

Phantom 

**INTERNATIONAL
TOOLS**

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CHECK OUR INNOVATIONS ON PAGE 6

■ Bij uitstek geschikt - Très approprié - Muy adecuado - Ideal geeignet
 □ Beperkt geschikt - Approprié - Adecuado - Eingeschränkt geeignet

ISO	ISO	NL	FR	ES	DE
		Ongelegerd en gelegeerd staal ≤600 N/mm ² 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)	Aciers non-alliés ou faiblement alliés ≤600 N/mm ² 1.0037 (A37), 1.0038 (E 24-2 Ne), 1.00402 (1C20), 1.1178 (1C30)	Acero no aleado ≤600 N/mm ² 1.0037 (S235JR), 1.0038 (S235JR G2), 1.0402 (F.112), 1.1178 (C30E)	Unlegierter und legierter Stahl ≤600 N/mm ² 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)
		Ongelegerd en gelegeerd staal 600 - 850 N/mm ² 1.0050 (St50-2), 1.0070 (St70-2), 1.0301 (C10), 1.0503 (C45), 1.1121 (Ck10), 1.1191 (C45E), 1.0718 (11SMnPb30), 1.0736 (11SMn37)	Aciers non-alliés ou faiblement alliés 600 - 850 N/mm ² 1.0050 (A50-2), 1.0070 (A70-2), 1.0301 (1C10), 1.0503 (1C45), 1.1121 (XC10), 1.1191 (2C45), 1.0718 (S250PB), 1.0736 (S300PB)	Acero no aleado 600 - 850 N/mm ² 1.0050 (Fe490-2), 1.0070 (Fe690-2), 1.0301 (F.1151), 1.0503 (F.114), 1.1121 (F.1510-C10K), 1.1191 (C45K), 1.0718 (F.2112-11SMnPb28), 1.0736 (F.2113-11SMn37)	Unlegierter und legierter Stahl 600 - 850 N/mm ² 1.0050 (St50-2), 1.0070 (St70-2), 1.0301 (C10), 1.0503 (C45), 1.1121 (Ck10), 1.1191 (C45E), 1.0718 (11SMnPb30), 1.0736 (11SMn37)
		Gelegeerd staal 850 - 1000 N/mm ² 1.0727 (46S20), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (X210Cr12), 1.2083 (X42Cr13), 1.2767 (X45NiCrMo4), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)	Aciers alliés 850 - 1000 N/mm ² 1.0727 (45Mf4), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (Z200C12), 1.2083 (Z40C14), 1.2767 (Y35NCD16), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)	Acero aleado 850 - 1000 N/mm ² 1.0727 (46S20), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (F.5212-X210Cr12), 1.2083 (X42Cr13), 1.2767 (X45NiCrMo4), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)	Legierter Stahl 850 - 1000 N/mm ² 1.0727 (46S20), 1.0728 (60S20), 1.0757 (46SPb20), 1.2080 (X210Cr12), 1.2083 (X42Cr13), 1.2767 (X45NiCrMo4), 1.5131 (50MnSi4), 1.7003 (38Cr2), 1.7030 (28Cr4), 1.7043 (38Cr4)
		Gelegeerd staal 1000 - 1400 N/mm ² 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	Aciers alliés 1000 - 1400 N/mm ² 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	Acero aleado 1000 - 1400 N/mm ² 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	Legierter Stahl 1000 - 1400 N/mm ² 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)
		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), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)
		Roestvaststaal, INOX ≤850 N/mm ² 1.4005 (X12CrS13), 1.4104 (X14CrMos17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	Aciers inoxydables ≤850 N/mm ² 1.4005 (Z11CF13), 1.4104 (Z13CF17), 1.4105 (Z8CF17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	Acero inoxidable ≤850 N/mm ² 1.4006 (F.3401-X10Cr13), 1.4104 (F.3117-X10Cr17), 1.4301 (F.3504-X5CrNi18-10)(304), 1.4305 (F.3508-X10CrNiS18-09)(303)	Rostfreier Stahl, INOX ≤850 N/mm ² 1.4005 (X12CrS13), 1.4104 (X14CrMos17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)
		Roestvaststaal, INOX >850 N/mm ² 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	Aciers inoxydables >850 N/mm ² 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	Acero inoxidable >850 N/mm ² 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (F.3535-X6CrNiMoTi17-12-2)(316Ti)	Rostfreier Stahl, INOX >850 N/mm ² 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)
		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)
		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)
		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 Aluminiumlegeringen 3.0255 (Al99.5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)
		Gietaluminium Si 10 - 24% 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (G-AISi12), 3.2583 (G-AISi12Cu)	Alliages d'Aluminium Si 10 - 24% 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (G-AISi12), 3.2583 (G-AISi12Cu)	Fundición de Aluminio aleada Si 10 - 24% 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (L-2520,21), 3.2583 (L2530)	Druckguss Si 10 - 24% 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (G-AISi12), 3.2583 (G-AISi12Cu)
		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)	Magnesiumlegeringen 3.5200 (MgMn2), 3.5812 (G-MgAl8Zn1), 3.5612 (G-MgAl6Zn1)
		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 Kupferlegeringen 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)
		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 Aluminiumlegeringen 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (Cu-Be2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18
		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
		Versterkte kunststoffen GFK, CFK	Plastiques réinforcés GFK, CFK	Plásticos reforzados GFK, CFK	Verstärkte Kunststoffe GFK, CFK
		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 Kobaltlegeringen Hastelloy, Inconel, Nimonic, Jetalloy
		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)	Titanlegeringen 3.7024 (Ti99.5), 3.7114 (TiAl5Sn2.5), 3.7124 (TiCu2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2.5)

Phantom

**INTERNATIONAL
TOOLS**



**COMMITTED, DEDICATED SPECIALISTS
WITH MORE THAN 67 YEARS
OF EXPERIENCE**

> **SINCE 1952** > **PASSIONATE PEOPLE** > **99,9% ERROR FREE**

Phantom

RELIABLE, INNOVATIVE, SUPERIOR QUALITY

Phantom is the leading brand of cutting tools of the highest quality for use in metalworking. With no less than 20,000 general metalworking and modern precision-engineering tools to choose from, the extensive range contains machining tools of all types and sizes, including models. At Phantom, not only is the highest quality guaranteed, your options are also limitless. With precision and a long service life assured, we can safely say that, at Phantom, we can handle any cutting task.

BETROUWBAAR, INNOVATIEF EN A-KWALITEIT

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.



UN PRODUIT D'EXCELLENTE QUALITÉ

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.

INTERNATIONAL TOOLS

EXTENSIVE AND COMPETITIVELY PRICED

With its extensive, highly competitive range, International Tools offers an attractive array of drills, taps and countersinks in standard sizes. For universal use, available from stock.



UITGEBREID EN PRIJSCONCURREEREND

Met een uitgebreid en zeer prijsconcurrerend assortiment biedt International Tools u een aantrekkelijk aanbod boren, tappen en verzinkfrezen in gangbare maten. Universeel inzetbaar en ook nog eens uit voorraad leverbaar.

UNE LARGE GAMME A PRIX COMPETITIF

Avec International Tools vous accédez à une large gamme de forets, tarauds et fraise à chanfreiner dans les dimensions les plus courantes pour une utilisation universelle, le tout disponible sur stock.

THERE'S NO END TO WHAT YOU CAN DO.



UNA PRESTIGIOSA MARCA DE PRIMERA CALIDAD

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.

ZUVERLÄSSIG, INNOVATIV UND HÖCHSTER QUALITÄT

Phantom ist die A-Marke für zerspanende Werkzeuge, die für die Metallbearbeitung geeignet sind. Sie können von bis zu 20.000 Werkzeugen wählen für den allgemeinen 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, dass unsere Marke Phantom, für alle Ihre Probleme eine Lösung findet.

ECO

- › **LOWEST PRICE**
LAAGSTE PRIJS
PRIX TRÈS COMPÉTITIF
PRECIO MÁS BAJO
NIEDRIGSTER PREIS

**ECO
PRO**

- › **INDUSTRIAL QUALITY**
INDUSTRIE KWALITEIT
QUALITÉ INDUSTRIELLE
CALIDAD INDUSTRIAL
INDUSTRIEQUALITÄT

- › **Basic quality**

Basis kwaliteit
Qualité STANDARD
Calidad básica
Grundlegende Qualität

- › **Suitable for a wide range of materials**

Geschikt voor vele materialen
Adaptée à différents types de matières
Adecuado para muchos materiales
Geeignet für viele Materialien

- › **Professional use**

Professioneel gebruik
Usage professionnel
Uso profesional
Professioneller Einsatz

- › **Favourably priced**

Gunstige prijs
Le meilleur rapport qualité prix
Precio favorable
Günstiger Preis

- › **Suitable for a wide range of materials and stainless steel**

Geschikt voor vele materialen en RVS
Adaptée à différents types de matières ainsi que les inox
Adecuado para muchos materiales y acero inoxidable
Geeignet für viele Materialien und Edelstahl

- › **Professional and industrial use**

Professioneel en industrieel gebruik
Usage professionnel et industriel
Uso profesional e industrial
Professioneller und industrieller Einsatz

UNA AMPLIA GAMA A PRECIOS COMPETITIVOS

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.

BREIT & PREISBEWUSST

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.



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)
MG HM	Micro-Grain volhardmetaal	Carbure micrograin	Metal duro micrograno	Micro-Grain Vollhartmetall
M	Metrisch	Métrique	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 Whitworth, Fijne schroefdraad	Filetage BSF, pas fin	Rosca BSF, paso fino	British Standard Whitworth, Feingewinde
BSP G	British Standard Pipe (Gasdraad)	Filetage BSP(Gaz)	Rosca BSP (Gas)	British Standard Pipe (Gasgewinde)
BSP RP	BSP Parallel schroefdraad (druk dicht)	Filetage BSPG Gaz (Parallèle, étanche à la pression)	Rosca BSPG Paralelo (estanco a la presión)	BSP Parallel Gewinde (druckdicht)
BSP RT	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 Whitworth 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 Beschichtung
HARD LUBE	HARDLUBE-gecoat	Revêtement HARDLUBE	Recubrimiento HARDLUBE	HARDLUBE Beschichtung
DIN 371	DIN norm	Norme DIN	Norma DIN	DIN Norm






















	NL	FR	ES	DE
NFE 66103	NFE norm	Norme NFE	Norma NFE	NFE Norm
ISO 529	ISO norm	Norme ISO	Norma ISO	ISO Norm
NORM	Phantom Norm	Norme Phantom	Norma Phantom	Werksnorm
ECO	ECO, basis kwaliteit	ECO, qualité standard	ECO, calidad básica	ECO, grundlegende Qualität
ECO PRO	ECO PRO, industrie kwaliteit	ECO PRO, qualité industrielle	ECO PRO, calidad de la industria	ECO PRO, Industriequalität
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
	Coniciteit	Conicité	Conicidad	Konizität
	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 Gängen 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. Gewindelänge 2xD
1,5 xD	Max. draadlengte 1,5xD	Profondeur max. du filetage 1,5xD	Profundidad máx. de roscar 1,5xD	Max. Gewindelänge 1,5xD
2B	Tolerantie 2B	Tolérance 2B	Tolerancia 2B	Toleranz 2B
+0,1 +0,2	Overmaats	Surcoté	Sobremedida	Übermass
INOX	T.b.v. roestvaststaal	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 Performance Universel	Alta Rendimiento Universal	High Performance Universal
	Linkssnijdend	Coupe à gauche	Corte a izquierda	Linksschneidend
DIN 6335-HA	Cilindrische schacht DIN 6335-HA	Queue cylindrique DIN 6335-HA	Mango cilíndrico DIN 6335-HA	Zylinderschaft DIN 6335-HA

NL Draadsnijden
FR Filetage
ES Roscar
DE Gewinde Schneiden

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

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






















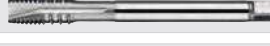





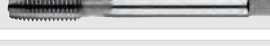









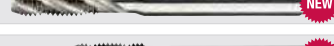



























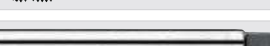

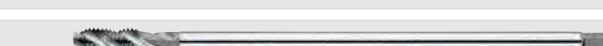

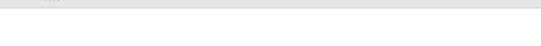
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> 21.100	Phantom	M	ISO 529		P M K N			P. 10
> 21.110	Phantom	M	ISO 529		P M K N			P. 10
> 21.140	INTERNATIONAL TOOLS	M	DIN 352	ECO	P M K N			P. 11
> 21.150	Phantom	M	DIN 352	INOX	P M K N			P. 11
> 21.163	Phantom	M	ISO 529	+0,1 +0,2	P M K N			P. 11
> 21.200	Phantom	MF	ISO 529		P M K N			P. 12
> 21.240	INTERNATIONAL TOOLS	MF	DIN 2181	ECO PRO	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	Phantom	UN-8	ISO 529		P M K N			P. 14
> 21.400	Phantom	BSP G	ISO 529		P M K N			P. 14
> 21.404	INTERNATIONAL TOOLS	BSP G	DIN 353	ECO PRO	P M K N			P. 14
> 21.410	Phantom	BSPT Rc	ISO 529		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	ISO 529		P M K N			P. 16
> 21.600	Phantom	PG	ISO 529		P M K N			P. 16
> 21.812	Phantom	M	ISO 529	Phan-Coil	P M K N			P. 17
> 21.822	Phantom	MF	ISO 529	Phan-Coil	P M K N			P. 17
> 21.832	Phantom	UNC	ISO 529	Phan-Coil	P M K N			P. 17
> 21.840	Phantom	UNF	ISO 529	Phan-Coil	P M K N			P. 17

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2



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> 81.905									P. 18		
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> 81.935									P. 18		
> 81.950									P. 19		
> 22.190	INTERNATIONAL TOOLS	M	DIN 352		P	K	N		NEW P. 20		
> 22.191	INTERNATIONAL TOOLS	M	DIN 371		P	K	N		NEW P. 20		
> 22.192	INTERNATIONAL TOOLS	M	DIN 376		P	K	N		NEW P. 20		
> 22.195	INTERNATIONAL TOOLS	M	DIN 371		P	K	N		P. 20		
> 22.196	INTERNATIONAL TOOLS	M	DIN 376		P	K	N		P. 21		
> 22.197	INTERNATIONAL TOOLS	M	DIN 371		P	M	K	N		P. 21	
> 22.198	INTERNATIONAL TOOLS	M	DIN 376		P	M	K	N		P. 21	
> 22.200	Phantom	M	DIN 371		P	M	K	N	S		P. 22
> 22.201	Phantom	M	DIN 376		P	M	K	N	S		P. 22
> 22.205	Phantom	M	ISO 529		P		K	N			P. 22
> 22.210	Phantom	M	DIN 371		P	M	K	N	S		NEW P. 23
> 22.211	Phantom	M	DIN 376		P	M	K	N	S		NEW P. 23
> 22.220	Phantom	M	DIN 371		P	M	K				P. 23
> 22.221	Phantom	M	DIN 376		P	M	K				P. 24
> 22.240	Phantom	M	DIN 371		P	M	K	N	S		P. 24
> 22.241	Phantom	M	DIN 376		P	M	K	N	S		P. 24
> 22.252	Phantom	M	DIN 371		P		K	N	S		P. 25
> 22.253	Phantom	M	DIN 376		P		K	N	S		P. 25
> 22.268	Phantom	M	DIN 371		P	M	K	N	S		P. 25
> 22.269	Phantom	M	DIN 376		P	M	K	N	S		P. 25
> 22.350	Phantom	M			P	M	K	N	S		P. 26
> 22.351	Phantom	M			P	M	K	N	S		P. 26
> 22.500	Phantom	M	DIN 371		P	M					P. 26
> 22.501	Phantom	M	DIN 376		P	M					P. 27
> 22.504	Phantom	M	DIN 371		P	M					P. 27
> 22.505	Phantom	M	DIN 376		P	M					P. 27
> 22.530	Phantom	M	DIN 371		P			N	S		P. 28
> 22.531	Phantom	M	DIN 376		P			N	S		P. 28
> 22.550	Phantom	M	DIN 371					N			P. 28
> 22.595	INTERNATIONAL TOOLS	M	DIN 371		P	M					P. 29





















> 22.596	INTERNATIONAL TOOLS	M	DIN 376		P M		P. 29				
> 22.600	Phantom	M	DIN 371		P M		P. 29				
> 22.601	Phantom	M	DIN 376		P M		P. 30				
> 22.604	Phantom	M	DIN 371		P M		P. 30				
> 22.605	Phantom	M	DIN 376		P M		P. 30				
> 22.610	Phantom	M	DIN 371		P M		P. 31				
> 22.611	Phantom	M	DIN 376		P M		P. 31				
> 22.650	Phantom	M	DIN 371			K		P. 31			
> 22.651	Phantom	M	DIN 376			K		P. 31			
> 22.700	Phantom	M	DIN 371		P		N		P. 32		
> 22.701	Phantom	M	DIN 376		P		N		P. 32		
> 22.705	Phantom	M	ISO 529		P		N		P. 32		
> 22.720	Phantom	M	DIN 371				N		P. 32		
> 22.721	Phantom	M	DIN 376				N		P. 33		
> 22.895	Phantom	M	Phan-Coil		P	K	N		P. 33		
> 22.896	Phantom	M	Phan-Coil		P	K	N		P. 33		
> 23.150	Phantom	M	DIN 371		P	K	N		P. 34		
> 23.151	Phantom	M	DIN 376		P	K	N		P. 34		
> 23.291	INTERNATIONAL TOOLS	M	DIN 371		P	K	N	 NEW	P. 34		
> 23.292	INTERNATIONAL TOOLS	M	DIN 376		P	K	N	 NEW	P. 34		
> 23.295	INTERNATIONAL TOOLS	M	DIN 371		P	K	N		P. 35		
> 23.296	INTERNATIONAL TOOLS	M	DIN 376		P	K	N		P. 35		
> 23.297	INTERNATIONAL TOOLS	M	DIN 371		P M	K	N		P. 35		
> 23.298	INTERNATIONAL TOOLS	M	DIN 376		P M	K	N		P. 35		
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> 23.301	Phantom	M	DIN 376		P M	K	N	S		P. 36	
> 23.305	Phantom	M	ISO 529		P		K	N		P. 36	
> 23.324	Phantom	M	DIN 371		P M	K	N	S		P. 37	
> 23.325	Phantom	M	DIN 376		P M	K	N	S		P. 37	
> 23.352	Phantom	M	DIN 371		P		K	N	S		P. 37
> 23.353	Phantom	M	DIN 376		P		K	N	S		P. 37
> 23.368	Phantom	M	DIN 371		P M	K	N	S		P. 38	
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> 23.370	Phantom	M	NORM		P M	K	N	S		P. 38	
> 23.371	Phantom	M	NORM		P M	K	N	S		P. 39	



> 23.400	Phantom	M	DIN 371		P	M					P. 39
> 23.401	Phantom	M	DIN 376		P	M					P. 39
> 23.404	Phantom	M	DIN 371		P	M					P. 40
> 23.405	Phantom	M	DIN 376		P	M					P. 40
> 23.430	Phantom	M	DIN 371		P			S			P. 40
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> 23.440	Phantom	M			P	M	N		H		P. 41
> 23.445	INTERNATIONAL TOOLS	M	DIN 371		P	M					P. 41
> 23.446	INTERNATIONAL TOOLS	M	DIN 376		P	M					P. 42
> 23.450	Phantom	M	DIN 371		P	M		S			P. 42
> 23.451	Phantom	M	DIN 376		P	M		S			P. 42
> 23.454	Phantom	M	DIN 371		P	M		S			P. 43
> 23.455	Phantom	M	DIN 376		P	M		S			P. 43
> 23.480	Phantom	M	DIN 371		P		N				P. 43
> 23.481	Phantom	M	DIN 376		P		N				P. 43
> 23.500	Phantom	M	DIN 371				N				P. 44
> 23.501	Phantom	M	DIN 376				N				P. 44
> 23.585	Phantom	M	Phan-Coil		P		K	N			P. 44
> 23.586	Phantom	M	Phan-Coil		P		K	N			P. 44
> 23.615	INTERNATIONAL TOOLS	MF	DIN 374		P		K	N			P. 45
> 23.620	Phantom	MF	DIN 374		P	M	K	N	S		P. 45
> 23.625	Phantom	MF	ISO 529		P		K	N			P. 46
> 23.668	Phantom	MF	DIN 374		P	M	K	N	S		P. 46
> 23.750	Phantom	MF	DIN 374		P	M		N	S		P. 46
> 23.835	INTERNATIONAL TOOLS	MF	DIN 374		P		K	N			P. 47
> 23.840	Phantom	MF	DIN 374		P	M	K	N	S		P. 47
> 23.868	Phantom	MF	DIN 374		P	M	K	N	S		P. 47
> 24.120	Phantom	UNC	DIN 371		P	M	K	N	S		P. 48
> 24.121	Phantom	UNC	DIN 376		P	M	K	N	S		P. 48
> 24.125	Phantom	UNC	ISO 529		P		K	N			P. 48
> 24.340	Phantom	UNC	DIN 371		P	M	K	N	S		P. 49
> 24.341	Phantom	UNC	DIN 376		P	M	K	N	S		P. 49
> 24.520	Phantom	UNF	DIN 371		P	M	K	N	S		P. 49
> 24.521	Phantom	UNF	DIN 376		P	M	K	N	S		P. 50
> 24.525	Phantom	UNF	ISO 529		P		K	N			P. 50

> 24.740	Phantom	UNF	DIN 371		P M K N S		P. 50
> 24.741	Phantom	UNF	DIN 376		P M K N S		P. 51
> 24.991	Phantom	UNEF	DIN 374		P M K N		P. 51
> 25.095	INTERNATIONAL TOOLS	BSP G	DIN 5156		P K N		P. 51
> 25.100	Phantom	BSP G	DIN 5156		P K N		P. 52
> 25.105	Phantom	BSP G	ISO 529		P K N		P. 52
> 25.160	Phantom	BSP G	DIN 5156		P M		P. 52
> 25.295	INTERNATIONAL TOOLS	BSP G	DIN 5156		P K N		P. 53
> 25.300	Phantom	BSP G	DIN 5156		P K N		P. 53
> 25.360	Phantom	BSP G	DIN 5156		P M		P. 53
> 25.480	Phantom	BSPT Rc	DIN 5156		P M K N		P. 54
> 25.500	Phantom	BSPP Rp	DIN 5156		P M K N		P. 54
> 25.520	Phantom	BSW	DIN 371		P K N		P. 54
> 25.521	Phantom	BSW	DIN 376		P K N		P. 55
> 25.640	Phantom	BSW	DIN 2182		P K N		P. 55
> 25.641	Phantom	BSW	DIN 2183		P K N		P. 55
> 25.720	Phantom	BSF	DIN 371		P K N		P. 56
> 25.721	Phantom	BSF	DIN 376		P K N		P. 56
> 25.760	Phantom	BSC FG	DIN 79012		P K N		P. 56
> 25.820	Phantom	NPT	DIN 374		P K N		P. 57
> 25.840	Phantom	NPTF	DIN 374		P K N		P. 57
> 25.900	Phantom	PG	DIN 40433		P K N		P. 57
> 25.950	Phantom	Tr	DIN 103		P K N		P. 58
> 26.100	Phantom	M	DIN 371		P N		P. 59
> 26.101	Phantom	M	DIN 376		P N		P. 59
> 26.110	Phantom	M	DIN 371		P M N		P. 59
> 26.111	Phantom	M	DIN 376		P M		P. 59
> 26.160	Phantom	M	DIN 371		P M N		P. 60
> 26.161	Phantom	M	DIN 376		P M N		P. 60
> 26.310	Phantom	M	DIN 376		P M K N		P. 60
> 26.316	Phantom	M	DIN 376		P M K N S H		P. 61
> 26.384	Phantom	M	DIN 376		P M K N S H		P. 61
> 26.500	Phantom	M	NORM		P K N		P. 61
> 26.700	Phantom	M	NORM		P N		P. 62
> 27.100	INTERNATIONAL TOOLS	M	DIN EN 22568		P K N		P. 63



> 27.110	INTERNATIONAL TOOLS	M	DIN EN 22568	P K N		P. 63
> 27.120	Phantom	M	DIN EN 22568	P M N		P. 63
> 27.150	Phantom	M	DIN EN 22568	P M N S		P. 64
> 27.175	Phantom	M	DIN EN 22568	N		P. 64
> 27.200	INTERNATIONAL TOOLS	MF	DIN EN 22568	P K N		P. 64
> 27.220	Phantom	MF	DIN EN 22568	P M N		P. 65
> 27.300	INTERNATIONAL TOOLS	UNC	DIN EN 22568	P K N		P. 65
> 27.320	Phantom	UNC	DIN EN 22568	P M N		P. 66
> 27.400	INTERNATIONAL TOOLS	UNF	DIN EN 22568	P K N		P. 66
> 27.420	Phantom	UNF	DIN EN 22568	P M N		P. 66
> 27.470	Phantom	UNEF	DIN EN 22568	P M N		P. 67
> 27.500	INTERNATIONAL TOOLS	BSP G	DIN EN 24231	P K N		P. 67
> 27.520	Phantom	BSP G	DIN EN 24231	P M N		P. 67
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> 27.530	Phantom	BSPT Rc	DIN EN 24230	P M N		P. 68
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> 27.560	Phantom	BSW	DIN EN 22568	P M N		P. 69
> 27.575	Phantom	BSF	DIN EN 22568	P M N		P. 69
> 27.580	Phantom	BA	DIN EN 22568	P M N		P. 69
> 27.590	Phantom	BSC FG	DIN EN 22568	P M N		P. 70

> 27.600	Phantom	NPT	DIN EN 24230			P. 70
> 27.610	Phantom	NPTF	DIN EN 24230			P. 70
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> 27.700	INTERNATIONAL TOOLS	M	DIN 382			P. 72
> 27.750	INTERNATIONAL TOOLS	MF	DIN 382			P. 72
> 27.800	INTERNATIONAL TOOLS	UNC	DIN 382			P. 72
> 27.840	INTERNATIONAL TOOLS	UNF	DIN 382			P. 73
> 27.900	INTERNATIONAL TOOLS	BSP G	DIN 382			P. 73
> 27.940	INTERNATIONAL TOOLS	BSW	DIN 382			P. 73
> 27.980	Phantom	NPT	DIN 382			P. 73
> 28.800	INTERNATIONAL TOOLS					P. 74
> 28.810	INTERNATIONAL TOOLS					P. 74
> 28.830	Phantom	M	Phan-Coil			P. 75
> 28.831	Phantom	MF	Phan-Coil			P. 75
> 28.832	Phantom	UNC	Phan-Coil			P. 75
> 28.833	Phantom	UNF	Phan-Coil			P. 76
> 28.860	Phantom		Phan-Coil			P. 76
> 28.865	Phantom		Phan-Coil			P. 76
> 28.870	Phantom	M	Phan-Coil			P. 77
> 28.871	Phantom	MF	Phan-Coil			P. 77
> 28.872	Phantom	UNC	Phan-Coil			P. 78



1 SC

1 HSS(+E)

2

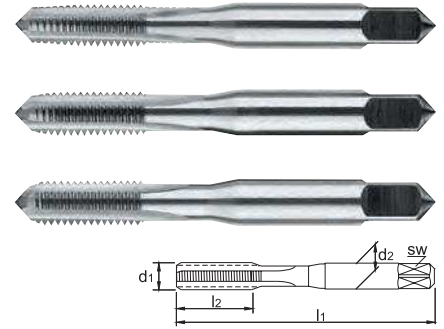
> 28.880	Phantom	M	Phan-Coil			P. 78
> 29.100	INTERNATIONAL TOOLS					P. 79
> 29.120	INTERNATIONAL TOOLS					P. 79
> 29.180	INTERNATIONAL TOOLS					P. 79
> 29.190	INTERNATIONAL TOOLS					P. 80
> 29.195	INTERNATIONAL TOOLS					P. 80
> 29.200	INTERNATIONAL TOOLS					P. 80
> 29.220	Phantom					P. 81
> 29.240	Phantom					P. 81
> 29.250	Phantom					P. 81
> 29.260	Phantom					P. 82
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> 29.300	INTERNATIONAL TOOLS					P. 82
> 29.910	Phantom	M	ISO 529			P. 83
> 29.950	Phantom	M			P M K N S	P. 83
> 29.951	Phantom	M			P M K N S	P. 83
> 29.956	Phantom	M			P M K N S	NEW P. 84
> 29.957	Phantom	M			P M K N S	NEW P. 84
> 29.960	Phantom	MF			P M K N S	P. 84
> 29.961	Phantom	MF			P M K N S	NEW P. 85
> 29.969	Phantom	BSC FG				P. 85
> 29.970	INTERNATIONAL TOOLS	M	DIN EN 22568		P K N	P. 85
> 29.971	Phantom	M	DIN EN 22568		P M N	NEW P. 86

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> 29.973	Phantom	MF	DIN EN 22568	←	P	M	N		P. 86
> 29.975	Phantom	UNC	DIN EN 22568	←	P	M	N		P. 87
> 29.978	Phantom	UNF	DIN EN 22568	←	P	M	N		P. 87
> 29.985	INTERNATIONAL TOOLS	BSP G	DIN EN 24230	←	P	K	N		P. 87
> 29.989	Phantom	BSC FG	DIN EN 22568	←	P	M	N		P. 88
> 29.990	INTERNATIONAL TOOLS	M	DIN 382	←					P. 88



> 21.100 Phantom

NL HSS Handtappen Metrisch, set à 3 stuks
 FR Tarauds à main HSS Métrique, Jeu de 3 pièces
 ES Machos mano HSS Métrica, juego de 3 piezas
 DE HSS Handgewindebohrer Metrisch, Satz von 3 Stück



HSS	M	60°	NFE 66103	ISO 529			ISO 2 6H
P 11 S800 N/mm ²	P 12 S850 N/mm ²	P 13 S1000 N/mm ²	M 21 INOX S850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

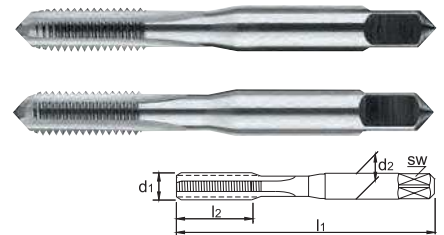
Ref.	d1	P	l1	l2	d2	sw
21.100.0160	M1,6	0.35	28	9	3	2.35
21.100.0200	M2	0.4	41	8	2.5	2
21.100.0220	M2,2	0.45	44.5	8	2.8	2.24
21.100.0250	M2,5	0.45	44.5	9.5	2.8	2.24
21.100.0260	M2,6	0.45	44.5	9.5	2.8	2.24
21.100.0300	M3	0.5	48	11	3.15	2.5
21.100.0350	M3,5	0.6	50	13	3.55	2.8
21.100.0400	M4	0.7	53	13	4	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, set à 2 stuks, Nr. 2+3
 FR Tarauds à main HSS Métrique, Jeu de 2 pièces, N° 2+3
 ES Machos mano HSS Métrica, juego de 2 piezas, N° 2+3
 DE HSS Handgewindebohrer Metrisch, Satz von 2 Stück, Nr. 2+3



HSS	M	60°	NFE 66103	ISO 529			ISO 2 6H
P 11 S800 N/mm ²	P 12 S850 N/mm ²	P 13 S1000 N/mm ²	M 21 INOX S850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

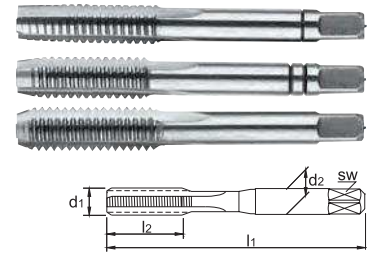
Ref.	d1	P	l1	l2	d2	sw
21.110.0250	M2,5	0.45	44.5	9.5	2.8	2.24
21.110.0300	M3	0.5	48	11	3.15	2.5
21.110.0400	M4	0.7	53	13	4	3.15
21.110.0500	M5	0.8	58	16	5	4
21.110.0600	M6	1	66	19	6.3	5

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

> 21.140 INTERNATIONAL TOOLS

NL ECO HSS Handtappen Metrisch, set à 3 stuks
 FR Tarauds à main HSS ECO Métrique, Jeu de 3 pièces
 ES Machos mano HSS ECO Métrica, juego de 3 piezas
 DE ECO HSS Handgewindebohrer Metrisch, Satz von 3 Stück



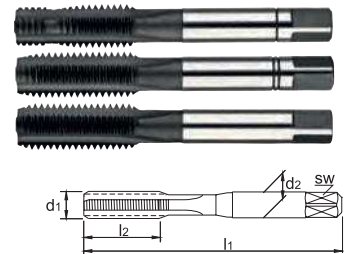
HSS M 60° DIN 352 ISO 2 6H ECO

P 11 ≤500 N/mm² P 12 ≤850 N/mm² P 13 ≤1000 N/mm² M 21 INOX ≤850 N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 51 Cu

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
21.140.0300	M3	0.5	40	11	3.5	2.7	21.140.1000	M10	1.5	70	24	7	5.5	21.140.2000	M20	2.5	95	40	16	12
21.140.0400	M4	0.7	45	13	4.5	3.4	21.140.1200	M12	1.75	75	29	9	7	21.140.2200	M22	2.5	100	40	18	14.5
21.140.0500	M5	0.8	50	16	6	4.9	21.140.1400	M14	2	80	30	11	9	21.140.2400	M24	3	110	50	18	14.5
21.140.0600	M6	1	50	19	6	4.9	21.140.1600	M16	2	80	32	12	9	21.140.2700	M27	3	110	50	20	16
21.140.0800	M8	1.25	56	22	6	4.9	21.140.1800	M18	2.5	95	40	14	11	21.140.3000	M30	3.5	132	56	22	18

> 21.150 Phantom

NL HSS-E Handtappen Metrisch, set à 3 stuks, stoomontlaten, Nr. 1: met geleiding
 FR Tarauds à main HSS-E Métrique, Jeu de 3 pièces, vaporisé, N° 1: avec guidage
 ES Machos mano HSS-E Métrica, juego de 3 piezas, vaporizada, N° 1: con guía
 DE HSS-E Handgewindebohrer Metrisch, Satz von 3 Stück, dampfangelassen, Nr. 1: mit einfacher Führung



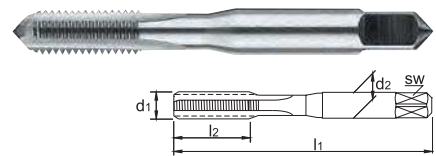
HSS-E M 60° OX. DIN 352 ISO 2 6H INOX

P 11 ≤500 N/mm² P 12 ≤850 N/mm² P 13 ≤1000 N/mm² M 21 INOX ≤850 N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 51 Cu

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
21.150.0300	M3	0.5	40	11	3.5	2.7	21.150.0600	M6	1	50	19	6	4.9	21.150.1200	M12	1.75	75	24	9	7
21.150.0400	M4	0.7	45	13	4.5	3.4	21.150.0800	M8	1.25	56	20	6	4.9							
21.150.0500	M5	0.8	50	16	6	4.9	21.150.1000	M10	1.5	70	22	7	5.5							

> 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 2 6H +0,1 +0,2

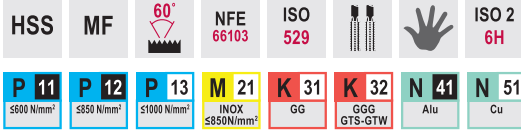
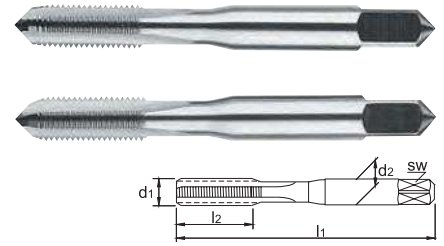
P 11 ≤500 N/mm² P 12 ≤850 N/mm² P 13 ≤1000 N/mm² M 21 INOX ≤850 N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 51 Cu

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
21.163.0610	M6+0,1	1	66	19	6.3	5	21.163.1220	M12+0,2	1.75	89	29	9	7.1
21.163.0820	M8+0,2	1.25	72	22	8	6.3	21.163.1620	M16+0,2	2	102	32	12.5	10
21.163.1010	M10+0,1	1.5	80	24	10	8	21.163.2020	M20+0,2	2.5	112	37	14	11.2
21.163.1210	M12+0,1	1.75	89	29	9	7.1	21.163.2420	M24+0,2	3	130	45	18	14



> 21.200 Phantom

NL HSS Handtappen Metrisch Fijn, set à 2 stuks
 FR Tarauts à main HSS Métrique Fin, Jeu de 2 pièces
 ES Machos mano HSS Métrica Fina, juego de 2 piezas
 DE HSS Handgewindebohrer Metrisch Fein, Satz von 2 Stück



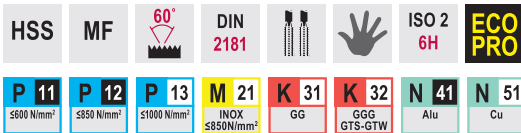
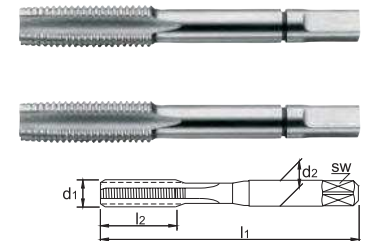
Ref.	d1	P	l1	l2	d2	sw
21.200.0303	MF3	0.35	48	11	3.15	2.5
21.200.0405	MF4	0.5	53	13	4	3.15
21.200.0505	MF5	0.5	58	16	5	4
21.200.0605	MF6	0.5	66	19	6.3	5
21.200.0607	MF6	0.75	66	19	6.3	5
21.200.0707	MF7	0.75	66	19	7.1	5.6
21.200.0807	MF8	0.75	72	22	8	6.3
21.200.0810	MF8	1	72	22	8	6.3
21.200.0910	MF9	1	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 ECO PRO HSS Handtappen Metrisch Fijn, set à 2 stuks
 FR Tarauts à main HSS ECO PRO Métrique Fin, Jeu de 2 pièces
 ES Machos mano HSS ECO PRO Métrica Fina, juego de 2 piezas
 DE ECO PRO HSS Handgewindebohrer Metrisch Fein, Satz von 2 Stück



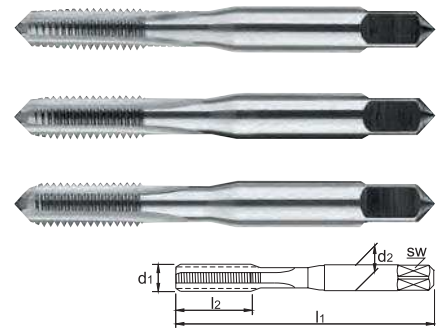
Ref.	d1	P	l1	l2	d2	sw
21.240.0405	MF4	0.5	45	10	4.5	3.4
21.240.0505	MF5	0.5	50	12	6	4.9
21.240.0607	MF6	0.75	50	14	6	4.9
21.240.0807	MF8	0.75	50	19	6	4.9
21.240.0810	MF8	1	56	22	6	4.9
21.240.1010	MF10	1	63	20	7	5.5
21.240.1012	MF10	1.25	70	24	7	5.5
21.240.1210	MF12	1	70	22	9	7

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

> **21.300 Phantom**

NL HSS Handtappen UNC, set à 3 stuks
 FR Tarauds à main HSS UNC, Jeu de 3 pièces
 ES Machos mano HSS UNC, juego de 3 piezas
 DE HSS Handgewindebohrer UNC, Satz von 3 Stück



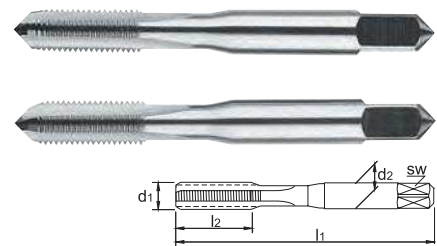
HSS	UNC	60°	NFE 66104	ISO 529			2B
P 11 ≤500 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

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, set à 2 stuks
 FR Tarauds à main HSS UNF, Jeu de 2 pièces
 ES Machos mano HSS UNF, juego de 2 piezas
 DE HSS Handgewindebohrer UNF, Satz von 2 Stück



HSS	UNF	60°	NFE 66104	ISO 529			2B
P 11 ≤500 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

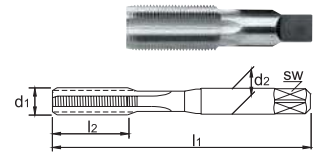
Ref.	d1	P	l1	l2	d2	sw
21.350.0218	UNF Nr. 2	64	41	8	2.5	2
21.350.0284	UNF Nr. 4	48	48	11	3.15	2.5
21.350.0416	UNF Nr. 8	36	53	13	4	3.15
21.350.0482	UNF Nr. 10	32	58	16	5	4
21.350.0548	UNF Nr. 12	28	66	19	6.3	5
21.350.0635	UNF 1/4	28	66	19	6.3	5
21.350.0794	UNF 5/16	24	72	22	8	6.3
21.350.0952	UNF 3/8	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 Tarda finisseur HSS UN-8
ES Macho de acabado HSS UN-8
DE HSS Fertigschneider UN-8

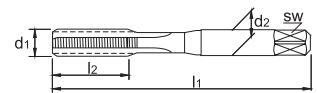
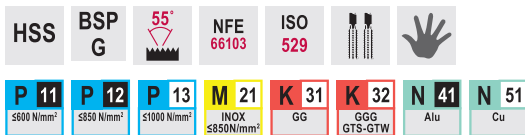


Ref.	d1	P	l1	l2	d2	sw
21.392.2858	UN 1.1/8	8	138	48	20	16
21.392.3175	UN 1.1/4	8	151	51	22.4	18
21.392.3493	UN 1.3/8	8	162	57	25	20
21.392.3810	UN 1.1/2	8	170	60	28	22.4

Ref.	d1	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), set à 2 stuks
FR Tarauts à main HSS BSP (pas gaz), Jeu de 2 pièces
ES Machos mano HSS BSP (gas), juego de 2 piezas
DE HSS Handgewindebohrer BSP (Rohrgewinde), Satz von 2 Stück

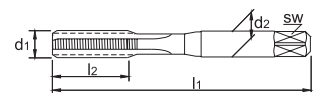
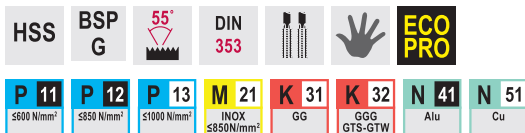


Ref.	d1	P	l1	l2	d2	sw
21.400.0973	BSP 1/8	28	59	15	8	6.3
21.400.1316	BSP 1/4	19	67	19	11	9
21.400.1666	BSP 3/8	19	75	21	12.5	10
21.400.2096	BSP 1/2	14	87	26	16	12.5
21.400.2291	BSP 5/8	14	91	26	18	14
21.400.2644	BSP 3/4	14	96	28	20	16

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 ECO PRO HSS Handtappen BSP (Gasdraad), set à 2 stuks
FR Tarauts à main HSS ECO PRO BSP (pas gaz), Jeu de 2 pièces
ES Machos mano HSS ECO PRO BSP (gas), juego de 2 piezas
DE ECO PRO HSS Handgewindebohrer BSP (Rohrgewinde), Satz von 2 Stück

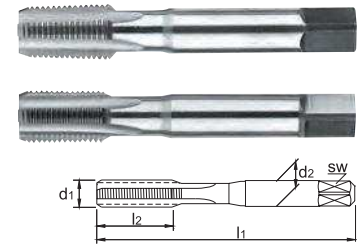


Ref.	d1	P	l1	l2	d2	sw
21.404.0973	BSP 1/8	28	63	20	7	5.5
21.404.1316	BSP 1/4	19	70	22	11	9
21.404.1666	BSP 3/8	19	70	22	12	9

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

> **21.410 Phantom**

NL HSS Handtappen BSPT (Rc), set à 2 stuks
 FR Tarauds à main HSS BSPT (Rc), Jeu de 2 pièces
 ES Machos mano HSS BSPT (Rc), juego de 2 piezas
 DE HSS Handgewindebohrer BSPT (Rc), Satz von 2 Stück



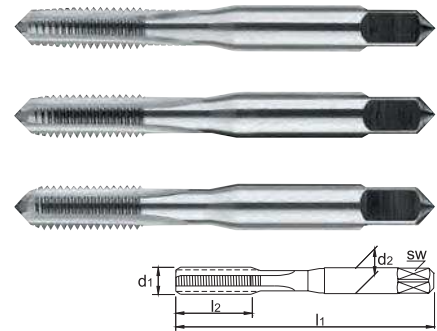
HSS	BSPT Rc	55°	NFE 66103	ISO 529			
P 11 ≤500 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

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), set à 3 stuks
 FR Tarauds à main HSS BSW (Whitworth), Jeu de 3 pièces
 ES Machos mano HSS BSW (Whitworth), juego de 3 piezas
 DE HSS Handgewindebohrer BSW (Whitworth), Satz von 3 Stück



HSS	BSW	55°	NFE 66104	ISO 529			
P 11 ≤500 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

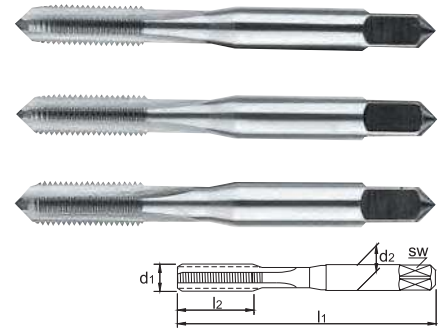
Ref.	d1	P	l1	l2	d2	sw
21.420.0317	BSW 1/8	40	50	18	3.55	2.8
21.420.0397	BSW 5/32	32	53	13	4	3.15
21.420.0476	BSW 3/16	24	58	16	5	4
21.420.0635	BSW 1/4	20	66	19	7.1	5.6
21.420.0794	BSW 5/16	18	72	22	8	6.3
21.420.0952	BSW 3/8	16	80	24	10	8
21.420.1111	BSW 7/16	14	85	25	8	6.3

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, set à 3 stuks
 FR Tarauds à main HSS BSF, Jeu de 3 pièces
 ES Machos mano HSS BSF, juego de 3 piezas
 DE HSS Handgewindebohrer BSF, Satz von 3 Stück



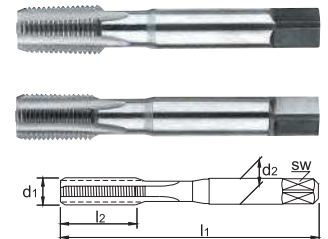
HSS	BSF	55°	NFE 66104	ISO 529			
P 11 s800 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

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, set à 2 stuks
 FR Tarauds à main HSS NPT, Jeu de 2 pièces
 ES Machos mano HSS NPT, juego de 2 piezas
 DE HSS Handgewindebohrer NPT, Satz von 2 Stück



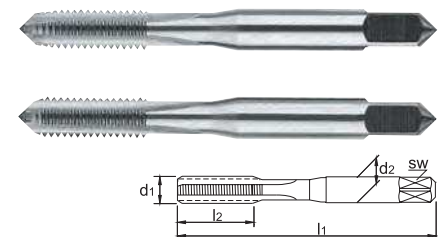
HSS	NPT	60°	ISO 529				
P 11 s800 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

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, set à 2 stuks
 FR Tarauds à main HSS PG, Jeu de 2 pièces
 ES Machos mano HSS PG, juego de 2 piezas
 DE HSS Handgewindebohrer PG, Satz von 2 Stück



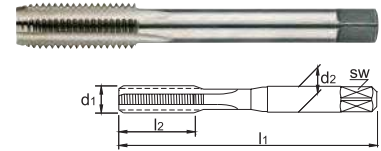
HSS	PG	80°	ISO 529				
P 11 s800 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu

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	12.5	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

> 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° ISO 529 Phan-Coil

P 11 P 12 P 13 M 21 K 31 K 32 N 41 N 51
≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² GG GGG GTS-GTW Alu Cu

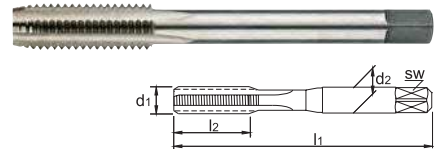
Ref.	d1	P	l1	l2	d2	sw
21.812.0400	M4	0.7	58	16	5	4
21.812.0500	M5	0.8	66	19	6.3	5
21.812.0600	M6	1	72	22	8	6.3

Ref.	d1	P	l1	l2	d2	sw
21.812.0800	M8	1.25	80	24	10	8
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° ISO 529 Phan-Coil

P 11 P 12 P 13 M 21 K 31 K 32 N 41 N 51
≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² GG GGG GTS-GTW Alu Cu

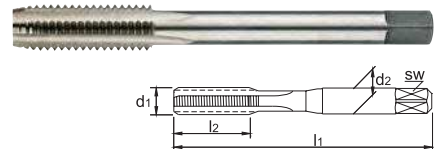
Ref.	d1	P	l1	l2	d2	sw
21.822.0810	MF8	1	80	24	10	8
21.822.1010	MF10	1	89	29	9	7.1
21.822.1025	MF10	1.25	89	29	9	7.1

Ref.	d1	P	l1	l2	d2	sw
21.822.1215	MF12	1.5	95	30	11.2	9
21.822.1415	MF14	1.5	102	32	12.5	10
21.822.1615	MF16	1.5	112	34	14	11.2

Ref.	d1	P	l1	l2	d2	sw
21.822.1815	MF18	1.5	112	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° ISO 529 Phan-Coil

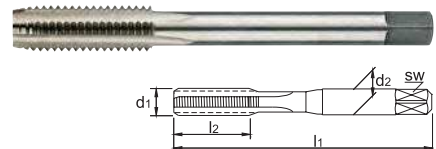
P 11 P 12 P 13 M 21 K 31 K 32 N 41 N 51
≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² GG GGG GTS-GTW Alu Cu

Ref.	d1	P	l1	l2	d2	sw
21.832.0482	UNC Nr. 10	24	66	25	6.3	5
21.832.0635	UNC 1/4	20	72	23	8	6.3
21.832.0794	UNC 5/16	18	80	24	10	8

Ref.	d1	P	l1	l2	d2	sw
21.832.0952	UNC 3/8	16	85	24	8	6.3
21.832.1270	UNC 1/2	13	102	32	12.5	10
21.832.1588	UNC 5/8	11	112	37	14	11.2

> 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° ISO 529 Phan-Coil

P 11 P 12 P 13 M 21 K 31 K 32 N 41 N 51
≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² GG GGG GTS-GTW Alu Cu

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

Ref.	d1	P	l1	l2	d2	sw
21.840.0952	UNF 3/8	24	85	25	8	6.3
21.840.1270	UNF 1/2	20	90	25	11.2	9
21.840.1588	UNF 5/8	18	112	37	14	11.2

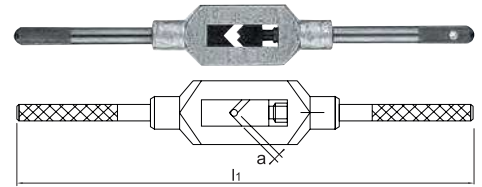


> 81.900 Phantom

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, Zinkdruckgu

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



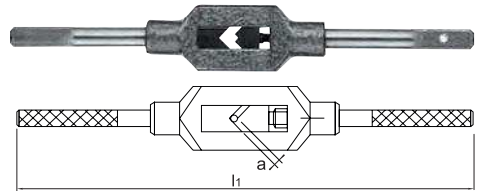
Ref.	Nr.	M	BSW	BSP	l1	a
81.900.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12
81.900.0400	4	M11-M27	7/16-1	1/4-3/4	500	6,2-16
81.900.0500	5L	M13-M32	1/2-1.1/4	1/4-1	750	7-20

> 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

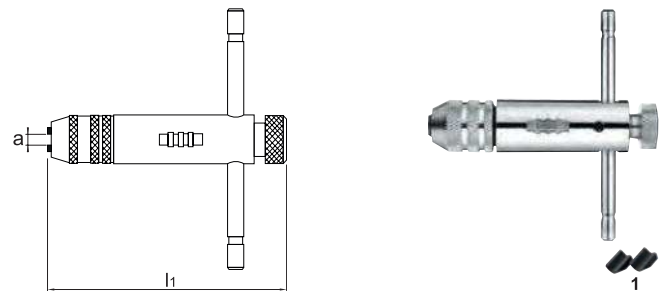
Ref.	Nr.	M	BSW	BSP	l1	a
81.905.0000	0	M1-M8	1/16-1/4	-	130	2,1-4,9
81.905.0100	1	M1-M10	1/16-3/8	1/8	180	2,1-5,5
81.905.0150	1,5	M1-M12	1/16-1/2	1/8	200	2,1-7
81.905.0200	2	M3,5-M12	5/32-1/2	1/8	280	3-8
81.905.0300	3	M5-M20	7/32-3/4	1/8-1/2	375	4,9-12



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

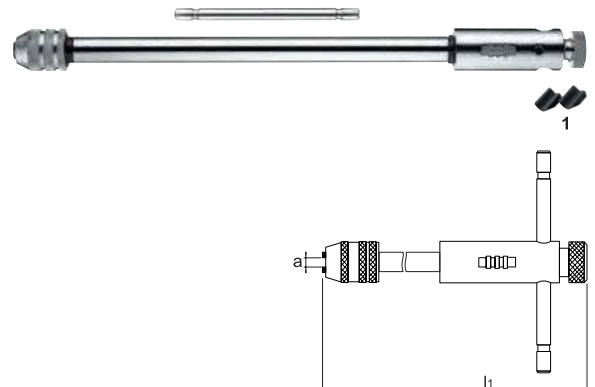
NL Rateltapkrukje
 FR Porte-tarands à cliquet
 ES Giromacho en T con carraca
 DE Werkzeughalter mit Knarre



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-tarands à cliquet, version longue
 ES Giromacho en T con carraca, larga
 DE Werkzeughalter mit Knarre, lang

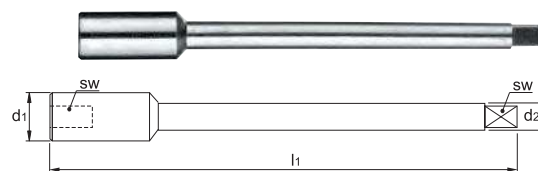


Ref.	Nr.	M	BSW	BSP	a	l1	1
81.935.1000	10	M3-M10	1/8-3/8		2,4-5,5	250	81.938.0100
81.935.2000	20	M5-M12	7/32-1/2	1/8	4,5-7	300	81.938.0200

> **81.950 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	1/16-1/8	115	12	7
81.950.0620	6.2	M11	7/16		120	14	8
81.950.0700	7	M12	1/2		125	15	9
81.950.0800	8				125	17	10
81.950.0900	9	M13-M16	9/16-5/8	1/4-3/8	130	19	11.2
81.950.1000	10				140	21	12.5
81.950.1100	11	M18	11/16-3/4		150	23	14
81.950.1200	12	M20		1/2	155	25	16
81.950.1300	13				165	27	17
81.950.1450	14.5	M22-M24	7/8-15/16	5/8	175	29	19
81.950.1600	16	M27	1	3/4	180	30	20
81.950.1800	18	M30	1.1/8	7/8	200	33	22.4
81.950.2000	20	M33	1.1/4		210	36	25
81.950.2200	22	M36	1.3/8	1.1/8	220	38	29
81.950.2400	24	M39-M42	1.1/2-1.5/8	1.1/4	235	42	32
81.950.2600	26				250	45	34.5
81.950.2900	29	M45-M48	1.3/4-1.7/8	1.3/8-2	265	50	38.5
81.950.3200	32	M52	2	2.1/4	285	55	42.5

SS 1
 HSS-E 1
 2



> 22.190 INTERNATIONAL TOOLS

NL ECO HSS Machinetap Metrisch, kort
 FR Taraud machine HSS ECO Métrique, court
 ES Macho máquina HSS ECO Métrica, corto
 DE ECO HSS Maschinengewindebohrer Metrisch, kurz

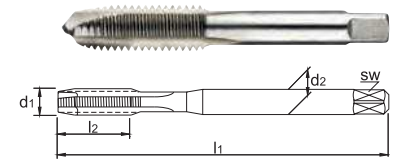


12-17	9-15	7-12	20-30
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Ref.	d1	P	l1	d2	sw
22.190.0300	M3	0.5	40	3.5	2.7
22.190.0400	M4	0.7	45	4.5	3.4
22.190.0500	M5	0.8	50	6	4.9

Ref.	d1	P	l1	d2	sw
22.190.0600	M6	1	50	6	4.9
22.190.0800	M8	1.25	56	6	4.9
22.190.1000	M10	1.5	70	7	5.5

Ref.	d1	P	l1	d2	sw
22.190.1200	M12	1.75	75	9	7



NIEUW NOUVEAU NUEVO NEU

> 22.191 INTERNATIONAL TOOLS

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

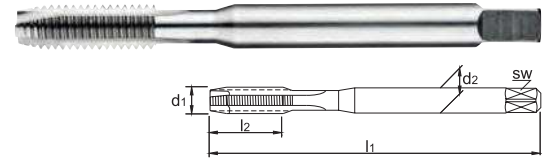


12-17	9-15	7-12	20-30
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Ref.	d1	P	l1	d2	sw
22.191.0300	M3	0.5	56	3.5	2.7
22.191.0400	M4	0.7	63	4.5	3.4

Ref.	d1	P	l1	d2	sw
22.191.0500	M5	0.8	70	6	4.9
22.191.0600	M6	1	80	6	4.9

Ref.	d1	P	l1	d2	sw
22.191.0800	M8	1.25	90	8	6.2
22.191.1000	M10	1.5	100	10	8



NIEUW NOUVEAU NUEVO NEU

> 22.192 INTERNATIONAL TOOLS

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

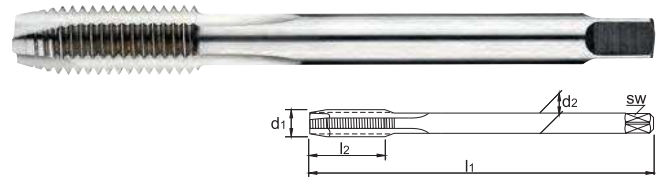


12-17	9-15	7-12	20-30
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Ref.	d1	P	l1	d2	sw
22.192.1200	M12	1.75	110	9	7

Ref.	d1	P	l1	d2	sw
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Ref.	d1	P	l1	d2	sw
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NIEUW NOUVEAU NUEVO NEU

> 22.195 INTERNATIONAL TOOLS

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

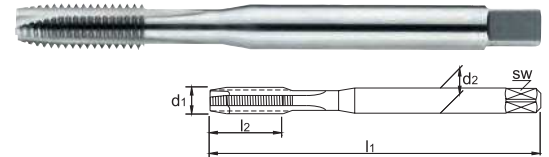


15-20	12-18	10-15	25-35
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Ref.	d1	P	l1	l2	d2	sw
22.195.0200	M2	0.4	45	8	2.8	2.1
22.195.0300	M3	0.5	56	9	3.5	2.7
22.195.0400	M4	0.7	63	12	4.5	3.4

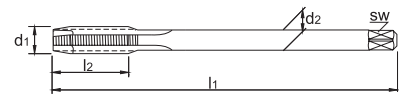
Ref.	d1	P	l1	l2	d2	sw
22.195.0500	M5	0.8	70	13	6	4.9
22.195.0600	M6	1	80	15	6	4.9
22.195.0800	M8	1.25	90	18	8	6.2

Ref.	d1	P	l1	l2	d2	sw
22.195.1000	M10	1.5	100	20	10	8



> 22.196 INTERNATIONAL TOOLS

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



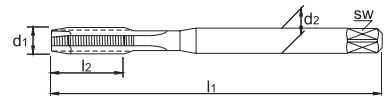
HSS-E M 60° DIN 376 3xD Form B 3,5-6 ISO 2 6H ECO PRO

P 11 ≤500 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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.196.1000	M10	1.5	100	20	7	5.5	22.196.1600	M16	2	110	25	12	9	22.196.2400	M24	3	160	63	18	14.5
22.196.1200	M12	1.75	110	23	9	7	22.196.2000	M20	2.5	140	30	16	12							
22.196.1400	M14	2	110	25	11	9	22.196.2200	M22	2.5	140	30	18	14.5							

> 22.197 INTERNATIONAL TOOLS

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



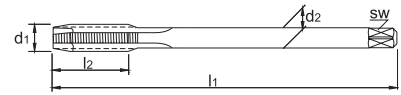
HSS-E M 60° TiN DIN 371 3xD Form B 3,5-6 ISO 2 6H ECO PRO

P 11 ≤500 N/mm² P 12 ≤850 N/mm² M 21 INOX ≤850 N/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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.197.0300	M3	0.5	56	6	3.5	2.7	22.197.0500	M5	0.8	70	13	6	4.9	22.197.0800	M8	1.25	90	18	8	6.2
22.197.0400	M4	0.7	63	12	4.5	3.4	22.197.0600	M6	1	80	15	6	4.9	22.197.1000	M10	1.5	100	20	10	8

> 22.198 INTERNATIONAL TOOLS

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



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

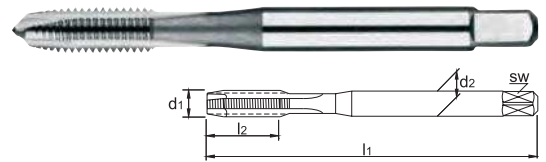
P 11 ≤500 N/mm² P 12 ≤850 N/mm² M 21 INOX ≤850 N/mm² K 31 GG N 41 Alu N 42 Alu Si>10% N 51 Cu
 22-30 18-27 7-10 15-22 32-52 15-20 5-12

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



> 22.200 Phantom

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



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

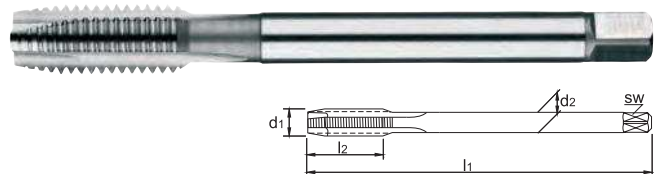
P 11 5600 N/mm² P 12 5850 N/mm² P 13 51000 N/mm² M 21 INOX 5850N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 42 Alu Si>10% N 51 Cu S 71 Ni/Co S 72 Ti

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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.200.0100	M1	0.25	40	6	2.5	2.1	22.200.0200	M2	0.4	45	8	2.8	2.1	22.200.0400	M4	0.7	63	13	4.5	3.4
22.200.0110	M1,1	0.25	40	6	2.5	2.1	22.200.0220	M2,2	0.45	45	9	2.8	2.1	22.200.0500	M5	0.8	70	16	6	4.9
22.200.0120	M1,2	0.25	40	6	2.5	2.1	22.200.0230	M2,3	0.4	45	9	2.8	2.1	22.200.0600	M6	1	80	19	6	4.9
22.200.0140	M1,4	0.3	40	7	2.5	2.1	22.200.0250	M2,5	0.45	50	9	2.8	2.1	22.200.0700	M7	1	80	19	7	5.5
22.200.0160	M1,6	0.35	40	8	2.5	2.1	22.200.0260	M2,6	0.45	50	9	2.8	2.1	22.200.0800	M8	1.25	90	22	8	6.2
22.200.0170	M1,7	0.35	40	8	2.5	2.1	22.200.0300	M3	0.5	56	11	3.5	2.7	22.200.1000	M10	1.5	100	24	10	8
22.200.0180	M1,8	0.35	40	8	2.5	2.1	22.200.0350	M3,5	0.6	56	13	4	3							

> 22.201 Phantom

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



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

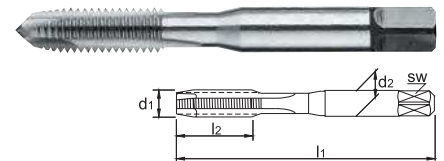
P 11 5600 N/mm² P 12 5850 N/mm² P 13 51000 N/mm² M 21 INOX 5850N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 42 Alu Si>10% N 51 Cu S 71 Ni/Co S 72 Ti

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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.201.0300	M3	0.5	56	13	2.2	-	22.201.1400	M14	2	110	30	11	9	22.201.3300	M33	3.5	180	50	25	20
22.201.0400	M4	0.7	63	13	2.8	2.1	22.201.1600	M16	2	110	32	12	9	22.201.3600	M36	4	200	56	28	22
22.201.0500	M5	0.8	70	16	3.5	2.7	22.201.1800	M18	2.5	125	34	14	11	22.201.3900	M39	4	200	60	32	24
22.201.0600	M6	1	80	19	4.5	3.4	22.201.2000	M20	2.5	140	34	16	12	22.201.4200	M42	4.5	200	60	32	24
22.201.0800	M8	1.25	90	22	6	4.9	22.201.2200	M22	2.5	140	34	18	14.5	22.201.4500	M45	4.5	220	65	36	29
22.201.0900	M9	1.25	90	22	7	5.5	22.201.2400	M24	3	160	38	18	14.5	22.201.4800	M48	5	250	70	36	29
22.201.1000	M10	1.5	100	24	7	5.5	22.201.2700	M27	3	160	38	20	16	22.201.5200	M52	5	250	70	40	32
22.201.1200	M12	1.75	110	29	9	7	22.201.3000	M30	3.5	180	45	22	18							

> 22.205 Phantom

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



HSS M 60° NFE 66103 ISO 529 2xD Form B 5 ISO 2 6H

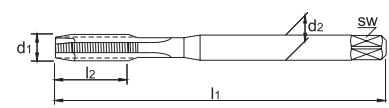
P 11 5600 N/mm² P 12 5850 N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 52 CuAlFe

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

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.205.0200	M2	0.4	41	8	2.5	2	22.205.0600	M6	1	66	19	6.3	5	22.205.1600	M16	2	102	32	12.5	10
22.205.0250	M2,5	0.45	44	9.5	2.8	2.24	22.205.0700	M7	1	66	19	7.1	5.6	22.205.1800	M18	2.5	112	37	14	11.2
22.205.0300	M3	0.5	48	11	3.15	2.5	22.205.0800	M8	1.25	72	22	8	6.3	22.205.2000	M20	2.5	112	37	14	11.2
22.205.0350	M3,5	0.6	50	13	3.55	2.8	22.205.0900	M9	1.25	72	22	9	7.1	22.205.2200	M22	2.5	118	38	16	12.5
22.205.0400	M4	0.7	53	13	4.5	3.15	22.205.1000	M10	1.5	80	24	10	8	22.205.2400	M24	3	130	45	18	14
22.205.0450	M4,5	0.75	58	16	5	4	22.205.1200	M12	1.75	89	29	9	7.1	22.205.2700	M27	3	135	45	20	16
22.205.0500	M5	0.8	58	16	5	4	22.205.1400	M14	2	95	30	11.2	9	22.205.3000	M30	3.5	138	48	20	16

> **22.210 Phantom**

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



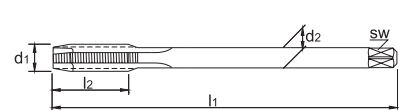
NIEUW NOUVEAU NUEVO NEU

HSS-E	M	60°	DIN 371	3xD	Form B	4-5	ISO 2 6H	+0,1 +0,2	UNI	
P 11 ≤500 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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	
22.210.0510	M5+0,1	0,8	70	15	6	4,9	22.210.0620	M6+0,2	1	80	17	6	4,9	22.210.1020	M10+0,2	1,5	100	22	10	8	
22.210.0610	M6+0,1	1	80	17	6	4,9	22.210.0820	M8+0,2	1,25	90	20	8	6,2								

> **22.211 Phantom**

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



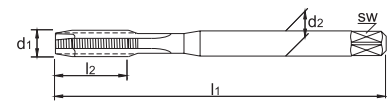
NIEUW NOUVEAU NUEVO NEU

HSS-E	M	60°	DIN 376	3xD	Form B	4-5	ISO 2 6H	+0,1 +0,2	UNI	
P 11 ≤500 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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.211.1220	M12+0,2	1,75	110	24	9	7	22.211.1610	M16+0,1	2	110	27	12	9							
22.211.1420	M14+0,2	2	110	26	11	9	22.211.1620	M16+0,2	2	110	27	12	9							

> **22.220 Phantom**

NL HSS-E Machinetap Metrisch, stoomontlaten
FR Taraud machine HSS-E Métrique, vaporisé
ES Macho máquina HSS-E Métrica, vaporizada
DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen



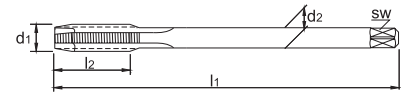
HSS-E	M	60°	OX.	DIN 371	3xD	Form B	4-5	ISO 2 6H
P 11 ≤500 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	M 21 INOX ≤850N/mm²	K 31 GG	K 32 GGG GTS-GTW			
15-20	10-20	6-10	7-10	10-15	5-8			

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.220.0200	M2	0,4	45	8	2,8	2,1	22.220.0300	M3	0,5	56	11	3,5	2,7	22.220.0700	M7	1	80	19	7	5,5
22.220.0220	M2,2	0,45	45	9	2,8	2,1	22.220.0350	M3,5	0,6	56	13	4	3	22.220.0800	M8	1,25	90	22	8	6,2
22.220.0230	M2,3	0,4	45	9	2,8	2,1	22.220.0400	M4	0,7	63	13	4,5	3,4	22.220.1000	M10	1,5	100	24	10	8
22.220.0250	M2,5	0,45	50	9	2,8	2,1	22.220.0500	M5	0,8	70	16	6	4,9							
22.220.0260	M2,6	0,45	50	9	2,8	2,1	22.220.0600	M6	1	80	19	6	4,9							



> 22.221 Phantom

NL HSS-E Machinetap Metrisch, stoomontlaten
 FR Taraud machine HSS-E Métrique, vaporisé
 ES Macho máquina HSS-E Métrica, vaporizada
 DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen



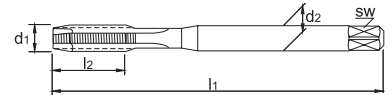
HSS-E M 60° OX. DIN 376 3xD Form B 4-5 ISO 2 6H

P 11 s600 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.221.0300	M3	0.5	56	13	2.2	-	22.221.1000	M10	1.5	100	24	7	5.5	22.221.2200	M22	2.5	140	34	18	14.5
22.221.0400	M4	0.7	63	13	2.8	2.1	22.221.1200	M12	1.75	110	29	9	7	22.221.2400	M24	3	160	38	18	14.5
22.221.0500	M5	0.8	70	16	3.5	2.7	22.221.1400	M14	2	110	30	11	9	22.221.2700	M27	3	160	38	20	16
22.221.0600	M6	1	80	19	4.5	3.4	22.221.1600	M16	2	110	32	12	9	22.221.3000	M30	3.5	180	45	22	18
22.221.0800	M8	1.25	90	22	6	4.9	22.221.1800	M18	2.5	125	34	14	11							
22.221.0900	M9	1.25	90	22	7	5.5	22.221.2000	M20	2.5	140	34	16	12							

> 22.240 Phantom

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



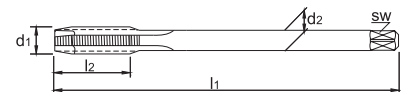
HSS-E M 60° TiCN DIN 371 3xD Form B 4-5 ISO 2 6H UNI

P 11 s600 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	M 22 INOX >850N/mm ²	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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.240.0300	M3	0.5	56	11	3.5	2.7	22.240.0500	M5	0.8	70	16	6	4.9	22.240.0800	M8	1.25	90	22	8	6.2
22.240.0400	M4	0.7	63	13	4.5	3.4	22.240.0600	M6	1	80	19	6	4.9	22.240.1000	M10	1.5	100	24	10	8

> 22.241 Phantom

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



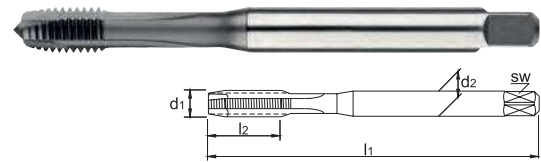
HSS-E M 60° TiCN DIN 376 3xD Form B 4-5 ISO 2 6H UNI

P 11 s600 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	M 22 INOX >850N/mm ²	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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.241.1200	M12	1.75	110	29	9	7	22.241.1600	M16	2	110	32	12	9							
22.241.1400	M14	2	110	30	11	9	22.241.2000	M20	2.5	140	34	16	12							

› **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

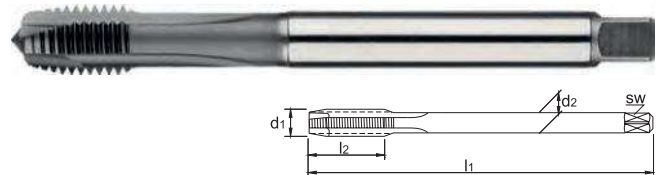


HSS-E PM	M	60°	TiCN	DIN 371	3xD	Form B	4-5	6HX		
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	S 71	S 72
≤500 N/mm²	≤550 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	Ni/Co	Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.252.0300	M3	0.5	56	11	3.5	2.7	22.252.0500	M5	0.8	70	15	6	4.9	22.252.0800	M8	1.25	90	20	8	6.2
22.252.0400	M4	0.7	63	13	4.5	3.4	22.252.0600	M6	1	80	17	6	4.9	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

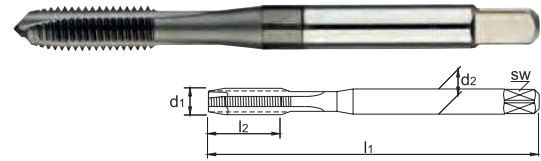


HSS-E PM	M	60°	TiCN	DIN 376	3xD	Form B	4-5	6HX		
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	S 71	S 72
≤500 N/mm²	≤550 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	Ni/Co	Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.253.1200	M12	1.75	110	24	9	7	22.253.1600	M16	2	110	27	12	9	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 HSS-E PM HP2 UNI Métrique, HARDLUBE
 ES Macho máquina HSS-E PM HP2 UNI Métrica, HARDLUBE
 DE HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE

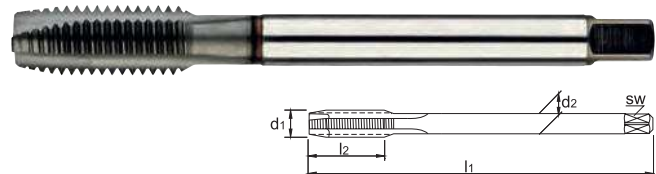


HSS-E PM	M	60°	HARD LUBE	DIN 371	3xD	Form B	4-5	ISO 2 6H	HP2 UNI		
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤500 N/mm²	≤550 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.268.0300	M3	0.5	56	11	3.5	2.7	22.268.0500	M5	0.8	70	16	6	4.9	22.268.0800	M8	1.25	90	22	8	6.2
22.268.0400	M4	0.7	63	13	4.5	3.4	22.268.0600	M6	1	80	19	6	4.9	22.268.1000	M10	1.5	100	24	10	8

› **22.269 Phantom**

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



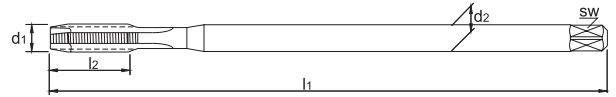
HSS-E PM	M	60°	HARD LUBE	DIN 376	3xD	Form B	4-5	ISO 2 6H	HP2 UNI		
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	S 71	S 72
≤500 N/mm²	≤550 N/mm²	≤1000 N/mm²	≤1400 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Ni/Co	Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.269.1200	M12	1.75	110	29	9	7	22.269.1600	M16	2	110	32	12	9							
22.269.1400	M14	2	110	30	11	9	22.269.2000	M20	2.5	140	34	16	12							



> 22.350 Phantom

NL UNI HSS-E Machinetap Metrisch, lang
 FR Tarda machine HSS-E UNI Métrique, version longue
 ES Macho máquina HSS-E UNI Métrica, larga
 DE UNI HSS-E Maschinengewindebohrer Metrisch, lang



HSS-E	M	60°	NORM	3xD	Form B	4-5	ISO 2 6H	UNI		
P 11 ≤500 N/mm ²	P 12 ≤350 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.350.0400	M4	0.7	126	13	4.5	3.4	22.350.0600	M6	1	160	17	6	4.9							
22.350.0500	M5	0.8	140	15	6	4.9	22.350.0800	M8	1.25	180	20	8	6.2							

> 22.351 Phantom

NL UNI HSS-E Machinetap Metrisch, lang
 FR Tarda machine HSS-E UNI Métrique, version longue
 ES Macho máquina HSS-E UNI Métrica, larga
 DE UNI HSS-E Maschinengewindebohrer Metrisch, lang

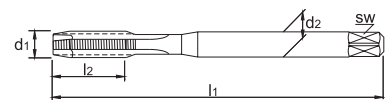


HSS-E	M	60°	NORM	3xD	Form B	4-5	ISO 2 6H	UNI		
P 11 ≤500 N/mm ²	P 12 ≤350 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	8-15	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.351.0800	M8	1.25	180	20	6	4.9	22.351.1200	M12	1.75	220	24	9	7	22.351.2000	M20	2.5	280	32	16	12
22.351.1000	M10	1.5	200	22	7	5.5	22.351.1600	M16	2	220	32	12	9	22.351.2400	M24	3	320	34	18	14.5

> 22.500 Phantom

NL HSS-E PM Machinetap Metrisch, 1400 N/mm², stoomontlaten
 FR Tarda machine HSS-E PM Métrique, 1400 N/mm², vaporisé
 ES Macho máquina HSS-E PM Métrica, 1400 N/mm², vaporizada
 DE HSS-E PM Maschinengewindebohrer Metrisch, 1400 N/mm², dampfangelassen

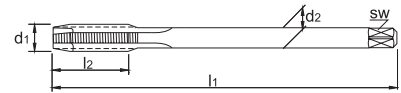


HSS-E PM	M	60°	OX.	DIN 371	3xD	Form B	4-5	ISO 2 6H
P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	M 22 INOX >850N/mm ²						
10-15	6-10	4-6						

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.500.0300	M3	0.5	56	11	3.5	2.7	22.500.0500	M5	0.8	70	16	6	4.9	22.500.0800	M8	1.25	90	22	8	6.2
22.500.0400	M4	0.7	63	13	4.5	3.4	22.500.0600	M6	1	80	19	6	4.9	22.500.1000	M10	1.5	100	24	10	8

› **22.501 Phantom**

NL HSS-E PM Machinetap Metrisch, 1400 N/mm², stoomontlaten
 FR Tardaud machine HSS-E PM Métrique, 1400 N/mm², vaporisé
 ES Macho máquina HSS-E PM Métrica, 1400 N/mm², vaporizada
 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

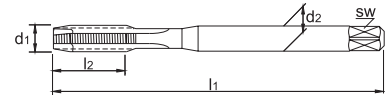
P 13 ≤1000 N/mm² P 14 ≤1400 N/mm² M 22 INOX >850N/mm²

10-15 6-10 4-6

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.501.0800	M8	1.25	90	22	6	4.9	22.501.1600	M16	2	110	32	12	9	22.501.2400	M24	3	160	38	18	14.5
22.501.1000	M10	1.5	100	24	7	5.5	22.501.1800	M18	2.5	125	34	14	11	22.501.2700	M27	3	160	38	20	16
22.501.1200	M12	1.75	110	29	9	7	22.501.2000	M20	2.5	140	34	16	12	22.501.3000	M30	3.5	180	45	22	18
22.501.1400	M14	2	110	30	11	9	22.501.2200	M22	2.5	140	34	18	14.5							

› **22.504 Phantom**

NL HSS-E PM Machinetap Metrisch, 1400 N/mm², TiCN
 FR Tardaud 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

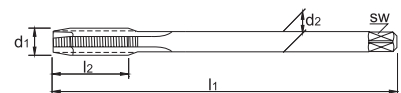
P 13 ≤1000 N/mm² P 14 ≤1400 N/mm² M 22 INOX >850N/mm²

10-15 6-10 4-6

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.504.0300	M3	0.5	56	11	3.5	2.7	22.504.0500	M5	0.8	70	16	6	4.9	22.504.0800	M8	1.25	90	22	8	6.2
22.504.0400	M4	0.7	63	13	4.5	3.4	22.504.0600	M6	1	80	19	6	4.9	22.504.1000	M10	1.5	100	24	10	8

› **22.505 Phantom**

NL HSS-E PM Machinetap Metrisch, 1400 N/mm², TiCN
 FR Tardaud 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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.505.1200	M12	1.75	110	29	9	7														

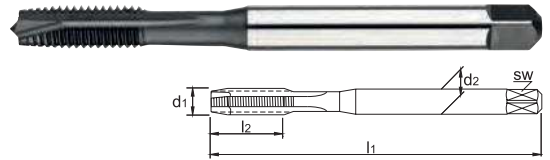


> 22.530 Phantom

- NL HSS-E PM Machinetap Metrisch, Titanium- en Nikkellegeringen, stoomontlaten
 FR Taraud machine HSS-E PM Métrique, alliage de Titane et Nickel, vaporisé
 ES Macho máquina HSS-E PM Métrica, aleados de Titano y Níquel, vaporizada
 DE HSS-E PM Maschinengewindebohrer Metrisch, Titanium- und Nickellegierungen, dampfangelassen

HSS-E PM	M	60°	OX.	DIN 371	3xD	Form B	4-5	ISO 2 6H	
P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.530.0300	M3	0.5	56	11	3.5	2.7	22.530.0500	M5	0.8	70	16	6	4.9	22.530.0800	M8	1.25	90	22	8	6.2
22.530.0400	M4	0.7	63	13	4.5	3.4	22.530.0600	M6	1	80	19	6	4.9	22.530.1000	M10	1.5	100	24	10	8

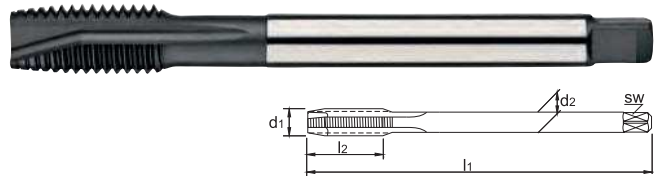


> 22.531 Phantom

- NL HSS-E PM Machinetap Metrisch, Titanium- en Nikkellegeringen, stoomontlaten
 FR Taraud machine HSS-E PM Métrique, alliage de Titane et Nickel, vaporisé
 ES Macho máquina HSS-E PM Métrica, aleados de Titano y Níquel, vaporizada
 DE HSS-E PM Maschinengewindebohrer Metrisch, Titanium- und Nickellegierungen, dampfangelassen

HSS-E PM	M	60°	OX.	DIN 376	3xD	Form B	4-5	ISO 2 6H	
P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	
22.531.1200	M12	1.75	110	29	9	7															

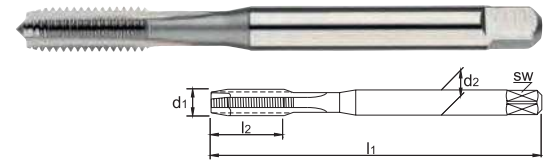


> 22.550 Phantom

- NL HSS-E Machinetap Metrisch, Messing
 FR Taraud machine HSS-E Métrique, Laiton
 ES Macho máquina HSS-E Métrica, Latón
 DE HSS-E Maschinengewindebohrer Metrisch, Messing

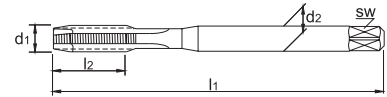
HSS-E	M	60°	DIN 371	2xD	Form C	2.5	ISO 2 6H	
N 51 Cu	N 52 CuAlFe	15-35	3-5					

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.550.0300	M3	0.5	56	11	3.5	2.7	22.550.0500	M5	0.8	70	16	6	4.9	22.550.0800	M8	1.25	90	22	8	6.2
22.550.0400	M4	0.7	63	13	4.5	3.4	22.550.0600	M6	1	80	19	6	4.9	22.550.1000	M10	1.5	100	24	10	8



> 22.595 INTERNATIONAL TOOLS

- NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
- FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
- ES Macho máquina HSS-E ECO PRO Métrica, vaporizada, acero inoxidable
- DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl



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

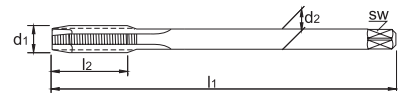
P 11 5900 N/mm² M 21 INOX ≤850N/mm²

15-20 7-10

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.595.0300	M3	0.5	56	9	3.5	2.7	22.595.0500	M5	0.8	70	13	6	4.9	22.595.0800	M8	1.25	90	18	8	6.2
22.595.0400	M4	0.7	63	12	4.5	3.4	22.595.0600	M6	1	80	15	6	4.9	22.595.1000	M10	1.5	100	20	10	8

> 22.596 INTERNATIONAL TOOLS

- NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
- FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
- ES Macho máquina HSS-E ECO PRO Métrica, vaporizada, acero inoxidable
- DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl



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

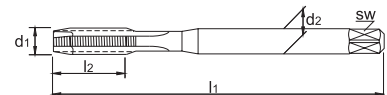
P 11 5900 N/mm² M 21 INOX ≤850N/mm²

15-20 7-10

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

> 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, vaporizada, 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 5900 N/mm² M 21 INOX ≤850N/mm² M 22 INOX >850N/mm²

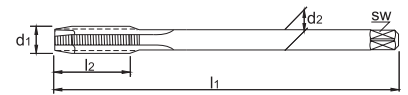
15-20 7-10 5-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.600.0300	M3	0.5	56	11	3.5	2.7	22.600.0500	M5	0.8	70	16	6	4.9	22.600.0800	M8	1.25	90	22	8	6.2
22.600.0400	M4	0.7	63	13	4.5	3.4	22.600.0600	M6	1	80	19	6	4.9	22.600.1000	M10	1.5	100	24	10	8



> 22.601 Phantom

NL HSS-E PM Machinetap Metrisch, stoomontlaten, roestvaststaal
 FR Tараud machine HSS-E PM Métrique, vaporisé, Inox
 ES Macho máquina HSS-E PM Métrica, vaporizada, 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
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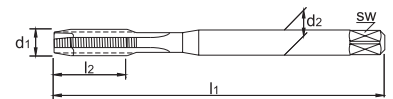
P 11 ≤600 N/mm ²	M 21 INOX ≤850 N/mm ²	M 22 INOX >850 N/mm ²
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15-20	7-10	5-8
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.601.0800	M8	1.25	90	22	6	4.9	22.601.1600	M16	2	110	32	12	9	22.601.2400	M24	3	160	38	18	14.5
22.601.1000	M10	1.5	100	24	7	5.5	22.601.1800	M18	2.5	125	34	14	11	22.601.2700	M27	3	160	38	20	16
22.601.1200	M12	1.75	110	29	9	7	22.601.2000	M20	2.5	140	34	16	12	22.601.3000	M30	3.5	180	45	22	18
22.601.1400	M14	2	110	30	11	9	22.601.2200	M22	2.5	140	34	18	14.5							

> 22.604 Phantom

NL HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal
 FR Tараud 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
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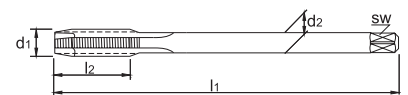
P 11 ≤600 N/mm ²	P 12 ≤550 N/mm ²	M 21 INOX ≤850 N/mm ²	M 22 INOX >850 N/mm ²
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15-20	15-20	7-10	4-8
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.604.0200	M2	0.4	45	8	2.8	2.1	22.604.0400	M4	0.7	63	13	4.5	3.4	22.604.0800	M8	1.25	90	22	8	6.2
22.604.0250	M2,5	0.45	50	9	2.8	2.1	22.604.0500	M5	0.8	70	16	6	4.9	22.604.1000	M10	1.5	100	24	10	8
22.604.0300	M3	0.5	56	11	3.5	2.7	22.604.0600	M6	1	80	19	6	4.9							

> 22.605 Phantom

NL HSS-E PM Machinetap Metrisch, TiCN, roestvaststaal
 FR Tараud 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
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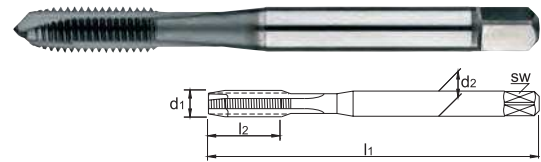
P 11 ≤600 N/mm ²	P 12 ≤550 N/mm ²	M 21 INOX ≤850 N/mm ²	M 22 INOX >850 N/mm ²
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15-20	15-20	7-10	4-8
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.605.1200	M12	1.75	110	29	9	7	22.605.1600	M16	2	110	32	12	9							
22.605.1400	M14	2	110	30	11	9	22.605.2000	M20	2.5	140	34	16	12							

> **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

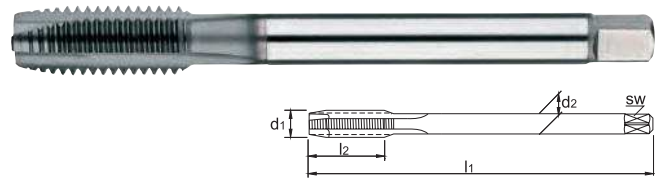
P 11 P 12 M 21 M 22 S 71 S 72
 ≤500 N/mm² ≤850 N/mm² INOX ≤850 N/mm² INOX >850 N/mm² Ni/Co Ti

15-20	15-20	7-10	4-10	4-12	4-12
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.610.0200	M2	0.4	45	9	2.8	2.1	22.610.0400	M4	0.7	63	13	4.5	3.4	22.610.0800	M8	1.25	90	20	8	6.2
22.610.0250	M2,5	0.45	50	9	2.8	2.1	22.610.0500	M5	0.8	70	15	6	4.9	22.610.1000	M10	1.5	100	22	10	8
22.610.0300	M3	0.5	56	11	3.5	2.7	22.610.0600	M6	1	80	17	6	4.9							

> **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

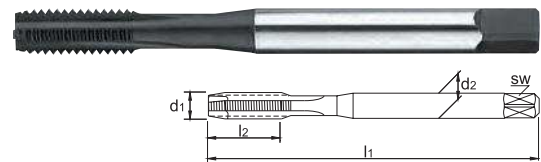
P 11 P 12 M 21 M 22 S 71 S 72
 ≤500 N/mm² ≤850 N/mm² INOX ≤850 N/mm² INOX >850 N/mm² Ni/Co Ti

15-20	15-20	7-10	4-10	4-12	4-12
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.611.1200	M12	1.75	110	24	9	7	22.611.1600	M16	2	110	27	12	9	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, nitrurada, fundición
 DE HSS-E Maschinengewindebohrer Metrisch, nitriert, Gusseisen



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

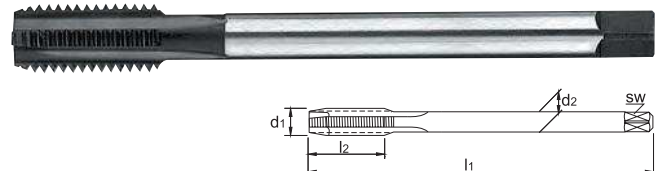
K 31 K 32
 GG GGS-GTW

10-15	5-8
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.650.0300	M3	0.5	56	11	3.5	2.7	22.650.0500	M5	0.8	70	16	6	4.9	22.650.0800	M8	1.25	90	22	8	6.2
22.650.0400	M4	0.7	63	13	4.5	3.4	22.650.0600	M6	1	80	19	6	4.9	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, nitrurada, fundición
 DE HSS-E Maschinengewindebohrer Metrisch, nitriert, Gusseisen



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

K 31 K 32
 GG GGS-GTW

10-15	5-8
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.651.0800	M8	1.25	90	22	6	4.9	22.651.1400	M14	2	110	30	11	9	22.651.2000	M20	2.5	140	34	16	12
22.651.1000	M10	1.5	100	24	7	5.5	22.651.1600	M16	2	110	32	12	9							
22.651.1200	M12	1.75	110	29	9	7	22.651.1800	M18	2.5	125	34	14	11							



> 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
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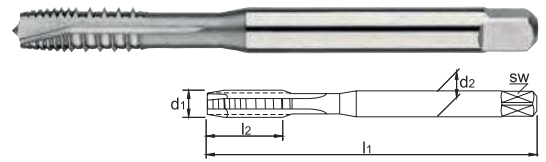
P 11	N 41	N 51
5800 N/mm ²	Alu	Cu

15-20	10-35	8-12
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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



> 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
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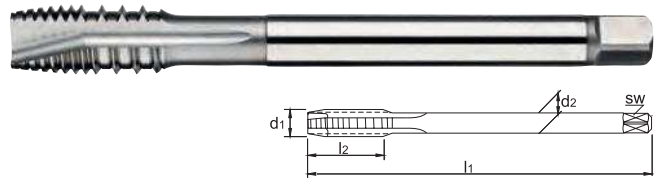
P 11	N 41	N 51
5800 N/mm ²	Alu	Cu

15-20	10-35	8-12
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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	60°	ISO 529	2xD	Form B	5	ISO 2 6H	ALU
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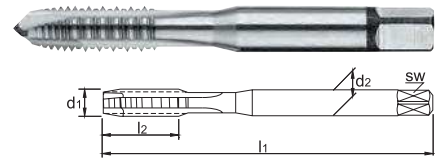
P 11	N 41	N 51
5800 N/mm ²	Alu	Cu

12-17	15-20	5-12
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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, nitrurada, 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
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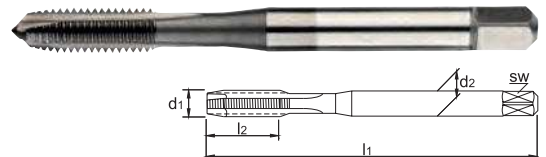
N 42
Alu
Si > 10%

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

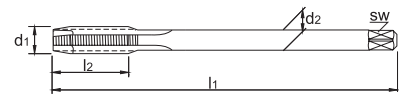
Ref.	d1	P	l1	l2	d2	sw
22.720.0500	M5	0.8	70	16	6	4.9
22.720.0600	M6	1	80	19	6	4.9

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, genitreeerd, Aluminium Si > 10%
 FR Taraud machine HSS-E Métrique, nitruéré, Aluminium Si > 10%
 ES Macho máquina HSS-E Métrica, nitruada, 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

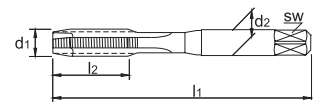
N 42
Alu
Si>10%

10-15

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.721.1200	M12	1.75	110	29	9	7														

> **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° DIN 371 Phan-Coil 2xD Form B 5 ISO 2 6H

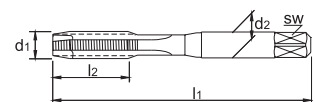
P 11 5900 Nimm²
P 12 s850 Nimm²
K 31 GG
K 32 GGG GTS-GTW
N 41 Alu
N 52 CuAlFe

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

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.895.0300	M3	0.5	63	7	4.5	3.4	22.895.0500	M5	0.8	80	10	6	4.9	22.895.0800	M8	1.25	100	15	10	8
22.895.0400	M4	0.7	70	8	6	4.9	22.895.0600	M6	1	90	12.5	8	6.2							

> **22.896 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



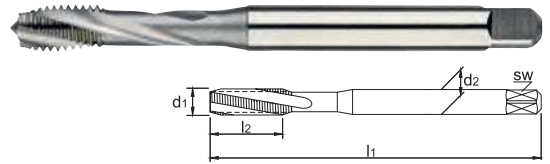
HSS EG M 60° DIN 376 Phan-Coil 2xD Form B 5 ISO 2 6H

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
22.896.1000	M10	1.5	110	17.5	9	7	22.896.1400	M14	2	110	22	12	9							
22.896.1200	M12	1.75	110	20	11	9	22.896.1600	M16	2	125	25	14	11							



> 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

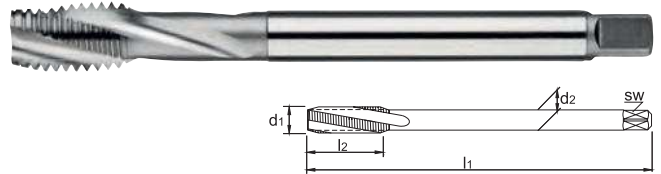
P 11 (s600 N/mm²) P 12 (s850 N/mm²) K 32 (GGG GTS-GTW) N 41 (Alu) N 42 (Alu Si>10%) N 51 (Cu) N 61 (PVC)

15-20 10-18 5-15 10-35 10-20 15-20 20-30

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.150.0300	M3	0.5	56	11	3.5	2.7	23.150.0600	M6	1	80	19	6	4.9	23.150.1000	M10	1.5	100	24	10	8
23.150.0400	M4	0.7	63	13	4.5	3.4	23.150.0700	M7	1	80	19	7	5.5							
23.150.0500	M5	0.8	70	16	6	4.9	23.150.0800	M8	1.25	90	22	8	6.2							

> 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

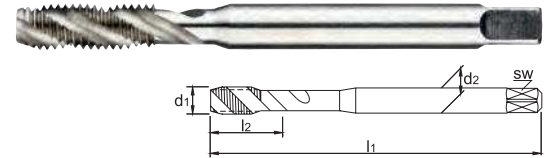
P 11 (s600 N/mm²) P 12 (s850 N/mm²) K 32 (GGG GTS-GTW) N 41 (Alu) N 42 (Alu Si>10%) N 51 (Cu) N 61 (PVC)

15-20 10-18 5-15 10-35 10-20 15-20 20-30

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.151.0600	M6	1	80	19	4.5	3.4	23.151.1600	M16	2	110	32	12	9	23.151.2700	M27	3	160	38	20	16
23.151.0800	M8	1.25	90	22	6	4.9	23.151.1800	M18	2.5	125	34	14	11	23.151.3000	M30	3.5	180	45	22	18
23.151.1000	M10	1.5	100	24	7	5.5	23.151.2000	M20	2.5	140	34	16	12	23.151.3300	M33	3.5	180	50	25	20
23.151.1200	M12	1.75	110	29	9	7	23.151.2200	M22	2.5	140	34	18	14.5	23.151.3600	M36	4	200	56	28	22
23.151.1400	M14	2	110	30	11	9	23.151.2400	M24	3	160	38	18	14.5							

> 23.291 INTERNATIONAL TOOLS

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



HSS M 60° DIN 371 2xD 35° Form C 2-3 ISO 2 6H **ECO**

P 11 (s600 N/mm²) P 12 (s850 N/mm²) K 31 (GG) N 41 (Alu)

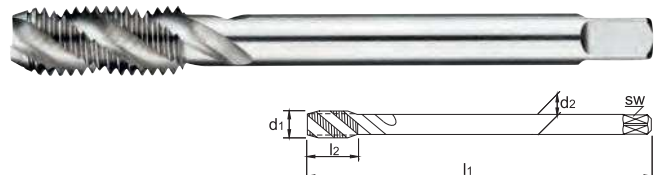
12-17 9-15 7-12 20-30

NIEUW NOUVEAU NUEVO NEU

Ref.	d1	P	l1	d2	sw	Ref.	d1	P	l1	d2	sw	Ref.	d1	P	l1	d2	sw
23.291.0300	M3	0.5	56	3.5	2.7	23.291.0500	M5	0.8	70	6	4.9	23.291.0800	M8	1.25	90	8	6.2
23.291.0400	M4	0.7	63	4.5	3.4	23.291.0600	M6	1	80	6	4.9	23.291.1000	M10	1.5	100	10	8

> 23.292 INTERNATIONAL TOOLS

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



HSS M 60° DIN 376 2xD 35° Form C 2-3 ISO 2 6H **ECO**

P 11 (s600 N/mm²) P 12 (s850 N/mm²) K 31 (GG) N 41 (Alu)

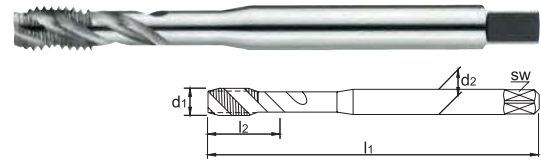
12-17 9-15 7-12 20-30

NIEUW NOUVEAU NUEVO NEU

Ref.	d1	P	l1	d2	sw	Ref.	d1	P	l1	d2	sw	Ref.	d1	P	l1	d2	sw
23.292.1200	M12	1.75	110	9	7												

> 23.295 INTERNATIONAL TOOLS

NL ECO PRO HSS-E Machinetap Metrisch
FR Tardaud machine HSS-E ECO PRO Métrique
ES Macho máquina HSS-E ECO PRO Métrica
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch



HSS-E M 60° DIN 371 2xD 35° Form C 2-3 ISO 2 6H ECO PRO

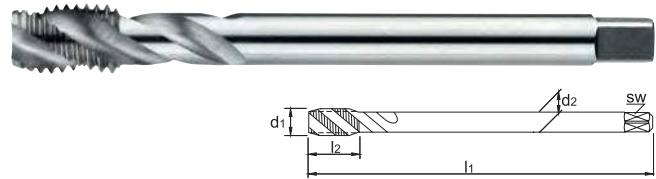
P 11 5600 N/mm² P 12 5850 N/mm² K 31 GG N 41 Alu

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

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.295.0200	M2	0.4	45	6	2.8	2.1	23.295.0500	M5	0.8	70	8	6	4.9	23.295.1000	M10	1.5	100	15	10	8
23.295.0300	M3	0.5	56	5	3.5	2.7	23.295.0600	M6	1	80	10	6	4.9							
23.295.0400	M4	0.7	63	7	4.5	3.4	23.295.0800	M8	1.25	90	13	8	6.2							

> 23.296 INTERNATIONAL TOOLS

NL ECO PRO HSS-E Machinetap Metrisch
FR Tardaud machine HSS-E ECO PRO Métrique
ES Macho máquina HSS-E ECO PRO Métrica
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch



HSS-E M 60° DIN 376 2xD 35° Form C 2-3 ISO 2 6H ECO PRO

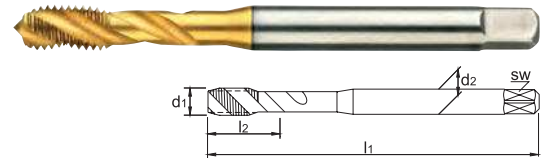
P 11 5600 N/mm² P 12 5850 N/mm² K 31 GG N 41 Alu

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

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.296.1000	M10	1.5	100	15	7	5.5	23.296.1600	M16	2	110	20	12	9	23.296.2400	M24	3	160	30	18	14.5
23.296.1200	M12	1.75	110	18	9	7	23.296.2000	M20	2.5	140	25	16	12							
23.296.1400	M14	2	110	20	11	9	23.296.2200	M22	2.5	140	25	18	14.5							

> 23.297 INTERNATIONAL TOOLS

NL ECO PRO HSS-E Machinetap Metrisch, TiN
FR Tardaud machine HSS-E ECO PRO Métrique, TiN
ES Macho máquina HSS-E ECO PRO Métrica, TiN
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, TiN



HSS-E M 60° TiN DIN 371 2xD 35° Form C 2-3 ISO 2 6H ECO PRO

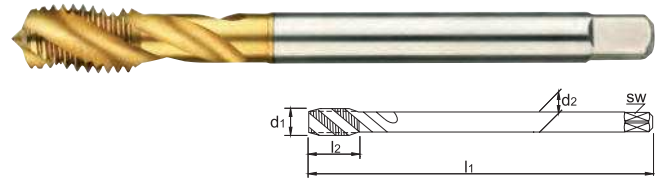
P 11 5600 N/mm² P 12 5850 N/mm² M 21 INOX 5850 N/mm² K 31 GG N 41 Alu N 42 Alu Si>10% N 51 Cu

22-30 18-27 7-10 15-22 32-52 15-20 5-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.297.0300	M3	0.5	56	5	3.5	2.7	23.297.0500	M5	0.8	70	8	6	4.9	23.297.0800	M8	1.25	90	13	8	6.2
23.297.0400	M4	0.7	63	7	4.5	3.4	23.297.0600	M6	1	80	10	6	4.9	23.297.1000	M10	1.5	100	15	10	8

> 23.298 INTERNATIONAL TOOLS

NL ECO PRO HSS-E Machinetap Metrisch, TiN
FR Tardaud machine HSS-E ECO PRO Métrique, TiN
ES Macho máquina HSS-E ECO PRO Métrica, TiN
DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, TiN



HSS-E M 60° TiN DIN 376 2xD 35° Form C 2-3 ISO 2 6H ECO PRO

P 11 5600 N/mm² P 12 5850 N/mm² M 21 INOX 5850 N/mm² K 31 GG N 41 Alu N 42 Alu Si>10% N 51 Cu

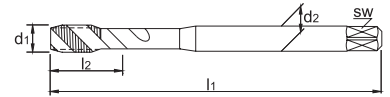
22-30 18-27 7-10 15-22 32-52 15-20 5-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.298.1200	M12	1.75	110	18	9	7														



> 23.300 Phantom

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

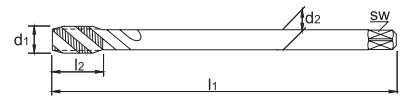


HSS-E	M	60°	DIN 371	2,5xD	40°	Form C	2,5	ISO 2 6H	UNI	
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤800 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.300.0200	M2	0.4	45	4	2.8	2.1	23.300.0300	M3	0.5	56	6	3.5	2.7	23.300.0700	M7	1	80	10	7	5.5
23.300.0220	M2,2	0.45	45	4.5	2.8	2.1	23.300.0350	M3,5	0.6	56	6	4	3	23.300.0800	M8	1.25	90	12.5	8	6.2
23.300.0230	M2,3	0.4	45	4	2.8	2.1	23.300.0400	M4	0.7	63	7	4.5	3.4	23.300.1000	M10	1.5	100	15	10	8
23.300.0250	M2,5	0.45	50	4	2.8	2.1	23.300.0500	M5	0.8	70	8	6	4.9							
23.300.0260	M2,6	0.45	50	4	2.8	2.1	23.300.0600	M6	1	80	10	6	4.9							

> 23.301 Phantom

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

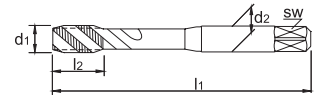


HSS-E	M	60°	DIN 376	2,5xD	40°	Form C	2,5	ISO 2 6H	UNI	
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤800 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.301.0600	M6	1	80	8	4.5	3.4	23.301.1400	M14	2	110	20	11	9	23.301.2400	M24	3	160	30	18	14.5
23.301.0800	M8	1.25	90	10	6	4.9	23.301.1600	M16	2	110	20	12	9	23.301.2700	M27	3	160	30	20	16
23.301.0900	M9	1.25	90	12.5	7	5.5	23.301.1800	M18	2.5	125	25	14	11	23.301.3000	M30	3.5	180	45	22	18
23.301.1000	M10	1.5	100	15	7	5.5	23.301.2000	M20	2.5	140	25	16	12	23.301.3300	M33	3.5	180	35	25	20
23.301.1200	M12	1.75	110	17.5	9	7	23.301.2200	M22	2.5	140	25	18	14.5	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**

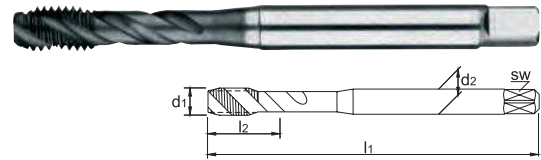


HSS	M	60°	ISO 529	2xD	40°	Form C	2,5	ISO 2 6H
P 11	P 12	K 31	K 32	N 41	N 52			
≤800 N/mm ²	≤850 N/mm ²	GG	GGG GTS-GTW	Alu	CuAlFe			
12-17	10-15	7-12	3-6	15-20	5-12			

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.305.0300	M3	0.5	48	14	3.15	2.5	23.305.1000	M10	1.5	80	15	10	8	23.305.2000	M20	2.5	112	25	14	11.2
23.305.0400	M4	0.7	53	7	4	3.15	23.305.1200	M12	1.75	89	18	9	7.1	23.305.2200	M22	2.5	118	25	16	12.5
23.305.0500	M5	0.8	58	8	5	4	23.305.1400	M14	2	95	20	11.2	9	23.305.2400	M24	3	130	30	18	14
23.305.0600	M6	1	66	10	6.3	5	23.305.1600	M16	2	102	20	12.5	10	23.305.2700	M27	3	135	30	20	16
23.305.0800	M8	1.25	72	13	8	6.3	23.305.1800	M18	2.5	112	25	14	11.2	23.305.3000	M30	3.5	138	35	20	16

> 23.324 Phantom

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

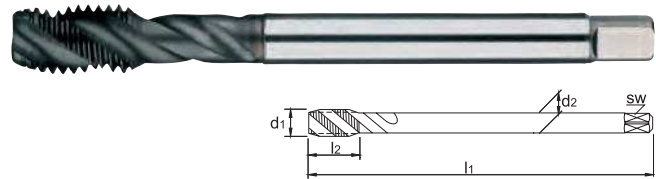


HSS-E	M	60°	TiCN	DIN 371	2,5xD	40°	Form C	2,5	ISO 2 6H	UNI	
P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤500 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.324.0300	M3	0.5	56	6	3.5	2.7	23.324.0500	M5	0.8	70	8	6	4.9	23.324.0800	M8	1.25	90	12.5	8	6.2
23.324.0400	M4	0.7	63	7	4.5	3.4	23.324.0600	M6	1	80	10	6	4.9	23.324.1000	M10	1.5	100	15	10	8

> 23.325 Phantom

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

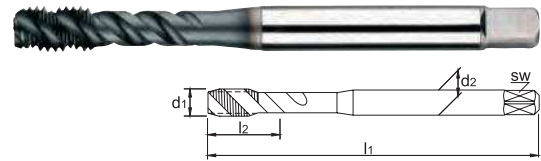


HSS-E	M	60°	TiCN	DIN 376	2,5xD	40°	Form C	2,5	ISO 2 6H	UNI	
P 11	P 12	P 13	M 21	M 22	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤500 N/mm²	≤850 N/mm²	≤1000 N/mm²	INOX ≤850N/mm²	INOX >850N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	4-8	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.325.1200	M12	1.75	110	17.5	9	7	23.325.1600	M16	2	110	20	12	9							
23.325.1400	M14	2	110	20	11	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

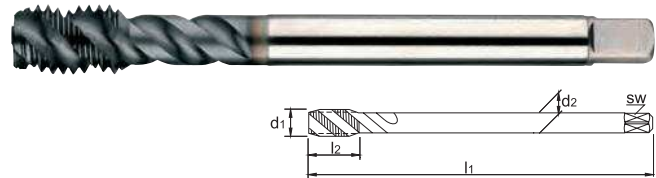


HSS-E PM	M	60°	TiCN	DIN 371	2,5xD	40°	Form C	2,5	6HX	
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	S 71	S 72
≤500 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	Ni/Co	Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.352.0300	M3	0.5	56	11	3.5	2.7	23.352.0500	M5	0.8	70	15	6	4.9	23.352.0800	M8	1.25	90	20	8	6.2
23.352.0400	M4	0.7	63	13	4.5	3.4	23.352.0600	M6	1	80	17	6	4.9	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



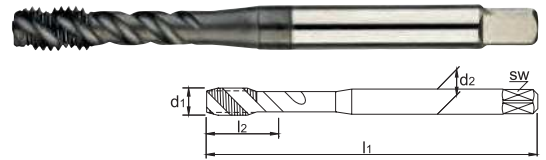
HSS-E PM	M	60°	TiCN	DIN 376	2,5xD	40°	Form C	2,5	6HX	
P 11	P 12	P 13	K 31	K 32	N 41	N 42	N 43	N 51	S 71	S 72
≤500 N/mm²	≤850 N/mm²	≤1000 N/mm²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Mg	Cu	Ni/Co	Ti
30-45	20-40	12-20	14-25	8-16	32-60	15-30	25-35	15-35	6-18	6-18

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



> 23.368 Phantom

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

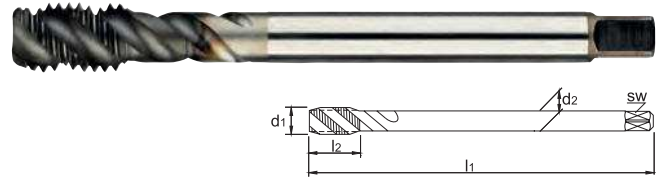


HSS-E PM	M	60°	HARD LUBE	DIN 371	2,5xD	50°	Form C	2-2,5	6HX	HP2 UNI	
P 11 ≤800 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	S 71 Ni/Co	S 72 Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.368.0300	M3	0.5	56	6	3.5	2.7	23.368.0500	M5	0.8	70	8	6	4.9	23.368.0800	M8	1.25	90	12.5	8	6.2
23.368.0400	M4	0.7	63	7	4.5	3.4	23.368.0600	M6	1	80	10	6	4.9	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 HSS-E PM HP2 UNI Métrique, HARDLUBE**
 ES **Macho máquina HSS-E PM HP2 UNI Métrica, HARDLUBE**
 DE **HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch, HARDLUBE**

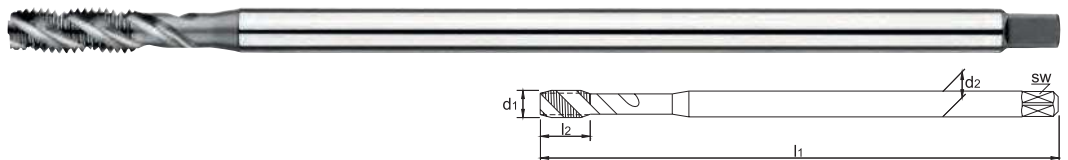


HSS-E PM	M	60°	HARD LUBE	DIN 376	2,5xD	50°	Form C	2-2,5	6HX	HP2 UNI	
P 11 ≤800 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	S 71 Ni/Co	S 72 Ti
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.369.1200	M12	1.75	110	17.5	9	7	23.369.1600	M16	2	110	20	12	9							
23.369.1400	M14	2	110	20	11	9	23.369.2000	M20	2.5	140	25	16	12							

> 23.370 Phantom

NL **UNI HSS-E Machinetap Metrisch, lang**
 FR **Taraud machine HSS-E UNI Métrique, version longue**
 ES **Macho máquina HSS-E UNI Métrica, larga**
 DE **UNI HSS-E Maschinengewindebohrer Metrisch, lang**

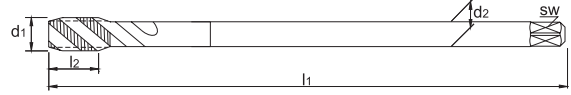


HSS-E	M	60°	NORM	2,5xD	40°	Form C	2,5	ISO 2 6H	UNI	
P 11 ≤800 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 Ni/Co	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.370.0400	M4	0.7	126	7	4.5	3.4	23.370.0600	M6	1	160	10	6	4.9							
23.370.0500	M5	0.8	140	8	6	4.9	23.370.0800	M8	1.25	180	12.5	8	6.2							

> **23.371 Phantom**

NL UNI HSS-E Machinetap Metrisch, lang
FR Taraud machine HSS-E UNI Métrique, version longue
ES Macho máquina HSS-E UNI Métrica, larga
DE UNI HSS-E Maschinengewindebohrer Metrisch, lang



HSS-E M 60° NORM 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

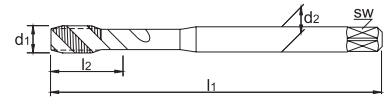
≤800 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² GG GGG GTS-GTW Alu Alu Si>10% Cu Ni/Co Ti

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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.371.0800	M8	1.25	180	12	6	4.9	23.371.1200	M12	1.75	220	17.5	9	7	23.371.2000	M20	2.5	280	25	16	12
23.371.1000	M10	1.5	200	15	7	5.5	23.371.1600	M16	2	220	20	12	9							

> **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° OX. DIN 371 2,5xD 40° Form C 2,5 ISO 2 6H

P 13 P 14 M 22

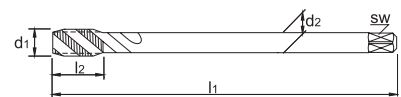
≤1000 N/mm² ≤1400 N/mm² INOX >850N/mm²

10-15 6-10 4-6

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.400.0300	M3	0.5	56	6	3.5	2.7	23.400.0500	M5	0.8	70	8	6	4.9	23.400.0800	M8	1.25	90	12.5	8	6.2
23.400.0400	M4	0.7	63	7	4.5	3.4	23.400.0600	M6	1	80	10	6	4.9	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° OX. DIN 376 2,5xD 40° Form C 2,5 ISO 2 6H

P 13 P 14 M 22

≤1000 N/mm² ≤1400 N/mm² INOX >850N/mm²

10-15 6-10 4-6

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.401.0800	M8	1.25	90	10	6	4.9	23.401.1600	M16	2	110	20	12	9	23.401.2400	M24	3	160	30	18	14.5
23.401.1000	M10	1.5	100	15	7	5.5	23.401.1800	M18	2.5	125	25	14	11	23.401.2700	M27	3	160	30	20	16
23.401.1200	M12	1.75	110	17.5	9	7	23.401.2000	M20	2.5	140	25	16	12	23.401.3000	M30	3.5	180	45	22	18
23.401.1400	M14	2	110	20	11	9	23.401.2200	M22	2.5	140	25	18	14.5							



> 23.404 Phantom

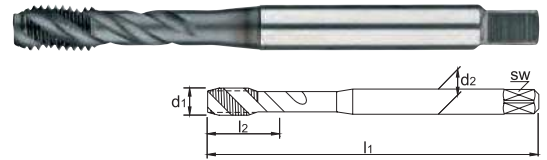
NL HSS-E PM Machinetap Metrisch, 1200 N/mm², TiCN
 FR Taraud machine HSS-E PM Métrique, 1200 N/mm², TiCN
 ES Macho máquina HSS-E PM Métrica, 1200 N/mm², TiCN
 DE HSS-E PM Maschinengewindebohrer Metrisch, 1200 N/mm², TiCN

HSS-E PM	M	60°	TiCN	DIN 371	2,5xD	40°	Form C	2,5	ISO 2 6H
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P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	M 22 INOX >850N/mm ²
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10-15	6-10	4-6
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.404.0300	M3	0.5	56	6	3.5	2.7	23.404.0500	M5	0.8	70	8	6	4.9	23.404.0800	M8	1.25	90	12.5	8	6.2
23.404.0400	M4	0.7	63	7	4.5	3.4	23.404.0600	M6	1	80	10	6	4.9	23.404.1000	M10	1.5	100	15	10	8



> 23.405 Phantom

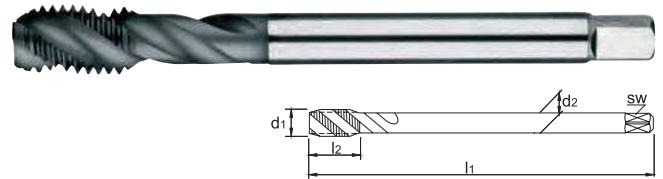
NL HSS-E PM Machinetap Metrisch, 1200 N/mm², TiCN
 FR Taraud machine HSS-E PM Métrique, 1200 N/mm², TiCN
 ES Macho máquina HSS-E PM Métrica, 1200 N/mm², TiCN
 DE HSS-E PM Maschinengewindebohrer Metrisch, 1200 N/mm², TiCN

HSS-E PM	M	60°	TiCN	DIN 376	2,5xD	40°	Form C	2,5	ISO 2 6H
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P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	M 22 INOX >850N/mm ²
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10-15	6-10	4-6
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.405.1200	M12	1.75	110	17.5	9	7														



> 23.430 Phantom

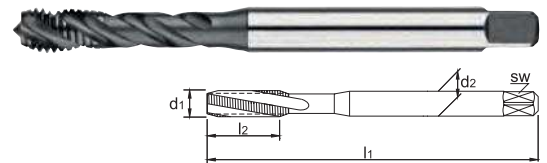
NL HSS-E PM Machinetap Metrisch, stoomontlaten, Titanium- en
 Nikkellegeringen
 FR Taraud machine HSS-E PM Métrique, vaporisé, alliage de Titane et
 Nickel
 ES Macho máquina HSS-E PM Métrica, vaporizada, aleados de Titano y
 Níquel
 DE HSS-E PM Maschinengewindebohrer Metrisch, dampfangelassen,
 Titanium- und Nickellegierungen

HSS-E PM	M	60°	OX.	DIN 371	2,5xD	40°	Form C	3	ISO 2 6H
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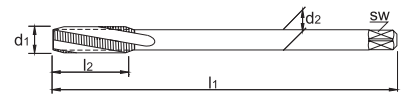
P 14 ≤1400 N/mm ²	N 52 CuAlFe	S 71 Ni/Co	S 72 Ti
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3-5	3-5	2-15	4-15
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.430.0400	M4	0.7	63	7	4.5	3.4	23.430.0600	M6	1	80	10	6	4.9	23.430.1000	M10	1.5	100	15	10	8
23.430.0500	M5	0.8	70	8	6	4.9	23.430.0800	M8	1.25	90	12.5	8	6.2							



> **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, vaporizada, aleados de Titano y Niquel
- DE HSS-E PM Maschinengewindebohrer Metrisch, dampfangelassen, Titanium- und Nickellegierungen

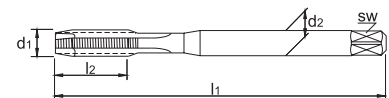
HSS-E PM M 60° OX. DIN 376 2,5xD 40° Form C 3 ISO 2 6H

P 14 S1400 N/mm² N 52 CuAlFe S 71 NiCo S 72 Ti

3-5 3-5 2-15 4-15

Ref.	d1	P	l1	l2	d2	sw
23.431.1200	M12	1.75	110	17.5	9	7

> **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

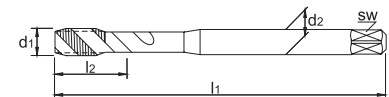
MG HM M 60° TiCN DIN 371 2xD Form C 2,5 6HX

P 14 S1400 N/mm² H 15 HRC M 22 INOX >850N/mm² N 52 CuAlFe N 62 GFK/CFK

25-40 5-15 30-50 25-30 10-20

Ref.	d1	P	l1	l2	d2	sw
23.440.0300	M3	0.5	56	11	3.5	2.7
23.440.0400	M4	0.7	63	13	4.5	3.4

> **23.445 INTERNATIONAL TOOLS**



- NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
- FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
- ES Macho máquina HSS-E ECO PRO Métrica, vaporizada, acero inoxidable
- DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl

HSS-E M 60° OX. DIN 371 2xD 35° Form C 2-3 ISO 2 6H INOX ECO PRO

P 14 S1400 N/mm² M 21 INOX ≤850N/mm²

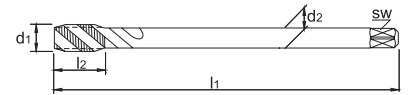
3-5 7-10

Ref.	d1	P	l1	l2	d2	sw
23.445.0300	M3	0.5	56	5	3.5	2.7
23.445.0400	M4	0.7	63	7	4.5	3.4



> 23.446 INTERNATIONAL TOOLS

- NL ECO PRO HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
 FR Taraud machine HSS-E ECO PRO Métrique, vaporisé, Inox
 ES Macho máquina HSS-E ECO PRO Métrica, vaporizada, acero inoxidable
 DE ECO PRO HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl

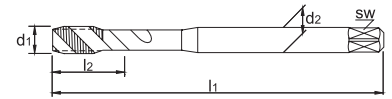


3-5 7-10

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.446.1200	M12	1.75	110	18	9	7														

> 23.450 Phantom

- NL HSS-E Machinetap Metrisch, stoomontlaten, roestvaststaal
 FR Taraud machine HSS-E Métrique, vaporisé, Inox
 ES Macho máquina HSS-E Métrica, vaporizada, acero inoxidable
 DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl

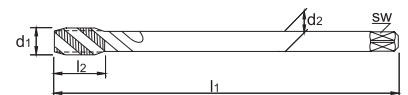


3-5 7-10 5-8 2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.450.0300	M3	0.5	56	6	3.5	2.7	23.450.0500	M5	0.8	70	8	6	4.9	23.450.0800	M8	1.25	90	12.5	8	6.2
23.450.0400	M4	0.7	63	7	4.5	3.4	23.450.0600	M6	1	80	10	6	4.9	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, vaporizada, acero inoxidable
 DE HSS-E Maschinengewindebohrer Metrisch, dampfangelassen, rostfreien Stahl

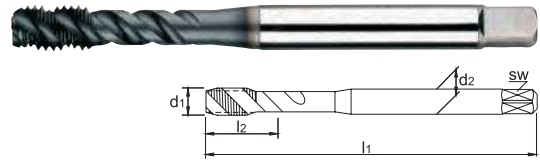


3-5 7-10 5-8 2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.451.0800	M8	1.25	90	10	6	4.9	23.451.2000	M20	2.5	140	25	16	12	23.451.3600	M36	4	200	45	28	22
23.451.1000	M10	1.5	100	15	7	5.5	23.451.2200	M22	2.5	140	25	18	14.5	23.451.3900	M39	4	200	50	32	24
23.451.1200	M12	1.75	110	17.5	9	7	23.451.2400	M24	3	160	30	18	14.5	23.451.4200	M42	4.5	200	56	32	24
23.451.1400	M14	2	110	20	11	9	23.451.2700	M27	3	160	30	20	16	23.451.4500	M45	4.5	220	67	36	29
23.451.1600	M16	2	110	20	12	9	23.451.3000	M30	3.5	180	45	22	18	23.451.4800	M48	5	250	67	36	29
23.451.1800	M18	2.5	125	25	14	11	23.451.3300	M33	3.5	180	40	25	20							

> **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



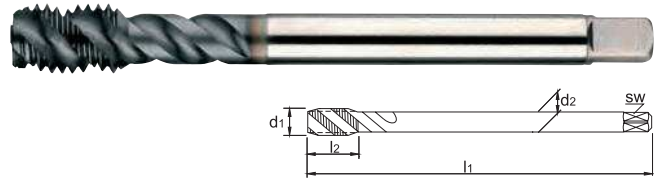
HSS-E PM M 60° TiCN DIN 371 2,5xD 40° Form C 2,5 ISO 2 6H INOX

P 14 ≤1400 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²	S 71 Ni/Co
6-8	7-10	5-8	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.454.0200	M2	0.4	45	4	2.8	2.1	23.454.0400	M4	0.7	63	7	4.5	3.4	23.454.0800	M8	1.25	90	12.5	8	6.2
23.454.0250	M2,5	0.45	50	4	2.8	2.1	23.454.0500	M5	0.8	70	8	6	4.9	23.454.1000	M10	1.5	100	15	10	8
23.454.0300	M3	0.5	56	6	3.5	2.7	23.454.0600	M6	1	80	10	6	4.9							

> **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



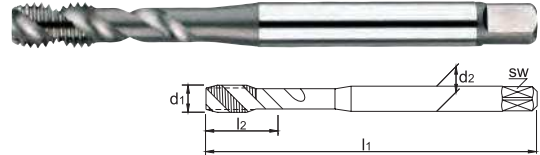
HSS-E PM M 60° TiCN DIN 376 2,5xD 40° Form C 2,5 ISO 2 6H INOX

P 14 ≤1400 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²	S 71 Ni/Co
6-8	7-10	5-8	2-8

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.455.1200	M12	1.75	110	17.5	9	7	23.455.1600	M16	2	110	20	12	9	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



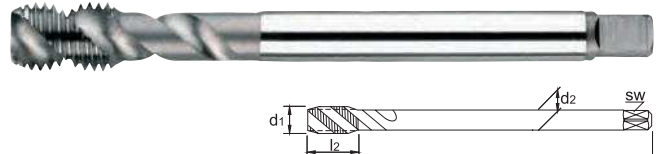
HSS-E M 60° DIN 371 2,5xD 45° Form C 2,5 ISO 2 6H ALU

P 11 ≤500 N/mm ²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20	10-35	10-15	8-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.480.0300	M3	0.5	56	6	3.5	2.7	23.480.0500	M5	0.8	70	8	6	4.9	23.480.0800	M8	1.25	90	12.5	8	6.2
23.480.0400	M4	0.7	63	7	4.5	3.4	23.480.0600	M6	1	80	10	6	4.9	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 ≤500 N/mm ²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
15-20	10-35	10-15	8-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.481.0800	M8	1.25	90	10	6	4.9	23.481.1200	M12	1.75	110	17.5	9	7	23.481.1600	M16	2	110	20	12	9
23.481.1000	M10	1.5	100	15	7	5.5	23.481.1400	M14	2	110	20	11	9							



> 23.500 Phantom

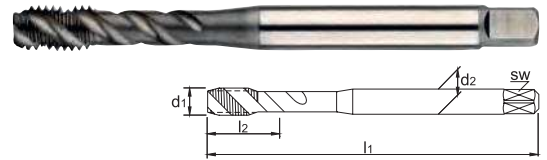
NL HSS-E Machinetap Metrisch, genitreeerd, Aluminium Si > 10%
 FR Tarda machine HSS-E Métrique, nitruré, Aluminium Si > 10%
 ES Macho máquina HSS-E Métrica, nitrurada, Aluminio Si > 10%
 DE HSS-E Maschinengewindebohrer Metrisch, nitriert,
 Aluminium Si > 10%

HSS-E M DIN 371 2,5xD 2,5 ISO 2 6H ALU

N 42
 Alu
 Si>10%

10-15

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.500.0300	M3	0.5	56	6	3.5	2.7	23.500.0500	M5	0.8	70	8	6	4.9	23.500.0800	M8	1.25	90	12.5	8	6.2
23.500.0400	M4	0.7	63	7	4.5	3.4	23.500.0600	M6	1	80	10	6	4.9	23.500.1000	M10	1.5	100	15	10	8



> 23.501 Phantom

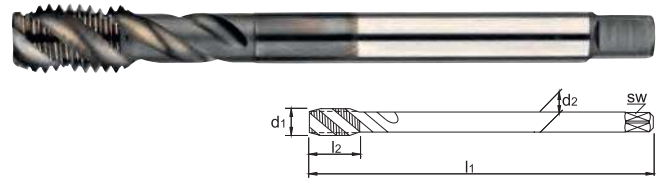
NL HSS-E Machinetap Metrisch, genitreeerd, Aluminium Si > 10%
 FR Tarda machine HSS-E Métrique, nitruré, Aluminium Si > 10%
 ES Macho máquina HSS-E Métrica, nitrurada, Aluminio Si > 10%
 DE HSS-E Maschinengewindebohrer Metrisch, nitriert,
 Aluminium Si > 10%

HSS-E M DIN 376 2,5xD 2,5 ISO 2 6H ALU

N 42
 Alu
 Si>10%

10-15

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	
23.501.1200	M12	1.75	110	17.5	9	7															



> 23.585 Phantom

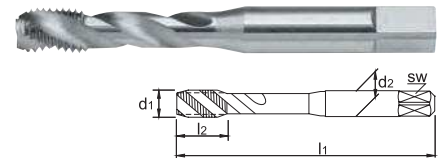
NL HSS-E Machinetap Metrisch, voor Phan-Coil
 FR Tarda machine HSS-E Métrique, pour Phan-Coil
 ES Macho máquina HSS-E Métrica, para Phan-Coil
 DE HSS-E Maschinengewindebohrer Metrisch, für Phan-Coil

HSS-E EG M DIN 371 Phan-Coil 2xD 2,5 ISO 2 6H

P 11
 s600 N/mm² s850 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	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.585.0300	M3	3.65	0.5	63	5	4.5	23.585.0500	M5	6.04	0.8	80	8	6	23.585.0800	M8	9.62	1.25	100	16	10
23.585.0400	M4	4.91	0.7	70	8	6	23.585.0600	M6	7.3	1	90	10	8							



> 23.586 Phantom

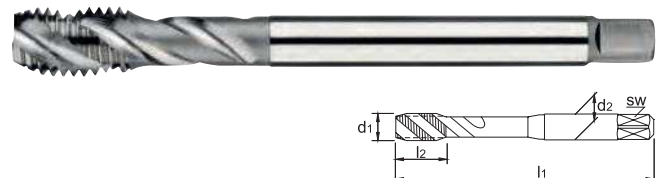
NL HSS-E Machinetap Metrisch, voor Phan-Coil
 FR Tarda machine HSS-E Métrique, pour Phan-Coil
 ES Macho máquina HSS-E Métrica, para Phan-Coil
 DE HSS-E Maschinengewindebohrer Metrisch, für Phan-Coil

HSS-E EG M DIN 376 Phan-Coil 2xD 2,5 ISO 2 6H

P 11
 s600 N/mm² s850 N/mm² GG GGG GTS-GTW Alu CuAlFe

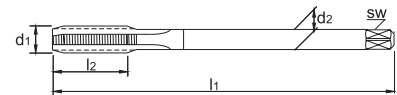
12-17 10-15 7-12 3-6 15-20 5-12

Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.586.1000	M10	1.5	110	17.5	9	7	23.586.1200	M12	1.75	110	20	11	9	23.586.1600	M16	2	125	25	14	11



> 23.615 INTERNATIONAL TOOLS

NL **ECO PRO HSS-E Machinetap Metrisch Fijn**
 FR **Taraut machine HSS-E ECO PRO Métrique Fin**
 ES **Macho máquina HSS-E ECO PRO Métrica Fina**
 DE **ECO PRO HSS-E Maschinengewindebohrer Metrisch Fein**



HSS-E MF 60° DIN 374 1,5xD Form B 3,5-6 ISO 2 6H **ECO PRO**

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

15-20 12-18 10-15 23-35

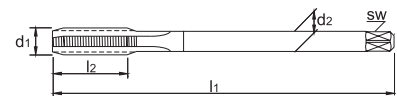
Ref.	d1	P	l1	l2	d2	sw
23.615.0505	MF5	0.5	70	12	3.5	2.7
23.615.0605	MF6	0.5	80	14	4.5	3.4
23.615.0607	MF6	0.75	80	14	4.5	3.4
23.615.0807	MF8	0.75	80	19	6	4.9
23.615.0810	MF8	1	90	22	6	4.9
23.615.1007	MF10	0.75	90	20	7	5.5
23.615.1010	MF10	1	90	20	7	5.5
23.615.1012	MF10	1.25	100	24	7	5.5
23.615.1210	MF12	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 **Taraut machine HSS-E UNI Métrique Fin**
 ES **Macho máquina HSS-E UNI 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 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 NiCo 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

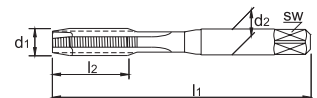
Ref.	d1	P	l1	l2	d2	sw
23.620.1610	MF16	1	100	22	12	9
23.620.1615	MF16	1.5	100	22	12	9
23.620.1810	MF18	1	110	25	14	11
23.620.1815	MF18	1.5	110	25	14	11
23.620.1820	MF18	2	125	30	14	11
23.620.2010	MF20	1	125	25	16	12
23.620.2015	MF20	1.5	125	25	16	12
23.620.2020	MF20	2	140	32	16	12
23.620.2210	MF22	1	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



> 23.625 Phantom

NL HSS Machinetap Metrisch Fijn
 FR Tarda machine HSS Métrique Fin
 ES Macho máquina HSS Métrica Fina
 DE HSS Maschinengewindebohrer Metrisch Fein



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

P 11 P 12 K 31 N 41
 ≤500 N/mm² ≤350 N/mm² GG Alu

15-20	12-18	10-15	23-35
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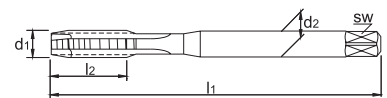
Ref.	d1	P	l1	l2	d2	sw
23.625.0403	MF4	0.35	53	13	4	3.15
23.625.0405	MF4	0.5	53	13	4	3.15
23.625.0455	MF4.5	0.5	58	16	5	4
23.625.0505	MF5	0.5	58	16	5	4
23.625.0607	MF6	0.75	66	19	6.3	5
23.625.0705	MF7	0.5	66	19	7.1	5.6
23.625.0707	MF7	0.75	66	19	7.1	5.6
23.625.0805	MF8	0.5	72	22	8	6.3
23.625.0807	MF8	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 Tarda machine HSS-E PM HP2 UNI Métrique Fin, HARDLUBE
 ES Macho máquina HSS-E PM HP2 UNI Métrica Fina, HARDLUBE
 DE HP2 UNI HSS-E PM Maschinengewindebohrer Metrisch Fein, HARDLUBE



HSS-E PM MF 60° HARD LUBE DIN 374 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
 ≤500 N/mm² ≤350 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
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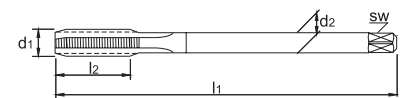
Ref.	d1	P	l1	l2	d2	sw
23.668.0810	MF8	1	90	20	6	4.9
23.668.1010	MF10	1	90	16	7	5.5
23.668.1012	MF10	1.25	90	16	7	5.5
23.668.1210	MF12	1	100	22	9	7
23.668.1212	MF12	1.25	100	22	9	7

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 Tarda machine HSS-E PM Métrique Fin, vaporisé
 ES Macho máquina HSS-E PM Métrica Fina, vaporizada
 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 P 12 P 13 M 21 M 22 N 41 N 42 N 51 S 71 S 72
 ≤500 N/mm² ≤350 N/mm² ≤1000 N/mm² INOX ≤850N/mm² INOX >850N/mm² Alu Alu Si>10% Cu Ni/Co Ti

15-20	10-20	6-10	7-10	4-8	25-35	10-20	15-35	4-8	4-8
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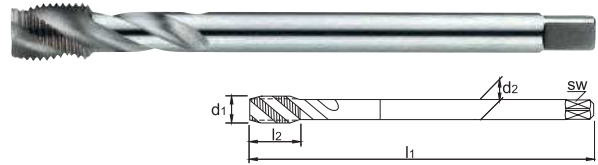
Ref.	d1	P	l1	l2	d2	sw
23.750.0405	MF4	0.5	63	10	2.8	2.1
23.750.0505	MF5	0.5	70	11	3.5	2.7
23.750.0605	MF6	0.5	80	13	4.5	3.4
23.750.0607	MF6	0.75	80	13	4.5	3.4
23.750.0807	MF8	0.75	80	13	6	4.9
23.750.0810	MF8	1	90	20	6	4.9
23.750.1010	MF10	1	90	20	7	5.5
23.750.1012	MF10	1.25	100	22	7	5.5
23.750.1210	MF12	1	100	22	9	7
23.750.1212	MF12	1.25	100	22	9	7

Ref.	d1	P	l1	l2	d2	sw
23.750.1215	MF12	1.5	100	22	9	7
23.750.1410	MF14	1	100	22	11	9
23.750.1412	MF14	1.25	100	22	11	9
23.750.1415	MF14	1.5	100	22	11	9
23.750.1610	MF16	1	100	22	12	9
23.750.1615	MF16	1.5	100	22	12	9
23.750.1810	MF18	1	110	25	14	11
23.750.1815	MF18	1.5	110	25	14	11
23.750.2010	MF20	1	125	25	16	12
23.750.2015	MF20	1.5	125	25	16	12

Ref.	d1	P	l1	l2	d2	sw
23.750.2210	MF22	1	125	25	18	14.5
23.750.2215	MF22	1.5	125	25	18	14.5
23.750.2415	MF24	1.5	140	28	18	14.5
23.750.2420	MF24	2	140	28	18	14.5
23.750.2615	MF26	1.5	140	28	18	14.5
23.750.2715	MF27	1.5	140	28	20	16
23.750.2720	MF27	2	140	28	20	16
23.750.2815	MF28	1.5	140	28	20	16
23.750.3015	MF30	1.5	150	28	22	18
23.750.3020	MF30	2	150	28	22	18

> 23.835 INTERNATIONAL TOOLS

NL **ECO PRO HSS-E Machinetap Metrisch Fijn**
 FR **Taraud machine HSS-E ECO PRO Métrique Fin**
 ES **Macho máquina HSS-E ECO PRO Métrica Fina**
 DE **ECO PRO HSS-E Maschinengewindebohrer Metrisch Fein**



HSS-E MF 60° DIN 374 2xD 35° Form C 2-3 ISO 2 6H **ECO PRO**

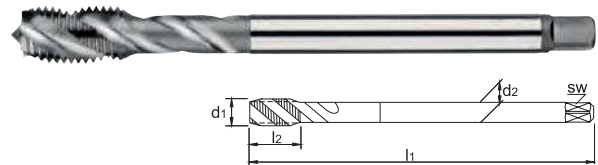
P 11 P 12 K 31 N 41
 ≤500 N/mm² ≤850 N/mm² GG Alu

15-20	12-18	10-15	23-35
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.835.0810	MF8	1	90	10	6	4.9	23.835.1212	MF12	1.25	100	14	9	7	23.835.1815	MF18	1.5	110	20	14	11
23.835.1010	MF10	1	90	12	7	5.5	23.835.1215	MF12	1.5	100	14	9	7	23.835.2015	MF20	1.5	125	20	16	12
23.835.1012	MF10	1.25	100	12	7	5.5	23.835.1415	MF14	1.5	100	16	11	9							
23.835.1210	MF12	1	100	14	9	7	23.835.1615	MF16	1.5	100	16	12	9							

> 23.840 Phantom

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



HSS-E MF 60° DIN 374 2,5xD 40° Form C 2-3 ISO 2 6H **UNI**

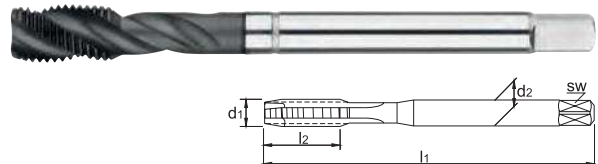
P 11 P 12 P 13 M 21 K 31 K 32 N 41 N 42 N 51 S 71 S 72
 ≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² GG GGG GTS-GTW Alu Alu Si>10% Cu NiCo Ti

15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.840.0810	MF8	1	90	20	6	4.9	23.840.1412	MF14	1.25	100	22	11	9	23.840.2615	MF26	1.5	140	20	18	14.5
23.840.1010	MF10	1	90	16	7	5.5	23.840.1415	MF14	1.5	100	22	11	9	23.840.2715	MF27	1.5	140	20	20	16
23.840.1012	MF10	1.25	100	22	7	5.5	23.840.1615	MF16	1.5	100	22	12	9	23.840.2720	MF27	2	140	20	20	16
23.840.1210	MF12	1	100	22	9	7	23.840.1815	MF18	1.5	110	25	14	11	23.840.2815	MF28	1.5	140	20	20	16
23.840.1212	MF12	1.25	100	22	9	7	23.840.2015	MF20	1.5	125	25	16	12	23.840.3015	MF30	1.5	150	22	22	18
23.840.1215	MF12	1.5	100	22	9	7	23.840.2215	MF22	1.5	125	25	18	14.5	23.840.3020	MF30	2	150	22	22	18
23.840.1410	MF14	1	100	22	11	9	23.840.2415	MF24	1.5	140	28	18	14.5							

> 23.868 Phantom

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



HSS-E PM MF 60° HARD LUBE DIN 374 2,5xD 50° Form C 2-2,5 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
 ≤500 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% NiCo Ti

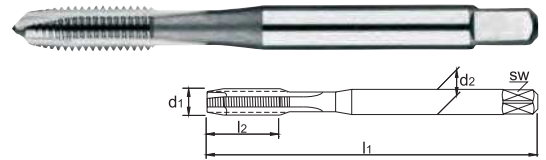
15-20	15-20	8-15	8-15	8-15	8-15	20-25	20-25	20-25	20-25	5-12	5-12
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Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw	Ref.	d1	P	l1	l2	d2	sw
23.868.0810	MF8	1	90	20	6	4.9	23.868.1215	MF12	1.5	100	22	9	7	23.868.2015	MF20	1.5	125	25	16	12
23.868.1010	MF10	1	90	16	7	5.5	23.868.1412	MF14	1.25	100	22	11	9	23.868.2215	MF22	1.5	125	25	18	14.5
23.868.1012	MF10	1.25	100	22	7	5.5	23.868.1415	MF14	1.5	100	22	11	9	23.868.2415	MF24	1.5	140	28	18	14.5
23.868.1210	MF12	1	100	22	9	7	23.868.1615	MF16	1.5	100	22	12	9	23.868.2420	MF24	2	140	28	18	14.5
23.868.1212	MF12	1.25	100	22	9	7	23.868.1815	MF18	1.5	110	25	14	11							



> 24.120 Phantom

NL UNI HSS-E Machinetap UNC
FR Tarda machine HSS-E UNI UNC
ES Macho máquina HSS-E UNI UNC
DE UNI HSS-E Maschinengewindebohrer UNC



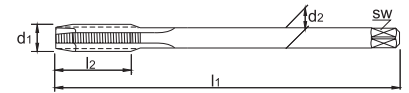
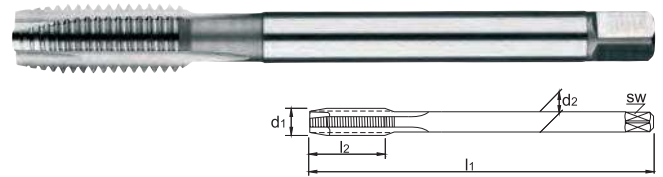
HSS-E	UNC	60°	DIN 371	3xD	Form B	5	2B	UNI		
P 11 s800 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 NiCo	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

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 Tarda machine HSS-E UNI UNC
ES Macho máquina HSS-E UNI UNC
DE UNI HSS-E Maschinengewindebohrer UNC



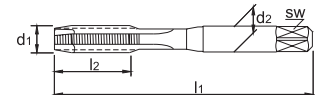
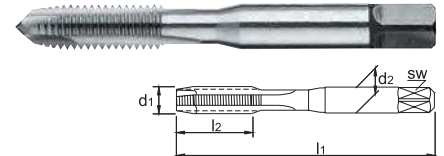
HSS-E	UNC	60°	DIN 376	3xD	Form B	5	2B	UNI		
P 11 s800 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 NiCo	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

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 Tarda machine HSS UNC
ES Macho máquina HSS UNC
DE HSS Maschinengewindebohrer UNC



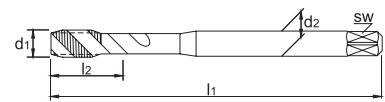
HSS	UNC	60°	NFE 66104	ISO 529	2,5xD	Form B	2,5	2B
P 11 s800 N/mm ²	P 12 s850 N/mm ²	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe				
12-17	10-15	3-6	15-20	5-12				

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 HSS-E UNI UNC**
 ES **Macho máquina HSS-E UNI UNC**
 DE **UNI HSS-E Maschinengewindebohrer UNC**



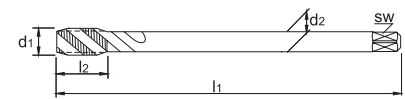
HSS-E	UNC	60°	DIN 371	2,5xD	40°	Form C	2,5	2B	UNI	
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤500 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	GG	GGG GTS-GTW	Alu	Alu SP>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
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 HSS-E UNI UNC**
 ES **Macho máquina HSS-E UNI UNC**
 DE **UNI HSS-E Maschinengewindebohrer UNC**



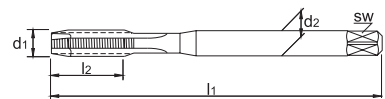
HSS-E	UNC	60°	DIN 376	2,5xD	40°	Form C	2,5	2B	UNI	
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤500 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	GG	GGG GTS-GTW	Alu	Alu SP>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
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 HSS-E UNI UNF**
 ES **Macho máquina HSS-E UNI UNF**
 DE **UNI HSS-E Maschinengewindebohrer UNF**



HSS-E	UNF	60°	DIN 371	3xD	40°	Form B	5	2B	UNI	
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤500 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	GG	GGG GTS-GTW	Alu	Alu SP>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

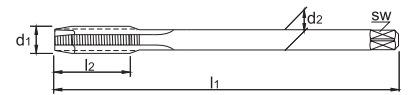
Ref.	d1	P	l1	l2	d2	sw
24.520.0285	UNF Nr. 4	48	56	11	3.5	2.7
24.520.0317	UNF Nr. 5	44	56	11	3.5	2.7
24.520.0350	UNF Nr. 6	40	56	13	4	3
24.520.0416	UNF Nr. 8	36	63	13	4.5	3.4
24.520.0482	UNF Nr. 10	32	70	16	6	4.9

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



> 24.521 Phantom

NL UNI HSS-E Machinetap UNF
FR Taraud machine HSS-E UNI UNF
ES Macho máquina HSS-E UNI UNF
DE UNI HSS-E Maschinengewindebohrer UNF



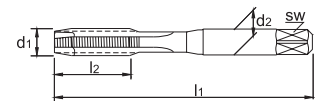
HSS-E	UNF	60°	DIN 376	3xD	Form B	5	2B	UNI		
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm ²	≤350 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	NiCo	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

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



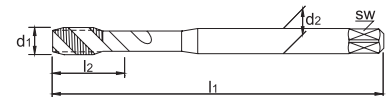
HSS	UNF	60°	NFE 66104	ISO 529	2,5xD	Form B	5	2B
P 11	P 12	K 32	N 41	N 52				
≤600 N/mm ²	≤350 N/mm ²	GGG GTS-GTW	Alu	CuAlFe				
12-17	10-15	3-6	15-20	5-12				

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 HSS-E UNI UNF
ES Macho máquina HSS-E UNI UNF
DE UNI HSS-E Maschinengewindebohrer UNF



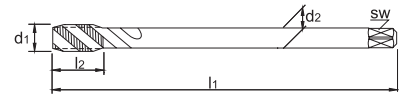
HSS-E	UNF	60°	DIN 371	2,5xD	40°	Form C	2,5	2B	UNI	
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
≤600 N/mm ²	≤350 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	NiCo	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

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 HSS-E UNI UNF
ES Macho máquina HSS-E UNI UNF
DE UNI HSS-E Maschinengewindebohrer UNF



HSS-E UNF 60° DIN 376 2,5xD 40° Form C 2,5 2B UNI

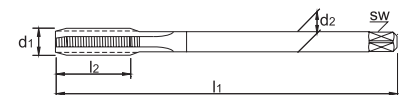
P 11 s500 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	K 31 GG	K 32 GG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	S 71 NiCo	S 72 Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

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

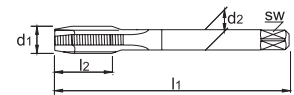
P 11 s500 N/mm ²	P 12 s850 N/mm ²	P 13 s1000 N/mm ²	M 21 INOX s850N/mm ²	M 22 INOX >850N/mm ²	K 31 GG	N 41 Alu
15-20	12-18	10-15	7-10	5-8	10-15	25-35

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 ECO PRO HSS-E Machinetap BSP (Gasdraad)
FR Taraud machine HSS-E ECO PRO BSP (pas gaz)
ES Macho máquina HSS-E ECO PRO BSP (gas)
DE ECO PRO HSS-E Maschinengewindebohrer BSP (Rohrgewinde)



HSS-E BSP G 55° DIN 5156 1,5xD Form B 3,5-6 ECO PRO

P 11 s500 N/mm ²	P 12 s850 N/mm ²	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



> 25.100 Phantom

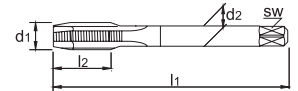
NL HSS-E Machinetap BSP (Gasdraad)
 FR Taraud machine HSS-E BSP (pas gaz)
 ES Macho máquina HSS-E BSP (gas)
 DE HSS-E Maschinengewindebohrer BSP (Rohrgewinde)



P 11 ≤600 N/mm ²	P 12 ≤850 N/mm ²	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 51 Cu	N 61 PVC
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15-20	10-20	5-15	10-35	10-20	8-35	20-30
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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



> 25.105 Phantom

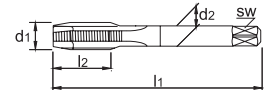
NL HSS Machinetap BSP (Gasdraad)
 FR Taraud machine HSS BSP (pas gaz)
 ES Macho máquina HSS BSP (gas)
 DE HSS Maschinengewindebohrer BSP (Rohrgewinde)



P 11 ≤600 N/mm ²	P 12 ≤850 N/mm ²	K 32 GGG GTS-GTW	N 41 Alu
---------------------------------------	---------------------------------------	-------------------------------	--------------------

12-17	10-15	3-6	15-20
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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	18	14
25.105.2644	BSP 3/4	14	127	37	20	16



> 25.160 Phantom

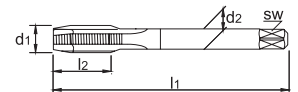
NL HSS-E Machinetap BSP (Gasdraad), stoomontlaten, roestvaststaal
 FR Taraud machine HSS-E BSP (pas gaz), vaporisé, Inox
 ES Macho máquina HSS-E BSP (gas), vaporizada, acero inoxidable
 DE HSS-E Maschinengewindebohrer BSP (Rohrgewinde), dampfangelassen, rostfreien Stahl



P 11 ≤600 N/mm ²	P 12 ≤850 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²
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15-20	10-20	7-10	4-8
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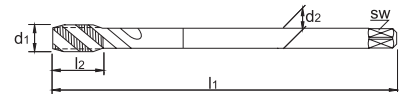
Ref.	d1	P	l1	l2	d2	sw
25.160.0973	BSP 1/8	28	90	16	7	5.5
25.160.1316	BSP 1/4	19	100	22	11	9



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 **ECO PRO HSS-E Machinetap BSP (Gasdraad)**
 FR **Taraud machine HSS-E ECO PRO BSP (pas gaz)**
 ES **Macho máquina HSS-E ECO PRO BSP (gas)**
 DE **ECO PRO HSS-E Maschinengewindebohrer BSP (Rohrgewinde)**



HSS-E **BSP G** **55°** **DIN 5156** **2xD** **35°** **Form C** **2-3** **ECO PRO**

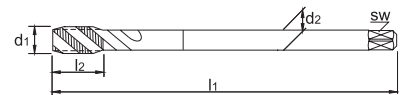
P 11 **P 12** **K 31** **N 41**
 ≤500 N/mm² ≤850 N/mm² GG Alu
 15-20 12-18 10-15 23-35

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** **40°** **Form C** **2,5**

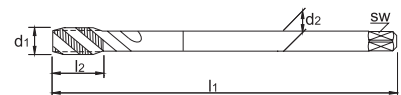
P 11 **P 12** **K 32** **N 41** **N 42** **N 51** **N 61**
 ≤500 N/mm² ≤850 N/mm² GGG GTS-GTW Alu Alu Si>10% Cu PVC
 15-20 10-20 5-15 10-35 10-20 8-35 20-30

Ref.	d1	P	l1	l2	d2	sw
25.300.0973	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), vaporizada, acero inoxidable**
 DE **HSS-E Maschinengewindebohrer BSP (Rohrgewinde), dampfangelassen, rostfreien Stahl**



HSS-E **BSP G** **55°** **OX.** **DIN 5156** **2,5xD** **40°** **Form C** **2,5** **INOX**

P 11 **P 12** **M 21** **M 22**
 ≤500 N/mm² ≤850 N/mm² INOX ≤850N/mm² INOX >850N/mm²
 15-20 10-20 7-10 4-8

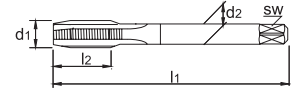
Ref.	d1	P	l1	l2	d2	sw
25.360.0973	BSP 1/8	28	90	16	7	5.5
25.360.1316	BSP 1/4	19	100	22	11	9

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



> 25.480 Phantom

NL HSS-E Machinetap BSPT (Rc)
 FR Tarda 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
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P 11	P 12	P 13	M 21	M 22	K 31	N 41
≤600 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	INOX >850N/mm ²	GG	Alu

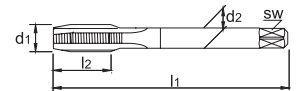
15-20	12-18	10-15	7-10	5-8	10-15	25-35
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Ref.	d1	P	l1	l2	d2	sw
25.480.0973	BSPT 1/8	28	90	16	7	5.5
25.480.1316	BSPT 1/4	19	100	22	11	9
25.480.1666	BSPT 3/8	19	100	22	12	9

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 Tarda 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
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P 11	P 12	P 13	M 21	M 22	K 31	N 41
≤600 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	INOX >850N/mm ²	GG	Alu

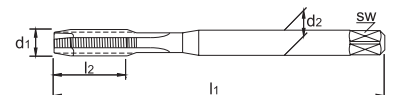
15-20	12-18	10-15	7-10	5-8	10-15	25-35
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Ref.	d1	P	l1	l2	d2	sw
25.500.0973	BSPP 1/8	28	90	16	7	5.5
25.500.1316	BSPP 1/4	19	100	22	11	9
25.500.1666	BSPP 3/8	19	100	22	12	9

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 Tarda 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
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P 11	P 12	K 32	N 41	N 51
≤600 N/mm ²	≤850 N/mm ²	GGG GTS-GTW	Alu	Cu

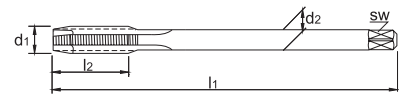
15-20	10-20	5-15	10-35	15-35
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Ref.	d1	P	l1	l2	d2	sw
25.520.0317	BSW 1/8	40	56	11	3.5	2.7
25.520.0397	BSW 5/32	32	63	13	4.5	3.4
25.520.0476	BSW 3/16	24	70	15	6	4.9
25.520.0556	BSW 7/32	24	80	16	6	4.9

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

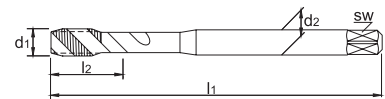
P 11 s800 Nimm²	P 12 s850 Nimm²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

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

> **25.640 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 Form C 2,5

40°

P 11 s800 Nimm²	P 12 s850 Nimm²	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

> **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 Form C 2,5

40°

P 11 s800 Nimm²	P 12 s850 Nimm²	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



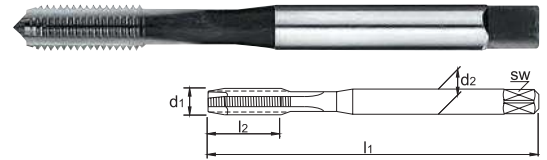
> 25.720 Phantom

NL HSS-E Machinetap BSF
FR Taraud machine HSS-E BSF
ES Macho máquina HSS-E BSF
DE HSS-E Maschinengewindebohrer BSF



15-20	10-20	5-15	10-35	15-35
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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



15-20	10-20	5-15	10-35	15-35
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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 (Rijwioldraad)
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)



15-20	10-20	5-15	10-35	15-35
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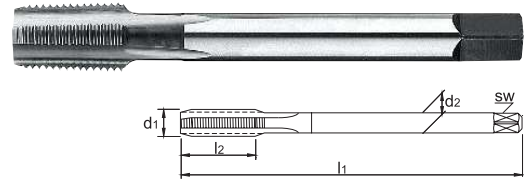
Ref.	d1	P	l1	l2	d2	sw
25.760.0635	BSC 1/4	26	80	16	6	4.9
25.760.0790	BSC 5/16	26	90	16	8	6.2
25.760.0950	BSC 3/8	26	90	16	7	5.5



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

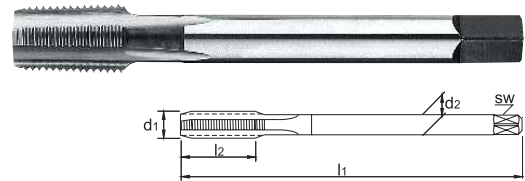
P 11 s500 N/mm ²	P 12 s850 N/mm ²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

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

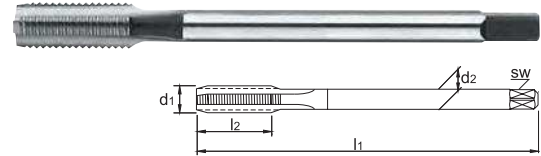
P 11 s500 N/mm ²	P 12 s850 N/mm ²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

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

> **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 s500 N/mm ²	P 12 s850 N/mm ²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
15-20	10-20	5-15	10-35	15-35

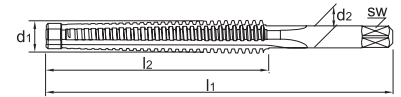
Ref.	d1	Nr.	P	l1	l2	d2	sw
25.900.0700	PG 7	7	20	100	22	9	7
25.900.0900	PG 9	9	18	100	22	12	9
25.900.1100	PG 11	11	18	110	25	14	11
25.900.1350	PG 13.5	13.5	18	125	25	16	12

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
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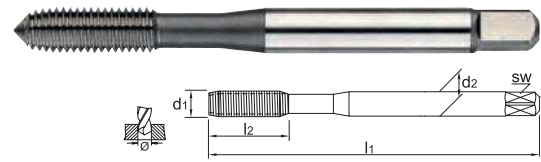
P 11 S800 Nimm ²	P 12 S850 Nimm ²	K 32 GGG GTS-GTW	N 41 Alu	N 51 Cu
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15-20	10-20	5-15	10-35	15-35
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Ref.	d1	l1	P	l2	d2	sw	Ref.	d1	l1	P	l2	d2	sw
25.950.1203	Tr 12	165	3	115	8	6,2	25.950.2004	Tr 20	225	4	140	15	12
25.950.1403	Tr 14	170	3	115	10	8	25.950.2205	Tr 22	260	5	170	16	12
25.950.1404	Tr 14	200	4	135	10	8	25.950.2405	Tr 24	270	5	170	18	14,5
25.950.1604	Tr 16	210	4	135	11	9	25.950.2605	Tr 26	250	5	155	20	16
25.950.1804	Tr 18	220	4	135	13	10	25.950.2805	Tr 28	290	5	190	22	18

> **26.100 Phantom**

NL HSS-E Roltap Metrisch, genitreerd
 FR Taraud à refouler HSS-E Métrique, nitruré
 ES Macho de laminación HSS-E Métrica, nitrurada
 DE HSS-E Gewindeformer Metrisch, nitriert



HSS-E M **NIT.** **DIN 371** 3xD **Form C** **6HX**

P 11 **P 12** **N 41** **N 42** **N 51**

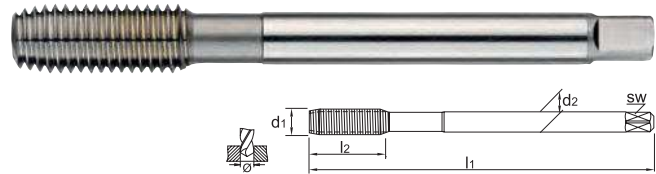
15-25	10-20	10-35	10-20	15-35
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Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.100.0200	M2	0.4	45	8	2.1	2.8	1.8
26.100.0250	M2,5	0.45	50	9	2.1	2.8	2.3
26.100.0300	M3	0.5	56	11	2.7	3.5	2.8
26.100.0400	M4	0.7	63	13	3.4	4.5	3.7

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.100.0500	M5	0.8	70	16	4.9	6	4.65
26.100.0600	M6	1	80	19	4.9	6	5.55
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 refouler HSS-E Métrique, nitruré
 ES Macho de laminación HSS-E Métrica, nitrurada
 DE HSS-E Gewindeformer Metrisch, nitriert



HSS-E M **NIT.** **DIN 376** 3xD **Form C** **6HX**

P 11 **P 12** **N 41** **N 42** **N 51**

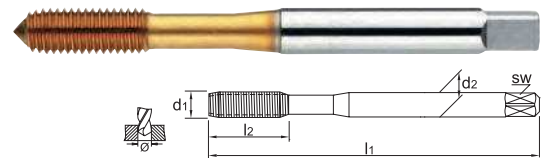
15-25	10-20	10-35	10-20	15-35
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Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.101.1200	M12	1.75	110	29	7	9	11.2

Ref.	d1	P	l1	l2	sw	d2	Ø mm

> **26.110 Phantom**

NL HSS-E Roltap Metrisch, TiN
 FR Taraud à refouler HSS-E Métrique, TiN
 ES Macho de laminación HSS-E Métrica, TiN
 DE HSS-E Gewindeformer Metrisch, TiN



HSS-E M **TiN** **DIN 371** 3xD **Form C** **6HX**

P 11 **P 12** **M 21** **N 41** **N 42** **N 51**

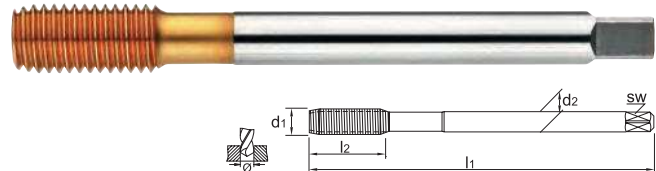
15-25	10-20	7-10	10-35	10-20	15-35
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Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.110.0200	M2	0.4	45	8	2.1	2.8	1.8
26.110.0250	M2,5	0.45	50	9	2.1	2.8	2.3
26.110.0300	M3	0.5	56	11	2.7	3.5	2.8
26.110.0400	M4	0.7	63	13	3.4	4.5	3.7

Ref.	d1	P	l1	l2	sw	d2	Ø mm
26.110.0500	M5	0.8	70	16	4.9	6	4.65
26.110.0600	M6	1	80	19	4.9	6	5.55
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 refouler HSS-E Métrique, TiN
 ES Macho de laminación HSS-E Métrica, TiN
 DE HSS-E Gewindeformer Metrisch, TiN



HSS-E M **TiN** **DIN 376** 3xD **Form C** **6HX**

P 11 **P 12** **M 21** **N 41** **N 42** **N 51**

15-25	10-20	7-10	10-35	10-20	15-35
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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



> 26.160 Phantom

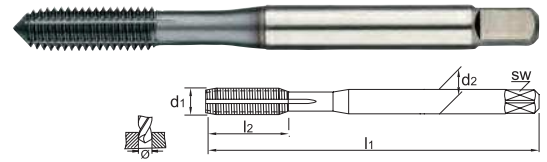
NL HSS-E Roltap met smeergroef, Metrisch, TiCN
 FR Taraud à refoiler HSS-E rainures de lubrification, Métrique, TiCN
 ES Macho de laminación HSS-E con ranura de refrigeración, Métrica, TiCN
 DE HSS-E Gewindeformer mit Schmiernut, Metrisch, TiCN

HSS-E M 60° TiCN DIN 371 3xD Form C 3 6HX

P 11 ≤600 N/mm ²	P 12 ≤850 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
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15-25	10-20	7-10	4-8	10-35	10-20	15-35
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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	4.65



> 26.161 Phantom

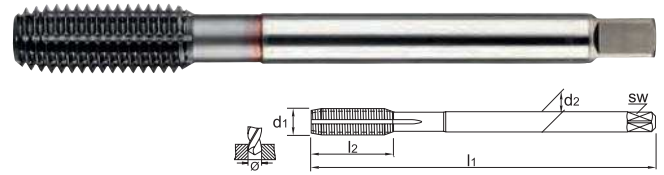
NL HSS-E Roltap met smeergroef, Metrisch, TiCN
 FR Taraud à refoiler HSS-E rainures de lubrification, Métrique, TiCN
 ES Macho de laminación HSS-E con ranura de refrigeración, Métrica, TiCN
 DE HSS-E Gewindeformer mit Schmiernut, Metrisch, TiCN

HSS-E M 60° TiCN DIN 376 3xD Form C 3 6HX

P 11 ≤600 N/mm ²	P 12 ≤850 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²	N 41 Alu	N 42 Alu Si>10%	N 51 Cu
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15-25	10-20	7-10	4-8	10-35	10-20	15-35
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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	13.1
26.161.1600	M16	2	110	26	9	12	15.1



> 26.310 Phantom

NL VHM Draadfrees 2xD
 FR Fraise à fileter Carbone 2xD
 ES Fresa de roscado MD 2xD
 DE VHM Gewindefräser 2xD

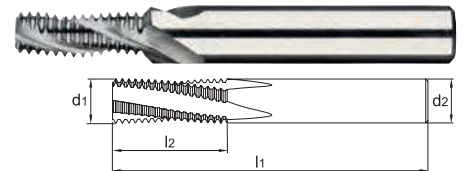
MG HM M 60° 2xD DIN 6535-HA Form C 3 6HX

P 11 ≤600 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	P 14 ≤1400 N/mm ²	M 21 INOX ≤850N/mm ²	M 22 INOX >850N/mm ²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 61 PVC
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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
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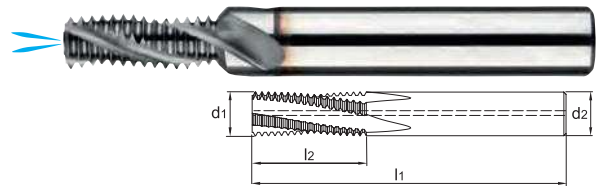
Ref.	d1	P	l1	l2	d2	Ø mm	z
26.310.0600	M6	1	4.8	54	13.5	6	5
26.310.0800	M8	1.25	6.4	62	18.1	8	6.8
26.310.1000	M10	1.5	7.95	74	21.8	10	8.5
26.310.1200	M12	1.75	9.95	74	25.4	10	10.2

Ref.	d1	P	l1	l2	d2	Ø mm	z
26.310.1400	M14	2	11.2	90	31	12	14
26.310.1600	M16	2	12.8	90	35	14	14
26.310.2000	M20	2.5	14.95	102	41.3	16	17.5



▶ **26.316 Phantom**

- NL VHM Draadrees 2xD met koelkanaal, TiCN
- FR Fraise à fileter Carbure 2xD à trou d'huile, TiCN
- ES Fresa de roscado MD 2xD con canal de refrigeración, TiCN
- DE VHM Gewindefräser 2xD mit Innenkühlung, TiCN



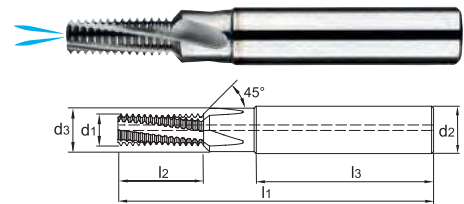
MG HM	M	60°	TiCN	2xD	DIN 6535-HA									
P 11 ≤500 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850 N/mm²	M 22 INOX >850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 52 CuAlFe	S 71 M/Co	S 72 Ti
80-110 D	100-120 D	80-100 D	90-100 C	20-30 A	55-65 C	50-60 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.	d1	P	l1	l2	d2	Ø mm	z
26.316.0600	M6	1	4.8	54	13.5	6	5
26.316.0800	M8	1.25	6.4	62	18.1	8	6.8
26.316.1000	M10	1.5	7.95	74	21.8	10	8.5
26.316.1200	M12	1.75	9.95	74	25.4	10	10.2

Ref.	d1	P	l1	l2	d2	Ø mm	z
26.316.1400	M14	2	11.2	90	31	12	12
26.316.1600	M16	2	12.8	90	35	14	14
26.316.2000	M20	2.5	14.95	102	41.3	16	17.5

▶ **26.384 Phantom**

- NL VHM Draadrees 2xD met koelkanaal, TiCN, met fase
- FR Fraise à fileter Carbure 2xD à trou d'huile, TiCN, avec chanfrein
- ES Fresa de roscado MD 2xD con canal de refrigeración, TiCN, con escalonado de avellanar
- DE VHM Gewindefräser 2xD mit Innenkühlung, TiCN, mit Fase



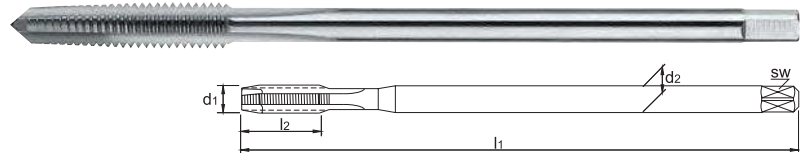
MG HM	M	60°	90°	TiCN	2xD	DIN 6535-HA						
P 11 ≤500 N/mm²	P 12 ≤850 N/mm²	P 13 ≤1000 N/mm²	P 14 ≤1400 N/mm²	H 15 HRC	M 21 INOX ≤850 N/mm²	M 22 INOX >850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 42 Alu Si>10%	N 43 Mg	N 52 CuAlFe
80-110 D	100-120 D	80-100 D	90-100 C	20-30 A	55-65 C	50-60 C	100-120 D	110-130 E	220-260 F	240-250 F	130-150 E	30-40 A

Ref.	d1	P	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
26.384.0400	M4	0.7	3	48	8.8	36	6	4.5	3.3
26.384.0500	M5	0.8	4	54	10.8	36	6	5.5	4.2
26.384.0600	M6	1	4.8	62	13.5	36	8	6.6	5

Ref.	d1	P	l1	l2	l3	d2	d3	Ø mm	z
26.384.0800	M8	1.25	6.4	74	18.1	40	10	6.8	6.8
26.384.1000	M10	1.5	7.95	80	21.8	45	12	8.5	8.5
26.384.1200	M12	1.75	9.95	90	25.4	45	14	10.2	10.2
26.384.1600	M16	2	12.8	102	35	48	18	14	14

▶ **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°	NORM	12	ISO 2 6H
P 11 ≤500 N/mm²	P 12 ≤850 N/mm²	K 31 GG	K 32 GGG GTS-GTW	N 41 Alu	N 52 CuAlFe
12-17	10-15	7-12	3-6	15-20	5-12

Ref.	d1	P	l1	l2	d2	sw
26.500.0400	M4	0.7	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



> 26.700 Phantom

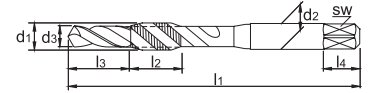
NL HSS Combi-boortap Metrisch
 FR Foret taraudeur HSS Métrique
 ES Broca-Macho HSS Métrica
 DE HSS Kombi-Gewindebohrer Metrisch

HSS M ISO 2
 NORM 6H

P 11
 5800 N/mm² Alu Alu Si>10%

12-20 15-25 18-25

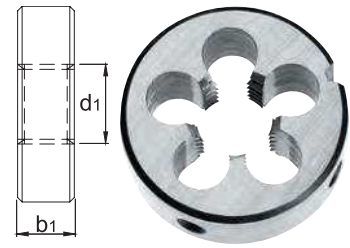
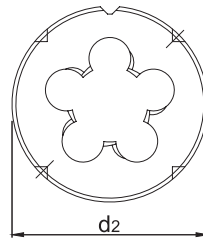
Ref.	d1	P	l1	l2	l3	d2	d3	sw
26.700.0300	M3	0.5	56	11	12	3	2.5	2.4
26.700.0400	M4	0.7	63	14	15	4	3.3	3
26.700.0500	M5	0.8	71	18	15	5	4.2	3.8
26.700.0600	M6	1	80	22	15	6	5	4.9



Ref.	d1	P	l1	l2	l3	d2	d3	sw
26.700.0800	M8	1.25	95	25	20	8	6.8	6.2
26.700.1000	M10	1.5	106	31	25	10	8.5	8
26.700.1200	M12	1.75	115	35	30	12	10.2	9

> **27.100** **INTERNATIONAL TOOLS**

NL **ECO PRO HSS Ronde Snijplaat Metrisch**
 FR **Filière ronde HSS ECO PRO Métrique**
 ES **Terraja esférica HSS ECO PRO Métrica**
 DE **ECO PRO HSS Runde Schneideisen Metrisch**



HSS M 60° DIN EN 22568 6g **ECO PRO**

P 11 ≤500 N/mm² P 12 ≤850 N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 42 Alu Si>10%

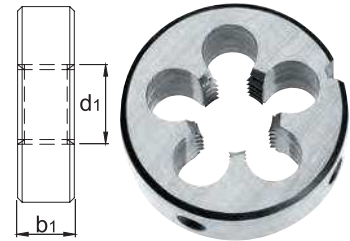
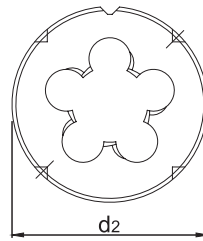
Ref.	d1	P	d2	b1
27.100.0200	M2	0.4	16	5
27.100.0250	M2,5	0.45	16	5
27.100.0300	M3	0.5	20	5
27.100.0400	M4	0.7	20	5
27.100.0500	M5	0.8	20	7
27.100.0600	M6	1	20	7
27.100.0700	M7	1	25	9

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 **ECO PRO HSS Ronde Snijplaat Metrisch, 25 mm**
 FR **Filière ronde HSS ECO PRO Métrique, 25 mm**
 ES **Terraja esférica HSS ECO PRO Métrica, 25 mm**
 DE **ECO PRO HSS Runde Schneideisen Metrisch, 25 mm**



HSS M 60° DIN EN 22568 6g **ECO PRO**

P 11 ≤500 N/mm² P 12 ≤850 N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 42 Alu Si>10%

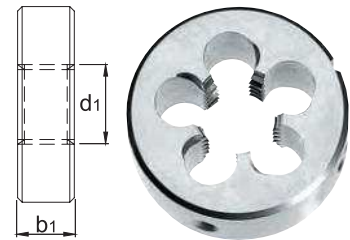
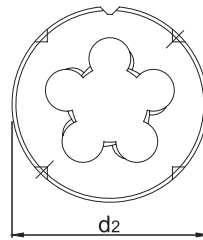
Ref.	d1	P	d2	b1
27.110.0300	M3	0.5	25	9
27.110.0400	M4	0.7	25	9
27.110.0500	M5	0.8	25	9

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 ≤500 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
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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



> 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**

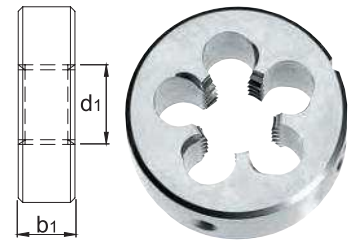
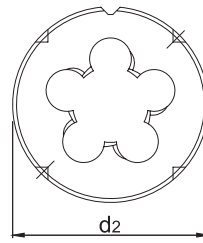


10-14	6-10	5-8	5-8	4-6	4-6	8-12	5-8
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Ref.	d1	P	d2	b1
27.150.0200	M2	0.4	16	5
27.150.0250	M2,5	0.45	16	5
27.150.0300	M3	0.5	20	5
27.150.0350	M3,5	0.6	20	5
27.150.0400	M4	0.7	20	5
27.150.0500	M5	0.8	20	7

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**

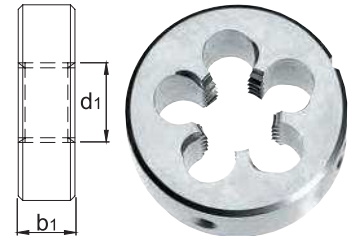
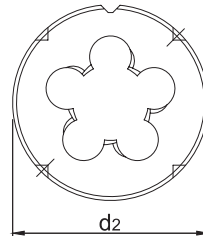


11-15	5-18
-------	------

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

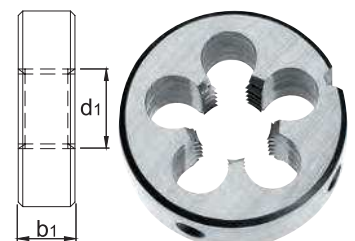
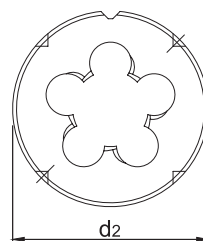
- NL **ECO PRO HSS Ronde Snijplaat Metrisch Fijn**
 FR **Filière ronde HSS ECO PRO Métrique Fin**
 ES **Terraja esférica HSS ECO PRO Métrica Fina**
 DE **ECO PRO HSS Runde Schneideisen Metrisch Fein**



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

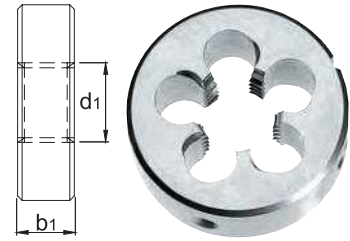
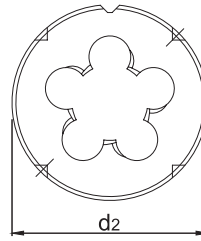
Ref.	d1	P	d2	b1
27.200.1012	MF10	1.25	30	11
27.200.1210	MF12	1	38	10
27.200.1212	MF12	1.25	38	10
27.200.1215	MF12	1.5	38	10
27.200.1310	MF13	1	38	10
27.200.1410	MF14	1	38	10
27.200.1412	MF14	1.25	38	10
27.200.1415	MF14	1.5	38	10
27.200.1510	MF15	1	38	10
27.200.1610	MF16	1	45	14
27.200.1615	MF16	1.5	45	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

P 11 **P 12** **P 13** **M 21** **N 41**

5600 N/mm² 5850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² Alu

10-14 6-10 5-8 4-6 15-25

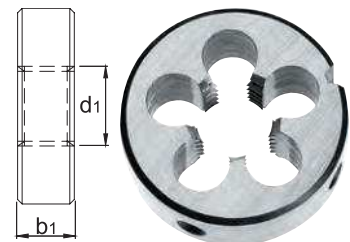
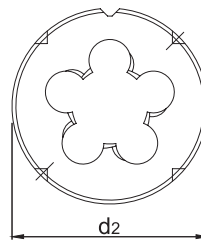
Ref.	d1	P	d2	b1
27.220.0303	MF3	0.35	20	5
27.220.0403	MF4	0.35	20	5
27.220.0405	MF4	0.5	20	5
27.220.0505	MF5	0.5	20	5
27.220.0605	MF6	0.5	20	5
27.220.0607	MF6	0.75	20	7
27.220.0707	MF7	0.75	25	9
27.220.0805	MF8	0.5	25	9
27.220.0807	MF8	0.75	25	9
27.220.0810	MF8	1	25	9
27.220.0907	MF9	0.75	25	9
27.220.0910	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 **ECO PRO HSS Ronde Snijplaat UNC**
 FR **Filière ronde HSS ECO PRO UNC**
 ES **Terraja esférica HSS ECO PRO UNC**
 DE **ECO PRO HSS Runde Schneideisen UNC**



HSS UNC **2A** **ECO PRO**

P 11 **P 12** **K 31** **K 32** **N 41** **N 42**

5600 N/mm² 5850 N/mm² GG GGG GTS-GTW Alu Alu Sp-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

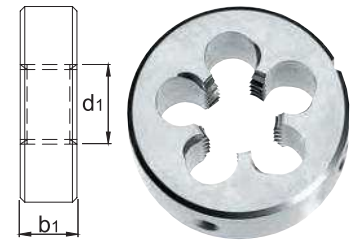
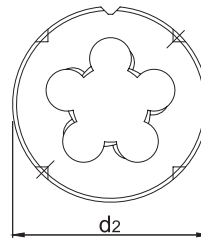
Ref.	d1	P	d2	b1
27.300.1270	UNC 1/2	13	38	14
27.300.1429	UNC 9/16	12	38	14
27.300.1588	UNC 5/8	11	45	18
27.300.1905	UNC 3/4	10	45	18

Ref.	d1	P	d2	b1
27.300.2222	UNC 7/8	9	55	22
27.300.2540	UNC 1	8	55	22



> 27.320 Phantom

NL HSS Ronde Snijplaat schilaansnijding, UNC
 FR Filière ronde HSS coupe gun, UNC
 ES Terraja esférica HSS entrada corregida (gun), UNC
 DE HSS Runde Schneideisen Schälanschnitt, UNC



HSS UNC 60° DIN EN 22568 ≥Nr.5 2A

P 11 P 12 P 13 M 21 N 41
 s600 N/mm² s850 N/mm² s1000 N/mm² INOX s850N/mm² Alu

10-14 6-10 5-8 4-6 15-25

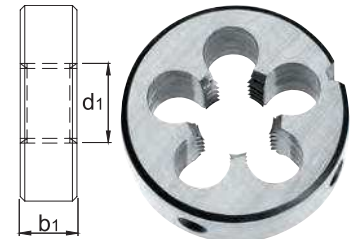
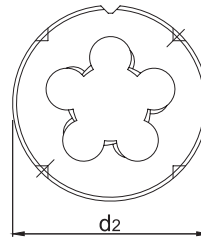
Ref.	d1	P	d2	b1
27.320.0284	UNC Nr. 4	40	16	5
27.320.0317	UNC Nr. 5	40	20	5
27.320.0350	UNC Nr. 6	32	20	7
27.320.0416	UNC Nr. 8	32	20	7
27.320.0482	UNC Nr. 10	24	20	7
27.320.0548	UNC Nr. 12	24	20	7
27.320.0635	UNC 1/4	20	20	7

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 ECO PRO HSS Ronde Snijplaat UNF
 FR Filière ronde HSS ECO PRO UNF
 ES Terraja esférica HSS ECO PRO UNF
 DE ECO PRO HSS Runde Schneideisen UNF



HSS UNF 60° DIN EN 22568 2A ECO PRO

P 11 P 12 K 31 K 32 N 41 N 42
 s600 N/mm² s850 N/mm² GG GGG GTS-GTW Alu Alu Si>10%

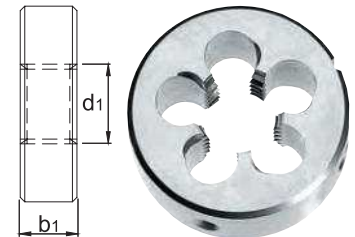
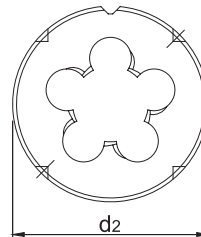
Ref.	d1	P	d2	b1
27.400.0635	UNF 1/4	28	20	7
27.400.0794	UNF 5/16	24	25	9
27.400.0952	UNF 3/8	24	30	11
27.400.1111	UNF 7/16	20	30	11

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 schilaansnijding, UNF
 FR Filière ronde HSS coupe gun, UNF
 ES Terraja esférica HSS entrada corregida (gun), UNF
 DE HSS Runde Schneideisen Schälanschnitt, UNF



HSS UNF 60° DIN EN 22568 ≥Nr.5 2A

P 11 P 12 P 13 M 21 N 41
 s600 N/mm² s850 N/mm² s1000 N/mm² INOX s850N/mm² Alu

10-14 6-10 5-8 4-6 15-25

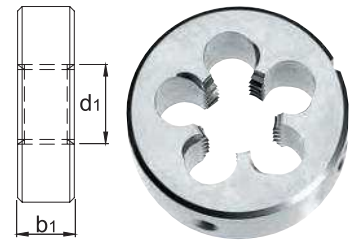
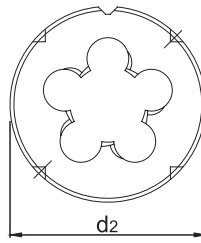
Ref.	d1	P	d2	b1
27.420.0185	UNF Nr. 1	72	16	5
27.420.0218	UNF Nr. 2	64	16	5
27.420.0252	UNF Nr. 3	56	16	5
27.420.0284	UNF Nr. 4	48	16	5
27.420.0317	UNF Nr. 5	44	20	5
27.420.0350	UNF Nr. 6	40	20	5
27.420.0416	UNF Nr. 8	36	20	7
27.420.0482	UNF Nr. 10	32	20	7

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 schilaansnijding, UNEF**
 FR **Filière ronde HSS coupe gun, UNEF**
 ES **Terraja esférica HSS entrada corregida (gun), UNEF**
 DE **HSS Runde Schneideisen Schälanschnitt, UNEF**



HSS **UNEF** **60°** **DIN EN 22568** **2A**

P 11 **P 12** **P 13** **M 21** **N 41**
 ≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² Alu

10-14 6-10 5-8 4-6 15-25

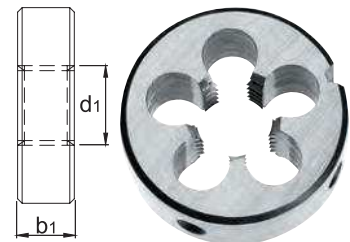
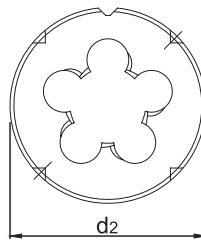
Ref.	d1	P	d2	b1
27.470.0635	UNEF 1/4	32	20	7
27.470.0794	UNEF 5/16	32	25	9
27.470.0952	UNEF 3/8	32	30	11
27.470.1111	UNEF 7/16	28	30	11

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 **ECO PRO HSS Ronde Snijplaat BSP (Gasdraad)**
 FR **Filière ronde HSS ECO PRO BSP (pas gaz)**
 ES **Terraja esférica HSS ECO PRO BSP (gas)**
 DE **ECO PRO HSS Runde Schneideisen BSP (Rohrgewinde)**



HSS **BSP G** **55°** **DIN EN 24231** **ECO PRO**

P 11 **P 12** **K 31** **K 32** **N 41** **N 42**
 ≤500 N/mm² ≤850 N/mm² GG GGG GTS-GTW Alu Alu Si>10%

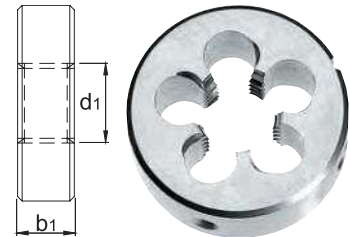
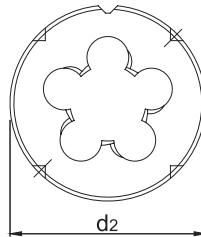
Ref.	d1	P	d2	b1
27.500.0973	BSP 1/8	28	30	11
27.500.1316	BSP 1/4	19	38	10
27.500.1666	BSP 3/8	19	45	14
27.500.2096	BSP 1/2	14	45	14

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 schilaansnijding, BSP (Gasdraad)**
 FR **Filière ronde HSS coupe gun, BSP (pas gaz)**
 ES **Terraja esférica HSS entrada corregida (gun), BSP (gas)**
 DE **HSS Runde Schneideisen Schälanschnitt, BSP (Rohrgewinde)**



HSS **BSP G** **55°** **DIN EN 24231**

P 11 **P 12** **P 13** **M 21** **N 41**
 ≤500 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
27.520.0973	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



> 27.525 Phantom

- NL HSS Ronde Snijplaat schilaansnijding, gelept, Messing, BSP (Gasdraad)
 FR Filière ronde HSS coupe gun, filets rodés, Laiton, BSP (pas gaz)
 ES Terraja esférica HSS entrada corregida (gun), lapeada, Latón, BSP (gas)
 DE HSS Runde Schneideisen Schälanschnitt, geläppt, Messing, BSP (Rohrgewinde)

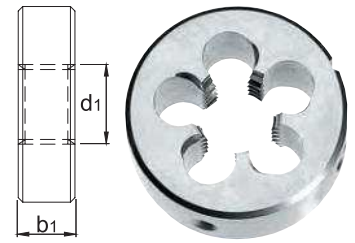
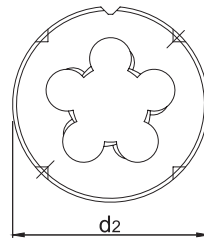


11-15 5-18

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 schilaansnijding, BSPT (Rc)
 FR Filière ronde HSS coupe gun, BSPT (Rc)
 ES Terraja esférica HSS entrada corregida (gun), BSPT (Rc)
 DE HSS Runde Schneideisen Schälanschnitt, BSPT (Rc)

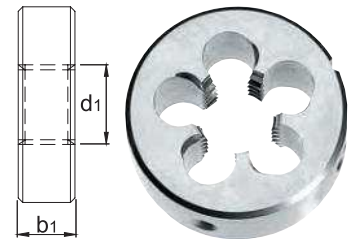
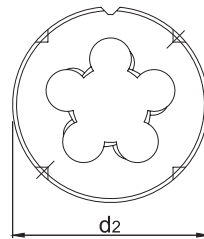


10-14 6-10 5-8 4-6 15-25

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

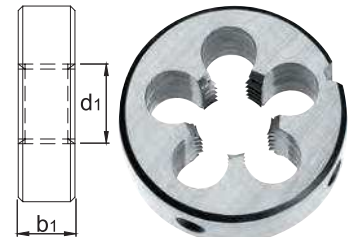
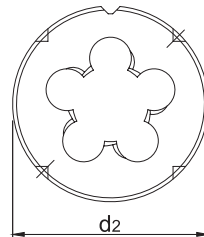
- NL ECO PRO HSS Ronde Snijplaat BSW (Whitworth)
 FR Filière ronde HSS ECO PRO BSW (Whitworth)
 ES Terraja esférica HSS ECO PRO BSW (Whitworth)
 DE ECO PRO HSS Runde Schneideisen BSW (Whitworth)



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

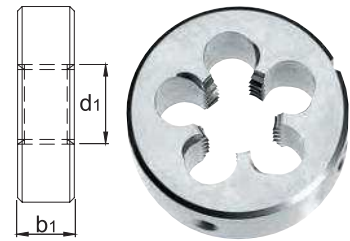
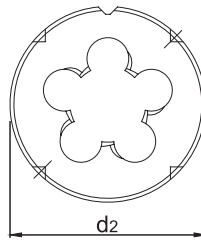
Ref.	d1	P	d2	b1
27.550.0952	BSW 3/8	16	30	11
27.550.1111	BSW 7/16	14	30	11
27.550.1270	BSW 1/2	12	38	14
27.550.1429	BSW 9/16	12	38	14

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 schilaansnijding, BSW (Whitworth)**
 FR **Filière ronde HSS coupe gun, BSW (Whitworth)**
 ES **Terraja esférica HSS entrada corregida (gun), BSW (Whitworth)**
 DE **HSS Runde Schneideisen Schälanschnitt, BSW (Whitworth)**



HSS **BSW** **55°** **DIN EN 22568**

P 11 ≤500 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	N 41 Alu
10-14	6-10	5-8	4-6	15-25

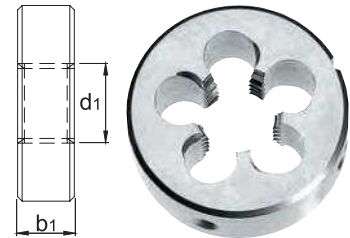
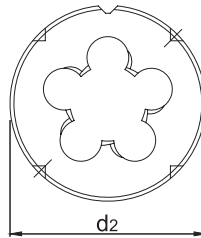
Ref.	d1	P	d2	b1
27.560.0317	BSW 1/8	40	20	5
27.560.0397	BSW 5/32	32	20	5
27.560.0476	BSW 3/16	24	20	7
27.560.0635	BSW 1/4	20	20	7
27.560.0794	BSW 5/16	18	25	9
27.560.0952	BSW 3/8	16	30	11

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 schilaansnijding, BSF**
 FR **Filière ronde HSS coupe gun, BSF**
 ES **Terraja esférica HSS entrada corregida (gun), BSF**
 DE **HSS Runde Schneideisen Schälanschnitt, BSF**



HSS **BSF** **55°** **DIN EN 22568**

P 11 ≤500 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	N 41 Alu
10-14	6-10	5-8	4-6	15-25

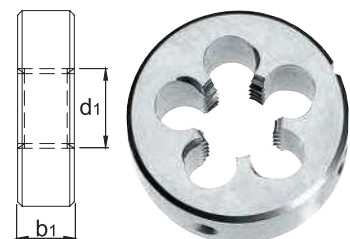
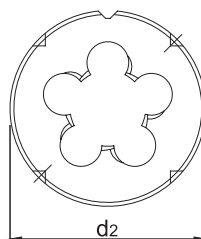
Ref.	d1	P	d2	b1
27.575.0476	BSF 3/16	32	20	7
27.575.0635	BSF 1/4	26	20	7
27.575.0794	BSF 5/16	22	25	9
27.575.0952	BSF 3/8	20	30	11

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 schilaansnijding, BA**
 FR **Filière ronde HSS coupe gun, BA**
 ES **Terraja esférica HSS entrada corregida (gun), BA**
 DE **HSS Runde Schneideisen Schälanschnitt, BA**



HSS **BA** **55°** **DIN EN 22568**

P 11 ≤500 N/mm ²	P 12 ≤850 N/mm ²	P 13 ≤1000 N/mm ²	M 21 INOX ≤850N/mm ²	N 41 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



> 27.590 Phantom

- NL HSS Ronde Snijplaat schilaansnijding, BSC, FG (Rijwielraad)
 FR Filière ronde HSS coupe gun, BSC, FG (filetage bicyclette)
 ES Terraja esférica HSS entrada corregida (gun), BSC, FG (rosca bicicleta)
 DE HSS Runde Schneideisen Schälanschnitt, BSC, FG (Fahradgewinde)

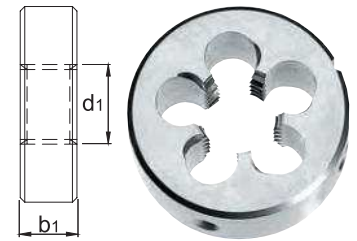
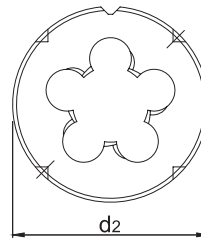


10-14	6-10	5-8	4-6	15-25
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Ref.	d1	P	d2	b1
27.590.0635	BSC 1/4	26	20	7
27.590.0790	BSC 5/16	26	25	9

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 schilaansnijding, NPT
 FR Filière ronde HSS coupe gun, NPT
 ES Terraja esférica HSS entrada corregida (gun), NPT
 DE HSS Runde Schneideisen Schälanschnitt, NPT

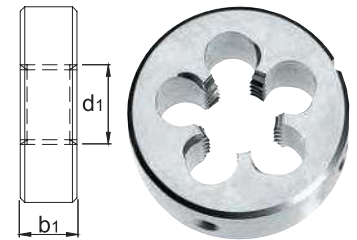
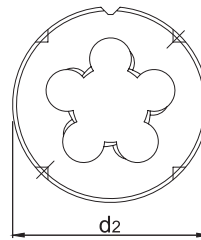


10-14	6-10	5-8	4-6	15-25
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Ref.	d1	P	d2	b1
27.600.0794	NPT 1/16	27	25	9
27.600.1029	NPT 1/8	27	30	11
27.600.1372	NPT 1/4	18	38	14
27.600.1715	NPT 3/8	18	45	14

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 schilaansnijding, NPTF
 FR Filière ronde HSS coupe gun, NPTF
 ES Terraja esférica HSS entrada corregida (gun), NPTF
 DE HSS Runde Schneideisen Schälanschnitt, NPTF

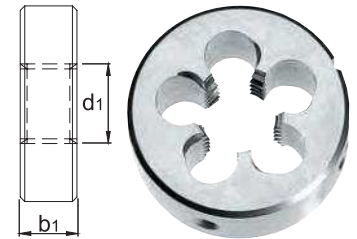
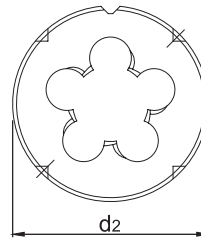


10-14	6-10	5-8	4-6	15-25
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Ref.	d1	P	d2	b1
27.610.0794	NPTF 1/16	27	25	9
27.610.1029	NPTF 1/8	27	30	11
27.610.1372	NPTF 1/4	18	38	14

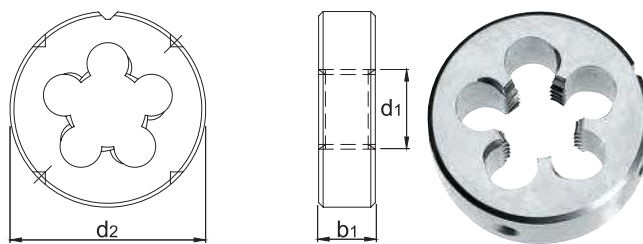
Ref.	d1	P	d2	b1
27.610.1715	NPTF 3/8	18	45	14
27.610.2134	NPTF 1/2	14	45	18
27.610.2667	NPTF 3/4	14	55	22

Ref.	d1	P	d2	b1
27.610.3340	NPTF 1	11.5	65	25



> **27.650 Phantom**

NL HSS Ronde Snijplaat schilaansnijding, PG
 FR Filière ronde HSS coupe gun, PG
 ES Terraja esférica HSS entrada corregida (gun), PG
 DE HSS Runde Schneideisen Schälanschnitt, PG



HSS PG 80° DIN EN 40434

P 11 ≤500 N/mm² P 12 ≤850 N/mm² P 13 ≤1000 N/mm² M 21 INOX ≤850 N/mm² N 41 Alu

10-14	6-10	5-8	4-6	15-25
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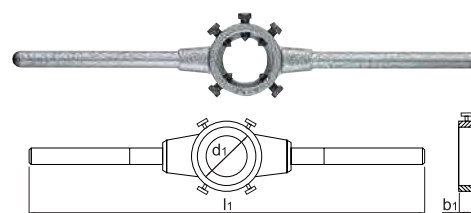
Ref.	d1	P	d2	b1
27.650.0700	PG 7	20	38	10
27.650.0900	PG 9	18	38	10
27.650.1100	PG 11	18	45	14
27.650.1350	PG 13.5	18	45	14

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 Snijplathouder
 FR Porte-filières
 ES Portaterraja
 DE Schneideisenhalter



DIN 225

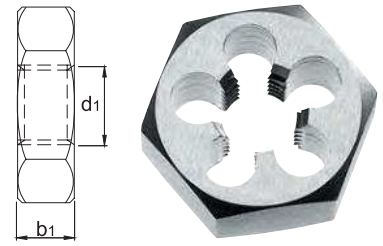
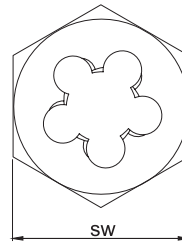
Ref.	d1	b1	l1
81.910.1605	16	5	160
81.910.2005	20	5	200
81.910.2007	20	7	200
81.910.2509	25	9	224
81.910.3011	30	11	280
81.910.3810	38	10	315
81.910.3814	38	14	315
81.910.4514	45	14	450
81.910.4518	45	18	450
81.910.5516	55	16	560
81.910.5522	55	22	560
81.910.6518	65	18	630
81.910.6525	65	25	630

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



> 27.700 INTERNATIONAL TOOLS

NL ECO PRO HSS Zeskante Snijmoer Metrisch
 FR Filière hexagonale HSS ECO PRO Métrique
 ES Terraja hexagonal HSS ECO PRO Métrica
 DE ECO PRO HSS Sechskant Schneideisen Metrisch



HSS M 60° DIN 382 6g ECO PRO

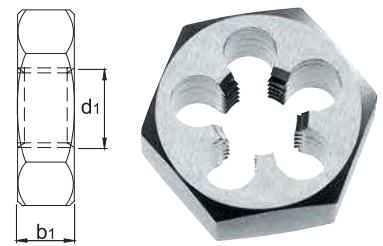
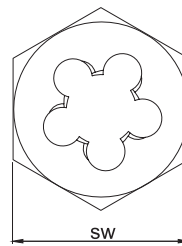
Ref.	d1	P	sw	b1
27.700.0300	M3	0.5	19	5
27.700.0400	M4	0.7	19	5
27.700.0500	M5	0.8	19	7
27.700.0600	M6	1	19	7
27.700.0700	M7	1	22	9
27.700.0800	M8	1.25	22	9
27.700.0900	M9	1.25	22	9
27.700.1000	M10	1.5	27	11

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 ECO PRO HSS Zeskante Snijmoer Metrisch Fijn
 FR Filière hexagonale HSS ECO PRO Métrique Fin
 ES Terraja hexagonal HSS ECO PRO Métrica Fina
 DE ECO PRO HSS Sechskant Schneideisen Metrisch Fein



HSS MF 60° DIN 382 6g ECO PRO

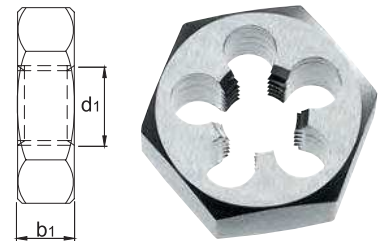
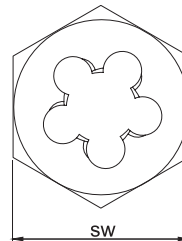
Ref.	d1	P	sw	b1
27.750.0303	MF3	0.35	19	5
27.750.0403	MF4	0.35	19	5
27.750.0505	MF5	0.5	19	5
27.750.0605	MF6	0.5	19	5
27.750.0607	MF6	0.75	19	5
27.750.0805	MF8	0.5	22	9
27.750.0807	MF8	0.75	22	9
27.750.0810	MF8	1	22	9
27.750.1005	MF10	0.5	27	11
27.750.1007	MF10	0.75	27	11
27.750.1010	MF10	1	27	11
27.750.1012	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
27.750.2615	MF26	1.5	50	16
27.750.2620	MF26	2	50	16
27.750.2715	MF27	1.5	60	18
27.750.2720	MF27	2	60	18
27.750.2815	MF28	1.5	60	18
27.750.2820	MF28	2	60	18
27.750.3015	MF30	1.5	60	18
27.750.3020	MF30	2	60	18
27.750.3215	MF32	1.5	60	18
27.750.3220	MF32	2	60	18
27.750.3315	MF33	1.5	60	18
27.750.3515	MF35	1.5	60	18

Ref.	d1	P	sw	b1
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 ECO PRO HSS Zeskante Snijmoer UNC
 FR Filière hexagonale HSS ECO PRO UNC
 ES Terraja hexagonal HSS ECO PRO UNC
 DE ECO PRO HSS Sechskant Schneideisen UNC



HSS UNC 60° DIN 382 2A ECO PRO

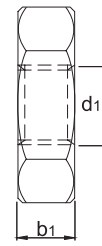
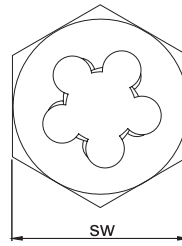
Ref.	d1	P	sw	b1
27.800.0635	UNC 1/4	20	19	7
27.800.0794	UNC 5/16	18	22	9
27.800.0952	UNC 3/8	16	27	11
27.800.1111	UNC 7/16	14	27	11
27.800.1270	UNC 1/2	13	36	14

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 **ECO PRO HSS Zeskante Snijmoer UNF**
 FR **Filière hexagonale HSS ECO PRO UNF**
 ES **Terraja hexagonal HSS ECO PRO UNF**
 DE **ECO PRO HSS Sechskant Schneideisen UNF**



HSS **UNF** **60°** **DIN 382** **2A** **ECO PRO**

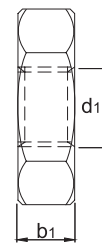
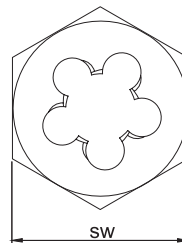
Ref.	d1	P	sw	b1
27.840.0635	UNF 1/4	28	19	7
27.840.0794	UNF 5/16	24	22	9
27.840.0952	UNF 3/8	24	27	11
27.840.1111	UNF 7/16	20	27	11
27.840.1270	UNF 1/2	20	36	10

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 **ECO PRO HSS Zeskante Snijmoer BSP (Gasdraad)**
 FR **Filière hexagonale HSS ECO PRO BSP (pas gaz)**
 ES **Terraja hexagonal HSS ECO PRO BSP (gas)**
 DE **ECO PRO HSS Sechskant Schneideisen BSP (Rohrgewinde)**



HSS **BSP G** **55°** **DIN 382** **ECO PRO**

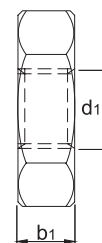
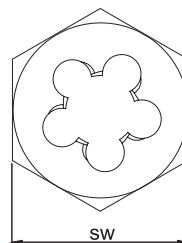
Ref.	d1	P	sw	b1
27.900.0973	BSP 1/8	28	27	11
27.900.1316	BSP 1/4	19	36	10
27.900.1666	BSP 3/8	19	41	14
27.900.2096	BSP 1/2	14	41	14
27.900.2291	BSP 5/8	14	50	16
27.900.2644	BSP 3/4	14	50	16

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 **ECO PRO HSS Zeskante Snijmoer BSW (Whitworth)**
 FR **Filière hexagonale HSS ECO PRO BSW (Whitworth)**
 ES **Terraja hexagonal HSS ECO PRO BSW (Whitworth)**
 DE **ECO PRO HSS Sechskant Schneideisen BSW (Whitworth)**



HSS **BSW** **55°** **DIN 382** **ECO PRO**

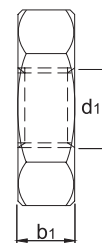
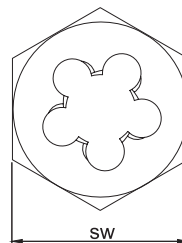
Ref.	d1	P	sw	b1
27.940.0317	BSW 1/8	40	19	5
27.940.0476	BSW 3/16	24	19	7
27.940.0635	BSW 1/4	20	19	7
27.940.0794	BSW 5/16	18	22	9
27.940.0952	BSW 3/8	16	27	11
27.940.1111	BSW 7/16	14	27	11

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



> 28.800 INTERNATIONAL TOOLS



NL ECO Draadeinduithaler
 FR Extracteurs de vis, goujons et tubes cassés ECO
 ES Extractor de tornillos rotos ECO
 DE ECO Schraubenausdreher

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



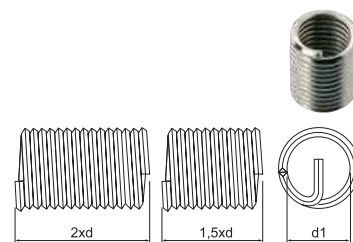
NL ECO Tapeinduithaler
 FR Extracteur de tarauds ECO
 ES Extractor de machos rotos ECO
 DE ECO Gewindekronen

Ref.	M	Ø "	z
28.810.0302	3	1/8	2
28.810.0403	4	5/32	3
28.810.0502	5	3/16	2
28.810.0503	5	3/16	3
28.810.0603	6	1/4	3
28.810.0604	6	1/4	4
28.810.0803	8	5/16	3
28.810.0804	8	5/16	4
28.810.1003	10	3/8	3
28.810.1004	10	3/8	4

Ref.	M	Ø "	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**

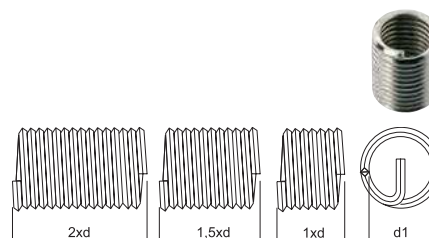


EG **M** **Phan-Coil**

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**

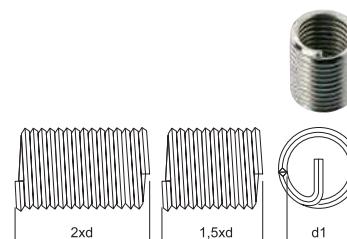


EG **MF** **Phan-Coil**

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



> 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	Ø mm	Packed per
28.833.2048	UNF Nr. 10	32	1,5	5	UNF Nr. 10
28.833.2063	UNF 1/4	28	1,5	6.6	UNF 1/4
28.833.2079	UNF 5/16	24	1,5	8.2	UNF 5/16
28.833.2095	UNF 3/8	24	1,5	9.8	UNF 3/8
28.833.2127	UNF 1/2	20	1,5	13	UNF 1/2
28.833.2158	UNF 5/8	18	1,5	16.2	UNF 5/8

> 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	Ref.	Nr.	d1
28.860.0025	25	M4x0,7	28.860.0070	70	M10x1,25 - MF10x1 - MF10x1,25
28.860.0030	30	UNC Nr. 10-24	28.860.0080	80	M12x1,75 - MF12x1,5
28.860.0035	35	M5x0,8	28.860.0085	85	UNC 1/2"-13
28.860.0040	40	M6x1	28.860.0090	90	MF14x1,5
28.860.0045	45	UNC 1/4"-20	28.860.0095	95	M16x2 - MF16x1,5 - UNC 5/8"-11
28.860.0055	55	M8x1,25 - MF8x1 - UNC 5/16"-18	28.860.0100	100	MF18x1,5
28.860.0065	65	UNC 3/8"-16			

> 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	Ref.	Nr.	d1
28.865.0025	25	M4x0,7	28.865.0070	70	M10x1,25 - MF10x1 - MF10x1,25
28.865.0030	30	UNC Nr. 10-24	28.865.0080	80	M12x1,75 - MF12x1,5
28.865.0035	35	M5x0,8	28.865.0085	85	UNC 1/2"-13
28.865.0040	40	M6x1	28.865.0090	90	MF14x1,5
28.865.0045	45	UNC 1/4"-20	28.865.0095	95	M16x2 - MF16x1,5 - UNC 5/8"-11
28.865.0055	55	M8x1,25 - MF8x1 - UNC 5/16"-18	28.865.0100	100	MF18x1,5
28.865.0065	65	UNC 3/8"-16			

> **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	28.865.0070	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	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 **ECO PRO Set Draadsnijden**
 FR **Jeu de Taraudage ECO PRO**
 ES **Juego de roscar ECO PRO**
 DE **ECO PRO Satz Gewindeschneiden**



ECO PRO

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 **ECO PRO Set Draadsnijden**
 FR **Jeu de Taraudage ECO PRO**
 ES **Juego de roscar ECO PRO**
 DE **ECO PRO Satz Gewindeschneiden**



ECO PRO

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, 38x14, 45x18, 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 6x0,75-8x1-10x1-12x1,5-14x1,5-16x1,5-18x1,5-20x1,5	MF 6x0,75-8x1-10x1-12x1,5-14x1,5-16x1,5-18x1,5-20x1,5	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

> 29.180 INTERNATIONAL TOOLS

NL **ECO PRO Set Handtappen**
 FR **Jeu de Tarauds à main ECO PRO**
 ES **Juego de Machos mano ECO PRO**
 DE **ECO PRO Satz Handgewindebohrer**



ECO PRO

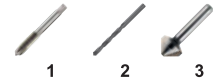
NIEUW NOUVEAU NUEVO NEU

Ref.	1	2
29.180.0001	21.140: M3-4-5-6-8-10-12	
29.180.0002	21.140: M3-4-5-6-8-10-12	11.400: 2,5-3,3-4,2-5-6,8-8,5-10,2



> 29.190 INTERNATIONAL TOOLS

NL ECO Set Draadsnijden (combinatie)
 FR Jeu de Taraudage ECO (combinaison)
 ES Juego de roscar ECO (combinación)
 DE ECO Satz Gewindeschneiden (Kombination)



ECO

NIEUW / NOUVEAU / NUEVO / NEU

Ref.	1	2	3	A, B, C
29.190.1000	22.191/22.192: M3-4-5-6-8-10-12			B
29.190.3000	22.190: M4-5-6-8-10	11.416: 3,3-4,2-5-6,8-8,5	42.533: 10,4, 16,5	A
29.190.6000	23.291/23.292: M3-4-5-6-8-10-12			B

> 29.195 INTERNATIONAL TOOLS

NL ECO PRO Set Draadsnijden (combinatie)
 FR Jeu de Taraudage ECO PRO (combinaison)
 ES Juego de roscar ECO PRO (combinación)
 DE ECO PRO Satz Gewindeschneiden (Kombination)

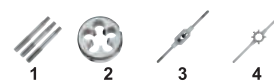


ECO PRO

Ref.	1	2	3	4	A, B, C
29.195.1000	22.195/22.196: M3-4-5-6-8-10-12				B
29.195.1250	22.197/22.198: M3-4-5-6-8-10-12				B
29.195.1500	22.595/22.596: M3-4-5-6-8-10-12				B
29.195.2000	22.195/22.196: M3-4-5-6-8-10-12	11.420: 2,5-3,3-4,2-5-6,8-8,5-10,2			B
29.195.2250	22.195/22.196: M3-4-5-6-8-10-12	11.420: 2,5-3,3-4,2-5-6,8-8,5-10,2		81.905: Nr. 1,5	B
29.195.2500	22.195/22.196: M3-4-5-6-8-10-12	11.490: 2,5-3,3-4,2-5-6,8-8,5-10,2			B
29.195.3000	22.195: M4-5-6-8-10	11.420: 3,3-4,2-5-6,8-8,5	42.535: 10,4 16,5		A
29.195.3500	22.197: M4-5-6-8-10	11.431: 3,3-4,2-5-6,8-8,5	42.536: 10,4 16,5		A
29.195.5000	22.197/22.198: M3-4-5-6-8-10-12	11.490: 2,5-3,3-4,2-5-6,8-8,5-10,2			B
29.195.6000	23.295/23.296: M3-4-5-6-8-10-12				B

> 29.200 INTERNATIONAL TOOLS

NL ECO PRO Set Draadsnijden
 FR Jeu de Taraudage ECO PRO
 ES Juego de roscar ECO PRO
 DE ECO PRO Satz Gewindeschneiden



ECO PRO

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 Handtappen**
 FR **Jeu de Tarauds à main**
 ES **Juego de Machos mano**
 DE **Satz Handgewindebohrer**



Ref.	1
29.220.0003	21.100: M3-4-5-6-8-10-12

> **29.240 Phantom**

NL **Set Draadsnijden leeg**
 FR **Coffret de tarauds 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**



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
29.250.3300	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



> 29.260 Phantom

NL Set Draadsnijden (combinatie)
 FR Jeu de Taraudage (combinaison)
 ES Juego de roscar (combinación)
 DE Satz Gewindeschneiden (Kombination)



Ref.	1	2	3	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	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	B
29.260.1995	22.200/22.201: M3-4-5-6-8-10-12	11.461: 2,5-3,3-4,2-5-6-8-8,5-10,2	B	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	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	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	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	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	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	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	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	B

> 29.280 Phantom

NL Set Snijplaten
 FR Jeu de Filières
 ES Juego de Terraja esférica
 DE Satz Schneideisen



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

> 29.300 INTERNATIONAL TOOLS

NL ECO Set Draadeindruithalers
 FR Jeu d'extracteurs, goujons et tubes cassés ECO
 ES Juego de extractores de tornillos rotos ECO
 DE ECO Satz Schraubenausdreher

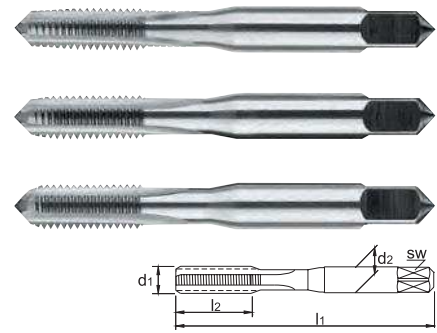


ECO

Ref.	1
29.300.0100	28.800 Nr. 1-5
29.300.0200	28.800 Nr. 1-6

> **29.910 Phantom**

NL HSS Handtappen Metrisch, links
FR Tarauds à main HSS Métrique, à gauche
ES Machos mano HSS Métrica, izquierda
DE HSS Handgewindebohrer Metrisch, links



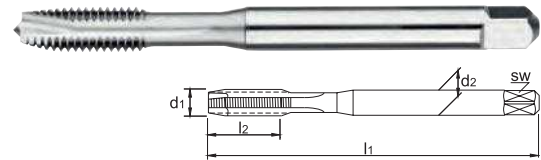
HSS M 60° NFE 66103 ISO 529 ISO 2 6H

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
29.910.0800	M8	1.25	72	22	8	6.3
29.910.1000	M10	1.5	80	24	10	8

Ref.	d1	P	l1	l2	d2	sw
29.910.1200	M12	1.75	89	29	9	7.1
29.910.1400	M14	2	95	30	11.2	9
29.910.1600	M16	2	102	32	12.5	10
29.910.1800	M18	2.5	112	37	14	11.2
29.910.2000	M20	2.5	112	37	14	11.2
29.910.2400	M24	3	130	45	18	14

> **29.950 Phantom**

NL UNI HSS-E Machinetap Metrisch, links
FR Taraud machine HSS-E UNI Métrique, à gauche
ES Macho máquina HSS-E UNI Métrica, a la izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch, links



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

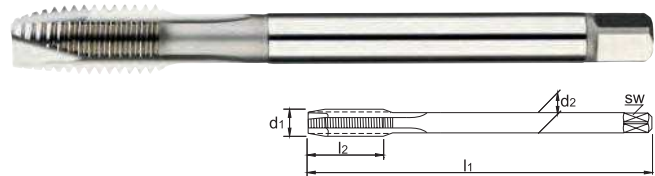
P 11	P 12	P 13	M 21	K 31	K 32	N 41	N 42	N 51	S 71	S 72
5900 N/mm ²	5850 N/mm ²	51000 N/mm ²	INOX 5850N/mm ²	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	Ni/Co	Ti
15-20	10-20	6-10	7-10	10-15	10-15	25-35	10-20	15-35	2-8	2-8

Ref.	d1	P	l1	l2	d2	sw
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	15	6	4.9

Ref.	d1	P	l1	l2	d2	sw
29.950.0600	M6	1	80	17	6	4.9
29.950.0800	M8	1.25	90	20	8	6.2
29.950.1000	M10	1.5	100	22	10	8

> **29.951 Phantom**

NL UNI HSS-E Machinetap Metrisch, links
FR Taraud machine HSS-E UNI Métrique, à gauche
ES Macho máquina HSS-E UNI Métrica, a la izquierda
DE UNI HSS-E Maschinengewindebohrer Metrisch, links



HSS-E M 60° DIN 376 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
5900 N/mm ²	5850 N/mm ²	51000 N/mm ²	INOX 5850N/mm ²	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
29.951.1200	M12	1.75	110	24	9	7
29.951.1400	M14	2	110	26	11	9
29.951.1600	M16	2	110	27	12	9
29.951.1800	M18	2.5	125	32	14	11

Ref.	d1	P	l1	l2	d2	sw
29.951.2000	M20	2.5	140	32	16	12
29.951.2200	M22	2.5	140	32	18	14.5
29.951.2400	M24	3	160	34	18	14.5
29.951.3000	M30	3.5	180	40	22	18

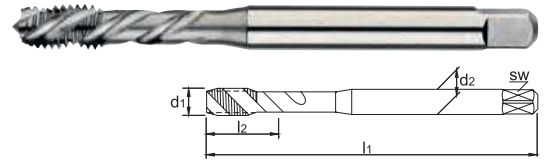


> 29.956 Phantom

NL UNI HSS-E Machinetap Metrisch, links
 FR Taraud machine HSS-E UNI Métrique, à gauche
 ES Macho máquina HSS-E UNI Métrica, izquierda
 DE UNI HSS-E Maschinengewindebohrer Metrisch, links

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
≤800 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	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	d2	sw
29.956.0300	M3	0.5	56	3.5	2.7
29.956.0400	M4	0.7	63	4.5	3.4
29.956.0500	M5	0.8	70	6	4.9



NIEUW NOUVEAU NUEVO NEU

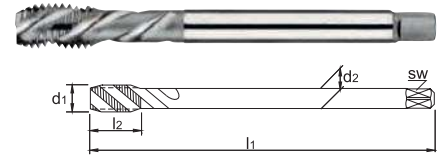
> 29.957 Phantom

NL UNI HSS-E Machinetap Metrisch, links
 FR Taraud machine HSS-E UNI Métrique, à gauche
 ES Macho máquina HSS-E UNI Métrica, izquierda
 DE UNI HSS-E Maschinengewindebohrer Metrisch, links

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
≤800 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	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	d2	sw
29.957.1200	M12	1.75	110	9	7
29.957.1400	M14	2	110	11	9
29.957.1600	M16	2	110	12	9

Ref.	d1	P	l1	d2	sw
29.957.2000	M20	2.5	140	16	12
29.957.2400	M24	3	160	18	14.5
29.957.3000	M30	3.5	180	22	18



NIEUW NOUVEAU NUEVO NEU

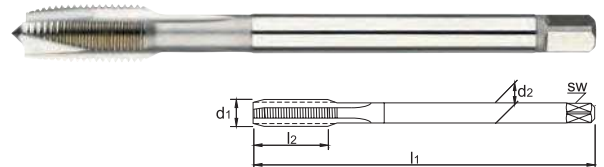
> 29.960 Phantom

NL UNI HSS-E Machinetap Metrisch Fijn, links
 FR Taraud machine HSS-E UNI Métrique Fin, à gauche
 ES Macho máquina HSS-E UNI Métrica Fina, a la izquierda
 DE UNI HSS-E Maschinengewindebohrer Metrisch Fein, links

HSS-E	MF	60°		DIN 374	3xD	Form B	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
≤800 N/mm ²	≤850 N/mm ²	≤1000 N/mm ²	INOX ≤850N/mm ²	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

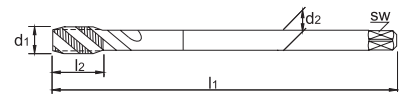
Ref.	d1	P	l1	l2	d2	sw
29.960.0607	MF6	0.75	80	13	4.5	3.4
29.960.0810	MF8	1	90	20	6	4.9
29.960.1010	MF10	1	90	16	7	5.5
29.960.1012	MF10	1.25	100	22	7	5.5
29.960.1210	MF12	1	100	22	9	7
29.960.1212	MF12	1.25	100	22	9	7
29.960.1415	MF14	1.5	100	22	11	9

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



> **29.961 Phantom**

NL UNI HSS-E Machinetap Metrisch Fijn, links
 FR Taraud machine HSS-E UNI Métrique Fin, à gauche
 ES Macho máquina HSS-E UNI Métrica Fina, a la izquierda
 DE UNI HSS-E Maschinengewindebohrer Metrisch Fein, links



NIEUW NOUVEAU NUEVO NEU

HSS-E MF 60° 40° Form C 2-3 ISO 2 6H UNI

DIN 374 2,5xD

P 11 P 12 P 13 M 21 K 31 K 32 N 41 N 42 N 51 S 71 S 72

5800 Nimm² 5850 Nimm² 51000 Nimm² INOX 5850Nimm² GG GGG GTS-GTW Alu Alu Si>10% Cu NiCo Ti

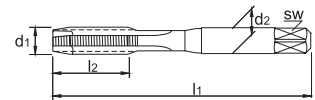
15-20 10-20 6-10 7-10 10-15 10-15 25-35 10-20 15-35 2-8 2-8

Ref.	d1	P	l1	l2	d2	sw
29.961.0810	MF8	1	90	20	6	4.9
29.961.1010	MF10	1	90	16	7	5.5
29.961.1012	MF10	1.25	100	22	7	5.5
29.961.1210	MF12	1	100	22	9	7
29.961.1212	MF12	1.25	100	22	9	7
29.961.1215	MF12	1.5	100	22	9	7
29.961.1410	MF14	1	100	22	11	9
29.961.1412	MF14	1.25	100	22	11	9
29.961.1415	MF14	1.5	100	22	11	9
29.961.1615	MF16	1.5	100	22	12	9

Ref.	d1	P	l1	l2	d2	sw
29.961.1815	MF18	1.5	110	25	14	11
29.961.2015	MF20	1.5	125	25	16	12
29.961.2215	MF22	1.5	125	25	18	14.5
29.961.2415	MF24	1.5	140	28	18	14.5
29.961.2615	MF26	1.5	140	20	18	14.5
29.961.2715	MF27	1.5	140	20	20	16
29.961.2720	MF27	2	140	20	20	16
29.961.2815	MF28	1.5	140	20	20	16
29.961.3015	MF30	1.5	150	22	22	18
29.961.3020	MF30	2	150	22	22	18

> **29.969 Phantom**

NL HSS Machinetap FG (Rijwieldraad), links
 FR Taraud machine HSS FG (filetage bicyclette), à gauche
 ES Macho máquina HSS FG (rosca bicicleta), izquierda
 DE HSS Maschinengewindebohrer FG (Fahrradgewinde), links



HSS BSC FG 60° 79012

DIN 79012

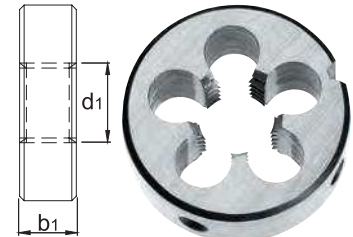
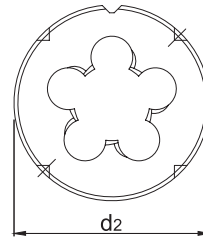
Ref. d1 P l1 l2 d2 sw

29.969.1430 FG 9/16 20 100 22 11 9

Ref.	d1	P	l1	l2	d2	sw

> **29.970 INTERNATIONAL TOOLS**

NL ECO PRO HSS Ronde Snijplaat Metrisch, links
 FR Filière ronde HSS ECO PRO Métrique, à gauche
 ES Terraja esférica HSS ECO PRO Métrica, izquierda
 DE ECO PRO HSS Runde Schneideisen Metrisch, links



HSS M 60° 6g ECO PRO

DIN EN 22568

P 11 P 12 K 31 K 32 N 41 N 42

5800 Nimm² 5850 Nimm² GG GGG GTS-GTW Alu Alu Si>10%

Ref.	d1	P	d2	b1
29.970.0300	M3	0.5	20	5
29.970.0400	M4	0.7	20	5
29.970.0500	M5	0.8	20	7
29.970.0600	M6	1	20	7
29.970.0800	M8	1.25	25	9

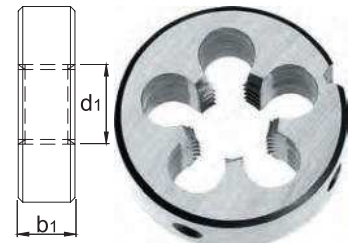
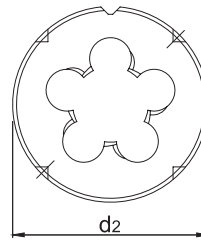
Ref.	d1	P	d2	b1
29.970.1000	M10	1.5	30	11
29.970.1200	M12	1.75	38	14
29.970.1400	M14	2	38	14
29.970.1600	M16	2	45	18
29.970.1800	M18	2.5	45	18

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



> 29.971 Phantom

NL HSS Ronde Snijplaat Metrisch, schilaansnijding, links
 FR Filière ronde HSS Métrique, coupe gun, à gauche
 ES Terraja esférica HSS Métrica, entrada corregida (gun), izquierda
 DE HSS Runde Schneideisen Metrisch, Schälanschnitt, links



HSS M 60° DIN EN 22568 6g

P 11 5800 N/mm² P 12 5850 N/mm² P 13 51000 N/mm² M 21 INOX 5850N/mm² N 41 Alu

10-14 6-10 5-8 4-6 15-25

Ref.	d1	d2	b1
29.971.0300	M3	20	5
29.971.0400	M4	20	5
29.971.0500	M5	20	7
29.971.0600	M6	20	7
29.971.0800	M8	25	9

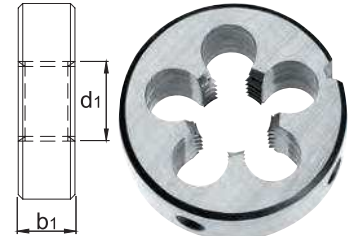
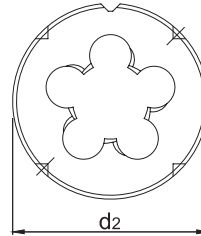
Ref.	d1	d2	b1
29.971.1000	M10	30	11
29.971.1200	M12	38	14
29.971.1400	M14	38	14
29.971.1600	M16	45	18
29.971.1800	M18	45	18

Ref.	d1	d2	b1
29.971.2000	M20	45	18
29.971.2200	M22	55	22
29.971.2400	M24	55	22
29.971.2700	M27	65	25
29.971.3000	M30	65	25

NIEUW NOUVEAU NUEVO NEU

> 29.972 INTERNATIONAL TOOLS

NL ECO PRO HSS Ronde Snijplaat Metrisch Fijn, links
 FR Filière ronde HSS ECO PRO Métrique Fin, à gauche
 ES Terraja esférica HSS ECO PRO Métrica Fina, izquierda
 DE ECO PRO HSS Runde Schneideisen Metrisch Fein, links



HSS MF 60° DIN EN 22568 6g ECO PRO

P 11 5800 N/mm² P 12 5850 N/mm² K 31 GG K 32 GGG GTS-GTW N 41 Alu N 42 Alu Sp>10%

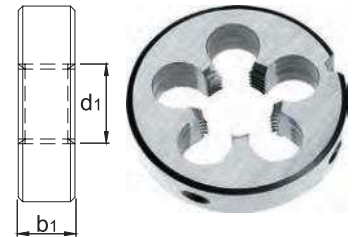
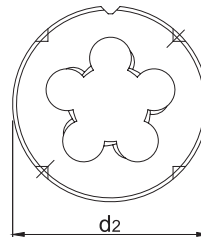
Ref.	d1	P	d2	b1
29.972.0605	MF6	0.5	20	5
29.972.0607	MF6	0.75	20	7
29.972.0807	MF8	0.75	25	9
29.972.0810	MF8	1	25	9
29.972.1010	MF10	1	30	11
29.972.1210	MF12	1	38	10

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

> 29.973 Phantom

NL HSS Ronde Snijplaat Metrisch Fijn, schilaansnijding, links
 FR Filière ronde HSS Métrique Fin, coupe gun, à gauche
 ES Terraja esférica HSS Métrica Fina, entrada corregida (gun), izquierda
 DE HSS Runde Schneideisen Metrisch Fein, Schälanschnitt, links



HSS UNC 60° DIN EN 22568 6g

P 11 5800 N/mm² P 12 5850 N/mm² P 13 51000 N/mm² M 21 INOX 5850N/mm² N 41 Alu

10-14 6-10 5-8 4-6 15-25

Ref.	d1	P	d2	b1
29.973.0605	MF6	0.5	20	5
29.973.0607	MF6	0.75	20	7
29.973.0807	MF8	0.75	25	9
29.973.0810	MF8	1	25	9
29.973.1010	MF10	1	30	11
29.973.1210	MF12	1	38	10

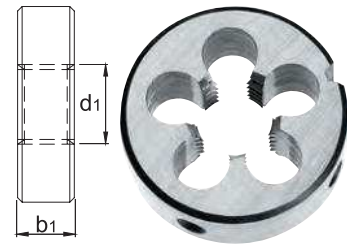
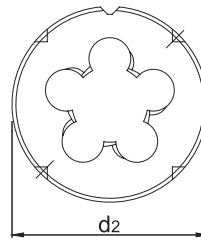
Ref.	d1	P	d2	b1
29.973.1215	MF12	1.5	38	10
29.973.1410	MF14	1	38	10
29.973.1415	MF14	1.5	38	10
29.973.1610	MF16	1	45	14
29.973.1615	MF16	1.5	45	14
29.973.1815	MF18	1.5	45	14

Ref.	d1	P	d2	b1
29.973.2010	MF20	1	45	14
29.973.2015	MF20	1.5	45	14
29.973.2215	MF22	1.5	55	16
29.973.2415	MF24	1.5	55	16
29.973.3015	MF30	1.5	65	18

NIEUW NOUVEAU NUEVO NEU

> **29.975 Phantom**

NL **HSS Ronde Snijplaat schilaansnijding, links, UNC**
 FR **Filière ronde HSS coupe gun, à gauche, UNC**
 ES **Terraja esférica HSS entrada corregida (gun), izquierda, UNC**
 DE **HSS Runde Schneideisen Schälanschnitt, links, UNC**



HSS **UNC**

P 11 **P 12** **P 13** **M 21** **N 41**
 ≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² Alu

10-14	6-10	5-8	4-6	15-25
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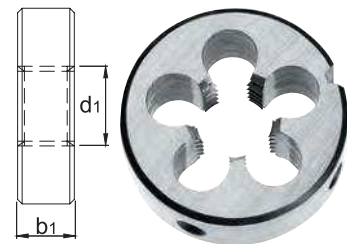
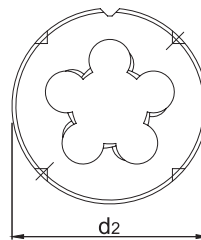
Ref.	d1	P	d2	b1
29.975.0635	UNC 1/4	20	20	7
29.975.0794	UNC 5/16	18	25	9
29.975.0952	UNC 3/8	16	30	11
29.975.1111	UNC 7/16	14	30	11

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 schilaansnijding, links, UNF**
 FR **Filière ronde HSS coupe gun, à gauche, UNF**
 ES **Terraja esférica HSS entrada corregida (gun), izquierda, UNF**
 DE **HSS Runde Schneideisen Schälanschnitt, links, UNF**



HSS **UNF**

P 11 **P 12** **P 13** **M 21** **N 41**
 ≤500 N/mm² ≤850 N/mm² ≤1000 N/mm² INOX ≤850N/mm² Alu

10-14	6-10	5-8	4-6	15-25
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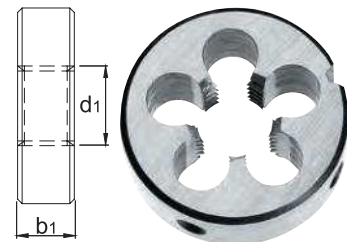
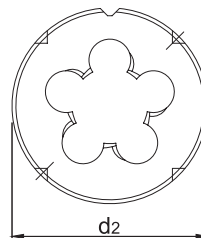
Ref.	d1	P	d2	b1
29.978.0635	UNF 1/4	28	20	7
29.978.0794	UNF 5/16	24	25	9
29.978.0952	UNF 3/8	24	30	11
29.978.1111	UNF 7/16	20	30	11

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 **ECO PRO HSS Ronde Snijplaat BSP (Gasdraad), links**
 FR **Filière ronde HSS ECO PRO BSP (pas gaz), à gauche**
 ES **Terraja esférica HSS ECO PRO BSP (gas), izquierda**
 DE **ECO PRO HSS Runde Schneideisen BSP (Rohrgewinde), links**



HSS **BSP G**

P 11 **P 12** **K 31** **K 32** **N 41** **N 42**
 ≤500 N/mm² ≤850 N/mm² GG GGG GTS-GTW Alu 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

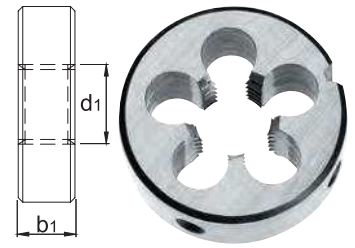
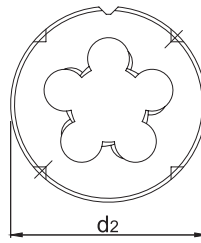
Ref.	d1	P	d2	b1
29.985.2096	BSP 1/2	14	45	14
29.985.2291	BSP 5/8	14	55	16
29.985.2644	BSP 3/4	14	55	16

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 schilaansnijding, links, BSC, FG (Rijwieldraad)**
 FR **Filière ronde HSS coupe gun, à gauche, BSC, FG (filetage bicyclette)**
 ES **Terraja esférica HSS entrada corregida (gun), izquierda, BSC, FG (rosca bicicleta)**
 DE **HSS Runde Schneideisen Schälanschnitt, links, BSC, FG (Fahrradgewinde)**



10-14	6-10	5-8	4-6	15-25
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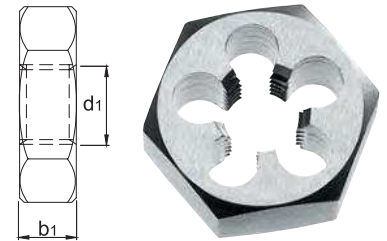
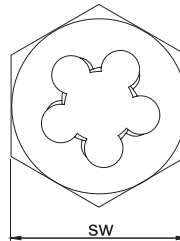
Ref.	d1	P	d2	b1
29.989.1430	FG 9/16	20	38	10

Ref.	d1	P	d2	b1

Ref.	d1	P	d2	b1

> 29.990 INTERNATIONAL TOOLS

- NL **ECO PRO HSS Zeskante Snijmoer Metrisch, links**
 FR **Filière hexagonale HSS ECO PRO Métrique, à gauche**
 ES **Terraja hexagonal HSS ECO PRO Métrica, izquierda**
 DE **ECO PRO HSS Sechskant Schneideisen Metrisch, links**





Ref.	d1	P	sw	b1
29.990.0300	M3	0.5	19	5
29.990.0400	M4	0.7	19	5
29.990.0500	M5	0.8	19	7
29.990.0600	M6	1	19	7
29.990.0800	M8	1.25	22	9


Ref.	d1	P	sw	b1
29.990.1000	M10	1.5	27	11
29.990.1200	M12	1.75	36	14
29.990.1400	M14	2	36	14
29.990.1600	M16	2	41	18
29.990.1800	M18	2.5	41	18


Ref.	d1	P	sw	b1
29.990.2000	M20	2.5	41	18
29.990.2200	M22	2.5	50	22
29.990.2400	M24	3	50	22


NL Voorboordiametertabel
FR Tableau de diamètres 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	19	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
7			1	0,2/0,25/0,35/0,5/0,75															
7,144	0,2813	9/32								26		26							
7,5				0,2/0,25/0,35/0,5/0,75/1															
7,723		G 1/16														28			32
7,747		Vg 8																	30
7,88		Vg 7,8																	
7,938	0,3125	5/16			18	24	32	20/28	27/36/40/48	26	18	22		26					
7,94		1/16 NPT															27		
8			1,25	0,2/0,25/0,35/0,5/0,75/1															
8,5				0,2/0,25/0,35/0,5/0,75/1															
9			1,25	0,2/0,25/0,35/0,5/0,75/1															
9,5				0,2/0,25/0,35/0,5/0,75/1															
9,525	0,375	3/8			16	24	32	20/28	18/27/36/40	26	16	20		26					
9,728	0,383	G 1/8														28			
9,906	0,39								27										
10			1,5	0,2/0,25/0,35/0,5/0,75/1/1,25															
10,29		1/8 NPT															27		
10,338	0,407	Vg 10																	28
10,5				0,35/0,5/0,75/1															
11			1,5	0,35/0,5/0,75/1															
11,13	0,4375	7/16			14	20	28	16/32	18/24/27/32	26	14	18		26					
11,5				0,35/0,5/0,75/1/1,5															
12			1,75	0,35/0,5/0,75/1/1,25/1,5															
12,243		Vg 12																	26
12,5		Pg 7																20	
12,7	0,5	1/2			13	20	28	12/16/32	12/14/18/24/27	26	12	16		26					
13																			
13,157	0,518	G 1/4														19			
13,5																			
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	2		11	18	24	12/16/20/28/32		26	11	14		26					
16																			
16,662	0,656	G 3/8														19			
17				0,35/0,5/0,75/1/1,5/2															
17,15		3/8 NPT															18		
17,462	0,6875	11/16					24	12/16/20/28/32		26	11	14							
18			2,5	0,35/0,5/0,75/1/1,5/2															
18,6		Pg 11																	18
19				0,35/0,5/0,75/1/1,5/2															
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
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											
60,33		2 NPT															11,5		
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							