

**Phantom** 

**INTERNATIONAL  
TOOLS**

**COME IN** WE'RE  
OPEN TILL

**19.00**  

 OPEN FOR ORDERS UP TO 19.00 HOURS  
 OPEN FOR ORDERS UP TO 18.00 HOURS



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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
		<b>Ongelegerd en gelegeerd staal ≤600 N/mm<sup>2</sup></b> 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)	<b>Aciers non-alliés ou faiblement alliés ≤600 N/mm<sup>2</sup></b> 1.0037 (A37), 1.0038 (E 24-2 Ne), 1.00402 (1C20), 1.1178 (1C30)	<b>Acero no aleado ≤600 N/mm<sup>2</sup></b> 1.0037 (S235JR), 1.0038 (S235JR G2), 1.0402 (F.112), 1.1178 (C30E)	<b>Unlegierter und legierter Stahl ≤600 N/mm<sup>2</sup></b> 1.0037 (St37), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)
		<b>Ongelegerd en gelegeerd staal 600 - 850 N/mm<sup>2</sup></b> 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)	<b>Aciers non-alliés ou faiblement alliés 600 - 850 N/mm<sup>2</sup></b> 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)	<b>Acero no aleado 600 - 850 N/mm<sup>2</sup></b> 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)	<b>Unlegierter und legierter Stahl 600 - 850 N/mm<sup>2</sup></b> 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)
		<b>Gelegeerd staal 850 - 1000 N/mm<sup>2</sup></b> 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)	<b>Aciers alliés 850 - 1000 N/mm<sup>2</sup></b> 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)	<b>Acero aleado 850 - 1000 N/mm<sup>2</sup></b> 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)	<b>Legierter Stahl 850 - 1000 N/mm<sup>2</sup></b> 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)
		<b>Gelegeerd staal 1000 - 1400 N/mm<sup>2</sup></b> 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	<b>Aciers alliés 1000 - 1400 N/mm<sup>2</sup></b> 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	<b>Acero aleado 1000 - 1400 N/mm<sup>2</sup></b> 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)	<b>Legierter Stahl 1000 - 1400 N/mm<sup>2</sup></b> 1.5710 (36NiCr6), 1.7035 (41Cr40), 1.7225 (42CrMo4), 1.8519 (31CrMoV9), 1.8550 (34CrAlNi7), 1.5752 (15NiCr13), 1.7131 (16MnCr5), 1.7264 (20CrMo5)
		<b>Gehard en inzetgehard staal 50 - 60 HRC</b> 1.2344 (X40CrMoV5), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)	<b>Aciers trempés et Aciers de cémentation alliés 50 - 60 HRC</b> 1.2344 (Z 40 CDV 5), 1.2767 (X45NiCrMo4), 1.2379 (D2), 1.2080 (Z200C12), 1.3343 (Z85WDCV)	<b>Acero templado 50 - 60 HRC</b> 1.2344 (X40CrMoV5), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)	<b>Gehärteter und einsatzgehärteter Stahl, 50-60 HRC</b> 1.2344 (X40CrMoV5), 1.2767 (X45NiCrMo4), 1.2767 (X45NiCrMo4), 1.2379 (X155CrVMo12-1), 1.2080 (X210Cr12), 1.3343 (S6-5-2)
		<b>Roestvaststaal, INOX ≤850 N/mm<sup>2</sup></b> 1.4005 (X12CrS13), 1.4104 (X14CrMos17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	<b>Aciers inoxydables ≤850 N/mm<sup>2</sup></b> 1.4005 (Z11CF13), 1.4104 (Z13CF17), 1.4105 (Z8CF17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)	<b>Acero inoxidable ≤850 N/mm<sup>2</sup></b> 1.4006 (F.3401-X10Cr13), 1.4104 (F.3117-X10Cr17), 1.4301 (F.3504-X5CrNi18-10)(304), 1.4305 (F.3508-X10CrNiS18-09)(303)	<b>Rostfreier Stahl, INOX ≤850 N/mm<sup>2</sup></b> 1.4005 (X12CrS13), 1.4104 (X14CrMos17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)
		<b>Roestvaststaal, INOX &gt;850 N/mm<sup>2</sup></b> 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	<b>Aciers inoxydables &gt;850 N/mm<sup>2</sup></b> 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)	<b>Acero inoxidable &gt;850 N/mm<sup>2</sup></b> 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (F.3535-X6CrNiMoTi17-12-2)(316Ti)	<b>Rostfreier Stahl, INOX &gt;850 N/mm<sup>2</sup></b> 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)
		<b>Grijs gietijzer GG &lt;260 HB30</b> 0.6015 (GG 15), 0.6025 (GG 25), 0.6040 (GG 40)	<b>Fontes &lt;260 HB30</b> 0.6015 (GG 15), 0.6025 (GG 25), 0.6040 (GG 40)	<b>Fundición gris con grafito laminado GG &lt;260 HB30</b> 0.6015 (FG15), 0.6025 (FG25), 0.6040 (FG40)	<b>Grauguss GG &lt;260 HB30</b> 0.6015 (GG 15), 0.6025 (GG 25), 0.6040 (GG 40)
		<b>Smeedbaar en Nodulair gietijzer &lt;260 HB30</b> 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)	<b>Fontes à graphites et malléables &lt;260 HB30</b> 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)	<b>Fundición gris con grafito esferoidal &lt;260 HB30</b> 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)	<b>Formbar und dehnbares Gusseisen &lt;260 HB30</b> 0.8145 (GTS-45), 0.8170 (GTS-70-02), 0.7040 (GGG 40), 0.7070 (GGG 70)
		<b>Aluminium en Aluminiumlegeringen</b> 3.0255 (Al99.5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	<b>Aluminium et Alliages d'Aluminium</b> 3.0255 (A59050C), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	<b>Aluminio y aleaciones de Aluminio</b> 3.0255 (Al99.5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	<b>Aluminium und Aluminiumlegeringen</b> 3.0255 (Al99.5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)
		<b>Gietaluminium Si 10 - 24%</b> 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9), 3.2581 (G-AlSi12), 3.2583 (G-AlSi12Cu)	<b>Alliages d'Aluminium Si 10 - 24%</b> 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9), 3.2581 (G-AlSi12), 3.2583 (G-AlSi12Cu)	<b>Fundición de Aluminio aleada Si 10 - 24%</b> 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9), 3.2581 (L-2520,21), 3.2583 (L2530)	<b>Druckguss Si 10 - 24%</b> 3.2131 (G-AlSi5Cu1), 3.2153 (G-AlSi7Cu3), (3.2573 G-AlSi9), 3.2581 (G-AlSi12), 3.2583 (G-AlSi12Cu)
		<b>Magnesiumlegeringen</b> 3.5200 (MgMn2), 3.5812 (G-MgAl8Zn1), 3.5612 (G-MgAl6Zn1)	<b>Alliages de Magnésium</b> 3.5200 (MgMn2), 3.5812 (AZ81hp), 3.5612 (AZ61)	<b>Aleaciones de Magnesio</b> 3.5200 (MgMn2), 3.5812 (AZ81hp), 3.5612 (AZ61)	<b>Magnesiumlegeringen</b> 3.5200 (MgMn2), 3.5812 (G-MgAl8Zn1), 3.5612 (G-MgAl6Zn1)
		<b>Koper en Koperlegeringen</b> 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)	<b>Cuivres et Alliages de cuivres</b> 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)	<b>Cobre y aleaciones de cobre</b> 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)	<b>Kupfer und Kupferlegeringen</b> 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)
		<b>Koper- en Aluminiumlegering</b> 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (CuBe2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18	<b>Cuivre et Alliages d'Aluminium</b> 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (CuBe1.9) AMPCO® 8, AMPCO® 8 15, AMPCO® 18	<b>Cobre y aleaciones de Aluminio</b> 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (CuBe2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18	<b>Kupfer- und Aluminiumlegeringen</b> 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (Cu-Be2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18
		<b>Duroplastic en Thermoplastic</b> PMMA, PVC, PE, PP, PTFE	<b>Duroplastiques et Thermoplastiques</b> PMMA, PVC, PE, PP, PTFE	<b>Duroplásticos en Termoplásticos</b> PMMA, PVC, PE, PP, PTFE	<b>Duroplaste und Thermoplaste</b> PMMA, PVC, PE, PP, PTFE
		<b>Versterkte kunststoffen</b> GFK, CFK	<b>Plastiques réinforcés</b> GFK, CFK	<b>Plásticos reforzados</b> GFK, CFK	<b>Verstärkte Kunststoffe</b> GFK, CFK
		<b>Nikkel- en Cobaltlegeringen</b> Hastelloy, Inconel, Nimonic, Jetalloy	<b>Alliages de Nickel et de Cobalt</b> Hastelloy, Inconel, Nimonic, Jetalloy	<b>Aleaciones de Níquel y Cobalto</b> Hastelloy, Inconel, Nimonic, Jetalloy	<b>Nickel und Kobaltlegeringen</b> Hastelloy, Inconel, Nimonic, Jetalloy
		<b>Titaniumlegeringen</b> 3.7024 (Ti99.5), 3.7114 (TiAl5Sn2.5), 3.7124 (TiCu2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2.5)	<b>Alliages de Titane</b> 3.7024 (T35), 3.7114 (TiAl5Sn2.5), 3.7124 (T-U2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2.5)	<b>Titanio aleado</b> 3.7024 (Ti99.5), 3.7114 (TiAl5Sn2.5), 3.7124 (TiCu2), 3.7154 (TiAl6Zr5), 3.7165 (TiAl6V4), 3.7184 (TiAl4Mo4Sn2.5)	<b>Titanlegeringen</b> 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 Werkzeuge 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










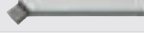



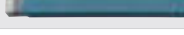




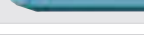
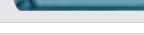
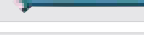
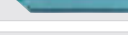
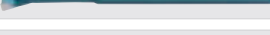
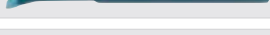
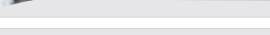
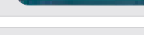
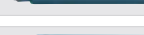
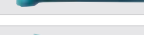
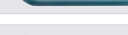
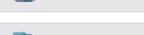
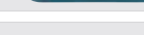
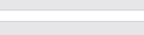

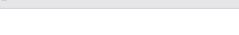
	NL	FR	ES	DE
<b>HSS-E</b>	HSS-E (5% Cobalt)	HSS-E (5% Cobalt)	HSS-E (5% Cobalto)	HSS-E (5% Cobalt)
<b>10% Co</b>	HSS-E (10% Cobalt)	HSS-E (10% Cobalt)	HSS-E (10% Cobalto)	HSS-E (10% Cobalt)
<b>MG HM</b>	Micro-Grain volhardmetaal	Carbure micro- grain	Metal duro micrograno	Micro-Grain Voll- hartmetall
<b>HM-TIP</b>	Hardmetaal Tip	Plaquette carbure brasée	Plaquetas de metal duro soldadas	mit HM-Schneiden
<b>DIN 4964-A</b>	DIN norm	Norme DIN	Norma DIN	DIN Norm
<b>NORM</b>	Fabriek standaard	Standard usine	Estándar de la fábrica	Werksnorm

	NL	FR	ES	DE
	Doorlopende gaten	Trou débouchant	Agujero pasante	Durchgangslöcher
	Blinde gaten	Trou borgne	Agujero ciego	Sacklöcher
	Doorlopende ga- ten, schroefdraad	Trou débouchant, filetage	Agujero pasante, rosca	Durchgangslöcher, Gewinde
<b>h8</b>	Tolerantie diameter	Tolérance diamètre	Tolerancia diámetro	Toleranz Durchmesser
<b>0,02</b>	Rechtheidstole- rantie	Tolérance de rectitude	Tolerancia de rectitud	Geradheitstoleranz

	NL	FR	ES	DE
	<b>Algemeen</b>	<b>Général</b>	<b>General</b>	<b>Allgemein</b>
	Fijn/nadraaien	Tournage fin et finition	Mecanizado fino y en acabado	Feinzerspanung / Schlichten
	Midden	Torneage en général	Mecanizado medio	Mittlere Zerspanung
	Ruw/voordraaien	Usinage d'ébauche	Mecanizado en desbaste	Grobzerspanung
	Constante sneddiepte	Coupe continue	Corte continuo	Glatter Schnitt
	Wisselende sneddiepte	Profondeur de coupe variables	Profundidad de corte variable	Wechselende Schnittiefen
	Onderbroken snedes	Coupe interrompue	Corte interrumpido	Unterbrochener Schnitt
	<b>Draaien</b>	<b>Tournage</b>	<b>Tornear</b>	<b>Drehen</b>
$a_p$ (mm)	Sneddiepte	Profondeur de coupe	Profundidad de corte	Schnittiefe
$d_{min}$	Minimale diameter	Diamètre minimum	Diámetro mínimo	Minimale Durchmesser
$f_n$ (mm)	Voeding per omwenteling	Avances par tour	Avances por revolución	Vorschub pro Umdrehung
	<b>Draadsnijden</b>	<b>Fileter</b>	<b>Roscar</b>	<b>Gewindeschneiden</b>
	<b>Borgring steken</b>	<b>Gorges de circlips</b>	<b>Tronzar arandelas de retención</b>	<b>Sprengingplatte steken</b>
$P$ (mm)	Spoed (mm)	Pas (mm)	Paso (mm)	Steigung (mm)
$P$ (inch)	Aantal gangen (inch)	Nombre de filets	Número de hilos	Gewindegänge
$x a_p$	Aantal snedes	Nombre de fils	Número de cortes	Anzahl der Durchgänge
$m$ (H13)	Borgringmaat	Largeur de gorges	Tamaño del arandela de retención	Maß der Sicherungsring
	<b>Steken</b>	<b>Tronçonner</b>	<b>Tronzar</b>	<b>Stechen</b>
	<b>Steekhouder</b>	<b>Lame à tronçonner</b>	<b>Portaplaquite de tronzado</b>	<b>Schneidenträger</b>
$t_{max}$	Max. steekdiepte	Profondeur max. de tronçonnage	Profundidad de tronzado maxima	Max. Stechtiefe
$d_{max}$	Max. steekdiameter	Diamètre max. de tronçonnage	Diametro de tronzado maximo	Max. Stechdurchmesser
	<b>Steekplaten</b>	<b>Plaquette à tronçonner</b>	<b>Plaquita para tronzar</b>	<b>Stechplatten</b>
$a$	Steekbreedte a	Largeur de coupe a	Anchura de corta a	Stechbreite a
$a_p_{max}$	Maximale sneddiepte	Profondeur de coupe max.	Profundidad de corte max.	Maximale Schnittiefe
$f_{rad}$	Voeding radiaal	Avance radial	Avance radial	Vorschub radial
$f_{ax}$	Voeding axiaal	Avance axial	Avance axial	Vorschub axial
$r$	Radius	Rayon	Radio	Radius
	<b>Kartelen</b>	<b>Moleter</b>	<b>Moleteadores</b>	<b>Rändeln</b>
$P$	Steek	Passe	Paso	Teilung
	<b>Frezen</b>	<b>Fraisage</b>	<b>Fresar</b>	<b>Fräsen</b>
$f_z$ (mm)	Voeding per tand	Avances par dent	Avances por diente	Vorschub pro Zahn
	<b>Materiaalgroepen</b>	<b>Groups de matières</b>	<b>Grupos de materiales</b>	<b>Materialgruppen</b>
<b>P</b>	Staal	Acier	Acero	Stahl
<b>H</b>	Geharde staalsoorten	Acier trempé	Acero templado	Gehärtete Stahlsorten
<b>M</b>	Roestvaststaal	Inox	Acero inoxidable	Rostfreier Stahl
<b>K</b>	Gietijzer	Fonte	Fundición	Gusseisen
<b>N</b>	Non-Ferro metalen & kunststoffen	Métaux non-ferreux & Plastiques	Metal non-ferrosos & Plásticos	Nichteisen Legierungen & Kunststoffen
<b>S</b>	Superlegeringen	Alliages super	Aleaciones súper	Superlegeringen

NL Draaien  
 FR Tournage  
 ES Tornear  
 DE Dreh- und Fräswerkzeuge

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











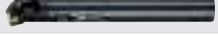














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> 71.130	<b>Phantom</b>		P. 6
> 71.140	<b>Phantom</b>		P. 6
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> 71.160	<b>Phantom</b>		P. 7
> 71.171			P. 7
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> 71.410			P. 8
> 71.420			P. 8
> 71.440			P. 8
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> 71.615			P. 11
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> 71.640			P. 12
> 71.650			P. 12
> 71.670			P. 13
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 SR 3  
 HSS-E 3  
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> 73.180		TPUX		
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> 73.395		SNMG		
> 73.400		SNMM		
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> 73.390 > 73.395 > 73.400	<b>Phantom</b>	SNMA SNMG SNMM		P. 51
> 72.563 > 72.565	<b>Phantom</b>	S-PTFNR A-PTFNR/L		P. 52
> 73.429 > 73.435 > 73.440	<b>Phantom</b>	TNMA TNMG TNMM		P. 53
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> 73.550 > 73.565 > 73.570	<b>Phantom</b>	CCGT CCMT CCMW		P. 57
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> 72.605 > 72.610	<b>Phantom</b>	S-SSSCR A-SSSCR		P. 60
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> 72.615 > 72.620	<b>Phantom</b>	S-STFCR A-STFCR/L		P. 62
> 73.775 > 73.790	<b>Phantom</b>	TCGT TCMT		P. 63
> 72.630	<b>Phantom</b>	A-SVUCR		P. 64

SS 1

HSS-E 1

2

SS 3

HSS-E 3



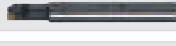












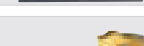







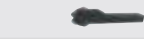






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















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## > 71.110 Phantom

NL HSS-E 5% Toolbit, geharde en geslepen uitvoering  
 FR Barreau HSS-E 5%, trempé et rectifié  
 ES Cuchilla HSS-E 5%, versión templada y rectificada  
 DE HSS-E 5% Drehlinge, gehärtete und geschliffene Ausführung



HSS-E 5% Co DIN 4964-D h14

Ref.	h1	b1	l1	Ref.	h1	b1	l1	Ref.	h1	b1	l1	Ref.	h1	b1	l1
71.110.0625	6	4	160	71.110.1223	12	4	150	71.110.1643	16	6	150	71.110.2545	25	6	160
71.110.0825	8	4	160	71.110.1233	12	5	150	71.110.1653	16	8	150	71.110.2575	25	12	160
71.110.0845	8	6	160	71.110.1243	12	6	150	71.110.1663	16	10	150	71.110.2585	25	16	160
71.110.1023	10	4	150	71.110.1251	12	8	100	71.110.1825	18	4	160	71.110.2595	25	20	160
71.110.1033	10	5	150	71.110.1253	12	8	150	71.110.1845	18	6	160	71.110.3047	30	6	200
71.110.1041	10	6	100	71.110.1263	12	10	150	71.110.2057	20	8	200	71.110.3077	30	12	200
71.110.1043	10	6	150	71.110.1441	14	6	100	71.110.2067	20	10	200	71.110.3097	30	20	200
71.110.1055	10	8	160	71.110.1465	14	10	160	71.110.2073	20	12	150	71.110.3257	32	8	200
71.110.1213	12	3	150	71.110.1625	16	4	160	71.110.2085	20	16	160	71.110.3287	32	16	200

## > 71.130 Phantom

NL HSS-E 5% Toolbit, geharde en geslepen uitvoering  
 FR Barreau HSS-E 5%, trempé et rectifié  
 ES Cuchilla HSS-E 5%, versión templada y rectificada  
 DE HSS-E 5% Drehlinge, gehärtete und geschliffene Ausführung



HSS-E 5% Co DIN 4964-B h14

Ref.	h1	b1	l1	Ref.	h1	b1	l1	Ref.	h1	b1	l1	Ref.	h1	b1	l1
71.130.0410	4	4	100	71.130.0815	8	8	150	71.130.1415	14	14	150	71.130.2015	20	20	150
71.130.0415	4	4	150	71.130.0820	8	8	200	71.130.1420	14	14	200	71.130.2020	20	20	200
71.130.0420	4	4	200	71.130.1010	10	10	100	71.130.1610	16	16	100	71.130.2515	25	25	150
71.130.0510	5	5	100	71.130.1015	10	10	150	71.130.1615	16	16	150	71.130.2520	25	25	200
71.130.0610	6	6	100	71.130.1020	10	10	200	71.130.1620	16	16	200	71.130.3020	30	30	200
71.130.0615	6	6	150	71.130.1210	12	12	100	71.130.1815	18	18	150	71.130.3220	32	32	200
71.130.0620	6	6	200	71.130.1215	12	12	150	71.130.1820	18	18	200				
71.130.0810	8	8	100	71.130.1220	12	12	200	71.130.2010	20	20	100				

## > 71.140 Phantom

NL HSS-E 10% Toolbit, geharde en geslepen uitvoering  
 FR Barreau HSS-E 10%, entièrement trempé et rectifié  
 ES Cuchilla HSS-E 10%, totalmente templado y rectificado  
 DE HSS-E 10% Drehlinge, völlig gehärtet und geschliffen



HSS-E 10% Co DIN 4964-B h14

Ref.	h1	b1	l1	Ref.	h1	b1	l1	Ref.	h1	b1	l1	Ref.	h1	b1	l1
71.140.0410	4	4	100	71.140.0615	6	6	150	71.140.1020	10	10	200	71.140.1615	16	16	150
71.140.0415	4	4	150	71.140.0620	6	6	200	71.140.1210	12	12	100	71.140.1620	16	16	200
71.140.0420	4	4	200	71.140.0810	8	8	100	71.140.1215	12	12	150	71.140.1815	18	18	150
71.140.0510	5	5	100	71.140.0815	8	8	150	71.140.1220	12	12	200	71.140.1820	18	18	200
71.140.0515	5	5	150	71.140.0820	8	8	200	71.140.1415	14	14	150	71.140.2015	20	20	150
71.140.0520	5	5	200	71.140.1010	10	10	100	71.140.1420	14	14	200	71.140.2020	20	20	200
71.140.0610	6	6	100	71.140.1015	10	10	150	71.140.1610	16	16	100	71.140.2520	25	25	200

> **71.150** **Phantom**

NL **HSS-E 5% Toolbit, geharde en geslepen uitvoering**  
 FR **Barreau HSS-E 5%, trempé et rectifié**  
 ES **Cuchilla HSS-E 5%, versión templada y rectificada**  
 DE **HSS-E 5% Drehlinge, gehärtete und geschliffene Ausführung**



HSS-E 5% Co DIN 4964-A h8

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.150.0410	4	100	71.150.0615	6	150	71.150.1020	10	200	71.150.1620	16	200
71.150.0415	4	150	71.150.0620	6	200	71.150.1210	12	100	71.150.1815	18	150
71.150.0420	4	200	71.150.0810	8	100	71.150.1215	12	150	71.150.1820	18	200
71.150.0510	5	100	71.150.0815	8	150	71.150.1220	12	200	71.150.2020	20	200
71.150.0515	5	150	71.150.0820	8	200	71.150.1415	14	150	71.150.2520	25	200
71.150.0520	5	200	71.150.1010	10	100	71.150.1420	14	200			
71.150.0610	6	100	71.150.1015	10	150	71.150.1615	16	150			

> **71.160** **Phantom**

NL **HSS-E 10% Toolbit, geharde en geslepen uitvoering**  
 FR **Barreau HSS-E 10%, trempé et rectifié**  
 ES **Cuchilla HSS-E 10%, versión templada y rectificada**  
 DE **HSS-E 10% Drehlinge, gehärtete und geschliffene Ausführung**



HSS-E 10% Co DIN 4964-A h8

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.160.0310	3	100	71.160.0610	6	100	71.160.1015	10	150	71.160.1615	16	150
71.160.0410	4	100	71.160.0615	6	150	71.160.1020	10	200	71.160.1620	16	200
71.160.0415	4	150	71.160.0620	6	200	71.160.1210	12	100	71.160.1815	18	150
71.160.0420	4	200	71.160.0810	8	100	71.160.1215	12	150	71.160.1820	18	200
71.160.0510	5	100	71.160.0815	8	150	71.160.1220	12	200	71.160.2020	20	200
71.160.0515	5	150	71.160.0820	8	200	71.160.1415	14	150	71.160.2520	25	200
71.160.0520	5	200	71.160.1010	10	100	71.160.1420	14	200			

> **71.171**

NL **VHM-MG Staaf, geslepen, met enkelzijdige fase 45°**  
 FR **Barreau Carbure MG, rectifié, avec phase unilatérale 45°**  
 ES **Barra MD-MG, rectificadas, con fase unilateral 45°**  
 DE **VHM-MG Stäbe, geschmiedet, mit einseitiger Fase 45°**



MG HM NORM K20 K40 h5 0,02

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.171.0610	6	100	71.171.1010	10	100	71.171.1612	16	120			
71.171.0810	8	100	71.171.1210	12	100	71.171.2515	25	150			

> **71.175**

NL **VHM-MG Staaf, geslepen**  
 FR **Barreau Carbure MG, rectifié**  
 ES **Barra MD-MG, rectificadas**  
 DE **VHM-MG Stäbe, geschmiedet**



MG HM NORM K15 K20 h6 0,02

Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1	Ref.	d1	l1
71.175.0200	2	330	71.175.0400	4	330	71.175.0600	6	330	71.175.1000	10	330
71.175.0300	3	330	71.175.0500	5	330	71.175.0800	8	330	71.175.1200	12	330







### > 71.270

NL **HSS Steekbeitel**  
 FR **Outil à saigner HSS**  
 ES **Herramienta de tronzar HSS**  
 DE **HSS Stechdrehmeissel**



Ref.	h1	b1	l1	a	t max
71.270.2005	20	20	210	5	48
71.270.2006	20	20	210	6	60

Ref.	h1	b1	l1	a	t max
71.270.2008	20	20	210	8	80
71.270.2508	25	25	250	8	80

Ref.	h1	b1	l1	a	t max

### > 71.400

NL **HSS Rechte Ruwbeitel, rechts**  
 FR **HSS Outil à charioter droit, à droite**  
 ES **HSS Herramienta de torneado recto, a derecha**  
 DE **HSS Gerader Schruppdrehmeissel, Rechts**



Ref.	h1	b1	l1
71.400.0808	8	8	80
71.400.1010	10	10	100

Ref.	h1	b1	l1
71.400.1212	12	12	125
71.400.1616	16	16	150

Ref.	h1	b1	l1
71.400.2020	20	20	175
71.400.2525	25	25	200

### > 71.410

NL **HSS Gebogen Ruwbeitel, rechts**  
 FR **Outil à charioter courbé HSS, à droite**  
 ES **Herramienta de torneado curva HSS, a derecha**  
 DE **HSS Gebogene Schruppdrehmeissel, Rechts**



Ref.	h1	b1	l1
71.410.0808	8	8	80
71.410.1010	10	10	100

Ref.	h1	b1	l1
71.410.1212	12	12	125
71.410.1616	16	16	150

Ref.	h1	b1	l1
71.410.2020	20	20	175
71.410.2525	25	25	200

### > 71.420

NL **HSS Boorbeitel, rechts, voor doorlopende gaten**  
 FR **Outil à aléser HSS, à droite, pour trous débouchants**  
 ES **Herramienta de torneado interno HSS, a derecha, para agujeros pasantes**  
 DE **HSS Bohrdrehmeissel, Rechts, für Durchgangslöcher**



Ref.	h1	b1	l1	d1 min.
71.420.0606	6	6	130	11
71.420.0808	8	8	140	14
71.420.1010	10	10	160	18

Ref.	h1	b1	l1	d1 min.
71.420.1212	12	12	180	21
71.420.1616	16	16	210	27
71.420.2020	20	20	250	34

Ref.	h1	b1	l1	d1 min.
71.420.2525	25	25	300	43

### > 71.440

NL **HSS Boorbeitel, rechts, voor blinde gaten**  
 FR **Outil à aléser, à droite HSS, pour trous borgnes**  
 ES **Herramienta de torneado interior HSS, a derecha, para agujeros ciegos**  
 DE **HSS Bohrdrehmeissel, Rechts, für Sacklöcher**



Ref.	h1	b1	l1	d1 min.
71.440.0606	6	6	130	11
71.440.0808	8	8	140	14
71.440.1010	10	10	160	18

Ref.	h1	b1	l1	d1 min.
71.440.1212	12	12	180	21
71.440.1616	16	16	180	27
71.440.2020	20	20	250	34

Ref.	h1	b1	l1	d1 min.
71.440.2525	25	25	300	43
71.440.3232	32	32	355	52

> **71.500**

NL **HSS Mesbeitel, rechts**  
 FR **Outil couteau HSS, à droite**  
 ES **Herramienta para corte y acabado HSS, a derecha**  
 DE **HSS Seitendrehmeissel, Rechts**



Ref.	h1	b1	l1
71.500.0808	8	8	80
71.500.1010	10	10	100

Ref.	h1	b1	l1
71.500.1212	12	12	125
71.500.1616	16	16	140

Ref.	h1	b1	l1
71.500.2020	20	20	175
71.500.2525	25	25	200

> **71.510**

NL **HSS Vlakbeitel, recht**  
 FR **Outil pelle HSS, droit**  
 ES **Herramienta de torneado para acabados HSS, recto**  
 DE **HSS Flachdrehmeissel, Gerade**



Ref.	h1	b1	l1
71.510.2012	20	12	125

Ref.	h1	b1	l1
71.510.2516	25	16	140

Ref.	h1	b1	l1
71.510.3220	32	20	170

> **71.520**

NL **HSS Steekbeitel, rechts**  
 FR **Outil à saigner HSS, à droite**  
 ES **Herramienta de tronzar HSS, a derecha**  
 DE **HSS Stechdrehmeissel, Rechts**



Ref.	h1	b1	l1	a
71.520.0808	8	8	100	3
71.520.1010	10	10	100	4
71.520.1208	12	8	110	3
71.520.1212	12	12	110	4

Ref.	h1	b1	l1	a
71.520.1610	16	10	125	4
71.520.1616	16	16	140	5
71.520.2012	20	12	140	5
71.520.2020	20	20	160	4

Ref.	h1	b1	l1	a
71.520.2516	25	16	180	6
71.520.3220	32	20	220	8

> **71.530**

NL **HSS Binnensteekbeitel, rechts, DIN 4963**  
 FR **Outil à chamberer HSS, à droite, DIN 4963**  
 ES **Herramienta para tronzar interior HSS, a derecha, DIN 4963**  
 DE **HSS Innenhakenstechmeissel, Rechts, DIN 4963**



Ref.	h1	b1	l1	d1 min.	a
71.530.0606	6	6	125	12	2
71.530.0808	8	8	140	16	3
71.530.1010	10	10	160	22	3

Ref.	h1	b1	l1	d1 min.	a
71.530.1212	12	12	180	28	3
71.530.1616	16	16	220	32	3
71.530.2020	20	20	250	40	4

Ref.	h1	b1	l1	d1 min.	a
71.530.2525	25	25	315	53	5
71.530.3232	32	32	345	68	6

> **71.550**

NL **HSS Buitendraadsnijbeitel, rechts, 60°**  
 FR **Outil à fileter extérieur HSS, à droite, 60°**  
 ES **Herramienta para roscado exterior HSS, a derecha, 60°**  
 DE **HSS Aussengewinde-Drehmeißel, Rechts, 60°**



Ref.	h1	b1	l1
71.550.0808	8	8	80
71.550.1010	10	10	100
71.550.1212	12	12	125

Ref.	h1	b1	l1
71.550.1610	16	10	110
71.550.2012	20	12	125
71.550.2516	25	16	140

Ref.	h1	b1	l1
71.550.3220	32	20	170





## > 71.570

- NL **HSS Binnendraadsnijbeitel, rechts, 60°**  
 FR **Outil à fileter intérieur HSS, à droite, 60°**  
 ES **Herramienta para roscado interior HSS, a derecha, 60°**  
 DE **HSS Innengewinde-Drehmeißel, Rechts, 60°**



Ref.	h1	b1	l1	d1 min.
71.570.0606	6	6	60	12
71.570.0808	8	8	140	16
71.570.1010	10	10	160	20

Ref.	h1	b1	l1	d1 min.
71.570.1212	12	12	180	24
71.570.1616	16	16	210	32
71.570.2020	20	20	250	38

Ref.	h1	b1	l1	d1 min.
71.570.2525	25	25	300	44



1 SC



1 HSS (+E)



2



3 SC



3 HSS-E



4



5



6



7



> 71.600



NL **HM-tip Rechte Ruwbeitel, rechts**  
 FR **Outil à charioter droit pointe carb. mét., à droite**  
 ES **Herramienta de torneado recto Punta MD , a derecha**  
 DE **HM-Schneiden Gerader Schruppdrehmeissel, Rechts**

<b>HM-TIP</b>	<b>DIN</b> 4971	<b>ISO</b> 1
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Ref.	h1	b1	l1	HM
71.600.1020	10	10	90	P20
71.600.1030	10	10	90	P30
71.600.1090	10	10	90	K10
71.600.1220	12	12	100	P20
71.600.1230	12	12	100	P30
71.600.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.600.1620	16	16	110	P20
71.600.1630	16	16	110	P30
71.600.1690	16	16	110	K10
71.600.2020	20	20	125	P20
71.600.2030	20	20	125	P30
71.600.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.600.2520	25	25	140	P20
71.600.2530	25	25	140	P30
71.600.2590	25	25	140	K10
71.600.3230	32	32	170	P30
71.600.3290	32	32	170	K10

> 71.605



NL **HM-tip Rechte Ruwbeitel, links**  
 FR **Outil à charioter droit pointe carb. mét., gauche**  
 ES **Herramienta de torneado recto Punta MD , a la izquierda**  
 DE **HM-Schneiden Gerader Schruppdrehmeissel, Links**

<b>HM-TIP</b>	<b>DIN</b> 4971	<b>ISO</b> 1
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Ref.	h1	b1	l1	HM
71.605.1020	10	10	90	P20
71.605.1030	10	10	90	P30
71.605.1090	10	10	90	K10
71.605.1220	12	12	100	P20
71.605.1230	12	12	100	P30
71.605.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.605.1620	16	16	110	P20
71.605.1630	16	16	110	P30
71.605.1690	16	16	110	K10
71.605.2020	20	20	125	P20
71.605.2030	20	20	125	P30
71.605.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.605.2520	25	25	140	P20
71.605.2530	25	25	140	P30
71.605.2590	25	25	140	K10
71.605.3290	32	32	170	K10

> 71.610



NL **HM-tip Gebogen Ruwbeitel, rechts**  
 FR **Outil à charioter courbé pointe carb. mét., à droite**  
 ES **Herramienta de torneado curva Punta MD, a derecha**  
 DE **HM-Schneiden Gebogene Schruppdrehmeissel, Rechts**

<b>HM-TIP</b>	<b>DIN</b> 4972	<b>ISO</b> 2
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Ref.	h1	b1	l1	HM
71.610.1020	10	10	90	P20
71.610.1030	10	10	90	P30
71.610.1090	10	10	90	K10
71.610.1220	12	12	100	P20
71.610.1230	12	12	100	P30
71.610.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.610.1620	16	16	110	P20
71.610.1630	16	16	110	P30
71.610.1690	16	16	110	K10
71.610.2020	20	20	125	P20
71.610.2030	20	20	125	P30
71.610.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.610.2520	25	25	140	P20
71.610.2530	25	25	140	P30
71.610.2590	25	25	140	K10
71.610.3220	32	32	170	P20
71.610.3230	32	32	170	P30
71.610.3290	32	32	170	K10

> 71.615



NL **HM-tip Gebogen Ruwbeitel, links**  
 FR **Outil à charioter courbé pointe carb. mét., gauche**  
 ES **Herramienta de torneado curva Punta MD, a la izquierda**  
 DE **HM-Schneiden Gebogene Schruppdrehmeissel, Links**

<b>HM-TIP</b>	<b>DIN</b> 4972	<b>ISO</b> 2
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Ref.	h1	b1	l1	HM
71.615.1020	10	10	90	P20
71.615.1030	10	10	90	P30
71.615.1090	10	10	90	K10
71.615.1220	12	12	100	P20
71.615.1230	12	12	100	P30
71.615.1290	12	12	100	K10

Ref.	h1	b1	l1	HM
71.615.1620	16	16	110	P20
71.615.1630	16	16	110	P30
71.615.1690	16	16	110	K10
71.615.2020	20	20	125	P20
71.615.2030	20	20	125	P30
71.615.2090	20	20	125	K10

Ref.	h1	b1	l1	HM
71.615.2530	25	25	140	P30
71.615.2590	25	25	140	K10
71.615.3230	32	32	170	P30
71.615.3290	32	32	170	K10





## > 71.620

- NL **HM-tip Boorbeitel, rechts, voor doorlopende gaten**  
 FR **Outil à aléser pointe carb. mét., à droite, pour trous débouchants**  
 ES **Herramienta de torneado interno Punta MD, a derecha, para agujeros pasantes**  
 DE **HM-Schneiden Bohrdrehmeissel, Rechts, für Durchgangslöcher**



<b>HM-TIP</b>	<b>DIN</b> 4973	<b>ISO</b> 8	
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Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM
71.620.0820	8	8	125	14	P20	71.620.1230	12	12	180	21	P30	71.620.2090	20	20	250	34	K10
71.620.0830	8	8	125	14	P30	71.620.1290	12	12	180	21	K10	71.620.2530	25	25	300	43	P30
71.620.0890	8	8	125	14	K10	71.620.1620	16	16	210	27	P20	71.620.2590	25	25	300	43	K10
71.620.1020	10	10	150	18	P20	71.620.1630	16	16	210	27	P30	71.620.3230	32	32	355	52	P30
71.620.1030	10	10	150	18	P30	71.620.1690	16	16	210	27	K10	71.620.3290	32	32	355	52	K10
71.620.1090	10	10	150	18	K10	71.620.2020	20	20	250	34	P20						
71.620.1220	12	12	180	21	P20	71.620.2030	20	20	250	34	P30						

## > 71.640

- NL **HM-tip Boorbeitel, rechts, voor doorlopende en blinde gaten**  
 FR **Outil à aléser pointe carb. mét., à droite, pour trous débouchants et borgnes**  
 ES **Herramienta de torneado interior Punta MD, a derecha, para agujeros pasantes y ciegos**  
 DE **HM-Schneiden Bohrdrehmeissel, Rechts, für Durchgangslöcher und Sacklöcher**



<b>HM-TIP</b>	<b>DIN</b> 4974	<b>ISO</b> 9	
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Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM
71.640.0820	8	8	125	14	P20	71.640.1230	12	12	180	21	P30	71.640.2090	20	20	250	34	K10
71.640.0830	8	8	125	14	P30	71.640.1290	12	12	180	21	K10	71.640.2520	25	25	300	43	P20
71.640.0890	8	8	125	14	K10	71.640.1620	16	16	210	27	P20	71.640.2530	25	25	300	43	P30
71.640.1020	10	10	150	18	P20	71.640.1630	16	16	210	27	P30	71.640.2590	25	25	300	43	K10
71.640.1030	10	10	150	18	P30	71.640.1690	16	16	210	27	K10	71.640.3220	32	32	355	52	P20
71.640.1090	10	10	150	18	K10	71.640.2020	20	20	250	34	P20	71.640.3230	32	32	355	52	P30
71.640.1220	12	12	180	21	P20	71.640.2030	20	20	250	34	P30	71.640.3290	32	32	355	52	K10

## > 71.650

- NL **HM-tip Boorbeitel, rechts, voor doorlopende en blinde gaten**  
 FR **Outil à aléser pointe carb. mét., à droite, pour trous débouchants et borgnes**  
 ES **Herramienta de torneado interior Punta MD, a derecha, para agujeros pasantes y ciegos**  
 DE **HM-Schneiden Bohrdrehmeissel, Rechts, für Durchgangslöcher und Sacklöcher**



<b>HM-TIP</b>	<b>DIN</b> 4974	<b>ISO</b> 9	
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Ref.	h1	l1	d1 min.	HM	Ref.	h1	l1	d1 min.	HM	Ref.	h1	l1	d1 min.	HM
71.650.0830	8	125	14	P30	71.650.1230	12	180	21	P30	71.650.2030	20	250	34	P30
71.650.0890	8	125	14	K10	71.650.1290	12	180	21	K10	71.650.2090	20	250	34	K10
71.650.1030	10	150	18	P30	71.650.1630	16	210	27	P30	71.650.2530	25	300	43	P30
71.650.1090	10	150	18	K10	71.650.1690	16	210	27	K10	71.650.2590	25	300	43	K10

> 71.670



NL **HM-tip Puntbeitel, 80°**  
 FR **Outil à retoucher pointe carb. mét. , 80°**  
 ES **Herramienta de cilindrar y afinar Punta MD, 80°**  
 DE **HM-Schneiden Spitzdrehmeissel, 80°**

<b>HM-TIP</b>	<b>DIN</b> 4975	<b>ISO</b> 10
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Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.670.1620	16	10	110	P20	71.670.2030	20	12	125	P30	71.670.2590	25	16	140	K10
71.670.1630	16	10	110	P30	71.670.2090	20	12	125	K10	71.670.3230	32	20	170	P30
71.670.1690	16	10	110	K10	71.670.2520	25	16	140	P20	71.670.3290	32	20	170	K10
71.670.2020	20	12	125	P20	71.670.2530	25	16	140	P30					

> 71.680



NL **HM-tip Vlakbeitel, recht**  
 FR **Outil pelle pointe carb. mét., droit**  
 ES **Herramienta de torneado para acabados Punta MD, recto**  
 DE **HM-Schneiden Flachdrehmeissel, Gerade**

<b>HM-TIP</b>	<b>DIN</b> 4976	<b>ISO</b> 4
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Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.680.1020	10	10	90	P20	71.680.1290	12	12	100	K10	71.680.2030	20	20	125	P30
71.680.1030	10	10	90	P30	71.680.1620	16	16	110	P20	71.680.2090	20	20	125	K10
71.680.1090	10	10	90	K10	71.680.1630	16	16	110	P30	71.680.2530	25	25	140	P30
71.680.1220	12	12	100	P20	71.680.1690	16	16	110	K10	71.680.2590	25	25	140	K10
71.680.1230	12	12	100	P30	71.680.2020	20	20	125	P20					

> 71.690



NL **HM-tip Gebogen Vlakbeitel, rechts**  
 FR **Outil pelle courbé pointe carb. mét., à droite**  
 ES **Herramienta de torneado curva Punta MD para acabados, a derecha**  
 DE **HM-Schneiden Gebogene Flachdrehmeissel, Rechts**

<b>HM-TIP</b>	<b>DIN</b> 4977	<b>ISO</b> 5
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Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.690.1620	16	16	110	P20	71.690.2030	20	20	125	P30	71.690.3230	32	32	170	P30
71.690.1630	16	16	110	P30	71.690.2090	20	20	125	K10	71.690.3290	32	32	170	K10
71.690.1690	16	16	110	K10	71.690.2530	25	25	140	P30					
71.690.2020	20	20	125	P20	71.690.2590	25	25	140	K10					

> 71.695



NL **HM-tip Gebogen Vlakbeitel, links**  
 FR **Outil pelle courbé pointe carb. mét. , gauche**  
 ES **Herramienta de torneado curva Punta MD para acabados, a la izquierda**  
 DE **HM-Schneiden Gebogene Flachdrehmeissel, Links**

<b>HM-TIP</b>	<b>DIN</b> 4977	<b>ISO</b> 5
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Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.695.1630	16	16	110	P30	71.695.2030	20	20	125	P30					
71.695.1690	16	16	110	K10	71.695.2090	20	20	125	K10					





## > 71.700

NL **HM-tip Mesbeitel, rechts**  
 FR **Outil couteau pointe carb. mét., à droite**  
 ES **Herramienta para corte y acabado Punta MD, a derecha**  
 DE **HM-Schneiden Seitendrehmeissel, Rechts**



HM-TIP	DIN	ISO
	4980	6

Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.700.1020	10	10	90	P20	71.700.1620	16	16	110	P20	71.700.2530	25	25	140	P30
71.700.1030	10	10	90	P30	71.700.1630	16	16	110	P30	71.700.2590	25	25	140	K10
71.700.1090	10	10	90	K10	71.700.1690	16	16	110	K10	71.700.3230	32	32	170	P30
71.700.1220	12	12	100	P20	71.700.2020	20	20	125	P20	71.700.3290	32	32	170	K10
71.700.1230	12	12	100	P30	71.700.2030	20	20	125	P30					
71.700.1290	12	12	100	K10	71.700.2090	20	20	125	K10					

## > 71.705 **Phantom**

NL **HM-tip Mesbeitel, links**  
 FR **Outil couteau pointe carb. mét., gauche**  
 ES **Herramienta para corte y acabado punta MD, a la izquierda**  
 DE **HM-Schneiden Seitendrehmeissel, Links**



HM-TIP	DIN	ISO
	4980	6

Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.705.1020	10	10	90	P20	71.705.1620	16	16	110	P20	71.705.2520	25	25	140	P20
71.705.1030	10	10	90	P30	71.705.1630	16	16	110	P30	71.705.2530	25	25	140	P30
71.705.1090	10	12	90	K10	71.705.1690	16	20	110	K10	71.705.2590	25	25	140	K10
71.705.1220	12	12	100	P20	71.705.2020	20	20	125	P20	71.705.3230	32	32	170	P30
71.705.1230	12	12	100	P30	71.705.2030	20	20	125	P30	71.705.3290	32	32	170	K10
71.705.1290	12	16	100	K10	71.705.2090	20	20	125	K10					

## > 71.710 **Phantom**

NL **HM-tip Steekbeitel, rechts**  
 FR **Outil à saigner pointe carb. mét., à droite**  
 ES **Herramienta de tronzar Punta MD, a derecha**  
 DE **HM-Schneiden Stechdrehmeissel, Rechts**



HM-TIP	DIN	ISO
	4981	7

Ref.	h1	b1	l1	a	HM	Ref.	h1	b1	l1	a	HM	Ref.	h1	b1	l1	a	HM
71.710.1220	12	8	100	3	P20	71.710.1690	16	10	110	4	K10	71.710.2530	25	16	140	6	P30
71.710.1230	12	8	100	3	P30	71.710.2020	20	12	125	5	P20	71.710.2590	25	16	140	6	K10
71.710.1290	12	8	100	3	K10	71.710.2030	20	12	125	5	P30	71.710.3230	32	20	170	8	P30
71.710.1620	16	10	110	4	P20	71.710.2090	20	12	125	5	K10	71.710.3290	32	20	170	8	K10
71.710.1630	16	10	110	4	P30	71.710.2520	25	16	140	6	P20						

## > 71.715 **Phantom**

NL **HM-tip Steekbeitel, links**  
 FR **Outil à saigner pointe carb. mét., gauche**  
 ES **Herramienta de tronzar Punta MD, a la izquierda**  
 DE **HM-Schneiden Stechdrehmeissel, Links**



HM-TIP	DIN	ISO
	4981	7

Ref.	h1	b1	l1	a	HM	Ref.	h1	b1	l1	a	HM	Ref.	h1	b1	l1	a	HM
71.715.1220	12	8	100	3	P20	71.715.1690	16	10	110	4	K10	71.715.2530	25	16	140	6	P30
71.715.1230	12	8	100	3	P30	71.715.2020	20	12	125	5	P20	71.715.2590	25	16	140	6	K10
71.715.1290	12	8	100	3	K10	71.715.2030	20	12	125	5	P30	71.715.3230	32	20	170	8	P30
71.715.1620	16	10	110	4	P20	71.715.2090	20	12	125	5	K10	71.715.3290	32	20	170	8	K10
71.715.1630	16	10	110	4	P30	71.715.2520	25	16	140	6	P20						

> 71.730



NL **HM-tip Binnenkamerbeitel, rechts**  
 FR **Outil à chambrer interieur pointe carb. mét., à droite**  
 ES **Herramienta para ranurar interior Punta MD, a derecha**  
 DE **HM-Schneiden Innenhakendrehmeißel, Rechts**

**HM-TIP** **DIN 263** **ISO 11**

Ref.	h1	b1	l1	d1 min.	a	t max	HM	Ref.	h1	b1	l1	d1 min.	a	t max	HM	Ref.	h1	b1	l1	d1 min.	a	t max	HM
71.730.1020	10	10	150	28	3	8	P20	71.730.1620	16	12	210	40	5	12	P20	71.730.2520	25	20	300	63	8	20	P20
71.730.1030	10	10	140	28	3	8	P30	71.730.1630	16	16	210	40	5	12	P30	71.730.2530	25	25	300	63	8	20	P30
71.730.1090	10	10	150	28	3	8	K10	71.730.1690	16	16	210	40	5	12	K10	71.730.2590	25	25	300	63	8	20	K10
71.730.1220	12	10	180	32	4	10	P20	71.730.2020	20	16	250	50	6	16	P20	71.730.3230	32	32	355	80	10	25	P20
71.730.1230	12	12	180	32	4	10	P30	71.730.2030	20	20	250	50	6	16	P30	71.730.3290	32	32	355	80	10	25	K10
71.730.1290	12	12	180	32	4	10	K10	71.730.2090	20	20	250	50	6	16	K10								

> 71.750



NL **HM-tip Buitendraadsnijbeitel, 60°, rechts**  
 FR **Outil à fileter extérieur pointe carb. mét., 60°, à droite**  
 ES **Herramienta para roscado exterior Punta MD, 60°, a derecha**  
 DE **HM-Schneiden Aussengewinde-Drehmeißel, 60°, Rechts**

**HM-TIP** **DIN 282** **ISO 12**

Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.750.1020	10	10	90	P20	71.750.1290	12	12	100	K10	71.750.2030	20	20	125	P30
71.750.1030	10	10	90	P30	71.750.1620	16	16	110	P20	71.750.2090	20	20	125	K10
71.750.1090	10	10	90	K10	71.750.1630	16	16	110	P30	71.750.2530	25	25	140	P30
71.750.1220	12	12	100	P20	71.750.1690	16	16	125	K10	71.750.2590	25	25	140	K10
71.750.1230	12	12	100	P30	71.750.2020	20	20	125	P20					

> 71.760



NL **HM-tip Buitendraadsnijbeitel, 55°, rechts**  
 FR **Outil à fileter extérieur pointe carb. mét., 55°, à droite**  
 ES **Herramienta para roscado exterior Punta MD, 55°, a derecha**  
 DE **HM-Schneiden Aussengewinde-Drehmeißel, 55°, Rechts**

**HM-TIP** **DIN 282**

Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM	Ref.	h1	b1	l1	HM
71.760.1020	10	10	90	P20	71.760.1290	12	12	100	K10	71.760.2030	20	20	125	P30
71.760.1030	10	10	90	P30	71.760.1620	16	16	110	P20	71.760.2520	25	25	140	P20
71.760.1090	10	10	90	K10	71.760.1630	16	16	110	P30	71.760.2530	25	25	140	P30
71.760.1220	12	12	100	P20	71.760.1690	16	16	110	K10	71.760.2590	25	25	140	K10
71.760.1230	12	12	100	P30	71.760.2020	20	20	125	P20					

> 71.770



NL **HM-tip Binnendraadsnijbeitel, 60°, rechts**  
 FR **Outil à fileter intérieur pointe carb. mét., 60°, à droite**  
 ES **Herramienta para roscado interior Punta MD, 60°, a derecha**  
 DE **HM-Schneiden Innengewinde-Drehmeißel, 60°, Rechts**

**HM-TIP** **DIN 283**

Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM
71.770.1020	10	10	150	28	P20	71.770.1290	12	12	180	32	K10	71.770.2030	20	20	250	50	P30
71.770.1030	10	10	150	28	P30	71.770.1620	16	16	210	40	P20	71.770.2090	20	20	250	50	K10
71.770.1090	10	10	150	28	K10	71.770.1630	16	16	210	40	P30	71.770.2530	25	25	300	63	P30
71.770.1220	12	12	180	32	P20	71.770.1690	16	16	210	40	K10	71.770.2590	25	25	300	63	K10
71.770.1230	12	12	180	32	P30	71.770.2020	20	20	250	50	P20						





## > 71.780

NL **HM-tip Binnendraadsnijbeitel, 55°, rechts**  
 FR **Outil à fileter intérieur pointe carb. mét., 55°, à droite**  
 ES **Herramienta para roscado interior Punta MD, 55°, a derecha**  
 DE **HM-Schneiden Innengewinde-Drehmeißel, 55°, Rechts**



**HM-TIP**    **DIN 345**

Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM	Ref.	h1	b1	l1	d1 min.	HM
71.780.1020	10	10	140	28	P20	71.780.1290	12	12	160	32	K10	71.780.2030	20	20	210	50	P30
71.780.1030	10	10	140	28	P30	71.780.1620	16	16	180	40	P20	71.780.2090	20	20	210	50	K10
71.780.1090	10	10	140	28	K10	71.780.1630	16	16	180	40	P30	71.780.2530	25	25	250	63	P30
71.780.1220	12	12	160	32	P20	71.780.1690	16	16	180	40	K10	71.780.2590	25	25	250	63	K10
71.780.1230	12	12	160	32	P30	71.780.2020	20	20	210	50	P20						



1 SC



1 HSS (+E)



2



3 SC



3 HSS-E



4



5



6



7



SP 1



HSS-E 1



2



SP 3



HSS-E 3



4



5



6

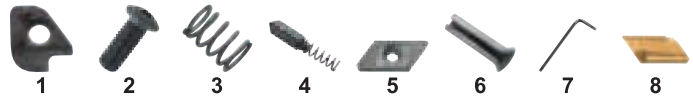
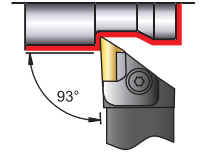
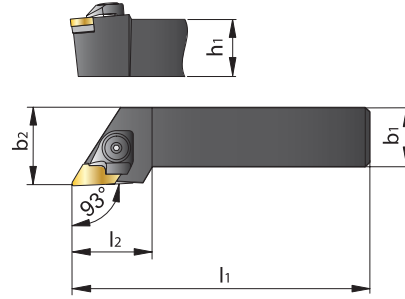


7



## > 72.121 Phantom

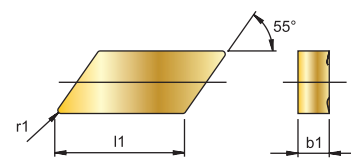
NL WISSELPLAATHOUDER CKJNR/L  
 FR PORTE-PLAQUETTE CKJNR/L  
 ES PORTAPLAQUITA CKJNR/L  
 DE KLEMMHALTER CKJNR/L




























Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7	8
72.121.1250	CKJNR 2525-M16	25	25	32	150	35	73.998.0025	73.998.0065	73.998.0190	73.998.0335	73.998.0285	73.998.0345	73.998.0405	KNUX 1604..
72.121.2250	CKJNL 2525-M16	25	25	32	150	35	73.998.0026	73.998.0065	73.998.0190	73.998.0335	73.998.0286	73.998.0345	73.998.0405	KNUX 1604..

> **73.105** **Phantom**

NL **WISSELPLAAT KNUX**  
 FR **PLAQUETTE KNUX**  
 ES **PLAQUITA KNUX**  
 DE **WENDEPLATTE KNUX**



KN..	$l_1$ (mm)	$b_1$ (mm)	$r_1$ (mm)
16	16,0	4,76	0,5-1,0

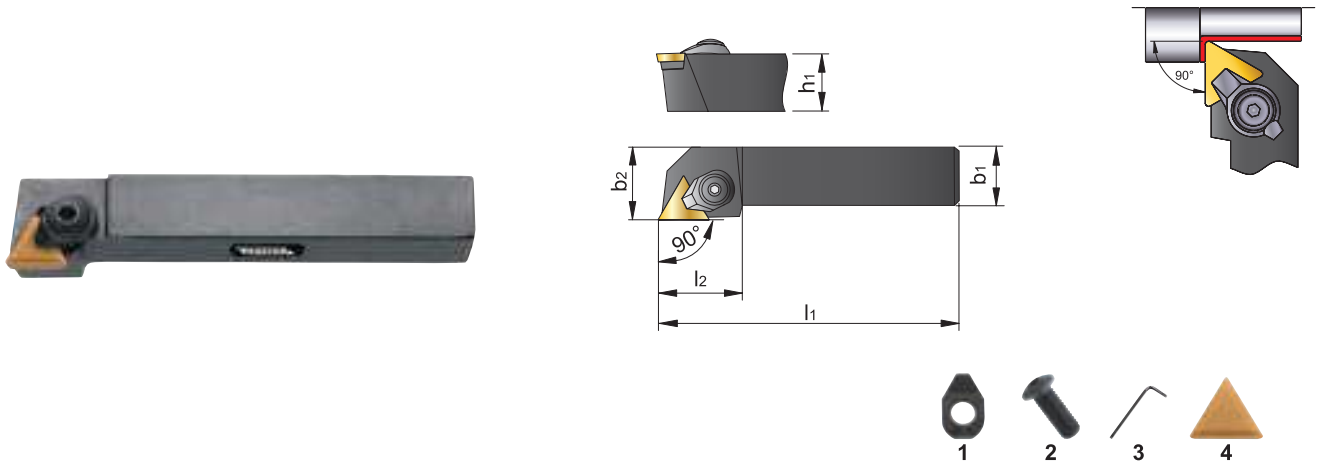
Ref.	Type		$a_p$ (mm)	$f_n$ (mm)	P	M	K	N	S	H					
73.105.0205	KNUX 160405-EL11 HC-P25		1-4	0,2-0,5	<b>P</b>										
73.105.0025	KNUX 160405-ER11 HC-P10/K10		1-4	0,2-0,5	<b>P</b>		<b>K</b>								
73.105.0155	KNUX 160405-ER11 HC-P25		1-4	0,2-0,5	<b>P</b>										
73.105.0355	KNUX 160405-ER12 HC-P25		3-6	0,2-0,5	<b>P</b>										
73.105.0455	KNUX 160410-ER12 HC-P25		3-6	0,2-0,5	<b>P</b>										





## > 72.156 Phantom

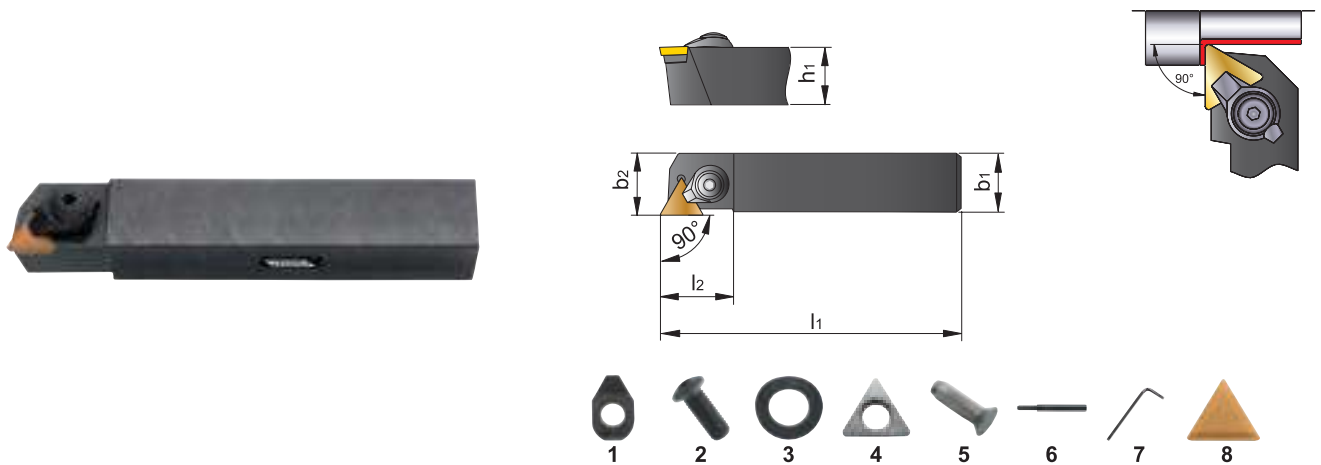
NL WISSELPLAATHOUDER CTGPR/L  
 FR PORTE-PLAQUETTE CTGPR/L  
 ES PORTAPLAQUITA CTGPR/L  
 DE KLEMMHALTER CTGPR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4
72.156.1120	CTGPR 1212 F11	12	12	16	80	16,5	73.998.0020	73.998.0060	73.998.0420	TP.. 1103..
72.156.1150	CTGPR 1616 H11	16	16	20	100	20	73.998.0020	73.998.0060	73.998.0420	TP.. 1103..
72.156.2120	CTGPL 1212 F11	12	12	16	80	16,5	73.998.0020	73.998.0060	73.998.0420	TP.. 1103..

## > 72.160 Phantom

NL WISSELPLAATHOUDER CTAPR/L  
 FR PORTE-PLAQUETTE CTAPR/L  
 ES PORTAPLAQUITA CTAPR/L  
 DE KLEMMHALTER CTAPR/L



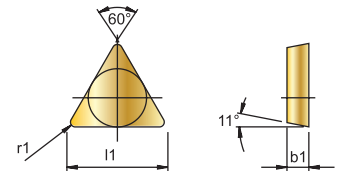
Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7	8
72.160.1200	CTAPR 2020 K16	20	20	20,5	125	30	73.998.0015	73.998.0050	73.998.0390	73.998.0280	73.998.0345	73.998.0440	73.998.0405	TP.. 1603..
72.160.1250	CTAPR 2525 M16	25	25	25,5	150	30	73.998.0015	73.998.0050	73.998.0390	73.998.0280	73.998.0345	73.998.0440	73.998.0405	TP.. 1603..
72.160.2250	CTAPL 2525 M16	25	25	25,5	150	30	73.998.0015	73.998.0050	73.998.0390	73.998.0280	73.998.0345	73.998.0440	73.998.0405	TP.. 1603..



> 73.171  
> 73.175  
> 73.180



NL **WISSELPLAAT TPMR, TPUN, TPUX**  
FR **PLAQUETTE TPMR, TPUN, TPUX**  
ES **PLAQUITA TPMR, TPUN, TPUX**  
DU **WENDEPLATTE TPMR, TPUN, TPUX**



TP..	l1 (mm)	b1 (mm)	r1 (mm)
11	11,0	3,18	0,4-0,8
16	16,5	3,18	0,4-1,2
22	22,0	4,76	0,8

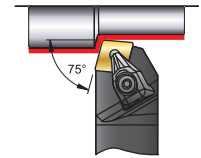
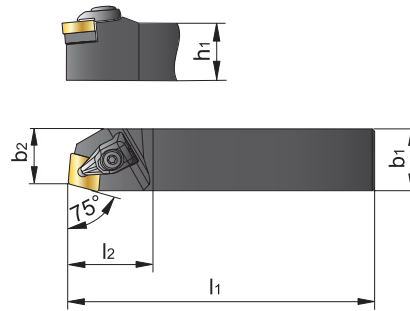
Ref.	Type	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.171.0150	TPMR 110304E HC-P15	0,5-2	0,05-0,15	P	M	K					▽▽		○	○	
73.171.0200	TPMR 110308 HC-P25/M20/S15	0,5-3	0,1-0,25	P	M			S			▽▽		○	○	
73.171.0300	TPMR 160304E HC-P15	0,5-3	0,1-0,25	P	M	K					▽▽		○	○	
73.171.0350	TPMR 160308E HC-P25/M20/S15	0,5-3	0,1-0,25	P	M			S			▽▽		○	○	
73.175.0175	TPUN 110304E P25	0,5-2	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0425	TPUN 160304E P25	0,5-3	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0450	TPUN 160304E HC-P25/M20/S15	0,5-3	0,1-0,25	P	M			S			▽▽		○	○	
73.175.0525	TPUN 160308 P25	1-4	0,2-0,5	P							▽▽		○	○	
73.175.0550	TPUN 160308 HC-P25	1-4	0,2-0,5	P							▽▽		○	○	
73.175.0650	TPUN 160312 HC-P35/M25/S25	1,5-5	0,1-0,3	P	M			S			▽▽	▽	○	○	○
73.180.0100	TPUX 110304FR P25	0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0150	TPUX 110304FL P25	0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0500	TPUX 160304FR P25	0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0550	TPUX 160304FL P25	0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0700	TPUX 160308FR P25	1-4	0,2-0,5	P		K	N				▽▽		○	○	
73.180.0750	TPUX 160308FL P25	1-4	0,2-0,5	P		K	N				▽▽		○	○	





## > 72.225 Phantom

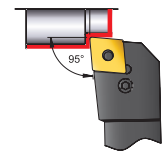
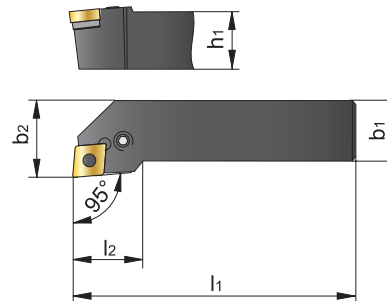
NL WISSELPLAATHOUDER DCBNR/L  
FR PORTE-PLAQUETTE DCBNR/L  
ES PORTAPLAQUITA DCBNR/L  
DE KLEMMHALTER DCBNR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.225.1250	DCBNR 2525 M12	25	25	22	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.225.2250	DCBNL 2525 M12	25	25	22	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..

## > 72.240 Phantom

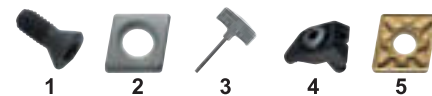
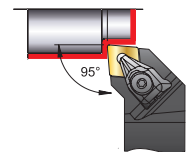
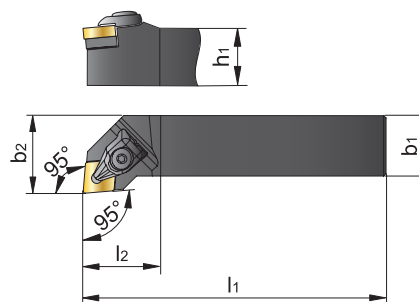
NL WISSELPLAATHOUDER PCLNR/L  
FR PORTE-PLAQUETTE PCLNR/L  
ES PORTAPLAQUITA PCLNR/L  
DE KLEMMHALTER PCLNR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7
72.240.1150	PCLNR 1616 H12	16	16	20	100	26,1	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.1200	PCLNR 2020 K12	20	20	25	125	27,4	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.1250	PCLNR 2525 M12	25	25	32	150	28	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.1320	PCLNR 3225 P12	32	25	32	170	32,6	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.2200	PCLNL 2020 K12	20	20	25	125	27,4	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.2250	PCLNL 2525 M12	25	25	32	150	28	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..
72.240.2320	PCLNL 3225 P12	32	25	32	170	32,6	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.1204..

## > 72.245 Phantom

NL WISSELPLAATHOUDER DCLNR/L  
FR PORTE-PLAQUETTE DCLNR/L  
ES PORTAPLAQUITA DCLNR/L  
DE KLEMMHALTER DCLNR/L

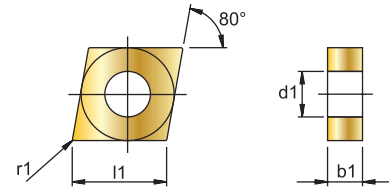


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.245.1200	DCLNR 2020 K12	20	20	25	125	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.1250	DCLNR 2525 M12	25	25	32	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.1320	DCLNR 3225 P12	32	25	32	170	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.2200	DCLNL 2020 K12	20	20	25	125	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.2250	DCLNL 2525 M12	25	25	32	150	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..
72.245.2320	DCLNL 3225 P12	32	25	32	170	32	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.1204..

> 73.225  
> 73.230  
> 73.235



NL **WISSELPLAAT CNMA, CNMG, CNMM, CNGP**  
FR **PLAQUETTE CNMA, CNMG, CNMM, CNGP**  
ES **PLAQUITA CNMA, CNMG, CNMM, CNGP**  
DU **WENDEPLATTE CNMA, CNMG, CNMM, CNGP**



CN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
12	12,7	5,15	4,76	0,4-1,2
19	19,5	7,92	6,35	0,8-1,6

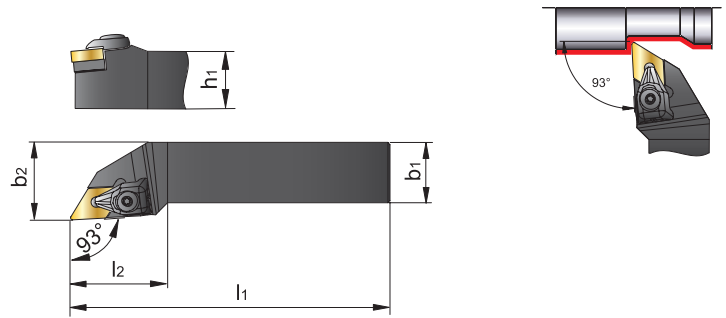
Ref.	Type	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽	▽	▽	○	○	○
73.230.0150	CNMG 120404-NF2 HC-P15/K25/M10	0,3-2,5	0,08-0,25	P	M	K				▽▽			○	○	
73.230.0170	CNMG 120404-NF2 HC-P25/M20	0,3-2,5	0,08-0,25	P	M	K				▽▽			○	○	
73.230.0250	CNMG 120404-NF2 HC-P35/M25/S25	0,2-2,5	0,08-0,25	P	M			S		▽▽			○	○	
73.230.1150	CNMG 120404-NF2E HC-P25/M20/S15	0,5-6	0,05-0,25	P	M			S		▽▽			○	○	
73.230.1200	CNMG 120404-NF2E HC-P15	0,5-6	0,05-0,25	P		K				▽▽			○		
73.230.0900	CNMG 120404-NF3 HC-P35/M25/S25	0,5-5,0	0,12-0,4	P	M			S		▽▽			○	○	
73.230.0700	CNGP 120404-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽			○		
73.230.0750	CNGP 120408-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽			○		
73.230.1300	CNMG 120408-NM3E HC-P25/M20/S15	0,5-6	0,05-0,25	P	M			S			▽		○	○	
73.230.0950	CNMG 120408-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽		○	○	
73.230.1000	CNMG 120408-NM3 HC-P35/M25/S25	1,0-3,5	0,15-0,35	P	M			S			▽		○	○	○
73.230.1050	CNMG 120412-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽		○	○	
73.230.1100	CNMG 120412-NM3 HC-P35/M25/S25	1,0-3,5	0,15-0,35	P	M			S		▽▽			○	○	
73.230.0600	CNMG 120404-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽		○	○	○
73.230.1650	CNMG 120408-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽		○	○	○
73.225.0100	CNMA 120408 HC-P10/K10	1-5	0,3-0,5	P		K					▽		○	○	
73.230.2150	CNMG 120408-NR4E HC-P15	0,5-6	0,2-0,5	P		K					▽	▽	○	○	
73.230.2200	CNMG 120408-NR4 HC-P25/M20	1,5-6,0	0,25-0,5	P	M	K					▽	▽	○	○	○
73.230.2250	CNMG 120408-NR4 HC-P35/M25/S25	1,5-5,0	0,3-0,5	P	M			S			▽	▽	○	○	○
73.235.0150	CNMM 120408-NR5E HC-P25	1-6	0,3-0,8	P								▽	○	○	
73.235.0160	CNMM 120408-NR5 HC-P25/M20	2,5-6,0	0,4-0,6	P	M	K						▽	○	○	○
73.235.0200	CNMM 120412-NR5 HC-P25/M20	2,5-6,0	0,4-0,6	P	M	K						▽	○	○	○
73.235.0350	CNMM 190612-NR5 HC-P15/M15?K25	2,0-10,0	0,4-1,0	P	M	K						▽	○	○	





## > 72.265 Phantom

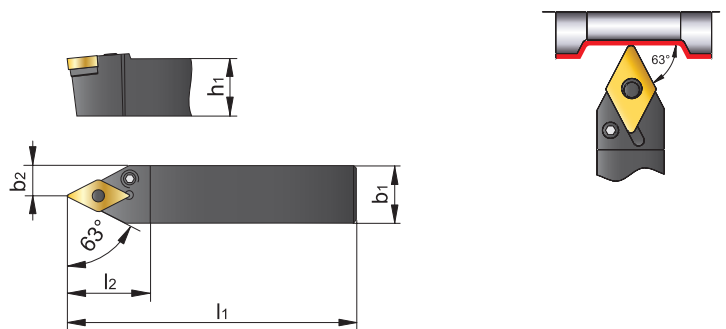
NL WISSELPLAATHOUDER DDJNR/L  
FR PORTE-PLAQUETTE DDJNR/L  
ES PORTAPLAQUITA DDJNR/L  
DE KLEMMHALTER DDJNR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.265.1160	DDJNR 1616 H11	16	16	20	100	33	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.1170	DDJNR 2020 K11	20	20	25	125	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.1200	DDJNR 2020 K15	20	20	25	125	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.1250	DDJNR 2525 M15	25	25	32	150	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.1320	DDJNR 3225 P15	32	25	32	170	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.2160	DDJNL 1616 H11	16	16	20	100	33	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.2170	DDJNL 2020 K11	20	20	25	125	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN..1104..
72.265.2200	DDJNL 2020 K15	20	20	25	125	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.2250	DDJNL 2525 M15	25	25	32	150	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..
72.265.2320	DDJNL 3225 P15	32	25	32	170	40	73.998.0450	73.998.0465	73.998.0494	73.998.0497	DN..1506..

## > 72.280 Phantom

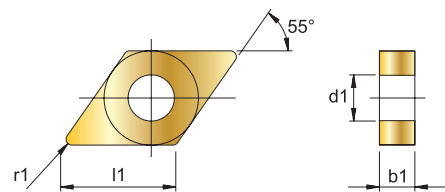
NL WISSELPLAATHOUDER PDNNR/L  
FR PORTE-PLAQUETTE PDNNR/L  
ES PORTAPLAQUITA PDNNR/L  
DE KLEMMHALTER PDNNR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7
72.280.1250	PDNNR 2525 M15	25	25	12,5	150	36,5	73.998.0265	73.998.0120	73.998.0150	73.998.0365	73.998.0200	73.998.0400	DN..1506..
72.280.2250	PDNNL 2525 M15	25	25	12,5	150	36,5	73.998.0265	73.998.0120	73.998.0150	73.998.0365	73.998.0200	73.998.0400	DN..1506..

> **73.275 Phantom**

NL **WISSELPLAAT DNMG, DNGP**  
 FR **PLAQUETTE DNMG, DNGP**  
 ES **PLAQUITA DNMG, DNGP**  
 DE **WENDEPLATTE DNMG, DNGP**



DN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	3,81	4,76	0,4-1,2
15	15,5	5,16	6,35	0,4-1,2

Ref.	Type	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽	▽	○	○	○
73.275.0100	DNMG 110404-NF2 HC-P15/M15/K25	0,2-2,5	0,08-0,3	P	M	K				▽▽		○		
73.275.0150	DNMG 110404-NF2 HC-P35/M25/S25	0,2-2,5	0,08-0,3	P	M			S		▽▽		○	○	
73.275.2400	DNMG 150604-NF2 HC-P25/M20	0,2-2,5	0,08-0,3	P	M	K				▽▽		○	○	
73.275.0850	DNMG 110404-NF3 HC-P35/M25/S25	0,5-5,0	0,12-0,4	P	M			S		▽▽		○	○	
73.275.3150	DNMG 150604-NF3 HC-P35/M25/S25	0,5-5,0	0,12-0,4	P	M			S		▽▽		○	○	
73.275.2300	DNGP 150604-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽		○		
73.275.3000	DNGP 150608-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽		○		
73.275.0900	DNMG 110408-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽▽	○	○	
73.275.3260	DNMG 150608-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽▽	○	○	
73.275.3270	DNMG 150608-NM3 HC-P35/M25/S25	1,0-3,5	0,15-0,35	P	M			S			▽▽	○	○	○
73.275.1400	DNMG 110404-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.1500	DNMG 110408-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.2625	DNMG 150604-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.3850	DNMG 150608-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.4400	DNMG 150608-NR4E HC-P25	0,2-5	0,15-0,4	P							▽▽	▽	○	○
73.275.3400	DNMG 150608-NR4E HC-P25/M20/S15	1,0-3,5	0,15-0,35	P	M			S			▽▽		○	○

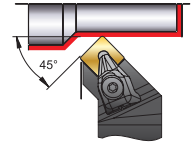
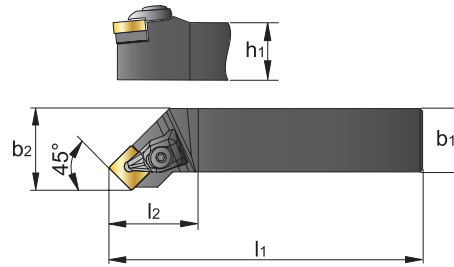






## > 72.325 Phantom

NL WISSELPLAATHOUDER DSSNR/L  
 FR PORTE-PLAQUETTE DSSNR/L  
 ES PORTAPLAQUITA DSSNR/L  
 DE KLEMMHALTER DSSNR/L

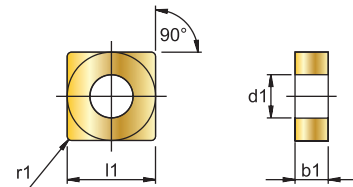


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.325.1200	DSSNR 2020 K12	20	20	25	125	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.1250	DSSNR 2525 M12	25	25	32	150	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.1320	DSSNR 3225 P12	32	25	32	170	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.2200	DSSNL 2020 K12	20	20	25	125	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.2250	DSSNL 2525 M12	25	25	32	150	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..
72.325.2320	DSSNL 3225 P12	32	25	32	170	35	73.998.0450	73.998.0470	73.998.0494	73.998.0497	SN..1204..

> 73.390  
> 73.395  
> 73.400



NL **WISSELPLAAT SNMA, SNMG, SNMM**  
FR **PLAQUETTE SNMA, SNMG, SNMM**  
ES **PLAQUITA SNMA, SNMG, SNMM**  
DE **WENDEPLATTE SNMA, SNMG, SNMM**



SN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
12	12,7	5,15	4,76	0,4-1,2

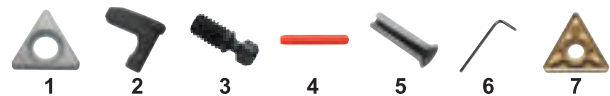
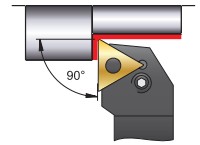
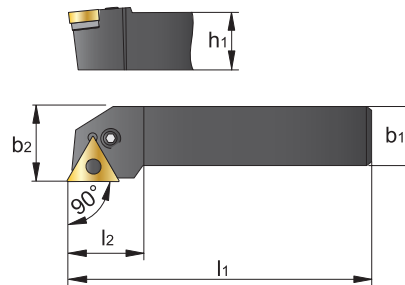
Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽	▽	○	○	○
73.395.0150	SNMG 120404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽		○	○	
73.395.1200	SNMG 120408-NR4E HC-P15		0,15-4	0,2-0,5	P		K				▽▽	▽	○	○	
73.395.0900	SNMG 120408-NR4E HC-P25		0,15-4	0,2-0,5	P						▽▽	▽	○	○	
73.395.1000	SNMG 120408-NM3 HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S		▽▽		○	○	○
73.395.1100	SNMG 120412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K				▽▽		○	○	
73.395.1600	SNMG 120408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽		○	○	○
73.390.0150	SNMA 120408 HC-P10/K10		1-5	0,3-0,5	P		K				▽▽		○	○	
73.395.2150	SNMG 120408-NR4 HC-P25/M20		1,5-5,0	0,3-0,5	P	M	K				▽▽	▽	○	○	○
73.400.0200	SNMM 120408-NR5E HC-P25		0,15-4	0,2-0,5	P							▽	○	○	
73.400.0300	SNMM 120412-NR5E HC-P25		0,15-4	0,2-0,5	P							▽	○	○	





## > 72.340 Phantom

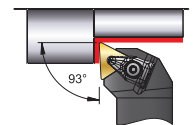
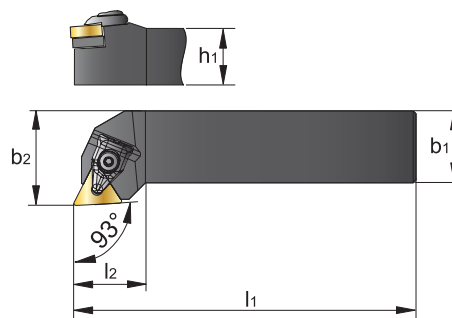
NL WISSELPLAATHOUDER PTGNR/L  
FR PORTE-PLAQUETTE PTGNR/L  
ES PORTAPLAQUITA PTGNR/L  
DE KLEMMHALTER PTGNR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5	6	7
72.340.1150	PTGNR 1616-H16	16	16	20	100	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.1200	PTGNR 2020-K16	20	20	25	125	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.1250	PTGNR 2525-M16	25	25	32	150	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.1320	PTGNR 3225-P16	32	25	32	170	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.2200	PTGNL 2020-K16	20	20	25	125	20	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.2250	PTGNL 2525-M16	25	25	32	150	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.340.2320	PTGNL 3225-P16	32	25	32	170	22,2	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..

## > 72.345 Phantom

NL WISSELPLAATHOUDER DTJNR/L  
FR PORTE-PLAQUETTE DTJNR/L  
ES PORTAPLAQUITA DTJNR/L  
DE KLEMMHALTER DTJNR/L

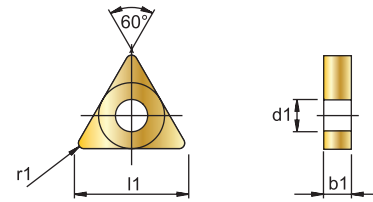


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.345.1200	DTJNR 2020 K16	20	20	25	125	23	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..
72.345.1250	DTJNR 2525 M16	25	25	32	150	24	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..
72.345.2200	DTJNL 2020 K16	20	20	25	125	23	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..
72.345.2250	DTJNL 2525 M16	25	25	32	150	24	73.998.0445	73.998.0475	73.998.0490	73.998.0495	TNM. 1604..

> 73.429  
> 73.435  
> 73.440



NL **WISSELPLAAT TNMA, TNMG, TNMM**  
FR **PLAQUETTE TNMA, TNMG, TNMM**  
ES **PLAQUITA TNMA, TNMG, TNMM**  
DE **WENDEPLATTE TNMA, TNMG, TNMM**



TN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
16	16,5	3,81	4,76	0,4-1,2
22	22,0	5,16	4,76	0,8-1,2

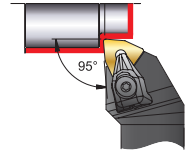
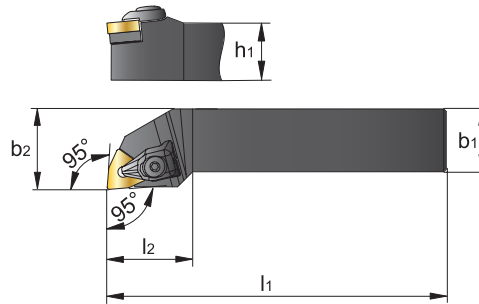
Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H						
73.435.0150	TNMG 160404-ER HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S							
73.435.0250	TNMG 160408-ER HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S							
73.435.0820	TNMG 160404-NF2E HC-P15		0,5-5	0,1-0,35	P		K									
73.435.0850	TNMG 160404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K									
73.435.1625	TNMG 160404-NM3 HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S							
73.435.2800	TNMG 160408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K									
73.435.1590	TNMG 160404-NF2E HC-P25		0,5-5	0,1-0,35	P											
73.435.1600	TNMG 160408-NM3E HC-P15		0,5-5	0,1-0,35	P		K									
73.435.1650	TNMG 160408-NM3E HC-P25		0,5-5	0,1-0,35	P											
73.435.1850	TNMG 160408-NM3E HC-P25/M20/S15		0,5-5	0,1-0,35	P	M			S							
73.435.3450	TNMG 220408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K									
73.435.2250	TNMG 160404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M										
73.435.2300	TNMG 160408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M										
73.429.0200	TNMA 160408 HC-P10/K10		1-5	0,3-0,5	P		K									
73.435.2850	TNMG 160408-NR4E HC-P25		0,5-5	0,1-0,35	P											
73.435.4100	TNMG 220412-NR4E HC-P25		1-4	0,2-0,5	P											
73.440.2850	TNMM 160408-NR6 HC-P25/M20		1-6,0	0,3-0,6	P	M	K									





## > 72.385 Phantom

NL WISSELPLAATHOUDER DWLNR/L  
 FR PORTE-PLAQUETTE DWLNR/L  
 ES PORTAPLAQUITA DWLNR/L  
 DE KLEMMHALTER DWLNR/L

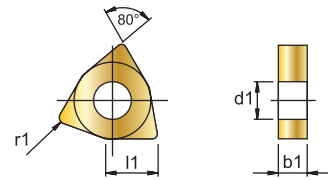


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.385.1150	DWLNR 1616 H06	16	16	20	100	25	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.1170	DWLNR 2020 K06	20	20	25	125	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.1200	DWLNR 2020 K08	20	20	25	125	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..
72.385.1230	DWLNR 2525 M06	25	25	32	150	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.1250	DWLNR 2525 M08	25	25	32	150	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..
72.385.2150	DWLNL 1616 H06	16	16	20	100	25	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.2170	DWLNL 2020 K06	20	20	25	125	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.2200	DWLNL 2020 K08	20	20	25	125	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..
72.385.2230	DWLNL 2525 M06	25	25	32	150	27	73.998.0445	73.998.0480	73.998.0490	73.998.0495	WN..0604..
72.385.2250	DWLNL 2525 M08	25	25	32	150	34	73.998.0450	73.998.0485	73.998.0494	73.998.0497	WN..0804..







> **73.495 Phantom**

NL **WISSELPLAAT WNMG**  
 FR **PLAQUETTE WNMG**  
 ES **PLAQUITA WNMG**  
 DE **WENDEPLATTE WNMG**



WN.	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,6	3,81	4,76	0,4-0,8
08	8,7	5,16	4,76	0,4-1,2

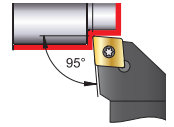
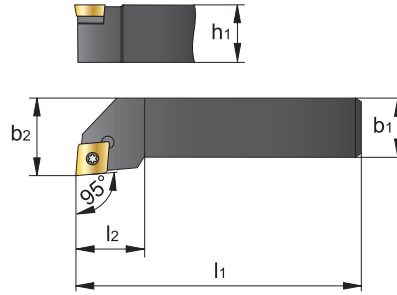
Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽	▽	○	○	○
73.495.0060	WNMG 060404-NF3 HC-P35/M25/S25		0,5-5,0	0,12-0,4	P	M	K		S		▽▽	▽	○	○	
73.495.0350	WNMG 080404-NF3 HC-P35/M25/S25		0,5-5,0	0,12-0,4	P	M	K		S		▽▽	▽	○	○	
73.495.0650	WNMG 080408-NF3 HC-P35/M25/S25		1,5-4,0	0,2-0,38	P	M	K		S		▽▽	▽	○	○	
73.495.0130	WNMG 060408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K				▽		○	○	
73.495.1050	WNMG 080408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K				▽		○	○	
73.495.1100	WNMG 080408-NM3 HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S		▽		○	○	○
73.495.1200	WNMG 080412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K				▽		○	○	
73.495.0960	WNMG 080404-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S		▽		○	○	
73.495.0970	WNMG 080408-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S		▽		○	○	
73.495.0600	WNMG 080404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽		○	○	○
73.495.1750	WNMG 080408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽		○	○	○





## > 72.420 Phantom

NL WISSELPLAATHOUDER SCLCR/L  
 FR PORTE-PLAQUETTE SCLCR/L  
 ES PORTAPLAQUITA SCLCR/L  
 DE KLEMMHALTER SCLCR/L

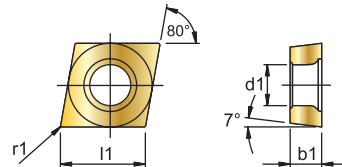


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.420.1080	SCLCR 0808-D06	8	8	10	60	9	-	-	73.998.0080	73.998.0428	CC..0602..
72.420.1100	SCLCR 1010-E06	10	10	12	70	9	-	-	73.998.0080	73.998.0428	CC..0602..
72.420.1120	SCLCR 1212-F09	12	12	16	80	15	-	-	73.998.0070	73.998.0420	CC..09T3..
72.420.1160	SCLCR 1616-H09	16	16	20	100	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC..09T3..
72.420.1200	SCLCR 2020-K09	20	20	25	125	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC..09T3..
72.420.1240	SCLCR 2020-K12	20	20	25	125	20	73.998.0325	73.998.0356	73.998.0072	73.998.0420	CC..1204..
72.420.1300	SCLCR 2525-M12	25	25	32	150	20	73.998.0325	73.998.0356	73.998.0072	73.998.0420	CC..1204..
72.420.2080	SCLCL 0808-D06	8	8	10	60	9	-	-	73.998.0080	73.998.0428	CC..0602..
72.420.2100	SCLCL 1010-E06	10	10	12	70	9	-	-	73.998.0080	73.998.0428	CC..0602..
72.420.2120	SCLCL 1212-F09	12	12	16	80	15	-	-	73.998.0070	73.998.0420	CC..09T3..
72.420.2160	SCLCL 1616-H09	16	16	20	100	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC..09T3..
72.420.2200	SCLCL 2020-K09	20	20	25	125	17	73.998.0320	73.998.0355	73.998.0070	73.998.0420	CC..09T3..

> 73.550  
> 73.565  
> 73.570



NL **WISSELPLAAT CCGT, CCMT, CCMW**  
FR **PLAQUETTE CCGT, CCMT, CCMW**  
ES **PLAQUITA CCGT, CCMT, CCMW**  
DE **WENDEPLATTE CCGT, CCMT, CCMW**



CC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,4	2,80	2,38	0,2-0,8
09	9,7	4,40	3,97	0,2-0,8
12	12,4	5,50	4,76	0,4-0,8

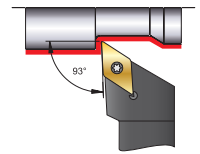
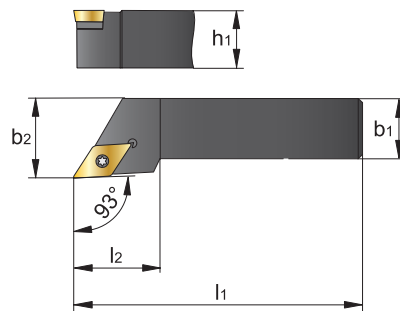
Ref.	Type		$a_p$ (mm)	$f_n$ (mm)	P	M	K	N	S	H						
73.565.0150	CCMT 060204-PF2 CM10		0,2-1,3	0,05-0,22	P	M										
73.565.2750	CCMT 09T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M										
73.565.0700	CCMT 060202-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K									
73.565.0750	CCGT 060202-PF3 HC-P35/M25/S25		0,05-2,5	0,05-0,25	P	M			S							
73.565.0800	CCMT 060204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M			S							
73.565.1150	CCMT 060204-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M										
73.565.3350	CCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K									
73.565.3570	CCMT 09T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M										
73.565.3590	CCMT 09T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M										
73.565.2150	CCMT 060204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K									
76.565.1600	CCMT 060208-PM3 HC-P35/M25/S25		0,05-2,0	0,15-0,25	P	M			S							
73.565.4500	CCMT 09T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K									
73.565.4650	CCMT 09T304-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M										
73.565.4700	CCMT 09T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M										
73.565.4750	CCMT 120404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K									
73.565.4800	CCMT 120408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M										
73.565.1450	CCMT 060204-PM3E HC-P15		0,05-2,5	0,05-0,2	P		K									
73.565.1500	CCMT 060204-PM3E HC-P25/M20/S15		0,05-2,5	0,05-0,2	P	M			S							
73.565.4000	CCMT 09T304-PM3E HC-P15		0,05-3,5	0,05-0,25	P		K									
73.565.4050	CCMT 09T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S							
73.565.4100	CCMT 09T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S							
73.565.4720	CCMT 120404-PM3E HC-P25/M20/S15		0,1-4	0,05-0,5	P	M			S							
73.565.4730	CCMT 120408-PM3E HC-P15		0,1-4	0,05-0,5	P		K									
73.565.4735	CCMT 120408-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,2	P	M			S							
73.550.0175	CCGT 060204-PA2 HC-K10		1-3	0,1-0,75	P	M	K	N								
73.550.0100	CCGT 060202-PA2 K10		0,5-2	0,05-0,12			K	N								
73.550.0150	CCGT 060204-PA2 K10		0,6-3	0,08-0,25			K	N								
73.550.0225	CCGT 09T304-PA2 HC-K10		0,6-4	0,08-0,25	P	M	K	N								
73.550.0200	CCGT 09T304-PA2 K10		0,6-3	0,08-0,25			K	N								
73.550.0250	CCGT 09T308-PA2 K10		0,6-4	0,08-0,25			K	N								
73.570.0200	CCMW 09T304 K20		0,4-3	0,12-0,25			K	N								





## > 72.450 Phantom

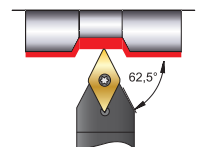
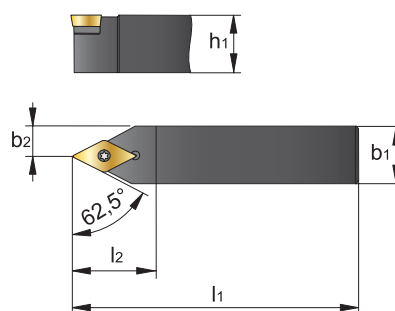
NL WISSELPLAATHOUDER SDJCR/L  
FR PORTE-PLAQUETTE SDJCR/L  
ES PORTAPLAQUITA SDJCR/L  
DE KLEMMHALTER SDJCR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.450.1080	SDJCR 0808-D07	8	8	10	60	13	-	-	73.998.0080	73.998.0430	DC..0702..
72.450.1100	SDJCR 1010-E07	10	10	12	70	13	-	-	73.998.0080	73.998.0430	DC..0702..
72.450.1120	SDJCR 1212-F07	12	12	16	80	14,5	-	-	73.998.0080	73.998.0430	DC..0702..
72.450.1160	SDJCR 1616-H11	16	16	20	100	20	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC..11T3..
72.450.1200	SDJCR 2020-K11	20	20	25	125	20,5	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC..11T3..
72.450.2080	SDJCL 0808-D07	8	8	10	60	13	-	-	73.998.0080	73.998.0430	DC..0702..
72.450.2100	SDJCL 1010-E07	10	10	12	70	13	-	-	73.998.0080	73.998.0430	DC..0702..
72.450.2120	SDJCL 1212-F07	12	12	16	80	14,5	-	-	73.998.0080	73.998.0430	DC..0702..
72.450.2160	SDJCL 1616-H11	16	16	20	100	20	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC..11T3..
72.450.2200	SDJCL 2020-K11	20	20	25	125	20,5	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC..11T3..

## > 72.455 Phantom

NL WISSELPLAATHOUDER SDNCN  
FR PORTE-PLAQUETTE SDNCN  
ES PORTAPLAQUITA SDNCN  
DE KLEMMHALTER SDNCN

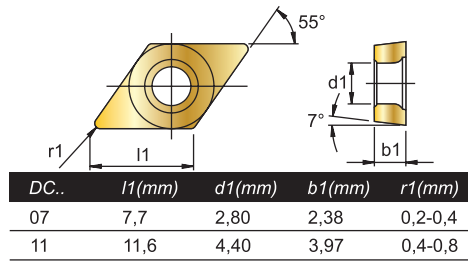


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.455.1080	SDNCN 0808-D07	8	8	4	60	8	-	-	73.998.0080	73.998.0430	DC..0702..
72.455.1100	SDNCN 1010-E07	10	10	5	70	10	-	-	73.998.0080	73.998.0430	DC..0702..
72.455.1120	SDNCN 1212-F07	12	12	6	80	12	-	-	73.998.0080	73.998.0430	DC..0702..
72.455.1160	SDNCN 1616-H11	16	16	8	100	18	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC..11T3..
72.455.1200	SDNCN 2020-K11	20	20	10	125	21	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC..11T3..

> 73.610  
> 73.630



NL **WISSELPLAAT DCGT, DCMT**  
FR **PLAQUETTE DCGT, DCMT**  
ES **PLAQUITA DCGT, DCMT**  
DE **WENDEPLATTE DCGT, DCMT**



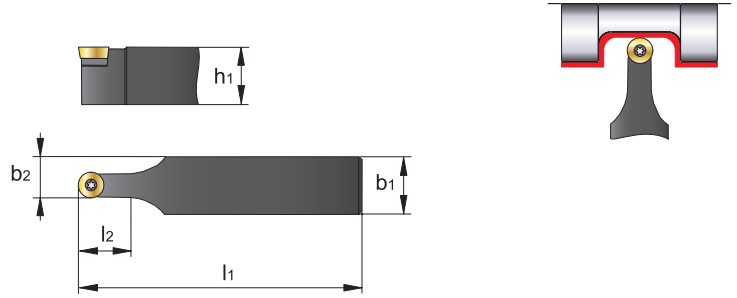
Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.630.0150	DCMT 070204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.630.2250	DCMT 11T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.630.0350	DCMT 070204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○	○	
73.630.2800	DCMT 11T302-PF3 CM10		0,1-1,3	0,03-0,12	P	M					▽▽▽			○		
73.630.2850	DCMT 11T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○	○	
73.630.2900	DCMT 11T304-PF3 HC-P35/M25/S25		0,05-2,5	0,05-0,25	P	M			S		▽▽▽			○	○	○
73.630.3400	DCMT 11T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.630.3450	DCMT 11T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.630.1600	DCMT 070204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.630.1750	DCMT 070208-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.630.3670	DCMT 11T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.630.3720	DCMT 11T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.630.3650	DCMT 11T308-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M			S			▽▽		○	○	○
73.630.3750	DCMT 11T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.630.0950	DCMT 070204-PM3E HC-P25/M20/S15		0,05-2	0,05-0,2	P	M			S			▽▽		○	○	
73.630.3500	DCMT 11T304-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S			▽▽		○	○	
73.630.3600	DCMT 11T308-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S			▽▽		○	○	
73.610.0150	DCGT 070202-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○	○	
73.610.0200	DCGT 070204-PA2 HC-K10		0,6-2,5	0,08-0,25	P	M	K	N				▽▽		○	○	
73.610.0300	DCGT 11T302-PA2 K10		0,5-2	0,05-0,12			K	N				▽▽	▽	○	○	
73.610.0400	DCGT 11T304-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽		○	○	
73.610.0425	DCGT 11T304-PA2 HC-K10		0,6-3	0,08-0,25	P	M	K	N				▽▽		○	○	
73.610.0450	DCGT 11T308-PA2 K10		0,8-3,5	0,1-0,3			K	N				▽▽	▽	○	○	
73.610.0475	DCGT 11T308-PA2 HC-K10		0,8-3,5	0,1-0,3	P	M	K	N				▽▽	▽	○	○	





## > 72.461 Phantom

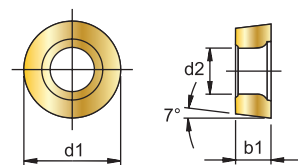
NL WISSELPLAATHOUDER SRDCN  
 FR PORTE-PLAQUETTE SRDCN  
 ES PORTAPLAQUITA SRDCN  
 DE KLEMMHALTER SRDCN




Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.461.1200	SRDCN 2020-K08	20	20	14	125	16,5	-		73.998.0090	73.998.0430	RCMT 0803M0
72.461.1201	SRDCN 2020-K10	20	20	15	125	20	73.998.0292	73.998.0355	73.998.0070	73.998.0420	RCMT 10T3M0
72.461.1250	SRDCN 2525-M10	25	25	17,5	150	20,9	73.998.0292	73.998.0355	73.998.0070	73.998.0420	RCMT 10T3M0

> **73.725 Phantom**

NL **WISSELPLAAT RCMT**  
 FR **PLAQUETTE RCMT**  
 ES **PLAQUITA RCMT**  
 DE **WENDEPLATTE RCMT**



RC..	d1(mm)	d2(mm)	b1(mm)
08	8,0	3,40	3,18
10	10,0	4,00	3,18
12	12,0	4,90	4,76

Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.725.0150	RCMT 0803M0-PM3 HC-P35/M25/S25		0,05-2,0	0,15-0,25	P	M			S			▽▽		○	○	○
73.725.0220	RCMT 10T3M0-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.725.0250	RCMT 1204M0-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.725.0270	RCMT 1204M0-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M			S			▽▽		○	○	○

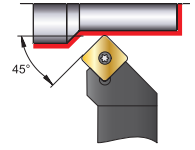
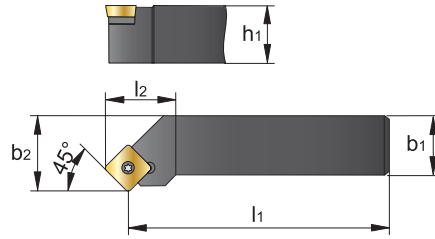






## > 72.485 Phantom

NL WISSELPLAATHOUDER SSSCR  
 FR PORTE-PLAQUETTE SSSCR  
 ES PORTAPLAQUITA SSSCR  
 DE KLEMMHALTER SSSCR

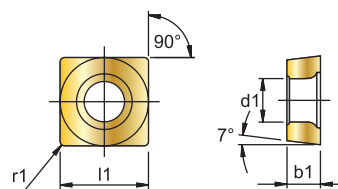


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.485.1120	SSSCR 1212-F09	12	12	16	80	18	-	-	73.998.0070	73.998.0420	SC.T 09T3..
72.485.1160	SSSCR 1616-H09	16	16	20	100	20	73.998.0295	73.998.0355	73.998.0070	73.998.0420	SC.T 09T3..
72.485.1200	SSSCR 2020-K09	20	20	25	125	20	73.998.0295	73.998.0355	73.998.0070	73.998.0420	SC.T 09T3..
72.485.1240	SSSCR 2020-K12	20	20	25	125	25	73.998.0296	73.998.0356	73.998.0072	73.998.0420	SC.T 1204..
72.485.1300	SSSCR 2525-M12	25	25	32	150	25	73.998.0296	73.998.0356	73.998.0072	73.998.0420	SC.T 1204..

> 73.750  
> 73.755



NL **WISSELPLAAT SCGT, SCMT**  
FR **PLAQUETTE SCGT, SCMT**  
ES **PLAQUITA SCGT, SCMT**  
DE **WENDEPLATTE SCGT, SCMT**



SC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
09	9,5	4,40	3,97	0,4-0,8
12	12,7	5,60	4,76	0,4-0,8

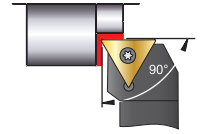
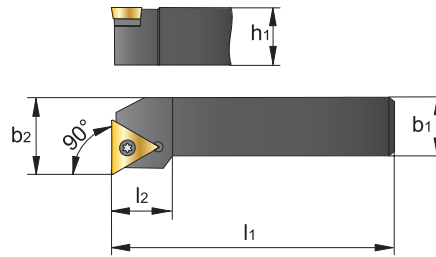
Ref.	Type	Image	a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽	▽	○	◐	◑
73.755.0750	SCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽		○		
73.755.1500	SCMT 09T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽	○	◐	
73.755.1870	SCMT 120408-PM3 HC-P35/M25/S25		0,05-2,0	0,15-0,25	P	M			S		▽▽		○	◐	◑
73.755.1350	SCMT 09T304-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S		▽▽		○	◐	
73.755.1450	SCMT 09T308-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S		▽▽		○	◐	
73.755.1750	SCMT 120408-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S		▽▽		○	◐	
73.750.0150	SCGT 09T304-PA2 K10		0,6-4	0,08-0,25			K	N			▽▽		○	◐	
73.750.0200	SCGT 09T308-PA2 K10		0,7-4	0,1-0,35			K	N			▽▽	▽	○	◐	





## > 72.500 Phantom

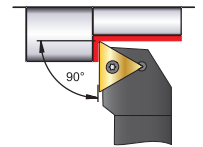
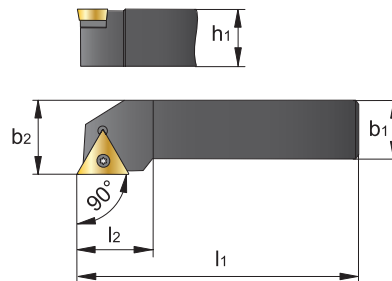
NL WISSELPLAATHOUDER STFGR  
FR PORTE-PLAQUETTE STFGR  
ES PORTAPLAQUITA STFGR  
DE KLEMMHALTER STFGR



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.500.1120	STFCR 1212-F11	12	12	16	80	15	-	-	73.998.0067	73.998.0423	TC.. 1102..
72.500.1160	STFCR 1616-H16	16	16	20	100	20	73.998.0300	73.998.0355	73.998.0080	73.998.0430	TC.. 16T3..
72.500.1200	STFCR 2020-K16	20	20	25	125	20	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..

## > 72.505 Phantom

NL WISSELPLAATHOUDER STGCR/L  
FR PORTE-PLAQUETTE STGCR/L  
ES PORTAPLAQUITA STGCR/L  
DE KLEMMHALTER STGCR/L

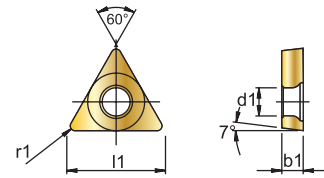


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.505.1120	STGCR 1212-F11	12	12	16	80	15	-	-	73.998.0080	73.998.0430	TC.. 1102..
72.505.1160	STGCR 1616-H16	16	16	20	100	22	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..
72.505.1200	STGCR 2020-K16	20	20	25	125	22	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..
72.505.1240	STGCR 2525-M16	25	25	32	150	22	73.998.0300	-	73.998.0070	73.998.0420	TC.. 16T3..
72.505.2120	STGCL 1212-F11	12	12	16	80	15	-	-	73.998.0080	73.998.0430	TC.. 1102..
72.505.2160	STGCL 1616-H16	16	16	20	100	22	73.998.0300	73.998.0355	73.998.0070	73.998.0420	TC.. 16T3..

> 73.775  
> 73.790



NL WISSELPLAAT TCGT, TCMT  
FR PLAQUETTE TCGT, TCMT  
ES PLAQUITA TCGT, TCMT  
DE WENDEPLATTE TCGT, TCMT



TC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	2,80	2,38	0,2-0,4
16	16,0	4,40	3,97	0,2-0,8

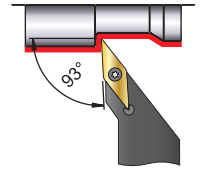
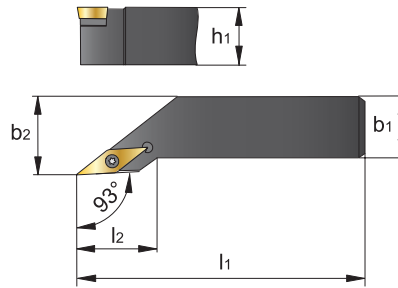
Ref.	Type		ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.790.0150	TCMT 110204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.790.0650	TCMT 110202-PF3 CM10		0,1-1,3	0,03-0,12	P	M					▽▽▽			○		
73.790.0800	TCMT 110208-PF3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K				▽▽▽			○	○	
73.790.2050	TCMT 16T304-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.790.2150	TCMT 16T308-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.790.0750	TCMT 110204-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.790.2100	TCMT 16T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.790.2200	TCMT 16T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.790.1400	TCMT 110204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.790.2850	TCMT 16T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.790.1350	TCMT 110204-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	○	
73.790.1450	TCMT 110208-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	○	
73.790.2300	TCMT 16T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	○	
73.790.2350	TCMT 16T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S			▽▽		○	○	
73.775.0150	TCGT 110202-PA2 K10		0,6-2	0,05-0,12			K	N			▽▽▽	▽▽		○	○	
73.775.0200	TCGT 110204-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽		○	○	
73.775.0750	TCGT 16T304-PA2 K10		0,6-4	0,08-0,25			K	N				▽▽		○	○	
73.775.0800	TCGT 16T308-PA2 K10		0,8-4	0,1-0,35			K	N				▽▽	▽	○	○	





## > 72.515 Phantom

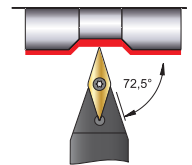
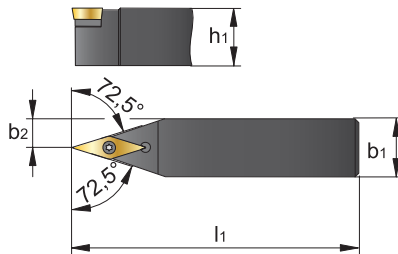
NL WISSELPLAATHOUDER SVJCR/L  
FR PORTE-PLAQUETTE SVJCR/L  
ES PORTAPLAQUITA SVJCR/L  
DE KLEMMHALTER SVJCR/L



Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.515.1160	SVJCR 1616-H11	16	16	20	100	21,5	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.1200	SVJCR 2020-K11	20	20	25	125	23	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.1201	SVJCR 2020-K16	20	20	25	125	29,5	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..
72.515.1250	SVJCR 2525-M16	25	25	32	150	32,5	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..
72.515.2160	SVJCL 1616-H11	16	16	20	100	21,5	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.2200	SVJCL 2020-K11	20	20	25	125	23	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.515.2250	SVJCL 2525-M16	25	25	32	150	32,5	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..

## > 72.520 Phantom

NL WISSELPLAATHOUDER SVVCN  
FR PORTE-PLAQUETTE SVVCN  
ES PORTAPLAQUITA SVVCN  
DE KLEMMHALTER SVVCN

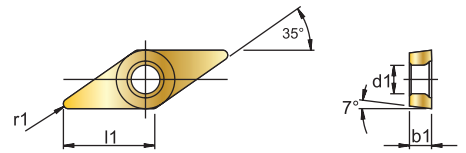


Ref.	Type	h1	b1	b2	l1	l2	1	2	3	4	5
72.520.1160	SVVCN 1616-H11	16	16	8	100	25	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.520.1200	SVVCN 2020-K11	20	20	10	125	32	-	-	73.998.0080	73.998.0430	VC.T 1103..
72.520.1250	SVVCN 2525-M16	25	25	12,5	150	40	73.998.0305	73.998.0355	73.998.0070	73.998.0420	VC.T 1604..

> 73.830  
> 73.840



NL **WISSELPLAAT VCMT, VCGT**  
FR **PLAQUETTE VCMT, VCGT**  
ES **PLAQUITA VCMT, VCGT**  
DE **WENDEPLATTE VCMT, VCGT**



VC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,0	2,80	3,18	0,2-0,8
16	16,6	4,40	4,76	0,2-0,8

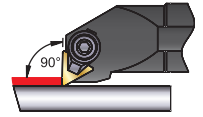
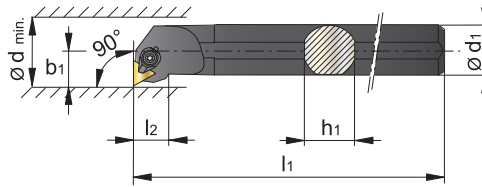
Ref.	Type	Image	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.840.0200	VCMT 110304-PF2 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽	▽▽		○		
73.840.0150	VCGT 110302-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.840.0850	VCMT 160404-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.840.1000	VCMT 160404-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M					▽▽▽			○	○	○
73.840.1500	VCMT 160404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.840.1550	VCMT 160408-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.840.1050	VCMT 160408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.830.0150	VCGT 110302-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○	○	
73.830.0200	VCGT 110304-PA2 K10		0,6-2,5	0,08-0,25			K	N				▽▽		○	○	
73.830.0250	VCGT 110308-PA2 K10		0,8-3	0,1-0,35			K	N				▽▽	▽	○	○	
73.830.0800	VCGT 160404-PA2 K10		0,3-1,5	0,05-0,15			K	N				▽▽		○	○	
73.830.0850	VCGT 160408-PA2 K10		1-7	0,3-0,6			K	N				▽▽	▽	○	○	





## > 72.540 Phantom

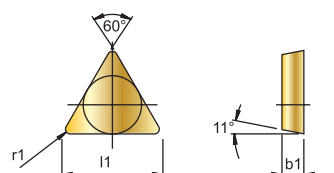
NL WISSELPLAATHOUDER S-CTFPR/L,  
FR PORTE-PLAQUETTE S-CTFPR/L  
ES PORTAPLAQUITA S-CTFPR/L  
DE KLEMMHALTER S-CTFPR/L



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6
72.540.1120	S12Q-CTFPR 11	11	9	17	12	180	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.1160	S16R-CTFPR 11	15	11	21	16	200	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.1200	S20S-CTFPR 11	18	13	25	20	250	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.1250	S25T-CTFPR 16	23	17	31,5	25	300	20	73.998.0280	73.998.0010	73.998.0055	73.998.0345	73.998.0435	TP.. 1603..
72.540.1320	S32U-CTFPR 16	30	22	40	32	350	20	73.998.0280	73.998.0010	73.998.0055	73.998.0345	73.998.0435	TP.. 1603..
72.540.2160	S16R-CTFPL 11	15	11	21	16	200	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.2200	S20S-CTFPL 11	18	13	25	20	250	15	-	73.998.0020	73.998.0060	-	73.998.0420	TP.. 1103..
72.540.2250	S25T-CTFPL 16	23	17	31,5	25	300	20	73.998.0280	73.998.0010	73.998.0055	73.998.0345	73.998.0435	TP.. 1603..



> 73.171  
> 73.175  
> 73.180



TP..	l1 (mm)	b1 (mm)	r1 (mm)
11	11,0	3,18	0,4-0,8
16	16,5	3,18	0,4-1,2
22	22,0	4,76	0,8

NL **WISSELPLAAT TPMR, TPUN, TPUX**  
FR **PLAQUETTE TPMR, TPUN, TPUX**  
ES **PLAQUITA TPMR, TPUN, TPUX**  
DU **WENDEPLATTE TPMR, TPUN, TPUX**

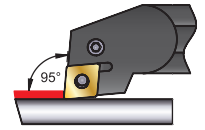
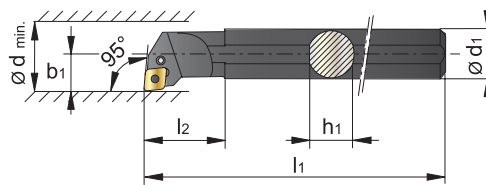
Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.171.0150	TPMR 110304E HC-P15		0,5-2	0,05-0,15	P	M	K					▽▽		○	○	
73.171.0200	TPMR 110308 HC-P25/M20/S15		0,5-3	0,1-0,25	P	M			S			▽▽		○	○	
73.171.0300	TPMR 160304E HC-P15		0,5-3	0,1-0,25	P	M	K					▽▽		○	○	
73.171.0350	TPMR 160308E HC-P25/M20/S15		0,5-3	0,1-0,25	P	M			S			▽▽		○	○	
73.175.0175	TPUN 110304E P25		0,5-2	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0425	TPUN 160304E P25		0,5-3	0,05-0,15	P						▽▽▽	▽▽		○		
73.175.0450	TPUN 160304E HC-P25/M20/S15		0,5-3	0,1-0,25	P	M			S			▽▽		○	○	
73.175.0525	TPUN 160308 P25		1-4	0,2-0,5	P							▽▽		○	○	
73.175.0550	TPUN 160308 HC-P25		1-4	0,2-0,5	P							▽▽		○	○	
73.175.0650	TPUN 160312 HC-P35/M25/S25		1,5-5	0,1-0,3	P	M			S			▽▽	▽	○	○	○
73.180.0100	TPUX 110304FR P25		0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0150	TPUX 110304FL P25		0,5-2	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0500	TPUX 160304FR P25		0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0550	TPUX 160304FL P25		0,5-3	0,05-0,15	P	M		N			▽▽▽	▽▽		○		
73.180.0700	TPUX 160308FR P25		1-4	0,2-0,5	P		K	N				▽▽		○	○	
73.180.0750	TPUX 160308FL P25		1-4	0,2-0,5	P		K	N				▽▽		○	○	





## > 72.545 Phantom

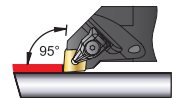
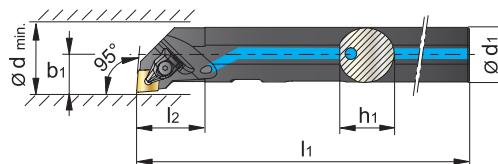
NL WISSELPLAATHOUDER S-PCLNR  
FR PORTE-PLAQUETTE S-PCLNR  
ES PORTAPLAQUITA S-PCLNR  
DE KLEMMHALTER S-PCLNR



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6	7
72.545.1250	S25T-PCLNR 12	23	17	32	25	300	21	73.998.0230	73.998.0100	73.998.0155	73.998.0365	73.998.0200	73.998.0400	CN.. 1204..
72.545.1320	S32U-PCLNR 12	30	22	40	32	350	24,1	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.. 1204..
72.545.1400	S40V-PCLNR 12	38	27	50	40	400	24,1	73.998.0230	73.998.0100	73.998.0150	73.998.0365	73.998.0200	73.998.0400	CN.. 1204..

## > 72.555 Phantom

NL WISSELPLAATHOUDER A-DCLNR/L  
FR PORTE-PLAQUETTE A-DCLNR/L  
ES PORTAPLAQUITA A-DCLNR/L  
DE KLEMMHALTER A-DCLNR/L

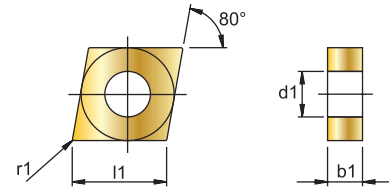


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.555.1250	A25R DCLNR 12	24	17	32	25	200	36	-		73.998.0494	73.998.0497	CN.. 1204..
72.555.1320	A32S DCLNR 12	31	22	40	32	250	40	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..
72.555.1400	A40T DCLNR 12	39	27	50	40	300	45	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..
72.555.2250	A25R DCLNL 12	24	17	32	25	200	36	-		73.998.0494	73.998.0497	CN.. 1204..
72.555.2320	A32S DCLNL 12	31	22	40	32	250	40	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..
72.555.2400	A40T DCLNL 12	39	27	50	40	300	45	73.998.0450	73.998.0455	73.998.0494	73.998.0497	CN.. 1204..

> 73.225  
> 73.230  
> 73.235



NL **WISSELPLAAT CNMA, CNMG, CNMM, CNGP**  
FR **PLAQUETTE CNMA, CNMG, CNMM, CNGP**  
ES **PLAQUITA CNMA, CNMG, CNMM, CNGP**  
DU **WENDEPLATTE CNMA, CNMG, CNMM, CNGP**



CN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
12	12,7	5,15	4,76	0,4-1,2
19	19,5	7,92	6,35	0,8-1,6

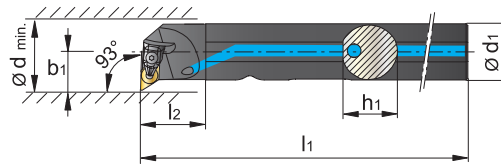
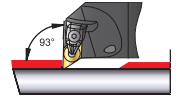
Ref.	Type	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽	▽	▽	○	○	○
73.230.0150	CNMG 120404-NF2 HC-P15/K25/M10	0,3-2,5	0,08-0,25	P	M	K				▽▽			○	○	
73.230.0170	CNMG 120404-NF2 HC-P25/M20	0,3-2,5	0,08-0,25	P	M	K				▽▽			○	○	
73.230.0250	CNMG 120404-NF2 HC-P35/M25/S25	0,2-2,5	0,08-0,25	P	M			S		▽▽			○	○	
73.230.1150	CNMG 120404-NF2E HC-P25/M20/S15	0,5-6	0,05-0,25	P	M			S		▽▽			○	○	
73.230.1200	CNMG 120404-NF2E HC-P15	0,5-6	0,05-0,25	P		K				▽▽			○		
73.230.0900	CNMG 120404-NF3 HC-P35/M25/S25	0,5-5,0	0,12-0,4	P	M			S		▽▽			○	○	
73.230.0700	CNGP 120404-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽			○		
73.230.0750	CNGP 120408-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽			○		
73.230.1300	CNMG 120408-NM3E HC-P25/M20/S15	0,5-6	0,05-0,25	P	M			S			▽		○	○	
73.230.0950	CNMG 120408-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽		○	○	
73.230.1000	CNMG 120408-NM3 HC-P35/M25/S25	1,0-3,5	0,15-0,35	P	M			S			▽		○	○	○
73.230.1050	CNMG 120412-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽		○	○	
73.230.1100	CNMG 120412-NM3 HC-P35/M25/S25	1,0-3,5	0,15-0,35	P	M			S		▽▽			○	○	
73.230.0600	CNMG 120404-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽		○	○	○
73.230.1650	CNMG 120408-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽		○	○	○
73.225.0100	CNMA 120408 HC-P10/K10	1-5	0,3-0,5	P		K					▽		○	○	
73.230.2150	CNMG 120408-NR4E HC-P15	0,5-6	0,2-0,5	P		K					▽	▽	○	○	
73.230.2200	CNMG 120408-NR4 HC-P25/M20	1,5-6,0	0,25-0,5	P	M	K					▽	▽	○	○	○
73.230.2250	CNMG 120408-NR4 HC-P35/M25/S25	1,5-5,0	0,3-0,5	P	M			S			▽	▽	○	○	○
73.235.0150	CNMM 120408-NR5E HC-P25	1-6	0,3-0,8	P								▽	○	○	
73.235.0160	CNMM 120408-NR5 HC-P25/M20	2,5-6,0	0,4-0,6	P	M	K						▽	○	○	○
73.235.0200	CNMM 120412-NR5 HC-P25/M20	2,5-6,0	0,4-0,6	P	M	K						▽	○	○	○
73.235.0350	CNMM 190612-NR5 HC-P15/M15?K25	2,0-10,0	0,4-1,0	P	M	K						▽	○	○	





## > 72.558 Phantom

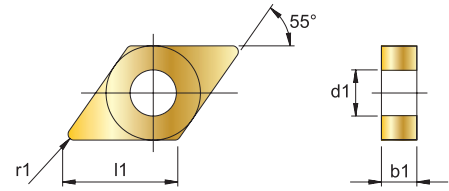
NL WISSELPLAATHOUDER A-DDUNR/L  
 FR PORTE-PLAQUETTE A-DDUNR/L  
 ES PORTAPLAQUITA A-DDUNR/L  
 DE KLEMMHALTER A-DDUNR/L



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.558.1250	A25R DDUNR 11	24	17	32	25	200	30	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..
72.558.1320	A32S DDUNR 11	31	22	40	32	250	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..
72.558.2250	A25R DDUNL 11	24	17	32	25	200	30	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..
72.558.2320	A32S DDUNL 11	31	22	40	32	250	40	73.998.0445	73.998.0460	73.998.0490	73.998.0496	DN.. 1104..

> **73.275 Phantom**

NL **WISSELPLAAT DNMG, DNGP**  
 FR **PLAQUETTE DNMG, DNGP**  
 ES **PLAQUITA DNMG, DNGP**  
 DE **WENDEPLATTE DNMG, DNGP**



DN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	3,81	4,76	0,4-1,2
15	15,5	5,16	6,35	0,4-1,2

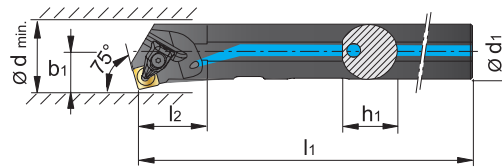
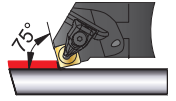
Ref.	Type	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽	▽	○	○	○
73.275.0100	DNMG 110404-NF2 HC-P15/M15/K25	0,2-2,5	0,08-0,3	P	M	K				▽▽		○		
73.275.0150	DNMG 110404-NF2 HC-P35/M25/S25	0,2-2,5	0,08-0,3	P	M			S		▽▽		○	○	
73.275.2400	DNMG 150604-NF2 HC-P25/M20	0,2-2,5	0,08-0,3	P	M	K				▽▽		○	○	
73.275.0850	DNMG 110404-NF3 HC-P35/M25/S25	0,5-5,0	0,12-0,4	P	M			S		▽▽		○	○	
73.275.3150	DNMG 150604-NF3 HC-P35/M25/S25	0,5-5,0	0,12-0,4	P	M			S		▽▽		○	○	
73.275.2300	DNGP 150604-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽		○		
73.275.3000	DNGP 150608-NF4 HC-M20/K30	0,05-4,0	0,05-0,25	P	M	K	N	S		▽▽		○		
73.275.0900	DNMG 110408-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽▽	○	○	
73.275.3260	DNMG 150608-NM3 HC-P25/M20	1,0-3,5	0,15-0,35	P	M	K					▽▽	○	○	
73.275.3270	DNMG 150608-NM3 HC-P35/M25/S25	1,0-3,5	0,15-0,35	P	M			S			▽▽	○	○	○
73.275.1400	DNMG 110404-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.1500	DNMG 110408-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.2625	DNMG 150604-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.3850	DNMG 150608-NM4 HC-P35/M30	1,0-4,0	0,2-0,4	P	M						▽▽	○	○	○
73.275.4400	DNMG 150608-NR4E HC-P25	0,2-5	0,15-0,4	P							▽▽	▽	○	○
73.275.3400	DNMG 150608-NR4E HC-P25/M20/S15	1,0-3,5	0,15-0,35	P	M			S			▽▽		○	○





## > 72.560 Phantom

NL WISSELPLAATHOUDER A-DSKNR/L  
 FR PORTE-PLAQUETTE A-DSKNR/L  
 ES PORTAPLAQUITA A-DSKNR/L  
 DE KLEMMHALTER A-DSKNR/L

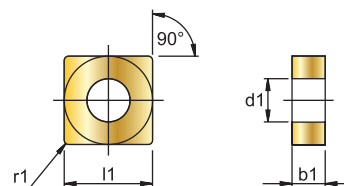


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.560.1320	A32S DSKNR 12	31	22	40	32	250	40	739980450	739980470	739980494	739980497	SN.. 1204..
72.560.2320	A32S DSKNL 12	31	22	40	32	250	40	739980450	739980470	739980494	739980497	SN.. 1204..

> 73.390  
> 73.395  
> 73.400



NL **WISSELPLAAT SNMA, SNMG, SNMM**  
FR **PLAQUETTE SNMA, SNMG, SNMM**  
ES **PLAQUITA SNMA, SNMG, SNMM**  
DE **WENDEPLATTE SNMA, SNMG, SNMM**



SN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
12	12,7	5,15	4,76	0,4-1,2

Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽	▽	○	○	○
73.395.0150	SNMG 120404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K				▽▽		○	○	
73.395.1200	SNMG 120408-NR4E HC-P15		0,15-4	0,2-0,5	P		K				▽▽	▽	○	○	
73.395.0900	SNMG 120408-NR4E HC-P25		0,15-4	0,2-0,5	P						▽▽	▽	○	○	
73.395.1000	SNMG 120408-NM3 HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S		▽▽		○	○	○
73.395.1100	SNMG 120412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K				▽▽		○	○	
73.395.1600	SNMG 120408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M					▽▽		○	○	○
73.390.0150	SNMA 120408 HC-P10/K10		1-5	0,3-0,5	P		K				▽▽		○	○	
73.395.2150	SNMG 120408-NR4 HC-P25/M20		1,5-5,0	0,3-0,5	P	M	K				▽▽	▽	○	○	○
73.400.0200	SNMM 120408-NR5E HC-P25		0,15-4	0,2-0,5	P							▽	○	○	
73.400.0300	SNMM 120412-NR5E HC-P25		0,15-4	0,2-0,5	P							▽	○	○	

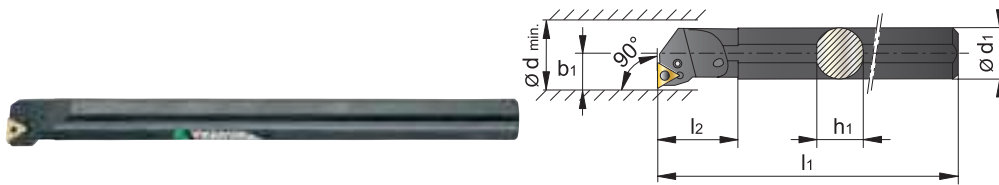
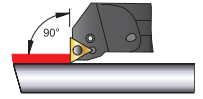






## > 72.563 Phantom

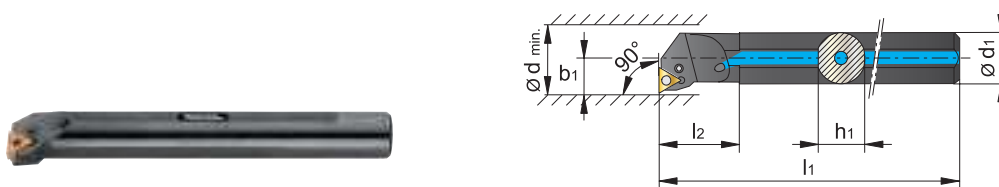
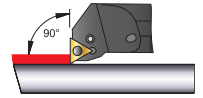
NL WISSELPLAATHOUDER S-PTFNR  
FR PORTE-PLAQUETTE S-PTFNR  
ES PORTAPLAQUITA S-PTFNR  
DE KLEMMHALTER S-PTFNR



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6	7
72.563.1250	S25T-PTFNR 16	23	17	32	25	300	17,5	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0204	73.998.0410	TNM. 1604..

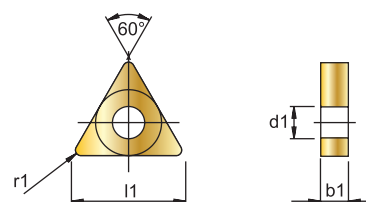
## > 72.565 Phantom

NL WISSELPLAATHOUDER A-PTFNR/L  
FR PORTE-PLAQUETTE A-PTFNR/L  
ES PORTAPLAQUITA A-PTFNR/L  
DE KLEMMHALTER A-PTFNR/L



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6	7
72.565.1250	A25R-PTFNR 16	23	17	32	25	200	17,5	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.565.1320	A32S-PTFNR 16	30	22	40	32	250	18	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.565.2250	A25R-PTFNL 16	23	17	32	25	200	17,5	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..
72.565.2320	A32S-PTFNL 16	30	22	40	32	250	180	73.998.0270	73.998.0125	73.998.0170	73.998.0380	73.998.0215	73.998.0410	TNM. 1604..

> 73.429  
> 73.435  
> 73.440



TN..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
16	16,5	3,81	4,76	0,4-1,2
22	22,0	5,16	4,76	0,8-1,2

NL **WISSELPLAAT TNMA, TNMG, TNMM**  
FR **PLAQUETTE TNMA, TNMG, TNMM**  
ES **PLAQUITA TNMA, TNMG, TNMM**  
DE **WENDEPLATTE TNMA, TNMG, TNMM**

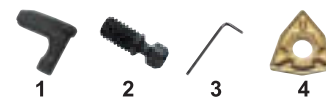
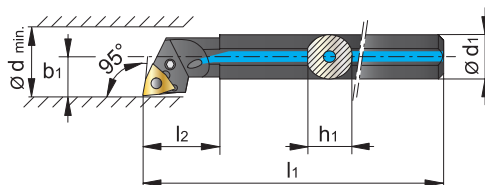
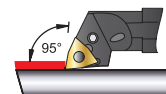
Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H						
73.435.0150	TNMG 160404-ER HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S							
73.435.0250	TNMG 160408-ER HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S							
73.435.0820	TNMG 160404-NF2E HC-P15		0,5-5	0,1-0,35	P		K									
73.435.0850	TNMG 160404-NF2 HC-P25/M20		0,2-2,5	0,08-0,3	P	M	K									
73.435.1625	TNMG 160404-NM3 HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S							
73.435.2800	TNMG 160408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K									
73.435.1590	TNMG 160404-NF2E HC-P25		0,5-5	0,1-0,35	P											
73.435.1600	TNMG 160408-NM3E HC-P15		0,5-5	0,1-0,35	P		K									
73.435.1650	TNMG 160408-NM3E HC-P25		0,5-5	0,1-0,35	P											
73.435.1850	TNMG 160408-NM3E HC-P25/M20/S15		0,5-5	0,1-0,35	P	M			S							
73.435.3450	TNMG 220408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K									
73.435.2250	TNMG 160404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M										
73.435.2300	TNMG 160408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M										
73.429.0200	TNMA 160408 HC-P10/K10		1-5	0,3-0,5	P		K									
73.435.2850	TNMG 160408-NR4E HC-P25		0,5-5	0,1-0,35	P											
73.435.4100	TNMG 220412-NR4E HC-P25		1-4	0,2-0,5	P											
73.440.2850	TNMM 160408-NR6 HC-P25/M20		1-6,0	0,3-0,6	P	M	K									





## > 72.570 Phantom

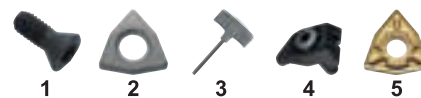
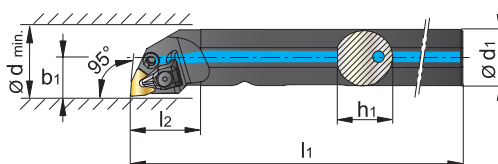
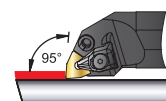
NL WISSELPLAATHOUDER A-PWLNLR/L  
 FR PORTE-PLAQUETTE A-PWLNLR/L  
 ES PORTAPLAQUITA A-PWLNLR/L  
 DE KLEMMHALTER A-PWLNLR/L



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4
72.570.1200	A20Q-PWLNLR 06	19	13	25	20	180	19,5	73.998.0135	73.998.0167	73.998.0415	WNM. 0604..
72.570.2200	A20Q-PWLNLR 06	19	13	25	20	180	19,5	73.998.0135	73.998.0167	73.998.0415	WNM. 0604..

## > 72.575 Phantom

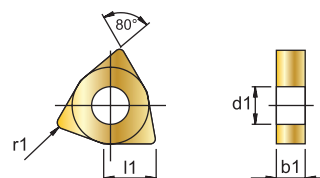
NL WISSELPLAATHOUDER A-DWLNLR/L  
 FR PORTE-PLAQUETTE A-DWLNLR/L  
 ES PORTAPLAQUITA A-DWLNLR/L  
 DE KLEMMHALTER A-DWLNLR/L



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5	6
72.575.1250	A25R DWLNLR 06	24	17	32	25	200	32	73.998.0445	73.998.0480	73.998.0490	73.998.0495	-	WNM. 0604..
72.575.1320	A32S DWLNLR 08	31	22	40	32	250	40	73.998.0450	73.998.0485	73.998.0494	73.998.0497	73.998.0498	WNM. 0804..
72.575.2250	A25R DWLNLR 06	24	17	32	25	200	32	73.998.0445	73.998.0480	73.998.0490	73.998.0495	-	WNM. 0604..
72.575.2320	A32S DWLNLR 08	31	22	40	32	250	40	73.998.0450	73.998.0485	73.998.0494	73.998.0497	73.998.0498	WNM. 0804..

> **73.495** **Phantom**

NL **WISSELPLAAT WNMG**  
 FR **PLAQUETTE WNMG**  
 ES **PLAQUITA WNMG**  
 DE **WENDEPLATTE WNMG**



WN.	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,6	3,81	4,76	0,4-0,8
08	8,7	5,16	4,76	0,4-1,2

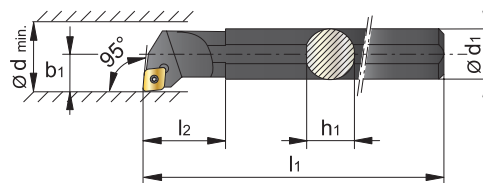
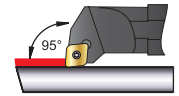
Ref.	Type		a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H						
73.495.0060	WNMG 060404-NF3 HC-P35/M25/S25		0,5-5,0	0,12-0,4	P	M	K		S							
73.495.0350	WNMG 080404-NF3 HC-P35/M25/S25		0,5-5,0	0,12-0,4	P	M	K		S							
73.495.0650	WNMG 080408-NF3 HC-P35/M25/S25		1,5-4,0	0,2-0,38	P	M	K		S							
73.495.0130	WNMG 060408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K									
73.495.1050	WNMG 080408-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K									
73.495.1100	WNMG 080408-NM3 HC-P35/M25/S25		1,0-3,5	0,15-0,35	P	M			S							
73.495.1200	WNMG 080412-NM3 HC-P25/M20		1,0-3,5	0,15-0,35	P	M	K									
73.495.0960	WNMG 080404-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S							
73.495.0970	WNMG 080408-NM3E HC-P25/M20/S15		0,5-6	0,1-0,35	P	M			S							
73.495.0600	WNMG 080404-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M										
73.495.1750	WNMG 080408-NM4 HC-P35/M30		1,0-4,0	0,2-0,4	P	M										





## > 72.585 Phantom

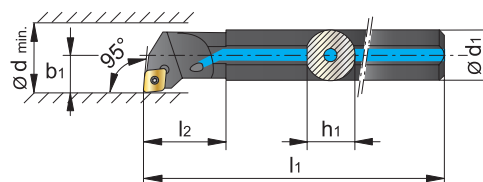
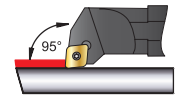
NL WISSELPLAATHOUDER S-SCLCR  
FR PORTE-PLAQUETTE S-SCLCR  
ES PORTAPLAQUITA S-SCLCR  
DE KLEMMHALTER S-SCLCR



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.585.1080	S08H-SCLCR 06	7	5	11	8	100	8	73.998.0085	73.998.0430	CC..0602..
72.585.1100	S10K-SCLCR 06	9	7	13	10	125	10	73.998.0085	73.998.0430	CC..0602..
72.585.1120	S12Q-SCLCR 06	11	9	16	12	180	10	73.998.0085	73.998.0430	CC..0602..
72.585.1160	S16R-SCLCR 09	15	11	20	16	200	16	73.998.0075	73.998.0420	CC..09T3..
72.585.1200	S20S-SCLCR 09	18	13	25	20	250	16	73.998.0075	73.998.0420	CC..09T3..
72.585.1250	S25T-SCLCR 09	23	17	32	25	300	16	73.998.0070	73.998.0420	CC..09T3..

## > 72.590 Phantom

NL WISSELPLAATHOUDER A-SCLCR/L  
FR PORTE-PLAQUETTE A-SCLCR/L  
ES PORTAPLAQUITA A-SCLCR/L  
DE KLEMMHALTER A-SCLCR/L

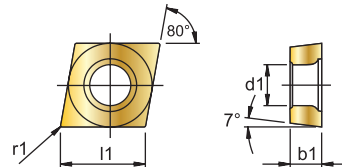


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.590.1080	A08F-SCLCR 06	7,5	5	11	8	80	8	73.998.0085	73.998.0430	CC..0602..
72.590.1100	A10H-SCLCR 06	9,5	7	13	10	100	10	73.998.0085	73.998.0430	CC..0602..
72.590.1120	A12K-SCLCR 06	11,5	9	16	12	125	10	73.998.0085	73.998.0430	CC..0602..
72.590.1160	A16M-SCLCR 09	15,5	11	20	16	150	16	73.998.0075	73.998.0420	CC..09T3..
72.590.1200	A20Q-SCLCR 09	19	13	25	20	180	16	73.998.0074	73.998.0420	CC..09T3..
72.590.1250	A25R-SCLCR 09	24	17	31,5	25	200	16	73.998.0074	73.998.0420	CC..09T3..
72.590.2080	A08F-SCLCL 06	7,5	5	11	8	80	8	73.998.0085	73.998.0430	CC..0602..
72.590.2100	A10H-SCLCL 06	9,5	7	13	10	100	10	73.998.0085	73.998.0430	CC..0602..
72.590.2120	A12K-SCLCL 06	11,5	9	16	12	125	10	73.998.0085	73.998.0430	CC..0602..
72.590.2160	A16M-SCLCL 09	15,5	11	20	16	150	16	73.998.0075	73.998.0420	CC..09T3..
72.590.2200	A20Q-SCLCL 09	19	13	25	20	180	16	73.998.0074	73.998.0420	CC..09T3..
72.590.2250	A25R-SCLCL 09	24	17	31,5	25	200	16	73.998.0074	73.998.0420	CC..09T3..

> 73.550  
> 73.565  
> 73.570



NL **WISSELPLAAT CCGT, CCMT, CCMW**  
FR **PLAQUETTE CCGT, CCMT, CCMW**  
ES **PLAQUITA CCGT, CCMT, CCMW**  
DE **WENDEPLATTE CCGT, CCMT, CCMW**



CC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
06	6,4	2,80	2,38	0,2-0,8
09	9,7	4,40	3,97	0,2-0,8
12	12,4	5,50	4,76	0,4-0,8

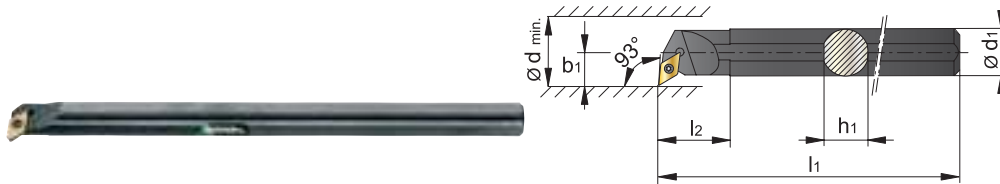
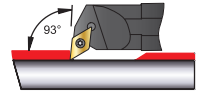
Ref.	Type		ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.565.0150	CCMT 060204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.565.2750	CCMT 09T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.565.0700	CCMT 060202-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○	○	
73.565.0750	CCGT 060202-PF3 HC-P35/M25/S25		0,05-2,5	0,05-0,25	P	M			S		▽▽▽			○	○	○
73.565.0800	CCMT 060204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M			S		▽▽▽			○	○	
73.565.1150	CCMT 060204-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M					▽▽▽			○	○	○
73.565.3350	CCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽▽			○	○	
73.565.3570	CCMT 09T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.565.3590	CCMT 09T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.565.2150	CCMT 060204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
76.565.1600	CCMT 060208-PM3 HC-P35/M25/S25		0,05-2,0	0,15-0,25	P	M			S			▽▽		○	○	○
73.565.4500	CCMT 09T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.565.4650	CCMT 09T304-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.565.4700	CCMT 09T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.565.4750	CCMT 120404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.565.4800	CCMT 120408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.565.1450	CCMT 060204-PM3E HC-P15		0,05-2,5	0,05-0,2	P		K					▽▽		○		
73.565.1500	CCMT 060204-PM3E HC-P25/M20/S15		0,05-2,5	0,05-0,2	P	M			S			▽▽		○	○	
73.565.4000	CCMT 09T304-PM3E HC-P15		0,05-3,5	0,05-0,25	P		K					▽▽		○		
73.565.4050	CCMT 09T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S			▽▽		○	○	
73.565.4100	CCMT 09T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,25	P	M			S			▽▽		○	○	
73.565.4720	CCMT 120404-PM3E HC-P25/M20/S15		0,1-4	0,05-0,5	P	M			S			▽▽		○	○	
73.565.4730	CCMT 120408-PM3E HC-P15		0,1-4	0,05-0,5	P		K					▽▽		○		
73.565.4735	CCMT 120408-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,2	P	M			S			▽▽		○	○	
73.550.0175	CCGT 060204-PA2 HC-K10		1-3	0,1-0,75	P	M	K	N				▽▽		○	○	
73.550.0100	CCGT 060202-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○	○	
73.550.0150	CCGT 060204-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽		○	○	
73.550.0225	CCGT 09T304-PA2 HC-K10		0,6-4	0,08-0,25	P	M	K	N				▽▽		○	○	
73.550.0200	CCGT 09T304-PA2 K10		0,6-3	0,08-0,25			K	N			▽▽▽	▽▽		○	○	
73.550.0250	CCGT 09T308-PA2 K10		0,6-4	0,08-0,25			K	N				▽▽	▽	○	○	
73.570.0200	CCMW 09T304 K20		0,4-3	0,12-0,25			K	N			▽▽▽	▽▽		○		

SR 1  
HSS-E 1  
2  
SR 3  
HSS-E 3  
4  
5  
6  
7



## > 72.595 Phantom

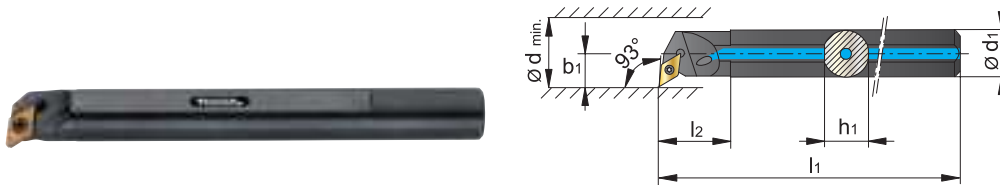
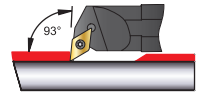
NL WISSELPLAATHOUDER S-SDUCR  
FR PORTE-PLAQUETTE S-SDUCR  
ES PORTAPLAQUITA S-SDUCR  
DE KLEMMHALTER S-SDUCR



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.595.1120	S12Q-SDUCR 07	11	9	16	12	180	12,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.595.1160	S16R-SDUCR 07	14,5	11	20	16	200	16,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.595.1200	S20S-SDUCR 11	18	13	25	20	250	20,5	-	-	73.998.0075	73.998.0420	DC.. 11T3..
72.595.1250	S25T-SDUCR 11	23	17	32	25	300	26	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..

## > 72.600 Phantom

NL WISSELPLAATHOUDER A-SDUCR/L  
FR PORTE-PLAQUETTE A-SDUCR/L  
ES PORTAPLAQUITA A-SDUCR/L  
DE KLEMMHALTER A-SDUCR/L



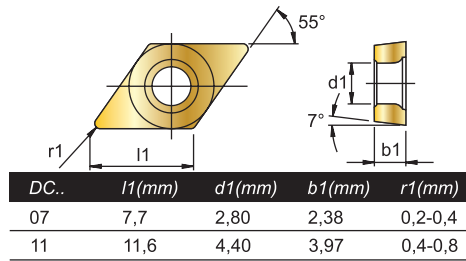
Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3	4	5
72.600.1120	A12K-SDUCR 07	11,5	9	17	12	125	12,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.1160	A16M-SDUCR 07	15,5	11	21	16	150	16,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.1200	A20Q-SDUCR 11	19	13	25	20	180	21	-	-	73.998.0075	73.998.0420	DC.. 11T3..
72.600.1250	A25R-SDUCR 11	24	17	31,5	25	200	26	73.998.0290	73.998.0355	73.998.0070	73.998.0420	DC.. 11T3..
72.600.2120	A12K-SDUCL 07	11,5	9	17	12	125	12,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.2160	A16M-SDUCL 07	15,5	11	21	16	150	16,5	-	-	73.998.0080	73.998.0430	DC.. 0702..
72.600.2200	A20Q-SDUCL 11	19	13	20	25	180	21	-	-	73.998.0075	73.998.0420	DC.. 11T3..



> 73.610  
> 73.630



NL **WISSELPLAAT DCGT, DCMT**  
FR **PLAQUETTE DCGT, DCMT**  
ES **PLAQUITA DCGT, DCMT**  
DE **WENDEPLATTE DCGT, DCMT**



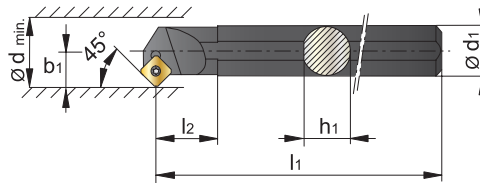
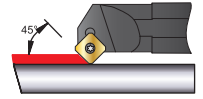
Ref.	Type		$a_p$ (mm)	$f_n$ (mm)	P	M	K	N	S	H						
73.630.0150	DCMT 070204-PF2 CM10		0,2-1,3	0,05-0,22	P	M										
73.630.2250	DCMT 11T304-PF2 CM10		0,2-1,3	0,05-0,22	P	M										
73.630.0350	DCMT 070204-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K									
73.630.2800	DCMT 11T302-PF3 CM10		0,1-1,3	0,03-0,12	P	M										
73.630.2850	DCMT 11T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K									
73.630.2900	DCMT 11T304-PF3 HC-P35/M25/S25		0,05-2,5	0,05-0,25	P	M			S							
73.630.3400	DCMT 11T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M										
73.630.3450	DCMT 11T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M										
73.630.1600	DCMT 070204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K									
73.630.1750	DCMT 070208-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K									
73.630.3670	DCMT 11T304-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K									
73.630.3720	DCMT 11T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K									
73.630.3650	DCMT 11T308-PM3 HC-P35/M25		0,05-2,0	0,15-0,25	P	M			S							
73.630.3750	DCMT 11T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M										
73.630.0950	DCMT 070204-PM3E HC-P25/M20/S15		0,05-2	0,05-0,2	P	M			S							
73.630.3500	DCMT 11T304-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S							
73.630.3600	DCMT 11T308-PM3E HC-P25/M20/S15		0,05-3	0,05-0,35	P	M			S							
73.610.0150	DCGT 070202-PA2 K10		0,5-2	0,05-0,12			K	N								
73.610.0200	DCGT 070204-PA2 HC-K10		0,6-2,5	0,08-0,25	P	M	K	N								
73.610.0300	DCGT 11T302-PA2 K10		0,5-2	0,05-0,12			K	N								
73.610.0400	DCGT 11T304-PA2 K10		0,6-3	0,08-0,25			K	N								
73.610.0425	DCGT 11T304-PA2 HC-K10		0,6-3	0,08-0,25	P	M	K	N								
73.610.0450	DCGT 11T308-PA2 K10		0,8-3,5	0,1-0,3			K	N								
73.610.0475	DCGT 11T308-PA2 HC-K10		0,8-3,5	0,1-0,3	P	M	K	N								





## > 72.605 Phantom

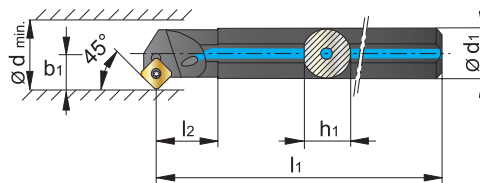
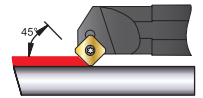
NL WISSELPLAATHOUDER S-SSSCR  
 FR PORTE-PLAQUETTE S-SSSCR  
 ES PORTAPLAQUITA S-SSSCR  
 DE KLEMMHALTER S-SSSCR



Ref.	Type	h1	b1	d min.	d1	l1	1	2	3
72.605.1160	S16R-SSSCR 09	15	11	21	16	200	73.998.0075	73.998.0420	SC..09T...

## > 72.610 Phantom

NL WISSELPLAATHOUDER A-SSSCR  
 FR PORTE-PLAQUETTE A-SSSCR  
 ES PORTAPLAQUITA A-SSSCR  
 DE KLEMMHALTER A-SSSCR

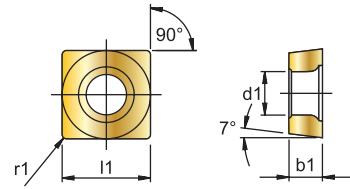


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.610.1160	A16M-SSSCR 09	16	11	21	16	150	129	73.998.0075	73.998.0420	SC..09T3..
72.610.1200	A20Q-SSSCR 09	19	13	25	20	180	132	73.998.0075	73.998.0420	SC..09T3..

> 73.750  
> 73.755



NL **WISSELPLAAT SCGT, SCMT**  
FR **PLAQUETTE SCGT, SCMT**  
ES **PLAQUITA SCGT, SCMT**  
DE **WENDEPLATTE SCGT, SCMT**



SC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
09	9,5	4,40	3,97	0,4-0,8
12	12,7	5,60	4,76	0,4-0,8

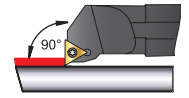
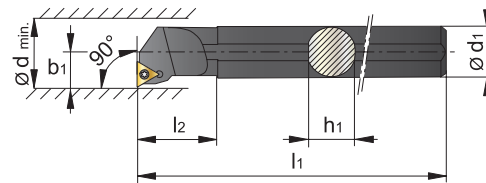
Ref.	Type	Image	a <sub>p</sub> (mm)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽	▽	○	◐	◑
73.755.0750	SCMT 09T304-PF3 HC-P25/M20		0,05-2,5	0,05-0,25	P	M	K				▽▽		○		
73.755.1500	SCMT 09T308-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽	○	◐	
73.755.1870	SCMT 120408-PM3 HC-P35/M25/S25		0,05-2,0	0,15-0,25	P	M			S		▽▽		○	◐	◑
73.755.1350	SCMT 09T304-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S		▽▽		○	◐	
73.755.1450	SCMT 09T308-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S		▽▽		○	◐	
73.755.1750	SCMT 120408-PM3E HC-P25/M20/S15		0,05-4	0,05-0,5	P	M			S		▽▽		○	◐	
73.750.0150	SCGT 09T304-PA2 K10		0,6-4	0,08-0,25			K	N			▽▽		○	◐	
73.750.0200	SCGT 09T308-PA2 K10		0,7-4	0,1-0,35			K	N			▽▽	▽	○	◐	





## > 72.615 Phantom

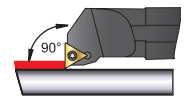
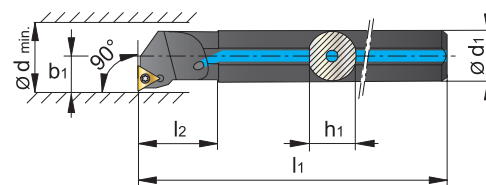
NL WISSELPLAATHOUDER S-STFCR  
 FR PORTE-PLAQUETTE S-STFCR  
 ES PORTAPLAQUITA S-STFCR  
 DE KLEMMHALTER S-STFCR



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.615.1160	S16R-STFCR 11	15	11	21	16	200	13	73.998.0080	73.998.0430	TC.. 1102..
72.615.1200	S20S-STFCR 11	18	13	25	20	250	13	73.998.0080	73.998.0430	TC.. 1102..

## > 72.620 Phantom

NL WISSELPLAATHOUDER A-STFCR/L  
 FR PORTE-PLAQUETTE A-STFCR/L  
 ES PORTAPLAQUITA A-STFCR/L  
 DE KLEMMHALTER A-STFCR/L

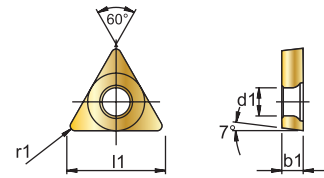


Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.620.1120	A12K-STFCR 11	12	9	17	12	125	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.1160	A16M-STFCR 11	16	11	21	16	150	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.1200	A20Q-STFCR 11	19	13	25	20	180	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.2120	A12K-STFCL 11	12	9	17	12	125	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.2160	A16M-STFCL 11	16	11	21	16	150	13	73.998.0080	73.998.0430	TC.. 1102..
72.620.2200	A20Q-STFCL 11	19	13	25	20	180	13	73.998.0080	73.998.0430	TC.. 1102..

> 73.775  
> 73.790



NL WISSELPLAAT TCGT, TCMT  
FR PLAQUETTE TCGT, TCMT  
ES PLAQUITA TCGT, TCMT  
DE WENDEPLATTE TCGT, TCMT



TC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,6	2,80	2,38	0,2-0,4
16	16,0	4,40	3,97	0,2-0,8

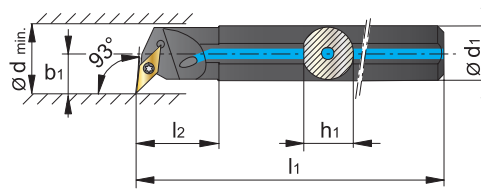
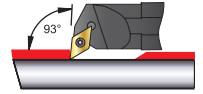
Ref.	Type	Image	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.790.0150	TCMT 110204-PF2 CM10		0,2-1,3	0,05-0,22	P	M					▽▽▽	▽▽		○		
73.790.0650	TCMT 110202-PF3 CM10		0,1-1,3	0,03-0,12	P	M					▽▽▽			○		
73.790.0800	TCMT 110208-PF3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K				▽▽▽			○	○	
73.790.2050	TCMT 16T304-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.790.2150	TCMT 16T308-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.790.0750	TCMT 110204-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.790.2100	TCMT 16T304-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.790.2200	TCMT 16T308-PF4 HC-P35/M30		0,5-2,0	0,05-0,15	P	M					▽▽▽	▽▽		○	○	○
73.790.1400	TCMT 110204-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.790.2850	TCMT 16T308-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.790.1350	TCMT 110204-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S		▽▽			○	○	
73.790.1450	TCMT 110208-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S		▽▽			○	○	
73.790.2300	TCMT 16T304-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S		▽▽			○	○	
73.790.2350	TCMT 16T308-PM3E HC-P25/M20/S15		0,05-3,5	0,05-0,5	P	M			S		▽▽			○	○	
73.775.0150	TCGT 110202-PA2 K10		0,6-2	0,05-0,12			K	N			▽▽▽	▽▽		○	○	
73.775.0200	TCGT 110204-PA2 K10		0,6-3	0,08-0,25			K	N				▽▽		○	○	
73.775.0750	TCGT 16T304-PA2 K10		0,6-4	0,08-0,25			K	N				▽▽		○	○	
73.775.0800	TCGT 16T308-PA2 K10		0,8-4	0,1-0,35			K	N				▽▽	▽	○	○	





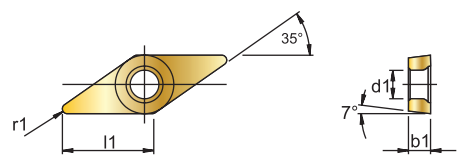
## > 72.630 Phantom

NL WISSELPLAATHOUDER A-SVUCR  
 FR PORTE-PLAQUETTE A-SVUCR  
 ES PORTAPLAQUITA A-SVUCR  
 DE KLEMMHALTER A-SVUCR



Ref.	Type	h1	b1	d min.	d1	l1	l2	1	2	3
72.630.1160	A16M-SVUCR 11	15,5	11	21	16	150	16,5	73.998.0080	73.998.0430	VC.. 1103..
72.630.1200	A20Q-SVUCR 11	19	13	25	20	180	20,5	73.998.0080	73.998.0430	VC.. 1103..

> 73.830  
> 73.840



VC..	l1(mm)	d1(mm)	b1(mm)	r1(mm)
11	11,0	2,80	3,18	0,2-0,8
16	16,6	4,40	4,76	0,2-0,8

NL **WISSELPLAAT VCMT, VCGT**  
FR **PLAQUETTE VCMT, VCGT**  
ES **PLAQUITA VCMT, VCGT**  
DE **WENDEPLATTE VCMT, VCGT**

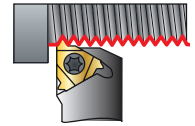
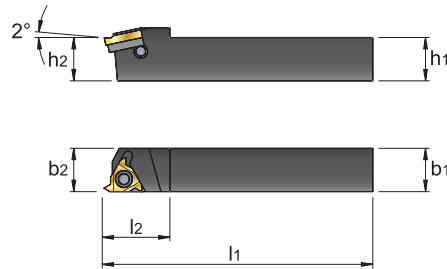
Ref.	Type	Image	ap (mm)	fn (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
73.840.0200	VCMT 110304-PF2 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽	▽▽		○		
73.840.0150	VCGT 110302-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.840.0850	VCMT 160404-PF3 HC-P25/M20		0,05-2,0	0,05-0,25	P	M	K				▽▽▽			○	○	
73.840.1000	VCMT 160404-PF3 HC-P35/M30		0,05-2,5	0,05-0,25	P	M					▽▽▽			○	○	○
73.840.1500	VCMT 160404-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.840.1550	VCMT 160408-PM3 HC-P25/M20		0,05-2,0	0,15-0,25	P	M	K					▽▽		○	○	
73.840.1050	VCMT 160408-PM3 HC-P35/M30		0,05-2,0	0,15-0,25	P	M						▽▽		○	○	○
73.830.0150	VCGT 110302-PA2 K10		0,5-2	0,05-0,12			K	N			▽▽▽	▽▽		○	○	
73.830.0200	VCGT 110304-PA2 K10		0,6-2,5	0,08-0,25			K	N				▽▽		○	○	
73.830.0250	VCGT 110308-PA2 K10		0,8-3	0,1-0,35			K	N				▽▽	▽	○	○	
73.830.0800	VCGT 160404-PA2 K10		0,3-1,5	0,05-0,15			K	N				▽▽		○	○	
73.830.0850	VCGT 160408-PA2 K10		1-7	0,3-0,6			K	N				▽▽	▽	○	○	





## > 74.101 Phantom

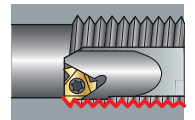
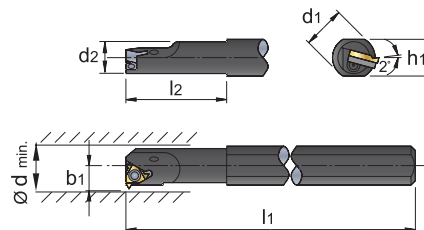
NL DRAADSNIJHOUDER, UITWENDIG, NL EN AL, RECHTS  
 FR OUTIL A FILETER, EXTERIEUR, NL ET AL, A DROITE  
 ES PORTAPLAQUITA PARA ROSCAR, EXTERIOR, NL Y AL, DCHA  
 DE KLEMMHALTER, AUSSEN, NL UND AL, RECHTS



Ref.	Type	h1	h2	b1	b2	l1	l2	1	2	3	4	5	6	7
74.101.1230	NL 1212-16	12	12	12	12	83,2	22	-	-	-	-	74.398.0115	74.398.0150	16ER
74.101.1630	AL 1616-16	16	16	16	16	100	20,5	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	74.398.0150	16ER
74.101.2030	AL 2020-16	20	20	20	20	128,6	30	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	74.398.0150	16ER
74.101.2530	AL 2525-16	25	25	25	25	153,6	30	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	74.398.0150	16ER
74.101.2540	AL 2525-22	25	25	25	25	155,7	36	74.398.0200	74.398.0225	-	74.398.0135	74.398.0120	74.398.0155	22ER
74.101.3230	AL 3232-16	32	32	32	32	173,6	30	74.398.0165	74.398.0195	74.398.0400	74.398.0130	74.398.0115	74.398.0150	16ER
74.101.3240	AL 3232-22	32	32	32	32	175,7	36	74.398.0200	74.398.0225	-	74.398.0135	74.398.0120	74.398.0155	22ER

## > 74.125 Phantom

NL DRAADSNIJHOUDER, INWENDIG, NVR EN AVR, RECHTS  
 FR OUTIL A FILETER, INTERIEUR, NVR ET AVR, A DROITE  
 ES PORTAPLAQUITA PARA ROSCAR, INTERIOR, NVR Y AVR, DCHA  
 DE KLEMMHALTER, INNEN, NVR UND AVR, RECHTS



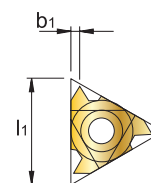
Ref.	Type	d1	h1	l1	d2	l2	b1	d min	1	2	3	4	5	6	7
74.125.1020	NVR 10-11	20	18	180	10	25	7,3	13	-	-	-	-	74.398.0100	74.398.0145	11IR
74.125.1330	NVR 13-16	20	18	180	12,7	32	10,3	17	-	-	-	-	74.398.0115	74.398.0150	16IR
74.125.1630	NVR 16-16	20	18	180	16	40	11,5	20	-	-	-	-	74.398.0115	74.398.0150	16IR
74.125.2030	AVR 20-16	20	18	180	20	40	13,4	24	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	74.398.0150	16IR
74.125.2230	AVR 25-16	25	22,6	200	24,6	45	16,1	29	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	74.398.0150	16IR
74.125.2530	AVR 25-16	32	29	250	25	60	16,3	29	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	74.398.0150	16IR
74.125.2540	AVR 25-22	32	29	250	25	60	17,4	32	74.398.0290	74.398.0315	-	74.398.0135	74.398.0120	74.398.0155	22IR
74.125.3230	AVR 32-16	32	29	250	32	60	19,6	36	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	74.398.0150	16IR
74.125.3240	AVR 32-22	32	29	250	32	60	21,5	39	74.398.0290	74.398.0315	-	74.398.0135	74.398.0120	74.398.0155	22IR
74.125.4030	AVR 40-16	40	36	300	40	60	23,8	44	74.398.0260	74.398.0285	74.398.0500	74.398.0130	74.398.0115	74.398.0150	16IR



> 74.150  
> 74.160

**Phantom**

NL **DRAADSNIJWISSELPLAAT ER 60°, ER 55°, DEELPROFIEL, UITWENDIG**  
 FR **PLAQUETTE A FILETER ER 60°, ER 55°, PROFIL PARTIEL, EXTERIEUR**  
 ES **PLAQUITA PARA ROSCAR ER 60°, ER 55°, PERFIL PARCIAL, EXTERIOR**  
 DE **GEWINDESCHNEIDPLATTE ER 60°, ER 55°, TEILPROFIL, AUSEN**

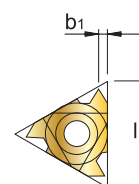


Ref.	Type	l1	b1	P (mm)	P (inch)	ap (mm)	P	M	K	N	S	H	
74.160.0200	16ER AG55 P30		16	1,7	0,5-3	48-8	0,08-0,33	P					
74.160.0220	16ER AG55 HC-P25/M20/K20		16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S	
74.160.0250	22ER N55 P30		22	2,5	3,5-5	7-5	0,19-0,42	P					
74.160.0270	22ER N55 HC-P25/M20/K20		22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S	
74.150.0220	16ER AG60 HC-P25/M20/K20		16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S	
74.150.0250	22ER N60 P30		22	2,5	3,5-5	7-5	0,19-0,42	P					
74.150.0270	22ER N60 HC-P25/M20/K20		22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S	

> 74.155  
> 74.165

**Phantom**

NL **DRAADSNIJWISSELPLAAT IR 60°, IR 55°, DEELPROFIEL, INWENDIG**  
 FR **PLAQUETTE A FILETER IR 60°, IR 55°, PROFIL PARTIEL, INTERIEUR**  
 ES **PLAQUITA PARA ROSCAR IR 60°, IR 55°, PERFIL PARCIAL, INTERIOR**  
 DE **GEWINDESCHNEIDPLATTE IR 60°, IR 55°, TEILPROFIL, INNEN**



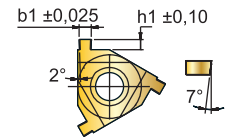
Ref.	Type	l1	b1	P (mm)	P (inch)	ap (mm)	P	M	K	N	S	H
74.165.0050	11IR A55 P30		11	0,9	0,5-1,5	48-16	0,08-0,25	P				
74.165.0200	16IR AG55 P30		16	1,7	0,5-3	48-8	0,08-0,33	P				
74.165.0220	16IR AG55 HC-P25/M20/K20		16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S
74.165.0250	22IR N55 P30		22	2,5	3,5-5	7-5	0,19-0,42	P				
74.165.0270	22IR N55 HC-P25/M20/K20		22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S
74.155.0050	11IR A60 P30		11	0,9	0,5-1,5	48-16	0,08-0,25	P				
74.155.0070	11IR A60 HC-P25/M20/K20		11	0,9	0,5-1,5	48-16	0,08-0,25	P	M	K	N	S
74.155.0220	16IR AG60 HC-P25/M20/K20	16	1,7	0,5-3	48-8	0,08-0,33	P	M	K	N	S	
74.155.0250	22IR N60 P30	22	2,5	3,5-5	7-5	0,19-0,42	P					
74.155.0270	22IR N60 HC-P25/M20/K20	22	2,5	3,5-5	7-5	0,19-0,42	P	M	K	N	S	





## > 74.390 Phantom

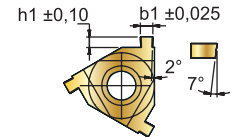
NL BORGRINGWISSELPLAAT, UITWENDIG, ER DIN 471  
 FR PLAQUETTE POUR GORGES DE CIRCLIPS, EXTERIEUR, ER DIN 471  
 ES PLAQUITA PARA ARANDELAS DE RETENCION, EXTERIOR, ER DIN 471  
 DE SCHNEIDPLATTE, AUSEN, ER DIN 471



Ref.	Type		m (H13)	b1	h1	a <sub>p</sub> (mm)	P	M	K	N	S	H
74.390.0070	16ER 1,1DIN 471 HC-P20/M20/K20		1,10	1,19	1,3	0,12-0,25	P	M	K	N		
74.390.0170	16ER 1,3DIN 471 HC-P20/M20/K20		1,30	1,39	1,5	0,15-0,25	P	M	K	N		
74.390.0220	16ER 1,6DIN 471 HC-P20/M20/K20		1,60	1,69	1,8	0,15-0,25	P	M	K	N		
74.390.0270	16ER 1,85DIN 471 HC-P20/M20/K20		1,85	1,94	2	0,16-0,28	P	M	K	N		
74.390.0320	16ER 2,15DIN 471 HC-P20/M20/K20		2,15	2,24	1,8	0,16-0,28	P	M	K	N		

## > 74.395 Phantom

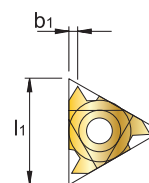
NL BORGRINGWISSELPLAAT, INWENDIG, DIN 472  
 FR PLAQUETTE POUR GORGES DE CIRCLIPS, INTERIEUR, DIN 472  
 ES PLAQUITA PARA ARANDELAS DE RETENCION, INTERIOR, DIN 472  
 DE SCHNEIDPLATTE, INNEN, DIN 472



Ref.	Type		m (H13)	b1	h1	a <sub>p</sub> (mm)	P	M	K	N	S	H
74.395.0070	16IR 1,1DIN 472 HC-P20/M20/K20		1,10	1,19	1,3	0,12-0,25	P	M	K	N		
74.395.0170	16IR 1,3DIN 472 HC-P20/M20/K20		1,30	1,39	1,5	0,15-0,25	P	M	K	N		
74.395.0220	16IR 1,6DIN 472 HC-P20/M20/K20		1,60	1,69	1,8	0,15-0,25	P	M	K	N		
74.395.0270	16IR 1,85DIN 472 HC-P20/M20/K20		1,85	1,94	2	0,16-0,28	P	M	K	N		
74.395.0320	16IR 2,15DIN 472 HC-P20/M20/K20		2,15	2,24	1,5	0,16-0,28	P	M	K	N		

> **74.170 Phantom**

NL **DRAADSNIJWISSELPLAAT ER 60°, VOLPROFIEL, UITWENDIG**  
 FR **PLAQUETTE A FILETER ER 60°, PROFIL PLEIN, EXTERIEUR**  
 ES **PLAQUITA PARA ROSCAR ER 60°, PERFIL COMPLETO, EXTERIOR**  
 DE **GEWINDESCHNEIDPLATTE ER 60°, VOLLPROFIL, AUSSEN**



Ref.	Type	l1	b1	P (mm)	a <sub>p</sub> (mm)	x a <sub>p</sub> (mm)	P	M	K	N	S	H
74.170.0720	16ER 0,5 ISO HC-P25/M20/K20	16	0,4	0,5	0,08-0,12	4-6	P	M	K	N	S	
74.170.0730	16ER 0,5 ISO HC-P25/M25	16	0,4	0,5	0,08-0,12	4-6	P	M				
74.170.0700	16ER 0,5 ISO P30	16	0,4	0,5	0,08-0,12	4-6	P					
74.170.0870	16ER 0,75 ISO HC-P25/M20/K20	16	0,6	0,75	0,1-0,18	4-7	P	M	K	N	S	
74.170.0850	16ER 0,75 ISO P30	16	0,6	0,75	0,1-0,18	4-7	P					
74.170.0875	16ER 0,80 ISO HC-P25/M20/K20	16	0,7	0,8	0,1-0,18	4-7	P	M	K	N	S	
74.170.0970	16ER 1,0 ISO HC-P25/M20/K20	16	0,7	1	0,12-0,25	4-8	P	M	K	N	S	
74.170.0990	16ER 1,0 ISO HC-P25/M25	16	0,7	1	0,12-0,25	4-8	P	M				
74.170.1020	16ER 1,25 ISO HC-P25/M20/K20	16	0,9	1,25	0,14-0,25	5-9	P	M	K	N	S	
74.170.1040	16ER 1,25 ISO HC-P25/M25	16	0,9	1,25	0,14-0,25	5-8	P	M				
74.170.1000	16ER 1,25 ISO P30	16	0,9	1,25	0,14-0,25	5-9	P					
74.170.1070	16ER 1,5 ISO HC-P25/M20/K20	16	1	1,5	0,15-0,25	6-10	P	M	K	N	S	
74.170.1090	16ER 1,5 ISO HC-P25/M25	16	1	1,5	0,15-0,25	6-9	P	M				
74.170.1050	16ER 1,5 ISO P30	16	1	1,5	0,15-0,25	6-10	P					
74.170.1120	16ER 1,75 ISO HC-P25/M20/K20	16	1,2	1,75	0,15-0,25	7-12	P	M	K	N	S	
74.170.1140	16ER 1,75 ISO HC-P25/M25	16	1,2	1,75	0,15-0,25	7-12	P	M				
74.170.1100	16ER 1,75 ISO P30	16	1,2	1,75	0,15-0,25	7-12	P					
74.170.1170	16ER 2,0 ISO HC-P25/M20/K20	16	1,3	2	0,16-0,28	7-12	P	M	K	N	S	
74.170.1190	16ER 2,0 ISO HC-P25/M25	16	1,3	2	0,16-0,28	7-12	P	M				
74.170.1220	16ER 2,5 ISO HC-P25/M20/K20	16	1,5	2,5	0,18-0,32	8-14	P	M	K	N	S	
74.170.1240	16ER 2,5 ISO HC-P25/M25	16	1,5	2,5	0,19-0,33	8-14	P	M				
74.170.1270	16ER 3,0 ISO HC-P25/M20/K20	16	1,6	3	0,19-0,33	9-16	P	M	K	N	S	
74.170.1290	16ER 3,0 ISO HC-P25/M25	16	1,6	3	0,19-0,33	9-16	P	M				
74.170.1250	16ER 3,0 ISO P30	16	1,6	3	0,19-0,33	9-16	P					
74.170.1320	22ER 3,5 ISO HC-P25	22	2,3	3,5	0,2-0,35	10-18	P					
74.170.1370	22ER 4,0 ISO HC-P25/M20/K20	22	2,3	4	0,22-0,36	11-18	P	M	K	N	S	
74.170.1420	22ER 4,5 ISO HC-P25/M20/K20	22	2,5	4,5	0,24-0,4	11-19	P	M	K	N	S	
74.170.1470	22ER 5,0 ISO HC-P25	22	2,5	5	0,25-0,42	12-20	P					

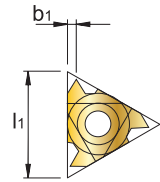




&gt; 74.180

&gt; 74.190

&gt; 74.240

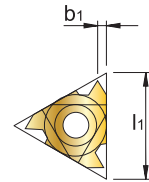
**Phantom**

- NL **DRAADSNIJWISSELPLAAT ER 55° BSW, BSP, 60° UN, TR, VOLPROFIEL, UITWENDIG**  
 FR **PLAQUETTE A FILETER ER 55° BSW, BSP, 60° UN, TR, PROFIL PLEIN, EXTERIEUR**  
 ES **PLAQUITA PARA ROSCAR ER 55° BSW, BSP, 60° UN, TR, PERFIL COMPLETO, EXTERIOR**  
 DE **GEWINDESCHNEIDPLATTE ER 55° BSW, BSP, 60° UN, TR, VOLLPROFIL, AUSSEN**

Ref.	Type		l1	b1	p (inch)	a <sub>p</sub> (mm)	x a <sub>p</sub> (mm)	P	M	K	N	S	H	
74.190.1270	16ER 28W HC-P25/M20/K20		16	0,7	28	0,1-0,18	4-7	P	M	K	N	S		
74.190.1520	16ER 19W HC-P25/M20/K20		16	1	19	0,12-0,25	5-9	P	M	K	N	S		
74.190.1570	16ER 18W HC-P25/M20/K20		16	1	18	0,14-0,25	5-9	P	M	K	N	S		
74.190.1620	16ER 16W HC-P25/M20/K20		16	1,1	16	0,15-0,25	5-9	P	M	K	N	S		
74.190.1670	16ER 14W HC-P25/M20/K20		16	1,2	14	0,15-0,25	7-12	P	M	K	N	S		
74.190.1690	16ER 14W HC-P25/M25		16	1,2	14	0,15-0,25	7-12	P	M					
74.190.1720	16ER 12W HC-P25/M20/K20		16	1,4	12	0,15-0,25	7-12	P	M	K	N	S		
74.190.1770	16ER 11W HC-P25/M20/K20		16	1,5	11	0,16-0,28	7-12	P	M	K	N	S		
74.190.1780	16ER 11W HC-P25/M25		16	1,5	11	0,16-0,28	7-12	P	M					
74.190.1820	16ER 10W HC-P25/M20/K20		16	1,5	10	0,16-0,28	8-14	P	M	K	N	S		
74.190.1870	16ER 9W HC-P25/M20/K20		16	1,7	9	0,16-0,28	8-14	P	M	K	N	S		
74.180.1370	16ER 20UN HC-P25/M20/K20			16	0,9	20	0,12-0,25	5-9	P	M	K	N	S	
74.180.1420	16ER 18UN HC-P25/M20/K20			16	1	18	0,12-0,25	5-9	P	M	K	N	S	
74.180.1470	16ER 16UN HC-P25/M20/K20			16	1,1	16	0,14-0,25	6-10	P	M	K	N	S	
74.180.1520	16ER 14UN HC-P25/M20/K20			16	1,2	14	0,15-0,25	7-12	P	M	K	N	S	
74.180.1570	16ER 13UN HC-P25/M20/K20	16		1,3	13	0,15-0,25	7-12	P	M	K	N	S		
74.180.1620	16ER 12UN HC-P25/M20/K20	16		1,4	12	0,15-0,25	7-12	P	M	K	N	S		
74.180.1770	16ER 10UN HC-P25/M20/K20	16		1,5	10	0,16-0,28	8-14	P	M	K	N	S		
74.180.1870	16ER 8UN HC-P25/M20/K20	16		1,7	8	0,18-0,32	8-14	P	M	K	N	S		
74.240.1050	16ER 1,5TR P30			16	1,1	1,5	0,15-0,25	6	P					
74.240.1150	16ER 2,0TR P30		16	1,3	2	0,16-0,28	8	P						
74.240.1250	16ER 3,0TR P30		16	1,5	3	0,19-0,33	12	P						
74.240.1370	22ER 4,0TR P30		22	1,9	4	0,22-0,36	13	P						
74.240.1450	22ER 5,0TR P30		22	2,5	5	0,25-0,42	14	P						

> **74.175 Phantom**

NL **DRAADSNIJWISSELPLAAT IR 60°, VOLPROFIEL, INWENDIG**  
 FR **PLAQUETTE A FILETER IR 60°, PROFIL PLEIN, INTERIEUR**  
 ES **PLAQUITA PARA ROSCAR IR 60°, PERFIL COMPLETO, INTERIOR**  
 DE **GEWINDESCHNEIDPLATTE IR 60°, VOLLPROFIL, INNEN**



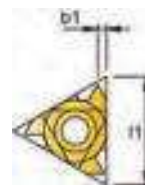
Ref.	Type	l1	b1	P (mm)	ap (mm)	x ap (mm)	P	M	K	N	S	H
74.175.0175	11IR 0,5 ISO HC-P25/M20/K20	11	0,4	0,5	0,08-0,12	4-6	P	M	K	N	S	
74.175.0150	11IR 0,5 ISO P30	11	0,4	0,5	0,08-0,12	4-6	P					
74.175.0320	11IR 0,75 ISO HC-P25/M20/K20	11	0,6	0,75	0,1-0,18	4-7	P	M	K	N	S	
74.175.0300	11IR 0,75 ISO P30	11	0,6	0,75	0,1-0,18	4-7	P					
74.175.0420	11IR 1,0 ISO HC-P25/M20/K20	11	0,7	1	0,12-0,25	4-8	P	M	K	N	S	
74.175.0400	11IR 1,0 ISO P30	11	0,7	1	0,12-0,25	4-8	P					
74.175.0470	11IR 1,25 ISO HC-P25/M20/K20	11	0,9	1,25	0,14-0,25	5-9	P	M	K	N	S	
74.175.0450	11IR 1,25 ISO P30	11	0,9	1,25	0,14-0,25	5-9	P					
74.175.0520	11IR 1,5 ISO HC-P25/M20/K20	11	1	1,5	0,15-0,25	6-10	P	M	K	N	S	
74.175.0530	11IR 1,5 ISO HC-P25/M25	11	1	1,5	0,15-0,25	6-10	P	M				
74.175.0500	11IR 1,5 ISO P30	11	1	1,5	0,15-0,25	6-9	P					
74.175.0570	11IR 1,75 ISO HC-P25/M20/K20	11	1,1	1,75	0,15-0,25	7-12	P	M	K	N	S	
74.175.0550	11IR 1,75 ISO P30	11	1,1	1,75	0,15-0,25	7-12	P					
74.175.0610	11IR 2,0 ISO HC-P25/M20/K20	11	1,1	2	0,16-0,28	7-12	P	M	K	N	S	
74.175.0650	11IR 2,5 ISO HC-P25/M20/K20	11	1,1	2,5	0,18-0,32	8-14	P	M	K	N	S	
74.175.0720	16IR 0,5 ISO HC-P25/M20/K20	16	0,5	0,5	0,08-0,12	4-6	P	M	K	N	S	
74.175.0700	16IR 0,5 ISO P30	16	0,4	0,5	0,08-0,12	4-6	P					
74.175.0970	16IR 1,0 ISO HC-P25/M20/K20	16	0,7	1	0,12-0,25	4-8	P	M	K	N	S	
74.175.0990	16IR 1,0 ISO HC-P25/M25	16	0,7	1	0,12-0,25	4-8	P	M				
74.175.0950	16IR 1,0 ISO P30	16	0,7	1	0,12-0,25	4-7	P					
74.175.1020	16IR 1,25 ISO HC-P25/M20/K20	16	0,9	1,25	0,12-0,25	5-9	P	M	K	N	S	
74.175.1040	16IR 1,25 ISO HC-P25/M25	16	0,9	1,25	0,14-0,25	5-9	P	M				
74.175.1000	16IR 1,25 ISO P30	16	0,9	1,25	0,14-0,25	5-8	P					
74.175.1070	16IR 1,5 ISO HC-P25/M20/K20	16	1	1,5	0,14-0,25	6-10	P	M	K	N	S	
74.175.1090	16IR 1,5 ISO HC-P25/M25	16	1	1,5	0,15-0,25	6-10	P	M				
74.175.1050	16IR 1,5 ISO P30	16	1	1,5	0,15-0,25	6-9	P					
74.175.1120	16IR 1,75 ISO HC-P25/M20/K20	16	1,2	1,75	0,15-0,25	7-12	P	M	K	N	S	
74.175.1140	16IR 1,75 ISO HC-P25/M25	16	1,2	1,75	0,15-0,25	7-12	P	M				
74.175.1100	16IR 1,75 ISO P30	16	1,2	1,75	0,15-0,25	7-11	P					
74.175.1175	16IR 2,0 ISO HC-P25/M20/K20	16	1,3	2	0,16-0,28	7-12	P	M	K	N	S	
74.175.1190	16IR 2,0 ISO HC-P25/M25	16	1,3	2	0,16-0,28	7-12	P	M				
74.175.1150	16IR 2,0 ISO P30	16	1,3	2	0,16-0,28	7-11	P					
74.175.1220	16IR 2,5 ISO HC-P25/M20/K20	16	1,5	2,5	0,18-0,32	8-14	P	M	K	N	S	
74.175.1240	16IR 2,5 ISO HC-P25/M25	16	1,5	2,5	0,18-0,32	8-14	P	M				
74.175.1200	16IR 2,5 ISO P30	16	1,5	2,5	0,18-0,32	8-12	P					
74.175.1270	16IR 3,0 ISO HC-P25/M20/K20	16	1,5	3	0,19-0,33	9-16	P	M	K	N	S	
74.175.1250	16IR 3,0 ISO P30	16	1,5	3	0,19-0,33	9-16	P					
74.175.1320	22IR 3,5 ISO HC-P25/M20/K20	22	2,3	3,5	0,2-0,35	10-18	P	M	K	N	S	
74.175.1370	22IR 4,0 ISO HC-P25/M20/K20	22	2,3	4	0,22-0,36	11-18	P	M	K	N	S	
74.175.1420	22IR 4,5 ISO HC-P25/M20/K20	22	2,4	4,5	0,24-0,4	11-19	P	M	K	N	S	
74.175.1470	22IR 5,0 ISO HC-P25/M20/K20	22	2,3	5	0,25-0,42	12-20	P	M	K	N	S	





> 74.185  
> 74.195  
> 74.245

**Phantom**

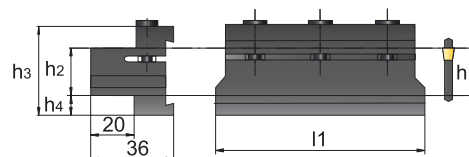


NL DRAADSNIJWISSELPLAAT IR 55° BSW, BSP, 60° UN, TR, VOLPROFIEL, INWENDIG  
FR PLAQUETTE A FILETER IR 55° BSW, BSP, 60° UN, TR, PROFIL PLEIN, INTERIEUR  
ES PLAQUITA PARA ROSCAR IR 55° BSW, BSP, 60° UN, TR, PERFIL COMPLETO, INTERIOR  
DE GEWINDESCHNEIDPLATTE IR 55° BSW, BSP, 60° UN, TR, VOLLPROFIL, INNEN

Ref.	Type	l1	b1	p (inch)	a <sub>p</sub> (mm)	x a <sub>p</sub> (mm)	P	M	K	N	S	H
74.195.0420	11IR 28W HC-P25/M20/K20	11	0,7	28	0,1-0,18	4-7	P	M	K	N	S	
74.195.0670	11IR 19W HC-P25/M20/K20	11	1	19	0,12-0,25	5-9	P	M	K	N	S	
74.195.0720	11IR 18W HC-P25/M20/K20	11	1	18	0,14-0,25	5-9	P	M	K	N	S	
74.195.0770	11IR 16W HC-P25/M20/K20	11	1,1	16	0,15-0,25	6-10	P	M	K	N	S	
74.195.0820	11IR 14W HC-P25/M20/K20	11	1,1	14	0,15-0,25	7-12	P	M	K	N	S	
74.195.1470	16IR 19W HC-P25/M20/K20	16	1	19	0,12-0,25	5-9	P	M	K	N	S	
74.195.1520	16IR 18W HC-P25/M20/K20	16	1	18	0,14-0,25	5-9	P	M	K	N	S	
74.195.1570	16IR 16W HC-P25/M20/K20	16	1,1	16	0,15-0,25	6-10	P	M	K	N	S	
74.195.1620	16IR 14W HC-P25/M20/K20	16	1,2	14	0,15-0,25	7-12	P	M	K	N	S	
74.195.1670	16IR 12W HC-P25/M20/K20	16	1,4	12	0,15-0,25	7-12	P	M	K	N	S	
74.195.1720	16IR 11W HC-P25/M20/K20	16	1,5	11	0,16-0,28	7-12	P	M	K	N	S	
74.195.1770	16IR 10W HC-P25/M20/K20	16	1,5	10	0,16-0,28	8-14	P	M	K	N	S	
74.195.1820	16IR 9W HC-P25/M20/K20	16	1,7	9	0,16-0,28	8-14	P	M	K	N	S	
74.185.0620	11IR 20UN HC-P25/M20/K20	11	0,9	20	0,12-0,25	5-9	P	M	K	N	S	
74.185.0670	11IR 18UN HC-P25/M20/K20	11	1	18	0,12-0,25	5-9	P	M	K	N	S	
74.185.1470	16IR 16UN HC-P25/M20/K20	16	1,1	16	0,14-0,25	6-10	P	M	K	N	S	
74.185.1520	16IR 14UN HC-P25/M20/K20	16	1,2	14	0,15-0,25	7-12	P	M	K	N	S	
74.185.1570	16IR 13UN HC-P25/M20/K20	16	1,3	13	0,15-0,25	7-12	P	M	K	N	S	
74.185.1620	16IR 12UN HC-P25/M20/K20	16	1,4	12	0,15-0,25	7-12	P	M	K	N	S	
74.185.1770	16IR 10UN HC-P25/M20/K20	16	1,5	10	0,16-0,28	8-14	P	M	K	N	S	
74.185.1870	16IR 8UN HC-P25/M20/K20	16	1,5	8	0,18-0,32	9-16	P	M	K	N	S	
74.245.1050	16IR 1,5TR P30	16	1,1	1,5	0,15-0,25	6	P					
74.245.1150	16IR 2,0TR P30	16	1,3	2	0,16-0,28	8	P					
74.245.1250	16IR 3,0TR P30	16	1,5	3	0,19-0,33	12	P					
74.245.1370	22IR 4,0TR P30	22	1,9	4	0,22-0,36	13	P					
74.245.1450	22IR 5,0TR P30	22	2,5	5	0,25-0,42	14	P					

> **74.400** **Phantom**

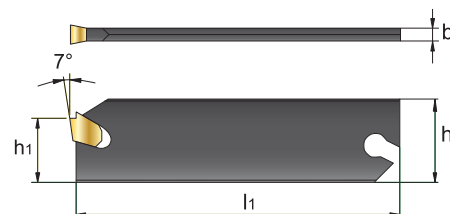
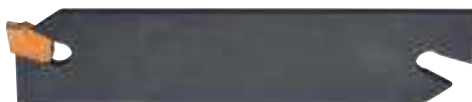
- NL **BASISHOUDER PTNN**
- FR **BLOC PTNN**
- ES **BLOQUE PTNN**
- DE **GRUNDHALTER PTNN**



Ref.	Type	Parting tool	h1	h2	h3	h4	l1
74.400.2000	PTNN 20-26	74.410.0300, 74.410.0400, 74.410.0500	20	20	38	8	90
74.400.2032	PTNN 20-32	74.410.1300, 74.410.1400, 74.410.1500	20	20	48	13	100
74.400.2532	PTNN 25-32	74.410.1300, 74.410.1400, 74.410.1500	25	25	48	8	110

> **74.410** **Phantom**

- NL **STEEKPLAATHOUDER LFMX, UITWENDIG**
- FR **LAME A TRONCONNER LFMX, EXTERIEUR**
- ES **PORTAPLAQUITA DE TRONZADO LFMX, EXTERIOR**
- DE **STECKKLINGE LFMX, AUSSEN**



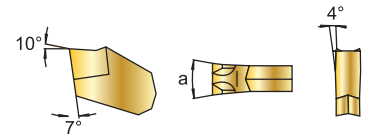
Ref.	Type	h1	h2	b1	l1	t max	7
74.410.0300	150.19-20-3	21.1	26	2.4	110	40	LFMX3
74.410.0400	150.19-20-4	21	26	3.2	110	40	LFMX4
74.410.0500	150.19-20-5	20.8	26	4.3	110	60	LFMX5
74.410.1300	150.19-25-3	24.7	32	2.4	150	40	LFMX3
74.410.1400	150.19-25-4	24.6	32	3.2	150	40	LFMX4
74.410.1500	150.19-25-5	24.4	32	4.3	150	60	LFMX5





## > 74.480 Phantom

NL STEEKPLAAT LFMX  
 FR PLAQUETTE A TRONCONNER LFMX  
 ES PLAQUITA PARA TRONZAR LFMX  
 DE STECHPLATTE LFMX

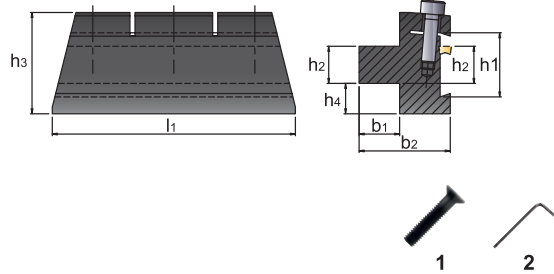


Ref.	Type	a	r	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
74.480.3001	LFMX 3N HC-P25/M25/K20		3,1	0,2	0,05-0,12	P	M	K				▽▽		○	○	
74.480.3002	LFMX 3N HC-P35		3,1	0,2	0,05-0,12	P						▽▽			○	○
74.480.4001	LFMX 4N HC-P25/M25/K20		4,1	0,2	0,05-0,15	P	M	K				▽▽		○	○	
74.480.4010	LFMX 4N HC-P35		4,1	0,2	0,05-0,15	P	M	K				▽▽			○	○
74.480.5001	LFMX 5N HC-P35		5,1	0,2	0,05-0,18	P						▽▽			○	○



> **74.500 Phantom**

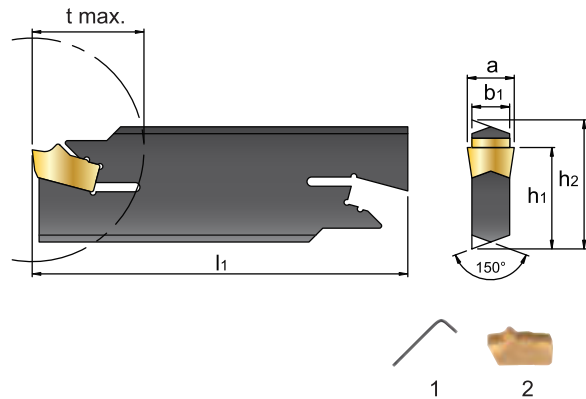
NL **BASISHOUDER PTNZ**  
 FR **BLOC PTNZ**  
 ES **BLOQUE PTNZ**  
 DE **GRUNDHALTER PTNZ**



Ref.	Type	h1	b1	b2	l1	h2	h3	h4	1	2
74.500.1626	PTNZ 16-26	16	16	29	90	16	39	28	74.998.0005	74.998.0010
74.500.2026	PTNZ 20-26	20	20	33	90	20	39	28	74.998.0005	74.998.0010
74.500.2532	PTNZ 25-32	25	20	36	110	25	48	28	74.998.0005	74.998.0010

> **74.510 Phantom**

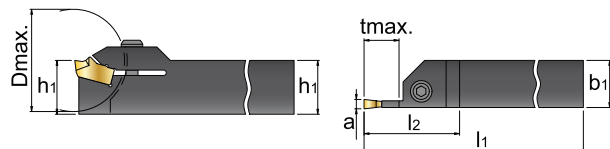
NL **STEEKPLAATHOUDER EXN, UITWENDIG**  
 FR **LAME A TRONCONNER EXN, EXTERIEUR**  
 ES **PORTAPLAQUITA DE TRONZADO EXN, EXTERIOR**  
 DE **STECHKLINGE EXN, AUSSEN**



Ref.	Item	h1	h2	l1	a	t max	1	2
74.510.0200	26-2,2	21,4	26	110	2,2	25	74.998.0016	EXN 2,2
74.510.0300	26-3	21,4	26	110	3	40	74.998.0016	EX . 3 - RXN 3
74.510.0400	26-4	21,4	26	110	4	40	74.998.0016	EX . 4 - RXN 4
74.510.1300	32-3	25	32	150	3	50	74.998.0016	EX . 3 - RXN 3
74.510.1400	32-4	25	32	150	4	50	74.998.0016	EX . 4 - RXN 4
74.510.1500	32-5	25	32	150	5	60	74.998.0016	EX . 5 - RXN 5

> **74.517 Phantom**

NL **STEEKPLAATHOUDER EXN, UITWENDIG**  
 FR **LAME A TRONCONNER EXN, EXTERIEUR**  
 ES **PORTAPLAQUITA DE TRONZADO EXN, EXTERIOR**  
 DE **STECHHALTER EXN, AUSSEN**

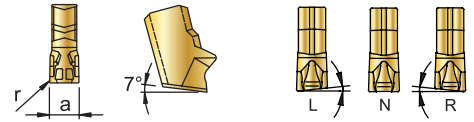


Ref.	Type	h1	b1	l1	l2	a	t max	d max	1	2	3
74.517.1122	R1212-2,2	12	12	91	66	2,2	11	22	74.998.0019	74.998.0010	EXN 2,2
74.517.1162	R1616-2,2	16	12	95	66	2,2	16	32	74.998.0019	74.998.0010	EXN 2,2
74.517.1163	R1616-3	16	12	95	66	3	16	32	74.998.0019	74.998.0010	EX . 3 - RXN 3
74.517.1203	R2020-3	20	16	150	115	3	21	42	74.998.0021	74.998.0010	EX . 3 - RXN 3
74.517.1204	R2020-4	20	16	150	115	4	21	42	74.998.0021	74.998.0010	EX . 4 - RXN 4
74.517.1253	R2525-3	25	20	150	115	3	21	42	74.998.0021	74.998.0010	EX . 3 - RXN 3
74.517.1254	R2525-4	25	20	150	115	4	21	42	74.998.0021	74.998.0010	EX . 4 - RXN 4
74.517.2203	L2020-3	20	16	150	115	3	21	42	74.998.0021	74.998.0010	EX . 3 - RXN 3
74.517.2253	L2525-3	25	20	150	115	3	21	42	74.998.0021	74.998.0010	EX . 3 - RXN 3



## > 74.582 Phantom

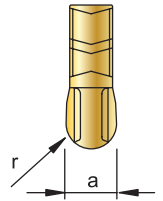
NL STEEKPLAAT, ENKEL, EXN, EXR, EXL  
 FR PLAQUETTE A TRONCONNER, SIMPLE, EXN, EXR, EXL  
 ES PLAQUITA PARA TRONZAR, SIMPLE, EXN, EXR, EXL  
 DE STECHPLATTE, NUR, EXN, EXR, EXL



Ref.	Type	a	r (radius)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◐	◑
74.582.2000	EXN-2,2 K15/M20	2,2	0,2	0,05-0,09				N	S			▽▽		○		
74.582.2003	EXN-2,2 HC-P40/M30	2,2	0,2	0,05-0,09	P	M	K					▽▽		○		
74.582.3000	EXN-3 K15/M20	3	0,2	0,05-0,12				N	S			▽▽		○		
74.582.3001	EXN-3 HC-P40/M30	3	0,2	0,05-0,12	P	M			S			▽▽		○		
74.582.3003	EXN-3 HC-P40/M30	3	0,2	0,05-0,12	P	M	K					▽▽		○		
74.582.3008	EXR-3 HC-P40/M30	3	0,2	0,05-0,12	P	M	K					▽▽		○		
74.582.3012	EXL-3 HC-P40/M30	3	0,2	0,05-0,12	P	M	K					▽▽		○		
74.582.4001	EXN-4 HC-P40/M30	4	0,2	0,05-0,15	P	M			S			▽▽		○		
74.582.4003	EXN-4 HC-P40/M30	4	0,2	0,05-0,15	P	M	K					▽▽		○		
74.582.4008	EXR-4 HC-P40/M30	4	0,2	0,05-0,15	P	M	K					▽▽		○		
74.582.4012	EXL-4 HC-P40/M30	4	0,2	0,05-0,15	P	M	K					▽▽		○		
74.582.5003	EXN-5 HC-P40/M30	5	0,3	0,05-0,18	P	M	K					▽▽		○		

## > 74.599 Phantom

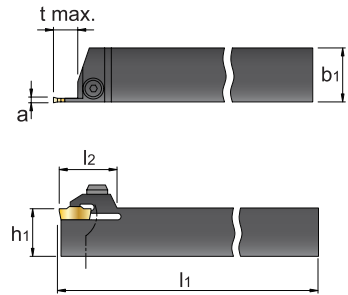
NL STEEKPLAAT, RADIUS, RXN  
 FR PLAQUETTE A TRONCONNER, A RAYON, RXN  
 ES PLAQUITA PARA TRONZAR, RADIO, RXN  
 DE STECHPLATTE, RADIUS, RXN



Ref.	Type	a	r (radius)	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	◐	◑
74.599.3003	RXN-3 HC-P25/M20	3	1,5	0,05-0,09	P	M	K					▽▽		○		
74.599.4003	RXN-4 HC-P25/M20	4	2	0,05-0,09	P	M	K					▽▽		○		
74.599.5003	RXN-5 HC-P25/M20	5	2,5	0,05-0,09	P	M	K					▽▽		○		

> **74.522 Phantom**

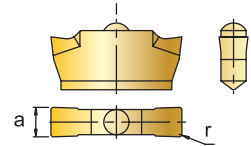
NL STEEKPLAATHOUDER EJN, UITWENDIG  
 FR LAME A TRONCONNER EJN, EXTERIEUR  
 ES PORTAPLAQUITA DE TRONZADO EJN, EXTERIOR  
 DE STECHHALTER EJN, AUSSEN



Ref.	Type	h1	b1	l1	l2	a	t max	1	2	3
74.522.1163	R1616-3-4	16	16	100	30	3-4	12	74.998.0016	74.998.0010	DXN 3 - DXN 4
74.522.1203	R2020-3-4	20	20	120	30	3-4	12	74.998.0016	74.998.0010	DXN 3 - DXN 4
74.522.1253	R2525-3-4	25	25	120	30	3-4	12	74.998.0016	74.998.0010	DXN 3 - DXN 4

> **74.596 Phantom**

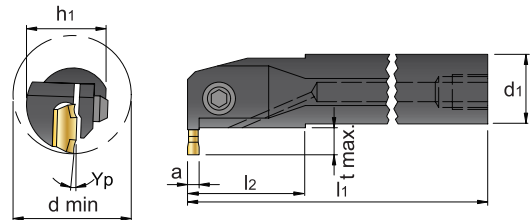
NL STEEKPLAAT DXN, DUBBEL  
 FR PLAQUETTE A TRONCONNER DXN, DOUBLE  
 ES PLAQUITA PARA TRONZAR DXN, DOBLE  
 DE STECHPLATTE DXN, DOPPELSEITIG



Ref.	Type	a	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽	▽	○	○	○
74.596.3003	DXN-3 HC-P35/M25	3	0,05-0,12	P	M					▽▽	▽	○	○	○
74.596.4003	DXN-4 HC-P35/M25	4	0,05-0,15	P	M					▽▽	▽	○	○	○

> **74.540 Phantom**

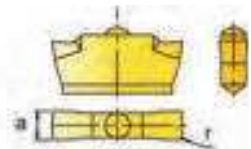
NL STEEKPLAATHOUDER EJN, INWENDIG  
 FR LAME A TRONCONNER EJN, INTERIEUR  
 ES PORTAPLAQUITA DE TRONZADO EJN, INTERIOR  
 DE STECHHALTER EJN, INNEN



Ref.	Type	h1	d1	l1	l2	a	t max	d min	1	2	3
74.540.2003	R20-3-4	18,0	20	200	30	3-4	5	16,5	74.998.0031	74.998.0012	EJN 3 - EJN 4
74.540.2503	R25-3-4	23,0	25	200	30	3-4	5	25	74.998.0032	74.998.0012	EJN 3 - EJN 4

> **74.560 Phantom**

NL STEEKPLAAT, DUBBEL  
 FR PLAQUETTE A TRONCONNER, DOUBLE  
 ES PLAQUITA PARA TRONZAR, DOBLE  
 DE STECHPLATTE, DOPPELSEITIG

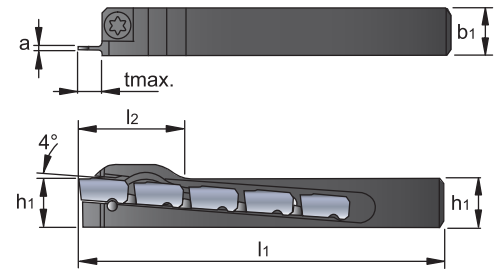


Ref.	Type	a	f <sub>n</sub> (mm)	P	M	K	N	S	H	▽▽	▽	○	○	○
74.560.3003	EJN-3 HC-P35/M25	3	0,05-0,12	P	M					▽▽	▽	○	○	○
74.560.4003	EJN-4 HC-P35/M25	4	0,05-0,15	P	M					▽▽	▽	○	○	○



## > 74.605 Phantom

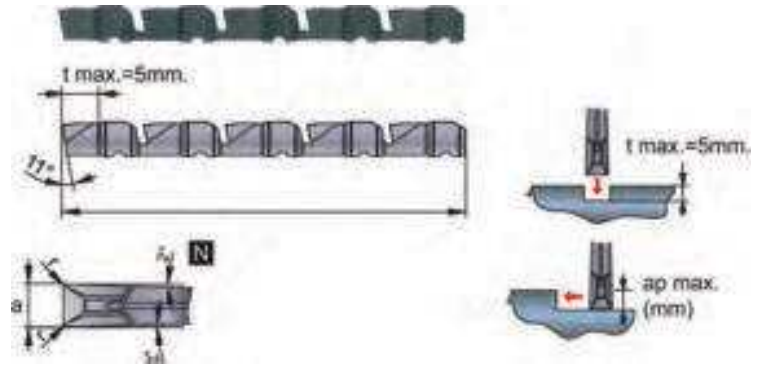
NL **BASISHOUDER MC CLICK, UITWENDIG, MC05**  
 FR **MC CLICK, LAME A TRONCONNER, EXTERIEUR, MC05**  
 ES **MC CLICK, PORTAPLAQUITA DE TRONZADO, EXTERIOR, MC05**  
 DE **MC CLICK, STECHHALTER, AUSEN, MC05**



Ref.	Type	h1	b1	l1	l2	a	t max	1	2	3
74.605.1616	MC05R-1616K	16	16	125	23	1-1,5	5	74.998.0002	74.998.0013	MC05
74.605.2020	MC05R-2020K	20	20	125	23	1-1,5	5	74.998.0002	74.998.0013	MC05

## > 74.620 Phantom

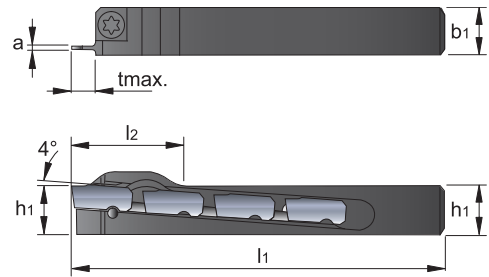
NL **STEEKPLAAT MC05**  
 FR **PLAQUETTE A TRONCONNER MC05**  
 ES **PLAQUITA PARA TRONZAR MC05**  
 DE **STECHPLATTE MC05**



Ref.	Type	a	a <sub>p</sub> max	r	f rad	f ax	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
74.620.1004	MC05 1,0N HC-P40/M35	1	0,5	0,1	0,025-0,1	0,025-0,15	P	M	K	N			▽▽▽			○		
74.620.1501	MC05 1,5N HC-P40/M35	1,5	0,5	0,1	0,025-0,12	0,025-0,15	P	M	K	N			▽▽▽			○		

> **74.610** **Phantom**

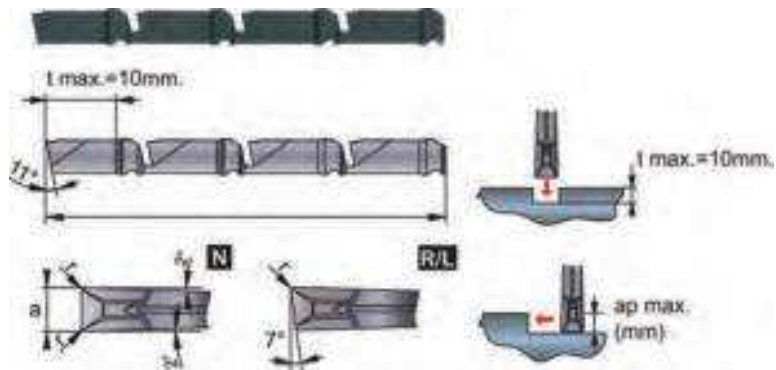
NL **BASISHOUDER MC CLICK, UITWENDIG, MC10**  
 FR **MC CLICK, LAME A TRONCONNER, EXTERIEUR, MC10**  
 ES **MC CLICK, PORTAPLAQUITA DE TRONZADO, EXTERIOR, MC10**  
 DE **MC CLICK, STECHHALTER, AUSEN, MC10**



Ref.	Type	h1	b1	l1	l2	Slotting width a	t max	1	7
74.610.1010	MC10R-1010K	10	10	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.1212	MC10R-1212K	12	12	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.1616	MC10R-1616K	16	16	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.2020	MC10R-2020K	20	20	125	28	1,5-2,5	10	74.998.0002	74.998.0013
74.610.2525	MC10R-2525K	25	25	125	28	1,5-2,5	10	74.998.0002	74.998.0013

> **74.625** **Phantom**

NL **STEEKPLAAT, MC10**  
 FR **PLAQUETTE A TRONCONNER, MC10**  
 ES **PLAQUITA PARA TRONZAR, MC10**  
 DE **STECHPLATTE, MC10**

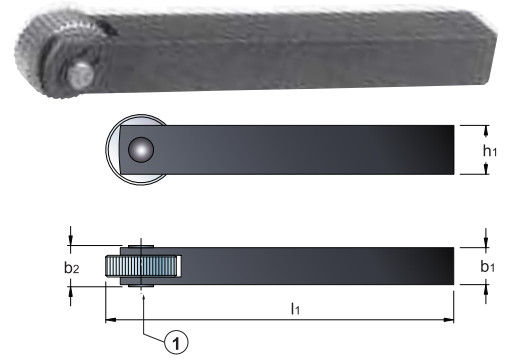


Ref.	Type	a	ap max	r	f rad	f ax	P	M	K	N	S	H	▽▽▽	▽▽	▽	○	○	○
74.625.1501	MC10 1,5N HC-P40/M35	1,5	1	0,1	0,025-0,1	0,025-0,20	P	M	K	N			▽▽▽			○		
74.625.1502	MC10 1,5R HC-P40/M35	1,5	1	0,1	0,025-0,1	-	P	M	K	N			▽▽▽			○		
74.625.1503	MC10 1,5L HC-P40/M35	1,5	1	0,1	0,025-0,1	-	P	M	K	N			▽▽▽			○		
74.625.2001	MC10 2,0N HC-P40/M35	2	1,5	0,1	0,025-0,12	0,025-0,20	P	M	K	N			▽▽▽			○		
74.625.2002	MC10 2,0R HC-P40/M35	2	1,5	0,1	0,025-0,12	-	P	M	K	N			▽▽▽			○		
74.625.2003	MC10 2,0L HC-P40/M35	2	1,5	0,1	0,025-0,12	-	P	M	K	N			▽▽▽			○		
74.625.2501	MC10 2,5N HC-P40/M35	2,5	2	0,1	0,025-0,15	0,025-0,20	P	M	K	N			▽▽▽			○		



### > 75.100 Phantom

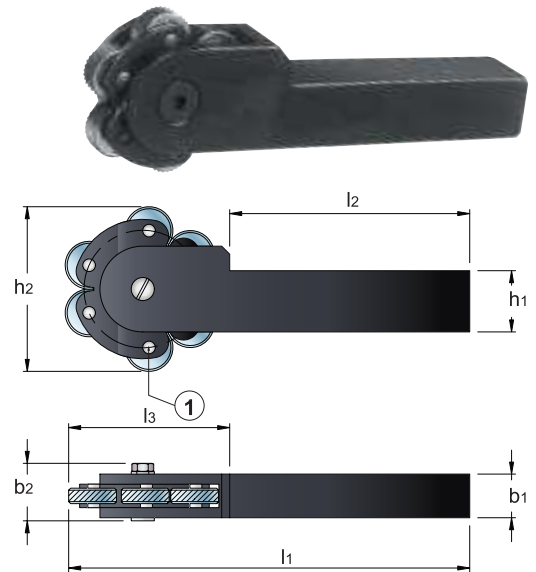
NL Drukkartelrolhouder, type M1  
 FR Outils de moletage par déformation, type M1  
 ES Moleteadores por deformación, tipo M1  
 DE Rändelhalter zur Verformung, Typ M1



Ref.	Type	Ø mm	l1	b1	b2	h1	1
75.100.1000	M1	8-200	112	14	19	14	75.290.0100

### > 75.103 Phantom

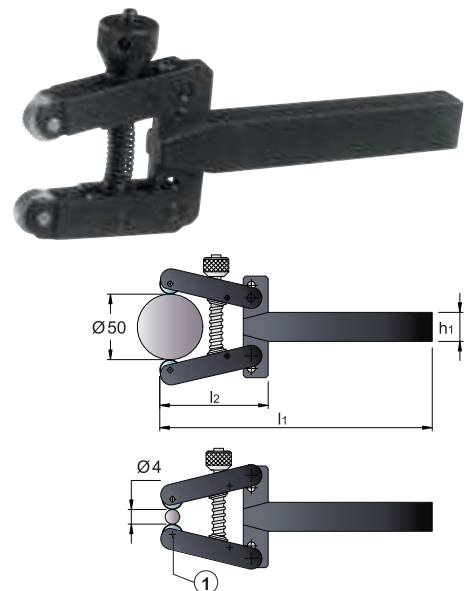
NL Drukkartelrolhouder, type M2  
 FR Outils de moletage par déformation, type M2  
 ES Moleteadores por deformación, tipo M2  
 DE Rändelhalter zur Verformung, Typ M2



Ref.	Type	Ø mm	l1	l2	l3	b1	b2	h1	h2	1
75.103.1000	M2	8-200	180	72	108	25	30	25	62	75.290.0201

### > 75.106 Phantom

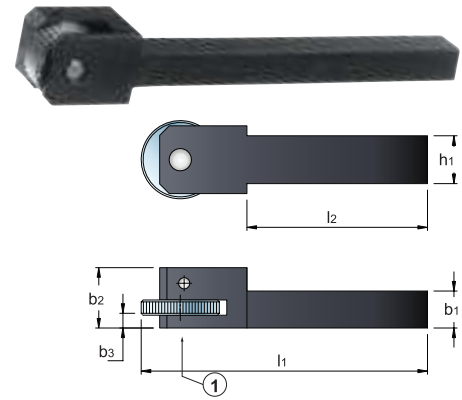
NL Drukkartelrolhouder, type M3  
 FR Outils de moletage par déformation, type M3  
 ES Moleteadores por deformación, tipo M3  
 DE Rändelhalter zur Verformung, Typ M3



Ref.	Type	Ø mm	l1	l2	b2	h1	1
75.106.1000	M3	4-50	220	87	25	18	75.290.0301

> **75.109 Phantom**

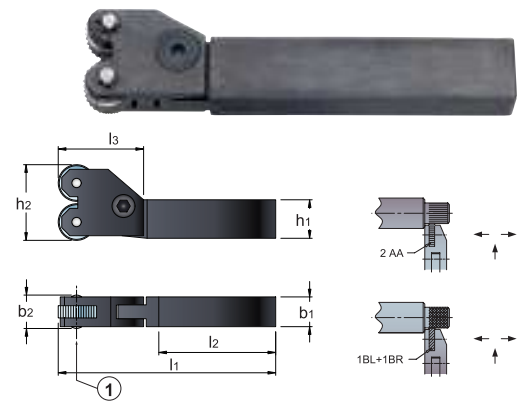
NL Drukkartelrolhouder, type M6  
 FR Outils de moletage par déformation, type M6  
 ES Moleteadores por deformación, tipo M6  
 DE Rändelhalter zur Verformung, Typ M6



Ref.	Type	Ø mm	l1	l2	b1	b2	b3	h1	1
75.109.1010	M6-2008-10	5-200	108	80	10	20	2.5	10	75.290.0600
75.109.1212	M6-2008-12	5-200	108	80	12	20	2.5	12	75.290.0600
75.109.1414	M6-2008-14	5-200	108	80	14	20	2.5	14	75.290.0600
75.109.1616	M6-2008-16	5-200	108	80	16	20	2.5	16	75.290.0600
75.109.2020	M6-2008-20	5-200	108	80	20	20	2.5	20	75.290.0600

> **75.115 Phantom**

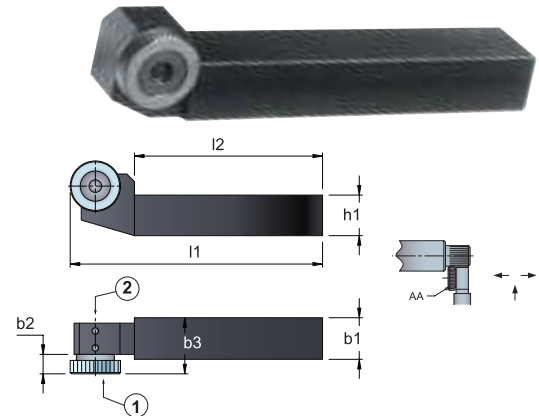
NL Drukkartelrolhouder, type M7  
 FR Outils de moletage par déformation, type M7  
 ES Moleteadores por deformación, tipo M7  
 DE Rändelhalter zur Verformung, Typ M7



Ref.	Type	Ø mm	l1	l2	l3	b1	b2	h1	h2	1
75.115.1000	M7	8-200	162	115	42	18	18	25	42	75.290.0301

> **75.121 Phantom**

NL Drukkartelrolhouder, type MCNCS  
 FR Outils de moletage par déformation, type MCNCS  
 ES Moleteadores por deformación, tipo MCNCS  
 DE Rändelhalter zur Verformung, Typ MCNCS

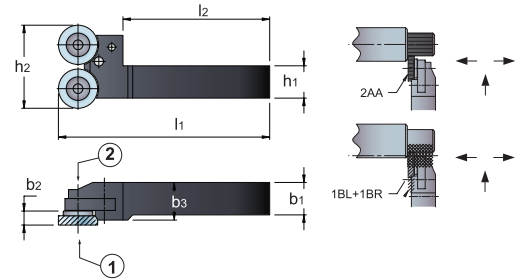


Ref.	Type	Ø mm	l1	l2	b1	b3	b2	h1	1	2
75.121.2520	MCNCS-20	8-200	150	125	25	32	10	20	75.290.0900	75.290.1000
75.121.2532	MCNCS-25	8-200	150	125	25	32	10	25	75.290.0900	75.290.1000



## > 75.125 Phantom

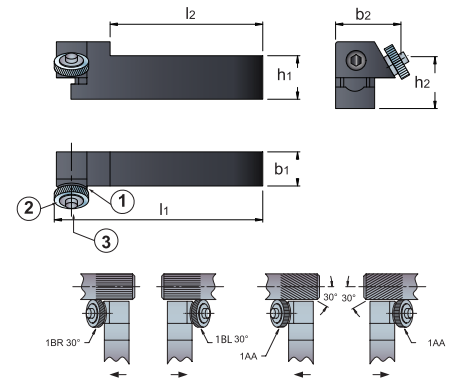
NL Drukkartelrolhouder, type MCNC  
 FR Outils de moletage par déformation, type MCNC  
 ES Moleteadores por deformación, tipo MCNC  
 DE Rändelhalter zur Verformung, Typ MCNC



Ref.	Type	Ø mm	l1	l2	b1	b2	b3	h1	h2	1	2
75.125.2025	MCNC-20R	8-200	150	112	25	32	55	20	55	75.290.0900	75.290.1000
75.125.2525	MCNC-25R	8-200	150	112	25	32	55	25	55	75.290.0900	75.290.1000

## > 75.129 Phantom

NL Freeskartelrolhouder, type MFCNCS  
 FR Outils de moletage par coupe, type MFCNCS  
 ES Moleteadores por corte, tipo MFCNCS  
 DE Rändelfräshalter, Typ MFCNCS

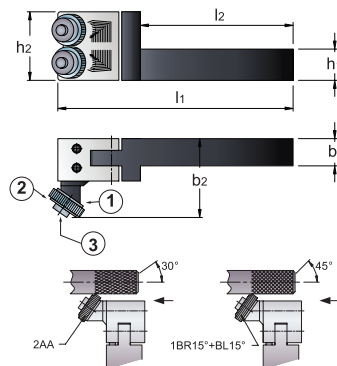


Ref.	Type	Ø mm	l1	l2	b1	b2	h1	h2	1	2	3
75.129.2025	MFCNCS 21.55.20	5-250	150	114	25	39	20	20	75.290.1200	75.290.1400	75.290.1600
75.129.2525	MFCNCS 21.55.25	5-250	150	114	25	39	25	25	75.290.1200	75.290.1400	75.290.1600



> **75.133 Phantom**

NL Freeskartelrolhouder, type MFCNC  
 FR Outils de moletage par coupe, type MFCNC  
 ES Moleteadores por corte, tipo MFCNC  
 DE Rändelfräshalter, Typ MFCNC



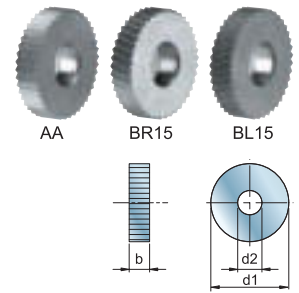
Ref.	Type	Ø mm	l1	l2	b1	b2	h1	h2	1	2	3
75.133.1616	MFCNC-16R	4-50	120	78	16	44	16	35	75.290.1100	75.290.1300	75.290.1500
75.133.2025	MFCNC-20R	5-250	165	112	20	63	25	50	75.290.1200	75.290.1400	75.290.1600
75.133.2525	MFCNC-25R	5-250	165	112	25	63	25	50	75.290.1200	75.290.1400	75.290.1600





## > 75.158 Phantom

NL **HSS-Co Frees Kartelrol, MFCNC 16x16**  
 FR **Molette de fraisage HSS-Co, MFCNC 16x16**  
 ES **Moleta de corte HSS-Co, MFCNC 16x16**  
 DE **HSS-Co Rändelfräsräder, MFCNC 16x16**

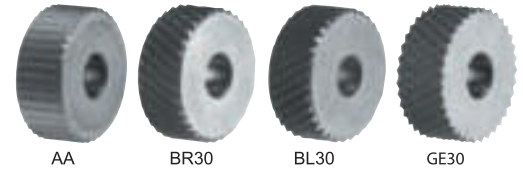


Ref.	Type	d1	d2	b1	t
75.158.1010	AA 14,5E3	14,5	5	3	1
75.158.2010	BL15 14,5E3	14,5	5	3	1

Ref.	Type	d1	d2	b1	t
75.158.3010	BR15 14,5E3	14,5	5	3	1

## > 75.174 Phantom

NL **HSS-Co Druk-Kartelrol, M1, M2, M3, M6, M7**  
 FR **Molette pour moletage par déformation HSS-Co, M1, M2, M3, M6, M7**  
 ES **Moleta de deformación HSS-Co, M1, M2, M3, M6, M7**  
 DE **HSS-Co Rändelräder, M1, M2, M3, M6, M7**

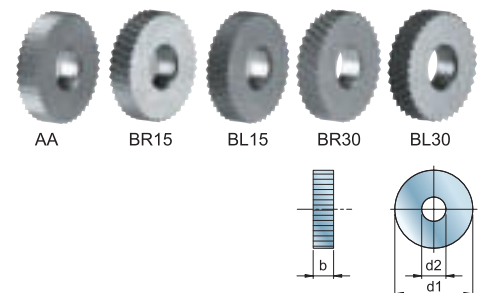


Ref.	Type	d1	d2	b1	t
75.174.1006	AA 20E8	20	6	8	0,6
75.174.1008	AA 20E8	20	6	8	0,8
75.174.1010	AA 20E8	20	6	8	1
75.174.1012	AA 20E8	20	6	8	1,2
75.174.1016	AA 20E8	20	6	8	1,6
75.174.1020	AA 20E8	20	6	8	2
75.174.4006	BR30 20E8	20	6	8	0,6
75.174.4008	BR30 20E8	20	6	8	0,8
75.174.4010	BR30 20E8	20	6	8	1
75.174.4012	BR30 20E8	20	6	8	1,2
75.174.4016	BR30 20E8	20	6	8	1,6
75.174.4018	BR30 20E8	20	6	8	1,8
75.174.4020	BR30 20E8	20	6	8	2

Ref.	Type	d1	d2	b1	t
75.174.5006	BL30 20E8	20	6	8	0,6
75.174.5008	BL30 20E8	20	6	8	0,8
75.174.5010	BL30 20E8	20	6	8	1
75.174.5012	BL30 20E8	20	6	8	1,2
75.174.5016	BL30 20E8	20	6	8	1,6
75.174.5018	BL30 20E8	20	6	8	1,8
75.174.5020	BL30 20E8	20	6	8	2
75.174.6006	GE30 20E8	20	6	8	0,6
75.174.6008	GE30 20E8	20	6	8	0,8
75.174.6010	GE30 20E8	20	6	8	1
75.174.6012	GE30 20E8	20	6	8	1,2
75.174.6016	GE30 20E8	20	6	8	1,6
75.174.6020	GE30 20E8	20	6	8	2

## > 75.182 Phantom

NL **HSS-Co Frees Kartelrol, MFCNCS, MFCNC 20x25 - 25x25**  
 FR **Molette de fraisage HSS-Co, MFCNCS, MFCNC 20x25 - 25x25**  
 ES **Moleta de corte HSS-Co, MFCNCS, MFCNC 20x25 - 25x25**  
 DE **HSS-Co Rändelfräsräder, MFCNCS, MFCNC 20x25 - 25x25**

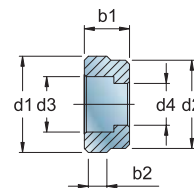
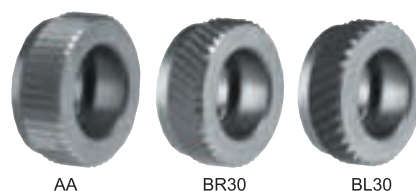


Ref.	Type	d1	d2	b1	t
75.182.1005	AA 21,5E5	21,5	8	5	0,5
75.182.1006	AA 21,5E5	21,5	8	5	0,6
75.182.1008	AA 21,5E5	21,5	8	5	0,8
75.182.1010	AA 21,5E5	21,5	8	5	1
75.182.1012	AA 21,5E5	21,5	8	5	1,2
75.182.1016	AA 21,5E5	21,5	8	5	1,6
75.182.1020	AA 21,5E5	21,5	8	5	2
75.182.2006	BR15 21,5E5	21,5	8	5	0,6
75.182.2008	BR15 21,5E5	21,5	8	5	0,8
75.182.2010	BR15 21,5E5	21,5	8	5	1
75.182.2012	BR15 21,5E5	21,5	8	5	1,2
75.182.2016	BR15 21,5E5	21,5	8	5	1,6
75.182.2020	BR15 21,5E5	21,5	8	5	2
75.182.3006	BL15 21,5E5	21,5	8	5	0,6
75.182.3008	BL15 21,5E5	21,5	8	5	0,8
75.182.3010	BL15 21,5E5	21,5	8	5	1

Ref.	Type	d1	d2	b1	t
75.182.3012	BL15 21,5E5	21,5	8	5	1,2
75.182.3016	BL15 21,5E5	21,5	8	5	1,6
75.182.3020	BL15 21,5E5	21,5	8	5	2
75.182.4005	BR30 21,5E5	21,5	8	5	0,5
75.182.4006	BR30 21,5E5	21,5	8	5	0,6
75.182.4008	BR30 21,5E5	21,5	8	5	0,8
75.182.4010	BR30 21,5E5	21,5	8	5	1
75.182.4012	BR30 21,5E5	21,5	8	5	1,2
75.182.4016	BR30 21,5E5	21,5	8	5	1,6
75.182.4020	BR30 21,5E5	21,5	8	5	2
75.182.5006	BL30 21,5E5	21,5	8	5	0,6
75.182.5008	BL30 21,5E5	21,5	8	5	0,8
75.182.5010	BL30 21,5E5	21,5	8	5	1
75.182.5012	BL30 21,5E5	21,5	8	5	1,2
75.182.5016	BL30 21,5E5	21,5	8	5	1,6
75.182.5020	BL30 21,5E5	21,5	8	5	2

> **75.197 Phantom**

NL **HSS-Co Druk-Kartelrol, MCNCS, MCNC**  
 FR **Molette pour moletage par déformation HSS-Co, MCNCS, MCNC**  
 ES **Moleta de deformación HSS-Co, MCNCS, MCNC**  
 DE **HSS-Co Rändelräder, MCNCS, MCNC**



Ref.	Type	d1	d2	d3	d4	b1	t
75.197.1006	AA 25D11	25	22	15	11	10	6
75.197.1008	AA 25D11	25	22	15	11	10	0,8
75.197.1010	AA 25D11	25	22	15	11	10	1
75.197.1012	AA 25D11	25	22	15	11	10	1,2
75.197.1016	AA 25D11	25	22	15	11	10	1,6
75.197.1020	AA 25D11	25	22	15	11	10	2
75.197.4006	BR30 25D11	25	22	15	11	10	0,6
75.197.4008	BR30 25D11	25	22	15	11	10	0,8
75.197.4010	BR30 25D11	25	22	15	11	10	1

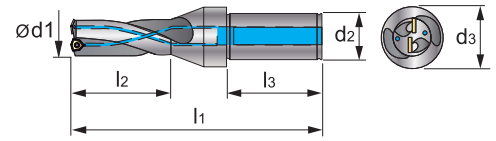
Ref.	Type	d1	d2	d3	d4	b1	t
75.197.4012	BR30 25D11	25	22	15	11	10	1,2
75.197.4016	BR30 25D11	25	22	15	11	10	1,6
75.197.4020	BR30 25D11	25	22	15	11	10	2
75.197.5006	BL30 25D11	25	22	15	11	10	0,6
75.197.5008	BL30 25D11	25	22	15	11	10	0,8
75.197.5010	BL30 25D11	25	22	15	11	10	1
75.197.5012	BL30 25D11	25	22	15	11	10	1,2
75.197.5016	BL30 25D11	25	22	15	11	10	1,6
75.197.5020	BL30 25D11	25	22	15	11	10	2





## > 75.300 Phantom

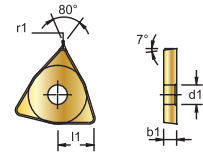
NL Volboor WCMX 3xD  
 FR Foret a plaquettes WCMX 3xD  
 ES Broca con plaquitas WCMX 3xD  
 DE Vollbohrer WCMX 3xD



Ref.	d1	d2	d3	l1	l2	1	2	3
75.300.1750	17,5	20	37	130	60	73.998.0512	73.998.0423	WCMX 0302
75.300.1800	18	20	37	130	60	73.998.0512	73.998.0423	WCMX 0302
75.300.1900	19	20	37	130	60	73.998.0512	73.998.0423	WCMX 0302
75.300.2200	22	25	37	151	75	73..998.0513	73.998.0423	WCMX 0402
75.300.2300	23	25	37	151	75	73..998.0513	73.998.0423	WCMX 0402
75.300.2400	24	25	37	156	80	73..998.0513	73.998.0423	WCMX 0402
75.300.2500	25	25	37	156	80	73..998.0513	73.998.0423	WCMX 0402
75.300.2600	26	25	37	166	90	73..998.0511	73.998.0490	WCMX 0503
75.300.2700	27	25	37	166	90	73..998.0511	73.998.0490	WCMX 0503
75.300.2800	28	25	37	166	90	73..998.0511	73.998.0490	WCMX 0503
75.300.2900	29	25	37	171	95	73..998.0511	73.998.0490	WCMX 0503
75.300.3000	30	30	37	171	95	73..998.0511	73.998.0490	WCMX 0503
75.300.3500	35	32	49	191	110	73..998.0514	73.998.0494	WCMX 06T3
75.300.3800	38	32	49	201	120	73..998.0514	73.998.0494	WCMX 06T3
75.300.4000	40	32	49	211	130	73..998.0514	73.998.0494	WCMX 06T3

## > 75.500 Phantom

NL Wisselplaat WCMX  
 FR Plaquette WCMX  
 ES Plaquita WCMX  
 DE Wendeplatte WCMX



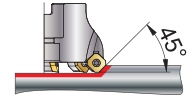
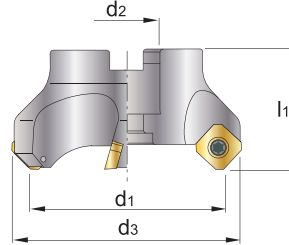
WCMX	l1(mm)	d1(mm)	b1(mm)	r1(mm)
03	3,46	2,50	2,38	0,8
04	3,99	2,80	2,38	0,8
05	5,07	3,40	3,18	0,8
06	6,14	3,80	3,97	0,8

Ref.	Type	$f_n$ (mm)	P	M	K	N	S	H
75.500.0600	WCMX 030208 HC-P25	0,08-0,15	P		K			
75.500.0650	WCMX 040208 HC-P25	0,08-0,15	P		K			
75.500.0700	WCMX 050308 HC-P25	0,10-0,30	P		K			
75.500.0750	WCMX 06T308 HC-P25	0,10-0,30	P		K			
75.500.0800	WCMX 030208 HC-P40	0,08-0,15	P	M				
75.500.0850	WCMX 040208 HC-P40	0,08-0,15	P	M				
75.500.0900	WCMX 050308 HC-P40	0,10-0,30	P	M				
75.500.0950	WCMX 06T308 HC-P40	0,10-0,30	P	M				



> **76.100 Phantom**

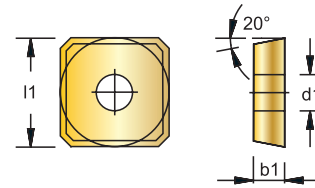
NL **Viakfrees, 45° SEHX 1204**  
 FR **Fraise à chanfreiner à 45° SEHX 1204**  
 ES **Fresa de planear, 45° SEHX 1204**  
 DE **Planfräser, 45° SEHX 1204**



Ref.	Type	d1	d2	d3	l1	z	1	2	3
76.100.0050	SEHX12 50X22X63X40 Z=4	50	22	63	40	4	73.998.0650	73.998.0680	SEH.. 12
76.100.0063	SEHX12 63X22X76X40 Z=5	63	22	76	40	5	73.998.0650	73.998.0680	SEH.. 12
76.100.0080	SEHX12 80X27X93X50 Z=6	80	27	93	50	6	73.998.0650	73.998.0680	SEH.. 12
76.100.0100	SEHX12 100X32X113X50 Z=7	100	32	113	50	7	73.998.0650	73.998.0680	SEH.. 12

> **76.615 Phantom**

NL **Wisselplaat SEHT 1204**  
 FR **Plaquette SEHT 1204**  
 ES **Plaquita SEHT 1204**  
 DE **Wendeplatte SEHT 1204**



SE..	l1(mm)	d1(mm)	b1(mm)
12	12,7	5,50	4,76

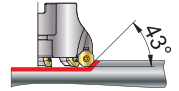
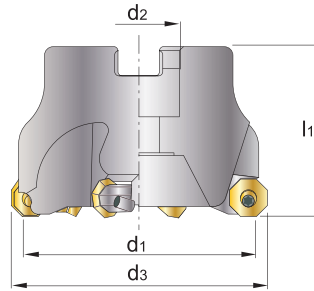
Ref.	Type	ap (mm)	fz (mm)	P	M	K	N	S	H
76.615.0150	SEHT 1204AF-ALU K10	6	0,1-0,5				N		
76.615.0200	SEHT 1204AFSN HC-P25	6	0,1-0,35	P					
76.615.0250	SEHT 1204AFSN HC-P25/M20/S15	6	0,1-0,35	P	M			S	
76.615.0360	SEHT 1204AFSN HC-P20/M20	6	0,1-0,35	P	M				





## > 76.115 Phantom

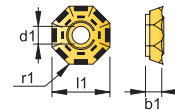
NL **Vlakfrees, 45° OFEX 05T3**  
 FR **Fraise à chanfreiner à 45° OFEX 05T3**  
 ES **Fresa de planear, 45° OFEX 05T3**  
 DE **Planfräser, 45° OFEX 05T3**



Ref.	Type	d1	d2	d3	l1	z	1	2	3
76.115.0040	OFEX05 40X16X47X40 Z=3	40	16	47	40	3	73.998.0645	73.998.0670	OFEX 05T3
76.115.0050	OFEX05 50X22X57X40 Z=3	50	22	57	40	4	73.998.0645	73.998.0670	OFEX 05T3
76.115.0063	OFEX05 63X22X70X40 Z=5	63	22	70	40	5	73.998.0645	73.998.0670	OFEX 05T3
76.115.0080	OFEX05 80X27X87X50 Z=6	80	27	87	50	6	73.998.0645	73.998.0670	OFEX 05T3

## > 76.470 Phantom

NL **Wisselplaat OFEX 05T3**  
 FR **Plaquette OFEX 05T3**  
 ES **Plaquita OFEX 05T3**  
 DE **Wendeplatte OFEX 05T3**

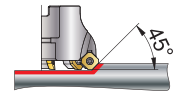
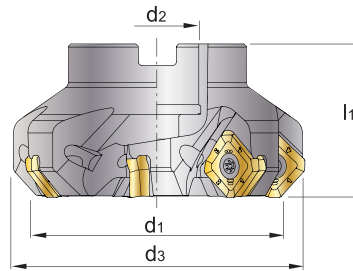


OFEX	l1(mm)	d1(mm)	b1(mm)	r1(mm)
05	12,7	4,50	3,97	0,5

Ref.	Type	a <sub>p</sub> (mm)	f <sub>z</sub> (mm)	P	M	K	N	S	H
76.470.0150	OFEX 05T305-ALU K10	0,5-3,5	0,1-0,5				N		
76.470.0200	OFEX 05T305 HC-P25	0,5-3,5	0,1-0,35	P					
76.470.0360	OFEX 05T305 HC-P20/M20	0,5-3,5	0,1-0,35	P	M				

> **76.125 Phantom**

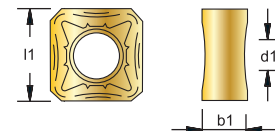
NL **Viakfrees, 45° SNHX 1205**  
 FR **Fraise à chanfreiner à 45° SNHX 1205**  
 ES **Fresa de planear, 45° SNHX 1205**  
 DE **Planfräser, 45° SNHX 1205**



Ref.	Type	d1	d2	d3	l1	z	1	2	3
76.125.0050	SNHX12 50X22X63X40 Z=4	50	22	63	40	4	73.998.0645	73.998.0670	SNHX 12
76.125.0063	SNHX12 63X22X76X40 Z=6	63	22	76	40	6	73.998.0645	73.998.0670	SNHX 12
76.125.0080	SNHX12 80X27X93X50 Z=7	80	27	93	50	7	73.998.0645	73.998.0670	SNHX 12
76.125.0100	SNHX12 100X32X113X50 Z=8	100	32	113	50	8	73.998.0630	73.998.0670	SNHX 12
76.125.0125	SNHX12 125X40X138X63 Z=10	125	40	138	63	10	73.998.0630	73.998.0670	SNHX 12

> **76.500 Phantom**

NL **Wisselplaat SNHX 1205**  
 FR **Plaquette SNHX 1205**  
 ES **Plaquita SNHX 1205**  
 DE **Wendeplatte SNHX 1205**



SN.X	l1(mm)	d1(mm)	b1(mm)
12	12,7	6,0	5,49

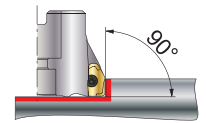
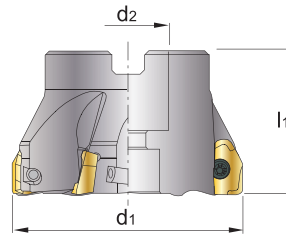
Ref.	Type	ap (mm)	fz (mm)	P	M	K	N	S	H
76.500.0200	SNHX 1205AN HC-P25	6	0,15-0,45	<b>P</b>					
76.500.0250	SNHX 1205AN HC-P25/M20/S15	6	0,15-0,45	<b>P</b>	<b>M</b>			<b>S</b>	
76.500.0360	SNHX 1205AN HC-P20/M20	6	0,15-0,45	<b>P</b>	<b>M</b>				





## > 76.135 Phantom

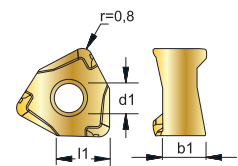
NL Hoekfrees, 90° XNEX 0806  
 FR Outil à surfacer, 90° XNEX 0806  
 SP Fresa de Escuadrado, 90° XNEX 0806  
 DE Winkel 90° XNEX 0806



Ref.	Type	d1	d2	l1	z	1	2	3
76.135.0050	XNEX08 50X22X40 Z=4	50	22	40	4	73.998.0640	73.998.0670	XNEX 08
76.135.0055	XNEX08 50X22X40 Z=5	50	22	40	5	73.998.0640	73.998.0670	XNEX 08
76.135.0063	XNEX08 63X22X40 Z=6	63	22	40	6	73.998.0640	73.998.0670	XNEX 08
76.135.0080	XNEX08 80X27X50 Z=7	80	27	50	7	73.998.0640	73.998.0670	XNEX 08
76.135.0100	XNEX08 100X32X50 Z=8	100	32	50	8	73.998.0640	73.998.0670	XNEX 08

## > 76.520 Phantom

NL Wisselplaat XNEX 0806  
 FR Plaqueette XNEX 0806  
 ES Plaquita XNEX 0806  
 DE Wendeplatte XNEX 0806



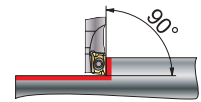
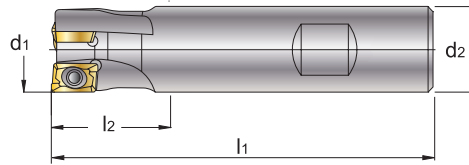
XN.X	l1(mm)	d1(mm)	b1(mm)
08	7,5	4,5	6,56

Ref.	Type		a <sub>p</sub> (mm)	f <sub>z</sub> (mm)	P	M	K	N	S	H
76.520.0150	XNEX 80608 K10		7	0,05-0,35				N		
76.520.0200	XNEX 080608 HC-P25		7	0,08-0,4	P					
76.520.0250	XNEX 080608 HC-P25/M20/S15		7	0,08-0,4	P	M			S	
76.520.0360	XNEX 080608 HC-P20/M20		7	0,08-0,4	P	M				



> **76.145 Phantom**

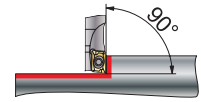
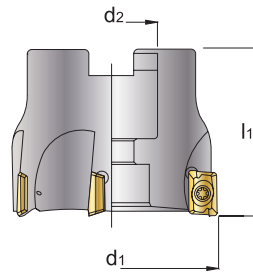
NL Schachtfrees, 90° APKT 1003  
 FR Fraise à plaquettes, 90° APKT 1003  
 ES Fresa integral, 90° APKT 1003  
 DE Schafffräser, 90° APKT 1003



Ref.	Type	d1	d2	l1	l2	z	1	2	3
76.145.0016	APKT10 16X16X85 Z=2	16	16	85	25	2	73.998.0600	73.998.0660	APKT 1003
76.145.0020	APKT10 20X20X85 Z=3	20	20	85	30	3	73.998.0600	73.998.0660	APKT 1003
76.145.0025	APKT10 25X25X95 Z=4	25	25	95	35	4	73.998.0600	73.998.0660	APKT 1003
76.145.0032	APKT10 32X32X95 Z=5	32	32	95	35	5	73.998.0600	73.998.0660	APKT 1003

> **76.146 Phantom**

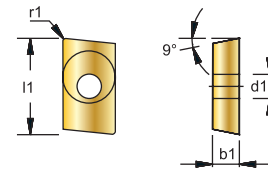
NL Hoekfrees, 90° APKT 1003  
 FR Outil à surfer, 90° APKT 1003  
 ES Fresa de Escuadrado, 90° APKT 1003  
 DE Winkel 90° APKT 1003



Ref.	Type	d1	d2	l1	z	1	2	3
76.146.0040	APKT10 40X16X40 Z=6	40	16	40	6	73.998.0600	73.998.0660	APKT 1003
76.146.0050	APKT10 50X22X40 Z=7	50	22	40	7	73.998.0600	73.998.0660	APKT 1003

> **76.365 Phantom**

NL Wisselplaat APKT, APHT 1003  
 FR Plaque APKT, APHT 1003  
 ES Plaquita APKT, APHT 1003  
 DE Wendeplatte APKT, APHT 1003



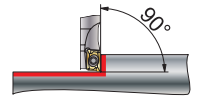
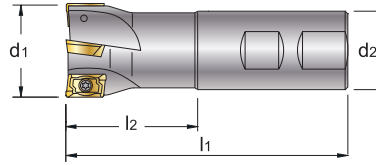
APKT	l1(mm)	d1(mm)	b1(mm)	r1(mm)
10	10,5	2,80	3,50	0,5

Ref.	Type	ap (mm)	fz (mm)	P	M	K	N	S	H
76.365.0150	APHT 1003-ALU K10	10	0,1-0,5				N		
76.365.0200	APKT 1003PDR HC-P25	10	0,08-0,3	P					
76.365.0250	APKT 1003PDR HC-P25/M20/S15	10	0,08-0,3	P	M			S	
76.365.0360	APKT 1003PDR HC-P20/M20	10	0,08-0,3	P	M				



### > 76.155 Phantom

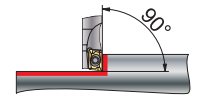
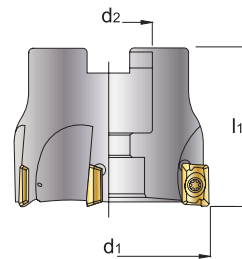
NL Schachtfrees, 90° APKT 1604  
 FR Fraise à plaquettes, 90° APKT 1604  
 ES Fresa integral, 90° APKT 1604  
 DE Schafffräser, 90° APKT 1604



Ref.	Type	d1	d2	l1	l2	z	1	2	3
76.155.0025	APKT16 25X20X95 Z=2	25	20	95	40	2	73.998.0610	73.998.0670	APKT 1604
76.155.0032	APKT16 32X25X95 Z=3	32	25	95	40	3	73.998.0645	73.998.0670	APKT 1604

### > 76.156 Phantom

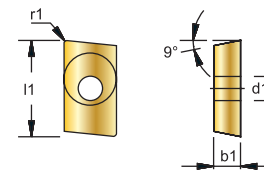
NL Hoekfrees, 90° APKT 1604  
 FR Outil à surfaçer, 90° APKT 1604  
 ES Fresa de Escuadrado, 90° APKT 1604  
 DE Winkel 90° APKT 1604



Ref.	Type	d1	d2	l1	z	1	2	3
76.156.0040	APKT16 40X16X40 Z=4	40	16	40	4	73.998.0645	73.998.0670	APKT 1604
76.156.0050	APKT16 50X22X40 Z=5	50	22	40	5	73.998.0645	73.998.0670	APKT 1604
76.156.0063	APKT16 63X22X40 Z=6	63	22	40	6	73.998.0645	73.998.0670	APKT 1604

### > 76.366 Phantom

NL Wisselplaat APKT, APHT 1604  
 FR Plaquette APKT, APHT 1604  
 ES Plaquita APKT, APHT 1604  
 DE Wendeplatte APKT, APHT 1604



APKT	l1(mm)	d1(mm)	b1(mm)	r1(mm)
16	17,0	4,40	5,26	0,9

Ref.	Type	a <sub>p</sub> (mm)	f <sub>z</sub> (mm)	P	M	K	N	S	H
76.366.0150	APHT 1604-ALU K10	15	0,1-0,5				N		
76.366.0200	APKT 1604PDR HC-P25	15	0,1-0,4	P					
76.366.0250	APKT 1604PDR HC-P25/M20/S15	15	0,1-0,4	P	M			S	
76.366.0360	APKT 1604PDR HC-P20/M20	15	0,1-0,4	P	M				



> **79.510**

NL **Set Kartelen**  
 FR **Assortiment d'outils à moleter**  
 ES **Juego de herramientas para moletear**  
 DE **Satz Rändelwerkzeuge**



Ref.	Type	Contents
79.510.1000	KM1-M7	1x M7 1x M12 1x BR30-BL30-AA (0.8) 1x BR30-BL30-AA (1.2) 1x BR30-BL30-AA(1.6)

> **79.613**

NL **Set, Hoekfrees, 90°, incl. wisselplaten XNEX 0806**  
 FR **Jeu, Outil à surfacier, 90°, incl. plaquettes XNEX 0806**  
 ES **Juego de, Fresa de Escuadrado, 90°, incl. wisselplaten XNEX 0806**  
 DE **Satz, Winkel 90°, inkl. Wendeplatten XNEX 0806**



-  **P** 76.520.0200
-  **P M S** 76.520.0250
-  **P M** 76.520.0360

Ref.	Contents
79.613.1020	Ø 100 mm - 80 x XNEX HC-P25
79.613.1025	Ø 100 mm - 80 x XNEX HC-P25/M20
79.613.1036	Ø 100 mm - 80 x XNEX HC-M20
79.613.5020	Ø 50 mm - 40 x XNEX HC-P25
79.613.5025	Ø 50 mm - 40 x XNEX HC-P25/M20
79.613.5036	Ø 50 mm - 40 x XNEX HC-M20
79.613.5520	Ø 50 mm - 50 x XNEX HC-P25
79.613.5525	Ø 50 mm - 50 x XNEX HC-P25/M20
79.613.5536	Ø 50 mm - 50 x XNEX HC-M20
79.613.6320	Ø 63 mm - 50 x XNEX HC-P25
79.613.6325	Ø 63 mm - 50 x XNEX HC-P25/M20
79.613.6336	Ø 63 mm - 50 x XNEX HC-M20
79.613.8020	Ø 80 mm - 70 x XNEX HC-P25
79.613.8025	Ø 80 mm - 70 x XNEX HC-P25/M20
79.613.8036	Ø 80 mm - 70 x XNEX HC-M20



NL **Snijsnelheden draaien**  
 FR **Vitesse de coupe de tournage**  
 ES **Velocidades de corte para tornear**  
 DE **Schnittgeschwindigkeit Drehen**

		HM															
ISO	Gr.	CM10	K10	K20	HC-K10	P25	HC-P10/ K10	HC-P15	HC-P15/ M15	HC-P25	HC-P25/ M20	HC-P25/ M20/ S15	HC-P25/ M25/ K20	HC-P35	HC-P35/ M25	HC-P35/ M30	HC-M20/ K30
		Vc (m/min)															
P	11	280-350			110-160	100-140			220-400		190-290					180-230	240-210
	12	260-300			90-120	90-120			100-280	200-320	100-250	170-250	90-250	60-130	80-150	130-150	220-120
	13	260-300			90-120	90-120			100-280	200-320	100-250	170-250	90-250	60-130	80-150	130-150	220-120
	14	160-200			80-110	60-100			120-280			130-210				70-130	80-110
H	15											60-120					
	21	230-270			90-140				220-300		140-210	80-230	80-140		140-200	120-110	150-200
M	22	170-240									70-100				80-150	100-90	90-160
	31		120-160		180-220		250-450	90-300	140-370	90-300	130-210	100-280	80-150				120-160
K	32	220-300	130-170		120-180		220-380		140-270		120-200						90-130
	41		300-2500	100-500	300-3200												
N	42		400-1500	100-300	400-2000												
	51		250-600	100-300	200-1000												
	52		250-600	100-300	200-1000												
	61		80-180	80-180	80-220												
S	71				20-40												
	72				80-140							60-150					

NL **Snijsnelheden steken**  
 FR **Vitesse de coupe de tronçonnage**  
 ES **Velocidades de corte para tronzar**  
 DE **Schnittgeschwindigkeit Stechen**

		HM			
ISO	Gr.	K15	HC-P25/ M20	HC-P35/ M25	HC-P40/ M30
P	11			140-210	90-200
	12			100-160	90-180
	13			100-160	90-180
	14		60-140	80-160	70-140
H	15				
	21		60-130	50-90	60-80
M	22				
	31	60-180			50-140
K	32	60-150			120-180
	41	500-2000		100-500	300-3200
N	42	100-400		100-300	200-1000
	51	100-400		100-300	200-1000
	52	100-400		100-300	200-1000
	61	50-700		80-180	80-220
S	71				20-40
	72				80-140

NL **Snijsnelheden draadsnijden**  
 FR **Vitesse de coupe de filetage**  
 ES **Velocidades de corte para roscar**  
 DE **Schnittgeschwindigkeit Gewindeschneiden**

		HM			
ISO	Gr.	P30	HC-P25	HC-P25/ M20	HC-P25/ M20/ K20
P	11	70-130	80-150		115-190
	12	70-120	70-130		85-145
	13	70-120	70-130		85-145
	14	50-80	60-110		70-110
H	15				45-60
	21	75-110		70-150	70-130
M	22	70-100		40-120	40-110
	31				70-130
K	32				125-160
	41				100-365
N	42				200-400
	51				80-225
	52				80-225
	61				
S	71				20-30
	72				50-70

NL **Snijsnelheden frezen**  
 FR **Vitesse de coupe de fraisage**  
 ES **Velocidades de corte para fresar**  
 DE **Schnittgeschwindigkeit Fräsen**

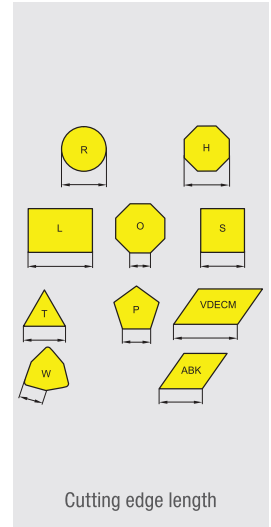
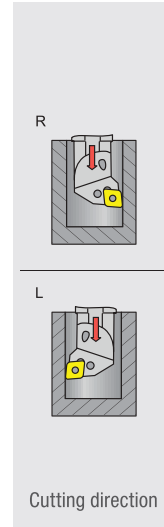
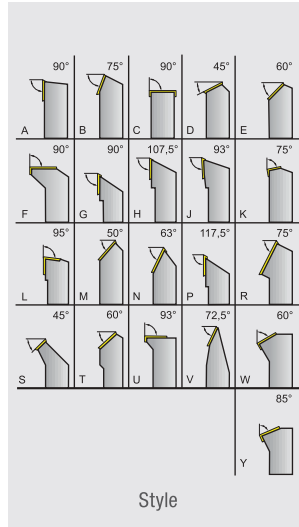
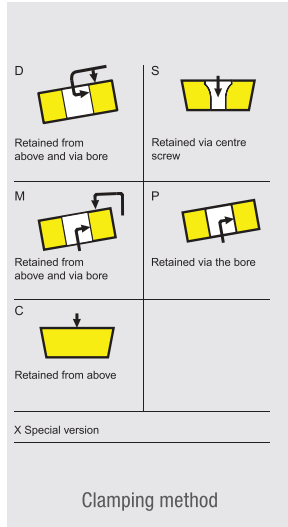
		HM				
ISO	Gr.	K10	HC-P25	HC-P20/ M20	HC-P25/ M25/ S15	HC-P30/ M25
P	11					190-280
	12		80-180	80-180	90-250	140-250
	13		80-180	80-180	90-250	140-250
	14					80-130
H	15			60-120	60-120	
	21			80-200	80-230	
M	22					
	31				100-280	160-310
K	32					130-200
	41	100-600				
N	42					
	51					
	52					
	61					
S	71			60-150	60-150	
	72					

NL ISO Wisselplaathouder inwendig draaien  
 FR Porte-plaquette ISO tournage intérieur  
 ES Portaplaquita ISO torneado interior  
 DE ISO Klemmhalter innen drehen



S	Steel shank	E	As C with coolant hole
A	Steel shank with coolant hole	F	As C with anti-vibration system
B	Steel shank with anti-vibration system	C	As C with coolant hole and anti-vibration system
D	Steel shank with coolant hole and anti-vibration system	H	Heavy metal
C	Carbide shank with steel head	J	Heavy metal with coolant hole

Shank version



**S 32 U - D C L N R 12**

Shank Ø

d <sub>s</sub> mm	
08	
10	
12	
16	
20	
25	
32	
40	
50	
60	

Tool length

l <sub>t</sub> mm	
80	F
100	H
110	J
125	K
140	L
150	M
160	N
180	P
170	Q
200	R
250	S
300	T
350	U
400	V
450	W
500	Y
Special length	X

Insert shape

Included angle		35°	V			
		55°	D			
		75°	E			
		80°	C			
		86°	M			
Included angle		55°	K			
		82°	B			
		85°	A			
Other shapes	90°	L	—	●	R	
	108°	P	●	90°	●	S
	120°	H	●	60°	—	T
	135°	O	●	80°	—	W

Clearance angle

3°	A	25°	F
5°	B	30°	G
7°	C	0°	N
15°	D	11°	P
20°	E		

Clearance angles not included within the standard for which particular information is necessary } O





NL ISO Wisselplaatouder uitwendig draaien  
 FR Porte-plaquette ISO tournage extérieur  
 ES Portaplaquita ISO torneado exterior  
 DE ISO Klemmhalter außen drehen



**D**  
Retained from above and via bore

**S**  
Retained via centre screw

**M**  
Retained from above and via bore

**P**  
Retained via the bore

**C**  
Retained from above

X Special version

Clamping method

Style

Cutting direction

Shank width

Cutting edge length

**D      C      L      N      R 25      25 - M      12**

Insert shape

Included angle		35°	V			
		55°	D			
		75°	E			
		80°	C			
Included angle		86°	M			
		55°	K			
		82°	B			
		85°	A			
Other shapes	90°	L	—	●	R	
	108°	P	●	90°	■	S
	120°	H	●	60°		T
	135°	O	●	80°		W

Clearance angle

3°	A	25°	F
5°	B	30°	G
7°	C	0°	N
15°	D	11°	P
20°	E		

Clearance angles not included within the standard for which particular information is necessary

} O

Shank height

Tool holder

Cartridge

Round shank

00

Tool length

l <sub>1</sub> , mm	A	l <sub>1</sub> , mm	N
32	A	160	N
40	B	170	P
50	C	180	Q
60	D	200	R
70	E	250	S
80	F	300	T
90	G	350	U
100	H	400	V
110	J	450	W
125	K	500	Y
140	L	Special	X
150	M		



NL ISO Wisselplaten  
 FR Plaquettes ISO  
 ES Plaquetas ISO  
 DE ISO Wendeplatten



Included angle	35°	V
	55°	D
Included angle	75°	E
	80°	C
Included angle	86°	M
	55°	K
Included angle	82°	B
	85°	A
Other shapes	90°	L
	108°	P
Other shapes	120°	H
	135°	O
Other shapes	-	R
	90°	S
Other shapes	60°	T
	80°	W

Insert shape

3°	A	25°	F
5°	B	30°	G
7°	C	0°	N
15°	D	11°	P
20°	E		

Clearance angle

Clearance angles not included within the standard for which particular information is necessary

	d ±	m ±	s ±
A	0,025	0,005	0,025
F	0,013	0,005	0,025
C	0,025	0,013	0,025
H	0,013	0,013	0,025
E	0,025	0,025	0,025
G	0,025	0,025	0,13
J	0,05-0,15*	0,005	0,025
K	0,05-0,15*	0,013	0,025
L	0,05-0,15*	0,025	0,025
M	0,05-0,15*	0,08-0,20	0,13
N	0,05-0,15*	0,08-0,20	0,025
U	0,08-0,25*	0,13-0,38	0,13

Tolerances

N		
R		
F		
A		
M, P		
G, P		
W		
T		
Q		
U		
B		
H		
C		
J		
X	Special version	

Form of top surface

d mm			
06	08	10	16
12	12	20	25
12	12	32	32

Cutting edge length

	Inch	mm	Index
1/16	1,59	01	
3/32	2,38	02	
1/8	3,18	03	
5/32	3,97	T3	
3/16	4,76	04	
7/32	5,56	05	
1/4	6,35	06	
5/16	7,94	07	
3/8	9,52	09	

Insert thickness

Code	Corner radius mm
00	≤ 0,05
01	0,1
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
24	2,4
32	3,2

Corner radius

Ⓞ RN 00  
RC MO

**C**   **N**   **M**   **G**   **12**   **04**   **08**

<p><b>N</b> </p> <p>Negative</p> <p><b>P</b> </p> <p>Positive</p> <p>Insert Type</p>	<p><b>F</b> </p> <p>Fine</p> <p><b>M</b> </p> <p>Medium</p> <p><b>R</b> </p> <p>Roughing</p> <p><b>A</b> Aluminium Non-Ferro</p> <p>Insert Index</p>	<p><b>1</b> </p> <p><b>6</b> </p> <p>Chipbreaker Index</p>	<p><b>ALU</b> Uncoated</p> <p><b>HC</b> Coated</p> <p>Surface</p>	<p><b>P</b> </p> <p>Steel</p> <p><b>M</b> </p> <p>INOX</p> <p><b>K</b> </p> <p>Cast NF</p> <p><b>S</b> </p> <p>Super Alloys</p> <p>ISO Index</p>	<p><b>10</b> </p> <p><b>35</b> </p> <p>Hard</p> <p>Tough</p> <p>Carbide Grade</p>
<b>N</b>	<b>M</b>	<b>3</b>	<b>HC</b>	<b>P</b>	<b>25</b>





NL **Negatieve wisselplaten voor draaien**  
 FR **Plaquettes négatives pour tournage**  
 ES **Plaquetas negativas para torneado**  
 DE **Negative Wendepplatten zum drehen**

N

NL **Fijn/nadraaien**  
 FR **Tournage fin**  
 ES **Torneado fino**  
 DE **Schlichten**

F

<p>NF2</p> 	 			
		<p>HC-P15/M15 HC-P35/M25</p>	<p>HC-P35/M25</p>	
		<p>HC-P15/M15 HC-P35/M25</p>	<p>HC-P35/M25</p>	
<p>NF2E</p> 	 			
		<p>HC-P25/M20/S15 HC-P15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20/S15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20/S15</p>		
<p>NF3</p> 	 			
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
<p>NF4</p> 	 			
		<p>HC-M20/K30</p>		
		<p>HC-M20/K30</p>		
		<p>HC-M20/K30</p>		
		<p>HC-M20/K30</p>		
		<p>HC-M20/K30</p>		


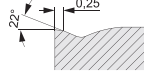
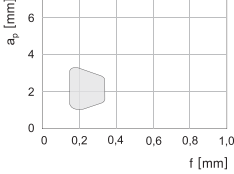





NL **Negatieve wisselplaten voor draaien**  
 FR **Plaquettes négatives pour tournage**  
 ES **Plaquetas negativas para torneado**  
 DE **Negative Wendeplatten zum drehen**

**N**

NL **Middelmatige bewerking negatieve wisselplaat**  
 FR **Tournage semi-finition**  
 ES **Torneado medio**  
 DE **Mittlere Zerspanung**

**M**

<p>NM3E</p> 	 			
		<p>HC-P25/M20/S15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20/S15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20/S15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20/S15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20/S15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20/S15</p>	<p>HC-P25/M20/S15</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20 HC-P35/M25</p>	<p>HC-P35/M25</p>
		<p>HC-P15/M15</p>	<p>HC-P25/M20 HC-P35/M25</p>	<p>HC-P35/M25</p>
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	
		<p>HC-P25/M20</p>	<p>HC-P25/M20</p>	




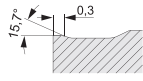
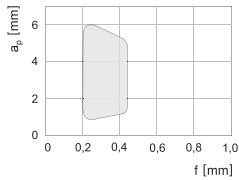




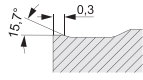
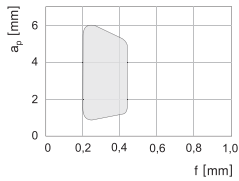




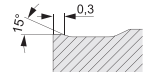
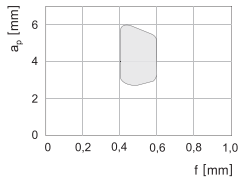




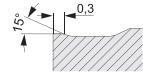
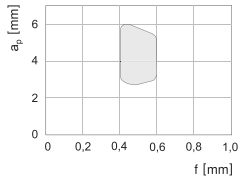





NL **Negatieve wisselplaten voor draaien**  
 FR **Plaquettes négatives pour tournage**  
 ES **Plaquetas negativas para torneado**  
 DE **Negative Wendepplatten zum drehen**

NL **Ruwen negatieve wisselplaat**  
 FR **Usinage d'ébauche**  
 ES **Mecanizado en desbaste**  
 DE **Schruppen**

N


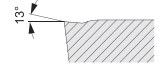
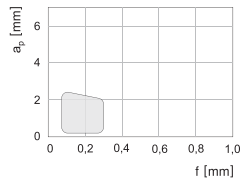




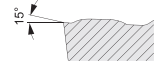
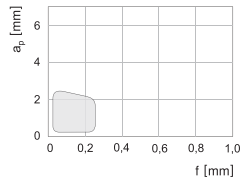




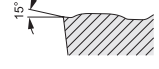
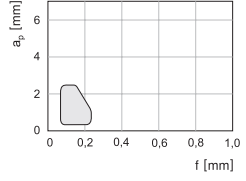



R

<p>NR4E</p> 	 	 HC-P15	 HC-P15	 HC-P15
<p>NR4</p> 	 	 HC-P25/M20 HC-P35/M25	 HC-P25/M20	 HC-P35/M25
<p>NR5E</p> 	 	 HC-P25	 HC-P25	 HC-P25
<p>NR5</p> 	 	 HC-P25/M20 HC-P15/M15	 HC-P25/M20	 HC-P25/M20 HC-P15/M15

NL **Positieve wisselplaten voor draaien**  
 FR **Plaquettes positives pour tournage**  
 ES **Plaquetas positivas para torneado**  
 DE **Positive Wendeplatten zum drehen**

NL **Fijn/nadraaien**  
 FR **Tournage fin**  
 ES **Torneado fino**  
 DE **Schlichten**

**P**  
**F**

<p>PF2</p> 	 	 CM10	 CM10	 CM10
<p>PF3</p> 	 	 HC-P25/M20	 HC-P35/M25	 HC-P35/M25
<p>PF4</p> 	 	 HC-P35/M30	 HC-P35/M30	 HC-P35/M30




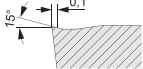
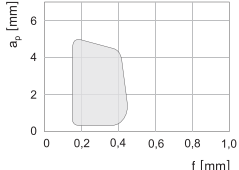




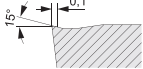
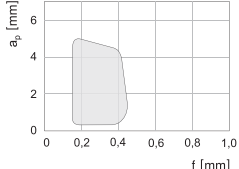





NL **Positieve wisselplaten voor draaien**  
 FR **Plaquettes positives pour tournage**  
 ES **Plaquetas positivas para torneado**  
 DE **Positive Wendepplatten zum drehen**

P

NL **Middelmatige bewerking**  
 FR **Tournage semi-finition**  
 ES **Torneado medio**  
 DE **Mittlere Zerspantung**

M


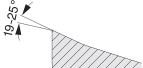
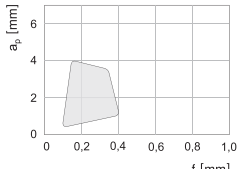



<p>PM3E</p> 	 			
		HC-P15 HC-P25/M20/S15	HC-P25/M20/S15	
		HC-P25/M20/S15	HC-P25/M20/S15	
		HC-P25/M20/S15	HC-P25/M20/S15	
<p>PM3</p> 	 			
		HC-P25/M20	HC-P25/M20 HC-P35/M25	HC-P35/M25
		HC-P25/M20	HC-P25/M20 HC-P35/M25	HC-P35/M25
		HC-P25/M20	HC-P25/M20	

NL **Positieve wisselplaten voor draaien**  
 FR **Plaquettes positives pour tournage**  
 ES **Plaquetas positivas para torneado**  
 DE **Positive Wendepplatten zum drehen**


P

NL **Aluminium/Non-Ferro**  
 FR **Aluminium/Non-Ferro**  
 ES **Aluminio/Non-Ferro**  
 DE **Aluminium/Nichteisenmetall**

A

<p>PA2</p> 	 			
		HC-K10 K10	HC-K10	
		HC-K10 K10	HC-K10	
		HC-K10 K10	HC-K10	
		HC-K10 K10	HC-K10	

NL **Draadsnijden**  
 FR **Filetage**  
 ES **Roscar**  
 DE **Gewindedrehen**

 <table border="1"> <thead> <tr> <th>mm</th> <th>Inch</th> <th>mm</th> </tr> </thead> <tbody> <tr> <td>09</td> <td>7/32</td> <td>5,56</td> </tr> <tr> <td>11</td> <td>1/4</td> <td>6,35</td> </tr> <tr> <td>16</td> <td>3/8</td> <td>9,52</td> </tr> <tr> <td>22</td> <td>1/2</td> <td>12,7</td> </tr> <tr> <td>27</td> <td>5/8</td> <td>15,8</td> </tr> </tbody> </table> <p>Insert size</p>	mm	Inch	mm	09	7/32	5,56	11	1/4	6,35	16	3/8	9,52	22	1/2	12,7	27	5/8	15,8	<table border="1"> <tbody> <tr> <td>E</td> <td>External</td> </tr> <tr> <td>I</td> <td>Internal</td> </tr> <tr> <td>EI</td> <td>Ex- &amp; Internal</td> </tr> </tbody> </table> <p>Type of Insert</p>	E	External	I	Internal	EI	Ex- & Internal	<table border="1"> <tbody> <tr> <td>R</td> <td>Right Hand</td> </tr> <tr> <td>L</td> <td>Left Hand</td> </tr> </tbody> </table> <p>RH/LH Insert</p>	R	Right Hand	L	Left Hand	<table border="1"> <thead> <tr> <th colspan="2">Full Profile - Pitch Range</th> </tr> <tr> <th>mm</th> <th>tpi</th> </tr> </thead> <tbody> <tr> <td>0.35-25.0</td> <td>72-1</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Partial Profile - Pitch Range</th> </tr> <tr> <th>mm</th> <th>tpi</th> </tr> </thead> <tbody> <tr> <td>A 0.5-1.5</td> <td>48-16</td> </tr> <tr> <td>AG 0.5-3.0</td> <td>48-8</td> </tr> <tr> <td>G 1.75-3.0</td> <td>14-8</td> </tr> <tr> <td>N 3.5-5.0</td> <td>7-5</td> </tr> </tbody> </table> <p>Pitch</p>	Full Profile - Pitch Range		mm	tpi	0.35-25.0	72-1	Partial Profile - Pitch Range		mm	tpi	A 0.5-1.5	48-16	AG 0.5-3.0	48-8	G 1.75-3.0	14-8	N 3.5-5.0	7-5	<table border="1"> <thead> <tr> <th colspan="2">Partial Profile</th> </tr> </thead> <tbody> <tr> <td>60°</td> <td>60° Partial profile</td> </tr> <tr> <td>55°</td> <td>55° Partial profile</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Full Profile</th> </tr> </thead> <tbody> <tr> <td>ISO</td> <td>ISO Metric</td> </tr> <tr> <td>UN</td> <td>American UN</td> </tr> <tr> <td>W</td> <td>Whitworth BSW/BSP</td> </tr> <tr> <td>TR</td> <td>Trapez</td> </tr> </tbody> </table> <p>Thread Standard</p>	Partial Profile		60°	60° Partial profile	55°	55° Partial profile	Full Profile		ISO	ISO Metric	UN	American UN	W	Whitworth BSW/BSP	TR	Trapez	<table border="1"> <tbody> <tr> <td>B</td> <td>With chipbreaker</td> </tr> <tr> <td>-</td> <td>Without</td> </tr> </tbody> </table> <p>Chipbreaker</p>	B	With chipbreaker	-	Without
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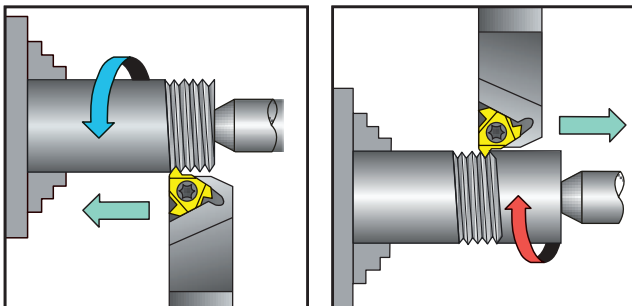
175

ISO

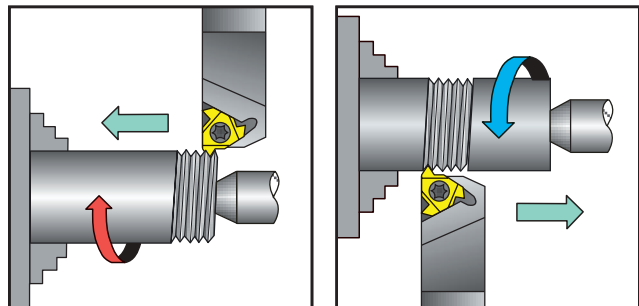
B

NL **Schroefdraadsnij methodes**  
 FR **Méthodes de filetage en tournage**  
 ES **Métodos de torneado de roscas**  
 DE **Gewindedrehverfahren**

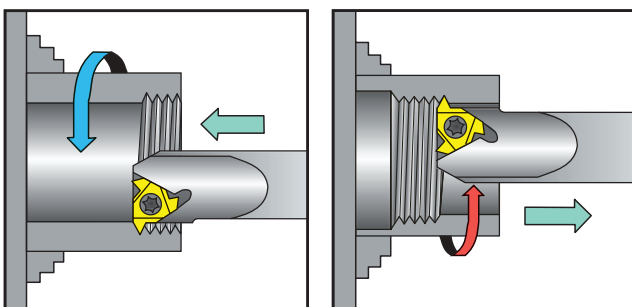
**External RH Thread**



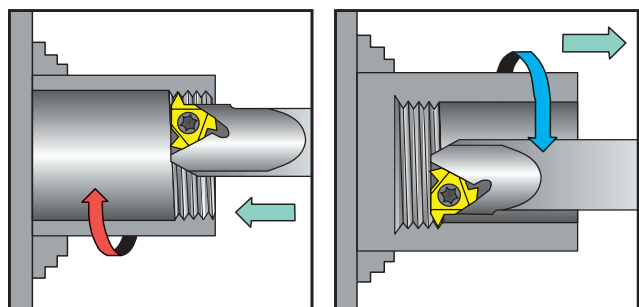
**External LH Thread**



**Internal RH Thread**

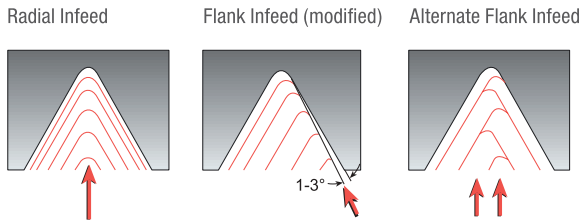


**Internal LH Thread**

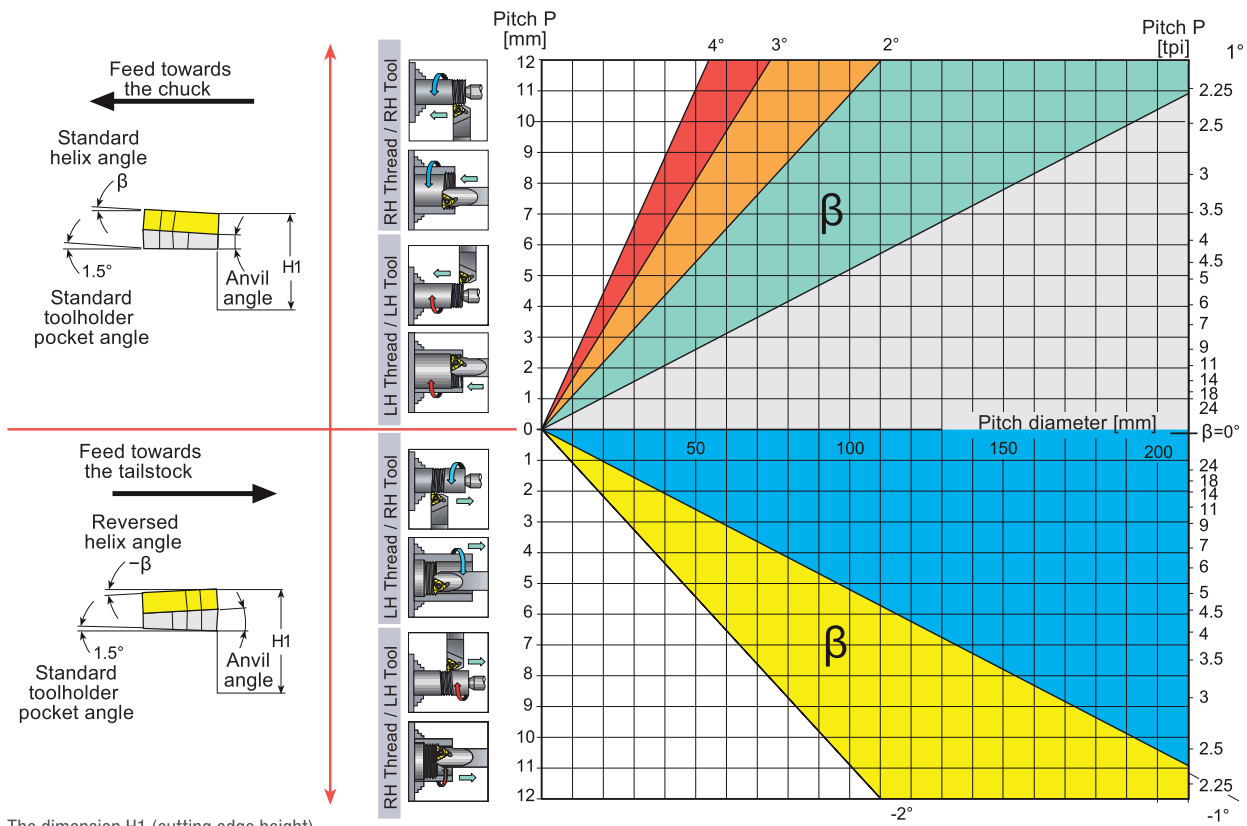




NL **Invoer methoden**  
 FR **Méthode angle d'attaque**  
 ES **Métodos de ataque de la rosca**  
 DE **Gewinzustellverfahren**



NL **Schroefdraadhelingshoek diagram**  
 FR **Diagramme de l'angle d'hélice**  
 ES **Diagrama del ángulo de hélice**  
 DE **Teilungswinkel Diagramm**



The dimension H1 (cutting edge height) remains constant with every insert / anvil combination.

NL **Onderlegplaten**  
 FR **Sous-plaquettes**  
 ES **Placa base**  
 DE **Unterlegplatten**

Resultant Helix Angle		$\beta$ Holder	3.5°	2.5°	1.5°	0.5°	0°	-0.5°	-1.5°
Insert Size	L mm		Ordering Code						
3/8"	16	ER / IL	743980170	743980175	743980165	74398180	-	743980190	743980195
		EL / IR	743980265	743980270	743980260	743980275	-	743980280	743980285
1/2"	22	ER / IL	743980205	743980210	743980200	743980215	-	743980220	743980225
		EL / IR	743980295	743980300	743980290	743980305	-	743980310	743980315
3/8" Groove	16	ER / IL	-	-	-	-	743980400	-	-
		EL / IR	-	-	-	-	743980500	-	-

NL ISO Wisselplaten  
 FR Plaquettes ISO  
 ES Plaquitas ISO  
 DE ISO Wendeplatten



<p><b>Insert shape</b></p> <p>A 85°                  B 82°                  K 55°</p> <p>H 120°</p> <p>L 90°</p> <p>O 135°</p> <p>P 108°</p> <p>C 80°                  D 55°                  E 75°                  M 86°                  V 35°</p> <p>R -</p> <p>S 90°</p> <p>T 60°</p> <p>W 80°</p> <p>X Special shapes</p>	<p><b>Clearance angle</b></p> <p><math>\alpha</math></p> <p>A 3°                  B 5°                  C 7°                  D 15°                  E 20°                  F 25°                  G 30°                  N 0°                  P 11°                  O Special version</p>	<p><b>Tolerances</b></p> <table border="1"> <thead> <tr> <th></th> <th>d [mm]</th> <th>m [mm]</th> <th>s [mm]</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>.025</td> <td>.005</td> <td>.025</td> </tr> <tr> <td>C</td> <td>.025</td> <td>.013</td> <td>.025</td> </tr> <tr> <td>E</td> <td>.025</td> <td>.025</td> <td>.025</td> </tr> <tr> <td>F</td> <td>.013</td> <td>.005</td> <td>.025</td> </tr> 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       A 3°                  B 5°                  C 7°                  D 15°                  E 20°                  F 25°                  G 30°                  N 0°                  P 11°                  Z Others</p> <p>Radius r (mm)                  M0*                  02 0.2                  04 0.4                  05 0.8                  08 0.8                  12 1.2</p> <p>* Shape R only</p>	<p><b>Cutting edge</b></p> <p>F Sharp                  E Honed                  S Chamfered and honed                  T Chamfered</p> <p><b>Cutting direction</b></p> <p>R                  L                  N</p>
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**S E H T 12 03 AE SN**

<p><b>Surface</b></p> <p>ALU Uncoated                  HC Coated</p>	<p><b>ISO Index</b></p> <p>P Steel                  M INOX                  K Cast NF                  S Super Alloys</p>	<p><b>Carbide Grade</b></p> <p>Hard                  10                  35                  Tough</p>
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**HC P 25**





NL Slijtage soorten  
 FR Types d'usure  
 ES Tipos de desgaste  
 DE Verschleißarten

	<p>Built-up edge (Adhesive wear)</p>	
	<p>Notching (Adhesive/Mechanic)</p>	
	<p>Crater (Chemical wear)</p>	
	<p>Flank wear (Abrasive wear)</p>	
	<p>Plastic deformation (Thermal wear)</p>	
	<p>Thermal cracks (Thermal wear)</p>	
	<p>Breakage (Mechanic wear)</p>	



NL **Maatregelen bij draaiproblemen**  
 FR **Problèmes de tournage et solutions**  
 ES **Problemas de torneado y soluciones**  
 DE **Maßnahmen bei Drehproblemen**

Type of problem													
Build up edge	Notching	Cratering	Flank wear	Plastic deformation	Breakage	Edge chipping	Surface quality	Vibration	Formation of burrs and chips	Long chips ( tangled swarf)	Short chips ( fragmented chips)	Corrective measures	
↑	↓	↓	↓	↓			↑	↓				Cutting values	Cutting speed
			■							↑	↓		Feed rate
		↓				↓			↓				Feed - center area
↓	↓	↓	■	■		↑		■	↓	↓		Selection of inserts	Chip groove
			↑	↑		↑			↓				Corner radius
													Larger ↓ ↑ smaller
		↑	↑	↑	↓	↓						General criteria	Cutting material
			■	■	■	■	■						wear resistance ↓ ↑ toughness
			■	■	■	■	■						Clamping of tool
			■	■	■	■	■					Clamping of workpiece	
□			□	□			□		□	□		Coolant	

↑ Raise, increase      ↓ Avoid, reduce      ■ Check, optimize      □ Use





NL **Maatregelen bij freesproblemen**  
 FR **Problèmes de fraisage et solutions**  
 ES **Problemas de fresado y soluciones**  
 DE **Maßnahmen bei Fräsproblemen**



1 SC



1 HSS-E



2



3 SC



3 HSS-E



4



5



6



7

Type of problem											Corrective measures
Build up edge	Notching	Cratering	Flank wear	Plastic deformation	Thermal cracks	Breakage	Edge chipping	Bad workpiece surface	Chattering vibration	Edge chipping on the workpiece	
↑	↓	↓	↓	↓	↓		↑	↑	■		Cutting speed
↑	↓	↓	↑	↓	↓	↓	↓	↓	■		Feed rate per tooth
	↑				■	↑	↑				Thoughtness of cutting material
		↑	↑	↑							Wear resistance of cutting material
■	↓				↓				↓	↓	Approach angle
↑	■			↑		■	■		↑		Rake angle
■	↑						↑	↓		↓	Cutting edge facet
						↑	↑	↑			Stability
								↑	↑		Precision of axial & radial run-out
			■	■		■	■			■	Wear of cutting edge
↑	↑	↑		■	↑			■			Cooling, chipremoval
	■					■	■	■	■	↓	Dept of cut

↑ Raise, increase      ↓ Lower, decrease      ■ Check, optimize