

**Phantom** 

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TOOLS**

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**CHECK OUR INNOVATIONS ON PAGE 6**

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

□ Beperkt geschikt - Apprôprié - Adecuado - Eingeschränkt geeignet

ISO	ISO	NL	FR	ES	DE
P 11 s850 N/mm²	P 11 s850 N/mm²	<b>Ongelegerd en gelegerd staal</b> ≤600 N/mm² 1.0037 (S137), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)	<b>Aciers non-alliés ou faiblement alliés ≤600 N/mm²</b> 1.0037 (A37), 1.0038 (E 24-2 Ne), 1.00402 (1C20), 1.1178 (1C30)	<b>Acero no aleado ≤600 N/mm²</b> 1.0037 (S235JR), 1.0038 (S235JR G2), 1.0402 (F.112), 1.1178 (C30E)	<b>Unlegierter und legierter Stahl</b> ≤600 N/mm² 1.0037 (S137), 1.0038 (S235JR G2), 1.00402 (C22), 1.1178 (C30E)
P 12 s850 N/mm²	P 12 s850 N/mm²	<b>Ongelegerd en gelegerd staal</b> 600 - 850 N/mm² 1.0050 (S150-2), 1.0070 (S170-2), 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/mm²</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/mm²</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</b> 600 - 850 N/mm² 1.0050 (S150-2), 1.0070 (S170-2), 1.0301 (C10), 1.0503 (C45), 1.1121 (Ck10), 1.1191 (C45E), 1.0718 (11SMnPb30), 1.0736 (11SMn37)
P 13 s1000 N/mm²	P 13 s1000 N/mm²	<b>Gelegerd staal 850 - 1000 N/mm²</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/mm²</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/mm²</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/mm²</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)
P 14 s1400 N/mm²	P 14 s1400 N/mm²	<b>Gelegerd staal 1000 - 1400 N/mm²</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/mm²</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/mm²</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/mm²</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)
H 15 HRC	H 15 HRC	<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)
M 21 INOX s850N/mm²	M 21 INOX s850N/mm²	<b>Roestvaststaal, INOX ≤850 N/mm²</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/mm²</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/mm²</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/mm²</b> 1.4005 (X12CrS13), 1.4104 (X14CrMos17), 1.4105 (X6CrMoS17), 1.4301 (XCrNi18-10)(304), 1.4305 (X8CrNiS18-9)(303)
M 22 INOX >850N/mm²	M 22 INOX >850N/mm²	<b>Roestvaststaal, INOX &gt;850 N/mm²</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/mm²</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/mm²</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/mm²</b> 1.4438 (X2CrNiMo18-15-4)(317), 1.4404 (X2CrNiMo17-12-2)(316L), 1.4571 (X6CrNiMoTi17-12-2)(316Ti)
K 31 GG	K 31 GG	<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)
K 32 GGG GTS-GTW	K 32 GGG GTS-GTW	<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 esférico &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)
N 41 Alu	N 41 Alu	<b>Aluminium en Aluminiumlegeringen</b> 3.0255 (AI99.5), 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 (AI99.5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)	<b>Aluminium und Aluminiumlegerungen</b> 3.0255 (AI99.5), 3.2315 (AlMgSi1), 3.3515 (AlMg1)
N 42 Alu Si>10%	N 42 Alu Si>10%	<b>Gietaluminium Si 10 - 24%</b> 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (G-AISi12), 3.2583 (G-AISi12Cu)	<b>Alliages d'Aluminium Si 10 - 24%</b> 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (G-AISi12), 3.2583 (G-AISi12Cu)	<b>Fundición de Aluminio aleada Si 10 - 24%</b> 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (L-2520,21), 3.2583 (L2530)	<b>Druckguss Si 10 - 24%</b> 3.2131 (G-AISi5Cu1), 3.2153 (G-AISi7Cu3), (3.2573 G-AISi9), 3.2581 (G-AISi12), 3.2583 (G-AISi12Cu)
N 43 Mg	N 43 Mg	<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>Magnesiumlegerungen</b> 3.5200 (MgMn2), 3.5812 (G-MgAl8Zn1), 3.5612 (G-MgAl6Zn1)
N 51 Cu	N 51 Cu	<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 Kupferlegerungen</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)
N 52 CuAlFe	N 52 CuAlFe	<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 Aluminiumlegerungen</b> 2.0916 (CuAl5), 2.0960 (CuAl9Mn), 2.1050 (CuSn10), 2.0980 (CuAl11Ni), 2.1247 (Cu-Be2) AMPCO® 8, AMPCO® 8 15, AMPCO® 18
N 61 PVC	N 61 PVC	<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
N 62 GFK/CFK	N 62 GFK/CFK	<b>Versterkte kunststoffen</b> GFK, CFK	<b>Plastiques réinforcés</b> GFK, CFK	<b>Plásticos reforzados</b> GFK, CFK	<b>Verstärkte Kunststoffe</b> GFK, CFK
S 71 NiCo	S 71 NiCo	<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 Kobaltlegerungen</b> Hastelloy, Inconel, Nimonic, Jetalloy
S 72 Ti	S 72 Ti	<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>Titanlegerungen</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

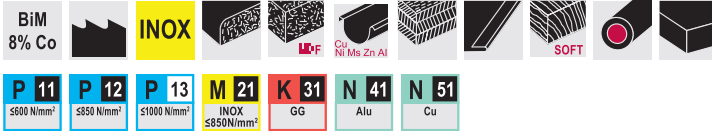
El amplio catálogo con precios competitivos de International Tools le ofrece una selección atractiva de brocas, machos y avellanadores de tamaños habituales. Para uso universal y disponibles en stock.

## 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.

## > 61.105 Phantom

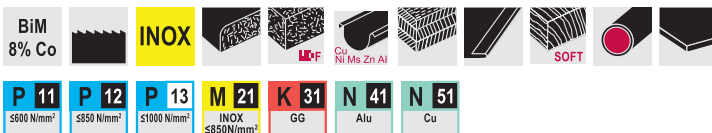
NL **HSS-Co 8% Bi-Metaal Gatzaag**  
 FR **Scie cloche HSS-Co 8% Bi-métal**  
 ES **Corona Perforadora HSS-Co 8% Bi-Metal**  
 DE **HSS-Co 8% Bi-Metall Lochsäge**



Ref.	d1	Ref.	d1	Ref.	d1
61.105.0014	14	61.105.0041	41	61.105.0076	76
61.105.0016	16	61.105.0043	43	61.105.0079	79
61.105.0017	17	61.105.0044	44	61.105.0083	83
61.105.0018	18	61.105.0046	46	61.105.0086	86
61.105.0019	19	61.105.0048	48	61.105.0089	89
61.105.0020	20	61.105.0049	49	61.105.0090	90
61.105.0021	21	61.105.0050	50	61.105.0092	92
61.105.0022	22	61.105.0051	51	61.105.0095	95
61.105.0024	24	61.105.0052	52	61.105.0098	98
61.105.0025	25	61.105.0054	54	61.105.0100	100
61.105.0027	27	61.105.0056	56	61.105.0102	102
61.105.0028	28	61.105.0057	57	61.105.0105	105
61.105.0029	29	61.105.0059	59	61.105.0108	108
61.105.0030	30	61.105.0060	60	61.105.0111	111
61.105.0032	32	61.105.0061	61	61.105.0114	114
61.105.0033	33	61.105.0064	64	61.105.0121	121
61.105.0034	34	61.105.0065	65	61.105.0127	127
61.105.0035	35	61.105.0067	67	61.105.0133	133
61.105.0037	37	61.105.0068	68	61.105.0140	140
61.105.0038	38	61.105.0070	70	61.105.0146	146
61.105.0040	40	61.105.0073	73	61.105.0152	152

## > 61.110 Phantom

NL **HSS-Co 8% Bi-Metaal Gatzaag voor dunne plaat en buizen**  
 FR **Scie cloche HSS-Co 8% Bi-métal pour tôle fine et tubes**  
 ES **Corona Perforadora HSS-Co 8% Bi-Metal para chapa fina y tubos**  
 DE **HSS-Co 8% Bi-Metall Lochsäge für dünne Platte und Rohren**



**NIEUW / NOUVEAU / NUEVO / NEU**

Ref.	d1	Ref.	d1	Ref.	d1
61.110.0014	14	61.110.0051	51	61.110.0098	98
61.110.0016	16	61.110.0054	54	61.110.0100	100
61.110.0017	17	61.110.0057	57	61.110.0102	102
61.110.0019	19	61.110.0060	60	61.110.0105	105
61.110.0020	20	61.110.0064	64	61.110.0108	108
61.110.0021	21	61.110.0067	67	61.110.0111	111
61.110.0022	22	61.110.0068	68	61.110.0114	114
61.110.0024	24	61.110.0070	70	61.110.0121	121
61.110.0025	25	61.110.0073	73	61.110.0127	127
61.110.0027	27	61.110.0076	76	61.110.0133	133
61.110.0030	30	61.110.0079	79	61.110.0140	140
61.110.0032	32	61.110.0083	83	61.110.0152	152
61.110.0035	35	61.110.0086	86	61.110.0160	160
61.110.0038	38	61.110.0089	89	61.110.0168	168
61.110.0040	40	61.110.0090	90	61.110.0177	177
61.110.0044	44	61.110.0092	92	61.110.0210	210
61.110.0048	48	61.110.0095	95		

> **61.130 Phantom**



NL **HM-tip Gatzaag snijdiepte 58 mm**  
 FR **Scie cloche pointe carb. mét. profondeur de coupe 58 mm**  
 ES **Corona Perforadora punta MD profundidad de corte 58 mm**  
 DE **HM-Schneiden Lochsäge schnittiefe 58 mm**



Ref.	d1
61.130.0014	14
61.130.0016	16
61.130.0017	17
61.130.0018	18
61.130.0019	19
61.130.0020	20
61.130.0021	21
61.130.0022	22
61.130.0024	24
61.130.0025	25
61.130.0027	27
61.130.0028	28
61.130.0029	29
61.130.0030	30
61.130.0032	32
61.130.0033	33
61.130.0035	35
61.130.0037	37
61.130.0038	38
61.130.0040	40
61.130.0041	41

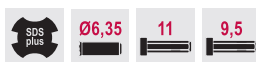
Ref.	d1
61.130.0043	43
61.130.0044	44
61.130.0046	46
61.130.0048	48
61.130.0049	49
61.130.0051	51
61.130.0052	52
61.130.0054	54
61.130.0056	56
61.130.0057	57
61.130.0059	59
61.130.0060	60
61.130.0061	61
61.130.0064	64
61.130.0065	65
61.130.0067	67
61.130.0068	68
61.130.0070	70
61.130.0073	73
61.130.0076	76
61.130.0079	79

Ref.	d1
61.130.0083	83
61.130.0086	86
61.130.0089	89
61.130.0090	90
61.130.0092	92
61.130.0095	95
61.130.0098	98
61.130.0100	100
61.130.0102	102
61.130.0105	105
61.130.0108	108
61.130.0111	111
61.130.0114	114
61.130.0121	121
61.130.0127	127
61.130.0133	133
61.130.0140	140
61.130.0146	146
61.130.0152	152

> **61.150 Phantom**



NL **Houder voor Gatzaag 61.105**  
 FR **Arbre pour Scies cloches 61.105**  
 ES **Husillo para Corona perforadora 61.105**  
 DE **Halter für Lochsägen 61.105**



Ref.	Nr	Ø mm	d2
61.150.0100	1	14-30	11
61.150.0201	2	32-152	11
61.150.0400	4	14-30	6,35

Ref.	Nr	Ø mm	d2
61.150.0500	5	14-30	9,5
61.150.0601	6	32-152	9,5
61.150.0800	8	14-30	SDS+

Ref.	Nr	Ø mm	d2
61.150.0901	9	32-152	SDS+



## > 61.151 Phantom

NL Houder voor HM-tip Gatzraag 61.130  
 FR Arbre pour Scies trépan à point carb. mét. 61.130  
 ES Husillo para Corona perforadora punta MD 61.130  
 DE Halter für HM-Bohrkrone 61.130



9

Ref.	Nr	Ø mm	d2	Ref.	Nr	Ø mm	d2	Ref.	Nr	Ø mm	d2
61.151.0100	1	14-30	9	61.151.0200	2	32-152	9				

## > 61.160 Phantom

NL Toebehoren voor Gatzraag 61.105 en 61.130  
 FR Accessoires pour Scie cloches 61.105 et 61.130  
 ES Accesorios para Corona perforadora 61.105 y 61.130  
 DE Zubehör für Lochsäge 61.105 und 61.130



Ref.	Type	61.150	Ref.	Type	61.150	Ref.	Type	61.150
61.160.0200	MK 2	1, 2	61.160.3301	l=300	1, 2	61.160.9500		

## > 61.170 Phantom

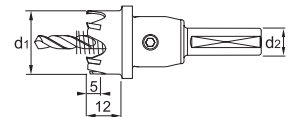
NL Centreerboor voor Gatzraag 61.105 en 61.130  
 FR Foret à centrer pour Scies cloches 61.105 et 61.130  
 ES Broca de centrar para la Corona perforadora 61.105 y 61.130  
 DE Zentrierbohrer für Lochsäge 61.105 und 61.130



Ref.	Type	61.150	d2	l1	61.1xx	Nr
61.170.0600	HSS-E		6.35	90	61.150	1, 2, 5, 6, 8, 9
61.170.0601	HSS-E		6.35	115	61.150	4
61.170.0602	HSS-E		6.35	110	61.150, 61.151	1, 2
61.170.0603	Carbide Tipped		6.35	110	61.151	1, 2

## > 61.630 Phantom

NL HM-tip Gatzrees materiaaldikte <5 mm  
 FR Scie trépan pointe carb. mét. épaisseur <5 mm  
 ES Corona fresa punta MD espesor <5 mm  
 DE HM-Schneiden Lochfräser Materialdicke <5 mm



HM-TIP	T	0,5-5 mm								
<b>P 11</b>	<b>P 12</b>	<b>P 13</b>	<b>P 14</b>	<b>M 21</b>	<b>M 22</b>	<b>K 31</b>	<b>K 32</b>	<b>N 42</b>	<b>N 52</b>	<b>N 62</b>
≤800 N/mm <sup>2</sup>	≤850 N/mm <sup>2</sup>	≤1000 N/mm <sup>2</sup>	≤1400 N/mm <sup>2</sup>	INOX ≤850N/mm <sup>2</sup>	INOX >850N/mm <sup>2</sup>	GG	GGG GTS-GTW	Alu Si>10%	CuAlFe	GFK/CFK
36	34	30	25	20	10	60	40	90	35	30

Ref.	d1	PG	d2	Ref.	d1	PG	d2	Ref.	d1	PG	d2
61.630.0140	14		10	61.630.0190	19		10	61.630.0240	24		10
61.630.0150	15		10	61.630.0200	20		10	61.630.0250	25		10
61.630.0152	15.2	9	10	61.630.0204	20.4	13.5	10	61.630.0260	26		10
61.630.0160	16		10	61.630.0210	21		10	61.630.0270	27		10
61.630.0170	17		10	61.630.0220	22		10	61.630.0280	28		10
61.630.0180	18		10	61.630.0225	22.5	16	10	61.630.0283	28.3	21	10
61.630.0186	18.6	11	10	61.630.0230	23		10	61.630.0300	30		10



> **61.630 Phantom**

Ref.	d1	PG	d2	Ref.	d1	PG	d2	Ref.	d1	PG	d2
61.630.0320	32		10	61.630.0450	45		13	61.630.0700	70		13
61.630.0350	35		13	61.630.0480	48		13	61.630.0760	76		13
61.630.0380	38		13	61.630.0500	50		13	61.630.0800	80		13
61.630.0400	40		13	61.630.0550	55		13				
61.630.0430	43		13	61.630.0600	60	48	13				

> **61.640 Phantom**

NL Toebehoren voor HM-tip Gattrees 61.630  
 FR Accessoires pour Scies trépan à pointe carb. mét. 61.630  
 ES Accesorios para Corona fresa punta MD 61.630  
 DE Zubehör für HM bestückte Tieflochfräser 61.630



61.640.0600

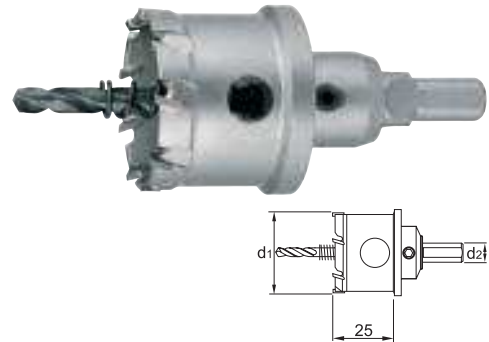


61.640.9000

Ref.	d2	l1	Ref.	d2	l1	Ref.	d2	l1
61.640.0600	6	46.5	61.640.9000	-				

> **61.670 Phantom**

NL HM-tip Gattrees diepgat uitvoering 25 mm, materiaaldikte <12 mm  
 FR Scie trépan pointe carb. mét. profondeur de coupe 25 mm, épaisseur <12 mm  
 ES Corona fresa punta MD profundidad de corte 25 mm, espesor <12 mm  
 DE HM-Schneiden Lochfräser Tiefloch-Ausführung 25 mm, Materialdicke <12 mm



HM-TIP
0,5-12 mm
P 11
P 12
P 13
P 14
M 21
M 22
K 31
K 32
N 42
N 52
N 62

≤500 N/mm<sup>2</sup>
≤850 N/mm<sup>2</sup>
≤1000 N/mm<sup>2</sup>
≤1400 N/mm<sup>2</sup>
INOX ≤850N/mm<sup>2</sup>
INOX >850N/mm<sup>2</sup>
GG
GGG GTS-GTW
Alu Si>10%
CuAlFe
GFK/CFK

36
34
30
25
20
10
60
40
90
35
30

Ref.	d1	d2	z	Ref.	d1	d2	z	Ref.	d1	d2	z
61.670.0016	16	10	6	61.670.0039	39	10	6	61.670.0063	63	10	8
61.670.0017	17	10	6	61.670.0040	40	10	6	61.670.0064	64	10	8
61.670.0018	18	10	6	61.670.0041	41	10	6	61.670.0065	65	10	8
61.670.0019	19	10	6	61.670.0042	42	10	6	61.670.0066	66	10	8
61.670.0020	20	10	6	61.670.0043	43	10	6	61.670.0067	67	10	8
61.670.0021	21	10	6	61.670.0044	44	10	6	61.670.0068	68	10	8
61.670.0022	22	10	6	61.670.0045	45	10	6	61.670.0070	70	10	8
61.670.0023	23	10	6	61.670.0046	46	10	6	61.670.0072	72	10	10
61.670.0024	24	10	6	61.670.0047	47	10	6	61.670.0074	74	10	10
61.670.0025	25	10	6	61.670.0048	48	10	6	61.670.0075	75	10	10
61.670.0026	26	10	6	61.670.0049	49	10	6	61.670.0076	76	10	10
61.670.0027	27	10	6	61.670.0050	50	10	6	61.670.0077	77	10	12
61.670.0028	28	10	6	61.670.0051	51	10	6	61.670.0078	78	10	12
61.670.0029	29	10	6	61.670.0052	52	10	6	61.670.0079	79	10	12
61.670.0030	30	10	6	61.670.0053	53	10	6	61.670.0080	80	13	12
61.670.0031	31	10	6	61.670.0054	54	10	6	61.670.0082	82	13	12
61.670.0032	32	10	6	61.670.0055	55	10	6	61.670.0083	83	13	12
61.670.0033	33	10	6	61.670.0056	56	10	6	61.670.0084	84	13	12
61.670.0034	34	10	6	61.670.0057	57	10	6	61.670.0085	85	13	12
61.670.0035	35	10	6	61.670.0058	58	10	6	61.670.0090	90	13	14
61.670.0036	36	10	6	61.670.0060	60	10	8	61.670.0092	92	13	14
61.670.0037	37	10	6	61.670.0061	61	10	8	61.670.0095	95	13	14
61.670.0038	38	10	6	61.670.0062	62	10	8	61.670.0100	100	13	14

> **61.675 Phantom**

NL Onderdelen en Toebehoren voor HM-tip Gattrees 61.670  
 FR Pièces détachées et Accessoires pour Scies trépan à pointe carb. mét. 61.670  
 ES Componentes y Accesorios para Corona fresa punta MD 61.670  
 DE Einzelteile und Zubehör für HM bestückte Tieflochfräser 61.670



61.675.0600

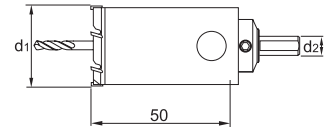


61.675.9000

Ref.	Type	Ref.	Type	Ref.	Type
61.675.0600	HSS 6x76 mm	61.675.9000	-		

## > 61.680 Phantom

- NL **HM-tip Gatfrees lange diepgat uitvoering 50 mm, materiaaldikte <12 mm**  
 FR **Scie trépan pointe carb. mét. profondeur de coupe 50 mm, épaisseur <12 mm**  
 ES **Corona fresa punta MD profundidad de corte 50 mm, espesor <12 mm**  
 DE **HM-Schneiden Lochfräser lange Tiefloch-Ausführung 50 mm, Materialdicke <12 mm**



<b>P 11</b> ≤800 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 42</b> Alu Si>10%	<b>N 52</b> CuAlFe	<b>N 62</b> GFK/CFK
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36	34	30	25	20	10	60	40	90	35	30
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Ref.	d1	d2	z	Ref.	d1	d2	z	Ref.	d1	d2	z
61.680.0020	20	10	6	61.680.0037	37	10	6	61.680.0057	57	10	6
61.680.0021	21	10	6	61.680.0038	38	10	6	61.680.0060	60	10	8
61.680.0022	22	10	6	61.680.0039	39	10	6	61.680.0061	61	10	8
61.680.0023	23	10	6	61.680.0040	40	10	6	61.680.0062	62	10	8
61.680.0024	24	10	6	61.680.0041	41	10	6	61.680.0064	64	10	8
61.680.0025	25	10	6	61.680.0042	42	10	6	61.680.0065	65	10	8
61.680.0026	26	10	6	61.680.0043	43	10	6	61.680.0067	67	10	8
61.680.0027	27	10	6	61.680.0045	45	10	6	61.680.0070	70	10	8
61.680.0028	28	10	6	61.680.0048	48	10	6	61.680.0075	75	10	10
61.680.0030	30	10	6	61.680.0050	50	10	6	61.680.0076	76	10	10
61.680.0032	32	10	6	61.680.0051	51	10	6	61.680.0080	80	13	12
61.680.0033	33	10	6	61.680.0053	53	10	6	61.680.0090	90	13	14
61.680.0034	34	10	6	61.680.0054	54	10	6	61.680.0100	100	13	14
61.680.0035	35	10	6	61.680.0055	55	10	6				

## > 61.685 Phantom

- NL **HSS Centreerboor voor HM-tip Gatfrees 61.680**  
 FR **Foret à centrer HSS pour Scies trépan à pointe carb. mét. 61.680**  
 ES **Broca de centrar HSS para Corona fresa punta MD 61.680**  
 DE **HSS Zentrierbohrer für HM bestückte Tieflochfräser 61.680**



Ref.	Type	Ref.	Type	Ref.	Type
61.685.0600	HSS 6x104 mm				

## > 62.100 Phantom

- NL **HSS Kernboor snijdiepte 25 mm**  
 FR **Fraise à carotter HSS profondeur de coupe 25 mm**  
 ES **Fresa hueca HSS profundidad de corte 25 mm**  
 DE **HSS Kernbohr Schnitttiefe 25 mm**



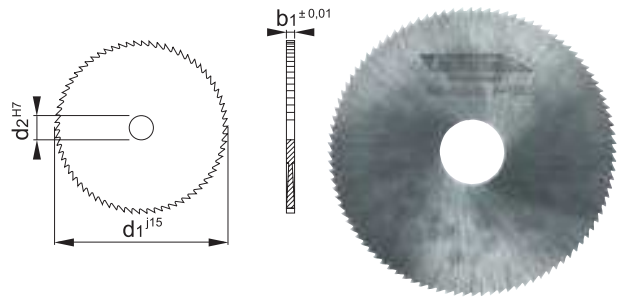
<b>P 11</b> ≤800 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>K 31</b> GG	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PTC
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25	20	13	18	38	32	22	17
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Ref.	d1	Ref.	d1	Ref.	d1
62.100.1200	12	62.100.2400	24	62.100.3600	36
62.100.1300	13	62.100.2500	25	62.100.3700	37
62.100.1400	14	62.100.2600	26	62.100.3800	38
62.100.1500	15	62.100.2700	27	62.100.3900	39
62.100.1600	16	62.100.2800	28	62.100.4000	40
62.100.1700	17	62.100.2900	29	62.100.4100	41
62.100.1800	18	62.100.3000	30	62.100.4200	42
62.100.1900	19	62.100.3100	31	62.100.4300	43
62.100.2000	20	62.100.3200	32	62.100.4400	44
62.100.2100	21	62.100.3300	33	62.100.4500	45
62.100.2200	22	62.100.3400	34	62.100.4600	46
62.100.2300	23	62.100.3500	35	62.100.4700	47

» **63.200 Phantom**

NL HSS Metaalcirkelzaag fijn  
 FR Fraise-scie HSS pas fin  
 ES Fresa sierra circular HSS paso fino  
 DE HSS Metallkreissägeblätter fein



**HSS** DIN 1837-A

**P 11** ≤500 N/mm<sup>2</sup>   **P 12** ≤850 N/mm<sup>2</sup>   **P 13** ≤1000 N/mm<sup>2</sup>   **P 14** ≤1400 N/mm<sup>2</sup>   **M 21** INOX ≤850N/mm<sup>2</sup>   **K 31** GG   **K 32** GGG GTS-GTW

30-40   25-35   15-25   15-20   10-15   25-30   20-25

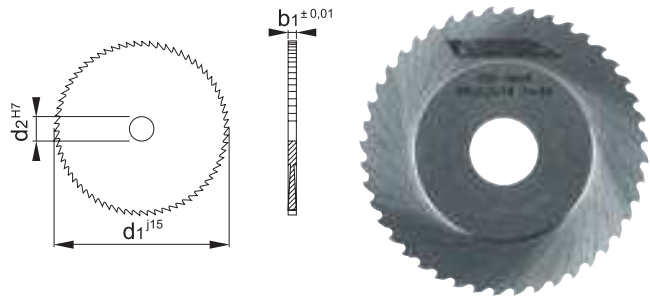
Ref.	d1	b1	d2	z
63.200.0303	32	0.3	8	80
63.200.0304	32	0.4	8	80
63.200.0305	32	0.5	8	80
63.200.0306	32	0.6	8	64
63.200.0308	32	0.8	8	64
63.200.0310	32	1	8	64
63.200.0312	32	1.2	8	48
63.200.0315	32	1.5	8	48
63.200.0316	32	1.6	8	48
63.200.0320	32	2	8	48
63.200.0403	40	0.3	10	100
63.200.0404	40	0.4	10	100
63.200.0405	40	0.5	10	80
63.200.0406	40	0.6	10	80
63.200.0408	40	0.8	10	80
63.200.0410	40	1	10	64
63.200.0412	40	1.2	10	64
63.200.0415	40	1.5	10	64
63.200.0416	40	1.6	10	64
63.200.0420	40	2	10	48
63.200.0425	40	2.5	10	48
63.200.0430	40	3	10	48
63.200.0503	50	0.3	13	128
63.200.0504	50	0.4	13	100
63.200.0505	50	0.5	13	100
63.200.0506	50	0.6	13	100
63.200.0508	50	0.8	13	80
63.200.0510	50	1	13	80
63.200.0512	50	1.2	13	80
63.200.0515	50	1.5	13	64
63.200.0516	50	1.6	13	64
63.200.0520	50	2	13	64
63.200.0525	50	2.5	13	64
63.200.0530	50	3	13	48
63.200.0540	50	4	13	48
63.200.0603	63	0.3	16	128
63.200.0604	63	0.4	16	128
63.200.0605	63	0.5	16	128
63.200.0606	63	0.6	16	100
63.200.0608	63	0.8	16	100
63.200.0610	63	1	16	100
63.200.0612	63	1.2	16	80
63.200.0615	63	1.5	16	80
63.200.0616	63	1.6	16	80
63.200.0620	63	2	16	80
63.200.0625	63	2.5	16	64
63.200.0630	63	3	16	64
63.200.0640	63	4	16	64
63.200.0650	63	5	16	48
63.200.0660	63	6	16	48
63.200.0803	80	0.3	22	160
63.200.0804	80	0.4	22	160
63.200.0805	80	0.5	22	128
63.200.0806	80	0.6	22	128
63.200.0808	80	0.8	22	128
63.200.0810	80	1	22	100
63.200.0812	80	1.2	22	100
63.200.0815	80	1.5	22	100
63.200.0816	80	1.6	22	100
63.200.0820	80	2	22	80

Ref.	d1	b1	d2	z
63.200.0825	80	2.5	22	80
63.200.0830	80	3	22	80
63.200.0840	80	4	22	64
63.200.0850	80	5	22	64
63.200.0860	80	6	22	64
63.200.1005	100	0.5	22	160
63.200.1006	100	0.6	22	160
63.200.1008	100	0.8	22	128
63.200.1010	100	1	22	128
63.200.1012	100	1.2	22	128
63.200.1015	100	1.5	22	100
63.200.1016	100	1.6	22	100
63.200.1020	100	2	22	100
63.200.1025	100	2.5	22	100
63.200.1030	100	3	22	80
63.200.1040	100	4	22	80
63.200.1050	100	5	22	80
63.200.1060	100	6	22	64
63.200.1210	125	1	22	160
63.200.1212	125	1.2	22	128
63.200.1215	125	1.5	22	128
63.200.1216	125	1.6	22	128
63.200.1220	125	2	22	128
63.200.1225	125	2.5	22	100
63.200.1230	125	3	22	100
63.200.1240	125	4	22	100
63.200.1250	125	5	22	80
63.200.1260	125	6	22	80
63.200.1610	160	1	32	160
63.200.1612	160	1.2	32	160
63.200.1615	160	1.5	32	160
63.200.1616	160	1.6	32	160
63.200.1620	160	2	32	128
63.200.1625	160	2.5	32	128
63.200.1630	160	3	32	128
63.200.1640	160	4	32	100
63.200.1650	160	5	32	100
63.200.1660	160	6	32	100
63.200.2010	200	1	32	200
63.200.2012	200	1.2	32	200
63.200.2015	200	1.5	32	160
63.200.2016	200	1.6	32	160
63.200.2020	200	2	32	160
63.200.2025	200	2.5	32	160
63.200.2030	200	3	32	128
63.200.2040	200	4	32	128
63.200.2050	200	5	32	128
63.200.2060	200	6	32	100
63.200.2520	250	2	32	200
63.200.2525	250	2.5	32	160
63.200.2530	250	3	32	160
63.200.2540	250	4	32	160
63.200.2550	250	5	32	128
63.200.2560	250	6	32	128
63.200.3125	315	2.5	40	200
63.200.3130	315	3	40	200
63.200.3140	315	4	40	160
63.200.3150	315	5	40	160
63.200.3160	315	6	40	160



**> 63.210 Phantom**

NL HSS Metaalcirkelzaag GF  
 FR Fraise-scie HSS GF  
 ES Fresa sierra circular HSS GF  
 DE HSS Metallkreissägeblätter GF



HSS **BW** +GF+

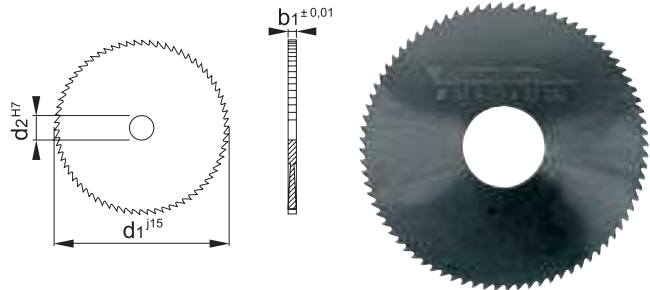
<b>P 11</b> ≤500 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PTC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	z
63.210.0612	63	1.2	16	100
63.210.0616	63	1.6	16	44
63.210.0617	63	1.6	16	64
63.210.0618	63	1.6	16	80
63.210.0716	68	1.6	16	44

Ref.	d1	b1	d2	z
63.210.0717	68	1.6	16	84
63.210.0718	68	1.6	16	72
63.210.0720	68	2	16	44
63.210.0820	75	2	16	32

**> 63.220 Phantom**

NL VHM Metaalcirkelzaag fijn  
 FR Fraise-scie Carbure pas fin  
 ES Fresa sierra circular MD paso fino  
 DE VHM Metallkreissägeblätter fein



VHM **SC** DIN 1837-A **A**

<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PTC	<b>S 71</b> Ni/Co	<b>S 72</b> Ti
100-200	80-160	60-120	40-80	50-100	25-60	60-120	60-120	150-600	80-300	80-300	150-600	25-60	30-60

Ref.	d1	b1	d2	z
63.220.0102	15	0.2	5	64
63.220.0103	15	0.3	5	64
63.220.0104	15	0.4	5	64
63.220.0105	15	0.5	5	48
63.220.0106	15	0.6	5	48
63.220.0107	15	0.7	5	48
63.220.0108	15	0.8	5	40
63.220.0109	15	0.9	5	40
63.220.0110	15	1	5	40
63.220.0112	15	1.2	5	40
63.220.0115	15	1.5	5	40
63.220.0116	15	1.6	5	40
63.220.0118	15	1.8	5	40
63.220.0120	15	1.2	5	40
63.220.0202	20	0.2	5	80
63.220.0203	20	0.3	5	64
63.220.0204	20	0.4	5	64
63.220.0205	20	0.5	5	48
63.220.0206	20	0.6	5	48
63.220.0207	20	0.7	5	48
63.220.0208	20	0.8	5	48
63.220.0209	20	0.9	5	40
63.220.0210	20	1	5	40
63.220.0212	20	1.2	5	40
63.220.0215	20	1.5	5	40
63.220.0216	20	1.6	5	40
63.220.0218	20	1.8	5	32
63.220.0220	20	2	5	32
63.220.0225	20	2.5	5	32
63.220.0230	20	3	5	32
63.220.0302	30	0.2	8	100
63.220.0303	30	0.3	8	80
63.220.0304	30	0.4	8	80
63.220.0305	30	0.5	8	80
63.220.0306	30	0.6	8	64

Ref.	d1	b1	d2	z
63.220.0307	30	0.7	8	64
63.220.0308	30	0.8	8	64
63.220.0309	30	0.9	8	64
63.220.0310	30	1	8	64
63.220.0312	30	1.2	8	48
63.220.0315	30	1.5	8	48
63.220.0316	30	1.6	8	48
63.220.0318	30	1.8	8	48
63.220.0320	30	2	8	48
63.220.0325	30	2.5	8	40
63.220.0330	30	3	8	40
63.220.0402	40	0.2	10	128
63.220.0403	40	0.3	10	100
63.220.0404	40	0.4	10	100
63.220.0405	40	0.5	10	80
63.220.0406	40	0.6	10	80
63.220.0407	40	0.7	10	80
63.220.0408	40	0.8	10	80
63.220.0409	40	0.9	10	64
63.220.0410	40	1	10	64
63.220.0412	40	1.2	10	64
63.220.0415	40	1.5	10	64
63.220.0416	40	1.6	10	64
63.220.0418	40	1.8	10	48
63.220.0420	40	2	10	48
63.220.0425	40	2.5	10	48
63.220.0430	40	3	10	48
63.220.0502	50	0.2	13	128
63.220.0503	50	0.3	13	128
63.220.0504	50	0.4	13	100
63.220.0505	50	0.5	13	100
63.220.0506	50	0.6	13	100
63.220.0507	50	0.7	13	80
63.220.0508	50	0.8	13	80
63.220.0509	50	0.9	13	80

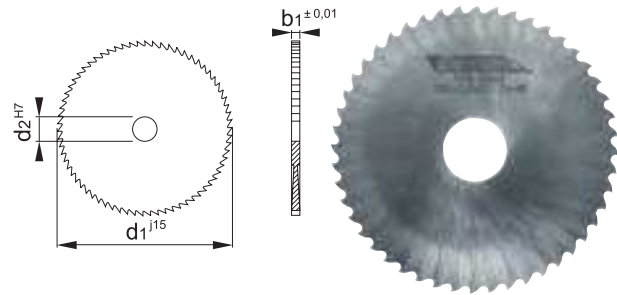
> **63.220 Phantom**

Ref.	d1	b1	d2	z
63.220.0510	50	1	13	80
63.220.0512	50	1.2	13	80
63.220.0515	50	1.5	13	64
63.220.0516	50	1.6	13	64
63.220.0518	50	1.8	13	64
63.220.0520	50	2	13	64
63.220.0525	50	2.5	13	64
63.220.0530	50	3	13	48
63.220.0603	63	0.3	16	128
63.220.0604	63	0.4	16	128
63.220.0605	63	0.5	16	128
63.220.0606	63	0.6	16	100
63.220.0607	63	0.7	16	100
63.220.0608	63	0.8	16	100
63.220.0609	63	0.9	16	100
63.220.0610	63	1	16	100
63.220.0612	63	1.2	16	80
63.220.0615	63	1.5	16	80
63.220.0616	63	1.6	16	80
63.220.0618	63	1.8	16	80
63.220.0620	63	2	16	80
63.220.0625	63	2.5	16	64
63.220.0630	63	3	16	64
63.220.0805	80	0.5	22	128
63.220.0806	80	0.6	22	128
63.220.0808	80	0.8	22	128
63.220.0810	80	1	22	100
63.220.0812	80	1.2	22	100
63.220.0815	80	1.5	22	100

Ref.	d1	b1	d2	z
63.220.0816	80	1.6	22	100
63.220.0818	80	1.8	22	80
63.220.0820	80	2	22	80
63.220.0825	80	2.5	22	80
63.220.0830	80	3	22	80
63.220.1005	100	0.5	22	160
63.220.1006	100	0.6	22	160
63.220.1008	100	0.8	22	128
63.220.1010	100	1	22	128
63.220.1012	100	1.2	22	128
63.220.1015	100	1.5	22	100
63.220.1016	100	1.6	22	100
63.220.1018	100	1.8	22	100
63.220.1020	100	2	22	100
63.220.1025	100	2.5	22	100
63.220.1030	100	3	22	80
63.220.1208	125	0.8	22	160
63.220.1210	125	1	22	160
63.220.1212	125	1.2	22	128
63.220.1215	125	1.5	22	128
63.220.1216	125	1.6	22	128
63.220.1218	125	1.8	22	128
63.220.1220	125	2	22	128
63.220.1610	160	1	32	160
63.220.1612	160	1.2	32	160
63.220.1615	160	1.5	32	160
63.220.1616	160	1.6	32	160
63.220.1620	160	2	32	128

> **63.250 Phantom**

NL HSS Metaalcirkelzaag grof  
 FR Fraise-scie HSS pas grossier  
 ES Fresa sierra circular HSS grueso  
 DE HSS Metallkreissägeblätter grob



**HSS** **DIN 1838-B** **B**

<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PTC
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30-40    25-35    15-25    15-20    10-15    6-8    25-30    20-25    500-700    500-700    200-400    200-600

Ref.	d1	b1	d2	z
63.250.0505	50	0.5	13	48
63.250.0506	50	0.6	13	48
63.250.0508	50	0.8	13	40
63.250.0510	50	1	13	40
63.250.0512	50	1.2	13	40
63.250.0516	50	1.6	13	32
63.250.0520	50	2	13	32
63.250.0525	50	2.5	13	32
63.250.0530	50	3	13	24
63.250.0540	50	4	13	24
63.250.0550	50	5	13	24
63.250.0560	50	6	13	20
63.250.0605	63	0.5	16	64
63.250.0606	63	0.6	16	48
63.250.0608	63	0.8	16	48
63.250.0610	63	1	16	48
63.250.0612	63	1.2	16	40
63.250.0615	63	1.5	16	40
63.250.0616	63	1.6	16	40
63.250.0620	63	2	16	40
63.250.0625	63	2.5	16	32
63.250.0630	63	3	16	40
63.250.0640	63	4	16	32
63.250.0650	63	5	16	24
63.250.0660	63	6	16	24
63.250.0805	80	0.5	22	64
63.250.0806	80	0.6	22	64
63.250.0808	80	0.8	22	64
63.250.0810	80	1	22	48
63.250.0812	80	1.2	22	48

Ref.	d1	b1	d2	z
63.250.0815	80	1.5	22	48
63.250.0816	80	1.6	22	48
63.250.0820	80	2	22	40
63.250.0825	80	2.5	22	40
63.250.0830	80	3	22	40
63.250.0840	80	4	22	32
63.250.0850	80	5	22	32
63.250.0860	80	6	22	32
63.250.1005	100	0.5	22	80
63.250.1006	100	0.6	22	80
63.250.1008	100	0.8	22	64
63.250.1010	100	1	22	64
63.250.1012	100	1.2	22	64
63.250.1015	100	1.5	22	64
63.250.1016	100	1.6	22	48
63.250.1020	100	2	22	48
63.250.1025	100	2.5	22	48
63.250.1030	100	3	22	40
63.250.1040	100	4	22	40
63.250.1050	100	5	22	40
63.250.1060	100	6	22	32
63.250.1210	125	1	22	80
63.250.1212	125	1.2	22	64
63.250.1215	125	1.5	22	64
63.250.1216	125	1.6	22	64
63.250.1220	125	2	22	64
63.250.1225	125	2.5	22	48
63.250.1230	125	3	22	48
63.250.1240	125	4	22	48
63.250.1250	125	5	22	40

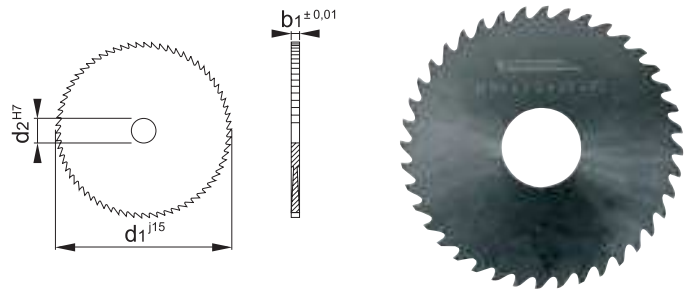
## > 63.250 Phantom

Ref.	d1	b1	d2	z
63.250.1260	125	6	22	40
63.250.1610	160	1	32	80
63.250.1612	160	1.2	32	80
63.250.1615	160	1.5	32	80
63.250.1616	160	1.6	32	80
63.250.1620	160	2	32	64
63.250.1625	160	2.5	32	64
63.250.1630	160	3	32	64
63.250.1640	160	4	32	48
63.250.1650	160	5	32	48
63.250.1660	160	6	32	48
63.250.2015	200	1.5	32	80
63.250.2016	200	1.6	32	80
63.250.2020	200	2	32	80
63.250.2025	200	2.5	32	80

Ref.	d1	b1	d2	z
63.250.2030	200	3	32	64
63.250.2040	200	4	32	64
63.250.2050	200	5	32	64
63.250.2060	200	6	32	48
63.250.2520	250	2	32	100
63.250.2525	250	2.5	32	80
63.250.2530	250	3	32	80
63.250.2540	250	4	32	80
63.250.2550	250	5	32	64
63.250.2560	250	6	32	64
63.250.3125	315	2.5	40	100
63.250.3130	315	3	40	100
63.250.3140	315	4	40	80
63.250.3150	315	5	40	80
63.250.3160	315	6	40	80

## > 63.270 Phantom

NL **VHM Metaalcirkelzaag grof**  
 FR **Fraise-scie Carbone pas grossier**  
 ES **Fresa sierra circular MD grueso**  
 DE **VHM Metallkreissägeblätter grob**



VHM  
SC

DIN  
1838-B

B

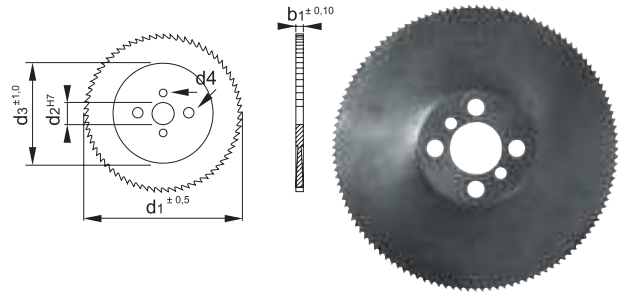
P 11	P 12	P 13	P 14	M 21	M 22	K 31	K 32	N 41	N 42	N 51	N 61	S 71	S 72
≤600 N/mm <sup>2</sup>	≤850 N/mm <sup>2</sup>	≤1000 N/mm <sup>2</sup>	≤1400 N/mm <sup>2</sup>	INOX ≤850N/mm <sup>2</sup>	INOX >850N/mm <sup>2</sup>	GG	GGG GTS-GTW	Alu	Alu Si>10%	Cu	PTC	Ni/Co	Ti
100-200	80-160	60-120	40-80	50-100	25-60	60-120	60-120	150-600	80-300	80-300	150-600	25-60	30-60

Ref.	d1	b1	d2	z
63.270.0103	15	0.3	5	20
63.270.0104	15	0.4	5	20
63.270.0105	15	0.5	5	20
63.270.0106	15	0.6	5	20
63.270.0108	15	0.8	5	20
63.270.0110	15	1	5	20
63.270.0112	15	1.2	5	20
63.270.0115	15	1.5	5	20
63.270.0120	15	2	5	20
63.270.0130	15	3	5	20
63.270.0203	20	0.3	5	20
63.270.0204	20	0.4	5	20
63.270.0205	20	0.5	5	20
63.270.0206	20	0.6	5	20
63.270.0208	20	0.8	5	20
63.270.0210	20	1	5	20
63.270.0212	20	1.2	5	20
63.270.0215	20	1.5	5	20
63.270.0220	20	2	5	20
63.270.0230	20	3	5	20
63.270.0303	30	0.3	8	30
63.270.0304	30	0.4	8	30
63.270.0305	30	0.5	8	30
63.270.0306	30	0.6	8	30
63.270.0308	30	0.8	8	24
63.270.0310	30	1	8	24
63.270.0312	30	1.2	8	24
63.270.0315	30	1.5	8	24
63.270.0320	30	2	8	24
63.270.0325	30	2.5	8	24
63.270.0330	30	3	8	24
63.270.0403	40	0.3	10	40
63.270.0404	40	0.4	10	40
63.270.0405	40	0.5	10	40
63.270.0406	40	0.6	10	40
63.270.0408	40	0.8	10	32
63.270.0410	40	1	10	32
63.270.0412	40	1.2	10	32
63.270.0415	40	1.5	10	32
63.270.0420	40	2	10	24
63.270.0425	40	2.5	10	24
63.270.0430	40	3	10	24
63.270.0504	50	0.4	13	48
63.270.0505	50	0.5	13	48
63.270.0506	50	0.6	13	48

Ref.	d1	b1	d2	z
63.270.0508	50	0.8	13	40
63.270.0510	50	1	13	40
63.270.0512	50	1.2	13	40
63.270.0515	50	1.5	13	32
63.270.0516	50	1.6	13	32
63.270.0520	50	2	13	32
63.270.0525	50	2.5	13	32
63.270.0530	50	3	13	24
63.270.0604	63	0.4	16	64
63.270.0605	63	0.5	16	64
63.270.0606	63	0.6	16	48
63.270.0608	63	0.8	16	48
63.270.0610	63	1	16	48
63.270.0612	63	1.2	16	40
63.270.0615	63	1.5	16	40
63.270.0616	63	1.6	16	40
63.270.0620	63	2	16	40
63.270.0625	63	2.5	16	32
63.270.0630	63	3	16	32
63.270.0806	80	0.6	22	64
63.270.0808	80	0.8	22	64
63.270.0810	80	1	22	48
63.270.0812	80	1.2	22	48
63.270.0815	80	1.5	22	48
63.270.0816	80	1.6	22	48
63.270.0820	80	2	22	40
63.270.0825	80	2.5	22	40
63.270.0830	80	3	22	40
63.270.1008	100	0.8	22	64
63.270.1010	100	1	22	64
63.270.1012	100	1.2	22	64
63.270.1015	100	1.5	22	48
63.270.1016	100	1.6	22	48
63.270.1020	100	2	22	48
63.270.1025	100	2.5	22	48
63.270.1030	100	3	22	40
63.270.1208	125	0.8	22	80
63.270.1210	125	1	22	80
63.270.1212	125	1.2	22	64
63.270.1215	125	1.5	22	64
63.270.1216	125	1.6	22	64
63.270.1220	125	2	22	64
63.270.1225	125	2.5	22	48
63.270.1230	125	3	22	48

**> 63.400 Phantom**

NL HSS Afkortzaag stoomontlaten  
 FR Fraise-scie à tronçonner HSS vaporisé  
 ES Fresa sierra circular tronczadora HSS vaporizada  
 DE HSS Trennsägeblätter dampfangelassen



HSS OX. T<sub>S4</sub> BW T<sub>S5</sub> C

P 11 5600 Nmm<sup>2</sup> P 12 5850 Nmm<sup>2</sup> P 13 51000 Nmm<sup>2</sup> K 31 GG K 32 GGG GTS-GTW N 41 Alu N 42 Alu Si-10% N 51 Cu N 61 PFC

30-40 25-35 15-25 25-30 20-25 500-700 500-700 200-400 200-600

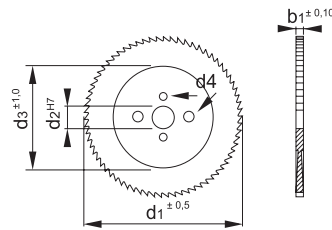
Ref.	d1	b1	d2	d3	z	t	d4
63.400.1718	175	1.5	32	75	180	3	
63.400.2013	200	1.8	32	90	130	5	2/8-45+2/11-63
63.400.2016	200	1.8	32	90	160	4	2/8-45+2/11-63
63.400.2018	200	1.8	32	90	180	3.5	2/8-45+2/11-63
63.400.2126	225	1.2	32	100	264	2.5	2/8-45+2/11-63+2/9-50
63.400.2209	225	2	32	90	90	8	2/8-45+2/11-63+2/9-50
63.400.2212	225	2	32	90	120	6	2/8-45+2/11-63+2/9-50
63.400.2214	225	2	32	90	140	5	2/8-45+2/11-63+2/9-50
63.400.2218	225	2	32	90	180	4	2/8-45+2/11-63+2/9-50
63.400.2222	225	2	32	90	220	3	2/8-45+2/11-63+2/9-50
63.400.2312	225	2	40	90	120	6	2/8-55+4/11-63
63.400.2318	225	2	40	90	180	4	2/8-55+4/11-63
63.400.2326	225	2	40	90	220	3	2/8-55+4/11-63
63.400.2508	250	2	32	90	80	10	2/8-45+2/11-63+2/9-50
63.400.2510	250	2	32	90	100	8	2/8-45+2/11-63+2/9-50
63.400.2512	250	2	32	90	128	6	2/8-45+2/11-63+2/9-50
63.400.2516	250	2	32	90	160	5	2/8-45+2/11-63+2/9-50
63.400.2520	250	2	32	90	200	4	2/8-45+2/11-63+2/9-50
63.400.2525	250	2	32	90	250	3	2/8-45+2/11-63+2/9-50
63.400.2566	250	2.5	32	100	160	5	2/8-45+2/11-63+2/9-50
63.400.2570	250	2.5	32	100	200	4	2/8-45+2/11-63+2/9-50
63.400.2575	250	2.5	32	100	250	3	2/8-45+2/11-63+2/9-50
63.400.2608	250	2.5	40	100	80	10	2/8-55+4/12-64
63.400.2610	250	2.5	40	100	100	8	2/8-55+4/12-64
63.400.2612	250	2.5	40	100	128	6	2/8-55+4/12-64
63.400.2616	250	2.5	40	100	160	5	2/8-55+4/12-64
63.400.2620	250	2.5	40	100	200	4	2/8-55+4/12-64
63.400.2625	250	2.5	40	100	250	3	2/8-55+4/12-64
63.400.2709	275	2.5	32	100	90	10	2/8-45+2/11-63+2/12-75
63.400.2711	275	2.5	32	100	110	8	2/8-45+2/11-63+2/12-75
63.400.2714	275	2.5	32	100	140	6	2/8-45+2/11-63+2/12-75
63.400.2718	275	2.5	32	100	180	5	2/8-45+2/11-63+2/12-75
63.400.2722	275	2.5	32	100	220	4	2/8-45+2/11-63+2/12-75
63.400.2728	275	2.5	32	100	280	3	2/8-45+2/11-63+2/12-75
63.400.2809	275	2.5	40	100	90	10	2/8-55+4/12-64
63.400.2811	275	2.5	40	100	110	8	2/8-55+4/12-64
63.400.2814	275	2.5	40	100	140	6	2/8-55+4/12-64
63.400.2818	275	2.5	40	100	180	5	2/8-55+4/12-64
63.400.2822	275	2.5	40	100	220	4	2/8-55+4/12-64
63.400.2828	275	2.5	40	100	280	3	2/8-55+4/12-64
63.400.3009	300	2.5	32	100	90	10	2/8-45+4/11-63
63.400.3012	300	2.5	32	100	120	8	2/8-45+4/11-63
63.400.3016	300	2.5	32	100	160	6	2/8-45+4/11-63
63.400.3018	300	2.5	32	100	180	5	2/8-45+4/11-63
63.400.3020	300	2.5	32	100	200	4	2/8-45+4/11-63

Ref.	d1	b1	d2	d3	z	t	d4
63.400.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.400.3030	300	2.5	32	100	300	3	2/8-45+4/11-63
63.400.3059	300	3	40	100	90	10.5	2/8-55+4/12-64
63.400.3062	300	3	40	100	120	8	2/8-55+4/12-64
63.400.3066	300	3	40	100	160	6	2/8-55+4/12-64
63.400.3068	300	3	40	100	180	5	2/8-55+4/12-64
63.400.3072	300	3	40	100	220	4	2/8-55+4/12-64
63.400.3080	300	3	40	100	300	3	2/8-55+4/12-64
63.400.3110	315	2.5	32	100	100	10	2/8-45+4/11-63
63.400.3112	315	2.5	32	100	120	8	2/8-45+4/11-63
63.400.3116	315	2.5	32	100	160	6	2/8-45+4/11-63
63.400.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.400.3124	315	2.5	32	100	240	4	2/8-45+4/11-63
63.400.3130	315	2.5	32	100	300	3	2/8-45+4/11-63
63.400.3160	315	2.5	40	100	100	10	2/8-55+2/12-64
63.400.3162	315	2.5	40	100	120	8	2/8-55+2/12-64
63.400.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.400.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.400.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.400.3180	315	2.5	40	100	300	3	2/8-55+4/12-64
63.400.3512	350	3	32	120	120	9	2/8-45+4/11-63
63.400.3514	350	3	32	120	140	8	2/8-45+4/11-63
63.400.3518	350	3	32	120	180	6	2/8-45+4/11-63
63.400.3522	350	3	32	120	220	5	2/8-45+4/11-63
63.400.3528	350	3	32	120	280	4	2/8-45+4/11-63
63.400.3535	350	3	31	120	350	3	2/8-45+4/11-63
63.400.3562	350	3	40	120	120	9	2/8-55+4/12-64
63.400.3564	350	3	40	120	140	8	2/8-55+4/12-64
63.400.3568	350	3	40	120	180	6	2/8-55+2/12-64
63.400.3572	350	3	40	120	220	5	2/8-55+2/12-64
63.400.3578	350	3	40	120	280	4	2/8-55+2/12-64
63.400.3585	350	3	40	120	350	3	2/8-55+4/12-64
63.400.3608	350	3	50	120	80	14	4/15-80+4/14-85
63.400.3612	350	3	50	120	120	9	4/15-80+4/14-85
63.400.3616	350	3	50	120	160	7	4/15-80+4/14-85
63.400.3622	350	3	50	120	220	5	4/15-80+4/14-85
63.400.3711	370	3	50	120	110	10	4/15-80+4/14-85
63.400.3716	370	3	50	120	160	7	4/15-80+4/14-85
63.400.3722	370	3	50	120	220	5	4/15-80+4/14-85
63.400.4008	400	3	50	120	80	16	4/15-80+4/14-85
63.400.4010	400	3	50	120	100	12	4/15-80+4/14-85
63.400.4012	400	3	50	120	120	10	4/15-80+4/14-85
63.400.4016	400	3	50	120	160	8	4/15-80+4/14-85
63.400.4020	400	3	50	120	200	6	4/15-80+4/14-85



## > 63.401 Phantom

NL HSS Afkortzaag TiN  
 FR Fraise-scie à tronçonner HSS TiN  
 ES Fresa sierra circular tronzoadora HSS TiN  
 DE HSS Trennsägeblätter TiN



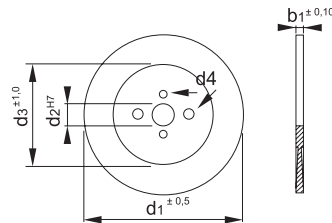
HSS	TiN	Ts4 BW	Ts5 C
P 11 ≤600 N/mm <sup>2</sup>	P 12 ≤350 N/mm <sup>2</sup>	P 13 ≤1000 N/mm <sup>2</sup>	K 31 GG
		K 32 GGG GTS-GTW	N 41 Alu
			N 42 Alu Si>10%
			N 51 Cu
			N 61 FTC
30-40	25-35	15-25	25-30
			20-25
			500-700
			500-700
			200-400
			200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.401.2512	250	2	32	100	128	6	2/8-45+2/11-63+2/9-50
63.401.2516	250	2	32	100	160	5	2/8-45+2/11-63+2/9-50
63.401.2520	250	2	32	100	200	4	2/8-45+2/11-63+2/9-50
63.401.2525	250	2	32	100	250	3	2/8-45+2/11-63+2/9-50
63.401.2566	250	2.5	32	100	160	5	2/8-45+2/11-63+2/9-50
63.401.2570	250	2.5	32	100	200	4	2/8-45+2/11-63+2/9-50
63.401.2714	275	2.5	32	100	140	6	2/8-45+2/11-63+2/12-75
63.401.2718	275	2.5	32	100	180	5	2/8-45+2/11-63+2/12-75
63.401.2722	275	2.5	32	100	220	4	2/8-45+2/11-63+2/12-75
63.401.2814	275	2.5	40	100	140	6	2/8-55+4/12-64
63.401.2818	275	2.5	40	100	180	5	2/8-55+4/12-64
63.401.2822	275	2.5	40	100	220	4	2/8-55+4/12-64

Ref.	d1	b1	d2	d3	z	t	d4
63.401.3016	300	2.5	32	100	160	6	2/8-45+4/11-63
63.401.3018	300	2.5	32	100	180	5	2/8-45+4/11-63
63.401.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.401.3116	315	2.5	32	100	160	6	2/8-45+4/11-63
63.401.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.401.3124	315	2.5	32	100	240	4	2/8-45+4/11-63
63.401.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.401.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.401.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.401.3518	350	3	32	100	180	6	2/8-45+4/11-63
63.401.3522	350	3	32	100	220	5	2/8-45+4/11-63

## > 63.410 Phantom

NL HSS Afkortzaag onvertand, stoomontlaten  
 FR Fraise-scie à tronçonner HSS sans dents, vaporisé  
 ES Fresa sierra circular tronzoadora HSS sin dientes, vaporizada  
 DE HSS Trennsägeblätter unverzahnt, dampfangelassen



HSS	OX.	Z=0
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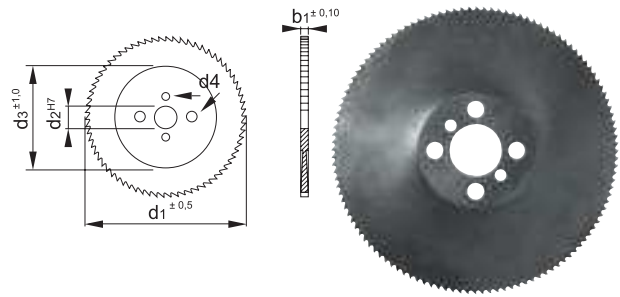
Ref.	d1	b1	d2	d3	d4
63.410.2532	250	2	32	100	2/8-45+2/11-63+2/9-50
63.410.2540	250	2.5	40	100	2/8-55+4/12-64
63.410.2732	275	2.5	32	100	2/8-45+2/11-63+2/12-75
63.410.2740	275	2.5	40	100	2/8-55+4/12-64
63.410.3032	300	2.5	32	100	2/8-45+4/11-63

Ref.	d1	b1	d2	d3	d4
63.410.3040	300	2.5	40	100	2/8-55+2/12-64
63.410.3132	315	2.5	32	100	2/8-45+4/11-63
63.410.3140	315	2.5	40	100	2/8-55+2/12-64
63.410.3542	350	2.5	40	120	2/8-55+4/12-64
63.410.3543	350	3	40	120	2/8-55+4/12-64



> **63.420** **Phantom**

NL HSS-E Afkortzaag stoomontlaten  
 FR Fraise-scie à tronçonner HSS-E vaporisé  
 ES Fresa sierra circular tronczadora HSS-E vaporizada  
 DE HSS-E Trennsägeblätter dampfangelassen



HSS-E OX. T<sub>s</sub>4 BW T<sub>s</sub>5 C INOX

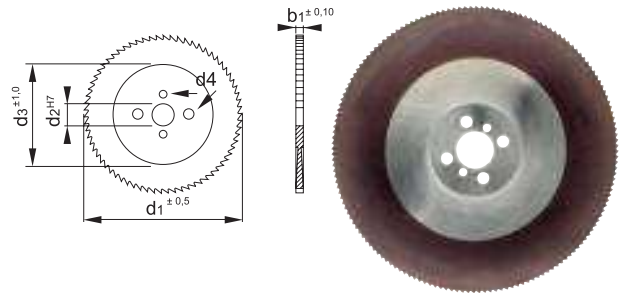
<b>P 11</b> ≤500 N/mm <sup>2</sup>	<b>P 12</b> ≤550 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.420.2218	225	2	32	90	180	4	2/8-45+2/11-63+2/9-50
63.420.2222	225	2	32	90	220	3	2/8-45+2/11-63+2/9-50
63.420.2516	250	2	32	100	160	5	2/8-45+2/11-63+2/9-50
63.420.2520	250	2	32	100	200	4	2/8-45+2/11-63+2/9-50
63.420.2525	250	2	32	100	250	3	2/8-45+2/11-63+2/9-50
63.420.2714	275	2.5	32	100	140	6	2/8-45+2/11-63+2/12-75
63.420.2718	275	2.5	32	100	180	5	2/8-45+2/11-63+2/12-75
63.420.2722	275	2.5	32	100	220	4	2/8-45+2/11-63+2/12-75
63.420.2814	275	2.5	40	100	140	6	2/8-55+4/12-64
63.420.2818	275	2.5	40	100	180	5	2/8-55+4/11-63
63.420.2822	275	2.5	40	100	220	4	2/8-55+4/12-64
63.420.3018	300	2.5	32	100	180	5	2/8-45+4/11-63

Ref.	d1	b1	d2	d3	z	t	d4
63.420.3020	300	2.5	32	100	200	5	2/8-45+4/11-63
63.420.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.420.3030	300	2.5	32	100	300	3	2/8-45+4/11-63
63.420.3116	315	2.5	32	100	160	6	2/8-45+2/11-63
63.420.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.420.3124	315	2.5	32	100	240	4	2/8-45+4/11-63
63.420.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.420.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.420.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.420.3518	350	3	32	120	180	6	2/8-45+4/11-63
63.420.3522	350	3	32	120	220	5	2/8-45+4/11-63
63.420.3528	350	3	32	120	280	4	2/8-45+4/11-63

> **63.424** **Phantom**

NL HSS-E Afkortzaag TiAlN  
 FR Fraise-scie à tronçonner HSS-E TiAlN  
 ES Fresa sierra circular tronczadora HSS-E TiAlN  
 DE HSS-E Trennsägeblätter TiAlN



HSS-E TiAlN T<sub>s</sub>4 BW T<sub>s</sub>5 C INOX

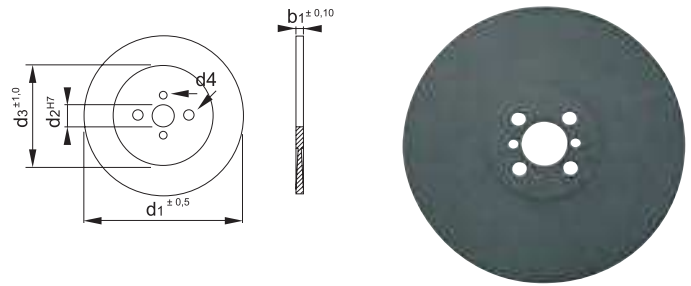
<b>P 11</b> ≤500 N/mm <sup>2</sup>	<b>P 12</b> ≤550 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PVC
30-40	25-35	15-25	15-20	10-15	6-8	25-30	20-25	500-700	500-700	200-400	200-600

Ref.	d1	b1	d2	d3	z	t	d4
63.424.2822	275	2.5	40	100	220	4	2/8-55+4/12-64
63.424.3022	300	2.5	32	100	220	4	2/8-45+4/11-63
63.424.3030	300	2.5	32	100	300	3	2/8-45+4/11-63
63.424.3116	315	2.5	32	100	160	6	2/8-45+2/11-63
63.424.3120	315	2.5	32	100	200	5	2/8-45+4/11-63
63.424.3124	315	2.5	32	100	240	4	2/8-45+4/11-63

Ref.	d1	b1	d2	d3	z	t	d4
63.424.3166	315	2.5	40	100	160	6	2/8-55+4/12-64
63.424.3170	315	2.5	40	100	200	5	2/8-55+4/12-64
63.424.3174	315	2.5	40	100	240	4	2/8-55+4/12-64
63.424.3518	350	3	32	120	180	6	2/8-45+4/11-63
63.424.3522	350	3	32	120	220	5	2/8-45+4/11-63

## > 63.430 Phantom

NL HSS-E Afkortzaag onvertand, stoomontlaten  
 FR Fraise-scie à tronçonner HSS-E sans dents, vaporisé  
 ES Fresa sierra circular tronzoadora HSS-E sin dientes, vaporizada  
 DE HSS-E Trennsägeblätter unverzahnt, dampfangelassen



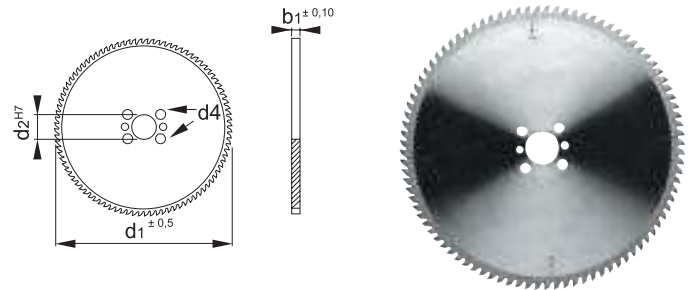
HSS-E OX. Z=0

Ref.	d1	b1	d2	d3	d4
63.430.2532	250	2	32	100	2/8-45+2/11-63+2/9-50
63.430.2740	275	2.5	40	100	2/8-55+4/12-64
63.430.3032	300	2.5	32	100	2/8-45+4/11-63
63.430.3040	300	2.5	40	100	2/8-55+4/12-64

Ref.	d1	b1	d2	d3	d4
63.430.3132	315	2.5	32	100	2/8-45+2/11-63
63.430.3140	315	2.5	40	100	2/8-55+4/12-64
63.430.3532	350	3	32	120	2/8-45+2/11-63
63.430.3540	350	2.5	40	120	2/8-55+4/12-64

## > 63.450 Phantom

NL HM-tip Cirkelzaag positieve spaanhoek  
 FR Fraise-scie pointe carb. mét. angle de coupe positif  
 ES Fresa sierra circular punta MD ángulo de corte positivo  
 DE HM-Schneiden Kreissägeblätter mit positivem Spanwinkel



HM-TIP α 5°

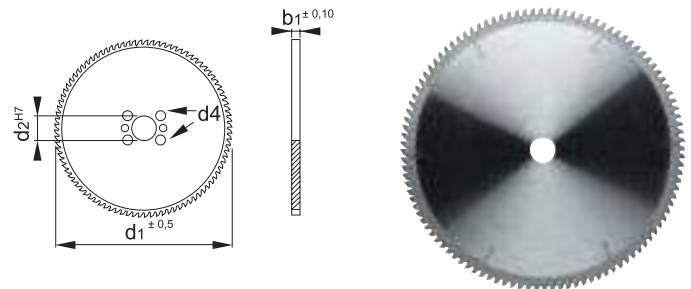
N 41 Alu N 42 Alu Si>10%

Ref.	d1	b1	d2	z	d4
63.450.2032	200	3.2	32	64	
63.450.2532	250	3.4	32	60	
63.450.2533	250	3.4	32	80	
63.450.3029	300	3.4	32	72	2/11-63
63.450.3031	300	3.4	32	84	2/11-63
63.450.3032	300	3.4	32	96	

Ref.	d1	b1	d2	z	d4
63.450.3534	350	3.4	32	84	2/11-63
63.450.3535	350	3.4	32	96	2/11-63
63.450.3536	350	3.4	32	108	2/11-63
63.450.4030	400	4	32	96	
63.450.4032	400	4	32	108	2/11-63

## > 63.460 Phantom

NL HM-tip Cirkelzaag negatieve spaanhoek  
 FR Fraise-scie pointe carb. mét. angle de coupe négatif  
 ES Fresa sierra circular punta MD ángulo de corte negativo  
 DE HM-Schneiden Kreissägeblätter negativem Spanwinkel



HM-TIP α -5°

N 41 Alu N 42 Alu Si>10%

Ref.	d1	b1	d2	z	d4
63.460.2032	200	3.2	32	64	2/11-63
63.460.2532	250	3.4	32	60	
63.460.2533	250	3.4	32	80	
63.460.3029	300	3.4	32	72	2/11-63
63.460.3031	300	3.4	32	84	2/11-63
63.460.3032	300	3.4	32	96	

Ref.	d1	b1	d2	z	d4
63.460.3529	350	3.4	32	84	2/11-63
63.460.3531	350	3.4	32	96	2/11-63
63.460.3533	350	3.4	32	108	2/11-63
63.460.4032	400	4	32	96	2/11/63
63.460.4034	400	4	32	108	2/11/63

> **64.150** **Phantom**

NL HSS-Co Handzaagblad  
 FR Lame de scie à main HSS-Co  
 ES Hoja de sierra manual HSS-Co  
 DE HSS-Co Handsägeblätter

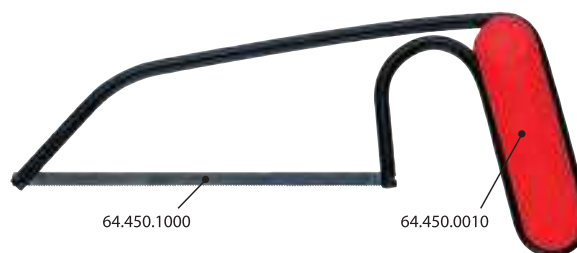


**HSS-Co** 300mm  
 12"

Ref.	TPI	t
64.150.1800	18	1,4
64.150.2400	24	1
64.150.3200	32	0,8

> **64.450** **Phantom**

NL CV Junior Zaagblad 6" en Houder  
 FR Lame de scie Junior 6" et Arbre Acier spécial (Chrome)  
 ES Hoja de sierra Junior 6" y Mango Cromo Vanadium  
 DE CV junior Sägeblätter 6" und Halter



**CV** 150mm  
 6"

Ref.	#
64.450.0010	1
64.450.1000	144
64.450.2000	12

> **64.460** **Phantom**

NL HSS Metaalzaagbeugel robuuste uitvoering  
 FR Monture de scie à métaux HSS version Heavy Duty  
 ES Mango de sierra HSS versión macizo  
 DE HSS Metallsägebogen robuste Ausführung



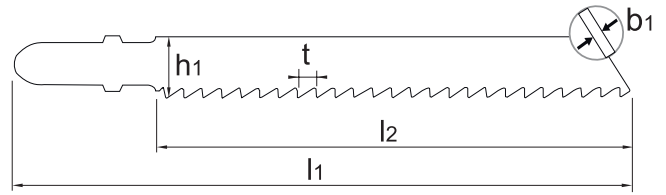
**HSS** 24 TPI **150KG** **45°-90°** 300mm  
 12"

Ref.	#
64.460.1001	1



## > 64.500 Phantom

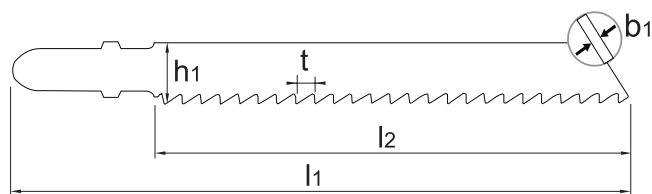
NL Decoupeerzaag, voor metaal  
 FR Lame de scie sauteuse, pour métal  
 ES Hojas de sierra de calar, para metal  
 DE Stichtsägeblätter, für Metall














































Ref.	Type	l1	l2	h1	b1	t	
64.500.0710	T75-0,9	75	50	8,0	1,00	0,9	Phantom BM T75-0,9 BiM HSS 0,5-1,5 mm INOX
64.500.0711	T75-1,1 INOX	75	50	9,5	1,00	1,1	Phantom HM T75-1,1 INOX HM 1,5-3 mm INOX
64.500.0714	T75-1,2	75	50	8,0	1,00	1,2	Phantom BM T75-1,2 BiM HSS 1-3 mm INOX
64.500.0720	T75-2	75	50	8,0	1,00	2	Phantom BM T75-2 BiM HSS 2,6-6 mm INOX
64.500.1018	T100-1,2/2,5 UNI	100	75	8,0	1,00	1,2-2,5	Phantom BM T100-1,2/2,5 UNI BiM HSS 1,5-10 mm UNI INOX Cu Ni Ms Zn Al
64.500.1021	T100-2	100	75	8,0	1,27	2	Phantom HSS T100-2 HSS 2-20 mm ACRYL Cu Ni Ms Zn Al
64.500.1025	T100-3	100	75	8,0	1,15	3	Phantom HSS T100-3 HSS 3-15 mm Cu Ni Ms Zn Al
64.500.1027	T100-3C	100	75	6,2	1,15	3	Phantom HSS T100-3C HSS 3-15 mm Cu Ni Ms Zn Al
64.500.1312	T132-1,2	132	110	8,0	1,00	1,2	Phantom BiM T132-1,2 BiM HSS 1-3 mm Cu Ni Ms Zn Al
64.500.1313	T132-1/1,6 UNI	132	110	8,0	1,00	1-1,6	Phantom BiM T132-1/1,6 UNI BiM HSS 1,2-6 mm UNI Cu Ni Ms Zn Al
64.500.1321	T132-1,8/2,5 UNI	132	110	8,0	1,27	1,8-2,5	Phantom BiM T132-1,8/2,5 UNI BiM HSS 3-100 mm UNI INOX SOFT Cu Ni Ms Zn Al
64.500.1330	T132-2/4 UNI	132	110	8,0	1,27	2-4	Phantom BiM T132-2/4 UNI BiM HSS 3-65 mm UNI INOX SOFT Cu Ni Ms Zn Al

> **64.500** **Phantom**

NL Decoupeerzaag, voor hout, tegels, cellenbeton en composiet  
 FR lame de scie sauteuse, pour bois  
 ES Hojas de sierra de calar, para madera  
 DE Stichsägeblätter, für Holz

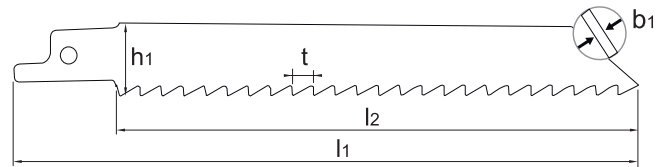


Ref.	Type	l1	l2	h1	b1	t	
64.500.0725	T75-2C	75	50	5,4	1,25	2	 CV   
64.500.0819	T80-1,9	80	55	8,0	1,27	1,9	 BIM HSS  
64.500.1020	T100-2G	100	75	8,0	1,27	2	 BIM HSS   
64.500.1024	T100-2,5CG	100	75	8,0	1,27	2,5	 CV  
64.500.1026	T100-2,5G	100	75	8,0	1,27	2,5	 BIM HSS  
64.500.1028	T100-2,5NG	100	75	8,0	1,27	2,5	 BIM HSS  
64.500.1042	T100-4G	100	75	8,0	1,27	4	 BIM HSS   
64.500.1150	T115-2,5/3,2G	115	90	8,0	1,45	2,5-3,2	 CV   
64.500.1340	T132-4G	132	110	8,0	1,27	4	 BIM HSS   
64.500.1540	T150-4	150	130	8,0	1,25	4	 CV   
64.500.1950	T75-HM	75	50	8,0	1,00	-	 HM  
64.500.2043	T100-4,3HM	100	75	8,0	1,25	4,3	 HM   



## > 64.600 Phantom

NL Reciprozaag  
FR Lame de scie sabre  
ES Hojas de sierra de sable  
DE Säbelsägeblätter










Ref.	Type	l1	l2	h1	b1	t	
64.600.1510	R150-1	150	130	19,0	0,90	1	Phantom BIM R150-1 BiM HSS 0,7-3 mm
64.600.1514	R150-1,4	150	130	19,0	0,90	1,4	Phantom BIM R150-1,4 BiM HSS 1,5-4 mm INOX
64.600.1518	R150-1,8	150	130	19,0	0,90	1,8	Phantom BIM R150-1,8 BiM HSS 3-8 mm INOX
64.600.1519	R150-1,8 90°	150	130	25,4	0,90	1,8	Phantom BIM R150-1,8 90° BiM HSS 3-8 mm INOX 90°
64.600.1522	R150-1,8/2,5 UNI	150	130	19,0	1,27	1,8-2,5	Phantom BIM R150-1,8/2,5 UNI BiM HSS 3-12 mm UNI INOX
64.600.1525	R150-2,5	150	130	19,0	0,90	2,5	Phantom BIM R150-2,5 BiM HSS 3-12 mm
64.600.1540	R150-4,2C	150	130	19,0	1,27	4,2	Phantom BIM R150-4,2C BiM HSS 6-100 mm
64.600.2014	R200-1,4	200	180	19,0	0,90	1,4	Phantom BIM R200/1,4 BiM HSS 1,5-4 mm INOX
64.600.2018	R200-1,8	200	180	19,0	0,90	1,8	Phantom BIM R200-1,8 BiM HSS 2-8 mm
64.600.2023	R200-1,8/2,5 UNI	200	180	19,0	1,27	1,8-2,5	Phantom BIM R200-1,8/2,5 UNI BiM HSS 3-12 mm UNI
64.600.2025	R200-2,5	200	180	19,0	0,90	2,5	Phantom BIM R200-2,5 BiM HSS 3-150 mm
64.600.2090	R200-2,4/4,2 UNI	200	180	19,0	1,27	2,4-4,2	Phantom BIM R200-2,4/4,2 UNI BiM HSS 3-18 mm UNI MDF
64.600.2214	R230-1,4	230	210	19,0	0,90	1,4	Phantom BIM R230-1,4 BiM HSS 1,5-4 mm INOX

Ref.	Type	l1	l2	h1	b1	t	
64.600.2218	R230-1,8	230	210	19,0	0,90	1,8	Phantom BIM R230-1,8 BIM HSS 2-8 mm
64.600.2220	R230-2	230	210	19,0	1,27	2	Phantom BIM R230-2 BIM HSS 2,5-10 mm Cu Ni Ms Zn Al
64.600.2221	R230-1,8/2,5 UNI	230	210	19,0	0,90	1,8-2,5	Phantom BIM R230-1,8/2,5 UNI BIM HSS 3-12 mm UNI
64.600.2225	R230-2,5	230	210	19,0	0,90	2,5	Phantom BIM R230-2,5 BIM HSS 3-12 mm Cu Ni Ms Zn Al
64.600.2232	R230-2,2/3,2 UNI	230	210	19,0	1,27	2,2-3,2	Phantom BIM R230-2,2/3,2 UNI BIM HSS UNI MDF 90° Cu Ni Ms Zn Al
64.600.2332	R230-3,2	230	210	19,0	1,57	3,2	Phantom BIM R230-3,2 BIM HSS 4-12 mm 90° GG Cu Ni Ms Zn Al
64.600.2342	R230-4,2C	230	210	19,0	1,27	4,2	Phantom BIM R230-4,2C BiM HSS 6-175 mm LWF
64.600.2356	R230-5/6,5	230	210	19,0	1,20	5-6,5	Phantom CV R230-5/6,5 CV 15-190 mm SOFT
64.600.3018	R300-1,8	300	280	19,0	0,90	1,8	Phantom BIM R300-1,8 BIM HSS 2-8 mm INOX
64.600.3021	R300-1,8/2,5 UNI	300	280	19,0	0,90	1,8-2,5	Phantom BIM R300-1,8/2,5 UNI BIM HSS 3-12 mm UNI
64.600.3025	R300-2,5	300	280	19,0	0,90	2,5	Phantom BIM R300-2,5 BIM HSS 3-12 mm GG Cu Ni Ms Zn Al
64.600.3032	R300-4,2C	300	280	19,0	1,27	4,2	Phantom BIM R300-4,2C BIM HSS 6-250 mm MDF



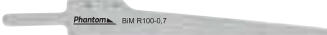








## > 64.605 Phantom

NL **HM-tip Reciprozaag**  
 FR **Lame de scie sabre pointe carb. mét.**  
 ES **Hojas de sierra de sable punta MD**  
 DE **HM-Schneiden Säbelsägeblätter**

Ref.	Type	l1	l2	h1	b1	t	
64.605.1542	RHM150-4,2	150	130	19	0,9	4,2	 <b>HM-TIP</b>   
64.605.3013	RHM300-1,3	300	200	46	2,97	18	 <b>HM-TIP</b>  

## > 64.630 Phantom

NL **HSS Bi-Metaal Carrosseriezaag**  
 FR **Lame de scie sabre HSS Bi-métal**  
 ES **Hojas de sierra de sable HSS Bi-Metal**  
 DE **HSS Bi-Metall Karosseriesägeblätter**

Ref.	Type	l1	l2	h1	b1	t	
64.630.1007	R100-0,7	100	75	12,3	0,65	0,7	 <b>BiM HSS</b>  <b>INOX</b> 
64.630.1010	R100-1	100	75	12,3	0,65	1	 <b>BiM HSS</b>  <b>INOX</b> 
64.630.1018	R100-1,8	100	75	12,3	0,65	1,8	 <b>BiM HSS</b>  <b>INOX</b> 



> **66.110 Phantom**



NL **M2 Bi-Metaal Machinezaagblad**  
 FR **Lame de scie Bi-métal M2**  
 ES **Hoja de sierra de máquina Bi-metal M2**  
 DE **M2 Bi-Metall Maschinensägeblätter**

BiM  
HSS

<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PTC
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Ref.	l1	l2	b1	T''
66.110.3036	300	25	1.25	10
66.110.3037	300	25	1.25	14
66.110.3054	300	32	1.6	6
66.110.3055	300	32	1.6	8
66.110.3056	300	32	1.6	10
66.110.3514	350	25	1.25	6
66.110.3515	350	25	1.25	8
66.110.3516	350	25	1.25	10
66.110.3517	350	25	1.25	14
66.110.3534	350	32	1.6	6
66.110.3535	350	32	1.6	8
66.110.3536	350	32	1.6	10
66.110.3537	350	32	1.6	14
66.110.3553	350	38	2	4
66.110.3554	350	38	2	6
66.110.3555	350	38	2	8
66.110.3556	350	38	2	10
66.110.3557	350	38	2	14
66.110.4034	400	25	1.25	6
66.110.4035	400	25	1.25	8
66.110.4036	400	25	1.25	10
66.110.4037	400	25	1.25	14
66.110.4054	400	32	1.6	6
66.110.4055	400	32	1.6	8
66.110.4056	400	32	1.6	10
66.110.4057	400	32	1.6	14
66.110.4073	400	38	2	4
66.110.4074	400	38	2	6
66.110.4075	400	38	2	8

Ref.	l1	l2	b1	T''
66.110.4076	400	38	2	10
66.110.4077	400	38	2	14
66.110.4233	425	32	1.6	4
66.110.4234	425	32	1.6	6
66.110.4513	450	32	1.6	4
66.110.4515	450	32	1.6	8
66.110.4516	450	32	1.6	10
66.110.4553	450	38	2	4
66.110.4554	450	38	2	6
66.110.4555	450	38	2	8
66.110.4556	450	38	2	10
66.110.5013	500	38	2	4
66.110.5014	500	38	2	6
66.110.5015	500	38	2	8
66.110.5016	500	38	2	10
66.110.5214	525	40	2	6
66.110.5513	550	45	2.25	4
66.110.5514	550	45	2.25	6
66.110.5515	550	45	2.25	8
66.110.5516	550	45	2.25	10
66.110.6013	600	50	2.5	4
66.110.6014	600	50	2.5	6
66.110.6015	600	50	2.5	8
66.110.6016	600	50	2.5	10
66.110.6513	650	50	2.5	4
66.110.6514	650	50	2.5	6
66.110.6515	650	50	2.5	8
66.110.6516	650	50	2.5	10

> **66.130 Phantom**



NL **M2 Bi-Metaal Machinezaagblad type Kasto**  
 FR **Lame de scie Bi-métal M2 type Kasto**  
 ES **Hoja de sierra de máquina Bi-metal M2 tipo Kasto**  
 DE **M2 Bi-Metall Maschinensägeblätter Typ Kasto**

BiM  
HSS KASTO

<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PVC
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Ref.	l1	l2	b1	T''
66.130.4074	400	38	2	6
66.130.4075	400	38	2	8
66.130.4076	400	38	2	10
66.130.4553	450	38	2	4
66.130.4555	450	38	2	8
66.130.4556	450	38	2	10
66.130.5513	550	45	2.25	4
66.130.5514	550	45	2.25	6

Ref.	l1	l2	b1	T''
66.130.5515	550	45	2.25	8
66.130.5516	550	45	2.25	10
66.130.5713	575	50	2.5	4
66.130.5714	575	50	2.5	6
66.130.5715	575	50	2.5	8
66.130.6533	650	50	2.5	4
66.130.6534	650	50	2.5	6
66.130.6535	650	50	2.5	8



## > 66.160 Phantom

NL **M42 Bi-Metaal Machinezaagblad**  
 FR **Lame de scie Bi-métal M42**  
 ES **Hoja de sierra de máquina Bi-metal M42**  
 DE **M42 Bi-Metall Maschinensägeblätter**

BiM  
8% Co

INOX

<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu	<b>N 61</b> PTC
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Ref.	l1	l2	b1	T/''
66.160.4094	400	40	2	6
66.160.4095	400	40	2	8
66.160.4096	400	40	2	10
66.160.4097	400	40	2	14
66.160.4554	450	40	2	6

Ref.	l1	l2	b1	T/''
66.160.4555	450	40	2	8
66.160.4556	450	40	2	10
66.160.5014	500	40	2	6
66.160.5015	500	40	2	8
66.160.5713	575	50	2.5	4

Ref.	l1	l2	b1	T/''
66.160.5714	575	50	2.5	6
66.160.7013	700	50	2.5	4
66.160.7014	700	50	2.5	6

## > 66.420 Phantom

NL **M42 Bi-Metaal Bandaag voor kleiner stafmateriaal**  
 FR **Scie à ruban Bi-métal M42 pour matériaux pleins de petites dimensions**  
 ES **Sierra de cinta Bimetal M42 para barras de dimensiones pequeñas**  
 DE **M42 Bi-Metall Sägebänder für Stangenmaterial kleinere Größen**



BiM 8% Co	Const.	$\alpha=0^\circ$	●	○	□	
<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>N 41</b> Alu	<b>N 51</b> Cu
50-120	35-50	30-45	30-40	30-40	80-800	50-400

h1 x b1 (mm)	z=4/''	z=6/''
27 x 0,9	66.420.63....	66.420.64....

> **66.440** **Phantom**

NL **M42 Bi-Metaal Bandzaag voor groter stafmateriaal**  
 FR **Scie à ruban Bi-métal M42 pour matériaux pleins de grandes dimensions**  
 ES **Sierra de cinta Bimetal M42 para barras de mayores dimensiones**  
 DE **M42 Bi-Metall Sägebänder für größeres Stangenmaterial**



BiM HSS	HSS-E 8%	Const.	$\alpha=10^\circ$	●	○	■	—	●●●●
<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>N 41</b> Alu	<b>N 51</b> Cu	
50-120	35-50	30-45	30-40	30-40	10-30	80-800	50-400	

h1 x b1 (mm)	z=3/''	z=4/''	z=6/''
13 x 0,9	66.440.12....	66.440.13....	66.440.14....
20 x 0,9	66.440.22....		
27 x 0,9	66.440.32....		

> **66.450** **Phantom**

NL **M42 Bi-Metaal Bandzaag voor profielmateriaal**  
 FR **Scie à ruban Bi-métal M42 pour profilés**  
 ES **Sierra de cinta Bimetal M42 para materiales de perfiles**  
 DE **M42 Bi-Metall Sägebänder für Profilmaterial**



BiM HSS	HSS-E 8%	Variabel	$\alpha=0^\circ$	●	○	□	≡	●●●●	■	■	
<b>P 11</b> ≤600 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW	<b>N 41</b> Alu	<b>N 51</b> Cu	<b>S 71</b> Ni/Co	<b>S 72</b> Ti
50-120	35-50	30-45	30-40	30-40	10-30	30-60	30-60	80-800	50-400	10-25	10-20

h1 x b1 (mm)	z=3-4/''	z=4-6/''	z=5-8/''	z=6-10/''	z=8-12/''	z=10-14/''
13 x 0,65				66.450.07....	66.450.08....	66.450.09....
13 x 0,9				66.450.17....	66.450.18....	66.450.19....
20 x 0,9		66.450.25....	66.450.26....	66.450.27....	66.450.28....	66.450.29....
27 x 0,9	66.450.34....	66.450.35....	66.450.36....	66.450.37....	66.450.38....	66.450.39....
34 x 1,1	66.450.54....	66.450.55....	66.450.56....	66.450.57....	66.450.58....	
41 x 1,3	66.450.64....	66.450.65....	66.450.66....			



## > 66.455 Phantom

NL **M42 Bi-Metaal Bandzaag universele multizaag**  
 FR **Scie à ruban Bi-métal M42 scie multifonction**  
 ES **Sierra de cinta Bimetal M42 sierra universal**  
 DE **M42 Bi-Metall Sägebänder Universal-Sägeband**



BiM HSS	HSS-E 8%	Variabel	$\lambda \alpha 5^\circ$	●	○	○	□	H	⋈	⊗	⊞
<b>P 11</b> ≤500 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>K 31</b> GG	<b>K 32</b> GGG GTS-GTW							
50-120	35-50	30-45	30-60	30-60							

h1 x b1 (mm)	z=3-4/''	z=4-6/''	z=5-7/''	z=8-11/''
27 x 0,9		66.455.36....	66.455.37....	66.455.39....
34 x 1,1		66.455.55....	66.455.57....	
41 x 1,3	66.455.64....	66.455.65....		

## > 66.460 Phantom

NL **M42 Bi-Metaal Bandzaag voor grotere afmetingen**  
 FR **Scie à ruban Bi-métal M42 pour matériaux de grandes dimensions**  
 ES **Sierra de cinta Bimetal M42 para materiales con dimensiones grandes**  
 DE **M42 Bi-Metall Sägebänder größer Abmessung**



BiM HSS	HSS-E 8%	Variabel	$\lambda \alpha 10^\circ$	●	○	■	—	H	⊗
<b>P 11</b> ≤500 N/mm <sup>2</sup>	<b>P 12</b> ≤850 N/mm <sup>2</sup>	<b>P 13</b> ≤1000 N/mm <sup>2</sup>	<b>P 14</b> ≤1400 N/mm <sup>2</sup>	<b>M 21</b> INOX ≤850N/mm <sup>2</sup>	<b>M 22</b> INOX >850N/mm <sup>2</sup>	<b>K 31</b> GG	<b>N 41</b> Alu	<b>N 42</b> Alu Si>10%	<b>N 51</b> Cu
50-120	35-50	30-45	30-40	30-40	10-30	30-60	80-800	80-800	50-400

h1 x b1 (mm)	z=1,4-2/''	z=2-3/''	z=3-4/''	z=4-6/''	z=5-8/''	z=6-10/''
20 x 0,9				66.460.25....		
27 x 0,9		66.460.33....	66.460.34....	66.460.35....	66.460.36....	66.460.37....
34 x 1,1	66.460.52....	66.460.32....	66.460.54....	66.460.55....		
41 x 1,3	66.460.62....	66.460.63....	66.460.64....	66.460.65....		
54 x 1,6		66.460.73....	66.460.74....	66.460.75....		

> **66.580** **Phantom**

NL **M51 Bi-Metaal Bandzaag extra slijtvast**  
 FR **Scie à ruban Bi-métal M51 très résistante à l'usure**  
 ES **Sierra de cinta Bimetal M51 extra resistente al desgaste**  
 DE **M51 BiMetall Sägebänder besonders Verschleissfest**



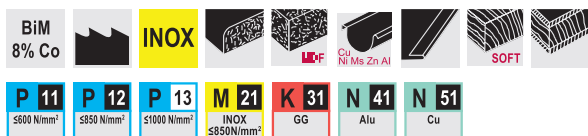
<b>BiM</b> HSS	<b>10% Co</b>	Variabel	$\alpha 15^\circ$				<b>H</b>
<b>P 11</b> <small>≤900 N/mm<sup>2</sup></small>	<b>P 12</b> <small>≤850 N/mm<sup>2</sup></small>	<b>P 13</b> <small>≤1000 N/mm<sup>2</sup></small>	<b>P 14</b> <small>≤1400 N/mm<sup>2</sup></small>	<b>M 21</b> <small>INOX ≤850N/mm<sup>2</sup></small>	<b>M 22</b> <small>INOX &gt;850N/mm<sup>2</sup></small>	<b>S 71</b> <small>Ni/Co</small>	<b>S 72</b> <small>Ti</small>
50-120	35-50	30-45	30-40	30-40	10-30	10-25	10-20

h1 x b1 (mm)	z=1,4-2/''	z=2-3/''	z=3-4/''
27 x 0,9			66.580.44....
34 x 1,1			66.580.54....
41 x 1,3		66.580.63....	66.580.64....
54 x 1,6	66.580.72....	66.580.73....	



> **69.111 Phantom**

NL **HSS-Co 8% Bi-Metaal Set Gatzagen 61.105**  
 FR **Jeu de Scies cloches HSS-Co 8% Bi-métal 61.105**  
 ES **Juego de coronas perforadoras HSS-Co 8% Bi-Metal 61.105**  
 DE **HSS-Co 8% Bi-Metall Satz Lochsägen 61.105**



Ref.	1	2	3	4
69.111.0900	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	2+5	6,35x90	61.160.9500
69.111.0901	19, 22, 29, 35, 38, 44, 51, 57, 68 mm	2+5	6,35x90	61.160.9500
69.111.1200	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	2+5	6,35x90	61.160.9500
69.111.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 68, 76 mm	2+5	6,35x90	61.160.9500

> **69.130 Phantom**

NL **HM-tip Set Gatzagen 61.130**  
 FR **Jeu de Scies cloches pointe carb. mét. 61.130**  
 ES **Juego de coronas perforadoras punta MD 61.130**  
 DE **HM-Schneiden Satz Lochsägen 61.130**

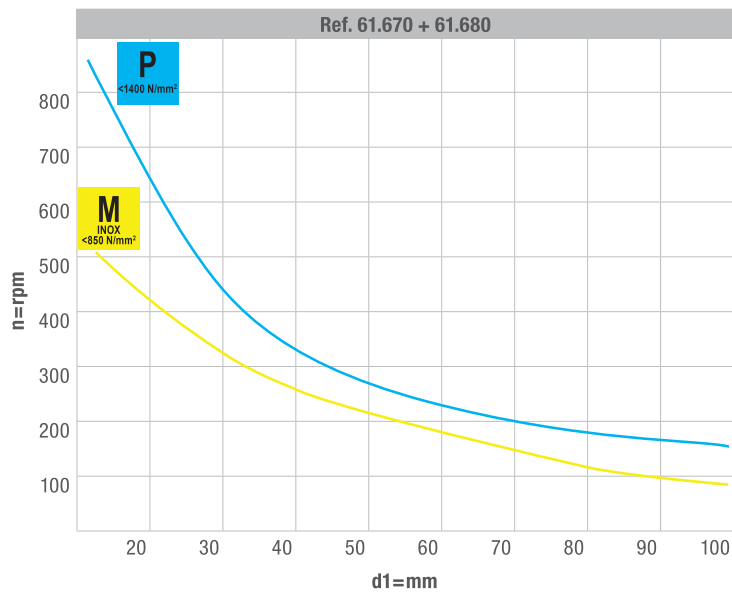
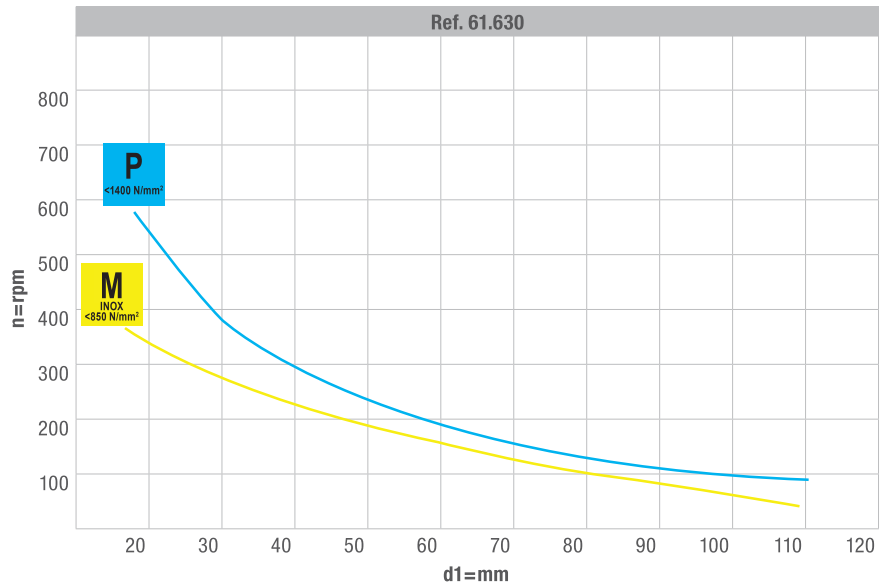


Ref.	1	2	3	4
69.130.0601	22, 29, 35, 44, 51, 65 mm	1+2	HSS 6,35x110	Carbide Tipped 6,35x110
69.130.0901	19, 22, 29, 35, 38, 44, 51, 57, 64 mm	1+2	HSS 6,35x110	Carbide Tipped 6,35x110
69.130.1201	16, 19, 22, 25, 29, 32, 35, 38, 44, 51, 64, 76 mm	1+2	HSS 6,35x110	Carbide Tipped 6,35x110



NL Aanbevolen toerentallen gatzagen  
 FR Vitesses de rotation recommandées pour scies cloches  
 ES Número de revoluciones recomendadas para coronas perforadoras  
 DE Drehzahlempfehlung Lochsägen

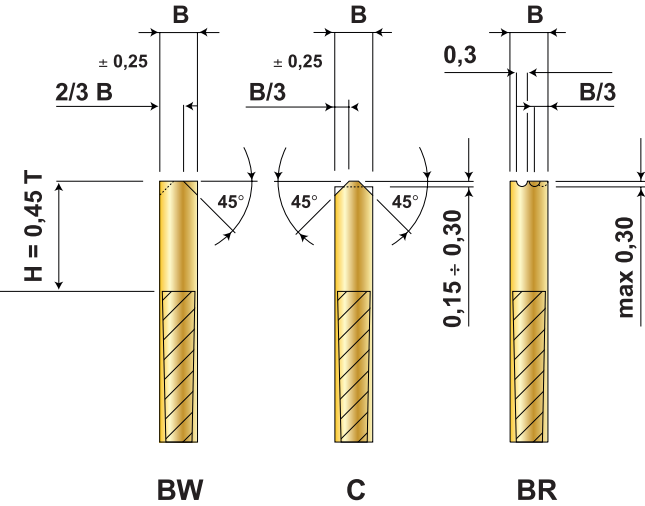
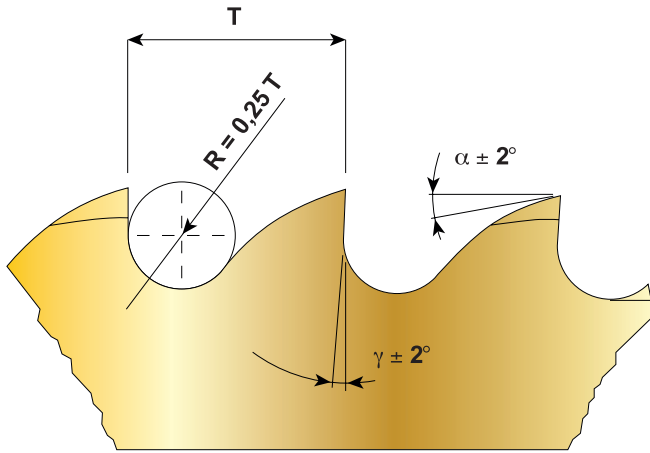
Ref. 61.105			
d1 (mm)	n=rpm		
	P	M	N
14	620	310	940
16	550	275	825
17	520	260	775
18	480	240	720
19	480	240	690
20	425	210	635
21	410	205	610
22	390	195	585
24	360	180	530
25	350	175	525
27	325	160	480
28	310	155	465
29	300	150	450
30	285	145	425
32	275	140	410
33	260	135	390
34	255	130	380
35	250	125	375
37	235	115	350
38	230	115	345
40	215	110	315
41	210	105	315
43	200	100	295
44	195	95	290
46	185	90	280
48	180	90	270
49	175	85	260
50	170	85	255
51	165	80	250
52	165	80	250
54	160	80	240
57	150	75	225
59	145	70	220
60	140	70	215
61	135	70	210
64	135	65	205
65	135	65	205
67	130	60	195
68	130	60	190
70	125	60	185
73	120	60	180
76	115	55	170
79	110	55	165
83	105	50	155
86	100	50	145
89	95	45	145
90	95	45	140
92	95	45	140
95	90	45	135
98	90	45	135
100	85	40	130
102	85	40	130
105	80	40	120
108	80	40	120
111	75	35	110
114	75	35	105
121	70	35	100
127	65	30	90
133	65	30	90
140	60	30	85
146	55	25	80
152	55	25	80



n=rpm  
 NL: Toerental (omw/min)  
 FR: Vitesse de rotation (tr/min)  
 ES: Número de revoluciones (rpm)  
 DE: Drehzahl (U/min)

NL Technische informatie afkortzagen 63.4XX  
 FR Information technique fraise-scie à tronçonner 63.4XX  
 ES Información técnica fresa sierra circular tronzadora 63.4XX  
 DE Technische Informationen Trennsägeblätter 63.4XX

NL Tandvormen  
 FR Formes de dents  
 ES Forma de los dientes  
 DE Zahnform



B zaagbladdikte  
 épaisseur de la lame  
 espesor de la sierra  
 Sägeblattstärke

T tandsteek  
 pas de la dent  
 paso de diente  
 Zahnteilung

H tandhoogte  
 hauteur de dent  
 altura de diente  
 Zahnhöhe

R spaankamer diameter  
 diamètre du fond de la dent  
 diametro de la garganta  
 Spanraumdurchmesser

g spaanhoek  
 angle d'attaque  
 angulo de desprendimiento  
 Spanwinkel

a vrijloophoek  
 angle de dépouille  
 angulo de desmoldeo posterior  
 Rückenfreiwinkel

HSS	63.400 63.401	HSS-E	63.420 63.424
g	18° ± 2°		18° ± 2°
a	10° ± 2°		10° ± 2°

NL Snijhoeken  
 FR Arête de coupe  
 ES Angulo de corte  
 DE Spanwinkel

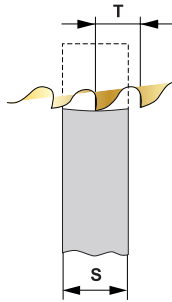
ISO	GR.	HSS		HSS-E	
		g8	a8	g8	a8
P	11	18°	10°		
	12	18°	10°		
	13	18°	10°	18°	10°
	14			18°	10°
M	21	18°	10°	18°	10°
	22			18°	10°
K	31	10°	6°		
	32	10°	6°		
N	41	25°	10°		
	42				
	51	20°			
	52	15°			
S	61				
	71			18°	10°
	72			18°	10°



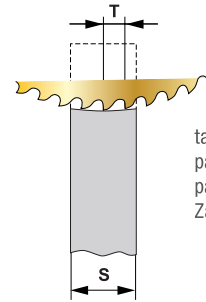


NL Tandsteek  
FR Pas de dent  
ES Paso de diente  
DE Verzahnung

NL massief materiaal  
FR matériaux pleins  
ES materiales macizos  
DE Vollmaterial

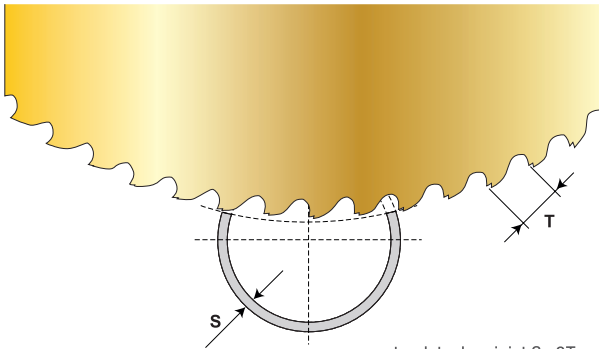


tandsteek onjuist  $S < 3T$   
pas de la dent incorrect  $S < 3T$   
paso de diente incorrecto  $S < 3T$   
Zahnteilung nicht korrekt  $S < 3T$

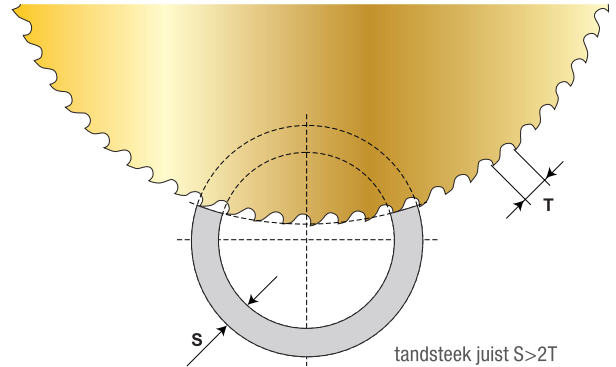


tandsteek juist  $S > 3T$   
pas de la dent correct  $S > 3T$   
paso de diente correcto  $S > 3T$   
Zahnteilung nicht korrekt  $S > 3T$

NL buis en profielen  
FR tubes et profilés  
ES tubos y perfiles  
DE Rohre und Profile



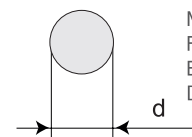
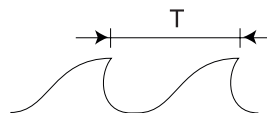
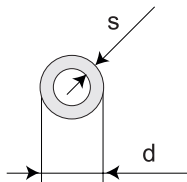
tandsteek onjuist  $S < 2T$   
pas de la dent incorrect  $S < 2T$   
paso de diente incorrecto  $S < 2T$   
Zahnteilung nicht korrekt  $S < 2T$



tandsteek juist  $S > 2T$   
pas de la dent correct  $S > 2T$   
paso de diente correcto  $S > 2T$   
Zahnteilung nicht korrekt  $S > 2T$

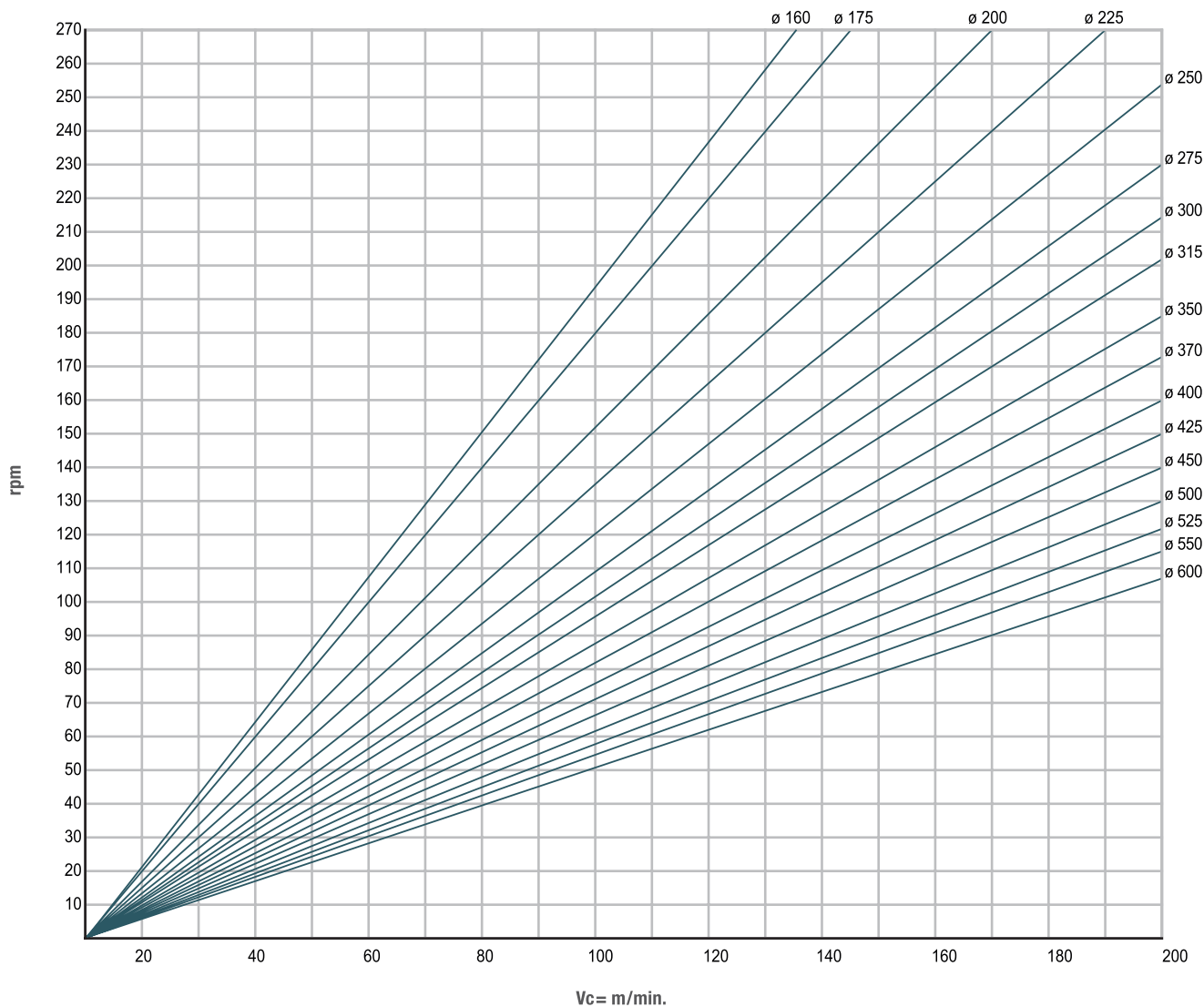
$fz = 0,05 \div 0,08 \text{ mm/Z}$					$fz < 0,08 \text{ mm/Z}$			$fz > 0,08 \text{ mm/Z}$
d	s	T	s	T	d	T	T	
≤ 20 mm	≤ 1 mm	3	> 1 mm	4	≤ 20 mm	5,5		
≤ 30 mm	≤ 1,5 mm	5	> 1,5 mm	5,5	≤ 30 mm	7		
≤ 40 mm	≤ 2 mm	6	> 2 mm	7	≤ 40 mm	8		
≤ 50 mm	≤ 4 mm	6	> 4 mm	7	≤ 50 mm	9		
≤ 60 mm	≤ 4 mm	7	> 4 mm	8	≤ 60 mm	10	12	
≤ 70 mm	≤ 3 mm	7	> 3 mm	8	≤ 70 mm	11	12	
≤ 80 mm	≤ 4 mm	8	> 4 mm	10	≤ 80 mm	12	14	
≤ 90 mm	≤ 4 mm	8	> 4 mm	10	≤ 90 mm	12	14	
≤ 100 mm	≤ 7 mm	10	> 7 mm	12	≤ 100 mm	14	16	
≤ 120 mm	≤ 5 mm	10	> 5 mm	12	≤ 120 mm	14	16	
≤ 140 mm	≤ 4 mm	10	> 4 mm	12	≤ 140 mm	16	18	

NL buis en profielen  
FR tubes et profilés  
ES tubos y perfiles  
DE Rohre und Profil



NL massief materiaal  
FR matériaux pleins  
ES materiales macizos  
DE Vollmaterial

NL Toerentabel  
 FR Tableau des vitesses de rotation  
 ES Tabla de número de revoluciones  
 DE Drehzahltable



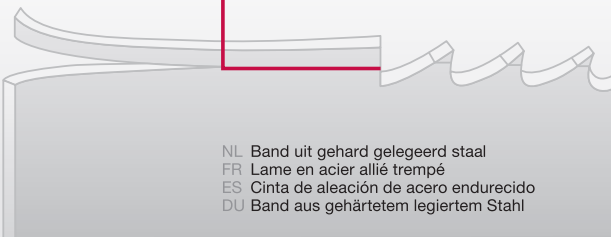
NL Tandvormen  
FR Formes des dents  
ES Forma de los dientes  
DE Sägezahnformen

### Phantom

NL M42/M51 strook  
FR M42/M51 bande  
ES M42/M51 banda  
DU M42/M51 Band



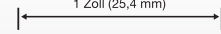
NL Speciaal lasprocedé  
FR Procédé de soudage spécial  
ES Procedimiento especial de soldadura  
DU Spezielles Schweißverfahren



NL Band uit gehard gelegeerd staal  
FR Lame en acier allié trempé  
ES Cinta de aleación de acero endurecido  
DU Band aus gehärtetem legiertem Stahl

### Phantom

1 inch  
1 Zoll, pouce  
1 pulgada (25,4 mm)  
1 Zoll (25,4 mm)



NL Constante vertanding  
FR Pas constant  
ES Dentado regular  
DU Konstante Verzahnung



NL Variabele vertanding  
FR Pas variable  
ES Dentado variable  
DU Variable Verzahnung

> 66.420

### Phantom

0°



NL Standaard tand  
FR Denture standard  
ES Dentado normal  
DU Standardzahn

#### NL BANDZAAG VOOR:

- > Kortspanig materiaal
- > Dunwandig materiaal
- GEGEVENS:**
- > Spaanhoek 0°

#### FR SCIE À RUBAN POUR :

- > Matériaux à copeaux courts
- > Matériaux à paroi fine
- CARACTÉRISTIQUES :**
- > Angle de coupe 0°

#### ES SIERRA DE CINTA PARA:

- > Material de viruta corta
- > Material de pared delgada
- DATOS:**
- > Ángulo de corte 0°

#### DU SÄGEBAND FÜR:

- > Profile oder Werkstücke
- > Dünnwandige Werkstoffe
- DETAILS:**
- > Spanwinkel 0°

> 66.440

### Phantom

positief

positif/positif/positivo/positiv



NL Haaktand  
FR Denture crochet  
ES Dentado en ángulo  
DU Hook-Zahn

#### NL BANDZAAG VOOR:

- > Langspanig materiaal
- > Taai materiaal
- > Groter materiaal
- GEGEVENS:**
- > Positieve spaanhoek 5°

#### FR SCIE À RUBAN POUR :

- > Matériaux à copeaux longs
- > Matériaux difficiles
- > Matériaux de grandes dimensions
- CARACTÉRISTIQUES :**
- > Angle de coupe positif 5°

#### ES SIERRA DE CINTA PARA:

- > Material de viruta larga
- > Material duro
- > Sección más grande
- DATOS:**
- > Ángulo de corte positivo 5°

#### DU SÄGEBAND FÜR:

- > Langspanende Werkstoffe
- > Vollmaterial
- > Größere Durchmesser
- DETAILS:**
- > 5° positiver Spanwinkel

> 66.450

### Phantom

0°



NL Speciale tand  
FR Denture spéciale  
ES Dentado especial  
DU Spezial Zahn

#### NL BANDZAAG VOOR:

- > Vibratie-arm zagen
- > Profielen
- GEGEVENS:**
- > Spaanhoek 0°

#### FR SCIE À RUBAN POUR :

- > Scies basses vibrations
- > Profils
- CARACTÉRISTIQUES :**
- > Angle de coupe 0°

#### ES SIERRA DE CINTA PARA:

- > Sierras con brazo de vibración
- > Perfiles
- DATOS:**
- > Ángulo de corte 0°

#### DU SÄGEBAND FÜR:

- > Vibrationsarme Sägen
- > Profile
- DETAILS:**
- > Spanwinkel 0°

> 66.455 / 66.460 / 66.580

### Phantom

positief

positif/positif/positivo/positiv



NL Speciale tand  
FR Denture spéciale  
ES Dentado especial  
DU Spezial Zahn

#### NL BANDZAAG VOOR:

- > Vibratie-arm zagen
- > Massief materiaal
- > Positieve spaanhoek 5°, 10° of 15°

#### FR SCIE À RUBAN POUR :

- > Scies basses vibrations
- > Matériaux massifs
- CARACTÉRISTIQUES :**
- > Angle de coupe positif 5°, 10° et 15°

#### ES SIERRA DE CINTA PARA:

- > Sierras con brazo de vibración
- > Material macizo
- DATOS:**
- > Ángulo de corte positivo 5°, 10° o 15°

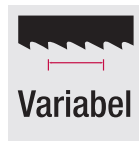
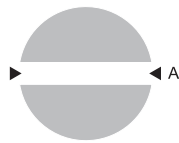
#### DU SÄGEBAND FÜR:

- > Vibrationsarme Sägen
- > Vollmaterial
- DETAILS:**
- > 5°, 10° oder 15° positiver Spanwinkel

NL **BANDZAGEN:** Aantal tanden per inch  
 FR **SCIES A RUBAN:** Nombre de dents par pouce  
 ES **SIERRAS DE SINTA :** El Número de dientes por Pulgada  
 DE **SAGEBANDER :** Anzahl Zähne pro Zoll

NL Massief materiaal  
 FR Matériau solide  
 ES Materiales Macizos  
 DE Vollmaterial

NL Profielen  
 FR Profilés  
 ES Perfiles  
 DE Profilen

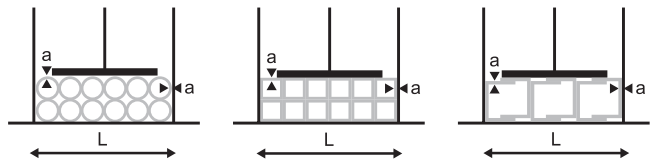
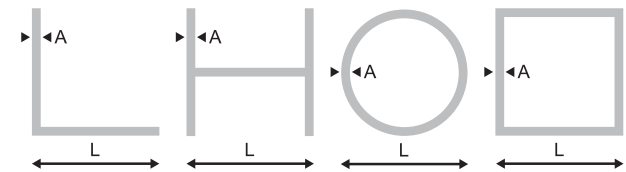


$z = \dots / \text{''}$

A (mm)

$z = \dots / \text{''}$

18	2	10/14
	3	
14	5	8/12
	8	
10	12	6/10
	16	
8	18	5/8
	30	
6	40	4/6
	70	
4	100	3/4
	140	
3	200	2/3
	240	
2	300	1/2
	450	
1,2	600	0,75/1,2
	750	
0,75		



**VOORBEELD/EXEMPLE/EJEMPLO/BEISPIEL**



$A = \frac{a \times \text{aantal wanden/nombre des parois/numero des paredes/Anzahl Wände}}{2}$

$A = \frac{5 \times 12 = 30 \text{ mm}}{2}$       $L = 6 \times 50 = 300 \text{ mm}$

mm. A mm.	20	40	60	80	100	120	150	200	300	500
2	14	14	10/14	10/14	10/14	10/14	10/14	8/12	6/10	6/10
3	10/14	10/14	10/14	10/14	8/12	8/12	8/12	6/10	5/8	5/8
4	8/12	8/12	8/12	8/12	8/12	6/10	6/10	6/10	5/8	5/8
5	8/12	8/12	8/12	6/10	6/10	6/10	6/10	5/8	5/8	4/6
6	6/10	6/10	6/10	6/10	6/10	6/10	5/8	5/8	4/6	4/6
8	6/10	6/10	6/10	6/10	5/8	5/8	5/8	4/6	4/6	3/4
10		5/8	5/8	5/8	5/8	5/8	4/6	4/6	4/6	3/4
12		5/8	5/8	5/8	4/6	4/6	4/6	4/6	3/4	3/4
15		4/6	4/6	4/6	4/6	4/6	3/4	3/4	3/4	2/3
20			4/6	4/6	3/4	3/4	3/4	3/4	2/3	2/3
30				3/4	3/4	3/4	2/3	2/3	2/3	2/3
50							2/3	2/3	2/3	1,2/2

**OPSPANNEN/SERRAGE/FIJACION/SPANNEN**

