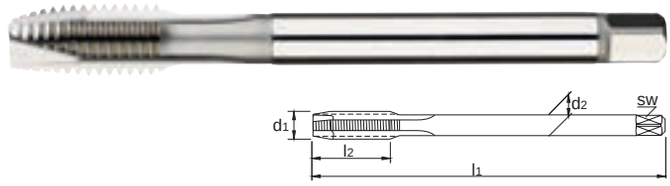
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	P	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

Ref.	d1	P	l1	l1	d2	sw
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 UNI HSS-E Métrique, gauche**
ES **Macho máquina UNI HSS-E Métrica, a la izquierda**
DE **UNI HSS-E Maschinengewindebohrer Metrisch, links**



NIEUW | NOUVEAU | NUEVO | NEU

HSS-E | M | 60° | DIN 376 | 3xD | Form B | 4-5 | ISO 2 6H | UNI

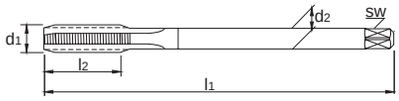
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	P	sw
29.951.1200	M12	1.75	110	17.5	9	7
29.951.1400	M14	2	110	20	11	9
29.951.1600	M16	2	110	20	12	9
29.951.2000	M20	2.5	140	25	16	12

Ref.	d1	P	l1	l1	d2	sw
29.951.2200	M22	2.5	140	25	18	14.5
29.951.2400	M24	3	160	30	18	14.5
29.951.3000	M30	3.5	180	35	22	18

› 29.960 Phantom





NL **UNI HSS-E Machinetap Metrisch Fijn, links**
FR **Taraud machine UNI HSS-E Métrique Fin, gauche**
ES **Macho máquina UNI HSS-E Métrica Fina, a la izquierda**
DE **UNI HSS-E Maschinengewindebohrer Metrisch Fein, links**

NIEUW NOUVEAU NUEVO NEU

HSS-E | MF | 60° | DIN 374 | 3xD | Form B | 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

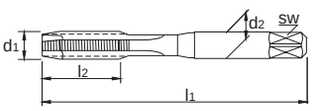
15-20 | 10-20 | 6-10 | 7-10 | 10-15 | 10-15 | 25-35 | 10-20 | 15-35 | 2-8 | 2-8

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

Ref.	d1	P	l1	l2	d2	sw
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

› 29.969 Phantom





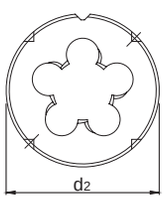
NL **HSS Machinetap FG (Rijwieldraad), links**
FR **Taraud machine HSS FG (filetage bicyclette), gauche**
ES **Macho máquina HSS FG (rosca bicicleta), izquierda**
DE **HSS Maschinengewindebohrer FG (Fahrradgewinde), links**

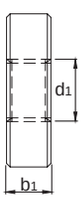
HSS | BSC FG | 60° | DIN 79012 | 2-3

Ref.	d1	P	l1	l2	d2	sw
29.969.1430	FG 9/16	20	100	22	11	9

Ref.	d1	P	l1	l2	d2	sw

› 29.970 INTERNATIONAL TOOLS







NL **HSS Ronde Snijplaat Metrisch, links**
FR **Filière ronde HSS Métrique, gauche**
ES **Terraja esférica HSS Métrica, izquierda**
DE **HSS Runde Schneideisen Metrisch, links**

HSS | M | 60° | DIN EN 22568 | 6g

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	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

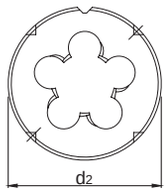
Ref.	d1	P	d2	b1
29.970.1000	M10	1.5	30	11
29.970.1200	M12	1.75	38	14
29.970.1400	M14	2	38	14
29.970.1600	M16	2	45	18
29.970.1800	M18	2.5	45	18

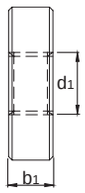
Ref.	d1	P	d2	b1
29.970.2000	M20	2.5	45	18
29.970.2200	M22	2.5	55	22
29.970.2400	M24	3	55	22
29.970.2700	M27	3	65	25
29.970.3000	M30	3.5	65	25

19:00 ▶ 24h

› 29.972 INTERNATIONAL TOOLS

NL **HSS Ronde Snijplaat Metrisch Fijn, links**
FR **Filière ronde HSS Métrique Fin, gauche**
ES **Terraja esférica HSS Métrica Fina, izquierda**
DE **HSS Runde Schneideisen Metrisch Fein, links**







HSS | MF | 60° | DIN EN 22568 | 6g

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%

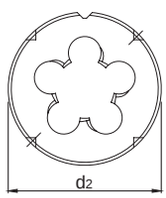
Ref.	d1	P	d2	b1
29.972.0605	MF6	0.5	20	5
29.972.0607	MF6	0.75	20	7
29.972.0807	MF8	0.75	25	9
29.972.0810	MF8	1	25	9
29.972.1010	MF10	1	30	11
29.972.1210	MF12	1	38	10

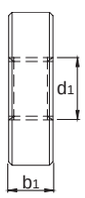
Ref.	d1	P	d2	b1
29.972.1215	MF12	1.5	38	10
29.972.1410	MF14	1	38	10
29.972.1415	MF14	1.5	38	10
29.972.1610	MF16	1	45	14
29.972.1615	MF16	1.5	45	14
29.972.1815	MF18	1.5	45	14

Ref.	d1	P	d2	b1
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

› 29.975 Phantom

NL **HSS Ronde Snijplaat UNC, schilaansnijding, links**
FR **Filière ronde HSS UNC, coupe gun, gauche**
ES **Terraja esférica HSS UNC, entrada corregida (gun), izquierda**
DE **HSS Runde Schneideisen UNC, Schälanschnitt, links**







HSS | UNC | 60° | DIN EN 22568 | 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

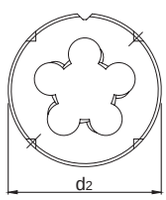
Ref.	d1	P	d2	b1
29.975.0635	UNC 1/4	20	20	7
29.975.0794	UNC 5/16	18	25	9
29.975.0952	UNC 3/8	16	30	11
29.975.1111	UNC 7/16	14	30	11

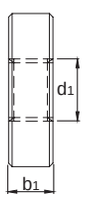
Ref.	d1	P	d2	b1
29.975.1270	UNC 1/2	13	38	14
29.975.1429	UNC 9/16	12	38	14
29.975.1588	UNC 5/8	11	45	18
29.975.1905	UNC 3/4	10	45	18

Ref.	d1	P	d2	b1
29.975.2222	UNC 7/8	9	55	22
29.975.2540	UNC 1	8	55	22

› 29.978 Phantom

NL **HSS Ronde Snijplaat UNF, schilaansnijding, links**
FR **Filière ronde HSS UNF, coupe gun, gauche**
ES **Terraja esférica HSS UNF, entrada corregida (gun), izquierda**
DE **HSS Runde Schneideisen UNF, Schälanschnitt, links**







HSS | UNF | 60° | DIN EN 22568 | 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

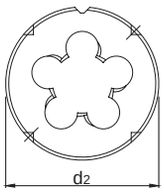
Ref.	d1	P	d2	b1
29.978.0635	UNF 1/4	28	20	7
29.978.0794	UNF 5/16	24	25	9
29.978.0952	UNF 3/8	24	30	11
29.978.1111	UNF 7/16	20	30	11

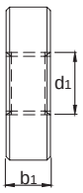
Ref.	d1	P	d2	b1
29.978.1270	UNF 1/2	20	38	10
29.978.1429	UNF 9/16	18	38	10
29.978.1588	UNF 5/8	18	45	14
29.978.1905	UNF 3/4	16	45	14

Ref.	d1	P	d2	b1
29.978.2222	UNF 7/8	14	55	16
29.978.2540	UNF 1	12	55	16

› 29.985 INTERNATIONAL TOOLS

NL **HSS Ronde Snijplaat BSP (Gasdraad), links**
FR **Filière ronde HSS BSP (pas gaz), gauche**
ES **Terraja esférica HSS BSP (gas), izquierda**
DE **HSS Runde Schneideisen BSP (Rohrgewinde), links**







HSS | BSP G | 55° | DIN EN 24231

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%

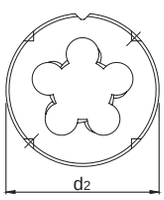
Ref.	d1	P	d2	b1
29.985.0973	BSP 1/8	28	30	11
29.985.1316	BSP 1/4	19	38	10
29.985.1666	BSP 3/8	19	45	14

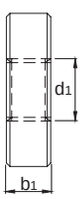
Ref.	d1	P	d2	b1
29.985.2096	BSP 1/2	14	45	14
29.985.2291	BSP 5/8	14	55	16
29.985.2644	BSP 3/4	14	55	16

Ref.	d1	P	d2	b1
29.985.3020	BSP 7/8	14	65	18
29.985.3325	BSP 1	11	65	18
29.985.4191	BSP 1.1/4	11	75	20

› 29.989 Phantom

NL **HSS Ronde Snijplaat FG (Rijwieldraad), schilaansnijding, links**
FR **Filière ronde HSS FG (filetage bicyclette), coupe gun, gauche**
ES **Terraja esférica HSS FG (rosca bicicleta), entrada corregida (gun), izquierda**
DE **HSS Runde Schneideisen FG (Fahrradgewinde), Schälanschnitt, links**







HSS | BSC FG | 60° | DIN 79012 | 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

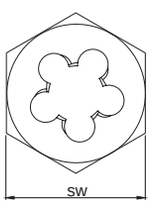
Ref.	d1	P	d2	b1
29.989.1430	FG 9/16	20	38	10

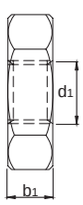
Ref.	d1	P	d2	b1

Ref.	d1	P	d2	b1

› 29.990 INTERNATIONAL TOOLS

NL **HSS Zeskante Snijmoer Metrisch, links**
FR **Filière hexagonale HSS Métrique, gauche**
ES **Terraja hexagonal HSS Métrica, izquierda**
DE **HSS Sechskant Schneideisen Metrisch, links**







HSS | M | 60° | DIN 382 | 6g

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

19:00 ▶ 24h

NL **Voorboordiametertabel**
FR **Tableau de diamètre de pré-perçage**
ES **Tabla de perforación previa**
DE **Bohrungsdurchmessertabelle**

M		
d1 (mm)	P	(mm)
1	0,25	0,75
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
2,5	0,45	2,05
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
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

PG		
d1	P	(mm)
PG 7	20	11,4
PG 9	18	14
PG 11	18	17,25
PG 13,5	18	19
PG 16	18	21,25
PG 21	16	26,75
PG 29	16	35,5
PG 36	16	45,5
PG 42	16	52,5
PG 48	16	57,75

MF		
d1 (mm)	P	(mm)
3	0,35	2,65
4	0,5	3,5
5	0,5	4,5
6	0,75	5,2
7	0,75	6,2
8	0,75	7,2
8	1	7
9	1	8
10	0,75	9,2
10	1	9
10	1,25	8,8
11	1	10
12	1	11
12	1,25	10,8
12	1,5	10,5
14	1	13
14	1,25	12,8
14	1,50	12,5
15	1	14
15	1,5	13,5
16	1	15
16	1,5	14,5
18	1	17
18	1,5	16,5
18	2	16
20	1	19
20	1,5	18,5
20	2	18
22	1	21
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
26	1,5	24,5
27	1,5	25,5
27	2	25
28	1,5	26,5
30	1,5	28,5
30	2	28
32	1,5	30,5
33	2	31
35	1,5	33,5
36	1,5	34,5
36	2	34
36	3	33
38	1,5	36,5
39	3	36
40	1,5	38,5
42	1,5	40,5
45	1,5	43,5
50	1,5	48,5

UNC		
d1 (“)	P	(mm)
nr 1	64	1,5
nr 2	56	1,8
nr 3	48	2
nr 4	40	2,3
nr 5	40	2,6
nr 6	32	2,7
nr 8	32	3,5
nr 10	24	3,8
nr 12	24	4,5
1/4	20	5,1
5/16	18	6,5
3/8	16	7,9
7/16	14	9,3
1/2	13	10,7
9/16	12	12,3
5/8	11	13,5
3/4	10	16,5
7/8	9	19,3
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

BSW		
d1 (“)	P	(mm)
1/16	60	1,15
3/32	48	1,8
1/8	40	2,5
5/32	32	3,2
3/16	24	3,7
7/32	24	4,4
1/4	20	5,1
5/16	18	6,5
3/8	16	7,9
7/16	14	9,2
1/2	12	10,4
9/16	12	12,1
5/8	11	13,4
3/4	10	16,25
7/8	9	19,25
1	8	22,0
1 1/8	7	24,75
1 1/4	7	27,75
1 3/8	6	30,5
1 1/2	6	33,5
1 5/8	5	35,5
1 3/4	5	39,0
1 7/8	4 1/2	41,5
2	4 1/2	44,5

UNF		
d1 (“)	P	(mm)
nr 0	80	1,2
nr 1	72	1,5
nr 2	64	1,8
nr 3	56	2,1
nr 4	48	2,4
nr 5	44	2,6
nr 6	40	2,9
nr 8	36	3,5
nr 10	32	4
nr 12	28	4,6
1/4	28	5,4
5/16	28	5,9
3/8	24	8,4
7/16	20	9,9
1/2	20	11,5
9/16	18	13
5/8	16	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	33
1 1/2	12	36

BSP		
d1 (“)	P	(mm)
G 1/16	28	6,7
G 1/8	28	8,7
G 1/4	19	11,6
G 3/8	14	15
G 1/2	14	19
G 5/8	14	20,75
G 3/4	14	24,5
G 7/8	14	28
G 1	11	30,5
G 1 1/8	11	35,1
G 1 1/4	11	39,5
G 1 3/8	11	42
G 1 1/2	11	45
G 1 3/4	11	51
G 2	11	57
G 2 1/4	11	63,1
G 2 1/2	11	72,5
G 2 3/4	11	79,1
G 3	11	85,5
G 3 1/4	11	91,5
G 3 1/2	11	97,7

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



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		9/32	1	0,2/0,25/0,35/0,5/0,75															
7,144	0 2813									26		26							
7,5		G 1/16		0,2/0,25/0,35/0,5/0,75/1															
7,723		Vg 8														28			
7,747		Vg 7,8																	32
7,88		5/16																	30
7,938	0 3125	1/16 NPT			18	24	32	20/28	27/36/40/48	26	18	22		26					
7,94																	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		1/8 NPT	1,5	0,2/0,25/0,35/0,5/0,75/1/1,25															
10,29		Vg 10															27		
10,338	0 407																		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		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

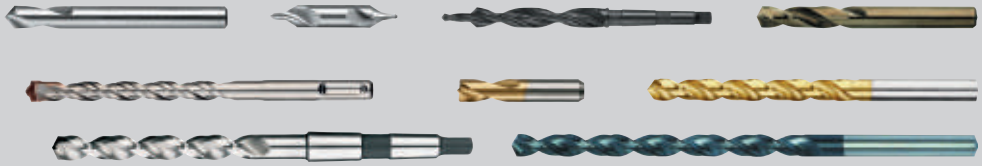
mm	inch	Description	M	MF	UNC	UNF	UNEF	UN	UNS	Bicycle	BSW	BSF	W	BSB	BA	BSP	NPT	Pg	Vg
23				0,35/0,5/0,75/1/1,5/2															
23,812	0,9375	15/16					20	12/16/28/32			9	11							
24			3	0,35/0,5/0,75/1/1,5/2															
24,32		W 24,32											14						
24,606	0,9688	31/32								30									
25				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**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



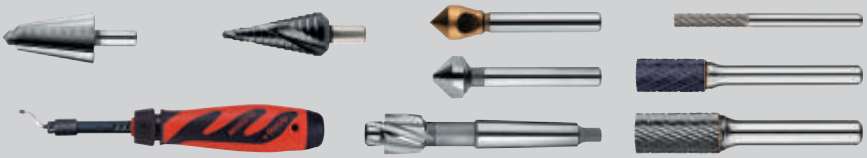
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



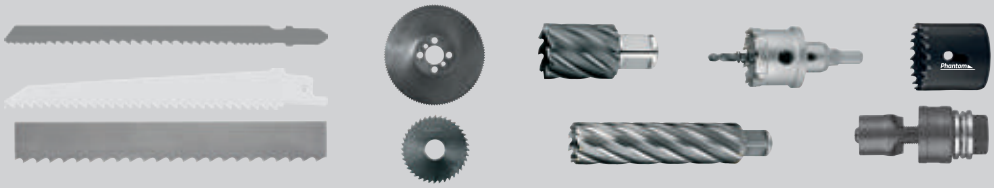
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
	2 snijkanten, centrumsnijdend	2 dents, coupe au centre	2 dientes, corte con centro	2 Schneiden, Zentrumschneidend
	3 snijkanten, centrumsnijdend	3 dents, coupe au centre	3 dientes, corte con centro	3 Schneiden, Zentrumschneidend
	4 Snijkanten, centrumsnijdend	4 dents, coupe au centre	4 dientes, con corte centro	4 Schneiden, Zentrumschneidend
	4 snijkanten, niet centrumsnijdend	4 dents, pas de coupe au centre	4 dientes, corte sin centro	4 Schneiden, Nicht Zentrumschneidend
	4 Snijkanten, met ongelijke tandverdeling	4 dents, avec denture à pas différentiel	4 dientes, con paso irregular	4 Schneiden, mit ungleicher Zahnteilung
	5 Snijkanten, met ongelijke tandverdeling	5 dents, avec denture à pas différentiel	5 dientes, con paso irregular	5 Schneiden, mit ungleicher Zahnteilung
	6 snijkanten, centrumsnijdend	6 dents, coupe au centre	6 dientes, corte con centro	6 Schneiden, Zentrumschneidend
	8 snijkanten, centrumsnijdend	8 dents, coupe au centre	8 dientes, corte con centro	8 Schneiden, Zentrumschneidend
	2 snijkanten, volradius	2 dents, à rayon complet	2 dientes, con radio completo	2 Schneiden, Vollradius
	4 Snijkanten, volradius	4 dents, à rayon complet	4 dientes, con radio completo	4 Schneiden, Vollradius
	Ongelijke spiraalhoek	Avec angles d'hélice variables	Con ángulo de hélice desigual	Mit ungleichen Spiralwinkel
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Vollhartmetall
MG HM	Micro-Grain volhardmetaal	Carbure micrograin	Metal duro micrograno	Micro-Grain Vollhartmetall
NG HM	Nano-Grain volhardmetaal	Carbure Nanograin	Metal duro nanograno	Nano-Grain Vollhartmetall
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung
TiCN	TiCN gecoat	Revêtement TiCN	Recubrimiento TiCN	TiCN Beschichtung

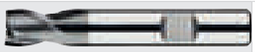
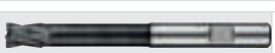
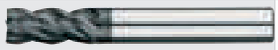
	NL	FR	ES	DE
TiAlN B	TiAlN-B gecoat	Revêtement TiAlN-B	Recubrimiento TiAlN-B	TiAlN-B Beschichtung
AlTiN X	AlTiN-X gecoat	Revêtement AlTiN-X	Recubrimiento AlTiN-X	AlTiN-X Beschichtung
HR	Ronde tand, fijn	Profil rond, pas fin	Profilo redondo, paso fino	Feiner Verzahnung
WR	Ronde tand, grof	Profil rond, pas ébauche	Profilo redondo	Runder Verzahnung
DIN 6527	DIN norm	Norme DIN	Norma DIN	DIN Norm
Phantom	Phantom norm	Norme Phantom	Norma Phantom	Werksnorm
	Snijkantradius	Rayon de coupe	Radio de corte	Radius am Schneidenecke
	Spiraalhoek	Angle d'Hélice	Angulo de hélice	Spiralwinkel
DIN 6535-HB	Cilindrische schacht met Weldon vlak	Queue cylindrique avec méplat type Weldon	Mango cilíndrico con plano de arrastre tipo Weldon	Zylinderschaft mit Mitnahmeflache Tyo Weldon
h6	Cilindrische schacht h6	Queue cylindrique h6	Mango cilíndrico h6	Zylinderschaft h6
r ±0,01	Tolerantie radius	Tolérance rayon	Tolerancia radio	Toleranz Radius
d1 ±0,00 -0,03	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser
HSC	High Speed Cutting	Usinage à grande vitesse	Mecanizado de alta velocidad	Hochgeschwindigkeitszerspanung
HRC	Frezen voor gehard staal	Fraises pour aciers trempés	Fresas para acero templado	Fräser für gehärtet Stahl
INOX	T.b.v. roestvaststaal	Pour Inox	Para acero inoxidable	Für Rostfreier Stahl
ALU	T.b.v. aluminium	Pour aluminium	Para aluminio	Für Aluminium

NL **VHM Frezen**
FR **Fraises Broca**
ES **Fresas Metal Duro**
DE **VHM Fräser**

P K Bij uitstek geschikt
H N Très approprié
M S Muy adecuado
Ideal geeignet

P K Beperkt geschikt
H N Appropriété
M S Adecuado
Eingeschränkt geeignet

P= pagina
P= page
P= página
P= Seite

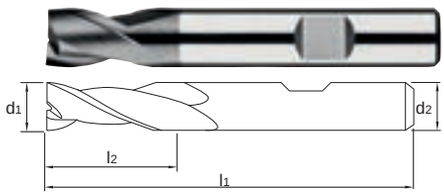
› 32.244	Phantom	DIN 6527		P M K N S			P. 3
› 32.250	Phantom	DIN 6527		P M K N S			P. 3
› 32.254	Phantom	DIN 6527		P M K N S			P. 3
› 32.255	Phantom	Phantom		P M K N S			P. 4
› 32.256	Phantom	Phantom		P M K N S			P. 4
› 32.270	Phantom			P M K N S			P. 4
› 32.275	Phantom		HSC	P	H		P. 5
› 32.290	Phantom	DIN 6527	HSC	P	H		P. 5
› 32.330	Phantom		ALU	N			P. 6
› 32.633	Phantom		ALU	N			P. 6
› 32.750	Phantom			P M K N			P. 6
› 33.244	Phantom	DIN 6527		P M K N S			P. 7
› 33.250	Phantom	DIN 6527		P M K N S			P. 7
› 33.254	Phantom	DIN 6527		P M K N S			P. 7
› 33.255	Phantom	Phantom		P M K N S			P. 8
› 33.256	Phantom	Phantom		P M K N S			P. 8
› 33.544	Phantom		INOX	P M K N S			P. 8
› 33.633	Phantom		ALU	N			P. 9
› 34.244	Phantom	DIN 6527		P M K N S			P. 10
› 34.254	Phantom	DIN 6527		P M K N S			P. 10
› 34.255	Phantom	Phantom		P M K N S			P. 10
› 34.256	Phantom	Phantom		P M K N S			P. 11
› 34.258	Phantom	DIN 6527		P M K	H		P. 11
› 34.262	Phantom	DIN 6527		P M K	H		P. 11
› 34.265	Phantom			P M K	H		P. 12
› 34.267	Phantom	DIN 6527		P M K	H		P. 12
› 34.268	Phantom	DIN 6527	INOX	P M K S			P. 12
› 34.270	Phantom		INOX	P M K S			P. 13
› 34.272	Phantom	DIN 6527	INOX	P M K S			P. 13
› 34.275	Phantom		INOX	P M K S			P. 13

› 34.278	Phantom	VARI	DIN 6527	INOX	P	M	K		S			P. 14
› 34.375	Phantom	VARI			P	M	K	N				P. 14
› 34.400	Phantom			HSC	P					H		P. 14
› 34.410	Phantom		DIN 6527	HSC	P					H		P. 15
› 34.424	Phantom			HRC	P					H		P. 15
› 34.464	Phantom			HRC	P					H		P. 15
› 34.510	Phantom		DIN 6527	HSC	P					H		P. 16
› 34.515	Phantom		DIN 6527	HSC	P					H		P. 16
› 35.244	Phantom		HR		P	M	K					P. 17
› 35.484	Phantom		HR	INOX	P	M			S			P. 17
› 35.540	Phantom		WR	ALU				N				P. 17
› 35.852	Phantom							N				P. 18
› 35.860	Phantom							N				P. 18
› 35.868	Phantom							N				P. 18
› 35.876	Phantom							N				P. 18
› 36.130	Phantom			ALU				N				P. 19
› 36.140	Phantom			ALU				N				P. 19
› 36.164	Phantom		90°		P	M		N	S			P. 19
› 36.244	Phantom				P	M	K	N	S			P. 20
› 36.256	Phantom		Phantom		P	M	K	N	S			P. 20
› 36.275	Phantom			HSC	P					H		P. 20
› 36.285	Phantom			HSC	P					H		P. 21
› 36.290	Phantom			HSC	P					H		P. 21
› 36.345	Phantom	VARI			P	M	K		S			P. 22
› 36.354	Phantom			HSC	P					H		P. 22
› 36.430	Phantom				P	M	K					P. 22

19:00 ▶ 24h

› 32.244 Phantom

NL **VHM-MG Schachtfrees, 2-snijder AlTiN-X, DIN 6527, kort**
FR **Fraise à rainurer 2 dents Carbure MG AlTiN-X, DIN 6527, courte**
ES **Fresa de ranurar de 2 labios MD-MG AlTiN-X, DIN 6527, corta**
DE **VHM-MG Langlochfräser (2-Schneider) AlTiN-X, DIN 6527, kurz**



MG HM | AlTiN X | DIN 6527 | 30° | DIN 6535-HB

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 | S 71 Ni/Co | S 72 Ti



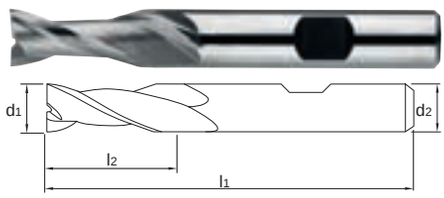
Ref.	d1	d2	l1	l2	z
32.244.0200	2	6	50	3	2
32.244.0300	3	6	50	4	2
32.244.0400	4	6	54	5	2
32.244.0500	5	6	54	6	2

Ref.	d1	d2	l1	l2	z
32.244.0600	6	6	54	7	2
32.244.0800	8	10	58	9	2
32.244.1000	10	10	66	11	2
32.244.1200	12	12	73	12	2

Ref.	d1	d2	l1	l2	z
32.244.1600	16	16	82	16	2
32.244.2000	20	20	92	20	2

› 32.250 Phantom

NL **VHM-MG Schachtfrees, 2-snijder DIN 6527, lang**
FR **Fraise à rainurer 2 dents Carbure MG DIN 6527, longue**
ES **Fresa de ranurar de 2 labios MD-MG DIN 6527, larga**
DE **VHM-MG Langlochfräser (2-Schneider) DIN 6527, lang**



MG HM | DIN 6527 | 30° | DIN 6535-HB

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 | S 72 Ti



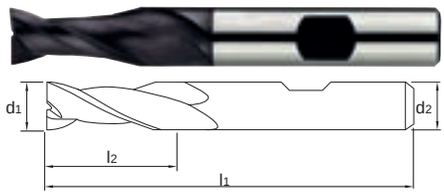
Ref.	d1	d2	l1	l2	z
32.250.0300	3	6	57	7	2
32.250.0400	4	6	57	8	2
32.250.0500	5	6	57	10	2

Ref.	d1	d2	l1	l2	z
32.250.0600	6	6	57	10	2
32.250.0800	8	8	63	16	2
32.250.1000	10	10	72	19	2

Ref.	d1	d2	l1	l2	z
32.250.1200	12	12	83	22	2
32.250.1600	16	16	92	26	2
32.250.2000	20	20	104	32	2

› 32.254 Phantom

NL **VHM-MG Schachtfrees, 2-snijder AlTiN-X, DIN 6527, lang**
FR **Fraise à rainurer 2 dents Carbure MG AlTiN-X, DIN 6527, longue**
ES **Fresa de ranurar de 2 labios MD-MG AlTiN-X, DIN 6527, larga**
DE **VHM-MG Langlochfräser (2-Schneider) AlTiN-X, DIN 6527, lang**



MG HM | AlTiN X | DIN 6527 | 30° | DIN 6535-HB

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 | S 71 Ni/Co | S 72 Ti



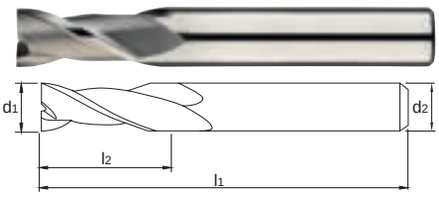
Ref.	d1	d2	l1	l2	z
32.254.0300	3	6	57	7	2
32.254.0400	4	6	57	8	2
32.254.0500	5	6	57	10	2

Ref.	d1	d2	l1	l2	z
32.254.0600	6	6	57	10	2
32.254.0800	8	8	63	16	2
32.254.1000	10	10	72	19	2

Ref.	d1	d2	l1	l2	z
32.254.1200	12	12	83	22	2
32.254.1600	16	16	92	26	2
32.254.2000	20	20	104	32	2

› 32.255 Phantom

NL **VHM-MG Schachtfrees, 2-snijder**
FR **Fraise à rainurer 2 dents Carbure MG**
ES **Fresa de ranurar de 2 labios MD-MG**
DE **VHM-MG Langlochfräser (2-Schneider)**



MG HM | Phantom | 30° | h6

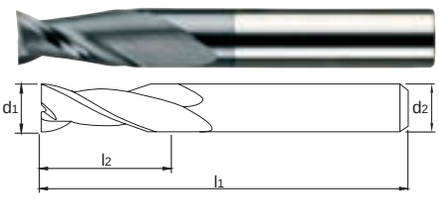
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ti
60-70 J	55-65 I	50-60 H	35-50 H	42-50 H	25-32 G	60-70 I	80-85 I	145-180 J	70-90 H	100-110 J	30-55 H	40-50 F	18-25 F



Ref.	d1	d2	l1	l2	z
32.255.0200	2	3	39	7	2
32.255.0300	3	3	39	9	2
32.255.0400	4	4	51	14	2
32.255.0500	5	5	51	16	2
32.255.0600	6	6	64	19	2
32.255.0800	8	8	64	21	2
32.255.1000	10	10	70	22	2
32.255.1200	12	12	76	25	2

› 32.256 Phantom

NL **VHM-MG Schachtfrees, 2-snijder AlTiN-X**
FR **Fraise à rainurer 2 dents Carbure MG AlTiN-X**
ES **Fresa de ranurar de 2 labios MD-MG AlTiN-X**
DE **VHM-MG Langlochfräser (2-Schneider) AlTiN-X**



MG HM | AlTiN X | Phantom | 30° | h6

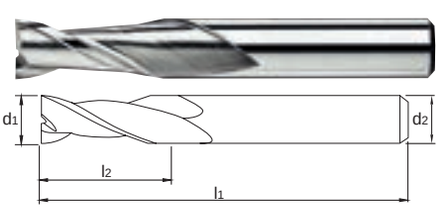
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC	Ni/Co	Ti
100-115 K	95-110 J	80-100 I	55-80 I	50-65 I	35-44 H	100-120 J	130-140 J	240-300 K	120-150 I	160-180 K	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

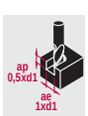
› 32.270 Phantom

NL **VHM-MG Precisie Schachtfrees, 2-snijder**
FR **Fraise de précision Carbure MG**
ES **Fresa de precisión MD-MG**
DE **VHM-MG Präzision Fräser (2-Schneider)**



MG HM | Phantom | 30° | h6 | d1 ±0,01

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

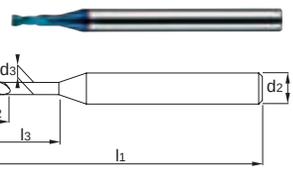


Ref.	d1	d2	l1	l2	z
32.270.0030	0.3	3	39	0.8	2
32.270.0040	0.4	3	39	1	2
32.270.0050	0.5	3	39	1.5	2
32.270.0060	0.6	3	39	1.5	2
32.270.0070	0.7	3	39	2	2
32.270.0080	0.8	3	39	2	2
32.270.0090	0.9	3	39	2.5	2
32.270.0100	1	3	39	3	2
32.270.0110	1.1	3	39	3	2
32.270.0120	1.2	3	39	4	2
32.270.0125	1.25	3	39	4	2
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

19:00 ▶ 24h

› 32.275 Phantom

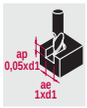
NL **VHM-NG Precisie HSC Schachtfrees, 2-snijder TiAlN-B, 45-70 HRc**
FR **Fraise de précision UGV Carbure NG TiAlN-B, 45-70 HRc**
ES **Fresa de precisión MAV MD-NG TiAlN-B, 45-70 HRc**
DE **VHM-NG Präzision HSC Fräser (2-Schneider) TiAlN-B, 45-70 HRc**



NG HM | TiAlN B | Phantom | 30° | h6 | d1 ±0,01 | 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	0.27	45	0.15	0.3	2
32.275.0101	0.1	4	0.27	45	0.15	0.5	2
32.275.0200	0.2	4	0.27	45	0.3	0.5	2
32.275.0202	0.2	4	0.27	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	0.3	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

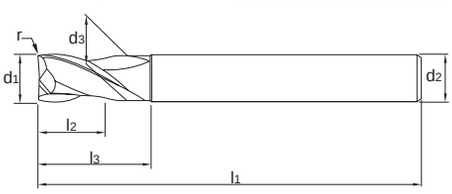
Ref.	d1	d2	d3	l1	l2	l3	z
32.275.0801	0.8	4	0.75	45	1.2	4	2
32.275.0802	0.8	4	0.75	45	1.2	6	2
32.275.0803	0.8	4	0.75	45	1.2	8	2
32.275.0804	0.8	4	0.75	45	1.2	12	2
32.275.1000	1	4	0.95	45	1.5	4	2
32.275.1001	1	4	0.95	45	1.5	6	2
32.275.1002	1	4	0.95	45	1.5	8	2
32.275.1003	1	4	0.95	45	1.5	10	2
32.275.1004	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

Ref.	d1	d2	d3	l1	l2	l3	z
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 **VHM-NG HSC Torusfrees, 2-snijder TiAlN-B, 45-70 HRc**
FR **Fraise torique UGV Carbure NG TiAlN-B, 45-70 HRc**
ES **Fresa tórica MAV MD-NG TiAlN-B, 45-70 HRc**
DE **VHM-NG HSC Torusfräser TiAlN-B, 45-70 HRc**

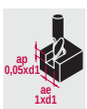




NG HM | TiAlN B | Phantom | r | 30° | h6 | d1≤ø6 ±0,01 | d1>ø6 ±0,015 | HSC

P 14 ≤1400 N/mm² | H 15 HRc

80-250 B | 40-200 B

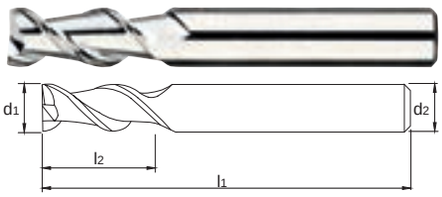


Ref.	d1	d2	d3	l1	l2	l3	r	z
32.290.0111	0.5	4	0.45	45	0.7	1.5	0.05	2
32.290.0112	0.5	4	0.45	45	0.7	2.5	0.05	2
32.290.0113	0.5	4	0.45	45	0.7	4	0.05	2
32.290.0211	0.6	4	0.55	45	0.9	2	0.05	2
32.290.0212	0.6	4	0.55	45	0.9	3	0.05	2
32.290.0213	0.6	4	0.55	45	0.9	4	0.05	2
32.290.0421	0.8	4	0.75	45	1.2	2	0.1	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

Ref.	d1	d2	d3	l1	l2	l3	r	z
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
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

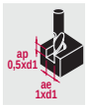
NL **VHM-MG Schachtfrees, 2-snijder lang, Aluminium**
FR **Fraise à rainurer 2 dents Carbure MG longue, Aluminium**
ES **Fresa de ranurar de 2 labios MD-MG larga, Aluminio**
DE **VHM-MG Langlochfräser (2-Schneider) lang, Aluminium**



MG HM | Phantom | 45° | h6 | d1 +0,000 −0,015 | ALU

N 41 Alu | N 51 Cu | N 61 PVC

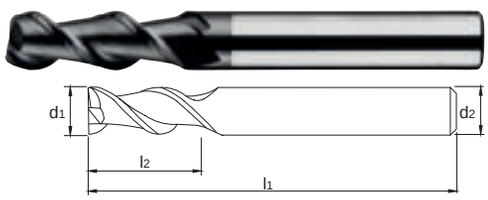
280-350 P | 300-400 P | 400-600 P



Ref.	d1	d2	l1	l2	z
32.330.0300	3	6	57	8	2
32.330.0400	4	6	57	11	2
32.330.0500	5	6	57	13	2
32.330.0600	6	6	57	13	2
32.330.0800	8	8	63	19	2
32.330.1000	10	10	72	22	2
32.330.1200	12	12	83	26	2
32.330.1600	16	16	92	32	2
32.330.2000	20	20	104	38	2

› 32.633 Phantom

NL **VHM-MG Schachtfrees, 2-snijder TiCN, extra lang, Aluminium**
FR **Fraise à rainurer 2 dents Carbure MG TiCN, extra longue, Aluminium**
ES **Fresa de ranurar de 2 labios MD-MG TiCN, extra larga, Aluminio**
DE **VHM-MG Langlochfräser (2-Schneider) TiCN, extra lang, Aluminium**



MG HM | TiCN | Phantom | 45° | h6 | d1 +0,000 −0,015 | ALU

N 41 Alu | N 51 Cu | N 61 PVC

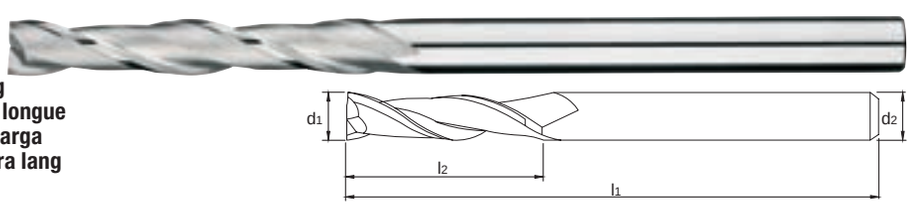
280-350 P | 300-400 P | 400-600 P



Ref.	d1	d2	l1	l2	z
32.633.0100	1	6	40	3	2
32.633.0200	2	6	40	6	2
32.633.0300	3	6	50	11	2
32.633.0400	4	6	70	16	2
32.633.0500	5	6	70	22	2
32.633.0600	6	6	70	22	2
32.633.0800	8	8	70	28	2
32.633.1000	10	10	80	32	2
32.633.1200	12	12	90	38	2
32.633.1600	16	16	95	52	2
32.633.2000	20	20	110	55	2

› 32.750 Phantom

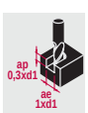
NL **VHM-MG Schachtfrees, 2-snijder extra lang**
FR **Fraise à rainurer 2 dents Carbure MG extra longue**
ES **Fresa de ranurar de 2 labios MD-MG extra larga**
DE **VHM-MG Langlochfräser (2-Schneider) extra lang**



MG HM | Phantom | 30° | h6

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

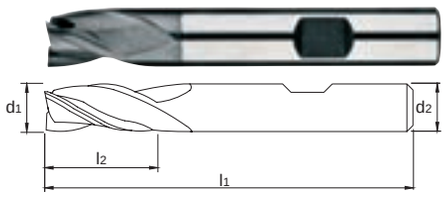


Ref.	d1	d2	l1	l2	z
32.750.0300	3	3	75	30	2
32.750.0400	4	4	75	30	2
32.750.0500	5	5	100	40	2
32.750.0600	6	6	150	50	2
32.750.0800	8	8	150	50	2
32.750.1000	10	10	150	60	2
32.750.1200	12	12	150	75	2
32.750.1400	14	14	150	65	2
32.750.1600	16	16	150	65	2
32.750.1800	18	18	150	65	2
32.750.2000	20	20	150	65	2

19:00 ▶ 🛒 ▶ 24h

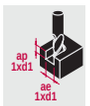
› 33.244 Phantom

NL **VHM-MG Schachtfrees, 3-snijder AlTiN-X, DIN 6527, kort**
FR **Fraise universelle Carbure MG AlTiN-X, DIN 6527, courte**
ES **Fresa frontal de 3 labios MD-MG AlTiN-X, DIN 6527, corta**
DE **VHM-MG Universalfräser AlTiN-X, DIN 6527, kurz**



MG HM | AlTiN X | DIN 6527 | 30° | DIN 6535-HB

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



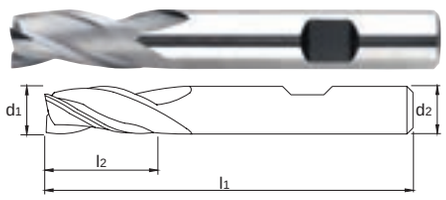
Ref.	d1	d2	l1	l2	z
33.244.0200	2	6	50	3	3
33.244.0300	3	6	50	4	3
33.244.0350	3.5	6	50	4	3
33.244.0400	4	6	54	5	3
33.244.0450	4.5	6	54	5	3
33.244.0500	5	6	54	6	3

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

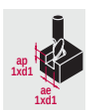
› 33.250 Phantom

NL **VHM-MG Schachtfrees, 3-snijder DIN 6527, lang**
FR **Fraise universelle Carbure MG DIN 6527, longue**
ES **Fresa frontal de 3 labios MD-MG DIN 6527, larga**
DE **VHM-MG Universalfräser DIN 6527, lang**



MG HM | DIN 6527 | 30° | DIN 6535-HB

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 J	55-65 I	50-60 H	35-50 H	42-50 H	25-32 G	60-70 I	80-85 I	145-180 J	70-90 H	100-110 J	30-55 H	40-50 F	18-25 F



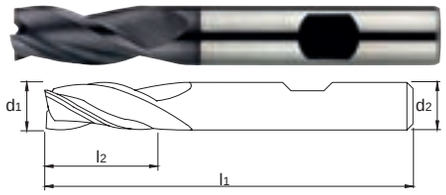
Ref.	d1	d2	l1	l2	z
33.250.0300	3	6	57	7	3
33.250.0400	4	6	57	8	3
33.250.0500	5	6	57	10	3

Ref.	d1	d2	l1	l2	z
33.250.0600	6	6	57	10	3
33.250.0800	8	8	63	16	3
33.250.1000	10	10	72	19	3

Ref.	d1	d2	l1	l2	z
33.250.1200	12	12	83	22	3
33.250.1600	16	16	92	26	3
33.250.2000	20	20	104	32	3

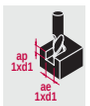
› 33.254 Phantom

NL **VHM-MG Schachtfrees, 3-snijder AlTiN-X, DIN 6527, lang**
FR **Fraise universelle Carbure MG AlTiN-X, DIN 6527, longue**
ES **Fresa frontal de 3 labios MD-MG AlTiN-X, DIN 6527, larga**
DE **VHM-MG Universalfräser AlTiN-X, DIN 6527, lang**



MG HM | AlTiN X | DIN 6527 | 30° | DIN 6535-HB

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

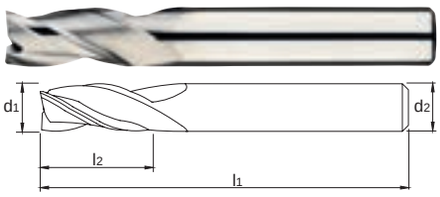


Ref.	d1	d2	l1	l2	z
33.254.0300	3	6	57	7	3
33.254.0400	4	6	57	8	3
33.254.0500	5	6	57	10	3

Ref.	d1	d2	l1	l2	z
33.254.0600	6	6	57	10	3
33.254.0800	8	8	63	16	3
33.254.1000	10	10	72	19	3

Ref.	d1	d2	l1	l2	z
33.254.1200	12	12	83	22	3
33.254.1600	16	16	92	26	3
33.254.2000	20	20	104	32	3

› 33.255 Phantom



NL **VHM-MG Schachtfrees, 3-snijder**
FR **Fraise universelle Carbure MG**
ES **Fresa frontal de 3 labios MD-MG**
DE **VHM-MG Universalfräser**

MG HM | Phantom | 30° | h6

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 J	55-65 I	50-60 H	35-50 H	42-50 H	25-32 G	60-70 I	80-85 I	145-180 J	70-90 H	100-110 J	30-55 H	40-50 F	18-25 F

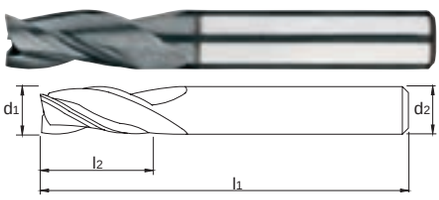


Ref.	d1	d2	l1	l2	z
33.255.0300	3	3	38	7	3
33.255.0400	4	4	50	8	3
33.255.0500	5	5	50	10	3

Ref.	d1	d2	l1	l2	z
33.255.0600	6	6	57	10	3
33.255.0800	8	8	63	16	3
33.255.1000	10	10	72	19	3

Ref.	d1	d2	l1	l2	z
33.255.1200	12	12	83	22	3

› 33.256 Phantom



NL **VHM-MG Schachtfrees, 3-snijder AlTiN-X**
FR **Fraise universelle Carbure MG AlTiN-X**
ES **Fresa frontal de 3 labios MD-MG AlTiN-X**
DE **VHM-MG Universalfräser AlTiN-X**

MG HM | AlTiN X | Phantom | 30° | h6

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

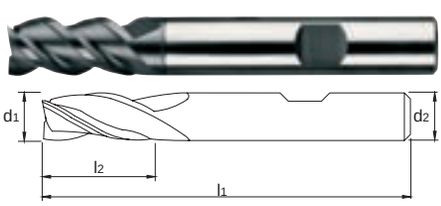


Ref.	d1	d2	l1	l2	z
33.256.0100	1	3	38	3	3
33.256.0150	1.5	3	38	4	3
33.256.0200	2	3	38	6	3
33.256.0250	2.5	3	38	7	3
33.256.0300	3	3	38	7	3
33.256.0350	3.5	3.5	50	7	3
33.256.0400	4	4	50	8	3
33.256.0450	4.5	4.5	50	8	3

Ref.	d1	d2	l1	l2	z
33.256.0500	5	5	50	10	3
33.256.0600	6	6	57	10	3
33.256.0700	7	8	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

Ref.	d1	d2	l1	l2	z
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

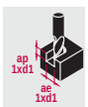
› 33.544 Phantom



NL **VHM-MG Schachtfrees, 3-snijder AlTiN-X, DIN 6527, lang, roestvaststaal**
FR **Fraise universelle Carbure MG AlTiN-X, DIN 6527, longue, Inox**
ES **Fresa frontal de 3 labios MD-MG AlTiN-X, DIN 6527, larga, acero inoxidable**
DE **VHM-MG Universalfräser AlTiN-X, DIN 6527, lang, rostfreien Stahl**

MG HM | AlTiN X | DIN 6527 | 45° | DIN 6535-HB | 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

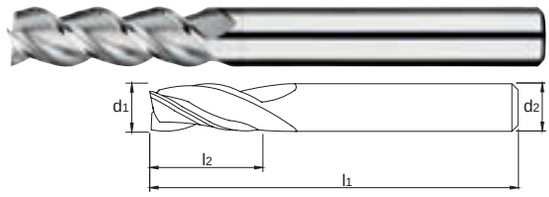
Ref.	d1	d2	l1	l2	z
33.544.0600	6	6	57	10	3
33.544.0800	8	8	63	16	3
33.544.1000	10	10	72	19	3

Ref.	d1	d2	l1	l2	z
33.544.1200	12	12	83	22	3
33.544.1600	16	16	92	26	3
33.544.2000	20	20	104	32	3

19:00 ▶ 🛒 ▶ 24h

› 33.633 Phantom

NL **VHM-MG Schachtfrees, 3-snijder TiCN, lang, Aluminium**
FR **Fraise universelle Carbure MG TiCN, longue, Aluminium**
ES **Fresa frontal de 3 labios MD-MG TiCN, larga, Aluminio**
DE **VHM-MG Universalfräser TiCN, lang, Aluminium**



MG HM | TiCN | Phantom | 45° | h6 | ALU

N 41 Alu | N 51 Cu | N 61 PVC

280-350 P | 300-400 P | 400-600 P

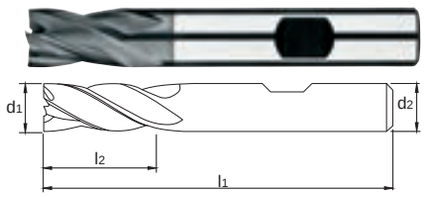


Ref.	d1	d2	l1	l2	z
33.633.0300	3	6	65	4	3
33.633.0400	4	6	65	16	3
33.633.0500	5	6	70	22	3

Ref.	d1	d2	l1	l2	z
33.633.0600	6	6	70	22	3
33.633.0800	8	8	80	28	3
33.633.1000	10	10	90	32	3

Ref.	d1	d2	l1	l2	z
33.633.1200	12	12	95	38	3
33.633.1600	16	16	110	52	3
33.633.2000	20	20	110	55	3

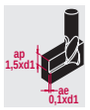
› 34.244 Phantom



NL **VHM-MG Schachtfrees, 4-snijder AlTiN-X, DIN 6527, kort**
FR **Fraise standard Carbure MG AlTiN-X, DIN 6527, courte**
ES **Fresa frontal de varios labios MD-MG AlTiN-X, DIN 6527, corta**
DE **VHM-MG 4 Schneiden-Schaftfräser AlTiN-X, DIN 6527, kurz**

MG HM | AlTiN X | DIN 6527 | 30° | DIN 6535-HB

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

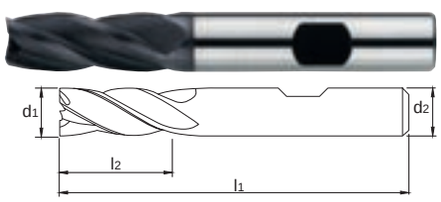


Ref.	d1	d2	l1	l2	z
34.244.0200	2	6	50	4	4
34.244.0300	3	6	50	5	4
34.244.0400	4	6	54	8	4
34.244.0500	5	6	54	9	4

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

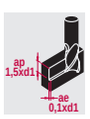
› 34.254 Phantom



NL **VHM-MG Schachtfrees, 4-snijder AlTiN-X, DIN 6527, lang**
FR **Fraise standard Carbure MG AlTiN-X, DIN 6527, longue**
ES **Fresa frontal de varios labios MD-MG AlTiN-X, DIN 6527, larga**
DE **VHM-MG 4 Schneiden-Schaftfräser AlTiN-X, DIN 6527, lang**

MG HM | AlTiN X | DIN 6527 | 30° | DIN 6535-HB

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

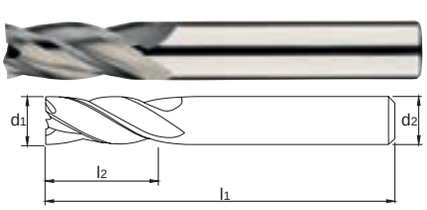


Ref.	d1	d2	l1	l2	z
34.254.0600	6	6	57	13	4
34.254.0800	8	8	63	19	4

Ref.	d1	d2	l1	l2	z
34.254.1000	10	10	72	22	4
34.254.1200	12	12	83	26	4

Ref.	d1	d2	l1	l2	z
34.254.1600	16	16	92	32	4
34.254.2000	20	20	104	38	4

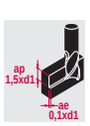
› 34.255 Phantom



NL **VHM-MG Schachtfrees, 4-snijder**
FR **Fraise standard Carbure MG**
ES **Fresa frontal de varios labios MD-MG**
DE **VHM-MG 4 Schneiden-Schaftfräser**

MG HM | Phantom | 30° | h6

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 J	55-65 I	50-60 H	35-50 H	42-50 H	25-32 G	60-70 I	80-85 I	145-180 J	70-90 H	100-110 J	30-55 H	40-50 F	18-25 F



Ref.	d1	d2	l1	l2	z
34.255.0300	3	3	32	12	4
34.255.0400	4	4	40	12	4
34.255.0500	5	5	50	14	4

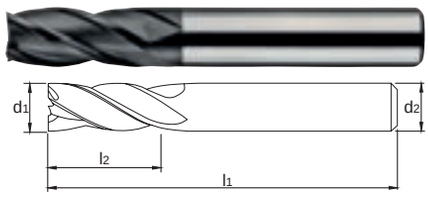
Ref.	d1	d2	l1	l2	z
34.255.0600	6	6	50	16	4
34.255.0800	8	8	60	20	4
34.255.1000	10	10	70	22	4

Ref.	d1	d2	l1	l2	z
34.255.1200	12	12	70	22	4

19:00 ▶ 24h

› 34.256 Phantom

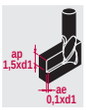
NL **VHM-MG Schachtfrees, 4-snijder AlTiN-X**
FR **Fraise standard Carbure MG AlTiN-X**
ES **Fresa frontal de varios labios MD-MG AlTiN-X**
DE **VHM-MG 4 Schneiden-Schaftfräser AlTiN-X**



MG HM | AlTiN X | Phantom | 30° | h6

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 | S 71 Ni/Co | S 72 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



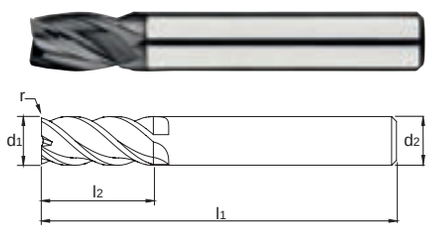
Ref.	d1	d2	l1	l2	z
34.256.0100	1	4	40	3	4
34.256.0150	1.5	4	40	4.5	4
34.256.0200	2	2	32	8	4
34.256.0250	2.5	2.5	32	8	4
34.256.0300	3	3	32	12	4
34.256.0350	3.5	3.5	32	12	4
34.256.0400	4	4	40	12	4
34.256.0450	4.5	4.5	50	14	4

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

› 34.258 Phantom

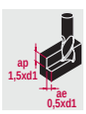
NL **VHM-MG Vari-frees, 4-snijder AlTiN-X, kort, snijkantradius, staal, 30-45 HRc**
FR **Fraise Vari Carbure MG AlTiN-X, courte, rayon de coupe, acier, 30-45 HRc**
ES **Fresa Vari MD-MG AlTiN-X, corta, radio de corte, acero, 30-45 HRc**
DE **VHM-MG Fräser mit ungleicher Teilung AlTiN-X, kurz, Radius an der Schneidenecke, Stahl, 30-45 HRc**



MG HM | VARI | AlTiN X | DIN 6527 | r | h6 | d1 ±0,00 -0,03

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

105-150 H | 120-150 I | 125-140 I | 95-110 I | 25-40 G | 75-96 I | 65-80 H | 100-120 J | 130-140 J



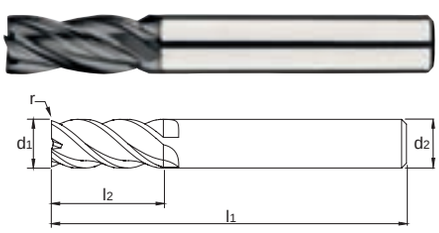
Ref.	d1	d2	l1	l2	r	z
34.258.0314	3	6	50	5	0.3	4
34.258.0414	4	6	54	8	0.3	4
34.258.0514	5	6	54	9	0.3	4

Ref.	d1	d2	l1	l2	r	z
34.258.0634	6	6	54	10	0.4	4
34.258.0834	8	8	58	12	0.4	4
34.258.1034	10	10	66	14	0.4	4

Ref.	d1	d2	l1	l2	r	z
34.258.1254	12	12	73	16	0.6	4
34.258.1674	16	16	82	22	0.8	4
34.258.2094	20	20	92	24	0.8	4

› 34.262 Phantom

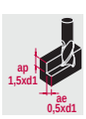
NL **VHM-MG Vari-frees, 4-snijder AlTiN-X, lang, snijkantradius, staal, 30-45 HRc**
FR **Fraise Vari Carbure MG AlTiN-X, longue, rayon de coupe, acier, 30-45 HRc**
ES **Fresa Vari MD-MG AlTiN-X, larga, radio de corte, acero, 30-45 HRc**
DE **VHM-MG Fräser mit ungleicher Teilung AlTiN-X, lang, Radius an der Schneidenecke, Stahl, 30-45 HRc**



MG HM | VARI | AlTiN X | DIN 6527 | r | h6 | d1 ±0,00 -0,03

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

105-150 H | 120-150 I | 125-140 I | 95-110 I | 25-40 G | 75-96 I | 65-80 H | 100-120 J | 130-140 J

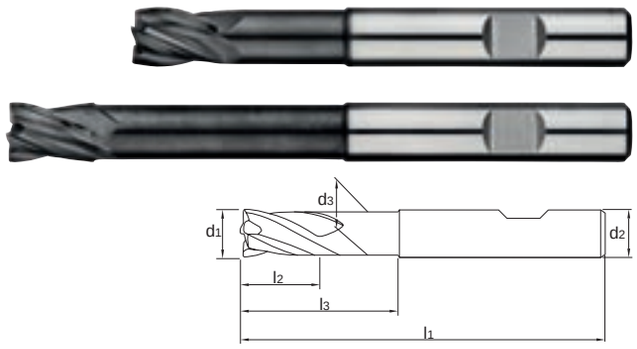


Ref.	d1	d2	l1	l2	r	z
34.262.0314	3	6	57	8	0.3	4
34.262.0414	4	6	57	11	0.3	4
34.262.0514	5	6	57	13	0.3	4

Ref.	d1	d2	l1	l2	r	z
34.262.0634	6	6	57	13	0.4	4
34.262.0834	8	8	63	19	0.4	4
34.262.1034	10	10	72	22	0.4	4

Ref.	d1	d2	l1	l2	r	z
34.262.1254	12	12	83	26	0.6	4
34.262.1674	16	16	92	32	0.8	4
34.262.2074	20	20	104	38	0.8	4

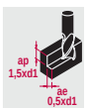
› 34.265 Phantom



NL **VHM-MG Vari-frees, 4-snijder AlTiN-X, verjongde schacht (nek), staal, 30-45 HRc**
FR **Fraise Vari Carbure MG AlTiN-X, queue détalonnée, acier, 30-45 HRc**
ES **Fresa Vari MD-MG AlTiN-X, mango rebajado (cuello), acero, 30-45 HRc**
DE **VHM-MG Fräser mit ungleicher Teilung AlTiN-X, abgesetztem Schaft, Stahl, 30-45 HRc**

MG HM | VARI | AlTiN X | Phantom | DIN 6535-HB | d1 ±0,00 -0,03

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW
105-150 H	120-150 I	125-140 I	95-110 I	25-40 G	75-96 I	65-80 H	100-120 J	130-140 J

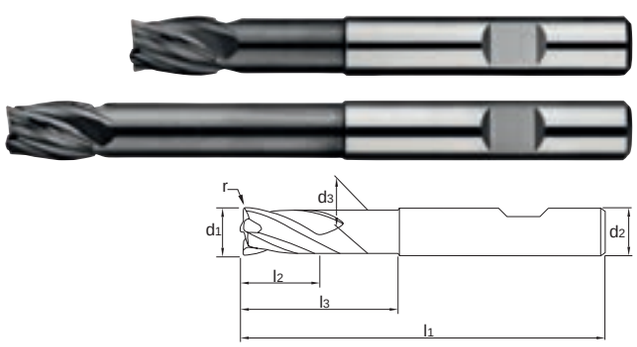


Ref.	d1	d2	d3	l1	l2	l3	z
34.265.0317	3	6	2.7	57	7	17	4
34.265.0422	4	6	3.7	63	8	22	4
34.265.0500	5	6	4.7	67	10	27	4
34.265.0620	6	6	5.5	62	10	20	4
34.265.0632	6	6	5.5	74	10	32	4

Ref.	d1	d2	d3	l1	l2	l3	z
34.265.0830	8	8	7.5	73	12	30	4
34.265.0846	8	8	7.5	90	12	46	4
34.265.1035	10	10	9.2	82	14	35	4
34.265.1055	10	10	9.2	102	14	55	4
34.265.1240	12	12	11	93	16	40	4

Ref.	d1	d2	d3	l1	l2	l3	z
34.265.1264	12	12	11	117	16	64	4
34.265.1655	16	16	15	109	22	55	4
34.265.1687	16	16	15	141	22	87	4

› 34.267 Phantom



NL **VHM-MG Vari-frees, 4-snijder AlTiN-X, verjongde schacht (nek), snijkantradius, staal, 30-45 HRc**
FR **Fraise Vari Carbure MG AlTiN-X, queue détalonnée, rayon de coupe, acier, 30-45 HRc**
ES **Fresa Vari MD-MG AlTiN-X, mango rebajado (cuello), radio de corte, acero, 30-45 HRc**
DE **VHM-MG Fräser mit ungleicher Teilung AlTiN-X, abgesetztem Schaft, Radius an der Schneidenecke, Stahl, 30-45 HRc**

MG HM | VARI | AlTiN X | Phantom | r | DIN 6535-HB | d1 ±0,00 -0,03

P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW
105-150 H	120-150 I	125-140 I	95-110 I	25-40 G	75-96 I	65-80 H	100-120 J	130-140 J

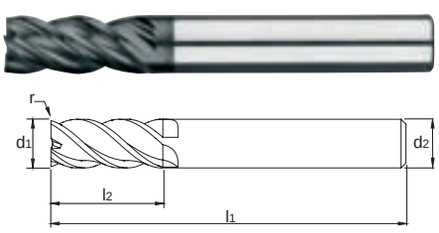


Ref.	d1	d2	d3	l1	l2	l3	r	z
34.267.0314	3	6	2.7	57	7	17	0.3	4
34.267.0414	4	6	3.7	63	8	22	0.3	4
34.267.0514	5	6	4.7	67	10	27	0.3	4
34.267.0634	6	6	5.5	62	10	20	0.5	4
34.267.0636	6	6	5.5	74	10	32	0.5	4

Ref.	d1	d2	d3	l1	l2	l3	r	z
34.267.0834	8	8	7.5	73	12	30	0.5	4
34.267.0836	8	8	7.5	90	12	46	0.5	4
34.267.1034	10	10	9.2	82	14	35	0.7	4
34.267.1036	10	10	9.2	102	14	55	0.7	4
34.267.1254	12	12	11	93	16	40	0.7	4

Ref.	d1	d2	d3	l1	l2	l3	r	z
34.267.1256	12	12	11	117	16	64	0.7	4
34.267.1674	16	16	15	109	22	55	1	4
34.267.1676	16	16	15	141	22	87	1	4
34.267.2074	20	20	19	104	26	50	1	4

› 34.268 Phantom



NL **VHM-MG Vari-frees, 4-snijder kort, AlTiN-X, snijkantradius, roestvaststaal**
FR **Fraise Vari Carbure MG courte, AlTiN-X, rayon de coupe, Inox**
ES **Fresa Vari MD-MG corta, AlTiN-X, radio de corte, acero inoxidable**
DE **VHM-MG Fräser mit ungleicher Drallsteigung kurz, AlTiN-X, Radius an der Schneidenecke, rostfreien Stahl**

MG HM | VARI | AlTiN X | Phantom | r | h6 | d1 ±0,00 -0,03 | INOX

P 13	P 14	M 21	M 22	K 31	K 32	N 52	S 71	S 72
≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	CuAlFe	Ni/Co	Ti
125-140 I	95-110 I	75-96 I	65-80 H	100-120 J	130-140 J	50-100 G	25-35 G	80-95 H



Ref.	d1	d2	l1	l2	r	z
34.268.0300	3	6	54	7	0.3	4
34.268.0400	4	6	54	8	0.3	4
34.268.0500	5	6	54	10	0.3	4

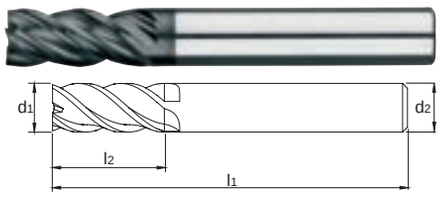
Ref.	d1	d2	l1	l2	r	z
34.268.0600	6	6	54	10	0.5	4
34.268.0800	8	8	58	12	0.5	4
34.268.1000	10	10	66	14	0.5	4

Ref.	d1	d2	l1	l2	r	z
34.268.1200	12	12	73	16	0.7	4
34.268.1600	16	16	82	22	1	4
34.268.2000	20	20	92	26	1	4

19:00 ▶ 🛒 ▶ 24h

› 34.270 Phantom

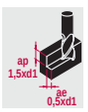
NL **VHM-MG Vari-frees, 4-snijder lang, AlTiN-X, roestvaststaal**
FR **Fraise Vari Carbure MG longue, AlTiN-X, Inox**
ES **Fresa Vari MD-MG larga, AlTiN-X, acero inoxidable**
DE **VHM-MG Fräser mit ungleicher Drallsteigung lang, AlTiN-X, rostfreien Stahl**



VARI | MG HM | AlTiN X | Phantom | h6 | d1 ±0,00 -0,03 | INOX

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 52 CuAlFe | S 71 Ni/Co | S 72 Ti

125-140 I | 95-110 I | 75-96 I | 65-80 H | 100-120 J | 130-140 J | 50-100 G | 25-35 G | 80-95 H



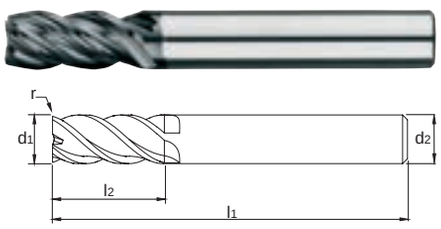
Ref.	d1	d2	l1	l2	z
34.270.0300	3	6	57	8	4
34.270.0400	4	6	57	11	4
34.270.0500	5	6	57	13	4
34.270.0600	6	6	57	13	4

Ref.	d1	d2	l1	l2	z
34.270.0800	8	8	63	19	4
34.270.1000	10	10	72	22	4
34.270.1200	12	12	83	26	4
34.270.1400	14	14	83	26	4

Ref.	d1	d2	l1	l2	z
34.270.1600	16	16	92	32	4
34.270.1800	18	18	92	32	4
34.270.2000	20	20	104	38	4
34.270.2500	25	25	104	38	4

› 34.272 Phantom

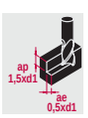
NL **VHM-MG Vari-frees, 4-snijder lang, AlTiN-X, snijkantradius, roestvaststaal**
FR **Fraise Vari Carbure MG longue, AlTiN-X, rayon de coupe, Inox**
ES **Fresa Vari MD-MG larga, AlTiN-X, radio de corte, acero inoxidable**
DE **VHM-MG Fräser mit ungleicher Drallsteigung lang, AlTiN-X, Radius an der Schneidenecke, rostfreien Stahl**



VARI | MG HM | AlTiN X | Phantom | r | h6 | d1 ±0,00 -0,03 | INOX

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 52 CuAlFe | S 71 Ni/Co | S 72 Ti

125-140 I | 95-110 I | 75-96 I | 65-80 H | 100-120 J | 130-140 J | 50-100 G | 25-35 G | 80-95 H



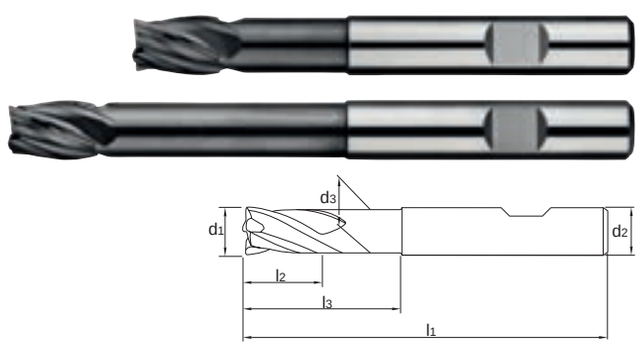
Ref.	d1	d2	l1	l2	r	z
34.272.0300	3	6	57	8	0.3	4
34.272.0400	4	6	57	11	0.3	4
34.272.0500	5	6	57	13	0.3	4
34.272.0600	6	6	57	13	0.5	4

Ref.	d1	d2	l1	l2	r	z
34.272.0800	8	8	63	19	0.5	4
34.272.1000	10	10	72	22	0.5	4
34.272.1200	12	12	83	26	0.7	4
34.272.1400	14	14	83	26	0.7	4

Ref.	d1	d2	l1	l2	r	z
34.272.1600	16	16	92	32	1	4
34.272.1800	18	18	92	32	1	4
34.272.2000	20	20	104	38	1	4
34.272.2500	25	25	104	38	1	4

› 34.275 Phantom

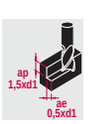
NL **VHM-MG Vari-frees, 4-snijder AlTiN-X, verjongde schacht (nek), roestvaststaal**
FR **Fraise Vari Carbure MG AlTiN-X, queue détalonnée, Inox**
ES **Fresa Vari MD-MG AlTiN-X, mango rebajado (cuello), acero inoxidable**
DE **VHM-MG Fräser mit ungleicher Drallsteigung AlTiN-X, abgesetztem Schaft, rostfreien Stahl**



VARI | MG HM | AlTiN X | Phantom | DIN 6535-HB | d1 ±0,00 -0,03 | INOX

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 52 CuAlFe | S 71 Ni/Co | S 72 Ti

125-140 I | 95-110 I | 75-96 I | 65-80 H | 100-120 J | 130-140 J | 50-100 G | 25-35 G | 80-95 H

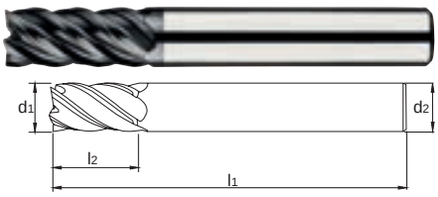


Ref.	d1	d2	d3	l1	l2	l3	z
34.275.0317	3	6	2.7	57	7	17	4
34.275.0422	4	6	3.7	63	8	22	4
34.275.0500	5	6	4.7	67	10	27	4
34.275.0620	6	6	5.5	62	10	20	4
34.275.0632	6	6	5.5	74	10	32	4

Ref.	d1	d2	d3	l1	l2	l3	z
34.275.0830	8	8	7.5	73	12	30	4
34.275.0846	8	8	7.5	90	12	45	4
34.275.1035	10	10	9.2	82	14	35	4
34.275.1055	10	10	9.2	102	14	55	4
34.275.1240	12	12	11	93	16	40	4

Ref.	d1	d2	d3	l1	l2	l3	z
34.275.1264	12	12	11	117	16	64	4
34.275.1655	16	16	15	109	22	55	4
34.275.1687	16	16	48	141	22	87	4

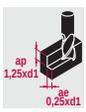
› 34.278 Phantom



NL **VHM-MG Vari-frees, 5-snijder lang, AlTiN-X, roestvaststaal**
FR **Fraise Vari Carbure MG longue, AlTiN-X, Inox**
ES **Fresa Vari MD-MG larga, AlTiN-X, acero inoxidable**
DE **VHM-MG Fräser mit ungleicher Drallsteigung lang, AlTiN-X, rostfreien Stahl**

MG HM | VARI | AlTiN X | Phantom | h6 | d1 ±0,00 -0,03 | INOX

P 13	P 14	M 21	M 22	K 31	K 32	N 52	S 71	S 72
≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	CuAlFe	Ni/Co	Ti
125-140 I	95-110 I	75-96 I	65-80 H	100-120 J	130-140 J	50-100 G	25-35 G	80-95 H

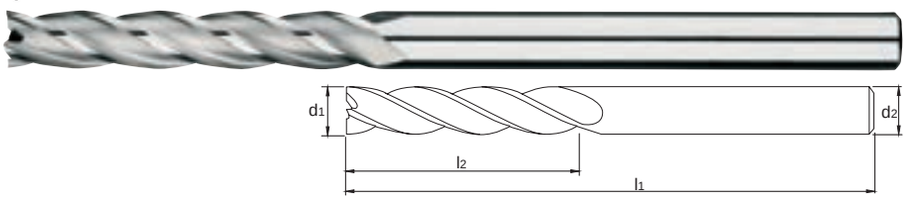


Ref.	d1	d2	l1	l2	z
34.278.0600	6	6	57	13	5
34.278.0800	8	8	63	19	5

Ref.	d1	d2	l1	l2	z
34.278.1000	10	10	72	22	5
34.278.1200	12	12	83	26	5

Ref.	d1	d2	l1	l2	z
34.278.1600	16	16	92	32	5
34.278.2000	20	20	104	38	5

› 34.375 Phantom



NL **VHM-MG Schachtfrees, 4-snijder extra lang**
FR **Fraise standard Carbure MG extra longue**
ES **Fresa frontal de varios labios MD-MG extra larga**
DE **VHM-MG 4 Schneiden-Schaftfräser extra lang**

MG HM | Phantom | 30° | h6

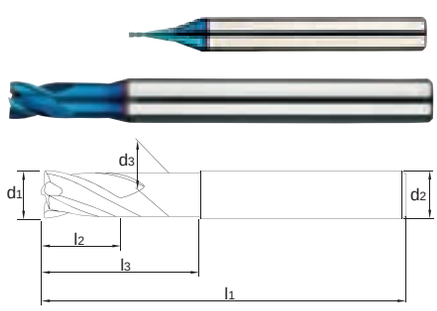
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 43	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	PVC
55-65 G	55-65 G	50-60 F	35-50 F	42-50 F	25-32 G	60-70 G	80-85 G	145-180 H	70-90 F	100-110 H	30-55 F	40-50 F

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

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
34.375.1600	16	16	150	65	4
34.375.1800	18	18	150	65	4
34.375.2000	20	20	150	65	4

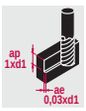
› 34.400 Phantom



NL **VHM-NG HSC Schachtfrees, 4-snijder TiAlN-B, verjongde schacht (nek), 45-70 HRc**
FR **Fraise UGV - Usinage Grande Vitesse Carbure NG TiAlN-B, queue détalonnée, 45-70 HRc**
ES **Fresa integral MAV MD-NG TiAlN-B, mango rebajado (cuello), 45-70 HRc**
DE **VHM-NG HSC High-Speed Schaftfräser TiAlN-B, abgesetztem Schaft, 45-70 HRc**

NG HM | TiAlN B | Phantom | 30° | h6 | HSC

P 14	H 15
≤1400 N/mm²	HRC
150-210 K	80-120 F



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

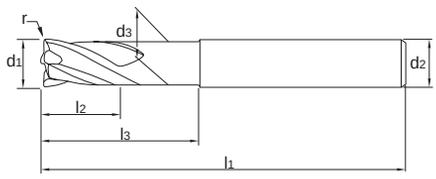
Ref.	d1	d2	d3	l1	l2	l3	z
34.400.0500	5	6	4.85	55	5	13	4
34.400.0600	6	6	5.85	55	6	15	4
34.400.0800	8	8	7.7	65	8	20	4
34.400.1000	10	10	9.7	75	10	25	4

Ref.	d1	d2	d3	l1	l2	l3	z
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

19:00 ▶ 24h

› 34.410 Phantom



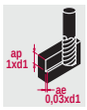


NL **VHM-NG HSC Torusfrees, 4-snijder verjongde schacht (nek), TiAlN-B, 45-70 HRc**
FR **Fraise torique UGV - Usinage Grande Vitesse Carbure NG queue détalonnée, TiAlN-B, 45-70 HRc**
ES **Fresa tórica MAV MD-NG mango rebajado (cuello), TiAlN-B, 45-70 HRc**
DE **VHM-NG HSC Torusfräser abgesetztem Schaft, TiAlN-B, 45-70 HRc**

NG HM | TiAlN B | Phantom | r | 30° | h6 | HSC

P 14 ≤1400 N/mm² | H 15 HRC

150-210 K | 80-120 F

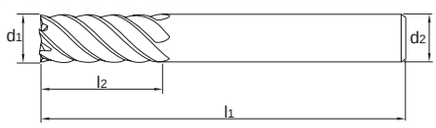


Ref.	d1	d2	d3	l1	l2	l3	r	z
34.410.0605	6	6	5.85	90	9	20	0.5	4
34.410.0610	6	6	5.85	90	9	20	1	4
34.410.0805	8	8	7.7	100	12	25	0.5	4
34.410.0810	8	8	7.7	100	12	25	1	4
34.410.1005	10	10	9.7	100	15	32	0.5	4

Ref.	d1	d2	d3	l1	l2	l3	r	z
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

› 34.424 Phantom



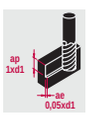


NL **VHM-MG Schachtfrees, meersnijder AlTiN-X, lang, HRC, 30-65 HRc**
FR **Fraise standard Carbure MG AlTiN-X, longue, HRC, 30-65 HRc**
ES **Fresa frontal de varios labios MD-MG AlTiN-X, larga, HRC, 30-65 HRc**
DE **VHM-MG Mehrschneiden-Schaftfräser AlTiN-X, lang, HRC, 30-65 HRc**

MG HM | MG HM | AlTiN X | Phantom | 45° | DIN 6535-HB | HRC

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | H 15 HRC

105-120 O | 85-105 N | 20-30 H



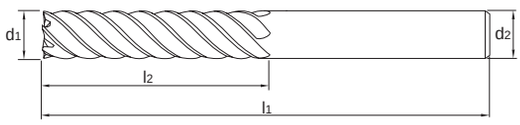
Ref.	d1	d2	l1	l2	z
34.424.0600	6	6	57	13	6
34.424.0700	7	8	63	16	6
34.424.0800	8	8	63	19	6
34.424.0900	9	10	72	19	6

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
34.424.1800	18	18	92	32	8
34.424.2000	20	20	104	38	8
34.424.2500	25	25	104	44	8

› 34.464 Phantom



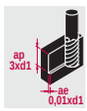


NL **VHM-MG Schachtfrees, meersnijder AlTiN-X, extra lang, HRC, 30-65 HRc**
FR **Fraise standard Carbure MG AlTiN-X, extra longue, HRC, 30-65 HRc**
ES **Fresa frontal de varios labios MD-MG AlTiN-X, extra larga, HRC, 30-65 HRc**
DE **VHM-MG Mehrschneiden-Schaftfräser AlTiN-X, extra lang, HRC, 30-65 HRc**

MG HM | AlTiN X | Phantom | 45° | h6 | DIN 6535-HB | HRC

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | H 15 HRC

105-120 O | 75-85 N | 20-30 H

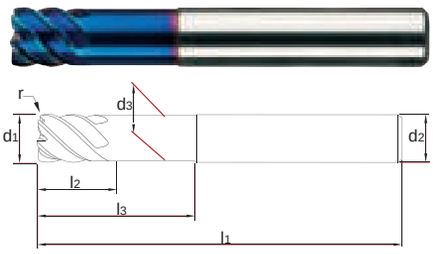


Ref.	d1	d2	l1	l2	z
34.464.0600	6	6	70	26	6
34.464.0800	8	8	90	36	6
34.464.1000	10	10	100	46	6

Ref.	d1	d2	l1	l2	z
34.464.1200	12	12	110	56	6
34.464.1600	16	16	130	66	6
34.464.2000	20	20	140	76	6

Ref.	d1	d2	l1	l2	z
34.464.2500	25	25	180	92	6

› 34.510 Phantom

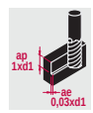


NL **VHM-NG HSC Torusfrees, 6-snijder verjongde schacht (nek), TiAlN-B, 45-70 HRc**
FR **Fraise torique UGV - Usinage Grande Vitesse Carbure NG queue détalonnée, TiAlN-B, 45-70 HRc**
ES **Fresa tórica MAV MD-NG mango rebajado (cuello), TiAlN-B, 45-70 HRc**
DE **VHM-NG HSC Torusfräser abgesetztem Schaft, TiAlN-B, 45-70 HRc**

NG HM | TiAlN B | Phantom | r | 45° | h6 | HSC

P 14 ≤1400 N/mm² | H 15 HRC

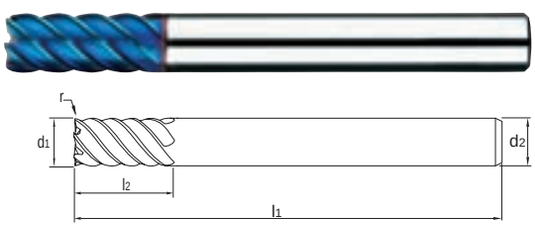
330-475 K | 200-330 I



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

Ref.	d1	d2	d3	l1	l2	l3	r	z
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

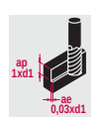


NL **VHM-NG HSC Schachtfrees, 6-snijder TiAlN-B, snijkantradius, 45-70 HRc**
FR **Fraise UGV - Usinage Grande Vitesse Carbure NG TiAlN-B, rayon de coupe, 45-70 HRc**
ES **Fresa integral MAV MD-NG TiAlN-B, radio de corte, 45-70 HRc**
DE **VHM-NG HSC High-Speed Schaftfräser TiAlN-B, Radius an der Schneidenecke, 45-70 HRc**

NG HM | TiAlN B | Phantom | r | 45° | h6 | 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

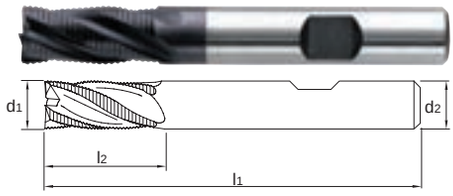
Ref.	d1	d2	l1	l2	r	z
34.515.1033	10	10	100	46	1	6
34.515.1221	12	12	110	26	0.5	6
34.515.1232	12	12	110	26	1	6
34.515.1233	12	12	110	56	1	6
34.515.1631	16	16	130	32	1	6
34.515.1642	16	16	130	32	1.5	6

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

19:00 ▶ 24h

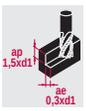
› 35.244 Phantom

NL **VHM-MG Ruwfrees TiAlN, fijn, staal**
FR **Fraise d'ébauche Carbure MG TiAlN, pas fin, acier**
ES **Fresa de desbaste MD-MG TiAlN, paso fino, acero**
DE **VHM-MG Schruppfräser TiAlN, fein, Stahl**



MG HM | TiAlN | DIN 844-B | 20° | DIN 6535-HB

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



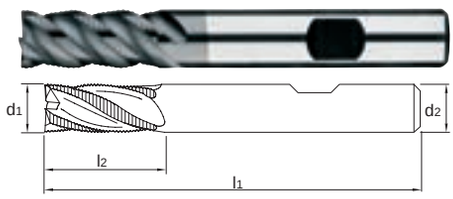
Ref.	d1	d2	l1	l2	z
35.244.0400	4	6	57	11	3
35.244.0600	6	6	57	13	3
35.244.0800	8	8	63	16	3

Ref.	d1	d2	l1	l2	z
35.244.1000	10	10	72	22	4
35.244.1200	12	12	83	26	4
35.244.1400	14	14	83	26	4

Ref.	d1	d2	l1	l2	z
35.244.1600	16	16	92	32	4
35.244.2000	20	20	104	38	4
35.244.2500	25	25	121	45	5

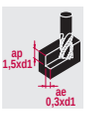
› 35.484 Phantom

NL **VHM-MG Ruwfrees TiAlN, fijn, roestvaststaal, 30-40 HRc**
FR **Fraise d'ébauche Carbure MG TiAlN, pas fin, Inox, 30-40 HRc**
ES **Fresa de desbaste MD-MG TiAlN, paso fino, acero inoxidable, 30-40 HRc**
DE **VHM-MG Schruppfräser TiAlN, fein, rostfreien Stahl, 30-40 HRc**



MG HM | TiAlN | Phantom | 45° | DIN 6535-HB | 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



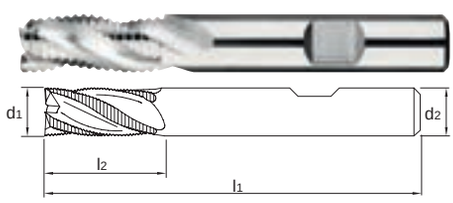
Ref.	d1	d2	l1	l2	z
35.484.0400	4	6	57	11	3
35.484.0500	5	6	57	13	4
35.484.0600	6	6	57	16	4

Ref.	d1	d2	l1	l2	z
35.484.0800	8	8	63	16	4
35.484.1000	10	10	72	22	4
35.484.1200	12	12	83	26	4

Ref.	d1	d2	l1	l2	z
35.484.1400	14	14	83	26	5
35.484.1600	16	16	92	32	5
35.484.2000	20	20	104	38	6

› 35.540 Phantom

NL **VHM-MG Ruwfrees rond, Aluminium**
FR **Fraise d'ébauche Carbure MG ronde, Aluminium**
ES **Fresa de desbaste MD-MG redondo, Aluminio**
DE **VHM-MG Schruppfräser rund, Aluminium**



MG HM | WR | Phantom | 30° | DIN 6535-HB | 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



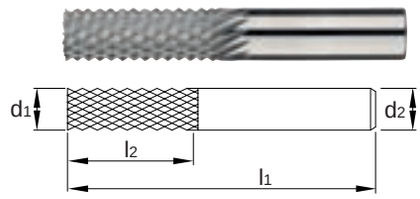
Ref.	d1	d2	l1	l2	z
35.540.0600	6	6	57	13	3
35.540.0800	8	8	63	16	3

Ref.	d1	d2	l1	l2	z
35.540.1000	10	10	72	22	3
35.540.1200	12	12	83	26	3

Ref.	d1	d2	l1	l2	z
35.540.1600	16	16	92	32	3
35.540.2000	20	20	104	38	3

› 35.852 Phantom

NL **VHM-MG Router zonder kopvertanding**
FR **Fraise à contourner Carbure MG sans denture en bout**
ES **Fresa de contornear MD-MG sin corte al centro**
DE **VHM-MG Router ohne Kopfverzahnung**



MG HM

N 62 GFK/CFK

100-200

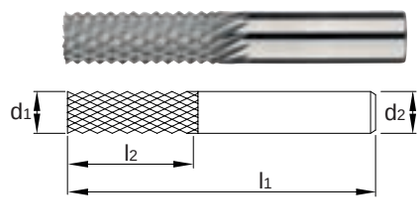
Ref.	d1	d2	l1	l2
35.852.0300	3	3	45	13
35.852.0400	4	4	50	16

Ref.	d1	d2	l1	l2
35.852.0600	6	6	63	19
35.852.0800	8	8	63	25

Ref.	d1	d2	l1	l2
35.852.1000	10	10	63	25
35.852.1200	12	12	75	30

› 35.860 Phantom

NL **VHM-MG Router met kopvertanding**
FR **Fraise à contourner Carbure MG avec denture en bout**
ES **Fresa de contornear MD-MG con corte al centro**
DE **VHM-MG Router mit Stirnverzahnung**



MG HM

N 62 GFK/CFK

100-200

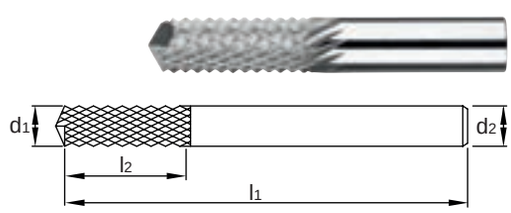
Ref.	d1	d2	l1	l2
35.860.0300	3	3	45	13
35.860.0400	4	4	50	16

Ref.	d1	d2	l1	l2
35.860.0600	6	6	63	19
35.860.0800	8	8	63	25

Ref.	d1	d2	l1	l2
35.860.1000	10	10	63	25
35.860.1200	12	12	75	30

› 35.868 Phantom

NL **VHM-MG Router met boorpunt**
FR **Fraise à contourner Carbure MG avec pointe de perçage**
ES **Fresa de contornear MD-MG con punta de taladro**
DE **VHM-MG Router mit Bohrspitze**



MG HM

N 62 GFK/CFK

100-200

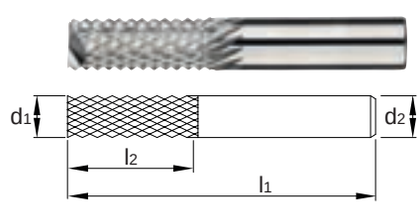
Ref.	d1	d2	l1	l2
35.868.0300	3	3	45	13
35.868.0400	4	4	50	16

Ref.	d1	d2	l1	l2
35.868.0600	6	6	63	19
35.868.0800	8	8	63	25

Ref.	d1	d2	l1	l2
35.868.1000	10	10	63	25
35.868.1200	12	12	75	30

› 35.876 Phantom

NL **VHM-MG Router twee snijkanten, kopvertanding**
FR **Fraise à contourner Carbure MG à deux taillants, denture en bout**
ES **Fresa de contornear MD-MG con dos labios, corte al centro**
DE **VHM-MG Router zwei Schneiden, Kopfverzahnung**



MG HM

N 62 GFK/CFK

100-200

Ref.	d1	d2	l1	l2
35.876.0300	3	3	45	13
35.876.0400	4	4	50	16

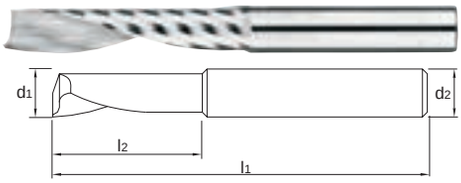
Ref.	d1	d2	l1	l2
35.876.0600	6	6	63	19
35.876.0800	8	8	63	25

Ref.	d1	d2	l1	l2
35.876.1000	10	10	63	25
35.876.1200	12	12	75	30

19:00 ▶ 24h

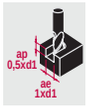
› 36.130 Phantom

NL **VHM-MG Eensnijderfrees Aluminium**
FR **Fraise à 1 dent Carbure MG Aluminium**
ES **Fresa frontal de 1 labio MD-MG Aluminio**
DE **VHM-MG Einzahnfräser Aluminium**



MG HM | Phantom | 21° | h6 | ALU

N 41 Alu — 300-450 H
N 61 PVC — 300-450 H



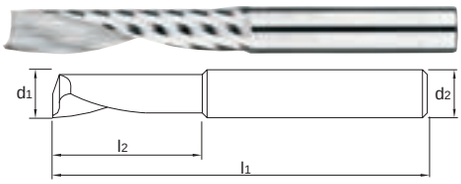
Ref.	d1	d2	l1	l2	z
36.130.0201	2	2	50	8	1
36.130.0202	2	6	64	8	1
36.130.0251	2.5	2.5	50	8	1
36.130.0252	2.5	6	64	8	1
36.130.0301	3	3	50	8	1
36.130.0302	3	6	64	8	1
36.130.0303	3	3	64	12	1
36.130.0304	3	6	64	12	1

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 **VHM-MG Eensnijderfrees Aluminium**
FR **Fraise à 1 dent Carbure MG Aluminium**
ES **Fresa frontal de 1 labio MD-MG Aluminio**
DE **VHM-MG Einzahnfräser Aluminium**



MG HM | Phantom | 30° | h6 | ALU

N 41 Alu — 300-450 H
N 42 Alu Si>10% — 145-220 I
N 61 PVC — 300-450 H



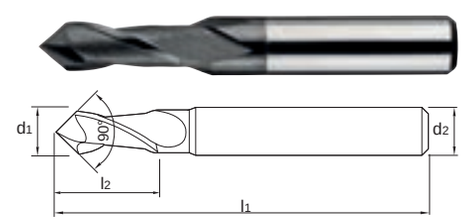
Ref.	d1	d2	l1	l2	z
36.140.0200	2	3	50	8	1
36.140.0250	2.5	3	40	12	1
36.140.0300	3	3	50	12	1

Ref.	d1	d2	l1	l2	z
36.140.0400	4	4	60	15	1
36.140.0500	5	5	60	17	1
36.140.0600	6	6	65	20	1

Ref.	d1	d2	l1	l2	z
36.140.0800	8	8	65	22	1
36.140.1000	10	10	75	25	1
36.140.1200	12	12	80	30	1

› 36.164 Phantom

NL **VHM-MG Multi-frees AlTiN-X, 90°**
FR **Fraise pour rainures Carbure MG AlTiN-X, 90°**
ES **Fresa para ranuras MD-MG AlTiN-X, 90°**
DE **VHM-MG Multifräser AlTiN-X, 90°**



MG HM | AlTiN X | Phantom | 30° | h6

P 11 ≤600 N/mm² — 70-75 S
P 12 ≤850 N/mm² — 40-60 S
P 13 ≤1000 N/mm² — 35-40 S
P 14 ≤1400 N/mm² — 30-35 Q
M 21 INOX ≤850N/mm² — 30-35 Q
M 22 INOX >850N/mm² — 25-30 P
N 41 Alu — 150-180 S
N 42 Alu Si>10% — 120-150 S
N 51 Cu — 50-120 S
N 61 PVC — 150-180 s
S 71 Ni/Co — 20-25 P
S 72 Ti — 30-35 P

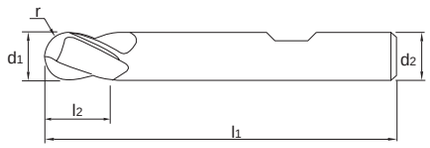
Ref.	d1	d2	l1	l2	z
36.164.0300	3	4	50	6	2
36.164.0400	4	5	50	8	2
36.164.0500	5	6	50	10	2
36.164.0600	6	8	60	12	2

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

› 36.244 Phantom





NL **VHM-MG Radiusfrees, 2-snijder AlTiN-X, DIN 6527, kort**
FR **Fraise à rayon Carbure MG AlTiN-X, DIN 6527, courte**
ES **Fresa de punta esférica MD-MG AlTiN-X, DIN 6527, corta**
DE **VHM-MG 2 Schneiden Radiusfräser AlTiN-X, DIN 6527, kurz**

MG HM | AlTiN X | DIN 6527 | DIN 6535-HB

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



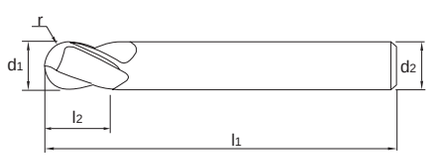
Ref.	d1	d2	l1	l2	r	z
36.244.0200	2	6	50	3	1	2
36.244.0300	3	6	50	4	1.5	2
36.244.0400	4	6	54	5	2	2
36.244.0500	5	6	54	6	25	2

Ref.	d1	d2	l1	l2	r	z
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

Ref.	d1	d2	l1	l2	r	z
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 **VHM-MG Radiusfrees, 2-snijder TiAlN**
FR **Fraise à rayon Carbure MG TiAlN**
ES **Fresa de punta esférica MD-MG TiAlN**
DE **VHM-MG 2 Schneiden Radiusfräser TiAlN**

MG HM | TiAlN | Phantom | 30° | h6

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



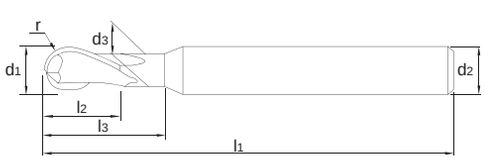
Ref.	d1	d2	l1	l2	r	z
36.256.0100	1	3	38	3	0.5	2
36.256.0150	1.5	3	38	5	0.75	2
36.256.0200	2	3	38	6	1	2
36.256.0250	2.5	3	38	7	1.25	2
36.256.0300	3	3	38	12	1.5	2
36.256.0350	3.5	4	50	12	1.75	2
36.256.0400	4	4	50	14	2	2
36.256.0450	4.5	5	50	14	2.25	2

Ref.	d1	d2	l1	l2	r	z
36.256.0500	5	5	50	16	2.5	2
36.256.0600	6	6	63	19	3	2
36.256.0700	7	7	63	19	3.5	2
36.256.0800	8	8	63	19	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	75	25	6	2

Ref.	d1	d2	l1	l2	r	z
36.256.1400	14	14	88	30	7	2
36.256.1600	16	16	88	32	8	2
36.256.1800	18	18	100	36	9	2
36.256.2000	20	20	100	38	10	2
36.256.2200	22	22	100	38	11	2
36.256.2500	25	25	100	38	12.5	2

› 36.275 Phantom

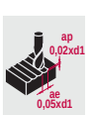




NL **VHM-NG Precisie HSC Radiusfrees, 2-snijder TiAlN-B, 45-70 HRc**
FR **Fraise à rayon de précision UGV - Usinage Grande Carbure NG TiAlN-B, 45-70 HRc**
ES **Fresa de punta esférical de precisión MAV MD-NG TiAlN-B, 45-70 HRc**
DE **VHM-NG Präzisions HSC Radiusfräser (2-Schneider) TiAlN-B, 45-70 HRc**

NG HM | TiAlN B | Phantom | 30° | h6 | d1<ø6 ±0,005 | d1>ø6 ±0,01 | HSC

P 14	H 15
≤1400 N/mm²	HRC
75-275 U	75-160 T



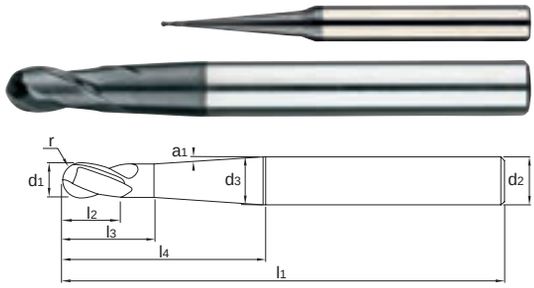
Ref.	d1	d2	d3	l1	l2	l3	r	z
36.275.0030	0.3	4	40	0.5	0.15	2		
36.275.0040	0.4	4	40	0.6	0.2	2		
36.275.0050	0.5	4	40	0.7	0.25	2		
36.275.0060	0.6	4	40	0.9	0.3	2		
36.275.0070	0.7	4	40	1.1	0.35	2		
36.275.0080	0.8	4	40	1.2	0.4	2		
36.275.0090	0.9	4	40	1.4	0.45	2		
36.275.0100	1	6	50	1.5	0.5	2	0.95	3
36.275.0150	1.5	6	50	2	0.75	2	1.45	4

Ref.	d1	d2	d3	l1	l2	l3	r	z
36.275.0200	2	6	50	2.5	1	2	1.95	5
36.275.0250	2.5	6	50	3	1.25	2	2.4	7
36.275.0300	3	6	60	4	1.5	2	2.85	10
36.275.0400	4	6	60	5	2	2	3.85	10
36.275.0500	5	6	60	6	2.5	2	4.85	12
36.275.0600	6	6	60	7	3	2	5.85	15
36.275.0800	8	8	80	9	4	2	7.7	15
36.275.1000	10	10	80	11	5	2	9.7	25
36.275.1200	12	12	80	14	6	2	11.7	25

19:00 ▶ 24h

› 36.285 Phantom

NL **VHM-MG Precisie Radiusfrees, 2-snijder AlTiN-X, HRC, 30-65 HRc**
FR **Fraise à rayon de précision Carbure MG AlTiN-X, HRC, 30-65 HRc**
ES **Fresa de punta esférical de precisión MD-MG AlTiN-X, HRC, 30-65 HRc**
DE **VHM-MG Präzisions-Radiusfräser (2-Schneider) AlTiN-X, HRC, 30-65 HRc**



MG HM | AlTiN X | Phantom | 30° | h6 | d1 ±0,00 -0,03 | HRC

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | H 15 HRC

75-200 X | 60-110 W | 80-135 V

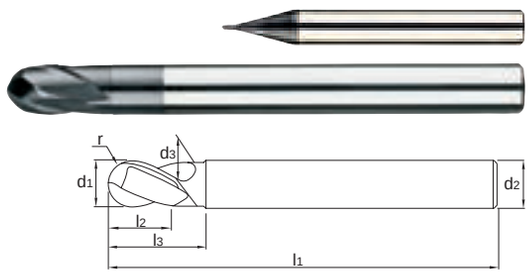


Ref.	d1	d2	d3	l1	l2	l3	l4	r	z	α1
36.285.0111	1	6	2	60	2	4	23	0.5	2	1°30'
36.285.0112	1	6	4.3	60	2	4	23	0.5	2	5°
36.285.0113	1	6	5	80	2	4	42	0.5	2	3°
36.285.0221	2	6	2.9	60	4	6	23	1	2	1°30'
36.285.0222	2	6	5	60	4	6	23	1	2	5°
36.285.0223	2	6	5.7	80	4	6	41	1	2	3°
36.285.0331	3	6	5.3	90	6	8	52	1.5	2	1°30'
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°

Ref.	d1	d2	d3	l1	l2	l3	l4	r	z	α1
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°

› 36.290 Phantom

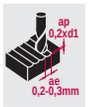
NL **VHM-MG Precisie Radiusfrees, 2-snijder AlTiN-X, HRC, 30-65 HRc**
FR **Fraise à rayon de précision Carbure MG AlTiN-X, HRC, 30-65 HRc**
ES **Fresa de punta esférical de precisión MD-MG AlTiN-X, HRC, 30-65 HRc**
DE **VHM-MG Präzisions-Radiusfräser (2-Schneider) AlTiN-X, HRC, 30-65 HRc**



MG HM | AlTiN X | Phantom | 30° | h6 | r ±0,01 | d1 ±0,00 -0,03 | HRC

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | H 15 HRC

75-200 X | 60-110 W | 80-135 V

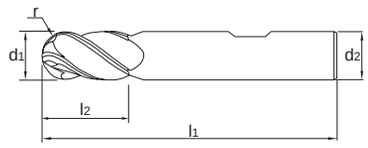


Ref.	d1	d2	d3	l1	l2	l3	r	z
36.290.0100	1	6	0.95	50	1	2.2	0.5	2
36.290.0120	1.2	4	1.1	50	1.2	2.6	0.6	2
36.290.0150	1.5	4	1.4	50	1.5	3	0.75	2
36.290.0200	2	6	1.9	50	2	4	1	2
36.290.0250	2.5	6	2.4	60	2.5	5	1.25	2
36.290.0300	3	6	2.9	60	3	6	1.5	2
36.290.0400	4	6	3.9	70	4	8	2	2
36.290.0500	5	6	4.9	80	5	10	2.5	2
36.290.0600	6	6	5.9	90	6	12	3	2
36.290.0700	7	8	6.9	90	7	14	3.5	2

Ref.	d1	d2	d3	l1	l2	l3	r	z
36.290.0800	8	8	7.9	100	8	16	4	2
36.290.0900	9	10	8.9	100	9	18	4.5	2
36.290.1000	10	10	9.9	100	10	20	5	2
36.290.1200	12	12	11.9	110	12	24	6	2
36.290.1400	14	14	13.8	110	14	28	7	2
36.290.1600	16	16	15.8	140	16	32	8	2
36.290.1800	18	18	17.8	140	18	36	9	2
36.290.2000	20	20	19.8	160	20	40	10	2
36.290.2500	25	25	24.8	180	25	50	12.5	2

› 36.345 Phantom





NL **VHM-MG Radiusfrees, 4-snijder AlTiN-X, lang, roestvaststaal**
FR **Fraise à rayon Carbure MG AlTiN-X, longue, Inox**
ES **Fresa de punta esférica MD-MG AlTiN-X, larga, acero inoxidable**
DE **VHM-MG 4 Schneiden Radiusfräser AlTiN-X, lang, rostfreien Stahl**

MG HM | VARI | AlTiN X | Phantom | DIN 6535-HB | r ±0,01 | INOX

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 | S 71 Ni/Co | S 72 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



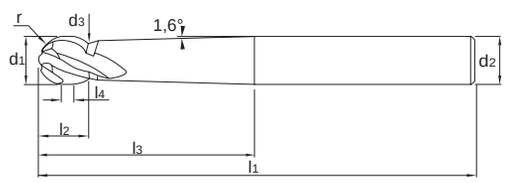
Ref.	d1	d2	l1	l2	r	z
36.345.0300	3	6	57	8	1.5	4
36.345.0400	4	6	57	11	2	4
36.345.0500	5	6	57	13	2.5	4

Ref.	d1	d2	l1	l2	r	z
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

Ref.	d1	d2	l1	l2	r	z
36.345.1200	12	12	83	26	6	4
36.345.1600	16	16	92	32	8	4

› 36.354 Phantom



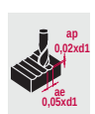


NL **VHM-MG Precisie Radiusfrees Radiusfrees, 4-snijder, AlTiN-X, 30-65 HRc**
FR **Fraise à rayon de précision Carbure MG Fraise à rayon, AlTiN-X, 30-65 HRc**
ES **Fresa de punta esférical de precisión MD-MG Fresa de punta esférica, AlTiN-X, 30-65 HRc**
DE **VHM-MG Präzisions-Radiusfräser 4 Schneiden Radiusfräser, AlTiN-X, 30-65 HRc**

MG HM | AlTiN X | Phantom | h6 | d1 ±0,01 | HRC

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | H 15 HRC

280-320 O | 260-300 N | 60-110 N

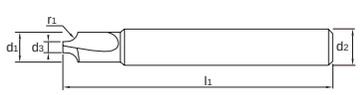


Ref.	d1	d2	d3	l1	l2	l3	l4	r	z
36.354.0500	5	6	4.1	80	6	43	2	2.5	4
36.354.0600	6	6	4.7	100	7	30	2	3	4
36.354.0800	8	8	6.5	100	9	36	3	4	4

Ref.	d1	d2	d3	l1	l2	l3	l4	r	z
36.354.1000	10	10	8.2	100	11	43	3	5	4
36.354.1200	12	12	9.8	110	13	52	3	6	4
36.354.1600	16	16	13.4	150	15	61	3	8	4

› 36.430 Phantom





NL **VHM-MG Radiusfrees, 4-snijder Kwarthol frees**
FR **Fraise à rayon Carbure MG Fraise à 1/4 de cercle concave**
ES **Fresa de punta esférica MD-MG Fresa semicóncava de 1/4 de círculo**
DE **VHM-MG 4 Schneiden Radiusfräser Viertelrund-Profilfräser**

MG HM | Phantom | h6

P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm²

45-65 G | 30-45 G

Ref.	r	d1	d2	d3	l1	z
36.430.0100	1	6	6	0.9	50	4
36.430.0150	1.5	6	6	0.9	50	4
36.430.0200	2	6	6	0.9	50	4
36.430.0250	2.5	8	8	0.9	60	4

Ref.	r	d1	d2	d3	l1	z
36.430.0300	3	8	8	1.9	60	4
36.430.0350	3.5	10	10	1.9	60	4
36.430.0400	4	10	10	1.9	60	4
36.430.0450	4.5	12	12	1.9	70	4

Ref.	r	d1	d2	d3	l1	z
36.430.0500	5	12	12	1.9	70	4
36.430.0600	6	16	16	3.9	80	4
36.430.0800	8	20	20	3.9	80	4

19:00 ▶ 🛒 ▶ 24h

NL **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**

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 **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**

$$n = \frac{Vc \times 1000}{3{,}14 \times d1} \qquad Vc = \frac{n \times 3{,}14 \times d1}{1000}$$

	Vc (m/min)																	
	5	8	10	12	15	20	25	30	35	40	50	60	70	80	90	100	110	120
d1 (mm)	**n = rpm**																	
1	1592	2546	3183	3820	4775	6366	7958	9549	11141	12732	15915	19099	22282	25465	28648	31831	35014	38197
1,5	1061	1698	2122	2546	3183	4244	5305	6366	7427	8588	10610	12732	14854	16977	19099	21221	23343	25465
2	796	1273	1592	1910	2387	3183	3937	4775	5570	6366	7958	9549	11141	12732	14324	15915	17507	19099
2,5	637	1019	1273	1528	1910	2546	3183	3820	4456	5093	6366	7639	8913	10186	11459	12732	14006	15279
3	531	849	1061	1273	1592	2122	2653	3183	2714	4244	5305	6366	7427	8488	9549	10610	11671	12732
3,5	455	728	909	1091	1364	1819	2274	2728	3183	3638	4547	5457	6366	7276	8185	9095	10004	10913
4	398	637	796	955	1194	1592	1989	2387	2785	3183	3979	4775	5570	6366	7162	7958	8754	9549
4,5	354	566	707	849	1061	1415	1768	2122	2476	2829	3537	4244	4951	5659	6366	7074	7781	8488
5	318	509	637	764	955	1273	1592	1910	2228	2546	3183	3820	4456	5093	5730	6366	7003	7639
5,5	289	463	579	694	868	1157	1447	1739	2026	2315	2894	3472	4051	4630	5209	5787	6366	6945
6	265	424	531	637	796	1061	1326	1592	1857	2122	2653	3183	3714	4244	4775	5305	5836	6366
7	227	364	455	546	682	909	1137	1364	1592	1819	2274	2728	3183	3638	4093	4547	5002	5457
8	199	318	398	477	597	796	995	1194	1393	1592	1989	2387	2785	3183	3581	3979	4377	4775
9	177	283	354	424	531	707	884	1061	1238	1415	1768	2122	2476	2829	3183	3537	3890	4244
10	159	255	318	382	477	637	796	955	1114	1273	1592	1910	2228	2546	2865	3183	3501	3820
11	145	321	289	347	434	579	723	868	1013	1157	1447	1736	2026	2315	2604	2894	3183	3472
12	133	212	265	318	398	531	663	796	928	1061	1326	1592	1857	2122	2387	2653	2918	3183
13	122	196	245	294	367	490	612	735	857	979	1224	1469	1714	1959	2204	2449	2693	2938
14	114	182	227	273	341	455	568	682	796	909	1137	1364	1592	1819	2046	2274	2501	2728
15	106	170	212	255	318	424	531	637	743	849	1061	1273	1485	1698	1910	2122	2334	2546
16	99	159	199	239	298	398	497	597	696	796	995	1194	1393	1592	1790	1989	2188	2387
18	88	141	177	212	265	354	442	361	619	707	884	1061	1238	1415	1592	1768	1945	2122
20	80	127	159	191	239	318	398	477	557	637	796	955	1114	1273	1432	1592	1751	1910
22	72	116	145	174	217	289	362	434	506	579	723	868	1013	1157	1302	1447	1592	1736
24	66	106	133	159	199	265	332	398	464	531	663	796	928	1061	1194	1326	1459	1592
25	64	102	127	153	191	255	318	382	446	509	637	764	891	1019	1146	1273	1401	1528

FRC
NL: Voedingscode
EN: Feed Rate Code
ES: Codificación de velocidad de avance
FR: Codification vitesse d'avance

fz (mm/z)
NL: Voeding per tand (mm/z)
EN: Feed per tooth (mm/z)
ES: Avance por diente (mm/z)
FR: Avance par dent (mm/z)

Vc
NL: Snijsnelheid (m/min)
EN: cutting speed (m/min)
ES: Velocidad de corte (m/min)
FR: Vitesse de coupe (m/min)

n=rpm
NL: Spiltoerental (omw/min)
EN: Spindle R.P.M. (rev/min)
ES: Velocidad del husillo (rpm)
FR: Vitesse de broche (tr/min)

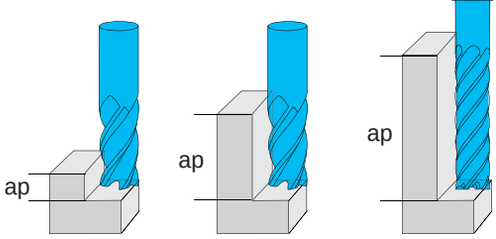
NL **Voedingswaardentabel**
FR **Tableau des avances**
ES **Tabla de avances**
DE **Vorschubtabelle**

P 11 ≤600 N/mm² = ISO

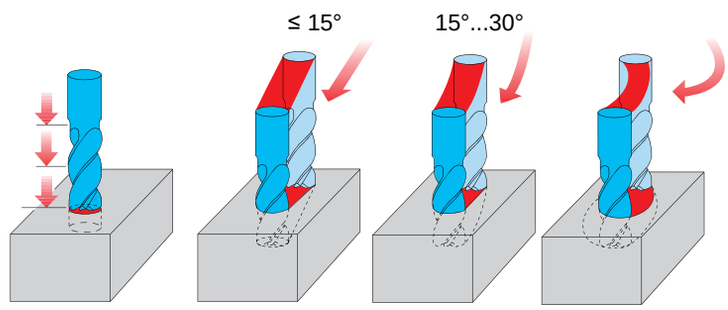
25-35 E Vc = 25-35 FRC = E

	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 **Voedingswaarde aanpassing**
FR **Modification des avances**
ES **Modificación de avances**
DE **Vorschubanpassung**

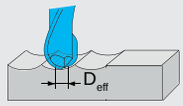


ap=1 x D Vf = 100 %
ap=2 x D Vf = 50 %V
ap=3 x D f = 25 %



90° Vf = 30 %
≤ 15° Vf = 100 %
15°...30° Vf = 70 %V
f = 85 %

NL **Formules**
FR **Formules**
ES **Fórmulas**
DE **Formuln**

Vc	NL: Snijsnelheid (m/min) FR: Vitesse de coupe (m/min) ES: Velocidad de corte (m/min) DE: Schnittgeschwindigkeit (m/min)		$Vc = \frac{p \times D \times n}{1000}$
n	NL: Toerental (omw/min) FR: Vitesse de tour (tr/min) ES: Número de revoluciones (rpm) DE: Umdrehung (U/min)		$n = \frac{Vc \times 1000}{p \times D}$
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)		$fz = \frac{vf}{n \times z}$
Vf	NL: Toerental (omw/min) FR: Vitesse de tour (tr/min) ES: Número de revoluciones (rpm) DE: Umdrehung (U/min)		vf = (n) x (z) x (fz)
D(eff)	NL: Toerental (omw/min) FR: Vitesse de tour (tr/min) ES: Número de revoluciones (rpm) DE: Umdrehung (U/min)		$D(eff) = 2 \times D \times ap - ap^2$

π= 3.14 **D =**  **(mm)** **z = no. of flutes**
mb. de dents
no. de dientes
Zähnezahl

ap =  **(mm)**

19:00 24h

NL **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**

$$n = \frac{Vc \times 1000}{3{,}14 \times d1} \qquad Vc = \frac{n \times 3{,}14 \times d1}{1000}$$

	Vc (m/min)																	
	5	8	10	12	15	20	25	30	35	40	50	60	70	80	90	100	110	120
d1 (mm)	**n = rpm**																	
1	1592	2546	3183	3820	4775	6366	7958	9549	11141	12732	15915	19099	22282	25465	28648	31831	35014	38197
1,5	1061	1698	2122	2546	3183	4244	5305	6366	7427	8588	10610	12732	14854	16977	19099	21221	23343	25465
2	796	1273	1592	1910	2387	3183	3937	4775	5570	6366	7958	9549	11141	12732	14324	15915	17507	19099
2,5	637	1019	1273	1528	1910	2546	3183	3820	4456	5093	6366	7639	8913	10186	11459	12732	14006	15279
3	531	849	1061	1273	1592	2122	2653	3183	2714	4244	5305	6366	7427	8488	9549	10610	11671	12732
3,5	455	728	909	1091	1364	1819	2274	2728	3183	3638	4547	5457	6366	7276	8185	9095	10004	10913
4	398	637	796	955	1194	1592	1989	2387	2785	3183	3979	4775	5570	6366	7162	7958	8754	9549
4,5	354	566	707	849	1061	1415	1768	2122	2476	2829	3537	4244	4951	5659	6366	7074	7781	8488
5	318	509	637	764	955	1273	1592	1910	2228	2546	3183	3820	4456	5093	5730	6366	7003	7639
5,5	289	463	579	694	868	1157	1447	1739	2026	2315	2894	3472	4051	4630	5209	5787	6366	6945
6	265	424	531	637	796	1061	1326	1592	1857	2122	2653	3183	3714	4244	4775	5305	5836	6366
7	227	364	455	546	682	909	1137	1364	1592	1819	2274	2728	3183	3638	4093	4547	5002	5457
8	199	318	398	477	597	796	995	1194	1393	1592	1989	2387	2785	3183	3581	3979	4377	4775
9	177	283	354	424	531	707	884	1061	1238	1415	1768	2122	2476	2829	3183	3537	3890	4244
10	159	255	318	382	477	637	796	955	1114	1273	1592	1910	2228	2546	2865	3183	3501	3820
11	145	321	289	347	434	579	723	868	1013	1157	1447	1736	2026	2315	2604	2894	3183	3472
12	133	212	265	318	398	531	663	796	928	1061	1326	1592	1857	2122	2387	2653	2918	3183
13	122	196	245	294	367	490	612	735	857	979	1224	1469	1714	1959	2204	2449	2693	2938
14	114	182	227	273	341	455	568	682	796	909	1137	1364	1592	1819	2046	2274	2501	2728
15	106	170	212	255	318	424	531	637	743	849	1061	1273	1485	1698	1910	2122	2334	2546
16	99	159	199	239	298	398	497	597	696	796	995	1194	1393	1592	1790	1989	2188	2387
18	88	141	177	212	265	354	442	361	619	707	884	1061	1238	1415	1592	1768	1945	2122
20	80	127	159	191	239	318	398	477	557	637	796	955	1114	1273	1432	1592	1751	1910
22	72	116	145	174	217	289	362	434	506	579	723	868	1013	1157	1302	1447	1592	1736
24	66	106	133	159	199	265	332	398	464	531	663	796	928	1061	1194	1326	1459	1592
25	64	102	127	153	191	255	318	382	446	509	637	764	891	1019	1146	1273	1401	1528

FRC
NL: Voedingscode
FR: Codification vitesse d'avance
ES: Codificación de velocidad de avance
DE: Vorschubgeschwindigkeit Codierung

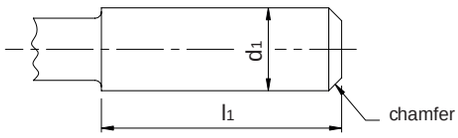
fz (mm/z)
NL: Voeding per tand (mm/z)
FR: Avance par dent (mm/z)
ES: Avance por diente (mm/z)
DE: Vorschub pro Zahn (mm/Z)

Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)

n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)

DIN 6535 HA

NL **Cilindrische schacht**
FR **Queue cylindrique**
ES **Mango cilíndrico**
DE **Zylinderschaft**



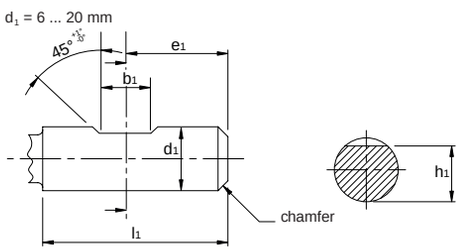
Dimensions in mm	
d_1 h8	l_1 +2 0
3	28
4	28
5	28
6	36
8	36

Dimensions in mm	
d_1 h8	l_1 +2 0
10	40
12	45
16	48
20	50
25	56

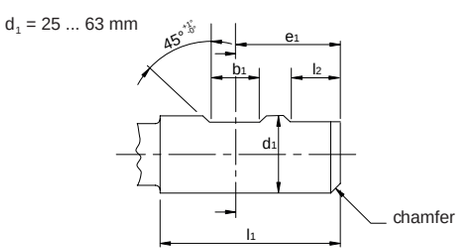
Dimensions in mm	
d_1 h8	l_1 +2 0
32	60
40	70
50	80
63	90

DIN 6535 HB

NL **Cilindrische schacht “Weldon”**
FR **Queue cylindrique “Weldon”**
ES **Mango cilíndrico “Weldon”**
DE **Zylinderschaft “Weldon”**



Dimensions in mm					
d_1 h6	b_1 +0.05 0	e_1 0 -1	h_1 h13	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 h13	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
50	18	45	47.8	80	23
63	18	50	60.8	90	23

19:00 ▶ 24h

NL **Vergelijking Hardheid**
FR **Comparaison de la dureté**
ES **Comparación de dureza**
DE **Vergleich der Härte**

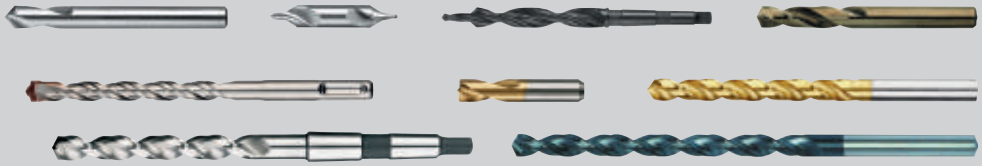
Dimensions in mm			
(N/mm²)	HRc	HB30	HV10
240		71	75
255		76	80
270		81	85
285		86	90
305		90	95
320		95	100
335		100	105
350		105	110
370		109	115
385		114	120
400		119	125
415		124	130
430		128	135
450		133	140
465		138	145
480		143	150
495		147	155
510		152	160
530		157	165
545		162	170
560		166	175
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

NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



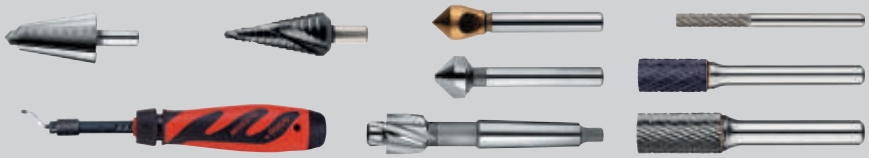
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



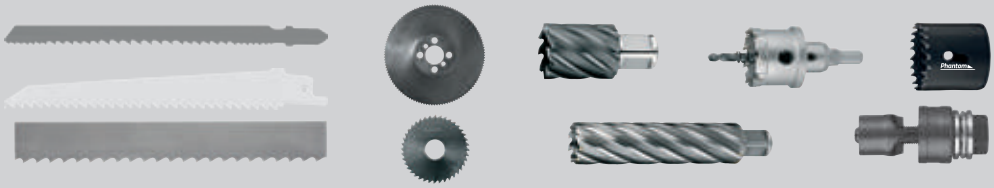
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
	2 snijkanten, centrumsnijdend	2 dents, coupe au centre	2 dientes, corte con centro	2 Schneiden, Zentrumschneidend
	2 snijkanten, volradius	2 dents, à rayon complet	2 dientes, con radio completo	2 Schneiden, Vollradius
	3 snijkanten, centrumsnijdend	3 dents, coupe au centre	3 dientes, corte con centro	3 Schneiden, Zentrumschneidend
	4 Snijkanten, centrumsnijdend	4 dents, coupe au centre	4 dientes, con corte centro	4 Schneiden, Zentrumschneidend
	4 snijkanten, niet centrumsnijdend	4 dents, pas de coupe au centre	4 dientes, corte sin centro	4 Schneiden, Nicht Zentrumschneidend
	4 Snijkanten, centrum-snijdend, volradius	4 dents, coupe au centre, à rayon complet	4 dientes, corte al centro, con radio completo	4 Schneiden, Zentrumschneidend
	5 Snijkanten, met on-gelijke tandverdeling	5 dents, avec denture à pas différentiel	5 dientes, con paso irregular	5 Schneiden, mit un-gleicher Zahnteilung
	6 snijkanten, centrumsnijdend	6 dents, coupe au centre	6 dientes, corte con centro	6 Schneiden, Zen-trumschneidend
HSS-E 8%	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalto)	HSS-E (8% Cobalt)
TiCN	TiCN gecoat	Revêtement TiCN	Recubrimiento TiCN	TiCN Beschichtung
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung
DIN 844-B	DIN norm	Norme DIN	Norma DIN	DIN Norm
Phantom	Phantom norm	Norme Phantom	Norma Phantom	Werksnorm
N	Type N, standaard spiraaluitvoering	Type N, hélice standard	Versión helicoidal estándar	Type N, standard Spiralwinkel

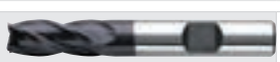
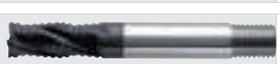
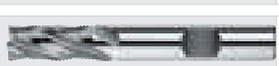
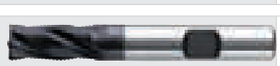
	NL	FR	ES	DE
H	Type H, flauwe spiraalhoek	Type H, hélice lente	Ángulo de hélice lento	Type H, flache Spiralwinkel
30°	Spiraalhoek	Angle d'Hélice	Angulo de hélice	Spiralwinkel
WR	Ronde tand, grof	Profil rond, pas ébauche	Profilo redondo	Runder Verzahnung
WF	Vlakke tand, grof	Profil semi-finiti-on, pas ébauche	Profilo semi-desbaste	Flache Verzahnung
HR	Ronde tand, fijn	Profil rond, pas fin	Profilo redondo, paso fino	Feiner Verzahnung
	Ronde tand, extra fijn	Profil rond, pas extra fin	Profilo redondo, paso extra fino	Extra feiner Verzahnung
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft
h6	Cilindrische schacht h6	Queue cylindrique h6	Mango cilíndrico h6	Zylinderschaft h6
DIN 1835-B	Cilindrische schacht met Weldon vlak	Queue cylindrique avec méplat type Weldon	Mango cilíndrico con plano de arrastre tipo Weldon	Zylinderschaft mit Mit-nahmeflache Tyo Weldon
	Cilindrische schacht met aantrekdraad	Queue cylindrique filetée	Mango cilíndrico roscado	Zylinderschaft mit Anzugsgewinde
	Met langsspiebaan	Avec rainure de clavette	Con ranura longitudinal	Mit Längsnut
	Met langs- en dwarsspiebaan	Avec rainure de clavette et tenons	Con ranura longitu-dinal y transversal	Mit Längs- und Quernut
d1 ±0,00 -0,03	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser
UNI	Universeel	Universel	Universal	Universal

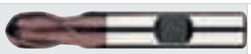
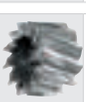
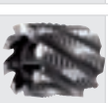
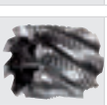
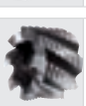
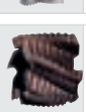
NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**

P K Bij uitstek geschikt
H N Très approprié
M S Muy adecuado
Ideal geeignet

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

P= pagina
P= page
P= página
P= Seite

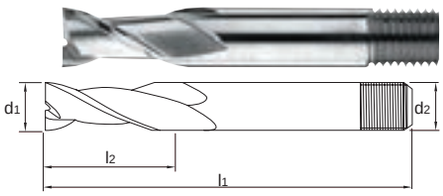
› 32.200	Phantom	DIN 327-D		P			N		P. 4
› 32.204	Phantom	DIN 327-D		P	M		N		P. 4
› 32.220	Phantom	DIN 327-B		P			N		P. 4
› 32.224	Phantom	DIN 327-B		P	M		N		P. 5
› 32.228	Phantom	DIN 327-B	PM HSS	P	M	K	N		P. 5
› 32.260	Phantom	Phantom		P			N		P. 5
› 32.320	Phantom	DIN 844-B		P			N		P. 6
› 32.500	Phantom	DIN 844-D		P			N		P. 6
› 32.520	Phantom	DIN 844-B		P			N		P. 7
› 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. 8
› 33.360	Phantom	DIN 844-B		P			N		P. 8
› 33.520	Phantom	Phantom		P					P. 8
› 34.200	Phantom	DIN 844-D		P			N		P. 9
› 34.204	Phantom	DIN 844-D		P	M		N		P. 9
› 34.220	Phantom	DIN 844-B		P			N		P. 9
› 34.224	Phantom	DIN 844-B		P	M		N		P. 10
› 34.350	Phantom	DIN 844-D		P			N		P. 10
› 34.355	Phantom	DIN 844-B		P			N		P. 10
› 34.370	Phantom	Phantom		P			N		P. 11
› 35.024	Phantom	DIN 327-B		P	M				P. 12
› 35.100	Phantom	DIN 844-D		P			N		P. 12
› 35.104	Phantom	DIN 844-D		P			N		P. 12
› 35.120	Phantom	DIN 844-B		P			N		P. 13
› 35.124	Phantom	DIN 844-B		P			N		P. 13
› 35.200	Phantom	DIN 844-D		P			N		P. 13
› 35.220	Phantom	DIN 844-B		P			N		P. 14
› 35.224	Phantom	DIN 844-B		P	M		N		P. 14

› 35.228	Phantom	DIN 844-B	PM HSS	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
› 36.100	Phantom	Phantom					N		P. 16
› 36.120	Phantom	Phantom		P			N		P. 16
› 36.200	Phantom	DIN 327-D		P			N		P. 16
› 36.220	Phantom	DIN 327-B		P			N		P. 17
› 36.228	Phantom	DIN 844-B	PM HSS	P	M	K			P. 17
› 36.324	Phantom	DIN 844-B		P			N		P. 17
› 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
› 37.370	Phantom	DIN 1880		P		K			P. 22
› 37.500	Phantom	DIN 841		P			N		P. 22
› 37.580	Phantom	DIN 841		P			N		P. 22
› 37.600	Phantom	DIN 1880		P			N		P. 23
› 37.604	Phantom	DIN 1880		P					P. 23

19:00 ▶ 🛒 ▶ 24h

› 37.680	Phantom	DIN 1880	P		N		P. 23
› 38.210	Phantom	DIN 885-A	P	M	K	N		P. 24
› 38.300	Phantom	DIN 856	P	M	K	N		P. 24
› 38.350	Phantom	DIN 855	P	M	K	N		P. 25
› 38.400	Phantom	DIN 842	P	M	K	N		P. 25
› 38.450	Phantom	DIN 847	P	M	K	N		P. 25
› 38.500	Phantom	Phantom	P	M	K	N		P. 26
› 39.100								P. 28
› 39.200	Phantom	DIN 327-B	P		N		P. 28
› 39.300	Phantom	DIN 844-B	P		N		P. 28
› 39.400	Phantom	DIN 844-B	P		N		P. 29

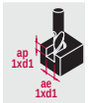
› 32.200 Phantom



NL **HSS-E Schachtfrees, 2-snijder**
FR **Fraise à rainurer 2 dents HSS-E**
ES **Fresa de ranurar de 2 labios HSS-E**
DE **HSS-E Langlochfräser (2-Schneider)**

HSS-E 8% | DIN 327-D | 30°

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
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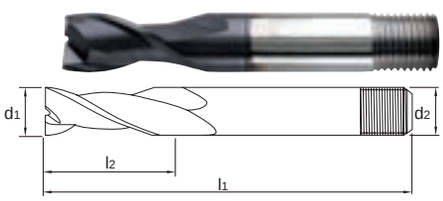
32.200.0300	3	6	49	5	2
32.200.0400	4	6	51	7	2
32.200.0500	5	6	52	8	2
32.200.0600	6	6	52	8	2
32.200.0700	7	10	60	10	2
32.200.0800	8	10	61	11	2
32.200.0900	9	10	61	11	2
32.200.1000	10	10	63	13	2

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	88	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

Ref.	d1	d2	l1	l2	z
32.200.2600	26	25	102	26	2
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	32	118	38	2
32.200.4000	40	32	118	38	2

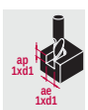
› 32.204 Phantom



NL **HSS-E Schachtfrees, 2-snijder TiAlN**
FR **Fraise à rainurer 2 dents HSS-E TiAlN**
ES **Fresa de ranurar de 2 labios HSS-E TiAlN**
DE **HSS-E Langlochfräser (2-Schneider) TiAlN**

HSS-E 8% | TiAlN | DIN 327-D | 30°

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
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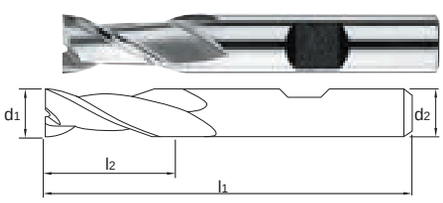
32.204.0400	4	6	51	7	2
32.204.0500	5	6	52	8	2
32.204.0600	6	6	52	8	2

Ref.	d1	d2	l1	l2	z
32.204.0800	8	10	61	11	2
32.204.1000	10	10	63	13	2
32.204.1200	12	12	73	16	2
32.204.1400	14	12	73	16	2

Ref.	d1	d2	l1	l2	z
32.204.1600	16	16	79	19	2
32.204.1800	18	16	79	19	2
32.204.2000	20	20	88	22	2

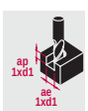
› 32.220 Phantom



NL **HSS-E Schachtfrees, 2-snijder**
FR **Fraise à rainurer 2 dents HSS-E**
ES **Fresa de ranurar de 2 labios HSS-E**
DE **HSS-E Langlochfräser (2-Schneider)**

HSS-E 8% | DIN 327-B | 30° | 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
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

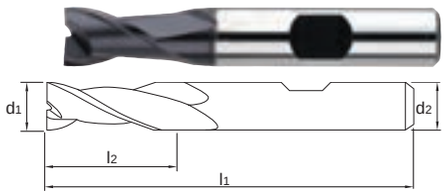
Ref.	d1	d2	l1	l2	z
32.220.0900	9	10	61	11	2
32.220.0950	9.5	10	61	11	2
32.220.1000	10	10	63	13	2
32.220.1050	10.5	12	70	13	2
32.220.1100	11	12	70	13	2
32.220.1200	12	12	73	16	2
32.220.1250	12.5	12	73	16	2
32.220.1300	13	12	73	16	2
32.220.1400	14	12	73	16	2
32.220.1500	15	12	73	16	2
32.220.1600	16	16	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	32	118	38	2
32.220.4000	40	32	118	38	2

19:00 ▶ 24h

› 32.224 Phantom

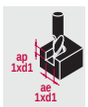
NL **HSS-E Schachtfrees, 2-snijder TiAlN**
FR **Fraise à rainurer 2 dents HSS-E TiAlN**
ES **Fresa de ranurar de 2 labios HSS-E TiAlN**
DE **HSS-E Langlochfräser (2-Schneider) TiAlN**



HSS-E 8% | TiAlN | DIN 327-B | 30° | DIN 1835-B

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

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
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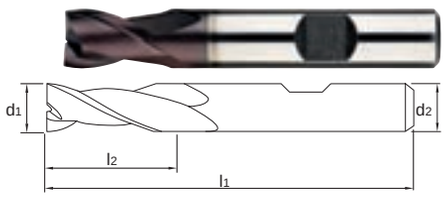
32.224.0300	3	6	49	5	2
32.224.0400	4	6	51	7	2
32.224.0500	5	6	52	8	2
32.224.0600	6	6	52	8	2
32.224.0700	7	10	60	10	2

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

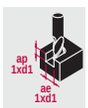
NL **PM-HSS Schachtfrees, 2-snijder TiAlN**
FR **Fraise à rainurer 2 dents PM-HSS TiAlN**
ES **Fresa de ranurar de 2 labios PM-HSS TiAlN**
DE **PM-HSS Langlochfräser (2-Schneider) TiAlN**



PM HSS | TiAlN | DIN 327-B | 30° | DIN 1835-B

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 51 Cu | N 52 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



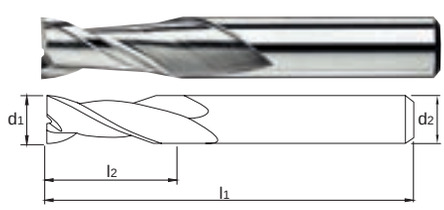
Ref.	d1	d2	l1	l2	z
32.228.0200	2	6	48	4	2
32.228.0300	3	6	49	5	2
32.228.0400	4	6	51	7	2
32.228.0500	5	6	52	8	2
32.228.0600	6	6	52	8	2

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

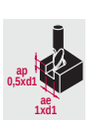
NL **HSS-E Precisie Schachtfrees, 2-snijder**
FR **Fraise de précision HSS-E**
ES **Fresa de precisión HSS-E**
DE **HSS-E Präzision Fräser (2-Schneider)**



HSS-E 8% | 30° | h6 | d1 ±0,01 | Phantom

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 B | 28-32 A | 20-25 B | 15-20 A | 75-105 C



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

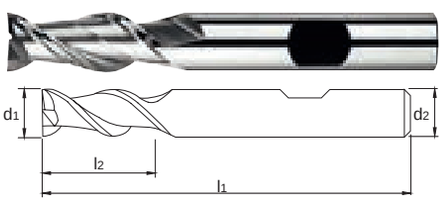
Ref.	d1	d2	l1	l2	z
32.260.0230	2.3	4	40	7	2
32.260.0240	2.4	4	40	7	2
32.260.0250	2.5	4	40	7	2
32.260.0260	2.6	4	40	7	2
32.260.0270	2.7	4	40	7	2
32.260.0280	2.8	5	44	8	2
32.260.0290	2.9	5	44	8	2
32.260.0300	3	5	44	8	2
32.260.0310	3.1	5	44	8	2
32.260.0320	3.2	5	44	8	2
32.260.0330	3.3	5	44	10	2
32.260.0340	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

Ref.	d1	d2	l1	l2	z
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
32.260.0520	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 Phantom

Ref.	d1	d2	l1	l2	z
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

› 32.320 Phantom



NL **HSS-E Schachtfrees, 2-snijder Aluminium**
FR **Fraise à rainurer 2 dents HSS-E Aluminium**
ES **Fresa de ranurar de 2 labios HSS-E Aluminio**
DE **HSS-E Langlochfräser (2-Schneider) Aluminium**

HSS-E 8% | DIN 844-B | 42° | DIN 1835-B

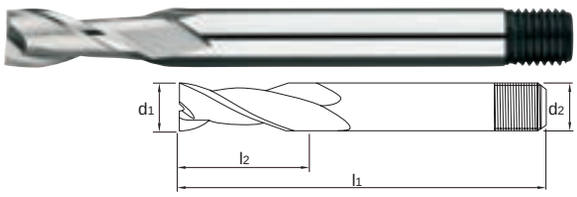
P 11 ≤600 N/mm² | N 41 Alu | N 42 Alu Si>10%

30-35 J | 75-130 Q | 70-90 P



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

› 32.500 Phantom



NL **HSS-E Schachtfrees, 2-snijder lang**
FR **Fraise à rainurer 2 dents HSS-E longue**
ES **Fresa de ranurar de 2 labios HSS-E larga**
DE **HSS-E Langlochfräser (2-Schneider) lang**

HSS-E 8% | DIN 844-D | 30°

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

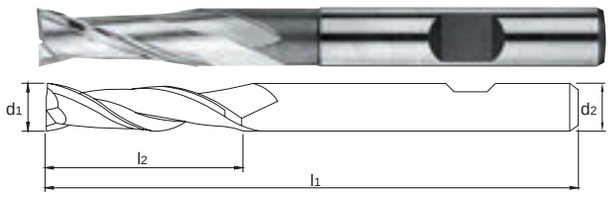


Ref.	d1	d2	l1	l2	z
32.500.0600	6	6	68	13	2
32.500.0800	8	10	88	19	2
32.500.1000	10	10	95	22	2
32.500.1200	12	12	110	26	2
32.500.1600	16	16	123	32	2
32.500.2000	20	20	141	38	2

19:00 ▶ 24h

› 32.520 Phantom

NL **HSS-E Schachtfrees, 2-snijder lang**
FR **Fraise à rainurer 2 dents HSS-E longue**
ES **Fresa de ranurar de 2 labios HSS-E larga**
DE **HSS-E Langlochfräser (2-Schneider) lang**



HSS-E 8% | DIN 844-B | 30° | 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

30-35 G | 28-32 F | 20-25 G | 15-20 G | 75-105 I



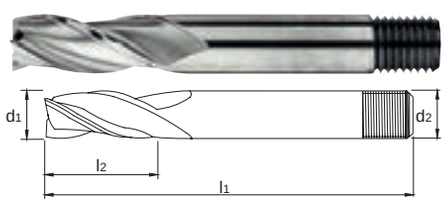
Ref.	d1	d2	l1	l2	z
32.520.0300	3	6	56	8	2
32.520.0400	4	6	63	11	2
32.520.0500	5	6	68	13	2
32.520.0600	6	6	68	13	2
32.520.0800	8	10	88	19	2

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

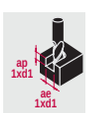
NL **HSS-E Schachtfrees, 3-snijder**
FR **Fraise universelle HSS-E**
ES **Fresa frontal de 3 labios HSS-E**
DE **HSS-E Universalfräser**



HSS-E 8% | DIN 844-D | 30°

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 J | 28-32 I | 20-25 J | 15-20 I | 75-105 K



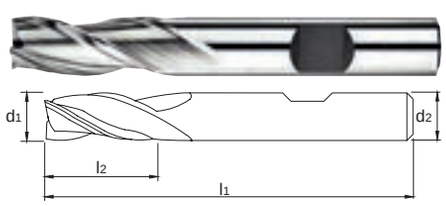
Ref.	d1	d2	l1	l2	z
33.200.0400	4	6	55	11	3
33.200.0500	5	6	57	13	3
33.200.0600	6	6	57	13	3
33.200.0700	7	10	66	16	3
33.200.0800	8	10	69	19	3

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

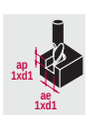
NL **HSS-E Schachtfrees, 3-snijder**
FR **Fraise universelle HSS-E**
ES **Fresa frontal de 3 labios HSS-E**
DE **HSS-E Universalfräser**



HSS-E 8% | DIN 844-B | 30° | 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

30-35 J | 28-32 I | 20-25 J | 15-20 I | 75-105 K



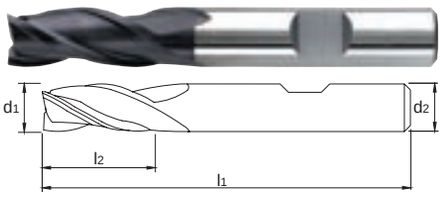
Ref.	d1	d2	l1	l2	z
33.220.0100	1	6	47	3	3
33.220.0150	1.5	6	51	7	3
33.220.0200	2	6	51	7	3
33.220.0250	2.5	6	52	8	3
33.220.0300	3	6	52	8	3
33.220.0350	3.5	6	54	10	3
33.220.0400	4	6	55	11	3
33.220.0450	4.5	6	55	11	3
33.220.0500	5	6	57	13	3

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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 TiAlN**
FR **Fraise universelle HSS-E TiAlN**
ES **Fresa frontal de 3 labios HSS-E TiAlN**
DE **HSS-E Universalfräser TiAlN**



HSS-E 8% | TiAlN | DIN 844-B | 20° | DIN 1835-B

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



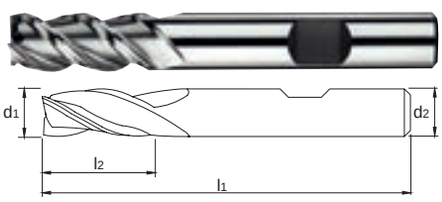
Ref.	d1	d2	l1	l2	z
33.224.0150	1.5	6	51	7	3
33.224.0200	2	6	51	7	3
33.224.0250	2.5	6	52	8	3
33.224.0300	3	6	52	8	3
33.224.0400	4	6	55	11	3

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

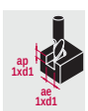
› 33.360 Phantom

NL **HSS-E Schachtfrees, 3-snijder spiraalhoek 50°**
FR **Fraise universelle HSS-E hélice 50°**
ES **Fresa frontal de 3 labios HSS-E ángulo de hélice 50°**
DE **HSS-E Universalfräser Spiralwinkel 50°**



HSS-E 8% | DIN 844-B | 50° | 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
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K



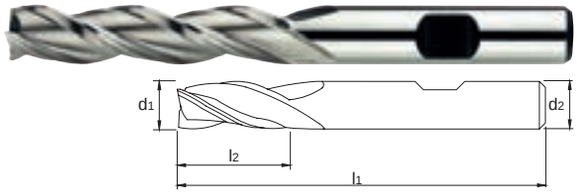
Ref.	d1	d2	l1	l2	z
33.360.0200	2	6	51	7	2
33.360.0300	3	6	52	8	2
33.360.0400	4	6	55	11	2
33.360.0500	5	6	57	13	2

Ref.	d1	d2	l1	l2	z
33.360.0600	6	6	57	13	3
33.360.0800	8	10	69	19	3
33.360.0900	9	10	69	19	3
33.360.1000	10	10	72	22	3

Ref.	d1	d2	l1	l2	z
33.360.1200	12	12	83	26	3
33.360.1600	16	16	92	32	3
33.360.2000	20	20	104	38	3
33.360.2200	22	20	104	38	4

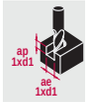
› 33.520 Phantom

NL **HSS-E Schachtfrees, 3-snijder lang**
FR **Fraise universelle HSS-E longue**
ES **Fresa frontal de 3 labios HSS-E larga**
DE **HSS-E Universalfräser lang**



HSS-E 8% | 30° | DIN 1835-B | Phantom

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



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

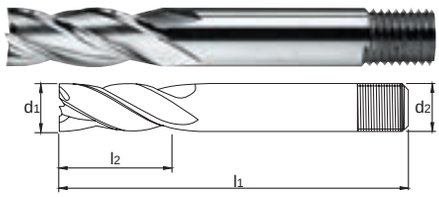
Ref.	d1	d2	l1	l2	z
33.520.0900	9	10	88	38	3
33.520.1000	10	10	95	45	3
33.520.1100	11	12	102	45	3
33.520.1200	12	12	110	53	3
33.520.1300	13	12	110	53	3
33.520.1400	14	12	110	53	3

Ref.	d1	d2	l1	l2	z
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

19:00 ▶ 🛒 ▶ 24h

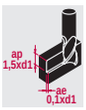
› 34.200 Phantom

NL **HSS-E Schachtfrees, meersnijder**
FR **Fraise standard HSS-E**
ES **Fresa frontal de varios labios HSS-E**
DE **HSS-E Mehrschneiden-Schaftfräser**



HSS-E 8% | DIN 844-D | 30°

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



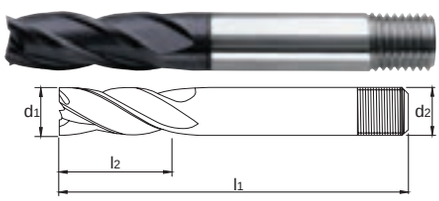
Ref.	d1	d2	l1	l2	z
34.200.0200	2	6	51	7	4
34.200.0300	3	6	52	8	4
34.200.0400	4	6	55	11	4
34.200.0500	5	6	57	13	4
34.200.0600	6	6	57	13	4
34.200.0700	7	10	66	16	4
34.200.0800	8	10	69	19	4
34.200.0900	9	10	69	19	4
34.200.1000	10	10	72	22	4

Ref.	d1	d2	l1	l2	z
34.200.1100	11	12	79	22	4
34.200.1200	12	12	83	26	4
34.200.1300	13	12	83	26	4
34.200.1400	14	12	83	26	4
34.200.1500	15	12	83	26	4
34.200.1600	16	16	92	32	4
34.200.1700	17	16	92	32	4
34.200.1800	18	16	92	32	4
34.200.1900	19	16	92	32	4

Ref.	d1	d2	l1	l2	z
34.200.2000	20	20	104	38	4
34.200.2200	22	20	104	38	6
34.200.2300	23	25	104	38	6
34.200.2400	24	25	121	45	6
34.200.2500	25	25	121	45	6
34.200.2600	26	25	121	45	6
34.200.2800	28	25	121	45	6
34.200.3000	30	25	121	45	6
34.200.4000	40	32	143	63	6

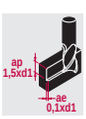
› 34.204 Phantom

NL **HSS-E Schachtfrees, meersnijder TiAlN**
FR **Fraise standard HSS-E TiAlN**
ES **Fresa frontal de varios labios HSS-E TiAlN**
DE **HSS-E Mehrschneiden-Schaftfräser TiAlN**



HSS-E 8% | TiAlN | DIN 844-D | 30°

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



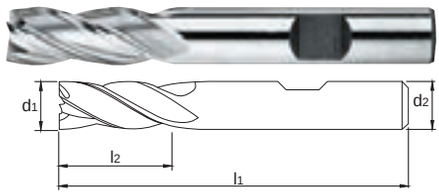
Ref.	d1	d2	l1	l2	z
34.204.0300	3	6	52	8	4
34.204.0400	4	6	55	11	4
34.204.0500	5	6	57	13	4
34.204.0600	6	6	57	13	4

Ref.	d1	d2	l1	l2	z
34.204.0800	8	10	69	19	4
34.204.1000	10	10	72	22	4
34.204.1200	12	12	83	26	4
34.204.1400	14	12	83	26	4

Ref.	d1	d2	l1	l2	z
34.204.1500	15	12	83	26	4
34.204.1600	16	16	92	32	4
34.204.1800	18	16	92	32	4
34.204.2000	20	20	104	38	4

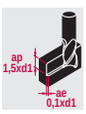
› 34.220 Phantom

NL **HSS-E Schachtfrees, meersnijder**
FR **Fraise standard HSS-E**
ES **Fresa frontal de varios labios HSS-E**
DE **HSS-E Mehrschneiden-Schaftfräser**



HSS-E 8% | DIN 844-B | 30° | 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
30-35 J	28-32 I	20-25 J	15-20 I	75-105 K

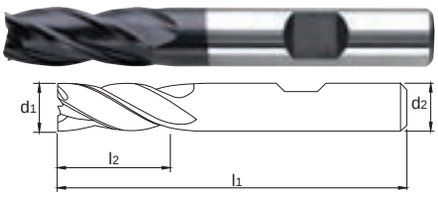


Ref.	d1	d2	l1	l2	z
34.220.0200	2	6	51	7	4
34.220.0300	3	6	52	8	4
34.220.0400	4	6	55	11	4
34.220.0500	5	6	57	13	4
34.220.0600	6	6	57	13	4
34.220.0700	7	10	66	16	4
34.220.0800	8	10	69	19	4
34.220.0900	9	10	69	19	4
34.220.1000	10	10	72	22	4
34.220.1100	11	12	79	22	4
34.220.1200	12	12	83	26	4

Ref.	d1	d2	l1	l2	z
34.220.1300	13	12	83	26	4
34.220.1400	14	12	83	26	4
34.220.1500	15	12	83	26	4
34.220.1600	16	16	92	32	4
34.220.1700	17	16	92	32	4
34.220.1800	18	16	92	32	4
34.220.1900	19	16	92	32	4
34.220.2000	20	20	104	38	4
34.220.2200	22	20	104	38	6
34.220.2400	24	25	121	45	6
34.220.2500	25	25	121	45	6

Ref.	d1	d2	l1	l2	z
34.220.2600	26	25	121	45	6
34.220.2800	28	25	121	45	6
34.220.3000	30	25	121	45	6
34.220.3200	32	32	133	53	6
34.220.3400	34	32	133	53	6
34.220.3500	35	32	133	53	6
34.220.3600	36	32	133	53	6
34.220.3800	38	32	143	63	6
34.220.4000	40	32	143	63	6

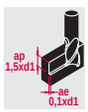
› 34.224 Phantom



NL **HSS-E Schachtfrees, meersnijder TiAlN**
FR **Fraise standard HSS-E TiAlN**
ES **Fresa frontal de varios labios HSS-E TiAlN**
DE **HSS-E Mehrschneiden-Schaftfräser TiAlN**

HSS-E 8% | TiAlN | DIN 844-B | 30° | DIN 1835-B

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

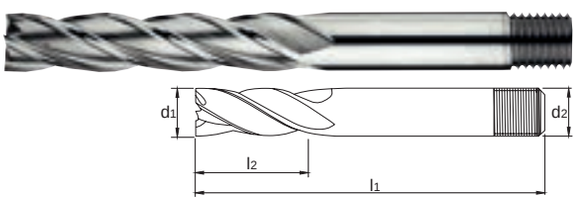


Ref.	d1	d2	l1	l2	z
34.224.0200	2	6	51	7	4
34.224.0300	3	6	52	8	4
34.224.0400	4	6	55	11	4
34.224.0500	5	6	57	13	4
34.224.0600	6	6	57	13	4

Ref.	d1	d2	l1	l2	z
34.224.0800	8	10	69	19	4
34.224.1000	10	10	72	22	4
34.224.1200	12	12	83	26	4
34.224.1400	14	12	83	26	4
34.224.1600	16	16	92	32	4

Ref.	d1	d2	l1	l2	z
34.224.1800	18	16	92	32	4
34.224.2000	20	20	104	38	4
34.224.2500	25	25	121	45	4
34.224.3000	30	25	121	45	4
34.224.3200	32	32	133	53	6

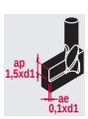
› 34.350 Phantom



NL **HSS-E Schachtfrees, meersnijder lang**
FR **Fraise standard HSS-E longue**
ES **Fresa frontal de varios labios HSS-E larga**
DE **HSS-E Mehrschneiden-Schaftfräser lang**

HSS-E 8% | DIN 844-D | 30°

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

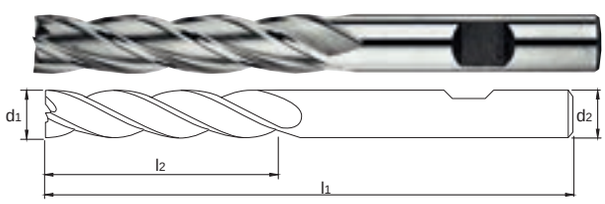


Ref.	d1	d2	l1	l2	z
34.350.0300	3	6	56	12	4
34.350.0400	4	6	63	19	4
34.350.0500	5	6	68	24	4
34.350.0600	6	6	68	24	4
34.350.0800	8	10	88	38	4
34.350.1000	10	10	95	45	4
34.350.1200	12	12	110	53	4

Ref.	d1	d2	l1	l2	z
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

Ref.	d1	d2	l1	l2	z
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

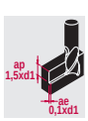
› 34.355 Phantom



NL **HSS-E Schachtfrees, meersnijder lang**
FR **Fraise standard HSS-E longue**
ES **Fresa frontal de varios labios HSS-E larga**
DE **HSS-E Mehrschneiden-Schaftfräser lang**

DIN 844-B | 30° | 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
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

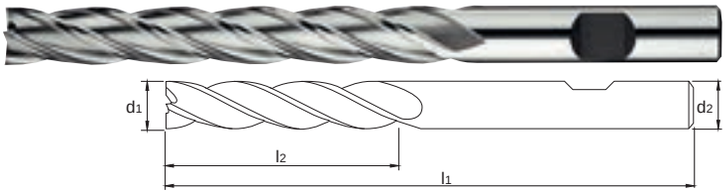
Ref.	d1	d2	l1	l2	z
34.355.1200	12	12	110	53	4
34.355.1400	14	12	110	53	4
34.355.1500	15	12	110	53	4
34.355.1600	16	16	123	63	4
34.355.1700	17	16	123	63	4
34.355.1800	18	16	123	63	4
34.355.1900	19	16	123	63	4
34.355.2000	20	20	141	75	4
34.355.2200	22	20	141	75	6

Ref.	d1	d2	l1	l2	z
34.355.2400	24	25	166	90	6
34.355.2500	25	25	166	90	6
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

19:00 ▶ 24h

› 34.370 Phantom

NL **HSS-E Schachtfrees, 4-snijder extra lang**
FR **Fraise standard HSS-E extra longue**
ES **Fresa frontal de varios labios HSS-E extra larga**
DE **HSS-E 4 Schneiden-Schaftfräser extra lang**



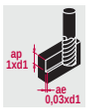
HSS-E 8%

30°

DIN 1835-B

Phantom

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



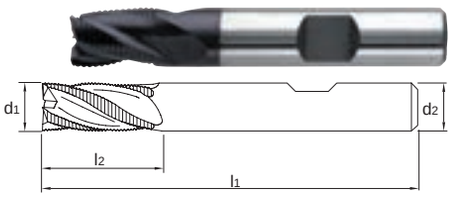
Ref.	d1	d2	l1	l2	z
34.370.0600	6	6	100	56	4
34.370.0800	8	10	113	63	4
34.370.1000	10	10	120	70	4

Ref.	d1	d2	l1	l2	z
34.370.1200	12	12	137	80	4
34.370.1400	14	12	137	80	4
34.370.1600	16	16	150	90	4

Ref.	d1	d2	l1	l2	z
34.370.1800	18	16	160	100	4
34.370.2000	20	20	176	110	4
34.370.2500	25	25	186	110	4

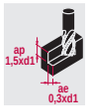
› 35.024 Phantom

NL **HSS-E Ruwfrees kort, TiAlN, fijn**
FR **Fraise d'ébauche HSS-E courte, TiAlN, pas fin**
ES **Fresa de desbaste HSS-E corta, TiAlN, paso fino**
DE **HSS-E Schruppfräser kurz, TiAlN, fein**



HSS-E 8% | TiAlN | DIN 327-B | 30° | DIN 1835-B

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



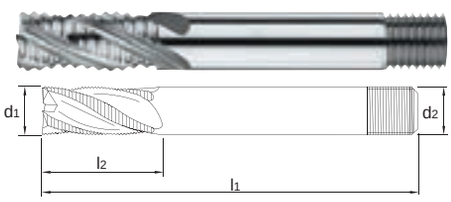
Ref.	d1	d2	l1	l2	z
35.024.0600	6	6	52	8	3
35.024.0800	8	10	61	11	4

Ref.	d1	d2	l1	l2	z
35.024.1000	10	10	63	13	4
35.024.1200	12	12	73	16	4

Ref.	d1	d2	l1	l2	z
35.024.1600	16	16	79	19	4
35.024.2000	20	20	82	22	4

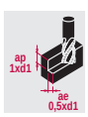
› 35.100 Phantom

NL **HSS-E Ruwfrees rond**
FR **Fraise d'ébauche HSS-E ronde**
ES **Fresa de desbaste HSS-E redondo**
DE **HSS-E Schruppfräser rund**



HSS-E 8% | WR | DIN 844-D | 30°

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



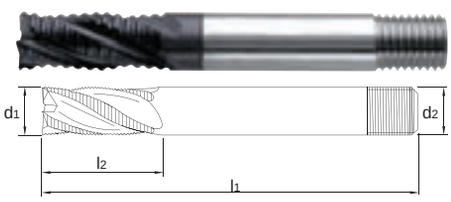
Ref.	d1	d2	l1	l2	z
35.100.0600	6	6	57	13	3
35.100.0700	7	10	66	16	3
35.100.0800	8	10	69	19	3
35.100.0900	9	10	69	19	3
35.100.1000	10	10	72	22	4

Ref.	d1	d2	l1	l2	z
35.100.1100	11	12	79	22	4
35.100.1200	12	12	83	26	4
35.100.1300	13	12	83	26	4
35.100.1400	14	12	83	26	4
35.100.1500	15	12	83	26	4

Ref.	d1	d2	l1	l2	z
35.100.1600	16	16	92	32	4
35.100.1800	18	16	92	32	4
35.100.2000	20	20	104	38	4

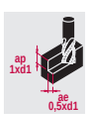
› 35.104 Phantom

NL **HSS-E Ruwfrees TiAlN, rond**
FR **Fraise d'ébauche HSS-E TiAlN, ronde**
ES **Fresa de desbaste HSS-E TiAlN, redondo**
DE **HSS-E Schruppfräser TiAlN, rund**



HSS-E 8% | TiAlN | WR | DIN 844-D | 30°

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



Ref.	d1	d2	l1	l2	z
35.104.0600	6	6	57	13	3
35.104.0800	8	10	69	19	3
35.104.1000	10	10	72	22	4

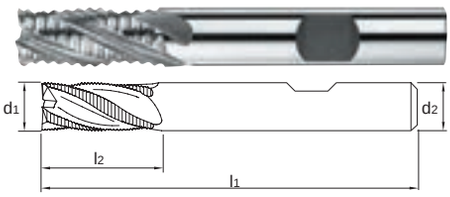
Ref.	d1	d2	l1	l2	z
35.104.1200	12	12	83	26	4
35.104.1400	14	12	83	26	4
35.104.1600	16	16	92	32	4

Ref.	d1	d2	l1	l2	z
35.104.1800	18	16	92	32	4
35.104.2000	20	20	104	38	4

19:00 ▶ 🛒 ▶ 24h

› 35.120 Phantom

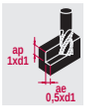
NL **HSS-E Ruwfrees rond**
FR **Fraise d'ébauche HSS-E ronde**
ES **Fresa de desbaste HSS-E redondo**
DE **HSS-E Schruppfräser rund**



HSS-E 8% | WR | DIN 844-B | 30° | 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

30-35 L | 25-30 K | 20-25 L | 15-20 J | 75-85 L



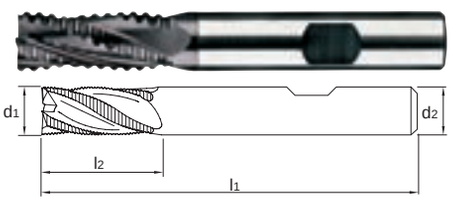
Ref.	d1	d2	l1	l2	z
35.120.0600	6	6	57	13	3
35.120.0700	7	10	66	16	3
35.120.0800	8	10	69	19	3
35.120.0900	9	10	69	19	3
35.120.1000	10	10	72	22	4
35.120.1100	11	12	79	22	4
35.120.1200	12	12	83	26	4

Ref.	d1	d2	l1	l2	z
35.120.1300	13	12	83	26	4
35.120.1400	14	12	83	26	4
35.120.1500	15	12	83	26	4
35.120.1600	16	16	92	32	4
35.120.1800	18	16	92	32	4
35.120.2000	20	20	104	38	4
35.120.2200	22	20	104	38	5

Ref.	d1	d2	l1	l2	z
35.120.2400	24	25	121	45	5
35.120.2500	25	25	121	45	5
35.120.2800	28	25	121	45	6
35.120.3000	30	25	121	45	6
35.120.3200	32	32	133	53	6
35.120.3600	36	32	133	53	6
35.120.4000	40	32	143	63	6

› 35.124 Phantom

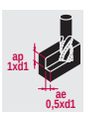
NL **HSS-E Ruwfrees TiAlN, rond**
FR **Fraise d'ébauche HSS-E TiAlN, ronde**
ES **Fresa de desbaste HSS-E TiAlN, redondo**
DE **HSS-E Schruppfräser TiAlN, rund**



HSS-E 8% | TiAlN | WR | DIN 844-B | 30° | 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

45-50 L | 35-40 K | 25-30 L | 15-20 J | 105-120 L



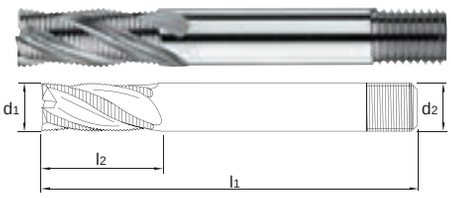
Ref.	d1	d2	l1	l2	z
35.124.0600	6	6	57	13	3
35.124.0800	8	10	69	19	3
35.124.1000	10	10	72	22	4
35.124.1200	12	12	83	26	4
35.124.1400	14	12	83	26	4

Ref.	d1	d2	l1	l2	z
35.124.1600	16	16	92	32	4
35.124.1800	18	16	92	32	4
35.124.2000	20	20	104	38	4
35.124.2500	25	25	121	45	5
35.124.2800	28	25	121	45	6

Ref.	d1	d2	l1	l2	z
35.124.3000	30	25	121	45	6
35.124.3600	36	32	133	53	6
35.124.4000	40	32	143	63	6

› 35.200 Phantom

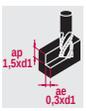
NL **HSS-E Ruwfrees fijn**
FR **Fraise d'ébauche HSS-E pas fin**
ES **Fresa de desbaste HSS-E paso fino**
DE **HSS-E Schruppfräser fein**



HSS-E 8% | DIN 844-D | 30°

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 L | 25-30 K | 20-25 L | 15-20 J | 75-85 L



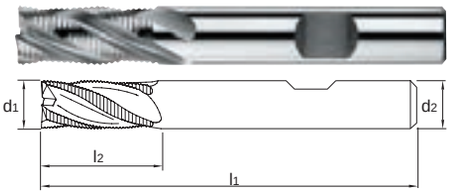
Ref.	d1	d2	l1	l2	z
35.200.0600	6	6	57	13	4
35.200.0800	8	10	69	19	4
35.200.1000	10	10	72	22	4

Ref.	d1	d2	l1	l2	z
35.200.1200	12	12	83	26	4
35.200.1400	14	12	83	26	4
35.200.1600	16	16	92	32	4

Ref.	d1	d2	l1	l2	z
35.200.2000	20	20	104	38	4

› 35.220 Phantom

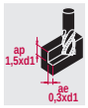
NL **HSS-E Ruwfrees fijn**
FR **Fraise d'ébauche HSS-E pas fin**
ES **Fresa de desbaste HSS-E paso fino**
DE **HSS-E Schruppfräser fein**



HSS-E 8% | DIN 844-B | 30° | 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

30-35 L | 25-30 K | 20-25 L | 15-20 J | 75-85 L



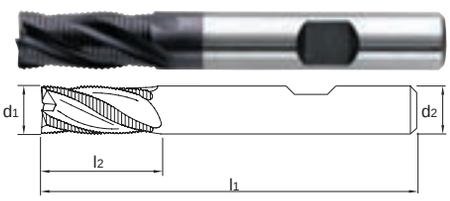
Ref.	d1	d2	l1	l2	z
35.220.0600	6	6	57	13	4
35.220.0700	7	10	66	16	4
35.220.0800	8	10	69	19	4

Ref.	d1	d2	l1	l2	z
35.220.1000	10	10	72	22	4
35.220.1200	12	12	83	26	4
35.220.1400	14	12	83	26	4

Ref.	d1	d2	l1	l2	z
35.220.1600	16	16	92	32	4
35.220.1800	18	16	92	32	4
35.220.2000	20	20	104	38	4

› 35.224 Phantom

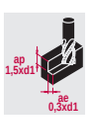
NL **HSS-E Ruwfrees TiAlN, fijn**
FR **Fraise d'ébauche HSS-E TiAlN, pas fin**
ES **Fresa de desbaste HSS-E TiAlN, paso fino**
DE **HSS-E Schruppfräser TiAlN, fein**



HSS-E 8% | TiAlN | DIN 844-B | 30° | DIN 1835-B

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

45-50 L | 35-40 K | 25-30 L | 15-20 J | 22-28 I | 18-24 G | 105-120 L



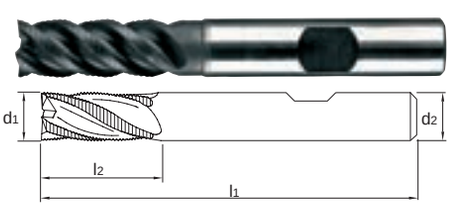
Ref.	d1	d2	l1	l2	z
35.224.0600	6	6	57	13	3
35.224.0800	8	10	69	19	3
35.224.1000	10	10	72	22	4

Ref.	d1	d2	l1	l2	z
35.224.1200	12	12	83	26	4
35.224.1400	14	12	83	26	4
35.224.1600	16	16	92	32	4

Ref.	d1	d2	l1	l2	z
35.224.1800	18	16	92	32	4
35.224.2000	20	20	104	38	4

› 35.228 Phantom

NL **PM-HSS Ruwfrees TiAlN, fijn**
FR **Fraise d'ébauche PM-HSS TiAlN, pas fin**
ES **Fresa de desbaste PM-HSS TiAlN, paso fino**
DE **PM-HSS Schruppfräser TiAlN, fein**



PM HSS | TiAlN | DIN 844-B | 45° | DIN 1835-B

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

55-60 J | 40-50 J | 30-35 I | 25-30 J | 30-35 H | 25-30 H | 40-45 I | 40-50 I



Ref.	d1	d2	l1	l2	z
35.228.0400	4	6	57	11	3
35.228.0500	5	6	57	13	4
35.228.0600	6	6	57	13	4
35.228.0700	7	10	66	16	4
35.228.0800	8	10	69	19	4

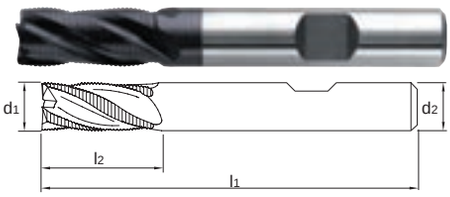
Ref.	d1	d2	l1	l2	z
35.228.0900	9	10	69	19	4
35.228.1000	10	10	72	22	4
35.228.1200	12	12	83	26	4
35.228.1400	14	12	83	26	5
35.228.1600	16	16	92	32	5

Ref.	d1	d2	l1	l2	z
35.228.1800	18	16	92	32	6
35.228.2000	20	20	104	38	6
35.228.2500	25	25	121	45	6

19:00 ▶ 24h

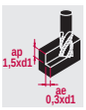
› 35.324 Phantom

NL **HSS-E Ruwfrees TiAlN, extra-fijn**
FR **Fraise d'ébauche HSS-E TiAlN, pas extra fin**
ES **Fresa de desbaste HSS-E TiAlN, paso extra fino**
DE **HSS-E Schruppfräser TiAlN, extra feinen**



HSS-E 8% | TiAlN | DIN 844-B | 30° | DIN 1835-B

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



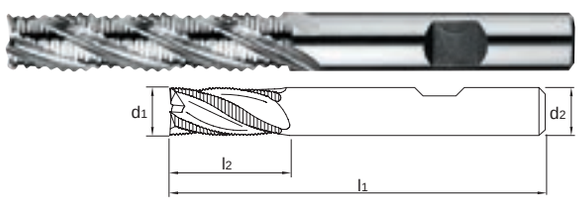
Ref.	d1	d2	l1	l2	z
35.324.0600	6	6	57	13	3
35.324.0800	8	10	69	19	3
35.324.1000	10	10	72	22	4
35.324.1200	12	12	83	26	4

Ref.	d1	d2	l1	l2	z
35.324.1400	14	12	83	26	4
35.324.1600	16	16	92	32	4
35.324.1800	18	16	92	32	4
35.324.2000	20	20	104	38	4

Ref.	d1	d2	l1	l2	z
35.324.2200	22	20	104	38	5
35.324.2500	25	25	121	45	5

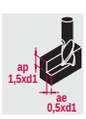
› 35.720 Phantom

NL **HSS-E Ruwfrees lang, rond**
FR **Fraise d'ébauche HSS-E longue, ronde**
ES **Fresa de desbaste HSS-E larga, redondo**
DE **HSS-E Schruppfräser lang, rund**



HSS-E 8% | WR | DIN 844-B | 30° | 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
30-35 G	28-32 F	20-25 G	15-20 G	75-105 I



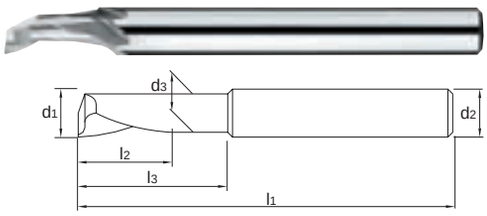
Ref.	d1	d2	l1	l2	z
35.720.0600	6	6	68	24	3
35.720.0800	8	10	88	38	3
35.720.1000	10	10	95	45	4
35.720.1200	12	12	110	53	4
35.720.1600	16	16	123	63	4

Ref.	d1	d2	l1	l2	z
35.720.1800	18	16	123	63	4
35.720.2000	20	20	141	75	4
35.720.2200	22	20	141	75	5
35.720.2500	25	25	166	90	5
35.720.2800	28	25	166	90	6

Ref.	d1	d2	l1	l2	z
35.720.3000	30	25	166	90	6
35.720.3200	32	32	186	106	6
35.720.3600	36	32	186	106	6
35.720.4000	40	32	217	125	6

› 36.100 Phantom

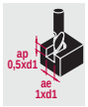
NL **HSS-E Eensnijderfrees Aluminium**
FR **Fraise à 1 dent HSS-E Aluminium**
ES **Fresa frontal de 1 labio HSS-E Aluminio**
DE **HSS-E Einzahnfräser Aluminium**



HSS-E | 30° | ALU | Phantom

P 11 ≤600 N/mm² | N 41 Alu

25-35 I | 160-220 M



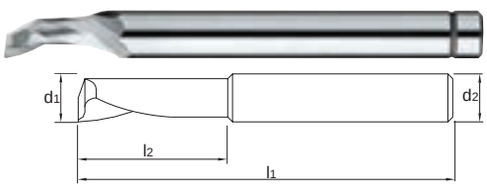
Ref.	d1	d2	d3	l1	l2	l3	z
36.100.0300	3	8		60	12		1
36.100.0400	4	8		60	12		1
36.100.0500	5	8		60	14		1
36.100.0501	5	8	4.8	80	18	35	1

Ref.	d1	d2	d3	l1	l2	l3	z
36.100.0502	5	8		100	40		1
36.100.0600	6	8		60	14		1
36.100.0700	7	8		60	14		1
36.100.0800	8	8		80	14		1

Ref.	d1	d2	d3	l1	l2	l3	z
36.100.0801	8	8	7.5	120	14	68	1
36.100.0900	9	8		80	14		1
36.100.1000	10	8		80	14		1

› 36.120 Phantom

NL **HSS-E Eensnijderfrees staal**
FR **Fraise à 1 dent HSS-E acier**
ES **Fresa frontal de 1 labio HSS-E acero**
DE **HSS-E Einzahnfräser Stahl**



HSS-E | 30° | Phantom

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | N 41 Alu

25-35 I | 20-30 I | 160-220 M



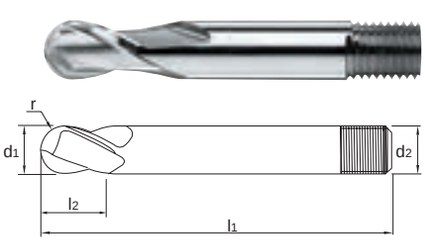
Ref.	d1	d2	l1	l2	z
36.120.0300	3	8	60	12	1
36.120.0400	4	8	60	12	1

Ref.	d1	d2	l1	l2	z
36.120.0500	5	8	60	12	1
36.120.0600	6	8	60	14	1

Ref.	d1	d2	l1	l2	z
36.120.0800	8	8	80	14	1
36.120.1000	10	8	80	14	1

› 36.200 Phantom

NL **HSS-E Radiusfrees, 2-snijder**
FR **Fraise à rayon HSS-E**
ES **Fresa de punta esférica HSS-E**
DE **HSS-E 2 Schneiden Radiusfräser**



HSS-E 8% | DIN 327-D

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
36.200.0300	3	6	49	5	1.5	2
36.200.0400	4	6	51	7	2	2
36.200.0500	5	6	52	8	2.5	2
36.200.0600	6	6	52	8	3	2

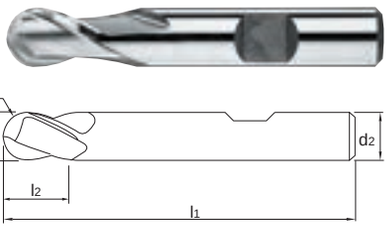
Ref.	d1	d2	l1	l2	r	z
36.200.0800	8	10	61	11	4	2
36.200.1000	10	10	63	13	5	2
36.200.1200	12	12	73	16	6	2
36.200.1400	14	12	73	16	7	2

Ref.	d1	d2	l1	l2	r	z
36.200.1500	15	12	73	16	7.5	2
36.200.1600	16	16	79	19	8	2
36.200.1800	18	16	79	19	9	2
36.200.2000	20	20	88	22	10	2

19:00 ▶ 24h

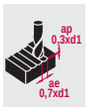
› 36.220 Phantom

NL **HSS-E Radiusfrees, 2-snijder**
FR **Fraise à rayon HSS-E**
ES **Fresa de punta esférica HSS-E**
DE **HSS-E 2 Schneiden Radiusfräser**



HSS-E 8% | DIN 327-B | 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
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

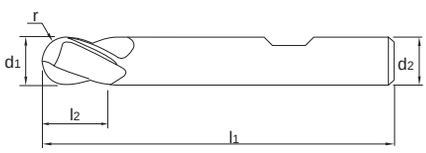
Ref.	d1	d2	l1	l2	r	z
36.220.0900	9	10	61	11	4.5	2
36.220.1000	10	10	63	13	5	2
36.220.1100	11	12	70	13	5.5	2
36.220.1200	12	12	73	16	6	2
36.220.1300	13	12	73	16	6.5	2
36.220.1400	14	12	73	16	7	2
36.220.1500	15	12	73	16	7.5	2

Ref.	d1	d2	l1	l2	r	z
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 **PM-HSS Radiusfrees, 2-snijder TiAlN**
FR **Fraise à rayon PM-HSS TiAlN**
ES **Fresa de punta esférica PM-HSS TiAlN**
DE **PM-HSS 2 Schneiden Radiusfräser TiAlN**





PM HSS | TiAlN | DIN 844-B | DIN 1835-B

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
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

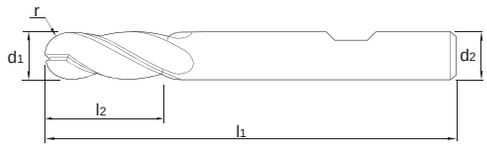
Ref.	d1	d2	l1	l2	r	z
36.228.0600	6	6	52	8	3	2
36.228.0800	8	10	61	11	4	2
36.228.1000	10	10	63	13	5	2

Ref.	d1	d2	l1	l2	r	z
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 TiAlN**
FR **Fraise à rayon HSS-E TiAlN**
ES **Fresa de punta esférica HSS-E TiAlN**
DE **HSS-E 4 Schneiden Radiusfräser TiAlN**





HSS-E 8% | TiAlN | DIN 844-B | 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
45-50 J	40-45 I	30-35 J	20-25 I	130-145 K

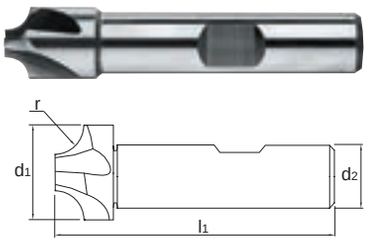


Ref.	d1	d2	l1	l2	r	z
36.324.0600	6	6	57	13	3	4
36.324.0800	8	10	69	19	4	4
36.324.1000	10	10	72	22	5	4

Ref.	d1	d2	l1	l2	r	z
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

Ref.	d1	d2	l1	l2	r	z
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**

HSS-E 8% | DIN 6518-B | DIN 1835-B

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | N 41 Alu

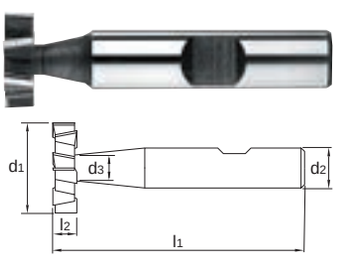
18-24 F | 15-18 F | 10-15 F | 80-90 F

Ref.	r	d1	d2	l1
36.410.0100	1	8	10	60
36.410.0150	1.5	9	10	60
36.410.0200	2	10	10	60
36.410.0250	2.5	11	10	60
36.410.0300	3	12	12	60
36.410.0350	3.5	13	12	60
36.410.0400	4	14	12	60
36.410.0450	4.5	15	12	60
36.410.0500	5	16	12	60
36.410.0550	5.5	19	16	67

Ref.	r	d1	d2	l1
36.410.0600	6	20	16	67
36.410.0650	6.5	21	16	71
36.410.0700	7	22	16	71
36.410.0750	7.5	23	16	71
36.410.0800	8	24	16	71
36.410.0850	8.5	25	25	85
36.410.0900	9	26	25	85
36.410.0950	9.5	27	25	85
36.410.1000	10	28	25	85
36.410.1100	11	32	25	90

Ref.	r	d1	d2	l1
36.410.1200	12	34	25	90
36.410.1250	12.5	41	25	100
36.410.1300	13	42	25	100
36.410.1400	14	44	25	100
36.410.1500	15	46	25	100
36.410.1600	16	48	25	100
36.410.1800	18	52	32	112
36.410.2000	20	56	32	112

› 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**

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	8
36.510.1025	10.5	6	4	50	2.5	8
36.510.1030	10.5	6	4.2	50	3	8
36.510.1320	13.5	10	4.6	56	2	8
36.510.1330	13.5	10	4.6	56	3	8
36.510.1340	13.5	10	4.6	56	4	8
36.510.1630	16.5	10	4.6	56	3	8
36.510.1640	16.5	10	4.6	56	4	8
36.510.1650	16.5	10	5	56	5	8

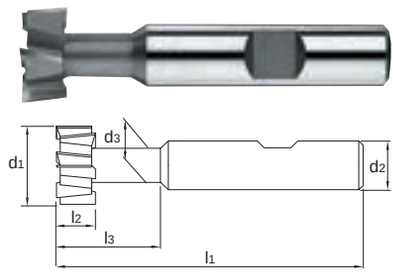
Ref.	d1	d2	d3	l1	l2	z
36.510.1930	19.5	10	5.6	56	3	8
36.510.1940	19.5	10	5.6	56	4	8
36.510.1950	19.5	10	6	56	5	8
36.510.1960	19.5	10	6.5	56	6	8
36.510.2240	22.5	10	6	63	4	8
36.510.2250	22.5	10	6	63	5	8
36.510.2260	22.5	10	6.5	63	6	8
36.510.2280	22.5	10	6.5	63	8	8
36.510.2550	25.5	10	7.5	63	5	8

Ref.	d1	d2	d3	l1	l2	z
36.510.2560	25.5	10	7.5	63	6	8
36.510.2580	25.5	10	7.5	63	8	8
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	10

19:00 ▶ 🛒 ▶ 24h

› 36.560 Phantom

NL **HSS-E T-Gleuffrees kruisvertand**
FR **Fraise pour rainures en T HSS-E denture alternée**
ES **Fresa para ranurar en T HSS-E diente alternado**
DE **HSS-E T-Nutenfräser Kreuzverzahnt**



HSS-E | DIN 851-AB | DIN 1835-B

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | N 41 Alu

25-30 G | 20-25 F | 15-20 F | 90-100 G

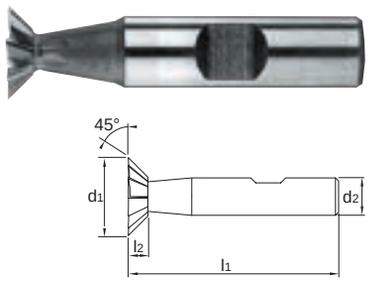
Ref.	d1	d2	d3	l1	l2	z
36.560.1250	12.5	10	5	57	6	6
36.560.1600	16	10	7	62	8	6
36.560.1900	19	12	8	71	9	6

Ref.	d1	d2	d3	l1	l2	z
36.560.2200	22	12	10	75	10	6
36.560.2500	25	16	12	82	11	6
36.560.2800	28	16	13	83	12	6

Ref.	d1	d2	d3	l1	l2	z
36.560.3200	32	20	15	90	14	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°**



HSS-E | DIN 1833-C | 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 A | 20-25 A | 15-20 A | 10-15 A | 90-100 A

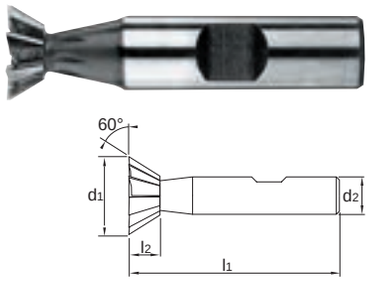
Ref.	d1	d2	l1	l2
36.620.1600	16	12	60	4
36.620.2000	20	12	63	5

Ref.	d1	d2	l1	l2
36.620.2500	25	12	67	6.3
36.620.3200	32	16	71	8

Ref.	d1	d2	l1	l2
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°**



HSS-E | DIN 1833-C | 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 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

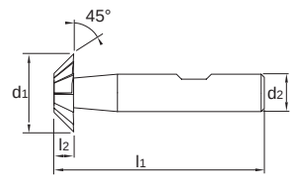
Ref.	d1	d2	l1	l2
36.650.2500	25	12	67	10
36.650.3200	32	16	71	12.5

Ref.	d1	d2	l1	l2
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°**





HSS-E | DIN 1833-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 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

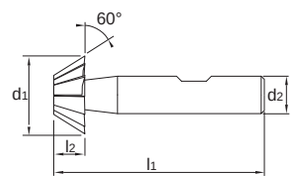
Ref.	d1	d2	l1	l2
36.720.2500	25	12	67	6.3
36.720.3200	32	16	71	8

Ref.	d1	d2	l1	l2
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°**





HSS-E | DIN 1833-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 A | 20-25 A | 15-20 A | 10-15 A | 90-100 A

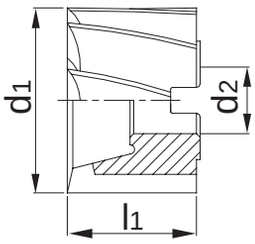
Ref.	d1	d2	l1	l2
36.750.1600	16	12	60	6.3
36.750.2000	20	12	63	8

Ref.	d1	d2	l1	l2
36.750.2500	25	12	67	10
36.750.3200	32	16	71	12.5

Ref.	d1	d2	l1	l2
36.750.4000	40	16	80	16

› 37.260 Phantom

NL **HSS-E Mantelkopfrees grofgetand, DIN 841, type N**
FR **Fraise deux tailles HSS-E denture grosse, DIN 841, type N**
ES **Fresa frontal sin mango HSS-E dentado grueso, DIN 841, tipo N**
DE **HSS-E Walzenstirnfräser grobverzahnt, DIN 841, Typ N**





HSS-E | DIN 841 | N

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

25-30 H | 20-25 G | 15-20 G | 10-15 F | 10-15 G | 8-12 F | 17-22 G | 20-25 H

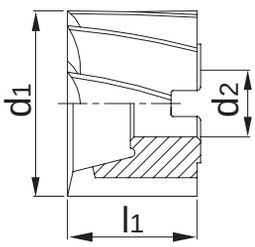
Ref.	d1	d2	l1	z
37.260.0303	30	13	30	6
37.260.0353	35	16	35	6
37.260.0402	40	16	20	8
37.260.0404	40	16	40	8

Ref.	d1	d2	l1	z
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

Ref.	d1	d2	l1	z
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 fijngetand, DIN 841, type H**
FR **Fraise deux tailles HSS-E denture fine, DIN 841, type H**
ES **Fresa frontal sin mango HSS-E dentado fino, DIN 841, tipo H**
DE **HSS-E Walzenstirnfräser feingezahnt, DIN 841, Typ H**





HSS-E | DIN 841 | H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | K 31 GG | K 32 GGG GTS-GTW

25-30 H | 20-25 G | 15-20 G | 10-15 F | 17-22 G | 20-25 H

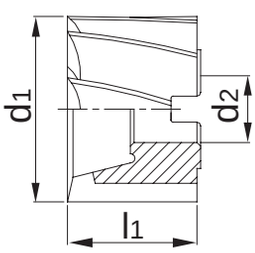
Ref.	d1	d2	l1	z
37.270.0303	30	13	30	8
37.270.0353	35	16	35	10

Ref.	d1	d2	l1	z
37.270.0404	40	16	40	10
37.270.0505	50	22	50	12

Ref.	d1	d2	l1	z
37.270.0606	60	27	60	12
37.270.0757	75	27	75	14

› 37.350 Phantom

NL **HSS-E Mantelkopfrees DIN 1880, Aluminium**
FR **Fraise deux tailles HSS-E DIN 1880, Aluminium**
ES **Fresa frontal sin mango HSS-E DIN 1880, Aluminio**
DE **HSS-E Walzenstirnfräser DIN 1880, Aluminium**





HSS-E | DIN 1880

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | N 41 Alu | N 51 Cu

25-30 H | 20-25 G | 95-105 J | 60-100 I

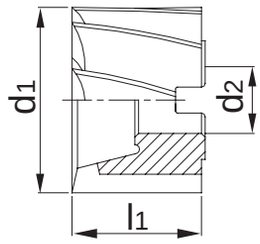
Ref.	d1	d2	l1	z
37.350.0400	40	16	32	4
37.350.0500	50	22	36	4

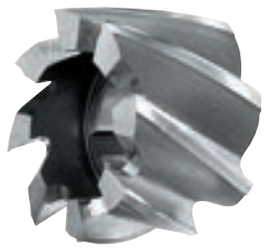
Ref.	d1	d2	l1	z
37.350.0630	63	27	40	5
37.350.0800	80	27	44.5	6

Ref.	d1	d2	l1	z
37.350.1000	100	32	49.5	7

› 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**





HSS-E 8% | DIN 1880 | N

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

25-30 H | 20-25 G | 15-20 G | 10-15 F | 10-15 G | 8-12 F | 17-22 G | 20-25 H

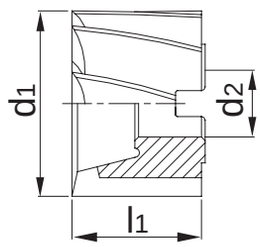
Ref.	d1	d2	l1	z
37.360.0400	40	16	32	8
37.360.0500	50	22	36	8
37.360.0630	63	27	40	8

Ref.	d1	d2	l1	z
37.360.0800	80	27	44.5	10
37.360.1000	100	32	49.5	12
37.360.1250	125	40	55.5	14

Ref.	d1	d2	l1	z
37.360.1600	160	50	62.5	16

› 37.370 Phantom

NL **HSS-E Mantelkopfrees fijngetand, DIN 1880, type H**
FR **Fraise deux tailles HSS-E denture fine, DIN 1880, type H**
ES **Fresa frontal sin mango HSS-E dentado fino, DIN 1880, tipo H**
DE **HSS-E Walzenstirnfräser feingezahnt, DIN 1880, Typ H**





HSS-E | DIN 1880 | H

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | K 31 GG | K 32 GGG GTS-GTW

25-30 H | 20-25 G | 15-20 G | 10-15 F | 17-22 G | 20-25 H

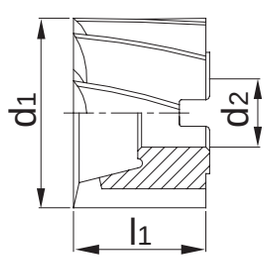
Ref.	d1	d2	l1	z
37.370.0400	40	16	32	10
37.370.0500	50	22	36	12

Ref.	d1	d2	l1	z
37.370.0630	63	27	40	12
37.370.0800	80	27	44.5	14

Ref.	d1	d2	l1	z
37.370.1000	100	32	49.5	16
37.370.1250	125	40	55.5	18

› 37.500 Phantom

NL **HSS-E Mantelkopruwfrees DIN 841, rond**
FR **Fraise deux tailles semi-finition HSS-E DIN 841, ronde**
ES **Fresa frontal sin mango de desbaste HSS-E DIN 841, redondo**
DE **HSS-E Walzenstirnschruppfräser DIN 841, rund**





HSS-E | WR | DIN 841

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 J | 20-25 J | 15-20 H | 10-15 G | 95-105 J

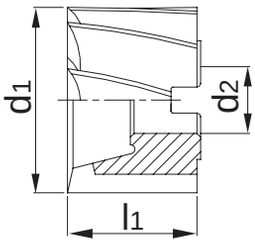
Ref.	d1	d2	l1	z
37.500.0404	40	16	40	6
37.500.0505	50	22	50	6

Ref.	d1	d2	l1	z
37.500.0606	60	27	60	8
37.500.0757	75	27	75	8

19:00 ▶ 🛒 ▶ 24h

› 37.580 Phantom

NL **HSS-E Mantelkopruwfrees DIN 841, vlak**
FR **Fraise deux tailles semi-finition HSS-E DIN 841, plate**
ES **Fresa frontal sin mango de desbaste HSS-E DIN 841, plano**
DE **HSS-E Walzenstirnschruppfräser DIN 841, Flach**





HSS-E | WF | DIN 841

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 41 Alu

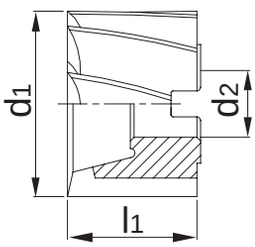
25-30 J | 20-25 J | 15-20 H | 10-15 G | 95-105 J

Ref.	d1	d2	l1	z
37.580.0404	40	16	40	6
37.580.0505	50	22	50	6

Ref.	d1	d2	l1	z
37.580.0606	60	27	60	8
37.580.0757	75	27	75	8

› 37.600 Phantom

NL **HSS-E Mantelkopruwfrees DIN 1880, rond**
FR **Fraise deux tailles semi-finition HSS-E DIN 1880, ronde**
ES **Fresa frontal sin mango de desbaste HSS-E DIN 1880, redondo**
DE **HSS-E Walzenstirnschruppfräser DIN 1880, rund**





HSS-E 8% | WR | DIN 1880

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 J | 20-25 J | 15-20 H | 10-15 G | 95-105 J

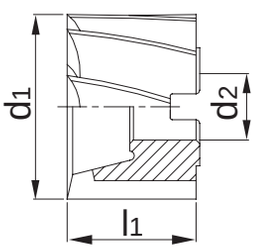
Ref.	d1	d2	l1	z
37.600.0400	40	16	32	6
37.600.0500	50	22	36	6
37.600.0630	63	27	40	8

Ref.	d1	d2	l1	z
37.600.0800	80	27	44.5	8
37.600.1000	100	32	49.5	10
37.600.1250	125	40	55.5	12

Ref.	d1	d2	l1	z
37.600.1600	160	50	62.5	14

› 37.604 Phantom

NL **HSS-E Mantelkopfrees TiAlN, DIN 1880, rond**
FR **Fraise deux tailles HSS-E TiAlN, DIN 1880, ronde**
ES **Fresa frontal sin mango HSS-E TiAlN, DIN 1880, redondo**
DE **HSS-E Walzenstirnfräser TiAlN, DIN 1880, rund**





HSS-E 8% | TiAlN | WR | DIN 1880

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm²

30-35 J | 30-35 J | 20-25 H | 12-18 G

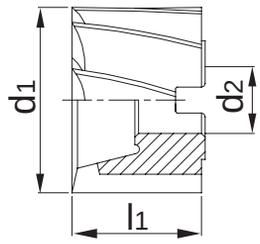
Ref.	d1	d2	l1	z
37.604.0400	40	16	32	6

Ref.	d1	d2	l1	z
37.604.0500	50	22	36	6

Ref.	d1	d2	l1	z
37.604.0630	63	27	40	8

› 37.680 Phantom

NL **HSS-E Mantelkopruwfrees DIN 1880, vlak**
FR **Fraise deux tailles semi-finition HSS-E DIN 1880, plate**
ES **Fresa frontal sin mango de desbaste HSS-E DIN 1880, plano**
DE **HSS-E Walzenstirnschruppfräser DIN 1880, Flach**





HSS-E 8% | WF | DIN 1880

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 J | 20-25 J | 15-20 H | 10-15 G | 95-105 J

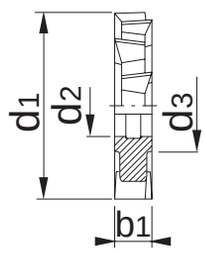
Ref.	d1	d2	l1	z
37.680.0400	40	16	32	6
37.680.0500	50	22	36	6
37.680.0630	63	27	40	8

Ref.	d1	d2	l1	z
37.680.0800	80	27	44.5	8
37.680.1000	100	32	49.5	10
37.680.1250	125	40	55.5	12

Ref.	d1	d2	l1	z
37.680.1600	160	50	62.5	14

› 38.210 Phantom

NL **HSS-E Schijffrees kruisvertand**
FR **Fraise trois tailles HSS-E denture alternée**
ES **Fresa para ranurar HSS-E diente alternado**
DE **HSS-E Scheibenfräser Kreuzverzahnt**





HSS-E | DIN 885-A | N

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

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	14
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	16
38.210.0610	63	10	22	34	16
38.210.0612	63	12	22	34	16
38.210.0614	63	14	22	34	14
38.210.0616	63	16	22	34	14
38.210.0618	63	18	22	34	14
38.210.0620	63	20	22	34	14
38.210.0803	80	3	27	41	24
38.210.0804	80	4	27	41	20
38.210.0805	80	5	27	41	20
38.210.0806	80	6	27	41	20

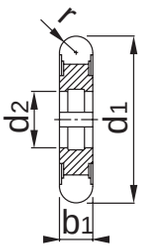
Ref.	d1	b1	d2	d3	z
38.210.0808	80	8	27	41	18
38.210.0810	80	10	27	41	18
38.210.0812	80	12	27	41	18
38.210.0814	80	14	27	41	18
38.210.0816	80	16	27	41	16
38.210.0820	80	20	27	41	16
38.210.1003	100	3	32	47	20
38.210.1004	100	4	32	47	20
38.210.1005	100	5	32	47	20
38.210.1006	100	6	32	47	20
38.210.1008	100	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	18
38.210.1025	100	25	32	47	18
38.210.1204	125	4	32	47	26
38.210.1205	125	5	32	47	26

Ref.	d1	b1	d2	d3	z
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	20
38.210.1218	125	18	32	47	20
38.210.1220	125	20	32	47	20
38.210.1225	125	25	32	47	20
38.210.1604	160	4	40	55	32
38.210.1605	160	5	40	55	32
38.210.1606	160	6	40	55	28
38.210.1608	160	8	40	55	28
38.210.1610	160	10	40	55	28
38.210.1612	160	12	40	55	24
38.210.1614	160	14	40	55	24
38.210.1616	160	16	40	55	24
38.210.1618	160	18	40	55	24
38.210.1620	160	20	40	55	22

19:00 ▶ 🛒 ▶ 24h

› 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**





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

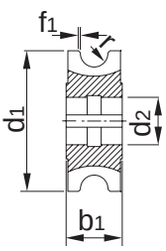
Ref.	r	d1	b1	d2	z
38.300.0100	1	50	2	16	16
38.300.0125	1.25	50	2.5	16	16
38.300.0150	1.5	50	3	16	16
38.300.0200	2	50	4	16	16
38.300.0250	2.5	63	5	22	12

Ref.	r	d1	b1	d2	z
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

Ref.	r	d1	b1	d2	z
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**





HSS-E | DIN 855

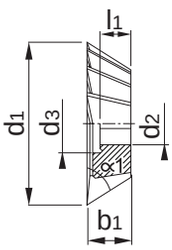
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu
25-30 D	20-25 C	15-20 A	10-15 A	10-15 B	8-12 A	17-22 B	20-25 B	95-105 B

Ref.	r	d1	b1	d2	d3	f1	z
38.350.0100	1	50	8	16	0.2	14	
38.350.0125	1.25	50	6	16	0.2	14	27
38.350.0150	1.5	50	8	16	0.2	14	27
38.350.0200	2	50	9	16	0.25	14	27
38.350.0250	2.5	63	10	22	0.3	14	34
38.350.0300	3	63	12	22	0.3	12	34

Ref.	r	d1	b1	d2	d3	f1	z
38.350.0400	4	63	16	22	0.4	12	34
38.350.0500	5	63	20	22	0.5	10	34
38.350.0600	6	80	24	27	0.6	10	41
38.350.0800	8	80	32	27	0.8	10	41
38.350.1000	10	100	40	32	1	10	47
38.350.1200	12	100	44	32	1.2	10	47

› 38.400 Phantom

NL **HSS-E Hoekkopfrees 45°, 50°, 60°**
FR **Fraise conique 2 tailles HSS-E 45°, 50°, 60°**
ES **Fresa semicircular cónica HSS-E 45°, 50°, 60°**
DE **HSS-E Winkelstirnfräser 45°, 50°, 60°**





HSS-E | DIN 842

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

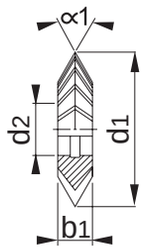
Ref.	d1	d2	d3	b1	α	z
38.400.4504	40	10	15	12	45°	14
38.400.4505	50	13	19	15	45°	16
38.400.4506	63	16	23	18	45°	16
38.400.4508	80	22	30	23	45°	18
38.400.4510	100	32	39	30	45°	20

Ref.	d1	d2	d3	b1	α	z
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	32	39	32	50°	20

Ref.	d1	d2	d3	b1	α	z
38.400.6004	40	10	15	13	60°	14
38.400.6005	50	16	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	32	39	32	60°	20

› 38.450 Phantom

NL **HSS-E Prismafrees 45°, 60°, 90°**
FR **Fraise isocèle 2 tailles HSS-E 45°, 60°, 90°**
ES **Fresa semicircular angular HSS-E 45°, 60°, 90°**
DE **HSS-E Prismenfräser 45°, 60°, 90°**





HSS-E | DIN 847

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

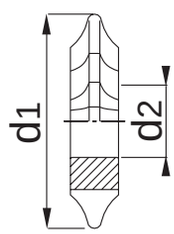
Ref.	d1	d2	b1	∂	z
38.450.4505	50	16	8	45°	16
38.450.4506	63	22	10	45°	16
38.450.4508	80	27	12	45°	20
38.450.4510	100	32	18	45°	20

Ref.	d1	d2	b1	∂	z
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

Ref.	d1	d2	b1	∂	z
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-E Modulschijffrees drukhoek 20°**
FR **Fraise module HSS-E angle de pression 20°**
ES **Fresa de módulo HSS-E ángulo de presión 20°**
DE **HSS-E Modulscheibenfräser Eingriffswinkel 20°**





HSS-E

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)

Ref.	Modul	d1	d2	Nr.
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)

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› 38.500 Phantom

Ref.	Modul	d1	d2	Nr.
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)
38.500.6005	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**



Ref.	Type	Ø mm
39.100.1050	32.220	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm

Ref.	Type	Ø mm
39.100.1200	32.200/32.220/33.200/33.220/ 34.200/34.220	4, 5, 6, 8, 10, 12 mm

› 39.200 Phantom

NL **HSS-E Set Schachtfrezen, 2-snijder**
FR **Jeu de Fraises à rainurer HSS-E**
ES **Juego de fresas frontales de 2 labios HSS-E**
DE **HSS-E Satz Langlochfräser**



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
39.200.1050	32.220	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm

Ref.	Type	Ø mm
39.200.1150	32.220	4, 5, 6, 8, 10, 12 mm

› 39.300 Phantom

NL **HSS-E Set Schachtfrezen, 3-snijder**
FR **Jeu de Fraises universelles HSS-E**
ES **Jeugo de Fresas frontales de 3 labios HSS-E**
DE **HSS-E Satz Universalfräser**



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
39.300.1050	33.220	3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20 mm

Ref.	Type	Ø mm
39.300.1150	33.220	4, 5, 6, 8, 10, 12 mm

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› 39.400 Phantom

NL **HSS-E set Schachtfrezen, meersnijder**
FR **Jeu de Fraises standards HSS-E**
ES **Juego de fresas frontales de varios labios HSS-E**
DE **HSS-E Satz Schaftfräser (4 Schneiden)**



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 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

Ref.	Type	Ø 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**

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 **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**

$$n = \frac{Vc \times 1000}{3{,}14 \times d1} \qquad Vc = \frac{n \times 3{,}14 \times d1}{1000}$$

Vc (m/min)																		
	5	8	10	12	15	20	25	30	35	40	50	60	70	80	90	100	110	120
d1 (mm)	n = rpm																	
1	1592	2546	3183	3820	4775	6366	7958	9549	11141	12732	15915	19099	22282	25465	28648	31831	35014	38197
1,5	1061	1698	2122	2546	3183	4244	5305	6366	7427	8588	10610	12732	14854	16977	19099	21221	23343	25465
2	796	1273	1592	1910	2387	3183	3937	4775	5570	6366	7958	9549	11141	12732	14324	15915	17507	19099
2,5	637	1019	1273	1528	1910	2546	3183	3820	4456	5093	6366	7639	8913	10186	11459	12732	14006	15279
3	531	849	1061	1273	1592	2122	2653	3183	2714	4244	5305	6366	7427	8488	9549	10610	11671	12732
3,5	455	728	909	1091	1364	1819	2274	2728	3183	3638	4547	5457	6366	7276	8185	9095	10004	10913
4	398	637	796	955	1194	1592	1989	2387	2785	3183	3979	4775	5570	6366	7162	7958	8754	9549
4,5	354	566	707	849	1061	1415	1768	2122	2476	2829	3537	4244	4951	5659	6366	7074	7781	8488
5	318	509	637	764	955	1273	1592	1910	2228	2546	3183	3820	4456	5093	5730	6366	7003	7639
5,5	289	463	579	694	868	1157	1447	1739	2026	2315	2894	3472	4051	4630	5209	5787	6366	6945
6	265	424	531	637	796	1061	1326	1592	1857	2122	2653	3183	3714	4244	4775	5305	5836	6366
7	227	364	455	546	682	909	1137	1364	1592	1819	2274	2728	3183	3638	4093	4547	5002	5457
8	199	318	398	477	597	796	995	1194	1393	1592	1989	2387	2785	3183	3581	3979	4377	4775
9	177	283	354	424	531	707	884	1061	1238	1415	1768	2122	2476	2829	3183	3537	3890	4244
10	159	255	318	382	477	637	796	955	1114	1273	1592	1910	2228	2546	2865	3183	3501	3820
11	145	321	289	347	434	579	723	868	1013	1157	1447	1736	2026	2315	2604	2894	3183	3472
12	133	212	265	318	398	531	663	796	928	1061	1326	1592	1857	2122	2387	2653	2918	3183
13	122	196	245	294	367	490	612	735	857	979	1224	1469	1714	1959	2204	2449	2693	2938
14	114	182	227	273	341	455	568	682	796	909	1137	1364	1592	1819	2046	2274	2501	2728
15	106	170	212	255	318	424	531	637	743	849	1061	1273	1485	1698	1910	2122	2334	2546
16	99	159	199	239	298	398	497	597	696	796	995	1194	1393	1592	1790	1989	2188	2387
18	88	141	177	212	265	354	442	361	619	707	884	1061	1238	1415	1592	1768	1945	2122
20	80	127	159	191	239	318	398	477	557	637	796	955	1114	1273	1432	1592	1751	1910
22	72	116	145	174	217	289	362	434	506	579	723	868	1013	1157	1302	1447	1592	1736
24	66	106	133	159	199	265	332	398	464	531	663	796	928	1061	1194	1326	1459	1592
25	64	102	127	153	191	255	318	382	446	509	637	764	891	1019	1146	1273	1401	1528
26	61	98	122	147	184	245	306	367	428	490	612	735	857	979	1102	1224	1347	1469
28	57	91	114	136	171	227	284	341	398	455	568	682	796	909	1023	1137	1251	1364
30	53	85	106	127	159	212	265	318	371	424	531	637	743	849	955	1061	1167	1273
35	45	73	91	109	136	182	227	273	318	364	455	546	637	728	819	909	1000	1091
40	40	64	80	95	119	159	199	239	279	318	398	477	557	637	716	796	875	955
45	35	57	71	85	106	141	177	212	248	283	354	424	495	566	637	707	778	849
50	32	51	64	76	95	127	159	191	223	255	318	382	446	509	573	637	700	764
55	29	46	58	69	87	116	145	174	203	231	289	347	405	463	521	579	637	694
60	27	42	53	64	80	106	133	159	186	212	265	318	371	424	477	531	584	637

FRC
NL: Voedingscode
FR: Codification vitesse d'avance
ES: Codificación de velocidad de avance
DE: Vorschubgeschwindigkeit Codierung

fz (mm/z)
NL: Voeding per tand (mm/z)
FR: Avance par dent (mm/z)
ES: Avance por diente (mm/z)
DE: Vorschub pro Zahn (mm/Z)

Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)

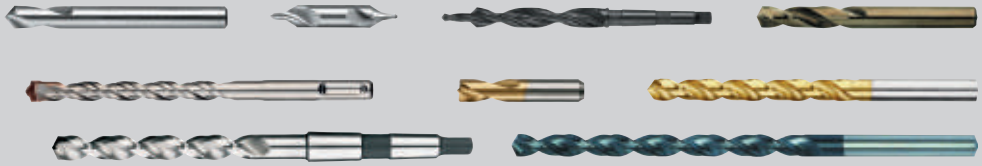
n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)

19:00 ▶ 24h

NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



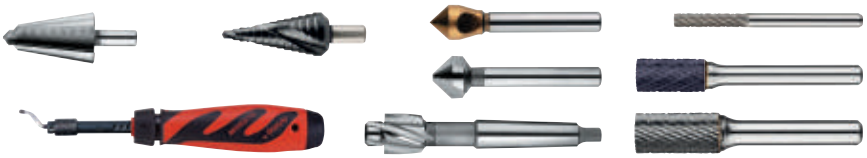
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



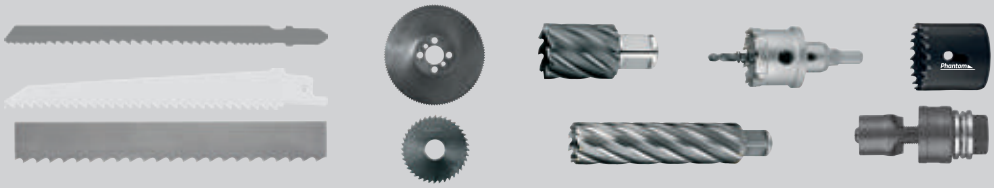
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
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 8%	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Vollhartmetall
OX.	Stoomontlaten	Vaporisé	Vaporizado	Dampfangelassen
NIT.	Genitreerd	Nitruré	Nitrurado	Nitriert
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung
AlCrN	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung
90°	Hoek 90°	Angle 90°	Ángulo 90°	Winkel 90°
180°	Hoek 180°	Angle 180°	Ángulo 180°	Winkel 180°
DIN 335-C	DIN norm	Norme DIN	Norma DIN	DIN Norm
Phantom	Phantom norm	Norme Phantom	Norma Phantom	Werksnorm
	Verzinkfrees met schuin gat	Fraise à chanfreiner à trou	Avellanador con agujero	Kegelsenker mit schräger Bohrung
1	Verzinkfrees met 1 snijkant	Fraise à chanfreiner à un dent	Avellanador con 1 diente	Kegelsenker mit 1 Schneide
3	Verzinkfrees 3 snijkanten, frezende bewerking	Fraise à chanfreiner à 3 dents, pour fraisage	Avellanador con 3 dientes, para fresar	Kegelsenker mit 3 Schneiden, für fräsen
3	Verzinkfrees 3 snijkanten, borende bewerking	Fraise à chanfreiner à 3 dents, pour perçage	Avellanador con 3 dientes, para taladar	Kegelsenker mit 3 Schneiden, für Bohren
90°	Verzinkhoek	Angle de chanfreinage	Ángulo de avellanar	Senkwinkel

	NL	FR	ES	DE
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft
	Schacht zeskant	Queue hexagonale	Mango hexagonal	Sechskantschaft
1/4"	Bitopname (1/4")	Queue hexagonale 1/4" (6,35 mm)	Mango hexagonal 1/4" (6,35 mm)	Bitaufname (1/4")
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel
1	Fijnpassing 90°	Ajustement fin 90°	Ajuste fino 90°	Senkung fein 90°
2	Middelpassing 90°	Ajustement moyen 90°	Ajuste medio 90°	Senkung mittel 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°
1	Fijnpassing 180°	Ajustement fin 180°	Ajuste fino 180°	Senkung fein 180°
2	Middelpassing 180°	Ajustement moyen 180°	Ajuste medio 180°	Senkung mittel 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°
	Rechte hoek	Angle droit	Borde recto	Gerade Kante
	Buitenrand buis	Angle extérieur	Borde externo de agujero	Außenbearbeitung Rohre
	Rand achterzijde	Bord arrière de trou	Borde detrás de agujero	Innenbearbeitung Rückseite
	Plat oppervlak	Surface plane	Superficie plana	Ebene Oberfläche
	Rand voorzijde	Angle d'un alésage	Borde de agujero	Innenbearbeitung Vorderseite
	Rand voor- en achterzijde	Trous sécants	Borde de agujero ambos lados	Innenbearbeitung Vorder- und Rückseite
	Oppervlak binnenkant gat	Surface interne d'un trou	Superficie interna de agujero	Innere Oberfläche "Wand"
	Plaatmateriaal	Tôles	Planchas	Bleche

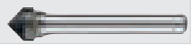
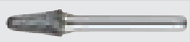
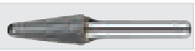
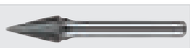
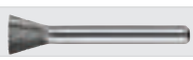
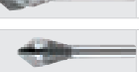
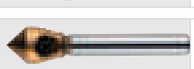
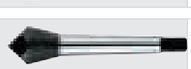
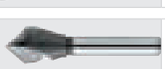
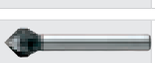
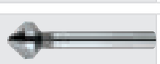
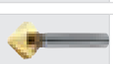
NL **Verzinken en Ontbramen**
FR **Chanfreinage et ébavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**

PK HN MS Bij uitstek geschikt / Très approprié / Muy adecuado / Ideal geeignet

PK HN MS Beperkt geschikt / Approprié / Adecuado / Eingeschränkt geeignet

P= pagina
P= page
P= página
P= Seite

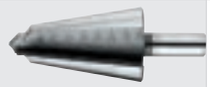
› 41.510	Phantom	A	Ø6		P. 6
› 41.511	Phantom	A	Ø6	TiAlN	P. 6
› 41.513	Phantom	A	Ø3		P. 6
› 41.518	Phantom	A	Ø8		P. 6
› 41.520	Phantom	B	Ø6		P. 7
› 41.521	Phantom	B	Ø6	TiAlN	P. 7
› 41.523	Phantom	B	Ø3		P. 7
› 41.528	Phantom	B	Ø8		P. 7
› 41.529	Phantom	B	Ø6		P. 7
› 41.530	Phantom	C	Ø6		P. 8
› 41.531	Phantom	C	Ø6	TiAlN	P. 8
› 41.533	Phantom	C	Ø3		P. 8
› 41.538	Phantom	C	Ø8		P. 8
› 41.539	Phantom	C	Ø6		P. 8
› 41.540	Phantom	D	Ø6		P. 9
› 41.543	Phantom	D	Ø3	TiAlN	P. 9
› 41.548	Phantom	D	Ø8		P. 9
› 41.549	Phantom	D	Ø6		P. 9
› 41.550	Phantom	E	Ø6		P. 10
› 41.553	Phantom	E	Ø3	TiAlN	P. 10
› 41.559	Phantom	E	Ø6		P. 10
› 41.560	Phantom	F	Ø6		P. 11
› 41.561	Phantom	F	Ø6	TiAlN	P. 11
› 41.563	Phantom	F	Ø3		P. 11
› 41.568	Phantom	F	Ø8		P. 11
› 41.569	Phantom	F	Ø6		P. 11
› 41.570	Phantom	G	Ø6		P. 12
› 41.573	Phantom	G	Ø3		P. 12
› 41.578	Phantom	G	Ø8		P. 12
› 41.579	Phantom	G	Ø6		P. 12
› 41.580	Phantom	H	Ø6		P. 13
› 41.583	Phantom	H	Ø3		P. 13
› 41.588	Phantom	H	Ø8		P. 13

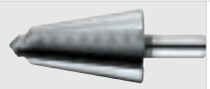
› 41.600	Phantom	J	Ø6								P. 14
› 41.610	Phantom	K	Ø6								P. 14
› 41.613	Phantom	K	Ø3								P. 14
› 41.620	Phantom	L	Ø6								P. 15
› 41.623	Phantom	L	Ø3								P. 15
› 41.628	Phantom	L	Ø8								P. 15
› 41.629	Phantom	L	Ø6								P. 15
› 41.630	Phantom	M	Ø6								P. 16
› 41.633	Phantom	M	Ø3								P. 16
› 41.640	Phantom	N	Ø6								P. 17
› 41.643	Phantom	N	Ø3								P. 17
› 41.850	Phantom										P. 18
› 41.860	Phantom										P. 18
› 41.865	Phantom										P. 18
› 42.100	Phantom	HSS-E	1	30°	P		K	N			P. 19
› 42.200	Phantom	HSS-E	1	45°	P		K	N			P. 19
› 42.300	Phantom	HSS-E		60°	P		K	N			P. 19
› 42.310	Phantom	HSS-E		60°	P		K	N			P. 20
› 42.320	Phantom	HSS-E	1	60°	P		K	N			P. 20
› 42.330	Phantom	HSS-E	1	60°	P		K	N			P. 20
› 42.340	Phantom	HSS-E	3	60°	P	M	K	N			P. 21
› 42.370	Phantom	HSS-E	3	60°	P	M	K	N			P. 21
› 42.390	INTERNATIONAL TOOLS	HSS	>3	60°	P						P. 21
› 42.420	Phantom	HSS-E	1	82°	P		K	N			P. 22
› 42.440	Phantom	HSS-E	3	82°	P	M	K	N			P. 22
› 42.500	Phantom	HSS-E		90°	P		K	N			P. 22
› 42.501	Phantom	HSS-E		90°	P		K	N			P. 23
› 42.510	Phantom	HSS-E		90°	P		K	N			P. 23
› 42.520	Phantom	HSS-E	1	90°	P		K	N			P. 23
› 42.530	Phantom	HSS-E	1	90°	P		K	N			P. 24
› 42.535	INTERNATIONAL TOOLS	HSS	3	90°			K	N			P. 24
› 42.540	Phantom	HSS-E	3	90°	P	M	K	N			P. 24
› 42.541	Phantom	HSS-E	3	90°	P	M	K	N			P. 25

19:00 ▶ 🛒 ▶ 24h

› 42.545	Phantom	HSS-E	3	90°	P	M	K	N					P. 25
› 42.546	Phantom	HSS-E	3	90°	P	M	K	N					P. 25
› 42.550	Phantom	HSS-E 8%	3	90°	P	M	K	N	S				P. 26
› 42.552	Phantom	HSS-E	3	90°	P	M	K	N	S				P. 26
› 42.560	Phantom	MG HM	3	90°	P	M	K	N	S	H			P. 26
› 42.570	Phantom	HSS-E	3	90°	P	M	K	N					P. 27
› 42.580	Phantom	HSS-E	3	90°									P. 27
› 42.590	INTERNATIONAL TOOLS	HSS	>3	90°	P								P. 27
› 42.640	Phantom	HSS-E	3	100°	P	M	K	N					P. 27
› 42.700	Phantom	HSS-E		120°	P		K	N					P. 28
› 42.710	Phantom	HSS-E		120°	P		K	N					P. 28
› 42.740	Phantom	HSS-E	3	120°	P	M	K	N					P. 15
› 43.200	Phantom	HSS-E	DIN 1866	90°	P	M	K	N					P. 29
› 43.210	Phantom	HSS-E	DIN 1866	90°	P	M	K	N					P. 29
› 43.240	Phantom	HSS-E	DIN 1866	90°	P	M	K	N					P. 29
› 43.320	Phantom	HSS-E	DIN 373	180°	P	M	K	N					P. 30
› 43.330	Phantom	HSS-E	DIN 373	180°	P	M	K	N					P. 30
› 43.350	Phantom	HSS-E	DIN 373	180°	P	M	K	N					P. 30
› 43.400	Phantom	HSS-E	DIN 373	180°	P	M	K	N					P. 31
› 43.410	Phantom	HSS-E	DIN 373	180°	P	M	K	N					P. 31
› 43.440	Phantom	HSS-E	DIN 373	180°	P	M	K	N					P. 31
› 44.100	Phantom	HSS	OX.		P	M	K	N					P. 32
› 44.102	Phantom	HSS	NIT.		P	M	K	N					P. 32
› 44.110	Phantom	HSS	OX.		P	M	K	N					P. 32
› 44.120	Phantom	HSS	OX.		P	M	K	N					P. 33
› 44.130	Phantom	HSS	NIT.		P	M	K	N					P. 33
› 44.134	Phantom	HSS	TiAlN		P	M	K	N					P. 33
› 44.150	Phantom	HSS			P	M	K	N					P. 34

1 SC
1 HSS(-E)
2
3 SC
3 HSS-E
4







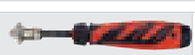




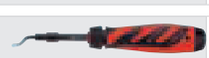


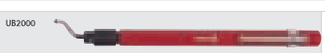
















› 44.200	Phantom	HSS			P			N		P. 34
› 44.210	Phantom	HSS-E			P	M		N		P. 34
› 44.220	INTERNATIONAL TOOLS	HSS			P			N		P. 35
› 46.100	SHAVIV									P. 36
› 46.120	SHAVIV	B								P. 36
› 46.130	SHAVIV	C								P. 37
› 46.140	SHAVIV	D								P. 37
› 46.155	SHAVIV	E								P. 37
› 46.160	SHAVIV	F								P. 37
› 46.180	SHAVIV									P. 38
› 46.300	SHAVIV	E								P. 38
› 46.370	SHAVIV								UB2000	P. 39
› 46.400	SHAVIV									P. 39
› 49.150	Phantom									P. 40
› 49.230	Phantom	HSS-E		60°	P			N		P. 40
› 49.232	Phantom	HSS-E	1	60°	P		K	N		P. 41
› 49.234	Phantom	HSS-E	3	60°	P		K	N		P. 41
› 49.250	Phantom	HSS-E		90°	P	M	K	N		P. 42
› 49.252	Phantom	HSS-E	1	90°	P		K	N		P. 42
› 49.253	INTERNATIONAL TOOLS	HSS	3	90°	P		K	N		P. 42
› 49.254	Phantom	HSS-E	3	90°	P	M	K	N		P. 43
› 49.255	Phantom	HSS-E 8%	3	90°	P	M	K	N	S	P. 43
› 49.256	Phantom	HSS-E	3	90°	P	M	K	N		P. 44
› 49.270	Phantom	HSS-E		120°	P		K	N		P. 44



















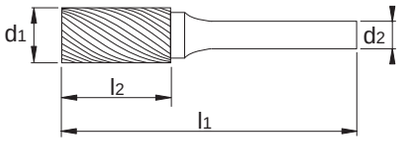


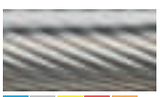
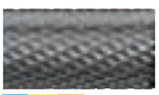
› 49.320	Phantom	HSS-E	DIN 1866	90°	P	M	K	N		P. 44
› 49.340	Phantom	HSS-E	DIN 373	180°	P	M	K	N		P. 45
› 49.413	Phantom	HSS	NIT.		P	M	K	N		P. 45
› 49.414	Phantom	HSS	TiAlN		P	M	K	N		P. 45
› 49.420	Phantom	HSS			P			N		P. 46
› 49.490	Phantom									P. 46
› 49.600	SHAVIV									P. 46

› 41.510 Phantom



NL **HM Stiftfrees model A, cilindrisch**
FR **Fraise lime Carbure Forme A, Forme cylindrique**
ES **Fresa rotativa MD forma A, cilíndrico**
DE **HM Frässtift Form A, Zylinderform**



1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18	41.510.0601	41.510.0603	41.510.0604	41.510.0606	41.510.0608	41.510.0609
8	8	6	64	19	41.510.0801	41.510.0803	41.510.0804	41.510.0806	41.510.0808	41.510.0809
10	9,5	6	64	19	41.510.1001	41.510.1003	41.510.1004	41.510.1006	41.510.1008	41.510.1009
12	12,7	6	70	25	41.510.1201	41.510.1203	41.510.1204	41.510.1206	41.510.1208	41.510.1209
16	16	6	70	25	41.510.1601		41.510.1604	41.510.1606		
20	19	6	70	25				41.510.2006		

› 41.511 Phantom



NL **HM Stiftfrees model A, cilindrisch, TiAlN**
FR **Fraise lime Carbure Forme A, Forme cylindrique, TiAlN**
ES **Fresa rotativa MD forma A, cilíndrico, TiAlN**
DE **HM Frässtift Form A, Zylinderform, TiAlN**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18				41.511.0606		
8	8	6	64	19				41.511.0806		
10	9,5	6	64	19				41.511.1006		
12	12,7	6	70	25				41.511.1206		

› 41.513 Phantom



NL **HM Stiftfrees model A, cilindrisch, schacht 3 mm**
FR **Fraise lime Carbure Forme A, Forme cylindrique, queue 3 mm**
ES **Fresa rotativa MD forma A, cilíndrico, mango 3 mm**
DE **HM Frässtift Form A, Zylinderform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
1,5	1,5	3	38	6		41.513.0153	41.513.0154			
2	2	3	38	11				41.513.0206		
3	3	3	38	14	41.513.0301	41.513.0303	41.513.0304	41.513.0306		41.513.0309
6	6,3	3	45	12,7				41.513.0636		41.513.0639

› 41.518 Phantom

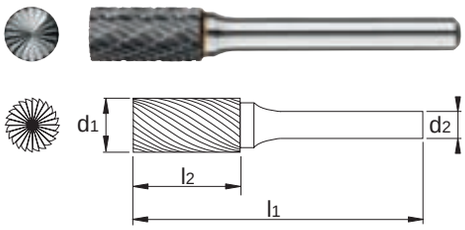


NL **HM Stiftfrees model A, cilindrisch, schacht 8 mm**
FR **Fraise lime Carbure Forme A, Forme cylindrique, queue 8 mm**
ES **Fresa rotativa MD forma A, cilíndrico, mango 8 mm**
DE **HM Frässtift Form A, Zylinderform, Schaft 8 mm**

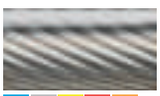
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	70	25				41.518.1286		
16	16	8	70	25	41.518.1681			41.518.1686		
20	19	8	70	25				41.518.2086		

19:00 24h

› 41.520 Phantom



NL **HM Stiftfrees model B, cilindrisch met kopvertanding**
FR **Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout**
ES **Fresa rotativa MD forma B, cilíndrico con corte al centro**
DE **HM Frässtift Form B, Zylinderform mit Stirnverzahnung**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18	41.520.0601	41.520.0603	41.520.0604	41.520.0606	41.520.0608	
8	8	6	64	19	41.520.0801	41.520.0803	41.520.0804	41.520.0806	41.520.0808	
10	9,5	6	64	19	41.520.1001	41.520.1003	41.520.1004	41.520.1006	41.520.1008	
12	12,7	6	70	25	41.520.1201	41.520.1203	41.520.1204	41.520.1206	41.520.1208	
16	16	6	70	25		41.520.1603		41.520.1606		
20	19	8	70	25				41.520.2006		

› 41.521 Phantom



NL **HM Stiftfrees model B, cilindrisch met kopvertanding, TiAlN**
FR **Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout, TiAlN**
ES **Fresa rotativa MD forma B, cilíndrico con corte al centro, TiAlN**
DE **HM Frässtift Form B, Zylinderform mit Stirnverzahnung, TiAlN**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18				41.521.0606		
8	8	6	64	19				41.521.0806		
10	9,5	6	64	19				41.521.1006		
12	12,7	6	70	25				41.521.1206		

› 41.523 Phantom



NL **HM 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 MD forma B, cilíndrico con corte al centro, mango 3 mm**
DE **HM Frässtift Form B, Zylinderform mit Stirnverzahnung, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
1,5	1,5	3	38	6		41.523.0153				
2	2	3	38	11				41.523.0206		
3	3	3	38	14	41.523.0301	41.523.0303	41.23.0304	41.523.0306		
5	5	3	38	12,7				41.523.0506		
6	6,3	3	38	12,7				41.523.0636		
16	16	3	70	25				41.523.1686		
20	19	3	70	25				41.523.2086		

› 41.528 Phantom



NL **HM 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 MD forma B, cilíndrico con corte al centro, mango 8 mm**
DE **HM Frässtift Form B, Zylinderform mit Stirnverzahnung, Schaft 8 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	70	25				41.528.1286		

› 41.529 Phantom

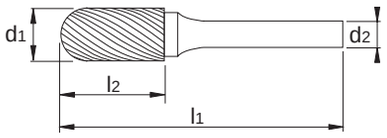


NL **HM Stiftfrees model B, cilindrisch met kopvertanding, lang**
FR **Fraise lime Carbure Forme B, Forme cylindrique avec denture en bout, longue**
ES **Fresa rotativa MD forma B, cilíndrico con corte al centro, larga**
DE **HM Frässtift Form B, Zylinderform mit Stirnverzahnung, lang**

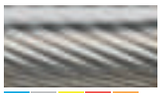
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	162	12,7			41.529.0614			
10	9,5	6	170	19			41.529.1014			
12	12,7	6	175	25			41.529.1214			

› 41.530 Phantom





NL **HM Stiftfrees model C, cilindrisch, ronde kop**
FR **Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi**
ES **Fresa rotativa MD forma C, cilíndrico, forma semiesférica**
DE **HM Frässtift Form C, Walzenrundform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18	41.530.0601	41.530.0603	41.530.0604	41.530.0606	41.530.0608	41.530.0609
8	8	6	64	19	41.530.0801	41.530.0803	41.530.0804	41.530.0806	41.530.0808	41.530.0809
10	9,5	6	64	19	41.530.1001	41.530.1003	41.530.1004	41.530.1006	41.530.1008	41.530.1009
12	12,7	6	70	25	41.530.1201	41.530.1203	41.530.1204	41.530.1206	41.530.1208	41.530.1209
16	16	6	70	25	41.530.1601	41.530.1603	41.530.1604	41.530.1606		
20	19	6	70	25				41.530.2006		

› 41.531 Phantom



NL **HM Stiftfrees model C, cilindrisch, ronde kop, TiAlN**
FR **Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi, TiAlN**
ES **Fresa rotativa MD forma C, cilíndrico, forma semiesférica, TiAlN**
DE **HM Frässtift Form C, Walzenrundform, TiAlN**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18				41.531.0606		
8	8	6	64	19				41.531.0806		
10	9,5	6	64	19				41.531.1006		
12	12,7	6	70	25				41.531.1206		

› 41.533 Phantom



NL **HM 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 MD forma C, cilíndrico, forma semiesférica, mango 3 mm**
DE **HM Frässtift Form C, Walzenrundform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
2	2	3	38	11		41.533.0203		41.533.0206		
3	3	3	38	14	41.533.0301	41.533.0303	41.533.0304	41.533.0306		41.533.0309
6	6,3	3	45	12,7		41.533.0633	41.533.0634	41.533.0636		41.533.0639

› 41.538 Phantom



NL **HM 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 MD forma C, cilíndrico, forma semiesférica, mango 8 mm**
DE **HM Frässtift Form C, Walzenrundform, Schaft 8 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	70	25				41.538.1286		
16	16	8	70	25				41.538.1686		
19	19	8	70	25				41.538.2086		

› 41.539 Phantom

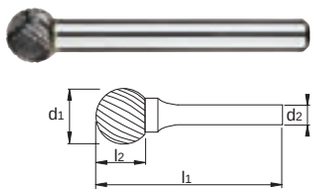


NL **HM Stiftfrees model C, cilindrisch, ronde kop, lang**
FR **Fraise lime Carbure Forme C, Forme cylindrique à bout arrondi, longue**
ES **Fresa rotativa MD forma C, cilíndrico, forma semiesférica, larga**
DE **HM Frässtift Form C, Walzenrundform, lang**

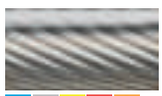
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	162	12,7			41.539.0614			
10	9,5	6	170	19			41.539.1014			
12	12,7	6	175	25			41.539.1214			

19:00 24h

› 41.540 Phantom



NL **HM Stiftfrees model D, kogelvorm**
FR **Fraise lime Carbure Forme D, Forme sphérique**
ES **Fresa rotativa MD forma D, modelo esférico**
DE **HM Frässtift Form D, Kugelform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	5	41.540.0601	41.540.0603	41.540.0604	41.540.0606	41.540.0608	41.540.0609
8	8	6	50	6,4	41.540.0801	41.540.0803	41.540.0804	41.540.0806	41.540.0808	41.540.0809
10	9,5	6	52	8	41.540.1001	41.540.1003	41.540.1004	41.540.1006	41.540.1008	41.540.1009
12	12,7	6	55	11	41.540.1201	41.540.1203	41.540.1204	41.540.1206	41.540.1208	41.540.1209
16	16	6	58	14	41.540.1601			41.540.1606		
20	19	6	62	16				41.540.2006		

› 41.543 Phantom



NL **HM Stiftfrees model D, kogelvorm, schacht 3 mm**
FR **Fraise lime Carbure Forme D, Forme sphérique, queue 3 mm**
ES **Fresa rotativa MD forma D, modelo esférico, mango 3 mm**
DE **HM Frässtift Form D, Kugelform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
2	2	3	38	1,8		41.543.0203		41.543.0206		
3	3	3	38	2,5	41.543.0301	41.543.0303	41.543.0304	41.543.0306		41.543.0309
4	4	3	38	3,4		41.543.0403		41.543.0406		
6	6,3	3	38	5	41.543.0631	41.543.0633		41.543.0636		41.543.0639

› 41.548 Phantom



NL **HM Stiftfrees model D, kogelvorm, schacht 8 mm**
FR **Fraise lime Carbure Forme D, Forme sphérique, queue 8 mm**
ES **Fresa rotativa MD forma D, modelo esférico, mango 8 mm**
DE **HM Frässtift Form D, Kugelform, Schaft 8 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	56	11				41.548.1286		
16	16	8	59	14				41.548.1686		
20	19	8	62	16,5				41.548.2086		

› 41.549 Phantom

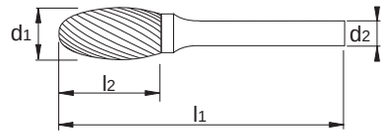


NL **HM Stiftfrees model D, kogelvorm, lang**
FR **Fraise lime Carbure Forme D, Forme sphérique, longue**
ES **Fresa rotativa MD forma D, modelo esférico, larga**
DE **HM Frässtift Form D, Kugelform, lang**

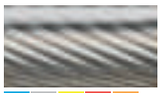
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
10	9,5	6	158	8			41.549.1014			
12	12,7	6	161	11			41.549.1214			

› 41.550 Phantom





NL **HM Stiftfrees model E, druppelvorm**
FR **Fraise lime Carbure Forme E, Forme goutte**
ES **Fresa rotativa MD forma E, forma oval**
DE **HM Frässtift Form E, Tropfenform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	9,5	41.550.0601			41.550.0606		
8	8	6	60	15						41.550.0809
10	9,5	6	60	16	41.550.1001		41.550.1004	41.550.1006		41.550.1009
12	12,7	6	66	22	41.550.1201		41.550.1204	41.550.1206		41.550.1209
16	16	6	70	25				41.550.1606		

› 41.553 Phantom



NL **HM Stiftfrees model E, druppelvorm, schacht 3 mm**
FR **Fraise lime Carbure Forme E, Forme goutte, queue 3 mm**
ES **Fresa rotativa MD forma E, forma oval, mango 3 mm**
DE **HM Frässtift Form E, Tropfenform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	5,5				41.553.0306		
6	6,3	3	42	9,5				41.553.0636		

› 41.559 Phantom



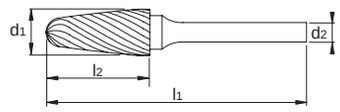
NL **HM Stiftfrees model E, druppelvorm, lang**
FR **Fraise lime Carbure Forme E, Forme goutte, longue**
ES **Fresa rotativa MD forma E, forma oval, larga**
DE **HM Frässtift Form E, Tropfenform, lang**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
10	9,5	6	166	16			41.559.1014			

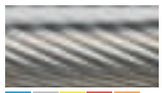
19:00 ▶ 24h

› 41.560 Phantom





NL **HM Stiftfrees model F, boomvorm met ronde kop**
FR **Fraise lime Carbure Forme F, Forme ogive à bout arrondi**
ES **Fresa rotativa MD forma F, forma ojival en semiesférica**
DE **HM Frässtift Form F, Rundbogenform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	12,7		41.560.0303	41.560.0304			
6	6	6	50	18	41.560.0601	41.560.0603	41.560.0604	41.560.0606	41.560.0608	41.560.0609
8	8	6	65	20					41.560.0808	41.560.0809
10	9,5	6	64	19	41.560.1001	41.560.1003	41.560.1004	41.560.1006	41.560.1008	41.560.1009
12	12,7	6	70	25	41.560.1201	41.560.1203	41.560.1204	41.560.1206	41.560.1208	41.560.1209
16	16	6	70	25	41.560.1601		41.560.1604	41.560.1606		

› 41.561 Phantom



NL **HM Stiftfrees model F, boomvorm met ronde kop, TiAlN**
FR **Fraise lime Carbure Forme F, Forme ogive à bout arrondi, TiAlN**
ES **Fresa rotativa MD forma F, forma ojival en semiesférica, TiAlN**
DE **HM Frässtift Form F, Rundbogenform, TiAlN**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18				41.561.0606		
10	9,5	6	64	19				41.561.1006		
12	12,7	6	70	25				41.561.1206		

› 41.563 Phantom



NL **HM 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 MD forma F, forma ojival en semiesférica, mango 3 mm**
DE **HM Frässtift Form F, Rundbogenform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	12,7	41.563.0301			41.563.0306		41.563.0309
6	6,3	3	45	12,7	41.563.0631	41.563.0633		41.563.0636		41.563.0639

› 41.568 Phantom



NL **HM 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 MD forma F, forma ojival en semiesférica, mango 8 mm**
DE **HM Frässtift Form F, Rundbogenform, Schaft 8 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	70	25				41.568.1286		
16	16	8	70	25				41.568.1686		
20	19	8	82	38				41.568.2086		

› 41.569 Phantom

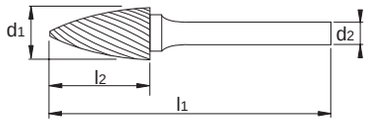


NL **HM Stiftfrees model F, boomvorm met ronde kop, lang**
FR **Fraise lime Carbure Forme F, Forme ogive à bout arrondi, longue**
ES **Fresa rotativa MD forma F, forma ojival en semiesférica, larga**
DE **HM Frässtift Form F, Rundbogenform, lang**

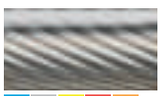
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	6	175	25			41.569.1214			

› 41.570 Phantom





NL **HM Stiftfrees model G, boomvorm spits**
FR **Fraise lime Carbure Forme G, Forme ogive**
ES **Fresa rotativa MD forma G, forma ojival en punta**
DE **HM Frässtift Form G, Spitzbogenform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	18	41.570.0601	41.570.0603	41.570.0604	41.570.0606	41.570.0608	41.570.0609
8	8	6	64	19	41.570.0801	41.570.0803	41.570.0804	41.570.0806	41.570.0808	41.570.0809
10	9,5	6	64	19	41.570.1001	41.570.1003	41.570.1004	41.570.1006	41.570.1008	41.570.1009
12	12,7	6	70	25	41.570.1201	41.570.1203	41.570.1204	41.570.1206	41.570.1208	41.570.1209
16	16	6	70	25	41.570.1601	41.570.1603	41.570.1604	41.570.1606		

› 41.573 Phantom



NL **HM Stiftfrees model G, boomvorm spits, schacht 3 mm**
FR **Fraise lime Carbure Forme G, Forme ogive, queue 3 mm**
ES **Fresa rotativa MD forma G, forma ojival en punta, mango 3 mm**
DE **HM Frässtift Form G, Spitzbogenform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	10	41.573.0301	41.573.0303	41.573.0304	41.573.0306		
6	6,3	3	45	12,7		41.573.0633		41.573.0636		

› 41.578 Phantom



NL **HM Stiftfrees model G, boomvorm spits, schacht 8 mm**
FR **Fraise lime Carbure Forme G, Forme ogive, queue 8 mm**
ES **Fresa rotativa MD forma G, forma ojival en punta, mango 8 mm**
DE **HM Frässtift Form G, Spitzbogenform, Schaft 8 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	70	25				41.578.1286		
16	16	8	70	25				41.578.1686		
20	19	8	83	38				41.578.2086		

› 41.579 Phantom



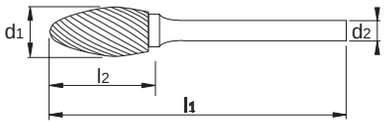
NL **HM Stiftfrees model G, boomvorm spits, lang**
FR **Fraise lime Carbure Forme G, Forme ogive, longue**
ES **Fresa rotativa MD forma G, forma ojival en punta, larga**
DE **HM Frässtift Form G, Spitzbogenform, lang**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	164	12,7			41.579.0614			
10	9,5	6	170	19			41.579.1014			
12	12,7	6	175	25			41.579.1214			

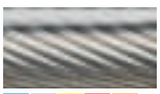
19:00 ▶ 24h

› 41.580 Phantom





NL **HM Stiftfrees model H, vlamvorm**
FR **Fraise lime Carbure Forme H, Forme flamme**
ES **Fresa rotativa MD forma H, forma llama**
DE **HM Frässtift Form H, Flammenform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	9,5				41.580.0606		
8	8	6	64	19	41.580.0801	41.580.0803	41.580.0804	41.580.0806	41.580.0808	41.580.0809
10	9,5	6	65	19						41.580.1009
12	12,7	6	77	32	41.580.1201	41.580.1203	41.580.1204	41.580.1206	41.580.1208	41.580.1209
16	16	6	80	36				41.580.1606		

› 41.583 Phantom



NL **HM Stiftfrees model H, vlamvorm, schacht 3 mm**
FR **Fraise lime Carbure Forme H, Forme flamme, queue 3 mm**
ES **Fresa rotativa MD forma H, forma llama, mango 3 mm**
DE **HM Frässtift Form H, Flammenform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	6,3				41.583.0306		
6	6	3	43	10				41.583.0636		

› 41.588 Phantom

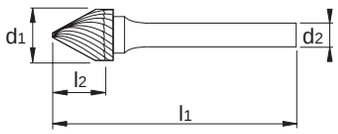


NL **HM Stiftfrees model H, vlamvorm, schacht 8 mm**
FR **Fraise lime Carbure Forme H, Forme flamme, queue 8 mm**
ES **Fresa rotativa MD forma H, forma llama, mango 8 mm**
DE **HM Frässtift Form H, Flammenform, Schaft 8 mm**

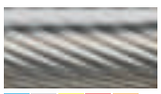
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	77	32				41.588.1286		
16	16	8	36	81				41.588.1686		
20	19	8	86	41				41.588.2086		

› 41.600 Phantom





NL **HM Stiftfrees model J, kegelvorm 60°**
FR **Fraise lime Carbure Forme J, Forme conique pointue 60°**
ES **Fresa rotativa MD forma J, forma cónica 60°**
DE **HM Frässtift Form J, Kegelsenkform 60°**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	4				41.600.0606		
10	9,5	6	55	8		41.600.1003		41.600.1006		
12	12,7	6	58	11				41.600.1206		
16	16	6	61	14,5				41.600.1606		
20	19	6	65	17,5				41.600.2006		

› 41.610 Phantom



NL **HM Stiftfrees model K, kegelvorm 90°**
FR **Fraise lime Carbure Forme K, Forme conique pointue 90°**
ES **Fresa rotativa MD forma K, forma cónica 90°**
DE **HM Frässtift Form K, Kegelsenkform 90°**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	6		41.610.0603				
10	9,5	6	52	4,7		41.610.1003				
12	12,7	6	54	6,3		41.610.1203				
16	16	6	57	8		41.610.1603				

› 41.613 Phantom

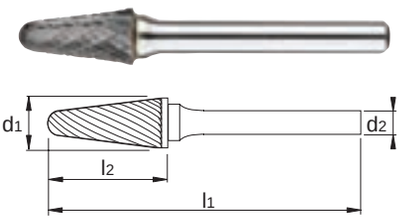


NL **HM Stiftfrees model K, kegelvorm 90°, schacht 3 mm**
FR **Fraise lime Carbure Forme K, Forme conique pointue 90°, queue 3 mm**
ES **Fresa rotativa MD forma K, forma cónica 90°, mango 3 mm**
DE **HM Frässtift Form K, Kegelsenkform 90°, Schaft 3 mm**

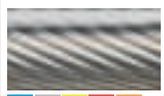
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	1,5		41.613.0303				

19:00 ▶ 24h

› 41.620 Phantom



NL **HM Stiftfrees model L, kegelvorm, met ronde kop**
FR **Fraise lime Carbure Forme L, Forme conique à bout arrondi**
ES **Fresa rotativa MD forma L, forma cónica, con punta redondeada**
DE **HM Frässtift Form L, Rundkegelform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	16	41.620.0601	41.620.0603	41.620.0604	41.620.0606		
8	8	6	70	22	41.620.0801			41.620.0806		41.620.0809
10	9,5	6	74	27	41.620.1001			41.620.1006	41.620.1008	41.620.1009
12	12,7	6	76	28	41.620.1201		41.620.1204	41.620.1206	41.620.1208	41.620.1209
16	16	6	77	30				41.620.1606		

› 41.623 Phantom



NL **HM 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 MD forma L, forma cónica, con punta redondeada, mango 3 mm**
DE **HM Frässtift Form L, Rundkegelform, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	12,7	41.623.0301	41.623.0303	41.623.0304	41.623.0306		

› 41.628 Phantom



NL **HM 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 MD forma L, forma cónica, con punta redondeada, mango 8 mm**
DE **HM Frässtift Form L, Rundkegelform, Schaft 8 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	8	77	32				41.628.1286		
16	16	8	78	33				41.628.1686		
20	19	8	86	41				41.628.2086		

› 41.629 Phantom

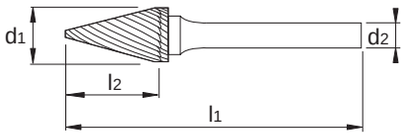


NL **HM Stiftfrees model L, kegelvorm, met ronde kop, lang**
FR **Fraise lime Carbure Forme L, Forme conique à bout arrondi, longue**
ES **Fresa rotativa MD forma L, forma cónica, con punta redondeada, larga**
DE **HM Frässtift Form L, Rundkegelform, lang**

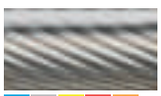
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
12	12,7	6	178	28			41.629.1214			

› 41.630 Phantom





NL **HM Stiftfrees model M, kegelvorm, spits**
FR **Fraise lime Carbure Forme M, Forme conique à bout pointu**
ES **Fresa rotativa MD forma M, forma cónica, en punta**
DE **HM Frässtift Form M, Spitzkegelform**

1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	12,7	41.630.0601	41.630.0603		41.630.0606		
6	6	6	50	19	41.630.0611	41.630.0613		41.630.0616		
6	6	6	50	25	41.630.0621	41.630.0623		41.630.0626		
10	9,5	6	64	16	41.630.1001	41.630.1003		41.630.1006		
12	12,7	6	70	22	41.630.1201	41.630.1203		41.630.1206		
16	16	6	73	25		41.630.1603		41.630.1606		

› 41.633 Phantom



NL **HM 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 MD forma M, forma cónica, en punta, mango 3 mm**
DE **HM Frässtift Form M, Spitzkegelform, Schaft 3 mm**

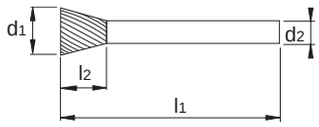
Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	11	41.633.0301	41.633.0303		41.633.0306		

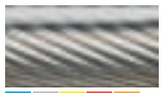
19:00 ▶ 🛒 ▶ 24h

› 41.640 Phantom

NL **HM Stiftfrees model N, omgekeerde kegelvorm**
FR **Fraise lime Carbure Forme N, Forme conique inversée**
ES **Fresa rotativa MD forma N, forma de cono invertido**
DE **HM Frässtift Form N, Winkelfrässtifte**





1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
 N	 P H M K S	 P M S	 P H M K S	 P K	 M

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
6	6	6	50	8				41.640.0606		
8	8	6	53	9,5				41.640.0806		
12	12,7	6	57	12,7				41.640.1206		

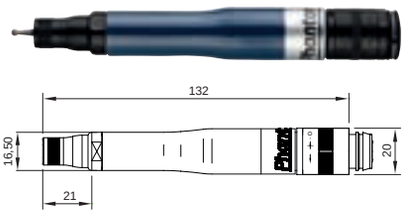
› 41.643 Phantom



NL **HM Stiftfrees model N, omgekeerde kegelvorm, schacht 3 mm**
FR **Fraise lime Carbure Forme N, Forme conique inversée, queue 3 mm**
ES **Fresa rotativa MD forma N, forma de cono invertido, mango 3 mm**
DE **HM Frässtift Form N, Winkelfrässtifte, Schaft 3 mm**

Ø	d1	d2	l1	l2	1-ALU	3-FINE	4-DIAMOND	6-UNI	8-STEEL	9-INOX
3	3	3	38	4				41.643.0306		

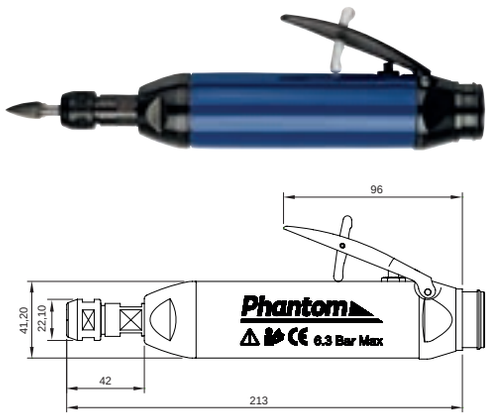
› 41.850 Phantom



NL **Pneumatische rechte slijpmachine, opname 3 mm**
FR **Meuleuse pneumatique droite, cône 3 mm**
ES **Amoladora recta neumática, sujeción 3 mm**
DE **Druckluft Geradschleifer, Aufnahme 3 mm**

Ref.	RPM
41.850.7500	75.000

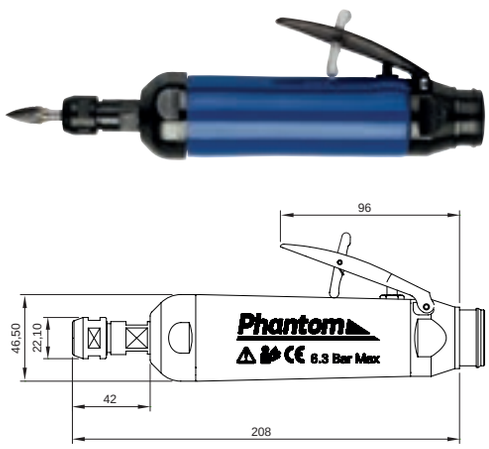
› 41.860 Phantom



NL **Pneumatische rechte slijpmachine, opname 6 mm**
FR **Meuleuse pneumatique droite, cône 6 mm**
ES **Amoladora recta neumática, sujeción 6 mm**
DE **Druckluft Geradschleifer, Aufnahme 6 mm**

Ref.	RPM
41.860.2500	25.000

› 41.865 Phantom



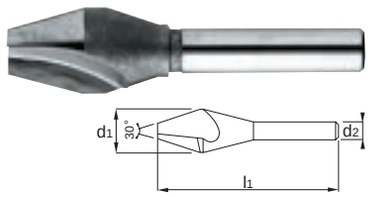
NL **Pneumatische rechte slijpmachine, lage vibratie, opname 6 mm**
FR **Meuleuse pneumatique droite, avec vibrations réduites, cône 6 mm**
ES **Amoladora recta neumática, Baja vibración, sujeción 6 mm**
DE **Druckluft Geradschleifer, Vibrationsarm, Aufnahme 6 mm**

Ref.	RPM
41.865.2500	25.000

19:00 ▶ 24h

› 42.100 Phantom

NL **HSS-E Verzinkfrees 30°, 1 snijkant**
FR **Fraise à chanfreiner HSS-E 30°, 1 dent**
ES **Avellanador HSS-E 30°, 1 labio**
DE **HSS-E Kegelsenker 30°, 1 Schneide**



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

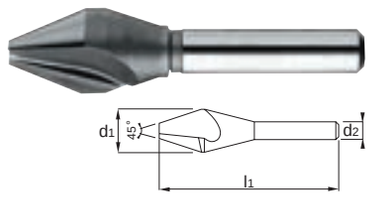
Ref.	d1	Min-Max Ø	l1	d2
42.100.1000	10	6-10	49	6
42.100.1500	15	9-15	61	8

Ref.	d1	Min-Max Ø	l1	d2
42.100.2000	20	12-20	72	10
42.100.2500	25	14-25	87	12

Ref.	d1	Min-Max Ø	l1	d2
42.100.3000	30	17-30	94	12

› 42.200 Phantom

NL **HSS-E Verzinkfrees 45°, 1 snijkant**
FR **Fraise à chanfreiner HSS-E 45°, 1 dent**
ES **Avellanador HSS-E 45°, 1 labio**
DE **HSS-E Kegelsenker 45°, 1 Schneide**



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

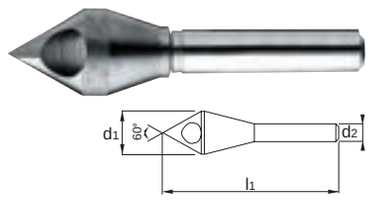
Ref.	d1	Min-Max Ø	l1	d2
42.200.0600	6	3-6	43	6
42.200.1000	10	4-10	49	6

Ref.	d1	Min-Max Ø	l1	d2
42.200.1500	15	5-15	61	8
42.200.2000	20	7-20	72	10

Ref.	d1	Min-Max Ø	l1	d2
42.200.2500	25	8-25	87	12
42.200.3000	30	10-30	94	12

› 42.300 Phantom

NL **HSS-E Verzinkfrees 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**



HSS-E 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

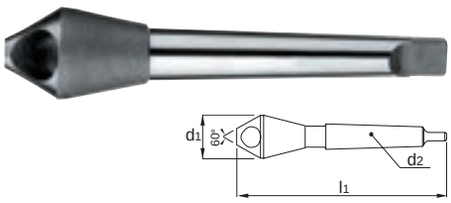
Ref.	d1	Min-Max Ø	l1	d2
42.300.1000	10	5-9	49	6
42.300.1500	15	8-14	60	8

Ref.	d1	Min-Max Ø	l1	d2
42.300.2000	20	10-18	72	10
42.300.2500	25	12-23	87	12

Ref.	d1	Min-Max Ø	l1	d2
42.300.3000	30	15-28	93	12

› 42.310 Phantom

NL **HSS-E Verzinkfrees 60°, schuin gat, MK**
FR **Fraise à chanfreiner HSS-E 60°, à trou, CM**
ES **Avellanador para desbarbar HSS-E 60°, con agujero, CM**
DE **HSS-E Kegelsenker 60°, Querloch, MK**



HSS-E | 60° | DIN 228-B

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.	d1	Min-Max Ø	l1	d2
42.310.2000	20	10-18	104	MK 1
42.310.2500	25	12-23	106	MK 1

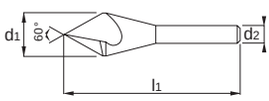
Ref.	d1	Min-Max Ø	l1	d2
42.310.3002	30	15-28	122	MK 2
42.310.4002	40	20-38	130	MK 2

Ref.	d1	Min-Max Ø	l1	d2
42.310.4003	40	20-38	158	MK 3

› 42.320 Phantom

NL **HSS-E Verzinkfrees 60°, 1 snijkant**
FR **Fraise à chanfreiner HSS-E 60°, 1 dent**
ES **Avellanador HSS-E 60°, 1 labio**
DE **HSS-E Kegelsenker 60°, 1 Schneide**





HSS-E | 1 | 60°

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.	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

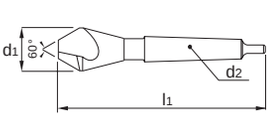
Ref.	d1	Min-Max Ø	l1	d2
42.320.1500	15	2-15	60	8
42.320.2000	20	2-20	72	10
42.320.2500	25	3-25	87	12

Ref.	d1	Min-Max Ø	l1	d2
42.320.3000	30	3-30	98	12

› 42.330 Phantom

NL **HSS-E Verzinkfrees 60°, 1 snijkant, MK**
FR **Fraise à chanfreiner HSS-E 60°, 1 dent, CM**
ES **Avellanador HSS-E 60°, 1 labio, CM**
DE **HSS-E Kegelsenker 60°, 1 Schneide, MK**





HSS-E | 1 | 60° | DIN 228-B

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.	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

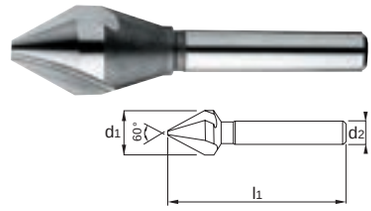
Ref.	d1	Min-Max Ø	l1	d2
42.330.3002	30	3-30	125	MK 2
42.330.4000	40	5-40	158	MK 3
42.330.5003	50	6-50	172	MK 3

Ref.	d1	Min-Max Ø	l1	d2
42.330.6300	63	8-63	199	MK 3

19:00 ▶ 🛒 ▶ 24h

› 42.340 Phantom

NL **HSS-E Verzinkfrees 60°, 3 snijkanten**
FR **Fraise à chanfreiner HSS-E 60°, 3 taillants**
ES **Avellanador HSS-E 60°, 3 labios**
DE **HSS-E Kegelsenker 60°, 3 Schneiden**



HSS-E | 3 | 3 | 60° | —

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.	d1	Min-Max Ø	l1	d2
42.340.0630	6.3	1,5-6,3	47	5
42.340.0830	8.3	2-8,3	52	6
42.340.1040	10.4	2,5-10,4	53	6

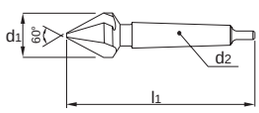
Ref.	d1	Min-Max Ø	l1	d2
42.340.1240	12.4	3-12,4	60	8
42.340.1650	16.5	4-16,5	65	10
42.340.2050	20.5	4-20,5	69	10

Ref.	d1	Min-Max Ø	l1	d2
42.340.2500	25	5-25	75	10
42.340.3100	31	6-31	81	12

› 42.370 Phantom

NL **HSS-E Verzinkfrees 60°, 3 snijkanten, MK**
FR **Fraise à chanfreiner HSS-E 60°, 3 taillants, CM**
ES **Avellanador HSS-E 60°, 3 labios, CM**
DE **HSS-E Kegelsenker 60°, 3 Schneiden, MK**





HSS-E | 3 | 3 | 60° | DIN 228-B

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.	d1	Min-Max Ø	l1	d2
42.370.1650	16.5	4-16,5	94	MK 1
42.370.2050	20.5	4-20,5	100	MK 1
42.370.2500	25	6-25	112	MK 2

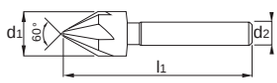
Ref.	d1	Min-Max Ø	l1	d2
42.370.3100	31	6-31	122	MK 2
42.370.4000	40	8-40	158	MK 3
42.370.5000	50	10-50	172	MK 3

Ref.	d1	Min-Max Ø	l1	d2
42.370.6300	63	10-63	199	MK 3
42.370.8000	80	14-80	239	MK 4

› 42.390 INTERNATIONAL TOOLS

NL **HSS Verzinkfrees 60°, meersnijder**
FR **Fraise à chanfreiner HSS 60°, multi-dents**
ES **Avellanador HSS 60°, multi labios**
DE **HSS Kegelsenker 60°, Mehrschneiden**





HSS | DIN 334-A | >3 | 60° | — | ✋

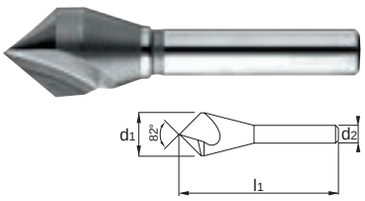
P 11 ≤600 N/mm²
10-15 *

Ref.	d1	d2	l1	z
42.390.0800	8	8	50	5
42.390.1250	12.5	8	50	5

Ref.	d1	d2	l1	z
42.390.1600	16	10	60	7
42.390.2000	20	10	63	7

Ref.	d1	d2	l1	z

› 42.420 Phantom



NL **HSS-E Verzinkfrees 82°, 1 snijkant**
FR **Fraise à chanfreiner HSS-E 82°, 1 dent**
ES **Avellanador HSS-E 82°, 1 labio**
DE **HSS-E Kegelsenker 82°, 1 Schneide**

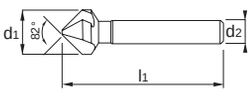
HSS-E | 1 | 82°

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.	d1	Min-Max Ø	l1	d2
42.420.1000	10	1-10	46	6
42.420.1200	12	2-12	50	8
42.420.1500	15	2-15	56	8
42.420.2000	20	2-20	65	10

› 42.440 Phantom





NL **HSS-E Verzinkfrees 82°, 3 snijkanten**
FR **Fraise à chanfreiner HSS-E 82°, 3 taillants**
ES **Avellanador HSS-E 82°, 3 labios**
DE **HSS-E Kegelsenker 82°, 3 Schneiden**

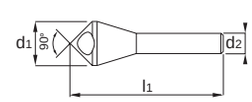
HSS-E | 3 | 3 | 82°

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.	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

› 42.500 Phantom





NL **HSS-E Verzinkfrees 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**

HSS-E | 90°

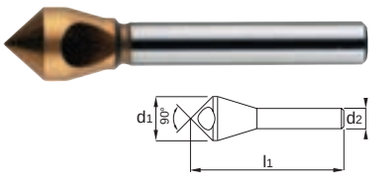
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	N 61 PVC
35-45 C	20-30 D	15-20 C	20-30 C	30-40 D	55-65 I	30-40 F	20-30 E	30-40 D	50-100 I

Ref.	d1	Min-Max Ø	l1	d2
42.500.0500	10	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

19:00 ▶ 24h

› 42.501 Phantom

NL **HSS-E Verzinkfrees 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**



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	10	2-5	45	6
42.501.1000	10	4-9	45	6

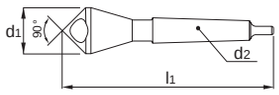
Ref.	d1	Min-Max Ø	l1	d2
42.501.1500	15	6-14	55	8
42.501.2000	20	8-18	65	10

Ref.	d1	Min-Max Ø	l1	d2
42.501.2500	25	10-23	78	12
42.501.3000	30	12-28	88	12

› 42.510 Phantom

NL **HSS-E Verzinkfrees 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**





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

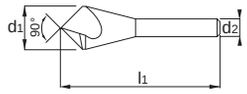
Ref.	d1	Min-Max Ø	l1	d2
42.510.4002	40	16-38	130	MK 2
42.510.4003	40	16-38	153	MK 3
42.510.5002	50	20-48	135	MK 2
42.510.5003	50	20-48	158	MK 3

Ref.	d1	Min-Max Ø	l1	d2
42.510.6000	60	24-58	172	MK 3
42.510.8000	80	32-77	215	MK 4

› 42.520 Phantom

NL **HSS-E Verzinkfrees 90°, 1 snijkant**
FR **Fraise à chanfreiner HSS-E 90°, 1 dent**
ES **Avellanador HSS-E 90°, 1 labio**
DE **HSS-E Kegelsenker 90°, 1 Schneide**





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

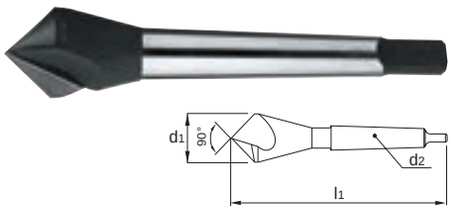
Ref.	d1	Min-Max Ø	l1	d2
42.520.0400	4	1-4	40	4
42.520.0500	5	1-5	40	5
42.520.0600	6	1-6	40	6
42.520.0800	8	1-8	40	6

Ref.	d1	Min-Max Ø	l1	d2
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

Ref.	d1	Min-Max Ø	l1	d2
42.520.2500	25	3-25	78	12
42.520.3000	30	3-30	88	12

› 42.530 Phantom

NL **HSS-E Verzinkfrees 90°, 1 snijkant, MK**
FR **Fraise à chanfreiner HSS-E 90°, 1 dent, CM**
ES **Avellanador HSS-E 90°, 1 labio, CM**
DE **HSS-E Kegelsenker 90°, 1 Schneide, MK**



HSS-E | 1 | 90° | DIN 228-B

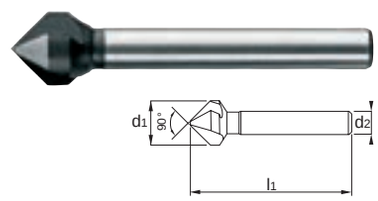
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 42 Alu Si>10% | N 51 Cu | N 52 CuAlFe | N 61 PVC

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.	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	12-50	173	MK 3
42.530.8000	80	12-80	215	MK 4

› 42.535 INTERNATIONAL TOOLS

NL **HSS Verzinkfrees 90°, 3 snijkanten**
FR **Fraise à chanfreiner HSS 90°, 3 taillants**
ES **Avellanador HSS 90°, 3 labios**
DE **HSS Kegelsenker 90°, 3 Schneiden**



HSS | DIN 335-C | 3 | 3 | 90°

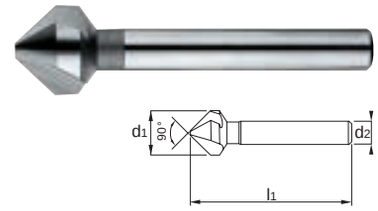
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu

17-22 * | 10-15 * | 15-20 * | 20-25 * | 35-45 *

Ref.	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	8
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

› 42.540 Phantom

NL **HSS-E Verzinkfrees 90°, 3 snijkanten**
FR **Fraise à chanfreiner HSS-E 90°, 3 taillants**
ES **Avellanador HSS-E 90°, 3 labios**
DE **HSS-E Kegelsenker 90°, 3 Schneiden**



HSS-E | 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

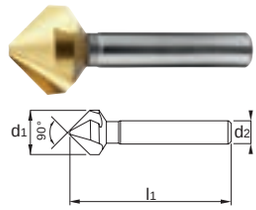
17-22 C | 10-15 C | 8-12 B | 4-8 A | 8-12 B | 6-10 A | 15-20 C | 20-25 C | 35-45 D | 30-40 C | 15-25 D | 20-30 C | 35-70 I

Ref.	d1	Min-Max Ø	l1	d2
42.540.0430	4.3	1,3-4,3	40	4
42.540.0530	5.3	1,5-5,3	40	4
42.540.0630	6.3	1,5-6,3	45	5
42.540.0730	7.3	1,8-7,3	50	6
42.540.0830	8.3	2-8,3	50	6
42.540.0940	9.4	2,2-9,4	50	6
42.540.1040	10.4	2,5-10,4	50	6
42.540.1240	12.4	2,8-12,4	56	8
42.540.1440	14.4	2,9-14,4	56	8
42.540.1650	16.5	3,2-16,5	60	10
42.540.2050	20.5	3,5-20,5	63	10
42.540.2500	25	3,8-25	67	10
42.540.2800	28	4-28	71	12
42.540.3100	31	4-31	71	12
42.540.3500	35	7-35	107	16
42.540.4000	40	8-40	111	16
42.540.5000	50	10-50	120	16

19:00 ▶ 24h

› 42.541 Phantom

NL **HSS-E Verzinkfrees 90°, TiN, 3 snijkanten**
FR **Fraise à chanfreiner HSS-E 90°, TiN, 3 taillants**
ES **Avellanador HSS-E 90°, TiN, 3 labios**
DE **HSS-E Kegelsenker 90°, TiN, 3 Schneiden**



HSS-E | TiN | 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
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
42.541.0630	6.3	1,5-6,3	45	5
42.541.0830	8.3	2-8,3	50	6
42.541.1040	10.4	2,5-10,4	50	6

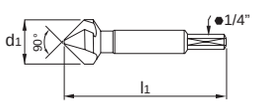
Ref.	d1	Min-Max Ø	l1	d2
42.541.1240	12.4	2,8-12,4	56	8
42.541.1650	16.5	3,2-16,5	60	10
42.541.2050	20.5	3,5-20,5	63	10

Ref.	d1	Min-Max Ø	l1	d2
42.541.2500	25	3,8-25	67	10
42.541.3100	31	4,2-31	71	12

› 42.545 Phantom

NL **HSS-E Verzinkfrees 90°, 3 snijkanten, met 1/4"-zeskant bitopname**
FR **Fraise à chanfreiner HSS-E 90°, 3 taillants, avec queue hexagonale 1/4"**
ES **Avellanador HSS-E 90°, 3 labios, con presa esagonale da 1/4"**
DE **HSS-E Kegelsenker 90°, 3 Schneiden, mit 1/4" Hexa-Bitaufnahme**





HSS-E | 3 | 90° | 1/4" | —

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.	d1	Min-Max Ø	l1	d2
42.545.0630	6.3	1,5-6,3	50	6.35
42.545.0830	8.3	2-8,3	50	6.35

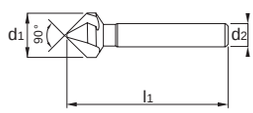
Ref.	d1	Min-Max Ø	l1	d2
42.545.1040	10.4	2,5-10,4	50	6.35
42.545.1240	12.4	2,8-12,4	50	6.35

Ref.	d1	Min-Max Ø	l1	d2
42.545.1650	16.5	3,2-16,5	50	6.35
42.545.2050	20.5	3,5-20,5	50	6.35

› 42.546 Phantom

NL **HSS-E Verzinkfrees 90°, 3 snijkanten, lang**
FR **Fraise à chanfreiner HSS-E 90°, 3 taillants, longue**
ES **Avellanador HSS-E 90°, 3 labios, larga**
DE **HSS-E Kegelsenker 90°, 3 Schneiden, lang**





HSS-E | Phantom | 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
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

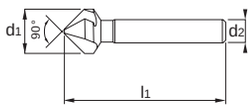
Ref.	d1	Min-Max Ø	l1	d2
42.546.0630	6.3	1,5-6,3	84	6
42.546.0830	8.3	2-8,3	85	8
42.546.1040	10.4	2,5-10,4	87	10

Ref.	d1	Min-Max Ø	l1	d2
42.546.1240	12.4	2,8-12,4	108	10
42.546.1650	16.5	3,2-16,5	112	12
42.546.2050	20.5	3,5-20,5	115	12

Ref.	d1	Min-Max Ø	l1	d2
42.546.2500	25	3,8-25	118	12

› 42.550 Phantom





NL **HSS-E Verzinkfrees 90°, 3 snijkanten**
FR **Fraise à chanfreiner HSS-E 90°, 3 taillants**
ES **Avellanador HSS-E 90°, 3 labios**
DE **HSS-E Kegelsenker 90°, 3 Schneiden**

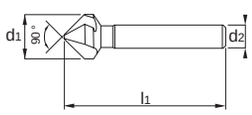
HSS-E 8% | DIN 335-C | 3 | 3 | 90°

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.	d1	Min-Max Ø	l1	d2
42.550.0630	6.3	1,5-6,3	45	5
42.550.0830	8.3	2,5-8,3	50	6
42.550.1040	10.4	2,5-10,4	50	6
42.550.1240	12.4	3-12,4	56	8
42.550.1650	16.5	4-16,5	60	10
42.550.2050	20.5	4-20,5	63	10
42.550.2500	25	5-25	67	10
42.550.3100	31	6-31	71	12

› 42.552 Phantom





NL **HSS-E Verzinkfrees 90°, 3 snijkanten, AlCrN-X**
FR **Fraise à chanfreiner HSS-E 90°, 3 taillants, AlCrN-X**
ES **Avellanador HSS-E 90°, 3 labios, AlCrN-X**
DE **HSS-E Kegelsenker 90°, 3 Schneiden, AlCrN-X**

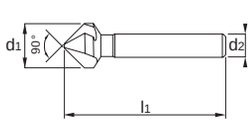
HSS-E 8% | AlCrN-X | DIN 335-C | 3 | 3 | 90°

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
42.552.0630	6.3	1,5-6,3	45	5
42.552.0830	8.3	2-8,3	50	6
42.552.1040	10.4	2,5-10,4	50	6
42.552.1240	12.4	2,8-12,4	56	8
42.552.1650	16.5	3,2-16,5	60	10
42.552.2050	20.5	3,5-20,5	63	10
42.552.2500	25	3,8-25	67	10
42.552.3100	31	6-31	71	12

› 42.560 Phantom





NL **VHM-MG Verzinkfrees 90°, 3 snijkanten**
FR **Fraise à chanfreiner Carbure MG 90°, 3 taillants**
ES **Avellanador MD-MG 90°, 3 labios**
DE **VHM-MG Kegelsenker 90°, 3 Schneiden**

MG HM | DIN 335-C | 3 | 3 | 90°

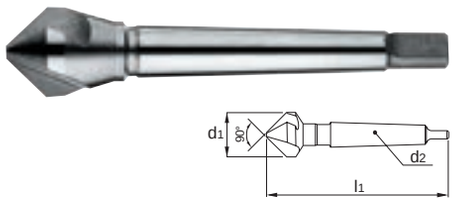
P 11	P 12	P 13	P 14	H 15	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	HRC	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
40-80 C	30-60 C	20-40 B	20-40 B	8-10 A	20-40 C	15-20 B	40-60 B	50-80 C	40-100 D	40-80 C	50-80 C	10-12 A	10-12 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

19:00 ▶ 24h

› 42.570 Phantom

NL **HSS-E Verzinkfrees 90°, 3 snijkanten, MK**
FR **Fraise à chanfreiner HSS-E 90°, 3 taillants, CM**
ES **Avellanador HSS-E 90°, 3 labios, CM**
DE **HSS-E Kegelsenker 90°, 3 Schneiden, MK**



HSS-E | 3 | 3 | 90° | DIN 228-B

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.	d1	Min-Max Ø	l1	d2
42.570.1040	10.4	2,5-10,4	84	MK 1
42.570.1240	12.4	3-12,4	87	MK 1
42.570.1650	16.5	4-16,5	90	MK 1
42.570.2050	20.5	4-20,5	94	MK 1

Ref.	d1	Min-Max Ø	l1	d2
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

Ref.	d1	Min-Max Ø	l1	d2
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

› 42.580 Phantom

NL **HSS-E Verzinkfrees met handgreep 90°, 3 snijkanten**
FR **Fraise à chanfreiner à poignée HSS-E 90°, 3 taillants**
ES **Avellanador para desbarbar con manejar HSS-E 90°, 3 labios**
DE **HSS-E Kegelsenker mit Griff 90°, 3 Schneiden**



HSS-E | 3 | 90°

Ref.	d1
42.580.1240	12.4
42.580.1650	16.5

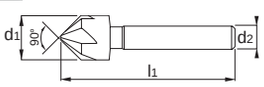
Ref.	d1
42.580.2050	20.5
42.580.2500	25

Ref.	d1
42.580.3100	31

› 42.590 INTERNATIONAL TOOLS

NL **HSS Verzinkfrees 90°, meersnijder**
FR **Fraise à chanfreiner HSS 90°, multi-dents**
ES **Avellanador HSS 90°, multi labios**
DE **HSS Kegelsenker 90°, Mehrschneiden**





HSS | DIN 335-A | >3 | 90°

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

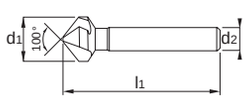
Ref.	d1	d2	l1	z
42.590.1600	16	10	56	7
42.590.2000	20	10	60	7

Ref.	d1	d2	l1	z

› 42.640 Phantom

NL **HSS-E Verzinkfrees 100°, 3 snijkanten**
FR **Fraise à chanfreiner HSS-E 100°, 3 taillants**
ES **Avellanador HSS-E 100°, 3 labios**
DE **HSS-E Kegelsenker 100°, 3 Schneiden**





HSS-E | 3 | 3 | 100°

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

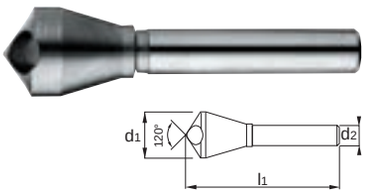
17-22 C | 10-15 C | 8-12 B | 4-8 A | 8-12 B | 6-10 A | 15-20 C | 20-25 C | 35-45 D | 30-40 C | 15-25 D | 20-30 C | 35-70 I

Ref.	d1	Min-Max Ø	l1	d2
42.640.1040	10.4	2,5-10,4	49	6
42.640.1650	16.5	4-16,5	59	10

Ref.	d1	Min-Max Ø	l1	d2
42.640.2050	20.5	4-20,5	62	10
42.640.2500	25	5-25	65	10

Ref.	d1	Min-Max Ø	l1	d2
42.640.3100	31	6-31	68	12

› 42.700 Phantom



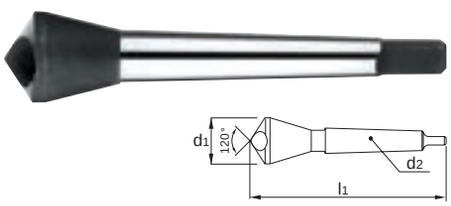
NL **HSS-E Verzinkfrees 120°, schuin gat**
FR **Fraise à chanfreiner HSS-E 120°, à trou**
ES **Avellanador para desbarbar HSS-E 120°, con agujero**
DE **HSS-E Kegelsenker 120°, Querloch**

HSS-E | 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
42.700.1000	10	4-9	43	6
42.700.1500	15	5-14	52	8
42.700.2000	20	6-18	61	10
42.700.2500	25	8-23	73	12
42.700.3000	30	10-28	82	12

› 42.710 Phantom



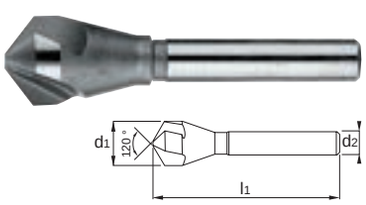
NL **HSS-E Verzinkfrees 120°, schuin gat, MK**
FR **Fraise à chanfreiner HSS-E 120°, à trou, CM**
ES **Avellanador HSS-E 120°, con agujero, CM**
DE **HSS-E Kegelsenker 120°, Querloch, MK**

HSS-E | 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
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 Verzinkfrees 120°, 3 snijkanten**
FR **Fraise à chanfreiner HSS-E 120°, 3 taillants**
ES **Avellanador HSS-E 120°, 3 labios**
DE **HSS-E Kegelsenker 120°, 3 Schneiden**

HSS-E | 3 | 3 | 120°

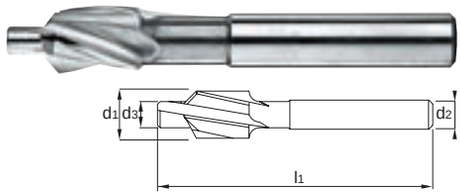
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

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

19:00 ▶ 🛒 ▶ 24h

› 43.200 Phantom

NL **HSS-E Kopverzinkfrees 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**



HSS-E | 90° | DIN 1866 | 1

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

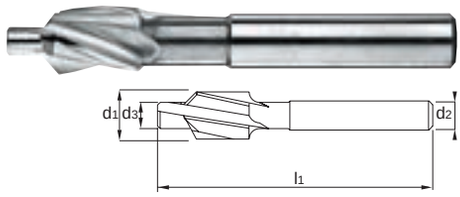
Ref.	M	d1	d3	l1	d2
43.200.0100	1	2	1.1	45	2
43.200.0120	1,2	2.5	1.3	45	2.5
43.200.0140	1,4	2.8	1.5	45	2.8
43.200.0160	1,6	3.3	1.7	56	3.3
43.200.0180	1,8	3.8	1.9	56	3.8

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 Kopverzinkfrees 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**



HSS-E | 90° | DIN 1866 | 2

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

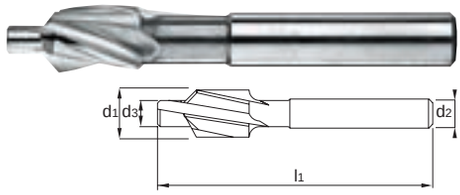
Ref.	M	d1	d3	l1	d2
43.210.0200	2	4.6	2.4	56	4.6
43.210.0250	2,5	5.7	2.9	56	5.7
43.210.0300	3	6.5	3.4	71	6.5

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

Ref.	M	d1	d3	l1	d2
43.210.0600	6	12.4	6.6	80	12.4
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 Kopverzinkfrees 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**



HSS-E | 90° | DIN 1866 | 3

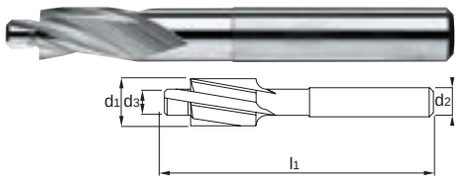
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 52 CuAlFe	N 61 PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

Ref.	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

› 43.320 Phantom



NL **HSS-E Kopverzinkfrees 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**

HSS-E | 180° | DIN 373 | 1

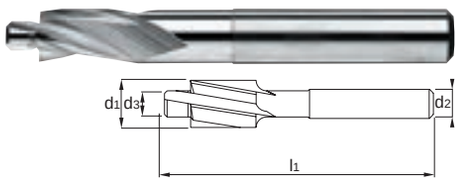
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

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

Ref.	M	d1	d3	l1	d2
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

Ref.	M	d1	d3	l1	d2
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 Kopverzinkfrees 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**

HSS-E | 180° | DIN 373 | 2

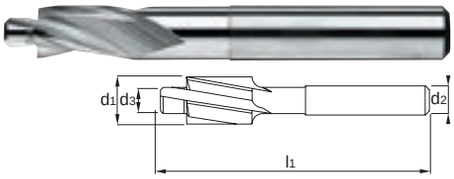
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
17-22 C	10-15 C	8-12 B	4-8 A	8-12 B	6-10 A	15-20 C	20-25 C	35-45 D	30-40 C	15-25 D	20-30 C	35-70 I

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

Ref.	M	d1	d3	l1	d2
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

Ref.	M	d1	d3	l1	d2
43.330.1000	10	18	11	100	12.5
43.330.1200	12	20	14	100	12.5

› 43.350 Phantom



NL **HSS-E Kopverzinkfrees 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**

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

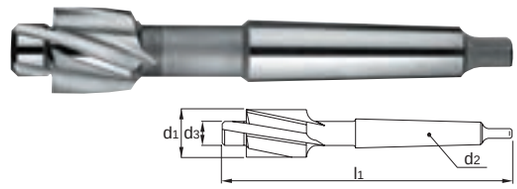
Ref.	M	d1	d3	l1	d2
43.350.0500	5	10	4.2	80	10
43.350.0600	6	11	5	80	11
43.350.0800	8	15	6.8	100	12.5

Ref.	M	d1	d3	l1	d2
43.350.1000	10	18	8.5	100	12.5
43.350.1200	12	20	10.2	100	12.5

19:00 ▶ 🛒 ▶ 24h

› 43.400 Phantom

NL **HSS-E Kopverzinkfrees 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**



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

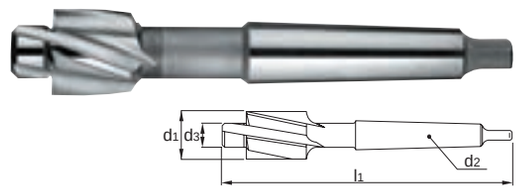
Ref.	M	d1	d3	l1	d2
43.400.1000	10	18	10.5	150	MK 2
43.400.1200	12	20	13	150	MK 2
43.400.1400	14	24	15	160	MK 2
43.400.1600	16	26	17	190	MK 3

Ref.	M	d1	d3	l1	d2
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

Ref.	M	d1	d3	l1	d2
43.400.2700	27	43	30	240	MK 4
43.400.3000	30	48	33	240	MK 4

› 43.410 Phantom

NL **HSS-E Kopverzinkfrees 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**



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

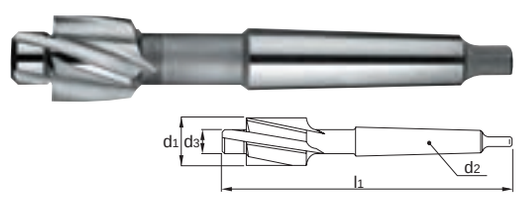
Ref.	M	d1	d3	l1	d2
43.410.1000	10	18	11	150	MK 2
43.410.1200	12	20	14	150	MK 2
43.410.1400	14	24	16	160	MK 2

Ref.	M	d1	d3	l1	d2
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

Ref.	M	d1	d3	l1	d2
43.410.2200	22	36	24	205	MK 3
43.410.2400	24	40	26	205	MK 3

› 43.440 Phantom

NL **HSS-E Kopverzinkfrees 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**



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

Ref.	M	d1	d3	l1	d2
43.440.1800	18	30	15.5	190	MK 3
43.440.2000	20	33	17.5	190	MK 3

Ref.	M	d1	d3	l1	d2
43.440.2400	24	40	21	205	MK 3

› 44.100 Phantom



NL **HSS Getrapte Plaatboor stoomontlaten**
FR **Foret étagé HSS vaporisé**
ES **Broca escalonada HSS vaporizada**
DE **HSS Stufenbohrer dampfangelassen**

HSS OX.

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.	Type	xØ	Ø mm	d2
44.100.0100	M412	9	4-5-6-7-8-9-10-11-12	10
44.100.0200	M625	11	6-8-10-12-14-16-18-20-22-24-25	12
44.100.0300	M618	7	6-8-10-12-14-16-18	10
44.100.0400	M834	14	8-10-12-14-16-18-20-22-24-26-28-30-32-34	12
44.100.0500	PGD21	9	8-10-12,5-15,2-18,6-20,4-22,5-25,5-28,3	12
44.100.0600	PGK21	9	7-9-11,4-14-17,25-19-21,25-24-26,75	12

› 44.102 Phantom



NL **HSS Getrapte Plaatboor genitreerd**
FR **Foret étagé HSS nitruré**
ES **Broca escalonada HSS nitrurada**
DE **HSS Stufenbohrer nitriert**

HSS NIT.

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.	Type	xØ	Ø mm	d2
44.102.0412	M412	5	M4-6-8-10-12	10
44.102.0420	M420	9	M4-6-8-10-12-14-16-18-20	10
44.102.0630	M630	13	M6-8-10-12-14-16-18-20-22-24-26-28-30	13
44.102.0638	M638	12	M6-9-13-16-19-21-23-26-29-32-35-38	13

› 44.110 Phantom



NL **HSS Getrapte Plaatboor voor kabelwartels (PG), stoomontlaten**
FR **Foret étagé HSS pour filetages de tubes électriques (PG), vaporisé**
ES **Broca escalonada HSS para glándulas de cable (PG), vaporizada**
DE **HSS Stufenbohrer für Drüse (PG), dampfangelassen**

HSS PG OX.

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.	Type	xØ	Ø mm	d2
44.110.0500	TBMD840	8	8,5-10,5-12,5-16,5-20,5-25,5-32,5-40,5	12
44.110.0600	TBMV840	7	8,5-10,5-14,5-18,5-23,5-30,5-38,5	12
44.110.0700	TBMK840	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	12

19:00 ▶ 🛒 ▶ 24h

› 44.120 Phantom

NL **HSS Getrapte Plaatboor stoomontlaten**
FR **Foret étagé HSS vaporisé**
ES **Broca escalonada HSS vaporizada**
DE **HSS Stufenbohrer dampfangelassen**



HSS OX.

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.	Type	xØ	Ø mm	"	d2
44.120.0100	1	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	10
44.120.0200	2	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	12
44.120.0300	3	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	12
44.120.1200	12	12	6,4-8,7-11,1-13,5-15,9-18,3-20,6-22,2-28,6-31-31,8-34,9	1/4-11/32-7/16-17/32-5/8-23/32-13/16-7/8-1.1/8-1.7/32-1.1/4-1.3/8	12

› 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**



HSS NIT.

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.	Type	xØ	Ø mm	d2
44.130.0100	1	5	M4-6-8-10-12	8
44.130.0200	2	9	M4-6-8-10-12-14-16-18-20	10
44.130.0300	3	13	M6-8-10-12-14-16-18-20-22-24-26-28-30	13

› 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**



HSS TiAlN

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.	Type	xØ	Ø mm	d2
44.134.0100	1	5	M4-6-8-10-12	8
44.134.0200	2	9	M4-6-8-10-12-14-16-18-20	10
44.134.0300	3	13	M6-8-10-12-14-16-18-20-22-24-26-28-30	13

› 44.150 Phantom

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**





44.150.9000

HSS

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.	Type	xØ	Ø mm	d2
44.150.0100	M1	11	9-12-15-18-21-24-27-30-33-36-40	12
44.150.1000	TBM4K1040	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	12
44.150.9000			7x40	4

› 44.200 Phantom

NL **HSS Conische Plaatfrees**
FR **Foret conique HSS**
ES **Fresa cónica HSS**
DE **HSS konische Blechschälbohrer**



HSS

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.	Type	Min-Max Ø	l1	d2
44.200.0100	1	3-14	62	6
44.200.0200	2	6-20	70	8
44.200.0300	3	16-30	75	10
44.200.0400	4	26-40	78	12

Ref.	Type	Min-Max Ø	l1	d2
44.200.0500	5	36-50	78	12
44.200.0600	6	46-60	78	13
44.200.0700	7	6-30	95	10
44.200.0800	8	6-25,4	84	8

› 44.210 Phantom

NL **HSS-E Conische Plaatfrees**
FR **Foret conique HSS-E**
ES **Fresa cónica HSS-E**
DE **HSS-E konische Blechschälbohrer**



HSS-E

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.	Type	Min-Max Ø	l1	d2
44.210.0100	1	3-14	62	6
44.210.0200	2	6-20	70	8
44.210.0300	3	16-30	75	10

Ref.	Type	Min-Max Ø	l1	d2
44.210.0400	4	26-40	78	12
44.210.0700	7	6-30	95	10

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› 44.220 INTERNATIONAL TOOLS



NL **HSS Freesboor**
FR **Foret fraiseur HSS**
ES **Broca fresa HSS**
DE **HSS Fräsbohrer**

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.	d1	d2	l2	l1	z
44.220.0600	6	6	50	90	5

Ref.	d1	d2	l2	l1	z
44.220.0800	8	8	50	90	7

› 46.100 SHAVIV

NL **Handgrepen en Onderdelen**
FR **Manches et accessoires**
ES **Mangos y Accesorios**
DE **Handgriffe und Einzelteile**

Ref.	Type		
46.100.0010	Mango II	B, C, D, E, F, Burr-Bi, M	
46.100.1200	ALU	B, C, D, E, F, Burr-Bi, M	
46.100.1300	Set HC	Ø 1,0 - 8,0 mm, C55	

› 46.120 SHAVIV

NL **Handontbramer en mesjes type B**
FR **Ebavureur et lames type B**
ES **Desbarbador y cuchillas tipo B**
DE **Handentgrater und Klingen Typ B**

Ref.	Type					P	H	M	K	N
46.120.0250	Mango II, B, B10, B20									
46.120.0255	Mango II, B, B10, B20									
46.120.0260	Mango II, B, 10x B10									
46.120.0265	Mango II, B, 10x B10									
46.120.1001	B									
46.120.1002	B									
46.120.2100	B10					P				N
46.120.2101	B10P				TiN	P		M		N
46.120.2102	B10C				VHM SC		H			N
46.120.2109	B10L					P				N
46.120.2110	B11					P				N
46.120.2120	B12					P				N
46.120.2121	B12P				TiN	P		M		N
46.120.2200	B20								K	N
46.120.2201	B20P				TiN				K	N
46.120.2250	B25					P				N
46.120.2252	B25C				VHM SC	P				N
46.120.2300	B30					P				N
46.120.2301	B30P					P		M		N
46.120.2320	B32								K	N
46.120.2500	B50					P	H	M	K	N
46.120.2600	B60					P				N
46.120.2700	B70					P	H	M	K	N

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› 46.130 SHAVIV

NL **Handontbramer en mesjes type C**
FR **Ebavureur et lames type C**
ES **Desbarbador y cuchillas tipo C**
DE **Handentgrater und Klingen Typ C**

Ref.	Type		P	H	M	K	N
46.130.0250	Mango II, C, C42						
46.130.1100	Mango II						
46.130.2400	C40		P		M	K	N
46.130.2420	C42		P		M	K	N

› 46.140 SHAVIV

NL **Handontbramer en mesjes type D**
FR **Ebavureur et lames type D**
ES **Desbarbador y cuchillas tipo D**
DE **Handentgrater und Klingen Typ D**

Ref.	Type		P	H	M	K	N
46.140.0250	Mango II, D, D80						
46.140.1100	D						
46.140.2800	D80						
46.140.2850	D85						

› 46.155 SHAVIV

NL **Handontbramer en mesjes type Multi Tool**
FR **Ebavureur et lames type Outil universel**
ES **Desbarbador y cuchillas tipo herramienta universal**
DE **Handentgrater und Klingen Typ Multi-Tool**

Ref.	Type	
46.155.0250	Mango II, M, B10, B20, B30, E100, E200, E111	
46.155.1500	M	

› 46.160 SHAVIV

NL **Handontbramer en mesjes type F**
FR **Ebavureur et lames type F**
ES **Desbarbador y cuchillas tipo F**
DE **Handentgrater und Klingen Typ F**

Ref.	Type		P	H	M	K	N
46.160.0250	Mango II, F, F20						
46.160.0255	Mango II, FR, F20						
46.160.1100	F						
46.160.1105	FR						
46.160.2120	F12		P		M	K	N
46.160.2200	F20		P		M	K	N

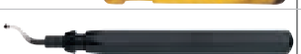
› 46.180 SHAVIV

NL **Handontbramer en mesjes type Burr-Bi**
FR **Ebavureur et lames type Burr-Bi**
ES **Desbarbador y cuchillas tipo Burr-Bi**
DE **Handentgrater und Klingen Typ Burr-Bi**

Ref.	Type		P	H	M	K	N
46.180.0250	Mango II, BR, 2x R10						
46.180.3110	R10		P		M	K	N
46.180.3120	R20		P		M		N
46.180.3130	R30		P		M		N

› 46.300 SHAVIV

NL **Handontbramer en mesjes type E**
FR **Ebavureur et lames type E**
ES **Desbarbador y cuchillas tipo E**
DE **Handentgrater und Klingen Typ E**

Ref.	Type		P	H	M	K	N
46.300.0250	Mango II, E, E100, E200, E300						
46.300.0255	Mango IIE, E100, E200, E300						
46.300.0260	Mango II, E, 10x E100						
46.300.0265	Mango II, E, 10x E100						
46.300.1000	SHAVIV 1, E100, E200, E300						
46.300.1100	SHAVIV 1 (A)						
46.300.1500	MB2000						
46.300.2001	E						
46.300.2002	E						
46.300.2100	E100		P				N
46.300.2101	E100P		P		M		N
46.300.2102	E100C		VHM SC	H			N
46.300.2104	E100S		P		M		N
46.300.2109	E100L		P				N
46.300.2110	E110		P				N
46.300.2111	E110P		P		M		N
46.300.2150	E111		P				N
46.300.2200	E200					K	N
46.300.2201	E200P					K	N
46.300.2250	E250		P				N

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46.300.2300	E300						P					N
46.300.2320	E320										K	N
46.300.2350	E350										K	N
46.300.2600	E600						P					N
46.300.2601	E601						P					N
46.300.2720	E720						P					N

› 46.370 SHAVIV

UB2000



NL **Handontbramer type UB**
FR **Ebavureur type UB**
ES **Desbarbador tipo UB**
DE **Handentgrater Typ UB**

Ref.	Type	
46.370.3000	UB2000	

› 46.400 SHAVIV

NL **Hulpgereedschap voor gereedschapsmakers**
FR **Kit pour ajusteurs et outilleurs**
ES **Conjunto de herramientas para ajustadores**
DE **Hilfswerkzeuge für Werkzeugmacher**

Ref.	Type											
								P	H	M	K	N
46.400.1000	TD											
46.400.2001	US1											
46.400.2380	UB38											

› 49.150 Phantom

NL **HM set Stiftfrezen**
FR **Jeu de Fraises limes Carbure**
ES **Juego fresa rotativa MD**
DE **HM Satz Frässtifte**



VHM SC | Ø6

Ref.	Contents
49.150.0101	Form B, C, D, F, G - Ø 9,5 - 1-ALU
49.150.0103	Form B, C, D, F, G - Ø 9,5 - 3-FINE
49.150.0104	Form B, C, D, F, G - Ø 9,5 - 4-DIAMOND

Ref.	Contents
49.150.0106	Form B, C, D, F, G - Ø 9,5 - 6-UNI
49.150.0108	Form B, C, D, F, G - Ø 9,5 - 8-STEEL
49.150.0109	Form B, C, D, F, G - Ø 9,5 - 9-INOX

› 49.230 Phantom

NL **HSS-E set Verzinkfrezen 42.300, schuin gat, 60°**
FR **Jeu de fraises à ébavurer HSS-E 42.300, à trou, 60°**
ES **Juego de avellanadores HSS-E 42.300, con agujero, 60°**
DE **HSS-E Satz Kegelsenker 42.300, Querloch, 60°**



HSS-E | 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.	Ø mm
49.230.1000	10-15-20-25-30 mm

Ref.	Ø mm

19:00 ▶ 24h

› 49.232 Phantom

NL **HSS-E set Verzinkfrezen 42.320, 1 snijkant, 60°**
FR **Jeu de fraises à ébavurer HSS-E 42.320, 1 dent, 60°**
ES **Juego de avellanadores HSS-E 42.320, 1 labio, 60°**
DE **HSS-E Satz Kegelsenker 42.320, 1 Schneide, 60°**



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.	Ø mm
49.232.1000	10-15-20-25-30 mm

Ref.	Ø mm

› 49.234 Phantom

NL **HSS-E set Verzinkfrezen 42.340, 3 snijkanten, 60°**
FR **Jeu de fraises à ébavurer HSS-E 42.340, 3 taillants, 60°**
ES **Juego de avellanadores HSS-E 42.340, 3 labios, 60°**
DE **HSS-E Satz Kegelsenker 42.340, 3 Schneiden, 60°**



HSS-E | 3 | 3 | 60°

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.	Ø mm
49.234.1040	10,4-16,5-20,5-25-31 mm

Ref.	Ø mm

› 49.250 Phantom



NL **HSS-E set Verzinkfrezen 42.500, schuin gat, 90°**
FR **Jeu de fraises à ébavurer HSS-E 42.500, à trou, 90°**
ES **Juego de avellanadores HSS-E 42.500, con agujero, 90°**
DE **HSS-E Satz Kegelsenker 42.500, Querloch, 90°**

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.	Ø mm	Ref.	Ø mm
49.250.1000	10-15-20-25-30 mm		

› 49.252 Phantom



NL **HSS-E set Verzinkfrezen 42.520, 1 snijkant, 90°**
FR **Jeu de fraises à ébavurer HSS-E 42.520, 1 dent, 90°**
ES **Juego de avellanadores HSS-E 42.520, 1 labio, 90°**
DE **HSS-E Satz Kegelsenker 42.520, 1 Schneide, 90°**

HSS-E | 1 | 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.	Ø mm	Ref.	Ø mm
49.252.1000	10-15-20-25-30 mm		

› 49.253 INTERNATIONAL TOOLS



NL **HSS set Verzinkfrezen 42.535, 3 snijkanten, 90°**
FR **Jeu de fraises à ébavurer HSS 42.535, 3 taillants, 90°**
ES **Juego de avellanadores HSS 42.535, 3 labios, 90°**
DE **HSS Satz Kegelsenker 42.535, 3 Schneiden, 90°**

HSS | DIN 335-C | 3 | 3 | 90°

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.	Ø mm	Ref.	Ø mm
49.253.5630	6,3-8,3-10,4-12,4-16,5-20,5-25		

19:00 ▶ 24h

› 49.254 Phantom

NL **HSS-E set Verzinkfrezen 42.540, 3 snijkanten, 90°**
FR **Jeu de fraises à ébavurer HSS-E 42.540, 3 taillants, 90°**
ES **Juego de avellanadores HSS-E 42.540, 3 labios, 90°**
DE **HSS-E Satz Kegelsenker 42.540, 3 Schneiden, 90°**



HSS-E | 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
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.	Ø mm
49.254.0630	6,3-8,3-10,4-12,4-16,5-20,5 mm
49.254.0631	6,3-10,4-16,5-20,5-25 mm

Ref.	Ø mm
49.254.1040	10,4-16,5-20,5-25-31 mm

› 49.255 Phantom

NL **HSS-E set Verzinkfrezen 42.550, 3 snijkanten, 90°**
FR **Jeu de fraises à ébavurer HSS-E 42.550, 3 taillants, 90°**
ES **Juego de avellanadores HSS-E 42.550, 3 labios, 90°**
DE **HSS-E Satz Kegelsenker 42.550, 3 Schneiden, 90°**



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.	Ø mm
49.255.0631	6,3-10,4-16,5-20,5-25 mm

Ref.	Ø mm

› 49.256 Phantom



NL **HSS-E set Verzinkfrezen 42.541, 3 snijkanten, 90°, TiN**
FR **Jeu de fraises à ébavurer HSS-E 42.541, 3 taillants, 90°, TiN**
ES **Juego de avellanadores HSS-E 42.541, 3 labios, 90°, TiN**
DE **HSS-E Satz Kegelsenker 42.541, 3 Schneiden, 90°, TiN**

HSS-E | TiN | 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
≤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.	Ø mm
49.256.1040	10,4-16,5-20,5-25-31 mm

Ref.	Ø mm

› 49.270 Phantom



NL **HSS-E set Verzinkfrezen 42.700, schuin gat, 120°**
FR **Jeu de fraises à ébavurer HSS-E 42.700, à trou, 120°**
ES **Juego de avellanadores HSS-E 42.700, con agujero, 120°**
DE **HSS-E Satz Kegelsenker 42.700, Querloch, 120°**

HSS-E | 120°

Ref.	Ø mm
49.270.1000	10-15-20-25-30 mm

Ref.	Ø mm

› 49.320 Phantom



NL **HSS-E Set Kopverzinkfrezen 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°**

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
49.320.1000	43.200	1: M3-M4-M5-M6-M8-M10
49.320.2000	43.210	2: M3-M4-M5-M6-M8-M10

Ref.	Type	Ø mm
49.320.3000	43.240	3: M3-M4-M5-M6-M8-M10

19:00 ▶ 🛒 ▶ 24h

› 49.340 Phantom

NL **HSS-E Set Kopverzinkfrezen 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°**



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
49.340.1000	43.320	1: M3-M4-M5-M6-M8-M10
49.340.2000	43.330	2: M3-M4-M5-M6-M8-M10

Ref.	Type	Ø mm
49.340.3000	43.350	3: 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, nitrurado**
DE **HSS Satz Stufenbohrer spiralförmig, 44.130, nitriert**



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.	Ø mm
49.413.1000	1 (M4-M12), 2 (M4-M20), 3 (M6-M30)

Ref.	Ø 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**



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.	Ø mm
49.414.1000	1 (M4-M12), 2 (M4-M20), 3 (M6-M30)

Ref.	Ø mm

› 49.420 Phantom

NL **HSS Set Conische Plaatfrezen 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**



49.420.3000



49.420.1000

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.	Ø mm
49.420.1000	1 (3-14), 2 (6-20), 3 (16-30)

Ref.	Ø mm
49.420.3000	120 ml

› 49.490 Phantom

NL **Set plaatboren, plaatfrees en verzinkfrezen**
FR **Jeu de forets étagé, foret conique, fraise à ebavurer et à chanfreiner**
ES **Juego brocas escalonadas, fresa cónica y avellanadores**
DE **Satz Stufenbohrer, Blechschälbohrer und Entgratungssenker**



Ref.	Ø mm
49.490.1000	44.130.0100 (M4-M12), 44.130.0200 (M4-M20), 44.200.0200 (6-20 mm), 42.500.1500 (15 mm), 42.540.1240 (12,4 mm), 42.540.2500 (25 mm)

› 49.600 SHAVIV

NL **Assortiment**
FR **Coffret ébavureurs et lames**
ES **Surtido**
DE **Sortiment**



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

19:00 ▶ 24h

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**

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**

	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 étagées**
ES **Tabla de número de revoluciones para brocas escalonadas**
DE **Drehzahltabelle Stufenbohrer**

	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**

$$n = \frac{Vc \times 1000}{3{,}14 \times d1} \qquad Vc = \frac{n \times 3{,}14 \times d1}{1000}$$

	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

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)

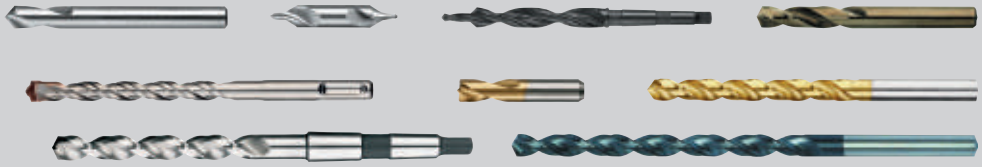
Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)

n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)

NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



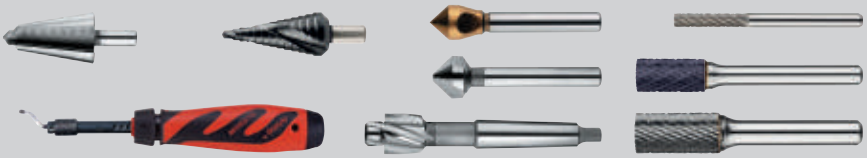
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



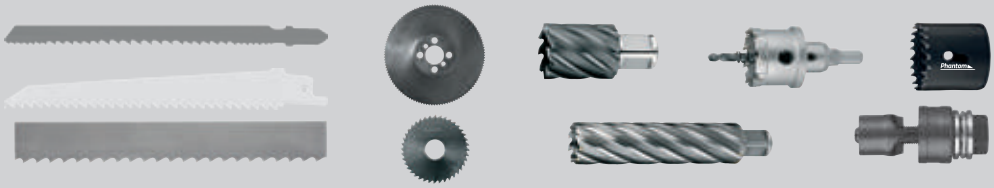
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
HSS	HSS	HSS	HSS	HSS
HSS-E	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
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Vollhartmetall
" inch	Diameter in inches	Diamètre en pouce	Diámetro en pulgadas	Durchmesser in Zoll-Masse
DIN 212-B	DIN norm	Norme DIN	Norma DIN	DIN Norm
DIN≈ 8051	DIN bij benadering	Equivalent norme DIN	Según norma DIN	Ähnlich nach DIN
Phantom	Phantom norm	Norme Phantom	Norma Phantom	Werksnorm

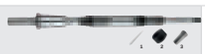
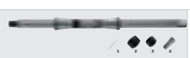
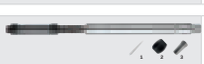
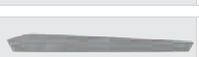
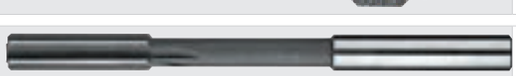
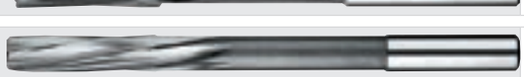
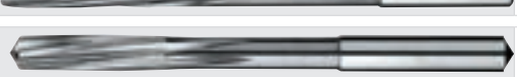
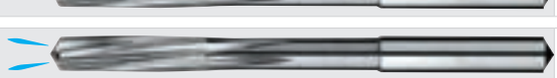
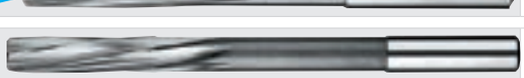
	NL	FR	ES	DE
1:10	Coniciteit	Conicité	Conicidad	Konizität
h8	Cilindrische schacht h8	Queue cylindrique h8	Mango cilíndrico h8	Zylinderschaft h8
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel
x0,01	Oplopend met 0,01 mm	Croissant par 0,01 mm	Creciente por 0,01 mm	Ansteigend mit 0,01 mm
H7	Passing	Tolérance	Tolerancia	Passung
≤ø3 - 0,000 +0,003	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser
MT	Ruimen van Morse Konus	Pour alésage cône morse	Para escariar mango cónico	Für reiben von Morsekegel

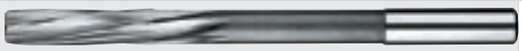
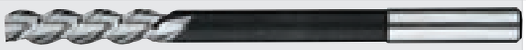
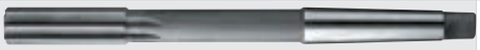
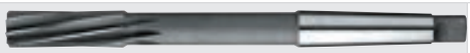
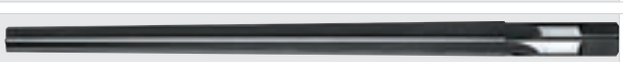
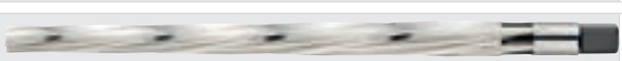
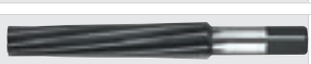
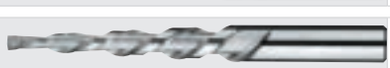
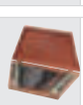
NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**

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

› 51.110	Phantom	HSS	DIN 206-B	H7	P		K	N					P. 4
› 51.170	Phantom	HSS	DIN 206-B	H7	P		K	N					P. 4
› 51.180	Phantom	HSS		H7	P		K	N					P. 4
› 51.200	HUNGER	D			P		K	N					P. 5
› 51.201	HUNGER	D											P. 5
› 51.202	HUNGER	D											P. 6
› 51.210	HUNGER	E			P		K	N					P. 6
› 51.211	HUNGER	E											P. 6
› 51.212	HUNGER	E											P. 6
› 51.220	HUNGER	K			P		K	N					P. 7
› 51.221	HUNGER	K											P. 7
› 51.224	HUNGER	K											P. 7
› 51.230	HUNGER	U			P		K	N					P. 8
› 51.231	HUNGER	U											P. 8
› 51.232	HUNGER	U											P. 8
› 51.233	HUNGER	U											P. 8
› 51.234	HUNGER	U											P. 9
› 51.240	HUNGER	V			P		K	N					P. 9
› 51.241	HUNGER	V											P. 9
› 51.242	HUNGER	V											P. 9
› 51.244	HUNGER	V											P. 10
› 81.900													P. 10
› 81.905													P. 10
› 51.300	Phantom	HSS	DIN 212-C	H7			K	N					P. 11
› 51.310	Phantom	HSS	DIN 212-B	H7	P		K	N					P. 11
› 51.320	Phantom	HSS-E	DIN 212-B	H7	P	M	K	N	S				P. 11
› 51.330	Phantom	MG HM	DIN 212-B	H7	P	M	K	N	S				P. 12
› 51.334	Phantom	MG HM	DIN 212-B	H7	P	M	K	N	S				P. 12
› 51.340	Phantom	HSS-E	DIN 212-B	P7	P	M	K	N	S				P. 12

› 51.350	Phantom	HSS-E	DIN 212-B	x0,01	P	M	K	N	S		P. 13
› 51.360	Phantom	MG HM	DIN 212-B	x0,01	P	M	K	N	S		P. 13
› 51.400	Phantom	HSS-E		H7	P	M	K	N	S		P. 14
› 51.420	Phantom	HSS-E	DIN 212-E	H7	P			N			P. 14
› 51.500	Phantom	HSS	DIN 208-A	H7			K	N			P. 15
› 51.510	Phantom	HSS	DIN 208-B	H7	P		K	N			P. 15
› 51.520	Phantom	HSS-E	DIN 208-B	H7	P	M	K	N	S		P. 15
› 51.570	Phantom	HSS-E	DIN 208-B	H7	P	M	K	N	S		P. 16
› 51.600	Phantom	HSS-E 8%		H7	P	M	K	N	S		P. 16
› 51.620	Phantom	HSS-E	DIN 208-E	H7	P			N			P. 17
› 51.640	Phantom	HM-TIP	DIN 8094-B	H7	P	M	K	N	S		P. 17
› 51.645	Phantom	HM-TIP	DIN≈ 8051		P	M	K	N	S		P. 17
› 51.650	Phantom	HSS	DIN 219-B	H7	P		K	N			P. 18
› 84.410	TORAX	DIN 217									P. 18
› 51.700	Phantom	HSS	DIN 311	k11	P		K	N			P. 18
› 51.720	Phantom	HSS	DIN 9-A	1:50			K	N			P. 19
› 51.730	Phantom	HSS	DIN 9-B	1:50	P		K	N			P. 19
› 51.760	Phantom	HSS	DIN 204	DIN 228-B	P		K	N			P. 19
› 51.770	Phantom	HSS	MT	1:10	P		K	N			P. 20
› 51.780	Phantom	HSS	NPT	1:16	P		K	N			P. 20
› 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. 21
› 51.820	Phantom	HSS-E		1:20	P	M	K	N	S		P. 21
› 51.830	Phantom	HSS-E		1:20	P	M		N			P. 21
› 51.840	Phantom	HSS-E		1:12,5	P	M	K	N	S		P. 22
› 51.850	Phantom	HSS-E		1:12,5	P	M		N			P. 22
› 51.860	Phantom	HSS-E		1:10	P	M	K	N	S		P. 22
› 51.870	Phantom	HSS-E		1:10	P	M		N			P. 22
› 59.200	HUNGER	D									P. 23
› 59.210	HUNGER	E									P. 23

19:00 ▶ 🛒 ▶ 24h

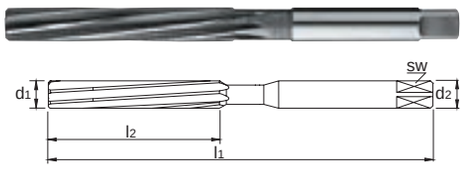
› 59.220	HUNGER	K					P. 23
› 59.230	HUNGER	U					P. 23
› 59.240	HUNGER	V					P. 24
› 59.350	Phantom	HSS-E	DIN 212-B	x0,01			P. 24

› 51.110 Phantom

NL **HSS Handruimer H7**
FR **Alésoir à main HSS H7**
ES **Escariador mano HSS H7**
DE **HSS Handreibahle 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

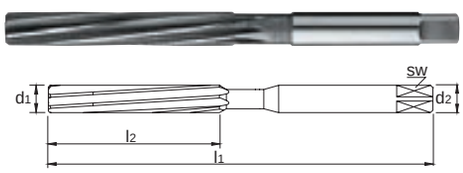
Ref.	d1	l1	l2	d2	sw
51.110.3000	30	247	124	30	22.4
51.110.3100	31	265	133	31	25
51.110.3200	32	265	133	32	25
51.110.3300	33	265	133	33	25
51.110.3400	34	284	142	34	28
51.110.3500	35	284	142	35	28
51.110.3600	36	284	142	36	28
51.110.3700	37	284	142	37	28
51.110.3800	38	305	152	38	31.5
51.110.3900	39	305	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**
FR **Alésoir à main HSS H7**
ES **Escariador mano HSS H7**
DE **HSS Handreibahle H7**

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	66	33	3.17	2.5
51.170.0476	3/16	87	44	4.76	4
51.170.0635	1/4	100	50	6.35	5
51.170.0794	5/16	115	58	7.94	6.3
51.170.0952	3/8	133	66	9.52	8
51.170.1032	13/32	133	66	10.32	8
51.170.1111	7/16	142	71	11.11	9

Ref.	d1	l1	l2	d2	sw
51.170.1270	1/2	152	76	12.7	10
51.170.1429	9/16	163	81	14.29	11.2
51.170.1588	5/8	175	87	15.88	12.5
51.170.1746	11/16	201	100	17.46	14
51.170.1905	3/4	201	100	19.05	16
51.170.2063	13/16	201	100	20.63	16
51.170.2222	7/8	215	107	22.22	18

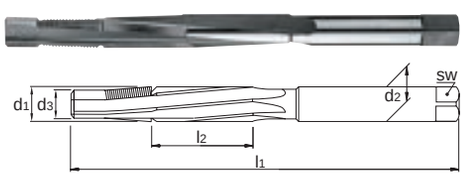
Ref.	d1	l1	l2	d2	sw
51.170.2381	15/16	231	115	23.81	10
51.170.2540	1	231	115	25.4	20
51.170.2698	1.1/16	247	124	26.98	22.4
51.170.2858	1.1/8	247	124	28.58	22.4
51.170.3175	1.1/4	265	133	31.75	25
51.170.3810	1.1/2	305	152	38.1	31.5

› 51.180 Phantom

NL **HSS Handruimer systeem Berg, H7**
FR **Alésoir à main HSS système Berg, H7**
ES **Escariador mano HSS sistema Berg, H7**
DE **HSS Handreibahle System Berg, H7**

HSS | 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	d3	l1	l2	d2	sw
51.180.1000	10	9	110	35	10	8
51.180.1050	10.5	9.5	110	35	10.5	8
51.180.1100	11	10	110	35	11	8.9
51.180.1150	11.5	10.5	110	35	11.5	8.9
51.180.1200	12	11	140	50	12	9
51.180.1250	12.5	11.5	140	50	12.5	9
51.180.1300	13	12	140	50	13	9

Ref.	d1	d3	l1	l2	d2	sw
51.180.1350	13.5	12.5	140	50	13.5	9
51.180.1400	14	13	150	60	14	11
51.180.1450	14.5	13.5	150	60	14.5	11
51.180.1500	15	14	150	60	15	12
51.180.1550	15.5	14.5	150	60	15.5	12
51.180.1600	16	15	160	70	16	12
51.180.1650	16.5	15.5	160	70	16	12

Ref.	d1	d3	l1	l2	d2	sw
51.180.1700	17	16	160	70	17	13
51.180.1750	17.5	16.5	160	70	17	13
51.180.1800	18	17	170	70	18	15
51.180.1850	18.5	17.5	170	70	18	15
51.180.1900	19	18	170	70	18	15
51.180.1950	19.5	18.5	170	70	18	15
51.180.2000	20	19	180	70	18	15

19:00 ▶ 24h

› 51.180 Phantom

Ref.	d1	d3	l1	l2	d2	sw
51.180.2050	20.5	19.5	180	70	18	15
51.180.2100	21	20	180	70	18	15
51.180.2150	21.5	20.5	180	70	18	15
51.180.2200	22	21	180	70	18	15
51.180.2250	22.5	21.5	180	70	18	15
51.180.2300	23	22	190	80	18	15
51.180.2350	23.5	22.5	190	80	18	15
51.180.2400	24	23	190	80	18	15
51.180.2450	24.5	23.5	190	80	18	15
51.180.2500	25	24	200	80	20	16
51.180.2550	25.5	24.5	200	80	20	16
51.180.2600	26	25	200	80	20	16
51.180.2650	26.5	25.5	200	80	20	16
51.180.2700	27	26	200	80	20	16
51.180.2750	27.5	26.5	200	80	20	16
51.180.2800	28	27	220	80	24	18
51.180.2850	28.5	27.5	220	80	24	18
51.180.2900	29	28	220	80	24	18
51.180.2950	29.5	28.5	220	80	24	18

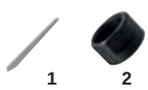
Ref.	d1	d3	l1	l2	d2	sw
51.180.3000	30	29	230	80	24	18
51.180.3050	30.5	29.5	230	80	24	18
51.180.3100	31	30	230	80	24	18
51.180.3150	31.5	30.5	230	80	24	18
51.180.3200	32	31	230	80	24	18
51.180.3250	32.5	31.5	230	80	24	18
51.180.3300	33	32	230	80	24	18
51.180.3350	33.5	32.5	230	80	24	18
51.180.3400	34	33	230	90	24	18
51.180.3450	34.5	33.5	230	90	28	18
51.180.3500	35	34	230	90	28	22
51.180.3550	35.5	34.5	230	90	28	22
51.180.3600	36	35	230	90	28	22
51.180.3650	36.5	35.5	230	90	28	22
51.180.3700	37	36	240	90	28	22
51.180.3750	37.5	36.5	240	90	28	22
51.180.3800	38	37	240	90	28	22
51.180.3850	38.5	37.5	240	90	28	22
51.180.3900	39	38	240	90	28	22

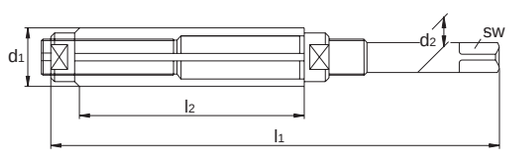
Ref.	d1	d3	l1	l2	d2	sw
51.180.3950	39.5	38.5	240	90	28	22
51.180.4000	40	39	240	90	28	22
51.180.4100	41	40	240	90	33	26
51.180.4200	42	41	240	90	33	26
51.180.4300	43	42	240	90	33	26
51.180.4400	44	43	250	100	33	26
51.180.4500	45	44	250	100	33	26
51.180.4600	46	45	250	100	33	26
51.180.4700	47	46	250	100	33	26
51.180.4800	48	47	250	100	38	29
51.180.4900	49	48	250	100	38	29
51.180.5000	50	49	250	100	38	29
51.180.5100	51	50	250	100	38	29
51.180.5200	52	51	250	100	38	29
51.180.5300	53	52	250	100	38	29
51.180.5400	54	53	250	100	38	29
51.180.5500	55	54	250	100	38	29
51.180.5600	56	55	260	110	38	29

› 51.200 HUNGER

NL **HSS Verstelbare Handruimer type D**
FR **Alésoir expansible à main HSS type D**
ES **Mano ajustable HSS tipo D**
DE **HSS Verstellbare Handreibahlen Typ 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**

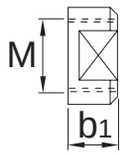
Ref.	Ø mm	l2
51.201.0640	6,4-8	32
51.201.0800	8-9	32
51.201.0900	9-10	32
51.201.1000	10-11	35
51.201.1100	11-12	35
51.201.1200	12-13,5	42
51.201.1350	13,5-15,5	50

Ref.	Ø mm	l2
51.201.1550	15,5-18	60
51.201.1800	18-21	65
51.201.2100	21-24	70
51.201.2400	24-27,5	75
51.201.2750	27,5-31,5	80
51.201.3150	31,5-37	90
51.201.3700	37-45	100

Ref.	Ø mm	l2
51.201.4500	45-55	109
51.201.5500	55-65	120
51.201.6500	65-80	145
51.201.8000	80-95	150
51.201.9500	95-110	150

› 51.202 HUNGER

NL **Reservemoer type D-K**
FR **Ecrou de rechange type D-K**
ES **Tuerca de recambio tipo D-K**
DE **Ersatzmutter Typ D-K**





Ref.	Ø mm	b1	M
51.202.0640	6,4-7,2	8	5x0,75
51.202.0700	7,2-8	8	5,75x1
51.202.0800	8-9	8	6,75x1
51.202.0900	9-10	8	7,5x1
51.202.1000	10-11	8.5	8x1
51.202.1100	11-12	9	9x1
51.202.1200	12-13,5	9	10x1

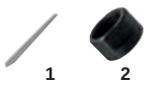
Ref.	Ø mm	b1	M
51.202.1350	13,5-15,5	10	11x1
51.202.1550	15,5-18	10	13x1
51.202.1800	18-21	11	15x1
51.202.2100	21-24	12	17x1,5
51.202.2400	24-27,5	13	19x1,5
51.202.2750	27,5-31,5	14	21x2
51.202.3150	31,5-37	15	25x2

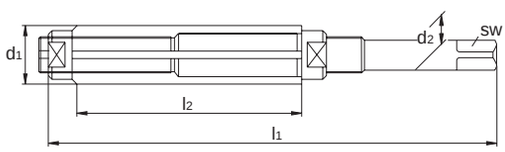
Ref.	Ø mm	b1	M
51.202.3700	37-45	16	30x2
51.202.4500	45-55	16	36x2
51.202.5500	55-65	17	44x2
51.202.6500	65-80	20	55x2
51.202.8000	80-95	26	65x2
51.202.9500	95-110	26	75x2

› 51.210 HUNGER

NL **HSS Verstelbare Handruimer extra lang, type E**
FR **Alésoir expansible à main HSS extra long, type E**
ES **Mano ajustable HSS extra largo, tipo E**
DE **HSS Verstellbare Handreibahlen extra lang, Typ E**







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
51.210.1050	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**



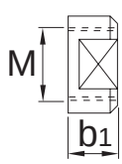
Ref.	Ø mm	l2
51.211.1050	10,5-12	65
51.211.1200	12-13,5	70
51.211.1350	13,5-15,5	80
51.211.1550	15,5-17,5	90

Ref.	Ø mm	l2
51.211.1750	17,5-19,5	100
51.211.1950	19,5-21,5	110
51.211.2150	21,5-24,5	120
51.211.2450	24,5-27,5	130

Ref.	Ø mm	l2
51.211.2750	27,5-31,5	140
51.211.3150	31,5-37	150
51.211.3700	37-45	165
51.211.4500	45-55	180

› 51.212 HUNGER

NL **Reservemoer type E, (overige maten: 51.202)**
FR **Ecrou 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)**





Ref.	Ø mm	b1	M
51.212.1050	10,5-12	9	8,25x1

Ref.	Ø mm	b1	M
51.212.1750	17,5-19,5	11	14x1

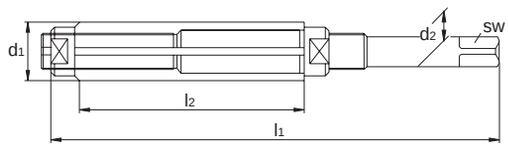
Ref.	Ø mm	b1	M
51.212.1950	19,5-21,5	11	16x1,5

19:00 ▶ 24h

› 51.220 HUNGER

NL **HSS Verstelbare Handruimer type K, enkelvoudige geleiding**
FR **Alésoir expansible à main HSS type K, guidage simple**
ES **Mano ajustable HSS tipo K, guía simple**
DE **HSS Verstellbare Handreibahlen Typ K, einseitiger Führung**





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
51.220.0700	7-8	175	32	4	4.25	3.5	51.221.0700	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	51.221.5500	51.202.6500	51.224.6500
51.220.8000	80-95	700	150	10	40.5	32	51.221.5500	51.202.8000	51.224.8000
51.220.9500	95-110	700	150	10	45.4	36	51.221.5500	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)**

Ref.	Ø mm	l2
51.221.0700	7-8	32
51.221.0800	8-9	32
51.221.0900	9-10	32
51.221.1000	10-11	35
51.221.1100	11-12	35
51.221.1200	12-13,5	42

Ref.	Ø mm	l2
51.221.1350	13,5-15,5	50
51.221.1550	15,5-18	60
51.221.1800	18-21	65
51.221.2100	21-24	70
51.221.2400	24-27,5	75
51.221.2750	27,5-31,5	80

Ref.	Ø mm	l2
51.221.3150	31,5-37	90
51.221.3700	37-45	100
51.221.4500	45-55	109
51.221.5500	55-65	120

› 51.224 HUNGER



NL **Geleidebus type K**
FR **Bague de guidage type K**
ES **Anillo de guía tipo K**
DE **Führungsbüchsen Typ K**

Ref.	Ø mm
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.	Ø mm
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

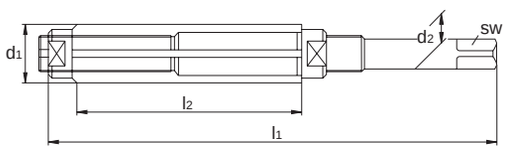
Ref.	Ø mm
51.224.4500	45-55
51.224.5500	55-65
51.224.6500	65-80
51.224.8000	80-95
51.224.9500	95-110

› 51.230 HUNGER



NL **HSS Verstelbare Handruimer type U, dubbele geleiding**
FR **Alésoir expansible à main HSS type U, guidage double**
ES **Mano ajustable HSS tipo U, guía doble**
DE **HSS Verstellbare Handreibahlen Typ U, doppelter führung**





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
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



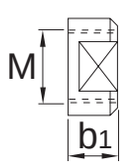
NL **HSS Stel Reservemessen type U**
FR **Jeu de Lames de rechange HSS type U**
ES **Juego de cuchillas de recambio HSS tipo U**
DE **HSS Satz Ersatzmesser Typ U**

Ref.	Ø mm	l2
51.231.1200	12-13,5	30
51.231.1350	13,5-15,5	33
51.231.1550	15,5-18	36
51.231.1800	18-21	40

Ref.	Ø mm	l2
51.231.1950	19,5-22,5	44
51.231.2100	21-24,5	44
51.231.2450	24,5-29	48
51.231.2900	29-34	52

Ref.	Ø mm	l2
51.231.3400	34-39	54
51.231.3900	39-45	60
51.231.4500	45-52/59-66	60

› 51.232 HUNGER





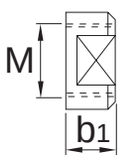
NL **Reservemoer type U, groot**
FR **Ecrou de rechange type U, grand**
ES **Tuerca de recambio tipo U, grande**
DE **Ersatzmutter Typ U, groß**

Ref.	Ø mm	b1	M
51.232.1200	12-13,5	9	10x1
51.232.1350	13,5-15,5	10	11x1
51.232.1550	15,5-18	10	13x1
51.232.1800	18-21	11	15x1
51.232.1950	19,5-22,5	11	16x1

Ref.	Ø mm	b1	M
51.232.2100	21-24,5	12	17x1,5
51.232.2450	24,5-29	13	20x1,5
51.232.2900	29-34	14	24x2
51.232.3400	34-39	14.5	28x2
51.232.3900	39-45	15	31x2

Ref.	Ø mm	b1	M
51.232.4500	45-52	16	36x2
51.232.5200	52-59	15	39x2
51.232.5900	59-66	15	50x2

› 51.233 HUNGER





NL **Reservemoer type U, klein, met schaalverdeling, (overige maten: 51.202)**
FR **Ecrou 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)**

Ref.	Ø mm	b1	M
51.233.1200	12-13,5	8.5	9x1
51.233.1550	15,5-18	9.5	12x1
51.233.1800	18-21	10.5	14x1
51.233.2100	21-24,5	11	16x1,5

Ref.	Ø mm	b1	M
51.233.2450	24,5-29	12	19x1,5
51.233.2900	29-34	13	21x2
51.233.3400	34-39	14	26x2
51.233.3900	39-45	14.5	28x2

Ref.	Ø mm	b1	M
51.233.4500	45-52	16	36x2
51.233.5200	52-59	15	39x2

19:00 ▶ 24h

› 51.234 HUNGER

NL **Geleidebus type U**
FR **Bague de guidage type U**
ES **Anillo de guía tipo U**
DE **Führungsbüchsen Typ U**



Ref.	Ø mm
51.234.1200	12-13,5
51.234.1350	13,5-15,5
51.234.1550	15,5-18
51.234.1800	18-21
51.234.1950	19,5-22,5

Ref.	Ø mm
51.234.2100	21-24,5
51.234.2450	24,5-29
51.234.2900	29-34
51.234.3400	34-39
51.234.3900	39-45

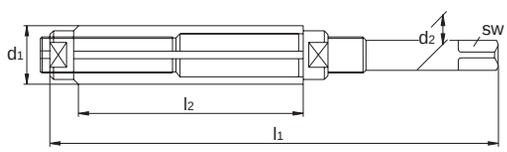
Ref.	Ø mm
51.234.4500	45-52
51.234.5200	52-59
51.234.5900	59-66

› 51.240 HUNGER

NL **HSS Verstelbare Handruimer type V, klepgeleideruimer**
FR **Alésoir expansible à main HSS type V, pour guide de soupapes**
ES **Mano ajustable HSS tipo V, para guías de válvulas**
DE **HSS Verstellbare Handreibahlen Typ V, für Ventilführungen**







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
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	51.242.0990	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**



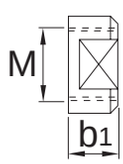
Ref.	Ø mm	l2
51.241.0540	5,4-6	28
51.241.0590	5,9-6,5	28
51.241.0640	6,4-7	28
51.241.0690	6,9-7,5	28

Ref.	Ø mm	l2
51.241.0740	7,4-8	28
51.241.0790	7,9-8,5	28
51.241.0840	8,4-9	28
51.241.0890	8,9-9,5	32

Ref.	Ø mm	l2
51.241.0940	9,4-10	32
51.241.0990	9,9-11	36
51.241.1090	10,9-12	36

› 51.242 HUNGER

NL **Reservemoer type V, (overige maten: 51.202)**
FR **Ecrou de rechange type V, (autres dimensions: 51.202)**
ES **Tuerca de recambio tipo V, (otros tamaños: 51.202)**
DE **Ersatzmutter Typ V, (übrige Abmessungen: 51.202)**





Ref.	Ø mm	b1	M
51.242.0540	5,4-6	8	4,5x0,75
51.242.0640	6,4-7	8	5,5x0,75
51.242.0740	7,4-8	8	5,5x0,75

Ref.	Ø mm	b1	M
51.242.0840	8,4-9	8	7,25x1
51.242.0890	8,9-9,5	8.5	7,25x1
51.242.0940	9,4-10	8.5	7,75x1

Ref.	Ø mm	b1	M
51.242.0990	9,9-11	9	8,25x1
51.242.1090	10,9-12	9	8,75x1

› 51.244 HUNGER

NL **Geleidebus type V**
FR **Bague de guidage type V**
ES **Anillo de guía tipo V**
DE **Führungsbüchsen Typ V**



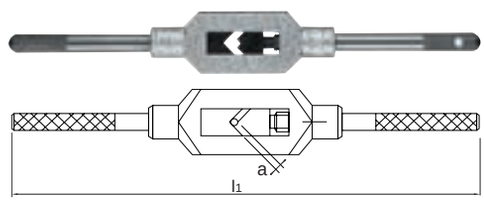
Ref.	Ø mm
51.244.0540	5,4-6
51.244.0590	5,9-6,5
51.244.0640	6,4-7
51.244.0690	6,9-7,5

Ref.	Ø mm
51.244.0740	7,4-8
51.244.0790	7,9-8,5
51.244.0840	8,4-9
51.244.0890	8,9-9,5

Ref.	Ø mm
51.244.0940	9,4-10
51.244.0990	9,9-11
51.244.1090	10,9-12

› 81.900 Phantom

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**



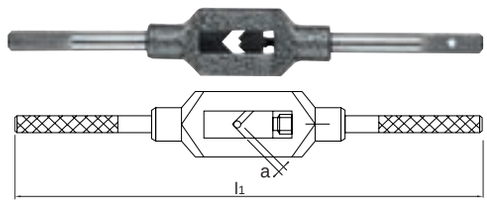
DIN 1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0000	0	M1-M8	1/16-1/4	-	125	2,1-4,9
81.900.0100	1	M1-M10	1/16-3/8	1/8	180	2,1-5,5
81.900.0150	1,5	M1-M12	1/16-1/2	1/8	200	2,1-7
81.900.0200	2	M3,5-M12	5/32-1/2	1/8	280	3-8

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.900.0400	4	M11-M27	7/16-1	1/4-3/4	500	6,2-16
81.900.0500	5L	M13-M32	1/2-1.1/4	1/4-1	750	7-20

› 81.905 Phantom

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**



DIN 1814

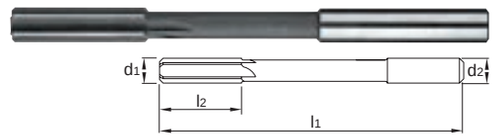
Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0000	0	M1-M8	1/16-1/4	-	130	2,1-4,9
81.905.0100	1	M1-M10	1/16-3/8	1/8	180	2,1-5,5
81.905.0150	1,5	M1-M12	1/16-1/2	1/8	200	2,1-7
81.905.0200	2	M3,5-M12	5/32-1/2	1/8	280	3-8
81.905.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0400	4	M11-M27	7/16-1	1/4-3/4	500	6,2-16
81.905.0500	5S	M13-M32	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	11-24
81.905.0800	8	M25-M64	1-2.1/2	3/4-3	1250	16-40

19:00 ▶ 24h

› 51.300 Phantom

NL **HSS Machineruimer H7, rechte groeven**
FR **Alésoir machine HSS H7, goujures droites**
ES **Escariador máquina HSS H7, canales rectas**
DE **HSS Maschinenreibahlen H7, gerade Nuten**



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

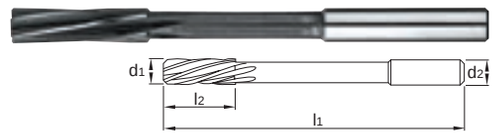
Ref.	d1	l1	l2	d2
51.300.0400	4	75	19	4
51.300.0450	4.5	80	21	4.5
51.300.0500	5	86	23	5
51.300.0550	5.5	93	26	5.5
51.300.0600	6	101	28	6
51.300.0650	6.5	101	28	6

Ref.	d1	l1	l2	d2
51.300.0700	7	109	31	7
51.300.0800	8	117	33	8
51.300.0900	9	125	36	9
51.300.1000	10	133	38	10
51.300.1100	11	133	38	10
51.300.1200	12	151	44	12

Ref.	d1	l1	l2	d2
51.300.1300	13	151	44	12
51.300.1400	14	160	47	12.5
51.300.1500	15	162	50	12.5
51.300.1600	16	170	52	12.5

› 51.310 Phantom

NL **HSS Machineruimer H7**
FR **Alésoir machine HSS H7**
ES **Escariador máquina HSS H7**
DE **HSS Maschinenreibahlen H7**



HSS | DIN 212-B | 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

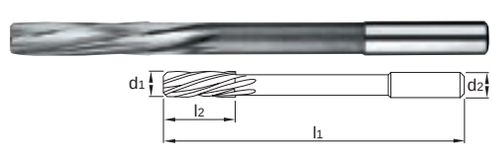
Ref.	d1	l1	l2	d2
51.310.0400	4	75	19	4
51.310.0450	4.5	80	21	4.5
51.310.0500	5	86	23	5
51.310.0550	5.5	93	26	5.5
51.310.0600	6	101	28	6
51.310.0650	6.5	101	28	6
51.310.0700	7	109	31	7

Ref.	d1	l1	l2	d2
51.310.0800	8	117	33	8
51.310.0900	9	125	36	9
51.310.1000	10	133	38	10
51.310.1100	11	133	38	10
51.310.1200	12	151	44	12
51.310.1300	13	151	44	12
51.310.1400	14	160	47	12.5

Ref.	d1	l1	l2	d2
51.310.1500	15	162	50	12.5
51.310.1600	16	170	52	12.5
51.310.1700	17	175	54	14
51.310.1800	18	182	56	14
51.310.1900	19	189	58	16
51.310.2000	20	195	60	16

› 51.320 Phantom

NL **HSS-E Machineruimer H7**
FR **Alésoir machine HSS-E H7**
ES **Escariador máquina HSS-E H7**
DE **HSS-E Maschinenreibahlen H7**



HSS-E | DIN 212-B | 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

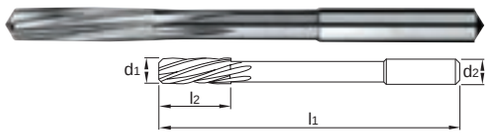
15-22 E | 12-17 D | 7-10 C | 5-7 B | 4-6 A | 3-5 A | 4-5 C | 6-15 D | 25-35 G | 20-30 G | 12-17 D | 2-3 A | 2-3 A

Ref.	d1	d2	l1	l2
51.320.0100	1	1	38	7
51.320.0150	1.5	1.5	40	10
51.320.0200	2	2	49	12
51.320.0250	2.5	2.5	57	18
51.320.0300	3	3	57	18
51.320.0350	3.5	3.5	57	18
51.320.0400	4	4	75	19
51.320.0450	4.5	4.5	80	21
51.320.0500	5	5	86	23
51.320.0550	5.5	5.5	93	26

Ref.	d1	d2	l1	l2
51.320.0600	6	6	101	28
51.320.0650	6.5	6	101	28
51.320.0700	7	7	109	31
51.320.0750	7.5	7	109	31
51.320.0800	8	8	117	33
51.320.0850	8.5	8	117	33
51.320.0900	9	9	125	36
51.320.0950	9.5	9	125	36
51.320.1000	10	10	133	38
51.320.1050	10.5	10	133	38

Ref.	d1	d2	l1	l2
51.320.1100	11	10	133	38
51.320.1150	11.5	12	151	44
51.320.1200	12	12	151	44
51.320.1250	12.5	12	151	44
51.320.1300	13	12	151	44
51.320.1350	13.5	14	160	47
51.320.1400	14	14	160	47
51.320.1450	14.5	14	162	50
51.320.1500	15	14	162	50
51.320.1600	16	16	170	52

› 51.330 Phantom



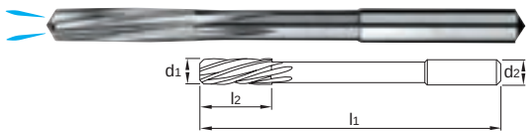
NL **VHM-MG Machineruimer H7**
FR **Alésoir machine Carbure MG H7**
ES **Escariador máquina MD-MG H7**
DE **VHM-MG Maschinenreibahlen H7**

MG HM | DIN 212-B | 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
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
51.330.0100	1	1.4	40	8
51.330.0150	1.5	1.5	40	8
51.330.0200	2	2	49	11
51.330.0250	2.5	2.5	57	14
51.330.0300	3	3	61	15
51.330.0400	4	4	75	19
51.330.0500	5	5	86	23
51.330.0600	6	6	93	26
51.330.0800	8	8	117	33
51.330.1000	10	10	133	38
51.330.1200	12	10	151	44
51.330.1400	14	14	160	47

› 51.334 Phantom



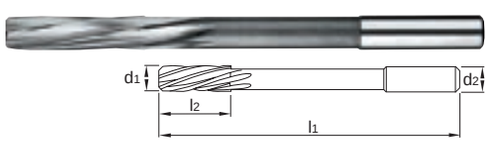
NL **VHM-MG Machineruimer H7, met koelkanaal**
FR **Alésoir machine Carbure MG H7, à trou d´huile**
ES **Escariador máquina MD-MG H7, con canal de refrigeración**
DE **VHM-MG Maschinenreibahlen H7, mit Innenkühlung**

MG HM | DIN 212-B | h6 | 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
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
51.334.0400	4	4	75	19
51.334.0500	5	5	86	23
51.334.0600	6	6	93	26
51.334.0800	8	8	117	33
51.334.1000	10	10	133	38
51.334.1200	12	12	151	44

› 51.340 Phantom



NL **HSS-E Machineruimer passing P7**
FR **Alésoir machine HSS-E tolérance P7**
ES **Escariador máquina HSS-E tolerancia P7**
DE **HSS-E Maschinenreibahlen Passung P7**

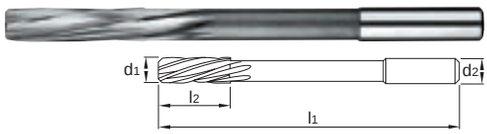
HSS-E | DIN 212-B | h8 | P7

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	d2	l1	l2
51.340.0100	1	0.95	38	12
51.340.0200	2	2.12	49	19
51.340.0300	3	3	57	20
51.340.0400	4	4	75	24
51.340.0500	5	5	86	26
51.340.0600	6	6	101	28
51.340.0700	7	7	109	31
51.340.0800	8	8	117	33
51.340.0900	9	9	125	36
51.340.1000	10	10	133	38
51.340.1100	11	10	133	38
51.340.1200	12	10	151	44
51.340.1300	13	10	151	44
51.340.1400	14	14	160	47
51.340.1500	15	14	162	50
51.340.1600	16	16	170	52
51.340.1800	18	16	182	56
51.340.2000	20	16	195	60

19:00 ▶ 🛒 ▶ 24h

› 51.350 Phantom



NL **HSS-E Precisie Machineruimer x 0,01 mm**
FR **Alésoir machine de précision HSS-E x 0,01 mm**
ES **Escariador máquina de precisión HSS-E x 0,01 mm**
DE **HSS-E Präzisions Maschinenreibahlen x 0,01 mm**

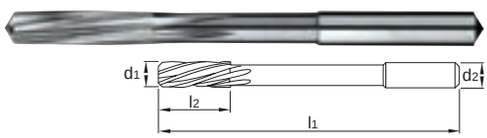
HSS-E	DIN 212-B	h8	x0,01	≤ø3 -0,000 +0,003	≤ø6 -0,000 +0,004	>ø6 -0,000 +0,005

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	d2	l1	l2	z
51.350.0070-51.350.0079	0.70 - 0.79	0.7-0.79	33	7	4
51.350.0080-51.350.0105	0.80 - 1.05	0.8-1.05	38	12	4
51.350.0106-51.350.0144	1.06 - 1.44	1.06-1.44	40	15	6
51.350.0145-51.350.0179	1.45 - 1.79	1.45-1.79	43	18	6
51.350.0180-51.350.0236	1.80 - 2.36	1.8-2.36	49	19	6
51.350.0237-51.350.0375	2.37 - 3.75	2.37-3.75	57	20	6
51.350.0376-51.350.0425	3.76 - 4.25	4	75	24	6
51.350.0426-51.350.0475	4.26 - 4.75	4.5	80	25	6
51.350.0476-51.350.0530	4.76 - 5.30	5	86	26	6
51.350.0531-51.350.0580	5.31 - 5.80	5.5	93	27	6
51.350.0581-51.350.0670	5.81 - 6.70	6	101	28	6
51.350.0671-51.350.0755	6.71 - 7.55	7	109	31	6

Ref.	d1	d2	l1	l2	z
51.350.0758-51.350.0855	7.58 - 8.55	8	117	33	6
51.350.0856-51.350.0955	8.56 - 9.55	9	125	36	6
51.350.0956-51.350.1130	9.56 - 11.30	10	133	38	6
51.350.1131-51.350.1320	11.31 - 13.20	12	151	44	6
51.350.1397-51.350.1405	13.97 - 14.05	14	160	47	8
51.350.1410-51.350.1510	14.10 - 15.10	14	162	50	8-0
51.350.1597-51.350.1615	15.97 - 16.15	16	170	52	8-0
51.350.1697-51.350.1705	16.97 - 17.05	16	175	54	8
51.350.1797-51.350.1820	17.97 - 18.20	16	182	56	8
51.350.1897-51.350.1905	18.97 - 19.05	16	189	58	8
51.350.1997-51.350.2010	19.97 - 20.10	16	195	60	8

› 51.360 Phantom



NL **VHM-MG Precisie Machineruimer x 0,01 mm**
FR **Alésoir machine de précision Carbure MG x 0,01 mm**
ES **Escariador máquina de precisión MD-MG x 0,01 mm**
DE **VHM-MG Präzisions Maschinenreibahlen x 0,01 mm**

MG HM	DIN 212-B	h8	x0,01	≤ø3 -0,000 +0,003	≤ø6 -0,000 +0,004	>ø6 -0,000 +0,005

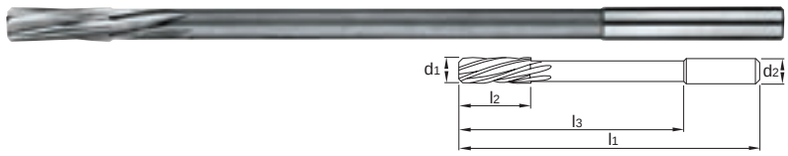
P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	M 21 INOX ≤850N/mm²	M 22 INOX >850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
25-40 E	20-25 D	12-18 C	10-15 B	8-14 A	7-12 A	8-15 C	15-20 D	50-60 G	40-60 G	20-30 D	6-10 A	6-10 A

Ref.	d1	d2	l1	l2	z
51.360.0070-51.360.0079	0.70 - 0.79	0.7-0.79	33	7	4
51.360.0080-51.360.0105	0.80 - 1.05	0.8-1.05	38	12	4
51.360.0106-51.360.0144	1.06 - 1.44	1.06-1.44	40	15	6
51.360.0145-51.360.0179	1.45 - 1.79	1.45-1.79	43	18	6
51.360.0180-51.360.0236	1.80 - 2.36	1.8-2.36	49	19	6
51.360.0237-51.360.0375	2.37 - 3.75	2.37-3.75	57	20	6
51.360.0376-51.360.0425	3.76 - 4.25	4	75	24	6
51.360.0426-51.360.0475	4.26 - 4.75	4.5	80	25	6
51.360.0476-51.360.0530	4.76 - 5.30	5	86	26	6
51.360.0535-51.360.0580	5.35 - 5.80	5.5	93	27	6
51.360.0581-51.360.0670	5.81 - 6.70	6	101	28	6
51.360.0675-51.360.0755	6.75 - 7.55	7	109	31	6

Ref.	d1	d2	l1	l2	z
51.360.0760-51.360.0855	7.60 - 8.55	8	117	33	6
51.360.0860-51.360.0955	8.60 - 9.55	9	125	36	6
51.360.0960-51.360.1130	9.60 - 11.30	10	133	38	6
51.360.1131-51.360.1305	11.31 - 13.05	12	151	44	6
51.360.1398-51.360.1405	13.98 - 14.05	14	160	47	8
51.360.1497-51.360.1505	14.97 - 15.05	14	162	50	8
51.360.1597-51.360.1605	15.97 - 16.05	16	170	52	8
51.360.1697-51.360.1705	16.97 - 17.05	16	175	54	8
51.360.1797-51.360.1805	17.97 - 18.05	16	182	56	8
51.360.1897-51.360.1905	18.97 - 19.05	16	189	58	8
51.360.1997-51.360.2005	19.97 - 20.05	16	195	60	8

› 51.400 Phantom

NL **HSS-E Machineruimer H7, extra lang**
FR **Alésoir machine HSS-E H7, extra long**
ES **Escariador máquina HSS-E H7, extra larga**
DE **HSS-E Maschinenreibahlen H7, extra lang**



HSS-E | Phantom | 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

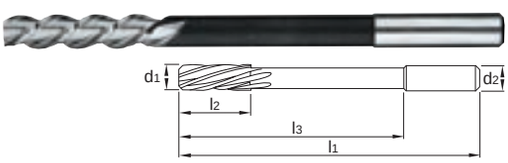
Ref.	d1	d2	l1	l2	l3
51.400.0200	2	2	65	14	45
51.400.0250	2.5	2.5	75	14	55
51.400.0300	3	3	90	14	70
51.400.0400	4	4	105	16	80

Ref.	d1	d2	l1	l2	l3
51.400.0500	5	5	115	16	90
51.400.0600	6	6	130	16	100
51.400.0700	7	7	140	18	110
51.400.0800	8	8	160	18	130

Ref.	d1	d2	l1	l2	l3
51.400.0900	9	9	175	18	140
51.400.1000	10	10	190	20	150
51.400.1100	11	10	200	20	160
51.400.1200	12	12	210	20	160

› 51.420 Phantom

NL **HSS-E Machineschilruimer H7**
FR **Alésoir taille Gammon HSS-E H7**
ES **Escariador máquina Gammon HSS-E H7**
DE **HSS-E Maschinenschälreibahlen 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

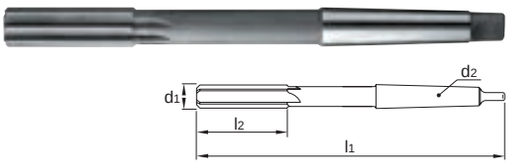
Ref.	d1	d2	l1	l2	l3
51.420.0300	3	2.8	61	20	42
51.420.0400	4	4	75	24	51
51.420.0500	5	5	86	26	60

Ref.	d1	d2	l1	l2	l3
51.420.0600	6	6	101	28	73
51.420.0700	7	7	109	31	80
51.420.0800	8	8	117	33	86

Ref.	d1	d2	l1	l2	l3
51.420.0900	9	9	125	36	91
51.420.1000	10	10	133	38	99
51.420.1200	12	12	151	44	106

19:00 ▶ 24h

› 51.500 Phantom



NL **HSS Machineruimer H7, rechte groeven, MK**
FR **Alésoir machine HSS H7, goujures droites, CM**
ES **Escariador máquina HSS H7, canales rectas, CM**
DE **HSS Maschinenreibahlen H7, gerade Nuten, MK**

HSS | DIN 208-A | DIN 228-B | H7

K 31 GG | K 32 GGG GTS-GTW | N 51 Cu

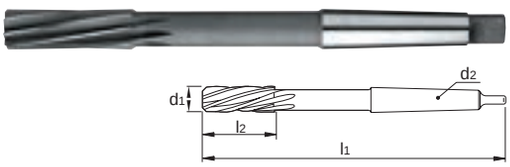
4-5 C | 6-15 D | 12-20 D

Ref.	d1	d2	l1	l2
51.500.0500	5	MK 1	133	26
51.500.0600	6	MK 1	138	28
51.500.0700	7	MK 1	150	31
51.500.0800	8	MK 1	156	33
51.500.0900	9	MK 1	162	36
51.500.1000	10	MK 1	168	38
51.500.1100	11	MK 1	175	41
51.500.1200	12	MK 1	182	44
51.500.1300	13	MK 1	182	44
51.500.1400	14	MK 1	189	47

Ref.	d1	d2	l1	l2
51.500.1500	15	MK 2	204	50
51.500.1600	16	MK 2	210	52
51.500.1700	17	MK 2	214	54
51.500.1800	18	MK 2	219	56
51.500.1900	19	MK 2	223	58
51.500.2000	20	MK 2	228	60
51.500.2100	21	MK 2	232	62
51.500.2200	22	MK 2	237	64
51.500.2300	23	MK 2	241	66
51.500.2400	24	MK 3	268	68

Ref.	d1	d2	l1	l2
51.500.2500	25	MK 3	268	68
51.500.2600	26	MK 3	273	70
51.500.2800	28	MK 3	277	71
51.500.3000	30	MK 3	281	73
51.500.3100	31	MK 4	317	77
51.500.3200	32	MK 4	317	77
51.500.3300	33	MK 4	317	77
51.500.3400	34	MK 4	321	78

› 51.510 Phantom



NL **HSS Machineruimer H7, MK**
FR **Alésoir machine HSS H7, CM**
ES **Escariador máquina HSS H7, CM**
DE **HSS Maschinenreibahlen H7, MK**

HSS | DIN 208-B | DIN 228-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

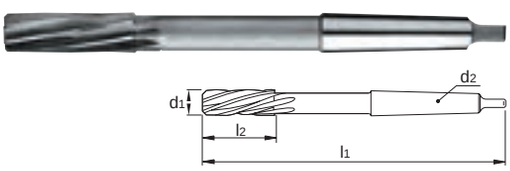
10-15 E | 8-15 D | 4-5 C | 4-5 C | 6-15 D | 30-50 F | 12-20 D

Ref.	d1	d2	l1	l2
51.510.0500	5	MK 1	133	26
51.510.0600	6	MK 1	138	28
51.510.0700	7	MK 1	150	31
51.510.0800	8	MK 1	156	33
51.510.0900	9	MK 1	162	36
51.510.1000	10	MK 1	168	38
51.510.1100	11	MK 1	175	41
51.510.1200	12	MK 1	182	44
51.510.1300	13	MK 1	182	44
51.510.1400	14	MK 1	189	47

Ref.	d1	d2	l1	l2
51.510.1500	15	MK 2	204	50
51.510.1600	16	MK 2	210	52
51.510.1700	17	MK 2	214	54
51.510.1800	18	MK 2	219	56
51.510.1900	19	MK 2	223	58
51.510.2000	20	MK 2	228	60
51.510.2100	21	MK 2	232	62
51.510.2200	22	MK 2	237	64
51.510.2300	23	MK 2	241	66
51.510.2400	24	MK 3	268	68

Ref.	d1	d2	l1	l2
51.510.2500	25	MK 3	268	68
51.510.2600	26	MK 3	273	70
51.510.2700	27	MK 3	277	71
51.510.2800	28	MK 3	277	71
51.510.3000	30	MK 3	281	73
51.510.3100	31	MK 4	317	77
51.510.3200	32	MK 4	317	77
51.510.3400	34	MK 4	321	78

› 51.520 Phantom



NL **HSS-E Machineruimer H7, MK**
FR **Alésoir machine HSS-E H7, CM**
ES **Escariador máquina HSS-E H7, CM**
DE **HSS-E Maschinenreibahlen H7, MK**

HSS-E | DIN 208-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

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
51.520.0400	4	MK 1	120	24
51.520.0500	5	MK 1	133	26
51.520.0600	6	MK 1	138	28
51.520.0700	7	MK 1	150	31
51.520.0800	8	MK 1	156	33
51.520.0900	9	MK 1	162	36
51.520.1000	10	MK 1	168	38
51.520.1050	10.5	MK 1	175	41
51.520.1100	11	MK 1	175	41
51.520.1150	11.5	MK 1	175	41
51.520.1200	12	MK 1	182	44
51.520.1250	12.5	MK 1	182	44

Ref.	d1	d2	l1	l2
51.520.1300	13	MK 1	182	44
51.520.1350	13.5	MK 1	189	47
51.520.1400	14	MK 1	189	47
51.520.1450	14.5	MK 2	204	50
51.520.1500	15	MK 2	204	50
51.520.1550	15.5	MK 2	210	52
51.520.1600	16	MK 2	210	52
51.520.1650	16.5	MK 2	214	54
51.520.1700	17	MK 2	214	54
51.520.1750	17.5	MK 2	219	56
51.520.1800	18	MK 2	219	56
51.520.1850	18.5	MK 2	223	58

Ref.	d1	d2	l1	l2
51.520.1900	19	MK 2	223	58
51.520.1950	19.5	MK 2	228	60
51.520.2000	20	MK 2	228	60
51.520.2050	20.5	MK 2	232	62
51.520.2100	21	MK 2	232	62
51.520.2150	21.5	MK 2	237	64
51.520.2200	22	MK 2	237	64
51.520.2250	22.5	MK 2	241	66
51.520.2300	23	MK 2	241	66
51.520.2400	24	MK 3	268	68
51.520.2500	25	MK 3	268	68
51.520.2600	26	MK 3	273	70

› 51.520 Phantom

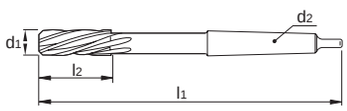
Ref.	d1	d2	l1	l2
51.520.2700	27	MK 3	277	71
51.520.2800	28	MK 3	277	71
51.520.2900	29	MK 3	281	73
51.520.3000	30	MK 3	281	73
51.520.3100	31	MK 4	317	77
51.520.3200	32	MK 4	317	77
51.520.3300	33	MK 4	317	77
51.520.3400	34	MK 4	321	78

Ref.	d1	d2	l1	l2
51.520.3500	35	MK 4	321	78
51.520.3600	36	MK 4	325	79
51.520.3700	37	MK 4	325	79
51.520.3800	38	MK 4	329	81
51.520.3900	39	MK 4	329	81
51.520.4000	40	MK 4	329	81
51.520.4100	41	MK 4	333	82
51.520.4200	42	MK 4	333	82

Ref.	d1	d2	l1	l2
51.520.4300	43	MK 4	336	83
51.520.4400	44	MK 4	336	83
51.520.4500	45	MK 4	336	83
51.520.4600	46	MK 4	340	84
51.520.4700	47	MK 4	340	84
51.520.4800	48	MK 4	344	86
51.520.4900	49	MK 4	344	86
51.520.5000	50	MK 4	344	86

› 51.570 Phantom





NL **HSS-E Machineruimer H7, MK**
FR **Alésoir machine HSS-E H7, CM**
ES **Escariador máquina HSS-E H7, CM**
DE **HSS-E Maschinenreibahlen 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
51.570.0635	1/4	MK 1	150	31
51.570.0794	5/16	MK 1	156	33
51.570.0952	3/8	MK 1	168	38
51.570.1111	7/16	MK 1	182	44

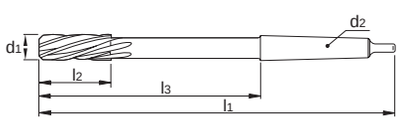
Ref.	d1	d2	l1	l2
51.570.1270	1/2	MK 1	182	44
51.570.1429	9/16	MK 2	204	50
51.570.1588	5/8	MK 2	210	52
51.570.1905	3/4	MK 2	223	58

Ref.	d1	d2	l1	l2
51.570.2222	7/8	MK 2	237	64
51.570.2540	1	MK 3	273	70

› 51.600 Phantom

NL **HSS-E Machineruimer H7, extra lang, MK**
FR **Alésoir machine HSS-E H7, extra long, CM**
ES **Escariador máquina HSS-E H7, extra largo, CM**
DE **HSS-E Maschinenreibahlen H7, extra lang, MK**





HSS-E | Phantom | 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

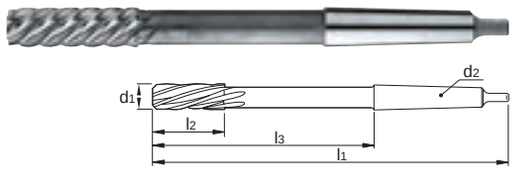
Ref.	d1	d2	l1	l2	l3
51.600.1300	13	MK 1	245	22	180
51.600.1400	14	MK 1	245	22	180
51.600.1500	15	MK 2	260	22	180
51.600.1600	16	MK 2	260	25	180
51.600.1800	18	MK 2	260	25	180
51.600.2000	20	MK 2	270	28	190

Ref.	d1	d2	l1	l2	l3
51.600.2200	22	MK 2	280	28	200
51.600.2400	24	MK 3	300	32	200
51.600.2500	25	MK 3	320	32	220
51.600.2600	26	MK 3	330	32	230
51.600.2800	28	MK 3	340	32	240
51.600.3000	30	MK 3	350	36	250

Ref.	d1	d2	l1	l2	l3
51.600.3200	32	MK 4	375	36	250
51.600.3400	34	MK 4	375	36	250
51.600.3600	36	MK 4	375	40	250
51.600.3800	38	MK 4	395	40	270
51.600.4000	40	MK 4	395	40	270

19:00 ▶ 24h

› 51.620 Phantom



NL **HSS-E Machineschilruimer H7, MK**
FR **Alésoir taille Gammon HSS-E H7, CM**
ES **Escariador máquina Gammon HSS-E H7, CM**
DE **HSS-E Maschinenschälreibahlen H7, MK**

HSS-E | DIN 208-E | DIN 228-B | H7

P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | P 14 ≤1400 N/mm² | N 41 Alu | N 42 Alu Si>10% | N 51 Cu

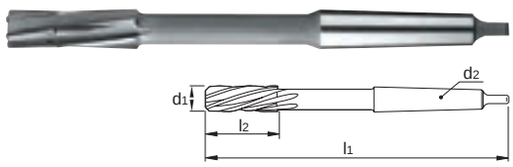
15-22 E | 12-17 D | 7-10 C | 5-7 B | 25-35 G | 20-30 G | 12-17 D

Ref.	d1	d2	l1	l2	l3
51.620.1200	12	MK 1	182	44	116
51.620.1400	14	MK 2	189	47	123
51.620.1500	15	MK 2	204	50	124
51.620.1600	16	MK 2	210	52	130
51.620.1800	18	MK 2	219	56	139
51.620.2000	20	MK 2	228	60	148
51.620.2200	22	MK 2	237	64	157

Ref.	d1	d2	l1	l2	l3
51.620.2400	24	MK 3	268	68	168
51.620.2500	25	MK 3	268	68	168
51.620.2600	26	MK 3	273	70	173
51.620.2700	27	MK 3	277	71	177
51.620.2800	28	MK 3	277	71	177
51.620.2900	29	MK 3	281	73	181
51.620.3000	30	MK 3	281	73	181

Ref.	d1	d2	l1	l2	l3
51.620.3100	31	MK 4	317	77	193
51.620.3200	32	MK 4	317	77	193
51.620.3400	34	MK 4	321	78	197
51.620.3500	35	MK 4	321	78	197
51.620.3800	38	MK 4	329	81	205
51.620.4000	40	MK 4	329	81	205

› 51.640 Phantom



NL **HM-tip Machineruimer H7, MK**
FR **Alésoir machine pointe carb. mét. H7, CM**
ES **Escariador máquina punta MD H7, CM**
DE **HM-Schneiden Maschinenreibahlen 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

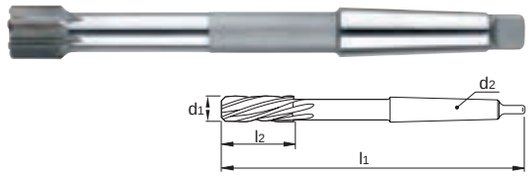
25-40 E | 20-25 D | 12-18 C | 10-15 B | 8-14 A | 7-12 A | 8-15 C | 15-20 D | 50-60 G | 40-60 G | 20-30 D | 6-10 A | 6-10 A

Ref.	d1	d2	l1	l2	z
51.640.1000	10	MK 1	168	38	6
51.640.1200	12	MK 1	182	44	6
51.640.1400	14	MK 1	189	47	6
51.640.1500	15	MK 2	204	50	6
51.640.1600	16	MK 2	210	52	6

Ref.	d1	d2	l1	l2	z
51.640.1800	18	MK 2	219	56	6
51.640.2000	20	MK 2	228	60	6
51.640.2200	22	MK 2	237	64	6
51.640.2400	24	MK 3	268	68	8
51.640.2500	25	MK 3	268	68	8

Ref.	d1	d2	l1	l2	z
51.640.2600	26	MK 3	273	70	8
51.640.2800	28	MK 3	277	71	8
51.640.3000	30	MK 3	281	73	8
51.640.3500	35	MK 4	321	78	8

› 51.645 Phantom



NL **HM-tip Machineruimer 1% nastelbaar, H7, MK**
FR **Alésoir machine pointe carb. mét. 1% réglable, H7, CM**
ES **Escariador máquina punta MD 1% extensible, H7, CM**
DE **HM-Schneiden Maschinenreibahlen 1% nachstellbar, 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

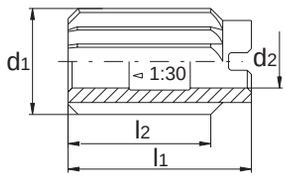
Ref.	d1	d2	l1	l2	z
51.645.0800	8	MK 1	156	16	4
51.645.1000	10	MK 1	168	19	6
51.645.1200	12	MK 1	182	19	6
51.645.1300	13	MK 1	182	19	6

Ref.	d1	d2	l1	l2	z
51.645.1400	14	MK 1	189	19	6
51.645.1500	15	MK 2	204	19	6
51.645.1600	16	MK 2	210	22	6
51.645.1800	18	MK 2	219	22	6

Ref.	d1	d2	l1	l2	z
51.645.2000	20	MK 2	228	22	6
51.645.2500	25	MK 3	268	25	8

› 51.650 Phantom

NL **HSS Opsteekruimer H7**
FR **Alésoir machine creux HSS H7**
ES **Escariador hueco HSS H7**
DE **HSS Aufsteckreibahlen H7**





HSS | DIN 219-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

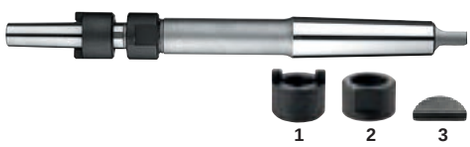
Ref.	d1	d2	l1	l2	84.410
51.650.2500	25	13	45	32	2
51.650.2600	26	13	45	32	2
51.650.2700	27	13	45	32	2
51.650.2800	28	13	45	32	2
51.650.2900	29	13	45	32	2
51.650.3000	30	13	45	32	2
51.650.3100	31	16	50	36	3
51.650.3200	32	16	50	36	3
51.650.3300	33	16	50	36	3
51.650.3400	34	16	50	36	3
51.650.3500	35	16	50	36	3
51.650.3600	36	19	56	40	4
51.650.3700	37	19	56	40	4

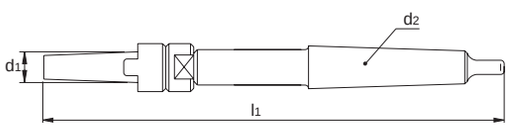
Ref.	d1	d2	l1	l2	84.410
51.650.3800	38	19	56	40	4
51.650.3900	39	19	56	40	4
51.650.4000	40	19	56	40	4
51.650.4100	41	19	56	40	4
51.650.4200	42	19	56	40	4
51.650.4300	43	22	63	45	5
51.650.4400	44	22	63	45	5
51.650.4500	45	22	63	45	5
51.650.4600	46	22	63	45	5
51.650.4700	47	22	63	45	5
51.650.4800	48	22	63	45	5
51.650.4900	49	22	63	45	5
51.650.5000	50	22	63	45	5

Ref.	d1	d2	l1	l2	84.410
51.650.5200	52	27	71	50	6
51.650.5500	55	27	71	50	6
51.650.5800	58	27	71	50	6
51.650.6000	60	27	71	50	6
51.650.6200	62	32	80	56	7
51.650.6500	65	32	80	56	7
51.650.6800	68	32	80	56	7
51.650.7000	70	32	80	56	7
51.650.7200	72	40	90	63	8
51.650.7500	75	40	90	63	8
51.650.8000	80	40	90	63	8

› 84.410 TORAX

NL **Opsteekhouder, DIN 217, voor opsteekruimers DIN 219 en opsteekopboor DIN 222, MK**
FR **Arbre de montage, DIN 217, pour alésoirs creux DIN 219 et forets creux DIN 222, CM**
ES **Porta-escariadores, DIN 217, para escariadores huecos DIN 219 y brocas escariadores huecos DIN 222, CM**
DE **Aufsteckhalter, DIN 217, für Aufsteckreibahlen DIN 219 und Aufsteckaufbohrer DIN 222, MK**





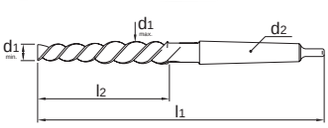
DIN 217

Ref.	Nr.	d1	l1	d2	Ø 51.650	Ø 13.350	1	2	3
84.410.0200	2	13	250	3	25-30	25-35	84.411.0200	84.412.0200	84.413.0200
84.410.0300	3	16	261	3	31-35	36-45	84.411.0300	84.412.0300	84.413.0300
84.410.0400	4	19	298	4	36-42	46-52	84.411.0400	84.412.0400	84.413.0400
84.410.0500	5	22	312	4	43-50	53-62	84.411.0500	84.412.0500	84.413.0500
84.410.0600	6	27	359	5	51-60	63-75	84.411.0600	84.412.0600	84.413.0600
84.410.0700	7	32	376	5	61-71	76-90	84.411.0700	84.412.0700	84.413.0700
84.410.0800	8	40	396	5	72-85	91-100	84.411.0800	84.412.0800	84.413.0800
84.410.0900	9	50	416	5	86-100	-	84.411.0900	84.412.0900	84.413.0900

› 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**





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 2
51.700.1800	12.6	18	261	145	MK 3

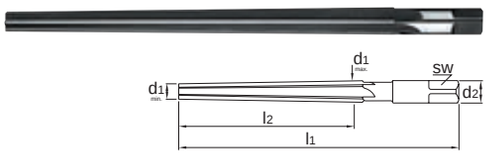
Ref.	d1 min.	d1 max	l1	l2	d2
51.700.1900	13.3	19	261	145	MK 3
51.700.2000	14	20	271	155	MK 3
51.700.2100	14.7	21	271	155	MK 3
51.700.2200	15.4	22	281	165	MK 3
51.700.2300	16.1	23	281	165	MK 3
51.700.2400	16.8	24	296	180	MK 3
51.700.2500	17.5	25	296	180	MK 3
51.700.2600	18.2	26	296	180	MK 3
51.700.2800	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

19:00 ▶ 🛒 ▶ 24h

› 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**



HSS | DIN 9-A | 1:50

K 31 GG | K 32 GGG GTS-GTW | N 51 Cu

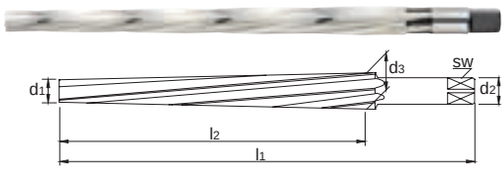
Ref.	Nr.	d1 min.	d1 max	l1	l2	d2	sw
51.720.0200	2	1.9	2.85	72	48	3.15	2.5
51.720.0250	2.5	2.4	3.36	68	48	3.15	2.5
51.720.0300	3	2.9	4.06	80	58	4	3.15
51.720.0400	4	3.9	5.26	93	68	5	4
51.720.0500	5	4.9	6.36	100	73	6.3	5

Ref.	Nr.	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.	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**



HSS | DIN 9-B | 1:50

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

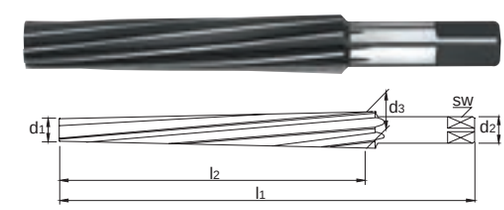
Ref.	Nr.	d1 min.	d1 max	l1	l2	d2	sw
51.730.0100	1	0.9	1.46	46	28	3.15	2.5
51.730.0150	1.5	1.4	2.14	57	37	3.15	2.5
51.730.0200	2	1.9	2.86	68	48	3.15	2.5
51.730.0250	2.5	2.4	3.36	68	48	3.15	2.5
51.730.0300	3	2.9	4.06	80	58	4	3.15
51.730.0400	4	3.9	5.26	93	68	5	4

Ref.	Nr.	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
51.730.1000	10	9.9	13.4	215	175	12.5	10
51.730.1200	12	11.8	16	255	210	14	11.2

Ref.	Nr.	d1 min.	d1 max	l1	l2	d2	sw
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 **Morse Konus Eindruimer**
FR **Alésoir finition pour cône morse**
ES **Escariador para cono Morse**
DE **Kegelreibahlen für Morsekegel**



HSS | DIN 204 | MT

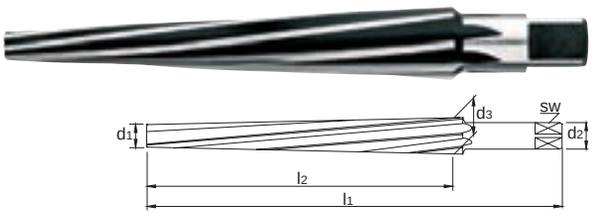
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

Ref.	Nr.	d1 min.	d1 max	l1	l2	d2	sw
51.760.0000	0	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

Ref.	Nr.	d1 min.	d1 max	l1	l2	d2	sw
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 Reibahlen Konizität 1:10**



HSS | Phantom | 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

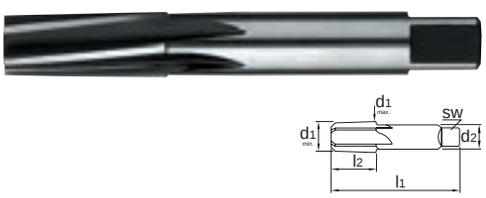
Ref.	d1 min.	d1 max	l1	l2	d2	sw
51.770.0300	3	10	100	70	8	6.3
51.770.0500	5	15	140	100	12.5	10

Ref.	d1 min.	d1 max	l1	l2	d2	sw
51.770.1000	10	25	195	150	20	16
51.770.1500	15	35	250	200	28	22.4

Ref.	d1 min.	d1 max	l1	l2	d2	sw
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**



HSS | NPT | Phantom | 1:16

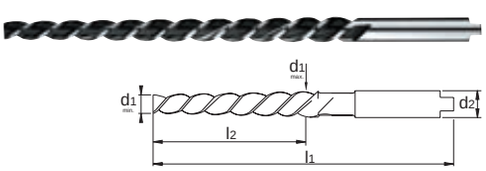
P 11 ≤600 N/mm² | P 12 ≤850 N/mm² | P 13 ≤1000 N/mm² | K 31 GG | K 32 GGG GTS-GTW | N 41 Alu | N 51 Cu

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

Ref.	Nr.	d1 min.	d1 max	l1	l2	d2	sw
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**



HSS | DIN 2179 | 1:50

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.	Nr.	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

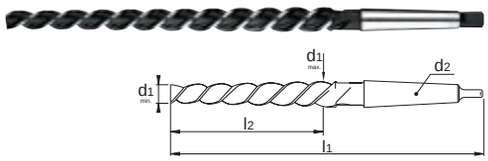
Ref.	Nr.	d1 min.	d1 max	l1	l2	d2
51.800.0400	4	3.9	5.26	112	68	5
51.800.0500	5	4.9	6.36	122	73	6.3
51.800.0600	6	5.9	8	160	105	8

Ref.	Nr.	d1 min.	d1 max	l1	l2	d2
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

19:00 ▶ 24h

› 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**



HSS | DIN 2180 | DIN 228-B | 1:50

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.	Nr.	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

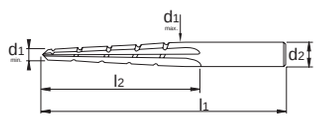
Ref.	Nr.	d1 min.	d1 max	l1	l2	d2
51.810.1200	12	11.8	16	315	210	MK 2
51.810.1600	16	15.8	20.4	335	230	MK 2
51.810.2000	20	19.8	24.8	377	250	MK 3
51.810.2500	25	24.7	30.7	427	300	MK 3

Ref.	Nr.	d1 min.	d1 max	l1	l2	d2
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**





HSS-E | Phantom | 1:20

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 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

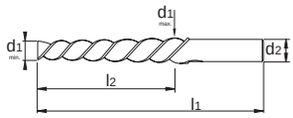
Ref.	d1 min.	d1 max	l1	l2	d2
51.820.0400	4	8	130	80	8
51.820.0500	5	10	155	100	10
51.820.0600	6	12	180	120	12

Ref.	d1 min.	d1 max	l1	l2	d2
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**





HSS-E | Phantom | 1:20

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

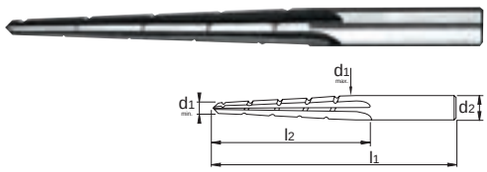
15-22 E | 12-17 D | 7-10 C | 5-7 B | 4-6 A | 3-5 A | 25-35 G | 20-30 G | 12-17 D

Ref.	d1 min.	d1 max	l1	l2	d2
51.830.0300	3	6	110	60	6
51.830.0400	4	8	130	80	8

Ref.	d1 min.	d1 max	l1	l2	d2
51.830.0500	5	10	155	100	10
51.830.0600	6	12	180	120	12

Ref.	d1 min.	d1 max	l1	l2	d2
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**

HSS-E | Phantom | 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

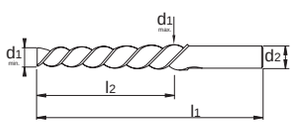
Ref.	d1 min.	d1 max	l1	l2	d2
51.840.0200	2	6	100	50	6
51.840.0300	3	8	110	62	8

Ref.	d1 min.	d1 max	l1	l2	d2
51.840.0400	4	10	130	75	10
51.840.0500	5	12	150	90	12

Ref.	d1 min.	d1 max	l1	l2	d2
51.840.0600	6	14	160	100	14

› 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**

HSS-E | Phantom | 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

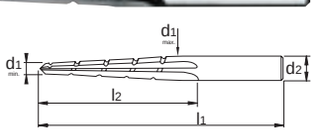
Ref.	d1 min.	d1 max	l1	l2	d2
51.850.0200	2	6	100	50	6
51.850.0300	3	8	110	62	8

Ref.	d1 min.	d1 max	l1	l2	d2
51.850.0400	4	10	130	75	10
51.850.0500	5	12	150	90	12

Ref.	d1 min.	d1 max	l1	l2	d2
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**

HSS-E | Phantom | 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

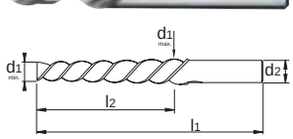
Ref.	d1 min.	d1 max	l1	l2	d2
51.860.0200	2	6	90	40	6
51.860.0300	3	8	100	50	8

Ref.	d1 min.	d1 max	l1	l2	d2
51.860.0400	4	10	115	60	10
51.860.0500	5	12	130	70	12

Ref.	d1 min.	d1 max	l1	l2	d2
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**

HSS-E | Phantom | 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

Ref.	d1 min.	d1 max	l1	l2	d2
51.870.0400	4	10	115	60	10
51.870.0500	5	12	130	70	12

Ref.	d1 min.	d1 max	l1	l2	d2
51.870.0600	6	14	140	80	14

19:00 ▶ 🛒 ▶ 24h

› 59.200 HUNGER

NL **Cassette met Verstelbare Handruimers type D**
FR **Cassette avec alésoirs expansibles type D**
ES **Estuche con Escariadores mano ajustables tipo D**
DE **Satz Verstellbare Handreibahlen Typ D**



Ref.	Ø mm	Type
59.200.3150	8-31,5	51.200 - 11x

Ref.	Ø mm	Type
59.200.4500	8-45	51.200 - 13x

› 59.210 HUNGER

NL **Cassette met Verstelbare Handruimers type E**
FR **Cassette avec alésoirs expansibles type E**
ES **Estuche con Escariadores mano ajustables tipo E**
DE **Satz Verstellbare Handreibahlen Typ E**



Ref.	Ø mm	Type
59.210.3150	10,5-31,5	51.210 - 9x

Ref.	Ø mm	Type
59.210.4500	10,5-45	51.210 - 11x

› 59.220 HUNGER

NL **Cassette met Verstelbare Handruimers type K**
FR **Cassette avec alésoirs expansibles type K**
ES **Estuche con Escariadores mano ajustables tipo K**
DE **Satz Verstellbare Handreibahlen Typ K**



Ref.	Ø mm	Type
59.220.3150	8-31,5	51.220 - 11x

Ref.	Ø mm	Type
59.220.4500	8-45	51.220 - 13x

› 59.230 HUNGER

NL **Cassette met Verstelbare Handruimers type U**
FR **Cassette avec alésoirs expansibles type U**
ES **Estuche con Escariadores mano ajustables tipo U**
DE **Satz Verstellbare Handreibahlen Typ U**



Ref.	Ø mm	Type
59.230.3400	12-34	51.230 - 7x

Ref.	Ø mm	Type
59.230.4500	12-45	51.230 - 9x

› 59.240 HUNGER

NL **Cassette met Verstelbare Handruimers type V**
FR **Cassette avec alésoirs expansibles type V**
ES **Estuche con Escariadores mano ajustables tipo V**
DE **Satz Verstellbare Handreibahlen Typ V**



Ref.	Ø mm	Type
59.240.1200	5,9-12	51.240 - 10x

Ref.	Ø mm	Type
59.240.1250	5,9-12	51.240 - 10x + 51.244 -10x

› 59.350 Phantom

NL **Cassette voor Precisie Machineruimers, leeg**
FR **Cassette pour alésoirs machine de précision, vide**
ES **Estuche para escariadores máquina de precisión, sin escariadores**
DE **Satz Präzisions Maschinenreibahlen, Leer**



Ref.	Ø mm
59.350.0007	2,98-3,00-3,01-3,02-3,98-4,00-4,01-4,02-4,98-5,00-5,01-5,02-5,98-6,00-6,01-6,02-7,98-8,00-8,01-8,02-9,98-10,00-10,01-10,02 mm
59.350.0010	0,98 - 2,01 mm x 0,01 mm
59.350.0020	1,98 - 3,01 mm x 0,01 mm
59.350.0030	2,98 - 4,01 mm x 0,01 mm
59.350.0040	3,98 - 5,01 mm x 0,01 mm
59.350.0050	4,98 - 6,01 mm x 0,01 mm
59.350.0060	0,97 - 10,02 mm x 0,01 mm
59.350.0070	1,00 - 10,00 mm x 0,1 mm

19:00 ▶ 24h

NL **Voedingswaardentabel ruimers**
FR **Tableau des avances alésoirs**
ES **Tabla de avances escariadores**
DE **Vorschubtabelle Reibahlen**

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**

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

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)

Vc
NL: Snijsnelheid (m/min)
FR: Vitesse de coupe (m/min)
ES: Velocidad de corte (m/min)
DE: Schnittgeschwindigkeit (m/min)

n=rpm
NL: Spiltoerental (omw/min)
FR: Vitesse de broche (tr/min)
ES: Velocidad del husillo (rpm)
DE: Spindeldrehzahl (U/min)

NL **Herleidingstabel passingen**
FR **Tableau de normalisations des tolérance**
ES **Tabla de normalización de las tolerancias**
DE **Zurückführungstabelle Passungen**

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

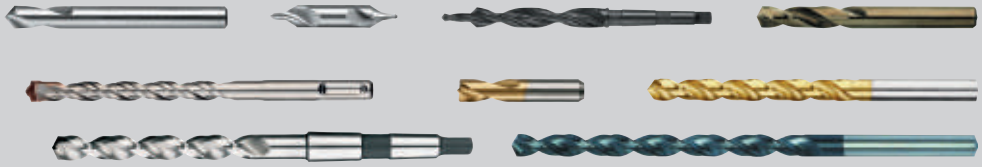
d1 (mm)	S7	U6	U7	X7	X8	X9	Z7	Z8	Z9	Z10	ZA7	ZA8	ZA9	ZB8	ZB9
1	0,98	0,98	0,98	0,97	0,97	0,97	0,97	0,97	0,96	0,96	0,96	0,96	0,95	0,95	0,95
2	1,98	1,98	1,98	1,97	1,97	1,97	1,97	1,97	1,96	1,96	1,96	1,96	1,95	1,95	1,95
3	2,98	2,98	2,98	2,97	2,97	2,97	2,97	2,97	2,96	2,96	2,96	2,96	2,95	2,95	2,95
4	3,98	3,97	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

19:00 ▶ 24h

NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



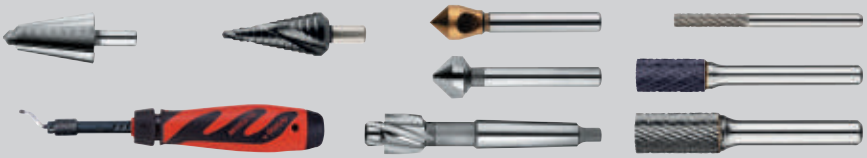
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



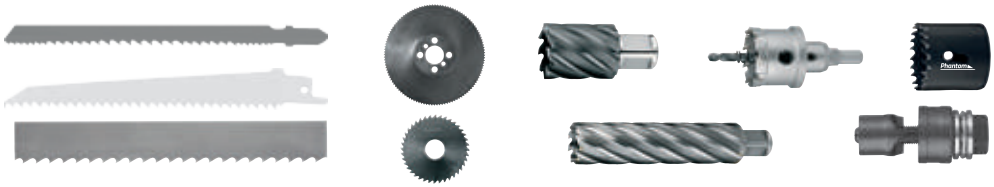
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
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 8%	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)	HSS-E (8% Cobalt)
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden
VHM SC	Volhardmetaal	Carbure monobloc	Metal duro integral	Hartmetall
CV	Hoog gelegeerd Chroom Vanadium staal	Acier hautement allié au Chrome Vanadium	Acero de alta aleación de Cromo Vanadio	Hochlegiert Chrom-Vanadium-Stahl
BiM HSS	HSS Bi-Metaal	Bi-métal HSS	HSS Bimetálica	HSS Bi-Metall
OX.	Stoomontlaten	Vaporisé	Vaporizado	Dampfangelassen
NIT.	Genitreerd	Nitruré	Nitrurado	Nitriert
TiN	TiN gecoat	Revêtement TiN	Recubrimiento TiN	TiN Beschichtung
TiAlN	TiAlN gecoat	Revêtement TiAlN	Recubrimiento TiAlN	TiAlN Beschichtung
AlCrN	AlCrN gecoat	Revêtement AlCrN	Recubrimiento AlCrN	AlCrN Beschichtung
AlCrN-X	AlCrN-X gecoat	Revêtement AlCrN-X	Recubrimiento AlCrN-X	AlCrN-X Beschichtung
90°	Hoek 90°	Angle 90°	Ángulo 90°	Winkel 90°
3	Verzinkfrees met 3 snijkanten	Fraise à chanfreiner à trois dents	Avellanador con 3 dientes	Kegelsenker mit 3 Schneiden
0,5-25 mm	Materiaaldikte	Épaisseur du matériau	Espesor de material	Materialstärke
Z=0	Onvertand	Sans dents	Sin dientes	Unverzahnt
A	Rechte tand	Denture angulaire	Forma de diente recta	Gerader Zahn
B	Gebogen tand	Denture angulaire moyenne	Forma de diente gruessa	Gebogene Zahn
BW	Om en om afgeschuinde tand	Denture angulaire moyenne alternée	Forma de diente gruessa alternativa	Gebogene Zahn, jeder zweite abgeschrägt
C	Met voor- en nasnijder	Denture rectifiée et affutée	Con dientes rectificadas y afiladas	Mit Vor- und Nachschneider
Constant	Constante tandsteek	A pas constant	Paso constante	Konstanter Verzahnung
VARI	Variabele tandsteek	A pas variable	Paso variable	Variabler Verzahnung
α=0°	Normale tand 0°	Angle de coupe 0°	Ángulo de corte 0°	Normaler Zahn 0°
Pos.	Positieve spaanhoek	Angle de coupe positif	Ángulo de corte positivo	Positivem Spannwinkel
α 5°	Positieve spaanhoek 5°	Angle de coupe positif 5°	Ángulo de corte positivo 5°	Positivem Spannwinkel 5°
α-5°	Negatieve spaanhoek 5°	Angle de coupe négatif 5°	Ángulo de corte negativo 5°	Negativem Spannwinkel 5°
	Voor gebundeld massief materiaal	Pour matériaux pleins en paquet	Para material en barras en paquetes	Für gebündelt massiv Material
	Voor gebundelde profielen	Pour profilés en paquet	Para material de perfiles en paquetes	Für gebündelte Profile
	Stafmateriaal dun	Matériaux pleins fins	Material en barras delgado	Stangenmaterial dünn

	NL	FR	ES	DE
	Stafmateriaal dik	Matériaux pleins épais	Material en barras grande	Stangenmaterial dick
	Kokerprofiel dunwandig	Profilés fins	Material de perfiles delgado	Schlauchmaterial dünn
	Kokerprofiel dikwandig	Profilés épais	Material de perfiles grande	Schlauchmaterial dick
	H-Profiel	Profil H	Perfil H	Profil H
	Strip	Bande	Tira	Streifen
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
Ø19 QUICK	Snelwisselopname Quick 19 mm	Changement rapide d'outil 19 mm	Sujeción de cambio rápido 19 mm	Schnellwechsel Kernbohrer-aufnahme 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
GG	Buis gietijzer	Tube fonte	Tubo fundición	Gussrohre
	Gesloten profiel	Profil fermé	Perfil cerrado	Geschlossene Profile
	Contoursnedes	Pour contours	Corte perfiles	Kurvenschnitt
	Harthout	Bois dur	Madera dura	Hartholz
	Hogesnelheid-snedes	Coupe ultra-rapide	Corte rápido	Sehr schneller Schnitt
	Keukenblad	Plan de travail	Encimera	Küchenarbeits-platten
	Laminaat	Parquet	Laminado	Laminat
	Gelamineerde platen	Contreplaqué filmé	Chapa laminada	Beschichtete Platten
	Gelijmd hout	Contreplaqué	Tableros contra-chapada	Multiplex / Tischlerplatten
Cu Ni Ms Zn Al	Non ferro / aluminium	Non ferreux / aluminium	Metal no férreo / Aluminio	Buntmetall / Aluminium
	Renovatie / Raamkozijnen	Renovation bâtiment / Châssis fenêtre	Renovación/ Marcos	Altbausanierung / Fensterrahmen
	Open profielen	Profil ouvert	Perfil abierto	Offene Profile
	Pallets	Palette / Bois de palette	Pallet	Palettenbau
	Kunststof	Plastique	Plástico	Kunststoff
	Multiplex	Contreplaqué	Madera contrachapada	Sperrholz
	Versterkt kunst-stof	Plastique reforce	Plásrico fortalece	Faserverstärkte Kunststoffe
	Sandwich panelen	Contreplaquet	Material tupo Sandwich	Sandwich-Material
	Dun plaatmateriaal	Matériaux plat fins	Material de chapas fino	Stahlbleche
SOFT	Zacht hout / bouwhout	Bois de construction	Madera de construcción	Weich- / Konstruktionsholz
	Stalen buizen	Tube en acier	Tubos en acero	Stahlrohre
	Rechte snedes	Coupe droite	Corte recto	Gerader Schnitt
	Schone snedes	Coupe sans éclats sur la surface	Corte muy liso	Sehr sauberer Schnitt

NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen un Blechlocher**

P K Bij uitstek geschikt
H N Très approprié
M S Muy adecuado
Ideal geeignet

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

P= pagina
P= page
P= página
P= Seite

› 61.105	Phantom	BiM 8% Co			P	M	K	N	NEW	P. 4
› 61.130	Phantom	HM-TIP								P. 4
› 61.140	Phantom								NEW	P. 5
› 61.150	Phantom									P. 5
› 61.151	Phantom									P. 5
› 61.160	Phantom									P. 5
› 61.170	Phantom									P. 6
› 61.630	Phantom	HM-TIP	0,5-5 mm		P	M	K	N		P. 6
› 61.640	Phantom									P. 6
› 61.670	Phantom	HM-TIP	0,5-25 mm		P	M	K	N		P. 7
› 61.675	Phantom									P. 7
› 61.680	Phantom	HM-TIP	0,5-50 mm		P	M	K	N		P. 8
› 61.685	Phantom									P. 8
› 62.100	Phantom	HSS	0,5-25 mm		P		K	N		P. 8
› 62.104	Phantom	HSS	0,5-25 mm	AlCrN	P	M	K	N		P. 9
› 62.122	Phantom	HSS-Co	0,5-25 mm	NIT.	P	M	K	N		P. 9
› 62.150	Phantom	HSS	0,5-50 mm		P		K	N		P. 10
› 62.154	Phantom	HSS	0,5-50 mm	AlCrN	P	M	K	N		P. 10
› 62.162	Phantom	HSS-Co	0,5-50 mm	NIT.	P	M	K	N		P. 11
› 62.180	Phantom	HSS	0,5-100 mm		P		K	N		P. 11
› 62.200	Phantom	HM-TIP	0,5-35 mm		P	M	K	N		P. 12
› 62.250	Phantom	HSS-Co	0,5-35 mm	Ø18 FEIN QUICKIN	P	M	K	N		P. 12
› 62.295	Phantom	HSS	3	90°	P	M	K	N		P. 13
› 62.300	Phantom									P. 14
› 63.200	Phantom	HSS	DIN 1837-A	A	P	M	K			P. 15
› 63.210	Phantom	HSS	+GF+	BW	P	M	K			P. 16
› 63.220	Phantom	VHM SC	DIN 1837-A	A	P	M	K	N	S	P. 16
› 63.250	Phantom	HSS	DIN 1838-B	B	P	M	K	N		P. 17
› 63.270	Phantom	VHM SC	DIN 1838-B	A	P	M	K	N	S	P. 18
› 63.400	Phantom	HSS	OX.	C+BW	P		K	N		P. 19

› 63.401	Phantom	HSS	TiN	C+BW	P		K	N			P. 20
› 63.410	Phantom	HSS	OX.	Z=0							P. 20
› 63.420	Phantom	HSS-E	OX.	C+BW	P	M	K	N			P. 21
› 63.424	Phantom	HSS-E	OX.	C+BW	P	M	K	N			P. 21
› 63.430	Phantom	HSS-E	OX.	Z=0							P. 22
› 63.450		HM-TIP	α 5°					N			P. 22
› 63.460		HM-TIP	α -5°					N			P. 22
› 64.150	Phantom	HSS-Co	300mm 12"								P. 23
› 64.450		CV	150mm 6"								P. 23
› 64.460	Phantom	HSS	STRONG	45°-90°							P. 23
› 64.500	Phantom										P. 24
› 64.600	Phantom										P. 26
› 64.605	Phantom										P. 26
› 64.630	Phantom										P. 27
› 66.110	Phantom	BiM HSS			P		K	N			P. 29
› 66.130	Phantom	BiM HSS	KASTO		P		K	N			P. 29
› 66.160	Phantom	BiM 8% Co	INOX		P	M	K	N			P. 30
› 66.420	Phantom	BiM 8% Co	Const.	α=0°	P	M		N			P. 30
› 66.440	Phantom	BiM 8% Co	Const.	Pos.	P	M		N			P. 31
› 66.450	Phantom	BiM 8% Co	VARI	α=0°	P	M		N			P. 31
› 66.455	Phantom	BiM 8% Co	VARI	Pos.	P		K				P. 32
› 66.460	Phantom	BiM 8% Co	VARI	Pos.	P	M	K	N			P. 32
› 66.580	Phantom	BiM 10% Co	Const.	Pos.	P	M		S			P. 33
› 67.100	Phantom										P. 34
› 67.120	Phantom										P. 35
› 67.130	Phantom	INOX									P. 35
› 67.250	Phantom										P. 36
› 67.290	Phantom										P. 36
› 69.111	Phantom	BiM 8% Co			P	M	K	N			P. 37
› 69.112	Phantom	BiM 8% Co			P	M	K	N			P. 37
› 69.130	Phantom	HM-TIP									P. 38

19:00 ▶ 24h

› 69.210	Phantom	HSS 0,5-25 mm	P K N	 P. 38
› 69.212	Phantom	HSS-Co 0,5-25 mm NIT.	P M K N	 P. 38
› 69.215	Phantom	HSS 0,5-50 mm	P K N	 P. 39
› 69.216	Phantom	HSS-Co 0,5-50 mm NIT.	P M K N	 P. 39
› 69.710	Phantom			 P. 39
› 69.712	Phantom			 P. 40
› 69.725	Phantom			 P. 40
› 69.790	Phantom			 P. 40
› 69.795	Phantom			 P. 41

› 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**



BiM 8% Co | VARI | INOX | MDF | Cu Ni Ms Zn Al | SOFT

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

NIEUW NOUVEAU NUEVO NEU

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

› 61.130 Phantom

NL **HM-tip Gatzaag snijdiepte 58 mm**
FR **Scie cloche pointe carb. mét. profondeur de coupe 58 mm**
ES **Corona Perforadora punta MD profundidad de corte 58 mm**
DE **HM-Schneiden Lochsäge schnittiefe 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		

19:00 ▶ 24h

› 61.140 Phantom

NL **Universele Quick Change Houder voor kleine of grote adapter voor Gatzaag 61.105**
FR **Adaptateur à changement rapide pour Scies cloches 61.105**
ES **Husillo de cambio rápido para la Corona perforadora 61.105**
DE **Universal Schnellweschelhalter für Lochsäge 61.105**



11

NIEUW NOUVEAU NUEVO NEU

Ref.	Ø mm	d2	1	2	3
61.140.0014	14-30	11	1	2	
61.140.0032	32-152	11	1		3

Ref.	Ø mm	d2	1	2	3
61.140.0114	14-30			2	
61.140.0132	32-152				3

Ref.	Ø mm	d2	1	2	3

› 61.150 Phantom

NL **Houder voor Gatzaag 61.105**
FR **Arbre pour Scies cloches 61.105**
ES **Husillo para Corona perforadora 61.105**
DE **Halter für Lochsägen 61.105**



SDS plus | 11 | 9,5 | Ø6,35

Ref.	Nr	Ø mm	d2
61.150.0100	1	14-30	11
61.150.0201	2	32-152	11
61.150.0400	4	14-30	6,35

Ref.	Nr	Ø mm	d2
61.150.0500	5	14-30	9,5
61.150.0601	6	32-152	9,5
61.150.0800	8	14-30	SDS+

Ref.	Nr	Ø mm	d2
61.150.0901	9	32-152	SDS+

› 61.151 Phantom

NL **Houder voor HM-tip Gatzaag 61.130**
FR **Arbre pour Scies trépans à point carb. mét. 61.130**
ES **Husillo para Corona perforadora punta MD 61.130**
DE **Halter für HM-Bohrkrone 61.130**



9

Ref.	Nr	Ø mm	d2
61.151.0100	1	14-30	9

Ref.	Nr	Ø mm	d2
61.151.0200	2	32-152	9

Ref.	Nr	Ø mm	d2

› 61.160 Phantom

NL **Toebehoren voor Gatzaag 61.105 en 61.130**
FR **Accessoires pour Scies cloche 61.105 et 61.130**
ES **Accesorios para Corona perforadora 61.105 y 61.130**
DE **Zubehör für Lochsägen 61.105 und 61.130**


61.160.3301


61.160.0200


61.160.9500

Ref.	Type	61.150
61.160.0200	MK 2	1, 2

Ref.	Type	61.150
61.160.3301	l=300	1, 2

Ref.	Type	61.150
61.160.9500	-	-

› 61.170 Phantom

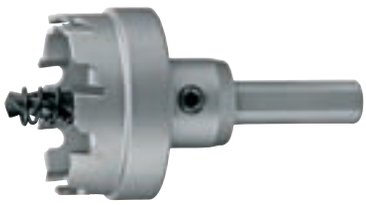


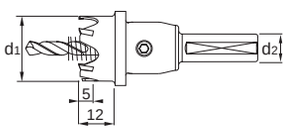
NL **Centreerboor voor Gatzaag 61.105 en 61.130**
FR **Foret à centrer pour Scies cloche 61.105 et 61.130**
ES **Broca de centrar para la Corona perforadora 61.105 y 61.130**
DE **Zentrierbohrer für Lochsäge 61.105 und 61.130**

Ref.	Type	d2	l1	61.105-61.130
61.170.0600	HSS-E	6.35	90	61.105, 61.130
61.170.0601	HSS-E	6.35	117	61.105
61.170.0602	HSS-E	6.35	110	61.105, 61.130
61.170.0603	Carbide Tipped	6.35	110	61.130

› 61.630 Phantom

NL **HM-tip Gatfrees materiaaldikte <5 mm**
FR **Scie trépan pointe carb. mét. épaisseur <5 mm**
ES **Corona fresa punta MD espesor <5 mm**
DE **HM-Schneiden Lochfräser Materialdicke <5 mm**





HM-TIP



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	PG	d2
61.630.0140	14	10	
61.630.0150	15	10	
61.630.0152	15.2	10	9
61.630.0160	16	10	
61.630.0170	17	10	
61.630.0180	18	10	
61.630.0186	18.6	10	11
61.630.0190	19	10	
61.630.0200	20	10	
61.630.0204	20.4	10	13.5
61.630.0210	21	10	
61.630.0220	22	10	

Ref.	d1	PG	d2
61.630.0225	22.5	10	16
61.630.0230	23	10	
61.630.0240	24	10	
61.630.0250	25	10	
61.630.0260	26	10	
61.630.0270	27	10	
61.630.0280	28	10	
61.630.0283	28.3	10	21
61.630.0300	30	10	
61.630.0320	32	10	
61.630.0350	35	13	
61.630.0380	38	13	

Ref.	d1	PG	d2
61.630.0400	40	13	
61.630.0430	43	13	
61.630.0450	45	13	
61.630.0480	48	13	
61.630.0500	50	13	
61.630.0550	55	13	
61.630.0600	60	13	48
61.630.0700	70	13	
61.630.0760	76	13	
61.630.0800	80	13	

› 61.640 Phantom

NL **Toebehoren voor HM-tip Gatfrees 61.630**
FR **Accessoires pour Scies trépans à pointe carb. mét. 61.630**
ES **Accesorios para Corona fresa punta MD 61.630**
DE **Zubehör für HM bestückte Tieflochfräser 61.630**



61.640.0600



61.640.9000

Ref.	d2	l1
61.640.0600	6	46.5

Ref.	d2	l1
61.640.9000	-	-

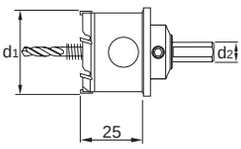
Ref.	d2	l1

19:00 ▶ 🛒 ▶ 24h

› 61.670 Phantom

NL **HM-tip Gatfrees diepgat uitvoering 25 mm, materiaaldikte <12 mm**
FR **Scie trépan pointe carb. mét. profondeur de coupe 25 mm, épaisseur <12 mm**
ES **Corona fresa punta MD profundidad de corte 25 mm, espesor <12 mm**
DE **HM-Schneiden Lochfräser Tiefloch-Ausführung 25 mm, Materialdicke <12 mm**





HM-TIP



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
61.670.0016	16	10	6
61.670.0017	17	10	6
61.670.0018	18	10	6
61.670.0019	19	10	6
61.670.0020	20	10	6
61.670.0021	21	10	6
61.670.0022	22	10	6
61.670.0023	23	10	6
61.670.0024	24	10	6
61.670.0025	25	10	6
61.670.0026	26	10	6
61.670.0027	27	10	6
61.670.0028	28	10	6
61.670.0029	29	10	6
61.670.0030	30	10	6
61.670.0031	31	10	6
61.670.0032	32	10	6
61.670.0033	33	10	6
61.670.0034	34	10	6
61.670.0035	35	10	6
61.670.0036	36	10	6
61.670.0037	37	10	6
61.670.0038	38	10	6

Ref.	d1	d2	z
61.670.0039	39	10	6
61.670.0040	40	10	6
61.670.0041	41	10	6
61.670.0042	42	10	6
61.670.0043	43	10	6
61.670.0044	44	10	6
61.670.0045	45	10	6
61.670.0046	46	10	6
61.670.0047	47	10	6
61.670.0048	48	10	6
61.670.0049	49	10	6
61.670.0050	50	10	6
61.670.0051	51	10	6
61.670.0052	52	10	6
61.670.0053	53	10	6
61.670.0054	54	10	6
61.670.0055	55	10	6
61.670.0056	56	10	6
61.670.0057	57	10	6
61.670.0058	58	10	6
61.670.0060	60	10	8
61.670.0061	61	10	8
61.670.0062	62	10	8

Ref.	d1	d2	z
61.670.0063	63	10	8
61.670.0064	64	10	8
61.670.0065	65	10	8
61.670.0066	66	10	8
61.670.0067	67	10	8
61.670.0068	68	10	8
61.670.0070	70	10	8
61.670.0072	72	10	10
61.670.0074	74	10	10
61.670.0075	75	10	10
61.670.0076	76	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
61.670.0084	84	13	12
61.670.0085	85	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

NL **Onderdelen en Toebehoren voor HM-tip Gatfrees 61.670**
FR **Pièces détâchées et Accessoires pour Scies trépans à pointe carb. mét. 61.670**
ES **Componentes y Accesorios para Corona fresa punta MD 61.670**
DE **Einzelteile und Zubehör für HM bestückte Tieflochfräser 61.670**



61.675.0600



61.675.9000

Ref.	Type
61.675.0600	HSS 6x76 mm

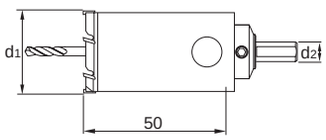
Ref.	Type
61.675.9000	-

Ref.	Type

› 61.680 Phantom

NL **HM-tip Gatfrees lange diepgat uitvoering 50 mm, materiaaldikte <12 mm**
FR **Scie trépan pointe carb. mét. profondeur de coupe 50 mm, épaisseur <12 mm**
ES **Corona fresa punta MD profundidad de corte 50 mm, espesor <12 mm**
DE **HM-Schneiden Lochfräser lange Tiefloch-Ausführung 50 mm, Materialdicke <12 mm**





HM-TIP — 0,5-12 mm

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 52 CuAlFe	N 62 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

Ref.	d1	d2	z
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

Ref.	d1	d2	z
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 **Centreerboor voor HM-tip Gatfrees 61.680**
FR **Foret à centrer pour Scies trépans à pointe carb. mét. 61.680**
ES **Broca de centrar para Corona fresa punta MD 61.680**
DE **Zentrierbohrer für HM bestückte Tieflochfräser 61.680**

Ref.	Type
61.685.0600	HSS 6x104 mm

Ref.	Type

Ref.	Type

› 62.100 Phantom



NL **HSS Kernboor snijdiepte 25 mm**
FR **Fraise à carotter HSS profondeur de coupe 25 mm**
ES **Fresa hueca HSS profundidad de corte 25 mm**
DE **HSS Kernbohr Schnittiefe 25 mm**

HSS — 0,5-25 mm — Ø19 WELDON — Ø19 QUICK

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.	d1
62.100.1200	12
62.100.1300	13
62.100.1400	14
62.100.1500	15
62.100.1600	16
62.100.1700	17
62.100.1800	18
62.100.1900	19
62.100.2000	20
62.100.2100	21
62.100.2200	22
62.100.2300	23

Ref.	d1
62.100.2400	24
62.100.2500	25
62.100.2600	26
62.100.2700	27
62.100.2800	28
62.100.2900	29
62.100.3000	30
62.100.3100	31
62.100.3200	32
62.100.3300	33
62.100.3400	34
62.100.3500	35

Ref.	d1
62.100.3600	36
62.100.3700	37
62.100.3800	38
62.100.3900	39
62.100.4000	40
62.100.4100	41
62.100.4200	42
62.100.4300	43
62.100.4400	44
62.100.4500	45
62.100.4600	46
62.100.4700	47

19:00 ▶ 24h

› 62.100 Phantom

Ref.	d1	Ref.	d1	Ref.	d1
62.100.4800	48	62.100.5400	54	62.100.6000	60
62.100.4900	49	62.100.5500	55	62.100.6100	61
62.100.5000	50	62.100.5600	56	62.100.6200	62
62.100.5100	51	62.100.5700	57	62.100.6300	63
62.100.5200	52	62.100.5800	58	62.100.6400	64
62.100.5300	53	62.100.5900	59	62.100.6500	65

› 62.104 Phantom



NL **HSS Kernboor AlCrN, snijdiepte 25 mm**
FR **Fraise à carotter HSS AlCrN, profondeur de coupe 25 mm**
ES **Fresa hueca HSS AlCrN, profundidad de corte 25 mm**
DE **HSS Kernbohr AlCrN, Schnittiefe 25 mm**

HSS | AlCrN | 0,5-25 mm | Ø19 WELDON | Ø19 QUICK

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	Ref.	d1	Ref.	d1
62.104.1200	12	62.104.1800	18	62.104.2400	24
62.104.1300	13	62.104.1900	19	62.104.2500	25
62.104.1400	14	62.104.2000	20	62.104.2600	26
62.104.1500	15	62.104.2100	21	62.104.2700	27
62.104.1600	16	62.104.2200	22	62.104.2800	28
62.104.1700	17	62.104.2300	23	62.104.3000	30

› 62.122 Phantom



NL **HSS-Co Kernboor genitreerd, snijdiepte 25 mm**
FR **Fraise à carotter HSS-Co nitruré, profondeur de coupe 25 mm**
ES **Fresa hueca HSS-Co nitrurada, profundidad de corte 25 mm**
DE **HSS-Co Kernbohr nitriert, Schnittiefe 25 mm**

HSS-Co | NIT. | 0,5-25 mm | Ø19 WELDON | Ø19 QUICK

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	Ref.	d1	Ref.	d1
62.122.1200	12	62.122.3000	30	62.122.4800	48
62.122.1300	13	62.122.3100	31	62.122.4900	49
62.122.1400	14	62.122.3200	32	62.122.5000	50
62.122.1500	15	62.122.3300	33	62.122.5100	51
62.122.1600	16	62.122.3400	34	62.122.5200	52
62.122.1700	17	62.122.3500	35	62.122.5300	53
62.122.1800	18	62.122.3600	36	62.122.5400	54
62.122.1900	19	62.122.3700	37	62.122.5500	55
62.122.2000	20	62.122.3800	38	62.122.5600	56
62.122.2100	21	62.122.3900	39	62.122.5700	57
62.122.2200	22	62.122.4000	40	62.122.5800	58
62.122.2300	23	62.122.4100	41	62.122.5900	59
62.122.2400	24	62.122.4200	42	62.122.6000	60
62.122.2500	25	62.122.4300	43	62.122.6100	61
62.122.2600	26	62.122.4400	44	62.122.6200	62
62.122.2700	27	62.122.4500	45	62.122.6300	63
62.122.2800	28	62.122.4600	46	62.122.6400	64
62.122.2900	29	62.122.4700	47	62.122.6500	65

› 62.150 Phantom



NL **HSS Kernboor snijdiepte 50 mm**
FR **Fraise à carotter HSS profondeur de coupe 50 mm**
ES **Fresa hueca HSS profundidad de corte 50 mm**
DE **HSS Kernbohr Schnittiefe 50 mm**

HSS | 0,5-50 mm | Ø19 WELDON | Ø19 QUICK

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.	d1	Ref.	d1	Ref.	d1
62.150.1200	12	62.150.3000	30	62.150.4800	48
62.150.1300	13	62.150.3100	31	62.150.4900	49
62.150.1400	14	62.150.3200	32	62.150.5000	50
62.150.1500	15	62.150.3300	33	62.150.5100	51
62.150.1600	16	62.150.3400	34	62.150.5200	52
62.150.1700	17	62.150.3500	35	62.150.5300	53
62.150.1800	18	62.150.3600	36	62.150.5400	54
62.150.1900	19	62.150.3700	37	62.150.5500	55
62.150.2000	20	62.150.3800	38	62.150.5600	56
62.150.2100	21	62.150.3900	39	62.150.5700	57
62.150.2200	22	62.150.4000	40	62.150.5800	58
62.150.2300	23	62.150.4100	41	62.150.5900	59
62.150.2400	24	62.150.4200	42	62.150.6000	60
62.150.2500	25	62.150.4300	43	62.150.6100	61
62.150.2600	26	62.150.4400	44	62.150.6200	62
62.150.2700	27	62.150.4500	45	62.150.6300	63
62.150.2800	28	62.150.4600	46	62.150.6400	64
62.150.2900	29	62.150.4700	47	62.150.6500	65

› 62.154 Phantom



NL **HSS Kernboor AlCrN, snijdiepte 50 mm**
FR **Fraise à carotter HSS AlCrN, profondeur de coupe 50 mm**
ES **Fresa hueca HSS AlCrN, profundidad de corte 50 mm**
DE **HSS Kernbohr AlCrN, Schnittiefe 50 mm**

HSS | AlCrN | 0,5-50 mm | Ø19 WELDON | Ø19 QUICK

P 11 ≤600 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
25	20	13	10	4	18	38	32	22	17

Ref.	d1	Ref.	d1	Ref.	d1
62.154.1200	12	62.154.1800	18	62.154.2500	25
62.154.1300	13	62.154.1900	19	62.154.2600	26
62.154.1400	14	62.154.2000	20	62.154.2800	28
62.154.1500	15	62.154.2100	21	62.154.3000	30
62.154.1600	16	62.154.2200	22		
62.154.1700	17	62.154.2400	24		

19:00 ▶ 24h

› 62.162 Phantom

NL **HSS-Co Kernboor genitreerd, snijdiepte 50 mm**
FR **Fraise à carotter HSS-Co nitruré, profondeur de coupe 50 mm**
ES **Fresa hueca HSS-Co nitrurada, profundidad de corte 50 mm**
DE **HSS-Co Kernbohr nitriert, Schnittiefe 50 mm**



HSS-Co | NIT. | 0,5-50 mm | Ø19 WELDON | Ø19 QUICK

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
31	18	16	9	10	4	20	16	38	40	36	36	22

Ref.	d1
62.162.1200	12
62.162.1300	13
62.162.1400	14
62.162.1450	14.5
62.162.1500	15
62.162.1550	15.5
62.162.1600	16
62.162.1650	16.5
62.162.1700	17
62.162.1750	17.5
62.162.1800	18
62.162.1850	18.5
62.162.1900	19
62.162.1950	19.5
62.162.2000	20
62.162.2050	20.5
62.162.2100	21
62.162.2200	22
62.162.2300	23
62.162.2400	24
62.162.2500	25

Ref.	d1
62.162.2600	26
62.162.2700	27
62.162.2800	28
62.162.2900	29
62.162.3000	30
62.162.3100	31
62.162.3200	32
62.162.3300	33
62.162.3400	34
62.162.3500	35
62.162.3600	36
62.162.3700	37
62.162.3800	38
62.162.3900	39
62.162.4000	40
62.162.4100	41
62.162.4200	42
62.162.4300	43
62.162.4400	44
62.162.4500	45
62.162.4600	46

Ref.	d1
62.162.4700	47
62.162.4800	48
62.162.4900	49
62.162.5000	50
62.162.5100	51
62.162.5200	52
62.162.5300	53
62.162.5400	54
62.162.5500	55
62.162.5600	56
62.162.5700	57
62.162.5800	58
62.162.5900	59
62.162.6000	60
62.162.6100	61
62.162.6200	62
62.162.6300	63
62.162.6400	64
62.162.6500	65

› 62.180 Phantom

NL **HSS Kernboor snijdiepte 100 mm**
FR **Fraise à carotter HSS profondeur de coupe 100 mm**
ES **Fresa hueca HSS profundidad de corte 100 mm**
DE **HSS Kernbohr Schnittiefe 100 mm**



HSS | 0,5-100 mm | Ø19 WELDON | Ø19 QUICK

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.	d1
62.180.1800	18
62.180.1900	19
62.180.2000	20
62.180.2100	21
62.180.2200	22
62.180.2400	24

Ref.	d1
62.180.2500	25
62.180.2600	26
62.180.2700	27
62.180.2800	28
62.180.3000	30
62.180.3200	32

Ref.	d1
62.180.3400	34
62.180.3500	35
62.180.4000	40
62.180.4500	45
62.180.5000	50

› 62.200 Phantom



NL **HM-tip Kernboor snijdiepte 35 mm**
FR **Fraise à carotter pointe carb. mét. profondeur de coupe 35 mm**
ES **Fresa hueca punta MD profundidad de corte 35 mm**
DE **HM-Schneiden Kernbohr Schnittiefe 35 mm**

HM-TIP | 0,5-35 mm | Ø19 WELDON | Ø19 QUICK

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	Ref.	d1	Ref.	d1
62.200.1200	12	62.200.2000	20	62.200.3200	32
62.200.1300	13	62.200.2200	22	62.200.3500	35
62.200.1400	14	62.200.2400	24	62.200.3600	36
62.200.1500	15	62.200.2500	25	62.200.4000	40
62.200.1600	16	62.200.2600	26	62.200.4500	45
62.200.1700	17	62.200.2700	27	62.200.5000	50
62.200.1800	18	62.200.2800	28	62.200.5500	55
62.200.1900	19	62.200.3000	30	62.200.6000	60

› 62.250 Phantom



NL **HSS-Co Kernboor met Fein QuickIN opname, snijdiepte 35 mm**
FR **Fraise à carotter HSS-Co Fein QuicIN, profondeur de coupe 35 mm**
ES **Fresa hueca HSS-Co con mango Fein QuickIn, profundidad de corte 35 mm**
DE **HSS-Co Kernbohr mit Fein QuickIN Aufnahme, Schnittiefe 35 mm**

HSS-Co | Ø18 FEIN QUICKIN | 0,5-35 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	Ref.	d1	Ref.	d1
62.250.1200	12	62.250.1800	18	62.250.2600	26
62.250.1300	13	62.250.1900	19	62.250.2700	27
62.250.1400	14	62.250.2000	20	62.250.2800	28
62.250.1500	15	62.250.2200	22	62.250.3000	30
62.250.1600	16	62.250.2400	24	62.250.3200	32
62.250.1700	17	62.250.2500	25		

19:00 ▶ 🛒 ▶ 24h

› 62.295 Phantom

NL **HSS Verzinkfrees 90°**
FR **Fraise à chanfreiner HSS 90°**
ES **Avellanador HSS 90°**
DE **HSS Kegelsenker 90°**



HSS | 3 | 90° | Ø19 WELDON | Ø19 QUICK

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

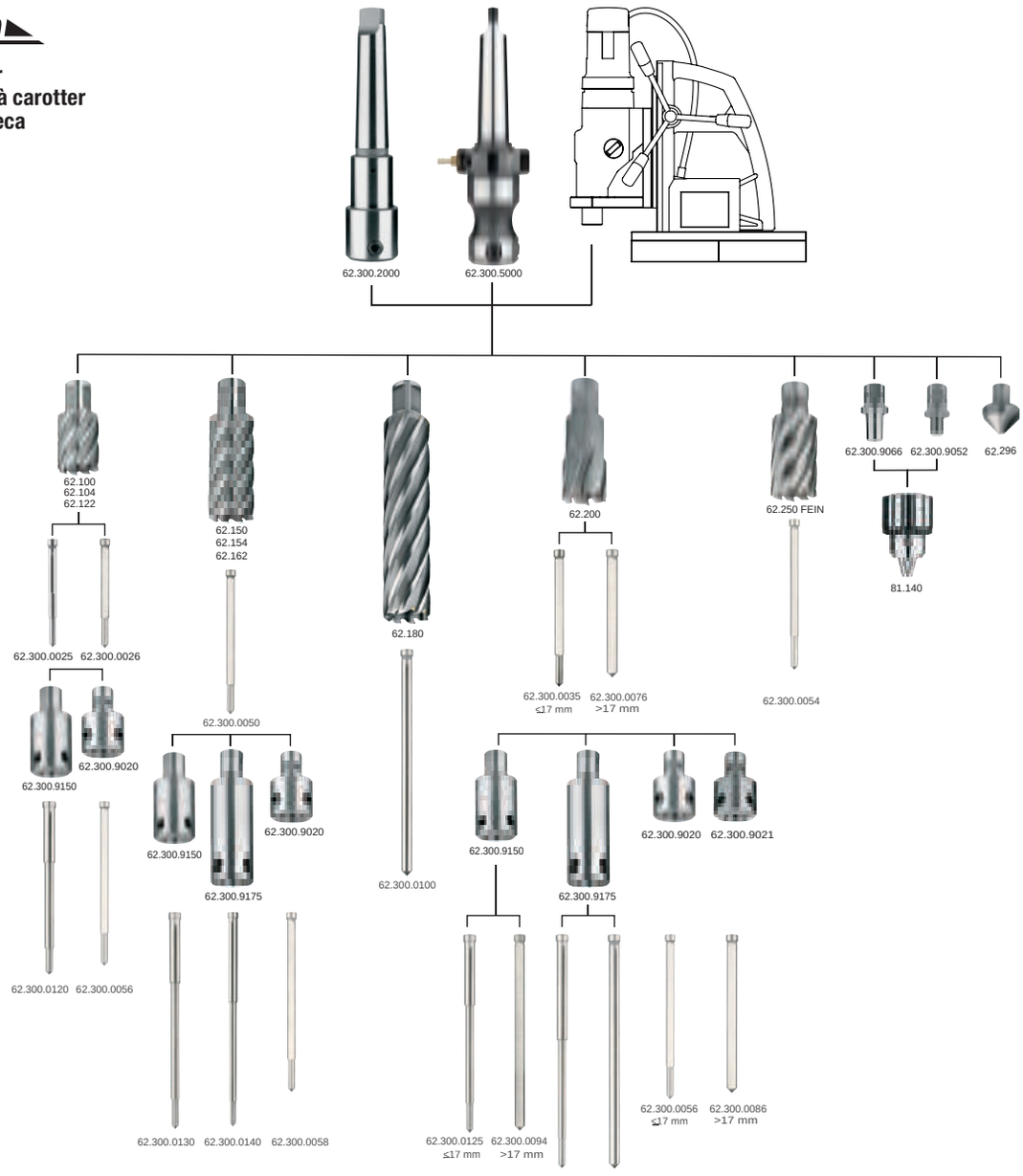
Ref.	d1
62.295.0325	25
62.295.0330	30

Ref.	d1
62.295.0340	40
62.295.0355	55

Ref.	d1

› 62.300 Phantom

NL **Toebehoren voor Kernboor**
FR **Accessoires pour Fraises à carotter**
ES **Accesorios para Fresa hueca**
DE **Zubehör für Kernbohrer**

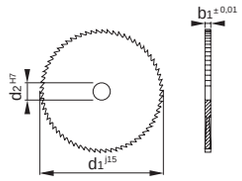


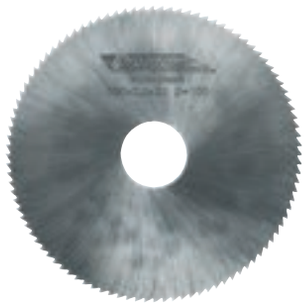
Ref.	Type	d1	l1	62.1XX
62.300.0025	25 mm	6,34/5,3	77	62.100, 62.104, 62.122
62.300.0026	25 mm	6,34/5,3	77	62.100, 62.104, 62.122
62.300.0035	35 mm	6,34/5,3	90	62.200 ≤ 17 mm
62.300.0050	50 mm	6,34/5,3	102	62.150, 62.154, 62.162
62.300.0054	35 mm	6,34/5,3	106	62.250
62.300.0056	35 mm	6,34/5,3	116	62.200 + 62.300.9020
62.300.0058	50 mm	6,34/5,3	127	62.150, 62.154, 62.162 + 62.300.9020
62.300.0076	35 mm	7,98	90	62.200 >17 mm
62.300.0086	35 mm	7,98	90	62.200 >17 mm + 62.300.9150
62.300.0094	35 mm	7,98	145	62.200 >17 mm + 62.300.9175
62.300.0100	100 mm	7,98	160	62.180
62.300.0102	35 mm	7,98	165	62.200 >17 + 62.300.9175
62.300.0120	25 mm	7,98/6,34/5,3	127	62.100, 62.104, 62.122 + 62.300.9150
62.300.0125	35 mm	7,98/6,34/5,3	140	62.200 ≤ 17 mm + 62.300.9150
62.300.0130	50 mm	7,98/6,34/5,3	153	62.150, 62.154, 62.162 + 62.300.9150
62.300.0135	35 mm	7,98/6,34/5,3	165	62.200 ≤ 17 mm + 62.300.9175
62.300.0140	50 mm	7,98/6,34/5,3	178	62.150, 62.154, 62.162 + 62.300.9175
62.300.1000	MK 2			
62.300.2000	MK 3			
62.300.3000	MK 4			
62.300.4000	MK 2			
62.300.5000	MK 3			
62.300.6000	MK 4			
62.300.9015	Fein M18 - Weldon			
62.300.9020	Fein QuickIn / Weldon	6,34		
62.300.9021	Fein QuickIn / Weldon	7,98		
62.300.9052	Weldon - 1/2"-20 UNF			
62.300.9066	Weldon - B16			
62.300.9150	Weldon - Weldon		50	
62.300.9175	Weldon - Weldon		75	

19:00 ▶ 🛒 ▶ 24h

› 63.200 Phantom

NL **HSS Metaalcirkelzaag fijn**
FR **Fraise-scie HSS pas fin**
ES **Fresa sierra circular HSS paso fino**
DE **HSS Metallkreissägeblätter fein**





HSS | DIN 1837-A | A

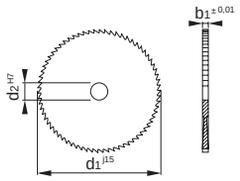
P 11	P 12	P 13	P 14	M 21	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	GG	GGG GTS-GTW
30-40	25-35	15-25	15-20	10-15	25-30	20-25

Ref.	d1	b1	d2	z
63.200.0303	32	0.3	8	80
63.200.0304	32	0.4	8	80
63.200.0305	32	0.5	8	80
63.200.0306	32	0.6	8	64
63.200.0308	32	0.8	8	64
63.200.0310	32	1	8	64
63.200.0312	32	1.2	8	48
63.200.0315	32	1.5	8	48
63.200.0316	32	1.6	8	48
63.200.0320	32	2	8	48
63.200.0403	40	0.3	10	100
63.200.0404	40	0.4	10	100
63.200.0405	40	0.5	10	80
63.200.0406	40	0.6	10	80
63.200.0408	40	0.8	10	80
63.200.0410	40	1	10	64
63.200.0412	40	1.2	10	64
63.200.0415	40	1.5	10	64
63.200.0416	40	1.6	10	64
63.200.0420	40	2	10	48
63.200.0425	40	2.5	10	48
63.200.0430	40	3	10	48
63.200.0503	50	0.3	13	128
63.200.0504	50	0.4	13	100
63.200.0505	50	0.5	13	100
63.200.0506	50	0.6	13	100
63.200.0508	50	0.8	13	80
63.200.0510	50	1	13	80
63.200.0512	50	1.2	13	80
63.200.0515	50	1.5	13	64
63.200.0516	50	1.6	13	64
63.200.0520	50	2	13	64
63.200.0525	50	2.5	13	64
63.200.0530	50	3	13	48
63.200.0540	50	4	13	48
63.200.0603	63	0.3	16	128
63.200.0604	63	0.4	16	128
63.200.0605	63	0.5	16	128
63.200.0606	63	0.6	16	100
63.200.0608	63	0.8	16	100
63.200.0610	63	1	16	100
63.200.0612	63	1.2	16	80
63.200.0615	63	1.5	16	80
63.200.0616	63	1.6	16	80
63.200.0620	63	2	16	80
63.200.0625	63	2.5	16	64
63.200.0630	63	3	16	64
63.200.0640	63	4	16	64
63.200.0650	63	5	16	48
63.200.0660	63	6	16	48
63.200.0803	80	0.3	22	160
63.200.0804	80	0.4	22	160
63.200.0805	80	0.5	22	128
63.200.0806	80	0.6	22	128
63.200.0808	80	0.8	22	128
63.200.0810	80	1	22	100
63.200.0812	80	1.2	22	100
63.200.0815	80	1.5	22	100
63.200.0816	80	1.6	22	100
63.200.0820	80	2	22	80

Ref.	d1	b1	d2	z
63.200.0825	80	2.5	22	80
63.200.0830	80	3	22	80
63.200.0840	80	4	22	64
63.200.0850	80	5	22	64
63.200.0860	80	6	22	64
63.200.1005	100	0.5	22	160
63.200.1006	100	0.6	22	160
63.200.1008	100	0.8	22	128
63.200.1010	100	1	22	128
63.200.1012	100	1.2	22	128
63.200.1015	100	1.5	22	100
63.200.1016	100	1.6	22	100
63.200.1020	100	2	22	100
63.200.1025	100	2.5	22	100
63.200.1030	100	3	22	80
63.200.1040	100	4	22	80
63.200.1050	100	5	22	80
63.200.1060	100	6	22	64
63.200.1210	125	1	22	160
63.200.1212	125	1.2	22	128
63.200.1215	125	1.5	22	128
63.200.1216	125	1.6	22	128
63.200.1220	125	2	22	128
63.200.1225	125	2.5	22	100
63.200.1230	125	3	22	100
63.200.1240	125	4	22	100
63.200.1250	125	5	22	80
63.200.1260	125	6	22	80
63.200.1610	160	1	32	160
63.200.1612	160	1.2	32	160
63.200.1615	160	1.5	32	160
63.200.1616	160	1.6	32	160
63.200.1620	160	2	32	128
63.200.1625	160	2.5	32	128
63.200.1630	160	3	32	128
63.200.1640	160	4	32	100
63.200.1650	160	5	32	100
63.200.1660	160	6	32	100
63.200.2010	200	1	32	200
63.200.2012	200	1.2	32	200
63.200.2015	200	1.5	32	160
63.200.2016	200	1.6	32	160
63.200.2020	200	2	32	160
63.200.2025	200	2.5	32	160
63.200.2030	200	3	32	128
63.200.2040	200	4	32	128
63.200.2050	200	5	32	128
63.200.2060	200	6	32	100
63.200.2520	250	2	32	200
63.200.2525	250	2.5	32	160
63.200.2530	250	3	32	160
63.200.2540	250	4	32	160
63.200.2550	250	5	32	128
63.200.2560	250	6	32	128
63.200.3125	315	2.5	40	200
63.200.3130	315	3	40	200
63.200.3140	315	4	40	160
63.200.3150	315	5	40	160
63.200.3160	315	6	40	160

› 63.210 Phantom

NL **HSS Metaalcirkelzaag GF**
FR **Fraise-scie HSS GF**
ES **Fresa sierra circular HSS GF**
DE **HSS Metallkreissägeblätter GF**





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

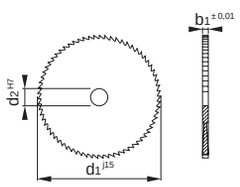
Ref.	d1	b1	d2	z
63.210.0612	63	1.2	16	100
63.210.0616	63	1.6	16	44
63.210.0617	63	1.6	16	64

Ref.	d1	b1	d2	z
63.210.0618	63	1.6	16	80
63.210.0716	68	1.6	16	44
63.210.0717	68	1.6	16	84

Ref.	d1	b1	d2	z
63.210.0718	68	1.6	16	72
63.210.0720	68	2	16	44
63.210.0820	75	2	16	32

› 63.220 Phantom

NL **VHM Metaalcirkelzaag fijn**
FR **Fraise-scie Carbure pas fin**
ES **Fresa sierra circular MD paso fino**
DE **VHM Metallkreissägeblätter fein**





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
63.220.0102	15	0.2	5	64
63.220.0103	15	0.3	5	64
63.220.0104	15	0.4	5	64
63.220.0105	15	0.5	5	48
63.220.0106	15	0.6	5	48
63.220.0107	15	0.7	5	48
63.220.0108	15	0.8	5	40
63.220.0109	15	0.9	5	40
63.220.0110	15	1	5	40
63.220.0112	15	1.2	5	40
63.220.0115	15	1.5	5	40
63.220.0116	15	1.6	5	40
63.220.0118	15	1.8	5	40
63.220.0120	15	1.2	5	40
63.220.0202	20	0.2	5	80
63.220.0203	20	0.3	5	64
63.220.0204	20	0.4	5	64
63.220.0205	20	0.5	5	48
63.220.0206	20	0.6	5	48
63.220.0207	20	0.7	5	48
63.220.0208	20	0.8	5	48
63.220.0209	20	0.9	5	40
63.220.0210	20	1	5	40
63.220.0212	20	1.2	5	40
63.220.0215	20	1.5	5	40
63.220.0216	20	1.6	5	40
63.220.0218	20	1.8	5	32
63.220.0220	20	2	5	32
63.220.0225	20	2.5	5	32
63.220.0230	20	3	5	32
63.220.0302	30	0.2	8	100
63.220.0303	30	0.3	8	80
63.220.0304	30	0.4	8	80
63.220.0305	30	0.5	8	80
63.220.0306	30	0.6	8	64
63.220.0307	30	0.7	8	64
63.220.0308	30	0.8	8	64

Ref.	d1	b1	d2	z
63.220.0309	30	0.9	8	64
63.220.0310	30	1	8	64
63.220.0312	30	1.2	8	48
63.220.0315	30	1.5	8	48
63.220.0316	30	1.6	8	48
63.220.0318	30	1.8	8	48
63.220.0320	30	2	8	48
63.220.0325	30	2.5	8	40
63.220.0330	30	3	8	40
63.220.0402	40	0.2	10	128
63.220.0403	40	0.3	10	100
63.220.0404	40	0.4	10	100
63.220.0405	40	0.5	10	80
63.220.0406	40	0.6	10	80
63.220.0407	40	0.7	10	80
63.220.0408	40	0.8	10	80
63.220.0409	40	0.9	10	64
63.220.0410	40	1	10	64
63.220.0412	40	1.2	10	64
63.220.0415	40	1.5	10	64
63.220.0416	40	1.6	10	64
63.220.0418	40	1.8	10	48
63.220.0420	40	2	10	48
63.220.0425	40	2.5	10	48
63.220.0430	40	3	10	48
63.220.0502	50	0.2	13	128
63.220.0503	50	0.3	13	128
63.220.0504	50	0.4	13	100
63.220.0505	50	0.5	13	100
63.220.0506	50	0.6	13	100
63.220.0507	50	0.7	13	80
63.220.0508	50	0.8	13	80
63.220.0509	50	0.9	13	80
63.220.0510	50	1	13	80
63.220.0512	50	1.2	13	80
63.220.0515	50	1.5	13	64
63.220.0516	50	1.6	13	64

19:00 ▶ 🛒 ▶ 24h

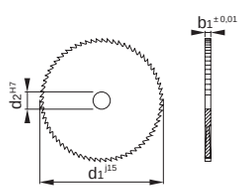
› 63.220 Phantom

Ref.	d1	b1	d2	z
63.220.0518	50	1.8	13	64
63.220.0520	50	2	13	64
63.220.0525	50	2.5	13	64
63.220.0530	50	3	13	48
63.220.0603	63	0.3	16	128
63.220.0604	63	0.4	16	128
63.220.0605	63	0.5	16	128
63.220.0606	63	0.6	16	100
63.220.0607	63	0.7	16	100
63.220.0608	63	0.8	16	100
63.220.0609	63	0.9	16	100
63.220.0610	63	1	16	100
63.220.0612	63	1.2	16	80
63.220.0615	63	1.5	16	80
63.220.0616	63	1.6	16	80
63.220.0618	63	1.8	16	80
63.220.0620	63	2	16	80
63.220.0625	63	2.5	16	64
63.220.0630	63	3	16	64
63.220.0805	80	0.5	22	128
63.220.0806	80	0.6	22	128
63.220.0808	80	0.8	22	128
63.220.0810	80	1	22	100
63.220.0812	80	1.2	22	100
63.220.0815	80	1.5	22	100
63.220.0816	80	1.6	22	100
63.220.0818	80	1.8	22	80

Ref.	d1	b1	d2	z
63.220.0820	80	2	22	80
63.220.0825	80	2.5	22	80
63.220.0830	80	3	22	80
63.220.1005	100	0.5	22	160
63.220.1006	100	0.6	22	160
63.220.1008	100	0.8	22	128
63.220.1010	100	1	22	128
63.220.1012	100	1.2	22	128
63.220.1015	100	1.5	22	100
63.220.1016	100	1.6	22	100
63.220.1018	100	1.8	22	100
63.220.1020	100	2	22	100
63.220.1025	100	2.5	22	100
63.220.1030	100	3	22	80
63.220.1208	125	0.8	22	160
63.220.1210	125	1	22	160
63.220.1212	125	1.2	22	128
63.220.1215	125	1.5	22	128
63.220.1216	125	1.6	22	128
63.220.1218	125	1.8	22	128
63.220.1220	125	2	22	128
63.220.1610	160	1	32	160
63.220.1612	160	1.2	32	160
63.220.1615	160	1.5	32	160
63.220.1616	160	1.6	32	160
63.220.1620	160	2	32	128

› 63.250 Phantom

NL **HSS Metaalcirkelzaag grof**
FR **Fraise-scie HSS pas grossier**
ES **Fresa sierra circular HSS grueso**
DE **HSS Metallkreissägeblätter grob**





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	z
63.250.0505	50	0.5	13	48
63.250.0506	50	0.6	13	48
63.250.0508	50	0.8	13	40
63.250.0510	50	1	13	40
63.250.0512	50	1.2	13	40
63.250.0516	50	1.6	13	32
63.250.0520	50	2	13	32
63.250.0525	50	2.5	13	32
63.250.0530	50	3	13	24
63.250.0540	50	4	13	24
63.250.0550	50	5	13	24
63.250.0560	50	6	13	20
63.250.0605	63	0.5	16	64
63.250.0606	63	0.6	16	48
63.250.0608	63	0.8	16	48
63.250.0610	63	1	16	48
63.250.0612	63	1.2	16	40
63.250.0615	63	1.5	16	40
63.250.0616	63	1.6	16	40
63.250.0620	63	2	16	40
63.250.0625	63	2.5	16	32
63.250.0630	63	3	16	32
63.250.0640	63	4	16	32
63.250.0650	63	5	16	24
63.250.0660	63	6	16	24
63.250.0805	80	0.5	22	64
63.250.0806	80	0.6	22	64
63.250.0808	80	0.8	22	64
63.250.0810	80	1	22	48
63.250.0812	80	1.2	22	48
63.250.0815	80	1.5	22	48
63.250.0816	80	1.6	22	48

Ref.	d1	b1	d2	z
63.250.0820	80	2	22	40
63.250.0825	80	2.5	22	40
63.250.0830	80	3	22	40
63.250.0840	80	4	22	32
63.250.0850	80	5	22	32
63.250.0860	80	6	22	32
63.250.1005	100	0.5	22	80
63.250.1006	100	0.6	22	80
63.250.1008	100	0.8	22	64
63.250.1010	100	1	22	64
63.250.1012	100	1.2	22	64
63.250.1015	100	1.5	22	64
63.250.1016	100	1.6	22	48
63.250.1020	100	2	22	48
63.250.1025	100	2.5	22	48
63.250.1030	100	3	22	40
63.250.1040	100	4	22	40
63.250.1050	100	5	22	40
63.250.1060	100	6	22	32
63.250.1210	125	1	22	80
63.250.1212	125	1.2	22	64
63.250.1215	125	1.5	22	64
63.250.1216	125	1.6	22	64
63.250.1220	125	2	22	64
63.250.1225	125	2.5	22	48
63.250.1230	125	3	22	48
63.250.1240	125	4	22	48
63.250.1250	125	5	22	40
63.250.1260	125	6	22	40
63.250.1610	160	1	32	80
63.250.1612	160	1.2	32	80
63.250.1615	160	1.5	32	80

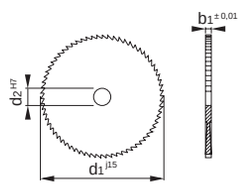
› 63.250 Phantom

Ref.	d1	b1	d2	z
63.250.1616	160	1.6	32	80
63.250.1620	160	2	32	64
63.250.1625	160	2.5	32	64
63.250.1630	160	3	32	64
63.250.1640	160	4	32	48
63.250.1650	160	5	32	48
63.250.1660	160	6	32	48
63.250.2015	200	1.5	32	80
63.250.2016	200	1.6	32	80
63.250.2020	200	2	32	80
63.250.2025	200	2.5	32	80
63.250.2030	200	3	32	64
63.250.2040	200	4	32	64

Ref.	d1	b1	d2	z
63.250.2050	200	5	32	64
63.250.2060	200	6	32	48
63.250.2520	250	2	32	100
63.250.2525	250	2.5	32	80
63.250.2530	250	3	32	80
63.250.2540	250	4	32	80
63.250.2550	250	5	32	64
63.250.2560	250	6	32	64
63.250.3125	315	2.5	40	100
63.250.3130	315	3	40	100
63.250.3140	315	4	40	80
63.250.3150	315	5	40	80
63.250.3160	315	6	40	80

› 63.270 Phantom

NL **VHM Metaalcirkelzaag grof**
FR **Fraise-scie Carbure pas grossier**
ES **Fresa sierra circular MD grueso**
DE **VHM Metallkreissägeblätter grob**





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

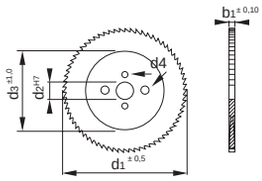
Ref.	d1	b1	d2	z
63.270.0103	15	0.3	5	20
63.270.0104	15	0.4	5	20
63.270.0105	15	0.5	5	20
63.270.0106	15	0.6	5	20
63.270.0108	15	0.8	5	20
63.270.0110	15	1	5	20
63.270.0112	15	1.2	5	20
63.270.0115	15	1.5	5	20
63.270.0120	15	2	5	20
63.270.0130	15	3	5	20
63.270.0203	20	0.3	5	20
63.270.0204	20	0.4	5	20
63.270.0205	20	0.5	5	20
63.270.0206	20	0.6	5	20
63.270.0208	20	0.8	5	20
63.270.0210	20	1	5	20
63.270.0212	20	1.2	5	20
63.270.0215	20	1.5	5	20
63.270.0220	20	2	5	20
63.270.0230	20	3	5	20
63.270.0303	30	0.3	8	30
63.270.0304	30	0.4	8	30
63.270.0305	30	0.5	8	30
63.270.0306	30	0.6	8	30
63.270.0308	30	0.8	8	24
63.270.0310	30	1	8	24
63.270.0312	30	1.2	8	24
63.270.0315	30	1.5	8	24
63.270.0320	30	2	8	24
63.270.0325	30	2.5	8	24
63.270.0330	30	3	8	24
63.270.0403	40	0.3	10	40
63.270.0404	40	0.4	10	40
63.270.0405	40	0.5	10	40
63.270.0406	40	0.6	10	40
63.270.0408	40	0.8	10	32
63.270.0410	40	1	10	32
63.270.0412	40	1.2	10	32
63.270.0415	40	1.5	10	32
63.270.0420	40	2	10	24
63.270.0425	40	2.5	10	24
63.270.0430	40	3	10	24
63.270.0504	50	0.4	13	48
63.270.0505	50	0.5	13	48
63.270.0506	50	0.6	13	48

Ref.	d1	b1	d2	z
63.270.0508	50	0.8	13	40
63.270.0510	50	1	13	40
63.270.0512	50	1.2	13	40
63.270.0515	50	1.5	13	32
63.270.0516	50	1.6	13	32
63.270.0520	50	2	13	32
63.270.0525	50	2.5	13	32
63.270.0530	50	3	13	24
63.270.0604	63	0.4	16	64
63.270.0605	63	0.5	16	64
63.270.0606	63	0.6	16	48
63.270.0608	63	0.8	16	48
63.270.0610	63	1	16	48
63.270.0612	63	1.2	16	40
63.270.0615	63	1.5	16	40
63.270.0616	63	1.6	16	40
63.270.0620	63	2	16	40
63.270.0625	63	2.5	16	32
63.270.0630	63	3	16	32
63.270.0806	80	0.6	22	64
63.270.0808	80	0.8	22	64
63.270.0810	80	1	22	48
63.270.0812	80	1.2	22	48
63.270.0815	80	1.5	22	48
63.270.0816	80	1.6	22	48
63.270.0820	80	2	22	40
63.270.0825	80	2.5	22	40
63.270.0830	80	3	22	40
63.270.1008	100	0.8	22	64
63.270.1010	100	1	22	64
63.270.1012	100	1.2	22	64
63.270.1015	100	1.5	22	48
63.270.1016	100	1.6	22	48
63.270.1020	100	2	22	48
63.270.1025	100	2.5	22	48
63.270.1030	100	3	22	40
63.270.1208	125	0.8	22	80
63.270.1210	125	1	22	80
63.270.1212	125	1.2	22	64
63.270.1215	125	1.5	22	64
63.270.1216	125	1.6	22	64
63.270.1220	125	2	22	64
63.270.1225	125	2.5	22	48
63.270.1230	125	3	22	48

19:00 ▶ 24h

› 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**





HSS | OX. | T≤4 BW | T≥5 C

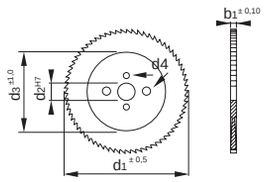
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	25-30	20-25	500-700	500-700	200-400	200-600

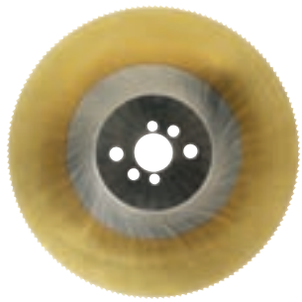
Ref.	d1	b1	d2	d3	z	t	d4
63.400.1718	175	1.5	32	75	180	3	
63.400.2013	200	1.8	32	90	130	5	2/8-45+2/11-63
63.400.2016	200	1.8	32	90	160	4	2/8-45+2/11-63
63.400.2018	200	1.8	32	90	180	3,5	2/8-45+2/11-63
63.400.2126	225	1.2	32	100	264	2,5	2/8-45+2/11-63+2/9-50
63.400.2209	225	2	32	90	90	8	2/8-45+2/11-63+2/9-50
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	2/8-45+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	10,5	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	31	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**





HSS | TiN | T≤4 BW | T≥5 C

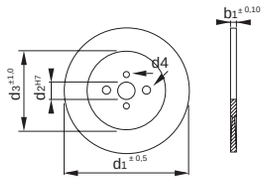
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.401.2512	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

Ref.	d1	b1	d2	d3	z	t	d4
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**





HSS | OX. | Z=0

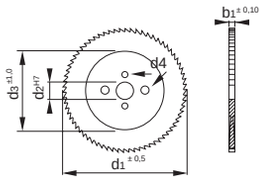
Ref.	d1	b1	d2	d3	d4
63.410.2532	250	2	32	100	2/8-45+2/11-63+2/9-50
63.410.2540	250	2.5	40	100	2/8-55+4/12-64
63.410.2732	275	2.5	32	100	2/8-45+2/11-63+2/12-75
63.410.2740	275	2.5	40	100	2/8-55+4/12+64
63.410.3032	300	2.5	32	100	2/8-45+4/11-63

Ref.	d1	b1	d2	d3	d4
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

19:00 ▶ 24h

› 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**





HSS-E | OX. | T≤4 BW | T≥5 C | INOX

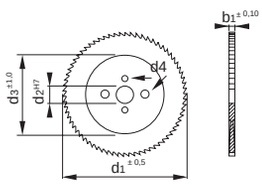
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.420.2218	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

Ref.	d1	b1	d2	d3	z	t	d4
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 TiAlN**
FR **Fraise-scie à tronçonner HSS-E TiAlN**
ES **Fresa sierra circular tronzadora HSS-E TiAlN**
DE **HSS-E Trennsägeblätter TiAlN**





HSS-E | TiAlN | T≤4 BW | T≥5 C | INOX

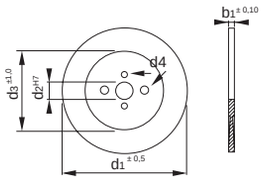
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

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

Ref.	d1	b1	d2	d3	z	t	d4
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**





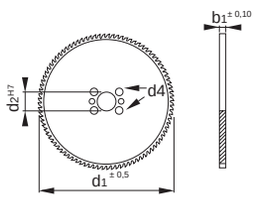
HSS-E | OX. | Z=0

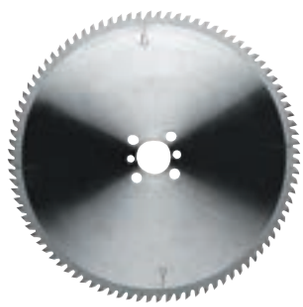
Ref.	d1	b1	d2	d3	d4
63.430.2532	250	2	32	100	2/8-45+2/11-63+2/9-50
63.430.2740	275	2.5	40	100	2/8-55+4/12-64
63.430.3032	300	2.5	32	100	2/8-45+4/11-63
63.430.3040	300	2.5	40	100	2/8-55+4/12-64

Ref.	d1	b1	d2	d3	d4
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

NL **HM-tip Cirkelzaag positieve spaanhoek**
FR **Fraise-scie pointe carb. mét. angle de coupe positif**
ES **Fresa sierra circular punta MD ángulo de corte positivo**
DE **HM-Schneiden Kreissägeblätter mit positivem Spanwinkel**





HM-TIP | α 5°

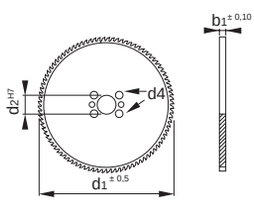
N 41 Alu | N 42 Alu Si>10%

Ref.	d1	b1	d2	z	d4
63.450.2032	200	3.2	32	64	
63.450.2532	250	3.4	32	60	
63.450.2533	250	3.4	32	80	
63.450.3029	300	3.4	32	72	2/11-63
63.450.3031	300	3.4	32	84	2/11-63
63.450.3032	300	3.4	32	96	

Ref.	d1	b1	d2	z	d4
63.450.3534	350	3.4	32	84	2/11-63
63.450.3535	350	3.4	32	96	2/11-63
63.450.3536	350	3.4	32	108	2/11-63
63.450.4030	400	4	32	96	
63.450.4032	400	4	32	108	2/11-63

› 63.460

NL **HM-tip Cirkelzaag negatieve spaanhoek**
FR **Fraise-scie pointe carb. mét. angle de coupe négatif**
ES **Fresa sierra circular punta MD ángulo de corte negativo**
DE **HM-Schneiden Kreissägeblätter negativem Spanwinkel**





HM-TIP | α-5°

N 41 Alu | N 42 Alu Si>10%

Ref.	d1	b1	d2	z	d4
63.460.2032	200	3.2	32	64	2/11-63
63.460.2532	250	3.4	32	60	
63.460.2533	250	3.4	32	80	
63.460.3029	300	3.4	32	72	2/11-63
63.460.3031	300	3.4	32	84	2/11-63
63.460.3032	300	3.4	32	96	

Ref.	d1	b1	d2	z	d4
63.460.3529	350	3.4	32	84	2/11-63
63.460.3531	350	3.4	32	96	2/11-63
63.460.3533	350	3.4	32	108	2/11-63
63.460.4032	400	4	32	96	2/11/63
63.460.4034	400	4	32	108	2/11/63

19:00 ▶ 24h

› 64.150 Phantom

NL **HSS-Co Handzaagblad**
FR **Lame de scie à main HSS-Co**
ES **Hoja de sierra manual HSS-Co**
DE **HSS-Co Handsägeblätter**



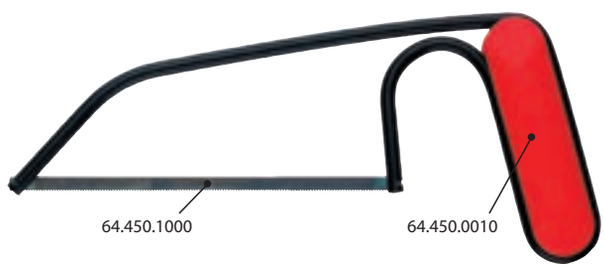


HSS 300mm 12”

Ref.	z	t
64.150.1800	18	1,4
64.150.2400	24	1
64.150.3200	32	0,8

› 64.450 Phantom

NL **CV Junior Zaagblad 6” en Houder**
FR **Lame de scie Junior 6” et Arbre Acier spécial (Chrome)**
ES **Hoja de sierra Junior 6” y Mango Cromo Vanadium**
DE **CV junior Sägeblätter 6” und Halter**



150mm 6”

Ref.	Nr.
64.450.0010	1
64.450.1000	144

› 64.460 Phantom

NL **Metaalzaagbeugel robuuste uitvoering**
FR **Monture de scie à métaux version Heavy Duty**
ES **Mango de sierra versión macizo**
DE **Metallsägebogen robuste Ausführung**



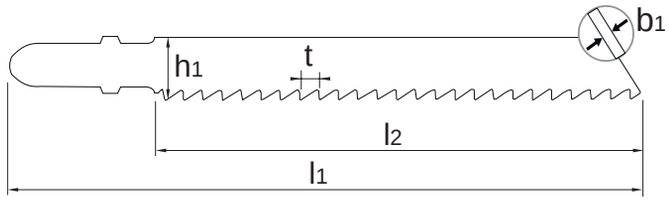
HSS 24 TPI 190MG 45°-90° 300mm 12”

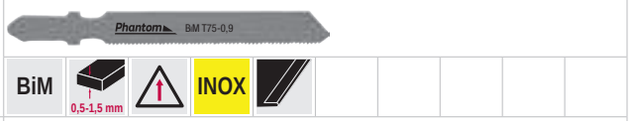
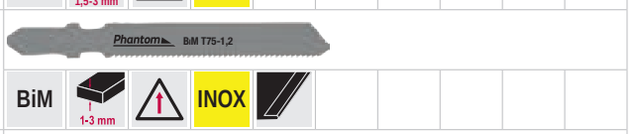
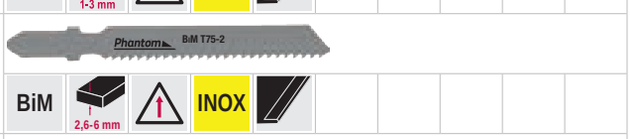
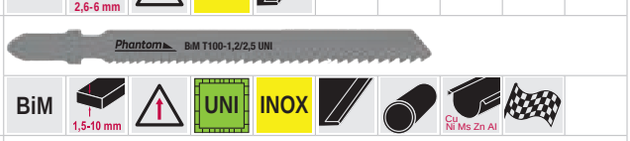
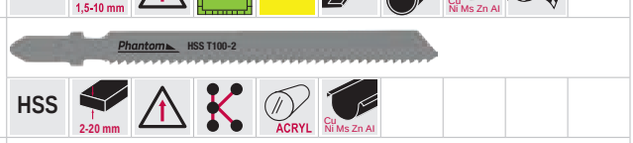
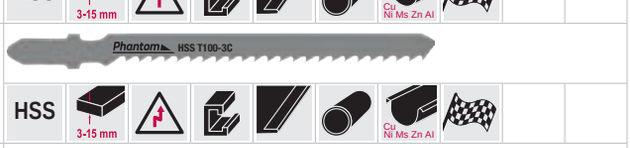
NIEUW NOUVEAU NUEVO NEU

Ref.	Nr.
64.460.1001	1

› 64.500 Phantom

NL **Decoupeerzaag, voor metaal**
FR **Lame de scie sauteuse, pour métal**
ES **Hojas de sierra de calar, para metal**
DE **Stichsägeblätter, für Metall**

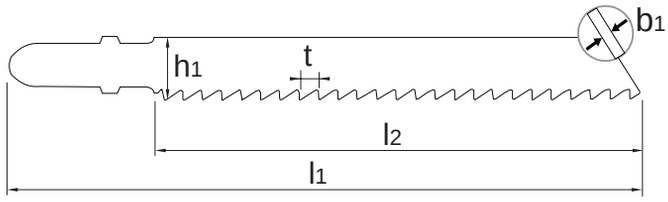


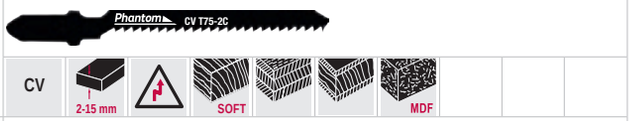
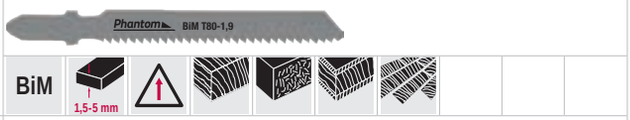
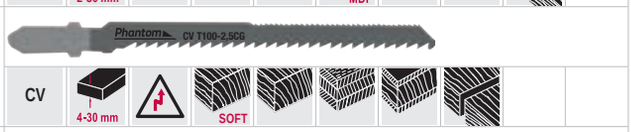
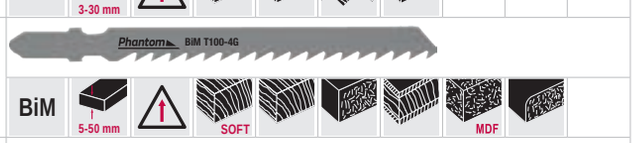
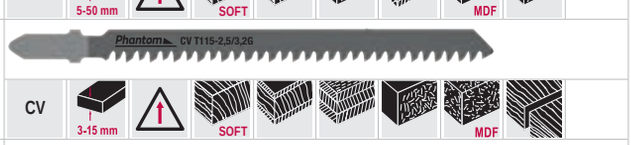
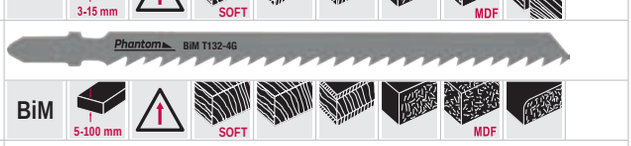
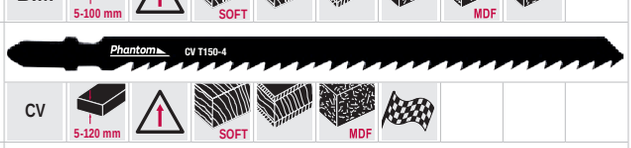
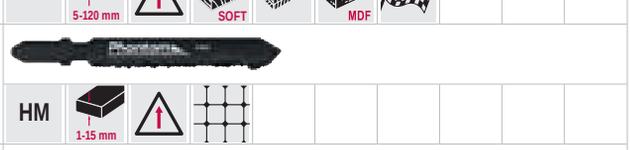
Ref.	Type	l1	l2	h1	b1	t	
64.500.0710	T75-0,9	75	50	8,0	1,00	0,9	
64.500.0711	T75-1,1 INOX	75	50	9,5	1,00	1,1	
64.500.0714	T75-1,2	75	50	8,0	1,00	1,2	
64.500.0720	T75-2	75	50	8,0	1,00	2	
64.500.1018	T100-1,2/2,5 UNI	100	75	8,0	1,00	1,2-2,5	
64.500.1021	T100-2	100	75	8,0	1,27	2	
64.500.1025	T100-3	100	75	8,0	1,15	3	
64.500.1027	T100-3C	100	75	6,2	1,15	3	
64.500.1312	T132-1,2	132	110	8,0	1,00	1,2	
64.500.1313	T132-1/1,6 UNI	132	110	8,0	1,00	1-1,6	
64.500.1321	T132-1,8/2,5 UNI	132	110	8,0	1,27	1,8-2,5	
64.500.1330	T132-2/4 UNI	132	110	8,0	1,27	2-4	

19:00 ▶ 24h

› 64.500 Phantom

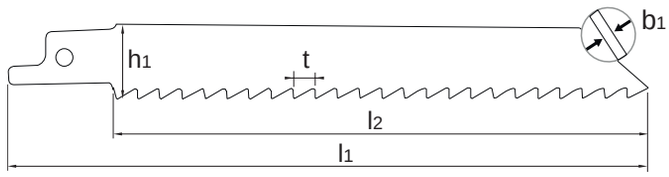
NL **Decoupeerzaag, voor hout, tegels, cellenbeton en composiet**
FR **Lame de scie sauteuse, pour bois**
ES **Hojas de sierra de calar, para madera**
DE **Stichsägeblätter, für Holz**



Ref.	Type	l1	l2	h1	b1	t	
64.500.0725	T75-2C	75	50	5,4	1,25	2	
64.500.0819	T80-1,9	80	55	8,0	1,27	1,9	
64.500.1020	T100-2G	100	75	8,0	1,27	2	
64.500.1024	T100-2,5CG	100	75	8,0	1,27	2,5	
64.500.1026	T100-2,5G	100	75	8,0	1,27	2,5	
64.500.1028	T100-2,5NG	100	75	8,0	1,27	2,5	
64.500.1042	T100-4G	100	75	8,0	1,27	4	
64.500.1150	T115-2,5/3,2G	115	90	8,0	1,45	2,5-3,2	
64.500.1340	T132-4G	132	110	8,0	1,27	4	
64.500.1540	T150-4	150	130	8,0	1,25	4	
64.500.1950	T75-HM	75	50	8,0	1,00	-	
64.500.2043	T100-4,3HM	100	75	8,0	1,25	4,3	

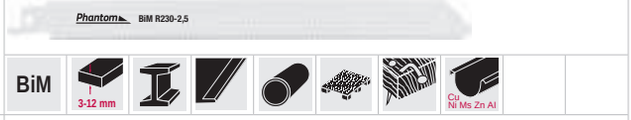
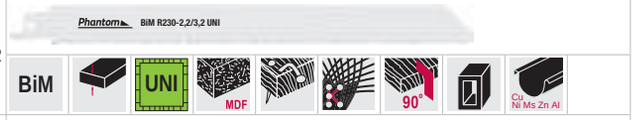
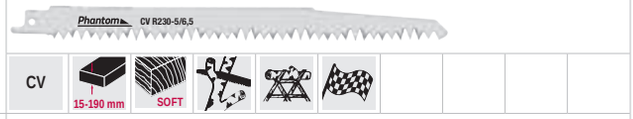
› 64.600 Phantom

NL **Reciprozaag**
FR **Lame de scie sabre**
ES **Hojas de sierra de sable**
DE **Säbelsägeblätter**



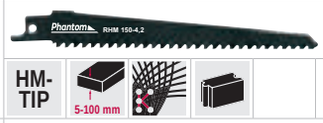
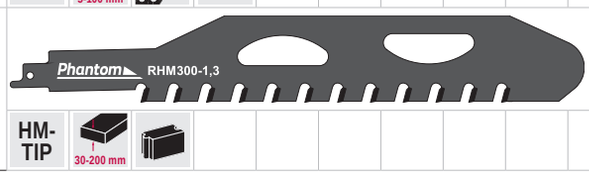
Ref.	Type	l1	l2	h1	b1	t	
64.600.1510	R150-1	150	130	19,0	0,90	1	Phantom BiM R150-1 · BiM · 0,7-3 mm
64.600.1514	R150-1,4	150	130	19,0	0,90	1,4	Phantom BiM R150-1,4 · BiM · 1,5-4 mm · INOX
64.600.1518	R150-1,8	150	130	19,0	0,90	1,8	Phantom BiM R150-1,8 · BiM · 3-8 mm · INOX
64.600.1519	R150-1,8 90°	150	130	25,4	0,90	1,8	Phantom BiM R150-1,8 90° · BiM · 3-8 mm · INOX · 90°
64.600.1522	R150-1,8/2,5 UNI	150	130	19,0	1,27	1,8-2,5	Phantom BiM R150-1,8/2,5 UNI · BiM · 3-12 mm · UNI · INOX · 90°
64.600.1525	R150-2,5	150	130	19,0	0,90	2,5	Phantom BiM R150-2,5 · BiM · 3-12 mm · Cu Ni Ms Zn Al
64.600.1540	R150-4,2C	150	130	19,0	1,27	4,2	Phantom BiM R150-4,2C · BiM · 6-100 mm · MDF
64.600.2014	R200-1,4	200	180	19,0	0,90	1,4	Phantom BiM R200/1,4 · BiM · 1,5-4 mm · INOX
64.600.2018	R200-1,8	200	180	19,0	0,90	1,8	Phantom BiM R200-1,8 · BiM · 2-8 mm
64.600.2023	R200-1,8/2,5 UNI	200	180	19,0	1,27	1,8-2,5	Phantom BiM R200-1,8/2,5 UNI · BiM · 3-12 mm · UNI · 90°
64.600.2025	R200-2,5	200	180	19,0	0,90	2,5	Phantom BiM R200-2,5 · BiM · 3-150 mm · GG
64.600.2090	R200-2,4/4,2 UNI	200	180	19,0	1,27	2,4-4,2	Phantom BiM R200-2,4/4,2 UNI · BiM · 3-18 mm · UNI · MDF · Cu Ni Ms Zn Al
64.600.2214	R230-1,4	230	210	19,0	0,90	1,4	Phantom BiM R230-1,4 · BiM · 1,5-4 mm

19:00 ▶ 24h

Ref.	Type	l1	l2	h1	b1	t	
64.600.2218	R230-1,8	230	210	19,0	0,90	1,8	
64.600.2220	R230-2	230	210	19,0	1,27	2	
64.600.2221	R230-1,8/2,5 UNI	230	210	19,0	0,90	1,8-2,5	
64.600.2225	R230-2,5	230	210	19,0	0,90	2,5	
64.600.2232	R230-2,2/3,2 UNI	230	210	19,0	1,27	2,2-3,2	
64.600.2332	R230-3,2	230	210	19,0	1,57	3,2	
64.600.2342	R230-4,2C	230	210	19,0	1,27	4,2	
64.600.2356	R230-5/6,5	230	210	19,0	1,20	5-6,5	
64.600.3018	R300-1,8	300	280	19,0	0,90	1,8	
64.600.3021	R300-1,8/2,5 UNI	300	280	19,0	0,90	1,8-2,5	
64.600.3025	R300-2,5	300	280	19,0	0,90	2,5	
64.600.3032	R300-4,2C	300	280	19,0	1,27	4,2	

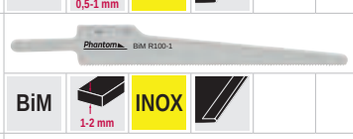
› 64.605 Phantom

NL **HM-tip Reciprozaag**
FR **Lame de scie sabre pointe carb. mét.**
ES **Hojas de sierra de sable punta MD**
DE **HM-Schneiden Säbelsägeblätter**

Ref.	Type	l1	l2	h1	b1	t	
64.605.1542	RHM150-4,2	150	130	19	0,9	4,2	
64.605.3013	RHM300-1,3	300	200	46	2,97	18	

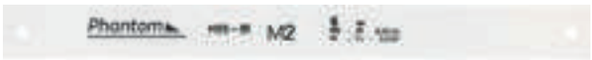
› 64.630 Phantom

NL **HSS Bi-Metaal Carrosseriezaag**
FR **Lame de scie sabre HSS Bi-métal**
ES **Hojas de sierra de sable HSS Bi-Metal**
DE **HSS Bi-Metall Karosseriesägeblätter**

Ref.	Type	l1	l2	h1	b1	t	
64.630.1007	R100-0,7	100	75	12,3	0,65	0,7	
64.630.1010	R100-1	100	75	12,3	0,65	1	
64.630.1018	R100-1,8	100	75	12,3	0,65	1,8	

19:00 24h

› 66.110 Phantom



NL **M2 Bi-Metaal Machinezaagblad**
FR **Lame de scie Bi-métal M2**
ES **Hoja de sierra de máquina Bimetal M2**
DE **M2 Bi-Metall Maschinensägeblätter**

BiM HSS

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	l2	b1	z
66.110.3036	300	25	1.25	10
66.110.3037	300	25	1.25	14
66.110.3054	300	32	1.6	6
66.110.3055	300	32	1.6	8
66.110.3056	300	32	1.6	10
66.110.3514	350	25	1.25	6
66.110.3515	350	25	1.25	8
66.110.3516	350	25	1.25	10
66.110.3517	350	25	1.25	14
66.110.3534	350	32	1.6	6
66.110.3535	350	32	1.6	8
66.110.3536	350	32	1.6	10
66.110.3537	350	32	1.6	14
66.110.3553	350	38	2	4
66.110.3554	350	38	2	6
66.110.3555	350	38	2	8
66.110.3556	350	38	2	10
66.110.3557	350	38	2	14
66.110.4034	400	25	1.25	6
66.110.4035	400	25	1.25	8
66.110.4036	400	25	1.25	10
66.110.4037	400	25	1.25	14
66.110.4054	400	32	1.6	6
66.110.4055	400	32	1.6	8
66.110.4056	400	32	1.6	10
66.110.4057	400	32	1.6	14
66.110.4073	400	38	2	4
66.110.4074	400	38	2	6
66.110.4075	400	38	2	8

Ref.	l1	l2	b1	z
66.110.4076	400	38	2	10
66.110.4077	400	38	2	14
66.110.4233	425	32	1.6	4
66.110.4234	425	32	1.6	6
66.110.4513	450	32	1.6	4
66.110.4515	450	32	1.6	8
66.110.4516	450	32	1.6	10
66.110.4553	450	38	2	4
66.110.4554	450	38	2	6
66.110.4555	450	38	2	8
66.110.4556	450	38	2	10
66.110.5013	500	38	2	4
66.110.5014	500	38	2	6
66.110.5015	500	38	2	8
66.110.5016	500	38	2	10
66.110.5214	525	40	2	6
66.110.5513	550	45	2.25	4
66.110.5514	550	45	2.25	6
66.110.5515	550	45	2.25	8
66.110.5516	550	45	2.25	10
66.110.6013	600	50	2.5	4
66.110.6014	600	50	2.5	6
66.110.6015	600	50	2.5	8
66.110.6016	600	50	2.5	10
66.110.6513	650	50	2.5	4
66.110.6514	650	50	2.5	6
66.110.6515	650	50	2.5	8
66.110.6516	650	50	2.5	10

› 66.130 Phantom



NL **M2 Bi-Metaal Machinezaagblad type Kasto**
FR **Lame de scie Bi-métal M2 type Kasto**
ES **Hoja de sierra de máquina Bimetal M2 tipo Kasto**
DE **M2 Bi-Metall Maschinensägeblätter Typ Kasto**

BiM HSS | 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	l2	b1	z
66.130.4074	400	38	2	6
66.130.4075	400	38	2	8
66.130.4076	400	38	2	10
66.130.4553	450	38	2	4
66.130.4555	450	38	2	8
66.130.4556	450	38	2	10
66.130.5513	550	45	2.25	4
66.130.5514	550	45	2.25	6

Ref.	l1	l2	b1	z
66.130.5515	550	45	2.25	8
66.130.5516	550	45	2.25	10
66.130.5713	575	50	2.5	4
66.130.5714	575	50	2.5	6
66.130.5715	575	50	2.5	8
66.130.6533	650	50	2.5	4
66.130.6534	650	50	2.5	6
66.130.6535	650	50	2.5	8

› 66.160 Phantom



NL **M42 Bi-Metaal Machinezaagblad**
FR **Lame de scie Bi-métal M42**
ES **Hoja de sierra de máquina Bimetal M42**
DE **M42 Bi-Metall Maschinensägeblätter**

BiM 8% Co | 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	l2	b1	z
66.160.4094	400	40	2	6
66.160.4095	400	40	2	8
66.160.4096	400	40	2	10
66.160.4097	400	40	2	14
66.160.4554	450	40	2	6
66.160.4555	450	40	2	8
66.160.4556	450	40	2	10

Ref.	l1	l2	b1	z
66.160.5014	500	40	2	6
66.160.5015	500	40	2	8
66.160.5713	575	50	2.5	4
66.160.5714	575	50	2.5	6
66.160.7013	700	50	2.5	4
66.160.7014	700	50	2.5	6

› 66.420 Phantom

NL **M42 Bi-Metaal Bandzaag voor kleiner stafmateriaal**
FR **Scie à ruban Bi-métal M42 pour matériaux pleins de petites dimensions**
ES **Sierra de cinta Bimetal M42 para barras de dimensiones pequeñas**
DE **M42 Bi-Metall Sägebänder für Stangenmaterial kleinere größen**



BiM 8% Co | Const. | α=0°

P 11 ≤600 N/mm² 50-120 | P 12 ≤850 N/mm² 35-50 | P 13 ≤1000 N/mm² 30-45 | P 14 ≤1400 N/mm² 30-40 | M 21 INOX ≤850N/mm² 30-40 | N 41 Alu 80-800 | N 51 Cu 50-400

h1 x b1 (mm)	z=4/”	z=6/”	z=14/”
27 x 0,9	66.420.63....	66.420.64....	

19:00 ▶ 24h

› 66.440 Phantom

NL **M42 Bi-Metaal Bandzaag voor groter stafmateriaal**
FR **Scie à ruban Bi-métal M42 pour matériaux pleins de grandes dimensions**
ES **Sierra de cinta Bimetal M42 para barras de mayores dimensiones**
DE **M42 Bi-Metall Sägebänder für größeres Stangenmaterial**



BiM HSS	HSS-E 8%	Const.	N 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	N 41 Alu	N 51 Cu	
50-120	35-50	30-45	30-40	30-40	10-30	80-800	50-400	

h1 x b1 (mm)	z=3/"	z=4/"	z=6/"
13 x 0,9	66.440.12....	66.440.13....	66.440.14....
20 x 0,9	66.440.22....		
27 x 0,9	66.440.32....		
34 x 1,1	66.440.52....		

› 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**



BiM HSS	HSS-E 8%	Variabel	α=0°									
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=3-4/"	z=4-6/"	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		66.450.25....	66.450.26....	66.450.27....	66.450.28....	66.450.29....
27 x 0,9	66.450.34....	66.450.35....	66.450.36....	66.450.37....	66.450.38....	66.450.39....
34 x 1,1	66.450.54....	66.450.55....	66.450.56....	66.450.57....	66.450.58....	
41 x 1,3	66.450.64....	66.450.65....	66.450.66....			

› 66.455 Phantom

NL **M42 Bi-Metaal Bandzaag universele multizaag**
FR **Scie à ruban Bi-métal M42 scie multifonction**
ES **Sierra de cinta Bimetal M42 sierra universal**
DE **M42 Bi-Metall Sägebänder Universal-Sägeband**



BiM HSS | HSS-E 8% | Variabel | N α 5°

P 11	P 12	P 13	K 31	K 32
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW
50-120	35-50	30-45	30-60	30-60

h1 x b1 (mm)	z=2-3/"	z=3-4/"	z=4-6/"	z=5-7/"	z=8-11/"
27 x 0,9			66.455.36....	66.455.37....	66.455.39....
34 x 1,1	66.455.53....		66.455.55....	66.455.57....	
41 x 1,3	66.455.63....	66.455.64....	66.455.65....		

› 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 Bimetal M42 para materiales con dimensiones grandes**
DE **M42 Bi-Metall Sägebänder größer Abmessung**



BiM HSS | HSS-E 8% | Variabel | N α 10°

P 11	P 12	P 13	P 14	M 21	M 22	K 31	N 41	N 42	N 51
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	Alu	Alu Si>10%	Cu
50-120	35-50	30-45	30-40	30-40	10-30	30-60	80-800	80-800	50-400

h1 x b1 (mm)	z=1,2-2/"	z=1,4-2/"	z=2-3/"	z=3-4/"	z=4-6/"	z=5-8/"	z=6-10/"
20 x 0,9					66.460.25....		
27 x 0,9			66.460.33....	66.460.34....	66.460.35....	66.460.36....	66.460.37....
34 x 1,1		66.460.52....	66.460.53....	66.460.54....	66.460.55....		
41 x 1,3	66.460.62....		66.460.63....	66.460.64....	66.460.65....		
54 x 1,6			66.460.73....	66.460.74....	66.460.75....		

19:00 ▶ 24h

› 66.580 Phantom

NL **M51 Bi-Metaal Bandzaag extra slijtvast**
FR **Scie à ruban Bi-métal M51 très résistante à l'usure**
ES **Sierra de cinta Bimetal M51 extra resistente al degaste**
DE **M51 BiMetall Sägebänder besonders Verschleissfest**





BiM HSS	10% Co	Variabel	N α15°	●	○	–	H
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 71 Ni/Co	S 72 Ti
50-120	35-50	30-45	30-40	30-40	10-30	10-25	10-20

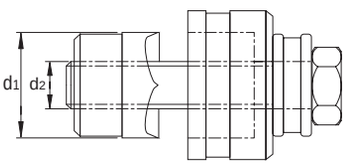
h1 x b1 (mm)	z=1,4-2/"	z=2-3/"	z=3-4/"
27 x 0,9			66.580.44....
34 x 1,1			66.580.54....
41 x 1,3		66.580.63....	66.580.64....
54 x 1,6	66.580.72....	66.580.73....	

› 67.100 Phantom

NL **Gatenpons voor handgebruik, met bout**
FR **Emporte-pièces pour usage à la main, avec boulon**
ES **Sacabocado para uso manual, con perno**
DE **Blechlocher für Handgebrauch, mit Schraube**







Ref.	d1	M	PG	1	d2	2	d2
67.100.1270	12.7	12	7	67.300.0940	9,5x40		
67.100.1271	12.7	12	7			67.300.0951	9,5x50
67.100.1520	15.2		9	67.300.0940	9,5x40		
67.100.1521	15.2		9			67.300.0951	9,5x40
67.100.1600	16.2	16		67.300.0940	9,5x40		
67.100.1601	16.2	16				67.300.0951	9,5x50
67.100.1860	18.6		11	67.300.0940	9,5x40		
67.100.1861	18.6		11			67.300.0951	9,5x50
67.100.2040	20.4	20	13	67.300.0940	9,5x40		
67.100.2041	20.4	20	13			67.300.0951	9,5x50
67.100.2200	22			67.300.0940	9,5x40		
67.100.2201	22					67.300.0951	9,5x50
67.100.2250	22.5		16	67.300.0940	9,5x40		
67.100.2251	22.5		16			67.300.0951	9,5x50
67.100.2500	25			67.300.0950	9,5x50		
67.100.2501	25					67.300.0951	9,5x50
67.100.2540	25.4	25		67.300.0950	9,5x50		
67.100.2541	25.4	25				67.300.0951	9,5x50
67.100.2830	28.3		21	67.300.0950	9,5x50		
67.100.2831	28.3		21			67.300.0951	9,5x50
67.100.3050	30.5			67.300.0950	9,5x50		
67.100.3051	30.5					67.300.0951	9,5x50
67.100.3170	31.7			67.300.0950	9,5x50		
67.100.3171	31.7					67.300.0951	9,5x50
67.100.3200	32.5	32		67.300.0950	9,5x50		
67.100.3201	32.5	32				67.300.0951	9,5x50
67.100.3500	35			67.300.1955	9,5x50		
67.100.3501	35					67.300.1956	9,5x50
67.100.3700	37		29	67.300.1955	9,5x50		
67.100.3701	37		29			67.300.1956	9,5x50
67.100.3800	38			67.300.1955	9,5x50		
67.100.3801	38					67.300.1956	9,5x50
67.100.4050	40.5	40		67.300.1955	9,5x50		
67.100.4051	40.5	40				67.300.1956	9,5x50
67.100.4700	47		36	67.300.1975	19x75		
67.100.4701	47		36			67.300.1976	19x75
67.100.5050	50.5	50		67.300.1975	19x75		
67.100.5051	50.5	50				67.300.1976	19x75
67.100.5400	54		42	67.300.1975	19x75		
67.100.5401	54		42			67.300.1976	19x75
67.100.6000	60		48	67.300.1975	19x75		
67.100.6001	60		48			67.300.1976	19x75
67.100.6350	63.5	63		67.300.1975	19x75		
67.100.6351	63.5	63				67.300.1976	19x75
67.100.7000	70			67.300.1975	19x75		
67.100.7001	70					67.300.1976	19x75
67.100.7550	75.5	75		67.300.1975	19x75		
67.100.7551	75.5	75				67.300.1976	19x75

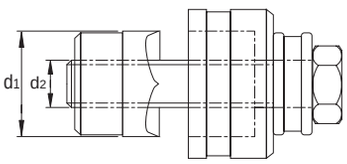
19:00 ▶ 24h

› 67.120 Phantom

NL **Gatenpons met 3-voudig splijtstempel, voor hand- en hydraulisch gebruik, met bout**
FR **Emporte-pièces à trois pointes, pour usage à la main et hydraulique, avec boulon**
ES **Sacabocado con punzón cortador, para uso manual e hidráulico, con perno**
DE **Blechlocher mit Spaltstempel, für hydraulischen Gebrauch, mit Schraube**







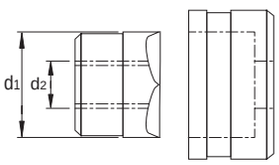
Ref.	d1	M	PG	1	d2	2	d2
67.120.1201	12.5	12		67.300.0949	6x40	67.300.1992	19x6
67.120.1521	15.2		9	67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.1601	16.2	16		67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.1861	18.6		11	67.300.0951	9,5x50	67.300.1993	19x9,5
67.120.2041	20.4	20	13	67.300.0951	9,5x50	67.300.1993	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	19
67.120.3701	37		29	67.300.1956	19x55	67.300.1991	19
67.120.4001	40.5	40		67.300.1976	19x75	67.300.1991	19
67.120.4701	47		36	67.300.1976	19x75	67.300.1991	19
67.120.5001	50.5	50		67.300.1976	19x75	67.300.1991	19
67.120.5401	54		42	67.300.1976	19x75	67.300.1991	19
67.120.6001	60		48	67.300.1976	19x75	67.300.1991	19
67.120.6301	63.5	63		67.300.1976	19x75	67.300.1991	19

› 67.130 Phantom

NL **Gatenpons met 3-voudig splijtstempel, voor hydraulisch gebruik, roestvaststaal**
FR **Emporte-pièces à trois pointes, pour usage à la main et hydraulique, Inox**
ES **Sacabocado con punzón cortador, para uso manual e hidráulico, acero inoxidable**
DE **Blechlocher mit Spaltstempel, für hydraulischen Gebrauch, rostfreien Stahl**







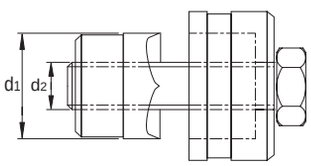
Ref.	d1	M	PG	1	d2	2	d2	3
67.130.1200	12.5	12		67.300.0949	6x40			67.300.3030
67.130.1521	15.2		9	67.300.1110	11.1x60	7.300.1995	19x1.1	67.300.3030
67.130.1600	16.2	16		67.300.1110	11.1x60	67.300.1995	19x1.1	67.300.3030
67.130.1861	18.6		11	67.300.1110	11.1x60	67.300.1995	19x1.1	67.300.3030
67.130.2041	20.4	20	13	67.300.1110	11.1x60	67.300.1995	19x1.1	67.300.3030
67.130.2251	22.5		16	67.300.1110	11.1x60	67.300.1995	19x1.1	67.300.3030
67.130.2500	25.4	25		67.300.1110	11.1x60	67.300.1995	19x1.1	67.300.3030
67.130.2831	28.3		21	67.300.1956	19x55	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.3050	30.5			67.300.1956	19x55	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.3200	32.5	32		67.300.1956	19x55	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.3701	37		29	67.300.1956	19x55	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.4000	40.5	40		67.300.1976	19x75	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.4701	47		36	67.300.1976	19x75	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.5000	50.5	50		67.300.1976	19x75	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.5401	54		42	67.300.1976	19x75	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.6001	60		48	67.300.1976	19x75	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020
67.130.6300	63	63		67.300.1976	19x75	67.300.1991	19	67.300.3000 / 67.300.3010 / 67.300.3020

› 67.250 Phantom

NL **Gatenpons Sanitair, met bout**
FR **Emporte-pièces Sanitaire, avec boulon**
ES **Sacabocado Sanitario, con perno**
DE **Blechlocher Sanitär, mit Schraube**







Ref.	d1	1	d2
67.250.2830	28.3	67.300.1010	M10x1
67.250.3170	31.7	67.300.1010	M10x1
67.250.3500	35	67.300.1010	M10x1

› 67.290 Phantom

NL **Hydraulische Handpomp**
FR **Pompe Hydraulique**
ES **Aparato Hidráulico manual**
DE **Hydraulische Handpumpe**



Ref.	#
67.290.1000	1

19:00 ▶ 24h

› 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**



BiM 8% Co | VARI | INOX | MDF | Cu Ni Ms Zn Al | SOFT

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

NIEUW NOUVEAU NUEVO NEU

Ref.	1	2	3	4
69.111.0900	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	2+5	6,35x90	61.160.9500
69.111.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	2+5	6,35x90	61.160.9500

› 69.112 Phantom

NL **HSS-Co 8% Bi-Metaal Set Gatzagen 61.105, met Quick Change houder en adapters**
FR **Jeu de Scies cloches HSS-Co 8% Bi-métal 61.105, avec arbre et adaptateurs à changement**
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**



BiM 8% Co | VARI | INOX | MDF | Cu Ni Ms Zn Al | SOFT

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

NIEUW NOUVEAU NUEVO NEU

Ref.	1	2	3	4
69.112.0900	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	1x	3x	6x
69.112.0910	20, 25, 29, 35, 38, 44, 51, 64, 76 mm	1x	3x	6x
69.112.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	1x	5x	7x

› 69.130 Phantom

NL **HM-tip Set Gatzagen 61.130**
FR **Jeu de Scies cloches pointe carb. mét. 61.130**
ES **Juego de coronas perforadoras punta MD 61.130**
DE **HM-Schneiden Satz Lochsägen 61.130**



HM-TIP

Ref.	1	2	3	4
69.130.0601	22, 29, 35, 44, 51, 65 mm	1+2	HSS 6,35x110	Carbide Tipped 6,35x110
69.130.0901	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	1+2	HSS 6,35x110	Carbide Tipped 6,35x110
69.130.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	1+2	HSS 6,35x110	Carbide Tipped 6,35x110

› 69.210 Phantom

NL **HSS Set Kernboren snijdiepte 25 mm, 62.100**
FR **Jeu de Fraises à carotter HSS profondeur de coupe 25 mm, 62.100**
ES **Juego de Fresas huecas HSS profundidad de corte 25 mm, 62.100**
DE **HSS Satz Kernbohrer Schnittiefe 25 mm, 62.100**



HSS — 0,5-25 mm — Ø19 WELDON — Ø19 QUICK

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
69.210.0001	12-14-16-18-20-22 mm + 62.300.0025

› 69.212 Phantom

NL **HSS-Co Set Kernboren genitreerd, snijdiepte 25 mm, 62.122**
FR **Jeu de Fraises à carotter HSS-Co nitruré, profondeur de coupe 25 mm, 62.122**
ES **Juego de Fresas huecas HSS-Co nitrurado, profundidad de corte 25 mm, 62.122**
DE **HSS-Co Satz Kernbohrer nitriert, Schnittiefe 25 mm, 62.122**



HSS-Co — NIT. — 0,5-25 mm — Ø19 WELDON — Ø19 QUICK

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 + 62.300.0025

19:00 ▶ 24h

› 69.215 Phantom

NL **HSS Set Kernboren snijdiepte 50 mm, 62.150**
FR **Jeu de Fraises à carotter HSS profondeur de coupe 50 mm, 62.150**
ES **Juego de Fresas huecas HSS profundidad de corte 50 mm, 62.150**
DE **HSS Satz Kernbohrer Schnittiefe 50 mm, 62.150**



HSS | 0,5-50 mm | Ø19 WELDON | Ø19 QUICK

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-Co Set Kernboren genitreerd, snijdiepte 50 mm, 62.162**
FR **Jeu de Fraises à carotter HSS-Co nitruré, profondeur de coupe 50 mm, 62.162**
ES **Juego de Fresas huecas HSS-Co nitrurado, profundidad de corte 50 mm, 62.162**
DE **HSS-Co Satz Kernbohrer nitriert, Schnittiefe 50 mm, 62.162**



HSS-Co | NIT. | 0,5-50 mm | Ø19 WELDON | Ø19 QUICK

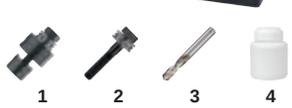
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 52	N 61
≤600 N/mm²	≤850 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	CuAlFe	PVC
31	18	16	9	10	4	20	16	38	40	36	36	22

Ref.	Ø mm
69.216.2001	14-16-18-20-22-26 + 62.300.0050

› 69.710 Phantom

NL **Set met Gatenponsen 67.100**
FR **Jeu d' Emporte-pièces 67.100**
ES **Jeugo de Sacabocados 67.100**
DE **Satz Blechlocher 67.100**





1 2 3 4

Ref.	1	2	3	4
69.710.2101	PG 9, PG 11, PG 13, PG16, PG21	67.300.0951 (2x) 9,5x50	67.300.9000 (11,5)	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**



Ref.	1	2	3	4
69.712.3051	PG 9, PG 11, PG 13, PG 16, PG 21 + 30,5	67.300.0951 (2x) 9,5x50	67.300.8990 (10 mm)	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	67.300.8990 (10 mm)	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	67.300.8990 (10 mm)	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	67.300.8990 (10 mm)	67.300.5000

› 69.725 Phantom

NL **Set met Gatenponsen Sanitair, 67.100**
FR **Jeu d'Emporte-pièces Sanitaire, 67.100**
ES **Jeugo de Sacabocados Sanitario, 67.100**
DE **Satz Blechlocher Sanitär, 67.100**



Ref.	1	2	3	4
69.725.3500	28,3-31,7-35	67.300.1010 (3x)	10 mm	67.300.5000

› 69.790 Phantom

NL **Set Hydraulische Handpomp en Gatenponsen 67.120**
FR **Jeu Pompe Hydraulique et Emporte-pièces 67.120**
ES **Juego de Aparato Hidráulico manual y Sacabocados 67.120**
DE **Satz Hydraulische Handpumpe und Blechlocher 67.120**



Ref.	1	2	3	4	5
69.790.1000	PG 9, PG 11, PG 13, PG 16, PG 21, PG 29, PG 36, PG 42, PG 48	67.300.1993, 67.300.1991	67.300.3030, 67.300.3000, 67.300.3010, 67.300.3020	67.300.8980 (10 mm)	67.300.5000
69.790.1200	M16, M20, M25, M32, M40	67.300.1993, 67.300.1991	67.300.3030, 67.300.3000, 67.300.3010, 67.300.3020	67.300.8980 (10 mm)	67.300.5000

19:00 ▶ 24h

› 69.795 Phantom

NL **Set Hydraulische Handpomp en Gatenponsen 67.130**
FR **Jeu Pompe Hydraulique et Emporte-pièces 67.130**
ES **Juego de Aparato Hidráulico manual y Sacabocados 67.130**
DE **Satz Hydraulische Handpumpe und Blechlocher 67.130**

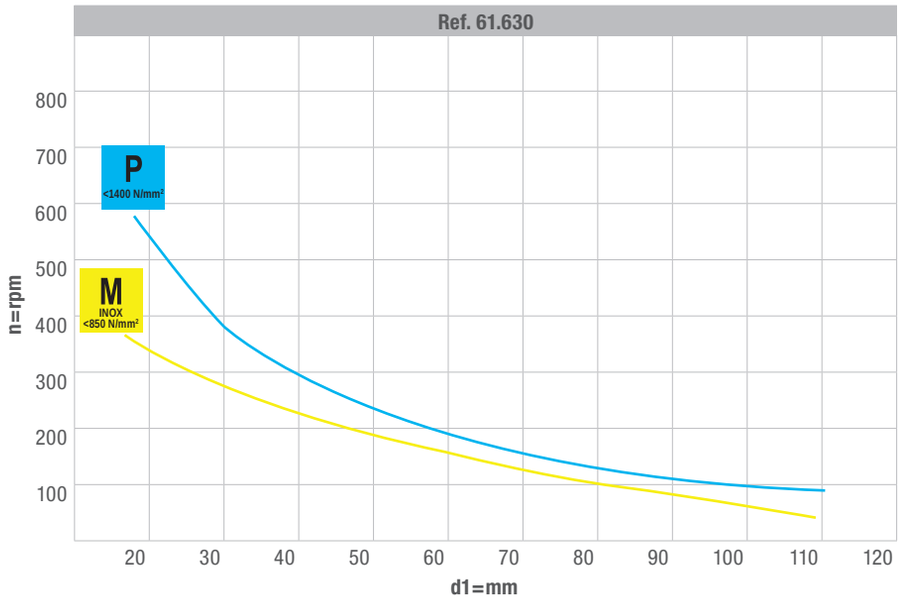


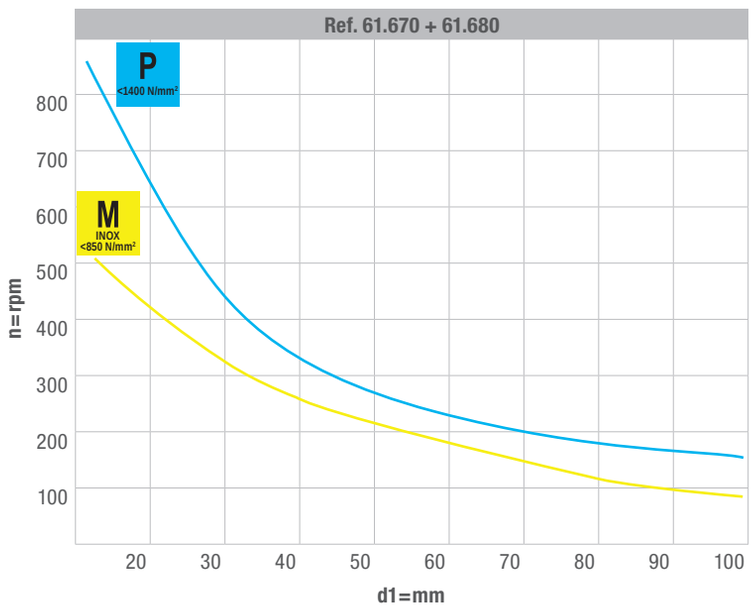
1 2 3 4 5

Ref.	1	2	3	4	5
69.795.1000	PG 9, PG 11, PG 13, PG 16, PG 21, PG 29, PG 36, PG 42	67.300.1995, 67.300.1991	67.300.3030, 67.300.3000, 67.300.3010, 67.300.3020	67.300.9000 (11,5 mm)	67.300.5000
69.795.1200	M16, M20, M25, M32, M40	67.300.1995, 67.300.1991	67.300.3030, 67.300.3000, 67.300.3010, 67.300.3020	67.300.9000 (11,5 mm)	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**

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



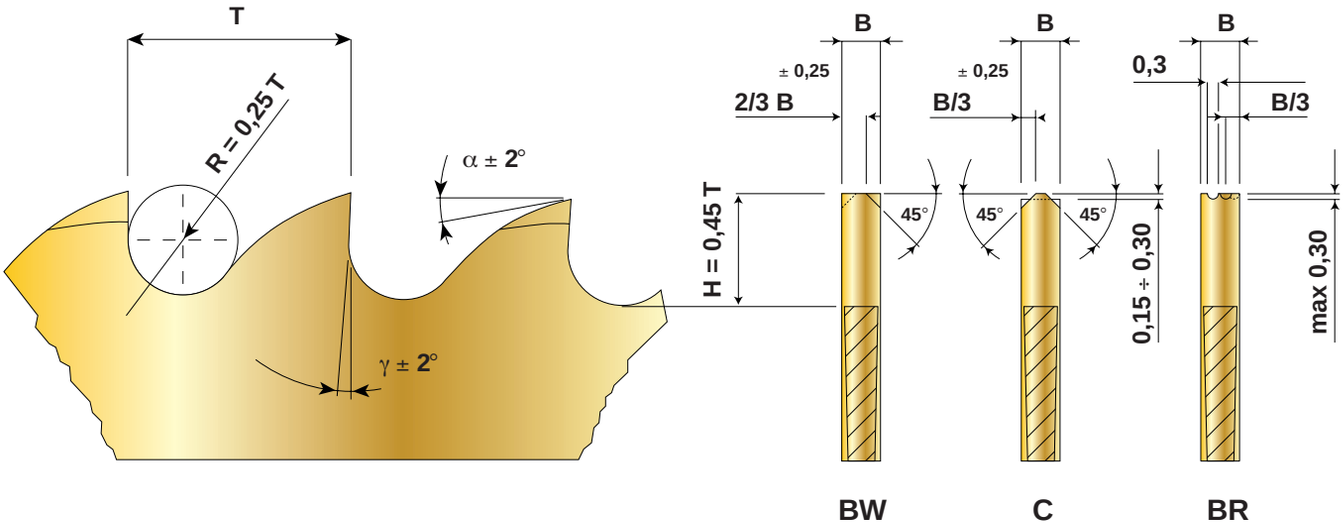


n=rpm
NL: Toerental (omw/min)
FR: Vitesse de rotation (tr/min)
ES: Número de revoluciones (rpm)
DE: Drehzahl (U/min)

19:00 24h

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**

NL **Tandvormen**
FR **Formes de dents**
ES **Forme de los dientes**
DE **Zahnform**



B zaagbladdikte
épaisseur de la lame
espesor de la sierra
Sägeblattstärke

T tandsteek
pas de la dent
paso de diente
Zahnteilung

H tandhoogte
hauteur de dent
altura de diente
Zahnhöhe

R spaankamer diameter
diamètre du fond de la dent
diametro de la garganta
Spanraumdurchmesser

g spaanhoek
angle d'attaque
angulo de desprendimiento
Spanwinkel

a vrijloophoek
angle de dépouille
angulo de desmoldeo posterior
Rückenfreiwinkel

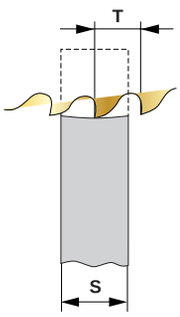
HSS 63.400 63.401	HSS-E 63.420 63.424
g = 18° ± 2°	g = 18° ± 2°
a = 10° ± 2°	a = 10° ± 2°

NL **Snijhoeken**
FR **Arête de coupe**
ES **Angulo de corte**
DE **Spanwinkel**

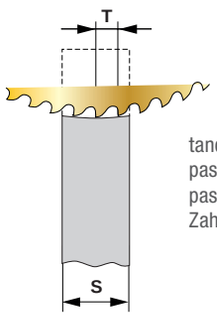
ISO	GR.	HSS		HSS-E	
		g8	a8	g8	a8
P	11	18°	10°		
	12	18°	10°		
	13	18°	10°	18°	10°
	14			18°	10°
M	21	18°	10°	18°	10°
	22			18°	10°
K	31	10°	6°		
	32	10°	6°		
N	41	25°	10°		
	42				
	51	20°			
	52	15°			
	61				
S	71			18°	10°
	72			18°	10°

NL **Tandsteek**
FR **Pas de dent**
ES **Paso de diente**
DE **Verzahnung**

NL massief materiaal
FR matériaux pleins
ES materiales macizos
DE Vollmaterial

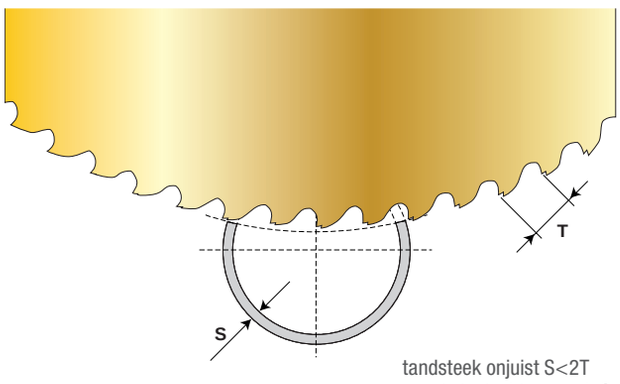


tandsteek onjuist S<3T
pas de la dent incorrect S<3T
paso de diente incorrecto S<3T
Zahnteilung nicht korrekt S<3T

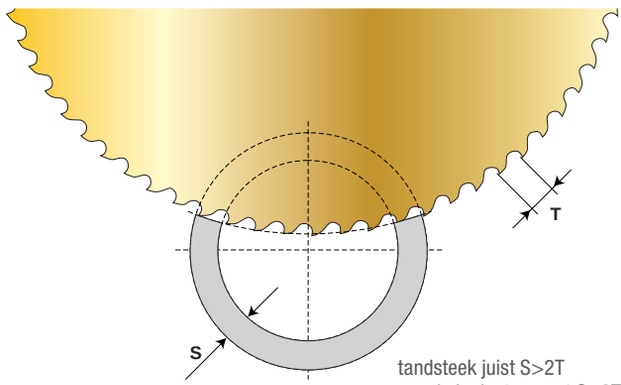


tandsteek juist S>3T
pas de la dent correct S>3T
paso de diente correcto S>3T
Zahnteilung nicht korrekt S>3T

NL buis en profielen
FR tubes et profilés
ES tubos y perfiles
DE Rohre und Profile



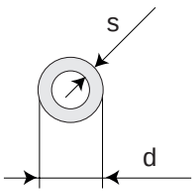
tandsteek onjuist S<2T
pas de la dent incorrect S<2T
paso de diente incorrecto S<2T
Zahnteilung nicht korrekt S<2T

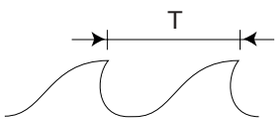


tandsteek juist S>2T
pas de la dent correct S>2T
paso de diente correcto S>2T
Zahnteilung nicht korrekt S>2T

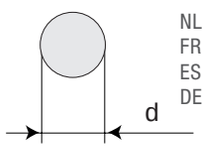
d	fz = 0,05 ÷ 0,08 mm/Z				d	fz < 0,08 mm/Z	fz > 0,08 mm/Z
d	s	T	s	T	d	T	T
≤ 20 mm	≤ 1 mm	3	> 1 mm	4	≤ 20 mm	5,5	
≤ 30 mm	≤ 1,5 mm	5	> 1,5 mm	5,5	≤ 30 mm	7	
≤ 40 mm	≤ 2 mm	6	> 2 mm	7	≤ 40 mm	8	
≤ 50 mm	≤ 4 mm	6	> 4 mm	7	≤ 50 mm	9	
≤ 60 mm	≤ 4 mm	7	> 4 mm	8	≤ 60 mm	10	12
≤ 70 mm	≤ 3 mm	7	> 3 mm	8	≤ 70 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



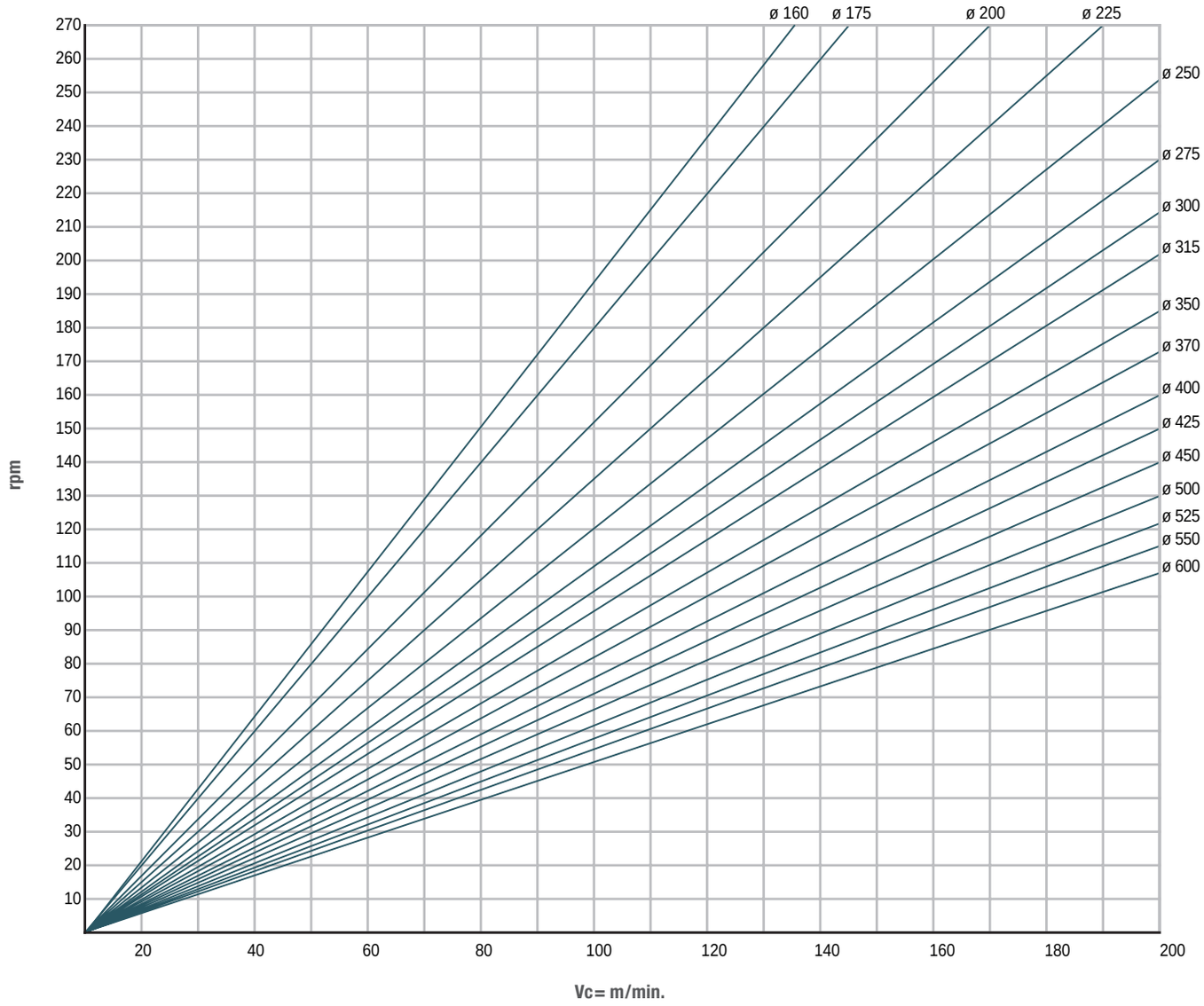


NL massief materiaal
FR matériaux pleins
ES materiales macizos
DE Vollmaterial



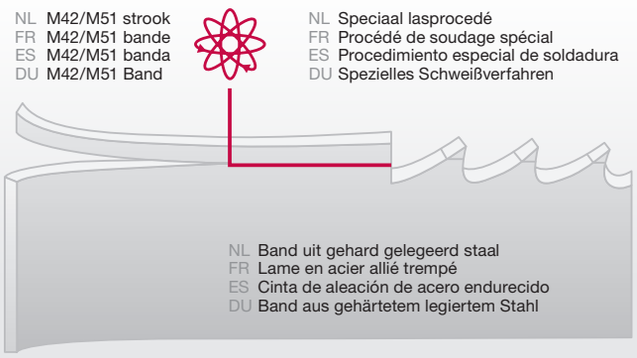
19:00 24h

NL **Toerentaltabel**
FR **Tableau des vitesses de rotation**
ES **Tabla de número de revoluciones**
DE **Drehzahltabelle**

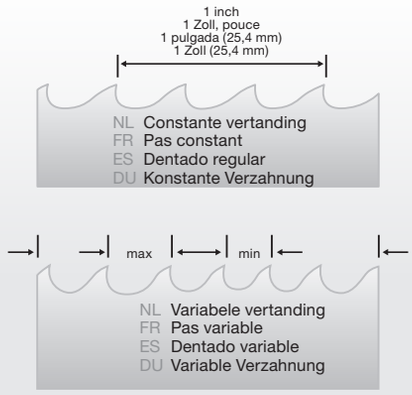


NL **Tandvormen**
FR **Formes des dents**
ES **Forma de los dientes**
DE **Sägezahnformen**

Phantom

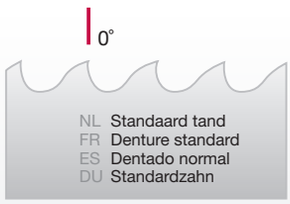


Phantom



› 66.420

Phantom



NL **BANDZAAG VOOR:**
› Kortspanig materiaal
› Dunwandig materiaal
GEGEVENS:
› Spaanhoek 0°

FR **SCIE À RUBAN POUR :**
› Matériaux à copeaux courts
› Matériaux à paroi fine
CARACTÉRISTIQUES :
› Angle de coupe 0°

ES **SIERRA DE CINTA PARA:**
› Material de viruta corta
› Material de pared delgada
DATOS:
› Ángulo de corte 0°

DU **SÄGEBAND FÜR:**
› Profile oder Werkstuecke
› Dünnwandige Werkstoffe
DETAILS:
› Spanwinkel 0°

› 66.440

Phantom



NL **BANDZAAG VOOR:**
› Langpanig materiaal
› Taai materiaal
› Groter materiaal
GEGEVENS:
› Positieve spaanhoek 5°

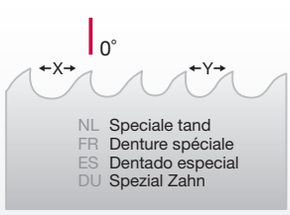
FR **SCIE À RUBAN POUR :**
› Matériaux à copeaux longs
› Matériaux difficiles
› Matériaux de grandes dimensions
CARACTÉRISTIQUES :
› Angle de coupe positif 5°

ES **SIERRA DE CINTA PARA:**
› Material de viruta larga
› Material duro
› Sección más grande
DATOS:
› Ángulo de corte positivo 5°

DU **SÄGEBAND FÜR:**
› Langspanende Werkstoffe
› Vollmaterial
› Größere Durchmesser
DETAILS:
› 5° positiver Spanwinkel

› 66.450

Phantom



NL **BANDZAAG VOOR:**
› Vibratie-arm zagen
› Profielen
GEGEVENS:
› Spaanhoek 0°

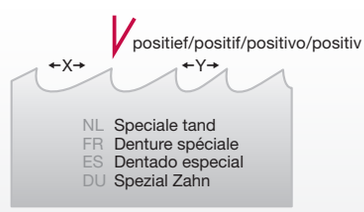
FR **SCIE À RUBAN POUR :**
› Scies basses vibrations
› Profilés
CARACTÉRISTIQUES :
› Angle de coupe 0°

ES **SIERRA DE CINTA PARA:**
› Sierras con brazo de vibración
› Perfiles
DATOS:
› Ángulo de corte 0°

DU **SÄGEBAND FÜR:**
› Vibrationsarme Sägen
› Profile
DETAILS:
› Spanwinkel 0°

› 66.455 / 66.460 / 66.580

Phantom



NL **BANDZAAG VOOR:**
› Vibratie-arm zagen
› Massief materiaal
GEGEVENS:
› Positieve spaanhoek 5°, 10° of 15°

FR **SCIE À RUBAN POUR :**
› Scies basses vibrations
› Matériaux massifs
CARACTÉRISTIQUES :
› Angle de coupe positif 5°, 10° et 15°

ES **SIERRA DE CINTA PARA:**
› Sierras con brazo de vibración
› Material macizo
DATOS:
› Ángulo de corte positivo 5°, 10° o 15°

DU **SÄGEBAND FÜR:**
› Vibrationsarme Sägen
› Vollmaterial
DETAILS:
› 5°, 10° oder 15° positiver Spanwinkel

19:00 24h

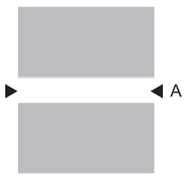
NL **BANDZAGEN: Aantal tanden per inch**
FR **SCIES A RUBAN: Nombre de dents par pouce**
ES **SIERRAS DE SINTA : El Número de dientes por Pulgada**
DE **SAGEBANDER : Anzahl Zähne pro Zoll**

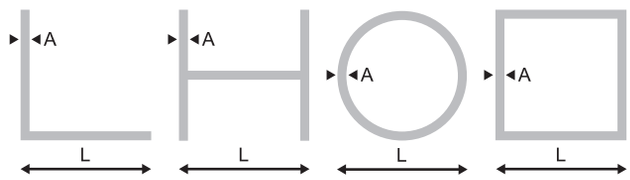
NL Massief materiaal
FR Matériau solide
ES Materiales Macizos
DE Vollmaterial

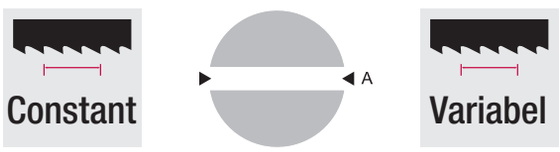


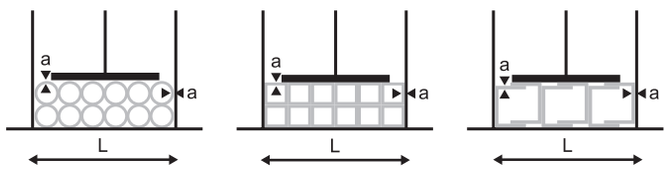
NL Profielen
FR Profilés
ES Perfiles
DE Profilen







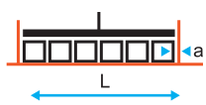




z = .../"	A (mm)	z = .../"
18	2	10/14
	3	
14	5	8/12
	8	
10	12	6/10
	16	
8	18	5/8
6	30	
	40	4/6
4	70	
	100	3/4
3	140	
	200	2/3
2	240	
	300	1/2
1,2	450	
	600	0,75/1,2
0,75	750	

VOORBEELD/EXEMPLE/EJEMPLO/BEISPIEL

6 x ▢ 50 x 50 x 5mm



$$A = \frac{\text{a x aantal wanden/nombre des parois/numero des paredes/Anzahl Wande}}{2}$$

$$A = \frac{5 \times 12 = 30 \text{ mm}}{2} \qquad L = 6 \times 50 = 300 \text{ mm}$$

A mm. \ L mm.	20	40	60	80	100	120	150	200	300	500
2	14	14	10/14	10/14	10/14	10/14	10/14	8/12	6/10	6/10
3	10/14	10/14	10/14	10/14	8/12	8/12	8/12	6/10	5/8	5/8
4	8/12	8/12	8/12	8/12	8/12	6/10	6/10	6/10	5/8	5/8
5	8/12	8/12	8/12	6/10	6/10	6/10	6/10	5/8	5/8	4/6
6	6/10	6/10	6/10	6/10	6/10	6/10	5/8	5/8	4/6	4/6
8	6/10	6/10	6/10	6/10	5/8	5/8	5/8	4/6	4/6	3/4
10		5/8	5/8	5/8	5/8	5/8	4/6	4/6	4/6	3/4
12		5/8	5/8	5/8	4/6	4/6	4/6	4/6	3/4	3/4
15		4/6	4/6	4/6	4/6	4/6	3/4	3/4	3/4	2/3
20			4/6	4/6	3/4	3/4	3/4	3/4	2/3	2/3
→ 30				3/4	3/4	3/4	2/3	2/3	2/3	2/3
50							2/3	2/3	2/3	1,2/2

OPSPANNEN/SERRAGE/FIJACION/SPANNEN



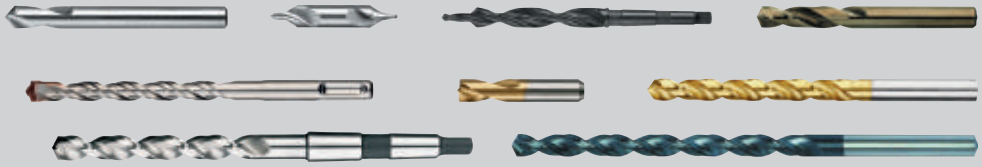


19:00 ▶ ▶ 24h

NL **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



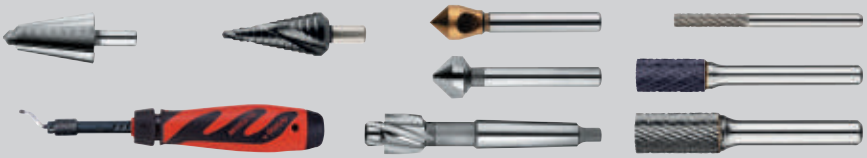
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



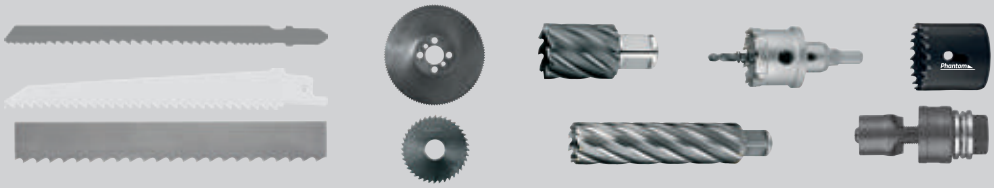
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
HSS-E	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalto)	HSS-E (5% Cobalt)
10% Co	HSS-E (10% Cobalt)	HSS-E (10% Cobalt)	HSS-E (10% Cobalto)	HSS-E (10% Cobalt)
MG HM	Micro-Grain volhardmetaal	Carbure micro-grain	Metal duro micrograno	Micro-Grain Voll-hartmetall
HM-TIP	Hardmetaal Tip	Plaquette carbure brasée	Plaquitas de metal duro soldadas	mit HM-Schneiden
DIN 4964-A	DIN norm	Norme DIN	Norma DIN	DIN Norm
Phantom	Phantom norm	Norme Phantom	Norma Phantom	Werksnorm

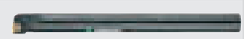
	NL	FR	ES	DE
	Doorlopende gaten	Trou débouchant	Agujero pasante	Durchgangslöcher
	Blinde gaten	Trou borgne	Agujero ciego	Sacklöcher
	Doorlopende gaten, schroefdraad	Trou débouchant, filetage	Agujero pasante, rosca	Durchgangslöcher, Gewinde
h8	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser
0,02	Rechtheidstolerantie	Tolérance de rectitude	Tolerancia de rectitud	Geradheitstoleranz

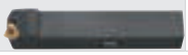
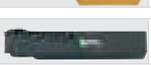
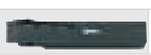
	NL	FR	ES	DE
	Algemeen	**Général**	**General**	**Allgemein**
▽▽▽	Fijn/nadraaien	Tournage fin et finition	Mecanizado fino y en acabado	Feinzerspanung / Schlichten
▽▽	Midden	Torneage en général	Mecanizado medio	Mittlere Zerspanung
▽	Ruw/voordraaien	Usinage d'ébauche	Mecanizado en desbaste	Grobzerspanung
○	Constante snedediepte	Coupe continue	Corte continuo	Glatter Schnitt
◠	Wisselende snedediepte	Profondeur de coupe variables	Profundidad de corte variable	Wechselende Schnittiefen
◌	Onderbroken snedes	Coupe interrompue	Corte interrumpido	Unterbrochener Schnitt
	Draaien	**Tournage**	**Tornear**	**Drehen**
a_p (mm)	Snedediepte	Profondeur de coupe	Profundidad de corte	Schnittiefe
d min	Minimale diameter	Diamètre minimum	Diámetro mínimo	Minimale Durchmesser
f_n (mm)	Voeding per omwenteling	Avances par tour	Avances por revolucion	Vorschub pro Umdrehung
	Draadsnijden	**Fileter**	**Roscar**	**Gewindeschneiden**
	Borgring steken	**Gorges de circlips**	**Tronzar arandelas de retención**	**Sprengringplatte stechen**
P (mm)	Spoed (mm)	Pas (mm)	Paso (mm)	Steigung (mm)
P (inch)	Aantal gangen (inch)	Nombre de filets	Número de hilos	Gewindegänge
x a_p	Aantal snedes	Nombre de fils	Número de cortes	Anzahl der Durchgänge
m (H13)	Borgringmaat	Largeur de gorges	Tamaño del arandela de retención	Maß der Sicherungsring
	Steken	**Tronçonner**	**Tronzar**	**Stechen**
	Steekhouder	**Lame à tronçonner**	**Portaplaquite de tronzado**	**Schneidenträger**
t max	Max. steekdiepte	Profondeur max. de tronçonnage	Profundidad de tronzado maxima	Max. Stechtiefe
d max	Max. steekdiameter	Diamètre max. de tronçonnage	Diametro de tronzado maximo	Max. Stechdurchmesser
	Steekplaten	**Plaquette à tronçonner**	**Plaquita para tronzar**	**Stechplatten**
a	Steekbreedte a	Largeur de coupe a	Anchura de corta a	Stechbreite a
a_p max	Maximale snedediepte	Profondeur de coupe max.	Profundidad de corte max.	Maximale Schnittiefe
f rad	Voeding radiaal	Avance radial	Avance radial	Vorschub radial
f ax	Voeding axiaal	Avance axial	Avance axial	Vorschub axial
r	Radius	Rayon	Radio	Radius
	Kartelen	**Moleter**	**Moleteadores**	**Rändeln**
P	Steek	Passe	Paso	Teilung
	Frezen	**Fraisage**	**Fresar**	**Fräsen**
f_z (mm)	Voeding per tand	Avances par dent	Avances por diente	Vorschub pro Zahn
	Materiaalgroepen	**Groups de matières**	**Grupos de materiales**	**Materialgruppen**
P	Staal	Acier	Acero	Stahl
H	Geharde staalsoorten	Acier trempé	Acero templado	Gehärtete Stahlsorten
M	Roestvaststaal	Inox	Acero inoxidable	Rostfreier Stahl
K	Gietijzer	Fonte	Fundición	Gusseisen
N	Non-Ferro metalen & kunststoffen	Métaux non-ferreux & Plastiques	Metal non-ferrosos & Plásticos	Nichteisen Legierungen & Kunststoffen
S	Superlegeringen	Alliages super	Aleaciones súper	Superlegierungen

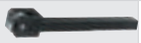
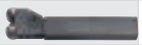
NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**

		7.
› 71.110	Phantom	P. 6
› 71.130	Phantom	P. 6
› 71.140	Phantom	P. 6
› 71.150	Phantom	P. 7
› 71.160	Phantom	P. 7
› 71.171		P. 7
› 71.175		P. 7
› 71.270		P. 8
› 71.400		P. 8
› 71.410		P. 8
› 71.420		P. 8
› 71.440		P. 8
› 71.500		P. 9
› 71.510		P. 9
› 71.520		P. 9
› 71.530		P. 9
› 71.550		P. 9
› 71.570		P. 10
› 71.600		P. 11
› 71.605		P. 11
› 71.610		P. 11
› 71.615		P. 11
› 71.620		P. 12
› 71.640		P. 12
› 71.650		P. 12
› 71.670		P. 13
› 71.680		P. 13
› 71.690		P. 13
› 71.695		P. 13
› 71.700		P. 14
› 71.705		P. 14
› 71.710		P. 14
› 71.715		P. 14
› 71.730		P. 15

› 71.750		P. 15
› 71.760		P. 15
› 71.770		P. 15
› 71.780		P. 16
› 72.121 Phantom		P. 18
› 73.105 Phantom		P. 19
› 72.156 › 72.160 Phantom		P. 20
› 73.171 › 73.175 › 73.180 Phantom		P. 21
› 72.225 › 72.240 › 72.245 Phantom		P. 22
› 73.225 › 73.230 › 73.235 Phantom		P. 23
› 72.265 › 72.280 Phantom		P. 24
› 73.275 Phantom		P. 25
› 72.325 Phantom		P. 26
› 73.390 › 73.395 › 73.400 Phantom		P. 27
› 72.340 › 72.345 Phantom		P. 28
› 73.429 › 73.435 › 73.440 Phantom		P. 29
› 72.385 Phantom		P. 30
› 73.495 Phantom		P. 31
› 72.420 Phantom		P. 32
› 73.550 › 73.565 › 73.570 Phantom		P. 33
› 72.450 › 72.455 Phantom		P. 34
› 73.610 › 73.630 Phantom		P. 35
› 72.461 Phantom		P. 36
› 73.725 Phantom		P. 37
› 72.485 Phantom		P. 38
› 73.750 › 73.755 Phantom		P. 39

› 72.500 › 72.505	Phantom		P. 40
› 73.775 › 73.790	Phantom		P. 41
› 72.515 › 72.520	Phantom		P. 42
› 73.830 › 73.840	Phantom		P. 43
› 72.540	Phantom		P. 44
› 73.171 › 73.175 › 73.180	Phantom		P. 45
› 72.545 › 72.555	Phantom		P. 46
› 73.225 › 73.230 › 73.235	Phantom		P. 47
› 72.558	Phantom		P. 48
› 73.275	Phantom		P. 49
› 72.560	Phantom		P. 50
› 73.390 › 73.395 › 73.400	Phantom		P. 51
› 72.563 › 72.565	Phantom		P. 52
› 73.429 › 73.435 › 73.440	Phantom		P. 53
› 72.570 › 72.575	Phantom		P. 54
› 73.495	Phantom		P. 55
› 72.585 › 72.590	Phantom		P. 56
› 73.550 › 73.565 › 73.570	Phantom		P. 57
› 72.595 › 72.600	Phantom		P. 58
› 73.610 › 73.630	Phantom		P. 59
› 72.605 › 72.610	Phantom		P. 60
› 73.750 › 73.755	Phantom		P. 61
› 72.615 › 72.620	Phantom		P. 62
› 73.775 › 73.790	Phantom		P. 63
› 72.630	Phantom		P. 64

› 73.830 › 73.840	Phantom		P. 65
› 74.101	Phantom		P. 66
› 74.125	Phantom		P. 66
› 74.150 › 74.160	Phantom		P. 67
› 74.155 › 74.165	Phantom		P. 67
› 74.390	Phantom		P. 68
› 74.395	Phantom		P. 68
› 74.170	Phantom		P. 69
› 74.180 › 74.190 › 74.240	Phantom		P. 70
› 74.175	Phantom		P. 71
› 74.185 › 74.195 › 74.245	Phantom		P. 72
› 74.400	Phantom		P. 73
› 74.410	Phantom		P. 73
› 74.480	Phantom		P. 74
› 74.500	Phantom		P. 75
› 74.510	Phantom		P. 75
› 74.517	Phantom		P. 75
› 74.582	Phantom		P. 76
› 74.599	Phantom		P. 76
› 74.522	Phantom		P. 77
› 74.596	Phantom		P. 77
› 74.540	Phantom		P. 77
› 74.560	Phantom		P. 77
› 74.605	Phantom		P. 78
› 74.620	Phantom		P. 78
› 74.610	Phantom		P. 79
› 74.625	Phantom		P. 79
› 75.100	Phantom		P. 80
› 75.103	Phantom		P. 80
› 75.106	Phantom		P. 80

› 75.109	Phantom		P. 81
› 75.115	Phantom		P. 81
› 75.121	Phantom		P. 81
› 75.125	Phantom		P. 82
› 75.129	Phantom		P. 82
› 75.133	Phantom		P. 83
› 75.158	Phantom		P. 84
› 75.174	Phantom		P. 84
› 75.182	Phantom		P. 84
› 75.197	Phantom		P. 85
› 75.300	Phantom		P. 86
› 75.500	Phantom		P. 86
› 76.100	Phantom		P. 87
› 76.615	Phantom		P. 87
› 76.115	Phantom		P. 88
› 76.470	Phantom		P. 88
› 76.125	Phantom		P. 89
› 76.500	Phantom		P. 89
› 76.135	Phantom		P. 90
› 76.520	Phantom		P. 90
› 76.145	Phantom		P. 91
› 76.146	Phantom		P. 91
› 76.365	Phantom		P. 91
› 76.155	Phantom		P. 92
› 76.156	Phantom		P. 92
› 76.366	Phantom		P. 92
› 76.230	Phantom		P. 93
› 76.710	Phantom		P. 93
› 79.510	Phantom		P. 94
› 79.613	Phantom		P. 94

› 71.110 Phantom



NL **HSS-E 5% Toolbit, geharde en geslepen uitvoering**
FR **Barreau HSS-E 5%, fraisé et rectifié**
ES **Cuchilla HSS-E 5%, versión templada y rectificada**
DE **HSS-E 5% Drehlinge, gehärtete und geschliffene Ausführung**

HSS-E | 5% Co | DIN 4964-D | h14

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

Ref.	h1	b1	l1
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

Ref.	h1	b1	l1
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

Ref.	h1	b1	l1
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**
FR **Barreau HSS-E 5%, fraisé et rectifié**
ES **Cuchilla HSS-E 5%, versión templada y rectificada**
DE **HSS-E 5% Drehlinge, gehärtete und geschliffene Ausführung**

HSS-E | 5% Co | DIN 4964-B | h14

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

Ref.	h1	b1	l1
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

Ref.	h1	b1	l1
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

Ref.	h1	b1	l1
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**
FR **Barreau HSS-E 10%, entièrement trempé et taillé**
ES **Cuchilla HSS-E 10%, totalmente templado y rectificado**
DE **HSS-E 10% Drehlinge, völlig gehärtet und geschliffen**

HSS-E | 10% Co | DIN 4964-B | h14

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

Ref.	h1	b1	l1
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

Ref.	h1	b1	l1
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

Ref.	h1	b1	l1
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

19:00 ▶ 🛒 ▶ 24h

› 71.150 Phantom



NL **HSS-E 5% Toolbit, geharde en geslepen uitvoering**
FR **Barreau HSS-E 5%, fraisé et rectifié**
ES **Cuchilla HSS-E 5%, versión templada y rectificada**
DE **HSS-E 5% Drehlinge, gehärtete und geschliffene Ausführung**

HSS-E | 5% Co | DIN 4964-A | h8

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.150.0410	4	100	71.150.0615	6	150	71.150.1020	10	200	71.150.1620	16	200
71.150.0415	4	150	71.150.0620	6	200	71.150.1210	12	100	71.150.1815	18	150
71.150.0420	4	200	71.150.0810	8	100	71.150.1215	12	150	71.150.1820	18	200
71.150.0510	5	100	71.150.0815	8	150	71.150.1220	12	200	71.150.2020	20	200
71.150.0515	5	150	71.150.0820	8	200	71.150.1415	14	150	71.150.2520	25	200
71.150.0520	5	200	71.150.1010	10	100	71.150.1420	14	200			
71.150.0610	6	100	71.150.1015	10	150	71.150.1615	16	150			

› 71.160 Phantom



NL **HSS-E 10% Toolbit, geharde en geslepen uitvoering**
FR **Barreau HSS-E 10%, fraisé et rectifié**
ES **Cuchilla HSS-E 10%, versión templada y rectificada**
DE **HSS-E 10% Drehlinge, gehärtete und geschliffene Ausführung**

HSS-E | 10% Co | DIN 4964-A | h8

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.160.0310	3	100	71.160.0610	6	100	71.160.1015	10	150	71.160.1615	16	150
71.160.0410	4	100	71.160.0615	6	150	71.160.1020	10	200	71.160.1620	16	200
71.160.0415	4	150	71.160.0620	6	200	71.160.1210	12	100	71.160.1815	18	150
71.160.0420	4	200	71.160.0810	8	100	71.160.1215	12	150	71.160.1820	18	200
71.160.0510	5	100	71.160.0815	8	150	71.160.1220	12	200	71.160.2020	20	200
71.160.0515	5	150	71.160.0820	8	200	71.160.1415	14	150	71.160.2520	25	200
71.160.0520	5	200	71.160.1010	10	100	71.160.1420	14	200			

› 71.171



NL **VHM-MG Staaf, geslepen, met enkelzijdige fase 45°**
FR **Barreau Carbure MG, fraisé, avec phase unilatérale 45°**
ES **Barra MD-MG, rectificadas, con fase unilateral 45°**
DE **VHM-MG Stäbe, geschmiedet, mit einseitiger Fase 45°**

MG HM | Phantom | K20 K40 | h5 | 0,02

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.171.0610	6	100	71.171.1010	10	100	71.171.1612	16	120			
71.171.0810	8	100	71.171.1210	12	100	71.171.2515	25	150			

› 71.175



NL **VHM-MG Staaf, geslepen**
FR **Barreau Carbure MG, fraisé**
ES **Barra MD-MG, rectificadas**
DE **VHM-MG Stäbe, geschmiedet**

MG HM | Phantom | K15 K20 | h6 | 0,02

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.175.0200	2	330	71.175.0400	4	330	71.175.0600	6	330	71.175.1000	10	330
71.175.0300	3	330	71.175.0500	5	330	71.175.0800	8	330	71.175.1200	12	330

› 71.270



NL **HSS Steekbeitel**
FR **Outil à saigner HSS**
ES **Herramienta de tronzar HSS**
DE **HSS Stechdrehmeissel**

Ref.	h1	b1	l1	a	t max
71.270.1603	16	16	180	3	30
71.270.1604	16	16	180	4	35

Ref.	h1	b1	l1	a	t max
71.270.2005	20	20	210	5	48
71.270.2006	20	20	210	6	60

Ref.	h1	b1	l1	a	t max
71.270.2008	20	20	210	8	80
71.270.2508	25	25	250	8	80

› 71.400



NL **HSS Rechte Ruwbeitel, rechts**
FR **HSS Outil à charioter droit, à droite**
ES **HSS Herramienta de torneado recto, a derecha**
DE **HSS Gerader Schruppdrehmeissel, Rechts**

Ref.	h1	b1	l1
71.400.0808	8	8	80
71.400.1010	10	10	100

Ref.	h1	b1	l1
71.400.1212	12	12	125
71.400.1616	16	16	150

Ref.	h1	b1	l1
71.400.2020	20	20	175
71.400.2525	25	25	200

› 71.410



NL **HSS Gebogen Ruwbeitel, rechts**
FR **Outil à charioter courbé HSS, à droite**
ES **Herramienta de torneado curva HSS, a derecha**
DE **HSS Gebogene Schruppdrehmeissel, Rechts**

Ref.	h1	b1	l1
71.410.0808	8	8	80
71.410.1010	10	10	100

Ref.	h1	b1	l1
71.410.1212	12	12	125
71.410.1616	16	16	150

Ref.	h1	b1	l1
71.410.2020	20	20	175
71.410.2525	25	25	200

› 71.420

NL **HSS Boorbeitel, rechts, voor doorlopende gaten**
FR **Outil à aléser HSS, à droite, pour trous débouchants**
ES **Herramienta de torneado interno HSS, a derecha, para agujeros pasantes**
DE **HSS Bohrdrehmeissel, Rechts, für Durchgangslöcher**





Ref.	h1	b1	l1	d1 min.
71.420.0606	6	6	130	11
71.420.0808	8	8	140	14
71.420.1010	10	10	160	18

Ref.	h1	b1	l1	d1 min.
71.420.1212	12	12	180	21
71.420.1616	16	16	210	27
71.420.2020	20	20	250	34

Ref.	h1	b1	l1	d1 min.
71.420.2525	25	25	300	43

› 71.440

NL **HSS Boorbeitel, rechts, voor blinde gaten**
FR **Outil à aléser, à droite HSS, pour trous borgnes**
ES **Herramienta de torneado interior HSS, a derecha, para agujeros ciegos**
DE **HSS Bohrdrehmeissel, Rechts, für Sacklöcher**





Ref.	h1	b1	l1	d1 min.
71.440.0606	6	6	130	11
71.440.0808	8	8	140	14
71.440.1010	10	10	160	18

Ref.	h1	b1	l1	d1 min.
71.440.1212	12	12	180	21
71.440.1616	16	16	180	27
71.440.2020	20	20	250	34

Ref.	h1	b1	l1	d1 min.
71.440.2525	25	25	300	43
71.440.3232	32	32	355	52

19:00 ▶ 🛒 ▶ 24h

› 71.500



NL **HSS Mesbeitel, rechts**
FR **Outil couteau HSS, à droite**
ES **Herramienta para corte y acabado HSS, a derecha**
DE **HSS Seitendrehmeissel, Rechts**

Ref.	h1	b1	l1
71.500.0808	8	8	80
71.500.1010	10	10	100

Ref.	h1	b1	l1
71.500.1212	12	12	125
71.500.1616	16	16	140

Ref.	h1	b1	l1
71.500.2020	20	20	175
71.500.2525	25	25	200

› 71.510



NL **HSS Vlakbeitel, recht**
FR **Outil pelle HSS, droit**
ES **Herramienta de torneado para acabados HSS, recto**
DE **HSS Flachdrehmeissel, Gerade**

Ref.	h1	b1	l1
71.510.2012	20	12	125

Ref.	h1	b1	l1
71.510.2516	25	16	140

Ref.	h1	b1	l1
71.510.3220	32	20	170

› 71.520



NL **HSS Steekbeitel, rechts**
FR **Outil à saigner HSS, à droite**
ES **Herramienta de tronzar HSS, a derecha**
DE **HSS Stechdrehmeissel, Rechts**

Ref.	h1	b1	l1	a
71.520.0808	8	8	100	3
71.520.1010	10	10	100	4
71.520.1208	12	8	110	3
71.520.1212	12	12	110	4

Ref.	h1	b1	l1	a
71.520.1610	16	10	125	4
71.520.1616	16	16	140	5
71.520.2012	20	12	140	5
71.520.2020	20	20	160	6

Ref.	h1	b1	l1	a
71.520.2516	25	16	180	6
71.520.3220	32	20	220	8

› 71.530

NL **HSS Binnensteekbeitel, rechts, DIN 4963**
FR **Outil à chambrer HSS, à droite, DIN 4963**
ES **Herramienta para tronzar interior HSS, a derecha, DIN 4963**
DE **HSS Innenhakenstechmeissel, Rechts, DIN 4963**



Ref.	h1	b1	l1	d1 min.	a
71.530.0606	6	6	125	12	2
71.530.0808	8	8	140	16	3
71.530.1010	10	10	160	22	3

Ref.	h1	b1	l1	d1 min.	a
71.530.1212	12	12	180	28	3
71.530.1616	16	16	220	32	3
71.530.2020	20	20	250	40	4

Ref.	h1	b1	l1	d1 min.	a
71.530.2525	25	25	315	53	5
71.530.3232	32	32	345	68	6

› 71.550



NL **HSS Buitendraadsnijbeitel, rechts, 60°**
FR **Outil à fileter extérieur HSS, à droite, 60°**
ES **Herramienta para roscado exterior HSS, a derecha, 60°**
DE **HSS Aussengewinde-Drehmeißel, Rechts, 60°**

Ref.	h1	b1	l1
71.550.0808	8	8	80
71.550.1010	10	10	100
71.550.1212	12	12	125

Ref.	h1	b1	l1
71.550.1610	16	10	110
71.550.2012	20	12	125
71.550.2516	25	16	140

Ref.	h1	b1	l1
71.550.3220	32	20	170

› 71.570

NL **HSS Binnendraadsnijbeitel, rechts, 60°**
FR **Outil à fileter intérieur HSS, à droite, 60°**
ES **Herramienta para roscado interior HSS, a derecha, 60°**
DE **HSS Innengewinde-Drehmeißel, Rechts, 60°**



Ref.	h1	b1	l1	d1 min.
71.570.0606	6	6	60	12
71.570.0808	8	8	140	16
71.570.1010	10	10	160	20

Ref.	h1	b1	l1	d1 min.
71.570.1212	12	12	180	24
71.570.1616	16	16	210	32
71.570.2020	20	20	250	38

Ref.	h1	b1	l1	d1 min.
71.570.2525	25	25	300	44

› 71.600



NL **HM-tip Rechte Ruwbeitel, rechts**
FR **Outil à charioter droit pointe carb. mét., à droite**
ES **Herramienta de torneado recto Punta MD , a derecha**
DE **HM-Schneiden Gerader Schruppdrehmeissel, Rechts**

HM-TIP	DIN 4971	ISO 1

Ref.	h1	b1	l1	HM
71.600.1020	10	10	90	P20
71.600.1030	10	10	90	P30
71.600.1090	10	10	90	K10
71.600.1220	12	12	100	P20
71.600.1230	12	12	100	P30
71.600.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.600.1620	16	16	110	P20
71.600.1630	16	16	110	P30
71.600.1690	16	16	110	K10
71.600.2020	20	20	125	P20
71.600.2030	20	20	125	P30
71.600.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.600.2520	25	25	140	P20
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



NL **HM-tip Rechte Ruwbeitel, links**
FR **Outil à charioter droit pointe carb. mét., gauche**
ES **Herramienta de torneado recto Punta MD , a la izquierda**
DE **HM-Schneiden Gerader Schruppdrehmeissel, Links**

HM-TIP	DIN 4971	ISO 1

Ref.	h1	b1	l1	HM
71.605.1020	10	10	90	P20
71.605.1030	10	10	90	P30
71.605.1090	10	10	90	K10
71.605.1220	12	12	100	P20
71.605.1230	12	12	100	P30
71.605.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.605.1620	16	16	110	P20
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

Ref.	h1	b1	l1	HM
71.605.2520	25	25	140	P20
71.605.2530	25	25	140	P30
71.605.2590	25	25	140	K10
71.605.3290	32	32	170	K10

› 71.610



NL **HM-tip Gebogen Ruwbeitel, rechts**
FR **Outil à charioter courbé pointe carb. mét., à droite**
ES **Herramienta de torneado curva Punta MD, a derecha**
DE **HM-Schneiden Gebogene Schruppdrehmeissel, Rechts**

HM-TIP	DIN 4972	ISO 2

Ref.	h1	b1	l1	HM
71.610.1020	10	10	90	P20
71.610.1030	10	10	90	P30
71.610.1090	10	10	90	K10
71.610.1220	12	12	100	P20
71.610.1230	12	12	100	P30
71.610.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.610.1620	16	16	110	P20
71.610.1630	16	16	110	P30
71.610.1690	16	16	110	K10
71.610.2020	20	20	125	P20
71.610.2030	20	20	125	P30
71.610.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.610.2520	25	25	140	P20
71.610.2530	25	25	140	P30
71.610.2590	25	25	140	K10
71.610.3220	32	32	170	P20
71.610.3230	32	32	170	P30
71.610.3290	32	32	170	K10

› 71.615



NL **HM-tip Gebogen Ruwbeitel, links**
FR **Outil à charioter courbé pointe carb. mét., gauche**
ES **Herramienta de torneado curva Punta MD, a la izquierda**
DE **HM-Schneiden Gebogene Schruppdrehmeissel, Links**

HM-TIP	DIN 4972	ISO 2

Ref.	h1	b1	l1	HM
71.615.1020	10	10	90	P20
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

Ref.	h1	b1	l1	HM
71.615.1620	16	16	110	P20
71.615.1630	16	16	110	P30
71.615.1690	16	16	110	K10
71.615.2020	20	20	125	P20
71.615.2030	20	20	125	P30
71.615.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
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

NL **HM-tip Boorbeitel, rechts, voor doorlopende gaten**
FR **Outil à aléser pointe carb. mét., à droite, pour trous débouchants**
ES **Herramienta de torneado interno Punta MD, a derecha, para agujeros pasantes**
DE **HM-Schneiden Bohrdrehmeissel, Rechts, für Durchgangslöcher**



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
71.620.0890	8	8	125	14	K10
71.620.1020	10	10	150	18	P20
71.620.1030	10	10	150	18	P30
71.620.1090	10	10	150	18	K10
71.620.1220	12	12	180	21	P20

Ref.	h1	b1	l1	d1 min.	HM
71.620.1230	12	12	180	21	P30
71.620.1290	12	12	180	21	K10
71.620.1620	16	16	210	27	P20
71.620.1630	16	16	210	27	P30
71.620.1690	16	16	210	27	K10
71.620.2020	20	20	250	34	P20
71.620.2030	20	20	250	34	P30

Ref.	h1	b1	l1	d1 min.	HM
71.620.2090	20	20	250	34	K10
71.620.2530	25	25	300	43	P30
71.620.2590	25	25	300	43	K10
71.620.3230	32	32	355	52	P30
71.620.3290	32	32	355	52	K10

› 71.640

NL **HM-tip Boorbeitel, rechts, voor blinde gaten**
FR **Outil à aléser pointe carb. mét., à droite, pour trous borgnes**
ES **Herramienta de torneado interior Punta MD, a derecha, para agujeros ciegos**
DE **HM-Schneiden Bohrdrehmeissel, Rechts, für Sacklöcher**



HM-TIP | DIN 4974 | ISO 9

Ref.	h1	b1	l1	d1 min.	HM
71.640.0820	8	8	125	14	P20
71.640.0830	8	8	125	14	P30
71.640.0890	8	8	125	14	K10
71.640.1020	10	10	150	18	P20
71.640.1030	10	10	150	18	P30
71.640.1090	10	10	150	18	K10
71.640.1220	12	12	180	21	P20

Ref.	h1	b1	l1	d1 min.	HM
71.640.1230	12	12	180	21	P30
71.640.1290	12	12	180	21	K10
71.640.1620	16	16	210	27	P20
71.640.1630	16	16	210	27	P30
71.640.1690	16	16	210	27	K10
71.640.2020	20	20	250	34	P20
71.640.2030	20	20	250	34	P30

Ref.	h1	b1	l1	d1 min.	HM
71.640.2090	20	20	250	34	K10
71.640.2520	25	25	300	43	P20
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

NL **HM-tip Boorbeitel, rechts, voor blinde gaten**
FR **Outil à aléser pointe carb. mét., à droite, pour trous borgnes**
ES **Herramienta de torneado interior Punta MD, a derecha, para agujeros ciegos**
DE **HM-Schneiden Bohrdrehmeissel, Rechts, für Sacklöcher**



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

Ref.	h1	l1	d1 min.	HM
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

Ref.	h1	l1	d1 min.	HM
71.650.2030	20	250	34	P30
71.650.2090	20	250	34	K10
71.650.2530	25	300	43	P30
71.650.2590	25	300	43	K10

19:00 ▶ 🛒 ▶ 24h

› 71.670



NL **HM-tip Puntbeitel, 80°**
FR **Outil à retoucher pointe carb. mét. , 80°**
ES **Herramienta de cilindrar y afinar Punta MD, 80°**
DE **HM-Schneiden Spitzdrehmeissel, 80°**

HM-TIP	DIN	ISO
	4975	10

Ref.	h1	b1	l1	HM
71.670.1620	16	10	110	P20
71.670.1630	16	10	110	P30
71.670.1690	16	10	110	K10
71.670.2020	20	12	125	P20

Ref.	h1	b1	l1	HM
71.670.2030	20	12	125	P30
71.670.2090	20	12	125	K10
71.670.2520	25	16	140	P20
71.670.2530	25	16	140	P30

Ref.	h1	b1	l1	HM
71.670.2590	25	16	140	K10
71.670.3230	32	20	170	P30
71.670.3290	32	20	170	K10

› 71.680



NL **HM-tip Vlakbeitel, recht**
FR **Outil pelle pointe carb. mét., droit**
ES **Herramienta de torneado para acabados Punta MD, recto**
DE **HM-Schneiden Flachdrehmeissel, Gerade**

HM-TIP	DIN	ISO
	4976	4

Ref.	h1	b1	l1	HM
71.680.1020	10	10	90	P20
71.680.1030	10	10	90	P30
71.680.1090	10	10	90	K10
71.680.1220	12	12	100	P20
71.680.1230	12	12	100	P30

Ref.	h1	b1	l1	HM
71.680.1290	12	12	100	K10
71.680.1620	16	16	110	P20
71.680.1630	16	16	110	P30
71.680.1690	16	16	110	K10
71.680.2020	20	20	125	P20

Ref.	h1	b1	l1	HM
71.680.2030	20	20	125	P30
71.680.2090	20	20	125	K10
71.680.2530	25	25	140	P30
71.680.2590	25	25	140	K10

› 71.690



NL **HM-tip Gebogen Vlakbeitel, rechts**
FR **Outil pelle courbé pointe carb. mét., à droite**
ES **Herramienta de torneado curva Punta MD para acabados, a derecha**
DE **HM-Schneiden Gebogene Flachdrehmeissel, Rechts**

HM-TIP	DIN	ISO
	4977	5

Ref.	h1	b1	l1	HM
71.690.1620	16	16	110	P20
71.690.1630	16	16	110	P30
71.690.1690	16	16	110	K10
71.690.2020	20	20	125	P20

Ref.	h1	b1	l1	HM
71.690.2030	20	20	125	P30
71.690.2090	20	20	125	K10
71.690.2530	25	25	140	P30
71.690.2590	25	25	140	K10

Ref.	h1	b1	l1	HM
71.690.3230	32	32	170	P30
71.690.3290	32	32	170	K10

› 71.695



NL **HM-tip Gebogen Vlakbeitel, links**
FR **Outil pelle courbé pointe carb. mét. , gauche**
ES **Herramienta de torneado curva Punta MD para acabados, a la izquierda**
DE **HM-Schneiden Gebogene Flachdrehmeissel, Links**

HM-TIP	DIN	ISO
	4977	5

Ref.	h1	b1	l1	HM
71.695.1630	16	16	110	P30
71.695.1690	16	16	110	K10

Ref.	h1	b1	l1	HM
71.695.2030	20	20	125	P30
71.695.2090	20	20	125	K10

Ref.	h1	b1	l1	HM

› 71.700



NL **HM-tip Mesbeitel, rechts**
FR **Outil couteau pointe carb. mét., à droite**
ES **Herramienta para corte y acabado Punta MD, a derecha**
DE **HM-Schneiden Seitendrehmeissel, Rechts**

HM-TIP	DIN	ISO
	4980	6

Ref.	h1	b1	l1	HM
71.700.1020	10	10	90	P20
71.700.1030	10	10	90	P30
71.700.1090	10	10	90	K10
71.700.1220	12	12	100	P20
71.700.1230	12	12	100	P30
71.700.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.700.1620	16	16	110	P20
71.700.1630	16	16	110	P30
71.700.1690	16	16	110	K10
71.700.2020	20	20	125	P20
71.700.2030	20	20	125	P30
71.700.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.700.2530	25	25	140	P30
71.700.2590	25	25	140	K10
71.700.3230	32	32	170	P30
71.700.3290	32	32	170	K10

› 71.705 Phantom



NL **HM-tip Mesbeitel, links**
FR **Outil couteau pointe carb. mét., gauche**
ES **PHerramienta para corte y acabado unta MD, a la izquierda**
DE **HM-Schneiden Seitendrehmeissel, Links**

HM-TIP	DIN	ISO
	4980	6

Ref.	h1	b1	l1	HM
71.705.1020	10	10	90	P20
71.705.1030	10	10	90	P30
71.705.1090	10	12	90	K10
71.705.1220	12	12	100	P20
71.705.1230	12	12	100	P30
71.705.1290	12	16	100	K10

Ref.	h1	b1	l1	HM
71.705.1620	16	16	110	P20
71.705.1630	16	16	110	P30
71.705.1690	16	20	110	K10
71.705.2020	20	20	125	P20
71.705.2030	20	20	125	P30
71.705.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.705.2520	25	25	140	P20
71.705.2530	25	25	140	P30
71.705.2590	25	25	140	K10
71.705.3230	32	32	170	P30
71.705.3290	32	32	170	K10

› 71.710 Phantom



NL **HM-tip Steekbeitel, rechts**
FR **Outil à saigner pointe carb. mét., à droite**
ES **Herramienta de tronzar Punta MD, a derecha**
DE **HM-Schneiden Stechdrehmeissel, Rechts**

HM-TIP	DIN	ISO
	4981	7

Ref.	h1	b1	l1	a	HM
71.710.1220	12	8	100	3	P20
71.710.1230	12	8	100	3	P30
71.710.1290	12	8	100	3	K10
71.710.1620	16	10	110	4	P20
71.710.1630	16	10	110	4	P30

Ref.	h1	b1	l1	a	HM
71.710.1690	16	10	110	4	K10
71.710.2020	20	12	125	5	P20
71.710.2030	20	12	125	5	P30
71.710.2090	20	12	125	5	K10
71.710.2520	25	16	140	6	P20

Ref.	h1	b1	l1	a	HM
71.710.2530	25	16	140	6	P30
71.710.2590	25	16	140	6	K10
71.710.3230	32	20	170	8	P30
71.710.3290	32	20	170	8	K10

› 71.715 Phantom



NL **HM-tip Steekbeitel, links**
FR **Outil à saigner pointe carb. mét., gauche**
ES **Herramienta de tronzar Punta MD, a la izquierda**
DE **HM-Schneiden Stechdrehmeissel, Links**

HM-TIP	DIN	ISO
	4981	7

Ref.	h1	b1	l1	a	HM
71.715.1220	12	8	100	3	P20
71.715.1230	12	8	100	3	P30
71.715.1290	12	8	100	3	K10
71.715.1620	16	10	110	4	P20
71.715.1630	16	10	110	4	P30

Ref.	h1	b1	l1	a	HM
71.715.1690	16	10	110	4	K10
71.715.2020	20	12	125	5	P20
71.715.2030	20	12	125	5	P30
71.715.2090	20	12	125	5	K10
71.715.2520	25	16	140	6	P20

Ref.	h1	b1	l1	a	HM
71.715.2530	25	16	140	6	P30
71.715.2590	25	16	140	6	K10
71.715.3230	32	20	170	8	P30
71.715.3290	32	20	170	8	K10

19:00 ▶ 24h

› 71.730



NL **HM-tip Binnenkamerbeitel, rechts**
FR **Outil à chambrer interieur pointe carb. mét., à droite**
ES **Herramienta para ranurar interior Punta MD, a derecha**
DE **HM-Schneiden Innenhakendrehmeissel, Rechts**

HM-TIP | DIN 263 | ISO 11

Ref.	h1	b1	l1	d1 min.	a	t max	HM
71.730.1020	10	10	150	28	3	8	P20
71.730.1030	10	10	140	28	3	8	P30
71.730.1090	10	10	150	28	3	8	K10
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

Ref.	h1	b1	l1	d1 min.	a	t max	HM
71.730.1620	16	12	210	40	5	12	P20
71.730.1630	16	16	210	40	5	12	P30
71.730.1690	16	16	210	40	5	12	K10
71.730.2020	20	16	250	50	6	16	P20
71.730.2030	20	20	250	50	6	16	P30
71.730.2090	20	20	250	50	6	16	K10

Ref.	h1	b1	l1	d1 min.	a	t max	HM
71.730.2520	25	20	300	63	8	20	P20
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	P20
71.730.3290	32	32	355	80	10	25	K10

› 71.750



NL **HM-tip Buitendraadsnijbeitel, 60°, rechts**
FR **Outil à fileter extérieur pointe carb. mét., 60°, à droite**
ES **Herramienta para roscado exterior Punta MD, 60°, a derecha**
DE **HM-Schneiden Aussengewinde-Drehmeißel, 60°, Rechts**

HM-TIP | DIN 282 | ISO 12

Ref.	h1	b1	l1	HM
71.750.1020	10	10	90	P20
71.750.1030	10	10	90	P30
71.750.1090	10	10	90	K10
71.750.1220	12	12	100	P20
71.750.1230	12	12	100	P30

Ref.	h1	b1	l1	HM
71.750.1290	12	12	100	K10
71.750.1620	16	16	110	P20
71.750.1630	16	16	110	P30
71.750.1690	16	16	125	K10
71.750.2020	20	20	125	P20

Ref.	h1	b1	l1	HM
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



NL **HM-tip Buitendraadsnijbeitel, 55°, rechts**
FR **Outil à fileter extérieur pointe carb. mét., 55°, à droite**
ES **Herramienta para roscado exterior Punta MD, 55°, a derecha**
DE **HM-Schneiden Aussengewinde-Drehmeißel, 55°, Rechts**

HM-TIP | DIN 282

Ref.	h1	b1	l1	HM
71.760.1020	10	10	90	P20
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

Ref.	h1	b1	l1	HM
71.760.1290	12	12	100	K10
71.760.1620	16	16	110	P20
71.760.1630	16	16	110	P30
71.760.1690	16	16	110	K10
71.760.2020	20	20	125	P20

Ref.	h1	b1	l1	HM
71.760.2030	20	20	125	P30
71.760.2520	25	25	140	P20
71.760.2530	25	25	140	P30
71.760.2590	25	25	140	K10

› 71.770

NL **HM-tip Binnendraadsnijbeitel, 60°, rechts**
FR **Outil à fileter intérieur pointe carb. mét., 60°, à droite**
ES **Herramienta para roscado interior Punta MD, 60°, a derecha**
DE **HM-Schneiden Innengewinde-Drehmeißel, 60°, Rechts**



HM-TIP | DIN 283

Ref.	h1	b1	l1	d1 min.	HM
71.770.1020	10	10	150	28	P20
71.770.1030	10	10	150	28	P30
71.770.1090	10	10	150	28	K10
71.770.1220	12	12	180	32	P20
71.770.1230	12	12	180	32	P30

Ref.	h1	b1	l1	d1 min.	HM
71.770.1290	12	12	180	32	K10
71.770.1620	16	16	210	40	P20
71.770.1630	16	16	210	40	P30
71.770.1690	16	16	210	40	K10
71.770.2020	20	20	250	50	P20

Ref.	h1	b1	l1	d1 min.	HM
71.770.2030	20	20	250	50	P30
71.770.2090	20	20	250	50	K10
71.770.2530	25	25	300	63	P30
71.770.2590	25	25	300	63	K10

› 71.780

NL **HM-tip Binnendraadsnijbeitel, 55°, rechts**
FR **Outil à fileter intérieur pointe carb. mét., 55°, à droite**
ES **Herramienta para roscado interior Punta MD, 55°, a derecha**
DE **HM-Schneiden Innengewinde-Drehmeißel, 55°, Rechts**



HM-TIP

DIN 345

Ref.	h1	b1	l1	d1 min.	HM
71.780.1020	10	10	140	28	P20
71.780.1030	10	10	140	28	P30
71.780.1090	10	10	140	28	K10
71.780.1220	12	12	160	32	P20
71.780.1230	12	12	160	32	P30

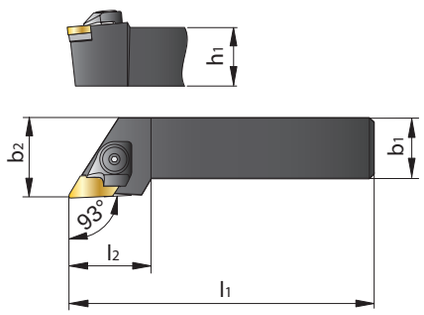
Ref.	h1	b1	l1	d1 min.	HM
71.780.1290	12	12	160	32	K10
71.780.1620	16	16	180	40	P20
71.780.1630	16	16	180	40	P30
71.780.1690	16	16	180	40	K10
71.780.2020	20	20	210	50	P20

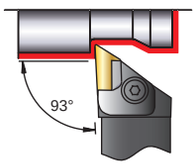
Ref.	h1	b1	l1	d1 min.	HM
71.780.2030	20	20	210	50	P30
71.780.2090	20	20	210	50	K10
71.780.2530	25	25	250	63	P30
71.780.2590	25	25	250	63	K10

› 72.121 Phantom

NL **WISSELPLAATHOUDER CKJNR/L**
FR **PORTE-PLAQUETTE CKJNR/L**
ES **PORTAPLAQUITA CKJNR/L**
DE **KLEMMHALTER CKJNR/L**







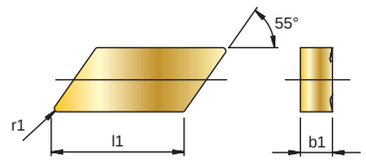


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7	8
72.121.1250	CKJNR 2525-M16	25	25	32	150	35	73.998.0025	73.998.0065	73.998.0190	73.998.0335	73.998.0285	73.998.0345	73.998.0405	KNUX 1604..
72.121.2250	CKJNL 2525-M16	25	25	32	150	35	73.998.0026	73.998.0065	73.998.0190	73.998.0335	73.998.0286	73.998.0345	73.998.0405	KNUX 1604..

19:00 24h

› 73.105 Phantom

NL **WISSELPLAAT KNUX**
FR **PLAQUETTE KNUX**
ES **PLAQUITA KNUX**
DE **WENDEPLATTE KNUX**



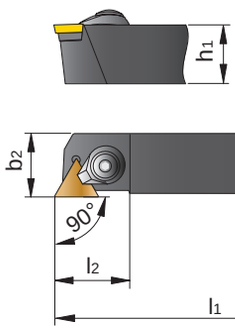
KN..	l1(mm)	b1(mm)	r1(mm)
16	16,0	4,76	0,5-1,0

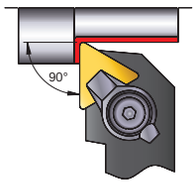
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.105.0205	KNUX 160405-EL11 HC-P25		1-4	0,2-0,5	P							▽▽		○	⌒	
73.105.0025	KNUX 160405-ER11 HC-P10/K10		1-4	0,2-0,5	P		K					▽▽		○	⌒	
73.105.0155	KNUX 160405-ER11 HC-P25		1-4	0,2-0,5	P							▽▽		○	⌒	
73.105.0355	KNUX 160405-ER12 HC-P25		3-6	0,2-0,5	P							▽▽	▽	○	⌒	◌
73.105.0455	KNUX 160410-ER12 HC-P25		3-6	0,2-0,5	P											

› 72.156 Phantom

NL **WISSELPLAATHOUDER CTGPR/L**
FR **PORTE-PLAQUETTE CTGPR/L**
ES **PORTAPLAQUITA CTGPR/L**
DE **KLEMMHALTER CTGPR/L**







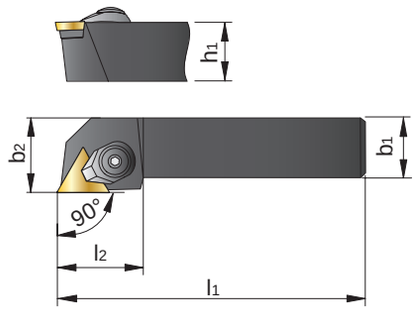


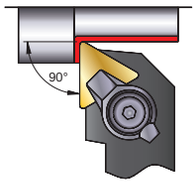
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4
72.156.1120	CTGPR 1212 F11	12	12	16	80	16,5	73.998.0020	73.998.0060	73.998.0420	TP.. 1103..
72.156.1150	CTGPR 1616 H11	16	16	20	100	20	73.998.0020	73.998.0060	73.998.0420	TP.. 1103..
72.156.2120	CTGPL 1212 F11	12	12	16	80	16,5	73.998.0020	73.998.0060	73.998.0420	TP.. 1103..

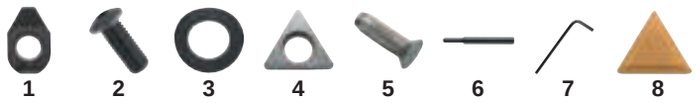
› 72.160 Phantom

NL **WISSELPLAATHOUDER CTAPR/L**
FR **PORTE-PLAQUETTE CTAPR/L**
ES **PORTAPLAQUITA CTAPR/L**
DE **KLEMMHALTER CTAPR/L**









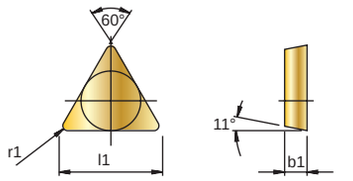
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7	8
72.160.1200	CTAPR 2020 K16	20	20	20,5	125	30	73.998.0015	73.998.0050	73.998.0390	73.998.0280	73.998.0345	73.998.0440	73.998.0405	TP.. 1603..
72.160.1250	CTAPR 2525 M16	25	25	25,5	150	30	73.998.0015	73.998.0050	73.998.0390	73.998.0280	73.998.0345	73.998.0440	73.998.0405	TP.. 1603..
72.160.2250	CTAPL 2525 M16	25	25	25,5	150	30	73.998.0015	73.998.0050	73.998.0390	73.998.0280	73.998.0345	73.998.0440	73.998.0405	TP.. 1603..

19:00 ▶ 24h

› 73.171
› 73.175
› 73.180

Phantom

NL **WISSELPLAAT TPMR, TPUN, TPUX**
FR **PLAQUETTE TPMR, TPUN, TPUX**
ES **PLAQUITA TPMR, TPUN, TPUX**
DU **WENDEPLATTE TPMR, TPUN, TPUX**



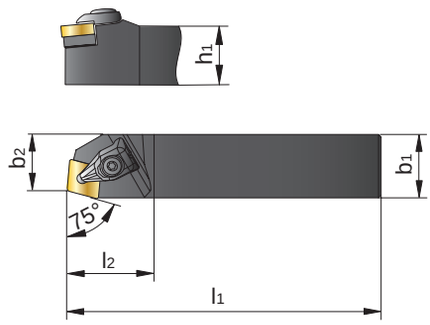
TP..	l1(mm)	b1(mm)	r1(mm)
11	11,0	3,18	0,4-0,8
16	16,5	3,18	0,4-1,2
22	22,0	4,76	0,8

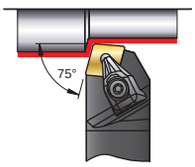
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.171.0150	TPMR 110304E HC-P15		0,5-2	0,05-0,15	P							▽▽		○	◠	
73.171.0200	TPMR 110308 HC-P25/M20/S15															
73.171.0300	TPMR 160304E HC-P15		0,5-3	0,1-0,25	P							▽▽		○	◠	
73.171.0350	TPMR 160308E HC-P25/M20/S15		0,5-3	0,1-0,25	P	M			S			▽▽		○	◠	
73.175.0175	TPUN 110304E P25		0,5-2	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0425	TPUN 160304E P25		0,5-3	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0450	TPUN 160304E HC-P25/M20/S15		0,5-3	0,1-0,25	P	M			S			▽▽		○	◠	
73.175.0525	TPUN 160308 P25		1-4	0,2-0,5	P							▽▽		○	◠	
73.175.0550	TPUN 160308 HC-P25		1-4	0,2-0,5	P							▽▽		○	◠	
73.175.0650	TPUN 160312 HC-P35/M25		1,5-5	0,1-0,3	P	M						▽▽	▽		◠	◌
73.180.0100	TPUX 110304R P25		0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0150	TPUX 110304L P25		0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0500	TPUX 160304R P25		0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0550	TPUX 160304L P25		0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0700	TPUX 160308R P25		1-4	0,2-0,5	P		K	N				▽▽		○	◠	
73.180.0750	TPUX 160308L P25		1-4	0,2-0,5	P		K	N				▽▽		○	◠	

› 72.225 Phantom

NL **WISSELPLAATHOUDER DCBNR/L**
FR **PORTE-PLAQUETTE DCBNR/L**
ES **PORTAPLAQUITA DCBNR/L**
DE **KLEMMHALTER DCBNR/L**







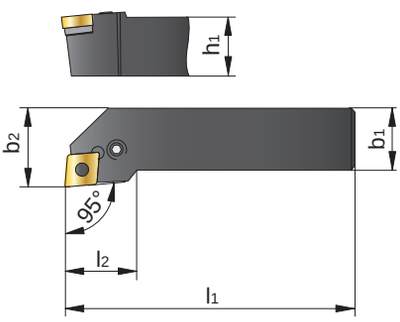


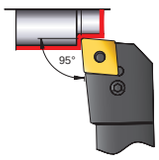
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.225.1250	DCBNR 2525 M12	25	25	22	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.225.2250	DCBNL 2525 M12	25	25	22	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..

› 72.240 Phantom

NL **WISSELPLAATHOUDER PCLNR/L**
FR **PORTE-PLAQUETTE PCLNR/L**
ES **PORTAPLAQUITA PCLNR/L**
DE **KLEMMHALTER PCLNR/L**







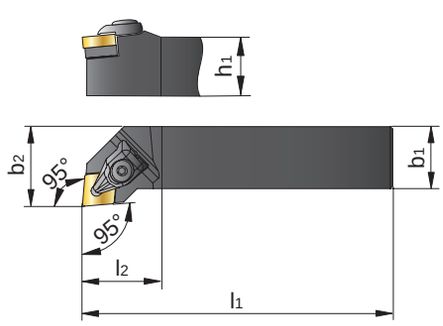


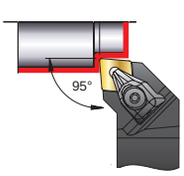
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7
72.240.1150	PCLNR 1616 H12	16	16	20	100	26,1	73.998.0150	73.998.0150	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.1200	PCLNR 2020 K12	20	20	25	125	27,4	73.998.0150	73.998.0150	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.1250	PCLNR 2525 M12	25	25	32	150	28	73.998.0150	73.998.0150	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.1320	PCLNR 3225 P12	32	32	32	170	32,6	73.998.0150	73.998.0150	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.2200	PCLNL 2020 K12	20	20	25	125	27,4	73.998.0150	73.998.0150	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.2250	PCLNL 2525 M12	25	25	32	150	28	73.998.0150	73.998.0150	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.2320	PCLNL 3225 P12	32	32	32	170	32,6	73.998.0150	73.998.0150	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..

› 72.245 Phantom

NL **WISSELPLAATHOUDER DCLNR/L**
FR **PORTE-PLAQUETTE DCLNR/L**
ES **PORTAPLAQUITA DCLNR/L**
DE **KLEMMHALTER DCLNR/L**









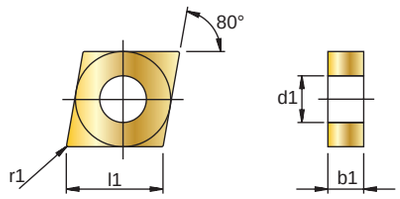
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.245.1200	DCLNR 2020 K12	20	20	25	125	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.1250	DCLNR 2525 M12	25	25	32	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.1320	DCLNR 3225 P12	32	25	32	170	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.2200	DCLNL 2020 K12	20	20	25	125	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.2250	DCLNL 2525 M12	25	25	32	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.2320	DCLNL 3225 P12	32	25	32	170	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..

19:00 ▶ 24h

› 73.225
› 73.230
› 73.235

Phantom

NL **WISSELPLAAT CNMA, CNMG, CNMM, CNGP**
FR **PLAQUETTE CNMA, CNMG, CNMM, CNGP**
ES **PLAQUITA CNMA, CNMG, CNMM, CNGP**
DU **WENDEPLATTE CNMA, CNMG, CNMM, CNGP**



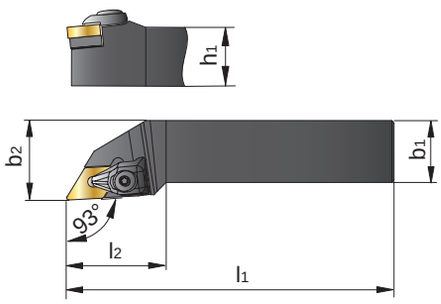
CN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
12	12,7	5,15	4,76	0,4-1,2
19	19,5	7,92	6,35	0,8-1,6

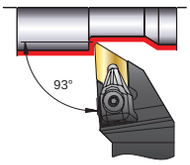
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.230.0170	CNMG 120404-NF2 HC-P15/M15		0,2-2,5	0,08-0,3	P	M					▽▽▽			○		
73.230.0250	CNMG 120404-NF2 HC-P35/M25		0,2-2,5	0,08-0,3	P	M					▽▽▽			○	⌒	
73.230.1150	CNMG 120404-NF2E HC-P25/M20/S15		0,5-6	0,05-0,25	P	M			S		▽▽▽			○	⌒	
73.230.1200	CNMG 120404-NF2E HC-P15		0,5-6	0,05-0,25	P						▽▽▽			○		
73.230.0900	CNMG 120404-NF3 HC-P25/M20		0,5-5,0	0,12-0,4	P	M	K				▽▽▽			○	⌒	
73.230.0700	CNGP 120404-NF4 HC-M20/K30		0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽▽			○		
73.230.0750	CNGP 120408-NF4 HC-M20/K30		0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽▽			○		
73.230.1300	CNMG 120408-NM3E HC-P25/M20/S15		0,5-6	0,05-0,25	P	M			S			▽▽		○	⌒	
73.230.0950	CNMG 120408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.230.1000	CNMG 120408-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			⌒	◌
73.230.1050	CNMG 120412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	◌
73.230.1100	CNMG 120412-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			⌒	
73.230.0600	CNMG 120404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.230.1650	CNMG 120408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	
73.225.0100	CNMA 120408 HC-P10/K10		1-5	0,3-0,5	P		K					▽▽		○	⌒	
73.230.2150	CNMG 120408-NR4E HC-P15		0,5-6	0,2-0,5	P							▽▽	▽	○		
73.230.2200	CNMG 120408-NR4 HC-P25/M20		1,5-6,0	0,25-0,5	P	M						▽▽	▽			◌
73.230.2250	CNMG 120408-NR4 HC-P35/M25		1,5-5,0	0,3-0,5	P	M						▽▽	▽		⌒	
73.235.0150	CNMM 120408-NR5E HC-P25		1-6	0,3-0,8	P							▽▽	▽	○	⌒	
73.235.0160	CNMM 120408-NR5 HC-P25/M20		2,5-6,0	0,4-0,6	P	M	K						▽	○	⌒	
73.235.0200	CNMM 120412-NR5 HC-P25/M20		2,5-6,0	0,4-0,6	P	M	K						▽	○	⌒	
73.235.0350	CNMM 190612-NR5 HC-P15/M15		2,0-10,0	0,4-1,0	P	M						▽▽	▽	○	⌒	◌

› 72.265 Phantom

NL **WISSELPLAATHOUDER DDJNR/L**
FR **PORTE-PLAQUETTE DDJNR/L**
ES **PORTAPLAQUITA DDJNR/L**
DE **KLEMMHALTER DDJNR/L**







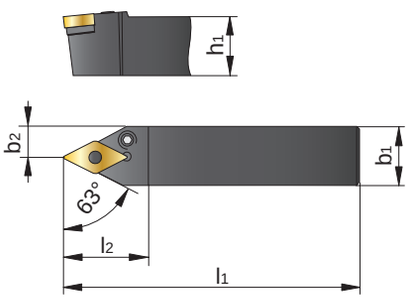


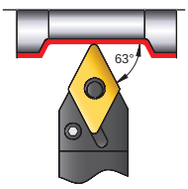
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.265.1160	DDJNR 1616 H11	16	16	20	100	33	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.1170	DDJNR 2020 K11	20	20	25	125	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.1200	DDJNR 2020 K15	20	20	25	125	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.1250	DDJNR 2525 M15	25	25	32	150	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.1320	DDJNR 3225 P15	32	25	32	170	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.2160	DDJNL 1616 H11	16	16	20	100	33	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.2170	DDJNL 2020 K11	20	20	25	125	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.2200	DDJNL 2020 K15	20	20	25	125	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.2250	DDJNL 2525 M15	25	25	32	150	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.2320	DDJNL 3225 P15	32	25	32	170	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..

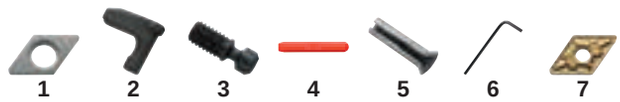
› 72.280 Phantom

NL **WISSELPLAATHOUDER PDNNR/L**
FR **PORTE-PLAQUETTE PDNNR/L**
ES **PORTAPLAQUITA PDNNR/L**
DE **KLEMMHALTER PDNNR/L**





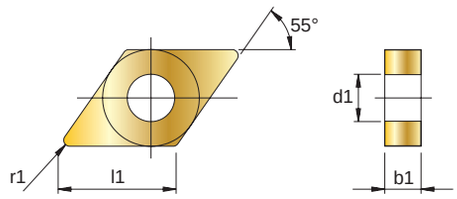




Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7
72.280.1250	PDNNR 2525 M15	25	25	12,5	150	36,5	73.998.0265	73.998.0120	73.998.0150	73.998.0365	73.998.0200	73.998.0400	DN..1506..
72.280.2250	PDNNL 2525 M15	25	25	12,5	150	36,5	73.998.0265	73.998.0120	73.998.0150	73.998.0365	73.998.0200	73.998.0400	DN..1506..

› 73.275 Phantom

NL **WISSELPLAAT DNMG, DNGP**
FR **PLAQUETTE DNMG, DNGP**
ES **PLAQUITA DNMG, DNGP**
DE **WENDEPLATTE DNMG, DNGP**



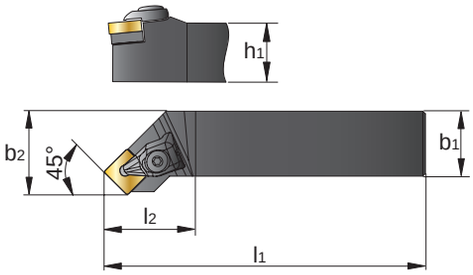
DN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	3,81	4,76	0,4-1,2
15	15,5	5,16	6,35	0,4-1,2

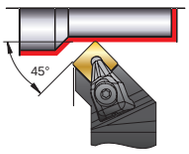
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.275.0100	DNMG 110404-NF2 HC-P15/M15		0,2-2,5	0,08-0,3	P	M					▽▽▽			○		
73.275.0150	DNMG 110404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M					▽▽▽			○		
73.275.2400	DNMG 150604-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽▽			○		
73.275.0850	DNMG 110404-NF3 HC-P25/M20		0,5-5,0	0,12-0,4	P	M	K				▽▽▽	▽▽		○	◠	
73.275.3150	DNMG 150604-NF3 HC-P35/M25		0,5-5,0	0,12-0,4	P	M					▽▽▽	▽▽			◠	◌
73.275.2300	DNGP 150604-NF4 HC-M20/K30		0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽▽	▽▽		○		
73.275.3000	DNGP 150608-NF4 HC-M20/K30		0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽▽	▽▽		○		
73.275.0900	DNMG 110408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.275.3260	DNMG 150608-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.275.3270	DNMG 150608-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			◠	◌
73.275.3400	DNMG 150608-NM3E HC-P25/M20/S15		1,0-3,5	0,15-0,35	P	M			S			▽▽		○	◠	
73.275.1400	DNMG 110404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			◠	◌
73.275.1500	DNMG 110408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			◠	◌
73.275.2625	DNMG 150604-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌
73.275.3850	DNMG 150608-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌
73.275.4400	DNMG 150608-NR4E HC-P25		0,2-5	0,15-0,4	P							▽▽		○	◠	

› 72.325 Phantom

NL **WISSELPLAATHOUDER DSSNR/L**
FR **PORTE-PLAQUETTE DSSNR/L**
ES **PORTAPLAQUITA DSSNR/L**
DE **KLEMMHALTER DSSNR/L**







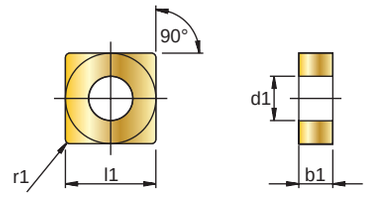


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.325.1200	DSSNR 2020 K12	20	20	25	125	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.1250	DSSNR 2525 M12	25	25	32	150	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.1320	DSSNR 3225 P12	32	25	32	170	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.2200	DSSNL 2020 K12	20	20	25	125	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.2250	DSSNL 2525 M12	25	25	32	150	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.2320	DSSNL 3225 P12	32	25	32	170	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..

› 73.390
› 73.395
› 73.400

Phantom

NL **WISSELPLAAT SNMA, SNMG, SNMM**
FR **PLAQUETTE SNMA, SNMG, SNMM**
ES **PLAQUITA SNMA, SNMG, SNMM**
DE **WENDEPLATTE SNMA, SNMG, SNMM**



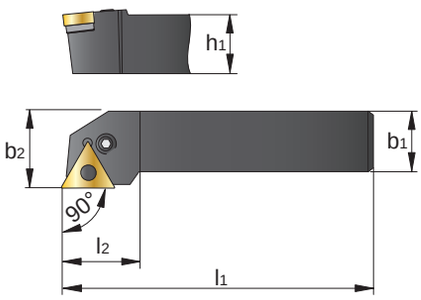
SN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
12	12,7	5,15	4,76	0,4-1,2

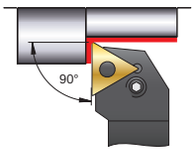
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.395.0150	SNMG 120404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽▽			○		
73.395.1200	SNMG 120408-NM3E HC-P15		0,15-4	0,2-0,5	P							▽▽		○		
73.395.0900	SNMG 120408-NM3E HC-P25		0,15-4	0,2-0,5	P							▽▽		○	⌒	
73.395.1000	SNMG 120408-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			⌒	◌
73.395.1100	SNMG 120412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.395.1600	SNMG 120408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.390.0150	SNMA 120408 HC-P10/K10		1-5	0,3-0,5	P		K					▽▽		○	⌒	
73.395.2150	SNMG 120408-NR4 HC-P25/M20		1,5-5,0	0,3-0,5	P	M	K					▽▽	▽	○	⌒	
73.400.0200	SNMM 120408-NR5E HC-P25		0,15-4	0,2-0,5	P							▽▽	▽	○	⌒	
73.400.0300	SNMM 120412-NR5E HC-P25		0,15-4	0,2-0,5	P							▽▽	▽	○	⌒	

› 72.340 Phantom

NL **WISSELPLAATHOUDER PTGNR/L**
FR **PORTE-PLAQUETTE PTGNR/L**
ES **PORTAPLAQUITA PTGNR/L**
DE **KLEMMHALTER PTGNR/L**







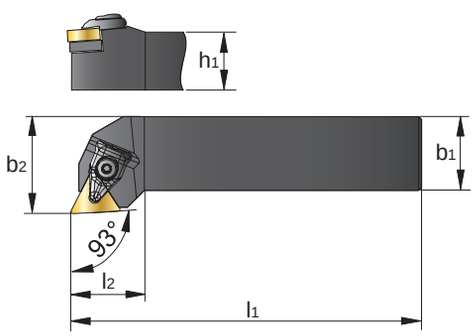


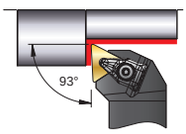
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7
72.340.1150	PTGNR 1616-H16	16	16	20	100	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.1200	PTGNR 2020-K16	20	20	25	125	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.1250	PTGNR 2525-M16	25	25	32	150	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.1320	PTGNR 3225-P16	32	25	32	170	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	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	73.998.0410	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	73.998.0410	TNM. 1604..
72.340.2320	PTGNL 3225-P16	32	25	32	170	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..

› 72.345 Phantom

NL **WISSELPLAATHOUDER DTJNR/L**
FR **PORTE-PLAQUETTE DTJNR/L**
ES **PORTAPLAQUITA DTJNR/L**
DE **KLEMMHALTER DTJNR/L**







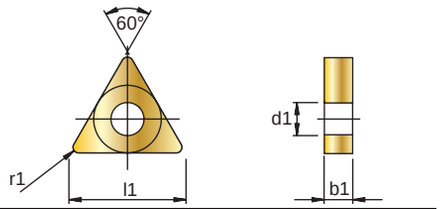


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.345.1200	DTJNR 2020 K16	20	20	25	125	23	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..
72.345.1250	DTJNR 2525 M16	25	25	32	150	24	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..
72.345.2200	DTJNL 2020 K16	20	20	25	125	23	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..
72.345.2250	DTJNL 2525 M16	25	25	32	150	24	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..

› 73.429
› 73.435
› 73.440

Phantom

NL **WISSELPLAAT TNMA, TNMG, TNMM**
FR **PLAQUETTE TNMA, TNMG, TNMM**
ES **PLAQUITA TNMA, TNMG, TNMM**
DE **WENDEPLATTE TNMA, TNMG, TNMM**



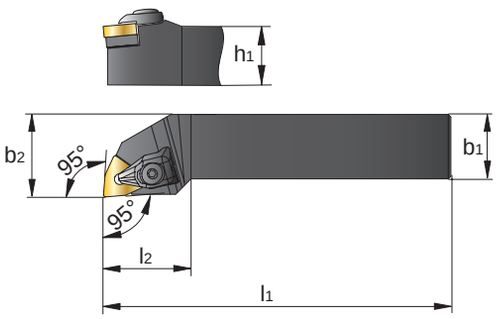
TN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
16	16,5	3,81	4,76	0,4-1,2
22	22,0	5,16	4,76	0,8-1,2

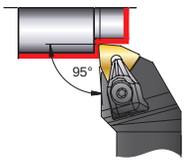
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.435.0150	TNMG 160404-ER HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.0250	TNMG 160408-ER HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.0820	TNMG 160404-NF2E HC-P15		0,5-5	0,1-0,35	P						▽▽▽			○		
73.435.0850	TNMG 160404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽▽			○		
73.435.1625	TNMG 160404-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.2800	TNMG 160408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.435.1590	TNMG 160404-NM3E HC-P25		0,5-5	0,1-0,35	P							▽▽		○	⌒	
73.435.1600	TNMG 160408-NM3E HC-P15		0,5-5	0,1-0,35	P							▽▽		○		
73.435.1650	TNMG 160408-NM3E HC-P25		0,5-5	0,1-0,35	P							▽▽		○	⌒	
73.435.1850	TNMG 160408-NM3E HC-P25/M20/S15		0,5-5	0,1-0,35	P	M			S			▽▽		○	⌒	
73.435.3450	TNMG 220408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.435.2250	TNMG 160404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.435.2300	TNMG 160408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.429.0200	TNMA 160408 HC-P10/K10		1-5	0,3-0,5	P		K					▽▽		○	⌒	
73.435.2850	TNMG 160408-NR4E HC-P25		0,5-5	0,1-0,35	P							▽▽	▽	○	⌒	
73.435.4100	TNMG 220412-NR4 HC-P25		1-4	0,2-,05	P							▽▽		○	⌒	
73.440.2850	TNMM 160408-NR6 HC-P25/M20		1-6,0	0,3-0,6	P	M	K						▽	○		

› 72.385 Phantom

NL **WISSELPLAATHOUDER DWLNR/L**
FR **PORTE-PLAQUETTE DWLNR/L**
ES **PORTAPLAQUITA DWLNR/L**
DE **KLEMMHALTER DWLNR/L**





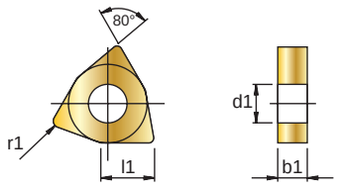




Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.385.1150	DWLNR 1616 H06	16	16	20	100	25	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.1170	DWLNR 2020 K06	20	20	25	125	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.1200	DWLNR 2020 K08	20	20	25	125	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..
72.385.1230	DWLNR 2525 M06	25	25	32	150	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.1250	DWLNR 2525 M08	25	25	32	150	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..
72.385.2150	DWLNL 1616 H06	16	16	20	100	25	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.2170	DWLNL 2020 K06	20	20	25	125	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.2200	DWLNL 2020 K08	20	20	25	125	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..
72.385.2230	DWLNL 2525 M06	25	25	32	150	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.2250	DWLNL 2525 M08	25	25	32	150	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..

› 73.495 Phantom

NL **WISSELPLAAT WNMG**
FR **PLAQUETTE WNMG**
ES **PLAQUITA WNMG**
DE **WENDEPLATTE WNMG**



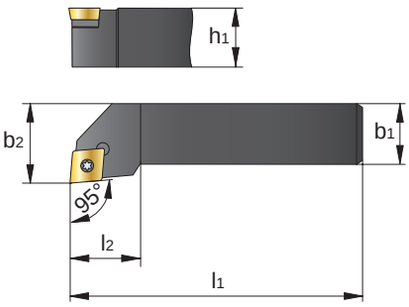
WN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,6	3,81	4,76	0,4-0,8
08	8,7	5,16	4,76	0,4-1,2

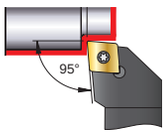
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.495.0060	WNMG 060404-NF3 HC-P25/M20		0,5-5,0	0,12-0,4	P	M	K				▽▽▽	▽▽		○	◠	
73.495.0350	WNMG 080404-NF3 HC-P25/M20		0,5-5,0	0,12-0,4	P	M	K				▽▽▽	▽▽		○	◠	
73.495.0650	WNMG 080408-NF3 HC-M20/K30		1,5-4,0	0,2-0,38	P	M	K					▽▽		○	◠	◌
73.495.0130	WNMG 060408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.495.1050	WNMG 080408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.495.1100	WNMG 080408-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			◠	◌
73.495.1200	WNMG 080412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.495.0960	WNMG 080404-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S			▽▽		○	◠	
73.495.0970	WNMG 080408-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S			▽▽		○	◠	
73.495.0600	WNMG 080404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌
73.495.1750	WNMG 080408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌

› 72.420 Phantom

NL **WISSELPLAATHOUDER SCLCR/L**
FR **PORTE-PLAQUETTE SCLCR/L**
ES **PORTAPLAQUITA SCLCR/L**
DE **KLEMMHALTER SCLCR/L**









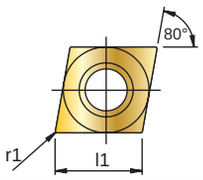
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.420.1080	SCLCR 0808-D06	8	8	10	60	9	-	-	73.998.0080	73.998.0428	CC.. 0602..
72.420.1100	SCLCR 1010-E06	10	10	12	70	9	-	-	73.998.0080	73.998.0428	CC.. 0602..
72.420.1120	SCLCR 1212-F09	12	12	16	80	15	-	-	73.998.0070	73.998.0420	CC.. 09T3..
72.420.1160	SCLCR 1616-H09	16	16	20	100	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC.. 09T3..
72.420.1200	SCLCR 2020-K09	20	20	25	125	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC.. 09T3..
72.420.1240	SCLCR 2020-K12	20	20	25	125	20	73.998.0325	73.998.0356	73.998.0072	73.998.0420	CC.. 1204..
72.420.1300	SCLCR 2525-M12	25	25	32	150	20	73.998.0325	73.998.0356	73.998.0072	73.998.0420	CC.. 1204..
72.420.2080	SCLCL 0808-D06	8	8	10	60	9	-	-	73.998.0080	73.998.0428	CC.. 0602..
72.420.2100	SCLCL 1010-E06	10	10	12	70	9	-	-	73.998.0080	73.998.0428	CC.. 0602..
72.420.2120	SCLCL 1212-F09	12	12	16	80	15	-	-	73.998.0070	73.998.0420	CC.. 09T3..
72.420.2160	SCLCL 1616-H09	16	16	20	100	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC.. 09T3..
72.420.2200	SCLCL 2020-K09	20	20	25	125	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC.. 09T3..

19:00 24h

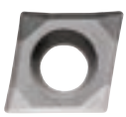
› 73.550
› 73.565
› 73.570

Phantom

NL **WISSELPLAAT CCGT, CCMT, CCMW**
FR **PLAQUETTE CCGT, CCMT, CCMW**
ES **PLAQUITA CCGT, CCMT, CCMW**
DE **WENDEPLATTE CCGT, CCMT, CCMW**



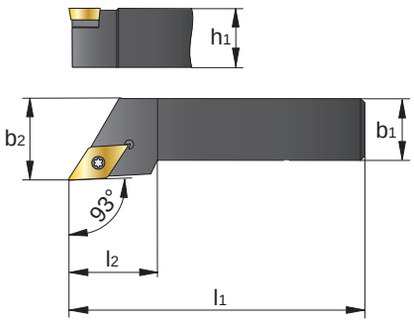
CC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,4	2,80	2,38	0,2-0,8
09	9,7	4,40	3,97	0,2-0,8
12	12,4	5,50	4,76	0,4-0,8

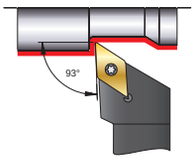
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.565.0150	CCMT 060204-PF2 CM10		0,2-1,3	0,05-0,22	P	M						▽▽		○		
73.565.2750	CCMT 09T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M						▽▽		○		
73.565.0700	CCMT 060202-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.565.0750	CCGT 060202-PF3 HC-P35/M25		0,05-2,5	0,05-0,25	P	M					▽▽▽				⌒	◌
73.565.0800	CCMT 060204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.565.1150	CCMT 060204-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M					▽▽▽				⌒	◌
73.565.3350	CCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.565.3570	CCMT 09T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	⌒	◌
73.565.3590	CCMT 09T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	⌒	◌
73.565.2150	CCMT 060204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
76.565.1600	CCMT 060208-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.4500	CCMT 09T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.565.4650	CCMT 09T304-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.4700	CCMT 09T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.4750	CCMT 120404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.565.4800	CCMT 120408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.1450	CCMT 060204-PM3E HC-P15		0,05-2,5	0,05-0,2	P							▽▽		○		
73.565.1500	CCMT 060204-PM3E HC-P25/M20/S15		0,05-2,5	0,05-0,2	P	M			S			▽▽		○	⌒	
73.565.4000	CCMT 09T304-PM3E HC-P15		0,05-3,5	0,05-0,25	P							▽▽		○		
73.565.4050	CCMT 09T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S			▽▽		○	⌒	
73.565.4100	CCMT 09T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S			▽▽		○	⌒	
73.565.4720	CCMT 120404-PM3E HC-P25/M20/S15		0,1-4	0,05-0,5	P	M			S			▽▽		○		
73.565.4730	CCMT 120408-PM3E HC-P15		0,1-4	0,05-0,5	P							▽▽		○		
73.565.4735	CCMT 120408-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,2	P	M			S			▽▽		○		
73.550.0175	CCGT 060204-PA2 HC-K10		1-3	0,1-0,75	P	M	K	N			▽▽▽	▽▽		○	⌒	
73.550.0100	CCGT 060202-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.550.0150	CCGT 060204-PA2 K10		0,6-3	0,08-,025			K	N				▽▽	▽	○	⌒	
73.550.0225	CCGT 09T304-PA2 HC-K10		0,6-4	0,08-,025	P	M	K	N			▽▽▽	▽▽		○	⌒	
73.550.0200	CCGT 09T304-PA2 K10		0,6-3	0,08-,025			K	N				▽▽	▽	○	⌒	
73.550.0250	CCGT 09T308-PA2 K10		0,6-4	0,08-,025			K	N				▽▽	▽	○	⌒	
73.570.0200	CCMW 09T304 K20		0,4-3	0,12-0,25			K	N			▽▽▽	▽▽		○		

› 72.450 Phantom

NL **WISSELPLAATHOUDER SDJCR/L**
FR **PORTE-PLAQUETTE SDJCR/L**
ES **PORTAPLAQUITA SDJCR/L**
DE **KLEMMHALTER SDJCR/L**







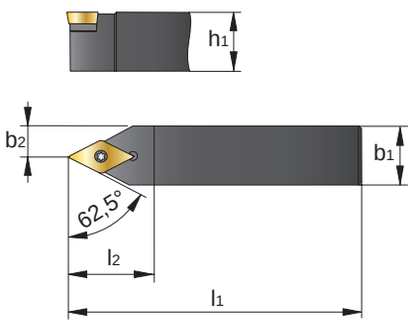


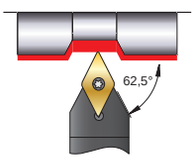
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.450.1080	SDJCR 0808-D07	8	8	10	60	13	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.450.1100	SDJCR 1010-E07	10	10	12	70	13	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.450.1120	SDJCR 1212-F07	12	12	16	80	14,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.450.1160	SDJCR 1616-H11	16	16	20	100	20	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..
72.450.1200	SDJCR 2020-K11	20	20	25	125	20,5	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..
72.450.2080	SDJCL 0808-D07	8	8	10	60	13	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.450.2100	SDJCL 1010-E07	10	10	12	70	13	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.450.2120	SDJCL 1212-F07	12	12	16	80	14,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.450.2160	SDJCL 1616-H11	16	16	20	100	20	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..
72.450.2200	SDJCL 2020-K11	20	20	25	125	20,5	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..

› 72.455 Phantom

NL **WISSELPLAATHOUDER SDNCN**
FR **PORTE-PLAQUETTE SDNCN**
ES **PORTAPLAQUITA SDNCN**
DE **KLEMMHALTER SDNCN**









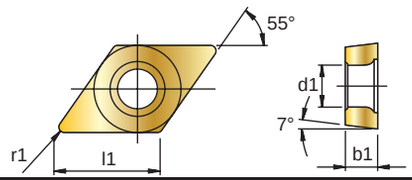
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.455.1080	SDNCN 0808-D07	8	8	4	60	8	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.455.1100	SDNCN 1010-E07	10	10	5	70	10	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.455.1120	SDNCN 1212-F07	12	12	6	80	12	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.455.1160	SDNCN 1616-H11	16	16	8	100	18	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..
72.455.1200	SDNCN 2020-K11	20	20	10	125	21	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..

19:00 ▶ 24h

› 73.610
› 73.630

Phantom

NL **WISSELPLAAT DCGT, DCMT**
FR **PLAQUETTE DCGT, DCMT**
ES **PLAQUITA DCGT, DCMT**
DE **WENDEPLATTE DCGT, DCMT**



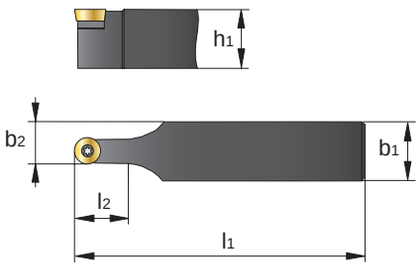
DC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
07	7,7	2,80	2,38	0,2-0,4
11	11,6	4,40	3,97	0,4-0,8

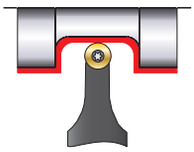
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.630.0150	DCMT 070204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.630.2250	DCMT 11T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.630.0350	DCMT 070204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.630.2800	DCMT 11T302-PF3 CM10		0,1-1,3	0,03-0,12	P	M					▽▽▽			○		
73.630.2850	DCMT 11T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.630.2900	DCMT 11T304-PF3 HC-P35/M25		0,05-2,5	0,05-0,25	P	M					▽▽▽				◠	◌
73.630.3400	DCMT 11T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.630.3450	DCMT 11T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.630.1600	DCMT 070204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.1750	DCMT 070208-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.3670	DCMT 11T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.3720	DCMT 11T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.3650	DCMT 11T308-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.630.3750	DCMT 11T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.630.0950	DCMT 070204-PM3E HC-P25/M20/S15		0,05-2	0,05-0,2	P	M			S			▽▽		○	◠	
73.630.3500	DCMT 11T304-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S			▽▽		○	◠	
73.630.3600	DCMT 11T308-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S			▽▽		○	◠	
73.610.0150	DCGT 070202-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.610.0200	DCGT 070204-PA2 HC-K10		0,6-2,5	0,08-0,25	P	M	K	N				▽▽	▽	○	◠	
73.610.0400	DCGT 11T304-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽	▽	○	◠	
73.610.0425	DCGT 11T304-PA2 HC-K10		0,6-3	0,08-0,25	P	M	K	N				▽▽	▽	○	◠	
73.610.0450	DCGT 11T308-PA2 K10		0,8-3,5	0,1-0,3			K	N				▽▽	▽	○	◠	
73.610.0475	DCGT 11T308-PA2 HC-K10		0,8-3,5	0,1-0,3	P	M	K	N				▽▽	▽	○	◠	

› 72.461 Phantom

NL **WISSELPLAATHOUDER SRDCN**
FR **PORTE-PLAQUETTE SRDCN**
ES **PORTAPLAQUITA SRDCN**
DE **KLEMMHALTER SRDCN**





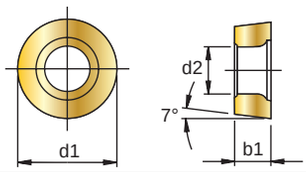




Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.461.1200	SRDCN 2020-K08	20	20	14	125	16,5	-		73.998.0090	73.998.0430	RCMT 0803M0
72.461.1201	SRDCN 2020-K10	20	20	15	125	20	73.998.0292	73.998.0355	73.998.0070	73.998.0420	RCMT 10T3M0
72.461.1250	SRDCN 2525-M10	25	25	17,5	150	20,9	73.998.0292	73.998.0355	73.998.0070	73.998.0420	RCMT 10T3M0

› 73.725 Phantom

NL **WISSELPLAAT RCMT**
FR **PLAQUETTE RCMT**
ES **PLAQUITA RCMT**
DE **WENDEPLATTE RCMT**



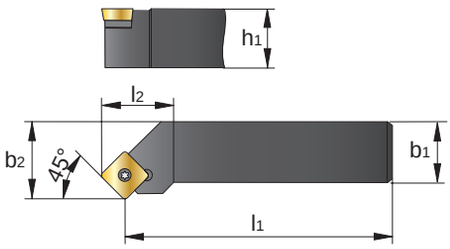
RC..	d1(mm)	d2(mm)	b1(mm)
08	8,0	3,40	3,18
10	10,0	4,00	3,18
12	12,0	4,90	4,76

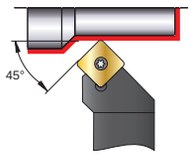
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.725.0150	RCMT 0803MO-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	
73.725.0220	RCMT 10T3MO-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.725.0250	RCMT 1204MO-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.725.0270	RCMT 1204MO-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	

› 72.485 Phantom

NL **WISSELPLAATHOUDER SSSCR**
FR **PORTE-PLAQUETTE SSSCR**
ES **PORTAPLAQUITA SSSCR**
DE **KLEMMHALTER SSSCR**









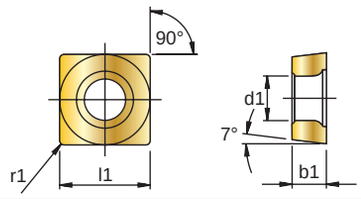
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.485.1120	SSSCR 1212-F09	12	12	16	80	18	-	-	73.998.0070	73.998.0420	SC.T 09T3..
72.485.1160	SSSCR 1616-H09	16	16	20	100	20	73.998.0295	73.998.0355	73.998.0070	73.998.0420	SC.T 09T3..
72.485.1200	SSSCR 2020-K09	20	20	25	125	20	73.998.0295	73.998.0355	73.998.0070	73.998.0420	SC.T 09T3..
72.485.1240	SSSCR 2020-K12	20	20	25	125	25	73.998.0296	73.998.0356	73.998.0072	73.998.0420	SC.T 1204..
72.485.1300	SSSCR 2525-M12	25	25	32	150	25	73.998.0296	73.998.0356	73.998.0072	73.998.0420	SC.T 1204..

19:00 ▶ 24h

› 73.750
› 73.755

Phantom

NL **WISSELPLAAT SCGT, SCMT**
FR **PLAQUETTE SCGT, SCMT**
ES **PLAQUITA SCGT, SCMT**
DE **WENDEPLATTE SCGT, SCMT**



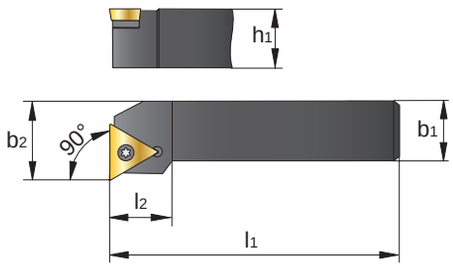
SC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
09	9,5	4,40	3,97	0,4-0,8
12	12,7	5,60	4,76	0,4-0,8

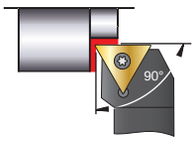
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.755.0750	SCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.755.1500	SCMT 09T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.755.1870	SCMT 120408-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.755.1350	SCMT 09T304-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S			▽▽		○	⌒	
73.755.1450	SCMT 09T308-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S			▽▽		○	⌒	
73.755.1750	SCMT 120408-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S			▽▽		○	⌒	
73.750.0150	SCGT 09T304-PA2 K10		0,6-4	0,08-0,25			K	N				▽▽	▽	○	⌒	
73.750.0200	SCGT 09T308-PA2 K10		0,7-4	0,1-0,35			K	N				▽▽	▽	○	⌒	

› 72.500 Phantom

NL **WISSELPLAATHOUDER STFCR**
FR **PORTE-PLAQUETTE STFCR**
ES **PORTAPLAQUITA STFCR**
DE **KLEMMHALTER STFCR**







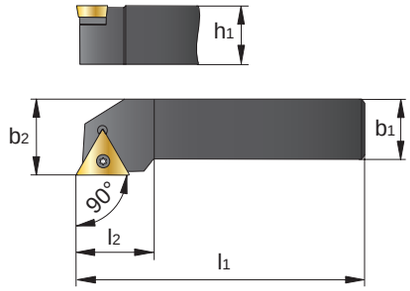


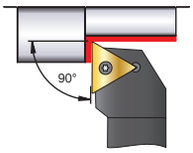
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.500.1120	STFCR 1212-F11	12	12	16	80	15	-	-	73.998.0067	73.998.0423	TC.. 1102..
72.500.1160	STFCR 1616-H16	16	16	20	100	20	73.998.0300	73.998.0355	73.998.0080	73.998.0430	TC.. 16T3..
72.500.1200	STFCR 2020-K16	20	20	25	125	20	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..

› 72.505 Phantom

NL **WISSELPLAATHOUDER STGCR/L**
FR **PORTE-PLAQUETTE STGCR/L**
ES **PORTAPLAQUITA STGCR/L**
DE **KLEMMHALTER STGCR/L**







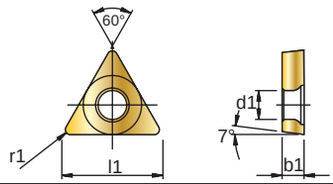


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.505.1120	STGCR 1212-F11	12	12	16	80	15	-	-	73.998.0080	73.998.0430	TC.. 1102..
72.505.1160	STGCR 1616-H16	16	16	20	100	22	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..
72.505.1200	STGCR 2020-K16	20	20	25	125	22	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..
72.505.1240	STGCR 2525-M16	25	25	32	150	22	73.998.0300	-	73.998.0070	73.998.0420	TC.. 16T3..
72.505.2120	STGCL 1212-F11	12	12	16	80	15	-	-	73.998.0080	73.998.0430	TC.. 1102..
72.505.2160	STGCL 1616-H16	16	16	20	100	22	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..

› 73.775
› 73.790

Phantom

NL **WISSELPLAAT TCGT, TCMT**
FR **PLAQUETTE TCGT, TCMT**
ES **PLAQUITA TCGT, TCMT**
DE **WENDEPLATTE TCGT, TCMT**



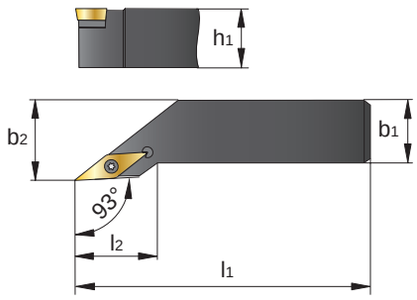
TC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	2,80	2,38	0,2-0,4
16	16,0	4,40	3,97	0,2-0,8

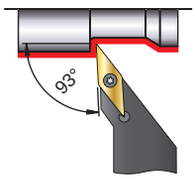
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.790.0150	TCMT 110204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.790.0650	TCMT 110202-PF3 CM10		0,1-1,3	0,03-0,12	P	M					▽▽▽			○		
73.790.0800	TCMT 110208-PF3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K				▽▽▽			○		
73.790.2050	TCMT 16T304-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.790.2150	TCMT 16T308-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.790.0750	TCMT 110204-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.790.2100	TCMT 16T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.790.2200	TCMT 16T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.790.1400	TCMT 110204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.790.2850	TCMT 16T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.790.1350	TCMT 110204-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.790.1450	TCMT 110208-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.790.2300	TCMT 16T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.790.2350	TCMT 16T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.775.0150	TCGT 110202-PA2 K10		0,6-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.775.0200	TCGT 110204-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽	▽	○	◠	
73.775.0750	TCGT 16T304-PA2 K10		0,6-4	0,08-0,25			K	N				▽▽	▽	○	◠	
73.775.0800	TCGT 16T308-PA2 K10		0,8-4	0,1-0,35			K	N				▽▽	▽	○	◠	

› 72.515 Phantom

NL **WISSELPLAATHOUDER SVJCR/L**
FR **PORTE-PLAQUETTE SVJCR/L**
ES **PORTAPLAQUITA SVJCR/L**
DE **KLEMMHALTER SVJCR/L**







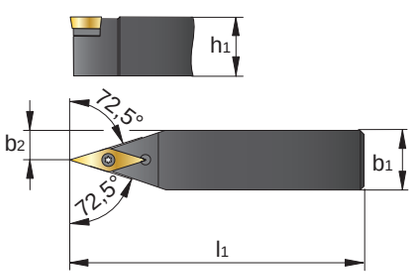


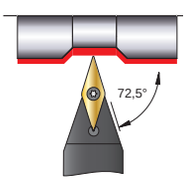
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.515.1160	SVJCR 1616-H11	16	16	20	100	21,5	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.1200	SVJCR 2020-K11	20	20	25	125	23	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.1201	SVJCR 2020-K16	20	20	25	125	29,5	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..
72.515.1250	SVJCR 2525-M16	25	25	32	150	32,5	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..
72.515.2160	SVJCL 1616-H11	16	16	20	100	21,5	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.2200	SVJCL 2020-K11	20	20	25	125	23	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.2250	SVJCL 2525-M16	25	25	32	150	32,5	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..

› 72.520 Phantom

NL **WISSELPLAATHOUDER SVVCN**
FR **PORTE-PLAQUETTE SVVCN**
ES **PORTAPLAQUITA SVVCN**
DE **KLEMMHALTER SVVCN**







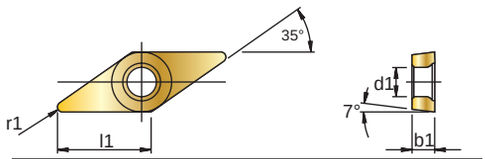


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.520.1160	SVVCN 1616-H11	16	16	8	100	25	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.520.1200	SVVCN 2020-K11	20	20	10	125	32	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.520.1250	SVVCN 2525-M16	25	25	12,5	150	40	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..

› 73.840
› 73.830

Phantom

NL **WISSELPLAAT VCMT, VCGT**
FR **PLAQUETTE VCMT, VCGT**
ES **PLAQUITA VCMT, VCGT**
DE **WENDEPLATTE VCMT, VCGT**

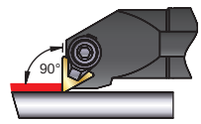


VC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,0	2,80	3,18	0,2-0,8
16	16,6	4,40	4,76	0,2-0,8

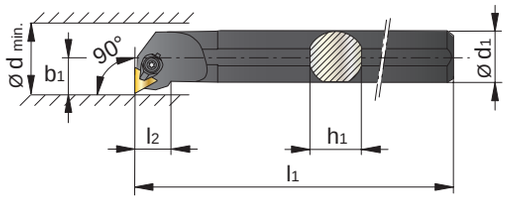
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.840.0200	VCMT 110304-PF2 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽	▽▽		○		
73.840.0150	VCGT 110302-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.840.0850	VCMT 160404-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.840.1000	VCMT 160404-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M					▽▽▽				◠	◌
73.840.1500	VCMT 160404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.840.1550	VCMT 160408-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.840.1050	VCMT 160408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.830.0150	VCGT 110302-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.830.0200	VCGT 110304-PA2 K10		0,6-2,5	0,08-0,25			K	N				▽▽	▽	○	◠	
73.830.0250	VCGT 110308-PA2 K10		0,8-3	0,1-0,35			K	N				▽▽	▽	○	◠	

› 72.540 Phantom

NL **WISSELPLAATHOUDER S-CTFPR/L,**
FR **PORTE-PLAQUETTE S-CTFPR/L**
ES **PORTAPLAQUITA S-CTFPR/L**
DE **KLEMMHALTER S-CTFPR/L**







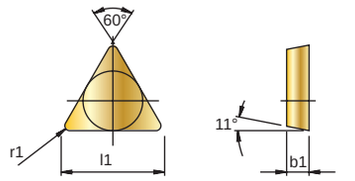


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6
72.540.1120	S12Q-CTFPR 11	11	9	17	12	180	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.1160	S16R-CTFPR 11	15	11	21	16	200	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.1200	S20S-CTFPR 11	18	13	25	20	250	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.1250	S25T-CTFPR 16	23	17	31,5	25	300	20	73.998.0280	73.998.0010	73.998.0055	73.998.0345	73.998.0435	TP.. 1603..
72.540.1320	S32U-CTFPR 16	30	22	40	32	350	20	73.998.0280	73.998.0010	73.998.0055	73.998.0345	73.998.0435	TP.. 1603..
72.540.2160	S16R-CTFPL 11	15	11	21	16	200	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.2200	S20S-CTFPL 11	18	13	25	20	250	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.2250	S25T-CTFPL 16	23	17	31,5	25	300	20	73.998.0280	73.998.0010	73.998.0055	73.998.0345	73.998.0435	TP.. 1603..

› 73.171
› 73.175
› 73.180

Phantom

NL **WISSELPLAAT TPMR, TPUN, TPUX**
FR **PLAQUETTE TPMR, TPUN, TPUX**
ES **PLAQUITA TPMR, TPUN, TPUX**
DU **WENDEPLATTE TPMR, TPUN, TPUX**



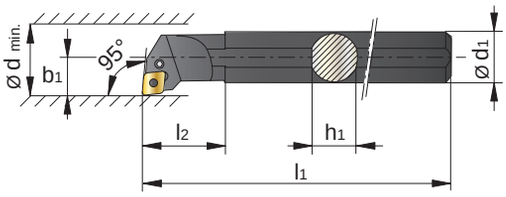
TP..	l1(mm)	b1(mm)	r1(mm)
11	11,0	3,18	0,4-0,8
16	16,5	3,18	0,4-1,2
22	22,0	4,76	0,8

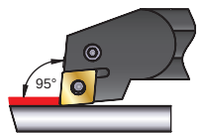
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.171.0150	TPMR 110304E HC-P15		0,5-2	0,05-0,15	P							▽▽		○	◠	
73.171.0200	TPMR 110308 HC-P25/M20/S15															
73.171.0300	TPMR 160304E HC-P15		0,5-3	0,1-0,25	P							▽▽		○	◠	
73.171.0350	TPMR 160308E HC-P25/M20/S15		0,5-3	0,1-0,25	P	M			S			▽▽		○	◠	
73.175.0175	TPUN 110304E P25		0,5-2	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0425	TPUN 160304E P25		0,5-3	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0450	TPUN 160304E HC-P25/M20/S15		0,5-3	0,1-0,25	P	M			S			▽▽		○	◠	
73.175.0525	TPUN 160308 P25		1-4	0,2-0,5	P							▽▽		○	◠	
73.175.0550	TPUN 160308 HC-P25		1-4	0,2-0,5	P							▽▽		○	◠	
73.175.0650	TPUN 160312 HC-P35/M25		1,5-5	0,1-0,3	P	M						▽▽	▽		◠	◌
73.180.0100	TPUX 110304R P25		0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0150	TPUX 110304L P25		0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0500	TPUX 160304R P25		0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0550	TPUX 160304L P25		0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0700	TPUX 160308R P25		1-4	0,2-0,5	P		K	N				▽▽		○	◠	
73.180.0750	TPUX 160308L P25		1-4	0,2-0,5	P		K	N				▽▽		○	◠	

› 72.545 Phantom

NL **WISSELPLAATHOUDER S-PCLNR**
FR **PORTE-PLAQUETTE S-PCLNR**
ES **PORTAPLAQUITA S-PCLNR**
DE **KLEMMHALTER S-PCLNR**







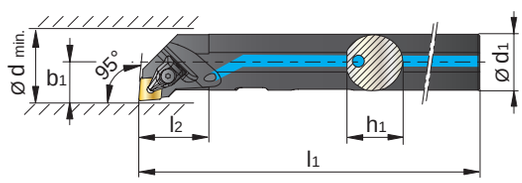


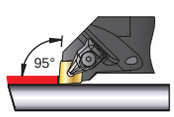
Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6	7
72.545.1250	S25T-PCLNR 12	23	17	32	25	300	21	73.998.0230	73.998.0100	73.998.0155	73.998.0365	73.998.0200	73.998.0400	CN.. 1204..
72.545.1320	S32U-PCLNR 12	30	22	40	32	350	24,1	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.. 1204..
72.545.1400	S40V-PCLNR 12	38	27	50	40	400	24,1	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.. 1204..

› 72.555 Phantom

NL **WISSELPLAATHOUDER A-DCLNR/L**
FR **PORTE-PLAQUETTE A-DCLNR/L**
ES **PORTAPLAQUITA A-DCLNR/L**
DE **KLEMMHALTER A-DCLNR/L**







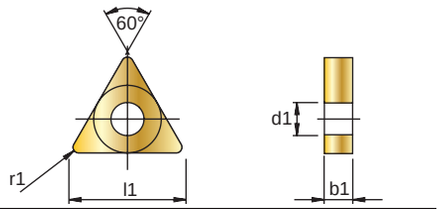


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.555.1250	A25R DCLNR 12	24	17	32	25	200	36	-		73.998.0494	73.998.0497	CN.. 1204..
72.555.1320	A32S DCLNR 12	31	22	40	32	250	40	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..
72.555.1400	A40T DCLNR 12	39	27	50	40	300	45	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..
72.555.2250	A25R DCLNL 12	24	17	32	25	200	36	-		73.998.0494	73.998.0497	CN.. 1204..
72.555.2320	A32S DCLNL 12	31	22	40	32	250	40	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..
72.555.2400	A40T DCLNL 12	39	27	50	40	300	45	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..

› 73.429
› 73.435
› 73.440

Phantom

NL **WISSELPLAAT TNMA, TNMG, TNMM**
FR **PLAQUETTE TNMA, TNMG, TNMM**
ES **PLAQUITA TNMA, TNMG, TNMM**
DE **WENDEPLATTE TNMA, TNMG, TNMM**

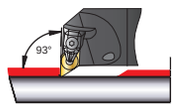


TN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
16	16,5	3,81	4,76	0,4-1,2
22	22,0	5,16	4,76	0,8-1,2

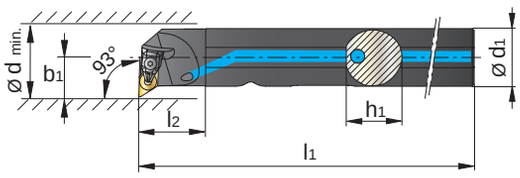
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.435.0150	TNMG 160404-ER HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.0250	TNMG 160408-ER HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.0820	TNMG 160404-NF2E HC-P15		0,5-5	0,1-0,35	P						▽▽▽			○		
73.435.0850	TNMG 160404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽▽			○		
73.435.1625	TNMG 160404-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.2800	TNMG 160408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.435.1590	TNMG 160404-NM3E HC-P25		0,5-5	0,1-0,35	P							▽▽		○	⌒	
73.435.1600	TNMG 160408-NM3E HC-P15		0,5-5	0,1-0,35	P							▽▽		○		
73.435.1650	TNMG 160408-NM3E HC-P25		0,5-5	0,1-0,35	P							▽▽		○	⌒	
73.435.1850	TNMG 160408-NM3E HC-P25/M20/S15		0,5-5	0,1-0,35	P	M			S			▽▽		○	⌒	
73.435.3450	TNMG 220408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.435.2250	TNMG 160404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.435.2300	TNMG 160408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.429.0200	TNMA 160408 HC-P10/K10		1-5	0,3-0,5	P		K					▽▽		○	⌒	
73.435.2850	TNMG 160408-NR4E HC-P25		0,5-5	0,1-0,35	P							▽▽	▽	○	⌒	
73.435.4100	TNMG 220412-NR4 HC-P25		1-4	0,2-,05	P							▽▽		○	⌒	
73.440.2850	TNMM 160408-NR6 HC-P25/M20		1-6,0	0,3-0,6	P	M	K						▽	○		

› 72.558 Phantom

NL **WISSELPLAATHOUDER A-DDUNR/L**
FR **PORTE-PLAQUETTE A-DDUNR/L**
ES **PORTAPLAQUITA A-DDUNR/L**
DE **KLEMMHALTER A-DDUNR/L**





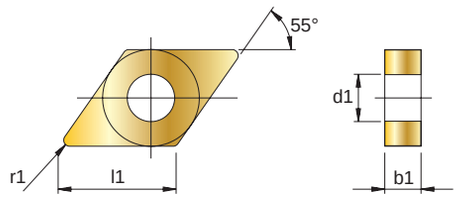




Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.558.1250	A25R DDUNR 11	24	17	32	25	200	30	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..
72.558.1320	A32S DDUNR 11	31	22	40	32	250	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..
72.558.2250	A25R DDUNL 11	24	17	32	25	200	30	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..
72.558.2320	A32S DDUNL 11	31	22	40	32	250	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..

› 73.275 Phantom

NL **WISSELPLAAT DNMG, DNGP**
FR **PLAQUETTE DNMG, DNGP**
ES **PLAQUITA DNMG, DNGP**
DE **WENDEPLATTE DNMG, DNGP**



DN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	3,81	4,76	0,4-1,2
15	15,5	5,16	6,35	0,4-1,2

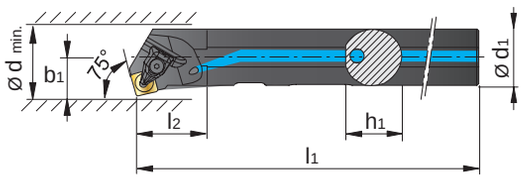
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.275.0100	DNMG 110404-NF2 HC-P15/M15		0,2-2,5	0,08-0,3	P	M					▽▽▽			○		
73.275.0150	DNMG 110404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M					▽▽▽			○		
73.275.2400	DNMG 150604-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽▽			○		
73.275.0850	DNMG 110404-NF3 HC-P25/M20		0,5-5,0	0,12-0,4	P	M	K				▽▽▽	▽▽		○	◠	
73.275.3150	DNMG 150604-NF3 HC-P35/M25		0,5-5,0	0,12-0,4	P	M					▽▽▽	▽▽			◠	◌
73.275.2300	DNGP 150604-NF4 HC-M20/K30		0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽▽	▽▽		○		
73.275.3000	DNGP 150608-NF4 HC-M20/K30		0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽▽	▽▽		○		
73.275.0900	DNMG 110408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.275.3260	DNMG 150608-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.275.3270	DNMG 150608-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			◠	◌
73.275.3400	DNMG 150608-NM3E HC-P25/M20/S15		1,0-3,5	0,15-0,35	P	M			S			▽▽		○	◠	
73.275.1400	DNMG 110404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			◠	◌
73.275.1500	DNMG 110408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			◠	◌
73.275.2625	DNMG 150604-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌
73.275.3850	DNMG 150608-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌
73.275.4400	DNMG 150608-NR4E HC-P25		0,2-5	0,15-0,4	P							▽▽		○	◠	

› 72.560 Phantom

NL **WISSELPLAATHOUDER A-DSKNR/L**
FR **PORTE-PLAQUETTE A-DSKNR/L**
ES **PORTAPLAQUITA A-DSKNR/L**
DE **KLEMMHALTER A-DSKNR/L**









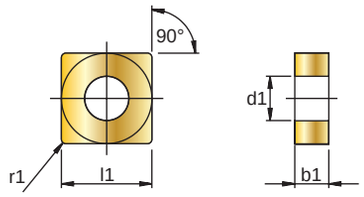
Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.560.1320	A32S DSKNR 12	31	22	40	32	250	40	739980450	739980470	739980494	739980497	SN.. 1204..
72.560.2320	A32S DSKNL 12	31	22	40	32	250	40	739980450	739980470	739980494	739980497	SN.. 1204..

19:00 ▶ 24h

› 73.390
› 73.395
› 73.400

Phantom

NL **WISSELPLAAT SNMA, SNMG, SNMM**
FR **PLAQUETTE SNMA, SNMG, SNMM**
ES **PLAQUITA SNMA, SNMG, SNMM**
DE **WENDEPLATTE SNMA, SNMG, SNMM**



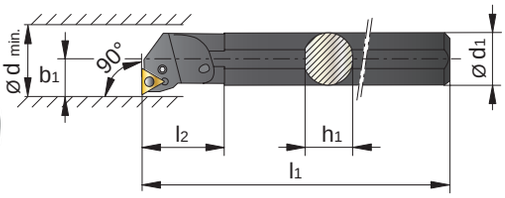
SN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
12	12,7	5,15	4,76	0,4-1,2

Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.395.0150	SNMG 120404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽▽			○		
73.395.1200	SNMG 120408-NM3E HC-P15		0,15-4	0,2-0,5	P							▽▽		○		
73.395.0900	SNMG 120408-NM3E HC-P25		0,15-4	0,2-0,5	P							▽▽		○	⌒	
73.395.1000	SNMG 120408-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			⌒	◌
73.395.1100	SNMG 120412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.395.1600	SNMG 120408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.390.0150	SNMA 120408 HC-P10/K10		1-5	0,3-0,5	P		K					▽▽		○	⌒	
73.395.2150	SNMG 120408-NR4 HC-P25/M20		1,5-5,0	0,3-0,5	P	M	K					▽▽	▽	○	⌒	
73.400.0200	SNMM 120408-NR5E HC-P25		0,15-4	0,2-0,5	P							▽▽	▽	○	⌒	
73.400.0300	SNMM 120412-NR5E HC-P25		0,15-4	0,2-0,5	P							▽▽	▽	○	⌒	

› 72.563 Phantom

NL **WISSELPLAATHOUDER S-PTFNR**
FR **PORTE-PLAQUETTE S-PTFNR**
ES **PORTAPLAQUITA S-PTFNR**
DE **KLEMMHALTER S-PTFNR**





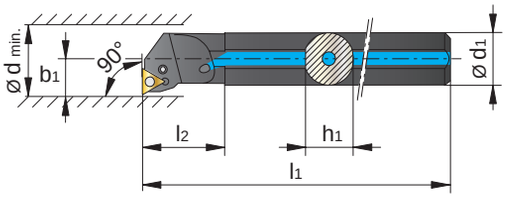


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6	7
72.563.1250	S25T-PTFNR 16	23	17	32	25	300	17,5	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0204	73.998.0410	TNM. 1604..

› 72.565 Phantom

NL **WISSELPLAATHOUDER A-PTFNR/L**
FR **PORTE-PLAQUETTE A-PTFNR/L**
ES **PORTAPLAQUITA A-PTFNR/L**
DE **KLEMMHALTER A-PTFNR/L**





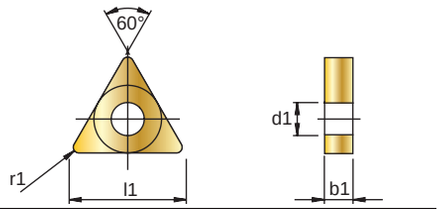


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6	7
72.565.1250	A25R-PTFNR 16	23	17	32	25	200	17,5	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.565.1320	A32S-PTFNR 16	30	22	40	32	250	18	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
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	73.998.0410	TNM. 1604..
72.565.2320	A32S-PTFNL 16	30	22	40	32	250	180	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..

› 73.429
› 73.435
› 73.440

Phantom

NL **WISSELPLAAT TNMA, TNMG, TNMM**
FR **PLAQUETTE TNMA, TNMG, TNMM**
ES **PLAQUITA TNMA, TNMG, TNMM**
DE **WENDEPLATTE TNMA, TNMG, TNMM**

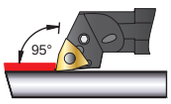


TN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
16	16,5	3,81	4,76	0,4-1,2
22	22,0	5,16	4,76	0,8-1,2

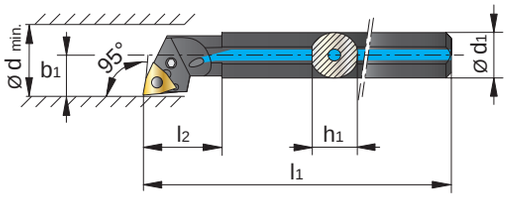
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.435.0150	TNMG 160404-ER HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.0250	TNMG 160408-ER HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.0820	TNMG 160404-NF2E HC-P15		0,5-5	0,1-0,35	P						▽▽▽			○		
73.435.0850	TNMG 160404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽▽		▽	○		
73.435.1625	TNMG 160404-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M					▽▽▽	▽▽		○	⌒	
73.435.2800	TNMG 160408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.435.1590	TNMG 160404-NM3E HC-P25		0,5-5	0,1-0,35	P							▽▽		○	⌒	
73.435.1600	TNMG 160408-NM3E HC-P15		0,5-5	0,1-0,35	P							▽▽		○		
73.435.1650	TNMG 160408-NM3E HC-P25		0,5-5	0,1-0,35	P							▽▽		○	⌒	
73.435.1850	TNMG 160408-NM3E HC-P25/M20/ S15		0,5-5	0,1-0,35	P	M			S			▽▽		○	⌒	
73.435.3450	TNMG 220408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	⌒	
73.435.2250	TNMG 160404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.435.2300	TNMG 160408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽▽	▽▽			⌒	◌
73.429.0200	TNMA 160408 HC-P10/K10		1-5	0,3-0,5	P		K					▽▽		○	⌒	
73.435.2850	TNMG 160408-NR4E HC-P25		0,5-5	0,1-0,35	P							▽▽	▽	○	⌒	
73.440.2850	TNMM 160408-NR6 HC-P25/M20		1-6,0	0,3-0,6	P	M	K						▽	○		

› 72.570 Phantom

NL **WISSELPLAATHOUDER A-PWLNR/L**
FR **PORTE-PLAQUETTE A-PWLNR/L**
ES **PORTAPLAQUITA A-PWLNR/L**
DE **KLEMMHALTER A-PWLNR/L**





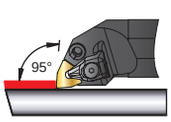




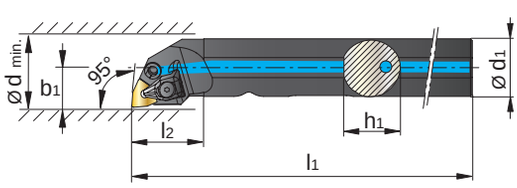
Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4
72.570.1200	A20Q-PWLNR 06	19	13	25	20	180	19,5	73.998.0135	73.998.0167	73.998.0415	WNM. 0604..
72.570.2200	A20Q-PWLNL 06	19	13	25	20	180	19,5	73.998.0135	73.998.0167	73.998.0415	WNM. 0604..

› 72.575 Phantom

NL **WISSELPLAATHOUDER A-DWLNR/L**
FR **PORTE-PLAQUETTE A-DWLNR/L**
ES **PORTAPLAQUITA A-DWLNR/L**
DE **KLEMMHALTER A-DWLNR/L**





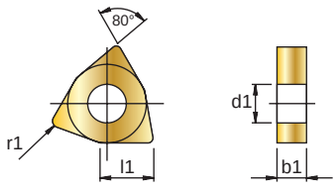




Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6
72.575.1250	A25R DWLNR 06	24	17	32	25	200	32	73.998.0445	73.998.0480	73.998.0490	73.998.0495	-	WNM. 0604..
72.575.1320	A32S DWLNR 08	31	22	40	32	250	40	73.998.0450	73.998.0485	73.998.0494	73.998.0497	73.998.0498	WNM. 0804..
72.575.2250	A25R DWLNL 06	24	17	32	25	200	32	73.998.0445	73.998.0480	73.998.0490	73.998.0495	-	WNM. 0604..
72.575.2320	A32S DWLNL 08	31	22	40	32	250	40	73.998.0450	73.998.0485	73.998.0494	73.998.0497	73.998.0498	WNM. 0804..

› 73.495 Phantom

NL **WISSELPLAAT WNMG**
FR **PLAQUETTE WNMG**
ES **PLAQUITA WNMG**
DE **WENDEPLATTE WNMG**

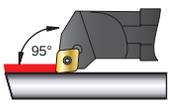


WN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,6	3,81	4,76	0,4-0,8
08	8,7	5,16	4,76	0,4-1,2

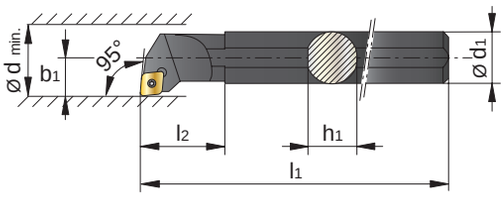
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.495.0060	WNMG 060404-NF3 HC-P25/M20		0,5-5,0	0,12-0,4	P	M	K				▽▽▽	▽▽		○	◠	
73.495.0350	WNMG 080404-NF3 HC-P25/M20		0,5-5,0	0,12-0,4	P	M	K				▽▽▽	▽▽		○	◠	
73.495.0650	WNMG 080408-NF3 HC-M20/K30		1,5-4,0	0,2-0,38	P	M	K					▽▽		○	◠	◌
73.495.0130	WNMG 060408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.495.1050	WNMG 080408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.495.1100	WNMG 080408-NM3 HC-P35/M25		1,0-3,5	0,15-0,35	P	M						▽▽			◠	◌
73.495.1200	WNMG 080412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K					▽▽		○	◠	
73.495.0960	WNMG 080404-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S			▽▽		○	◠	
73.495.0970	WNMG 080408-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S			▽▽		○	◠	
73.495.0600	WNMG 080404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌
73.495.1750	WNMG 080408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M						▽▽			◠	◌

› 72.585 Phantom

NL **WISSELPLAATHOUDER S-SCLCR**
FR **PORTE-PLAQUETTE S-SCLCR**
ES **PORTAPLAQUITA S-SCLCR**
DE **KLEMMHALTER S-SCLCR**





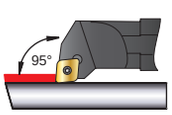




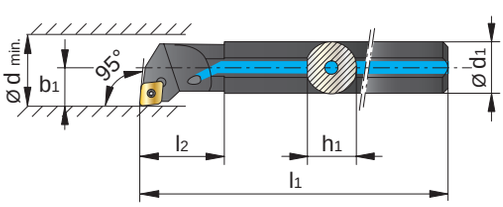
Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.585.1080	S08H-SCLCR 06	7	5	11	8	100	8	73.998.0085	73.998.0430	CC.. 0602..
72.585.1100	S10K-SCLCR 06	9	7	13	10	125	10	73.998.0085	73.998.0430	CC.. 0602..
72.585.1120	S12Q-SCLCR 06	11	9	16	12	180	10	73.998.0085	73.998.0430	CC.. 0602..
72.585.1160	S16R-SCLCR 09	15	11	20	16	200	16	73.998.0075	73.998.0420	CC.. 09T3..
72.585.1200	S20S-SCLCR 09	18	13	25	20	250	16	73.998.0075	73.998.0420	CC.. 09T3..
72.585.1250	S25T-SCLCR 09	23	17	32	25	300	16	73.998.0070	73.998.0420	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**







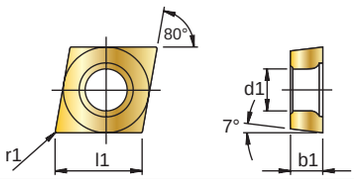


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.590.1080	A08F-SCLCR 06	7,5	5	11	8	80	8	73.998.0085	73.998.0430	CC.. 0602..
72.590.1100	A10H-SCLCR 06	9,5	7	13	10	100	10	73.998.0085	73.998.0430	CC.. 0602..
72.590.1120	A12K-SCLCR 06	11,5	9	16	12	125	10	73.998.0085	73.998.0430	CC.. 0602.
72.590.1160	A16M-SCLCR 09	15,5	11	20	16	150	16	73.998.0075	73.998.0420	CC.. 09T3..
72.590.1200	A20Q-SCLCR 09	19	13	25	20	180	16	73.998.0074	73.998.0420	CC.. 09T3..
72.590.1250	A25R-SCLCR 09	24	17	31,5	25	200	16	73.998.0074	73.998.0420	CC.. 09T3..
72.590.2080	A08F-SCLCL 06	7,5	5	11	8	80	8	73.998.0085	73.998.0430	CC.. 0602..
72.590.2100	A10H-SCLCL 06	9,5	7	13	10	100	10	73.998.0085	73.998.0430	CC.. 0602..
72.590.2120	A12K-SCLCL 06	11,5	9	16	12	125	10	73.998.0085	73.998.0430	CC.. 0602..
72.590.2160	A16M-SCLCL 09	15,5	11	20	16	150	16	73.998.0075	73.998.0420	CC.. 09T3..
72.590.2200	A20Q-SCLCL 09	19	13	25	20	180	16	73.998.0074	73.998.0420	CC.. 09T3..
72.590.2250	A25R-SCLCL 09	24	17	31,5	25	200	16	73.998.0074	73.998.0420	CC.. 09T3..

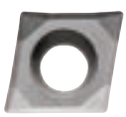
› 73.550
› 73.565
› 73.570

Phantom

NL **WISSELPLAAT CCGT, CCMT, CCMW**
FR **PLAQUETTE CCGT, CCMT, CCMW**
ES **PLAQUITA CCGT, CCMT, CCMW**
DE **WENDEPLATTE CCGT, CCMT, CCMW**

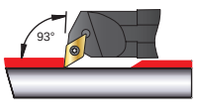


CC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,4	2,80	2,38	0,2-0,8
09	9,7	4,40	3,97	0,2-0,8
12	12,4	5,50	4,76	0,4-0,8

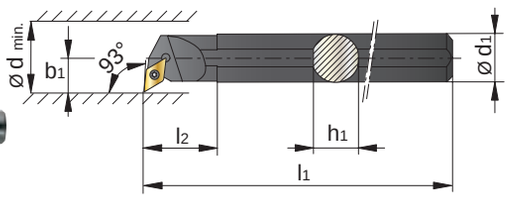
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.565.0150	CCMT 060204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.565.2750	CCMT 09T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.565.0700	CCMT 060202-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.565.0750	CCGT 060202-PF3 HC-P35/M25		0,05-2,5	0,05-0,25	P	M					▽▽▽				⌒	◌
73.565.0800	CCMT 060204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.565.1150	CCMT 060204-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M					▽▽▽				⌒	◌
73.565.3350	CCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.565.3570	CCMT 09T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	⌒	◌
73.565.3590	CCMT 09T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	⌒	◌
73.565.2150	CCMT 060204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
76.565.1600	CCMT 060208-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.4500	CCMT 09T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.565.4650	CCMT 09T304-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.4700	CCMT 09T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.4750	CCMT 120404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.565.4800	CCMT 120408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.565.1450	CCMT 060204-PM3E HC-P15		0,05-2,5	0,05-0,2	P							▽▽		○		
73.565.1500	CCMT 060204-PM3E HC-P25/M20/S15		0,05-2,5	0,05-0,2	P	M			S			▽▽		○	⌒	
73.565.4000	CCMT 09T304-PM3E HC-P15		0,05-3,5	0,05-0,25	P							▽▽		○		
73.565.4050	CCMT 09T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S			▽▽		○	⌒	
73.565.4100	CCMT 09T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S			▽▽		○	⌒	
73.565.4720	CCMT 120404-PM3E HC-P25/M20/S15		0,1-4	0,05-0,5	P	M			S			▽▽		○		
73.565.4730	CCMT 120408-PM3E HC-P15		0,1-4	0,05-0,5	P							▽▽		○		
73.565.4735	CCMT 120408-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,2	P	M			S			▽▽		○		
73.550.0175	CCGT 060204-PA2 HC-K10		1-3	0,1-0,75	P	M	K	N			▽▽▽	▽▽		○	⌒	
73.550.0225	CCGT 09T304-PA2 HC-K10		0,6-4	0,08-,025	P	M	K	N			▽▽▽	▽▽		○	⌒	
73.550.0100	CCGT 060202-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.550.0150	CCGT 060204-PA2 K10		0,6-3	0,08-,025			K	N				▽▽	▽	○	⌒	
73.550.0200	CCGT 09T304-PA2 K10		0,6-3	0,08-,025			K	N				▽▽	▽	○	⌒	
73.550.0250	CCGT 09T308-PA2 K10		0,6-4	0,08-,025			K	N				▽▽	▽	○	⌒	
73.570.0200	CCMW 09T304 K20		0,4-3	0,12-0,25			K	N			▽▽▽	▽▽		○		

› 72.595 Phantom

NL **WISSELPLAATHOUDER S-SDUCR**
FR **PORTE-PLAQUETTE S-SDUCR**
ES **PORTAPLAQUITA S-SDUCR**
DE **KLEMMHALTER S-SDUCR**





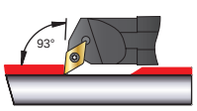




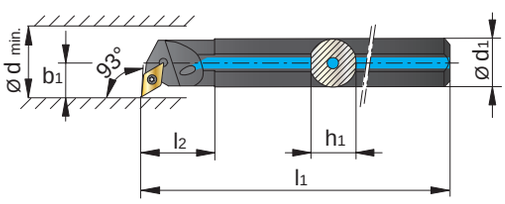
Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.595.1120	S12Q-SDUCR 07	11	9	16	12	180	12,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.595.1160	S16R-SDUCR 07	14,5	11	20	16	200	16,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.595.1200	S20S-SDUCR 11	18	13	25	20	250	20,5	-	-	73.998.0075	73.998.0420	DC.. 11T3..
72.595.1250	S25T-SDUCR 11	23	17	32	25	300	26	73.998.0290	73.998.0355	73.998.0070	73.998.0420	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**







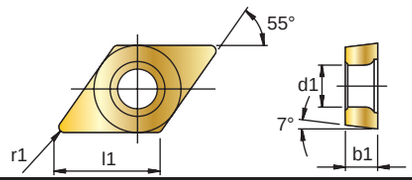


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.600.1120	A12K-SDUCR 07	11,5	9	17	12	125	12,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.1160	A16M-SDUCR 07	15,5	11	21	16	150	16,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.1200	A20Q-SDUCR 11	19	13	25	20	180	21	-	-	73.998.0075	73.998.0420	DC.. 11T3..
72.600.1250	A25R-SDUCR 11	24	17	31,5	25	200	26	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..
72.600.2120	A12K-SDUCL 07	11,5	9	17	12	125	12,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.2160	A16M-SDUCL 07	15,5	11	21	16	150	16,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.2200	A20Q-SDUCL 11	19	13	20	25	180	21	-	-	73.998.0075	73.998.0420	DC.. 11T3..

› 73.610
› 73.630

Phantom

NL **WISSELPLAAT DCGT, DCMT**
FR **PLAQUETTE DCGT, DCMT**
ES **PLAQUITA DCGT, DCMT**
DE **WENDEPLATTE DCGT, DCMT**

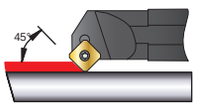


DC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
07	7,7	2,80	2,38	0,2-0,4
11	11,6	4,40	3,97	0,4-0,8

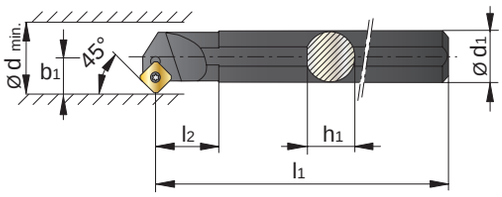
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.630.0150	DCMT 070204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.630.2250	DCMT 11T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.630.0350	DCMT 070204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.630.2800	DCMT 11T302-PF3 CM10		0,1-1,3	0,03-0,12	P	M					▽▽▽			○		
73.630.2850	DCMT 11T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.630.2900	DCMT 11T304-PF3 HC-P35/M25		0,05-2,5	0,05-0,25	P	M					▽▽▽				◠	◌
73.630.3400	DCMT 11T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.630.3450	DCMT 11T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.630.1600	DCMT 070204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.1750	DCMT 070208-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.3670	DCMT 11T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.3720	DCMT 11T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.630.3650	DCMT 11T308-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.630.3750	DCMT 11T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.630.0950	DCMT 070204-PM3E HC-P25/M20/S15		0,05-2	0,05-0,2	P	M			S			▽▽		○	◠	
73.630.3500	DCMT 11T304-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S			▽▽		○	◠	
73.630.3600	DCMT 11T308-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S			▽▽		○	◠	
73.610.0150	DCGT 070202-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.610.0200	DCGT 070204-PA2 HC-K10		0,6-2,5	0,08-0,25	P	M	K	N				▽▽	▽	○	◠	
73.610.0400	DCGT 11T304-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽	▽	○	◠	
73.610.0425	DCGT 11T304-PA2 HC-K10		0,6-3	0,08-0,25	P	M	K	N				▽▽	▽	○	◠	
73.610.0450	DCGT 11T308-PA2 K10		0,8-3,5	0,1-0,3			K	N				▽▽	▽	○	◠	
73.610.0475	DCGT 11T308-PA2 HC-K10		0,8-3,5	0,1-0,3	P	M	K	N				▽▽	▽	○	◠	

› 72.605 Phantom

NL **WISSELPLAATHOUDER S-SSSCR**
FR **PORTE-PLAQUETTE S-SSSCR**
ES **PORTAPLAQUITA S-SSSCR**
DE **KLEMMHALTER S-SSSCR**





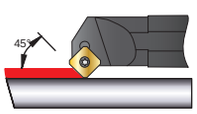




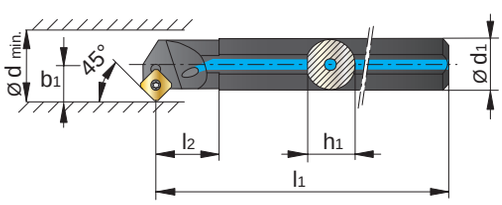
Ref.	Type	h1	b1	d min.	d1	l1	1	2	3
72.605.1160	S16R-SSSCR 09	15	11	21	16	200	73.998.0075	73.998.0420	SC.. 09T...

› 72.610 Phantom

NL **WISSELPLAATHOUDER A-SSSCR**
FR **PORTE-PLAQUETTE A-SSSCR**
ES **PORTAPLAQUITA A-SSSCR**
DE **KLEMMHALTER A-SSSCR**







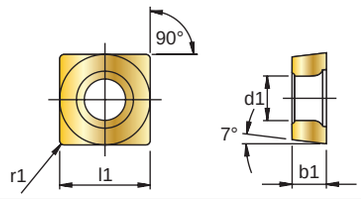


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.610.1160	A16M-SSSCR 09	16	11	21	16	150	129	73.998.0075	73.998.0420	SC.. 09T3..
72.610.1200	A20Q-SSSCR 09	19	13	25	20	180	132	73.998.0075	73.998.0420	SC.. 09T3..

› 73.750
› 73.755

Phantom

NL **WISSELPLAAT SCGT, SCMT**
FR **PLAQUETTE SCGT, SCMT**
ES **PLAQUITA SCGT, SCMT**
DE **WENDEPLATTE SCGT, SCMT**



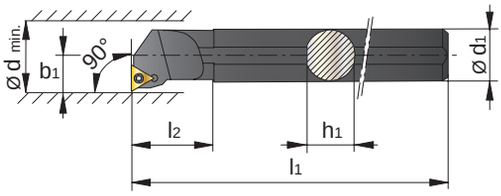
SC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
09	9,5	4,40	3,97	0,4-0,8
12	12,7	5,60	4,76	0,4-0,8

Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
73.755.0750	SCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○		
73.755.1500	SCMT 09T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	⌒	
73.755.1870	SCMT 120408-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M						▽▽			⌒	◌
73.755.1350	SCMT 09T304-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S			▽▽		○	⌒	
73.755.1450	SCMT 09T308-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S			▽▽		○	⌒	
73.755.1750	SCMT 120408-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S			▽▽		○	⌒	
73.750.0150	SCGT 09T304-PA2 K10		0,6-4	0,08-0,25			K	N				▽▽	▽	○	⌒	
73.750.0200	SCGT 09T308-PA2 K10		0,7-4	0,1-0,35			K	N				▽▽	▽	○	⌒	

› 72.615 Phantom

NL **WISSELPLAATHOUDER S-STFCR**
FR **PORTE-PLAQUETTE S-STFCR**
ES **PORTAPLAQUITA S-STFCR**
DE **KLEMMHALTER S-STFCR**





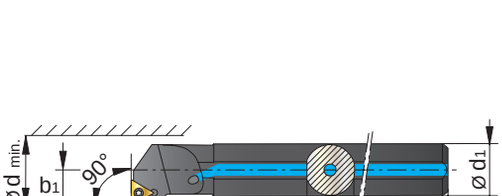


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.615.1160	S16R-STFCR 11	15	11	21	16	200	13	73.998.0080	73.998.0430	TC.. 1102..
72.615.1200	S20S-STFCR 11	18	13	25	20	250	13	73.998.0080	73.998.0430	TC.. 1102..

› 72.620 Phantom

NL **WISSELPLAATHOUDER A-STFCR/L**
FR **PORTE-PLAQUETTE A-STFCR/L**
ES **PORTAPLAQUITA A-STFCR/L**
DE **KLEMMHALTER A-STFCR/L**





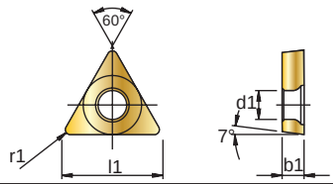


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.620.1120	A12K-STFCR 11	12	9	17	12	125	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.1160	A16M-STFCR 11	16	11	21	16	150	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.1200	A20Q-STFCR 11	19	13	25	20	180	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.2120	A12K-STFCL 11	12	9	17	12	125	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.2160	A16M-STFCL 11	16	11	21	16	150	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.2200	A20Q-STFCL 11	19	13	25	20	180	13	73.998.0080	73.998.0430	TC.. 1102..

› 73.775
› 73.790

Phantom

NL **WISSELPLAAT TCGT, TCMT**
FR **PLAQUETTE TCGT, TCMT**
ES **PLAQUITA TCGT, TCMT**
DE **WENDEPLATTE TCGT, TCMT**

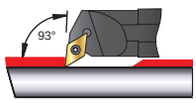


TC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	2,80	2,38	0,2-0,4
16	16,0	4,40	3,97	0,2-0,8

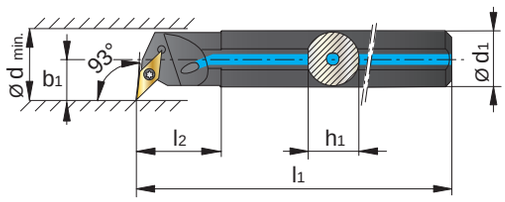
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.790.0150	TCMT 110204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.790.0650	TCMT 110202-PF3 CM10		0,1-1,3	0,03-0,12	P	M					▽▽▽			○		
73.790.0800	TCMT 110208-PF3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K				▽▽▽			○		
73.790.2050	TCMT 16T304-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.790.2150	TCMT 16T308-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.790.0750	TCMT 110204-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.790.2100	TCMT 16T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.790.2200	TCMT 16T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	◠	◌
73.790.1400	TCMT 110204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.790.2850	TCMT 16T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.790.1350	TCMT 110204-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.790.1450	TCMT 110208-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.790.2300	TCMT 16T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.790.2350	TCMT 16T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	◠	
73.775.0150	TCGT 110202-PA2 K10		0,6-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.775.0200	TCGT 110204-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽	▽	○	◠	
73.775.0750	TCGT 16T304-PA2 K10		0,6-4	0,08-0,25			K	N				▽▽	▽	○	◠	
73.775.0800	TCGT 16T308-PA2 K10		0,8-4	0,1-0,35			K	N				▽▽	▽	○	◠	

› 72.630 Phantom

NL **WISSELPLAATHOUDER A-SVUCR**
FR **PORTE-PLAQUETTE A-SVUCR**
ES **PORTAPLAQUITA A-SVUCR**
DE **KLEMMHALTER A-SVUCR**







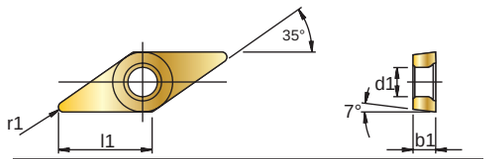


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.630.1160	A16M-SVUCR 11	15,5	11	21	16	150	16,5	73.998.0080	73.998.0430	VC.. 1103..
72.630.1200	A20Q-SVUCR 11	19	13	25	20	180	20,5	73.998.0080	73.998.0430	VC.. 1103..

› 73.830
› 73.840

Phantom

NL **WISSELPLAAT VCMT, VCGT**
FR **PLAQUETTE VCMT, VCGT**
ES **PLAQUITA VCMT, VCGT**
DE **WENDEPLATTE VCMT, VCGT**



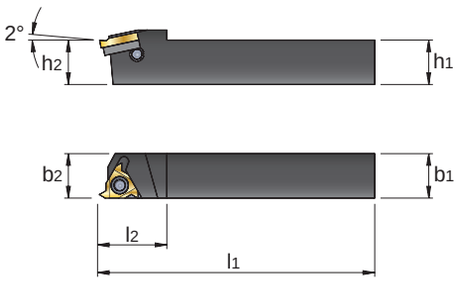
VC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,0	2,80	3,18	0,2-0,8
16	16,6	4,40	4,76	0,2-0,8

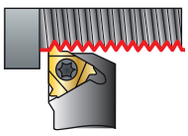
Ref.	Type		a_p (mm)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
73.840.0200	VCMT 110304-PF2 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽	▽▽		○		
73.840.0150	VCGT 110302-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.840.0850	VCMT 160404-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○		
73.840.1000	VCMT 160404-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M					▽▽▽				◠	◌
73.840.1500	VCMT 160404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.840.1550	VCMT 160408-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	◠	
73.840.1050	VCMT 160408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽			◠	◌
73.830.0150	VCGT 110302-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○		
73.830.0200	VCGT 110304-PA2 K10		0,6-2,5	0,08-0,25			K	N				▽▽	▽	○	◠	
73.830.0250	VCGT 110308-PA2 K10		0,8-3	0,1-0,35			K	N				▽▽	▽	○	◠	

› 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**







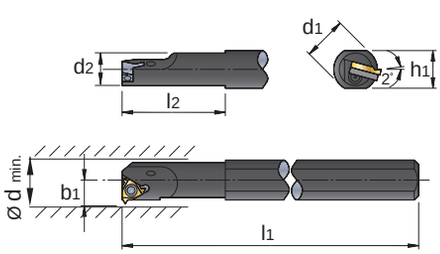


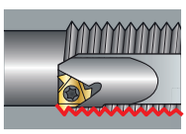
Ref.	Type	h1	h2	b1	b2	l1	l2	1	2	3	4	5	6	7
74.101.1230	NL 1212-16	12	12	12	12	83,2	22	-	-	-	-	74.398.0115	74.398.0150	16ER
74.101.1630	AL 1616-16	16	16	16	16	100	20,5	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	74.398.0150	16ER
74.101.2030	AL 2020-16	20	20	20	20	128,6	30	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	74.398.0150	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	74.398.0150	16ER
74.101.2540	AL 2525-22	25	25	25	25	155,7	36	74.398.0200	74.398.0225	-	74.398.0135	74.398.0120	74.398.0155	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	74.398.0150	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	74.398.0155	22ER

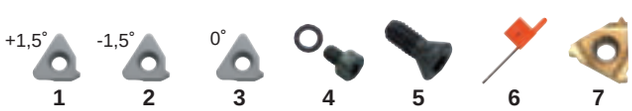
› 74.125 Phantom

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**







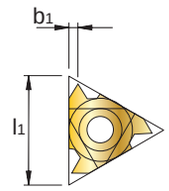


Ref.	Type	d1	h1	l1	d2	l2	b1	d min	1	2	3	4	5	6	7
74.125.1020	NVR 10-11	20	18	180	10	25	7,3	13	-	-	-	-	74.398.0100	74.398.0145	11IR
74.125.1330	NVR 13-16	20	18	180	12,7	32	10,3	17	-	-	-	-	74.398.0115	74.398.0150	16IR
74.125.1630	NVR 16-16	20	18	180	16	40	11,5	20	-	-	-	-	74.398.0115	74.398.0150	16IR
74.125.2030	AVR 20-16	20	18	180	20	40	13,4	24	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	74.398.0150	16IR
74.125.2230	AVR 25-16	25	22,6	200	24,6	45	16,1	29	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	74.398.0150	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	74.398.0150	16IR
74.125.2540	AVR 25-22	32	29	250	25	60	17,4	32	74.398.0290	74.398.0315	-	74.398.0135	74.398.0120	74.398.0155	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	74.398.0150	16IR
74.125.3240	AVR 32-22	32	29	250	32	60	21,5	39	74.398.0290	74.398.0315	-	74.398.0135	74.398.0120	74.398.0155	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	74.398.0150	16IR

19:00 ▶ 24h

› 74.150
› 74.160

Phantom

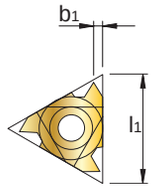


NL **DRAADSNIJWISSELPLAAT ER 60°, ER 55°, DEELPROFIEL, UITWENDIG**
FR **PLAQUETTE A FILETER ER 60°, ER 55°, PROFIL PARTIEL, EXTERIEUR**
ES **PLAQUITA PARA ROSCAR ER 60°, ER 55°, PERFIL PARCIAL, EXTERIOR**
DE **GEWINDESCHNEIDPLATTE ER 60°, ER 55°, TEILPROFIL, AUSEN**

Ref.	Type		l1	b1	P (mm)	P (inch)	a_p (mm)	P	M	K	N	S	H
74.160.0200	16ER AG55 P30		16	1,7	0,5-3	48-8	0,08-0,33	P					
74.160.0220	16ER AG55 HC-P25/M20/K20		16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S	
74.160.0250	22ER N55 P30		22	2,5	3,5-5	7-5	0,19-0,42	P					
74.160.0270	22ER N55 HC-P25/M20/K20		22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S	
74.150.0200	16ER AG60 P30		16	1,7	0,5-3	48-8	0,08-0,33	P					
74.150.0220	16ER AG60 HC-P25/M20/K20		16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S	
74.150.0250	22ER N60 P30		22	2,5	3,5-5	7-5	0,19-0,42	P					
74.150.0270	22ER N60 HC-P25/M20/K20		22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S	

› 74.155
› 74.165

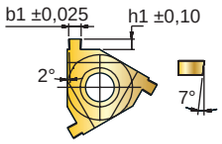
Phantom



NL **DRAADSNIJWISSELPLAAT IR 60°, IR 55°, DEELPROFIEL, INWENDIG**
FR **PLAQUETTE A FILETER IR 60°, IR 55°, PROFIL PARTIEL, INTERIEUR**
ES **PLAQUITA PARA ROSCAR IR 60°, IR 55°, PERFIL PARCIAL, INTERIOR**
DE **GEWINDESCHNEIDPLATTE IR 60°, IR 55°, TEILPROFIL, INNEN**

Ref.	Type		l1	b1	P (mm)	P (inch)	a_p (mm)	P	M	K	N	S	H
74.165.0050	11IR A55 P30		11	0,9	0,5-1,5	48-16	0,08-0,25	P					
74.165.0200	16IR AG55 P30		16	1,7	0,5-3	48-8	0,08-0,33	P					
74.165.0220	16IR AG55 HC-P25/M20/K20		16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S	
74.165.0250	22IR N55 P30		22	2,5	3,5-5	7-5	0,19-0,42	P					
74.165.0270	22IR N55 HC-P25/M20/K20		22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S	
74.155.0050	11IR A60 P30		11	0,9	0,5-1,5	48-16	0,08-0,25	P					
74.155.0070	11IR A60 HC-P25/M20/K20		11	0,9	0,5-1,5	48-16	0,08-0,25	P	M	K	N	S	
74.155.0200	16IR AG60 P30		16	1,7	0,5-3	48-8	0,08-0,33	P					
74.155.0220	16IR AG60 HC-P25/M20/K20		16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S	
74.155.0250	22IR N60 P30		22	2,5	3,5-5	7-5	0,19-0,42	P					
74.155.0270	22IR N60 HC-P25/M20/K20		22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S	

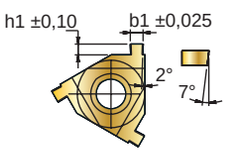
› 74.390 Phantom



NL **BORGRINGWISSELPLAAT, UITWENDIG, ER DIN 471**
FR **PLAQUETTE POUR GORGES DE CIRCLIPS, EXTERIEUR, ER DIN 471**
ES **PLAQUITA PARA ARANDELAS DE RETENCION, EXTERIOR, ER DIN 471**
DE **SCHNEIDPLATTE, AUSEN, ER DIN 471**

Ref.	Type		m (H13)	b1	h1	a_p (mm)	P	M	K	N	S	H
74.390.0070	16ER 1,1DIN 471 HC-P20/M20/K20		1,10	1,19	1,3	0,12-0,25	P	M	K	N		
74.390.0170	16ER 1,3DIN 471 HC-P20/M20/K20		1,30	1,39	1,5	0,15-0,25	P	M	K	N		
74.390.0220	16ER 1,6DIN 471 HC-P20/M20/K20		1,60	1,69	1,8	0,15-0,25	P	M	K	N		
74.390.0270	16ER 1,85DIN 471 HC-P20/M20/K20		1,85	1,94	2	0,16-0,28	P	M	K	N		
74.390.0320	16ER 2,15DIN 471 HC-P20/M20/K20		2,15	2,24	1,8	0,16-0,28	P	M	K	N		

› 74.395 Phantom



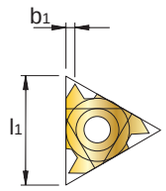
NL **BORGRINGWISSELPLAAT, INWENDIG, DIN 472**
FR **PLAQUETTE POUR GORGES DE CIRCLIPS, INTERIEUR, DIN 472**
ES **PLAQUITA PARA ARANDELAS DE RETENCION, INTERIOR, DIN 472**
DE **SCHNEIDPLATTE, INNEN, DIN 472**

Ref.	Type		m (H13)	b1	h1	a_p (mm)	P	M	K	N	S	H
74.395.0070	16IR 1,1DIN 472 HC-P20/M20/K20		1,10	1,19	1,3	0,12-0,25	P	M	K	N		
74.395.0170	16IR 1,3DIN 472 HC-P20/M20/K20		1,30	1,39	1,5	0,15-0,25	P	M	K	N		
74.395.0220	16IR 1,6DIN 472 HC-P20/M20/K20		1,60	1,69	1,8	0,15-0,25	P	M	K	N		
74.395.0270	16IR 1,85DIN 472 HC-P20/M20/K20		1,85	1,94	2	0,16-0,28	P	M	K	N		
74.395.0320	16IR 2,15DIN 472 HC-P20/M20/K20		2,15	2,24	1,5	0,16-0,28	P	M	K	N		

19:00 24h

› 74.170 Phantom

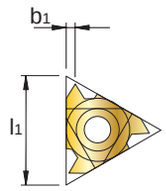
NL **DRAADSNIJWISSELPLAAT ER 60°, VOLPROFIEL, UITWENDIG**
FR **PLAQUETTE A FILETER ER 60°, PROFIL PLEIN, EXTERIEUR**
ES **PLAQUITA PARA ROSCAR ER 60°, PERFIL COMPLETO, EXTERIOR**
DE **GEWINDESCHNEIDPLATTE ER 60°, VOLLPROFIL, AUSEN**



Ref.	Type		l1	b1	P (mm)	a_p (mm)	x a_p (mm)	P	M	K	N	S	H
74.170.0720	16ER 0,5 ISO HC-P25/M20/K20		16	0,4	0,5	0,08-0,12	4-6	P	M	K	N	S	
74.170.0730	16ER 0,5 ISO HC-P25/M25		16	0,4	0,5	0,08-0,12	4-6	P	M				
74.170.0700	16ER 0,5 ISO P30		16	0,4	0,5	0,08-0,12	4-6	P					
74.170.0870	16ER 0,75 ISO HC-P25/M20/K20		16	0,6	0,75	0,1-0,18	4-7	P	M	K	N	S	
74.170.0850	16ER 0,75 ISO P30		16	0,6	0,75	0,1-0,18	4-7	P					
74.170.0875	16ER 0,80 ISO HC-P25/M20/K20		16	0,7	0,8	0,1-0,18	4-7	P	M	K	N	S	
74.170.0970	16ER 1,0 ISO HC-P25/M20/K20		16	0,7	1	0,12-0,25	4-8	P	M	K	N	S	
74.170.0990	16ER 1,0 ISO HC-P25/M25		16	0,7	1	0,12-0,25	4-8	P	M				
74.170.0950	16ER 1,0 ISO P30		16	0,7	1	0,12-0,25	4-8	P					
74.170.1020	16ER 1,25 ISO HC-P25/M20/K20		16	0,9	1,25	0,14-0,25	5-9	P	M	K	N	S	
74.170.1040	16ER 1,25 ISO HC-P25/M25		16	0,9	1,25	0,14-0,25	5-9	P	M				
74.170.1000	16ER 1,25 ISO P30		16	0,9	1,25	0,14-0,25	5-9	P					
74.170.1070	16ER 1,5 ISO HC-P25/M20/K20		16	1	1,5	0,15-0,25	6-10	P	M	K	N	S	
74.170.1090	16ER 1,5 ISO HC-P25/M25		16	1	1,5	0,15-0,25	6-10	P	M				
74.170.1050	16ER 1,5 ISO P30		16	1	1,5	0,15-0,25	6-10	P					
74.170.1120	16ER 1,75 ISO HC-P25/M20/K20		16	1,2	1,75	0,15-0,25	7-12	P	M	K	N	S	
74.170.1140	16ER 1,75 ISO HC-P25/M25		16	1,2	1,75	0,15-0,25	7-12	P	M				
74.170.1100	16ER 1,75 ISO P30		16	1,2	1,75	0,15-0,25	7-12	P					
74.170.1170	16ER 2,0 ISO HC-P25/M20/K20		16	1,3	2	0,16-0,28	7-12	P	M	K	N	S	
74.170.1190	16ER 2,0 ISO HC-P25/M25		16	1,3	2	0,16-0,28	7-12	P	M				
74.170.1150	16ER 2,0 ISO P30		16	1,3	2	0,16-0,28	7-12	P					
74.170.1220	16ER 2,5 ISO HC-P25/M20/K20		16	1,5	2,5	0,18-0,32	8-14	P	M	K	N	S	
74.170.1240	16ER 2,5 ISO HC-P25/M25		16	1,5	2,5	0,19-0,33	8-14	P	M				
74.170.1200	16ER 2,5 ISO P30		16	1,5	2,5	0,18-0,32	8-14	P					
74.170.1270	16ER 3,0 ISO HC-P25/M20/K20		16	1,6	3	0,19-0,33	9-16	P	M	K	N	S	
74.170.1290	16ER 3,0 ISO HC-P25/M25		16	1,6	3	0,19-0,33	9-16	P	M				
74.170.1250	16ER 3,0 ISO P30		16	1,6	3	0,19-0,33	9-16	P					
74.170.1320	22ER 3,5 ISO HC-P25		22	2,3	3,5	0,2-0,35	10-18	P					
74.170.1370	22ER 4,0 ISO HC-P25/M20/K20		22	2,3	4	0,22-0,36	11-18	P	M	K	N	S	
74.170.1420	22ER 4,5 ISO HC-P25/M20/K20		22	2,5	4,5	0,24-0,4	11-19	P	M	K	N	S	
74.170.1470	22ER 5,0 ISO HC-P25		22	2,5	5	0,25-0,42	12-20	P					

› 74.180
› 74.190
› 74.240

Phantom



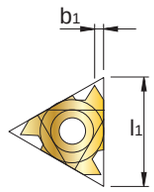
NL **DRAADSNIJWISSELPLAAT ER 55° BSW, BSP, 60° UN, TR, VOLPROFIEL, UITWENDIG**
FR **PLAQUETTE A FILETER ER 55° BSW, BSP, 60° UN, TR, PROFIL PLEIN, EXTERIEUR**
ES **PLAQUITA PARA ROSCAR ER 55° BSW, BSP, 60° UN, TR, PERFIL COMPLETO, EXTERIOR**
DE **GEWINDESCHNEIDPLATTE ER 55° BSW, BSP, 60° UN, TR, VOLLPROFIL, AUSEN**

Ref.	Type		l1	b1	p (inch)	a_p (mm)	x a_p (mm)	P	M	K	N	S	H
74.190.1270	16ER 28W HC-P25/M20/K20		16	0,7	28	0,1-0,18	4-7	P	M	K	N	S	
74.190.1520	16ER 19W HC-P25/M20/K20		16	1	19	0,12-0,25	5-9	P	M	K	N	S	
74.190.1570	16ER 18W HC-P25/M20/K20		16	1	18	0,14-0,25	5-9	P	M	K	N	S	
74.190.1620	16ER 16W HC-P25/M20/K20		16	1,1	16	0,15-0,25	5-9	P	M	K	N	S	
74.190.1670	16ER 14W HC-P25/M20/K20		16	1,2	14	0,15-0,25	7-12	P	M	K	N	S	
74.190.1690	16ER 14W HC-P25/M25		16	1,2	14	0,15-0,25	7-12	P	M				
74.190.1720	16ER 12W HC-P25/M20/K20		16	1,4	12	0,15-0,25	7-12	P	M	K	N	S	
74.190.1770	16ER 11W HC-P25/M20/K20		16	1,5	11	0,16-0,28	7-12	P	M	K	N	S	
74.190.1780	16ER 11W HC-P25/M25		16	1,5	11	0,16-0,28	7-12	P	M				
74.190.1820	16ER 10W HC-P25/M20/K20		16	1,5	10	0,16-0,28	8-14	P	M	K	N	S	
74.190.1870	16ER 9W HC-P25/M20/K20		16	1,7	9	0,16-0,28	8-14	P	M	K	N	S	
74.180.1370	16ER 20UN HC-P25/M20/K20		16	0,9	20	0,12-0,25	5-9	P	M	K	N	S	
74.180.1420	16ER 18UN HC-P25/M20/K20		16	1	18	0,12-0,25	5-9	P	M	K	N	S	
74.180.1470	16ER 16UN HC-P25/M20/K20		16	1,1	16	0,14-0,25	6-10	P	M	K	N	S	
74.180.1520	16ER 14UN HC-P25/M20/K20		16	1,2	14	0,15-0,25	7-12	P	M	K	N	S	
74.180.1570	16ER 13UN HC-P25/M20/K20		16	1,3	13	0,15-0,25	7-12	P	M	K	N	S	
74.180.1620	16ER 12UN HC-P25/M20/K20		16	1,4	12	0,15-0,25	7-12	P	M	K	N	S	
74.180.1770	16ER 10UN HC-P25/M20/K20		16	1,5	10	0,16-0,28	8-14	P	M	K	N	S	
74.180.1870	16ER 8UN HC-P25/M20/K20		16	1,7	8	0,18-0,32	8-14	P	M	K	N	S	
74.240.1050	16ER 1,5TR P30		16	1,1	1,5	0,15-0,25	6	P					
74.240.1150	16ER 2,0TR P30		16	1,3	2	0,16-0,28	8	P					
74.240.1250	16ER 3,0TR P30		16	1,5	3	0,19-0,33	12	P					
74.240.1370	22ER 4,0TR P30		22	1,9	4	0,22-0,36	13	P					
74.240.1450	22ER 5,0TR P30		22	2,5	5	0,25-0,42	14	P					

19:00 ▶ 24h

› 74.175 Phantom

NL **DRAADSNIJWISSELPLAAT IR 60°, VOLPROFIEL, INWENDIG**
FR **PLAQUETTE A FILETER IR 60°, PROFIL PLEIN, INTERIEUR**
ES **PLAQUITA PARA ROSCAR IR 60°, PERFIL COMPLETO, INTERIOR**
DE **GEWINDESCHNEIDPLATTE IR 60°, VOLLPROFIL, INNEN**



Ref.	Type		l1	b1	P (mm)	a_p (mm)	x a_p (mm)	P	M	K	N	S	H
74.175.0175	11IR 0,5 ISO HC-P25/M20/K20		11	0,4	0,5	0,08-0,12	4-6	P	M	K	N	S	
74.175.0150	11IR 0,5 ISO P30		11	0,4	0,5	0,08-0,12	4-6	P					
74.175.0320	11IR 0,75 ISO HC-P25/M20/K20		11	0,6	0,75	0,1-0,18	4-7	P	M	K	N	S	
74.175.0300	11IR 0,75 ISO P30		11	0,6	0,75	0,1-0,18	4-7	P					
74.175.0420	11IR 1,0 ISO HC-P25/M20/K20		11	0,7	1	0,12-0,25	4-8	P	M	K	N	S	
74.175.0400	11IR 1,0 ISO P30		11	0,7	1	0,12-0,25	4-8	P					
74.175.0470	11IR 1,25 ISO HC-P25/M20/K20		11	0,9	1,25	0,14-0,25	5-9	P	M	K	N	S	
74.175.0450	11IR 1,25 ISO P30		11	0,9	1,25	0,14-0,25	5-9	P					
74.175.0520	11IR 1,5 ISO HC-P25/M20/K20		11	1	1,5	0,15-0,25	6-10	P	M	K	N	S	
74.175.0530	11IR 1,5 ISO HC-P25/M25		11	1	1,5	0,15-0,25	6-10	P	M				
74.175.0500	11IR 1,5 ISO P30		11	1	1,5	0,15-0,25	6-9	P					
74.175.0570	11IR 1,75 ISO HC-P25/M20/K20		11	1,1	1,75	0,15-0,25	7-12	P	M	K	N	S	
74.175.0550	11IR 1,75 ISO P30		11	1,1	1,75	0,15-0,25	7-12	P					
74.175.0610	11IR 2,0 ISO HC-P25/M20/K20		11	1,1	2	0,16-0,28	7-12	P	M	K	N	S	
74.175.0650	11IR 2,5 ISO HC-P25/M20/K20		11	1,1	2,5	0,18-0,32	8-14	P	M	K	N	S	
74.175.0720	16IR 0,5 ISO HC-P25/M20/K20		16	0,5	0,5	0,08-0,12	4-6	P	M	K	N	S	
74.175.0700	16IR 0,5 ISO P30		16	0,4	0,5	0,08-0,12	4-6	P					
74.175.0970	16IR 1,0 ISO HC-P25/M20/K20		16	0,7	1	0,12-0,25	4-8	P	M	K	N	S	
74.175.0990	16IR 1,0 ISO HC-P25/M25		16	0,7	1	0,12-0,25	4-8	P	M				
74.175.0950	16IR 1,0 ISO P30		16	0,7	1	0,12-0,25	4-7	P					
74.175.1020	16IR 1,25 ISO HC-P25/M20/K20		16	0,9	1,25	0,12-0,25	5-9	P	M	K	N	S	
74.175.1040	16IR 1,25 ISO HC-P25/M25		16	0,9	1,25	0,14-0,25	5-9	P	M				
74.175.1000	16IR 1,25 ISO P30		16	0,9	1,25	0,14-0,25	5-8	P					
74.175.1070	16IR 1,5 ISO HC-P25/M20/K20		16	1	1,5	0,14-0,25	6-10	P	M	K	N	S	
74.175.1090	16IR 1,5 ISO HC-P25/M25		16	1	1,5	0,15-0,25	6-10	P	M				
74.175.1050	16IR 1,5 ISO P30		16	1	1,5	0,15-0,25	6-9	P					
74.175.1120	16IR 1,75 ISO HC-P25/M20/K20		16	1,2	1,75	0,15-0,25	7-12	P	M	K	N	S	
74.175.1140	16IR 1,75 ISO HC-P25/M25		16	1,2	1,75	0,15-0,25	7-12	P	M				
74.175.1100	16IR 1,75 ISO P30		16	1,2	1,75	0,15-0,25	7-11	P					
74.175.1175	16IR 2,0 ISO HC-P25/M20/K20		16	1,3	2	0,16-0,28	7-12	P	M	K	N	S	
74.175.1190	16IR 2,0 ISO HC-P25/M25		16	1,3	2	0,16-0,28	7-12	P	M				
74.175.1150	16IR 2,0 ISO P30		16	1,3	2	0,16-0,28	7-11	P					
74.175.1220	16IR 2,5 ISO HC-P25/M20/K20		16	1,5	2,5	0,18-0,32	8-14	P	M	K	N	S	
74.175.1240	16IR 2,5 ISO HC-P25/M25		16	1,5	2,5	0,18-0,32	8-14	P	M				
74.175.1200	16IR 2,5 ISO P30		16	1,5	2,5	0,18-0,32	8-12	P					
74.175.1270	16IR 3,0 ISO HC-P25/M20/K20		16	1,5	3	0,19-0,33	9-16	P	M	K	N	S	
74.175.1250	16IR 3,0 ISO P30		16	1,5	3	0,19-0,33	9-16	P					
74.175.1320	22IR 3,5 ISO HC-P25/M20/K20		22	2,3	3,5	0,2-0,35	10-18	P	M	K	N	S	
74.175.1370	22IR 4,0 ISO HC-P25/M20/K20		22	2,3	4	0,22-0,36	11-18	P	M	K	N	S	
74.175.1420	22IR 4,5 ISO HC-P25/M20/K20		22	2,4	4,5	0,24-0,4	11-19	P	M	K	N	S	
74.175.1470	22IR 5,0 ISO HC-P25/M20/K20		22	2,3	5	0,25-0,42	12-20	P	M	K	N	S	

› 74.185
› 74.195
› 74.245

Phantom



NL **DRAADSNIJWISSELPLAAT IR 55° BSW, BSP, 60° UN, TR, VOLPROFIEL, INWENDIG**
FR **PLAQUETTE A FILETER IR 55° BSW, BSP, 60° UN, TR, PROFIL PLEIN, INTERIEUR**
ES **PLAQUITA PARA ROSCAR IR 55° BSW, BSP, 60° UN, TR, PERFIL COMPLETO, INTERIOR**
DE **GEWINDESCHNEIDPLATTE IR 55° BSW, BSP, 60° UN, TR, VOLLPROFIL, INNEN**

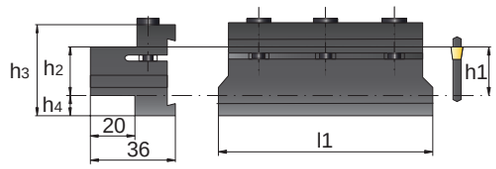
Ref.	Type		l1	b1	p (inch)	a_p (mm)	x a_p (mm)	P	M	K	N	S	H
74.195.0420	11IR 28W HC-P25/M20/K20		11	0,7	28	0,1-0,18	4-7	P	M	K	N	S	
74.195.0670	11IR 19W HC-P25/M20/K20		11	1	19	0,12-0,25	5-9	P	M	K	N	S	
74.195.0720	11IR 18W HC-P25/M20/K20		11	1	18	0,14-0,25	5-9	P	M	K	N	S	
74.195.0770	11IR 16W HC-P25/M20/K20		11	1,1	16	0,15-0,25	6-10	P	M	K	N	S	
74.195.0820	11IR 14W HC-P25/M20/K20		11	1,1	14	0,15-0,25	7-12	P	M	K	N	S	
74.195.1470	16IR 19W HC-P25/M20/K20		16	1	19	0,12-0,25	5-9	P	M	K	N	S	
74.195.1520	16IR 18W HC-P25/M20/K20		16	1	18	0,14-0,25	5-9	P	M	K	N	S	
74.195.1570	16IR 16W HC-P25/M20/K20		16	1,1	16	0,15-0,25	6-10	P	M	K	N	S	
74.195.1620	16IR 14W HC-P25/M20/K20		16	1,2	14	0,15-0,25	7-12	P	M	K	N	S	
74.195.1670	16IR 12W HC-P25/M20/K20		16	1,4	12	0,15-0,25	7-12	P	M	K	N	S	
74.195.1720	16IR 11W HC-P25/M20/K20		16	1,5	11	0,16-0,28	7-12	P	M	K	N	S	
74.195.1770	16IR 10W HC-P25/M20/K20		16	1,5	10	0,16-0,28	8-14	P	M	K	N	S	
74.195.1820	16IR 9W HC-P25/M20/K20		16	1,7	9	0,16-0,28	8-14	P	M	K	N	S	
74.185.0620	11IR 20UN HC-P25/M20/K20		11	0,9	20	0,12-0,25	5-9	P	M	K	N	S	
74.185.0670	11IR 18UN HC-P25/M20/K20		11	1	18	0,12-0,25	5-9	P	M	K	N	S	
74.185.1470	16IR 16UN HC-P25/M20/K20		16	1,1	16	0,14-0,25	6-10	P	M	K	N	S	
74.185.1520	16IR 14UN HC-P25/M20/K20		16	1,2	14	0,15-0,25	7-12	P	M	K	N	S	
74.185.1570	16IR 13UN HC-P25/M20/K20		16	1,3	13	0,15-0,25	7-12	P	M	K	N	S	
74.185.1620	16IR 12UN HC-P25/M20/K20		16	1,4	12	0,15-0,25	7-12	P	M	K	N	S	
74.185.1770	16IR 10UN HC-P25/M20/K20		16	1,5	10	0,16-0,28	8-14	P	M	K	N	S	
74.185.1870	16IR 8UN HC-P25/M20/K20		16	1,5	8	0,18-0,32	9-16	P	M	K	N	S	
74.245.1050	16IR 1,5TR P30		16	1,1	1,5	0,15-0,25	6	P					
74.245.1150	16IR 2,0TR P30		16	1,3	2	0,16-0,28	8	P					
74.245.1250	16IR 3,0TR P30		16	1,5	3	0,19-0,33	12	P					
74.245.1370	22IR 4,0TR P30		22	1,9	4	0,22-0,36	13	P					
74.245.1450	22IR 5,0TR P30		22	2,5	5	0,25-0,42	14	P					

19:00 ▶ 24h

› 74.400 Phantom

NL **BASISHOUDER PTNN**
FR **BLOC PTNN**
ES **BLOQUE PTNN**
DE **GRUNDHALTER PTNN**



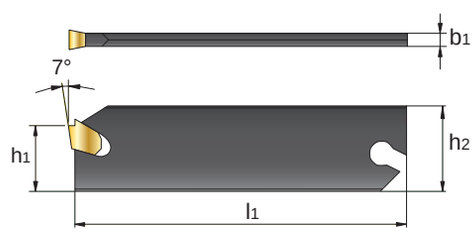


Ref.	Type	Parting tool	h1	h2	h3	h4	l1
74.400.2000	PTNN 20-26	74.410.0300, 74.410.0400, 74.410.0500	20	20	38	8	90
74.400.2032	PTNN 20-32	74.410.1300, 74.410.1400, 74.410.1500	20	20	48	13	100
74.400.2532	PTNN 25-32	74.410.1300, 74.410.1400, 74.410.1500	25	25	48	8	110

› 74.410 Phantom

NL **STEEKPLAATHOUDER LFMX, UITWENDIG**
FR **LAME A TRONCONNER LFMX, EXTERIEUR**
ES **PORTAPLAQUITA DE TRONZADO LFMX, EXTERIOR**
DE **STECHKLINGE LFMX, AUSEN**

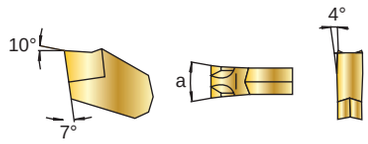




Ref.	Type	h1	h2	b1	l1	t max	7
74.410.0300	150.19-20-3	21.1	26	2.4	110	40	LFMX3
74.410.0400	150.19-20-4	21	26	3.2	110	40	LFMX4
74.410.0500	150.19-20-5	20.8	26	4.3	110	60	LFMX5
74.410.1300	150.19-25-3	24.7	32	2.4	150	40	LFMX3
74.410.1400	150.19-25-4	24.6	32	3.2	150	40	LFMX4
74.410.1500	150.19-25-5	24.4	32	4.3	150	60	LFMX5

› 74.480 Phantom

NL **STEEKPLAAT LFMX**
FR **PLAQUETTE A TRONCONNER LFMX**
ES **PLAQUITA PARA TRONZAR LFMX**
DE **STECHPLATTE LFMX**

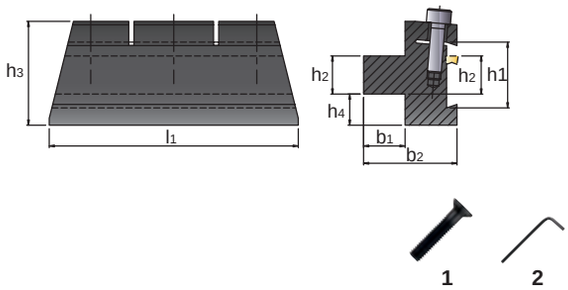


Ref.	Type		a	r	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
74.480.3001	LFMX 3N HC-P25/M25/K20		3,1	0,2	0,05-0,12	P	M	K					▽▽		○	⌒	
74.480.3002	LFMX 3N HC-P35		3,1	0,2	0,05-0,12	P							▽▽			⌒	◌
74.480.4001	LFMX 4N HC-P25/M25/K20		4,1	0,2	0,05-0,15	P	M	K					▽▽		○	⌒	
74.480.4010	LFMX 4N HC-P35		4,1	0,2	0,05-0,15	P	M	K					▽▽			⌒	◌
74.480.5001	LFMX 5N HC-P35		5,1	0,2	0,05-0,18	P							▽▽			⌒	◌

› 74.500 Phantom

NL **BASISHOUDER PTNZ**
FR **BLOC PTNZ**
ES **BLOQUE PTNZ**
DE **GRUNDHALTER PTNZ**



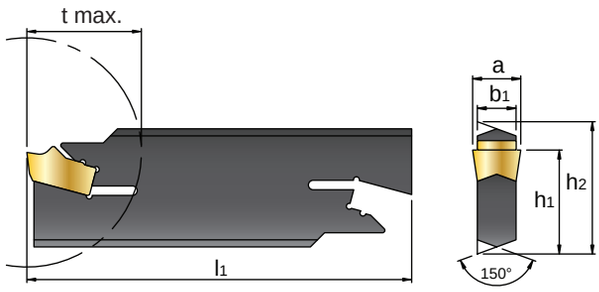


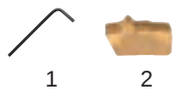
Ref.	Type	h1	b1	b2	l1	h2	h3	h4	1	2
74.500.1626	PTNZ 16-26	16	16	29	90	16	39	28	74.998.0005	74.998.0010
74.500.2026	PTNZ 20-26	20	20	33	90	20	39	28	74.998.0005	74.998.0010
74.500.2532	PTNZ 25-32	25	20	36	110	25	48	28	74.998.0005	74.998.0010

› 74.510 Phantom

NL **STEEKPLAATHOUDER EXN, UITWENDIG**
FR **LAME A TRONCONNER EXN, EXTERIEUR**
ES **PORTAPLAQUITA DE TRONZADO EXN, EXTERIOR**
DE **STECHKLINGE EXN, AUSEN**





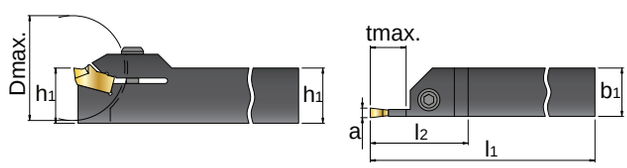


Ref.	Item	h1	h2	l1	a	t max	1	2
74.510.0200	26-2,2	21,4	26	110	2,2	25	74.998.0016	EXN 2,2
74.510.0300	26-3	21,4	26	110	3	40	74.998.0016	EX . 3 - RXN 3
74.510.0400	26-4	21,4	26	110	4	40	74.998.0016	EX . 4 - RXN 4
74.510.1300	32-3	25,0	32	150	3	50	74.998.0016	EX . 3 - RXN 3
74.510.1400	32-4	25,0	32	150	4	50	74.998.0016	EX . 4 - RXN 4
74.510.1500	32-5	25,0	32	150	5	60	74.998.0016	EX . 5 - RXN 5

› 74.517 Phantom

NL **STEEKPLAATHOUDER EXN, UITWENDIG**
FR **LAME A TRONCONNER EXN, EXTERIEUR**
ES **PORTAPLAQUITA DE TRONZADO EXN, EXTERIOR**
DE **STECHHALTER EXN, AUSEN**

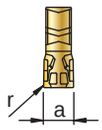


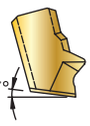


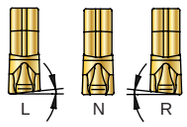
Ref.	Type	h1	b1	l1	l2	a	t max	d max	1	2	3
74.517.1122	R1212-2,2	12	12	91	66	2,2	11	22	74.998.0019	74.998.0010	EXN 2,2
74.517.1162	R1616-2,2	16	12	95	66	2,2	16	32	74.998.0019	74.998.0010	EXN 2,2
74.517.1163	R1616-3	16	12	95	66	3	16	32	74.998.0019	74.998.0010	EX . 3 - RXN 3
74.517.1203	R2020-3	20	16	150	115	3	21	42	74.998.0021	74.998.0010	EX . 3 - RXN 3
74.517.1204	R2020-4	20	16	150	115	4	21	42	74.998.0021	74.998.0010	EX . 4 - RXN 4
74.517.1253	R2525-3	25	20	150	115	3	21	42	74.998.0021	74.998.0010	EX . 3 - RXN 3
74.517.1254	R2525-4	25	20	150	115	4	21	42	74.998.0021	74.998.0010	EX . 4 - RXN 4
74.517.2203	L2020-3	20	16	150	115	3	21	42	74.9980021	74.998.0010	EX . 3 - RXN 3
74.517.2253	L2525-3	25	20	150	115	3	21	42	74.998.0021	74.998.0010	EX . 3 - RXN 3

› 74.582 Phantom

NL **STEEKPLAAT, ENKEL, EXN, EXR, EXL**
FR **PLAQUETTE A TRONCONNER, SIMPLE, EXN, EXR, EXL**
ES **PLAQUITA PARA TRONZAR, SIMPLE, EXN, EXR, EXL**
DE **STECHPLATTE, NUR, EXN, EXR, EXL**



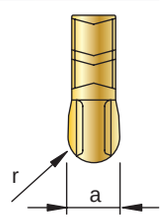




Ref.	Type		a	r (radius)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
74.582.2000	EXN-2,2 K15		2,2	0,2	0,05-0,09			K	N	S			▽▽		○		
74.582.2003	EXN-2,2 HC-P40/M30		2,2	0,2	0,05-0,09	P	M	K					▽▽		○		
74.582.3000	EXN-3 K15		3	0,2	0,05-0,12			K	N	S			▽▽		○		
74.582.3001	EXN-3 HC-P40/M30		3	0,2	0,05-0,12	P	M	K					▽▽		○		
74.582.3003	EXN-3 HC-P40/M30		3	0,2	0,05-0,12	P	M	K					▽▽		○		
74.582.3008	EXR-3 HC-P40/M30		3	0,2	0,05-0,12	P	M	K					▽▽		○		
74.582.3012	EXL-3 HC-P40/M30		3	0,2	0,05-0,12	P	M	K					▽▽		○		
74.582.4001	EXN-4 HC-P40/M30		4	0,2	0,05-0,15	P	M	K					▽▽		○		
74.582.4003	EXN-4 HC-P40/M30		4	0,2	0,05-0,15	P	M	K					▽▽		○		
74.582.4008	EXR-4 HC-P40/M30		4	0,2	0,05-0,15	P	M	K					▽▽		○		
74.582.4012	EXL-4 HC-P40/M30		4	0,2	0,05-0,15	P	M	K					▽▽		○		
74.582.5003	EXN-5 HC-P40/M30		5	0,3	0,05-0,18	P	M	K					▽▽		○		

› 74.599 Phantom

NL **STEEKPLAAT, RADIUS, RXN**
FR **PLAQUETTE A TRONCONNER, A RAYON, RXN**
ES **PLAQUITA PARA TRONZAR, RADIO, RXN**
DE **STECHPLATTE, RADIUS, RXN**



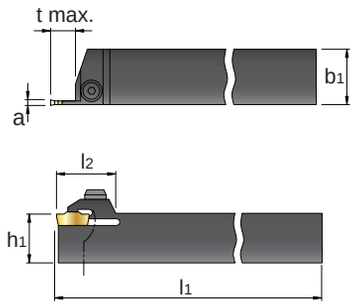
Ref.	Type		a	r (radius)	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
74.599.3003	RXN-3 HC-P25/M20		3	1,5	0,05-0,09	P	M	K					▽▽		○		
74.599.4003	RXN-4 HC-P25/M20		4	2	0,05-0,09	P	M	K					▽▽		○		
74.599.5003	RXN-5 HC-P25/M20		5	2,5	0,05-0,09	P	M	K					▽▽		○		

19:00 ▶ 24h

› 74.522 Phantom

NL **STEEKPLAATHOUDER EJN, UITWENDIG**
FR **LAME A TRONCONNER EJN, EXTERIEUR**
ES **PORTAPLAQUITA DE TRONZADO EJN, EXTERIOR**
DE **STECHHALTER EJN, AUSEN**

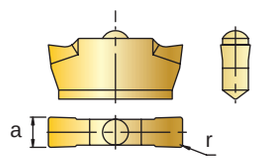




Ref.	Type	h1	b1	l1	l2	a	t max	1	2	3
74.522.1163	R1616-3-4	16,0	16	100	30	3-4	12	74.998.0016	74.998.0010	DXN 3 - DXN 4
74.522.1203	R2020-3-4	20,0	20	120	30	3-4	12	74.998.0016	74.998.0010	DXN 3 - DXN 4
74.522.1253	R2525-3-4	25,0	25	120	30	3-4	12	74.998.0016	74.998.0010	DXN 3 - DXN 4

› 74.596 Phantom

NL **STEEKPLAAT DXN, DUBBEL**
FR **PLAQUETTE A TRONCONNER DXN, DOUBLE**
ES **PLAQUITA PARA TRONZAR DXN, DOBLE**
DE **STECHPLATTE DXN, DOPPELSEITIG**

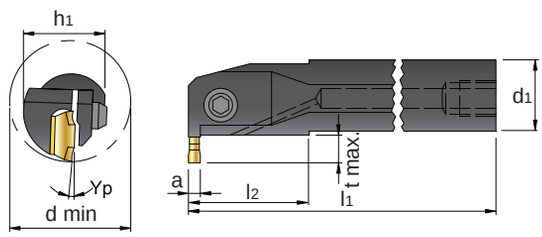


Ref.	Type		a	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
74.596.3003	DXN-3 HC-P35/M25		3	0,05-0,12	P	M						▽▽		○		
74.596.4003	DXN-4 HC-P35/M25		4	0,05-0,15	P	M						▽▽		○		

› 74.540 Phantom

NL **STEEKPLAATHOUDER EJN, INWENDIG**
FR **LAME A TRONCONNER EJN, INTERIEUR**
ES **PORTAPLAQUITA DE TRONZADO EJN, INTERIOR**
DE **STECHHALTER EJN, INNEN**

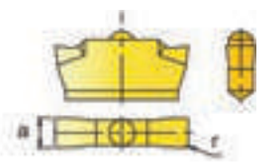




Ref.	Type	h1	d1	l1	l2	a	t max	d min	1	2	3
74.540.2003	R20-3-4	18,0	20	200	30	3-4	5	16,5	74.998.0031	74.998.0435	EJN 3 - EJN 4
74.540.2503	R25-3-4	23,0	25	200	30	3-4	5	25	74.998.0032	74.998.0012	EJN 3 - EJN 4

› 74.560 Phantom

NL **STEEKPLAAT, DUBBEL**
FR **PLAQUETTE A TRONCONNER, DOUBLE**
ES **PLAQUITA PARA TRONZAR, DOBLE**
DE **STECHPLATTE, DOPPELSEITIG**

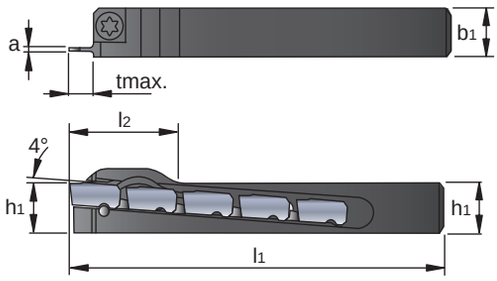


Ref.	Type		a	f_n (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	⌒	◌
74.560.3003	EJN-3 HC-P35/M25		3	0,05-0,12	P	M						▽▽		○		
74.560.4003	EJN-4 HC-P35/M25		4	0,05-0,15	P	M						▽▽		○		

› 74.605 Phantom

NL **BASISHOUDER MC CLICK, UITWENDIG, MC05**
FR **MC CLICK, LAME A TRONCONNER, EXTERIEUR, MC05**
ES **MC CLICK, PORTAPLAQUITA DE TRONZADO, EXTERIOR, MC05**
DE **MC CLICK, STECHHALTER, AUSEN, MC05**

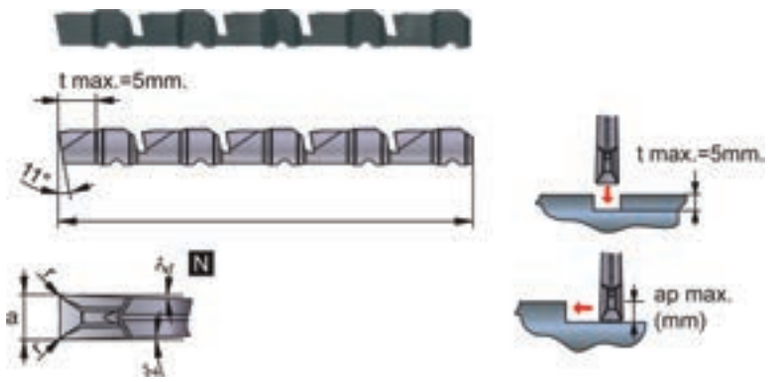




Ref.	Type	h1	b1	l1	l2	a	t max	1	2	3
74.605.1616	MC05R-1616K	16	16	125	23	1-1,5	5	74.998.0002	74.998.0013	MC05
74.605.2020	MC05R-2020K	20	20	125	23	1-1,5	5	74.998.0002	74.998.0013	MC05

› 74.620 Phantom

NL **STEEKPLAAT MC05**
FR **PLAQUETTE A TRONCONNER MC05**
ES **PLAQUITA PARA TRONZAR MC05**
DE **STECHPLATTE MC05**



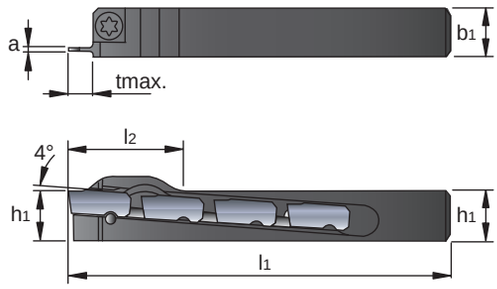
Ref.	Type	a	a_p max	r	f rad	f ax	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
74.620.1004	MC05 1,0N HC-P40/M35	1	0,5	0,1	0,025-0,1	0,025-0,15	P	M	K	N			▽▽▽			○		
74.620.1501	MC05 1,5N HC-P40/M35	1,5	0,5	0,1	0,025-0,12	0,025-0,15	P	M	K	N			▽▽▽			○		

19:00 24h

› 74.610 Phantom

NL **BASISHOUDER MC CLICK, UITWENDIG, MC10**
FR **MC CLICK, LAME A TRONCONNER, EXTERIEUR, MC10**
ES **MC CLICK, PORTAPLAQUITA DE TRONZADO, EXTERIOR, MC10**
DE **MC CLICK, STECHHALTER, AUSEN, MC10**

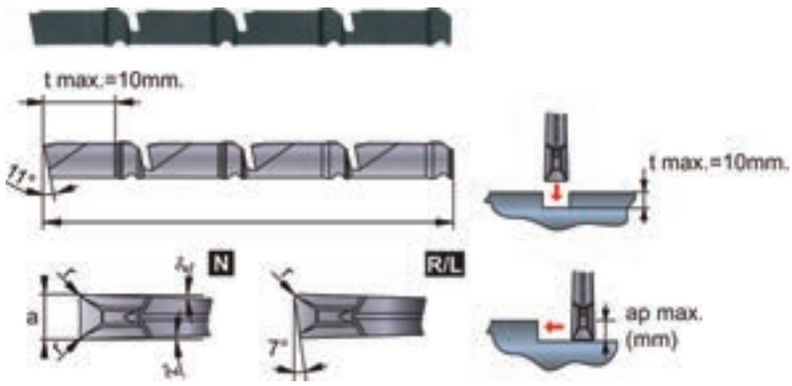




Ref.	Type	h1	b1	l1	l2	Slotting width a	t max	1	7
74.610.1010	MC10R-1010K	10	10	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.1212	MC10R-1212K	12	12	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.1616	MC10R-1616K	16	16	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.2020	MC10R-2020K	20	20	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.2525	MC10R-2525K	25	25	125	28	1,5-2,5	10	74.998.0002	74.998.0013

› 74.625 Phantom

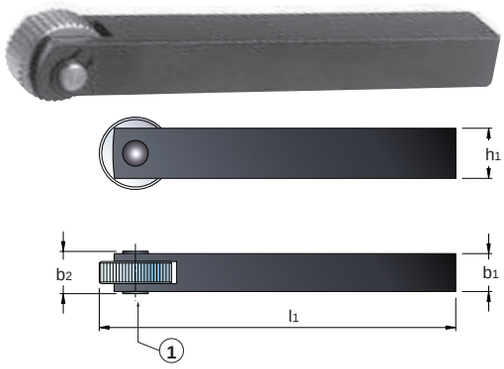
NL **STEEKPLAAT, MC10**
FR **PLAQUETTE A TRONCONNER, MC10**
ES **PLAQUITA PARA TRONZAR, MC10**
DE **STECHPLATTE, MC10**



Ref.	Type	a	a_p max	r	f rad	f ax	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◠	◌
74.625.1501	MC10 1,5N HC-P40/M35	1,5	1	0,1	0,025-0,1	0,025-0,20	P	M	K	N			▽▽▽			○		
74.625.1502	MC10 1,5R HC-P40/M35	1,5	1	0,1	0,025-0,1	-	P	M	K	N			▽▽▽			○		
74.625.1503	MC10 1,5L HC-P40/M35	1,5	1	0,1	0,025-0,1	-	P	M	K	N			▽▽▽			○		
74.625.2001	MC10 2,0N HC-P40/M35	2	1,5	0,1	0,025-0,12	0,025-0,20	P	M	K	N			▽▽▽			○		
74.625.2002	MC10 2,0R HC-P40/M35	2	1,5	0,1	0,025-0,12	-	P	M	K	N			▽▽▽			○		
74.625.2003	MC10 2,0L HC-P40/M35	2	1,5	0,1	0,025-0,12	-	P	M	K	N			▽▽▽			○		
74.625.2501	MC10 2,5N HC-P40/M35	2,5	2	0,1	0,025-0,15	0,025-0,20	P	M	K	N			▽▽▽			○		

› 75.100 Phantom

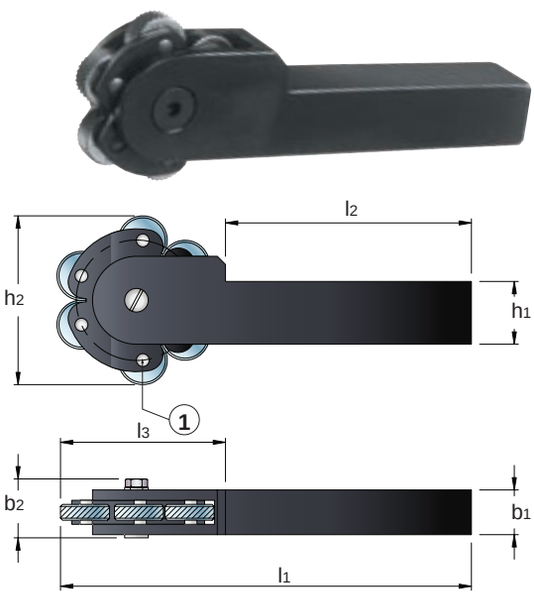
NL **Drukkartelrolhouder, type M1**
FR **Outils de moletage par déformation, type M1**
ES **Moletadores par deformarción, tipo M1**
DE **Rändelhalter zur Verformung, Typ M1**



Ref.	Type	Ø mm	l1	b1	b2	h1	1
75.100.1000	M1	8-200	112	14	19	14	75.290.0100

› 75.103 Phantom

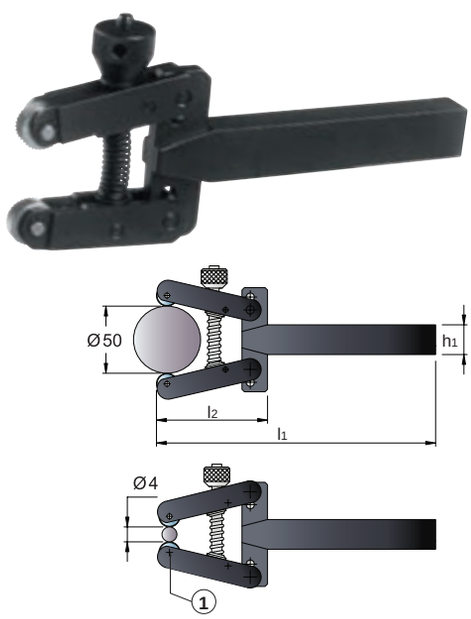
NL **Drukkartelrolhouder, type M2**
FR **Outils de moletage par déformation, type M2**
ES **Moletadores par deformarción, tipo M2**
DE **Rändelhalter zur Verformung, Typ M2**



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	75.290.0200

› 75.106 Phantom

NL **Drukkartelrolhouder, type M3**
FR **Outils de moletage par déformation, type M3**
ES **Moletadores par deformarción, tipo M3**
DE **Rändelhalter zur Verformung, Typ M3**

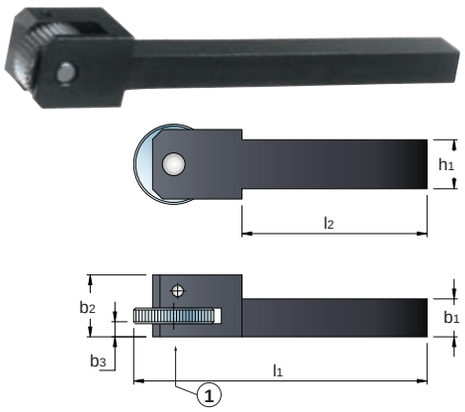


Ref.	Type	Ø mm	l1	l2	b2	h1	1
75.106.1000	M3	4-50	220	87	25	18	75.290.0300

19:00 ▶ 24h

› 75.109 Phantom

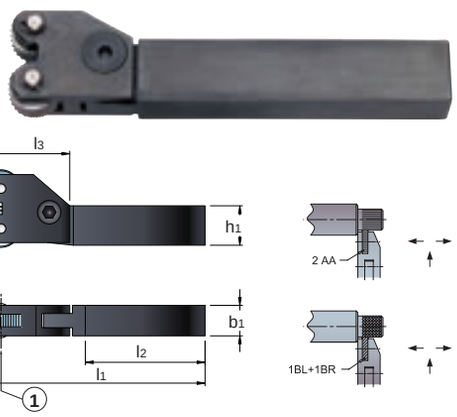
NL **Drukkartelrolhouder, type M6**
FR **Outils de moletage par déformation, type M6**
ES **Moletadores par deformarción, tipo M6**
DE **Rändelhalter zur Verformung, Typ M6**



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

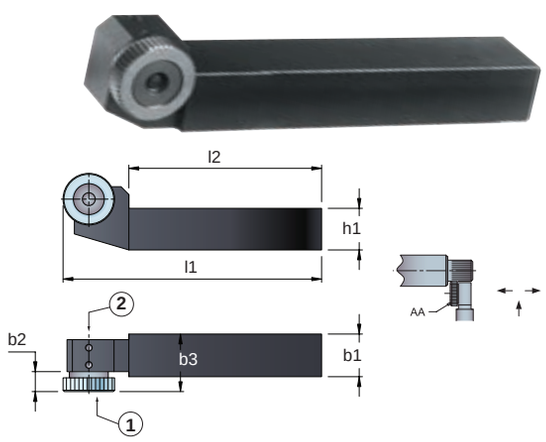
NL **Drukkartelrolhouder, type M7**
FR **Outils de moletage par déformation, type M7**
ES **Moletadores par deformarción, tipo M7**
DE **Rändelhalter zur Verformung, Typ M7**



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	75.290.0300

› 75.121 Phantom

NL **Drukkartelrolhouder, type MCNCS**
FR **Outils de moletage par déformation, type MCNCS**
ES **Moletadores par deformarción, tipo MCNCS**
DE **Rändelhalter zur Verformung, Typ MCNCS**

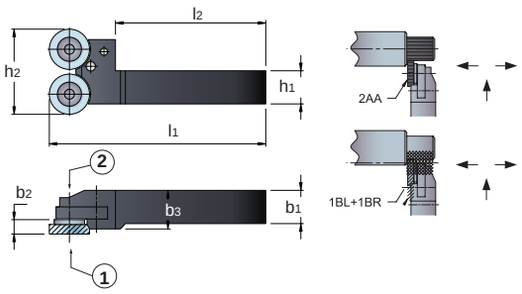


Ref.	Type	Ø mm	l1	l2	b1	b3	b2	h1	1	2
75.121.2520	MCNCS-20	8-200	150	125	25	32	10	20	75.290.0900	75.290.1000
75.121.2532	MCNCS-25	8-200	150	125	25	32	10	25	75.290.0900	75.290.1000

› 75.125 Phantom

NL **Drukkartelrolhouder, type MCNC**
FR **Outils de moletage par déformation, type MCNC**
ES **Moletadores par deformarción, tipo MCNC**
DE **Rändelhalter zur Verformung, Typ MCNC**



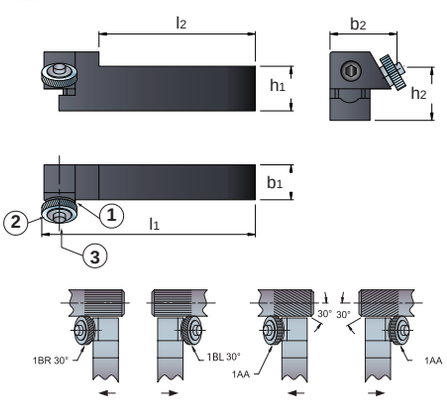


Ref.	Type	Ø mm	l1	l2	b1	b2	b3	h1	h2	1	2
75.125.2025	MCNC-20R	8-200	150	112	25	32	55	20	55	75.290.0900	75.290.1000
75.125.2525	MCNC-25R	8-200	150	112	25	32	55	25	55	75.290.0900	75.290.1000

› 75.129 Phantom

NL **Freeskartelrolhouder, type MFCNCS**
FR **Outils de moletage par coupe, type MFCNCS**
ES **Moletadres por corte, tipo MFCNCS**
DE **Rändelfräshalter, Typ MFCNCS**

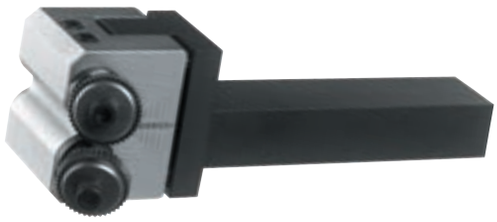


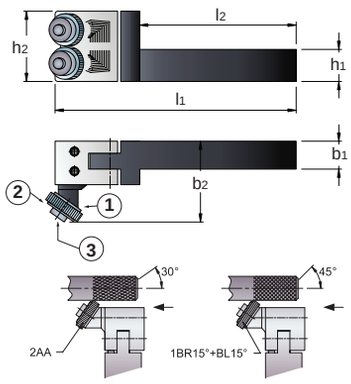


Ref.	Type	Ø mm	l1	l2	b1	b2	h1	h2	1	2	3
75.129.2025	MFCNCS 21.55.20	5-250	150	114	25	39	20	20	75.290.1200	75.290.1400	75.290.1600
75.129.2525	MFCNCS 21.55.25	5-250	150	114	25	39	25	25	75.290.1200	75.290.1400	75.290.1600

› 75.133 Phantom

NL **Freeskartelrolhouder, type MFCNC**
FR **Outils de moletage par coupe, type MFCNC**
ES **Moletadres por corte, tipo MFCNC**
DE **Rändelfräshalter, Typ MFCNC**

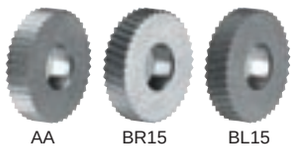


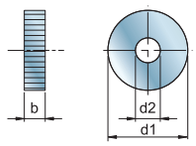


Ref.	Type	Ø mm	l1	l2	b1	b2	h1	h2	1	2	3
75.133.1616	MFCNC-16R	4-50	120	78	16	44	16	35	75.290.1100	75.290.1300	75.290.1500
75.133.2025	MFCNC-20R	5-250	165	112	20	63	25	50	75.290.1200	75.290.1400	75.290.1600
75.133.2525	MFCNC-25R	5-250	165	112	25	63	25	50	75.290.1200	75.290.1400	75.290.1600

› 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**



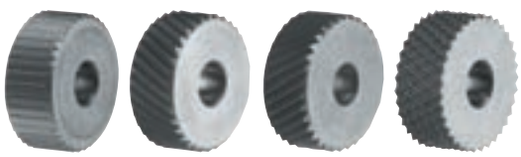


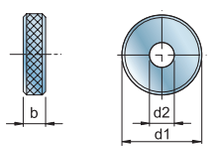
Ref.	Type	d1	d2	b1	t
75.158.1010	AA 14,5E3	14.5	5	3	1
75.158.2010	BL15 14,5E3	14.5	5	3	1

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**



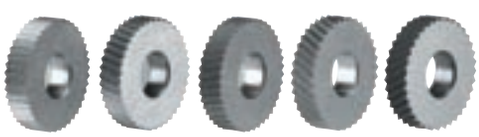


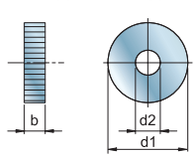
Ref.	Type	d1	d2	b1	t
75.174.1006	AA 20E8	20	6	8	0,6
75.174.1008	AA 20E8	20	6	8	0,8
75.174.1010	AA 20E8	20	6	8	1
75.174.1012	AA 20E8	20	6	8	1,2
75.174.1016	AA 20E8	20	6	8	1,6
75.174.1020	AA 20E8	20	6	8	2
75.174.4006	BR30 20E8	20	6	8	0,6
75.174.4008	BR30 20E8	20	6	8	0,8
75.174.4010	BR30 20E8	20	6	8	1
75.174.4012	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**





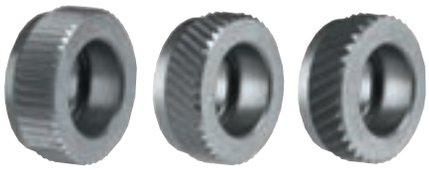
Ref.	Type	d1	d2	b1	t
75.182.1005	AA 21,5E5	21.5	8	5	0,5
75.182.1006	AA 21,5E5	21.5	8	5	0,6
75.182.1008	AA 21,5E5	21.5	8	5	0,8
75.182.1010	AA 21,5E5	21.5	8	5	1
75.182.1012	AA 21,5E5	21.5	8	5	1,2
75.182.1016	AA 21,5E5	21.5	8	5	1,6
75.182.1020	AA 21,5E5	21.5	8	5	2
75.182.2006	BR15 21,5E5	21.5	8	5	0,6
75.182.2008	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

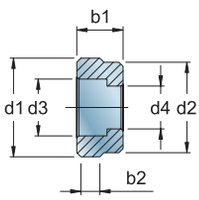
Ref.	Type	d1	d2	b1	t
75.182.3012	BL15 21,5E5	21.5	8	5	1,2
75.182.3016	BL15 21,5E5	21.5	8	5	1,6
75.182.3020	BL15 21,5E5	21.5	8	5	2
75.182.4005	BR30 21,5E5	21.5	8	5	0,5
75.182.4006	BR30 21,5E5	21.5	8	5	0,6
75.182.4008	BR30 21,5E5	21.5	8	5	0,8
75.182.4010	BR30 21,5E5	21.5	8	5	1
75.182.4012	BR30 21,5E5	21.5	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

19:00 ▶ 24h

› 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**





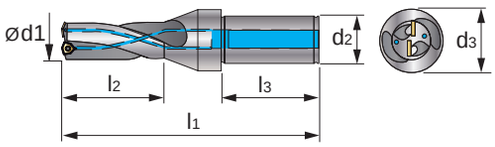
Ref.	Type	d1	d2	d3	d4	b1	t
75.197.1006	AA 25D11	25	22	15	11	10	6
75.197.1008	AA 25D11	25	22	15	11	10	0,8
75.197.1010	AA 25D11	25	22	15	11	10	1
75.197.1012	AA 25D11	25	22	15	11	10	1,2
75.197.1016	AA 25D11	25	22	15	11	10	1,6
75.197.1020	AA 25D11	25	22	15	11	10	2
75.197.4006	BR30 25D11	25	22	15	11	10	0,6
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

› 75.300 Phantom

NL **Volboor WCMX 3xD**
FR **Foret a plaquettes WCMX 3xD**
ES **Broca con plaquitas WCMX 3xD**
DE **Vollbohrer WCMX 3xD**



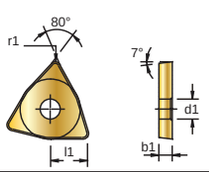




Ref.	d1	d2	d3	l1	l2	1	2	3
75.300.1750	17.5	20	37	130	60	73.998.0512	73.998.0423	WCMX 0302
75.300.1800	18	20	37	130	60	73.998.0512	73.998.0423	WCMX 0302
75.300.1900	19	20	37	130	60	73.998.0512	73.998.0423	WCMX 0302
75.300.2000	20	20	37	135	65	73.998.0512	73.998.0423	WCMX 0302
75.300.2100	21	25	37	151	75	73..998.0513	73.998.0423	WCMX 0402
75.300.2200	22	25	37	151	75	73..998.0513	73.998.0423	WCMX 0402
75.300.2300	23	25	37	151	75	73..998.0513	73.998.0423	WCMX 0402
75.300.2400	24	25	37	156	80	73..998.0513	73.998.0423	WCMX 0402
75.300.2500	25	25	37	156	80	73..998.0513	73.998.0423	WCMX 0402
75.300.2600	26	25	37	166	90	73..998.0511	73.998.0490	WCMX 0503
75.300.2700	27	25	37	166	90	73..998.0511	73.998.0490	WCMX 0503
75.300.2800	28	25	37	166	90	73..998.0511	73.998.0490	WCMX 0503
75.300.2900	29	25	37	171	95	73..998.0511	73.998.0490	WCMX 0503
75.300.3000	30	30	37	171	95	73..998.0511	73.998.0490	WCMX 0503
75.300.3400	34	32	49	191	110	73..998.0514	73.998.0494	WCMX 06T3
75.300.3500	35	32	49	191	110	73..998.0514	73.998.0494	WCMX 06T3
75.300.3800	38	32	49	201	120	73..998.0514	73.998.0494	WCMX 06T3
75.300.4000	40	32	49	211	130	73..998.0514	73.998.0494	WCMX 06T3

› 75.500 Phantom

NL **Wisselplaat WCMX**
FR **Plaquette WCMX**
ES **Plaquita WCMX**
DE **Wendeplatte WCMX**



WCMX	l1(mm)	d1(mm)	b1(mm)	r1(mm)
03	3,46	2,50	2,38	0,8
04	3,99	2,80	2,38	0,8
05	5,07	3,40	3,18	0,8
06	6,14	3,80	3,97	0,8

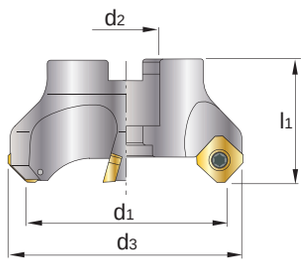
Ref.	Type		f_n (mm)	P	M	K	N	S	H
75.500.0600	WCMX 030208 HC-P25		0,08-0,15	P		K			
75.500.0650	WCMX 040208 HC-P25		0,08-0,15	P		K			
75.500.0700	WCMX 050308 HC-P25		0,10-0,30	P		K			
75.500.0750	WCMX 06T308 HC-P25		0,10-0,30	P		K			
75.500.0800	WCMX 030208 HC-P40		0,08-0,15	P	M				
75.500.0850	WCMX 040208 HC-P40		0,08-0,15	P	M				
75.500.0900	WCMX 050308 HC-P40		0,10-0,30	P	M				
75.500.0950	WCMX 06T308 HC-P40		0,10-0,30	P	M				

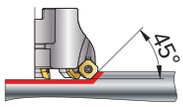
19:00 24h

› 76.100 Phantom

NL **Vlakfrees, 45° SEHX 1204**
FR **Fraise à chanfreiner à 45° SEHX 1204**
ES **Fresa de planear, 45° SEHX 1204**
DE **Planfräser, 45° SEHX 1204**





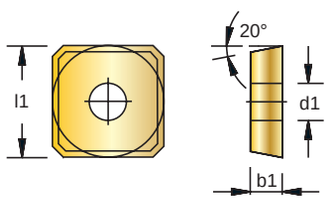




Ref.	Type	d1	d2	d3	l1	z	1	2	3
76.100.0050	SEHX12 50X22X63X40 Z=4	50	22	63	40	4	73.998.0650	73.998.0680	SEH.. 12
76.100.0063	SEHX12 63X22X76X40 Z=5	63	22	76	40	5	73.998.0650	73.998.0680	SEH.. 12
76.100.0080	SEHX12 80X27X93X50 Z=6	80	27	93	50	6	73.998.0650	73.998.0680	SEH.. 12
76.100.0100	SEHX12 100X32X113X50 Z=7	100	32	113	50	7	73.998.0650	73.998.0680	SEH.. 12

› 76.615 Phantom

NL **Wisselplaat SEHT 1204**
FR **Plaquette SEHT 1204**
ES **Plaquita SEHT 1204**
DE **Wendeplatte SEHT 1204**



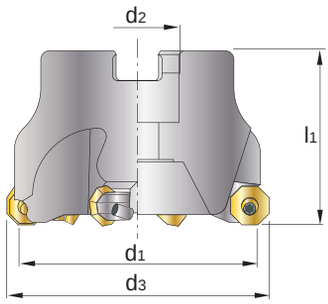
SE..	l1(mm)	d1(mm)	b1(mm)
12	12,7	5,50	4,76

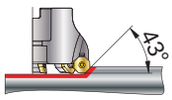
Ref.	Type		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.615.0150	SEHT 1204AF-ALU K10		6	0,1-0,5				N		
76.615.0200	SEHT 1204AFSN HC-P25		6	0,1-0,35	P					
76.615.0250	SEHT 1204AFSN HC-P25/M20/S15		6	0,1-0,35	P	M			S	
76.615.0360	SEHT 1204AFSN HC-P20/M20		6	0,1-0,35	P	M				

› 76.115 Phantom

NL **Vlakfrees, 45° OFEX 05T3**
FR **Fraise à chanfreiner à 45° OFEX 05T3**
ES **Fresa de planear, 45° OFEX 05T3**
DE **Planfräser, 45° OFEX 05T3**





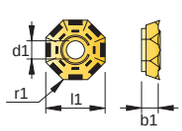




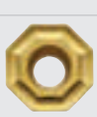
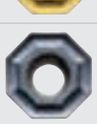
Ref.	Type	d1	d2	d3	l1	z	1	2	3
76.115.0040	OFEX05 40X16X47X40 Z=3	40	16	47	40	3	73.998.0645	73.998.0670	OFEX 05T3
76.115.0050	OFEX05 50X22X57X40 Z=3	50	22	57	40	4	73.998.0645	73.998.0670	OFEX 05T3
76.115.0063	OFEX05 63X22X70X40 Z=5	63	22	70	40	5	73.998.0645	73.998.0670	OFEX 05T3
76.115.0080	OFEX05 80X27X87X50 Z=6	80	27	87	50	6	73.998.0645	73.998.0670	OFEX 05T3

› 76.470 Phantom

NL **Wisselplaat OFEX 05T3**
FR **Plaquette OFEX 05T3**
ES **Plaquita OFEX 05T3**
DE **Wendeplatte OFEX 05T3**



OFEX	l1(mm)	d1(mm)	b1(mm)	r1(mm)
05	12,7	4,50	3,97	0,5

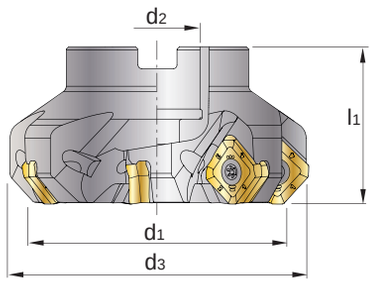
Ref.	Type		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.470.0150	OFEX 05T305-ALU K10		0,5-3,5	0,1-0,5				N		
76.470.0200	OFEX 05T305 HC-P25		0,5-3,5	0,1-0,35	P					
76.470.0360	OFEX 05T305 HC-P20/M20		0,5-3,5	0,1-0,35	P	M				

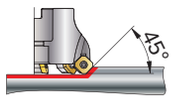
19:00 24h

› 76.125 Phantom

NL **Vlakfrees, 45° SNHX 1205**
FR **Fraise à chanfreiner à 45° SNHX 1205**
ES **Fresa de planear, 45° SNHX 1205**
DE **Planfräser, 45° SNHX 1205**





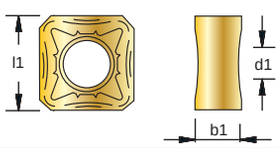




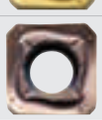
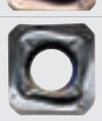
Ref.	Type	d1	d2	d3	l1	z	1	2	3
76.125.0050	SNHX12 50X22X63X40 Z=4	50	22	63	40	4	73.998.0645	73.998.0670	SNHX 12
76.125.0063	SNHX12 63X22X76X40 Z=6	63	22	76	40	6	73.998.0645	73.998.0670	SNHX 12
76.125.0080	SNHX12 80X27X93X50 Z=7	80	27	93	50	7	73.998.0645	73.998.0670	SNHX 12
76.125.0100	SNHX12 100X32X113X50 Z=8	100	32	113	50	8	73.998.0630	73.998.0670	SNHX 12
76.125.0125	SNHX12 125X40X138X63 Z=10	125	40	138	63	10	73.998.0630	73.998.0670	SNHX 12

› 76.500 Phantom

NL **Wisselplaat SNHX 1205**
FR **Plaquette SNHX 1205**
ES **Plaquita SNHX 1205**
DE **Wendeplatte SNHX 1205**



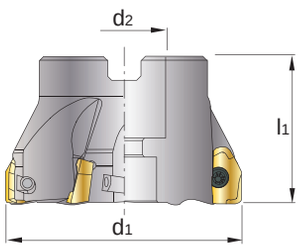
SN.X	l1(mm)	d1(mm)	b1(mm)
12	12,7	6,0	5,49

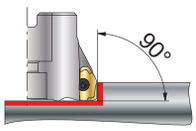
Ref.	Type		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.500.0200	SNHX 1205AN HC-P25		6	0,15-0,45	P					
76.500.0250	SNHX 1205AN HC-P25/M20/S15		6	0,15-0,45	P	M			S	
76.500.0360	SNHX 1205AN HC-P20/M20		6	0,15-0,45	P	M				

› 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**





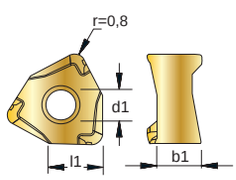




Ref.	Type	d1	d2	l1	z	1	2	3
76.135.0050	XNEX08 50X22X40 Z=4	50	22	40	4	73.998.0640	73.998.0670	XNEX 08
76.135.0055	XNEX08 50X22X40 Z=5	50	22	40	5	73.998.0640	73.998.0670	XNEX 08
76.135.0063	XNEX08 63X22X40 Z=6	63	22	40	6	73.998.0640	73.998.0670	XNEX 08
76.135.0080	XNEX08 80X27X50 Z=7	80	27	50	7	73.998.0640	73.998.0670	XNEX 08
76.135.0100	XNEX08 100X32X50 Z=8	100	32	50	8	73.998.0640	73.998.0670	XNEX 08

› 76.520 Phantom

NL **Wisselplaat XNEX 0806**
FR **Plaquette XNEX 0806**
ES **Plaquita XNEX 0806**
DE **Wendeplatte XNEX 0806**



XN.X	l1(mm)	d1(mm)	b1(mm)
08	7,5	4,5	6,56

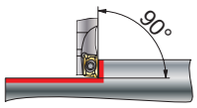
Ref.	Type		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.520.0200	XNEX 080608 HC-P25		7	0,08-0,4	P					
76.520.0250	XNEX 080608 HC-P25/M20/S15		7	0,08-0,4	P	M			S	
76.520.0360	XNEX 080608 HC-P20/M20		7	0,08-0,4	P	M				

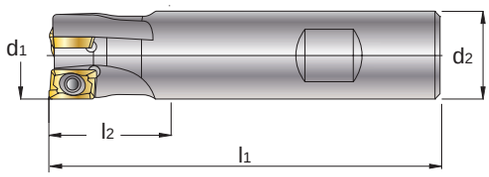
19:00 24h

› 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**







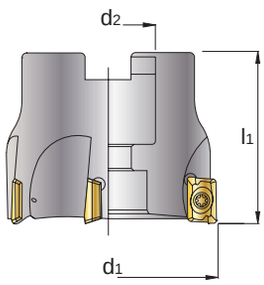


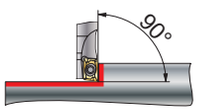
Ref.	Type	d1	d2	l1	l2	z	1	2	3
76.145.0016	APKT10 16X16X85 Z=2	16	16	85	25	2	73.998.0600	73.998.0660	APKT 1003
76.145.0020	APKT10 20X20X85 Z=3	20	20	85	30	3	73.998.0600	73.998.0660	APKT 1003
76.145.0025	APKT10 25X25X95 Z=4	25	25	95	35	4	73.998.0600	73.998.0660	APKT 1003
76.145.0032	APKT10 32X32X95 Z=5	32	32	95	35	5	73.998.0600	73.998.0660	APKT 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**





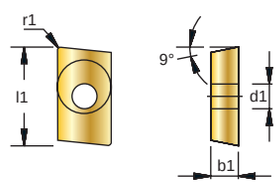




Ref.	Type	d1	d2	l1	z	1	2	3
76.146.0040	APKT10 40X16X40 Z=6	40	16	40	6	73.998.0600	73.998.0660	APKT 1003
76.146.0050	APKT10 50X22X40 Z=7	50	22	40	7	73.998.0600	73.998.0660	APKT 1003

› 76.365 Phantom

NL **Wisselplaat APKT, APHT 1003**
FR **Plaquette APKT, APHT 1003**
ES **Plaquita APKT, APHT 1003**
DE **Wendeplatte APKT, APHT 1003**



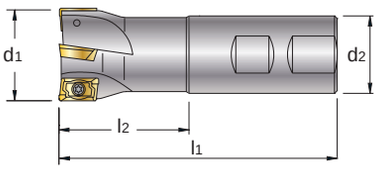
APKT	l1(mm)	d1(mm)	b1(mm)	r1(mm)
10	10,5	2,80	3,50	0,5

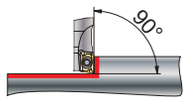
Ref.	Type		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.365.0150	APHT 1003-ALU K10		10	0,1-0,5				N		
76.365.0200	APKT 1003PDR HC-P25		10	0,08-0,3	P					
76.365.0250	APKT 1003PDR HC-P25/M20/S15		10	0,08-0,3	P	M			S	
76.365.0360	APKT 1003PDR HC-P20/M20		10	0,08-0,3	P	M				

› 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**







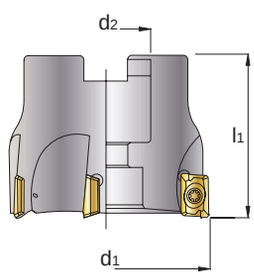


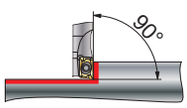
Ref.	Type	d1	d2	l1	l2	z	1	2	3
76.155.0025	APKT16 25X20X95 Z=2	25	20	95	40	2	73.998.0610	73.998.0670	APKT 1604
76.155.0032	APKT16 32X25X95 Z=3	32	25	95	40	3	73.998.0645	73.998.0670	APKT 1604

› 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**





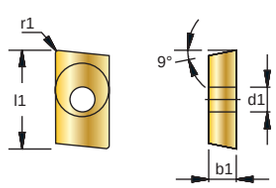




Ref.	Type	d1	d2	l1	z	1	2	3
76.156.0040	APKT16 40X16X40 Z=4	40	16	40	4	73.998.0645	73.998.0670	APKT 1604
76.156.0050	APKT16 50X22X40 Z=5	50	22	40	5	73.998.0645	73.998.0670	APKT 1604
76.156.0063	APKT16 63X22X40 Z=6	63	22	40	6	73.998.0645	73.998.0670	APKT 1604

› 76.366 Phantom

NL **Wisselplaat APKT, APHT 1604**
FR **Plaquette APKT, APHT 1604**
ES **Plaquita APKT, APHT 1604**
DE **Wendeplatte APKT, APHT 1604**



APKT	*l1(mm)*	*d1(mm)*	*b1(mm)*	*r1(mm)*
16	17,0	4,40	5,26	0,4

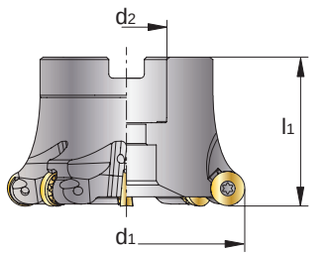
Ref.	Type		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.366.0150	APHT 1604-ALU K10		15	0,1-0,5				N		
76.366.0200	APKT 1604PDR HC-P25		15	0,1-0,4	P					
76.366.0250	APKT 1604PDR HC-P25/M20/S15		15	0,1-0,4	P	M			S	
76.366.0360	APKT 1604PDR HC-P20/M20		15	0,1-0,4	P	M				

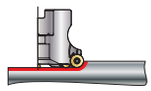
19:00 ▶ 24h

› 76.230 Phantom

NL **Vlakfrees RDMW 1204**
FR **Fraise à chanfreiner RDMW 1204**
ES **Fresa de planear RDMW 1204**
DE **Planfräser RDMW 1204**





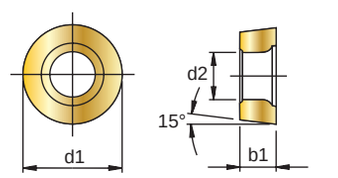




Ref.	Type	d1	d2	l1	z	1	2	3
76.230.0040	RDMW12 40X16X40 Z=4	40	16	40	4	73.998.0620	73.998.0670	RDM.. 1204
76.230.0050	RDMW12 50X22X50 Z=4	50	22	50	4	73.998.0620	73.998.0670	RDM.. 1204
76.230.0063	RDMW12 63X22X50 Z=5	63	22	50	5	73.998.0620	73.998.0670	RDM.. 1204

› 76.710 Phantom

NL **Wisselplaat RDMW 1204**
FR **Plaquette RDMW 1204**
ES **Plaquita RDMW 1204**
DE **Wendeplatte RDMW 1204**



RDM.	d1(mm)	d2(mm)	b1(mm)
12	12,00	4,90	4,76

Ref.	Type		a_p (mm)	f_z (mm)	P	M	K	N	S	H
76.710.0200	RDMW 1204MO HC-P25		6	0,2-1	P					
76.710.0250	RDMW 1204MO HC-P25/M20/S15		6	0,2-1	P	M			S	

› 79.510

NL **Set Kartelen**
FR **Assortiment d'outils à moleter**
ES **Juego de herramientas para moletear**
DE **Satz Rändelwerkzeuge**



Ref.	Type	Contents
79.510.1000	KM1-M7	1 x M7, 1 x M12

› 79.613

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°, incl. wisselplaten XNEX 0806**
DE **Satz, Winkel 90°, inkl. Wendeplatten XNEX 0806**





P
76.520.0200



P M S
76.520.0250



P M
76.520.0360

Ref.	Contents
79.613.5020	Ø 50 mm - 40 x XNEX HC-P25
79.613.5025	Ø 50 mm - 40 x XNEX HC-P25/M20
79.613.5036	Ø 50 mm - 40 x XNEX HC-M20
79.613.6320	Ø 63 mm - 50 x XNEX HC-P25
79.613.6325	Ø 63 mm - 50 x XNEX HC-P25/M20
79.613.6336	Ø 63 mm - 50 x XNEX HC-M20

NL **Snijsnelheden draaien**
FR **Vitesse de coupe de tournage**
ES **Velocidades de corte para tornear**
DE **Schnittgeschwindigkeit Drehen**

		HM															
ISO	Gr.	CM10	K10	K20	HC-K10	P25	HC-P10/ K10	HC-P15	HC-P15/ M15	HC-P25	HC-P25/ M20	HC-P25/ M20/ S15	HC-P25/ M25/ K20	HC-P35	HC-P35/ M25	HC-P35/ M30	HC-M20/ K30
		Vc (m/min)															
P	11	280-350			110-160	100-140			220-400		190-290				180-230	240-210	
	12	260-300			90-120	90-120		100-280	200-320	100-250	170-250	90-250	60-130	80-150	130-150	220-120	
	13	260-300			90-120	90-120		100-280	200-320	100-250	170-250	90-250	60-130	80-150	130-150	220-120	
	14	160-200			80-110	60-100			120-280		130-210				70-130	80-110	
H	15											60-120					
M	21	230-270			90-140				220-300		140-210	80-230	80-140		140-200	120-110	150-200
	22	170-240									70-100				80-150	100-90	90-160
K	31		120-160		180-220		250-450	90-300	140-370	90-300	130-210	100-280	80-150				120-160
	32	220-300	130-170		120-180		220-380		140-270		120-200						90-130
N	41		300-2500	100-500	300-3200												
	42		400-1500	100-300	400-2000												
	51		250-600	100-300	200-1000												
	52		250-600	100-300	200-1000												
	61		80-180	80-180	80-220												
S	71				20-40												
	72				80-140							60-150					

NL **Snijsnelheden steken**
FR **Vitesse de coupe de tronçonnage**
ES **Velocidades de corte para tronzar**
DE **Schnittgeschwindigkeit Stechen**

		HM			
ISO	Gr.	K15	HC-P25/ M20	HC-P35/ M25	HC-P40/ M30
P	11			140-210	90-200
	12			100-160	90-180
	13			100-160	90-180
	14		60-140	80-160	70-140
H	15				
M	21		60-130	50-90	60-80
	22				
K	31	60-180			50-140
	32	60-150			120-180
N	41	500-2000		100-500	300-3200
	42	100-400		100-300	200-1000
	51	100-400		100-300	200-1000
	52	100-400		100-300	200-1000
	61	50-700		80-180	80-220
S	71				20-40
	72				80-140

NL **Snijsnelheden draadsnijden**
FR **Vitesse de coupe de filetage**
ES **Velocidades de corte para roscar**
DE **Schnittgeschwindigkeit Gewindeschneiden**

		HM			
ISO	Gr.	P30	HC-P25	HC-P25/ M20	HC-P25/ M20/ K20
P	11	70-130	80-150		115-190
	12	70-120	70-130		85-145
	13	70-120	70-130		85-145
	14	50-80	60-110		70-110
H	15				45-60
M	21	75-110		70-150	70-130
	22	70-100		40-120	40-110
K	31				70-130
	32				125-160
N	41				100-365
	42				200-400
	51				80-225
	52				80-225
	61				
S	71				20-30
	72				50-70

NL **Snijsnelheden frezen**
FR **Vitesse de coupe de fraisage**
ES **Velocidades de corte para fresar**
DE **Schnittgeschwindigkeit Fräsen**

		HM				
ISO	Gr.	K10	HC-P25	HC-P20/ M20	HC-P25/ M25/ S15	HC-P30/ M25
P	11					190-280
	12		80-180	80-180	90-250	140-250
	13		80-180	80-180	90-250	140-250
	14					80-130
H	15			60-120	60-120	
M	21			80-200	80-230	
	22					
K	31				100-280	160-310
	32					130-200
N	41	100-600				
	42					
	51					
	52					
	61					
S	71			60-150	60-150	
	72					

NL **ISO Wisselplaathouder uitwendig draaien**
FR **Porte-plaquette ISO tournage extérieur**
ES **Portaplaquita ISO torneado exterior**
DE **ISO Klemmhalter außen drehen**



Clamping method

D — Retained from above and via bore

S — Retained via centre screw

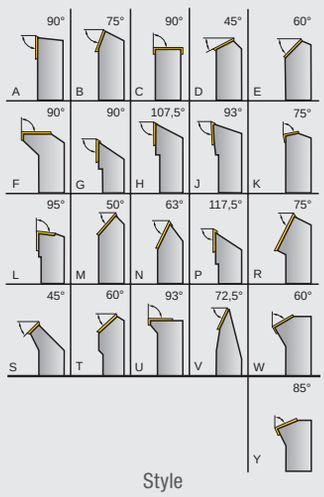
M — Retained from above and via bore

P — Retained via the bore

C — Retained from above

X Special version

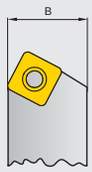
Style



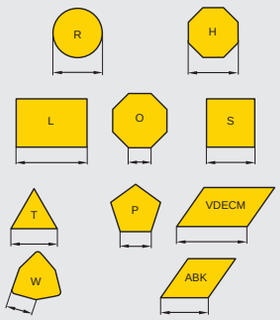
Cutting direction



Shank width



Cutting edge length



D	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		

19:00 24h

NL **ISO Wisselplaathouder inwendig draaien**
FR **Porte-plaquette ISO tournage intérieur**
ES **Portaplaquita ISO torneado interior**
DE **ISO Klemmhalter innen drehen**



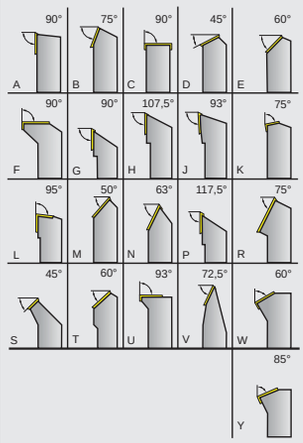
Shank version

S	Steel shank
A	Steel shank with coolant hole
B	Steel shank with anti-vibration system
C	Carbide shank with steel head
D	Steel shank with coolant hole and anti-vibration system
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

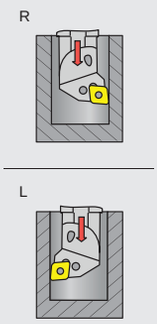
Clamping method

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

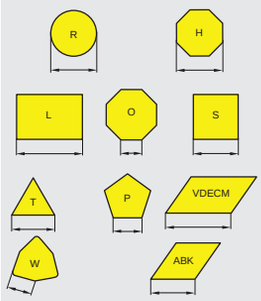
Style



Cutting direction



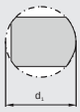
Cutting edge length



S	32	U - D	C	L	N	R	12

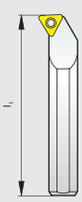
Shank Ø

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

NL **ISO Wisselplaten**
FR **Plaquettes ISO**
ES **Plaquitas ISO**
DE **ISO Wendeplatten**



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

Insert Type

N Negative (0°)

P Positive

Insert Index

F Fine
M Medium
R Roughing
A Aluminium Non-Ferro

Chipbreaker Index

1 ↕ **6**

Surface

ALU Uncoated
HC Coated

ISO Index

P Steel
M INOX
K Cast
N NF
S Super Alloys

Carbide Grade

Hard
10 ↕ **35**
Tough

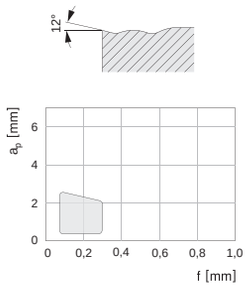
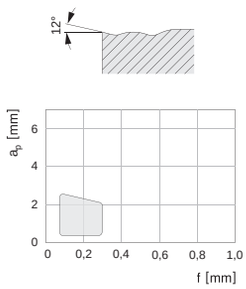
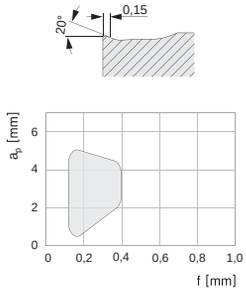
N	M	3	HC	P	25

NL **Negatieve wisselplaten voor draaien**
FR **Plaquettes négatives pour tournage**
ES **Plaquitas negativas para torneado**
DE **Negative Wendeplatten zum drehen**

N

NL **Fijn/nadraaien**
FR **Tournage fin**
ES **Torneado fino**
DE **Schlichten**

F

NF2 		HC-P15/M15 HC-P35/M25	HC-P35/M25	
		HC-P15/M15 HC-P35/M25	HC-P35/M25	
NF2E 		HC-P25/M20/S15 HC-P15	HC-P25/M20/S15	
		HC-P25/M20/S15	HC-P25/M20/S15	
		HC-P25/M20/S15		
NF3 		HC-P25/M20	HC-P25/M20	
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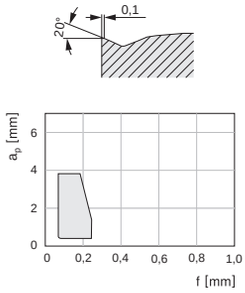
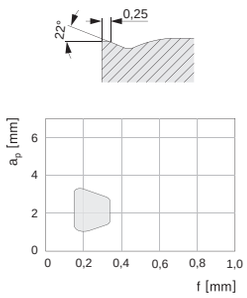
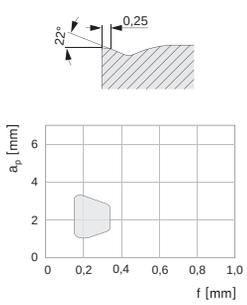
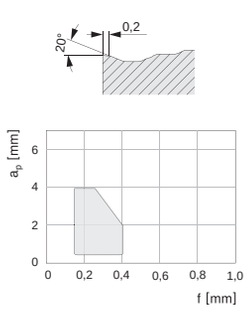
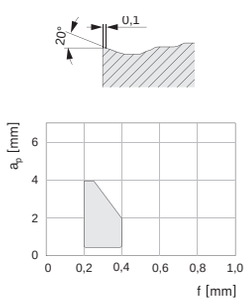
		HC-P25/M20	HC-P25/M20	
NF4 		HC-M20/K30		
		HC-M20/K30		
		HC-M20/K30		
		HC-M20/K30		
		HC-M20/K30		

NL **Negatieve wisselplaten voor draaien**
FR **Plaquettes négatives pour tournage**
ES **Plaquitas negativas para torneado**
DE **Negative Wendeplatten zum drehen**

N

NL **Middelmatige bewerking negatieve wisslplaat**
FR **Tournage semi-finition**
ES **Torneado medio**
DE **Mittlere Zerspanung**

M

NM3E 		HC-P25/M20/S15	HC-P25/M20/S15	
		HC-P25/M20/S15	HC-P25/M20/S15	
		HC-P25/M20/S15	HC-P25/M20/S15	
NM3 		HC-P25/M20	HC-P25/M20 HC-P35/M25	HC-P35/M25
		HC-P15/M15	HC-P25/M20 HC-P35/M25	HC-P35/M25
		HC-P25/M20	HC-P25/M20	
NM4 			HC-P35/M30	HC-P35/M30
			HC-P35/M30	HC-P35/M30
NM5 		HC-P35/M30	HC-P35/M30	HC-P35/M30
		HC-P35/M30	HC-P35/M30	HC-P35/M30
		HC-P35/M30	HC-P35/M30	HC-P35/M30
		HC-P35/M30	HC-P35/M30	HC-P35/M30

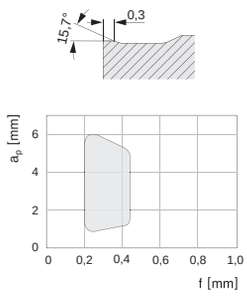
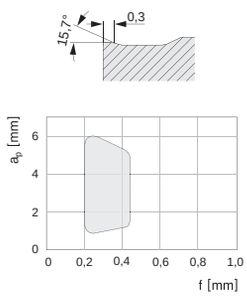
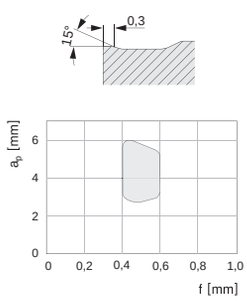
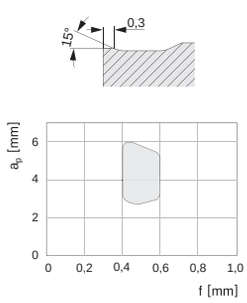
19:00 24h

NL **Negatieve wisselplaten voor draaien**
FR **Plaquettes négatives pour tournage**
ES **Plaquitas negativas para torneado**
DE **Negative Wendeplatten zum drehen**

N

NL **Ruwen negatieve wisslplaat**
FR **Usinage d´ébauche**
ES **Mecanizado en desbaste**
DE **Schruppen**

R

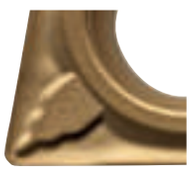
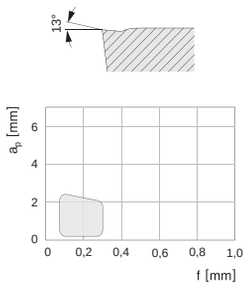
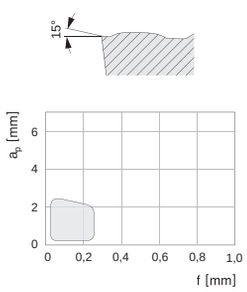
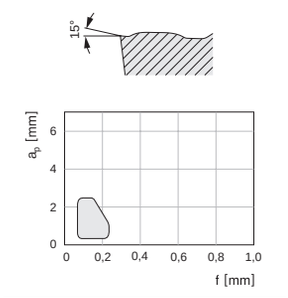
NR4E 		HC-P15		
NR4 		HC-P25/M20 HC-P35/M25	HC-P25/M20	HC-P35/M25
		HC-P25/M20 HC-P35/M25	HC-P25/M20	HC-P35/M25
		HC-25/M20/S15	HC-25/M20/S15	
NR5E 		HC-P25	HC-P25	
NR5 		HC-P25/M20 HC-P15/M15	HC-P25/M20	
		HC-P25/M20 HC-P15/M15	HC-P25/M20	
		HC-P25/M20	HC-P25/M20	

NL **Positieve wisselplaten voor draaien**
FR **Plaquettes positives pour tournage**
ES **Plaquitas positivas para torneado**
DE **Positive Wendeplatten zum drehen**

P

NL **Fijn/nadraaien**
FR **Tournage fin**
ES **Torneado fino**
DE **Schlichten**

F

PF2 		CM10		
		CM10		
PF3 		HC-P25/M20	HC-P35/M25	HC-P35/M25
		HC-P25/M20	HC-P35/M25	HC-P35/M25
PF4 		HC-P35/M30	HC-P35/M30	HC-P35/M30
		HC-P35/M30	HC-P35/M30	HC-P35/M30

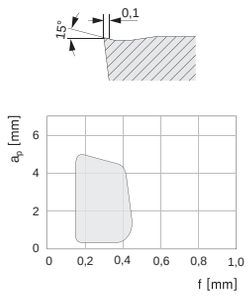
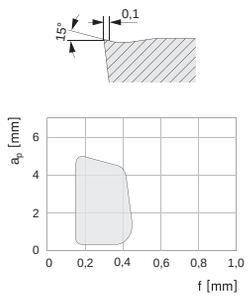
19:00 ▶ 24h

NL **Positieve wisselplaten voor draaien**
FR **Plaquettes positives pour tournage**
ES **Plaquitas positivas para torneado**
DE **Positive Wendeplatten zum drehen**

P

NL **Middelmatige bewerking**
FR **Tournage semi-finition**
ES **Torneado medio**
DE **Mittlere Zerspanung**

M

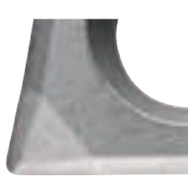
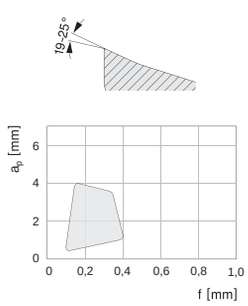
PM3E 		HC-P15 HC-P25/M20/S15	HC-P25/M20/S15	
		HC-P25/M20/S15	HC-P25/M20/S15	
		HC-P25/M20/S15	HC-P25/M20/S15	
PM3 		HC-P25/M20	HC-P25/M20 HC-P35/M25	HC-P35/M25
		HC-P25/M20	HC-P25/M20 HC-P35/M25	HC-P35/M25
		HC-P25/M20	HC-P25/M20	

NL **Positieve wisselplaten voor draaien**
FR **Plaquettes positives pour tournage**
ES **Plaquitas positivas para torneado**
DE **Positive Wendeplatten zum drehen**

P

NL **Aluminium/Non-Ferro**
FR **Aluminium/Non-Ferro**
ES **Aluminio/Non-Ferro**
DE **Aluminium/Nichteisenmetall**

A

PA2 		HC-K10 K10	HC-K10	
		HC-K10 K10	HC-K10	
		HC-K10 K10	HC-K10	
		HC-K10 K10	HC-K10	

NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewindedrehen**

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

Insert size

E	External
I	Internal
EI	Ex- & Internal

Type of Insert

R	Right Hand
L	Left Hand

RH/LH Insert

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

Pitch

Partical Profile	
60º	60º Partical profile
55º	55º Partical profile
Full Profile	
ISO	ISO Metric
UN	American UN
W	Whitworth BSW/BSP
TR	Trapez

Thread Standard

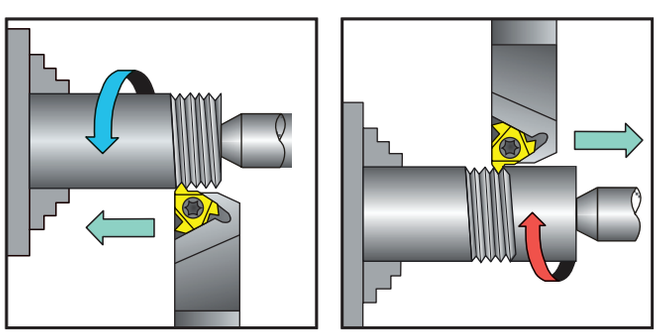
B	With chipbreaker
-	Without

Chipbreaker

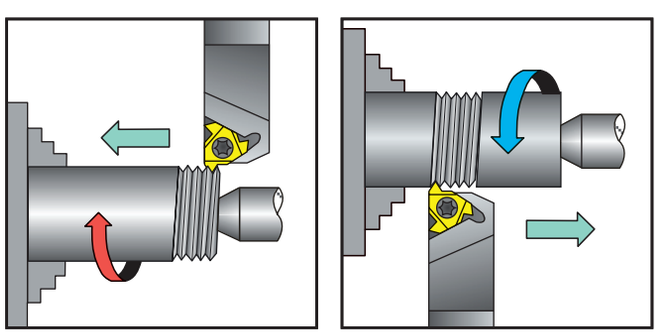
16	E	R	175	ISO	B

NL **Schroefdraadsnij methodes**
FR **Méthodes de filetage en tournage**
ES **Métodos de torneado de roscas**
DE **Gewindedrehverfahren**

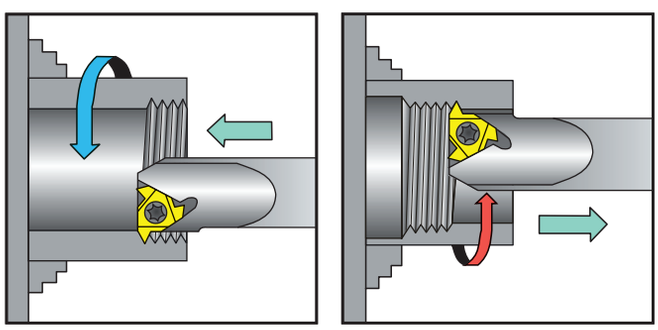
External RH Thread



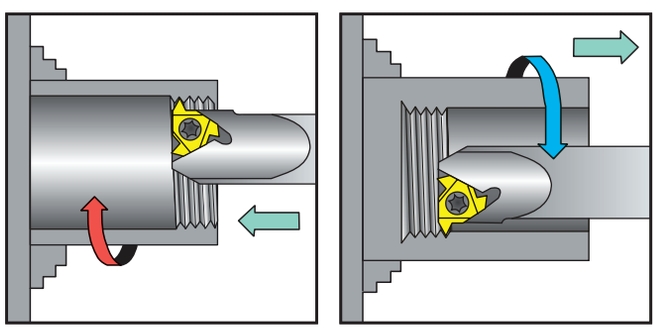
External LH Thread



Internal RH Thread

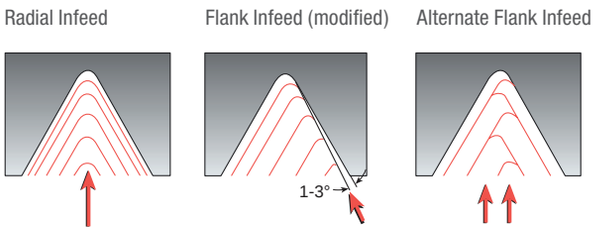


Internal LH Thread

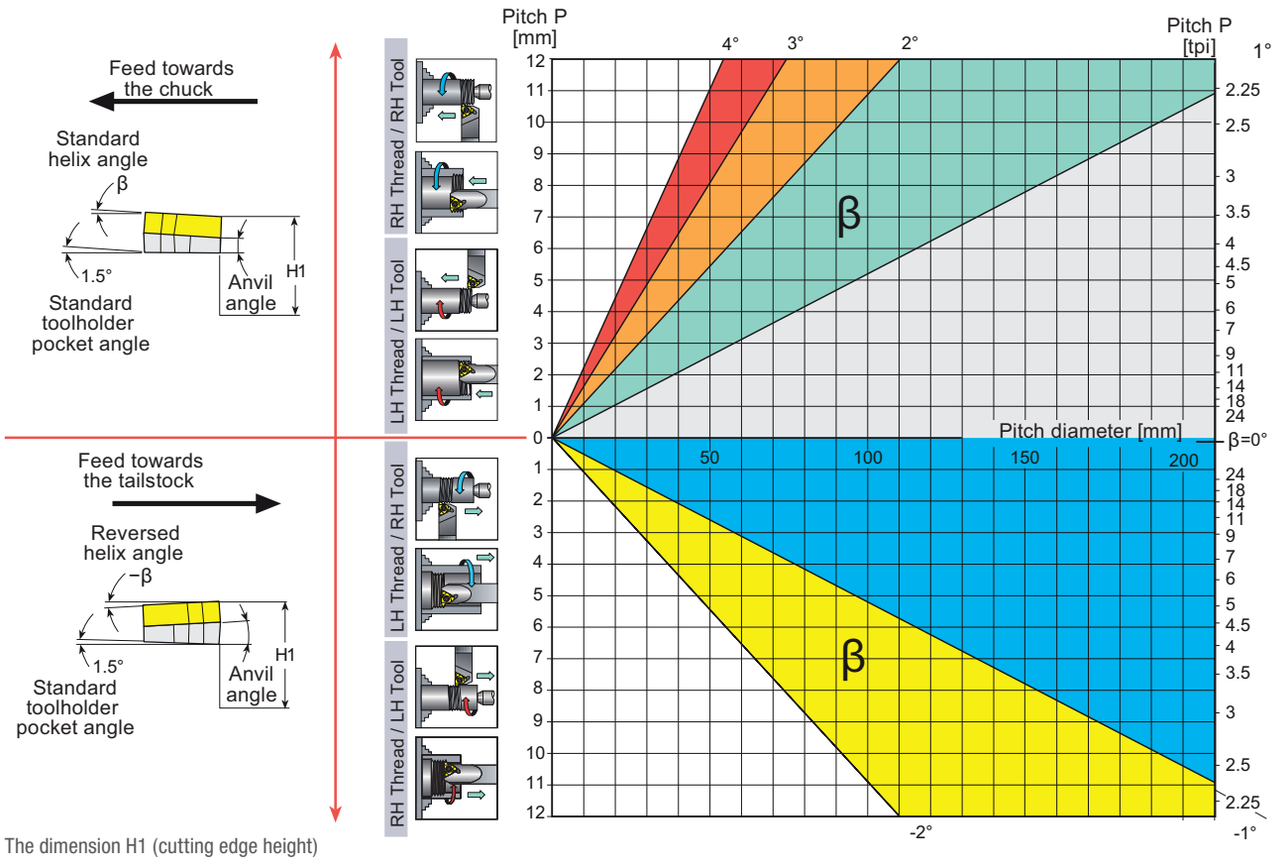


19:00 ▶ 24h

NL **Invoer methoden**
FR **Méthode angle d'attaque**
ES **Métodos de ataque de la rosca**
DE **Gewindezustellverfahren**



NL **Schroefdraadhelingshoek diagram**
FR **Diagramme de l'angle d'hélice**
ES **Diagrama del ángulo de hélice**
DE **Teilungswinkel Diagramm**

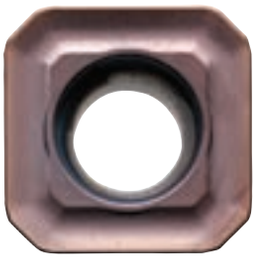


The dimension H1 (cutting edge height) remains constant with every insert / anvil combination.

NL **Onderlegplaten**
FR **Sous-plaquettes**
ES **Placa base**
DE **Unterlegplatten**

Resultant Helix Angle / Insert Size		ß	3.5°	2.5°	1.5°	0.5°	0°	-0.5°	-1.5°
		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**



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

Insert shape

	α
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special version

Clearance angle

	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	●	●	●
	.05	.005	.025	●		
J	.08	.005	.025		●	
	.10	.005	.025			●
	.05	.013	.025	●		
K	.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
	.05	.08	.13	●		
M	.08	.13	.13		●	
	.10	.15	.13			●
	.05	.08	.025	●		
N	.08	.13	.025		●	
	.10	.15	.025			●
	.08	.13	.13	●		
U	.13	.20	.13		●	
	.18	.27	.13			●

Tolerances

A	
F	
G	
M	
N	
Q	
R	
T	
U	
W	

X Special shapes

Form of top surface

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 shape

Cutting edge length

	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

Insert thickness

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

Facet corner radius

F	Sharp
E	Honed
S	Chamfered and honed
T	Chamfered

Cutting edge

R, L, N

Cutting direction

S	E	H	T	12	03	AE	SN

ALU	Uncoated	
HC	Coated	

Surface

P	P	Steel
M	M	INOX
K	K N	Cast NF
S	S	Super Alloys

ISO Index

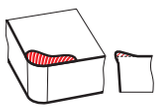
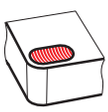
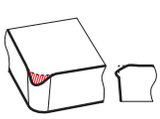
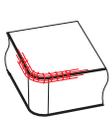
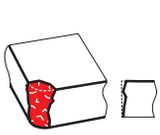
Hard
10
35
Tough

Carbide Grade

HC	P	25

19:00 24h

NL **Slijtage soorten**
FR **Types d'usure**
ES **Tipos de desgaste**
DE **Verschleißarten**

	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**

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	
		↓				↓			↓			Feed - center area	
↓		↓	■	■		↑		■	↓	↓		Chip groove (R / M / F)	Selection of inserts
			↑	↑		↑			↓			Corner radius (Larger / smaller)	
		↑	↑	↑	↓	↓						Cutting material (wear resistance / toughness)	
			■	■	■	■	■					Clamping of tool	General creteria
			■	■	■	■	■					Clamping of workpiece	
□			□	□			□		□	□		Coolant	

↑ Raise, increase ↓ Avoid, reduce ■ Check, optimize □ Use

19:00 ▶ 24h

NL **Maatregelen bij freesproblemen**
FR **Problèmes de fraisage et solutions**
ES **Problemas de fresado y soluciones**
DE **Maßnahmen bei Fräsproblemen**

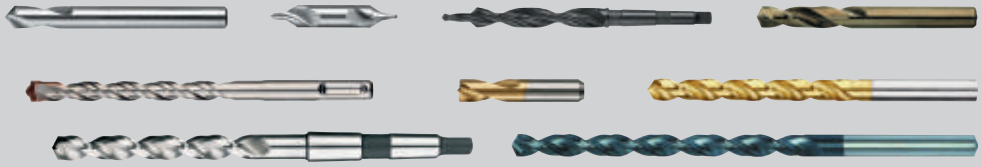
Type of problem											Corrective measures
Build up edge	Notching	Cratering	Flank wear	Plastic deformation	Thermal cracks	Breakage	Edge chipping	Bad workpiece surface	Chattering vibration	Edge chipping on the workpiece	
↑	↓	↓	↓	↓	↓		↑	↑	■		Cutting speed
↑	↓	↓	↑	↓	↓	↓	↓	↓	■		Feed rate per tooth
	↑				■	↑	↑				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**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



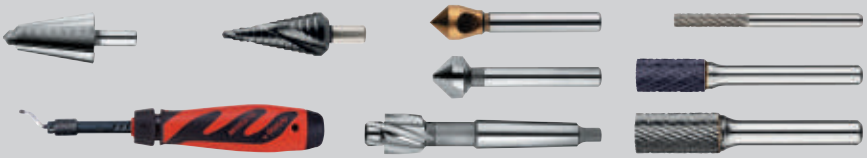
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



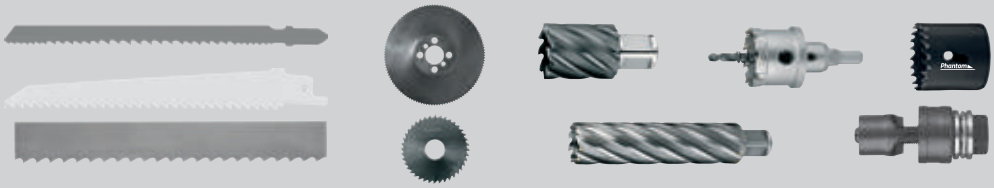
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



ICONEN ICONES ICONOS PIKTOGRAMME

	NL	FR	ES	DE
DIN 225	DIN norm	Norme DIN	Norma DIN	DIN Norm
Phantom	Phantom norm	Norme Phantom	Norma Phantom	Werksnorm
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
DIN 6535-HA	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft
DIN 228-B	Morse Konus Opname	Cône morse	Mango cónico	Morsekegel
ER	ER Spantangen volgens DIN 6499	Pinces ER selon DIN 6499	Pinzas ER según DIN 6499	ER Spannzangen gemäss DIN 6499
B1	Uitvoering VDI-houder	Type Porte-Outils VDI	Tipo portaherramientas VDI	Ausführung VDI-Halter
BAJONET	Bajonet opname	Fixation baïonnette	Fijación bayoneta	Bajonet Aufnahme
CAM-LOCK	Camlock opname	Fixation Camlock	Fijación Camlock	Camlock Aufnahme
TYPE XP	Precisie uitvoering	Version de précision	Versión de precisión	Präzision-ausführung
SK	Opname volgens DIN 2080	A queue selon DIN 2080	Con cono según DIN 2080	Aufnahme gemäß DIN 2080
ISO	Opname volgens DIN 69871	A queue selon DIN 69871	Con cono según DIN 69871	Aufnahme gemäß 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

	NL	FR	ES	DE
VDI	Opname volgens DIN 69880	A queue selon DIN 69880	Con cono según DIN 69880	Aufnahme gemäß DIN 69880
	Cilindrische schacht	Queue cylindrique	Mango cilíndrico	Zylinderschaft
TYPE A	Standaard uitvoering	Version standard	Versión estándar	Standard Ausführung
HRc 60±2	Oppervlaktehardheid HRc 60±2	Traitement de surface HRc 60±2	Tratamiento de superficie HRc 60±2	Oberflächengehärtet HRc 60±2
AT3	Tolerantieklasse AT3	Classe de tolérance AT3	Clase de tolerancia AT3	Toleranzklasse AT3
0,005	Rondloopnauwkeurig 0,005 mm	Concentricitée 0,005 mm	Concentricidad 0,005 mm	Rundlaufgegauigkeit 0,005 mm
	Klopvaste uitvoering	Tenue aux percussions	Resistente a percusiones	Schlagfester Ausführung
110 Nm	Maximale spankracht 110 Nm	Couple de serrage maximal 110 Nm	Fijación máxima 110 Nm	Maximalspannkraft 110 Nm
	Tandkranssleutel	Clé pour mandrin porte-forets	Llave para portabrocas	Schlüssel für Zahnkranzbohrfutter
	Spansleutel	Clé de mandrin	Llave de apriete	Spannschlüssel
G6,3 12.000 RPM	Balanceerklasse G6,3	Classe d'équilibrage G6,3	Clase de equilibración G6,3	Ausgewuchtet G6,3 bei 12.000 U/min
F7	Tolerantie boringsdiameter	Tolérance d'alésage	Tolerancia de escariado	Toleranz Borungsdurchmesser
n6	Tolerantie buitenmaat	Tolérance du diamètre externe	Tolerancia diámetro externo	Toleranz Aussendurchmesser

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

P= pagina
P= page
P= página
P= Seite

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› 81.140	TORAX		P. 11
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› 81.182	TORAX		P. 12
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› 81.230	TORAX	TYPE P, 0,04	P. 14
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› 81.510	AKON		P. 19
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› 81.530	AKON	DIN 228-B	P. 19
› 81.531	AKON	DIN 228-B	P. 20

› 81.532	TORAX	DIN 6535-HB, AUTO REVERSAL	P. 21
› 81.540	TORAX	DIN 228-B, AUTO REVERSAL	P. 21
› 81.545	TORAX	C, T	P. 22
› 81.550	TORAX	ER, DIN 228-B, C, T	P. 22
› 81.570	TORAX	DIN 228-B	P. 22
› 81.602	TORAX	DIN 6535-HB, C, T	P. 23
› 81.610	TORAX	DIN 228-B, C, T	P. 23
› 81.613	TORAX	SK, C, T	P. 24
› 81.614	TORAX	SK, C, T	P. 24
› 81.616	TORAX	MAS-BT, C, T	P. 25
› 81.625	TORAX		P. 25
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› 81.633	TORAX		P. 26
› 81.634	TORAX		P. 26
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› 82.153 TORAX	DIN 6537 SK SK		P. 34
› 82.154 TORAX	DIN 6359 SK G6,3 15.000 RPM		P. 34
› 82.155 TORAX	DIN 6359 SK G6,3 15.000 RPM		P. 35
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› 82.224 TORAX	DIN 6537 SK G6,3 15.000 RPM		P. 37
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› 82.323 TORAX	DIN 6358 SK		P. 38
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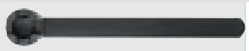
› 82.460 TORAX	DIN 6368		P. 40
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› 82.840	TORAX	ER-40	DIN 6499-B			P. 45
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› 82.885	TORAX	ER-25			NEW	P. 46
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› 82.962	TORAX					P. 46
› 82.963	TORAX					P. 47
› 82.990	TORAX					P. 47
› 83.110	TORAX	DIN 69880	B1	VDI		P. 48
› 83.111	TORAX	DIN 69880	B2	VDI		P. 48
› 83.112	TORAX	DIN 69880	B3	VDI		P. 49
› 83.113	TORAX	DIN 69880	B4	VDI		P. 49
› 83.120	TORAX	DIN 69880	C1	VDI		P. 50
› 83.121	TORAX	DIN 69880	C2	VDI		P. 50
› 83.122	TORAX	DIN 69880	C3	VDI		P. 51
› 83.123	TORAX	DIN 69880	C4	VDI		P. 51
› 83.150	TORAX	DIN 69880	E1	VDI		P. 52
› 83.151	TORAX	DIN 69880	E2	VDI		P. 52
› 83.155	TORAX	DIN 69880	F1	VDI		P. 53
› 83.158	TORAX	DIN 69880	E4	VDI		P. 53
› 83.161	TORAX	DIN 69880		VDI		P. 54
› 83.170	TORAX	DIN 69880				P. 54
› 84.100	TORAX	DIN 2185				P. 55
› 84.110	TORAX	DIN 2187				P. 55
› 84.120	TORAX					P. 55
› 84.170	TORAX	DIN 238				P. 56
› 84.171	TORAX					P. 56
› 84.172	TORAX					P. 56

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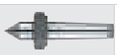
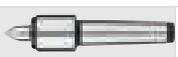
› 84.173	TORAX	DIN 238	SK			P. 57
› 84.174	TORAX	DIN 238	SK	G6,3 12.000 RPM		P. 57
› 84.176	TORAX	DIN 238	MAS-BT	G6,3 12.000 RPM		P. 57
› 84.203	TORAX	DIN 6383	SK			P. 58
› 84.204	TORAX		SK	G6,3 15.000 RPM		P. 58
› 84.206	TORAX		MAS-BT	G6,3 15.000 RPM		P. 58
› 84.410	TORAX	DIN 217				P. 59
› 84.411	TORAX					P. 59
› 84.412	TORAX					P. 59
› 84.413	TORAX					P. 59
› 84.600	TORAX					P. 59
› 84.610	TORAX	DIN 317				P. 60
› 84.620						P. 60
› 84.745	TORAX					P. 60
› 84.750	TORAX		MAS-BT			P. 60
› 84.751	TORAX		MAS-BT			P. 60
› 84.752	TORAX		MAS-BT			P. 61
› 84.760	TORAX	DIN 69872-A				P. 61
› 84.770	TORAX	DIN 69872-B				P. 61
› 84.775	TORAX	ISO 7388/2-B				P. 61
› 84.780	TORAX	OTT-90°				P. 62
› 84.872	TORAX	DIN 172-A	F7	n6		P. 63
› 84.873	TORAX	DIN 172-A	F7	n6		P. 63
› 84.874	TORAX	DIN 172-A	F7	n6		P. 63
› 84.879	TORAX	DIN 179-A	F7	n6		P. 64
› 84.880	TORAX	DIN 179-A	F7	n6		P. 64
› 84.881	TORAX	DIN 179-A	F7	n6		P. 64
› 85.050	TORAX					P. 65
› 85.051	TORAX					P. 65
› 85.052	TORAX					P. 66
› 85.053	TORAX					P. 66

› 85.058	TORAX			P. 66
› 85.059	TORAX			P. 67
› 85.062	TORAX			P. 67
› 85.100	TORAX			P. 68
› 85.110	TORAX			P. 68
› 85.120	TORAX			P. 68
› 85.130	TORAX			P. 68
› 85.140	TORAX			P. 69
› 85.150	TORAX			P. 69
› 85.210	TORAX			P. 69
› 85.215	TORAX			P. 70
› 85.220	TORAX			P. 70
› 85.225	TORAX			P. 70
› 85.230	TORAX			P. 71
› 85.232	TORAX			P. 71
› 85.280	TORAX			P. 71
› 85.410	BISON	DIN 6350		P. 72
› 85.420	BISON	DIN 6350		P. 72
› 85.421	BISON	DIN 55026-B		P. 73
› 85.422	BISON	DIN 55027 BAJO-NET		P. 73
› 85.423	BISON	DIN 6350 CAM-LOCK		P. 74
› 85.450	BISON	DIN 6350		P. 74
› 85.500	BISON	DIN 6350		P. 75
› 85.510	BISON	DIN 6350		P. 75
› 85.600	BISON			P. 76
› 85.602	BISON	DIN 55027 BAJO-NET		P. 76
› 85.603	BISON	DIN 55029 CAM-LOCK		P. 77
› 85.670	BISON	DIN 6351		P. 77
› 85.801	BISON			P. 78
› 85.802	BISON			P. 78
› 85.805	BISON			P. 78

› 85.811	BISON			P. 79
› 85.812	BISON			P. 79
› 85.813	BISON			P. 79
› 85.820	BISON			P. 80
› 85.821	BISON			P. 80
› 85.823	BISON			P. 80
› 85.840	BISON			P. 80
› 85.850	BISON			P. 81
› 85.851	BISON			P. 81
› 85.855	BISON			P. 81
› 85.856	BISON			P. 82
› 85.866	BISON			P. 82
› 85.868	BISON			P. 82
› 85.890	BISON			P. 82
› 85.961	BISON	DIN 55027 BAJO-NET		P. 83
› 85.962	BISON	DIN 55029 CAM-LOCK		P. 83
› 85.992	BISON			P. 83
› 85.993	BISON			P. 84
› 87.110	BISON			P. 85
› 87.250	BISON			P. 85
› 87.400	BISON			P. 86
› 88.150	BISON			P. 86
› 88.152	FORAX			P. 87
› 88.154	FORAX			P. 87
› 88.160	BISON			P. 88
› 88.170	BISON			P. 88
› 88.200	BISON			P. 89
› 88.205	BISON			P. 89
› 88.230	BISON			P. 90
› 88.237	FORAX			P. 90
› 88.250	BISON			P. 91

› 88.260	BISON		P. 91
› 88.270	BISON		P. 92
› 88.318	BISON		P. 92
› 88.340	TORAX		P. 93
› 88.350	TORAX		P. 93
› 88.407	BISON		P. 94
› 88.430	BISON		P. 94
› 88.435	BISON		P. 94
› 88.440	TORAX		P. 95
› 88.470	TORAX		P. 95
› 88.472	TORAX		P. 96
› 88.474	TORAX		P. 96
› 88.475	TORAX		P. 96
› 88.476	TORAX		P. 97
› 88.477	TORAX		P. 97
› 88.600	DIN 787		P. 98
› 88.605	DIN 6379		P. 98
› 88.610	DIN 508		P. 99
› 88.612	DIN 508-L		P. 99
› 88.613	DIN 508-R		P. 100
› 88.614			P. 100
› 88.615	DIN 6323		P. 100
› 88.616			P. 101
› 88.617			P. 101
› 88.618	TORAX		P. 101
› 88.630			P. 102
› 88.631	DIN 6331		P. 102
› 88.632	DIN 6334		P. 102
› 88.640	DIN 6340		P. 103
› 88.641	DIN 6319-C		P. 103
› 88.642	DIN 6319-D		P. 103

› 88.643		P. 103
› 88.650	DIN 6314	P. 104
› 88.655		P. 104
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› 88.675	DIN 6316	P. 106
› 88.680	DIN 6316	P. 106
› 88.700		P. 106
› 88.705		P. 107
› 88.710		P. 107
› 88.750	DIN 6318	P. 108
› 88.780		P. 108
› 88.800		P. 108
› 88.805		P. 109
› 88.810		P. 109
› 88.900 TORAX		P. 110
› 88.902 TORAX		P. 110
› 88.904 TORAX		P. 111
› 88.910 TORAX		P. 111
› 88.912 TORAX		P. 112
› 88.914 TORAX		P. 112
› 88.920 TORAX		P. 113
› 88.921 TORAX		P. 113
› 88.924 TORAX		P. 114
› 88.928 TORAX		P. 114
› 88.935 TORAX		P. 115
› 88.936 TORAX		P. 115
› 88.940 TORAX		P. 115
› 88.965 TORAX		NEW P. 116
› 88.966 TORAX		NEW P. 116

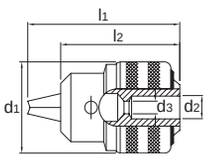
› 88.991	TORAX		P. 116
› 88.994	TORAX		P. 117
› 88.860	TORAX		P. 118
› 88.870	TORAX		P. 118
› 89.280	TORAX	ER DIN 6499-B	P. 118
› 89.282	TORAX	ER DIN 6499-B	P. 119
› 89.878			P. 119

› 81.130 TORAX

NL **Tandkransboorhouder, met sleutel**
FR **Mandrin porte-forets à couronne dentée, avec clé**
ES **Portabroca, con llave**
DE **Zahnkranzbohrfutter, mit Schlüssel**







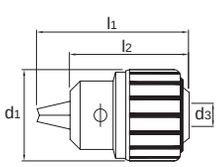
Ref.	Ø mm	d2	d3	d1	l1	l2	1	2	3
81.130.0810	0,8-6,5	B10		30	55	44	81.150.1400		
81.130.0820	0,8-6,5	3/8"-24 UNF	5.5	30	55	44	81.150.1400	81.182.0510	
81.130.1012	1-10	B12		33	60	50	81.150.0200		
81.130.1020	1-10	3/8"-24 UNF	5.5	33	60	50	81.150.0200	81.182.0510	
81.130.1025	1-10	1/2"-20 UNF	6.5	33	60	50	81.150.0200	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	5.5	43	73	59	81.150.0200	81.182.0510	
81.130.1325	1,5-13	1/2"-20 UNF	6.5	43	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	6.5	54	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 TORAX

NL **Tandkransboorhouder, met sleutel, verzwaarde uitvoering**
FR **Mandrin porte-forets à couronne dentée, avec clé, version extra renforcée**
ES **Portabroca, con llave, versión extra macizo**
DE **Zahnkranzbohrfutter, mit Schlüssel, extra stabile Ausführung**





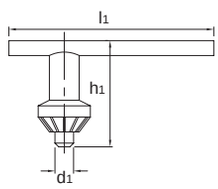


Ref.	Ø mm	d2	d1	l1	l2	1
81.140.0812	0,8-6,5	B12	32	51	39	81.150.2100
81.140.0891	0,8-6,5	J1	32	51	39	81.150.2100
81.140.1016	1-10	B16	43	65	53	81.150.0200
81.140.1092	1-10	J2	43	65	53	81.150.0200
81.140.1316	1-13	B16	53	86	68	81.150.2200
81.140.1396	1-13	J6	53	86	68	81.150.2200
81.140.1618	1-16	B18	57	94	78	81.150.0300
81.140.1693	1-16	J3	57	94	78	81.150.0300
81.140.2022	5-19	B22	65	108	89	81.150.2300
81.140.2093	5-19	J3	65	108	89	81.150.2300

› 81.150 TORAX

NL **Sleutel voor Tandkransboorhouder**
FR **Clé pour Mandrin porte-forets à couronne dentée**
ES **Llave para Portabroca**
DE **Schlüssel für Zahnkranzbohrfutter**





Ref.	Type	d1	h1	l1
81.150.0200	S2	6	40	80
81.150.0300	S3	8	47	85
81.150.1400	S14	6	32	55

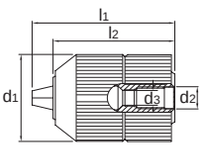
Ref.	Type	d1	h1	l1
81.150.2100	S7	4	35	60
81.150.2200	S9	6.3	45	90
81.150.2300	S13	9.5	70	132

› 81.180 TORAX

NL **Snelspanboorhouder**
FR **Mandrin porte-forets auto-serrant**
ES **Portabroca cierre automático**
DE **Schnellspannbohrfutter**







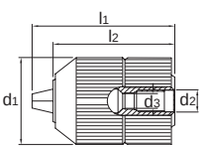
Ref.	Ø mm	d2	d3	d1	l2	l1	Watt Max.	1	2
81.180.1020	1-10	3/8"-24 UNF	5.5	41	54	64	400	81.182.0510	
81.180.1025	1-10	1/2"-20 UNF	6.5	41	54	64	400	81.182.0610	81.182.1330
81.180.1035	1-10	6,3 BIT	6.5	41	54	64	400		
81.180.1320	2-13	3/8"-24 UNF	5.5	46	66	81	1000	81.182.0510	
81.180.1325	2-13	1/2"-20 UNF	6.5	46	66	81	1000	81.182.0610	81.182.1330
81.180.1330	2-13	SDS+ 10 mm	6.5	46	66	81	1000	81.182.0610	81.182.1330

› 81.181 TORAX

NL **Snelspanboorhouder, in metalen uitvoering**
FR **Mandrin porte-forets auto-serrant, en métal**
ES **Portabroca cierre automático, en metal**
DE **Schnellspannbohrfutter, in Metallausführung**







Ref.	Ø mm	d2	d3	d1	l2	l1	Watt Max.	1	2
81.181.1020	1-10	3/8"-24 UNF	5.5	40.4	56	65.5	1000	81.182.0510	
81.181.1025	1-10	1/2"-20 UNF	6.5	40.4	56	65.5	1000	81.182.0610	81.182.1330
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
81.181.1330	2-13	SDS+ 10 mm	6.5	42.5	68	75	1000	81.182.0610	81.182.1330

› 81.182 TORAX

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**



Ref.	Description
81.182.0510	M5 x 0.8
81.182.0610	M6 x 1

Ref.	Description
81.182.1330	SDS+ / 12" -20 UNF

19:00 ▶ 24h

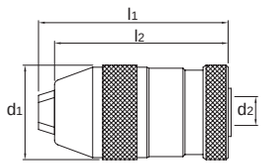
› 81.200 TORAX

NL **Zelfspannende Boorhouder, type A**
FR **Mandrin porte-forets auto-serrant, type A**
ES **Portabroca cierre automático, tipo A**
DE **Selbstspannende Bohrfutter, Typ A**





1



TYPE A

Ref.	Ø mm	d2	d1	l1	l2	1
81.200.0620	0,4-6,5	3/8"-24 UNF	33	74	68	81.411.0600
81.200.0810	0,8-8	B10	33	70	65	81.411.0800
81.200.0812	0,8-8	B12	33	70	65	81.411.0800
81.200.0820	0,8-8	3/8"-24 UNF	33	74	68	81.411.0800
81.200.0825	0,8-8	1/2"-20 UNF	33	74	68	81.411.0800
81.200.0891	0,8-8	J1	33	70	65	81.411.0800
81.200.1012	0,8-10	B12	39	80	73	81.411.1000
81.200.1016	0,8-10	B16	39	80	73	81.411.1000
81.200.1020	0,8-10	3/8"-24 UNF	39	80	73	81.411.1000
81.200.1025	0,8-10	1/2"-20 UNF	39	80	73	81.411.1000
81.200.1092	0,8-10	J2	39	80	73	81.411.1000
81.200.1094	0,8-10	J33	39	80	73	81.411.1000
81.200.1312	1-13	B12	44	95	86	81.411.1300
81.200.1316	1-13	B16	47	102	92	81.411.1300
81.200.1320	2-13	3/8"-24 UNF	44	95	86	81.411.1300
81.200.1325	2-13	1/2"-20 UNF	44	95	86	81.411.1300
81.200.1392	1-13	J2	44	95	86	81.411.1300
81.200.1396	1-13	J6	44	95	86	81.411.1300
81.200.1616	3-16	B16	51	105	95	81.411.1600
81.200.1618	3-16	B18	51	115	102	81.411.1600
81.200.1625	3-16	1/2"-20 UNF	51	115	102	81.411.1600
81.200.1630	3-16	5/8"-16 UN	51	115	102	81.411.1600
81.200.1696	3-16	J6	51	115	102	81.411.1600
81.200.1762	5-20	B18	64	140	127	
81.200.1828	5-20	B22	64	140	127	
81.200.1894	5-20	J3	64	140	127	

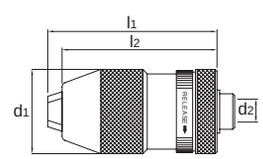
› 81.210 TORAX

NL **Zelfspannende Boorhouder, klopvast, met spankrachtborging, type A**
FR **Mandrin porte-forets 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**





1



TYPE A SECURITY LOCK

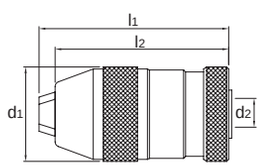
Ref.	Ø mm	d2	d1	l1	l2	1
81.210.1012	0,8-10	B12	38	85	79	81.411.1000
81.210.1025	0,8-10	3/8"-24 UNF	38	85	79	81.411.1000
81.210.1030	0,8-10	1/2"-20 UNF	38	85	79	81.411.1000
81.210.1316	1,5-13	B16	44	100	92	81.411.1300
81.210.1330	1,5-13	1/2"-20 UNF	44	100	92	81.411.1300

› 81.230 TORAX

NL **Zelfspannende Precisieboorhouder, verzwaarde uitvoering, type P**
FR **Mandrin porte-forets 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**







TYPE P 0,04

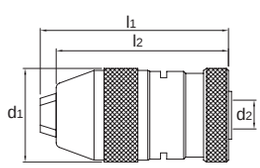
Ref.	Ø mm	d2	d1	l1	l2	1
81.230.0612	0,3-6,5	B12	33	70	62	81.412.0600
81.230.0812	0,3-8	B12	38	74	67	81.412.0800
81.230.1012	0,5-10	B12	43	89	81	81.412.1000
81.230.1016	0,5-10	B16	43	89	81	81.412.1000
81.230.1316	1-13	B16	49	103	91	81.412.1300
81.230.1325	1-13	1/2"-20 UNF	49	103	91	81.412.1300
81.230.1616	3-16	B16	55	107	95	81.412.1600
81.230.1618	3-16	B18	55	107	95	81.412.1600

› 81.250 TORAX

NL **Zelfspannende Precisieboorhouder, verzwaarde uitvoering, type XP**
FR **Mandrin porte-forets 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**





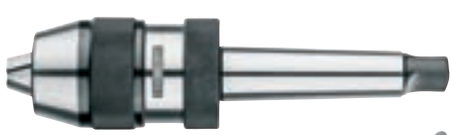


TYPE XP 0,04

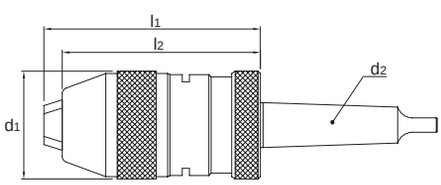
Ref.	Ø mm	d2	d1	l1	l2	1	2
81.250.0612	0,3-6,5	B12	33	70	62	81.412.0600	81.413.0600
81.250.0812	0,3-8	B12	38	74	67	81.412.0800	81.413.0800
81.250.1012	0,5-10	B12	43	89	81	81.412.1000	81.413.1000
81.250.1016	0,5-10	B16	43	89	81	81.412.1000	81.413.1000
81.250.1316	1-13	B16	49	103	91	81.412.1300	81.413.1300
81.250.1616	3-16	B16	55	107	95	81.412.1600	81.413.1300
81.250.1618	3-16	B18	55	107	95	81.412.1600	81.413.1600

› 81.300 TORAX

NL **Zelfspannende Precisieboorhouder, type XP, MK volgens DIN 228-B**
FR **Mandrin porte-forets de précision auto-serrant, type XP, CM selon DIN 228-B**
ES **Portabroca de precisión, cierre automático, tipo XP, CM según DIN 228-B**
DE **Selbstspannende Präzisionsbohrfutter, Typ XP, MK nach DIN 228-B**







DIN 228-B TYPE XP 0,04

Ref.	Ø mm	d2	d1	l1	l2	1	2
81.300.0208	0,3-8	2	38	72	65	81.412.0800	81.413.0800
81.300.0213	1-13	2	48	92	80	81.412.1300	81.413.1300
81.300.0313	1-13	3	48	92	80	81.412.1300	81.413.1300
81.300.0316	3-16	3	54	96	85	81.412.1600	81.413.1600
81.300.0413	1-13	4	48	92	80	81.412.1300	81.413.1300
81.300.0416	3-16	4	54	96	85	81.412.1600	81.413.1600

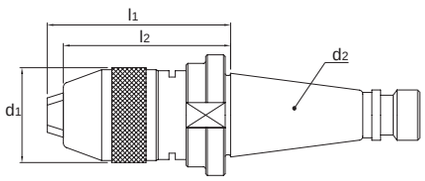
19:00 ▶ 🛒 ▶ 24h

› 81.303 TORAX

NL **Zelfspannende Precisieboorhouder, type XP, SK volgens DIN 2080**
FR **Mandrin porte-forets de précision auto-serrant, type XP, SA selon DIN 2080**
ES **Portabroca de precisión, cierre automático, tipo XP, SK según DIN 2080**
DE **Selbstspannende Präzisionsbohrfutter, Typ XP, SK nach DIN 2080**







TYPE XP | SK | 0,04

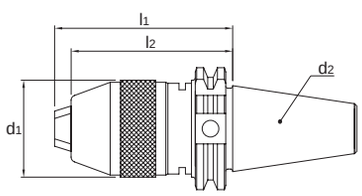
Ref.	Ø mm	d2	d1	l1	l2	1	2	3
81.303.3008	0,3-8	30	38	76	70	81.412.0800	81.413.0800	81.414.0800
81.303.4008	0,3-8	40	38	69	63	81.412.0800	81.413.0800	81.414.0800
81.303.4013	1-13	40	48	89	78	81.412.1300	81.413.1300	81.414.1300
81.303.4016	3-16	40	55	101	90	81.412.1600	81.413.1600	81.414.1640
81.303.5013	1-13	50	48	101	90	81.412.1300	81.413.1300	81.414.1300
81.303.5016	3-16	50	55	83	72	81.412.1600	81.413.1600	81.414.1650

› 81.304 TORAX

NL **Zelfspannende Precisieboorhouder, type XP, SK volgens DIN 69871**
FR **Mandrin porte-forets de précision auto-serrant, type XP, SA selon DIN 69871**
ES **Portabroca de precisión, cierre automático, tipo XP, SK según DIN 69871**
DE **Selbstspannende Präzisionsbohrfutter, Typ XP, SK nach DIN 69871**







TYPE XP | SK | 0,04

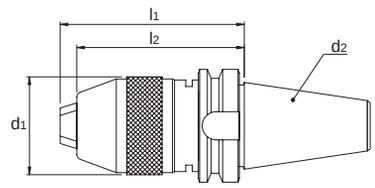
Ref.	Ø mm	d2	d1	l1	l2	1	2	3
81.304.4013	1-13	40	48	91	80	81.412.1300	81.413.1300	81.414.1300
81.304.4016	3-16	40	55	108	97	81.412.1600	81.413.1600	81.414.1640
81.304.5013	1-13	50	48	89	78	81.412.1300	81.413.1300	81.414.1300
81.304.5016	3-16	50	55	89	76	81.412.1600	81.413.1600	81.414.1650

› 81.306 TORAX

NL **Zelfspannende Precisieboorhouder, type XP, BT volgens MAS 403-BT**
FR **Mandrin porte-forets de précision auto-serrant, type XP, BT selon MAS 403-BT**
ES **Portabroca de precisión, cierre automático, tipo XP, BT según MAS 403-BT**
DE **Selbstspannende Präzisionsbohrfutter, Typ XP, BT nach MAS 403-BT**







TYPE XP | MAS-BT | 0,04

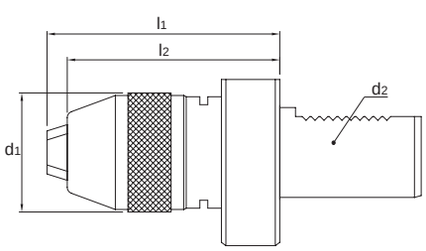
Ref.	Ø mm	d2	d1	l1	l2	1	2	3
81.306.4013	1-13	40	48	97	86	81.412.1300	81.413.1300	81.414.1300
81.306.4016	3-16	40	55	116	105	81.412.1600	81.413.1600	81.414.1640
81.306.5013	1-13	50	48	108	97	81.412.1300	81.413.1300	81.414.1300
81.306.5016	3-16	50	55	106	95	81.412.1600	81.413.1600	81.414.1650

› 81.308 TORAX

NL **Zelfspannende Precisieboorhouder, type XP, VDI volgens DIN 69880**
FR **Mandrin porte-forets de précision auto-serrant, type XP, VDI selon DIN 69880**
ES **Portabroca de precisión, cierre automático, tipo XP, VDI según DIN 69880**
DE **Selbstspannende Präzisionsbohrfutter, Typ XP, VDI nach DIN 69880**







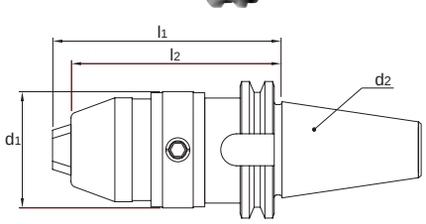
TYPE XP | VDI | 0,04

Ref.	Ø mm	d2	d1	l1	l2	1	2	3
81.308.3013	1-13	30	48	105	94	81.412.1300	81.413.1300	81.414.1300
81.308.4013	1-13	40	48	92	85	81.412.1300	81.413.1300	81.414.1300
81.308.4016	3-16	40	55	96	85	81.412.1600	81.413.1600	81.414.1640

› 81.320 TORAX

NL **Ultra Precisieboorhouder, type XPF, compleet met spansleutel, SK volgens DIN 69871**
FR **Mandrin porte-forets de ultra haute précision auto-serrant, type XPF, avec clé de serrage, SA selon DIN 69871**
ES **Portabroca de precisión super alta, tipo XPF, se suministra con llave de apriete, SK según DIN 69871**
DE **Ultra-Präzisionsbohrfutter, Typ XPF, Komplett mit Spannschlüssel, SK nach DIN 69871**





TYPE XPF | SK | 0,05 | 110 Nm

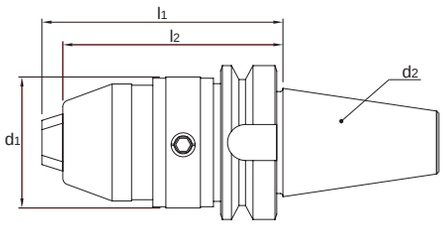
Ref.	Ø mm	d2	d1	l1	l2
81.320.0413	1-13	40	54	100	91
81.320.0416	3-16	40	57	101	94

19:00 ▶ 24h

› 81.330 TORAX

NL **Ultra Precisieboorhouder, type XPF, compleet met spansleutel, BT volgens MAS 403-BT**
FR **Mandrin porte-forets de ultra haute précision auto-serrant, type XPF, avec clé de serrage, BT selon MAS 403-BT**
ES **Portabroca de precisión super alta, tipo XPF, se suministra con llave de apriete, BT según MAS 403-BT**
DE **Ultra-Präzisionsbohrfutter, Typ XPF, Komplett mit Spannschlüssel, BT nach MAS 403-BT**





TYPE XPF | MAS-BT | 0,05 | 110 Nm

Ref.	Ø mm	d2	d1	l1	l2
81.330.0413	1-13	40	54	105	96
81.330.0416	3-16	40	57	106	99

› 81.411 TORAX

NL **Reservebekken, voor type A**
FR **Mors de rechange, pour type A**
ES **Garras de recambio, para tipo A**
DE **Ersatzbacken, für Typ A**

Ref.	Ø mm	Type
81.411.0600	0,4-6,5	6,5A

Ref.	Ø mm	Type

› 81.412 TORAX

NL **Reservebekken, voor type P en XP**
FR **Mors de rechange, pour type P et XP**
ES **Garras de recambio, para tipo P y XP**
DE **Ersatzbacken, für Typ P und XP**

Ref.	Ø mm	Type
81.412.0600	0,3-6,5	6,5P-6,5XP
81.412.0800	0,3-8	8P-8XP
81.412.1000	0,5-10	10P-10XP

Ref.	Ø mm	Type
81.412.1300	1-13	13P-13XP
81.412.1600	3-16	16P-16XP

› 81.413 TORAX

NL **Spansleutel, voor XP**
FR **Clé de serrage, pour type XP**
ES **Llave de apriete, para tipo XP**
DE **Spannschlüssel, für Typ XP**



Ref.	Type	l1	d1
81.413.0600	6,5XP	140	27
81.413.0800	8XP	165	28
81.413.1000	10XP	165	34

Ref.	Type	l1	d1
81.413.1300	13XP	165	38
81.413.1600	16XP	165	43

› 81.414 TORAX

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**

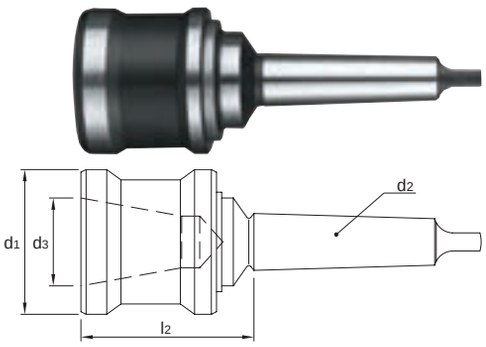


Ref.	Ø mm	Type
81.414.0800	0,3-8	8XP
81.414.1300	1-13	13XP

Ref.	Ø mm	Type
81.414.1640	3-16	16XP/40
81.414.1650	3-16	16XP/50

› 81.450 BISON

NL **Snelwisselhouder, MK volgens DIN 228-B, BISON type 1721**
FR **Porte-douilles à changement rapide, CM selon DIN 228-B, BISON type 1721**
ES **Torreta de cambio rápido', CM según DIN 228-B, BISON tipo 1721**
DE **Schnellwechselfutter, MK nach DIN 228-B, BISON Typ 1721**



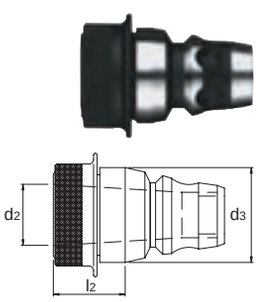
DIN 228-B

Ref.	d2	d3	d1	l1
81.450.0240	2	40	65	82.5
81.450.0340	3	40	65	81
81.450.0440	4	40	65	80

Ref.	d2	d3	d1	l1
81.450.0451	4	51.5	83	102
81.450.0551	5	51.5	83	98.5

› 81.460 BISON

NL **Inzethuls, met inwendige MK, voor 81.450**
FR **Douille d'accouplement, avec CM intérieur, pour 81.450**
ES **Manguito de unión, con CM interior, para 81.450**
DE **Einsätze, mit innerem MK, für 81.450**

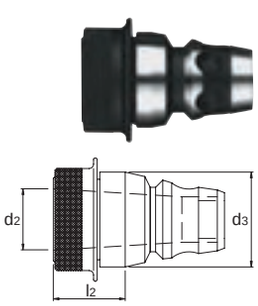


Ref.	d2	d3	l2
81.460.4001	1	40	29
81.460.4002	2	40	29
81.460.4003	3	40	47
81.460.5101	1	51.5	34

Ref.	d2	d3	l2
81.460.5102	2	51.5	34
81.460.5103	3	51.5	34
81.460.5104	4	51.5	57

› 81.462 BISON

NL **Inzethuls, met inwendige MK en pendelsysteem voor ruimers, voor 81.450**
FR **Douille d'accouplement, avec CM intérieur et système pendulaire pour alésoirs, pour 81.450**
ES **Manguito de unión, con CM interior y sistema pendular para escariadores, para 81.450**
DE **Einsätze, mit innerem MK und Pendelsystem für Reibahlen, für 81.450**



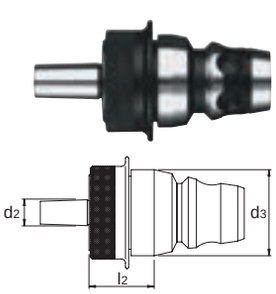
P

Ref.	d2	d3	l2
81.462.4002	2	40	29

Ref.	d2	d3	l2
81.462.4003	3	40	47

› 81.463 BISON

NL **Inzethuls, met uitwendige boorhouderopname, voor 81.450**
FR **Douille d'accouplement, avec connecteur porte-forets externe, pour 81.450**
ES **Manguito de unión, con conector portabrocas exterior, para 81.450**
DE **Einsätze, mit auswendige Bohrfutteraufnahme, für 81.450**



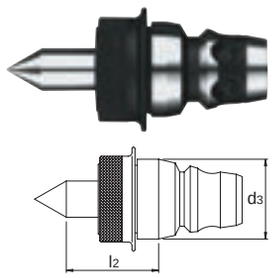
Ref.	d2	d3	l2
81.463.4012	B12	40	32.5
81.463.4016	B16	40	34

Ref.	d2	d3	l2
81.463.5116	B16	51.5	39

19:00 ▶ 24h

› 81.464 BISON

NL **Inzethuls, met uitwendige 60° centreerpunt, voor 81.450**
FR **Douille d'accouplement, avec pointe à centrer externe de 60°, pour 81.450**
ES **Manguito de unión, con punta de centrado exterior de 60°, para 81.450**
DE **Einsätze, mit äußerer Zentrierspitze 60°, für 81.450**



Ref.	d3	l2
81.464.4000	40	61

Ref.	d3	l2

› 81.510 AKON

NL **Snijplaathouderset**
FR **Coffret porte-filières machine**
ES **Juego de portacojinetes**
DE **Schneideisenhaltersatz**



Ref.	1	2
81.510.0100	M1-M6	20x7, 20x5, 16x5
81.510.0200	M4,5-M14	38x14, 38x10, 30x11/25x9/20x7

Ref.	1	2
81.510.0300	M16-M24	45x18/55x22, 45x14/55x16

› 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**



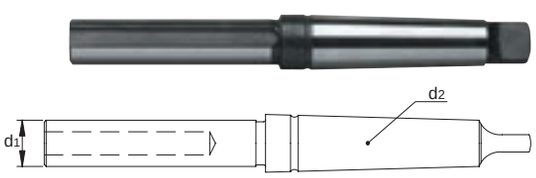
Ref.	1	2	3
81.520.0100	M1-M6	M1-M12	20x7, 20x5, 16x5
81.520.0200	M4,5-M14	M3-M16	38x14, 38x10, 30x11/25x9/20x7

Ref.	1	2	3
81.520.0300	M16-M24	M4-M24	45x18/55x22, 45x14/55x16

› 81.530 AKON

NL **Opsteekdoorn, MK volgens DIN 228-B**
FR **Mandrin support pour porte-tarauds et porte-filières, CM selon DIN 228-B**
ES **Espiga para portamachos y porta terrajas, CM según DIN 228-B**
DE **Aufsteckdorne, MK nach DIN 228-B**

DIN 228-B

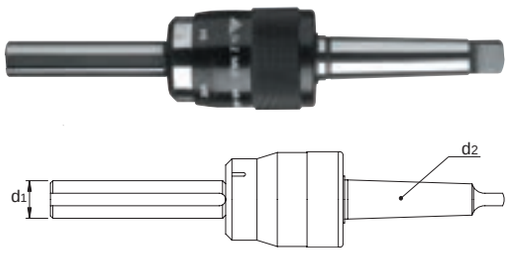


Ref.	Nr.	d2	d1
81.530.0101	1	1	12
81.530.0102	1	2	12
81.530.0103	1	3	12
81.530.0202	2	2	20

Ref.	Nr.	d2	d1
81.530.0203	2	3	20
81.530.0204	2	4	20
81.530.0303	3	3	25
81.530.0304	3	4	25

› 81.531 AKON

NL **Opsteekdoorn, MK volgens DIN 228-B, met instelbare slipkoppeling**
FR **Mandrin support pour porte-tarauds et porte-filières, CM selon DIN 228-B, à réglage de couple par friction**
ES **Espiga para portamachos y porta terrajas, CM según DIN 228-B, con ajuste de par por fricción**
DE **Aufsteckdorne, MK nach DIN 228-B, mit einstellbarer Rutschkupplung**



DIN 228-B

Ref.	Nr.	d2	d1
81.531.0202	2	2	20
81.531.0203	2	3	20

Ref.	Nr.	d2	d1
81.531.0304	3	4	25

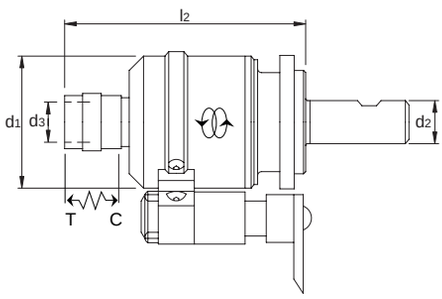
19:00 ▶ 24h

› 81.532 TORAX

NL **Tapapparaat, met omkeerinrichting, met druk- en trekcompensatie, Weldon, voor gebruik met tapinzetstukken**
FR **Appareil à tarauder, dispositif d'inversion, à compensation de pression et de traction, Weldon, pour douilles porte-tarauds**
ES **Aparato para roscar, con dispositivo de inversión, con compensación de presión y de tracción, Weldon, para casquillos de roscado**
DE **Gewindeschneidmaschinen, mit Umkehrvorrichtung, mit Zug-und Druckausgleich, Weldon, Für den Gebrauch mit Gewindebohrereinsatzstück**





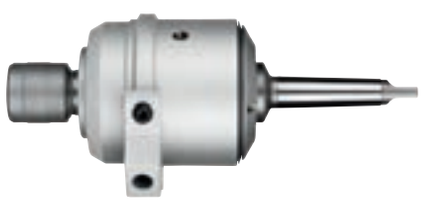


DIN 6535-HB | C T | AUTO REVERSAL

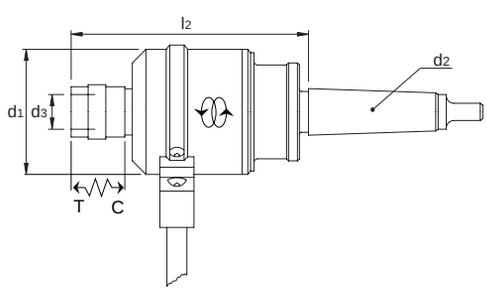
Ref.	d2	d3	d1	l2	Ø mm	1	2	T	C
81.532.2512	25	19	72	130	M3-M12	81.633/81.634	81.653/81.654	7	3

› 81.540 TORAX

NL **Tapapparaat, met omkeerinrichting, met druk- en trekcompensatie, MK volgens DIN 228-B, voor gebruik met tapinzetstukken**
FR **Appareil à tarauder, dispositif d'inversion, à compensation de pression et de traction, CM selon DIN 228-B, pour douilles porte-tarauds**
ES **Aparato para roscar, con dispositivo de inversión, con compensación de presión y de tracción, CM según DIN 228-B, para casquillos de roscado**
DE **Gewindeschneidmaschinen, mit Umkehrvorrichtung, mit Zug-und Druckausgleich, MK nach DIN 228-B, Für den Gebrauch mit Gewindebohrereinsatzstück**







DIN 228-B | C T | AUTO REVERSAL

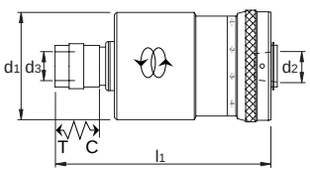
Ref.	d2	d3	d1	l2	Ø mm	1	2	T	C
81.540.0212	2	19	72	135	M3-M12	81.633/81.634	81.653/81.654	7	3
81.540.0312	3	19	78	133	M4-M12	81.633/81.634	81.653/81.654	7	3
81.540.0320	3	31	83	171	M8-M20	81.636/81.637	81.656/81.657	10	4
81.540.0420	4	31	83	172	M8-M20	81.636/81.637	81.656/81.657	10	4

› 81.545 TORAX

NL **Tapapparaat, met omkeerinrichting, met druk- en trekcompensatie, voor gebruik met tapinzetstukken**
FR **Appareil à tarauder, dispositif d'inversion, à compensation de pression et de traction, pour douilles porte-tarauds**
ES **Aparato para roscar, con dispositivo de inversión, con compensación de presión y de tracción, para casquillos de roscado**
DE **Gewindeschneidmaschinen, mit Umkehrvorrichtung, mit Zug-und Druckausgleich, Für den Gebrauch mit Gewindebohrereinsatzstück**







C T AUTO REVERSAL

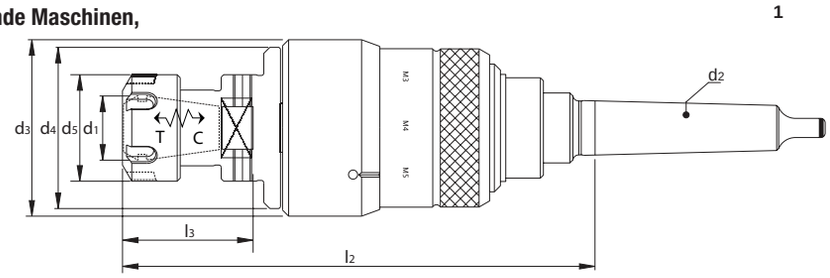
Ref.	d2	d3	d1	Ø mm	1	2	T	C
81.545.0007	J33	13	53	M1,4-7	81.651	84.171	7	3
81.545.0012	J6	19	68	M3-M12	81.653	84.171	7	3
81.545.0020	M20	26	83	M8-M20	81.655	84.172	10	4

› 81.550 TORAX

NL **Taphouder, voor rechtsom- en linksomdraaiende machines, met pendelsysteem, MK volgens DIN 228-B**
FR **Mandrin à tarauder porte-douilles, pour des machines tournantes à droite et à gauche, avec système pendulaire, CM selon DIN 228-B**
ES **Portamachos de cambio rápido, para giro normal e inverso, con sistema pendular, CM según DIN 228-B**
DE **Gewindeschneidfutter, für Rechts- und Linksdrehende Maschinen, mit Pendelsystem, MK nach DIN 228-B**







P ER DIN 228-B C T

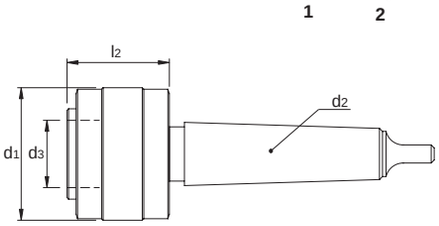
Ref.	d2	Ø mm	d3	d4	d5	l2	l3	1	T	C
81.550.0212	2	M3-M12	58	50	35	150	43	82.820	10	20
81.550.0312	3	M3-M12	58	50	35	150	43	82.820	10	20
81.550.0322	3	M8-M22	83	76	50	191	53	82.832	10	20
81.550.0422	4	M8-M22	83	76	50	192	53	82.832	10	20

› 81.570 TORAX

NL **Taphouder, MK volgens DIN 228-B, zonder axiale compensatie, voor gebruik met tapinzetstukken**
FR **Mandrin à tarauder porte-douilles, CM selon DIN 228-B, sans compensation axiale, pour douilles porte-tarauds**
ES **Portamachos de cambio rápido, CM según DIN 228-B, sin compensación axial, para casquillos de roscado**
DE **Gewindeschneidfutter, MK nach DIN 228-B, Ohne axialen Ausgleich, Für den Gebrauch mit Gewindebohrereinsatzstück**







DIN 228-B

Ref.	d2	d3	d1	l2	Ø mm	1	2
81.570.0212	2	19	33	45	M3-M12	81.633/81.634	81.653/81.654
81.570.0220	2	31	50	61	M8-M20	81.636/81.637	81.656/81.657
81.570.0312	3	19	33	45	M3-M12	81.633/81.634	81.653/81.654
81.570.0320	3	31	50	61	M8-M20	81.636/81.637	81.656/81.657

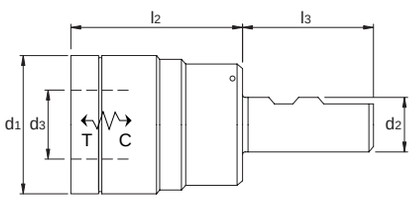
19:00 ▶ 24h

› 81.602 TORAX

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**







DIN 6535-HB C T

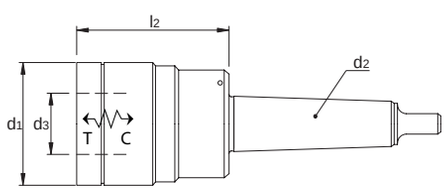
Ref.	d2	d3	d1	l2	l3	Ø mm	1	2	T	C
81.602.2012	20	19	38	41	50	M3-M12	81.633/81.634	81.653/81.654	9	9
81.602.2512	25	19	38	41	56	M3-M12	81.633/81.634	81.653/81.654	9	9
81.602.2520	25	31	55	63	56	M8-M20	81.636/81.637	81.656/81.657	15	15
81.602.3212	32	19	38	41	61	M3-M12	81.633/81.634	81.653/81.654	9	9
81.602.3220	32	31	55	63	61	M8-M20	81.636/81.637	81.656/81.657	15	15
81.602.3233	32	48	79	97	61	M14-M33	81.639	81.659	24	24
81.602.4012	40	19	38	41	72	M3-M12	81.633/81.634	81.653/81.654	9	9
81.602.4020	40	31	55	63	72	M8-M20	81.636/81.637	81.656/81.657	15	15
81.602.4033	40	48	79	97	72	M14-M33	81.639	81.659	24	24

› 81.610 TORAX

NL **Taphouder, met druk- en trekcompensatie, MK volgens DIN 228-B, voor gebruik met tapinzetstukken**
FR **Mandrin à tarauder porte-douilles, à compensation de pression et de traction, CM selon DIN 228-B, pour douilles porte-tarauds**
ES **Portamachos de cambio rápido, con compensación de presión y de tracción, CM según DIN 228-B, para casquillos de roscado**
DE **Gewindeschneidfutter, mit Zug-und Druckausgleich, MK nach DIN 228-B, Für den Gebrauch mit Gewindebohrereinsatzstück**





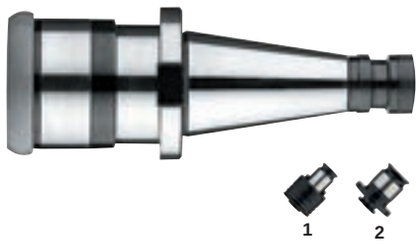


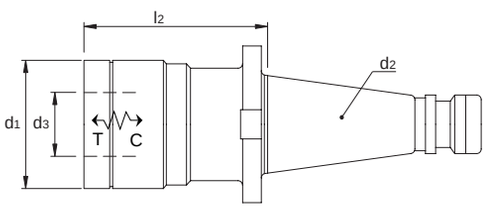
DIN 228-B C T

Ref.	d2	d3	d1	l2	Ø mm	1	2	T	C
81.610.0212	2	19	38	46	M3-M12	81.633/81.634	81.653/81.654	9	9
81.610.0312	3	19	38	46	M3-M12	81.633/81.634	81.653/81.654	9	9
81.610.0320	3	31	55	69	M8-M20	81.636/81.637	81.656/81.657	15	15
81.610.0420	4	31	55	70	M8-M20	81.636/81.637	81.656/81.657	15	15
81.610.0433	4	48	79	108	M14-M33	81.639	81.659	24	24
81.610.0533	5	48	79	103	M14-M33	81.639	81.659	24	24

› 81.613 TORAX

NL **Taphouder, met druk- en trekcompensatie, SK volgens DIN 2080, voor gebruik met tapinzetstukken**
FR **Mandrin à tarauder porte-douilles, à compensation de pression et de traction, SA selon DIN 2080, pour douilles porte-tarauds**
ES **Portamachos de cambio rápido, con compensación de presión y de tracción, SK según DIN 2080, para casquillos de roscado**
DE **Gewindeschneidfutter, mit Zug-und Druckausgleich, SK nach DIN 2080, Für den Gebrauch mit Gewindebohrereinsatzstück**



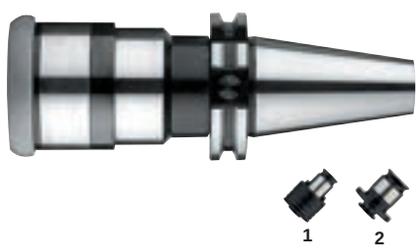


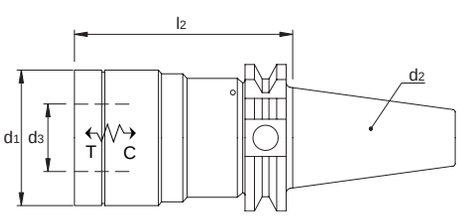
SK C T

Ref.	d2	d3	d1	l2	Ø mm	1	2	T	C
81.613.4012	40	19	38	53	M3-M12	81.633/81.634	81.653/81.654	9	9
81.613.4020	40	31	55	77	M8-M20	81.636/81.637	81.656/81.657	15	15
81.613.4033	40	48	79	118	M14-M33	81.639	81.659	24	24
81.613.5020	50	31	55	79	M8-M20	81.636/81.637	81.656/81.657	15	15
81.613.5033	50	48	79	125	M14-M33	81.639	81.659	24	24

› 81.614 TORAX

NL **Taphouder, met druk- en trekcompensatie, SK volgens DIN 69871, voor gebruik met tapinzetstukken**
FR **Mandrin à tarauder porte-douilles, à compensation de pression et de traction, SA selon DIN 69871, pour douilles porte-tarauds**
ES **Portamachos de cambio rápido, con compensación de presión y de tracción, SK según DIN 69871, para casquillos de roscado**
DE **Gewindeschneidfutter, mit Zug-und Druckausgleich, ISO nach DIN 69871, Für den Gebrauch mit Gewindebohrereinsatzstück**





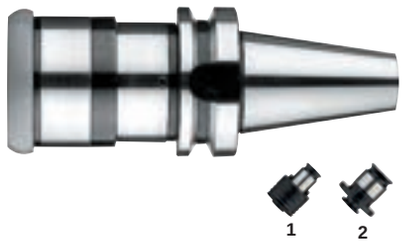
SK C T

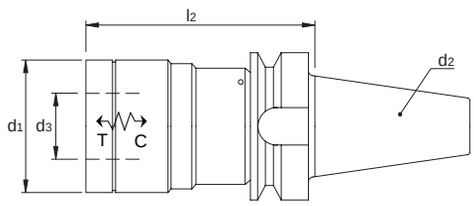
Ref.	d2	d3	d1	l2	Ø mm	1	2	T	C
81.614.4012	40	19	38	60	M3-M12	81.633/81.634	81.653/81.654	9	9
81.614.4020	40	31	55	100	M8-M20	81.636/81.637	81.656/81.657	15	15
81.614.4033	40	48	79	138	M14-M33	81.639	81.659	24	24
81.614.5012	50	19	38	62	M3-M12	81.633/81.634	81.653/81.654	9	9
81.614.5020	50	31	55	83	M8-M20	81.636/81.637	81.656/81.657	15	15
81.614.5033	50	48	79	133	M14-M33	81.639	81.659	24	24

19:00 24h

› 81.616 TORAX

NL **Taphouder, met druk- en trekcompensatie, BT volgens MAS 403-BT, voor gebruik met tapinzetstukken**
FR **Mandrin à tarauder porte-douilles, à compensation de pression et de traction, BT selon MAS 403-BT, pour douilles porte-tarauds**
ES **Portamachos de cambio rápido, con compensación de presión y de tracción, BT según MAS 403-BT, para casquillos de roscado**
DE **Gewindeschneidfutter, mit Zug-und Druckausgleich, BT nach MAS 403-BT, Für den Gebrauch mit Gewindebohrereinsatzstück**





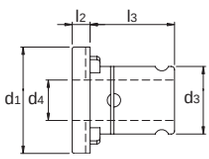
MAS-BT C T

Ref.	d2	d3	d1	l2	Ø mm	1	2	T	C
81.616.4012	40	19	38	68	M3-M12	81.633/81.634	81.653/81.654	9	9
81.616.4020	40	31	55	93	M8-M20	81.636/81.637	81.656/81.657	15	15
81.616.4033	40	48	79	138	M14-M33	81.639	81.659	24	24
81.616.5012	50	19	38	80	M3-M12	81.633/81.634	81.653/81.654	9	9
81.616.5020	50	31	55	102	M8-M20	81.636/81.637	81.656/81.657	15	15
81.616.5033	50	48	79	135	M14-M33	81.639	81.659	24	24

› 81.625 TORAX

NL **Reduceerbus, voor het reduceren van tapinzetstukken grootte 2 naar grootte 1, type 31/12R19**
FR **Douille de réduction, pour réduction de douilles de taille 2 à taille 1, Type 31/12R19**
ES **Casquillo de reducción, para la reducción de casquillos de roscado de tamaño 2 hacia 1, tipo 31/12R19**
DE **Reduzierhülse, zur Reduzierung- Gewindeeinsatz Größe 2 nach Größe 1, Typ 31/12R19**



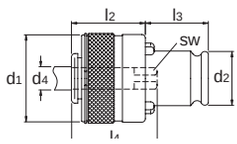


Ref.	d3	d4	d1	l2	l3
81.625.0201	31	19	46	8.5	35

› 81.631 TORAX

NL **Tapinzetstuk met ratel, DIN, type 13/0 Gr. 0**
FR **Douille porte-tarauds avec limiteur de couple, DIN, type 13/0 Taille 0**
ES **Casquillo de roscado con embrague de seguridad, DIN, tipo 13/0 Tam. 0**
DE **Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Typ 13/0 Gr. 0**



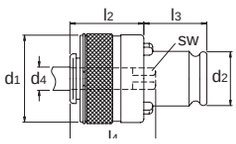


Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.631.0201	M2	371	2.8	2.1	23	13	21	19.5	6
81.631.0251	M2,5	371	2.8	2.1	23	13	21	19.5	6
81.631.0301	M3	371	3.5	2.7	23	13	21	19.5	6
81.631.0351	M3,5	371	4	3	23	13	21	19.5	6
81.631.0401	M4	371	4.5	3.4	23	13	21	19.5	6
81.631.0501	M5	371	6	4.9	23	13	21	19.5	6
81.631.0601	M6	371	6	4.9	23	13	21	19.5	6

› 81.633 TORAX

NL **Tapinzetstuk met ratel, DIN, type 19/1 Gr. 1**
FR **Douille porte-tarauds avec limiteur de couple, DIN, type 19/1 Taille 1**
ES **Casquillo de roscado con embrague de seguridad, DIN, tipo 19/1 Tam. 1**
DE **Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Typ 19/1 Gr. 1**



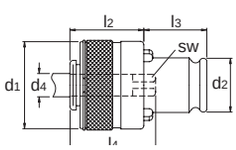


Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.633.0201	M2	DIN 371	2.8	2.1	32	19	25	21.5	8
81.633.0301	M3	DIN 371	3.5	2.7	32	19	25	21.5	8
81.633.0351	M3,5	DIN 371	4	3	32	19	25	21.5	8
81.633.0401	M4	DIN 371	4.5	3.4	32	19	25	21.5	8
81.633.0501	M5	DIN 371	6	4.9	32	19	25	21.5	8
81.633.0601	M6	DIN 371	6	4.9	32	19	25	21.5	8
81.633.0606	M6	DIN 376	4.5	3.4	32	19	25	21.5	8
81.633.0801	M8	DIN 371	8	6.2	32	19	25	21.5	8
81.633.0806	M8	DIN 376	6	4.9	32	19	25	21.5	8
81.633.1001	M10	DIN 371	10	8	32	19	25	21.5	8
81.633.1006	M10	DIN 376	7	5.5	32	19	25	21.5	8
81.633.1206	M12	DIN 376	9	7	32	19	25	21.5	8

› 81.634 TORAX

NL **Tapinzetstuk met ratel, ISO, type 19/1 Gr. 1**
FR **Douille porte-tarauds avec limiteur de couple, ISO, type 19/1 Taille 1**
ES **Casquillo de roscado con embrague de seguridad, ISO, tipo 19/1 Tam. 1**
DE **Gewindebohrereinsatzstück mit Sicherheitskupplung, ISO, Typ 19/1 Gr. 1**



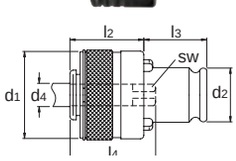


Ref.	M	d4	sw	d1	d2	l2	l3	l4
81.634.0300	M3	3.15	2.5	32	19	25	21.5	8
81.634.0400	M4	4	3.15	32	19	25	21.5	8
81.634.0500	M5	5	4	32	19	25	21.5	8
81.634.0600	M6	6.3	5	32	19	25	21.5	8

› 81.636 TORAX

NL **Tapinzetstuk met ratel, DIN, type 31/2 Gr. 2**
FR **Douille porte-tarauds avec limiteur de couple, DIN, type 31/2 Taille 2**
ES **Casquillo de roscado con embrague de seguridad, DIN, tipo 31/2 Tam. 2**
DE **Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Typ 31/2 Gr. 2**



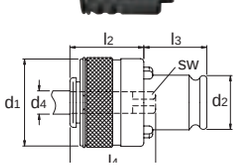


Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.636.0601	M6	DIN 371	6	4.9	50	31	34	35	4
81.636.0801	M8	DIN 371	8	6.2	50	31	34	35	4
81.636.0806	M8	DIN 376	6	4.9	50	31	34	35	4
81.636.1001	M10	DIN 371	10	8	50	31	34	35	4
81.636.1006	M10	DIN 376	7	5.5	50	31	34	35	4
81.636.1206	M12	DIN 376	9	7	50	31	34	35	4
81.636.1406	M14	DIN 376	11	9	50	31	34	35	4
81.636.1606	M16	DIN 376	12	9	50	31	34	35	4
81.636.1806	M18	DIN 376	14	11	50	31	34	35	4
81.636.2006	M20	DIN 376	16	12	50	31	34	35	4

› 81.637 TORAX

NL **Tapinzetstuk met ratel, ISO, type 31/2 Gr. 2**
FR **Douille porte-tarauds avec limiteur de couple, ISO, type 31/2 Taille 2**
ES **Casquillo de roscado con embrague de seguridad, ISO, tipo 31/2 Tam. 2**
DE **Gewindebohrereinsatzstück mit Sicherheitskupplung, ISO, Typ 31/2 Gr. 2**

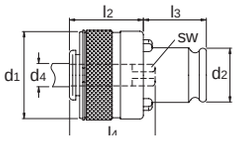




Ref.	M	d4	sw	d1	d2	l2	l3	l4
81.637.0600	M6	6.3	5	50	31	34	35	4
81.637.1206	M12	9	7.1	50	31	34	35	4
81.637.1400	M14	11.2	9	50	31	34	35	4
81.637.1600	M16	12.5	10	50	31	34	35	4
81.637.1800	M18	14	11.2	50	31	34	35	4
81.637.2000	M20	14	11.2	50	31	34	35	4

› 81.639 TORAX



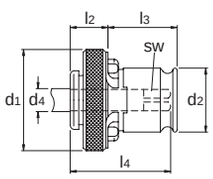


NL **Tapinzetstuk met ratel, DIN, type 48/3 Gr. 3**
FR **Douille porte-tarauds avec limiteur de couple, DIN, type 48/3 Taille 3**
ES **Casquillo de roscado con embrague de seguridad, DIN, tipo 48/3 Tam. 3**
DE **Gewindebohrereinsatzstück mit Sicherheitskupplung, DIN, Typ 48/3 Gr. 3**

Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.639.1406	M14	DIN 376	11	9	72	48	45	55.5	1
81.639.1606	M16	DIN 376	12	9	72	48	45	55.5	1
81.639.1806	M18	DIN 376	14	11	72	48	45	55.5	1
81.639.2006	M20	DIN 376	16	12	72	48	45	55.5	1
81.639.2206	M22	DIN 376	18	14.5	72	48	45	55.5	1
81.639.2406	M24	DIN 376	18	14.5	72	48	45	55.5	1
81.639.2706	M27	DIN 376	20	16	72	48	45	55.5	1
81.639.3006	M30	DIN 376	22	18	72	48	45	55.5	1
81.639.3306	M33	DIN 376	25	20	72	48	45	55.5	1

› 81.651 TORAX



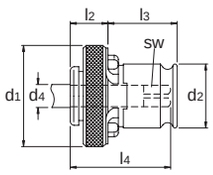


NL **Tapinzetstuk zonder ratel, DIN, type 13/10 Gr. 0**
FR **Douille porte-tarauds sans limiteur de couple, DIN, type 13/10 Taille 0**
ES **Casquillo de roscado sin embrague de seguridad, DIN, tipo 13/10 Tam. 0**
DE **Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Typ 13/10 Gr. 0**

Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.651.0201	M2	DIN 371	2.8	2.1	22	13	7	19.5	8
81.651.0251	M2,5	DIN 371	2.8	2.1	22	13	7	19.5	8
81.651.0301	M3	DIN 371	3.5	2.7	22	13	7	19.5	8
81.651.0351	M3,5	DIN 371	4	3	22	13	7	19.5	8
81.651.0401	M4	DIN 371	4.5	3.4	22	13	7	19.5	8
81.651.0501	M5	DIN 371	6	4.9	22	13	7	19.5	8
81.651.0601	M6	DIN 371	6	4.9	22	13	7	19.5	8

› 81.653 TORAX





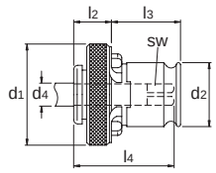
NL **Tapinzetstuk zonder ratel, DIN, type 19/11 Gr. 1**
FR **Douille porte-tarauds sans limiteur de couple, DIN, type 19/11 Taille 1**
ES **Casquillo de roscado sin embrague de seguridad, DIN, tipo 19/11 Tam. 1**
DE **Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Typ 19/11 Gr. 1**

Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.653.0301	M3	DIN 371	3.5	2.7	30	19	7	21.5	10
81.653.0351	M3,5	DIN 371	4	3	30	19	7	21.5	10
81.653.0401	M4	DIN 371	4.5	3.4	30	19	7	21.5	10
81.653.0506	M5	DIN 376	3.5	2.7	30	19	7	21.5	10
81.653.0601	M5+M6	DIN 371	6	4.9	30	19	7	21.5	10
81.653.0606	M6	DIN 376	4.5	3.4	30	19	7	21.5	10
81.653.0801	M8	DIN 371	8	6.2	30	19	7	21.5	10
81.653.0806	M8	DIN 376	6	4.9	30	19	7	21.5	10
81.653.1001	M10	DIN 371	10	8	30	19	7	21.5	10
81.653.1006	M10	DIN 376	7	5.5	30	19	7	21.5	10
81.653.1206	M12	DIN 376	9	7	30	19	7	21.5	10

› 81.654 TORAX

NL **Tapinzetstuk zonder ratel, ISO, type 19/11 Gr. 1**
FR **Douille porte-tarauds sans limiteur de couple, ISO, type 19/11 Taille 1**
ES **Casquillo de roscado sin embrague de seguridad, ISO, tipo 19/11 Tam. 1**
DE **Gewindebohrereinsatzstück ohne Sicherheitskupplung, ISO, Typ 19/11 Gr. 1**



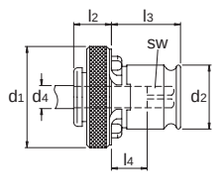


Ref.	M	d4	sw	d1	d2	l2	l3	l4
81.654.0300	M3	3.15	2.5	30	19	7	21.5	10
81.654.0400	M4	4	3.15	30	19	7	21.5	10
81.654.0500	M5	5	4	30	19	7	21.5	10
81.654.0600	M6	6.3	5	30	19	7	21.5	10

› 81.655 TORAX

NL **Tapinzetstuk zonder ratel, DIN, type 26/12 Gr. 1**
FR **Douille porte-tarauds sans limiteur de couple, DIN, type 26/12 Taille 1**
ES **Casquillo de roscado sin embrague de seguridad, DIN, tipo 26/12 Tam. 1**
DE **Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Typ 26/12 Gr. 1**





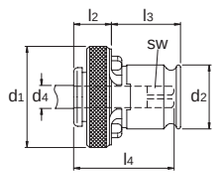
NIEUW NOUVEAU NUEVO NEU

Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.655.0801	M8	DIN 371	8	6.3	40	26	15	32	23
81.655.0806	M8	DIN 376	6	4.9	40	26	15	32	23
81.655.1001	M10	DIN 371	10	8	40	26	15	32	23
81.655.1006	M10	DIN 376	7	5.5	40	26	15	32	23
81.655.1206	M12	DIN 376	9	7	40	26	15	32	23
81.655.1406	M14	DIN 376	11	9	40	26	15	32	23
81.655.1606	M16	DIN 376	12	9	40	26	15	32	23
81.655.1806	M18	DIN 376	14	11	40	26	15	32	23
81.655.2006	M20	DIN 376	16	12	40	26	15	32	23

› 81.656 TORAX

NL **Tapinzetstuk zonder ratel, DIN, type 31/2 Gr. 2**
FR **Douille porte-tarauds sans limiteur de couple, DIN, type 31/2 Taille 2**
ES **Casquillo de roscado sin embrague de seguridad, DIN, tipo 31/2 Tam. 2**
DE **Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Typ 31/2 Gr. 2**





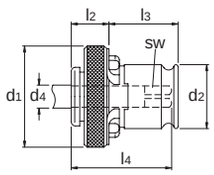
Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.656.0501	M5	DIN 371	6	4.9	46	31	11	35	19
81.656.0601	M6	DIN 371	6	4.9	46	31	11	35	19
81.656.0801	M8	DIN 371	8	6.2	46	31	11	35	19
81.656.0806	M8	DIN 376	6	4.9	46	31	11	35	19
81.656.1001	M10	DIN 371	10	8	46	31	11	35	19
81.656.1006	M10	DIN 376	7	5.5	46	31	11	35	19
81.656.1206	M12	DIN 376	9	7	46	31	11	35	19
81.656.1406	M14	DIN 376	11	9	46	31	11	35	19
81.656.1606	M16	DIN 376	12	9	46	31	11	35	19
81.656.1806	M18	DIN 376	14	11	46	31	11	35	19
81.656.2006	M20	DIN 376	16	12	46	31	11	35	19

19:00 ▶ 24h

› 81.657 TORAX

NL **Tapinzetstuk zonder ratel, ISO, type 31/12 Gr. 2**
FR **Douille porte-tarauds sans limiteur de couple, ISO, type 31/12 Taille 2**
ES **Casquillo de roscado sin embrague de seguridad, ISO, tipo 31/12 Tam. 2**
DE **Gewindebohrereinsatzstück ohne Sicherheitskupplung, ISO, Typ 31/12 Gr. 2**



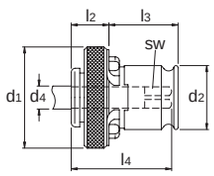


Ref.	M	d4	sw	d1	d2	l2	l3	l4
81.657.0600	M6	6.3	5	46	31	11	35	19
81.657.1400	M14	11.2	9	46	31	11	35	19
81.657.1600	M16	12.5	10	46	31	11	35	19
81.657.1800	M18	14	11.2	46	31	11	35	19
81.657.2000	M20	14	11.2	46	31	11	35	19

› 81.659 TORAX

NL **Tapinzetstuk zonder ratel, DIN, type 48/13 Gr. 3**
FR **Douille porte-tarauds sans limiteur de couple, DIN, type 48/13 Taille 3**
ES **Casquillo de roscado sin embrague de seguridad, DIN, tipo 48/13 Tam. 3**
DE **Gewindebohrereinsatzstück ohne Sicherheitskupplung, DIN, Typ 48/13 Gr. 3**



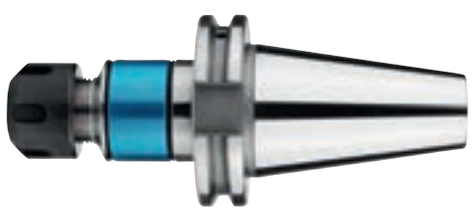


NIEUW NOUVEAU NUEVO NEU

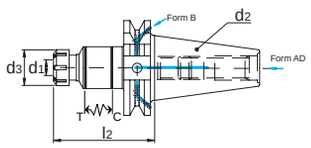
Ref.	M	DIN	d4	sw	d1	d2	l2	l3	l4
81.659.1406	M14	DIN 376	11	9	68	48	14	55.5	30
81.659.1606	M16	DIN 376	12	9	68	48	14	55.5	30
81.659.1806	M18	DIN 376	14	11	68	48	14	55.5	30
81.659.2006	M20	DIN 376	16	12	68	48	14	55.5	30
81.659.2206	M22	DIN 376	18	14.5	68	48	14	55.5	30
81.659.2406	M24	DIN 376	18	14.5	68	48	14	55.5	30
81.659.2706	M27	DIN 376	20	16	68	48	14	55.5	30
81.659.3006	M30	DIN 376	22	18	68	48	14	55.5	30

› 81.684 TORAX

NL **Synchro Taphouder SK volgens DIN 69871-AD/B, voor ER spantangen (met vierkant)**
FR **Mandrin à tarauder Synchro SA selon DIN 69871-AD/B, pour utilisation avec pinces ER (avec carré d'entraînement)**
ES **Portamachos Synchro SK según DIN 69871-AD/B, para uso con ER pinzas (con cuadrado interior)**
DE **Synchro Gewindeschneidfutter SK nach DIN 69871-AD/B, für ER-Spannzangen (mit Vierkant)**







ER | SK | HRc 60±2 | AT3 | MICRO C T

NIEUW NOUVEAU NUEVO NEU

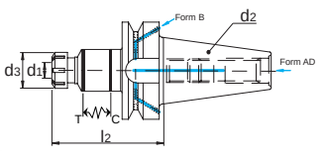
Ref.	d2	d1	l2	d3	Ø mm	1	T	C
81.684.4016	40	ER16	79	32	1-10	82.880	0.5	0.5
81.684.4025	40	ER25	84	42	3,5-16	82.885	0.5	0.5
81.684.5025	50	ER25	84	42	3,5-16	82.885	0.5	0.5

› 81.686 TORAX

NL **Synchro Taphouder BT volgens MAS 403-BT, voor ER spantangen (met vierkant)**
FR **Mandrin à tarauder Synchro BT selon MAS 403-BT, pour utilisation avec pinces ER (avec carré d'entraînement)**
ES **Portamachos Synchro BT según MAS 403-BT, para uso con ER pinzas (con cuadrado interior)**
DE **Synchro Gewindeschneidfutter BT nach MAS 403-BT, für ER-Spannzangen (mit Vierkant)**







ER | MAS-BT | HRc 60±2 | AT3 | MICRO C T

NIEUW NOUVEAU NUEVO NEU

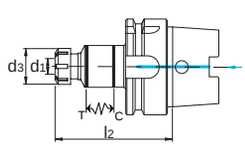
Ref.	d2	d1	l2	d3	Ø mm	1	T	C
81.686.4016	40	ER16	79	32	1-10	82.880	0.5	0.5
81.686.4025	40	ER25	89	42	3,5-16	82.885	0.5	0.5
81.686.5025	50	ER25	110	42	3,5-16	82.885	0.5	0.5

› 81.689 TORAX

NL **Synchro Taphouder HSK-A volgens DIN 69893, voor ER spantangen (met vierkant)**
FR **Mandrin à tarauder Synchro HSK-A selon DIN 69893, pour utilisation avec pinces ER (avec carré d'entraînement)**
ES **Portamachos Synchro HSK-A según DIN 69893, para uso con ER pinzas (con cuadrado interior)**
DE **Synchro Gewindeschneidfutter HSK-A nach DIN 69893, für ER-Spannzangen (mit Vierkant)**







ER | HSK-A | MICRO C T

NIEUW NOUVEAU NUEVO NEU

Ref.	d2	d1	l2	d3	Ø mm	1	T	C
81.689.0631	63	ER16	89	32	1-10	82.880	0.5	0.5
81.689.0632	63	ER25	94	42	3,5-16	82.885	0.5	0.5
81.689.1002	100	ER25	101	42	3,5-16	82.885	0.5	0.5

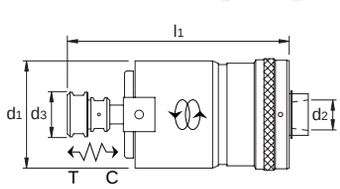
› 81.700 TORAX

NL **Tapapparaat, met omkeerinrichting, met druk- en trekcompensatie, met instelbare slipkoppeling**
FR **Appareil à tarauder, dispositif d'inversion, à compensation de pression et de traction, à réglage de couple par friction**
ES **Aparato para roscar, con dispositivo de inversión, con compensación de presión y de tracción, con ajuste de par por fricción**
DE **Gewindeschneidmaschinen, mit Umkehrvorrichtung, mit Zug-und Druckausgleich, mit einstellbarer Rutschkupplung**





1 2



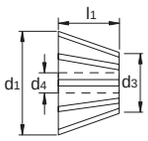
C T | AUTO REVERSAL

Ref.	Ø mm	d1	d2	d3	l2	x:y	RPM	C	1	2
81.700.0070	M2-M7	54	B16	23	129.5	1:02.4	1500	3.5	81.710	84.170
81.700.0120	M5-M12	74	B16	28	156	1:02.3	1000	4	81.710	84.170
81.700.0200	M8-M20	89	B22	38	205.5	1:02.3	600	6	81.710	84.170

› 81.710

NL **Rubberflex spantang, voor 81.700**
FR **Pince de serrage Rubberflex, pour 81.700**
ES **Pinza de sujeción Rubberflex, parra 81.700**
DE **Rubberflex-Spannzangen, für 81.700**



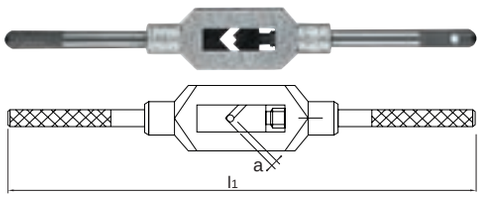


Ref.	d1	d3	d4	l1	M	Ø mm
81.710.0204	13.3	4.5	2.5	11	M2-M4	2,5-4,5
81.710.0407	13.3	6.5	4.5	11	M4-M7	4,5-6,5
81.710.0510	20.5	6.5	3.5	13	M5-M10	3,5-6,5

Ref.	d1	d3	d4	l1	M	Ø mm
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

› 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**



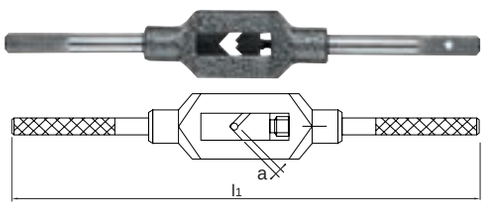
DIN 1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0000	0	M1-M8	1/16-1/4	-	125	2,1-4,9
81.900.0100	1	M1-M10	1/16-3/8	1/8	180	2,1-5,5
81.900.0150	1,5	M1-M12	1/16-1/2	1/8	200	2,1-7
81.900.0200	2	M3,5-M12	5/32-1/2	1/8	280	3-8

Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.900.0400	4	M11-M27	7/16-1	1/4-3/4	500	6,2-16
81.900.0500	5L	M13-M32	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**



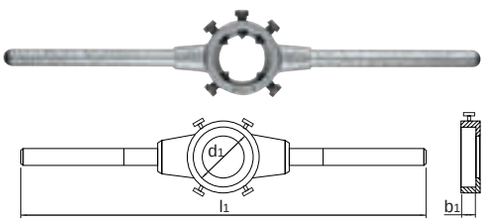
DIN 1814

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0000	0	M1-M8	1/16-1/4	-	130	2,1-4,9
81.905.0100	1	M1-M10	1/16-3/8	1/8	180	2,1-5,5
81.905.0150	1,5	M1-M12	1/16-1/2	1/8	200	2,1-7
81.905.0200	2	M3,5-M12	5/32-1/2	1/8	280	3-8
81.905.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12

Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0400	4	M11-M27	7/16-1	1/4-3/4	500	6,2-16
81.905.0500	5S	M13-M32	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	11-24
81.905.0800	8	M25-M64	1-2.1/2	3/4-3	1250	16-40

› 81.910

NL **Snijplaathouder**
FR **Porte-filières**
ES **Portaterraja**
DE **Schneideisenhalter**



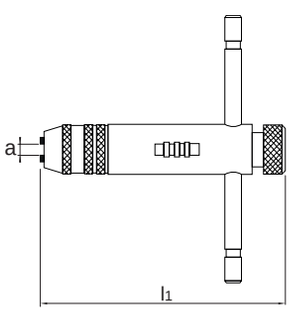
DIN 225

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

Ref.	d1	b1	l1
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

› 81.930

NL **Rateltapkrukje**
FR **Porte-tarauds à cliquet**
ES **Giromacho en T con carraca**
DE **Werkzeughalter mit Knarre**



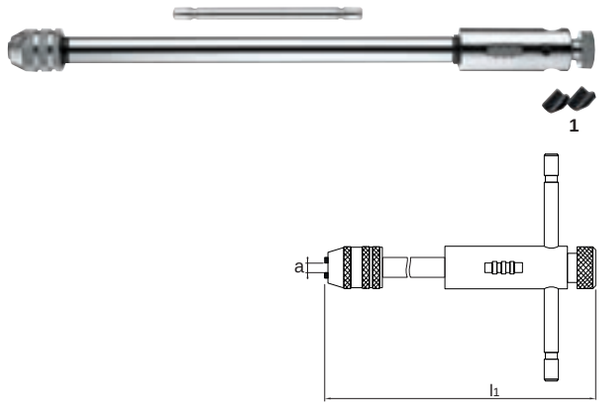


Ref.	Nr.	M	BSW	BSP	a	l1	1
81.930.0100	1	M3-M10	1/8-3/8		2,4-5,5	85	81.938.0100
81.930.0200	2	M5-M12	7/32-1/2	1/8	4,5-7	100	81.938.0200

19:00 ▶ 🛒 ▶ 24h

› 81.935

NL **Rateltapkrukje, lang**
FR **Porte-tarauds à cliquet, long**
ES **Giromacho en T con carraca, larga**
DE **Werkzeughalter mit Knarre, lang**



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 rateltapkrukje**
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**



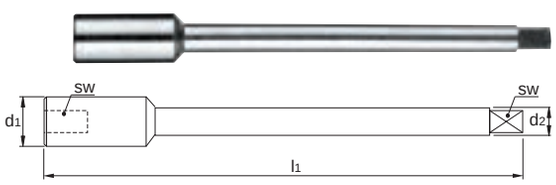
Ref.	Nr.	Type
81.938.0100	1	Nr.1 + Nr.10

Ref.	Nr.	Type
81.938.0200	2	Nr.2 + Nr.20

› 81.950

NL **Tapverlengstuk**
FR **Rallonge à tarauds**
ES **Prolongador de machos**
DE **Gewindebohrer Verlängerung**

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	115	12	7	1/16-1/8
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	130	19	11.2	1/4-3/8
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		155	25	16	1/2
81.950.1300	13			165	27	17	
81.950.1450	14.5	M22-M24	7/8-15/16	175	29	19	5/8
81.950.1600	16	M27	1	180	30	20	3/4
81.950.1800	18	M30	1.1/8	200	33	22.4	7/8
81.950.2000	20	M33	1.1/4	210	36	25	-
81.950.2200	22	M36	1.3/8	220	38	29	1.1/8
81.950.2400	24	M39-M42	1.1/2-1.5/8	235	42	32	1.1/4
81.950.2600	26			250	45	34.5	
81.950.2900	29	M45-M48	1.3/4-1.7/8	265	50	38.5	1.3/8-2
81.950.3200	32	M52	2	285	55	42.5	2.1/4

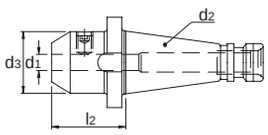
› 82.153 TORAX

NL **Weldonhouder, SK volgens DIN 2080**
FR **Porte-outils, SA selon DIN 2080**
ES **Portaherramientas Weldon, SK según DIN 2080**
DE **Weldon-Halter, SK nach DIN 2080**





1



DIN 6359 | DIN 1835-B | SK | HRc 60±2 | AT3 | 0,005

Ref.	d2	d1	l2	d3	M	1
82.153.3006	30	6	40	25	M12	82.159.0600
82.153.3008	30	8	40	28	M12	82.159.0800
82.153.3010	30	10	40	35	M12	82.159.1000
82.153.3012	30	12	40	42	M12	82.159.1200
82.153.3016	30	16	50	48	M12	82.159.1400
82.153.3020	30	20	63	52	M12	82.159.1600
82.153.4006	40	6	50	25	M16	82.159.0600
82.153.4008	40	8	50	28	M16	82.159.0800
82.153.4010	40	10	50	35	M16	82.159.1000
82.153.4012	40	12	50	42	M16	82.159.1200
82.153.4014	40	14	50	44	M16	82.159.1200
82.153.4016	40	16	63	48	M16	82.159.1400
82.153.4020	40	20	63	52	M16	82.159.1600

Ref.	d2	d1	l2	d3	M	1
82.153.4025	40	25	80	65	M16	82.159.1800
82.153.4032	40	32	80	72	M16	82.159.2000
82.153.5006	50	6	63	25	M24	82.159.0600
82.153.5008	50	8	63	28	M24	82.159.0800
82.153.5010	50	10	63	35	M24	82.159.1000
82.153.5012	50	12	63	42	M24	82.159.1200
82.153.5014	50	14	63	44	M24	82.159.1200
82.153.5016	50	16	63	48	M24	82.159.1400
82.153.5020	50	20	63	52	M24	82.159.1600
82.153.5025	50	25	80	65	M24	82.159.1800
82.153.5032	50	32	80	72	M24	82.159.2000
82.153.5040	50	40	90	80	M24	82.159.2001

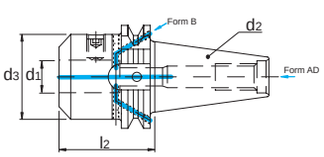
› 82.154 TORAX

NL **Weldonhouder, SK volgens DIN 69871-AD/B**
FR **Porte-outils, SA selon DIN 69871-AD/B**
ES **Portaherramientas Weldon, SK según DIN 69871-AD/B**
DE **Weldon-Halter, SK nach DIN 69871-AD/B**





1



DIN 6359 | DIN 1835-B | SK | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	1
82.154.4006	40	6	50	25	82.159.0600
82.154.4008	40	8	50	28	82.159.0800
82.154.4010	40	10	50	35	82.159.1000
82.154.4012	40	12	50	42	82.159.1200
82.154.4014	40	14	50	44	82.159.1200
82.154.4016	40	16	63	48	82.159.1400
82.154.4020	40	20	63	52	82.159.1600
82.154.4025	40	25	100	65	82.159.1800
82.154.4032	40	32	100	72	82.159.2000
82.154.5006	50	6	63	25	82.159.0600

Ref.	d2	d1	l2	d3	1
82.154.5008	50	8	63	28	82.159.0800
82.154.5010	50	10	63	35	82.159.1000
82.154.5012	50	12	63	42	82.159.1200
82.154.5014	50	14	63	44	82.159.1200
82.154.5016	50	16	63	48	82.159.1400
82.154.5020	50	20	63	52	82.159.1600
82.154.5025	50	25	80	65	82.159.1800
82.154.5032	50	32	100	72	82.159.2000
82.154.5040	50	40	100	80	82.159.2001

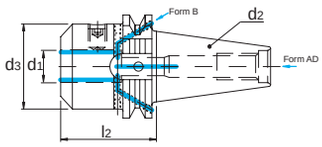
19:00 ▶ 24h

› 82.155 TORAX

NL **Weldonhouder, met koeling langs de schacht, ISO volgens DIN 69871-AD/B**
FR **Porte-outils, avec refroidissement par jets adjacents à l'outil, SA selon DIN 69871-AD/B**
ES **Portaherramientas Weldon, con refrigeración a lo través del mango, SK según DIN 69871-AD/B**
DE **Weldon-Halter, mit Kühlung am Schaft entlang, ISO nach DIN 69871-AD/B**







DIN 6359 | DIN 1835-B | SK | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	1
82.155.4006	40	6	50	25	82.159.0600
82.155.4008	40	8	50	28	82.159.0800
82.155.4010	40	10	50	35	82.159.1000
82.155.4012	40	12	50	42	82.159.1200
82.155.4014	40	14	50	44	82.159.1200
82.155.4016	40	16	63	48	82.159.1400
82.155.4020	40	20	63	52	82.159.1600
82.155.4025	40	25	100	65	82.159.1800
82.155.4032	40	32	100	72	82.159.2000
82.155.5006	50	6	63	25	82.159.0600

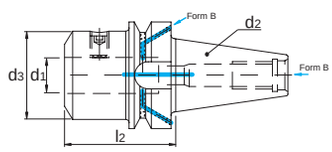
Ref.	d2	d1	l2	d3	1
82.155.5008	50	8	63	28	82.159.0800
82.155.5010	50	10	63	35	82.159.1000
82.155.5012	50	12	63	42	82.159.1200
82.155.5014	50	14	63	44	82.159.1200
82.155.5016	50	16	63	48	82.159.1400
82.155.5020	50	20	63	52	82.159.1600
82.155.5025	50	25	80	65	82.159.1800
82.155.5032	50	32	100	72	82.159.2000
82.155.5040	50	40	100	80	82.159.2001

› 82.156 TORAX

NL **Weldonhouder, BT volgens MAS 403-BT AD/B**
FR **Porte-outils, BT selon MAS 403-BT AD/B**
ES **Portaherramientas Weldon, BT según MAS 403-BT AD/B**
DE **Weldon-Halter, BT nach MAS 403-BT AD/B**







DIN 6359 | DIN 1835-B | MAS-BT | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	1
82.156.4006	40	6	50	25	82.159.0600
82.156.4008	40	8	50	28	82.159.0800
82.156.4010	40	10	63	35	82.159.1000
82.156.4012	40	12	63	42	82.159.1200
82.156.4014	40	14	63	44	82.159.1200
82.156.4016	40	16	63	48	82.159.1400
82.156.4020	40	20	63	52	82.159.1600
82.156.4025	40	25	90	65	82.159.1800
82.156.4032	40	32	100	72	82.159.2000
82.156.5006	50	6	63	25	82.159.0600

Ref.	d2	d1	l2	d3	1
82.156.5008	50	8	63	28	82.159.0800
82.156.5010	50	10	63	35	82.159.1000
82.156.5012	50	12	80	42	82.159.1200
82.156.5014	50	14	80	44	82.159.1200
82.156.5016	50	16	80	48	82.159.1400
82.156.5020	50	20	80	52	82.159.1600
82.156.5025	50	25	100	65	82.159.1800
82.156.5032	50	32	105	72	82.159.2000
82.156.5040	50	40	110	80	82.159.2001

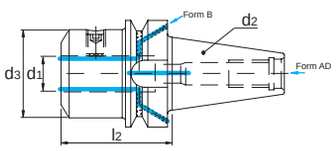
› 82.157 TORAX

NL **Weldonhouder, met koeling langs de schacht, BT volgens MAS 403-BT AD/B**
FR **Porte-outils, avec refroidissement par jets adjacents à l'outil, BT selon MAS 403-BT AD/B**
ES **Portaherramientas Weldon, con refrigeración a lo través del mango, BT según MAS 403-BT AD/B**
DE **Weldon-Halter, mit Kühlung am Schaft entlang, BT nach MAS 403-BT AD/B**





1



DIN 6359 | DIN 1835-B | MAS-BT | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	d1	l2	d3	1
82.157.4006	40	6	50	25	82.159.0600
82.157.4008	40	8	50	28	82.159.0800
82.157.4010	40	10	63	35	82.159.1000
82.157.4012	40	12	63	42	82.159.1200
82.157.4014	40	14	63	44	82.159.1200
82.157.4016	40	16	63	48	82.159.1400
82.157.4020	40	20	63	52	82.159.1600
82.157.4025	40	25	90	65	82.159.1800
82.157.4032	40	32	100	72	82.159.2000
82.157.5006	50	6	63	25	82.159.0600

Ref.	d2	d1	l2	d3	1
82.157.5008	50	8	63	28	82.159.0800
82.157.5010	50	10	63	35	82.159.1000
82.157.5012	50	12	80	42	82.159.1200
82.157.5014	50	14	80	44	82.159.1200
82.157.5016	50	16	80	48	82.159.1400
82.157.5020	50	20	80	52	82.159.1600
82.157.5025	50	25	100	65	82.159.1800
82.157.5032	50	32	105	72	82.159.2000
82.157.5040	50	40	110	80	82.159.2001

› 82.159 TORAX

NL **Spanbout, voor Weldonhouder**
FR **Vis Allen, pour porte-outils Weldon**
ES **Tornillo de fijación, para portaherramientas Weldon**
DE **Spannschrauben, für Weldon-Halter**



Ref.	Type	M
82.159.0600	6	M6
82.159.0800	8	M8
82.159.1000	10	M10
82.159.1200	12+14	M12
82.159.1400	16+18	M14

Ref.	Type	M
82.159.1600	20	M16
82.159.1800	25	M18x2
82.159.2000	32	M20x2x20
82.159.2001	40	M20x2x25

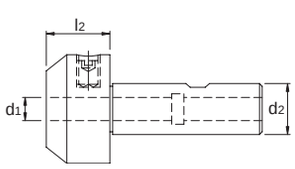
› 82.160 TORAX

NL **Reduceerhuls**
FR **Douille de réduction**
ES **Casquillo de reducción**
DE **Reduzierhülsen**





1



DIN 1835-B

Ref.	d1	d2	l2	1
82.160.2006	6	20	30	82.159.0600
82.160.2008	8	20	30	82.159.0800
82.160.2010	10	20	30	82.159.1000
82.160.2012	12	20	35	82.159.1200
82.160.3206	6	32	30	82.159.0600
82.160.3208	8	32	30	82.159.0800

Ref.	d1	d2	l2	1
82.160.3210	10	32	30	82.159.1000
82.160.3212	12	32	35	82.159.1200
82.160.3214	14	32	35	82.159.1200
82.160.3216	16	32	38	82.159.1400
82.160.3220	20	32	40	82.159.1600

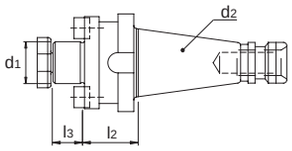
19:00 ▶ 24h

› 82.223 TORAX

NL **Opsteekfreeshouder voor frezen met dwarsspiebaan, SK volgens DIN 2080**
FR **Mandrin porte-fraises pour fraises avec tenons, SA selon DIN 2080**
ES **Portafresa para fresas con chavetas frontales, SK según DIN 2080**
DE **Aufsteckfräserdorne für Fräser mit Quernut, SK nach DIN 2080**







DIN 6537 | SK | HRc 60±2 | AT3 | 0,005

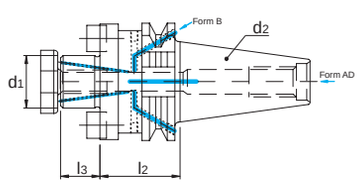
Ref.	d2	l2	l3	d1	M	1	2
82.223.4016	40	30	17	16	M16	82.450.0800	82.460.0800
82.223.4022	40	30	19	22	M16	82.450.1000	82.460.1000
82.223.4027	40	30	21	27	M16	82.450.1200	82.460.1200
82.223.4032	40	30	24	32	M16	82.450.1600	82.460.1600
82.223.4040	40	30	27	40	M16	82.450.2000	82.460.2000
82.223.5022	50	35	19	22	M24	82.450.1000	82.460.1000
82.223.5027	50	35	21	27	M24	82.450.1200	82.460.1200
82.223.5032	50	40	24	32	M24	82.450.1600	82.460.1600
82.223.5040	50	33	27	40	M24	82.450.2000	82.460.2000

› 82.224 TORAX

NL **Opsteekfreeshouder voor frezen met dwarsspiebaan, SK volgens DIN 69871-AD/B**
FR **Mandrin porte-fraises pour fraises avec tenons, SK selon DIN 69871-AD/B**
ES **Portafresa para fresas con chavetas frontales, SK según DIN 69871-AD/B**
DE **Aufsteckfräserdorne für Fräser mit Quernut, SK nach DIN 69871-AD/B**





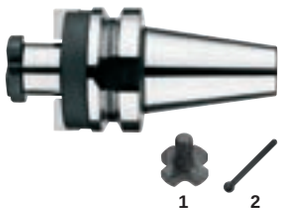


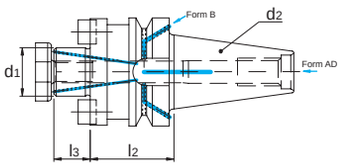
DIN 6537 | SK | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	l2	l3	d1	1	2
82.224.4016	40	35	17	16	82.450.0800	82.460.0800
82.224.4022	40	35	19	22	82.450.1000	82.460.1000
82.224.4027	40	40	21	27	82.450.1200	82.460.1200
82.224.4032	40	50	24	32	82.450.1600	82.460.1600
82.224.4040	40	50	27	40	82.450.2000	82.460.2000
82.224.5022	50	35	19	22	82.450.1000	82.460.1000
82.224.5027	50	40	21	27	82.450.1200	82.460.1200
82.224.5032	50	50	24	32	82.450.1600	82.460.1600
82.224.5040	50	50	27	40	82.450.2000	82.460.2000

› 82.226 TORAX

NL **Opsteekfreeshouder voor frezen met dwarsspiebaan, BT volgens MAS 403-BT AD/B**
FR **Mandrin porte-fraises pour fraises avec tenons, BT selon MAS 403-BT AD/B**
ES **Portafresa para fresas con chavetas frontales, BT según MAS 403-BT AD/B**
DE **Aufsteckfräserdorne für Fräser mit Quernut, BT nach MAS 403-BT AD/B**



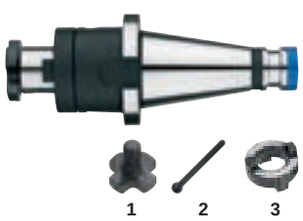


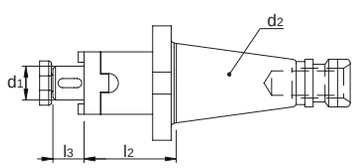
DIN 6537 | MAS-BT | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	l2	l3	d1	1	2
82.226.4016	40	40	17	16	82.450.0800	82.460.0800
82.226.4022	40	40	19	22	82.450.1000	82.460.1000
82.226.4027	40	40	21	27	82.450.1200	82.460.1200
82.226.4032	40	50	24	32	82.450.1600	82.460.1600
82.226.4040	40	50	27	40	82.450.2000	82.460.2000
82.226.5022	50	40	19	22	82.450.1000	82.460.1000
82.226.5027	50	40	21	27	82.450.1200	82.460.1200
82.226.5032	50	40	24	32	82.450.1600	82.460.1600
82.226.5040	50	50	27	40	82.450.2000	82.460.2000

› 82.323 TORAX

NL **Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, SK volgens DIN 2080**
FR **Mandrin porte-fraises combinés pour fraises avec rainure de clavette et tenons, SA selon DIN 2080**
ES **Portafresa combinado para fresas con ranura longitudinal y transversal, SK según DIN 2080**
DE **Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, SK nach DIN 2080**



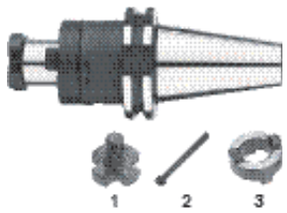


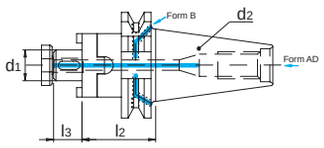
DIN 6358 | SK | HRc 60±2 | AT3 | 0,005

Ref.	d2	l2	l3	d1	1	2	3
82.323.3016	30	35	17	16	82.450.0800	82.460.0800	82.470.0800
82.323.3022	30	35	19	22	82.450.1000	82.460.1000	82.470.1000
82.323.3027	30	35	21	27	82.450.1200	82.460.1200	82.470.1200
82.323.3032	30	50	24	32	82.450.1600	82.460.1600	82.470.1600
82.323.4016	40	52	17	16	82.450.0800	82.460.0800	82.470.0800
82.323.4022	40	52	19	22	82.450.1000	82.460.1000	82.470.1000
82.323.4027	40	52	21	27	82.450.1200	82.460.1200	82.470.1200
82.323.4032	40	52	24	32	82.450.1600	82.460.1600	82.470.1600
82.323.4040	40	52	27	40	82.450.2000	82.460.2000	82.470.2000
82.323.5016	50	55	17	16	82.450.0800	82.460.0800	82.470.0800
82.323.5022	50	55	19	22	82.450.1000	82.460.1000	82.470.1000
82.323.5027	50	55	21	27	82.450.1200	82.460.1200	82.470.1200
82.323.5032	50	55	24	32	82.450.1600	82.460.1600	82.470.1600
82.323.5040	50	55	27	40	82.450.2000	82.460.2000	82.470.2000

› 82.324 TORAX

NL **Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, SK volgens DIN 69871-AD/B**
FR **Mandrin porte-fraises combinés pour fraises avec rainure de clavette et tenons, SA selon DIN 69871-AD/B**
ES **Portafresa combinado para fresas con ranura longitudinal y transversal, SK según DIN 69871-AD/B**
DE **Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, SK nach DIN 69871-AD/B**



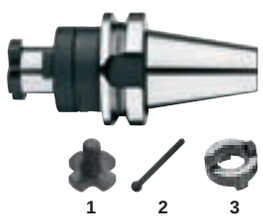


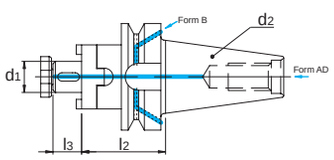
DIN 6358 | SK | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	l2	l3	d1	1	2	3
82.324.4016	40	55	17	16	82.450.0800	82.460.0800	82.470.0800
82.324.4022	40	55	19	22	82.450.1000	82.460.1000	82.470.1000
82.324.4027	40	55	21	27	82.450.1200	82.460.1200	82.470.1200
82.324.4032	40	60	24	32	82.450.1600	82.460.1600	82.470.1600
82.324.4040	40	60	27	40	82.450.2000	82.460.2000	82.470.2000
82.324.5016	50	55	17	16	82.450.0800	82.460.0800	82.470.0800
82.324.5022	50	55	19	22	82.450.1000	82.460.1000	82.470.1000
82.324.5027	50	55	21	27	82.450.1200	82.460.1200	82.470.1200
82.324.5032	50	55	24	32	82.450.1600	82.460.1600	82.470.1600
82.324.5040	50	55	27	40	82.450.2000	82.460.2000	82.470.2000

› 82.326 TORAX

NL **Combi-Opsteekfreeshouder voor frezen met langs- en dwarsspiebaan, BT volgens MAS 403-BT AD/B**
FR **Mandrin porte-fraises combinés pour fraises avec rainure de clavette et tenons, BT selon MAS 403-BT AD/B**
ES **Portafresa combinado para fresas con ranura longitudinal y transversal, BT según MAS 403-BT AD/B**
DE **Kombi-Aufsteckfräsdorn für Fräser mit Längs- und Quernut, BT nach MAS 403-BT AD/B**





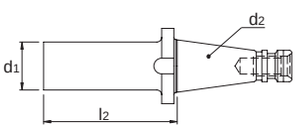
DIN 6358 | MAS-BT | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	l2	l3	d1	1	2	3
82.326.4016	40	55	17	16	82.450.0800	82.460.0800	82.470.0800
82.326.4022	40	55	19	22	82.450.1000	82.460.1000	82.470.1000
82.326.4027	40	55	21	27	82.450.1200	82.460.1200	82.470.1200
82.326.4032	40	60	24	32	82.450.1600	82.460.1600	82.470.1600
82.326.4040	40	60	27	40	82.450.2000	82.460.2000	82.470.2000
82.326.5016	50	70	17	16	82.450.0800	82.460.0800	82.470.0800
82.326.5022	50	70	19	22	82.450.1000	82.460.1000	82.470.1000
82.326.5027	50	70	21	27	82.450.1200	82.460.1200	82.470.1200
82.326.5032	50	70	24	32	82.450.1600	82.460.1600	82.470.1600
82.326.5040	50	70	27	40	82.450.2000	82.460.2000	82.470.2000

› 82.423 TORAX

NL **Halfbewerkte gereedschapshouder, SK volgens DIN 2080**
FR **Mandrin porte-outils non fini, SA selon DIN 2080**
ES **Piezas brutas para arboles de taladrar, SK según DIN 2080**
DE **Werkzeughalter-Rohling, SK nach DIN 2080**





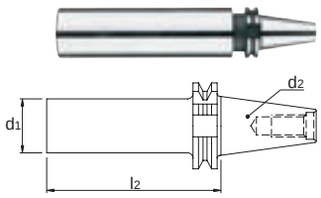
SK | AT3

Ref.	d2	l2	d1	M
82.423.4063	40	250	63	M16

Ref.	d2	l2	d1	M
82.423.5080	50	315	97	M24

› 82.424 TORAX

NL **Halfbewerkte gereedschapshouder, SK volgens DIN 69871**
FR **Mandrin porte-outils non fini, SA selon DIN 69871**
ES **Piezas brutas para arboles de taladrar, SK según DIN 69871**
DE **Werkzeughalter-Rohling, SK nach DIN 69871**



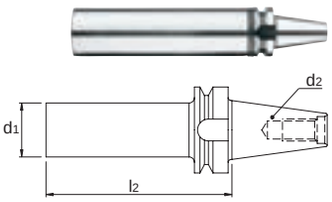
SK AT3

Ref.	d2	l2	d1
82.424.4063	40	250	63

Ref.	d2	l2	d1
82.424.5080	50	315	97

› 82.426 TORAX

NL **Halfbewerkte gereedschapshouder, BT volgens MAS 403-BT**
FR **Mandrin porte-outils non fini, BT selon MAS 403-BT**
ES **Piezas brutas para arboles de taladrar, BT según MAS 403-BT**
DE **Werkzeughalter-Rohling, BT nach MAS 403-BT**



MAS-BT AT3

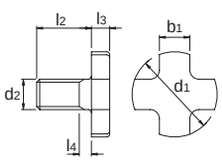
Ref.	d2	l2	d1
82.426.4063	40	250	63

Ref.	d2	l2	d1
82.426.5080	50	315	97

› 82.450 TORAX

NL **Aantrekschroef, type Kruis, voor opsteekhouder**
FR **Vis de serrage, type Croix, pour arbre de montage**
ES **Tornillo de fijación, tipo Cruz, parra adaptador morse**
DE **Anzugsschrauben, Typ Kreuz, für Aufsteckhalter**





DIN 6367

Ref.	M	l4	b1	d1	l3	l2	r1	r2	Type
82.450.0800	M8	3	8	20	6	16	1.6	2	16
82.450.1000	M10	3.6	10	28	7	18	2	3	22
82.450.1200	M12	4.5	12	35	8	22	2.5	3	27

Ref.	M	l4	b1	d1	l3	l2	r1	r2	Type
82.450.1600	M16	5.5	16	42	9	26	3	3	32
82.450.2000	M20	6	20	52	10	30	3	4	40
82.450.2400	M24	7.5	24	63	12	36	4	4	50

› 82.460 TORAX

NL **Spansleutel, voor opsteekhouder**
FR **Clé pour vis de serrage, pour arbre de montage**
ES **Llave para tornillo de fijación, parra adaptador morse**
DE **Spannschlüssel, für Aufsteckhalter**



DIN 6368

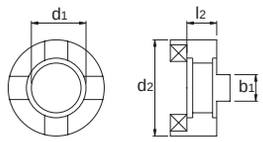
Ref.	M	Type	l1
82.460.0800	M8	16	180
82.460.1000	M10	22	200
82.460.1200	M12	27	225

Ref.	M	Type	l1
82.460.1600	M16	32	250
82.460.2000	M20	40	280
82.460.2400	M24	50	315

› 82.470 TORAX

NL **Meeneemring, voor opsteekhouder**
FR **Bague de déblocage, pour arbre de montage**
ES **Arandela de arrastre, para adaptador morse**
DE **Mitnehmerringe, für Aufsteckhalter**





DIN 6366

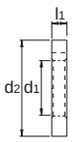
Ref.	d1	l2	b1	d2
82.470.1600	16	10	8	32
82.470.2200	22	12	10	40
82.470.2700	27	12	12	48

Ref.	d1	l2	b1	d2
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**





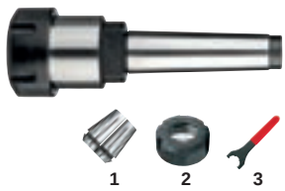
DIN 2084-B

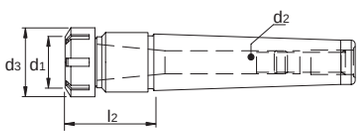
Ref.	d1	d2	l1
82.480.1601	16	25	1
82.480.1602	16	25	2
82.480.1603	16	25	3
82.480.1606	16	25	6
82.480.1610	16	25	10
82.480.1620	16	25	20
82.480.1630	16	25	30
82.480.2201	22	33	1
82.480.2202	22	33	2
82.480.2203	22	33	3
82.480.2206	22	33	6
82.480.2210	22	33	10
82.480.2220	22	33	20
82.480.2230	22	33	30
82.480.2701	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

Ref.	d1	d2	l1
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

› 82.511 TORAX

NL **ER Spantanghouder, MK volgens DIN 228-A**
FR **Mandrin porte-pinces ER, CM selon DIN 228-A**
ES **Portapinzas ER, CM según DIN 228-A**
DE **ER-Spannzangenfutter, MK nach DIN 228-A**





ER | DIN 228-B | HRc 60±2 | 0,005

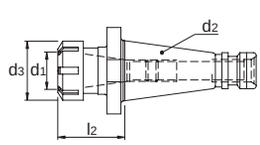
Ref.	d1	d2	d3	l2	Type	Ø mm	1	2	3
82.511.0225	ER25	2	42	50	ER25	1-16	82.825	82.960.2500	82.990.2500
82.511.0332	ER32	3	50	70	ER32	2-20	82.832	82.960.3200	82.990.3200
82.511.0432	ER32	4	50	65	ER32	2-20	82.832	82.960.3200	82.990.3200

› 82.513 TORAX

NL **ER Spantanghouder, SK volgens DIN 2080**
FR **Mandrin porte-pinces ER, SA selon DIN 2080**
ES **Portapinzas ER, SK según DIN 2080**
DE **ER-Spannzangenfutter, SK nach DIN 2080**







ER | SK | HRc 60±2 | AT3 | 0,005

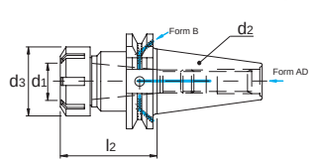
Ref.	d2	Type	l2	d3	M	Ø mm	1	2	3
82.513.3065	30	ER32	50	50	M12	2-20	82.832	82.960.3200	82.990.3200
82.513.4053	40	ER25	60	42	M16	1-16	82.825	82.960.2500	82.990.2500
82.513.4063	40	ER32	60	50	M16	2-20	82.832	82.960.3200	82.990.3200
82.513.4071	40	ER40	80	63	M16	3-26	82.840	82.960.4000	82.990.4000
82.513.5061	50	ER32	63	50	M24	2-20	82.832	82.960.3200	82.990.3200
82.513.5071	50	ER40	63	63	M24	3-26	82.840	82.960.4000	82.990.4000

› 82.514 TORAX

NL **ER Spantanghouder, SK volgens DIN 69871-AD/B**
FR **Mandrin porte-pinces ER, SA selon DIN 69871-AD/B**
ES **Portapinzas ER, SK según DIN 69871-AD/B**
DE **ER-Spannzangenfutter, SK nach DIN 69871-AD/B**







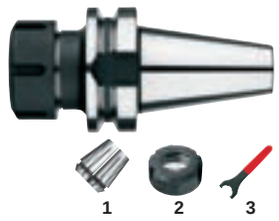
ER | SK | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

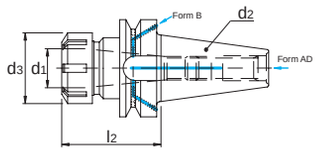
Ref.	d2	Type	d3	l2	Ø mm	1	2	3
82.514.4031	40	ER16	32	63	1-10	82.816	82.960.1600	82.990.1600
82.514.4033	40	ER16	32	100	1-10	82.816	82.960.1600	82.990.1600
82.514.4051	40	ER25	42	60	1-16	82.825	82.960.2500	82.990.2500
82.514.4061	40	ER32	50	70	2-20	82.832	82.960.3200	82.990.3200
82.514.4063	40	ER32	50	100	2-20	82.832	82.960.3200	82.990.3200
82.514.4071	40	ER40	63	80	3-26	82.840	82.960.4000	82.990.4000
82.514.5061	50	ER32	50	70	2-20	82.832	82.960.3200	82.990.3200
82.514.5063	50	ER32	50	100	2-20	82.832	82.960.3200	82.990.3200
82.514.5071	50	ER40	63	80	3-26	82.840	82.960.4000	82.990.4000
82.514.5073	50	ER40	63	100	3-26	82.840	82.960.4000	82.990.4000

19:00 ▶ 24h

› 82.516 TORAX

NL **ER Spantanghouder, BT volgens MAS 403-BT AD/B**
FR **Mandrin porte-pinces ER, BT selon MAS 403-BT AD/B**
ES **Portapinzas ER, BT según MAS 403-BT AD/B**
DE **ER-Spannzangenfutter, BT nach MAS 403-BT AD/B**



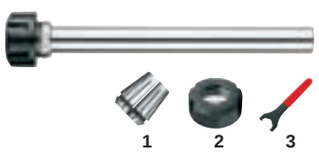


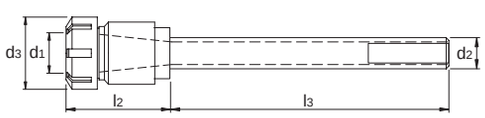
ER | MAS-BT | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

Ref.	d2	Type	d3	l2	Ø mm	1	2	3
82.516.4031	40	ER16	32	63	1-10	82.816	82.960.1600	82.990.1600
82.516.4051	40	ER25	42	60	1-16	82.825	82.960.2500	82.990.2500
82.516.4061	40	ER32	50	70	2-20	82.832	82.960.3200	82.990.3200
82.516.4063	40	ER32	50	100	2-20	82.832	82.960.3200	82.990.3200
82.516.4071	40	ER40	63	80	3-26	82.840	82.960.4000	82.990.4000
82.516.5061	50	ER32	50	70	2-20	82.832	82.960.3200	82.990.3200
82.516.5071	50	ER40	63	80	3-26	82.840	82.960.4000	82.990.4000

› 82.610 TORAX

NL **ER Spantanghouder, cilindrisch**
FR **Mandrin porte-pinces ER, forme cylindrique**
ES **Portapinzas ER, cilíndrico**
DE **ER-Spannzangenfutter, Zylinderform**





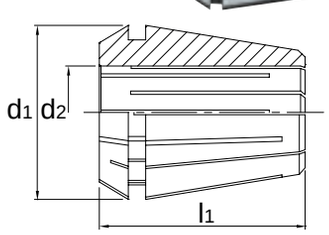
DIN 6499-B | ER

Ref.	d2	Type	l2	l3	Ø mm	d3	1	2	3
82.610.1616	16	ER16	30	150	1-10	32	82.816	82.960.1600	82.990.1600
82.610.2025	20	ER25	40	150	1-16	42	82.825	82.960.2500	82.990.2500
82.610.3232	32	ER32	35	150	2-20	50	82.832	82.960.3200	82.990.3200

› 82.811 TORAX

NL **Spantang ER 11, DIN 6499-B**
FR **Pince ER 11, DIN 6499-B**
ES **Pinza ER 11, DIN 6499-B**
DE **Spannzange ER 11, DIN 6499-B**





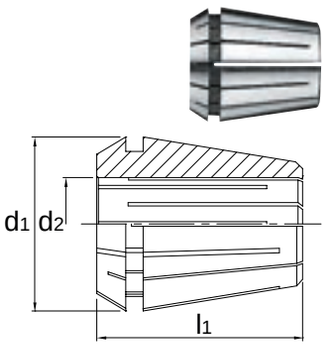
ER-11 | DIN 6499-B

Ref.	d2	Ø mm	d1	l1
82.811.0100	1	0,5-1	11.6	18
82.811.0150	1.5	1-1,5	11.6	18
82.811.0200	2	1,5-2	11.6	18
82.811.0250	2.5	2-2,5	11.6	18
82.811.0300	3	2,5-3	11.6	18
82.811.0350	3.5	3-3,5	11.6	18
82.811.0400	4	3,5-4	11.6	18

Ref.	d2	Ø mm	d1	l1
82.811.0450	4.5	4-4,5	11.6	18
82.811.0500	5	4,5-5	11.6	18
82.811.0550	5.5	5-5,5	11.6	18
82.811.0600	6	5,5-6	11.6	18
82.811.0650	6.5	6-6,5	11.6	18
82.811.0700	7	6,5-7	11.6	18

› 82.816 TORAX

NL **Spantang ER 16, DIN 6499-B**
FR **Pince ER 16, DIN 6499-B**
ES **Pinza ER 16, DIN 6499-B**
DE **Spannzange ER 16, DIN 6499-B**



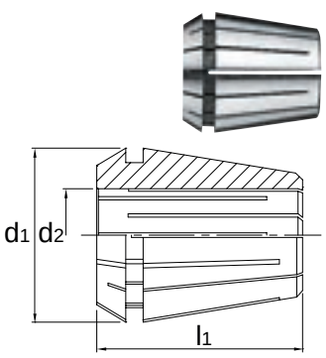
ER-16 DIN 6499-B DIN 6535-HA

Ref.	d2	Ø mm	d1	l1
82.816.0100	1	0,5-1	17	27
82.816.0150	1.5	1-1,5	17	27
82.816.0200	2	1-2	17	27
82.816.0250	2.5	2-2,5	17	27
82.816.0300	3	2-3	17	27
82.816.0400	4	3-4	17	27

Ref.	d2	Ø mm	d1	l1
82.816.0500	5	4-5	17	27
82.816.0600	6	5-6	17	27
82.816.0700	7	6-7	17	27
82.816.0800	8	7-8	17	27
82.816.0900	9	8-9	17	27
82.816.1000	10	9-10	17	27

› 82.820 TORAX

NL **Spantang ER 20, DIN 6499-B**
FR **Pince ER 20, DIN 6499-B**
ES **Pinza ER 20, DIN 6499-B**
DE **Spannzange ER 20, DIN 6499-B**



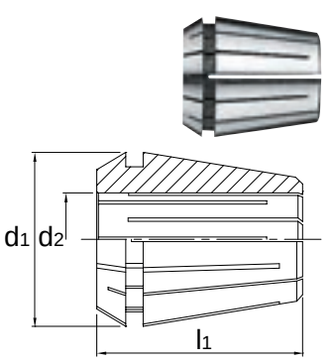
ER-20 DIN 6499-B

Ref.	d2	Ø mm	d1	l1
82.820.0100	1	0,5-1	21	31
82.820.0150	1.5	1-1,5	21	31
82.820.0200	2	1,5-2	21	31
82.820.0250	2.5	2-2,5	21	31
82.820.0300	3	2-3	21	31
82.820.0400	4	3-4	21	31
82.820.0500	5	4-5	21	31
82.820.0600	6	5-6	21	31

Ref.	d2	Ø mm	d1	l1
82.820.0700	7	6-7	21	31
82.820.0800	8	7-8	21	31
82.820.0900	9	8-9	21	31
82.820.1000	10	9-10	21	31
82.820.1100	11	10-11	21	31
82.820.1200	12	11-12	21	31
82.820.1300	13	12-13	21	31

› 82.825 TORAX

NL **Spantang ER 25, DIN 6499-B**
FR **Pince ER 25, DIN 6499-B**
ES **Pinza ER 25, DIN 6499-B**
DE **Spannzange ER 25, DIN 6499-B**



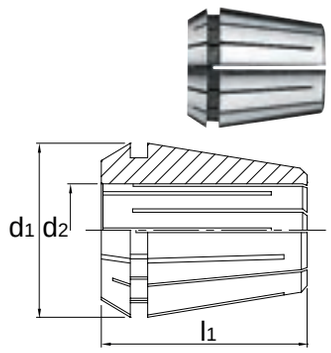
ER-25 DIN 6499-B

Ref.	d2	Ø mm	d1	l1
82.825.0100	1	0,5-1	26	35
82.825.0150	1.5	1-1,5	26	35
82.825.0200	2	1-2	26	35
82.825.0250	2.5	2-2,5	26	35
82.825.0300	3	2-3	26	35
82.825.0400	4	3-4	26	35
82.825.0500	5	4-5	26	35
82.825.0600	6	5-6	26	35
82.825.0700	7	6-7	26	35

Ref.	d2	Ø mm	d1	l1
82.825.0800	8	7-8	26	35
82.825.0900	9	8-9	26	35
82.825.1000	10	9-10	26	35
82.825.1100	11	10-11	26	35
82.825.1200	12	11-12	26	35
82.825.1300	13	12-13	26	35
82.825.1400	14	13-14	26	35
82.825.1500	15	14-15	26	35
82.825.1600	16	15-16	26	35

› 82.832 TORAX

NL **Spantang ER 32, DIN 6499-B**
FR **Pince ER 32, DIN 6499-B**
ES **Pinza ER 32, DIN 6499-B**
DE **Spannzange ER 32, DIN 6499-B**



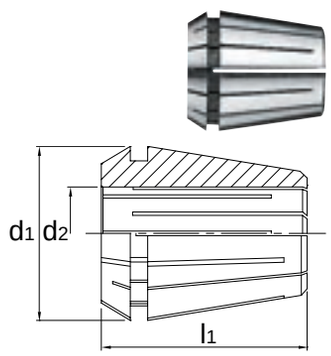
ER-32 DIN 6499-B

Ref.	d2	Ø mm	d1	l1
82.832.0200	2	1-2	33	40
82.832.0300	3	2-3	33	40
82.832.0400	4	3-4	33	40
82.832.0500	5	4-5	33	40
82.832.0600	6	5-6	33	40
82.832.0700	7	6-7	33	40
82.832.0800	8	7-8	33	40
82.832.0900	9	8-9	33	40
82.832.1000	10	9-10	33	40
82.832.1100	11	10-11	33	40

Ref.	d2	Ø mm	d1	l1
82.832.1200	12	11-12	33	40
82.832.1300	13	12-13	33	40
82.832.1400	14	13-14	33	40
82.832.1500	15	14-15	33	40
82.832.1600	16	15-16	33	40
82.832.1700	17	16-17	33	40
82.832.1800	18	17-18	33	40
82.832.1900	19	18-19	33	40
82.832.2000	20	19-20	33	40

› 82.840 TORAX

NL **Spantang ER 40, DIN 6499-B**
FR **Pince ER 40, DIN 6499-B**
ES **Pinza ER 40, DIN 6499-B**
DE **Spannzange ER 40, DIN 6499-B**



ER-40 DIN 6499-B

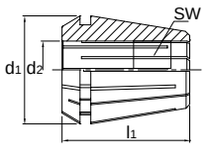
Ref.	d2	Ø mm	d1	l1
82.840.0300	3	2-3	41	46
82.840.0400	4	3-4	41	46
82.840.0500	5	4-5	41	46
82.840.0600	6	5-6	41	46
82.840.0700	7	6-7	41	46
82.840.0800	8	7-8	41	46
82.840.0900	9	8-9	41	46
82.840.1000	10	9-10	41	46
82.840.1100	11	10-11	41	46
82.840.1200	12	11-12	41	46
82.840.1300	13	12-13	41	46
82.840.1400	14	13-14	41	46

Ref.	d2	Ø mm	d1	l1
82.840.1500	15	14-15	41	46
82.840.1600	16	15-16	41	46
82.840.1700	17	16-17	41	46
82.840.1800	18	17-18	41	46
82.840.1900	19	18-19	41	46
82.840.2000	20	19-20	41	46
82.840.2100	21	20-21	41	46
82.840.2200	22	21-22	41	46
82.840.2300	23	22-23	41	46
82.840.2400	24	23-24	41	46
82.840.2500	25	24-25	41	46
82.840.2600	26	25-26	41	46

› 82.880 TORAX

NL **Spantang ER 16G voor tappen**
FR **Pince ER 16G pour tarauds**
ES **Pinza ER 16G para machos**
DE **Spannzange ER 16G für Maschinengewindebohrer**





ER-16

NIEUW NOUVEAU NUEVO NEU

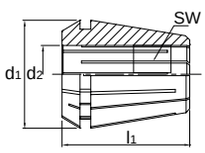
Ref.	d2	sw	d1	l1
82.880.0350	3.5	2.7	17	27
82.880.0400	4	3	17	27
82.880.0450	4.5	3.4	17	27
82.880.0500	5	4	17	27
82.880.0600	6	4.9	17	27

Ref.	d2	sw	d1	l1
82.880.0630	6.3	5	17	27
82.880.0700	7	5.5	17	27
82.880.0800	8	6.2	17	27
82.880.0900	9	7.1	17	27
82.880.1000	10	8	17	27

› 82.885 TORAX

NL **Spantang ER 25G voor tappen**
FR **Pince ER 25G pour tarauds**
ES **Pinza ER 25G para machos**
DE **Spannzange ER 25G für Maschinengewindebohrer**





ER-25

NIEUW NOUVEAU NUEVO NEU

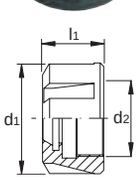
Ref.	d2	sw	d1	l1
82.885.0450	4.5	3.4	26	35
82.885.0500	5	4	26	35
82.885.0600	6	4.9	26	35
82.885.0630	6.3	5	26	35
82.885.0700	7	5.5	26	35

Ref.	d2	sw	d1	l1
82.885.0800	8	6.2	26	35
82.885.0900	9	7	26	35
82.885.1000	10	8	26	35
82.885.1120	11.2	9	26	35

› 82.960 TORAX

NL **Moer voor Spantanghouder, DIN 6499-D**
FR **Ecrou pour Mandrin porte-pinces, DIN 6499-D**
ES **Tuerca para Portapinzas, DIN 6499-D**
DE **Muttern für Spannzangenfutter, DIN 6499-D**





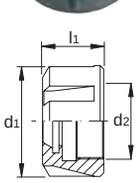
Ref.	M	d1	l1	Type
82.960.1600	M22x1,5	32	17.5	ER16
82.960.2500	M32x1,5	42	20	ER25

Ref.	M	d1	l1	Type
82.960.3200	M40x1,5	50	22.5	ER32
82.960.4000	M50x1,5	63	25.5	ER40

› 82.962 TORAX

NL **Moer voor Spantanghouder, DIN 6499, voor afdichtring 82.963**
FR **Ecrou pour Mandrin porte-pinces, DIN 6499, pour joint 82.963**
ES **Tuerca para Portapinzas, DIN 6499, para junta 82.963**
DE **Muttern für Spannzangenfutter, DIN 6499, Für Dichtungsringe 82.963**





Ref.	M	d2	l1	Type
82.962.1600	M22 x 1,5	28 sw 25	23.5	ER16
82.962.2500	M32 x 1,5	42	26	ER25

Ref.	M	d2	l1	Type
82.962.3200	M40 x 1,5	50	28.5	ER32
82.962.4000	M50 x 1,5	63	31.5	ER40

19:00 ▸ ▸ 24h

› 82.963 TORAX



NL **Afdichtring voor spantangen, ER, DIN 6499**
FR **Joint pour pinces, ER, DIN 6499**
ES **Junta para pinzas, ER, DIN 6499**
DE **Dichtungsringe für Spannzangen, ER, DIN 6499**

Ref.	Type	Ø
82.963.1603	ER16	3-2,5
82.963.1604	ER16	4-3,5
82.963.1605	ER16	5-4,5
82.963.1606	ER16	6-5,5
82.963.1607	ER16	7-6,5
82.963.1608	ER16	8-7,5
82.963.1609	ER16	9-8,5
82.963.1610	ER16	10-9,5
82.963.2503	ER25	3-2,5
82.963.2504	ER25	4-3,5
82.963.2505	ER25	5-4,5
82.963.2506	ER25	6-5,5
82.963.2507	ER25	7-6,5
82.963.2508	ER25	8-7,5
82.963.2509	ER25	9-8,5
82.963.2510	ER25	10-9,5
82.963.2511	ER25	11-10,5
82.963.2512	ER25	12-11,5
82.963.2513	ER25	13-12,5
82.963.2514	ER25	14-13,5
82.963.2515	ER25	15-14,5
82.963.2516	ER25	16-15,5
82.963.3203	ER32	3-2,5
82.963.3204	ER32	4-3,5
82.963.3205	ER32	5-4,5
82.963.3206	ER32	6-5,5
82.963.3207	ER32	7-6,5
82.963.3208	ER32	8-7,5
82.963.3209	ER32	9-8,5
82.963.3210	ER32	10-9,5
82.963.3211	ER32	11-10,5
82.963.3212	ER32	12-11,5

Ref.	Type	Ø
82.963.3213	ER32	13-12,5
82.963.3214	ER32	14-13,5
82.963.3215	ER32	15-14,5
82.963.3216	ER32	16-15,5
82.963.3217	ER32	17-16,5
82.963.3218	ER32	18-17,5
82.963.3219	ER32	19-18,5
82.963.3220	ER32	20-19,5
82.963.4003	ER40	3-2,5
82.963.4004	ER40	4-3,5
82.963.4005	ER40	5-4,5
82.963.4006	ER40	6-5,5
82.963.4007	ER40	7-6,5
82.963.4008	ER40	8-7,5
82.963.4009	ER40	9-8,5
82.963.4010	ER40	10-9,5
82.963.4011	ER40	11-10,5
82.963.4012	ER40	12-11,5
82.963.4013	ER40	13-12,5
82.963.4014	ER40	14-13,5
82.963.4015	ER40	15-14,5
82.963.4016	ER40	16-15,5
82.963.4017	ER40	17-16,5
82.963.4018	ER40	18-17,5
82.963.4019	ER40	19-18,5
82.963.4020	ER40	20-19,5
82.963.4021	ER40	21-20,5
82.963.4022	ER40	22-21,5
82.963.4023	ER40	23-22,5
82.963.4024	ER40	24-23,5
82.963.4025	ER40	25-24,5
82.963.4026	ER40	26-25,5

› 82.990 TORAX



NL **Sleutel voor Spantangmoer, ER, DIN 6499**
FR **Clé pour Ecrou de mandrins à pinces, ER, DIN 6499**
ES **Llave para Tuerca para portapinzas, ER, DIN 6499**
DE **Schlüssel für Spannzangenmuttern, ER, DIN 6499**

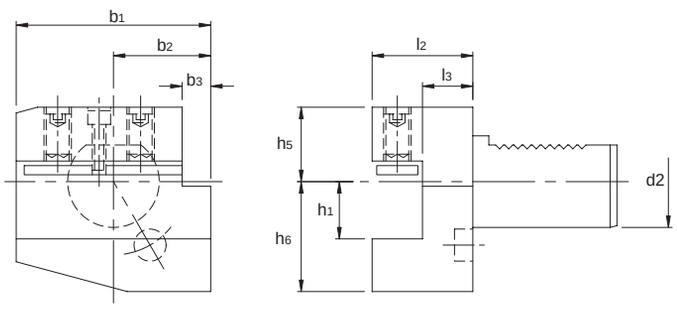
Ref.	Type
82.990.1600	ER16
82.990.2500	ER25
82.990.3200	ER32

Ref.	Type
82.990.4000	ER40
82.990.8800	
82.990.8850	

› 83.110 TORAX

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**





DIN 69880 | B1 | VDI

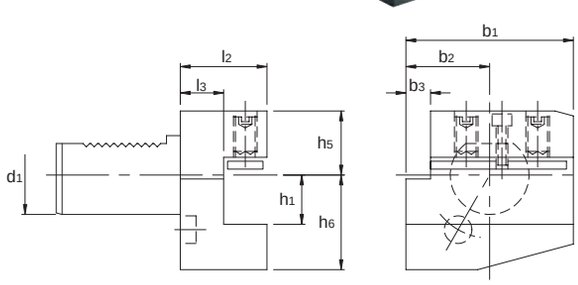
Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.110.3024	30	40	22	20	28	38	70	35	10
83.110.4024	40	44	22	25	32.5	48	85	42.5	12.5

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.110.5035	50	55	30	32	35	60	100	50	16

› 83.111 TORAX

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**





DIN 69880 | B2 | VDI

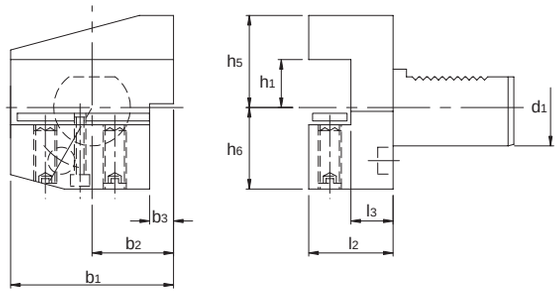
Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.111.3024	30	40	22	20	28	38	70	35	10
83.111.4024	40	44	22	25	32.5	48	85	42.5	12.5

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.111.5035	50	55	30	32	35	60	100	50	16

› 83.112 TORAX

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**





DIN 69880 | B3 | VDI

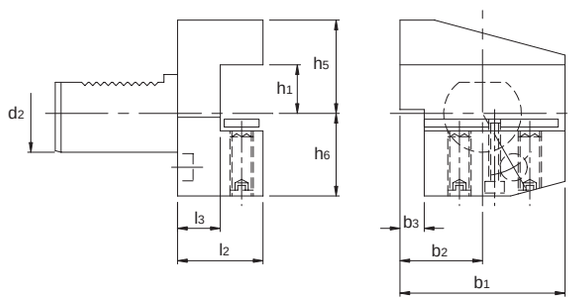
Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.112.3024	30	40	22	20	38	35	70	35	10
83.112.4024	40	44	22	25	48	42.5	85	42.5	12.5

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.112.5035	50	55	30	32	60	50	100	50	16

› 83.113 TORAX

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**





DIN 69880 | B4 | VDI

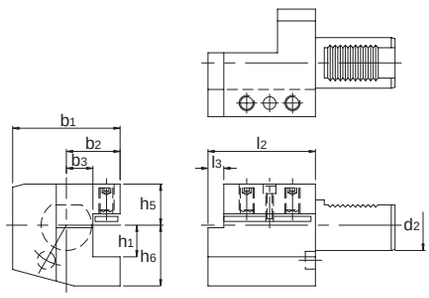
Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.113.3024	30	40	22	20	38	35	70	35	10
83.113.4024	40	44	22	25	48	42.5	85	42.5	12.5

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.113.5035	50	55	30	32	60	50	100	50	16

› 83.120 TORAX

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**





DIN 69880 | C1 | VDI

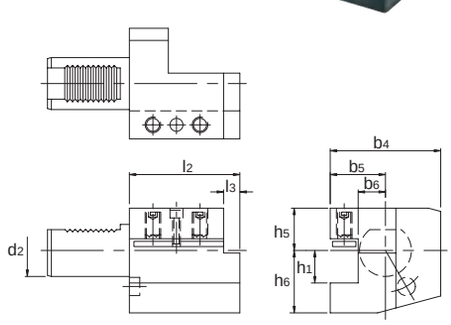
Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.120.3027	30	70	10	20	28	38	70	35	17
83.120.4028	40	85	12.5	25	32.5	48	85	42.5	21

Ref.	d2	l2	l3	h1	h5	h6	b1	b2	b3
83.120.5031	50	100	16	32	35	60	100	50	26

› 83.121 TORAX

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**





DIN 69880 | C2 | VDI

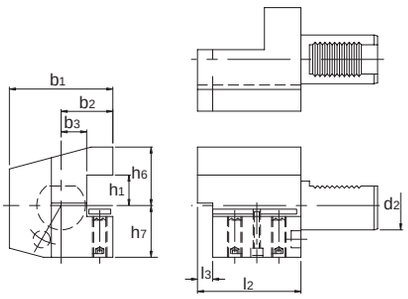
Ref.	d2	l2	l3	h1	h5	h6	b4	b5	b6
83.121.3027	30	70	10	20	28	38	70	41	23
83.121.4029	40	85	12.5	25	32.5	48	85	47.5	25.5

Ref.	d2	l2	l3	h1	h5	h6	b4	b5	b6
83.121.5031	50	100	16	32	35	60	100	55	30.5

› 83.122 FORAX

NL **VDI-houder DIN 69880, uitvoering C3, axiaal, links**
FR **Porte-outils VDI DIN 69880, version C3, axial, à gauche**
ES **Portaherramientas VDI DIN 69880, versión C3, axial, a la izquierda**
DE **VDI-Halter DIN 69880, Ausführung C3, axial, links**





DIN 69880 | C3 | VDI

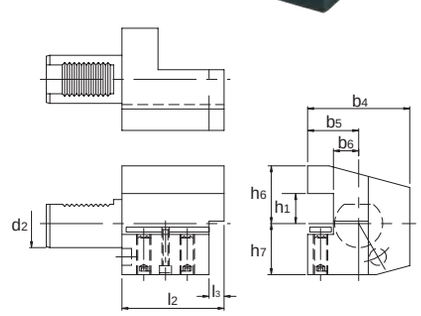
Ref.	d2	l2	l3	h1	h6	h7	b1	b2	b3
83.122.3027	30	70	10	20	38	35	70	35	17
83.122.4028	40	85	12.5	25	48	42.5	85	42.5	21

Ref.	d2	l2	l3	h1	h6	h7	b1	b2	b3
83.122.5031	50	100	16	32	60	50	100	50	26

› 83.123 FORAX

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**





DIN 69880 | C4 | VDI

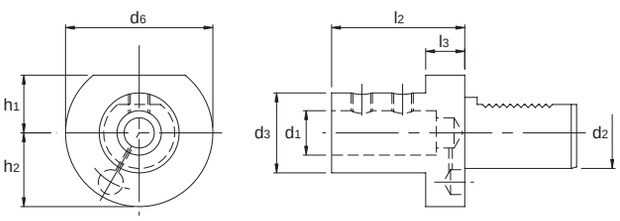
Ref.	d2	l2	l3	b4	b5	b6	h1	h6	h7
83.123.3027	30	70	10	70	35	17	20	35	38
83.123.4029	40	85	12.5	85	42.5	21	25	42.5	48

Ref.	d2	l2	l3	b4	b5	b6	h1	h6	h7
83.123.5031	50	100	16	100	50	26	32	50	60

› 83.150 TORAX

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**





DIN 69880 | E1 | VDI

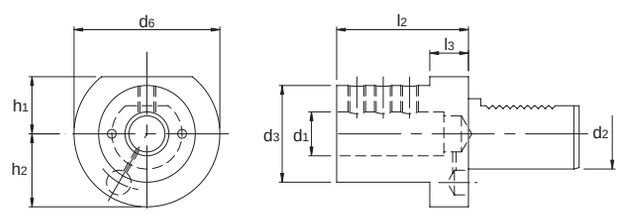
Ref.	d2	d1	d3	d6	h1	h2	l2	l3
83.150.3016	30	16	36	68	28	30	64	22
83.150.3020	30	20	40	68	28	30	67	22
83.150.3025	30	25	45	68	28	30	71	22
83.150.3032	30	32	52	68	28	30	75	22
83.150.4016	40	16	36	83	32.5		64	22
83.150.4020	40	20	40	83	32.5		67	22
83.150.4025	40	25	45	83	32.5		75	22
83.150.4032	40	32	52	83	32.5		75	22

Ref.	d2	d1	d3	d6	h1	h2	l2	l3
83.150.4040	40	40	60	83	32.5		90	22
83.150.5016	50	16	40	98	35		66	30
83.150.5020	50	20	40	98	35		66	30
83.150.5025	50	25	45	98	35		80	30
83.150.5032	50	32	52	98	35		80	30
83.150.5040	50	40	65	98	35		90	30
83.150.5050	50	50	75	98	35		100	30

› 83.151 TORAX

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**





DIN 69880 | E2 | VDI

Ref.	d2	d1	d3	d6	h1	h2	l2	l3
83.151.3008	30	8	55	68	28	30	60	22
83.151.3010	30	10	55	68	28	30	60	22
83.151.3012	30	12	55	68	28	30	60	22
83.151.3016	30	16	55	68	28	30	60	22
83.151.3020	30	20	55	68	28	30	60	22
83.151.3025	30	25	55	68	28	30	60	22
83.151.3032	30	32	55	68	28	30	75	22
83.151.4008	40	8	55	83	32.5		75	22
83.151.4010	40	10	55	83	32.5		75	22
83.151.4012	40	12	55	83	32.5		75	22
83.151.4016	40	16	55	83	32.5		75	22

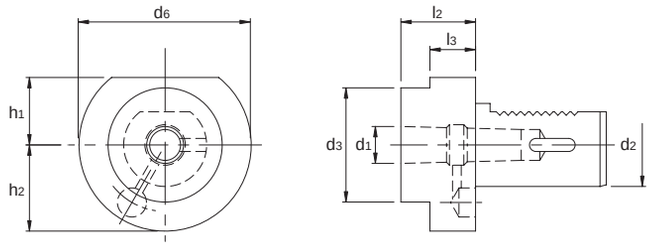
Ref.	d2	d1	d3	d6	h1	h2	l2	l3
83.151.4020	40	20	55	83	32.5		75	22
83.151.4025	40	25	55	83	32.5		75	22
83.151.4032	40	32	83	83	32.5		75	22
83.151.4040	40	40	83	83	32.5		90	22
83.151.5012	50	12	68	98	35		90	30
83.151.5016	50	16	68	98	35		90	30
83.151.5020	50	20	68	98	35		90	30
83.151.5025	50	25	68	98	35		90	30
83.151.5032	50	32	68	98	35		90	30
83.151.5040	50	40	98	98	35		90	30
83.151.5050	50	50	98	98	35		100	30

19:00 ▶ 24h

› 83.155 TORAX

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**





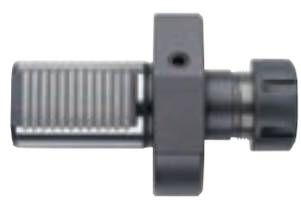
DIN 69880 | F1 | VDI

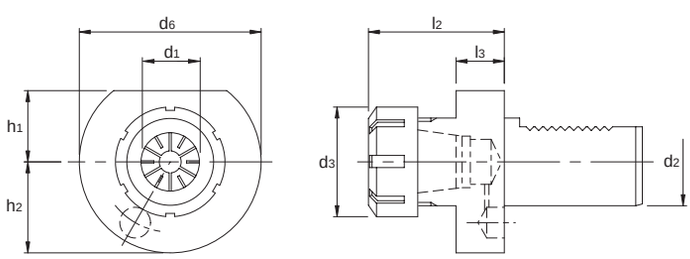
Ref.	d2	d1	d3	l2	l3	d6	h1	h2
83.155.3001	30	1		27		68	28	30
83.155.3002	30	2		27		68	28	30
83.155.3003	30	3	58	40	22	68	28	30
83.155.4002	40	2	55	36	22	83	32.5	
83.155.4003	40	3	55	36	22	83	32.5	

Ref.	d2	d1	d3	l2	l3	d6	h1	h2
83.155.4004	40	4	68	80	22	83	32.5	
83.155.5002	50	2	55	36	30	98	35	
83.155.5003	50	3	58	36	30	98	35	
83.155.5004	50	4	68	50	30	98	35	
83.155.5005	50	5	75	72	30	98	35	

› 83.158 TORAX

NL **VDI-houder DIN 69880, uitvoering E4, Spantanghouder**
FR **Porte-outils VDI DIN 69880, version E4 pour mandrins porte-pinces**
ES **Portaherramientas VDI DIN 69880, versión E4, Portapinzas**
DE **VDI-Halter DIN 69880, Ausführung E4, Spannzangenfutter**





DIN 69880 | E4 | VDI

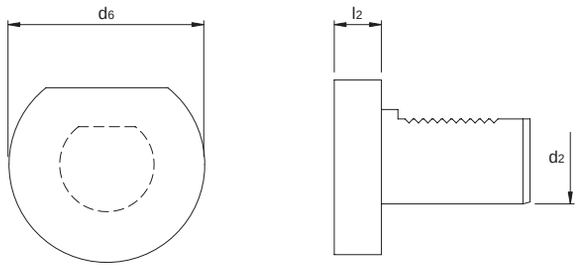
Ref.	d2	d1	d6	d3	h1	l2	l3	h2	Ø mm
83.158.3025	30	ER25	68	42	28	57	22	34	2-16
83.158.3032	30	ER32	68	50	28	75	22	34	2-20
83.158.3040	30	ER40	68	63	28	75	22	34	3-26
83.158.4025	40	ER25	83	42	32.5	75	22	41.5	2-16

Ref.	d2	d1	d6	d3	h1	l2	l3	h2	Ø mm
83.158.4032	40	ER32	83	50	32.5	75	22	41.5	2-20
83.158.4040	40	ER40	83	63	32.5	75	22	41.5	3-26
83.158.5040	50	ER40	98	63	35	75	30	49	3-26

› 83.161 TORAX

NL **Afstopplug, VDI-houder DIN 69880**
FR **Bouchon de protection pour porte-outils VDI DIN 69880**
ES **Tapón de protección, Portaherramientas VDI DIN 69880**
DE **Verschlussstopfen, VDI-Halter DIN 69880**





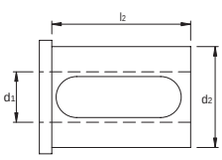
Ref.	d2	l2	d6
83.161.3068	30	20	68
83.161.4083	40	20	83

Ref.	d2	l2	d6
83.161.5098	50	20	98

› 83.170 TORAX

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**





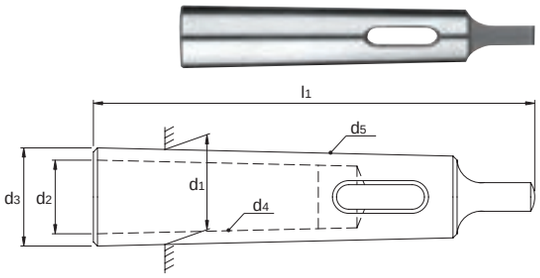
Ref.	d2	d1	l2
83.170.2506	25	6	46
83.170.2508	25	8	46
83.170.2510	25	10	46
83.170.2512	25	12	46
83.170.2516	25	16	46
83.170.3208	32	8	56
83.170.3210	32	10	56
83.170.3212	32	12	56

Ref.	d2	d1	l2
83.170.3216	32	16	56
83.170.3220	32	20	56
83.170.3225	32	25	56
83.170.4012	40	12	71
83.170.4016	40	16	71
83.170.4020	40	20	71
83.170.4025	40	25	71
83.170.4032	40	32	71

19:00 ▶ 24h

› 84.100 TORAX

NL **Boorhuls (Reduceerhuls), MK x MK**
FR **Douille (de réduction), CM x CM**
ES **Casquillo (Casquillo de reducción), CM x CM**
DE **Bohrhülse (Reduzierhülse), MK x MK**



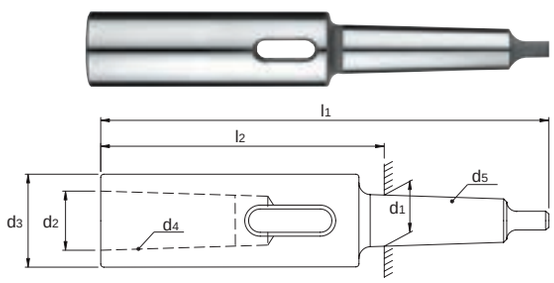
DIN 2185

Ref.	d5	d4	d1	d2	d3	l1
84.100.0100	1	0	11.8	9.045	13.2	85
84.100.0201	2	1	17.78	12.065	18.6	92
84.100.0301	3	1	23.825	12.065	24.1	99
84.100.0302	3	2	23.825	17.78	24.7	112
84.100.0401	4	1	31.267	12.065	18.6	124
84.100.0402	4	2	31.267	17.78	31.6	124
84.100.0403	4	3	31.267	23.825	32.4	140
84.100.0501	5	1	44.399	12.065	44.7	156

Ref.	d5	d4	d1	d2	d3	l1
84.100.0502	5	2	44.399	17.78	44.7	156
84.100.0503	5	3	44.399	23.825	44.7	156
84.100.0504	5	4	44.399	31.267	45.5	171
84.100.0602	6	2	63.348	17.78	63.8	218
84.100.0603	6	3	63.348	23.825	63.8	218
84.100.0604	6	4	63.348	31.267	63.8	218
84.100.0605	6	5	63.348	44.399	63.8	218

› 84.110 TORAX

NL **Verlengde Boorhuls, MK x MK**
FR **Douille allongée, CM x CM**
ES **Casquillo de prolongación, CM x CM**
DE **Verlängerte Bohrhülsen, MK x MK**



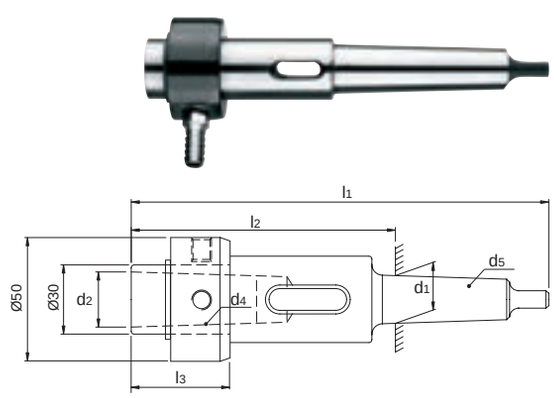
DIN 2187

Ref.	d5	d4	d1	d2	d3	l1	l2
84.110.0101	1	1	12.065	12.065	20	145	83
84.110.0102	1	2	12.065	17.78	30	160	91
84.110.0103	1	3	12.065	23.825	36	183	121
84.110.0201	2	1	17.78	12.065	20	160	85
84.110.0202	2	2	17.78	17.78	30	175	100
84.110.0203	2	3	17.78	23.825	36	196	112
84.110.0204	2	4	17.78	31.267	48	221	146
84.110.0301	3	1	23.825	12.065	20	175	81
84.110.0302	3	2	23.825	17.78	30	194	100
84.110.0303	3	3	23.825	23.825	36	215	121
84.110.0304	3	4	23.825	31.267	48	240	137

Ref.	d5	d4	d1	d2	d3	l1	l2
84.110.0305	3	5	23.825	44.399	63	275	181
84.110.0401	4	1	31.267	12.065	22	200	76
84.110.0402	4	2	31.267	17.78	30	215	97.5
84.110.0403	4	3	31.267	23.825	36	240	122.5
84.110.0404	4	4	31.267	31.267	48	265	147.5
84.110.0405	4	5	31.267	44.399	63	300	172
84.110.0502	5	2	44.399	17.78	30	247	145
84.110.0503	5	3	44.399	23.825	36	268	118.5
84.110.0504	5	4	44.399	31.267	48	300	150.5
84.110.0505	5	5	44.399	44.399	63	335	185.5

› 84.120 TORAX

NL **Boorhouder, voor boren met inwendige koeling, MK x MK**
FR **Mandrin porte-forets, pour forets à lubrification interne, CM x CM**
ES **Portabroca, para brocas con refrigeración interna, CM x CM**
DE **Bohrfutter, für Bohrer mit Innenkühlung, MK x MK**

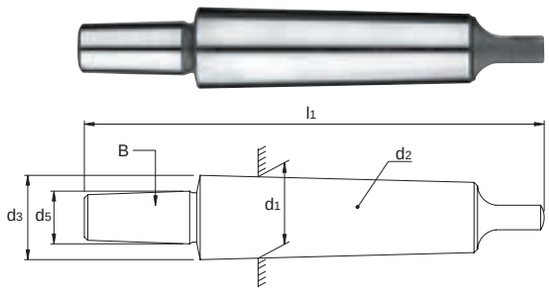


Ref.	d5	d4	d1	d2	l1	l2	l3
84.120.0202	2	2	17.78	17.78	175	100	38.5
84.120.0203	2	3	17.78	23.825	196	121	47.5
84.120.0302	3	2	23.825	17.78	194	100	38.5

Ref.	d5	d4	d1	d2	l1	l2	l3
84.120.0303	3	3	23.825	23.825	216	122	47.5
84.120.0402	4	2	31.267	17.78	240	122.5	38.5
84.120.0403	4	3	31.267	23.825	240	122.5	47.5

› 84.170 TORAX

NL **Boorhouderstift, MK en B-opname DIN 238**
FR **Arbre de mandrin porte-forets, CM et cône B selon DIN 238**
ES **Espiga para portabrocas, CM y con sujeción B DIN 238**
DE **Bohrfutterkegel, MK und B-Aufnahme DIN 238**



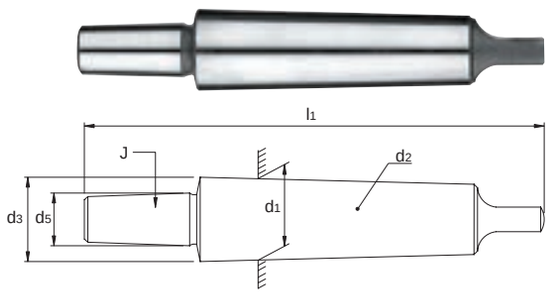
DIN 238

Ref.	d2	B	l1	d1	d5	d3
84.170.0110	1	B10	86	12.065	10.095	12.22
84.170.0112	1	B12	90	12.065	12.065	12.22
84.170.0116	1	B16	96	12.065	15.733	12.22
84.170.0118	1	B18	104	12.065	17.78	12.22
84.170.0210	2	B10	105	17.78	10.095	18
84.170.0212	2	B12	105	17.78	12.065	18
84.170.0216	2	B16	112	17.78	15.733	18
84.170.0218	2	B18	119	17.78	17.78	18
84.170.0222	2	B22	128	17.78	21.793	18
84.170.0312	3	B12	124	23.825	12.065	24.1

Ref.	d2	B	l1	d1	d5	d3
84.170.0316	3	B16	130	23.825	15.733	24.1
84.170.0318	3	B18	138	23.825	17.78	24.1
84.170.0322	3	B22	147	23.825	21.793	24.1
84.170.0416	4	B16	156	31.267	15.733	31.6
84.170.0418	4	B18	164	31.267	17.78	31.6
84.170.0422	4	B22	176	31.267	21.793	31.6
84.170.0516	5	B16	188	44.399	15.733	44.7
84.170.0518	5	B18	198	44.399	17.78	44.7
84.170.0522	5	B22	207	44.399	21.793	44.7

› 84.171 TORAX

NL **Boorhouderstift, MK- en J-opname**
FR **Arbre de mandrin porte-forets, CM et cône J**
ES **Espiga para portabrocas, CM y cono J**
DE **Bohrfutterkegel, MK- und J-Aufnahme**

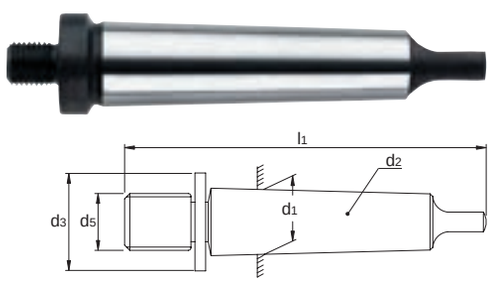


Ref.	d2	J	l1	d1	d5	d3
84.171.0101	1	J1	83.8	12.065	8.469	12.22
84.171.0102	1	J2	90.5	12.065	12.386	12.22
84.171.0103	1	J3	100.5	12.065	18.951	12.22
84.171.0201	2	J1	102.5	17.78	8.469	18
84.171.0202	2	J2	106	17.78	12.386	18
84.171.0203	2	J3	112.5	17.78	18.951	18
84.171.0206	2	J6	107	17.78	15.852	18

Ref.	d2	J	l1	d1	d5	d3
84.171.0233	2	J33	107	17.78	14.237	18
84.171.0302	3	J2	127	23.825	12.386	24.1
84.171.0303	3	J3	131.5	23.825	18.951	24.1
84.171.0306	3	J6	129	23.825	15.852	24.1
84.171.0333	3	J33	126	23.825	14.237	24.1
84.171.0403	4	J3	160.5	31.267	18.951	31.6
84.171.0406	4	J6	155	31.267	15.852	31.6

› 84.172 TORAX

NL **Boorhouderstift, MK en UNF-UN-M-draadopname**
FR **Arbre de mandrin porte-forets, CM et filetage UNF-UN-M**
ES **Espiga para portabrocas, CM y sujeción con rosca UNF-UN-M**
DE **Bohrfutterkegel, MK und UNF-UN-M-Gewindeaufnahme**



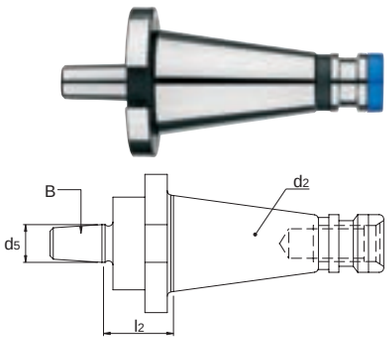
Ref.	d2	d5	l1	d1	d3
84.172.0210	2	3/8"-24 UNF	101	17.78	18
84.172.0212	2	1/2"-20 UNF	104	17.78	18
84.172.0216	2	5/8"-16 UN	106	17.78	18
84.172.0225	2	5/8"-16 UN	103	17.78	18

Ref.	d2	d5	l1	d1	d3
84.172.0305	3	5/8"-16 UN	122	23.825	24.1
84.172.0320	3	M20	125	23.825	24.1
84.172.0420	4	M20	150	31.267	31.6

19:00 ▶ 24h

› 84.173 TORAX

NL **Boorhouderstift, SK volgens DIN 2080, B-opname DIN 238**
FR **Arbre de mandrin porte-forets, SA selon DIN 2080, cône B selon DIN 238**
ES **Espiga para portabrocas, SK según DIN 2080, con sujeción B DIN 238**
DE **Bohrfutterkegel, SK nach DIN 2080, B-Aufnahme DIN 238**



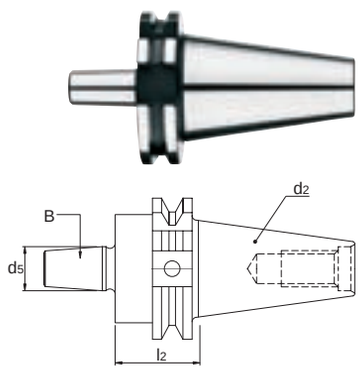
DIN 238 | SK | HRc 60±2 | AT3 | 0,005

Ref.	d2	B	d5	l2
84.173.3012	30	B12	12.065	15
84.173.3016	30	B16	15.733	17
84.173.4012	40	B12	12.065	15
84.173.4016	40	B16	15.733	17

Ref.	d2	B	d5	l2
84.173.4018	40	B18	17.78	17
84.173.5016	50	B16	15.733	20
84.173.5018	50	B18	17.78	20

› 84.174 TORAX

NL **Boorhouderstift, SK volgens DIN 69871, B-opname DIN 238**
FR **Arbre de mandrin porte-forets, SA selon DIN 69871, cône B selon DIN 238**
ES **Espiga para portabrocas, SK según DIN 69871, con sujeción B DIN 238**
DE **Bohrfutterkegel, SK nach DIN 69871, B-Aufnahme DIN 238**



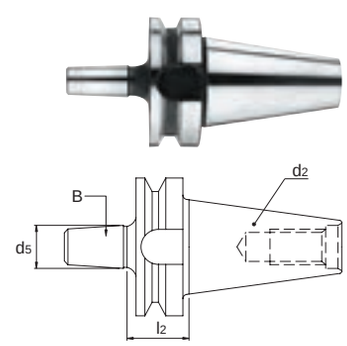
DIN 238 | SK | HRc 60±2 | AT3 | 0,005 | G6,3 12.000 RPM

Ref.	d2	B	d5	l2
84.174.4012	40	B12	12.065	17
84.174.4016	40	B16	15.733	17
84.174.4018	40	B18	17.78	17

Ref.	d2	B	d5	l2
84.174.5016	50	B16	15.733	20
84.174.5018	50	B18	17.78	20

› 84.176 TORAX

NL **Boorhouderstift, BT volgens MAS 403-BT, B-opname DIN 238**
FR **Arbre de mandrin porte-forets, BT selon MAS 403-BT, cône B selon DIN 238**
ES **Espiga para portabrocas, BT según MAS 403-BT, con sujeción B DIN 238**
DE **Bohrfutterkegel, BT nach MAS 403-BT, B-Aufnahme DIN 238**



DIN 238 | MAS-BT | HRc 60±2 | AT3 | 0,005 | G6,3 12.000 RPM

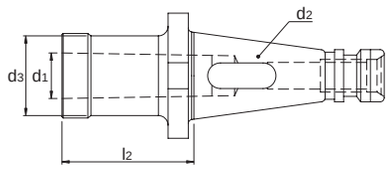
Ref.	d2	B	d5	l2
84.176.4012	40	B12	12.065	25
84.176.4016	40	B16	15.733	25
84.176.4018	40	B18	17.78	32

Ref.	d2	B	d5	l2
84.176.5016	50	B16	15.733	32
84.176.5018	50	B18	17.78	32

› 84.203 TORAX

NL **Verloophuls voor MK-opname, SK volgens DIN 2080**
FR **Adapteur pour queues cône morse, SA selon DIN 2080**
ES **Reductor a Morse, SK según DIN 2080**
DE **Reduzierhülsen für MK-Aufnahme, SK nach DIN 2080**





DIN 6383 | SK | HRc 60±2 | AT3 | 0,005

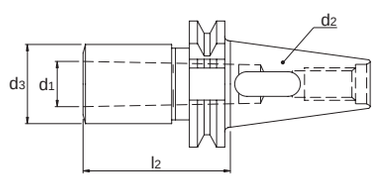
Ref.	d2	d1	l2	d3
84.203.3001	30	1	50	25
84.203.3002	30	2	50	32
84.203.3003	30	3	75	40
84.203.4001	40	1	50	25
84.203.4002	40	2	50	32
84.203.4003	40	3	65	40

Ref.	d2	d1	l2	d3
84.203.4004	40	4	95	48
84.203.5001	50	1	45	25
84.203.5002	50	2	60	32
84.203.5003	50	3	65	40
84.203.5004	50	4	70	48
84.203.5005	50	5	105	63

› 84.204 TORAX

NL **Verloophuls voor MK-opname, SK volgens DIN 69871**
FR **Adapteur pour queues cône morse, SA selon DIN 69871**
ES **Reductor a Morse, SK según DIN 69871**
DE **Reduzierhülsen für MK-Aufnahme, SK nach DIN 69871**





SK | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

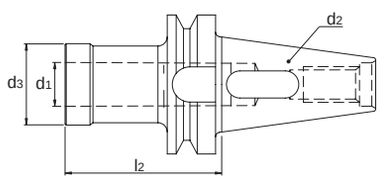
Ref.	d2	d1	l2	d3
84.204.4001	40	1	50	25
84.204.4002	40	2	50	32
84.204.4003	40	3	70	40
84.204.4004	40	4	95	48
84.204.5001	50	1	45	25

Ref.	d2	d1	l2	d3
84.204.5002	50	2	60	32
84.204.5003	50	3	65	40
84.204.5004	50	4	95	48
84.204.5005	50	5	105	63

› 84.206 TORAX

NL **Verloophuls voor MK-opname, BT volgens MAS 403-BT**
FR **Adapteur pour queues cône morse, BT selon MAS 403-BT**
ES **Reductor a Morse, BT según MAS 403-BT**
DE **Reduzierhülsen für MK-Aufnahme, BT nach MAS 403-BT**





MAS-BT | HRc 60±2 | AT3 | 0,005 | G6,3 15.000 RPM

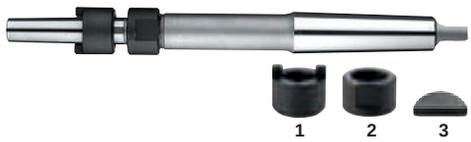
Ref.	d2	d1	l2	d3
84.206.4001	40	1	50	25
84.206.4002	40	2	50	32
84.206.4003	40	3	70	40
84.206.4004	40	4	95	48
84.206.5001	50	1	45	25

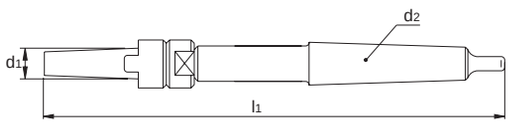
Ref.	d2	d1	l2	d3
84.206.5002	50	2	60	32
84.206.5003	50	3	65	40
84.206.5004	50	4	95	48
84.206.5005	50	5	105	63

19:00 ▶ 🛒 ▶ 24h

› 84.410 TORAX

NL **Opsteekhouder, DIN 217, voor opsteekruimers DIN 219 en opsteekopboor DIN 222, MK**
FR **Arbre de montage, DIN 217, pour alésoirs creux DIN 219 et forets creux DIN 222, CM**
ES **Porta-escariadores, DIN 217, para escariadores huecos DIN 219 y brocas escariadores huecos DIN 222, CM**
DE **Aufsteckhalter, DIN 217, für Aufsteckreibahlen DIN 219 und Aufsteckaufbohrer DIN 222, MK**





DIN 217

Ref.	Nr.	d1	l1	d2	Ø 51.650	Ø 13.350	1	2	3
84.410.0200	2	13	250	3	25-30	25-35	84.411.0200	84.412.0200	84.413.0200
84.410.0300	3	16	261	3	31-35	36-45	84.411.0300	84.412.0300	84.413.0300
84.410.0400	4	19	298	4	36-42	46-52	84.411.0400	84.412.0400	84.413.0400
84.410.0500	5	22	312	4	43-50	53-62	84.411.0500	84.412.0500	84.413.0500
84.410.0600	6	27	359	5	51-60	63-75	84.411.0600	84.412.0600	84.413.0600
84.410.0700	7	32	376	5	61-71	76-90	84.411.0700	84.412.0700	84.413.0700
84.410.0800	8	40	396	5	72-85	91-100	84.411.0800	84.412.0800	84.413.0800
84.410.0900	9	50	416	5	86-100	-	84.411.0900	84.412.0900	84.413.0900

› 84.411 TORAX

NL **Meeneemring voor Opsteekhouder**
FR **Bague de déblocage pour arbre de montage**
ES **Arandela de arrastre para porta-escariadores**
DE **Mitnehmerringe für Aufsteckhalter**



Ref.	Nr.
84.411.0200	2
84.411.0300	3
84.411.0400	4
84.411.0500	5

Ref.	Nr.
84.411.0600	6
84.411.0700	7
84.411.0800	8
84.411.0900	9

› 84.412 TORAX

NL **Afdrukmoer voor Opsteekhouder**
FR **Ecrou de déblocage pour arbre de montage**
ES **Tuerca de extracción para porta-escariadores**
DE **Abdrückmutter für Aufsteckhalter**



Ref.	Nr.
84.412.0200	2
84.412.0300	3
84.412.0400	4
84.412.0500	5

Ref.	Nr.
84.412.0600	6
84.412.0700	7
84.412.0800	8
84.412.0900	9

› 84.413 TORAX

NL **Spie voor Opsteekhouder**
FR **Clavette demi-ronde pour arbre de montage**
ES **Chaveta para porta-escariadores**
DE **Keil für Aufsteckhalter**



Ref.	Nr.
84.413.0200	2
84.413.0300	3
84.413.0400	4
84.413.0500	5

Ref.	Nr.
84.413.0600	6
84.413.0700	7
84.413.0800	8
84.413.0900	9

› 84.600 TORAX

NL **Konusreiniger**
FR **Nettoie-cônes**
ES **Limpiaconos**
DE **Kegelreiniger**



Ref.	d2
84.600.0100	1
84.600.0200	2
84.600.0300	3
84.600.0400	4

Ref.	d2
84.600.0500	5
84.600.3000	30
84.600.4000	40
84.600.5000	50

› 84.610 TORAX



NL **Konusuitdrijver**
FR **Chasse-cônes**
ES **Cuña expulsora**
DE **Kegelaustreiber**

DIN 317

Ref.	Nr.	Ø mm	l1
84.610.0100	1	1+2	140
84.610.0300	3	3	190

Ref.	Nr.	Ø mm	l1
84.610.0400	4	4	225
84.610.0500	5	5+6	265

› 84.620 Phantom



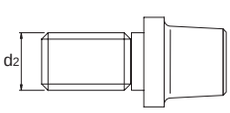
NL **Konusuitdrijver**
FR **Chasse-cônes**
ES **Cuña expulsora**
DE **Kegelaustreiber**

Ref.	Nr.	Ø mm	l1
84.620.0100	1	1-3	317

Ref.	Nr.	Ø mm	l1
84.620.0200	2	4-6	380

› 84.745 TORAX





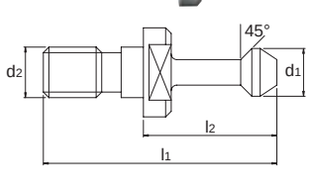
NL **MK Uitdrijflip, voor Spantanghouder 82.511**
FR **Tenons à visser CM, pour mandrin porte-pinces 82.511**
ES **Tornillo de expulsión, para Portapinzas 82.511**
DE **Einschraubbare MK Austreiblappen, für Spannzangenfutter 82.511**

Ref.	Type
84.745.1000	2
84.745.1200	3

Ref.	Type
84.745.1600	4

› 84.750 TORAX





NL **Aantrekbout, BT volgens MAS 403-BT, 45°, (.1601 = doorboorde uitvoering)**
FR **Tirette, BT selon MAS 403-BT, 45°, (.1601 = version avec trou pour lubrification)**
ES **Tirante, BT según MAS 403-BT, 45°, (.1601 = versión con agujero para refrigeración)**
DE **Anzugsbolzen, BT nach MAS 403-BT, 45°, (.1601 = durchbohrte Ausführung)**

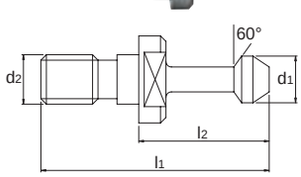
MAS-BT

Ref.	Type	d1	l1	l2
84.750.1600	BT-40 45°	15	60	35
84.750.1601	BT-40 45°	15	60	35

Ref.	Type	d1	l1	l2
84.750.2400	BT-50 45°	23	85	45

› 84.751 TORAX





NL **Aantrekbout, BT volgens MAS 403-BT, 60°**
FR **Tirette, BT selon MAS 403-BT, 60°**
ES **Tirante, BT según MAS 403-BT, 60°**
DE **Anzugsbolzen, BT nach MAS 403-BT, 60°**

MAS-BT

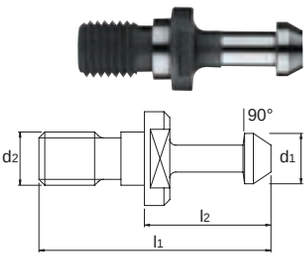
Ref.	Type	d1	l1	l2
84.751.1600	BT-40 60°	15	60	35

Ref.	Type	d1	l1	l2
84.751.2400	BT-50 60°	23	85	45

19:00 ▶ 24h

› 84.752 TORAX

NL **Aantrekbout, BT volgens MAS 403-BT, 90°**
FR **Tirette, BT selon MAS 403-BT, 90°**
ES **Tirante, BT según MAS 403-BT, 90°**
DE **Anzugsbolzen, BT nach MAS 403-BT, 90°**



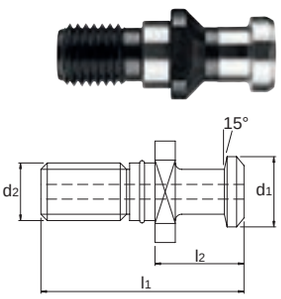
MAS-BT

Ref.	Type	d1	l1	l2
84.752.1600	BT-40 90°	15	60	35

Ref.	Type	d1	l1	l2
84.752.2400	BT-50 90°	23	85	45

› 84.760 TORAX

NL **Aantrekbout, DIN 69872-A, doorboorde uitvoering**
FR **Tirette, DIN 69872-A, version avec trou pour lubrification**
ES **Tirante, DIN 69872-A, versión con agujero para refrigeración**
DE **Anzugsbolzen, DIN 69872-A, Durchbohrte Ausführung**



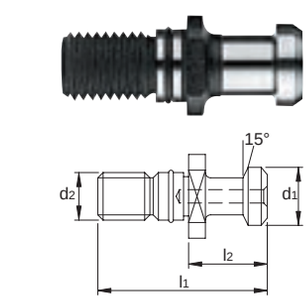
DIN
69872-A

Ref.	Type	d1	l1	l2
84.760.1600	DIN 40 A2	19	54	26

Ref.	Type	d1	l1	l2
84.760.2400	DIN 50 A2	28	74	34

› 84.770 TORAX

NL **Aantrekbout, DIN 69872-B, niet-doorboorde uitvoering, met O-ring**
FR **Tirette, DIN 69872-B, version sans trou pour lubrification, à joint torique**
ES **Tirante, DIN 69872-B, versión sin agujero para refrigeración, con junta O**
DE **Anzugsbolzen, DIN 69872-B, Nicht-Durchbohrte Ausführung, mit O-Ring**



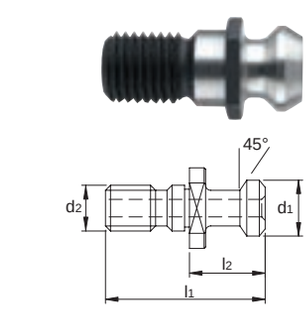
DIN
69872-B

Ref.	Type	d1	l1	l2
84.770.1600	DIN 40 B2	19	54	26

Ref.	Type	d1	l1	l2
84.770.2400	DIN 50 B2	28	74	34

› 84.775 TORAX

NL **Aantrekbout, ISO 7388B, doorboorde uitvoering**
FR **Tirette, ISO 7388B, version avec trou pour lubrification**
ES **Tirante, ISO 7388B, versión con agujero para refrigeración**
DE **Anzugsbolzen, ISO 7388B, Durchbohrte Ausführung**



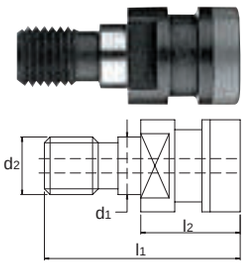
ISO
7388/2-B

Ref.	Type	d1	l1	l2
84.775.1600	DIN 40 B1	18.9	44.5	16.4

Ref.	Type	d1	l1	l2
84.775.2400	DIN 50 B1	29	65.5	25.5

› 84.780 TORAX

NL **Aantrekbout, SK volgens DIN 2080, systeem OTT**
FR **Tirette, SA selon DIN 2080, système OTT**
ES **Tirante, SK según DIN 2080, sistema OTT**
DE **Anzugsbolzen, SK nach DIN 2080, System OTT**



OTT-90°

Ref.	Type	d1	l1	l2
84.780.1600	OTT 40	17	55	25

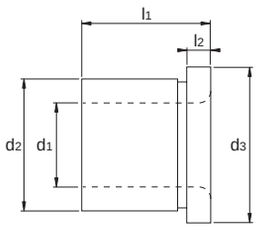
Ref.	Type	d1	l1	l2
84.780.2400	OTT 50	25	63	25

19:00 ▶ 24h

› 84.872 TORAX

NL **Boorbus, korte uitvoering, met kraag**
FR **Canon de perçage, version courte, à collerette**
ES **Casquillo guía broca, versión corta, con valona**
DE **Bohrbuchsen, kurze Ausführung, mit Kragen**





DIN 172-A | n6 | F7

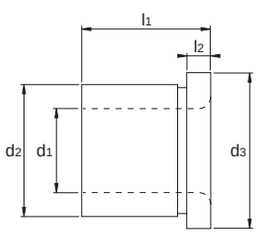
Ref.	d1	d2	d3	l1	l2
84.872.0120 - 84.872.0180	1.2 - 1.8	4	7	6	2
84.872.0190 - 84.872.0260	1.9 - 2.6	5	8	6	2
84.872.0270 - 84.872.0330	2.7 - 3.3	6	9	8	2.5
84.872.0340 - 84.872.0400	3.4 - 4.0	7	10	8	2.5
84.872.0410 - 84.872.0500	4.1 - 5.0	8	11	8	2.5
84.872.0510 - 84.872.0600	5.1 - 6.0	10	13	10	3
84.872.0610 - 84 872.0800	6.1-8.0	12	15	10	3
84.872.0810 - 84.872.1000	8.1-10.0	15	18	12	3
84.872.1010 - 84.872.1200	10.1-12.0	18	22	12	4

Ref.	d1	d2	d3	l1	l2
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 - 84.872.3750	35,5 - 37,5	55	59	25	5
84.872.3800 - 84.872.4000	38 - 40	55	59	30	5

› 84.873 TORAX

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**





DIN 172-A | n6 | F7

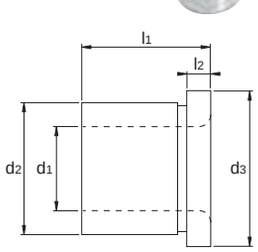
Ref.	d1	d2	d3	l1	l2
84.873.0120 - 84.873.0180	1.2 - 1.8	4	7	9	2
84.873.0190 - 84.873.0260	1.9 - 2.6	5	8	9	2
84.873.0270 - 84.873.0330	2.7 - 3.3	6	9	12	2.5
84.873.0340 - 84.873.0400	3.4 - 4	7	10	12	2.5
84.873.0410 - 84.873.0500	4.1 - 5	8	11	12	2.5
84.873.0510 - 84.873.0600	5.1 - 6	10	13	16	3

Ref.	d1	d2	d3	l1	l2
84.873.0610 - 84.873.0800	6.1 - 8	12	15	16	3
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

› 84.874 TORAX

NL **Boorbus, extra lang, met kraag**
FR **Canon de perçage, version extra longue, à collerette**
ES **Casquillo guía broca, extra larga, con valona**
DE **Bohrbuchsen, extra lang, mit Kragen**





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

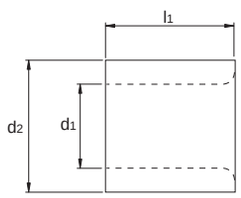
Ref.	d1	d2	d3	l1	l2
84.874.0750	7.5	12	15	20	3
84.874.0800	8	12	15	20	3
84.874.0850	8.5	15	18	25	3
84.874.0900	9	15	18	25	3
84.874.0950	9.5	15	18	25	3
84.874.1000	10	15	18	25	3
84.874.1050	10.5	18	22	25	4
84.874.1100	11	18	22	25	4
84.874.1150	11.5	18	22	25	4

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 TORAX

NL **Boorbus, korte uitvoering**
FR **Canon de perçage, version courte**
ES **Casquillo guía broca, versión corta**
DE **Bohrbuchsen, kurze Ausführung**





DIN 179-A | n6 | F7

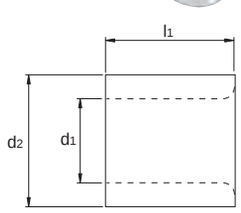
Ref.	d1	d2	l1
84.879.0120 - 84.879.0180	1.2 - 1.8	4	6
84.879.0190 - 84.879.0260	1.9 - 2.6	5	6
84.879.0270 - 84.879.0330	2.7 - 3.3	6	8
84.879.0340 - 84.879.0400	3.4 - 4	7	8
84.879.0410 - 84.879.0500	4.1 - 5	8	8
84.879.0510 - 84.879.0600	5.1 - 6	10	10
84.897.0610 - 84.879.0800	6.1 - 8	12	10
84.879.0810 - 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 - 84.879.6200	60 - 62	78	35
84.879.6500	65	85	35

› 84.880 TORAX

NL **Boorbus, middellange uitvoering**
FR **Canon de perçage, version longue**
ES **Casquillo guía broca, versión larga**
DE **Bohrbuchsen, mittellange Ausführung**





DIN 179-A | n6 | F7

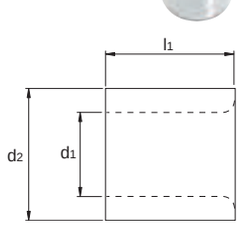
Ref.	d1	d2	l1
84.880.0120 - 84.880.0180	1.2 - 1.8	4	9
84.880.0190 - 84.880.0260	1.9 - 2.6	5	9
84.880.0270 - 84.880.0330	2.7 - 3.3	6	12
84.880.0340 - 84.880.0400	3.4 - 4	7	12
84.880.0410 - 84.880.0500	4.1 - 5	8	12
84.880.0510 - 84.880.0600	5.1 - 6	10	16
84.880.0610 - 84.880.0800	6.1 - 8	12	16

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 - 84.880.2500	18.25 - 25	30	36
84.880.2500	25	35	36

› 84.881 TORAX

NL **Boorbus, extra lang**
FR **Canon de perçage, version extra longue**
ES **Casquillo guía broca, extra larga**
DE **Bohrbuchsen, extra lang**





DIN 179-A | n6 | F7

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

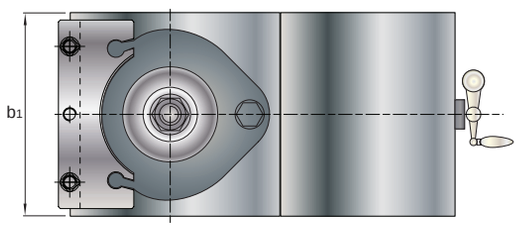
Ref.	d1	d2	l1
84.881.1250	12.5	22	36
84.881.1300	13	22	36
84.881.1350	13.5	22	36
84.881.1400	14	22	36
84.881.1450	14.5	22	36
84.881.1500	15	22	36
84.881.1550	15.5	26	36
84.881.1600	16	26	36
84.881.1650	16.5	26	36

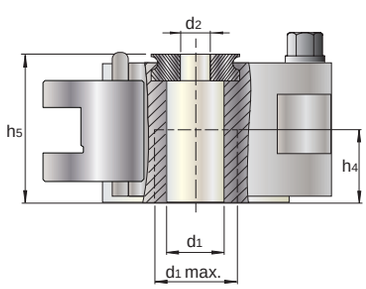
19:00 ▶ 24h

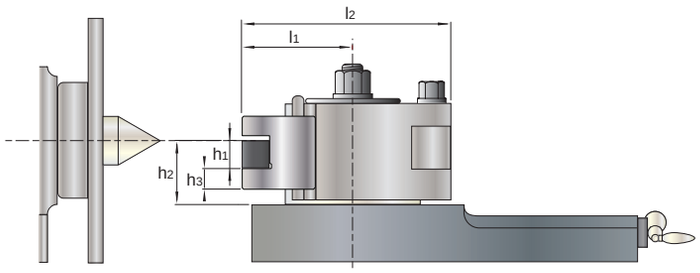
› 85.050 TORAX

NL **Snelwissel-Basishouder**
FR **Mandrin de base à serrage rapide**
ES **Torreta de precisión para herramientas de torno con cambio rápido**
DE **Schnellwechsel- Grundhalter**









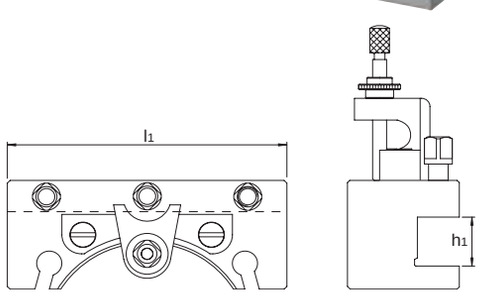
Ref.	Type	Holder	d1	d1 max	d2	h4	h5	b1
85.050.0000	Aa	Aad 12	13	10	37	80		
85.050.1000	A	AD 16	20	10	56	100	35	35
85.050.3000	B	BD 25	32	16	79	150	40	45

Ref.	Type	Holder	d1	d1 max	d2	h4	h5	b1
85.050.4000	C	CD 32	40	16	110	180	55	75
85.050.5000	D1	D1D 40	40	22	122	200	65	75

› 85.051 TORAX

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**





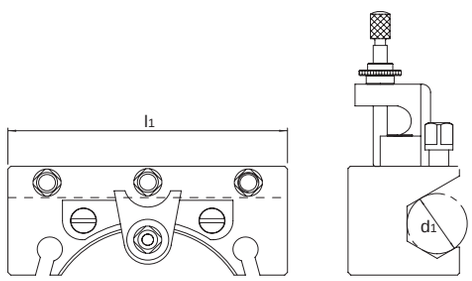
Ref.	Type	Nr.	l1	h1
85.051.0120	AaD 1250	Aa	50	12
85.051.1167	AD 1675	A	75	16
85.051.1169	AD 1690	A	90	16
85.051.1207	AD 2075	A	75	20
85.051.1209	AD 2090	A	90	20
85.051.3252	BD 25120	B	120	25
85.051.3254	BD 25140	B	140	25
85.051.3322	BD 32120	B	120	32
85.051.3324	BD 32140	B	140	32

Ref.	Type	Nr.	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 TORAX

NL **Snelwissel-Boorbeitelhouder, type H**
FR **Porte-outils d'alésage à serrage rapide, type H**
ES **Soporte de cambio Rápido, para interiores exagonal, tipo, tipo H**
DE **Schnellwechsel-Bohrstangenhalter, Typ H**





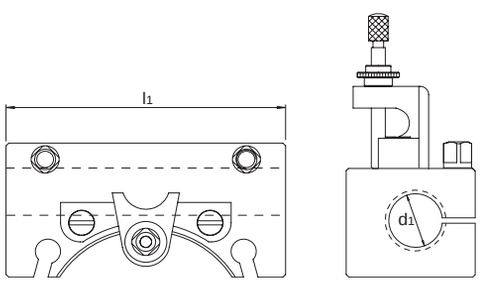
Ref.	Type	Nr.	l1	d1
85.052.0120	AaH 1250	Aa	50	12
85.052.1200	AH 2085	A	85	20
85.052.3320	BH 32130	B	130	32

Ref.	Type	Nr.	l1	d1
85.052.4400	CH 40160	C	160	40
85.052.5630	D1BH 63180	D1	180	63

› 85.053 TORAX

NL **Snelwissel-Boorbaarhouder, type J**
FR **Porte-barre d'alésage à serrage rapide, type J**
ES **Soporte de cambio Rápido, para interiores cilíndrico, tipo J**
DE **Schnellwechsel-Halter mit zylindrischer Bohrung, Typ J**





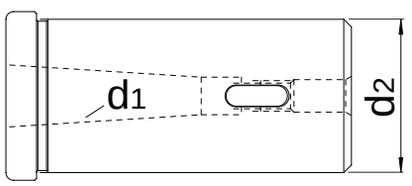
Ref.	Type	Nr.	l1	d1
85.053.0150	AaJ 1550	Aa	50	15
85.053.1300	AJ 3080	A	85	30
85.053.3400	BJ 40120	B	130	40

Ref.	Type	Nr.	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 TORAX

NL **Morsekonushuls, type L**
FR **Douille avec cône morse, type L**
ES **casquillo para cono Morse, tipo L**
DE **Konusbuchse, Typ L**





Ref.	Type	d1	d2
85.058.1010	AL1	30	1
85.058.1020	AL2	30	2
85.058.3020	BL2	40	2
85.058.3030	BL3	40	3

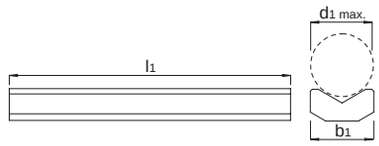
Ref.	Type	d1	d2
85.058.3040	BL4	40	4
85.058.4030	CL3	50	3
85.058.4040	CL4	50	4
85.058.5050	CL5	63	5

19:00 ▶ 24h

› 85.059 TORAX

NL **Inlegprisma, type P**
FR **Mors, type P**
ES **Garra de ajuste, tipo P**
DE **V-Block, Typ P**



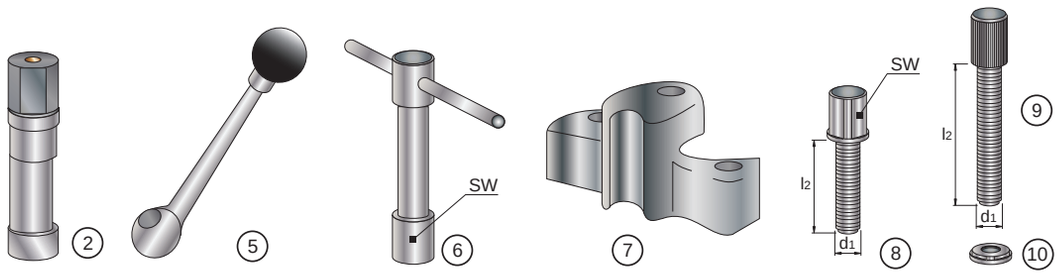


Ref.	Type	d1 max	l1	b1
85.059.1140	AP 1485	14	85	16
85.059.3200	BP 20130	20	130	22

Ref.	Type	d1 max	l1	b1
85.059.4250	CP 25160	25	160	30
85.059.4320	CP 32160	32	160	38

› 85.062 TORAX

NL **Onderdelen en Toebehoren**
FR **Pièces détâchées et Accessoires**
ES **Componentes fundamentales y Accesorios**
DE **Einzelteile und Zubehör**

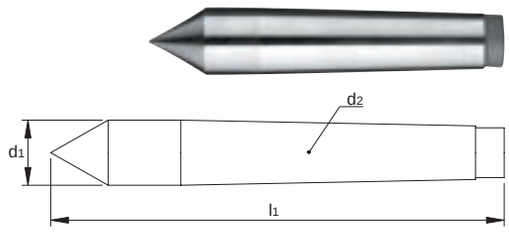


Ref.	Type	Nr.	d1	P	l2	sw
85.062.0002	Aa	7				
85.062.0006	Aa	8	5	0.8	20	5
85.062.0008	Aa	9	4	0.7	25	
85.062.0012	Aa	5				
85.062.0014	Aa	6				5
85.062.0024	Aa	2				
85.062.1002	A	7				
85.062.1006	A	8	7	1	25	8
85.062.1008	A	9	5	0.8	35	
85.062.1012	A	5				
85.062.1014	A	6				8
85.062.1024	A	2				
85.062.3002	B	7				
85.062.3006	B	8	10	1.5	30	10
85.062.3008	B	9	7	1	57	

Ref.	Type	Nr.	d1	P	l2	sw
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	9	1.25	65	
85.062.4012	C	5				
85.062.4014	C	6				14
85.062.4024	C	2				
85.062.5002	D1	8				
85.062.5008	D1	9	12	1.75	80	
85.062.5012	D1	5				
85.062.5014	D1	6				14
85.062.5024	D1	2				

› 85.100 TORAX

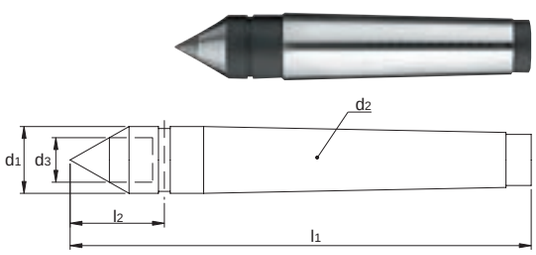
NL **Vast Center, 60°, MK**
FR **Contre-pointe fixe, 60°, CM**
ES **Contrapunto fijo, 60°, CM**
DE **Feste Zentrierspitzen, 60°, MK**



Ref.	d2	d1	l1
85.100.0100	1	12.2	80
85.100.0200	2	18	100
85.100.0300	3	24.1	125
85.100.0400	4	31.6	160
85.100.0500	5	44.7	200
85.100.0600	6	63.8	270

› 85.110 TORAX

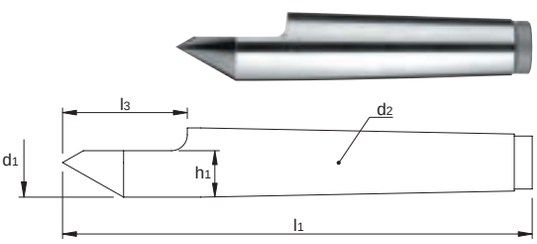
NL **Vast Center, met HM-punt, 60°, MK**
FR **Contre-pointe fixe, à pointe carbure, 60°, CM**
ES **Contrapunto fijo, con punta de MD, 60°, CM**
DE **Feste Zentrierspitzen, mit HM-Spitze, 60°, MK**



Ref.	d2	d1	d3	l2	l1
85.110.0100	1	12.2	7	16	80
85.110.0200	2	18	7	21	100
85.110.0300	3	24.1	11	27	125
85.110.0400	4	31.6	14	31.2	160
85.110.0500	5	44.7	18	45	200
85.110.0600	6	63.8	18	62	270

› 85.120 TORAX

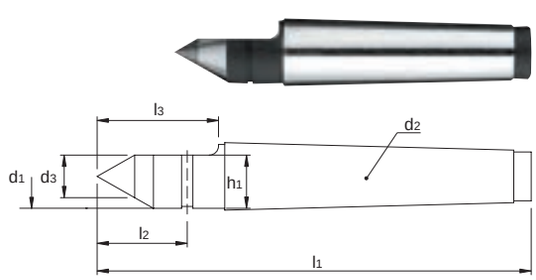
NL **Vast Center, 60°, met uitgediepte punt, MK**
FR **Contre-pointe fixe, 60°, avec pointe approfondie, CM**
ES **Contrapunto fijo, 60°, con media punta rebajada, CM**
DE **Feste Zentrierspitzen, 60°, mit verdünnter Spitze, MK**



Ref.	d2	d1	h1	l3	l1
85.120.0100	1	12.2	7.6	22	80
85.120.0200	2	18	11	30	100
85.120.0300	3	24.1	15.05	38	125
85.120.0400	4	31.6	20.8	50	160
85.120.0500	5	44.7	29.35	63	200
85.120.0600	6	63.8	41.9	79	270

› 85.130 TORAX

NL **Vast Center, 60°, met uitgediepte HM-punt, MK**
FR **Contre-pointe fixe, 60°, avec pointe carbure approfondie, CM**
ES **Contrapunto fijo, 60°, con media punta rebajada de MD, CM**
DE **Feste Zentrierspitzen, 60°, mit verdünnter HM-Spitze, MK**

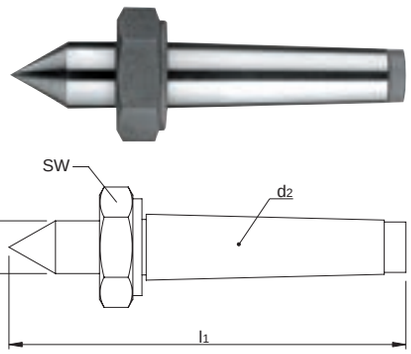


Ref.	d2	d1	d3	h1	l2	l3	l1
85.130.0100	1	12.2	7.6	7.6	16	22	80
85.130.0200	2	18	7	12.8	21	30	100
85.130.0300	3	24.1	11	18.05	27	38	125
85.130.0400	4	31.6	14	23.3	31.2	50	160
85.130.0500	5	44.7	18	31.85	45	63	200
85.130.0600	6	63.8	41.9	41.9	62	79	270

19:00 ▶ 24h

› 85.140 TORAX

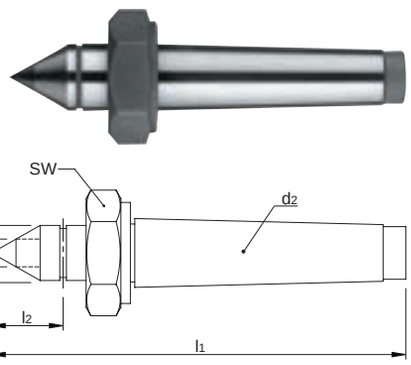
NL **Vast Center, 60°, met afdrukmoer, MK**
FR **Contre-pointe fixe, 60°, à écrou de déblocage, CM**
ES **Contrapunto fijo, 60°, con tuerca de extracción, CM**
DE **Feste Zentrierspitzen, 60°, mit Abdrückmutter, MK**



Ref.	d2	d1	sw	l1
85.140.0100	1	12.1	24	80
85.140.0200	2	17.8	32	100
85.140.0300	3	23.8	41	125
85.140.0400	4	31.3	55	160
85.140.0500	5	44.4	75	200

› 85.150 TORAX

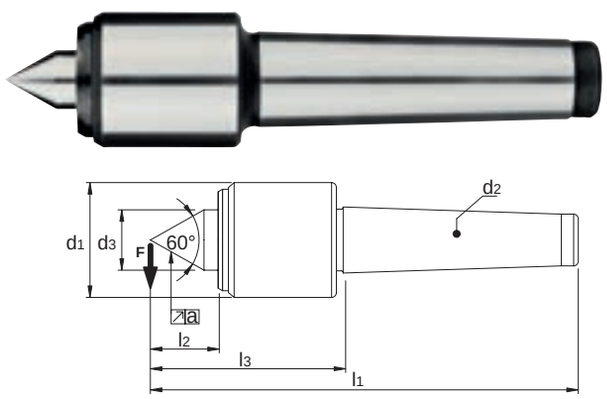
NL **Vast Center, met HM-punt, 60°, met afdrukmoer, MK**
FR **Contre-pointe fixe, à pointe carbure, 60°, à écrou de déblocage, CM**
ES **Contrapunto fijo, con punta de MD, 60°, con tuerca de extracción, CM**
DE **Feste Zentrierspitzen, mit HM-Spitze, 60°, mit Abdrückmutter, MK**



Ref.	d2	d1	d3	sw	l2	l1
85.150.0200	2	18	8	32	21	100
85.150.0300	3	24.1	12	41	27	125
85.150.0400	4	31.3	15	55	31.2	160
85.150.0500	5	44.4	18	75	45	200

› 85.210 TORAX

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**

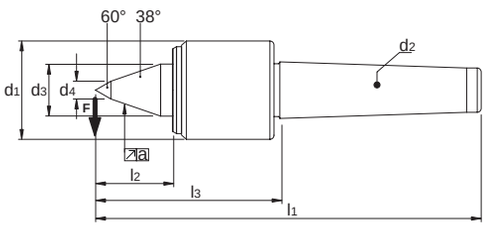


Ref.	d2	d1	d3	l1	l3	l2	F (Kg)	RPM	Tol.
85.210.0200	2	34	15	131.5	67.5	19	200	7000	0,005
85.210.0300	3	34	15	148.5	67.5	19	400	7000	0,005
85.210.0400	4	42	20	183.5	81	25	800	6300	0,005
85.210.0500	5	68	32	248.5	119	41	1600	4300	0,01

› 85.215 TORAX

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**



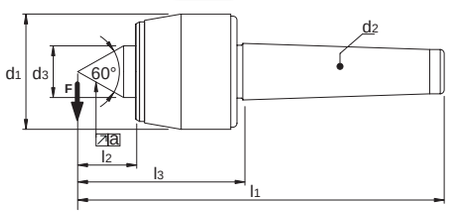


Ref.	d1	d2	d3	d4	l1	l2	l3	F (Kg)	RPM	Tol.
85.215.0200	34	2	15	10	141.5	29	77.5	170	7000	0,008
85.215.0300	34	3	15	11	159.5	30	78.5	340	7000	0,008
85.215.0400	42	4	20	13	196.5	38	94	700	6300	0,008
85.215.0500	68	5	32	14	260.5	53	131	1400	4300	0,01

› 85.220 TORAX

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**



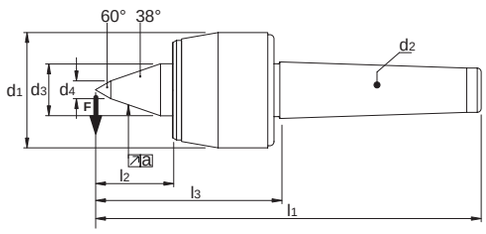


Ref.	d2	d1	d3	l1	l3	l2	F (Kg)	RPM	Tol.
85.220.0200	2	46	20	139.5	75.5	25	200	7000	0,005
85.220.0300	3	62	28	179.5	98.5	34	500	5000	0,005
85.220.0400	4	68	32	208.5	106	41	800	3800	0,005
85.220.0500	5	87	38	263.5	134	51	2000	3000	0,005
85.220.0600	6	102	50	341	159	57.5	3500	2600	0,01

› 85.225 TORAX

NL **Heavy Duty Meedraaiend Center, met verlengde punt, MK**
FR **Heavy Duty Contre-pointe à grande capacité, avec pointe allongée, CM**
ES **Contrapunto giratorio de gran capacidad,punta extendida, CM**
DE **Mitlaufende Heavy Duty Drehbankspitze, mit Spitzenverlängerung, MK**



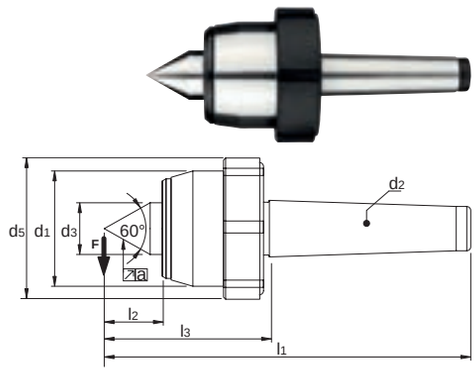


Ref.	d1	d2	d3	d4	l1	l2	l3	F (Kg)	RPM	Tol.
85.225.0200	46	2	20	10	149.5	35	85.5	140	7000	0,005
85.225.0300	62	3	28	12	196.5	51	115.5	400	5000	0,005
85.225.0400	68	4	32	14	222	54.5	119.5	500	3800	0,005
85.225.0500	87	5	38	16	277.5	65	148	1200	3000	0,005
85.225.0600	102	6	40	18	364.5	81	182.5	2500	2600	0,01

19:00 ▶ 24h

› 85.230 TORAX

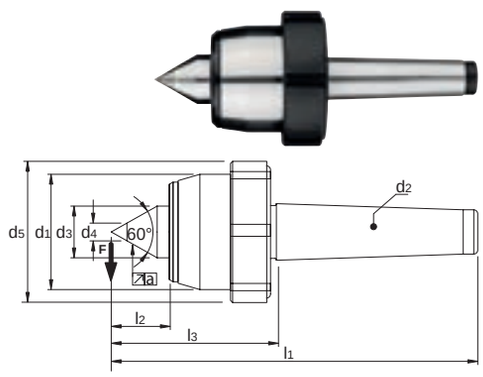
NL **Heavy Duty Meedraaiend Center, met afdrukmoer, MK**
FR **Heavy Duty Contre-pointe à grande capacité, avec écrou de déblocage, CM**
ES **Contrapunto giratorio de gran capacidad, con tuerca de extracción, CM**
DE **Mitlaufende Heavy Duty Drehbankspitze, mit Abdrückmutter, MK**



Ref.	d1	d2	d3	d5	l1	l3	l2	F (Kg)	RPM	Tol.
85.230.0200	44	2	20	61	139.5	75.5	25	200	7000	0,005
85.230.0300	60	3	28	75	179.5	98.5	34	500	5000	0,005
85.230.0400	66	4	32	83	208.5	106	41	800	3800	0,005
85.230.0500	65	5	38	104	263.5	134	51	2000	3000	0,005
85.230.0600	100	6	50	122	341	159	57.5	3500	2600	0,01

› 85.232 TORAX

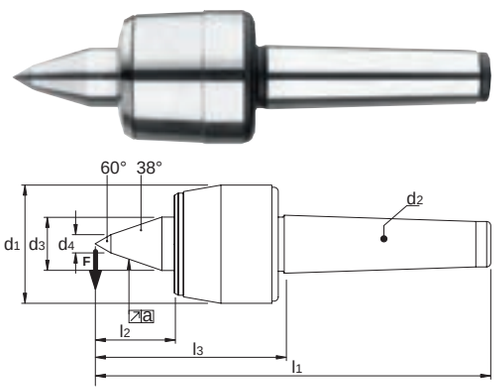
NL **Heavy Duty Meedraaiend Center met HM-punt, met afdrukmoer, MK**
FR **Heavy Duty Contre-pointe à grande capacité avec pointe carbure, avec écrou de déblocage, CM**
ES **Contrapunto giratorio de gran capacidad, para alta carga, con punta de MD, con tuerca de extracción, CM**
DE **Mitlaufende Heavy Duty Drehbankspitze mit HM-Spitze, mit Abdrückmutter, MK**



Ref.	d1	d2	d3	d4	d5	l1	l3	l2	F (Kg)	RPM	Tol.
85.232.0200	44	2	20	11	61	139.5	75.5	25	120	7000	0,005
85.232.0300	60	3	28	14	75	179.5	98.5	34	360	5000	0,005
85.232.0400	66	4	32	14	83	108.5	106	41	500	3800	0,005
85.232.0500	85	5	38	18	104	263.5	134	51	1000	3000	0,005
85.232.0600	100	6	50	18	122	341	159	57.5	1800	2600	0,01

› 85.280 TORAX

NL **Heavy Duty Meedraaiend Kopieercenter, MK**
FR **Contre-pointe pour machines à copier, de grande capacité avec charge différentielle, CM**
ES **Contrapunto giratorio copiador de gran capacidad, CM**
DE **Mitlaufende Heavy Duty Drehbankspitze mit verlängerter Spitze, MK**

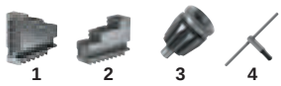


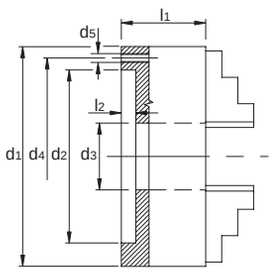
Ref.	d2	d3	l1	l3	l2	d1	d4	F (Kg)	RPM	Tol.
85.280.0300	3	22	174	85	38	49	10	360	5000	0,005
85.280.0400	4	30	207	98	46	63	11	500	4000	0,005
85.280.0500	5	35	266	128	64	85	18	1000	3500	0,005

› 85.410 BISON

NL **Zelfcentrerende Drie-Klauwplaat, gietijzer, type 3204, DIN 6350**
FR **Mandrin à 3 mors concentriques, fonte, type 3204, DIN 6350**
ES **Plato de sujeción autocentrador de 3 garras, fundición, tipo 3204, DIN 6350**
DE **Selbstzentrierende Dreibackenfutter, Gusseisen, Typ 3204, DIN 6350**







DIN 6350

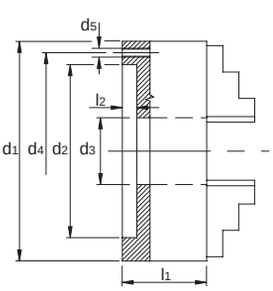
Ref.	d1	l1	l2	d2	d3	d4	d5	1	2	3	4
85.410.0080	80	44	3	56	16	67	3x M6	85.850.0080	85.855.0080	85.866.0080	85.890.0100
85.410.0100	100	50	3	70	20	83	3x M8	85.850.0100	85.855.0100	85.868.0100	85.890.0200
85.410.0125	125	56	4	95	32	108	3x M8	85.850.0125	85.855.0125	85.868.0125	85.890.0200
85.410.0160	160	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

› 85.420 BISON

NL **Zelfcentrerende Drie-Klauwplaat, staal, type 3504, DIN 6350**
FR **Mandrin à 3 mors concentriques, acier, type 3504, DIN 6350**
ES **Plato de sujeción autocentrador de 3 garras, acero, tipo 3504, DIN 6350**
DE **Selbstzentrierende Dreibackenfutter, Stahl, Typ 3504, DIN 6350**







DIN 6350

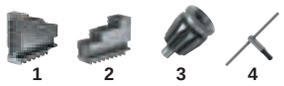
Ref.	d1	l1	l2	d2	d3	d4	d5	1	2	3	4
85.420.0080	80	44	3	56	16	67	3x M6	85.850.0080	85.855.0080	85.868.0080	85.890.0100
85.420.0100	100	50	3	70	20	83	3x M8	85.850.0100	85.855.0100	85.868.0100	85.890.0200
85.420.0125	125	59.5	4	95	35	108	3x M8	85.850.0125	85.855.0125	85.868.0125	85.890.0200
85.420.0160	160	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

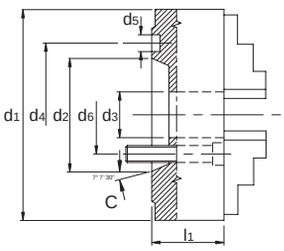
19:00 ▶ 24h

› 85.421 BISON

NL **Zelfcentrerende Drie-Klauwplaat, staal, type 3514, DIN 55026**
FR **Mandrin à 3 mors concentriques, acier, type 3514, DIN 55026**
ES **Plato de sujeción autocentrador de 3 garras, acero, tipo 3514, DIN 55026**
DE **Selbstzentrierende Dreibackenfutter, Stahl, Typ 3514, DIN 55026**







DIN 55026-B

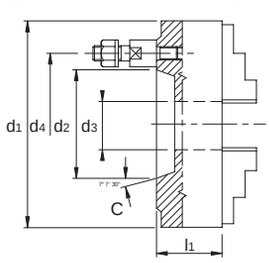
Ref.	d1	C	l1	d2	d3	d6	d4	d5	1	2	3	4
85.421.1605	160	5	68	82.56	42	61.9	104.8	19.6	85.850.0160	85.855.0160	85.868.0160	85.890.0300
85.421.2005	200	5	78	82.56	42	61.9	104.8	19.6	85.850.0200	85.855.0200	85.868.0200	85.890.0300
85.421.2006	200	6	78	106.37	55	82.6	133.4	19.6	85.850.0200	85.855.0200	85.868.0200	85.890.0300
85.421.2505	250	5	89	82.56	76	61.9	104.8	19.6	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.421.2506	250	6	89	106.37	55	82.6	133.4	19.6	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.421.2508	250	8	89	139.71	76	111.1	171.4	19.6	85.850.0250	85.855.0250	85.868.0250	85.890.0400
85.421.3106	315	6	96.2	106.37	103	82.6	133.4	19.6	85.850.0315	85.855.0315	85.868.0315	85.890.0400
85.421.3108	315	8	96.2	139.71	80	111.1	171.4	19.6	85.850.0315	85.855.0315	85.868.0315	85.890.0400
85.421.4008	400	8	108	139.71	136	111.1	171.4	19.6	85.850.0400	85.855.0400	85.868.0400	85.890.0500
85.421.4011	400	11	108	196.86	130	165.1	235	19.6	85.850.0400	85.855.0400	85.868.0400	85.890.0500

› 85.422 BISON

NL **Zelfcentrerende Drie-Klauwplaat, staal, type 3534, DIN 55027**
FR **Mandrin à 3 mors concentriques, acier, type 3534, DIN 55027**
ES **Plato de sujeción autocentrador de 3 garras, acero, tipo 3534, DIN 55027**
DE **Selbstzentrierende Dreibackenfutter, Stahl, Typ 3534, DIN 55027**







DIN 55027 BAJO-NET

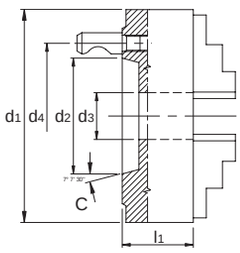
Ref.	d1	C	l1	d2	d3	d4	1	2	3	4	5
85.422.1203	125	3	59.5	53.97	32	75	85.850.0125	85.855.0125	85.868.0125	89.890.0200	85.992.0300 (3x)
85.422.1204	125	4	59.5	63.51	32	85	85.850.0125	85.855.0125	85.868.0125	85.890.0200	85.992.0400 (3x)
85.422.1604	160	4	68	63.51	42	85	85.850.0160	85.855.0160	85.868.0160	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)
85.422.2508	250	8	89	139.71	76	171.4	85.850.0250	85.855.0250	85.868.0250	85.890.0400	85.992.0800 (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 **Zelfcentrerende Drie-Klauwplaat, staal, type 3544, DIN 55029**
FR **Mandrin à 3 mors concentriques, acier, type 3544, DIN 55029**
ES **Plato de sujeción autocentrador de 3 garras, acero, tipo 3544, DIN 55029**
DE **Selbstzentrierende Dreibackenfutter, Stahl, Typ 3544, DIN 55029**







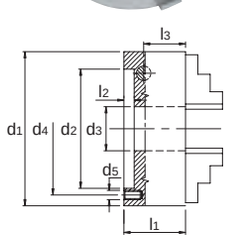
DIN 55029 CAM-LOCK

Ref.	d1	C	l1	d2	d3	d4	1	2	3	4	5
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)
85.423.1603	160	3	68	53.97	42	70.6	85.850.0160	85.855.0160	85.868.0160	85.890.0300	85.993.0300 (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)
85.423.3106	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)
85.423.4008	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)

› 85.450 BISON

NL **Zelfcentrerende Drie-Klauwplaat, staal, type 3404, DIN 6350**
FR **Mandrin à 3 mors concentriques, acier, type 3404, DIN 6350**
ES **Plato de sujeción autocentrador de 3 garras, acero, tipo 3404, DIN 6350**
DE **Selbstzentrierende Dreibackenfutter, Stahl, Typ 3404, DIN 6350**





DIN 6350

Ref.	d1	l1	l2	d2	d3	d4	l3	d5
85.450.0125	130	67	4	95	30	108	51.5	3x M8
85.450.0160	165	84	5	120	40	140	65	3x M10
85.450.0200	205	97	5	160	51	176	73.5	3x M12
85.450.0250	252	112	6	200	66	224	84.5	3x M16
85.450.0315	315	127	6	250	90	286	95.5	3x M16

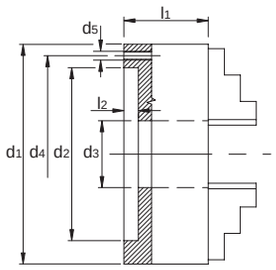
19:00 ▶ 24h

› 85.500 BISON

NL **Zelfcentrerende Vier-Klauwplaat, gietijzer, type 3604, DIN 6350**
FR **Mandrin à 4 mors concentriques, fonte, type 3604, DIN 6350**
ES **Plato de sujeción autocentrador de 4 garras, fundición, tipo 3604, DIN 6350**
DE **Selbstzentrierende Vierbackenfutter, Gusseisen, Typ 3604, DIN 6350**







DIN 6350

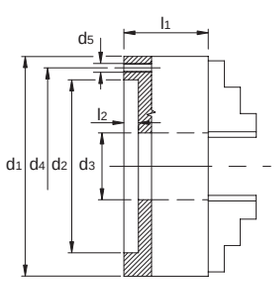
Ref.	d1	l1	l2	d2	d3	d4	d5	1	2	3	4
85.500.0125	125	56	4	95	32	108	3x M8	85.851.0125	85.856.0125	85.866.0100	85.890.0200
85.500.0160	160	64.5	4	125	42	140	6x M10	85.851.0160	85.856.0160	85.866.0100	85.890.0300
85.500.0200	200	75	4	160	55	176	6x M10	85.851.0200	85.856.0200	85.866.0100	85.890.0300
85.500.0250	250	85	5	200	76	224	6x M12	85.851.0250	85.856.0250	85.866.0100	85.890.0400
85.500.0315	315	94	5	260	103	286	6x M16	85.851.0315	85.856.0315	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, DIN 6350**
FR **Mandrin à 4 mors concentriques, acier, type 3704, DIN 6350**
ES **Plato de sujeción autocentrador de 4 garras, acero, tipo 3704, DIN 6350**
DE **Selbstzentrierende Vierbackenfutter, Stahl, Typ 3704, DIN 6350**







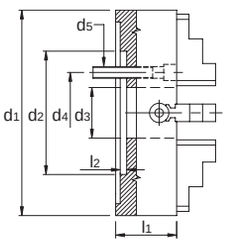
DIN 6350

Ref.	d1	l1	l2	d2	d3	d4	d5	1	2	3	4
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 (Bison type 4306), vanaf diam. 200 mm gietijzer (Bison type 4304)**
FR **Mandrin à 4 mors indépendants, diam. 85-160 mm acier (type Bison 4306), à partir du diam. 200 mm fonte (type Bison 4304)**
ES **Plato de 4 garras independientes, diám. 85-160 mm acero (tipo Bison 4306), desde diám. 200 mm fundición (tipo Bison 4304)**
DE **4-Backenfutter einzeln spannend, durchm. 85-160 mm Stahl (Bison Typ 4306), ab durchm. 200 mm Gusseisen (Bison type 4304)**





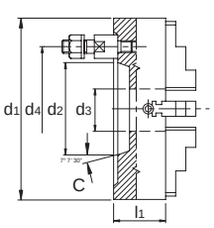
Ref.	d1	l1	l2	d2	d3	d4	d5	Bison
85.600.0085	83	40	5	62	25	72	4x M6	4306
85.600.0100	100	40	2.5	79.38	25	54	4x M8	4306
85.600.0125	130	43	2.5	69.85	26	54	4x M8	4306
85.600.0200	200	80	5	110	50	82.6	4x M10	4304
85.600.0250	250	85	7	150	65	104.8	4x M12	4304
85.600.0315	315	95	7	175	80	133.4	4x M16	4304
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

NL **Onafhankelijke Vier-Klauwplaat, gietijzer, type 4334, DIN 55027**
FR **Mandrin à 4 mors indépendants, fonte, type 4334, DIN 55027**
ES **Plato de 4 garras independientes, fundición, tipo 4334, DIN 55027**
DE **4-Backenfutter einzeln spannend, Gusseisen, Typ 4334, DIN 55027**







DIN 55027 BAJO-NET

Ref.	d1	C	l1	d2	d3	d4	1
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)
85.602.2505	250	5	85	82.578	65	104.8	85.992.0500 (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)

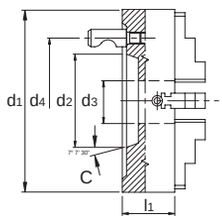
19:00 ▶ 24h

› 85.603 BISON

NL **Onafhankelijke Vier-Klauwplaat, gietijzer, type 4344, DIN 55029**
FR **Mandrin à 4 mors indépendants, fonte, type 4344, DIN 55029**
ES **Plato de 4 garras independientes, fundición, tipo 4344, DIN 55029**
DE **4-Backenfutter einzeln spannend, Gusseisen, Typ 4344, DIN 55029**







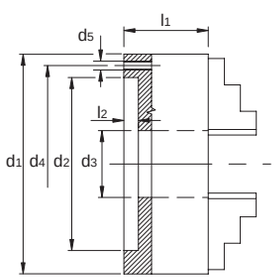
DIN 55029 CAM-LOCK

Ref.	d1	C	l1	d2	d3	d4	1
85.603.2004	200	4	80	63.526	50	82.6	85.992.0400
85.603.2005	200	5	80	82.578	50	104.8	85.992.0500
85.603.2006	200	6	80	106.39	50	133.4	85.992.0600
85.603.2505	250	5	85	82.578	65	104.8	85.992.0500
85.603.2506	250	6	85	106.39	65	133.4	85.992.0600
85.603.2508	250	8	85	139.734	65	171.4	85.992.0800
85.603.3106	315	6	95	106.39	80	133.4	85.992.0600
85.603.3108	315	8	95	139.734	80	171.4	85.992.0800
85.603.3111	315	11	95	196.887	80	235	85.992.1100
85.603.4006	400	6	105	106.39	100	133.4	85.992.0600
85.603.4008	400	8	105	139.734	100	171.4	85.992.0800
85.603.4011	400	11	105	196.887	100	235	85.992.1100
85.603.5008	500	8	120	139.734	125	171.4	85.992.0800
85.603.5011	500	11	120	196.887	125	235	85.992.1100

› 85.670 BISON

NL **Gecombineerde Vier-Klauwplaat, gietijzer, type 4605, DIN 6350**
FR **Mandrin à 4 mors combinés, fonte, type 4605, DIN 6350**
ES **Plato de 4 garras combinado, fundición, tipo 4605, DIN 6350**
DE **Kombinierte Vierbackenfutter, Gusseisen, Typ 4605, DIN 6350**





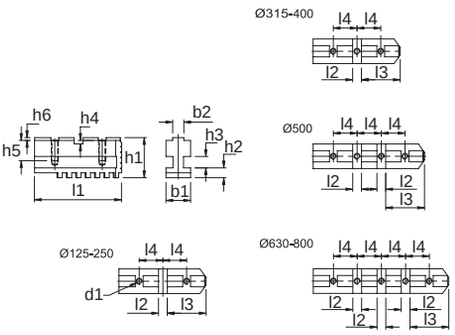
DIN 6351

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****



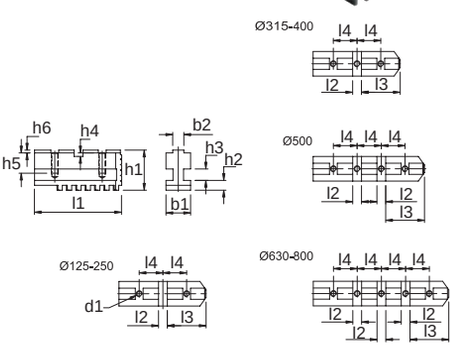


Ref.	d1	l1	b1	h1	h2	h3	b2	l2	l3	h4	l4	h5	d5	h6
85.801.0125	125	54	20	28	8	8	7.94	12.69	22.6	4	16	13.5	M8	3.2
85.801.0160	160	65	20	29	8	8	7.94	12.69	28.6	4	19.05	14	M10	3.2
85.801.0200	200	79	25	33	9	10	7.94	12.69	34.9	4	22.25	14	M10	3.2
85.801.0250	250	92	28	36	11	12	12.7	19.04	39.7	4	27	16	M12	3.2
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****



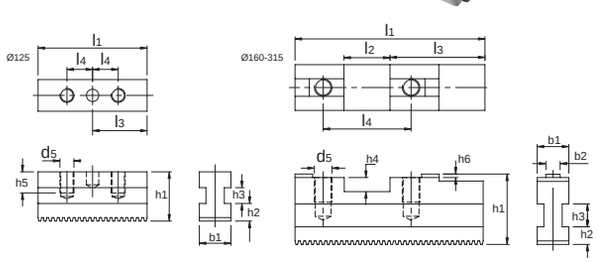


Ref.	d1	l1	b1	h1	h2	h3	b2	l2	l3	h4	l4	h5	d5	h6
85.802.0125	125	54	20	28	8	8	7.94	12.69	22.6	4	16	13.5	M8	3.2
85.802.0160	160	65	20	29	8	8	7.94	12.69	28.6	4	19.05	14	M10	3.2
85.802.0200	200	79	25	33	9	10	7.94	12.69	34.9	4	22.25	14	M10	3.2
85.802.0250	250	92	28	36	11	12	12.7	19.04	39.7	4	27	16	M12	3.2
85.802.0315	315	110	32	40	12.7	12	12.7	19.04	47.6	4	31.75	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**





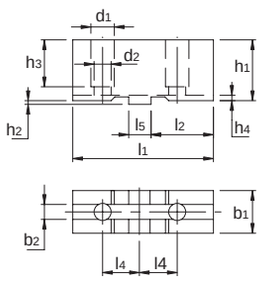
Ref.	d1	l1	b1	h1	h2	h3	b2	l2	l3	h4	l4	h5	d5	h6
85.805.0125	125	51.5	14	21.5	6.5	7	5	25.75	3	10	10	M6		
85.805.0160	160	65	20	26.5	7.5	9	18	28	5	32	12	M8	8	2.5
85.805.0200	200	85	22	28.5	8	9	20	42	5.5	40	12	M8	10	2.5
85.805.0250	250	87.5	26	36	10	11	20	41.5	5.5	40	17	M12	12	3
85.805.0315	315	125	32	42	12	14	26	69	7	54	17	M12	12	3

19:00 ▶ 24h

› 85.811 BISON

NL **Zachte Opschroefbekken, set à 3 stuks, voor 3-klauwplaat type 32**, 35****
FR **Jeu de mors doux, 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****



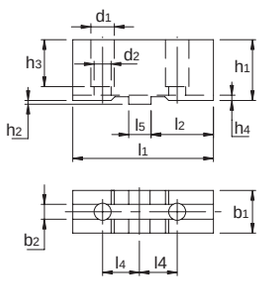


Ref.	d1	l1	b1	h1	b2	h2	h4	l5	l2	d2	d3	h3	l4	l3
85.811.0125	125	64	22	38.5	7.95	4	3.2	12.69	25	9	15	26	16	15
85.811.0160	160	78	25	41.5	7.95	4	3.2	12.69	34	11	18	29	19.05	21
85.811.0200	200	90	27	43.5	7.95	4	3.2	12.69	40	11	18	31	22.25	24
85.811.0250	250	106	32.5	51.5	12.71	4	3.2	19.04	45	14	20	36	27	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, 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****



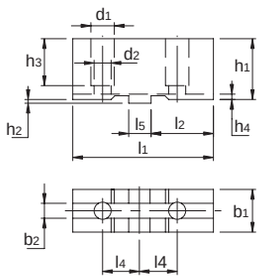


Ref.	d1	l1	b1	h1	b2	h2	h4	l5	l2	d2	d3	h3	l4	l3
85.812.0125	125	64	22	38.5	7.95	4	3.2	12.69	25	9	15	26	16	15
85.812.0160	160	78	25	41.5	7.95	4	3.2	12.69	34	11	18	29	19.05	21
85.812.0200	200	90	27	43.5	7.95	4	3.2	12.69	40	11	18	31	22.25	24
85.812.0250	250	106	32.5	51.5	12.71	4	3.2	19.04	45	14	20	38	27	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, 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**



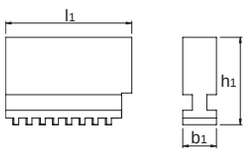


Ref.	d1	l1	b1	h1	b2	h2	h4	l2	l5	d2	d3	h3
85.813.0125	125	55	20	30	14	1.5	5	25	5	6.4	10.4	24
85.813.0160	160	85	20	40	8	4.5	3	35	18	8.4	13.5	26.5
85.813.0200	200	105	22	50	10	5	3	40	20	8.4	13.5	35
85.813.0250	250	125	30	55	12	5	3.5	60	20	13	19	41
85.813.0315	315	145	35	60	12	6	3.5	60	26	13	19	38

› 85.820 BISON

NL **Zachte Blokbekken, set à 3 stuks, voor 3-klauwplaat type 32**, 35****
FR **Jeu de mors doux, 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****





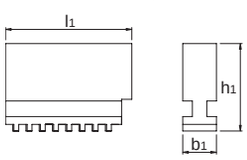
Ref.	d1	l1	b1	h1
85.820.0080	80	32	11	28
85.820.0100	100	42	15	32
85.820.0125	125	51	20	40
85.820.0160	160	70	20	53
85.820.0200	200	85	25	54

Ref.	d1	l1	b1	h1
85.820.0250	250	105	28	63
85.820.0315	315	125	32	73
85.820.0400	400	145	36	92
85.820.0500	500	180	40	100
85.820.0630	630	225	50	110

› 85.821 BISON

NL **Zachte Blokbekken, set à 4 stuks, voor 4-klauwplaat type 36**, 37****
FR **Jeu de mors doux, 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****





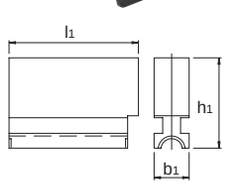
Ref.	d1	l1	b1	h1
85.821.0125	125	51	20	40
85.821.0160	160	70	20	53
85.821.0200	200	85	25	54
85.821.0250	250	105	28	63

Ref.	d1	l1	b1	h1
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, 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**





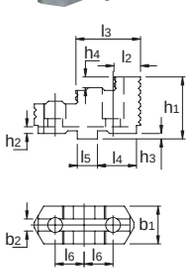
Ref.	d1	l1	b1	h1
85.823.0200	200	85	25	58
85.823.0250	250	91	28	61

Ref.	d1	l1	b1	h1
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****





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
85.840.0315	315	110	37	55	12.71	4	3.2	19.04	47.6	26.5	68	31.75	13
85.840.0400	400	127	42	64.5	12.71	4	6.3	19.04	57.1	27	76.5	38.1	13.5

19:00 ▶ 24h

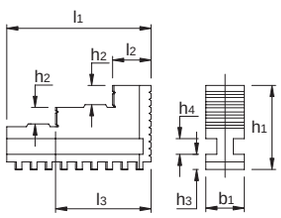
85.840 BISON

Ref.	d1	l1	b1	h1	b2	h2	h5	l5	l4	l2	l3	l6	h4
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****

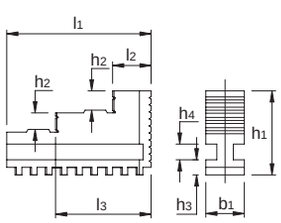


Ref.	d1	l1	b1	h1	h3	h4	h2	l2	l3
85.850.0080	80	32	11	28	6	6	6	9.5	21
85.850.0100	100	42	15	32	6	6	7	12	27.5
85.850.0125	125	51	20	40	8	8	8	13	33.5
85.850.0160	160	70	20	53	8	8	10	22	47.5
85.850.0200	200	85	25	54	10	10	12	23	57
85.850.0250	250	105	28	63	11	12	14	28	69.5
85.850.0315	315	125	32	73	12.7	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****

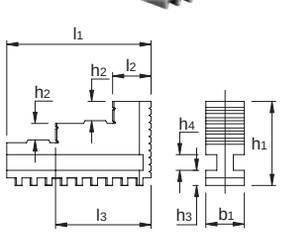


Ref.	d1	l1	b1	h1	h3	h4	h2	l2	l3
85.851.0100	100	42	15	32	6	6	7	12	27.5
85.851.0125	125	51	20	40	8	8	8	13	33.5
85.851.0160	160	70	20	53	8	8	10	22	47.5
85.851.0200	200	85	25	54	10	10	12	23	57
85.851.0250	250	105	28	63	11	12	14	28	69.5
85.851.0315	315	125	32	73	12.7	12	18	34.5	83
85.851.0400	400	145	36	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****



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
85.855.0125	125	51	20	40	8	8	8	13	33.5
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

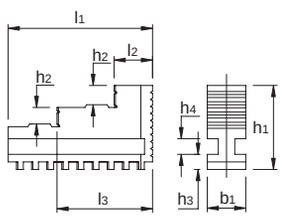
85.855 BISON

Ref.	d1	l1	b1	h1	h3	h4	h2	l2	l3
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****



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****
FR **Pignon, pour mandrin fonte type 32**, 36****
ES **Piñón, Para plato de sujeción fundición tipo 32**, 36****
DE **Ritzel, für gusseisen Backenfutter Typ 32**, 36****

Ref.	d1
85.866.0080	80
85.866.0100	100
85.866.0125	125
85.866.0160	160
85.866.0200	200

Ref.	d1
85.866.0250	250
85.866.0315	315
85.866.0400	400
85.866.0500	500
85.866.0630	630

› 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****

Ref.	d1
85.868.0125	125
85.868.0160	160
85.868.0200	200

Ref.	d1
85.868.0250	250
85.868.0315	314
85.868.0400	400

› 85.890 BISON



NL **Klauwplaatsleutel**
FR **clé à mandrin**
ES **Llave para platos**
DE **Spannschlüssel**

Ref.	Nr.	sw	l1	h1	Ø mm
85.890.0100	1	6	100	60	80
85.890.0200	2	9	100	60	100/125
85.890.0300	3	11	140	80	160/200
85.890.0400	4	14	215	100	250/315

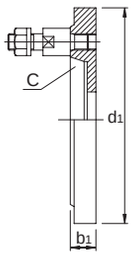
Ref.	Nr.	sw	l1	h1	Ø mm
85.890.0500	5	17	310	120	400
85.890.0600	6	19	400	140	500/630
85.890.0700	7	19	450	140	800

19:00 ▶ 24h

› 85.961 BISON

NL **Klauwplaatflens, gietijzer, Halfbewerkte gereedschapshouder, type 8232, DIN 55027**
FR **Faux-plateau, fonte, Mandrin porte-outils non fini, type 8232, DIN 55027**
ES **Contraplato, fundición, Piezas brutas para arboles de taladrar, tipo 8232, DIN 55027**
DE **Spannfutterflansche, Gusseisen, Werkzeughalter-Rohling, Typ 8232, DIN 55027**





DIN 55027 | BAJONET

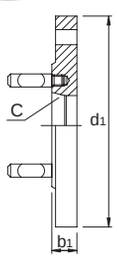
Ref.	d1	C	d3	b1
85.961.1003	100	3	102	18
85.961.1203	125	3	127	19.5
85.961.1204	125	4	127	19.5
85.961.1603	160	3	162	24
85.961.1604	160	4	162	24
85.961.1605	160	5	162	24
85.961.2004	200	4	203	38
85.961.2005	200	5	203	38
85.961.2006	200	6	203	33
85.961.2506	250	6	253	50

Ref.	d1	C	d3	b1
85.961.2508	250	8	253	46
85.961.3106	315	6	318	33
85.961.3108	315	8	318	55
85.961.3111	315	11	318	47
85.961.4008	400	8	405	43
85.961.4011	400	11	405	47
85.961.5008	500	8	505	45
85.961.5011	500	11	505	45
85.961.6311	630	11	635	45
85.961.6315	630	15	635	56

› 85.962 BISON

NL **Klauwplaatflens, gietijzer, Halfbewerkte gereedschapshouder, type 8242, DIN 55029**
FR **Faux-plateau, fonte, Mandrin porte-outils non fini, type 8242, DIN 55029**
ES **Contraplato, fundición, Piezas brutas para arboles de taladrar, tipo 8242, DIN 55029**
DE **Spannfutterflansche, Gusseisen, Werkzeughalter-Rohling, Typ 8242, DIN 55029**





DIN 55029 | CAM-LOCK

Ref.	d1	C	d3	b1
85.962.1003	100	3	102	28
85.962.1203	125	3	127	26
85.962.1204	125	4	127	26
85.962.1603	160	3	162	26
85.962.1604	160	4	162	29
85.962.1605	160	5	162	29
85.962.2004	200	4	203	44
85.962.2005	200	5	203	50
85.962.2006	200	6	203	35
85.962.2506	250	6	253	49

Ref.	d1	C	d3	b1
85.962.2508	250	8	253	49
85.962.3106	315	6	318	70
85.962.3108	315	8	318	55
85.962.3111	315	11	318	55
85.962.4008	400	8	405	43
85.962.4011	400	11	405	75
85.962.5008	500	8	505	46
85.962.5011	500	11	505	72
85.962.6311	630	11	635	72
85.962.6315	630	15	635	60

› 85.992 BISON

NL **Klauwplaatpen, voor DIN 55027 (Bajonet)**
FR **Tenon de fixation, pour DIN 55027 (Baïonnette)**
ES **Tornillo de fijación, para DIN 55027 (bayoneta)**
DE **Camloc Bolzen, für DIN 55027 (Bajonet)**



Ref.	C	d1	
85.992.0300	3	M10x34	3
85.992.0400	4	M10x39	3
85.992.0500	5	M10x43	4

Ref.	C	d1	
85.992.0600	6	M12x50	4
85.992.0800	8	M16x60	4
85.992.1100	11	M20x75	6

› 85.993 BISON



NL **Klauwplaatpen, voor DIN 55029 (Camlock)**
FR **Tenon de fixation, pour DIN 55029 (Camlock)**
ES **Tornillo de fijación, para DIN 55029 (Camlock**
DE **Camloc Bolzen, für DIN 55029 (Camlock)**

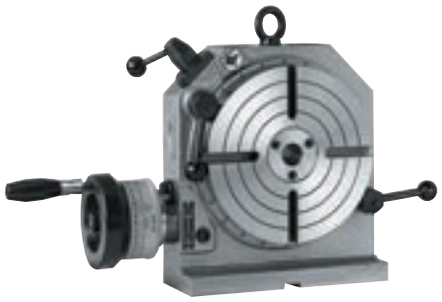
Ref.	C	d1	
85.993.0300	3	M10x1x35	3
85.993.0400	4	M10x1x37	3
85.993.0500	5	M12x1x43	6

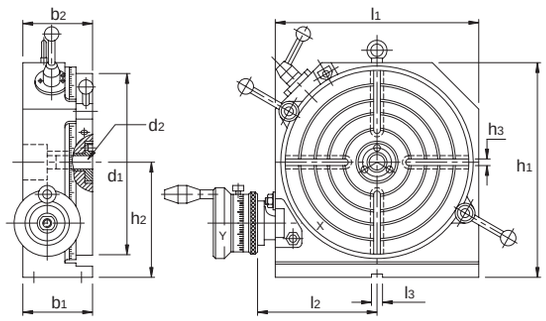
Ref.	C	d1	
85.993.0600	6	M16x1,5x49	6
85.993.0800	8	M20x1,5x55,5	6
85.993.1100	11	M22x1,5x67	6

19:00 ▶ 24h

› 87.110 BISON

NL **Rondverdeeltafel, type 5859**
FR **Plateau diviseur, type 5859**
ES **Plato divisor, tipo 5859**
DE **Rundtische, Typ 5859**



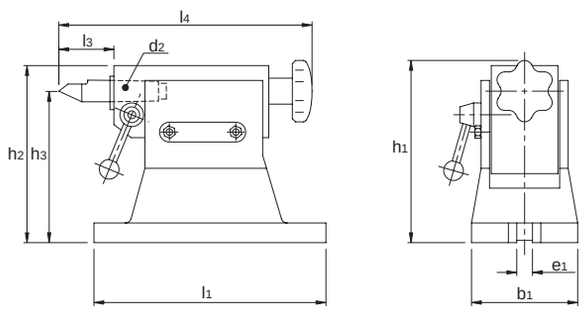


Ref.	d1	x:y	h1	l1	b1	l3	h2	h3	b2	l2	d2
87.110.0160	160	1:60	225	200	90	14	125	10	96	127	3
87.110.0200	200	1:60	270	240	95	14	150	10	98	147	3
87.110.0250	250	1:90	318	285	115	18	175	12	115	175	3
87.110.0320	320	1:90	374	348	115	18	200	12	120	207	3
87.110.0400	400	1:90	465	430	125	18	250	14	135	248	4

› 87.250 BISON

NL **Tegencenter, type 5819**
FR **Contre-pointe, type 5819**
ES **Contrapunto, tipo 5819**
DE **Reitstock, Typ 5819**



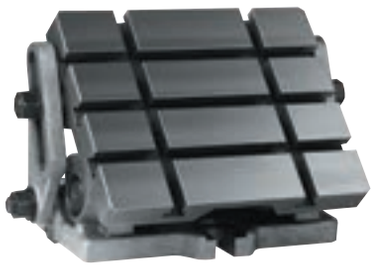


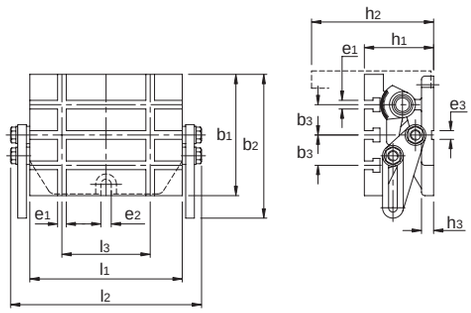
Ref.	h3	l1	b1	h1 max	e1 (H7)	l3	h2	l4	d2
87.250.0100	95-130	195	100	183	14	40-70	155	335	2
87.250.0125	130-170	250	120	223	18	50-90	200	409	3

Ref.	h3	l1	b1	h1 max	e1 (H7)	l3	h2	l4	d2
87.250.0160	170-200	280	142	253	18	50-90	230	433	3
87.250.0200	220-250	300	164	303	18	60-100	285	465	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**



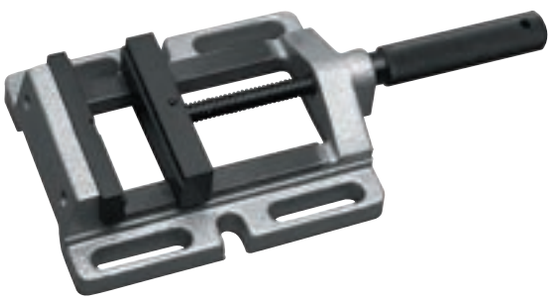


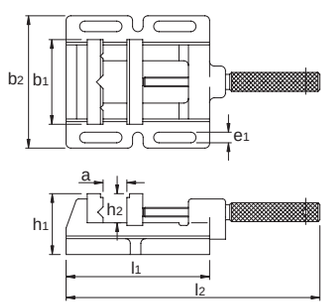
Ref.	b1	l1	l2	b2	b3	e1 N6	l3	e2	h1	h2	h3	e3
87.400.0200	200	250	324	236	50	12	126	18	111	201	22	16

Ref.	b1	l1	l2	b2	b3	e1 N6	l3	e2	h1	h2	h3	e3
87.400.0250	250	315	405	306	63	14	160	18	127	252	25	18

› 88.150 BISON

NL **Boorklem, type 6543**
FR **Etau machine, type 6543**
ES **Mordaza para taladros, tipo 6543**
DE **Bohrschraubstock, Typ 6543**





Ref.	b1	b2	l1	h1	l2	a max	h2	e1 N6	Max daN
88.150.0085	85	140	152	64	265	70	30	11	400
88.150.0100	100	152	170	64	285	85	30	13.5	500

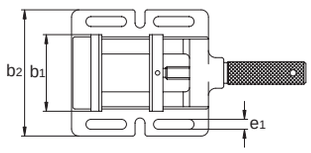
Ref.	b1	b2	l1	h1	l2	a max	h2	e1 N6	Max daN
88.150.0120	120	176	212	64	360	120	30	13.5	650
88.150.0150	150	208	262	66	442	150	38	13.5	800

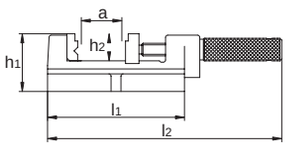
19:00 ▶ 24h

› 88.152 TORAX

NL **Boorklem**
FR **Etau machine**
ES **Mordaza para taladros**
DE **Bohrschraubstock**







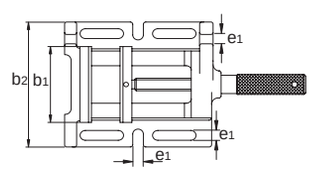
Ref.	b1	b2	a max	l1	l2	h1	h2	e1
88.152.0085	85	143	70	157	238	54	30	45x12,5
88.152.0100	100	152	95	176	280	60	30	49x14

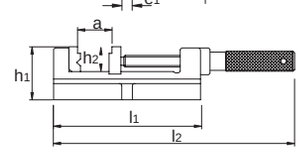
Ref.	b1	b2	a max	l1	l2	h1	h2	e1
88.152.0120	120	178	105	220	340	60	35	64x14
88.152.0150	150	195	140	229	380	77	39	75x15

› 88.154 TORAX

NL **Boorklem, met 3 opspanmogelijkheden**
FR **Etau machine, 3 positions**
ES **Mordaza para taladros, 3 posiciones**
DE **Bohrschraubstock, mit 3 Aufspannmöglichkeiten**







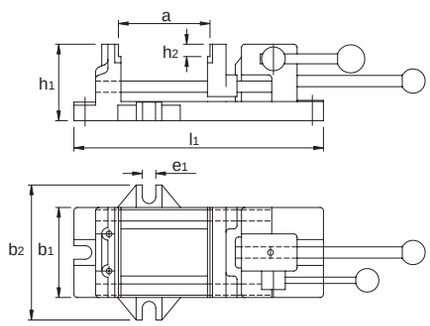
Ref.	b1	b2	a max	l1	l2	h1	h2
88.154.0100	100	158	95	189	275	64	30

Ref.	b1	b2	a max	l1	l2	h1	h2

› 88.160 BISON

NL **Snelspanmachineklem, type 6540**
FR **Etau à came à serrage rapide, type 6540**
ES **Mordaza mecánica de fijación rápida, tipo 6540**
DE **Schnellspann-Bohrerschraubstöcke, Typ 6540**





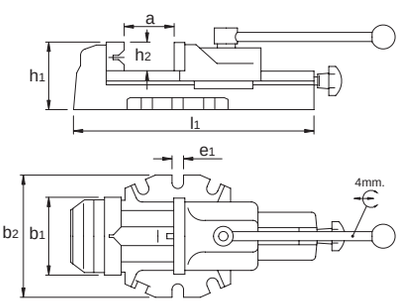
Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.160.0080	80	120	68	222	80	16.5	12	350
88.160.0100	100	160	85	293	125	16.5	14	500

Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.160.0125	125	185	90	327	150	16.5	14	700
88.160.0160	160	224	95	380	160	16.5	18	800

› 88.170 BISON

NL **Snelspanmachineklem, type 6542**
FR **Etau à came à serrage rapide, type 6542**
ES **Mordaza mecánica de fijación rápida, tipo 6542**
DE **Schnellspann-Bohrerschraubstöcke, Typ 6542**





Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.170.0080	80	140	70	220	80	30	14	800

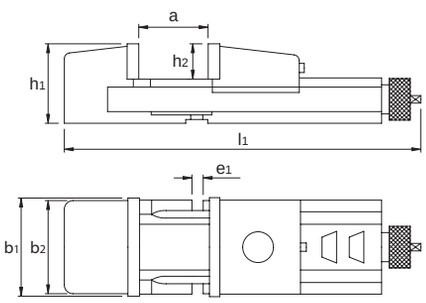
Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.170.0100	100	165	80	270	100	35	14	1200

19:00 ▶ 24h

› 88.200 BISON

NL **Snelspanmachineklem, type 6517**
FR **Etau à came à serrage rapide, type 6517**
ES **Mordaza mecánica de fijación rápida, tipo 6517**
DE **Schnellspann-Bohrerschraubstöcke, Typ 6517**



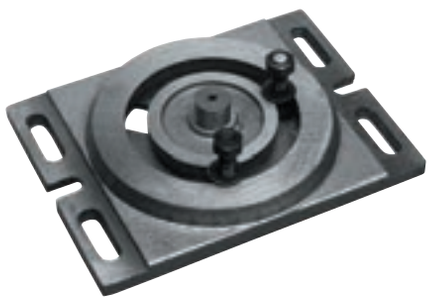


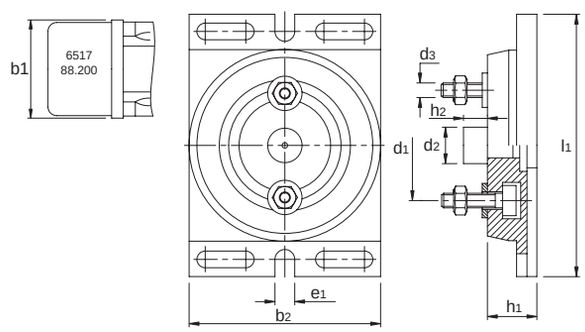
Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.200.0100	100	98	85	340	125	32	14	1800
88.200.0125	125	122	103	405	160	40	14	2500

Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
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**





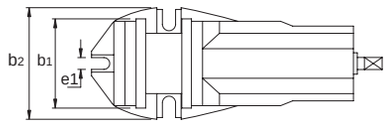
Ref.	b1	b2	d1	h1	l1	d3	d2	h2	e1 N6
88.205.0100	100	140	83	28	195	M12	25	18	14
88.205.0125	125	175	103	28	236	M12	25	18	14

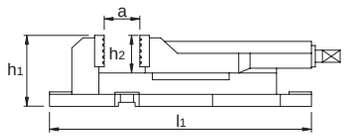
Ref.	b1	b2	d1	h1	l1	d3	d2	h2	e1 N6
88.205.0160	160	224	130	34	294	M16	30	20	18
88.205.0200	200	264	165	34	345	M16	30	20	18

› 88.230 BISON

NL **Machinespanklem, type 6512**
FR **Etau de fraisage, type 6512**
ES **Mordaza mecánica, tipo 6512**
DE **Maschinenschraubstöcke, Typ 6512**





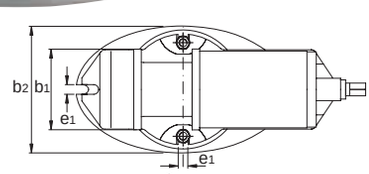


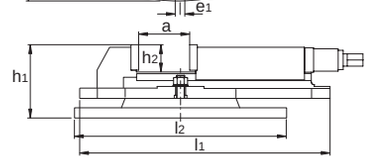
Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.230.0100	100	156	84	294	80	32	14	2500
88.230.0125	125	156	100	347	95	40	14	3500
88.230.0160	160	193	121	423	125	50	18	4000
88.230.0200	200	256	147	515	160	63	18	5500
88.230.0250	250	316	174	615	200	80	22	6200

› 88.237 TORAX

NL **Machinespanklem met draaiplaat**
FR **Etau de fraisage avec base tournante**
ES **Mordaza mecánica con base giratoria**
DE **Maschinenschraubstöcke mit Drehplatte**





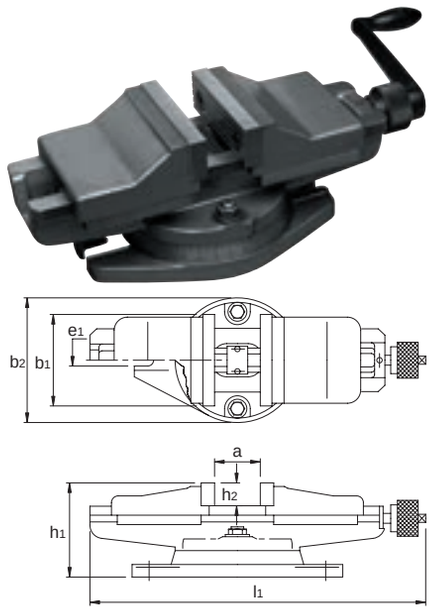


Ref.	b1	b2	a max	l1	l2	h1	h2	e1
88.237.0050	50	102	50	175	148	80	25	11
88.237.0075	75	140	75	257	198	101	33	14
88.237.0100	100	175	100	310	244	122	40	14
88.237.0125	125	210	125	354	275	141	47	16
88.237.0150	150	240	150	385	300	148	50	16

19:00 ▶ 24h

› 88.250 BISON

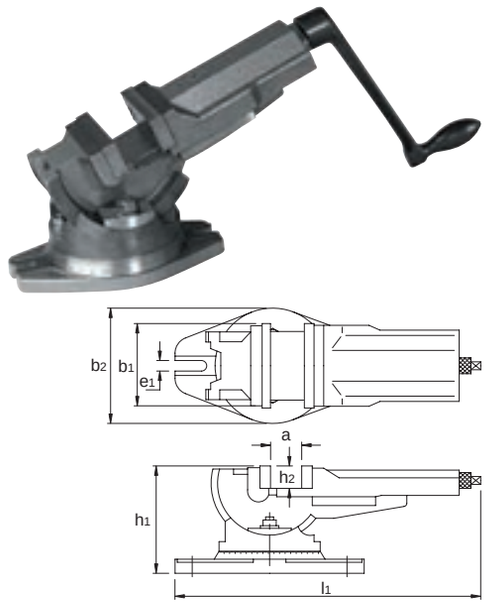
NL **Centrisch spannende Machinespanklem, type 6531**
FR **Etau de fraisage à serrage concentrique, type 6531**
ES **Mordaza mecánica concéntrica, tipo 6531**
DE **Zentrisch spannende Maschinenschraubstöcke, Typ 6531**



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

› 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**

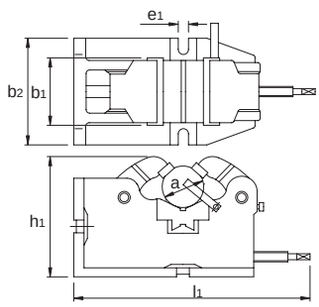


Ref.	b1	b2	h1	l1	a max	h2	e1 N6	Max daN
88.260.0100	100	144	145	372	80	32	14	2500
88.260.0125	125	168	169	437	100	40	17	3500
88.260.0160	160	212	195	492	125	50	18	4000

› 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**



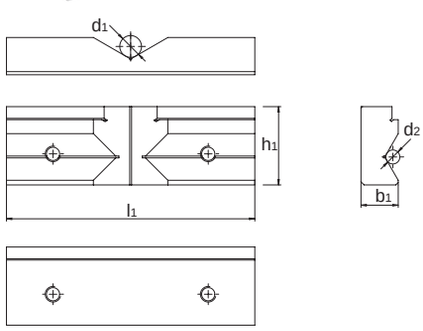


Ref.	b1	b2	h1	l1	a max	e1 N6	Max daN
88.270.0100	100	180	170	305	10-63	18	1000
88.270.0125	125	200	235	405	15-100	18	1500
88.270.0160	160	245	295	460	50-160	18	2000

› 88.318 BISON

NL **Prismabekken voor machinespanklem artikelnr. 88.200**
FR **Jeu de mors pour étau de fraisage n° article 88.200**
ES **Garras con ranurado para mordaza mecánica n° artículo 88.200**
DE **Prismabacken für Maschinenschraubstöcke Artikel-Nr. 88.200**





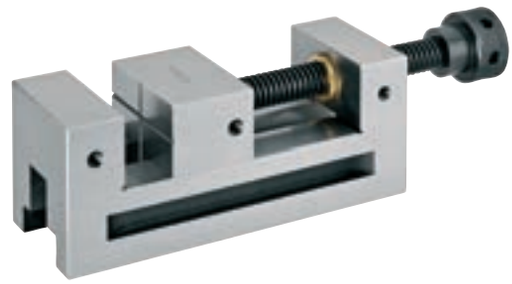
Ref.	l1	h1	b1	d1	d2	Bison
88.318.0100	100	32.4	18	6-24	12-48	6517, 6518
88.318.0125	125	40.4	22	8-30	15-60	6517, 6518

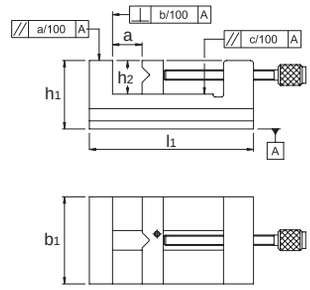
Ref.	l1	h1	b1	d1	d2	Bison
88.318.0160	160	50.4	24	10-35	18-80	6517, 6518
88.318.0200	200	63.4	30	14-44	22-100	6517, 6518

19:00 ▶ 24h

› 88.340 TORAX

NL **Precisie Slijpklem**
FR **Etau de précision**
ES **Mordaza de precisión**
DE **Präzisions-Schleifschraubstöcke**



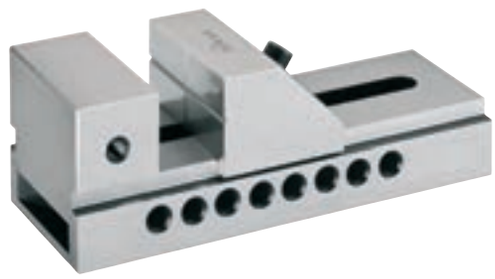


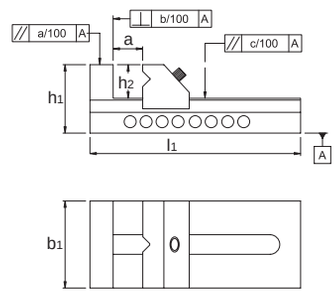
Ref.	b1	l1	h1	l2	a max	h2	Tol. a	Tol. b	Tol. c
88.340.0050	50	155	50	207.5	65	25	0.005	0.005	0.005
88.340.0063	63	190	65	242.5	85	32	0.005	0.005	0.005

Ref.	b1	l1	h1	l2	a max	h2	Tol. a	Tol. b	Tol. c
88.340.0080	80	220	84	280.5	100	40	0.005	0.005	0.005
88.340.0100	100	260	95	328.5	125	45	0.007	0.005	0.005

› 88.350 TORAX

NL **Precisie Slijpklem, met spanbout aan bovenzijde en snelverstelling**
FR **Etau de précision, mors flexible**
ES **Mordaza de precisión, con perno a parte encima y cambio rápido**
DE **Präzisions-Schleifschraubstöcke, mit Spannbolzen oben und Schnellverstellung**

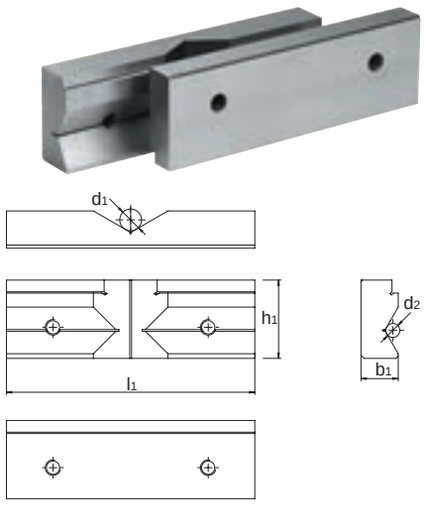




Ref.	b1	l1	h1	h2	a max	Tol. a	Tol. b	Tol. c
88.350.0026	26	65.4	29	9.15	22	0.007	0.005	0.005
88.350.0036	36	100	45	20	40	0.005	0.005	0.005
88.350.0050	50	140	50	25	65	0.005	0.005	0.005
88.350.0073	73	190	67	35	100	0.005	0.005	0.005
88.350.0100	100	245	90	45	125	0.005	0.005	0.005
88.350.0125	125	285	100	50	160	0.007	0.005	0.005

› 88.407 BISON

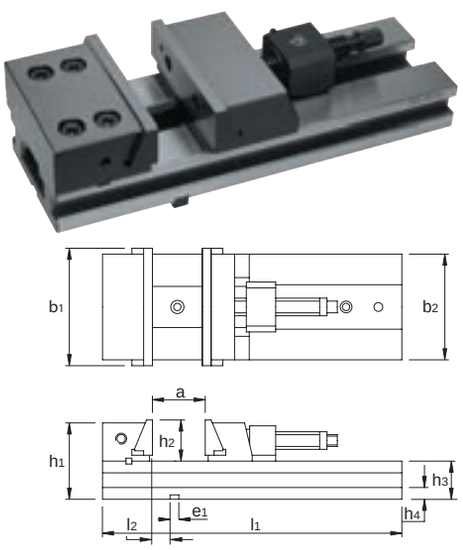
NL **Prismabekken voor machinespanklem type 6512, 6530, 6537**
FR **Jeu de mors pour étau de fraisage type 6512, 6530, 6537**
ES **Garras con ranurado para mordaza mecánica tipo 6512, 6530, 6537**
DE **Prismabacken für Maschinenschraubstöcke Typ 6512, 6530, 6537**



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

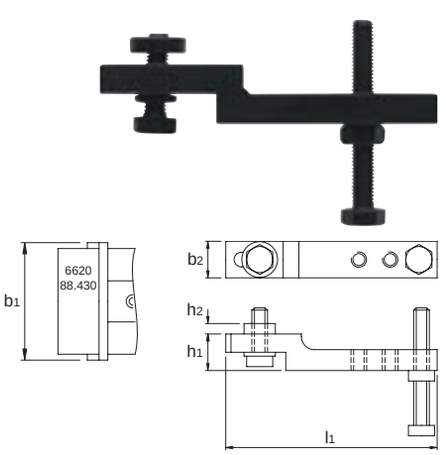
NL **Modulaire Precisie Machinespanklem, type 6620**
FR **Etau modulaire de haute précision, type 6620**
ES **Mordaza mecánica modular de alta precisión, tipo 6620**
DE **Modulare Präzisions-Maschinenschraubstöcke, Typ 6620**



Ref.	b1	b2	h3	h4	h1	l1	a max	h2	e1 N6	l2	Max. daN
88.430.1033	100	85	35	13	65	320	165	30	12	12	2000
88.430.1234	125	105	42	15	82	335	165	40	12	18	3000
88.430.1543	150	140	52	18	102	425	210	50	18	21.2	4100
88.430.1548	150	140	52	18	102	475	260	50	18	21.2	4100
88.430.1552	150	140	52	18	102	520	305	50	18	21.2	4100
88.430.2054	200	165	61	20	121	535	260	60	18	38.07	4500
88.430.2059	200	165	61	20	121	585	310	60	18	38.07	4500
88.430.2064	200	165	61	20	121	635	360	60	18	38.07	4500

› 88.435 BISON

NL **Werkstukaanslag, voor Modulaire Precisie Machinespanklem type 6620**
FR **Butée, pour Etau modulaire de haute précision type 6620**
ES **Pieza de trabajo, para Mordaza mecánica modular de alta precisión tipo 6620**
DE **Werkstückanschläge, für Modulare Präzisions-Maschinenschraubstöcke Typ 6620**



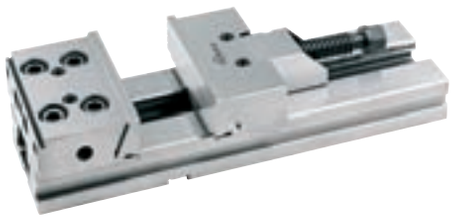
Ref.	Nr.	b1	l1	h1	b2	h2
88.435.0100	1	100 + 125	120	20	20	5

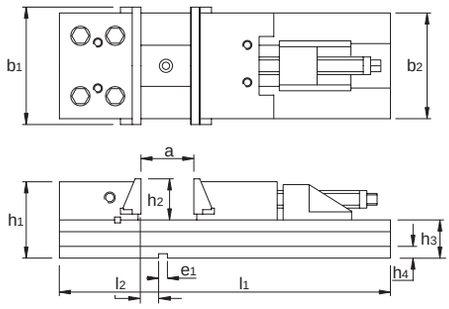
Ref.	Nr.	b1	l1	h1	b2	h2
88.435.0200	2	150 + 200	140	25	25	7

19:00 ▶ 24h

› 88.440 TORAX

NL **Modulaire Precisie Machinespanklem**
FR **Etau modulaire de haute précision**
ES **Mordaza mecánica modular de alta precisión**
DE **Modulare Präzisions-Maschinenschraubstöcke**



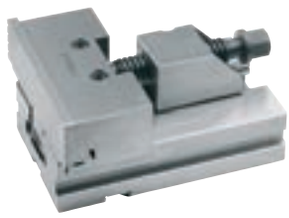


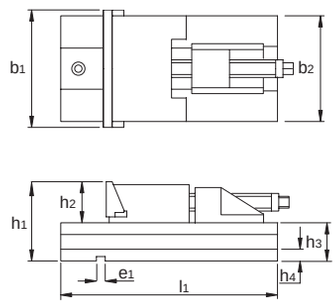
Ref.	b1	b2	h3	h4	h1	l1	a max	h2	e1 N6	l2	Max. daN
88.440.1027	100	75	35	15	65	270	100	30	16		3000
88.440.1234	125	95	40	15	80	345	150	40	16	25,61	3000
88.440.1542	150	125	50	20	100	420	200	50	16	25,61	5000
88.440.1552	150	125	50	20	100	520	300	50	16	25,61	5000
88.440.1745	175	145	58	20	118	455	200	60	16	25,61	6000
88.440.1755	175	145	58	20	118	555	300	60	16	25,61	6000
88.440.1765	175	145	58	20	118	655	400	60	16	25,61	6000
88.440.1775	175	145	58	20	118	755	500	60	16	25,61	6000

Ref.	b1	b2	h3	h4	h1	l1	a max	h2	e1 N6	l2	Max. daN
88.440.2059	200	170	70	26	135	595	300	65	16	25,61	10000
88.440.2069	200	170	70	26	135	695	400	65	16	25,61	10000
88.440.2079	200	170	70	26	135	795	500	65	16	25,61	10000
88.440.3063	300	195	78	26	158	635	300	80	16	25,61	12000
88.440.3073	300	195	78	26	158	735	400	80	16	25,61	12000
88.440.3083	300	195	78	26	158	835	500	80	16	25,61	12000
88.440.3093	300	195	78	26	158	935	600	80	16	25,61	12000

› 88.470 TORAX

NL **Beweegbare Modulaire Precisie Machinespanklem**
FR **Etau machine modulaire mobile de précision**
ES **Mordaza mecánica modular de alta precisión rotativa**
DE **bewegbare modulare Präzisions Maschinenklemme**





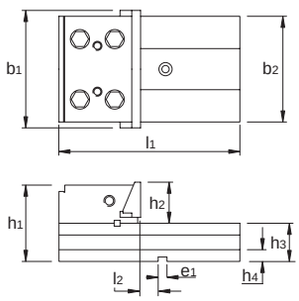
Ref.	b1	b2	h1	h2	h3	h4	l1	e1 N6
88.470.1250	125	95	80	40	40	15	160	16
88.470.1500	150	125	100	50	50	20	230	16

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 Modulaire Precisie Machinespanklem**
FR **Etau machine modulaire fixe de précision**
ES **Mordaza Mecánica Modular de precisión fija**
DE **Modulare Präzisions Maschinenschraubstöcke**





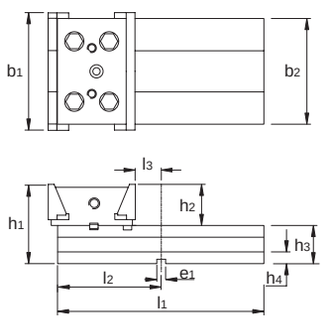
Ref.	b1	b2	h1	h2	h3	h4	l1	l2	e1 N6
88.472.1250	125	95	80	40	40	15	160	25.61	16
88.472.1500	150	125	100	50	50	20	230	25.61	16

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 Modulaire Dubbele Precisie Machinespanklem**
FR **Etau machine modulaire fixe double de précision**
ES **Mordaza Mecánica Modular de doble precisión fija**
DE **Modularer Präzisions Maschinenschraubstock mit Doppelspannung**





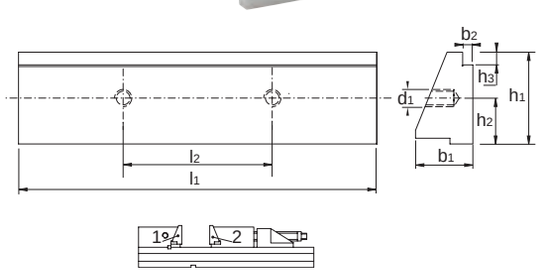
Ref.	b1	b2	h1	h2	h3	h4	l1	l2	l3	e1 N6
88.474.1250	125	95	80	40	40	15	160	71	33.6	16
88.474.1500	150	125	100	50	50	20	230	122.5	33.6	16

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 Bekken voor modulaire precisie machinespanklem 88.440, 88.470 en 88.472**
FR **Mors avec méplat pour étau modulaire de haute précision 88.440, 88.470 et 88.472**
ES **Garras escalonadas para mordaza mécanica modular de alta precisión 88.440, 88.470 y 88.472**
DE **Stufenbacke für Modular-Präzisionsschraubstöcke 88.440, 88.470 und 88.472**





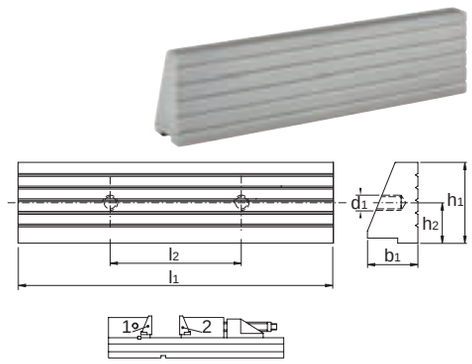
Ref.	l1	h1	b1	l2	h2	d1	b2	h3	Type
88.475.1202	125	32	19	32	15	M8	3	5	1
88.475.1204	125	32	19	80	15	M8	3	5	2
88.475.1502	150	40	24	50	19	M8	5	5	1
88.475.1504	150	40	24	90	19	M8	5	5	2

Ref.	l1	h1	b1	l2	h2	d1	b2	h3	Type
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

19:00 ▶ 24h

› 88.476 TORAX

NL **Standaard Gegroefde Bekken voor modulaire precisie machinespanklem 88.440, 88.470 en 88.472**
FR **Mors rainurés standards pour étau modulaire de haute précision 88.440, 88.470 et 88.472**
ES **Garras escalonadas para mordaza mécanica modular de alta precisión 88.440, 88.470 y 88.472**
DE **Stufenbacke für Modular-Präzisionsschraubstöcke 88.440, 88.470 und 88.472**

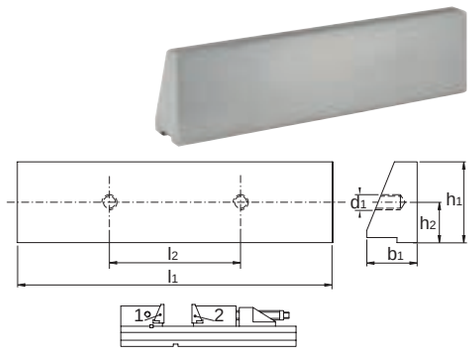


Ref.	l1	h1	b1	l2	h2	d1	Type
88.476.1202	125	32	30	32	15	M8	1
88.476.1204	125	32	30	80	15	M8	2
88.476.1502	150	40	24	50	19	M8	1
88.476.1504	150	40	24	90	19	M8	2

Ref.	l1	h1	b1	l2	h2	d1	Type
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	19	76	25.5	M10	1
88.476.2004	200	53	19	138	25.5	M10	2

› 88.477 TORAX

NL **Gladde Bekken voor modulaire precisie machinespanklem, 88.440, 88.470 en 88.472**
FR **Mors lisses pour étau modulaire de haute précision 88.440, 88.470 et 88.472**
ES **Garras lisas para mordaza mécanica modular de alta precisión 88.440, 88.470 y 88.472**
DE **Glatte Backen für Modular-Präzisionsschraubstöcke 88.440, 88.470 und 88.472**

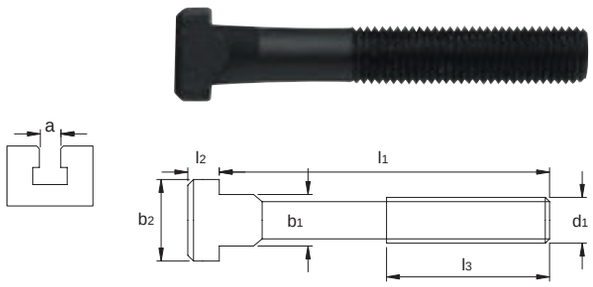


Ref.	l1	h1	b1	l2	h2	d1	Type
88.477.1202	125	32	19	32	15	M8	1
88.477.1204	125	32	19	80	15	M8	2
88.477.1502	150	40	24	50	19	M8	1
88.477.1504	150	40	24	90	19	M8	2

Ref.	l1	h1	b1	l2	h2	d1	Type
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

› 88.600

NL **T-Gleufbout, DIN 787, kwaliteit 8.8**
FR **Boulon en T, DIN 787, qualité de résistance 8.8**
ES **Tensor para ranuras T, DIN 787, calidad 8.8**
DE **T-Nutenschrauben, DIN 787, Qualität 8.8**



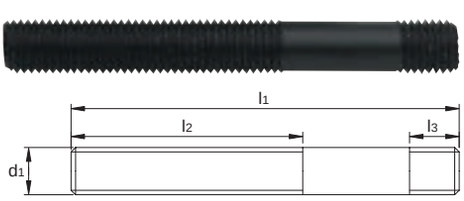
DIN 787

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

Ref.	a	d1	l1	l3	b1	l2	b2
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

NL **Draadeind, DIN 6379, kwaliteit 8.8**
FR **Goujon, DIN 6379, qualité de résistance 8.8**
ES **Tensor sin cabeza, DIN 6379, calidad 8.8**
DE **Stiftschrauben, DIN 6379, Qualität 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

Ref.	d1	l1	l2	l3
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

19:00 ▶ 🛒 ▶ 24h

› 88.605

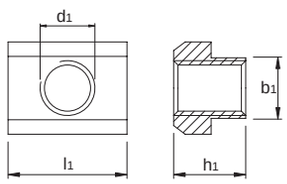
Ref.	d1	l1	l2	l3
88.605.2212	M22	125	75	31
88.605.2216	M22	160	100	31
88.605.2220	M22	200	125	31
88.605.2225	M22	250	160	31
88.605.2231	M22	315	180	31
88.605.2240	M22	400	250	31
88.605.2410	M24	100	45	35
88.605.2412	M24	125	75	35
88.605.2416	M24	160	100	35
88.605.2420	M24	200	125	35
88.605.2425	M24	250	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

Ref.	d1	l1	l2	l3
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



NL **T-Gleufmoer, DIN 508, kwaliteit 10**
FR **Ecrou en T, DIN 508, qualité de résistance 10**
ES **Cabeza-T, DIN 508, calidad 10**
DE **Muttern für T-Nuten, DIN 508, Qualität 10**



DIN 508

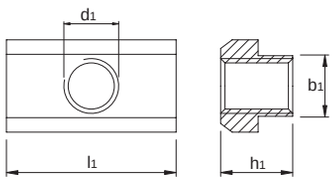
Ref.	d1	l1	h1	b1
88.610.0806	8M6	13	10	7.7
88.610.1008	10M8	15	12	9.7
88.610.1208	12M8	18	14	11.7
88.610.1210	12M10	18	14	11.7
88.610.1410	14M10	22	16	13.7
88.610.1412	14M12	22	16	13.7
88.610.1612	16M12	25	18	15.7
88.610.1614	16M14	25	18	15.7
88.610.1812	18M12	28	20	17.7
88.610.1814	18M14	28	20	17.7
88.610.1816	18M16	28	20	17.7
88.610.2016	20M16	32	24	19.7

Ref.	d1	l1	h1	b1
88.610.2018	20M18	32	24	19.7
88.610.2216	22M16	35	28	21.7
88.610.2220	22M20	35	28	21.7
88.610.2420	24M20	40	32	23.7
88.610.2422	24M22	40	32	23.7
88.610.2820	28M20	44	36	27.7
88.610.2824	28M24	44	36	27.7
88.610.3024	30M24	50	40	31.5
88.610.3227	32M27	50	40	31.5
88.610.3624	36M24	54	44	35.5
88.610.3630	36M30	54	44	35.5
88.610.4236	42M36	65	52	41.6

› 88.612



NL **T-Gleufmoer, lange uitvoering, DIN 508-L, kwaliteit 10**
FR **Ecrou en T allongé, DIN 508-L, qualité de résistance 10**
ES **Cabeza-T, versión larga, DIN 508-L, calidad 10**
DE **Muttern für T-Nuten, langes Modell, DIN 508-L, Qualität 10**



DIN 508-L

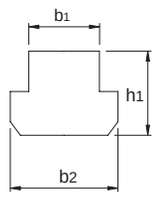
Ref.	d1	l1	h1	b1
88.612.1008	10M8	30	12	9.7
88.612.1210	12M10	36	14	11.7
88.612.1412	14M12	44	16	13.7
88.612.1614	16M14	50	18	15.7
88.612.1816	18M16	56	20	17.7
88.612.2018	20M18	64	24	19.7

Ref.	d1	l1	h1	b1
88.612.2220	22M20	70	28	21.7
88.612.2422	24M22	80	32	23.7
88.612.2824	28M24	88	36	27.7
88.612.3227	32M27	100	40	31.5
88.612.3630	36M30	108	44	35.5

› 88.613

NL **T-Gleufmoer, onbewerkt, DIN 508-R**
FR **Ecrou en T borgne, DIN 508-R**
ES **Cabeza-T en bruto, DIN 508-R**
DE **T-Nutenstein, Rohling, DIN 508-R**





DIN
508-R

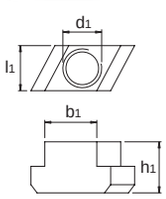
Ref.	d1	l1	h1	b1
88.613.1000	10	15	12	9.7
88.613.1200	12	18	14	11.7
88.613.1400	14	22	16	13.7
88.613.1600	16	25	18	15.7
88.613.1800	18	28	20	17.7
88.613.2000	20	32	24	19.7

Ref.	d1	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

NL **T-Gleufmoer, systeem “Rhombus”**
FR **Ecrou en T, système “Rhombus”**
ES **Cabeza-T, sistema “Romboidal”**
DE **Muttern für T-Nuten, System “Rhombus”**





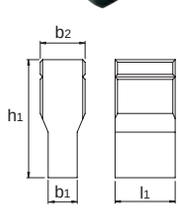
Ref.	d1	l1	h1	b1
88.614.1008	10M8	15	12	9.7
88.614.1210	12M10	18	14	11.7
88.614.1412	14M12	22	16	13.7
88.614.1614	16M14	25	18	15.7

Ref.	d1	l1	h1	b1
88.614.1816	18M16	28	20	17.7
88.614.2220	22M20	32	24	21.7
88.614.2824	28M24	35	28	27.7

› 88.615

NL **T-Gleufsteen, DIN 6323, inzetgehard en geslepen**
FR **Lardon percé en T, DIN 6323, trempé et rectifié**
ES **Regletas en T, DIN 6323, templado y rectificado**
DE **T-Nutensteine, DIN 6323, Gehärtet und geschliffen**





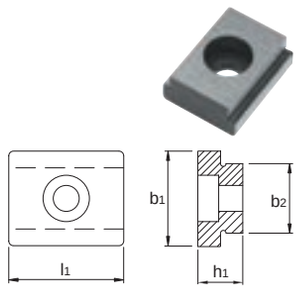
DIN
6323

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

NL **T-Gleufsteen, DIN 6322-A, inzetgehard en geslepen**
FR **Lardon percé en T, DIN 6322-A, trempé et rectifié**
ES **Regletas en T, DIN 6322-A, templado y rectificado**
DE **T-Nutensteine, DIN 6322-A, Gehärtet und geschliffen**



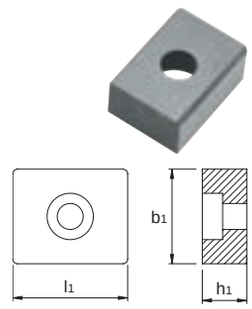
DIN 6322-A

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	18	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

NL **T-Gleufsteen, DIN 6322-B, inzetgehard en geslepen**
FR **Lardon percé en T, DIN 6322-B, trempé et rectifié**
ES **Regletas en T, DIN 6322-B, templado y rectificado**
DE **T-Nutensteine, DIN 6322-B, Gehärtet und geschliffen**



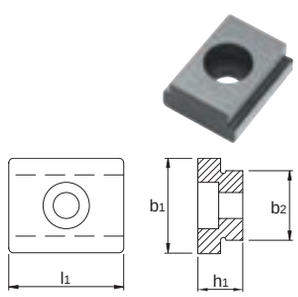
DIN 6322-B

Ref.	b1	h2	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

Ref.	b1	h2	l1
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 TORAX

NL **T-Gleufsteen, voor TORAX machinespanklemmen 88.440, 88.470, 88.472**
FR **Lardon percé en T, pour TORAX étau 88.440, 88.470, 88.472**
ES **Regletas en T, para TORAX mordaza mécanica 88.440, 88.470, 88.472**
DE **T-Nutensteine, für TORAX Präzisionsschraubstöcke 88.440, 88.470, 88.472**

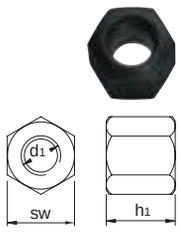


Ref.	b1	b2	h1	l1
88.618.1200	12	16	10	25
88.618.1400	14	16	10	25
88.618.1600	16	16	10	25
88.618.1800	18	16	10	25
88.618.2000	20	16	12	25

Ref.	b1	b2	h1	l1
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

NL **Hoge Moer (1,5x diam.), DIN 6330-B, kwaliteit 10**
FR **Ecrou Haut (1,5x diam.), DIN 6330-B, qualité de résistance 10**
ES **Tuerca alargada alta (1,5x diám.), DIN 6330-B, calidad 10**
DE **Sechskantmuttern, hoch (1,5 x durchm.), DIN 6330-B, Qualität 10**



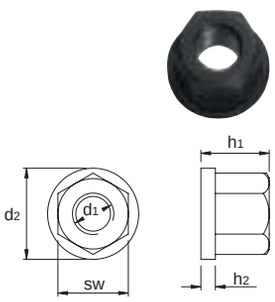
DIN 6330-B

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

Ref.	d1	h1	sw
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

NL **Kraagmoer, DIN 6331, kwaliteit 10**
FR **Ecrou à collet, DIN 6331, qualité de résistance 10**
ES **Tuerca hexogonal con collar, DIN 6331, calidad 10**
DE **Sechskantmuttern mit Bund, DIN 6331, Qualität 10**



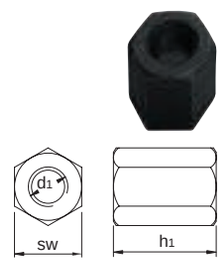
DIN 6331

Ref.	d1	sw	h1	d2	h2
88.631.0600	M6	10	9		
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

Ref.	d1	sw	h1	d2	h2
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

NL **Verlengmoer (3x diam.), DIN 6334, kwaliteit 10**
FR **Ecrou allongé haut (3x diam.), DIN 6334, qualité de résistance 10**
ES **Tuerca alargada alta (3x diám.), DIN 6334, calidad 10**
DE **Verlängerungsmuttern (3x durchm.), DIN 6334, Qualität 10**



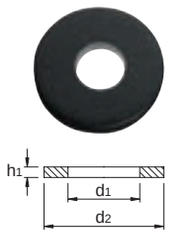
DIN 6334

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

NL **Onderlegschijf, DIN 6340**
FR **Rondelle, DIN 6340**
ES **Arandela, DIN 6340**
DE **Unterlegscheiben, DIN 6340**



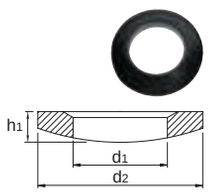
DIN 6340

Ref.	M	d1	d2	b1
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	b1
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

NL **Kogelschijf, DIN 6319-C**
FR **Rondelle sphérique, DIN 6319-C**
ES **Disco esférico, DIN 6319-C**
DE **Kugelscheiben, DIN 6319-C**



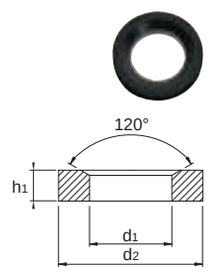
DIN 6319-C

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

NL **Kegelschijf, hol, DIN 6319-D**
FR **Rondelle articulée, cémentée, DIN 6319-D**
ES **Cazoleta cónica, cementada, DIN 6319-D**
DE **Kegelpfannen, hohl, DIN 6319-D**



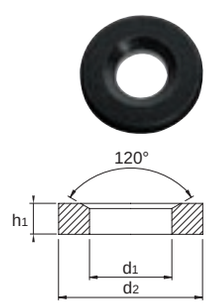
DIN 6319-D

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

NL **Kegelschijf, DIN 6319-G**
FR **Rondelle articulée, DIN 6319-G**
ES **Cazoleta cónica, DIN 6319-G**
DE **Kegelpfannen, DIN 6319-G**

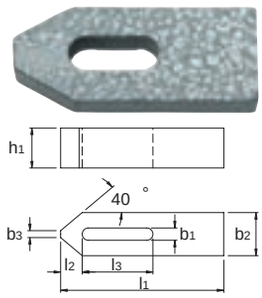


Ref.	M	d1	d2	h1
88.643.0800	M8	9.6	23	5
88.643.1000	M10	12	28	5
88.643.1200	M12	14.2	35	6
88.643.1400	M14	16.5	40	6

Ref.	M	d1	d2	h1
88.643.1600	M16	19	45	7
88.643.2000	M20	23.2	50	8
88.643.2400	M24	28	60	10
88.643.3000	M30	35	68	10

› 88.650

NL **Spanijzer, vlak, DIN 6314**
FR **Bride droite, DIN 6314**
ES **Brida plana, DIN 6314**
DE **Flache Spanneisen, DIN 6314**



DIN 6314

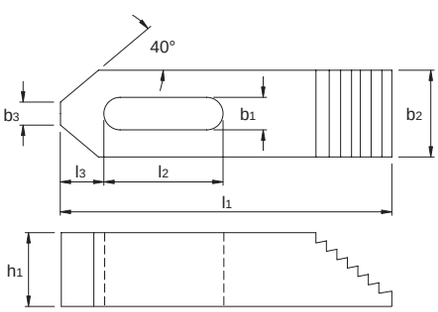
Ref.	b1	l1	h1	M	b2	b3	l2	l3
88.650.0705	7	50	10	M6	20	8	10	20
88.650.0906	9	60	12	M8	25	10	13	22
88.650.1108	11	80	15	M10	30	12	15	30
88.650.1408	14	80	20	M12, M14	40	14	21	30
88.650.1410	14	100	20	M12, M14	40	14	21	40
88.650.1412	14	125	20	M12, M14	40	14	21	50
88.650.1810	18	100	25	M16, M18	50	18	26	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

Ref.	b1	l1	h1	M	b2	b3	l2	l3
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

NL **Spanijzer, vertand, DIN 6314-Z**
FR **Bride droite pour cales crénelées, DIN 6314-Z**
ES **Brida dentada, DIN 6314-Z**
DE **Spanneisen mit Treppenzähnen, DIN 6314-Z**



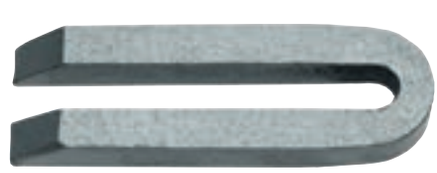


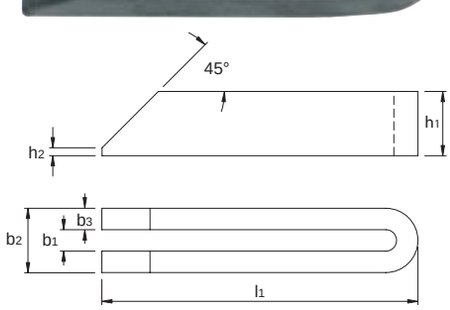
Ref.	b1	l1	h1	M	b2	b3	l2	l3
88.655.0705	7	50	10	M6	20	8	10	20
88.655.0906	9	60	12	M8	25	10	13	22
88.655.1108	11	80	15	M10	30	12	15	30
88.655.1410	14	100	20	M12, M14	40	14	21	40

Ref.	b1	l1	h1	M	b2	b3	l2	l3
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

NL **Spanbeugel, afgeschuind DIN 6315-B**
FR **Bride à fourche simple DIN 6315-B**
ES **Brida horquilla DIN 6315-B**
DE **Abgeschrägte Gabelspanneisen DIN 6315-B**





DIN 6315-B

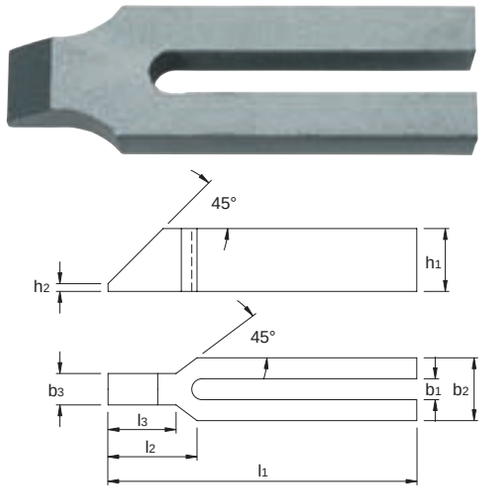
Ref.	b1	l1	M	h1	b2	b3	h2
88.660.0706	7	60	M6	12	12	6	3
88.660.0908	9	80	M8	25	15	8	4
88.660.1110	11	100	M10	31	20	10	5
88.660.1412	14	125	M12, M14	38	25	12	6
88.660.1416	14	160	M12, M14	38	25	12	6
88.660.1420	14	200	M12, M14	38	25	12	6
88.660.1816	18	160	M16, M18	48	30	15	8
88.660.1820	18	200	M16, M18	48	30	15	8
88.660.1825	18	250	M16, M18	48	40	15	8

Ref.	b1	l1	M	h1	b2	b3	h2
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

19:00 ▶ 24h

› 88.665

NL **Spanijzer met neus, DIN 6315-GN**
FR **Bride avec nez, DIN 6315-GN**
ES **Brida con nariz, DIN 6315-GN**
DE **Spanneisen mit Nase, DIN 6315-GN**



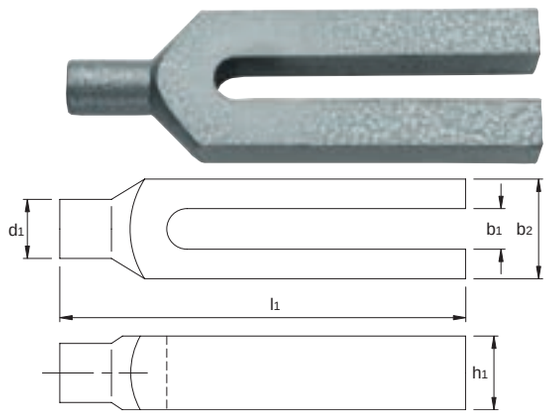
DIN 6315-GN

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

NL **Spanijzer met ronde neus, DIN 6315-C**
FR **Bride avec nez rond, DIN 6315-C**
ES **Brida con espiga redonda, DIN 6315-C**
DE **Spanneisen mit Kugel-Nase, DIN 6315-C**



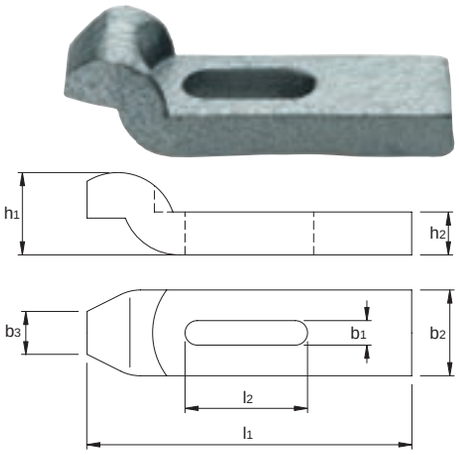
DIN 6315-C

Ref.	b1	l1	d1	M	b2	h1
88.670.0708	7	80	12	M6	19	15
88.670.0909	9	90	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

NL **Spanijzer, gebogen, DIN 6316**
FR **Bride contre-coudée, DIN 6316**
ES **Brida acodada, DIN 6316**
DE **Spanneisen, gekröpft, DIN 6316**



DIN 6316

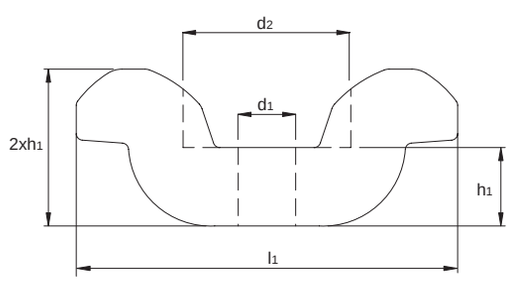
Ref.	b1	l1	M	h1	b2	b3	h2
88.675.0908	9	80	M8	25	25	12	12
88.675.1110	11	100	M10	30	32	15	15
88.675.1412	14	125	M12, M14	40	40	20	20
88.675.1812	18	125	M16, M18	50	50	25	25
88.675.1816	18	160	M16, M18	50	50	25	25

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

› 88.680

NL **Spanijzer, dubbel gebogen, Type 6316-B**
FR **Bride contre-coudée double, Type 6316-B**
ES **Brida acodada doble, Tipo 6316-B**
DE **Doppelt gekröpfte Spanneisen, Type 6316-B**





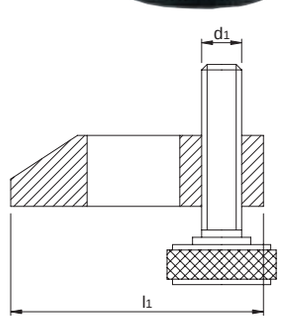
Ref.	d1	d2	h1	l1
88.680.1810	18	40	20	100

Ref.	d1	d2	h1	l1
88.680.2514	25	60	30	140

› 88.700

NL **Spanijzer, verstelbaar, Type 6314-T**
FR **Bride expansible, Type 6314-T**
ES **Brida regulable, Tipo 6314-T**
DE **Verstellbares Spanneisen, Typ 6314-T**





Ref.	e1 N6	l1	d1	M
88.700.1108	11	80	M10	M10
88.700.1410	14	100	M12	M12, M14
88.700.1812	18	125	M16	M16, M18

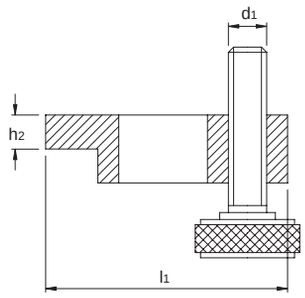
Ref.	e1 N6	l1	d1	M
88.700.2216	22	160	M20	M20, M22
88.700.2620	26	200	M24	M24

19:00 ▶ 24h

› 88.705

NL **Spanijzer, verstelbaar, Type 6314-AT**
FR **Bride expansible, Type 6314-AT**
ES **Brida regulable, Tip0 6314-AT**
DE **Verstellbares Spanneisen, Typ 6314-AT**





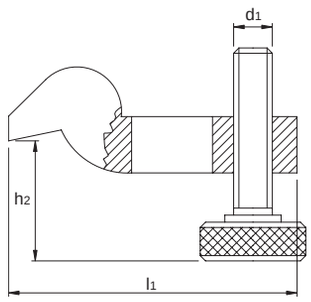
Ref.	e1 N6	l1	d1	h2	M
88.705.1108	10	80	M10	14	M10
88.705.1410	14	100	M12	14	M12, M14

Ref.	e1 N6	l1	d1	h2	M
88.705.1812	18	125	M16	16	M16, M18
88.705.2216	22	160	M20	20	M20, M22

› 88.710

NL **Spanijzer, verstelbaar, Type 6316-T**
FR **Bride expansible, Type 6316-T**
ES **Brida regulable, Tipo 6316-T**
DE **Verstellbares Spanneisen, Typ 6316-T**





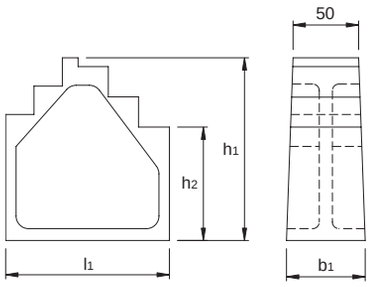
Ref.	e1 N6	l1	d1	h2	M
88.710.1110	11	100	M10	30-70	M10
88.710.1412	14	125	M12	34-74	M12, M14

Ref.	e1 N6	l1	d1	h2	M
88.710.1816	18	160	M16	43-93	M16, M18
88.710.2220	22	200	M20	50-110	M20, M22

› 88.750

NL **Ophoogblok, DIN 6318**
FR **Cale étagée, DIN 6318**
ES **Calzos de escalera, DIN 6318**
DE **Treppenblöcke, DIN 6318**





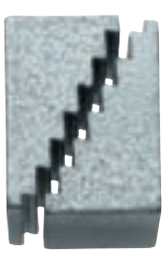
DIN
6318

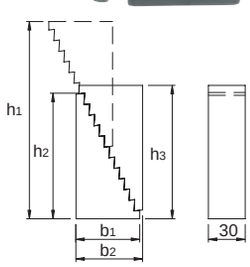
Ref.	l1	b1	h2	h1
88.750.0095	55	50	57.5	95

Ref.	l1	b1	h2	h1
88.750.0140	60	100	102.5	140

› 88.780

NL **Opstopblok, type 6500**
FR **Cale crénelée, type 6500**
ES **Calzo universal, tipo 6500**
DE **Spannunterlagen, Typ 6500**





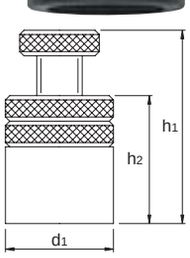
Ref.	b2	h1	h2	b1	h3
88.780.0050	25	50	36	22	40
88.780.0100	35	100	70	33	74

Ref.	b2	h1	h2	b1	h3
88.780.0190	60	190	120	60	124

› 88.800

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**





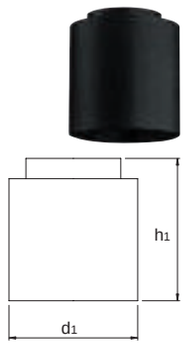
Ref.	Type	d1	h2	h1
88.800.0100	1	28	30	45
88.800.0200	2	38	45	65
88.800.0300	3	45	65	95
88.800.0400	4	60	90	140

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

19:00 ▶ 24h

› 88.805

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**



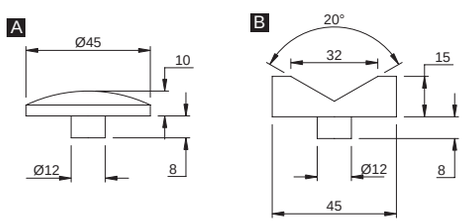
Ref.	Nr.	h1	d1
88.805.0101	1	15	28
88.805.0102	1	30	28
88.805.0103	1	60	28
88.805.0201	2	20	38
88.805.0202	2	40	38
88.805.0203	2	80	38
88.805.0301	3	30	45

Ref.	Nr.	h1	d1
88.805.0302	3	60	45
88.805.0303	3	100	45
88.805.0401	4	50	60
88.805.0402	4	100	60
88.805.0501	5	65	80
88.805.0502	5	130	100

› 88.810

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**





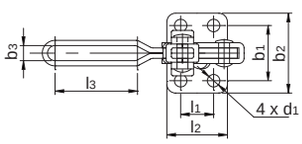
Ref.	Type
88.810.0100	A

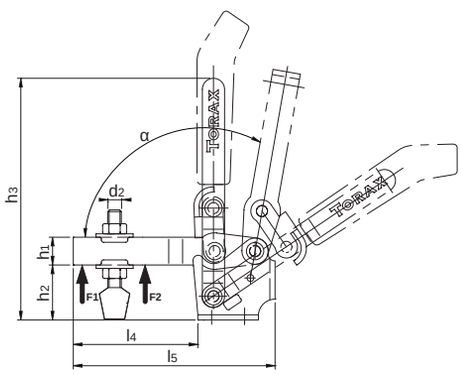
Ref.	Type
88.810.0200	B

› 88.900 TORAX

NL **Verticale Spanklem, met horizontale voet**
FR **Sauterelles verticale, à pied horizontal**
ES **Grapas Rapidas vertical, con base horizontal**
DE **Vertikale Spannklemme, mit waagerechtem Fuß**





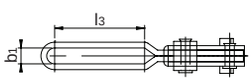


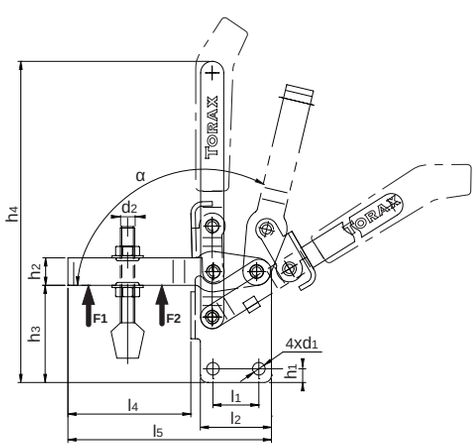
Ref.	Type	b1	l1	d1	b2	l2	b3	h1	h2	h3	l3	l4	l5	α1	Max daN	F2	d2
88.900.0000	0	23.8	15.9	4.4	33.3	25.4	5	8	18.8	76.1	17.5	26	54.2	100°	0.5	0.7	M4 x 25
88.900.0100	1	27	12.7	5.2	39.7	25.4	6.4	9.8	22.7	97.3	16	33	64	100°	0.8	1.1	M6 x 44
88.900.0300	3	31.8	19	7.2	46	34.9	8.7	16	31.8	140	47.6	71.4	116	100°	1.4	2.5	M8 x 63
88.900.0400	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	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	6	69.8	50.8	12.3	95.2	76.2	16.7	32	82.6	305	79.4	153	229.2	100° - 140°	3.5	5.5	M16 x 150

› 88.902 TORAX

NL **Verticale Spanklem, met verticale voet**
FR **Sauterelles verticale, à pied vertical**
ES **Grapas Rapidas vertical, con base vertical**
DE **Vertikale Spannklemme, mit vertikalem Fuß**







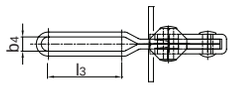
Ref.	Type	h1	l1	d1	l2	b1	h2	h3	h4	l3	l4	l5	α1	Max daN	F2	d2
88.902.0000	0	4.75	15.9	4.4	25.4	5	8	30.1	87.4	17.5	26	54.2	100°	0.8	1.1	M4 x 25
88.902.0100	1	6.4	12.7	5.2	25.4	6.4	9.8	34.6	109		32.9	64	100°	0.8	1.1	M6 x 44
88.902.0300	3	7.1	19	7.2	34.9	8.7	16	46.9	154	47.6	71.4	64	100°	1.4	2.5	M8 x 63
88.902.0400	4	9.5	31.8	8.7	49.2	11	19	67.3	222	62.5	85.1	116	105°	2	3	M10 x 85
88.902.0500	5	9.5	31.8	8.7	50.8	13.4	22.5	67	241	79.4	125.4	140.9	100° - 135°	3	5	M12 x 100
88.902.0600	6	12.7	50.8	12.3	76.2	16.7	31.8	115	338	90	153	176.2	100° - 140°	3.5	5.5	M16 x 150

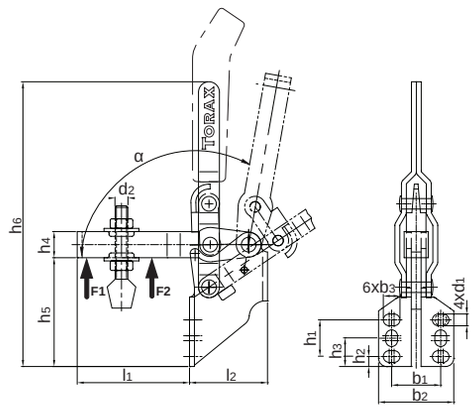
19:00 ▸ 24h

› 88.904 TORAX

NL **Verticale Spanklem, met haakse hoek**
FR **Sauterelles verticale, à angle perpendiculaire**
ES **Grapas Rapidas vertical, con ángulo perpendicular**
DE **Vertikale Spannklemme, mit rechtwinkliger Erstellung**





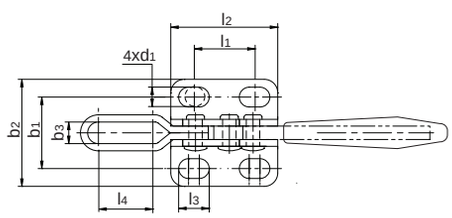


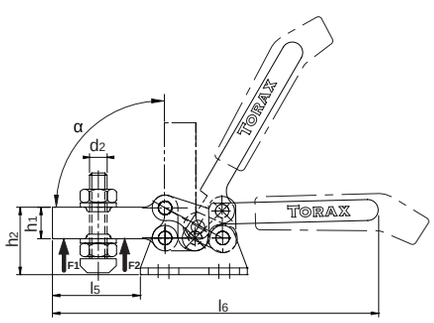
Ref.	Type	b1	h1	d1	b2	b3	b4	h2	h3	h4	h5	h6	l1	l2	l3	α1	Max daN	F2	d2
88.904.0100	1	20	14	4.8	30		8.4	7.5		10	44.8	119	36	34.2	22.9	90°	0.8	1.1	M4 x 25
88.904.0300	3	30	22.4	7.2	46	10.2	8.7	6.1	17,3	16	66.6	174	68.2	47.7	47.6	100°	1.4	10.2	M8 x 63

› 88.910 TORAX

NL **Horizontale Spanklem, met horizontale voet**
FR **Sauterelle horizontale, à pied horizontal**
ES **Grapas Rapidas horizontal, con base horizontal**
DE **Horizontaler Spannklemme, mit waagerechtem Fuß**



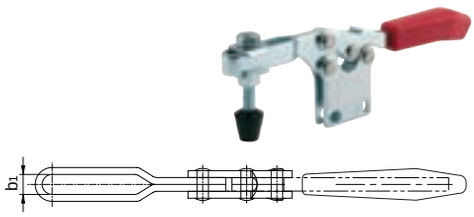


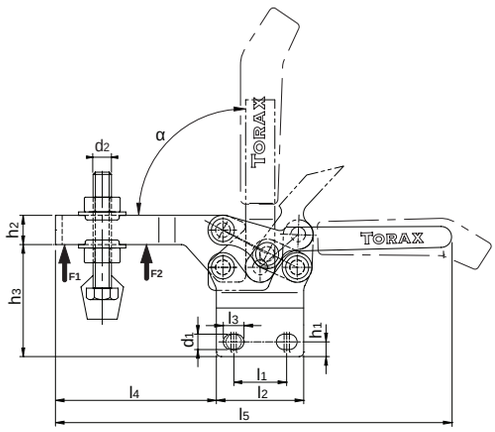


Ref.	Type	b1	l1	b2	l2	l3	b3	h1	h2	l4	l5	l6	α1	Max daN	F2	d2
88.910.0000	0	15.9	13.5	23.8	23.8	6.8	4.8	7	15	11	19.6	77	90°	0.25	0.4	M4 x 25
88.910.0200	2	22	27	36	37	6	7.4	12.7	38.1	35	56.2	142	85°	1	1.2	M6 x 44
88.910.0300	3	22.2	23.1	35	38	9	8.7	12.7	47.6	44	70	168	90°	1.8	2.5	M8 x 63
88.910.0500	5	41.3	41.3	57.2	57.1		11	19	63.5	78	107	292	85°	3	5	M10 x 85

› 88.912 TORAX

NL **Horizontale Spanklem, met verticale voet**
FR **Sauterelle horizontale, à pied vertical**
ES **Grapas Rapidas horizontal, con base vertical**
DE **Horizontaler Spannklemme, mit vertikalem Fuß**



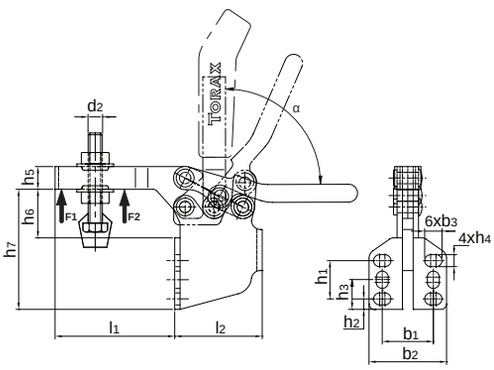


Ref.	Type	h1	l1	d1	l3	l2	b1	h2	h3	l4	l5	α1	Max daN	F2	d2
88.912.0000	0	3.95	13.5	4.4	6.8	23.8	4.8	7	16.1	19.6	77	90°	0.25	0.4	M4 x 25
88.912.0200	2	7	27	5.2	6	37	7.4	12.7	37.9	56.2	56.2	85°	1	1.2	M6 x 44
88.912.0300	3	6.4	23.1	6.7	9	38	8.7	12.7	48.7	70	168	90°	1.8	2.5	M8 x 63
88.912.0500	5	7.9	41.3	8.3		57.1	11	19	63	107	292	85°	3	5	M10 x 85

› 88.914 TORAX

NL **Horizontale Spanklem, met verticale voet**
FR **Sauterelle horizontale, à pied vertical**
ES **Grapas Rapidas horizontal, con base vertical**
DE **Horizontaler Spannklemme, mit vertikalem Fuß**





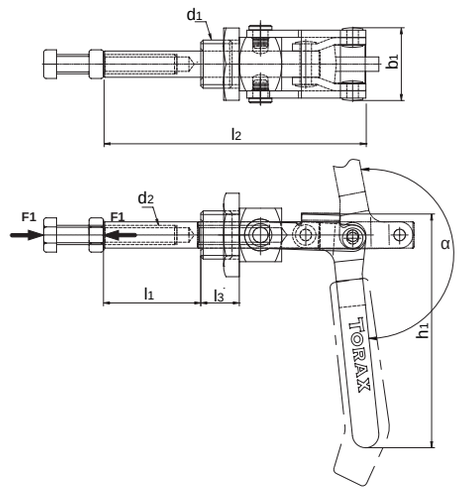
Ref.	Type	b1	h1	b3	h4	b2	b4	h2	h3	h5	h6	h7	l1	l2	α1	Max daN	F2	d2
88.914.0200	2	22	20.4	8.2	5.2	36	7.4	6.1	16.3	12.7	17.2	62.2	53.25	44	85°	1	1.2	M6 x 44
88.914.0300	3	28.6	21.4	9.7	6.7	43.4	8.7	5.85	16.55	12.7	27.2	67.2	67	49	90°	1.8	2.5	M8 x 63

19:00 ▸ 24h

› 88.920 TORAX

NL **Schuifstang Spanklem, zonder voet**
FR **Sauterelle à tige coulissante, sans pied**
ES **Grapas Rapidas Barra corredera, sin base**
DE **Spannklemme mit Schiebestange, ohne Fuß**



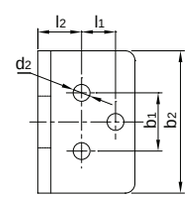


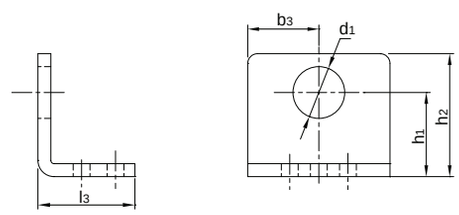
Ref.	Type	l1	l2	b1	d1	h1	l3	α1	Max daN	d2
88.920.0200	2	21	64.2	24	M16 x 1,5	75	12.7	180°	2	M6 x 1 x 25
88.920.0300	3	39.7	115	31	M20x 1,5	98	15.9	180°	2.5	M8 x 1,25 x 35
88.920.0500	5	70.3	171	39	M27 x 2	137	22.3	180°	4.5	M10 x 1,5 x 40

› 88.921 TORAX

NL **Haakse voet voor Schuifstang**
FR **Pied perpendiculaire pour tige coulissante**
ES **Base perpendicular para Barra corredera**
DE **Winkelfuß für Schubstange**





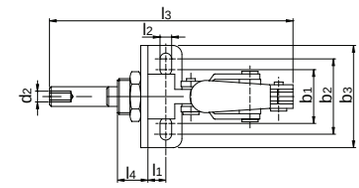


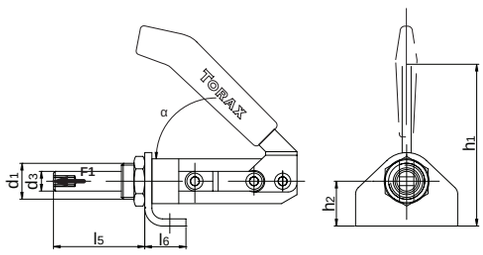
Ref.	Type	l1	b1	h1	l2	b2	b3	d1	d2	h2	l3
88.921.0200	2	10.5	18	26	13.5	44	22	16	5.2	38	30
88.921.0300	3	19	41.3	33.3	14.4	69.9	34.95	20	5.6	52.4	41.3
88.921.0500	5	31.8	45.2	37	21	76	38	27	8.5	62	62

› 88.924 TORAX

NL **Schuifstang Spanklem, met voet**
FR **Sauterelle à tige coulissante, à pied**
ES **Grapas Rapidas Barra corredera, con base**
DE **Spannklemme mit Schiebestange, mit Fuß**





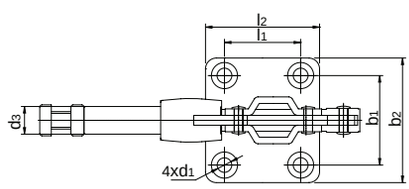


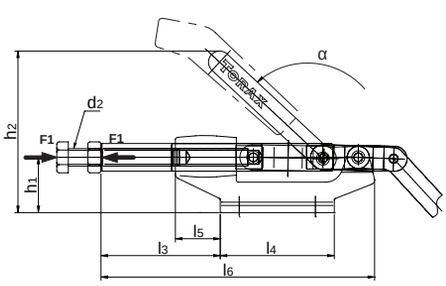
Ref.	Type	l1	b1	b2	l2	b3	h1	h2	l3	l4	l5	l6	d1	d3	α1	Max daN	d2
88.924.0300	3	30	10	42	6.5	57	85	25	136	17	51	23	M20 x 1,5	11	190°	2.5	M6 x 1
88.924.0500	5	30	13	45	8.5	64	120	30	16.55	22	59.5	30	M24 x 1,5	16	185°	4.5	M10 x 1,5

› 88.928 TORAX

NL **Schuifstang Spanklem, met voet**
FR **Sauterelle à tige coulissante, à pied**
ES **Grapas Rapidas Barra corredera, con base**
DE **Spannklemme mit Schiebestange, mit Fuß**





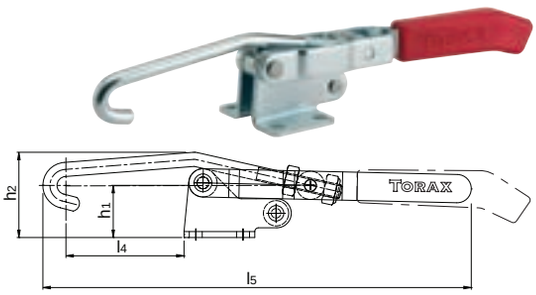


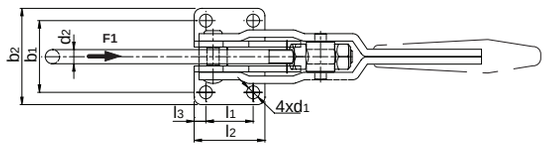
Ref.	Type	b1	l1	b2	l2	h1	h2	d1	d3	l3	l4	l5	l6	α1	Max daN	d2
88.928.0300	3	41.1	35	57.2	52.4	25.4	74.2	6.7	12.7	54.8	52.4	20.6	125	190°	4	M8 x 1,25
88.928.0500	5	41.1	41.1	57.2	58.8	31.8	93.5	8.3	16	81	58.8	31.8	163	185°	10	M10 x 1,5
88.928.0700	7	50.8	50.8	71.4	73.2	44.4	131.6	8.3	19.2	119.8	73.2	50.8	235	185°	25	M12 x 1,75

19:00 ▶ 24h

› 88.935 TORAX

NL **Sluitklem, zonder tegenhouder**
FR **Collier de serrage, sans bras support**
ES **Pasador de cierre, sin contrasoporte**
DE **Beckenendlage, ohne Gegenhalter**





Ref.	Type	b1	l1	d1	b2	l2	h1	h2	d2	l4	l5	l3	Max daN
88.935.0100	1	35	19	5.6	49.2	38.1		36.5	8	58.4	210.2	12.7	2
88.935.0300	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	5	60.3	28.6	10.3	85.7	54	46	66.7	12.7	76.2	335.2	12.7	5

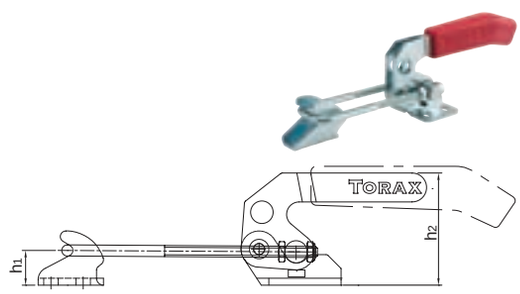
› 88.936 TORAX

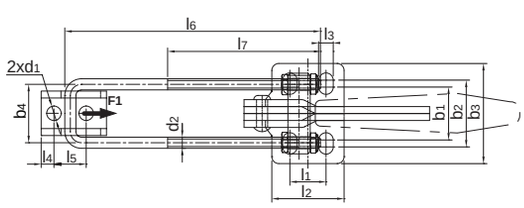
NL **Tegenhouder, voor 88.935**
FR **Bras support, pour 88.935**
ES **Contrasoporte, para 88.935**
DE **Gegenhalter, für 88.935**

Ref.	Type
88.936.1100	1
88.936.1300	3
88.936.1500	5

› 88.940 TORAX

NL **Sluitklem, 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**



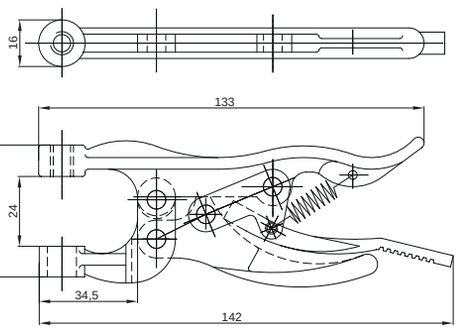


Ref.	Type	b1	l1	b2	l2	b3	l3	b4	l4	l5	d1	h1	h2	l6	l7	Max daN	d2
88.940.0200	2	19	13	24	26	36	5.2	21	4.6	11.6	5.2	12.5	40.3	92	55	1.6	M4
88.940.0300	3	25	19	32	35	48	6.5	28.5	17.7	14	6.4	21	59	114	60	3.2	M6
88.940.0500	5	36	32	45	51	60	8.5	44.5	8	19	8.5	24.2	82.3	152	60	7	M8

› 88.965 TORAX

NL **Klemtang**
FR **Pince de bridage**
ES **Pinza de sujeción**
DE **Schweißer zange**





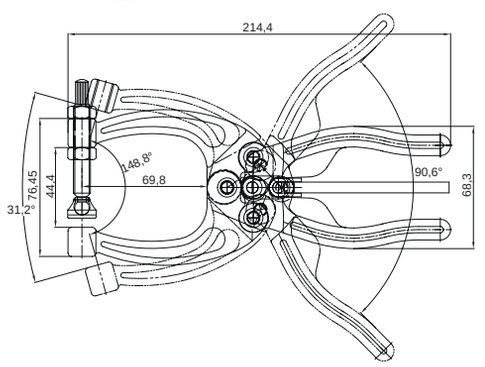
NIEUW NOUVEAU NUEVO NEU

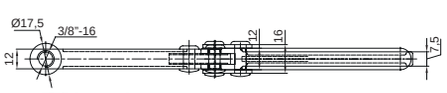
Ref.	Nr.
88.965.0200	1

› 88.966 TORAX

NL **Klemtang**
FR **Pince de bridage**
ES **Pinza de sujeción**
DE **Schweißer zange**







NIEUW NOUVEAU NUEVO NEU

Ref.	Nr.
88.966.0320	1

› 88.991 TORAX

NL **Bout met kunststof voet**
FR **Boulon à pied plastique**
ES **Perno con base sintética**
DE **Bolzen mit Kunststoffplatte**

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

19:00 ▶ 24h

› 88.994 TORAX

NL **Basishouder voor snelwissel-draaibeitelhouders**
FR **Mandrin de base pour porte-outils de tournage à serrage rapide**
ES **Soporte base para portacasquillos de cambio rápido y herramientas de torno**
DE **Grundhalter für Dreh-Schnellwechselhalter**

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 TORAX

NL **Set Parallelvlakstukken**
FR **Jeu de Cales parallèles**
ES **juego Bases paralelas**
DE **Satz Parallelunterlagen**



Ref.	Nr.	l1	hxb
88.860.0100	20	100	5-10-15-20 (2 mm) / 6-11-16-21 (3 mm) / 7-12-17-22 (4 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 TORAX

NL **Set Parallelvlakstukken**
FR **Jeu de Cales parallèles**
ES **juego Bases paralelas**
DE **Satz Parallelunterlagen**



Ref.	Nr.	l1	hxb
88.870.0104	6	100	18-22-26-30-34-38 (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)

› 89.280 TORAX

NL **Set Spantangen ER16 t/m ER40**
FR **Jeu de Pinces ER16 jusqu'à ER40**
ES **juego de Pinzas ER16 hasta ER40**
DE **Satz Spannzangen ER16 bis ER40**



DIN 6499-B ER

Ref.	Nr.	Type	Ø mm
89.280.1600	10	ER 16	1-10
89.280.2000	13	ER 20	1-13
89.280.2500	15	ER 25	2-16
89.280.3200	18	ER 32	3-20
89.280.4000	28	ER 40	3-30

19:00 ▶ 24h

› 89.282 TORAX

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**



DIN 6499-B | ER

Ref.	1	2	3	4
89.282.0225	82.511.0225		82.825 Ø 6-10-12-16	82.990.2500
89.282.0332	82.511.0332		82.832 Ø6-10-12-16-20	82.990.3200
89.282.0432	82.511.0432		82.832 Ø6-10-12-16-20	82.990.3200
89.282.3032		82.513.3065	82.832 Ø6-10-12-16-20	82.990.3200
89.282.4032		82.513.4063	82.832 Ø6-10-12-16-20	82.990.3200

› 89.878

NL **Set Opstopblokken**
FR **Jeu de Cales crénelées**
ES **Juego Calzos universales**
DE **Satz Füllblock**



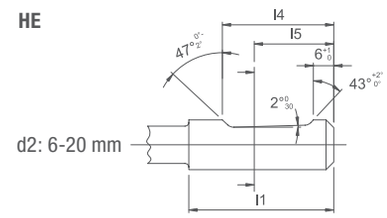
Ref.	#
89.878.1000	8 x 25-50 mm, 8 x 35-100 mm, 4 x 60-190 mm

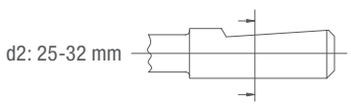
NL **Cilindrische schacht DIN 6535**
FR **Queue cylindrique DIN 6535**
ES **Mango cilíndrico DIN 6535**
DE **Zylinderschaft DIN 6535**

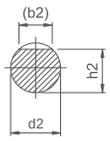
HA

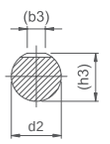


HE



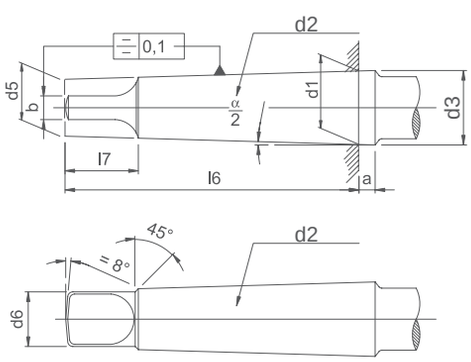




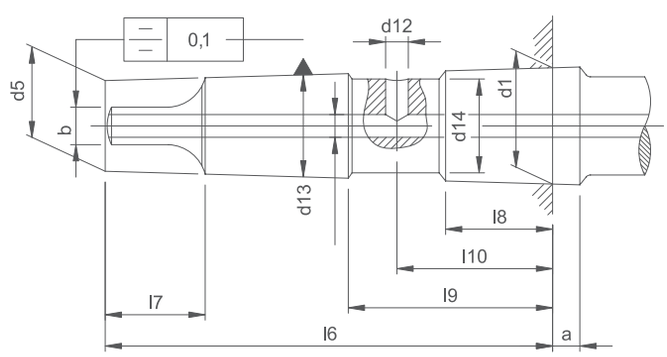


d2	(b2) h1	(b3)	h2	(h3)	l1 +2 0	l4 0 -1	l5	r2
6	4,3		5,1		36	25	18	1,2
8	5,5		6,9					
10	7,1		8,5		40	28	20	
12	8,2		10,4		45	33	22,5	
14	8,1		12,7					
16	10,1		14,2		48	36	24	1,6
18	10,8		16,2					
20	11,4		18,2		50	38	25	
25	13,5	9,3	23,0	24,1	56	44	32	

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**



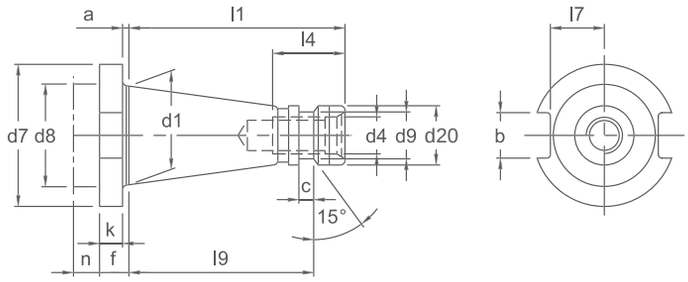
NL **Form BK, met inwendig koelkanaal**
FR **Forme BK, avec trou d´huile interne**
ES **Forma BK, con canal de refrigeración interno**
DE **Form BK, mit innerem Kühlkanal**



d2	a	b h13	d1	d3	d5	d6	d12	d13 -0,1	d14 0 -0,1	l6	l7	l8	l9	l10	α/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"

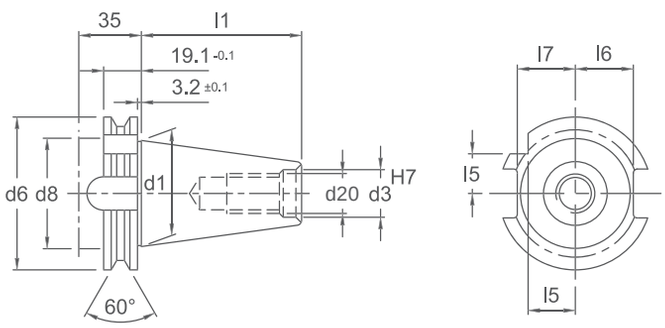
19:00 ▶ 24h

NL **SK-opname volgens DIN 2080**
FR **Attachements SA selon DIN 2080**
ES **Sujeción SA según DIN 2080**
DU **SK-Aufnahmen nach DIN 2080**



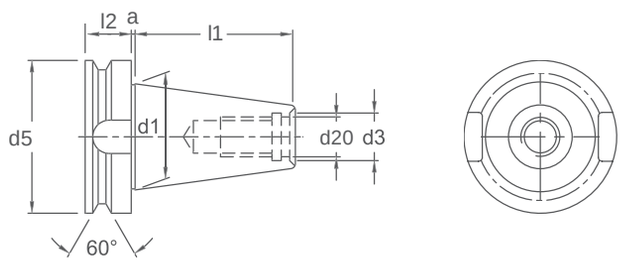
d2	d1	a	b	d20	d4	d7	d8	l1	l4	l7	l9	d9	c	k	f	n
SK 30	31,75	1,6	16,1	17,4	M12	50	36	68,4	24	16,2				8	9,5	9
SK 40	44,45	1,6	16,1	25,3	M16	63	50	93,4	32	22,5	82	21,1	7	10	11,1	11
SK 50	69,85	3,2	25,7	39,6	M24	97,5	78	126,8	47	35,3	115	32	13	12	15,1	16
SK 60	107,95	3,2	25,7	60,2	M30	156	136	206,8	59	60				16	19,1	16

NL **SK-opname volgens DIN 69871-A**
FR **Attachements SK selon DIN 69871-A**
ES **Sujeción SK según DIN 69871-A**
DU **SK-Aufnahmen nach DIN 69871-A**



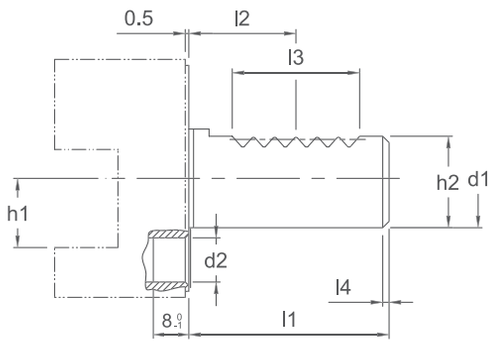
d2	d1	d20	d3	d6	d8	l1	l5	l6	l7
SK 30	31,75	M12	13	50,00	45	47,8	15,00	16,40	19,00
SK 40	44,45	M16	17	63,55	50	68,40	18,50	22,80	25,00
SK 45	57,15	M20	21	82,55	63	82,70	24,00	29,10	31,30
SK 50	69,85	M24	25	97,50	80	101,75	30,00	35,50	37,70

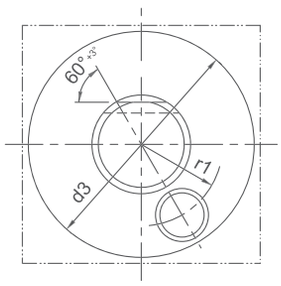
NL **BT-Opname volgens MAS 403-BT**
FR **Attachements BT selon MAS 403-BT**
ES **Sujeción BT según MAS 403-BT**
DU **BT-Aufnahmen nach MAS 403-BT**



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**

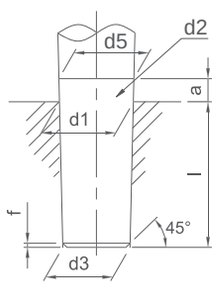


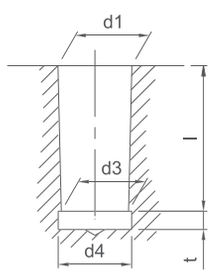


d1 h6	l1 +0,3	d2	Tol.	d3	h1 max	h2 +0,1	l2 +0,05	l3 min	l4 1	r1 +0,02
16	32	8	H6	40	12	15	12,7	16	2	14,5
20	40	10	H6	50	16	18	21,7	24	2	18
25	48	10	H6	58	16	23,5	21,7	24	2	21
30	55	14	H8	68	20	27	29,7	40	2	25
40	63	14	H8	83	25	36	29,7	40	3	32
50	78	16	H8	98	32	45	35,7	48	3	37
60	94	16	H8	123	32	55	43,7	56	4	48

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**

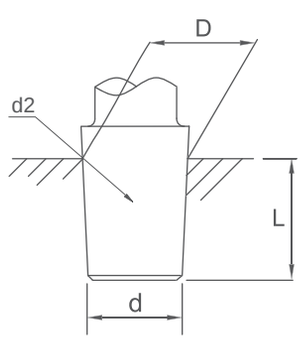
d2	a	d1	d5	d3	d4	f	l	t
B6	3	6,35	6,5	5,85	6,5	0,5	10	3
B10	3,5	10,094	10,3	9,4	9,8	1	14,5	3,5
B12	3,5	12,065	12,2	11,1	11,5	1,	18,5	3,5
B16	5	15,733	16,0	14,5	15,0	1,5	24,0	4,0
B18	5	17,780	18,0	16,2	16,8	1,5	25,0	4,0
B18 short	5	17,431	18,0	16,2	16,8	1,5	25,0	4,0
B22	5	21,793	22,0	19,8	20,5	2,0	40,5	4,5
B25	5	23,825	24,1	21,3	22,0	2,0	50,5	4,5





NL **Boorstift-opnames volgens Jacobs**
FR **Attachements pour mandrin porte-forets selon Jacobs**
ES **Sujeción espiga para portabrocas según Jacobs**
DE **Bohrfutterkegel-Aufnahmen nach DIN Jacobs**

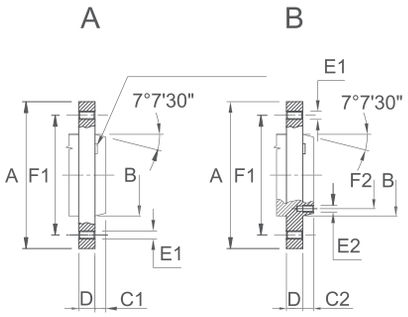
d2	D	d	L	Con. (%)
J1	9,754	8,469	16,669	7,709
J2 short	13,940	12,386	19,050	8,155
J2	14,199	12,386	22,225	8,155
J33	15,850	14,327	25,400	6,350
J6	17,170	15,852	25,400	5,191
J3	20,599	18,951	30,956	5,325



19:00 24h

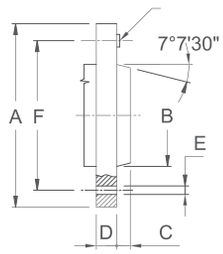
NL **Machinespilneuzen volgens DIN 55026 (bevestiging van voren)**
FR **Broches de machine selon DIN 55026 (fixation par l'avant)**
ES **Cabezales de torno según DIN 55026 (montaje delantero)**
DE **Maschinenspindeln nach DIN 55026 (Befestigung von vorne)**

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



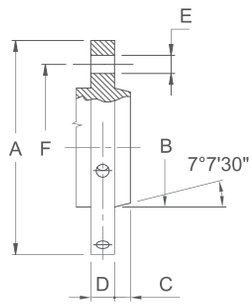
NL **Machinespilneuzen met Bajonetbevestiging volgens DIN 55027**
FR **Broches de machine avec fixation Baïonette selon DIN 55027**
ES **Cabezales de torno con fijación Bayoneta según DIN 55027**
DE **Maschinenspindeln mit Bajonet-Befestigung nach DIN 55027**

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



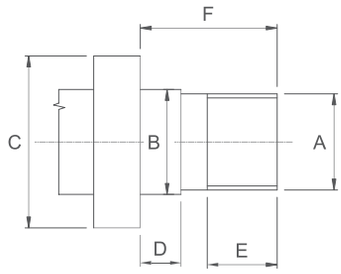
NL **Machinespilneuzen met Camlockbevestiging volgens DIN 55029**
FR **Broches de machine avec fixation Camlock selon DIN 55029**
ES **Cabezales de torno con fijación Camlock según DIN 55029**
DE **Maschinenspindeln mit Camlock-Befestigung nach DIN 55029**

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**

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**

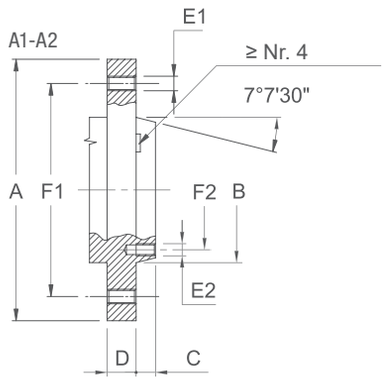
A1								
Nr.	A	B max.	C -0,025	D	E1	F1	E2	F2
5	133,4	82,275	14,288	22,2	11 x 7/16-14 UNC	104,8	8 x 7/16-14 UNC	61,9
6	165,1	106,390	15,875	25,4	11 x 1/2-13 UNC	133,4	8 x 1/2-13 UNC	82,6
8	209,5	139,735	17,462	28,6	11 x 5/8-11 UNC	171,4	8 x 5/8-11 UNC	111,1
11	279,4	196,885	19,05	34,9	11 x 3/4-10 UNC	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

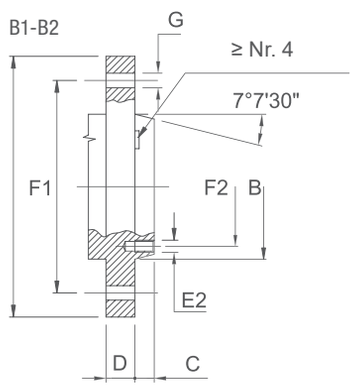
A2						
Nr.	A	B max.	C -0,025	D	E1	F1
3	92,1	53,985	11,1	15,9	3 x 7/15-14 UNC	70,66
4	108	63,525	11,1	19	11 x 7/16-14 UNC	82,55
5	133,4	82,575	12,7,	22,2	11 x 7/16-14 UNC	104,8
6	165,1	106,39	14,3	25,4	11 x 1/2-13 UNC	133,4
8	209,5	139,735	15,9	28,6	11 x 5/8-11 UNC	171,4
11	279,4	196,885	17,5	34,9	11 x 3/4-10 UNC	235
15	381	285,8	19	41,3	12 x 7/8-9 UNC	330,2

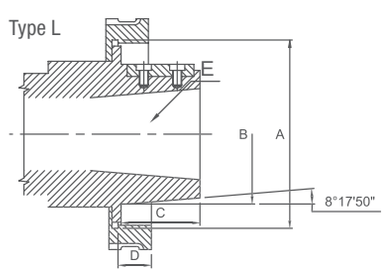
B1								
Nr.	A	B max.	C -0,025	D	G	F1	E2	F2
5	133,4	82,275	14,288	22,2	11 x 7/16-14 UNC	104,8	8 x 7/16-14 UNC	61,9
6	165,1	106,390	15,875	25,4	11 x 1/2-13 UNC	133,4	8 x 1/2-13 UNC	82,6
8	209,5	139,735	17,462	28,6	11 x 5/8-11 UNC	171,4	8 x 5/8-11 UNC	111,1
11	279,4	196,885	19,05	34,9	11 x 3/4-10 UNC	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



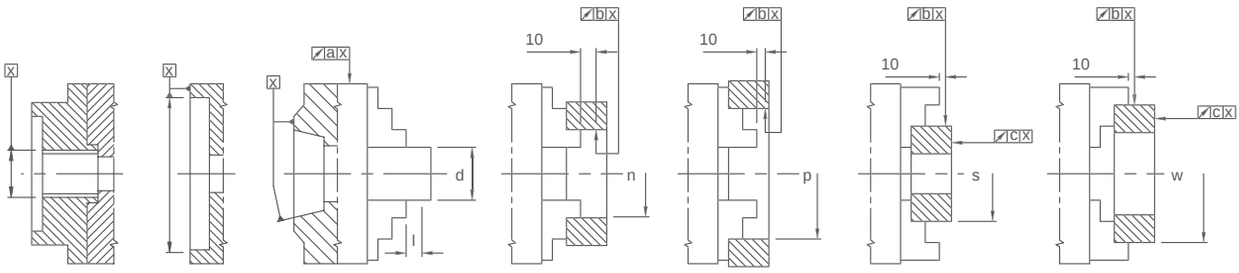




19:00 24h

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**



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**

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

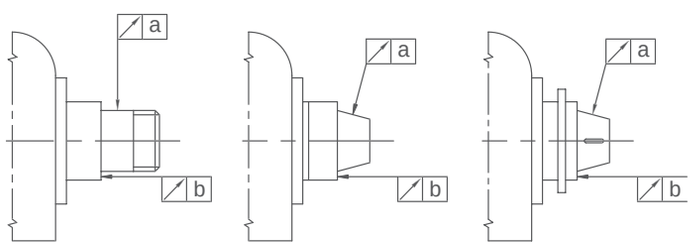
NL **Centreernauwkeurigheid voor gietijzeren klauwplaten 500 - 800 mm**
FR **Tolérance de centrage pour les mandrins en fonte 500 - 800 mm**
ES **Tolerancia de centrado para los platos de garras de fundición 500 - 800 mm**
DE **Zentriergenauigkeit von Gusseisenbackenfutter 500 - 800 mm**

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**

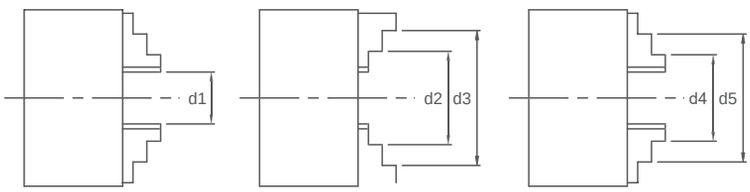
Tol. (mm)		
	80 - 160	200 - 800
a	0,003 mm	0,005 mm
b	0,003 mm	0,005 mm



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**



	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**

	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)**

	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)**

	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

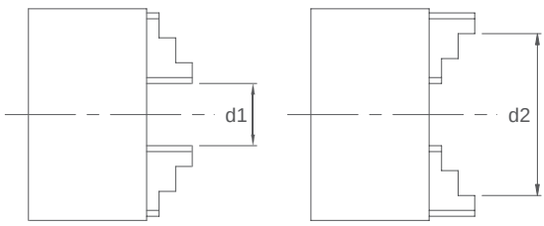
NL **Totale spankracht (daN) voor klauwplaten**
FR **Force de serrage totale (daN) pour serrage des mandrins**
ES **Fuerza de sujeción total (daN) para platos de garras**
DE **Gesamtspannkraft (daN) für Backenfutter**

	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

19:00 24h

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**



100x45

	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**

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**

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

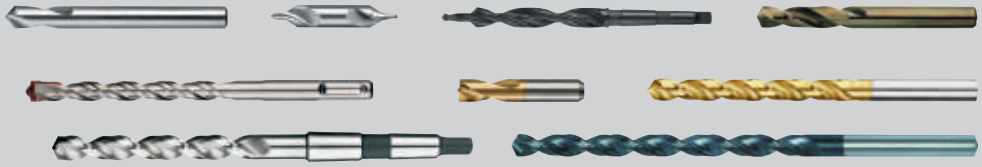
NL **Instelmomenten van tapinzetstukken met ratel (Nm)**
FR **Tableau des réglages pour les têtes à tarauder à limiteur de couple (Nm)**
ES **Tabla de los momentos torsor para casquillos para roscado con embrague de seguridad (Nm)**
DE **Einstellmomente von Gewindebohrereinsatzstück mit Sicherheitskupplung (Nm)**

M	Type 19/1	Type 31/2	Type 48/3
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 **VHM Boren**
FR **Forets Carbure Monobloc**
ES **Brocas Metal Duro**
DE **VHM Bohrer**



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**



NL **Draadsnijden**
FR **Filetage**
ES **Roscar**
DE **Gewinde Schneiden**



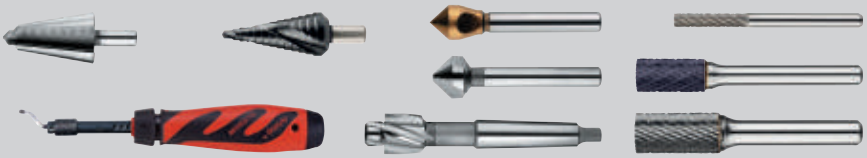
NL **VHM Frezen**
FR **Fraises Carbure Monobloc**
ES **Fresas Metal Duro**
DE **VHM Fräser**



NL **HSS-E Frezen**
FR **Fraises HSS-E**
ES **Fresas HSS-E**
DE **HSS-E Fräser**



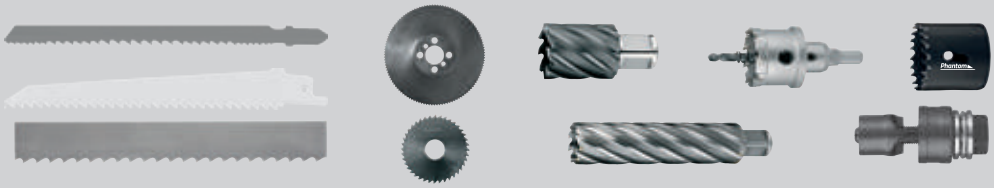
NL **Verzinken en Ontbramen**
FR **Chanfreinage et Ebavurage**
ES **Avellanar y Desbarbar**
DE **Senker und Entgrater**



NL **Ruimen**
FR **Alésage**
ES **Escariar**
DE **Reibahlen**



NL **Zagen en Ponsen**
FR **Sciage et Poinçonnage**
ES **Serrar y Punzonar**
DE **Sägen und Blechlocher**



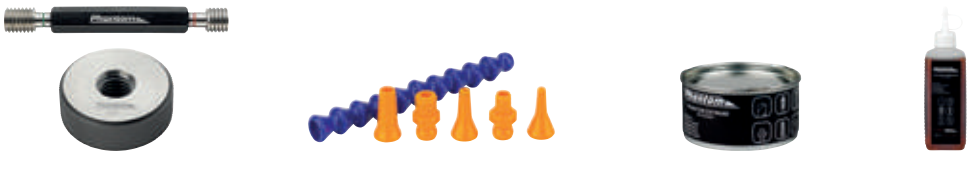
NL **Draaien**
FR **Tournage**
ES **Tornear**
DE **Dreh- und Fräswerkzeuge**



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



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**



NL **Overig**
FR **Autres**
ES **Otros**
DE **Übrig**

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

› 90.110	Phantom			P. 2
› 90.120	Phantom			P. 2
› 90.130	Phantom			P. 2
› 90.140	Phantom			P. 2
› 90.150	Phantom			P. 3
› 90.210	Phantom			P. 3
› 90.510	Phantom	1/4"		P. 4
› 90.520	Phantom	1/2"		P. 5
› 91.200	Phantom	M		P. 7
› 91.205	Phantom	M		P. 7
› 91.206	Phantom	M		P. 7
› 91.210	Phantom	MF		P. 7
› 91.215	Phantom	MF		P. 8
› 91.216	Phantom	MF		P. 8
› 91.220	Phantom	UNC		P. 8
› 91.225	Phantom	UNC		P. 9
› 91.226	Phantom	UNC		P. 9
› 91.230	Phantom	UNF		P. 9
› 91.235	Phantom	UNF		P. 9
› 91.236	Phantom	UNF		P. 10
› 91.250	Phantom	BSPT Rc		P. 10
› 91.255	Phantom	BSPT Rc		P. 10
› 91.256	Phantom	BSPT Rc		P. 10
› 91.270	Phantom	NPT		P. 10
› 91.275	Phantom	NPT		P. 11

› 90.110 Phantom



NL **Universal Snijolie EP (Extreme Pressure), chloor- en silicoonvrij, 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), Chlorfreie, auf Mineralölbasis**

Ref.	Contents
90.110.0250	250 ml
90.110.0251	Box with 10 pcs
90.110.5005	

Ref.	Contents
90.110.5010	
90.110.5025	
90.110.5060	

Ref.	Contents
90.110.5200	

› 90.120 Phantom



NL **Non-Ferro Snijolie EP (Extreme Pressure), chloor- en silicoonvrij, 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), Chlorfreie, auf Mineralölbasis**

Ref.	Contents
90.120.0250	250 ml
90.120.0251	
90.120.5005	

Ref.	Contents
90.120.5010	
90.120.5025	
90.120.5060	

Ref.	Contents
90.120.5200	

› 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), Chlorfreie, auf Mineralölbasis**

Ref.	Contents
90.130.0250	250 ml
90.130.0251	
90.130.5005	

Ref.	Contents
90.130.5010	
90.130.5025	
90.130.5060	

Ref.	Contents
90.130.5200	

› 90.140 Phantom



NL **Allround Snijolie spray EP (Extreme Pressure), chloor- en silicoonvrij, op plantaardige basis**
FR **Allround Huile de coupe spray EP (Haute Pression), sans chlore, à base d'huile végétale**
ES **Allround Aceite de corte pulverizador EP (Alta Presión), sin cloro, base vegatal**
DE **Allround Schneidöl Spray EP (Extreme Pressure), Chlorfreie, auf pflanzlicher Basis**

Ref.	Contents
90.140.0400	400 ml

Ref.	Contents
90.140.0401	

Ref.	Contents

› 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, Chlorfreie**



Ref.	Contents
90.150.0250	250 gr.
90.150.0251	

Ref.	Contents
90.150.2500	2,5 kg.
90.150.5000	

Ref.	Contents

› 90.210 Phantom

NL **Multi Cooling Concentrate, chloor- en silicoonvrij, secundair aminevrij en nitrietvrij**
FR **Multi Cooling Concentrate, sans chlore, exempt d'amine secondaire et de nitrite**
ES **Multi Cooling Concentrate, sin cloro, sin amina secundaria y sin nitritos**
DE **Hochleistungs- Kühlsmier- Konzentrat, Chlorfreie, sekundäre Amin-frei und Nitrit-frei**



Ref.	Contents
90.210.0050	5 l

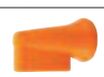
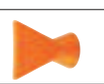
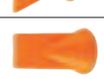
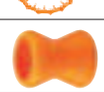
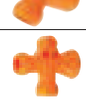
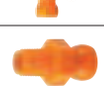
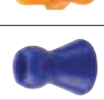
Ref.	Contents

Ref.	Contents

› 90.510 Phantom

NL **Koelmiddelslang 1/4”**
FR **Tuyau pour réfrigérant 1/4”**
ES **Sistema de mangueras 1/4”**
DE **Kühlmittelschlauch 1/4”**

1/4” max. 6 bar 15 l/min

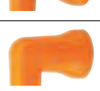
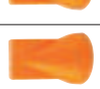
Ref.	NL	FR	ES	DE	Nr.	
90.510.1028	10 Segmenten lengte 140 mm	10 Segments 140 mm	10 Segmentos largo=140 mm	10 Segmenten länge 140 mm	2	
90.510.2015	Ronde spuitmond 1,5 mm	Buse ronde 1,5 mm	Tobera redonda 1,5 mm	Runde Düse 1,5 mm	4	
90.510.2030	Ronde spuitmond 3 mm	Buse ronde 3 mm	Tobera redonda 3 mm	Runde Düse 3 mm	4	
90.510.2060	Ronde spuitmond 6 mm	Buse ronde 6 mm	Tobera redonda 6 mm	Runde Düse 6 mm	4	
90.510.2115	Spuitmond 90° 1,5 mm	Buse 90 ° 1,5 mm	Tobera 90° 1,5 mm	Düse 90° 1,5 mm	4	
90.510.2130	Spuitmond 90° 3 mm	Buse 90 ° 3 mm	Tobera 90° 3 mm	Düse 90° 3 mm	4	
90.510.2160	Spuitmond 90° 6 mm	Buse 90 ° 6 mm	Tobera 90° 6 mm	Düse 90° 6 mm	4	
90.510.2190	Douchespuitmond 90°	Buse de douche 90°	Tobera de ducha 90°	Duschkopf 90°	2	
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	4	
90.510.2325	Platte spuitmond 25 x 1 mm	Buse plate 25x1 mm	Tobera plana 25 x 1 mm	Flachdüse 25 x 1 mm	2	
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	4	
90.510.2600	Ringsysteem bestaat uit 15 elementen en afsluitkap	Système de bague (15x) et bouchon	Sistema de anillo (15x) y tapa de cierre	Ringsysteem bestehende aus 15 Elementen und Schlusskappe	1	
90.510.3000	Koppelingsstuk	Raccord	Conexión	Kupplung	4	
90.510.3050	Afsluitkap	Bouchon	Tapa de cierre	Schlusskappe	4	
90.510.3100	Verlengstuk lengte 93 mm	Rallonge 93 mm	Expendedor largo 93 mm	Verlängerung 93 mm	4	
90.510.3150	Klemring met schroef	Bague de serrage m/vis	Abrazadera de aro con tornillo	Klemmring mit Schraube	4	
90.510.3170	Haaks verbindingsstuk	Bague de serrage m/vis	Conexión angular	Winkelverbindungsstücke	2	
90.510.3200	Y-verbindingsstuk	Raccord Y	Y-distribuidor	Y-Verbindungsstücke	2	
90.510.3220	T-verbindingsstuk	Pièce en T	Unión en T	T-Verbindungsstücke	2	
90.510.4080	Adapter NPT 1/8" buitendraad	Adaptateur NPT filetage externe 1/8”	Tobera de conexión NPT 1/8” rosca externo	Adapter NPT 1/8" Aussengewinde	4	
90.510.4140	Adapter NPT 1/4" buitendraad	Adaptateur NPT filetage externe 1/4”	Tobera de conexión NPT 1/4” rosca externo	Adapter NPT 1/4" Aussengewinde	4	
90.510.4270	Aadapter NPT 1/8" binnendraad	1/8 Raccord de réduction NPT	Tobera de conexión 1/8” NPT rosca interno	Adapter NPT 1/8" Innengewinde	4	

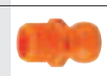
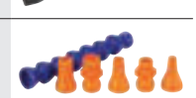
Ref.	NL	FR	ES	DE	Nr.	
90.510.4680	Adapter SAE 3/8" binnendraad	Adaptateur SAE filetage interne 3/8	Tobera de conexión SAE 3/8" rosca interno	Adapter SAE 3/8" Innengewinde	4	
90.510.5000	Kraan buitendraad NPT 1/4"	Robinet filetage externe NPT 1/4	Llave de cierre rosca externo NPT 1/4"	Hahn Aussengewinde NPT 1/4"	2	
90.510.5040	Kraan segmentaansluiting	Robinet Raccord de segment	Tubo flexible articulado con llave de cierre	Hahn Segmentanschluss	2	
90.510.8000	Montagetang	Pince de montage	Tenazas de montaje	Montagezange	1	
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 externo, Tobera de conexion NPT 1/8" rosca externo, 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	1	
90.510.9210	Spuitmondset 90°	Kit pour buse 90°	Juego de Toberas 90°	Düsensatz 90°	4	

› 90.520 Phantom

NL **Koelmiddelslang 1/2"**
FR **Tuyau pour réfrigérant 1/2"**
ES **Sistema de mangueras 1/2"**
DE **Kühlmittelschlauch 1/2"**

1/2" **max. 6 bar** **28 l/min**

Ref.	NL	FR	ES	DE	Nr.	
90.520.1028	7 Segmenten lengte 140 mm	7 Segments 140 mm	7 Segmentos largo 140 mm	7 Segmenten länge 140 mm	2	
90.520.2060	Ronde spuitmond 6 mm	Buse ronde 6 mm	Tobera redonda 6 mm	Runddüse 6 mm	4	
90.520.2090	Ronde spuitmond 9 mm	Buse ronde 9 mm	Tobera redonda 9 mm	Runddüse 9 mm	4	
90.520.2095	Ronde spuitmond 12 mm	Buse ronde 12 mm	Tobera redonda 12 mm	Runddüse 12 mm	4	
90.520.2160	Spuitmond 90° 6 mm	Buse 90° 6 mm	Tobera 90° 6 mm	Düse 90° 6 mm	4	
90.520.2190	Spuitmond 90° 9 mm	Buse 90° 9 mm	Tobera 90° 9 mm	Düse 90° 9 mm	4	
90.520.2220	Spuitmond 90° 12 mm	Buse 90° 12 mm	Tobera 90° 12 mm	Düse 90° 12 mm	4	
90.520.2290	Douchespuitmond 90°	Buse de douche 90°	Tobera de ducha 90°	Duschkopf 90°	2	
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	4	
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	4	
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	4	
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	4	
90.520.2332	Platte spuitmond 32 mm	Buse plate 32 mm	Tobera plana 32 mm	Flachdüse 32 mm	2	
90.520.2363	Platte spuitmond 63 mm	Buse plate 63 mm	Tobera plana 63 mm	Flachdüse 63 mm	2	

90.520.2600	Ringsysteem bestaat uit 14 elementen en afsluitkap	Système de bague (14x) et bouchon	Sistema de anillo (14x) y tapa de cierre	Ringsysteem bestehende aus 14 Elementen und Schlusskappe	1	
90.520.3000	Koppelingsstuk	Raccord	Pieza de conexión	Kupplung	4	
90.520.3050	Afsluitkap	Bouchon	Tapa de cierre	Schlusskappe	4	
90.520.3100	Verlengstuk lengte 96 mm	Rallonge 96 mm	Expendedor largo 96 mm	Verlängerung 96 mm	4	
90.520.3170	Haaks verbindingsstuk	Raccord à angle droit	Conexión angular	Winkelverbindungsstücke	2	
90.520.3200	Y-verbindingsstuk	Raccord Y	Y-distribuidor	Y-Verbindungsstücke	2	
90.520.3220	T-verbindingsstuk	Pièce en T	Unión en T	T-Verbindungsstücke	2	
90.520.4080	Adapter NPT 3/8" buitendraad	Adaptateur NPT filetage externe 3/8"	Tobera de conexión NPT 3/8" rosca externo	Adapter NPT 3/8" Aussenge-winde	4	
90.520.4140	Adapter NPT 1/2" buitendraad	Adaptateur NPT filetage externe 1/2"	Tobera de conexión NPT 1/2" rosca externo	Adapter NPT 1/2" Aussenge-winde	4	
90.520.4270	Adapter NPT 1/4" binnendraad	Adaptateur NPT filetage externe 1/4"	Tobera de conexión NPT 1/4" rosca interno	Adapter NPT 1/4" Innengewinde	4	
90.520.4280	Y-verloopstuk 1/4"	1/4" Raccord de réduction Y	Y-reducción 1/4"	Y-Verbindungsstücke 1/4"	2	
90.520.5000	Kraan buitendraad NPT 1/2"	Robinet filetage externe NPT 1/2"	Llave de cierre rosca externo NPT 1/2"	Hahn Aussengewinde NPT 1/2"	2	
90.520.5040	Kraan segmentaansluiting	Robinet Raccord de segment	Tubo flexible articulado con llave de cierre	Hahn Segmentanschluss	2	
90.520.8000	Montagetang	Pince de montage	Tenazas de montaje	Montagezange	1	
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: 7Segments, Adap-tateur 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 externo, Tobera de conexión NPT 1/2" rosca externo, 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	1	

19:00 24h

› 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**

Ref.	d1	P
91.200.0300	M3	0.5
91.200.0400	M4	0.7
91.200.0500	M5	0.8
91.200.0600	M6	1
91.200.0800	M8	1.25
91.200.1000	M10	1.5

Ref.	d1	P
91.200.1200	M12	1.75
91.200.1400	M14	2
91.200.1600	M16	2
91.200.1800	M18	2.5
91.200.2000	M20	2.5
91.200.2200	M22	2.5

Ref.	d1	P
91.200.2400	M24	3
91.200.2700	M27	3
91.200.3000	M30	3.5
91.200.3300	M33	3.5
91.200.3600	M36	4

› 91.205 Phantom



NL **Draadringkaliber, goedkeur, Metrisch, 6g**
FR **Bague filetée, entre, Métrique, 6g**
ES **Anillo, pasa, Métrica, 6g**
DE **Gut-GewindeLehrring, Metrisch, 6g**

Ref.	d1	P
91.205.0300	M3	0.5
91.205.0400	M4	0.7
91.205.0500	M5	0.8
91.205.0600	M6	1
91.205.0800	M8	1.25
91.205.1000	M10	1.5

Ref.	d1	P
91.205.1200	M12	1.75
91.205.1400	M14	2
91.205.1600	M16	2
91.205.1800	M18	2.5
91.205.2000	M20	2.5
91.205.2200	M22	2.5

Ref.	d1	P
91.205.2400	M24	3
91.205.2700	M27	3
91.205.3000	M30	3.5
91.205.3300	M33	3.5
91.205.3600	M36	4

› 91.206 Phantom



NL **Draadringkaliber, afkeur, Metrisch, 6g**
FR **Bague filetée, n'entre pas, Métrique, 6g**
ES **Anillo, no pasa, Métrica, 6g**
DE **Ausschuß-GewindeLehrring, Metrisch, 6g**

Ref.	d1	P
91.206.0300	M3	0.5
91.206.0400	M4	0.7
91.206.0500	M5	0.8
91.206.0600	M6	1
91.206.0800	M8	1.25
91.206.1000	M10	1.5

Ref.	d1	P
91.206.1200	M12	1.75
91.206.1400	M14	2
91.206.1600	M16	2
91.206.1800	M18	2.5
91.206.2000	M20	2.5
91.206.2200	M22	2.5

Ref.	d1	P
91.206.2400	M24	3
91.206.2700	M27	3
91.206.3000	M30	3.5
91.206.3300	M33	3.5
91.206.3600	M36	4

› 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**

Ref.	d1	P
91.210.0505	MF5	0.5
91.210.0605	MF6	0.5
91.210.0607	MF6	0.75
91.210.0807	MF8	0.75
91.210.0810	MF8	1
91.210.1007	MF10	0.75
91.210.1010	MF10	1
91.210.1012	MF10	1.25
91.210.1210	MF12	1
91.210.1212	MF12	1.25

Ref.	d1	P
91.210.1215	MF12	1.5
91.210.1410	MF14	1
91.210.1412	MF14	1.25
91.210.1415	MF15	1.5
91.210.1610	MF16	1
91.210.1615	MF16	1.5
91.210.1810	MF18	1
91.210.1815	MF18	1.5
91.210.2015	MF20	1.5
91.210.2215	MF22	1.5

Ref.	d1	P
91.210.2415	MF24	1.5
91.210.2420	MF24	2
91.210.2515	MF25	1.5
91.210.2715	MF27	1.5
91.210.2720	MF27	2
91.210.3015	MF30	1.5
91.210.3020	MF30	2
91.210.3215	MF32	1.5
91.210.3315	MF33	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**



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

Ref.	d1	P
91.215.1215	MF12	1.5
91.215.1410	MF14	1
91.215.1412	MF14	1.25
91.215.1415	MF15	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

Ref.	d1	P
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 **AusschuB-GewindeLehrring, Metrisch Fein, 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

Ref.	d1	P
91.216.1215	MF12	1.5
91.216.1410	MF14	1
91.216.1412	MF14	1.25
91.216.1415	MF15	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

Ref.	d1	P
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**

Ref.	d1	P
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

Ref.	d1	P
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

Ref.	d1	P
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**



Ref.	d1	P
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

Ref.	d1	P
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

Ref.	d1	P
91.225.1588	5/8	11
91.225.1905	3/4	10
91.225.2540	1	8

› 91.226 Phantom

NL **Draadringkaliber, afkeur, UNC, 2A**
FR **Bague filetée, n'entre pas, UNC, 2A**
ES **Anillo, no pasa, UNC, 2A**
DE **Ausschuß-GewindeLehrring, UNC, 2A**



Ref.	d1	P
91.226.0284	UNC Nr. 4	40
91.226.0350	UNC Nr. 6	32
91.226.0416	UNC Nr. 8	32
91.226.0482	UNC Nr. 10	24

Ref.	d1	P
91.226.0635	UNC 1/4	20
91.226.0794	UNC 5/16	18
91.226.0952	UNC 3/8	16
91.226.1270	UNC 1/2	13

Ref.	d1	P
91.226.1588	UNC 5/8	11
91.226.1905	UNC 3/4	10
91.226.2540	UNC 1	8

› 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**

Ref.	d1	P
91.230.0285	UNC Nr. 4	48
91.230.0350	UNC Nr. 6	40
91.230.0416	UNC Nr. 8	36
91.230.0482	UNC Nr. 10	32
91.230.0635	UNC 1/4	28

Ref.	d1	P
91.230.0794	UNC 5/16	24
91.230.0952	UNC 3/8	24
91.230.1111	UNC 7/16	20
91.230.1270	UNC 1/2	20
91.230.1429	UNC 9/16	18

Ref.	d1	P
91.230.1588	UNC 5/8	18
91.230.1905	UNC 3/4	16
91.230.2540	UNC 1	12

› 91.235 Phantom

NL **Draadringkaliber, goedkeur, UNF, 2A**
FR **Bague filetée, entre, UNF, 2A**
ES **Anillo, pasa, UNF, 2A**
DE **Gut-GewindeLehrring, UNF, 2A**



Ref.	d1	P
91.235.0482	UNF Nr. 10	32
91.235.0635	UNF 1/4	28
91.235.0794	UNF 5/16	24
91.235.0952	UNF 3/8	24

Ref.	d1	P
91.235.1111	UNF 7/16	20
91.235.1270	UNF 1/2	20
91.235.1429	UNF 9/16	18
91.235.1588	UNF 5/8	18

Ref.	d1	P
91.235.1905	UNF 3/4	16
91.235.2540	UNF 1	12

› 91.236 Phantom

NL **Draadringkaliber, afkeur, UNF, 2A**
FR **Bague filetée, n'entre pas, UNF, 2A**
ES **Anillo, no pasa, UNF, 2A**
DE **Ausschuß-GewindeLehrring, UNF, 2A**



Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
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, BSP (Gasdraad)**
FR **Tampon de filetage, entre et n'entre pas, BSP (pas gaz)**
ES **Tampón de rosca, pasa y no pasa, BSP (gas)**
DE **Gewinde-Grenzlehrdorn, Gut- und Ausschuss, BSP (Rohrgewinde)**

Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
91.250.0973	BSP 1/8	28	91.250.2096	BSP 1/2	14	91.250.3325	BSP 1	11
91.250.1316	BSP 1/4	19	91.250.2291	BSP 5/8	14			
91.250.1666	BSP 3/8	19	91.250.2644	BSP 3/4	14			

› 91.255 Phantom

NL **Draadringkaliber, goedkeur, BSP (Gasdraad)**
FR **Bague filetée, entre, BSP (pas gaz)**
ES **Anillo, pasa, BSP (gas)**
DE **Gut-GewindeLehrring, BSP (Rohrgewinde)**



Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
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, BSP (Gasdraad)**
FR **Bague filetée, n'entre pas, BSP (pas gaz)**
ES **Anillo, no pasa, BSP (gas)**
DE **Ausschuß-GewindeLehrring, BSP (Rohrgewinde)**



Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
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**

Ref.	d1	P	Ref.	d1	P	Ref.	d1	P
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

19:00 ▶ 🛒 ▶ 24h

› 91.275 Phantom

NL **Draadringkaliber, NPT**
FR **Bague filetée, NPT**
ES **Anillo, NPT**
DE **GewindeLehrring, NPT**



Ref.	d1	P
91.275.1029	NPT 1/8	27
91.275.1372	NPT 1/4	18

Ref.	d1	P
91.275.1715	NPT 3/8	18
91.275.2134	NPT 1/2	14

Ref.	d1	P
91.275.2667	NPT 3/4	14
91.275.3340	NPT 1	11.5

19:00 ▶ 24h



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