75 YEARS
1947-2022

Roscado
Taraudage
Threading
Gewindeschneiden

Hepyc CUTTING TOOL EXPERTS

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Machos de máquina / Tarauds machine / Machine taps (M-MF) / Maschinengewindebohrer

Entrada recta (Agujeros Ciegos y pasantes) /
Entrée droite (trous borgnes et débouchants) / Straight flute (through and blind holes) / Gerade Nuten (Durchgangs- und Sacklöcher)

Entrada Corregida (Agujeros pasantes) / Entrée corrigée (Trous débouchants) / Spiral point (through holes) / Schälanschnitt (Durchgangslöcher)

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
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Forma Helicoidal (Agujeros ciegos) / Forme helicoïdale (Trous borgnes) / Spiral fluted (Blind holes) / Spiralform (Sacklöcher)

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Laminación / Tarauds à refouler / Forming taps / Gewindeformer

P Aceros / Aciers / Steels / Stähle

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2134	HSSE		NIT		M DIN 13 · 16-18h · Tol. 6H · D	P	189
2806	HSSE	DIN 13			M DIN 13 · Tol. 6H	P N	190
1504	HSS	Hex			M DIN 13 · Tol. 6H · 1/4"	P	190
2248	HSS	ISO 529			M DIN 13 · Form. B "Gun" · Tol. 6H · 3XD	P N	191
2249	HSS	ISO 529			M DIN 13 · Form. C · Tol. 6H · 35° · 3XD	P N	191
2266	HSSE	JIS			M DIN 13 · Form. B "Gun" · Tol. 6H · 3XD · D	P N	192
2267	HSSE	JIS			M DIN 13 · Form. C · Tol. 6H · 35° · 3XD · D	P N	192
2268	HSSE	JIS	VAP		M DIN 13 · Form. B "Gun" · Tol. 6H · 3XD · D · MF	P N	193
2269	HSSE	JIS	VAP		M DIN 13 · Form. C · Tol. 6H · 35° · 3XD · D · MF	P N	193
2270	HSSE	JIS	TIN		M DIN 13 · Form. B "Gun" · Tol. 6H · 3XD · D · MF	P N	194
2271	HSSE	JIS	TIN		M DIN 13 · Form. C · Tol. 6H · 35° · 3XD · D · MF	P N	194

Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (UNC-UNF-UN-UNS-UNEF)

2148	HSSE	DIN 371			UNC ANSI/ASME B1.1 · Form. C · Tol. 2B · 1,5XD · R	P	195
2147	HSSE	DIN 376			UNC ANSI/ASME B1.1 · Form. C · Tol. 2B · 1,5XD · D	P	195
2147/5	HSSE	DIN 376			UNC ANSI/ASME B1.1 · Form. C · LH · 1,5XD · D	P	196
2150	HSSE	DIN 371			UNC ANSI/ASME B1.1 · Form. B "Gun" · Tol. 2B · 3XD · R	P N	197
2149	HSSE	DIN 376			UNC ANSI/ASME B1.1 · Form. B "Gun" · Tol. 2B · 3XD · D	P N	197
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Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (BSW-BSF)

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Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (G-Rc-NPT)

Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (TR-VG)

Fresas de roscar de metal duro / Fraises à tarauder en carbure / Solid carbide thread mills / Hartmetall-Gewindefräser

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

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Machos de mano / Tarauds à main / Hands taps / Handgewindebohrer

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Machos Perfil Completo / Taraud Profil Complet / Non Serial Form Taps / Vollprofilgewindebohrer

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

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Cojinetes / Filieres / Dies / Schneideisen

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Machos máquina para insertos / Tarauds machine pour inserts / Machine taps for wire thread inserts / Maschinengewindebohrer für Genwindeeinsätze

Insertos roscados / Filets rapportés / Wire thread inserts / Gewindeeinsätze

Accesorios / Accessoires / Accessories / Zubehör

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

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Calibres / Calibres / Gauges / Lehren

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Accesorios / Accessoires / Accessories / Zubehör

MICRO FINISH THREADING TECHNOLOGY

Micro Acabado > MAXI VENTAJAS
MICROFINISH > MAXI AVANTAGES
MICROFINISH > MAXI ADVANTAGES
MIKRO-FINISH > MAXI VORTEILE

¿Por qué conformarse con menos?

• La tecnología MICROFINISH consiste en que una vez el macho de roscar es rectificado, se limpia de rebabas y se redondean las aristas de corte.
• Se logra un mayor control y estabilidad del desgaste de la herramienta.
• Ello se traduce en un notable incremento de su rendimiento.
• Y en la mejora de los acabados de la rosca.

Why settle for less?

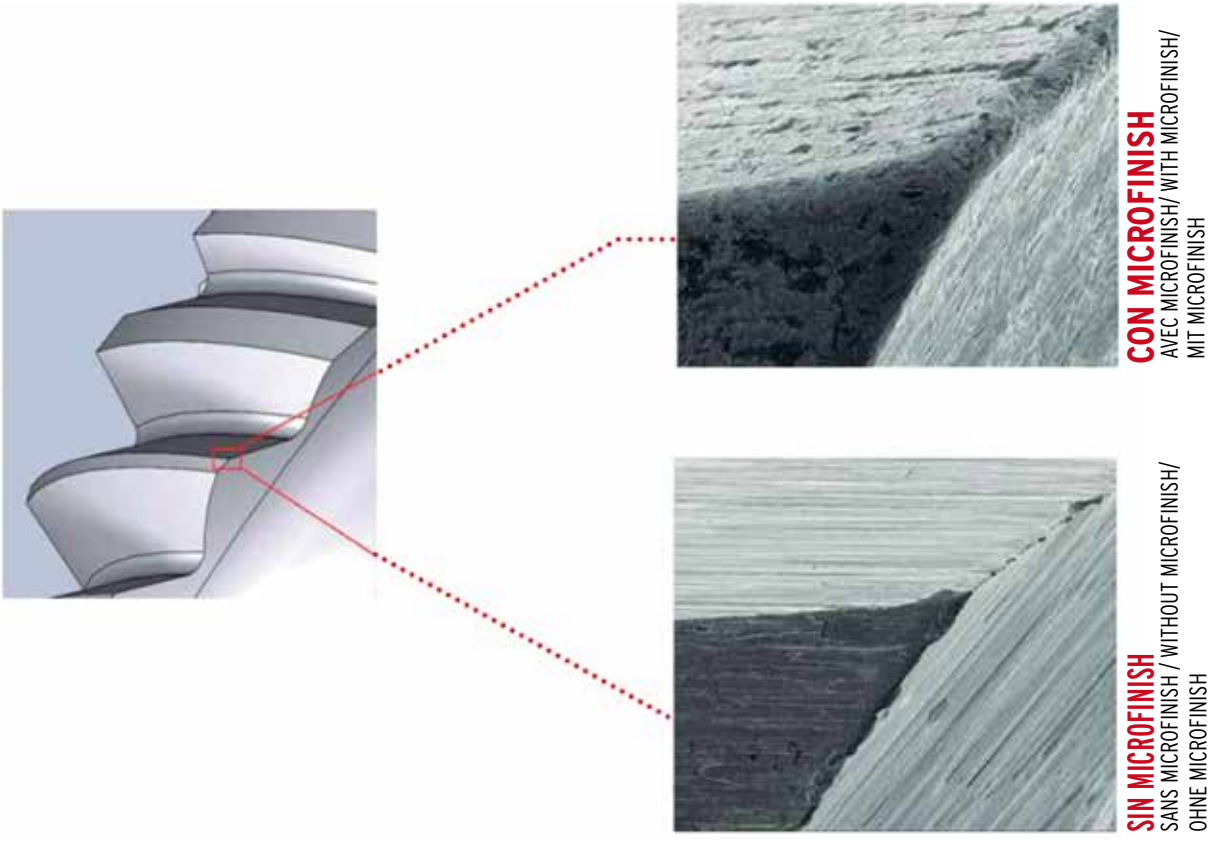
• With MICROFINISH technology once the thread of the tap is rectified, it is cleaned from burrs and the cutting edges are rounded.
• Greater control and stability of wear on the tool is achieved.
• This translates into a notable increase in performance.
• And improves the finishes of the thread.

Pourquoi se satisfaire de peu?

• La technologie MICROFINISH agit après le surfaçage du taraud, qui est nettoyé des bavures et dont les arêtes de coupe sont arrondies.
• L'usure de l'outil est alors mieux contrôlée et plus stable.
• Cela se traduit par une augmentation significative de son rendement.
• Et une amélioration des finitions du filetage.

Warum sich mit weniger zufrieden geben?

• Mit der MICROFINISH-Technologie wird das Gewinde nach dem Schleifen von Graten befreit und die Schneidkanten werden abgerundet.
• Hierdurch wird eine bessere Kontrolle und Stabilität des Werkzeugverschleißes erzielt.
• Dies führt zu einer deutlichen Leistungssteigerung.
• Und zu einer Verbesserung der Gewindeoberfläche.

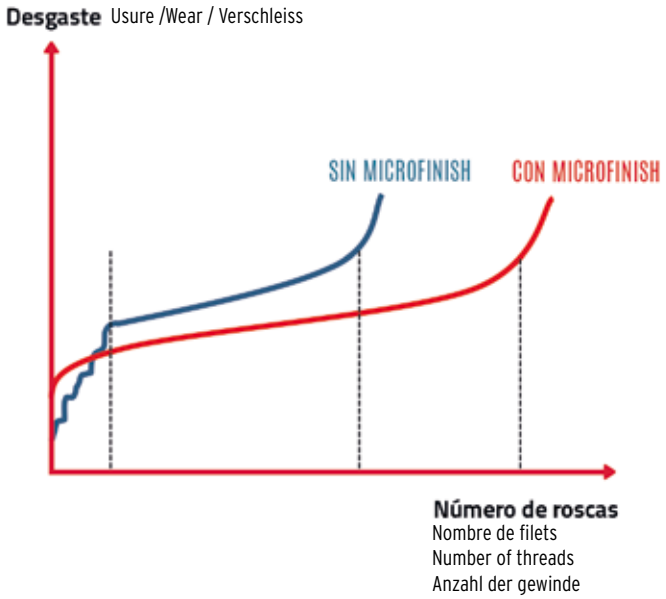


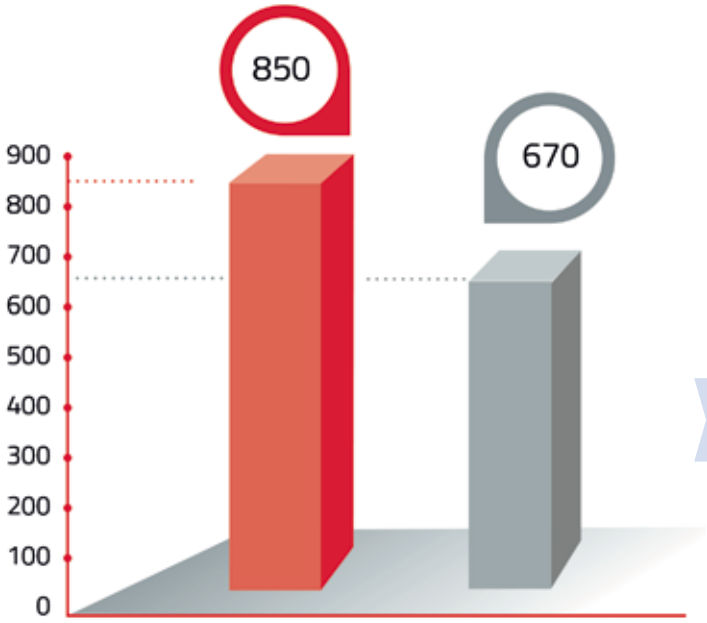
CON MICROFINISH
AVEC MICROFINISH/ WITH MICROFINISH/ MIT MICROFINISH

SIN MICROFINISH
SANS MICROFINISH / WITHOUT MICROFINISH/ OHNE MICROFINISH

CON MICROFINISH
AVEC MICROFINISH/ WITH MICROFINISH/ MIT MICROFINISH

SIN MICROFINISH
SANS MICROFINISH / WITHOUT MICROFINISH/ OHNE MICROFINISH





Rosca/Filet/Thread/Gewinde: M6 6H
Material/Matériau/Material/Material: F114 (C45)
Profundidad/Profondeur/Depth/Tiefe: 12mm
Velocidad/Vitesse/Speed/ Geschwindigkeit: 10 m/min

1. UNA ROSCA CON CALIDAD SUPERFICIAL SUPERIOR

Las roscas obtenidas tienen una calidad superficial superior, gracias a dos efectos:
• La geometría redondeada de forma constante a lo largo de todo el filo de corte del macho, permite un corte continuo y homogéneo de la rosca de la pieza.
• La menor rugosidad superficial de la rosca del macho reduce la fricción durante el roscado para obtener a su vez, una rosca con mejor calidad superficial.

2. MAYOR VIDA ÚTIL DE LA HERRAMIENTA

• Gracias a su nuevo acabado redondeado y a que el filo de corte se va desgastando de manera más controlada y constante, se evita el salto de partículas de cualquier forma y tamaño.
• Ello impide que se produzcan roturas prematuras con el uso.

1. UN FILET D'UNE QUALITÉ DE SURFACE SUPÉRIEURE

Les filets obtenus présentent une qualité de surface supérieure, grâce à deux effets :
• La géométrie arrondie de manière constante tout au long du fil de coupe du taraud apporte une coupe continue et homogène sur le filetage de la pièce.
• La plus faible rugosité de surface du taraud réduit la friction lors du taraudage, permettant ainsi d'obtenir un filet de meilleure qualité de surface.

2. UNE DURÉE DE VIE UTILE DE L'OUTIL PROLONGÉE

• Grâce à sa nouvelle finition arrondie et grâce à un fil de coupe qui s'use de manière mieux contrôlée et plus homogène, le décrochement de particules de toute forme et dimension est évité.
• Cela évite les ruptures prématurées à l'usage.

1. A THREAD WITH A HIGHER SURFACE QUALITY

The threads obtained have a superior surface quality, thanks to two effects:
• The constantly rounded geometry along the entire cutting edge of the tap, allows a continuous and homogeneous cutting of the piece´s thread.
• The lower surface roughness of the tap´s thread reduces friction during threading, which gives a thread with a better surface quality.

2. LONGER TOOL LIFE

• Thanks to its new rounded finishing and the fact that the cutting edge wears out in a more controlled and constant way, the skipping of particles of any shape and size is avoided.
• This avoids premature breakage when using.

1. EIN GEWINDE MIT HERVORRAGENDER OBERFLÄCHENGÜTE

Die hierdurch erzielten Gewinde weisen dank zweier Effekte eine höhere Oberflächenqualität auf:
• Die durchgehend abgerundete Geometrie entlang der gesamten Schneidkante des Gewindebohrers ermöglicht ein kontinuierliches und homogenes Schneiden des Gewindes am Werkstück.
• Die geringere Oberflächenrauheit des Gewindebohrers reduziert die Reibung während des Gewindeschneidens, um so ein Gewinde mit höherer Oberflächenqualität zu erzielen.

2. LÄNGERE NUTZUNGSDAUER DES WERKZEUGS

• Dank der neuen abgerundeten Oberfläche und der kontrollierteren und gleichmäßigeren Abnutzung der Schneidkante wird das Absplittern von Partikeln jeglicher Form und Größe vermieden.
• Dies verhindert vorzeitigen Bruch beim Gebrauch.

FORMULARIO MACHOS ESPECIALES
FICHE TECHNIQUE TARAUDS SPECIAUX / TECHNICAL ENQUIRY FOR SPECIAL TAPS / TECHNISCHES DATENBLATT FÜR SONDERGEWINDEBOHRER

Fecha / Date: .....

Empresa / Entreprise / Company: ..... Contacto / Contact: .....

Dirección / Adresse / Adress: ..... Población / Ville / Town: .....

Tel / Fax: ..... E-mail: .....

.....

TRABAJO A REALIZAR / TRAVAIL DEMANDE / REQUESTED WORK

Material / Matière / Material ..... Norma / Norme / Norm: .....

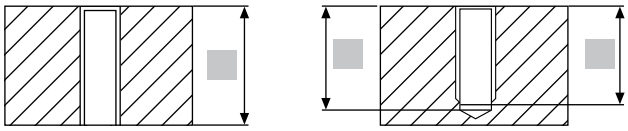
Dureza / Dureté / Hardness ..... HB ..... HRc Resistencia / Résistance / Resistance ..... N/mm^2

Tipo viruta: ☐ Corta ☐ Larga ☐ Polvo
Type copeau: Courte Longue Poussière
Shaving: Short Long Powder

Máquina / Machine ..... Refrigerante / Réfrigérant / Coolant .....

Posición / Position: ☐ Horizontal ☐ Vertical ☐ V. Corte / V. Coupe / Cutting Speed ☐ V. avance / Avance / Feed

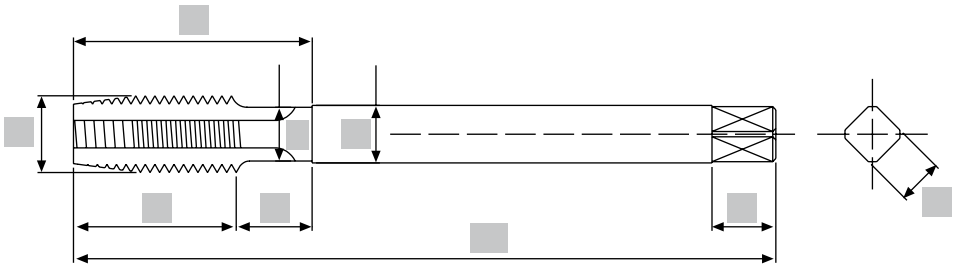
Agujero / Trou / Hole:



HERRAMIENTA / OUTIL / TOOL

Descripción / Description ..... Tolerancia / Tolérance / Tolerance .....

Cantidad / Quantité / Quantity ..... Número ranuras / Rainures / Grooves .....



Mango: ☐ Cilíndrico ☐ Weldon ☐ Cónico ☐ Rebajado
Queue: Cylindrique Weldon Conique Réduite
Shank: Straight Weldon Taper Reduced

Entrada: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ Otra
Entrée: A B C D E Autres
Entry: A B C D E Others

Material / Matière / Material: ☐ HSS ☐ HSSE ☐ HM ☐ HSS-HM

Superficie / Surface: ☐ Brillante / Brillant / Brilliant ☐ Recubrimiento / Revêtement / Coating

COMENTARIOS / COMMENTAIRES/ COMMENTS: .....

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Tel. (+34) 93 387 32 99 - Fax.(+ 34) 93 383 33 08 - especiales@hepycrf.com

FORMULARIO COJINETES ESPECIALES
FICHE TECHNIQUE FILIERES SPECIAUX / TECHNICAL ENQUIRY FOR SPECIAL DIES / TECHNISCHES DATENBLATT FÜR SPEZIALSCHNEIDBACKEN

Fecha / Date: .....

Empresa / Entreprise / Company: ..... Contacto / Contact: .....

Dirección / Adresse / Adress: ..... Población / Ville / Town: .....

Tel / Fax: ..... E-mail: .....

.....

TRABAJO A REALIZAR / TRAVAIL DEMANDE / REQUESTED WORK

Material / Matière / Material ..... Norma / Norme / Norm: .....

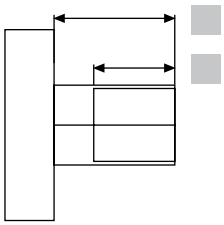
Dureza / Dureté / Hardness ..... HB ..... HRc Resistencia / Résistance / Resistance ..... N/mm^2

Tipo viruta: ☐ Corta ☐ Larga ☐ Polvo
Type copeau Courte Longue Poussière
Shaving Short Long Powder

Máquina / Machine ..... Refrigerante / Réfrigérant / Coolant .....

Posición / Position: ☐ Horizontal ☐ Vertical ☐ V. Corte ☐ V. avance
V. Coupe Avance
Cutting Speed Feed

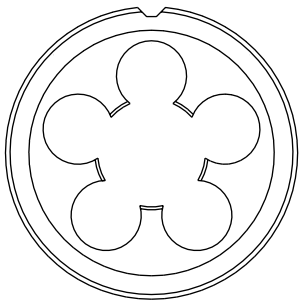
Eje / Axe / Axis:

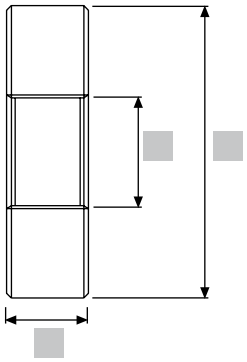


HERRAMIENTA / OUTIL / TOOL

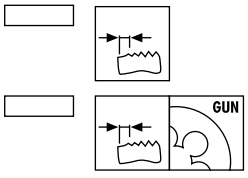
Descripción / Description ..... Tolerancia / Tolérance / Tolerance .....

Cantidad / Quantité / Quantity ..... Número ranuras / Rainures / Grooves .....





Entrada / Entrée / Entry



Material / Matière / Material: ☐ HSS ☐ HSSE ☐ HM ☐ HSS-HM

Superficie / Surface: ☐ Brillante ☐ Recubrimiento
Brillant Revêtement
Brilliant Coating

COMENTARIOS / COMMENTAIRES/ COMMENTS: .....

.....

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.....

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TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH

$$r.p.m.= \frac{Vc \times 1.000}{\pi x \varnothing}$$

		2102	2101	2102/5	2101/5	2114	2113	2190	2191	2180	2179	2274	2275	2148	2147	2147/5	2154	2153	2153/5	2189
Ref./ Réf. / Ref.		2102	2101	2102/5	2101/5	2114	2113	2190	2191	2180	2179	2274	2275	2148	2147	2147/5	2154	2153	2153/5	2189
Rosca/ Filetage/Thread		M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	UNC	UNC	UNC	UNF	UNF	UNF	UN
DIN		371	376-374	371	376-374	371	376-374	371	376-374	371	376-374	371	376	371	376-374	376-374	374	374	374	374
Form.		C(2-3)	C(2-3)	C(2-3)	C(2-3)	A(6-8)	A(6-8)	E(1,5-2)	E(1,5-2)	C(2-3)	C(2-3)	D(2-3)	D(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)
Ejec./Exéc./Exec.				LH	LH											LH			LH	
Tol.		6H	6H	6H	6H	6H	6H	6H	6H	6HX	6HX	6HX	6HX	6H	6H	6H	6H	6H	6H	6H
Mat.		HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HM	HM	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
Rec./Rev./Coat.										TiAlSiN+	TiAlSiN+	TICN+	TICN+							
Prof./ Depth		1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD
Gama/Gamme/Range		1-10	3-63	3-10	5-30	2-10	3-52	3-10	6-16	3-10	8-20	3-10	12-16	N.4-5/16	1/4-1"1/2	1/4-1"	N.4-5/16	1/4-1"1/2	1/4-1"	1"1/8-2"
Pag.		148	149	151	151	152	152	153	153	154	154	155	155	195	195	196	203	203	204	211
Mat.		Vc (m/min)																		
P.1	<600	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25							o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25
P.2	<800		● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20							● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20
P.3	<1000	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15							o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15
P.4	<1200																			
P.5	<1400																			
M.1	<950																			
M.2																				
M.3	<1200																			
M.4																				
K.1	<500									● 15-30	● 15-30									
K.2																				
K.3	<800									● 10-20	● 10-20									
K.4.1		o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15							o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15
K.4.2	<1400																			
N.1.1	Al																			
N.1.2																				
N.1.3																				
N.2.1	Cu																			
N.2.2								● 25-35	● 25-35	o 35-50	o 35-50									
N.2.3		o 10-20	o 10-20	o 10-20	o 10-20	o 10-20	o 10-20							o 10-20	o 10-20	o 10-20	o 10-20	o 10-20	o 10-20	o 10-20
N.2.4																				
N.3.1	Mg/Zn																			
N.4.1	Plastic																			
N.4.2																				
N.4.3																				
S.1.1	Ni																			
S.1.2																				
S.2.1	Ti																			
S.2.2																				
S.2.3																				
H.1	50 HRC											● 3-6	● 3-6							
H.2	55 HRC											● 2-5	● 2-5							
H.3	60 HRC											● 1-4	● 1-4							

● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

2160	2136	2135	2136/5	2135/5	2141	2142	2144	2144/5	2192	2206	2159	2164	2212	2212/5	2163	2242	2199	2134	1504
UNEF	BSW	BSW	BSW	BSW	BSF	BSF	G	G	G	G	GT	NPT	TR	TR	PG	VG	M	M	M-MF
374	371	376	371	376	371	374	5156	5156	5156	5156	5156	374			40433	371	357		
C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	E(1,2-2)	E(1,2-2)	C(2-3)	C(2-3)			C(2-3)	C(2-3)	A(6-8)	A(6-8)	D(3,5-5)
			LH	LH				LH						LH					
6H					6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H
HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSS
1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD
1/4-1"	3/32-3/8	1/8-2"1/2	1/8-3/16	1/4-1"	3/16-3/8	7/16-1"	1/8-2"	1/8-1"	1/8-1"	1/8-1"	1/8-1"	1/16-2"	10-32	10-32	7-48	5-8	3-24	3-24	3-10
211	212	212	213	21	216	216	217	217	218	218	222	222	223	223	224	224	189	189	190
Vc (m/min)																			
o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25			o 10-15	o 10-15	o 3-8	o 3-8	o 15-25	o 15-25	o 15-25	o 15-25	o 10-20
● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20		● 7-14	● 7-14	● 2-6	● 2-6	● 10-20	● 10-20	● 10-20	● 10-20	● 5-15
o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15			o 7-10	o 7-10	o 1-5	o 1-5	o 10-15	o 10-15			
o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15			o 7-10	o 7-10			o 10-15	o 10-15	o 10-15	o 10-15	o 5-15
									● 25-35	● 25-35									
o 10-20	o 10-20	o 10-20	o 10-20	o 10-20	o 10-20	o 10-20	o 10-20	o 10-20			o 7-15	o 7-15	● 2-6	● 2-6	o 10-20	o 10-20	o 10-20	o 10-20	

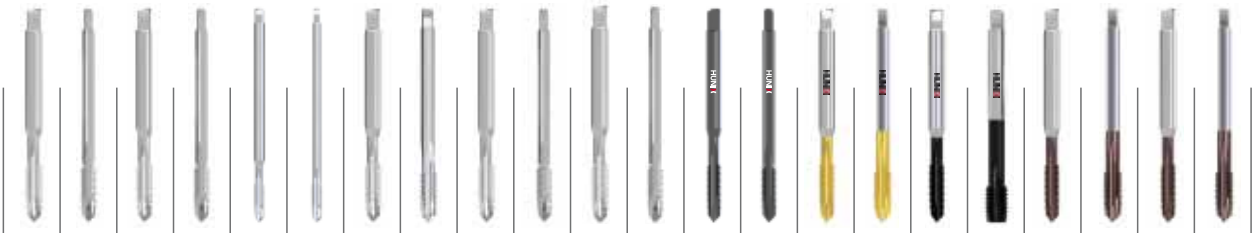
● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH

Hepyc CUTTING TOOL EXPERTS

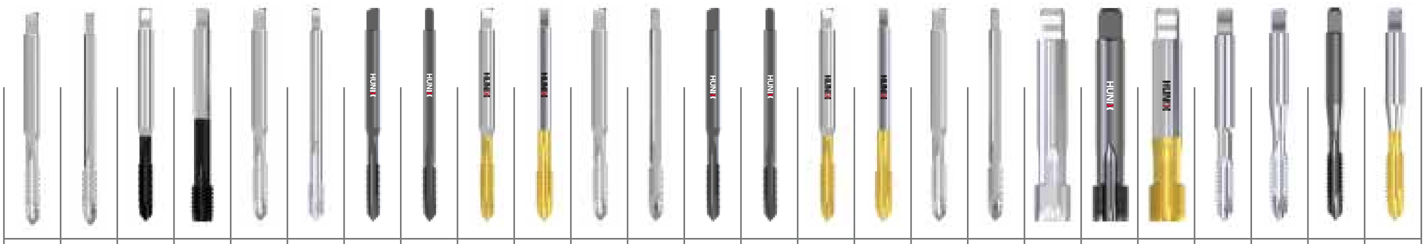
$$r.p.m.= \frac{Vc \times 1.000}{\pi x Ø}$$



Ref./ Réf. / Ref.		2104	2103	2104/5	2103/5	2111	2272	2110	2109	2168	2169	2407	2408	2250	2251	2116	2115	2254	2255	2126	2125	2176	2175
Rosca/ Filetage/Thread		M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF
DIN		371	374 376	371	374 376	371-EL	376-EL	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376
Form.		B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)
Ejec./Exéc./Exec.				LH	LH																		
Tol.		6H	6H	6H	6H	6H	6H	6H+01	6H+0,1	6G	6G	4H	4H	6H	6H	6H	6H	6HX	6HX	6H	6H	6HX	6HX
Mat.		HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
Rec./Rev./Coat.														VAP	VAP	TIN+	TIN+	HL	HL	TiAlSiN+	TiAlSiN+	TiAlSiN+	TiAlSiN+
Prof./ Depth		3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	2xD	2xD
Gama/Gamme/Range		2-10	3-52	3-10	20-24	3-12	8-16	3-10	8-16	3-10	8-20	3-10	12	2-10	3-24	2-10	3-24	2-10	8-24	3-10	8-24	3-10	8-20
Pag.		156	156	158	158	159	159	160	160	161	161	162	162	163	163	164	164	165	165	166	166	167	167
Mat.		Vc (m/min)																					
P.1	<600	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	o 15-25	● 15-25	● 15-25	● 20-30	● 20-30	● 20-40	● 20-40				
P.2	<800	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 20-40	● 20-40				
P.3	<1000	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	● 12-18	● 12-18	● 15-30	● 15-30	● 10-15	● 10-15		
P.4	<1200															o 8-12	o 8-12	● 10-20	● 10-20	● 6-10	● 6-10	o 6-10	o 6-10
P.5	<1400																	● 5-10	● 5-10	o 4-6	o 4-6	● 4-6	● 4-6
M.1	<950	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	o 7-10	● 7-10	● 7-10	● 9-12	● 9-12	● 5-15	● 5-15				
M.2		o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	o 5-8	● 5-8	● 5-8	● 6-10	● 6-10	● 5-15	● 5-15				
M.3	<1200													o 5-8	o 5-8	o 6-10	o 6-10	● 5-10	● 5-10	● 6-12	● 6-12		
M.4																		● 5-10	● 5-10			o 4-6	o 4-6
K.1	<500															● 10-15	● 10-15	● 10-30	● 10-30				
K.2																● 10-15	● 10-15	● 10-30	● 10-30				
K.3	<800															● 15-20	● 15-20	● 10-20	● 10-20				
K.4.1		o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	● 15-20	● 15-20	● 10-30	● 10-30				
K.4.2	<1400																	● 5-15	● 5-15	o 10-20	o 10-20	● 10-20	● 10-20
N.1.1	Al															● 15-25	● 15-25	● 10-30	● 10-30				
N.1.2		o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	● 15-25	● 15-25	● 10-30	● 10-30				
N.1.3																● 15-25	● 15-25	● 10-30	● 10-30				
N.2.1	Cu															● 15-25	● 15-25	● 10-30	● 10-30				
N.2.2																		● 10-30	● 10-30	o 4-6	o 4-6	o 4-6	o 4-6
N.2.3		● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-30	● 10-30				
N.2.4																		● 10-30	● 10-30				
N.3.1	Mg/Zn																	● 5-15	● 5-15				
N.4.1	Plastic	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 10-15	o 12-18	o 12-18	● 10-30	● 10-30				
N.4.2																		● 10-30	● 10-30	o 10-15	o 10-15	o 10-15	o 10-15
N.4.3																							
S.1.1	Ni																	● 2-8	● 2-8				
S.1.2																							
S.2.1	Ti																	● 10-15	● 10-15				
S.2.2																		● 2-8	● 2-8	o 6-8	o 6-8	o 6-8	o 6-8
S.2.3																				o 4-6	o 4-6	o 4-6	o 4-6
H.1	50 HRC																						
H.2	55 HRC																						
H.3	60 HRC																						

● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen
N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien



2133	2132	2258	2259	2150	2149	2262	2263	2234	2235	2156	2155	2276	2277	2280	2281	2138	2137	2145	2284	2286	2248	2266	2268	2270
M-MF	M-MF	M-MF	M-MF	UNC	UNC	UNC	UNC	UNC	UNC	UNF	UNF	UNF	UNF	UNF	UNF	BSW	BSW	G	G	G	M-MF	M-MF	M-MF	M-MF
371	374 376	371	374 376	371	376	371	376	371	376	371	374	371	374	371	374	371	376	5156	5156	5156	ISO 529	JIS B4430	JIS B4430	JIS B4430
B(3,5-5)-AZ	B(3,5-5)-AZ	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)
6H	6H	6HX	6HX	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	Med	Med	Med	Med	Med	6H	6H	6H	6H
HSSE	HSSE	HSSE-PM	HSSE-PM	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSS	HSSE	HSSE	HSSE
		HL	HL			VAP	VAP	TIN+	TIN+			VAP	VAP	TIN+	TIN+				VAP	TIN+			VAP	TIN
3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD
3-10	4-16	3-10	12-16	N.4-3/8	1/4-1"1/4	N.4-3/8	7/16-1"	N.4-3/8	7/16-1"	N.4-3/8	1/4-1"	N.4-3/8	7/16-1"	N.4-3/8	7/16-1"	1/8-3/8	1/4-1"	1/8-1"1/2	1/8-1"	1/8-1"	3-30	3-20	3-20	3-20
168	168	169	169	197	197	198	198	199	199	205	205	206	206	207	207	214	214	219	219	220	191	192	193	194
Vc (m/min)																								
		● 20-50	● 20-50	○ 15-25	○ 15-25	● 15-25	● 15-25	● 20-30	● 20-30	○ 15-25	○ 15-25	● 15-25	● 15-25	● 20-30	● 20-30	○ 15-25	○ 15-25	○ 15-25	● 15-25	● 20-30	○ 10-20	○ 15-25	○ 15-25	○ 20-30
		● 20-50	● 20-50	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 5-15	● 10-20	● 10-20	● 15-25
		● 15-40	● 15-40	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 12-18	● 12-18	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 12-18	● 12-18	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 12-18		○ 10-15	○ 10-15	○ 12-18
		● 10-20	● 10-20					○ 8-12	○ 8-12					○ 8-12	○ 8-12					○ 8-12				
		● 5-10	● 5-10																					
		● 5-15	● 5-15	○ 7-10	○ 7-10	● 7-10	● 7-10	● 9-12	● 9-12	○ 7-10	○ 7-10	● 7-10	● 7-10	● 9-12	● 9-12	○ 7-10	○ 7-10	○ 7-10	● 7-10	● 9-12		○ 7-10	○ 7-10	○ 9-12
		● 5-15	● 5-15	○ 5-8	○ 5-8	● 5-8	● 5-8	● 6-10	● 6-10	○ 5-8	○ 5-8	● 5-8	● 5-8	● 6-10	● 6-10	○ 5-8	○ 5-8	○ 5-8	● 5-8	● 6-10		○ 5-8	○ 5-8	○ 6-10
		● 5-10	● 5-10			○ 5-8	○ 5-8	○ 6-10	○ 6-10			○ 5-8	○ 5-8	○ 6-10	○ 6-10				○ 5-8	○ 6-10				
		● 5-10	● 5-10																					
		● 10-40	● 10-40					● 10-15	● 10-15					● 10-15	● 10-15					● 10-15				
		● 10-40	● 10-40					● 10-15	● 10-15					● 10-15	● 10-15					● 10-15				
		● 10-20	● 10-20					● 15-20	● 15-20					● 15-20	● 15-20					● 15-20				
		● 10-40	● 10-40	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 15-20	● 15-20	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 15-20	● 15-20	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 15-20	○ 5-15	○ 10-15	○ 10-15	○ 15-20
		● 5-15	● 5-15																					
● 10-20	● 10-20	● 10-40	● 10-40					● 15-25	● 15-25					● 15-25	● 15-25					● 15-25				
○ 10-15	○ 10-15	● 10-40	● 10-40	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 15-25	● 15-25	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 15-25	● 15-25	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 15-25	○ 10-15	○ 10-15	○ 10-15	○ 15-20
		● 10-40	● 10-40					● 15-25	● 15-25					● 15-25	● 15-25					● 15-25				
○ 6-8	○ 6-8	● 10-40	● 10-40					● 15-25	● 15-25					● 15-25	● 15-25					● 15-25				
		● 10-40	● 10-40																					
		● 10-40	● 10-40	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 5-15	● 10-20	● 10-20	● 15-25
		● 10-40	● 10-40																					
○ 10-20	○ 10-20	● 5-15	● 5-15																					
○ 10-15	○ 10-15	● 10-40	● 10-40	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 12-18	○ 12-18	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 12-18	○ 12-18	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 12-18	○ 10-15	○ 10-15	○ 10-15	○ 12-18
		● 10-40	● 10-40																					
		● 2-8	● 2-8																					
		● 10-15	● 10-15																					
		● 2-8	● 2-8																					

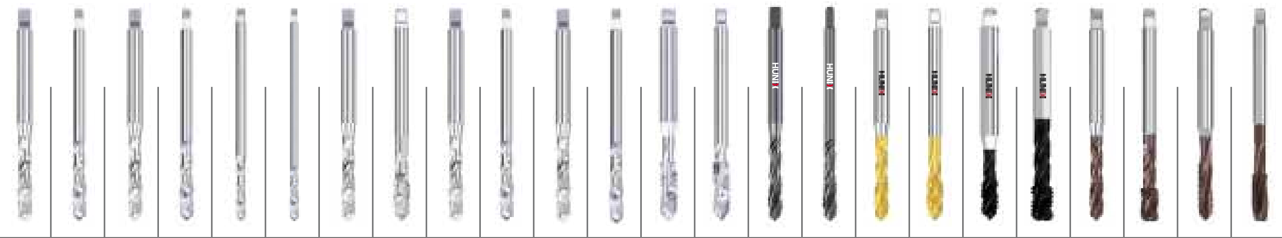
● Optima / Optimun ○ Alternativo / Alternative

P — Aceros / Aciers / Steels / Stähle
M — Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K — Fundicion / Fonte / Cast Iron / Gusseisen
N — Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S — Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H — Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH

Hepyc CUTTING TOOL EXPERTS

$$r.p.m. = \frac{Vc \times 1.000}{\pi \times Ø}$$



Ref./ Réf. / Ref.		2106	2105	2106/5	2105/5	2112	2273	2166	2165	2170	2208	2409	2410	2108	2107	2252	2253	2118	2117	2256	2257	2124	2123	2178	2177
Rosca/ Filetage/Thread		M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF
DIN		371	374 376	371	374 376	371-EL	376-EL	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376
Form.		C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)
Ejec./Exéc./Exec.		R35°	R35°	L35°-LH	L35°-LH	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R15°	R15°	R35°	R35°	R35°	R35°	R45°	R45°	R35°	R35°	R15°	R15°
Tol.		6H	6H	6H	6H	6H	6H	6H+01	6H+0,1	6G	6G	4H	4H	6H	6H	6H	6H	6H	6H	6HX	6HX	6H	6H	6HX	6HX
Mat.		HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
Rec./Rev./Coat.																VAP	VAP	TIN+	TIN+	HL	HL	TiAlSiN+	TiAlSiN+	TiAlSiN+	TiAlSiN+
Prof./ Depth		2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	1,5xD	1,5xD
Gama/Gamme/Range		M2-M10	M3-M52	M3-M10	M10-M24	M3-M12	M8-M16	M3-M10	M8-M16	M3-M10	M8-M20	M3-M10	M12	M2-M10	M4-M36	M2-M10	M3-M24	M2-M10	M3-M24	M2-M10	M8-M24	M3-M10	M8-M24	M3-M10	M8-M20
Pag.		170	170	172	172	73	173	174	174	175	175	176	176	177	177	178	178	179	179	180	180	181	181	182	182
Mat.		Vc (m/min)																							
P.1	<600	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	○ 15-25	● 15-25	● 15-25	● 20-30	● 20-30	● 20-40	● 20-40				
P.2	<800	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 20-40	● 20-40				
P.3	<1000	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 12-18	● 12-18	● 15-30	● 15-30	● 10-15	● 10-15		
P.4	<1200																	○ 8-12	○ 8-12	● 10-20	● 10-20	● 6-10	● 6-10	○ 6-10	○ 6-10
P.5	<1400																			● 5-10	● 5-10	○ 4-6	○ 4-6	● 4-6	● 4-6
M.1	<950	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	○ 7-10	● 7-10	● 7-10	● 9-12	● 9-12	● 5-15	● 5-15				
M.2		○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	○ 5-8	● 5-8	● 5-8	● 6-10	● 6-10	● 5-15	● 5-15				
M.3	<1200															○ 5-8	○ 5-8	○ 6-10	○ 6-10	● 5-10	● 5-10	● 6-12	● 6-12		
M.4																				● 5-10	● 5-10			○ 4-6	○ 4-6
K.1	<500																			● 10-30	● 10-30				
K.2																				● 10-30	● 10-30				
K.3	<800																	● 15-20	● 15-20	● 10-20	● 10-20				
K.4.1		○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	● 15-20	● 15-20	● 10-30	● 10-30				
K.4.2	<1400																			● 5-15	● 5-15	○ 10-20	○ 10-20	● 10-20	● 10-20
N.1.1	Al																			● 10-30	● 10-30				
N.1.2		○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15					● 10-30	● 10-30				
N.1.3																				● 10-30	● 10-30				
N.2.1	Cu																	● 15-25	● 15-25	● 10-30	● 10-30				
N.2.2																				● 10-30	● 10-30				
N.2.3		● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-30	● 10-30				
N.2.4																				● 10-30	● 10-30				
N.3.1	Mg/Zn																			● 5-15	● 5-15				
N.4.1	Plastic	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 10-15	○ 12-18	○ 12-18	● 10-30	● 10-30				
N.4.2																				● 10-30	● 10-30	○ 10-15	○ 10-15	○ 10-15	○ 10-15
N.4.3																									
S.1.1	Ni																			● 2-8	● 2-8				
S.1.2																									
S.2.1	Ti																			● 10-15	● 10-15				
S.2.2																				● 2-8	● 2-8	○ 6-8	○ 6-8	○ 6-8	○ 6-8
S.2.3																						○ 4-6	○ 4-6	○ 4-6	○ 4-6
H.1	50 HRC																								
H.2	55 HRC																								
H.3	60 HRC																								

● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	
M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	
K	Fundicion Fonte Cast Iron Gusseisen	
N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	
S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	
H	Materiales Duros Materiels Durs Hard materials Hartmaterialien	

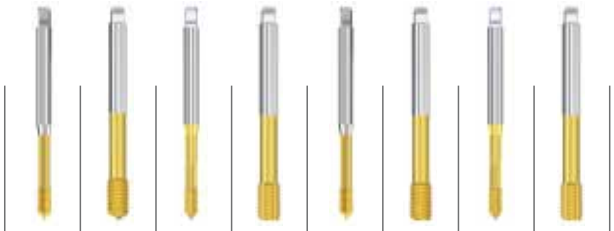
2182	2181	2260	2261	2152	2151	2264	2265	2236	2237	2158	2157	2278	2279	2282	2283	2140	2139	2146	2285	2287	2806	2249	2267	2269	2271
M-MF	M-MF	M-MF	M-MF	UNC	UNC	UNC	UNC	UNC	UNC	UNF	UNF	UNF	UNF	UNF	UNF	BSW	BSW	G	G	G	M-MF	M-MF	M-MF	M-MF	M-MF
371	374 376	371	374 376	371	376	371	376	371	376	371	374	371	374	371	374	371	376	5156	5156	5156		ISO 529	JIS B4430	JIS B4430	JIS B4430
C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	D(3,5-5)	C(2-3)	C(2-3)	C(2-3)	C(2-3)
R45°	R45°	R45°	R45°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R25°	R35°	R35°	R35°	R35°
6H	6H	6HX	6HX	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	Med	Med	Med	Med	Med	6H	6H	6H	6H	6H
HSSE	HSSE	HSSE-PM	HSSE-PM	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSS	HSSE	HSSE	HSSE
		HL	HL			VAP	VAP	TIN+	TIN+			VAP	VAP	TIN+	TIN+				VAP	TIN+				VAP	TIN
2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	1,5xD	2,5xD	2,5xD	2,5xD	2,5xD
M3-M10	M6-M16	M3-M10	M12-M16	N.4-3/8	1/4-1"1/4	N.4-3/8	7/16-1"	N.4-3/8	7/16-1"	N.4-3/8	1/4-1"	N.4-3/8	7/16-1"	N.4-3/8	7/16-1"	1/8-3/8	3/16-1"	1/8-1"1/2	1/8-1"	1/8-1"					
183	183	184	184	200	200	201	201	202	202	208	208	209	209	210	210	215	215	220	221	221	190	191	192	193	194
Vc (m/min)																									
		● 20-50	● 20-50	o 15-25	o 15-25	● 15-25	● 15-25	● 20-30	● 20-30	o 15-25	o 15-25	● 15-25	● 15-25	● 20-30	● 20-30	o 15-25	o 15-25	o 15-25	● 15-25	● 20-30	o 15-25	o 10-20	o 15-25	o 15-25	o 20-30
		● 20-50	● 20-50	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 10-20	● 5-15	● 10-20	● 10-20	● 15-25
		● 15-40	● 15-40	o 10-15	o 10-15	o 10-15	o 10-15	● 12-18	● 12-18	o 10-15	o 10-15	o 10-15	o 10-15	● 12-18	● 12-18	o 10-15	o 10-15	o 10-15	o 10-15	● 12-18			o 10-15	o 10-15	o 12-18
		● 10-20	● 10-20					o 8-12	o 8-12					o 8-12	o 8-12					o 8-12					
		● 5-10	● 5-10																						
		● 5-15	● 5-15	o 7-10	o 7-10	● 7-10	● 7-10	● 9-12	● 9-12	o 7-10	o 7-10	● 7-10	● 7-10	● 9-12	● 9-12	o 7-10	o 7-10	o 7-10	● 7-10	● 9-12			o 7-10	o 7-10	o 9-12
		● 5-15	● 5-15	o 5-8	o 5-8	● 5-8	● 5-8	● 6-10	● 6-10	o 5-8	o 5-8	● 5-8	● 5-8	● 6-10	● 6-10	o 5-8	o 5-8	o 5-8	● 5-8	● 6-10			o 5-8	o 5-8	o 6-10
		● 5-10	● 5-10			o 5-8	o 5-8	o 6-10	o 6-10			o 5-8	o 5-8	o 6-10	o 6-10				o 5-8	o 6-10					
		● 5-10	● 5-10																						
		● 10-40	● 10-40																						
		● 10-40	● 10-40																						
		● 10-20	● 10-20					● 15-20	● 15-20					● 15-20	● 15-20					15-20					
		● 10-40	● 10-40	o 10-15	o 10-15	o 10-15	o 10-15	● 15-20	● 15-20	o 10-15	o 10-15	o 10-15	o 10-15	● 15-20	● 15-20	o 10-15	o 10-15	o 10-15	o 10-15	15-20	10-15	5-15	10-15	10-15	15-20
		● 5-15	● 5-15																						
● 10-20	● 10-20	● 10-40	● 10-40																						
o 10-15	o 10-15	● 10-40	● 10-40	o 10-15	o 10-15					o 10-15	o 10-15					o 10-15	o 10-15	o 10-15			o 10-15	o 10-15	o 10-15	o 10-15	o 15-20
		● 10-40	● 10-40																						
o 6-8	o 6-8	● 10-40	● 10-40					● 15-25	● 15-25					● 15-25	● 15-25					● 15-25					
		● 10-40	● 10-40																						
		● 10-40	● 10-40	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 15-25	● 10-20	● 10-20	● 10-20	● 10-20	● 15-25	● 10-20	● 5-15	● 10-20	● 10-20	● 15-25
		● 10-40	● 10-40																						
o 10-20	o 10-20	● 5-15	● 5-15																						
o 10-15	o 10-15	● 10-40	● 10-40	o 10-15	o 10-15	o 10-15	o 10-15	o 12-18	o 12-18	o 10-15	o 10-15	o 10-15	o 10-15	o 12-18	o 12-18	o 10-15	o 10-15	o 10-15	o 10-15	o 12-18	o 10-15	o 10-15	o 10-15	o 10-15	o 12-18
		● 10-40	● 10-40																						
		● 2-8	● 2-8																						
		● 10-15	● 10-15																						
		● 2-8	● 2-8																						

● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen
N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH

$$r.p.m.= \frac{Vc \times 1.000}{\pi x Ø}$$



Ref./ Réf. / Ref.		2188	2187	2214	2213	2216	2215	2218	2217
Rosca/ Filetage/Thread		M	M	M	M	M	M	M	M
DIN		371	374 376	371	374 376	371	374 376	371	374 376
Form.		C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)
Ejec./Exéc./Exec.		A>12%	A>12%	A>12%	A>12%	A>12%	A>12%	A>12%	A>12%
Tol.		6HX	6HX	6HX	6HX	6GX	6GX	6GX	6GX
Mat.		HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
Rec./Rev./Coat.		TIN	TIN	TIN	TIN	TIN	TIN	TIN	TIN
Prof./ Depth		1,5xD	1,5xD	3xD	3xD	1,5xD	1,5xD	3xD	3xD
Gama/Gamme/Range		M3-M10	M12-M16	M3-M10	M8-M16	M3-M10	M12	M3-M10	M12
Pag.		185	185	186	186	187	187	188	188
Mat.		Vc (m/min)							
P.1	<600	● 25-45	● 25-45	● 25-45	● 25-45	● 25-45	● 25-45	● 25-45	● 25-45
P.2	<800	● 15-40	● 15-40	● 15-40	● 15-40	● 15-40	● 15-40	● 15-40	● 15-40
P.3	<1000	● 15-25	● 15-25	● 15-25	● 15-25	● 15-25	● 15-25	● 15-25	● 15-25
P.4	<1200								
P.5	<1400								
M.1	<950	● 10-25	● 10-25	● 10-25	● 10-25	● 10-25	● 10-25	● 10-25	● 10-25
M.2		● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20	● 10-20
M.3	<1200								
M.4									
K.1	<500								
K.2									
K.3	<800								
K.4.1									
K.4.2	<1400								
N.1.1	Al	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40
N.1.2		● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30
N.1.3									
N.2.1	Cu	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30
N.2.2									
N.2.3		● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30	● 15-30
N.2.4									
N.3.1	Mg/Zn	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40	● 20-40
N.4.1	Plastic								
N.4.2									
N.4.3									
S.1.1	Ni								
S.1.2									
S.2.1	Ti	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20
S.2.2									
S.2.3									
H.1	50 HRC								
H.2	55 HRC								
H.3	60 HRC								

● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen
N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

$$r.p.m.= \frac{Vc \times 1.000}{\pi x Ø}$$

Ref./ Réf. / Ref.		2411	2412
Rosca/ Filetage/Thread		M-MF	G
DIN		6535	6535
Form.			
Ejec./Exéc./Exec.		R15°	R15°
Tol.		h6	h6
Mat.		HM	HM
Rec./Rev./Coat.		TiAlCN	TiAlCN
Prof./ Depth			
Gama/Gamme/Range		M2-M24	G1/16-1"
Pag.		225	226
Mat.		**Vc (m/min)**	
P.1	<600	● 150 - 200	● 150 - 200
P.2	<800	● 120 - 170	● 120 - 170
P.3	<1000	● 100 - 140	● 100 - 140
P.4	<1200	● 80 - 120	● 80 - 120
P.5	<1400	● 70 - 110	● 70 - 110
M.1	<950	● 130 - 180	● 130 - 180
M.2		● 90 - 140	● 90 - 140
M.3	<1200	○ 80 - 120	○ 80 - 120
M.4		○ 70-110	○ 70-110
K.1	<500	● 130 - 180	● 130 - 180
K.2		● 120 - 160	● 120 - 160
K.3	<800	● 100 - 150	● 100 - 150
K.4.1		● 100 - 150	● 100 - 150
K.4.2	<1400	○ 80 - 120	○ 80 - 120
N.1.1	Al	● 500 - 900	● 500 - 900
N.1.2		● 300 - 500	● 300 - 500
N.1.3		● 200 - 400	● 200 - 400
N.2.1	Cu	● 150 - 250	● 150 - 250
N.2.2		● 130 - 180	● 130 - 180
N.2.3		● 100 - 140	● 100 - 140
N.2.4		● 60 - 80	● 60 - 80
N.3.1	Mg/Zn	● 100 - 140	● 100 - 140
N.4.1	Plastic	● 120 - 170	● 120 - 170
N.4.2		● 70 - 100	● 70 - 100
N.4.3			
S.1.1	Ni	● 60 - 80	● 60 - 80
S.1.2		○ 50 - 70	○ 50 - 70
S.2.1	Ti	● 60 - 80	● 60 - 80
S.2.2		○ 50 - 70	○ 50 - 70
S.2.3		○ 30 - 50	○ 30 - 50
H.1	50 HRC	● 60 - 100	● 60 - 100
H.2	55 HRC	● 30 - 60	● 30 - 60
H.3	60 HRC	○ 20 - 40	○ 20 - 40

● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH

$$r.p.m.= \frac{Vc \times 1.000}{\pi x Ø}$$

Ref./ Réf. / Ref.	2301	2301/5	2302	2314	2303	2324	2304	2304/5	2305	2306	2306/5	2316	2317
Rosca/ Filetage/Thread	M-MF	M	M	M	M	M	BSW	BSW	BSF	G	G	G	G
DIN	352-2181	352	352	352	352	352	352	352	2181	5157	5157	5157	5157
Form.												E(1,5-2)	E(1,5-2)
Ejec./Exéc./Exec.		LH						LH			LH		
Tol.	6H	6H	6H	6HX	6HX	6HX	Med	Med	Med	Med	Med	Med	+0,1
Mat.	HSS	HSS	HSS	HSSE	HSSE	HSSE-PM	HSS	HSS	HSS	HSS	HSS	HSS	HSS
Rec./Rev./Coat.			TiN		VAP	TICN							
Prof./ Depth													
Gama/Gamme/Range	M1-M64	M3-M30	M3-M20	M3-M16	M3-M20	M4-M16	3/32-3"	1/8-1"	3/16-1"1/2	1/8-3"	1/8-1"	1/8-1"	1/8-1"
Pag.	227	229	231	230	230	231	232	233	233	234	234	235	235

Mat.		Vc (m/min)												
P.1	<600	●	●	●	○	○		●	●	●	●	●		
P.2	<800	●	●	●	●	●	○	●	●	●	●	●		
P.3	<1000			○	●	●	●							
P.4	<1200				○	○	●							
P.5	<1400						●							
M.1	<950				○	●								
M.2					○	●								
M.3	<1200						○							
M.4							○							
K.1	<500													
K.2														
K.3	<800													
K.4.1		○	○	○	○		○	○	○	○	○	○		
K.4.2	<1400						○							
N.1.1	Al													
N.1.2		○	○	○				○	○	○	○	○		
N.1.3		●	●	●				●	●	●	●	●		
N.2.1	Cu													
N.2.2													●	●
N.2.3		●	●	●	○	○	○	●	●	●	●	●		
N.2.4														
N.3.1	Mg/Zn													
N.4.1	Plastic													
N.4.2														
N.4.3														
S.1.1	Ni													
S.1.2														
S.2.1	Ti					●								
S.2.2														
S.2.3														
H.1	50 HRC													
H.2	55 HRC													
H.3	60 HRC													

● Optima / Optimun ○ Alternativo / Alternative

P Aceros / Aciers / Steels / Stähle

M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl

K Fundicion / Fonte / Cast Iron / Gusseisen

N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle

S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen

H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2307	2307/5	2308	2308/5	2315	2309	2310	2312	2313	2321	2322	2323	2701	2702	2703	2704	2715
UNC	UNC	UNF	UNF	UN	Rc	UNEF	Pg	NPT	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF
352	352	2181	2181	2181	5157	2181	40432	2181	352-2181	352-2181	352-2181	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529
									No Prog	No Prog	No Prog	D(3-5)	D(3-5)	D(3-5)	D(3-5)	D(3-5)
	LH		LH													
2B	2B	2B	2B	2B		2B			6H	6H	6H	4H	4H	4H	4H	4H
HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS
N.4-2"	1/4-1"	N.4-1"1/2	1/4-1"	1"1/8-2"	1/8-1"	1/4-1"	7-48	1/16-2"	M2-M42	N.4-2"	N.4-1"1/2	M2-M24	N.2-1"	N.4-1"	1/8-1"	1/8-1/2
236	237	237	238	238	239	239	240	240	241	242	242	256	257	257	258	258
Vc (m/min)																
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● Optima / Optimun ○ Alternativo / Alternative

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

r.p.m.= $\frac{Vc \times 1.000}{\pi x Ø}$

Ref./ Réf. / Ref.		2501	2501/5	2514	2512	2502	2502/5	2503	2504	2504/5	2522	2521
Rosca/ Filetage/Thread		M-MF	M	M	M	BSW	BSW	BSF	G	G	G	G
DIN		22568	22568	22568	22568	22568	22568	22568	24231	24231	24231	24231
Form.												
Ejec./Exéc./Exec.			LH				LH			LH		
Tol.		6g	6g	6g	6g	Med	Med	Med	Med	Med	Med	-0,1
Mat.		HSS	HSS	HSSE	HSSE	HSS	HSS	HSS	HSS	HSS	HSS	HSS
Rec./Rev./Coat.				NIT	VAP							
Prof./ Depth												
Gama/Gamme/Range		M1-M64	M3-M30	M3-M16	M3-M20	3/32-2"	1/8-1"	3/16-1"	1/8-2"	1/8-1"	1/8-1"	1/8-1"
Pag.		243	245	246	246	247	247	248	248	249	250	250
Mat.		Vc (m/min)										
P.1	<600	●	●	o	o	●	●	●	●	●		
P.2	<800	●	●	●	●	●	●	●	●	●		
P.3	<1000			●	●							
P.4	<1200			o	o	o						
P.5	<1400											
M.1	<950			o	●							
M.2				o	●							
M.3	<1200											
M.4												
K.1	<500											
K.2												
K.3	<800											
K.4.1												
K.4.2	<1400											
N.1.1	Al											
N.1.2		o	o			o	o	o	o	o		
N.1.3		●	●			●	●	●	●	●		
N.2.1	Cu											
N.2.2											●	●
N.2.3		●	●	o	o	●	●	●	●	●		
N.2.4												
N.3.1	Mg/Zn											
N.4.1	Plastic											
N.4.2												
N.4.3												
S.1.1	Ni											
S.1.2												
S.2.1	Ti											
S.2.2					●							
S.2.3												
H.1	50 HRC											
H.2	55 HRC											
H.3	60 HRC											

● Optima / Optimun ○ Alternativo / Alternative

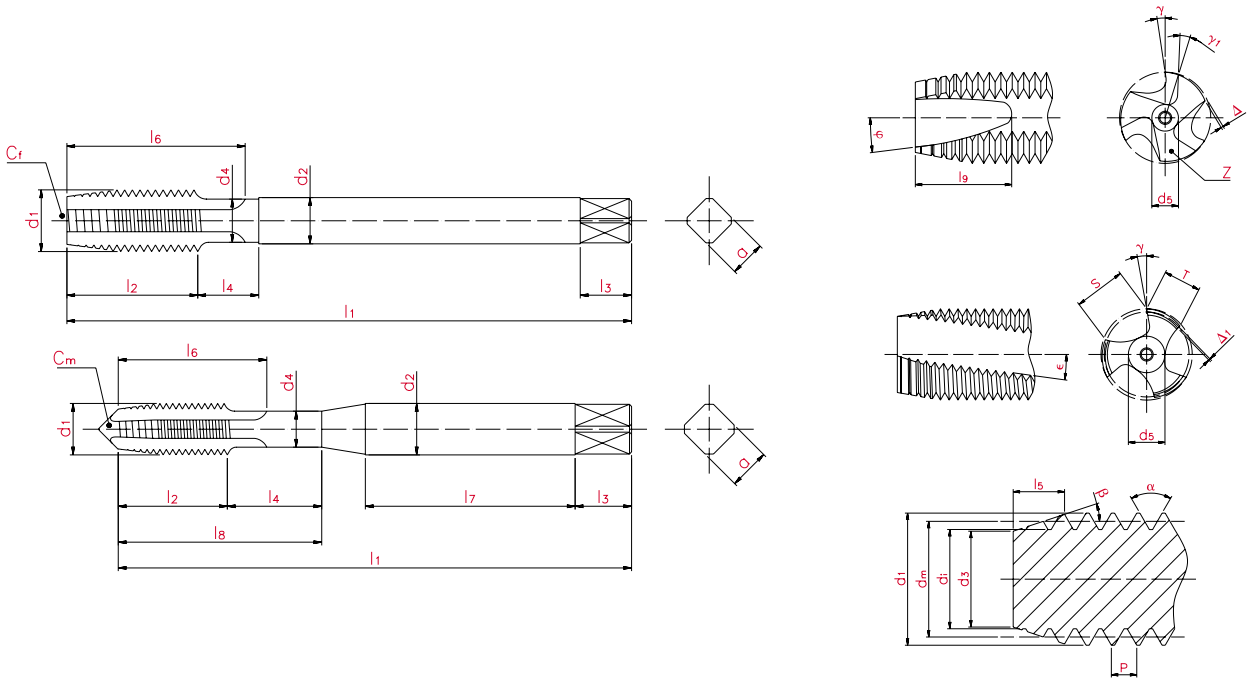
P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

								
2505	2505/5	2506	2506/5	2520	2507	2508	2510	2509
UNC	UNC	UNF	UNF	UN	R	UNEF	Pg	NPT
22568	22568	22568	22568	22568	24231	22568	40434	24230
	LH		LH					
2A	2A	2A	2A	2A		2A		
HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS
N.4-2"	1/4-1"	N.4-1"1/2	1/4-1"	1"1/8-2"	1/8-1"	1/4-1"	7-48	1/16-2"
251	251	252	252	254	253	253	254	255
•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•
o	o	o	o	o	o	o	o	o
•	•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•	•

● Optima / Optimun ○ Alternativo / Alternative

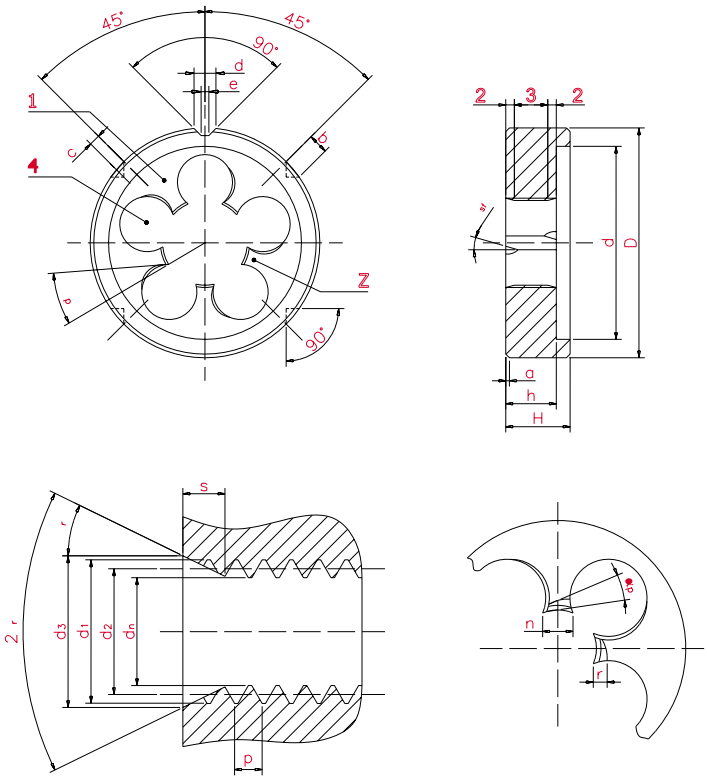
P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

TERMINOLOGÍA
TERMINOLOGIE / TERMINOLOGY / TERMINOLOGIE



l1	**Longitud total** / Longueur totale / Total length
l2	**Longitud de rosca** / Longueur de filetage / Thread length
l7	**Longitud de mango** / Longueur de queue / Shank length
l3	**Longitud de cuadro** / Longueur du carré / Square length
l4	**Longitud de sangrado** / Longueur d'indentation / Neck length
l5	**Longitud de entrada** / Longueur d'entrée / Chamfer length
l6	**Longitud de ranura** / Longueur de rainure / Flute Length
l8	**Longitud útil de corte** / Longueur utile de coupe / Useful length of cut
l9	**Longitud de la entrada en hélice** / Longueur de l'entrée en hélice / Spiral point length
d1	**Diámetro exterior** / Diamètre extérieur / External diameter
d2	**Diámetro de mango** / Diamètre de queue / Shank diameter
d3	**Diámetro de entrada** / Diamètre d'entrée / Chamfer diameter
d4	**Diámetro de sangrado** / Diamètre d'indentation / Neck diameter
d5	**Diámetro del alma** / Diamètre de l'âme / Core diameter
dm	**Diámetro medio** / Diamètre moyen / Pitch diameter
di	**Diámetro interno** / Diamètre interne / Internal diameter
a	**Cuadradillo** / Carré / Square
Cm	**Punto macho** / Pointe mâle / Male point
Cf	**Punto hembra** / Pointe femelle / Female point
P	**Paso de la rosca** / Pas de filetage / Pitch of thread
S	**Ancho de la ranura** / Largeur de la rainure / Flute width
T	**Ancho del diente** / Largeur de la dent / Width of land
Z	**Número de ranuras** / Nombre de rainures / Number of flutes
α	**Ángulo de flancos** / Angle de flancs / Angle of thread
β	**Ángulo de la entrada** / Angle de l'entrée / Chamfer angle
γ	**Ángulo de corte** / Angle de coupe / Rake angle
γ_1	**Ángulo de corte de la entrada corregida** / Angle de coupe de l'entrée corrigée / Spiral point rake angle
φ	**Ángulo de la entrada corregida** / Angle de l'entrée corrigée / Spiral point angle
ε	**Ángulo de la ranura** / Angle de la rainure / Flute angle
Δ	**Ángulo de destalonado de la entrada** / Angle de détalonnage de l'entrée / Chamfer relief angle
Δ_1	**Ángulo de destalonado de flancos** / Angle de détalonnage des flancs / Flank relief angle

TERMINOLOGÍA
TERMINOLOGIE / TERMINOLOGY / TERMINOLOGIE

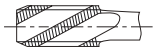
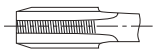
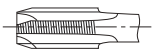
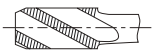


1	**Cuerpo del cojinete** / Corps de la filière / Die body
2	**Parte cortante - Entrada cónica** / Partie coupante - Entrée conique / Cutting part - Conical entry
3	**Hilos enteros** / Fils entiers / Entire threads
4	**Alojamiento para viruta** / Logement pour copeau / Void for shavings
d1	**Diámetro nominal de rosca** / Diamètre nominal de filetage / Nominal diameter of thread
d2	**Diámetro de flancos** / Diamètre de flancs / Flank Diameter
dn	**Diámetro de núcleo** / Diamètre du noyau / Nucleus diameter
d3	**Diámetro de la entrada cónica** / Diamètre de l'entrée conique / Diameter of conical chamfer
P	**Paso de la rosca** / Pas de filetage / Thread pitch
D	**Diámetro exterior del cojinete** / Diamètre extérieur de la filière / Exterior diameter of die
d	**Diámetro de la parte rebajada** / Diamètre de la partie chanfreinée / Diameter of the reduced part
H	**Diámetro de sangrado** / Diamètre d'indentation / Bled diameter
h	**Ancho del cojinete** / Largeur de la filière / Die width
Z	**Ancho útil del cojinete** / Largeur utile de la filière / Useful width of the die
n	**Número de dientes** / Nombre de dents / Number of teeth
r	**Ancho del diente** / Largeur de la dent / Tooth width
s	**Destalonado de la entrada cónica** / Détalonnage de l'entrée conique / Conical chamfer relief
a	**Longitud de la entrada cónica** / Longueur de l'entrée conique / Conical chamfer length
b	**Chaflán** / Chanfrein / Bevel
c	**Diámetro del agujero de fijación** / Diamètre du trou de fixation / Mounting hole diameter
d	**Desplazamiento del agujero de fijación** / Déplacement du trou de fixation / Mounting hole displacement
e	**Ancho de preranura** / Largeur de pré-rainure / Pre-groove width
γp	**Ángulo de la ranura** / Angle de la rainure / Groove angle
χr	**Ángulo de desprendimiento (de corte)** / Angle de dégagement (de coupe) / Rake angle (of cut)
2χr	**Ángulo de la entrada cónica** / Angle de l'entrée conique / Conical chamfer angle
αp	**Ángulo de destalonado de la entrada cónica** / Angle de détalonnage de l'entrée conique / Conical chamfer relief angle
γsf	**Ángulo de la entrada en hélice (rompevirutas)** / Longueur de l'entrée en hélice (brise-copeaux) / Blade chamfer angle (chip cap)

Tipos de ranuras y entradas para machos de roscar.
Flutes and chamfers types for taps / Types de rainures et entrées pour les tarauds / Arten von Nuten und Fasen für Gewindebohrer.

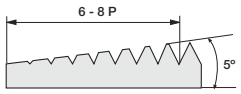
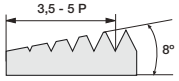
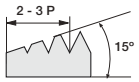
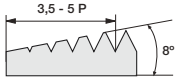
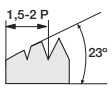
Ranuras / Flutes / Rainures / Nuten

La norma DIN 2197 tipifica los siguientes tipos de ranura para machos de roscar:
DIN norm 2197 provides regulations for the following types of flute for taps:
La norme DIN 2197 caractérise les types de rainures suivants pour les tarauds:
Die DIN-Norm 2197 definiert folgende Nutenarten für Gewindebohrer:

	Denominación Nomenclature Bezeichnung	**Ángulo de hélice** Helix angle Angle d'hélice Spiralwinkel **Medio/Basic**	**Formas entrada** Chamfer forms Chanfreins Fasen	**Descripción** Description Description Beschreibung
	**L15**	15°	D	**Ranura en hélice a izquierda para agujeros pasantes** Flute on left hand helix for through holes Rainure hélicoïdale à gauche pour les trous débauchants
		0°	A,C,D,E	**Ranura recta para agujeros ciegos y pasantes** Straight flute for blind and through holes Rainure droite pour trous borgnes et débouchants Linksgedrallte Spiralnut für Durchgangslöcher
	Ángulo de hélice en la entrada Spiral point Entrée corrigée	13°	B	**Ranura recta con entrada en hélice a izquierda para agujeros pasantes** Straight flute with spiral point for through holes Rainure droite avec entrée hélicoïdale gauche pour trous débauchants Gerade Nut für Sack- und Durchgangslöcher
	**R15** **R25** **R35** **R45**	15° 25° 35° 45°	C,E	**Ranura en hélice a derecha para agujeros ciegos** Flute on right hand helix for blind holes Rainure hélicoïdale à droite pour trous borgnes Rechtsgedrallte Spiralnut für Sacklöcher

Entradas / Chamfers / Chanfreins/ Fasen

La norma DIN 2197 tipifica los siguientes tipos de entrada para machos de roscar:
DIN norm 2197 provides regulations for the following types of chamfer for taps:
La norme DIN 2197 caractérise les types d'entrée suivants pour les tarauds:
Die DIN-Norm 2197 definiert folgende Fasenarten für Gewindebohrer:

Forma / Form A		**Para agujeros pasantes cortos. Ranura recta** For short through holes. Straight flute Pour les trous débauchants courts. Rainure droite Für kurze Durchgangslöcher. Gerade Nut
Forma / Form B		**Para agujeros pasantes medios y materiales de viruta larga. Ranura recta con entrada.** For medium through holes and materials producing long chips. Straight with spiral flute. Pour les trous débauchants moyens et les matériaux à copeaux longs. Rainure droite avec entrée. Für mittlere Durchgangslöcher und langspanende Werkstoffe. Gerade Nut mit Fase.
Forma / Form C		**Para agujeros ciegos o pasantes y materiales de viruta corta. Ranura recta o helicoidal.** For blind or through holes and materials producing short chips. Straight or spiral flute. Pour trous borgnes ou débauchants et matériaux à copeaux courts. Rainure droite ou hélicoïdale. Für Sack- oder Durchgangslöcher und kurzspanende Werkstoffe. Gerade oder spiralförmige Nut.
Forma / Form D		**Para agujeros ciegos con salida de rosca larga o pasantes.** Ranura recta o helicoidal. For blind holes with deeper previous hole or through holes. Straight or spiral flute. Pour trous borgnes avec un trou antérieur plus profond ou des trous débauchants. Rainure droite ou hélocoïdal. Für Sacklöcher mit langem Gewindeausgang oder Durchgangslöcher. Gerade oder spiralförmige Nut.
Forma / Form E		**Para agujeros ciegos con salida de rosca corta. Ranura recta o helicoidal.** For blind holes with shorter previous hole. Straight or spiral flute. Pour trous borgnes avec trou précédent plus court. Rainure droite ou hélocoïdal. Für Sacklöcher mit kurzem Gewindeausgang. Gerade oder spiralförmige Nut.

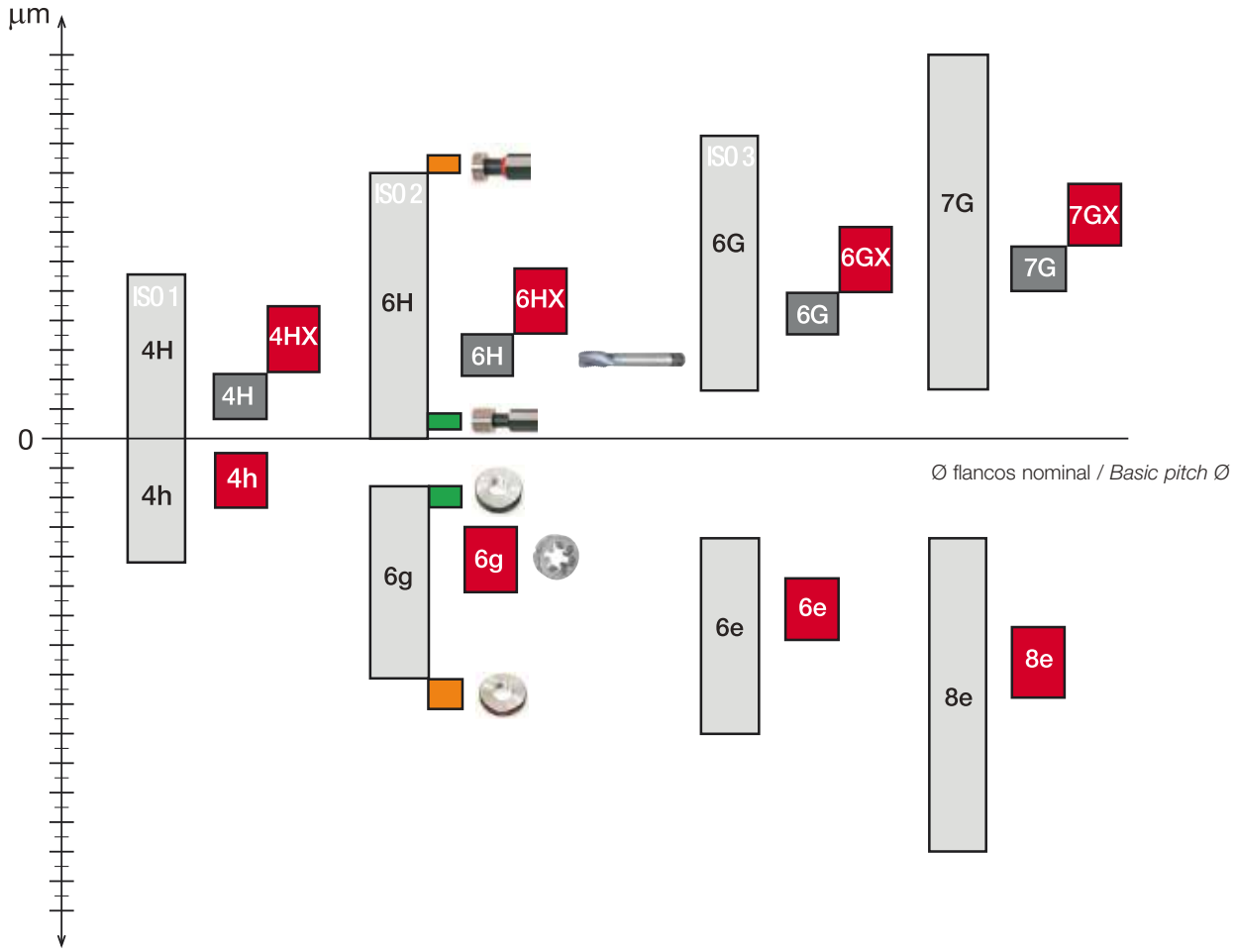
Símbolo Symbol Symbol	Ángulo Angle Winkel	Norm. Standar Norm	Descripción / Descrition / Beschreibung			
M	60°	DIN 13	Rosca Métrica ISO	Metric ISO thread	Filetage Métrique ISO	Metrisches ISO-Gewinde
M	60°	DIN 158	Rosca Métrica ISO Cónica	Taper metric ISO thread	Filetage Métrique ISO conique	Metrisches kegeliges ISO-Gewinde
EG-M	60°	DIN 8140	PART 2 Rosca Métrica ISO para insertos helicoil o reductores de roscas	Metric ISO thread for helical coil wire screw thread inserts	Filetage Métrique ISO pour des filets rapportées ou réducteurs de filetage	Metrisches ISO-Gewinde für spiralförmige Gewindeeinsätze oder Gewindereduzierungen
MF	60°	DIN 13	Rosca Métrica Fina ISO	Metric fine ISO thread	Filetage Métrique Fine ISO	Metrisches ISO-Feingewinde
MJ	60°	DIN ISO 5855	Rosca Métrica ISO para aeronáutica	Metric ISO thread for aeronautics	Filetage Métrique ISO pour aéronautique	Metrisches ISO-Gewinde für die Luftfahrt
G	55°	DIN-ISO	228 Rosca ISO para tubos, cilíndrica, no estanca	Pipe parallel ISO thread	Filetage ISO pour des tuyaux non étanche	Zylindrisches, nicht dichtendes ISO-Rohr-gewinde
R	55°	DIN 259	Rosca para tubos, cilíndrica, no estanca, antigua	Pipe parallel whitworth thread	Filetage pour des tuyaux non étanche ancien	Altes, zylindrisches, nicht dichtendes Rohrgewinde
Rp	55°	DIN 2999-3858	Rosca interior cilíndrica para tubos	Internal dryseal parallel thread	Filetage intérieur cylindrique pour tuyaux	Zylindrisches Innengewin-de für Rohre
Tr	30°	DIN 103	Rosca trapezoidal Métrica ISO	Trapezoidal thread	Filetage trapézoïdal Métri-que ISO	Metrisches ISO-Trapez-gewinde
S	30°+3°	DIN 513	Rosca Diente de Sierra	Saw form thread	Filetage en dents de scie	Sägengewinde
S	45°	DIN 2781	Rosca Diente de Sierra (2)	Saw form thread (2)	Filetage en dents de scie (2)	Sägengewinde (2)
Rd	30°	DIN: 405/ 20400/ 15403	Rosca Redonda	Rounded thread	Filetage rond	Rundgewinde
E	–	DIN 40400	Rosca lámparas eléctricas	Edison Edison form thread	Filetage de lampe électrique Edison	Elektro-(Edison-)Gewinde
Pg	80°	DIN 40430	Rosca para tubos de con-ducción eléctrica	Steel conduit thread	Filetage pour conduits électriques	Gewinde für Elektroinsta-llationsrohre
FG	60°	DIN 79012	Rosca para bicicletas	Bicycle thread	Filetage pour vélos	Farradgewinde
Vg	60°	DIN 7756	Rosca para válvulas	Valves thread	Filetage pour vannes	Ventilgewinde
W	55°	DIN 477	Rosca Whitworth cónica para botellas de gas	Whitworth thread for gas bottles valves	Filetage Whitworth conique pour bouteilles de gaz	Kegeliges Whitworth-Gewinde für Gasflaschenventile
BSW	55°	BS84 (1956)	Rosca Whitworth normal	Whitworth coarse thread	Filetage Whitworth normal	Whitworth-Regelgewinde
BSF	55°	BS84 (1956)	Rosca Whitworth fina	Whitworth fine thread	Filetage fin Whitworth	Whitworth-Feingewinde
BA	47°30'	BS93 (1951)	Rosca Inglesa	British association thread	Filetage anglais	Britisches Gewinde
BSC	60°	BS811 (1950)	Rosca Inglesa para bicicletas	British norm thread for bicycles	Filetage anglais pour vélos	Britisches Fahrradgewinde
G	55°	BS2779 (1973)	Rosca Whitworth para tubos cilíndrica (BSP)	Pipe parallel whitworth thread (BSP)	Filetage de tuyau cylindrique Whitworth (BSP)	Zylindrisches Whitworth-Rohrgewinde (BSP)
Rp	55°	BS21 (1973)	Rosca Whitworth cilíndrica para tubos (BSPP)	Pipe parallel thread (BSPP)	Filetage de tuyau cylindrique Whitworth (BSPP)	Zylindrisches Whitworth-Rohrgewinde (BSPP)
R	55°	BS21 (1985)	Rosca Whitworth cónica exterior para tubos estanca (BSPT)	External dryseal pipe taper thread (BSPT)	Filetage extérieur conique Whitworth (BSPT)	Kegeliges Whitworth-Außengewinde (BSPT)
Rc	55	BS21 (1985)	Rosca Whitworth cónica interior para tubos, estanca (BSPT)	Internal dryseal pipe taper thread (BSPT)	Filetage de tuyau conique intérieur Whitworth, étanche (BSPT)	Kegeliges, dichtendes Whitworth-Rohr-Innengewinde (BSPT)
NC	60°	ANSI B1.1 (1960)	Rosca nacional americana normal	American national coarse thread series	Filetagenational américain normal	Amerikanisches Regelgewinde
UNC	60°	ANSI B1.1 (1982)	Rosca unificada americana normal	Unified coarse thread series	Filetage unifié américain standard	Amerikanisches Einheitsgewinde (UNC)
EG-UNC	60°	MS 33537	Rosca unificada americana normal para insertos helicoil o reductores de roscas	Unified coarse thread series for helical coil wire screw thread inserts	Filetage unifié américain standard pour filets rapportés ou réducteurs de filetage	Amerikanisches Einheitsgewinde für Gewindeeinsätze oder Gewindereduzierungen
NF	60°	ANSI B1.1 (1960)	Rosca nacional americana fina	American national fine thread series	Filetagenational américain fin	Amerikanisches Feingewinde
UNF	60°	ANSI B1.1 (1982)	Rosca unificada americana fina	Unified fine thread series	Filetageunifié américain fin	Amerikanisches Einheits-Feingewinde (UNF)
NEF	60°	ANSI B1.1 (1960)	Rosca nacional americana extra fina	American national extra fine thread series	Filetagenational américain extra fin	Amerikanisches Extrafeingewinde

Símbolo Symbol Symbol	Ángulo Angle Winkel	Norm. Standar Norm	Descripción / Descrition / Beschreibung			
UNEF	60°	ANSI B1.1 (1982)	Rosca unificada americana extra fina	Unified extra fine thread series	Filetage extra fin américain unifié	Amerikanisches Einheits-Extrafeingewinde
N	60°	ANSI B1.1 (1960)	Rosca nacional americana, pasos 8-12-16 Hilos / 1"	American national 8-12-16 T.P.I. pitch series (8N, 12N, 16N)	Filetage national américain, pas 8-12-16 fils / 1 "	Amerikanisches Gewinde, Steigungen 8-12-16 Gewinde / 1 "
UN	60°	ANSI B1.1 (1982)	Rosca unificada americana, pasos 8-12-16 Hilos/1"	Unified 8-12-16 T.P.I. pitch series	Filetage unifié américain, étapes 8-12-16 Threads / 1 "	Amerikanisches Einheitsgewinde, Steigungen 8-12-16 Gewinde / 1 "
NS	60°	ANSI B1.1 (1960)	Rosca nacional americana, pasos especiales	American national thread special pitches	Filetagenational américain, emplacements spéciaux	Amerikanisches Gewinde, Sondersteigungen
UNS	60°	ANSI B1.1 (1982)	Rosca unificada americana especial	Unified thread special pitches	Filetageunifié américain spécial	Amerikanisches Spezial-Einheitsgewinde (UNS)
UNM	60°	ASA B1.10 (1958)	Rosca unificada miniatura	Unified miniature thread series	Filetageunifié miniature	Einheits-Miniaturgewinde
UNJ	60°	BS 4084 (1978)	Rosca unif. con radio de fondo controlado 0,15011P A 0,18042P	Unified constant pitch thread series with 0,15011P to 0,18042P controlled root radious	Filetageuniforme avec rayon inférieur contrôlé de 0,15011P à 0,18042P	Einheitsgewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
UNJC	60°	BS 4084 (1978)	Rosca unificada normal con radio de fondo controlado 0,15011P A 0,18042P	Unified coarse thread series with a 0,15011P to 0,18042P controlled radious	Filetage unitaire standard avec rayon inférieur contrôlé 0,15011P TO 0,18042P	Standard-Einheitsgewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
UNJF	60°	BS 4084 (1978)	Rosca unificada fina con radio de fondo controlado 0,15011P A 0,18042P	Unified fine thread series with a 0,15011P to 0,18042P controlled root radious	Filetage unifié fin avec rayon inférieur contrôlé 0,15011P TO 0,18042P	Einheits-Feingewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
UNJEF	60°	BS 4084 (1978)	Rosca unificada extrafina con radio de fondo controlado 0,15011P A 0,18042P	Unified extra fine thread series with a 0,15011P to 0,18042P controlled root radious	Filetage unifié ultrafin avec rayon inférieur contrôlé 0,15011P TO 0,18042P	Einheits-Extrafeingewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
NH	60°	ANSI B2.4 H28 (1966)	Rosca americana para material contra incendios	American national firehouse and hose coupling thread	Filetageaméricain pour matériel de lutte contre l'incendie	Amerikanisches Gewinde für Brandbekämpfungsgeräte
NPS	60°		Usada para designar los machos NPSC y NPSM	American standard straight pipe thread NPSC & NPSM	Utilisé pour désigner les tarauds NPSC et NPSM	Dient zur Kennzeichnung von NPSC- und NPSM-Gewindebohrern
NPS	60°		Usada para designar los machos NPSC y NPSM	American standard straight pipe thread NPSC & NPSM	Filetage américain cylindrique pour raccords de tuyaux	Zylindrisches amerikanisches Gewinde für Rohrverschraubungen
NPSC	60°	ANSI/ASME -B1.20.1 (1983)	Rosca americana cilíndrica para acoplamientos de tubos	American standard straight pipe thread in pipe couplings (marked NPS)	Filetage américain cylindrique étanche pour tuyaux	Dichtendes, zylindrisches amerikanisches Rohrgewinde
NPSF	60°	ANSI B1.20.3 (1976)	Rosca americana estanca cilíndrica para tubos	Dryseal american standard internal straight pipe thread (fuel)	Filetage américain cylindrique pour raccords de tuyaux	Zylindrisches amerikanisches Gewinde für flexible Rohrverschraubungen
NPSH	60°	ANSI/ASME-B1.20.1 (1983)	Rosca americana cilíndrica para acoplamientos de tubos flexibles	American standard straight pipe thread for hose couplings	Filetage américain intermédiaire interne cylindrique pour tubes étanches	Mittleres, zylindrisches amerikanisches Innengewinde für Dichtungsschläuche
NPSI	60°	ANSI B1.20.3 - (1976)	Rosca americana intermedia interna cilíndrica para tubos estancos	American standard intermidiate internal straight pipe thread	Filetage cylindrique américain pour joints mécaniques Joints mécaniques	Zylindrisches amerikanisches Rohrgewinde für mechanische Verbindungen
NPSL	60°	ANSI/ASME - B1.20.1 (1983)	Rosca americana cilíndrica de tubos para uniones mecánicas	American standard straight pipe thread for loose-fitting mechanical joints	Filetage cylindrique américain pour joints mécaniques Joints mécaniques	Zylindrisches amerikanisches Rohrgewinde für mechanische Verbindungen
NPSM	60°	ANSI/ ASME-B1.20.1 (1983)	Rosca americana cilíndrica de tubos para uniones mecánicas	American standard straight pipe thread for free-fitting mechanical joints	Filetage cylindrique américain pour joints mécaniques	Zylindrisches amerikanisches Rohrgewinde für mechanische Verbindungen
ANPT	60°	MIL-P-7105	Rosca americana para tubos cónicos en aeronáutica	Aeronautical national form taper pipe thread	Filetage américain pour tubes coniques en aéronautique	Amerikanisches Gewinde für Konusrohre in der Luftfahrt
NPT	60°	ANSI/ ASME-B1.20.1 (1983)	Rosca americana cónica para tubos	American standard taper pipe thread	Filetage de tuyau américain conique	Kegeliges amerikanisches Rohrgewinde
NPTF	60°	ANSI-B1.20.3 (1976)	Rosca americana estanca cónica para tubos (FUEL)	Dryseal american standard taper pipe thread (fuel)	Filetage américain conique étanche pour tuyaux (FUEL)	Kegeliges, dichtendes amerikanisches Rohrgewinde (KRAFTSTOFF)
NPTR	60°	ANSI/ ASME-B1.20.1 (1983)	Rosca americana cónica para juntas de raíles de ferrocarril	American standard taper pipe thread for railling joints (tap marked NPT)	Filetage américain conique pour les joints de rail de chemin de fer	Kegeliges amerikanisches Gewinde für Schienenstöße
NGO	60°	ANSI/ ASME-B1.20.1 (1983)	Rosca americana para salidas de gas	National gas outlet thread (specify RH or LH)	Filetageaméricain pour sorties de gaz	Amerikanisches Gewinde für Gasauslässe
NGS	60°	ANSI/ ASME-B1.20.1 (1983)	Rosca americana GAS cilíndrica	National gas straight thread	Filetage américain GAS cylindrique	Amerikanisches zylindrisches GAS-Gewinde

Símbolo Symbol Symbol	Ángulo Angle Winkel	Norm. Standar Norm	Descripción / Descrition / Beschreibung			
NGT	60°	ANSI B57.1(1977)	Rosca americana GAS cónica	National gas taper thread (see also «SGT»)	Filetage américain GAS cylindrique	Kegeliges amerikanisches GAS-Gewinde
PTF	60°	ANSI B1.20.3-(1976)	Rosca cónica para tubos SAE corta y estanca	Dryseal SAE short taper pipe thread	Filetage conique pour tubes courts et étanches SAE	Kegeliges Gewinde für kurze und dichtende SAE-Rohre
ACME-C	29°	ANSI B1.5 (1977)	Rosca trapezoidal americana centralizada	Acme thread centralizing	Filetage trapézoïdal américain centralisé	Amerikanisches Trapezgewinde, selbstzentrierend
ACME-G	29°	ANSI B1.5 (1977)	Rosca trapezoidal americana para usos generales	Acme thread general purpose	Filetage trapézoïdal américain à des fins générales	Amerikanisches Trapezgewinde für allgemeine Zwecke
STUB-ACME	29°	ANSI B1.8 (1977)	Rosca trapezoidal americana truncada	Stub Acme thread	Filetage trapézoïdal américain tronqué	Amerikanisches Trapezgewinde, abgeflacht
AMO	55°	ANSI B1.11(1958)	Rosca americana para objetivos de microscopios	American standard microscope objetive thread	Filetageaméricain pour objectifs de microscope	Amerikanisches Gewinde für Mikroskopobjektive
N-BUTT	45°+5°	ANSI B1.9 (1973)	Rosca americana BUTTRESS diente de sierra	American BUTTRESS thread	Dent de scie à filetage américain BUTTRESS	Amerikanisches Sägengewinde BUTTRESS
V	60°		Rosca en “V” con cresta y fondos truncados 60°	«V» thread with truncated crest and root (flatted to the user’s specifications)	Filetage en "V" avec crête et bas tronqués	"V"-Gewinde mit abgeflachtem Grat und Boden
SB			Roscas para fabricantes de estufas	Manufacturers stovebolt standards thread	Filetage pour les fabricants de poêles	Gewinde für Ofenhersteller
STI	60°		Rosca especial para insertos helicoil o reductores de roscas	Special thread for helical coil wire screw thread inserts	Filetage spécial pour inserts hélicoïdaux ou réducteurs de filetage	Spezialgewinde für spiralförmige Gewindeeinsätze oder Gewindereduzierungen
SGT	60°	ANSI B57.1(1977)	Rosca cónica GAS especial Special gas taper thread	Special gas taper thread	Filetage conique spécial GAS	"Kegeliges GAS-Spezialgewinde
SPL-PTF	60°	ANSI B1.20.3 (1976)	Rosca estanca especial GAS cónica	Dryseal special taper pipe thread	Filetage spécial étanche Conical GAS	Kegeliges, dichtendes GAS-Spezialgewinde
API	60°		Inst. americano del petróleo. Rosca americana cónica para instalaciones petrolíferas	American national taper form thread for petroleum installations	American Petroleum Inst. Filetagede discussion	American Petroleum Institute (API). Kegeliges amerikanisches Gewinde für die Erdölindustrie

Tolerancia del diámetro de flancos para roscas Métricas. Tolerance zones of the pitch diameter for Metric threads. /Tolérance de diamètre de flanc pour les filetages métriques. /Toleranzen des Flankendurchmessers für metrische Gewinde.

Amplitud de campo de tolerancia /Tolerance zones of the pitch diameter /Largeur du champ de tolérance /Toleranzfeldbreite



Rosca interior /Internal threads /Filetage intérieur /Innengewinde

- **Tolerancia de diámetro en los flancos de la rosca interior según DIN ISO 865-1./** Pitch diameter tolerance of the internal thread acc. DIN ISO 865-1./ Tolérance de diamètre sur les flancs du filetage intérieur selon DIN ISO 865-1. Durchmessertoleranz an den Flanken des Innengewindes gemäß DIN ISO 865-1.
- **Tolerancia de diámetro en los flancos del macho de rosca según DIN EN 22857 (DIN 7G según DIN 802-4).** / Pitch diameter tolerance of the tap acc. DIN EN 22857 (DIN 7G accoding to DIN 802-4). / Tolérance de diamètre sur les flancs du taraud selon DIN EN 22857 (DIN 7G selon DIN 802-4)./Durchmessertoleranz an den Flanken des Gewindebohrers gemäß DIN EN 22857 (DIN 7G gemäß DIN 802-4).
- **Tolerancia de diámetro en los flancos del macho con sobre-medida según norma HEPYC.** Pitch diameter tolerance of the tap according to HEPYC standards /Tolérance de diamètre sur les flancs du mâle avec surdimensionnement selon la norme HEPYC. / Durchmessertoleranz an den Flanken des Gewindebohrers mit Übermaß gemäß HEPYC-Norm.
- **Tolerancia de diámetro en los flancos del calibre tampón de rosca no pasa según DIN ISO 1502.** / Pitch diameter tolerance of the no-go thread plug gauge acc. DIN ISO 1502. / La tolérance de diamètre sur les flancs de la jauge tampon de filetage ne satisfait pas à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehrdorns entspricht nicht der DIN ISO 1502.
- **Tolerancia de diámetro en los flancos del calibre tampón de rosca pasa según DIN ISO 1502.** / Pitch diameter tolerance of the go thread plug gauge according to DIN ISO 1502. / La tolérance de diamètre sur les flancs de la jauge tampon de filetage est conforme à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehrdorns entspricht der DIN ISO 1502.

Rosca exterior /External thread /Filetage externe /Außengewinde

- **Tolerancia de diámetro en los flancos de la rosca exterior según DIN ISO 865-1.** / Pitch diameter tolerance of the external thread acc. DIN ISO 865-1. / Tolérance de diamètre sur les flancs du filetage extérieur selon DIN ISO 865-1. / Durchmessertoleranz an den Flanken des Außengewindes gemäß DIN ISO 865-1.
- **Tolerancia de diámetro en los flancos del cojinete según norma HEPYC.** / Pitch diameter tolerance of the die according to HEPYC standards. / Tolérance de diamètre sur les flancs de roulement selon la norme HEPYC. / Durchmessertoleranz an den Flanken des Gewindebohrers gemäß HEPYC-Norm.
- **Tolerancia de diámetro en los flancos del calibre anillo de rosca no pasa según DIN ISO 1502.** / Pitch diameter tolerance of the no-go thread ring gauge according to DIN ISO 1502. / La tolérance de diamètre sur les flancs de la jauge à bague filetée ne satisfait pas à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht nicht der DIN ISO 1502.
- **Tolerancia de diámetro en los flancos del anillo calibre de rosca pasa según DIN ISO 1502.** / Pitch diameter tolerance of the go thread ring gauge according to DIN ISO 1502. /La tolérance de diamètre sur les flancs de la bague de jauge de filetage est conforme à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht der DIN ISO 1502.

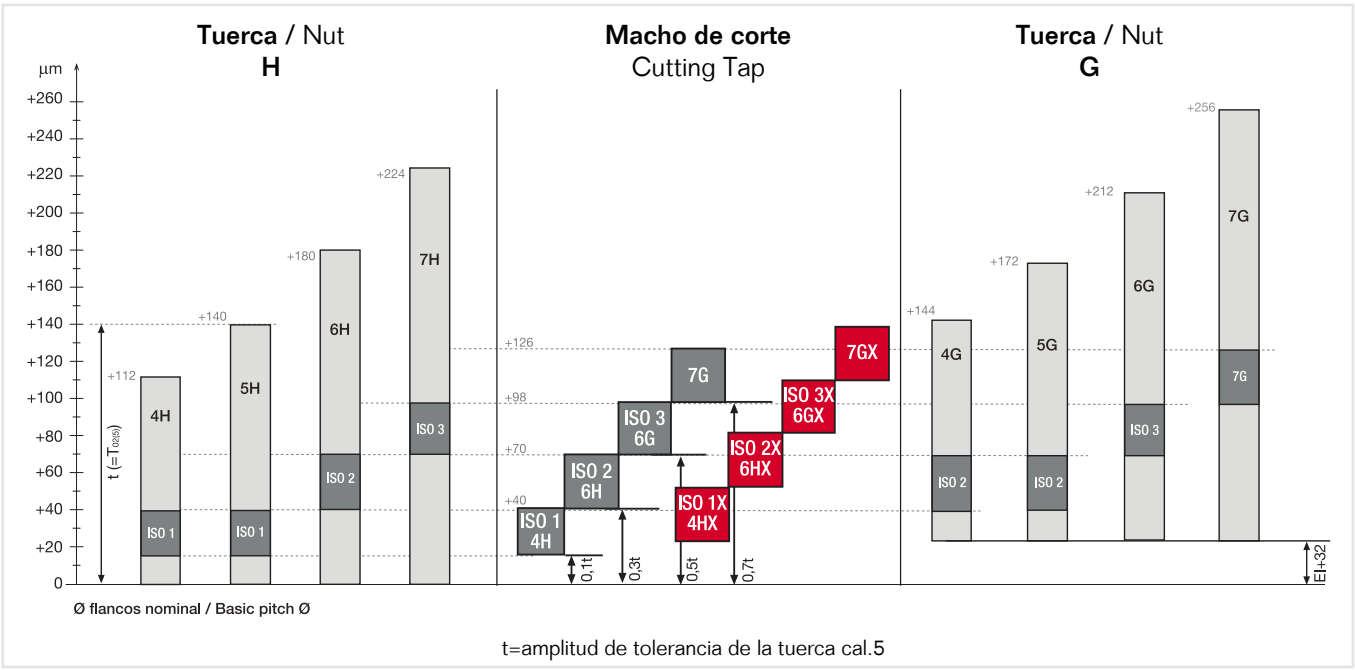
Tolerancias de rosca Métrica ISO

Tolerance of ISO Metric thread / Tolérances de filetage métrique ISO / Toleranz des metrischen ISO-Gewindes

Equivalencias entre clases de tolerancia de macho y campos de tolerancia de rosca interior.
Equivalence between tap class tolerances and nut tolerances.
Équivalences entre les classes de tolérance mâles et les champs de tolérance de filetage interne.
Äquivalenzen zwischen Toleranzklassen der Außengewinde und Toleranzfeldern für Innengewinde.

Tolerancia de rosca interior (tuerca) Internal tolerances (Nut) DIN 13					**ANSI B57.1(1977) Tolerancia de macho rosca M** Tap tolerances M thread DIN EN 22857 **CLASE** / CLASS		**Tolerancia de macho rosca M** Tap tolerances M thread DIN 802 PARTE I (norma antigua) DIN 802 PART I (old norm)
4H	5H				1	ISO 1	**4H**
4G	5G	6H			2	ISO 2	**6H**
		6G	7H	8H	3	ISO 3	**6G**
			7G	8G			**7G**

La tolerancia 7G no está recogida por la norma EN 22857, por lo que nos remitimos a la antigua norma DIN 802 (parte 1) para su aplicación.
Tolerance 7G is not according to norm EN 22857, therefore we refer to the old DIN 802 norm (part 1).



t=amplitud de tolerancia de la tuerca cal.5

Ejemplos: Valores mostrados en µm para M10 / Example: all values shown for M10 in µm

El campo de tolerancia (x) no está recogido por la norma EN 22857, sin embargo la antigua norma DIN 802 (parte 1) permite que para algunos casos (roscado en materiales abrasivos, machos de laminación, etc.) la tolerancia se pueda modificar a criterio del fabricante.
The tolerance denominated (x) is not on norm EN 22857, nevertheless old DIN 802 norm (part 1) allows the norm to be changed in some cases (threading in abrasive materials, forming taps, etc.), following the manufacturers criterion.

Le champ de tolérance (x) n'est pas couvert par la norme EN 22857, cependant l'ancienne norme DIN 802 (partie 1) permet que dans certains cas (filetage dans des matériaux abrasifs, tarauds de stratification, etc.) la tolérance puisse être modifiée à la discrétion du fabricant.

Das Toleranzfeld (x) wird von der EN 22857 nicht abgedeckt, jedoch erlaubt die alte Norm DIN 802 (Teil 1), dass in bestimmten Fällen (Gewindeschneiden in abrasiven Materialien, Lamellengewindebohrer usw.) die Toleranz nach Ermessen des Herstellers geändert werden kann.

Tolerancias para el cálculo de roscas métricas de los machos de roscar

Tolerances of metric thread tap pitch diameter / Tolérances pour le calcul des filetages métriques des tarauds / Toleranzen zur Berechnung der metrischen Gewinde von Gewindebohrern

Ø Rosca Thread Ø **D** mm.		**Paso** Pictch **P** mm.	µm							
			ISO 1 - 4H		ISO 2 - 6H		ISO 3 - 6G		7G	
Desde/From	Hasta/up to		Es	Ei	Es	Ei	Es	Ei	Es	Ei
0,99	1,4	0,2 0,25 0,3	+15 +17 +18	+3 +6 +6	+25 +28 +30	+15 +17 +18	- - -	- - -	- - -	- - -
1,4	2,8	0,2 0,25 0,35 0,4 0,45	+16 +18 +20 +21 +23	+6 +6 +6 +7 +8	+26 +30 +34 +35 +38	+16 +18 +20 +21 +23	- - - +49 +56	- - - +35 +38	- - - - -	- - - - -
2,8	5,6	0,35 0,5 0,6	+21 +24 +27	+6 +8 +9	+36 +40 +48	+21 +24 +27	- +56 +63	- +40 +45	- +72 +81	- +56 +63
		0,7 0,75	+29	+10	+48	+29	+67	+48	+86	+67
		0,8	+30	+10	+50	+30	+70	+50	+90	+70
5,6	11,2	0,5 0,75 1 1,25 1,5	+27 +32 +35 +38 +42	+9 +11 +11 +13 +14	+45 +53 +59 +63 +70	+27 +32 +35 +38 +42	+63 +74 +83 +88 +98	+45 +53 +59 +63 +70	+81 +95 +107 +113 +126	+63 +74 +83 +88 +98
11,2	22,4	0,5 0,75 1 1,25 1,5 1,75 2 2,5	+29 +34 +35 +42 +45 +48 +51 +54	+10 +12 +11 +14 +15 +16 +17 +17	+48 +56 +59 +70 +75 +80 +85 +90	+29 +34 +35 +42 +45 +48 +51 +54	+67 +78 +83 +98 +105 +112 +119 +126	+48 +56 +59 +70 +75 +80 +85 +90	+86 +100 +107 +126 +135 +144 +153 +162	+67 +78 +83 +98 +105 +112 +119 +126
22,4	45	0,5 0,75 1 1,5 2 3 3,5 4 4,5	+30 +36 +40 +48 +54 +64 +67 +71 +75	+10 +12 +14 +16 +18 +22 +22 +24 +25	+50 +60 +66 +80 +90 +106 +112 +118 +125	+30 +36 +40 +48 +54 +64 +67 +71 +75	+70 +84 +92 +112 +126 +148 +157 +165 +175	+50 +60 +66 +80 +90 +106 +112 +118 +125	+90 +108 +118 +144 +162 +190 +202 +212 +225	+70 +84 +92 +112 +126 +148 +157 +165 +175
45	90	0,5 0,75 1 1,5 2 3 4 5 5,5 6	+34 +38 +45 +51 +57 +67 +75 +80 +84 +90	+12 +13 +15 +17 +19 +22 +25 +27 +28 +30	+56 +63 +75 +85 +95 +112 +125 +133 +140 +150	+34 +38 +45 +51 +57 +67 +75 +80 +84 +90	+78 +88 +105 +119 +133 +157 +175 +186 +196 +210	+56 +63 +75 +85 +95 +112 +125 +133 +140 +150	+100 +113 +135 +153 +171 +202 +225 +239 +252 +270	+78 +88 +105 +119 +133 +157 +175 +186 +196 +210

Fórmula para el cálculo de medidas / Size formula calculation:
Tolerancias Métricas / Metric tolerances

Ø flancos/pitch min.= Ø flancos nominal / Basic pitch Ø + Ei (mm.) Ø flancos/pitch max.= Ø flancos nominal / Basic pitch Ø + Es (mm.)	Ø exterior min. = Ø nominal/Basic pitch Ø + Es (mm.) Ø exterior max. = Ø exterior min. + 0,030 (mm.)

Toleancia del diámetro de flancos de los machos de roscar / Tolerances of thread tap pitch diameter / Tolérance du diamètre des flancs des tarauds/ Toleranzen des Flankendurchmessers von Gewindebohrern

M

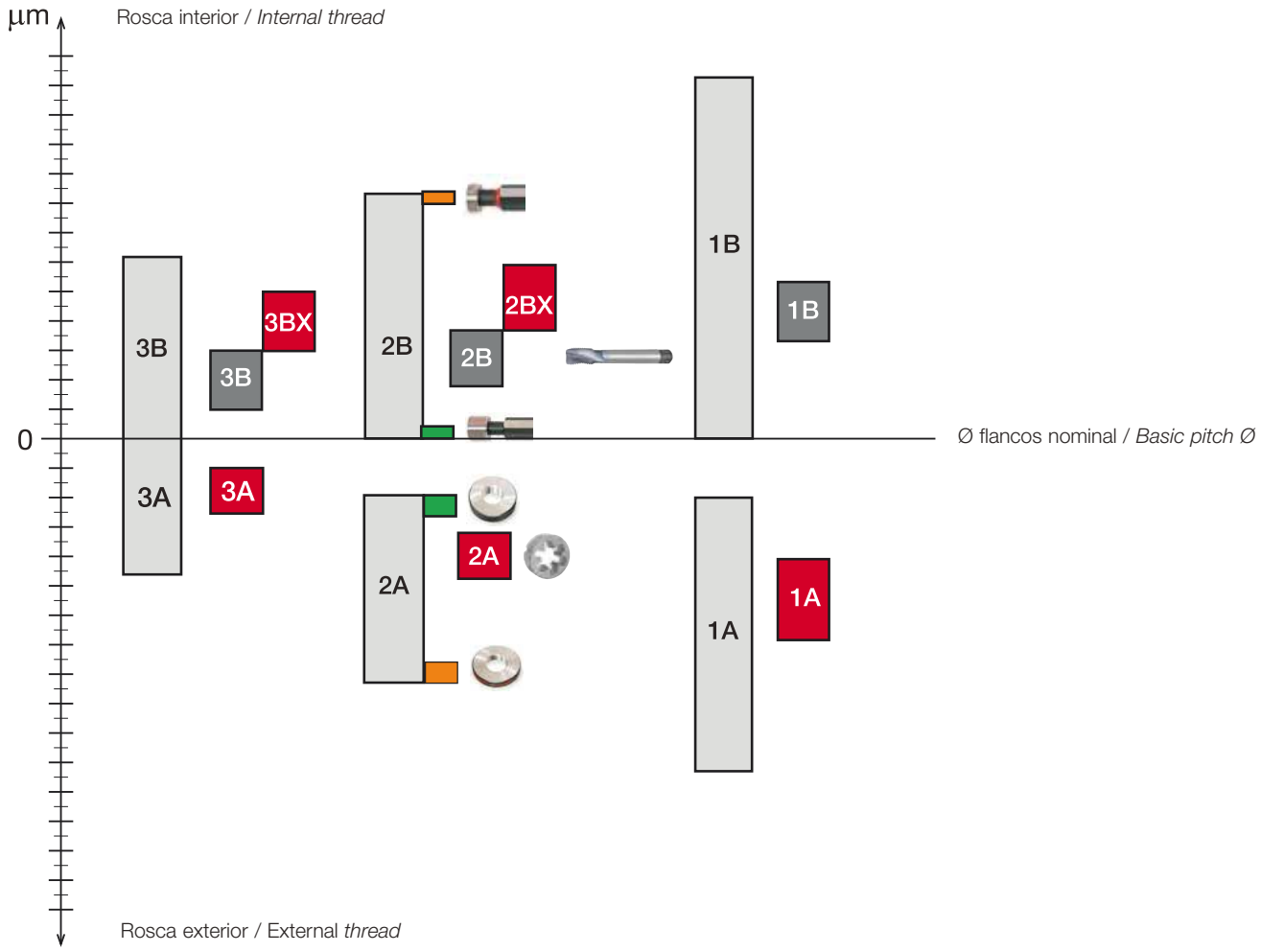
Ø Rosca Thread Ø **D** mm.			**Paso** Pictch **P** mm.	**Ø Flancos nominal** Basic pitchØ mm.	**Ø Rosca** Thread Ø **D** mm.			**Paso** Pictch **P** mm.	**Ø Flancos nominal** Basic pitchØ mm.	**Ø Rosca** Thread Ø **D** mm.			**Paso** Pictch **P** mm.	**Ø Flancos nominal** Basic pitchØ mm.
Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3		
M1*	M1,1*		0,25	0,838	M8		M7	1	6,350	M36	M39		4	33,402
			0,25	0,938				1,25	7,188				4	36,402
M1,2*			0,25	1,038			M9	1,25	8,188	M42			4,5	39,077
	M1,4*		0,3	1,205	M10			1,5	9,026		M45		4,5	42,077
M1,6			0,35	1,373			M11	1,5	0,026	M48			5	44,752
	M1,8		0,35	1,573	M12			1,75	10,863		M52		5	48,752
M2			0,4	1,740		M14		2	12,701	M56			5,5	52,428
	M2,2		0,45	1,908	M16			2	14,701		M60		5,5	56,428
M2,5			0,45	2,208		M18		2,5	16,376	M64			6	60,103
M3			0,5	2,675	M20			2,5	18,376		M68		6	64,103
	M3,5		0,6	3,110		M22		2,5	20,376					
M4			0,7	3,545	M24			3	22,051					
	M4,5		0,75	4,013		M27		3	25,051					
M5			0,8	4,480	M30			3,5	27,727					
M6			1	5,350		M33		3,5	30,727					

MF

Ø Rosca Thread Ø D mm.			Paso Pictch P mm.	Ø Flancos nominal Basic pitchØ mm.	Ø Rosca Thread Ø D mm.			Paso Pictch P mm.	Ø Flancos nominal Basic pitchØ mm.	Ø Rosca Thread Ø D mm.			Paso Pictch P mm.	Ø Flancos nominal Basic pitchØ mm.
Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3		
M1*			0,2	0,870			M28	2	26,701			M62	3	60,051
	M1,1*		0,2	0,970	M30			1	29,350			M62	4	59,402
M1,2*			0,2	1,070	M30			1,5	29,026	M64			1,5	63,026
	M1,4*		0,2	1,270	M30			2	28,701	M64			2	62,701
M1,6			0,2	1,470	M30			3	28,051	M64			3	62,051
	M1,8		0,2	1,670			M32	1,5	31,026	M64			4	61,402
M2			0,25	1,838			M32	2	30,701			M65	1,5	64,026
	M2,2		0,25	2,038		M33		1,5	32,026			M65	2	63,701
M2,5			0,35	2,273		M33		2	31,701			M65	3	63,051
M3			0,35	2,773		M33		3	31,051			M65	4	62,402
	M3,5		0,35	3,237			M35	1,5	34,026		M68		1,5	67,026
M4			0,5	3,675	M36			1,5	35,026		M68		2	66,701
	M4,5		0,5	4,175	M36			2	34,701		M68		2	66,051
M5			0,5	4,675	M36			3	34,051		M68		3	65,402
		M5,5	0,5	5,175			M38	1,5	37,026			M70	4	69,026
M6			0,5	5,675		M39		1,5	38,026			M70	2	68,701
M6			0,75	5,513		M39		2	37,701			M70	3	68,051
		M7	0,75	6,513		M39		3	37,051			M70	4	67,402
M8			0,5	7,675			M40	1,5	39,026			M70	6	66,103
M8			0,75	7,531			M40	2	38,701	M72			1,5	71,026
M8			1	7,350			M40	3	38,051	M72			2	70,701
		M9	1	8,350	M42			1,5	41,026	M72			3	70,051
M10			0,75	9,513	M42			2	40,701	M72			4	69,402
M10			1	9,350	M42			3	40,051	M72			6	68,103
M10			1,25	3,188	M42			4	39,402			M75	1,5	74,026
		M11	1	10,350		M45		1,5	44,026			M75	2	73,701
M12			1	11,350		M45		2	43,701			M75	3	73,051
M12			1,25	11,188		M45		3	43,051			M75	4	72,402
M12			1,5	11,026		M45		4	42,402		M76		1,5	75,026
	M14		1	13,350	M48			1,5	47,026		M76		2	74,701
	M14		1,25	13,188	M48			2	46,701		M76		3	74,051
	M14		1,5	13,026	M48			3	76,051		M76		4	73,402
		M15	1	14,350	M48			4	45,402		M76		6	72,103
		M15	1,5	14,026			M50	1,5	49,026	M80			1,5	79,026
M16			1	15,350			M50	2	48,701	M80			2	78,701
M16			1,5	15,026			M50	3	48,051	M80			3	78,051
		M17	1	16,350		M52		1,5	51,026	M80			4	77,402
		M17	1.5	16,026		M52		2	50,701	M80			6	76,103
	M18		1	17,350		M52		3	50,051		M85		2	83,701
	M18		1,5	17,026		M52		4	79,402		M85		3	83,051
	M18		2	16,701			M55	1,5	54,026		M85		4	82,402
M20			1	19,350			M55	2	53,701		M85		6	81,103
M20			1,5	19,026			M55	3	53,051	M90			2	88,701
M20			2	18,701			M55	4	52,402	M90			3	88,051
	M22		1	21,350	M56			1,5	55,026	M90			4	87,402
	M22		1,5	21,026	M56			2	54,701	M90			6	86,103
	M22		2	20,701	M56			3	54,051		M95		2	93,701
M24			1	23,350	M56			4	53,402		M95		3	93,051
M24			1,5	23,026			M58	1,5	57,026		M95		4	92,402
M24			2	22,701			M58	2	56,701		M95		6	91,103
		M25	1	24,350			M58	3	56,051	M100			2	98,701
		M25	1,5	24,026			M58	4	55,402	M100			3	98,051
		M25	2	23,701		M60		1,5	59,026	M100			4	97,402
	M27		1	26,350		M60		2	58,701	M100			6	96,103
	M27		1,5	26,026		M60		3	58,051		M105		2	103,701
	M27		2	25,701		M60		4	57,402		M105		3	103,051
		M28	1	27,350			M62	1,5	61,026		M105		4	102,402
		M28	1,5	27,026			M62	2	60,701		M105		6	101,103

Tolerancia del diámetro de flancos para roscas Americanas.
Tolerance zones of the pitch diameter for Unified threads.

Amplitud de campo de tolerancia /Tolerance zones of the pitch diameter /Largeur du champ de tolérance /Toleranzfeldbreite



Rosca interior /Internal threads /Filetage intérieur /Innengewinde

- **Tolerancia de diámetro en los flancos de la rosca interior según ASME B1.1**
  Pitch diameter tolerance of the internal thread acc. ASME B1.1
  Tolérance de diamètre sur les flancs du filetage intérieur selon ASME B1.1
  Durchmessertoleranz an den Flanken des Innengewindes nach ASME B1.1

- **Tolerancia de diámetro en los flancos del macho con sobre-medida según norma HEPYC.**
  Pitch diameter tolerance of the tap according to HEPYC standards.
  Tolérance de diamètre sur les flancs du taraud avec surdimensionnement selon la norme HEPYC/ Durchmessertoleranz an den Flanken des Gewindebohrers mit Übermaß gemäß HEPYC-Norm

- **Tolerancia de diámetro en los flancos del calibre tampón de rosca no pasa según DIN ISO 1502**
  Pitch diameter tolerance of the no-go thread plug gauge acc. DIN ISO 1502
  La tolérance de diamètre sur les flancs du calibre tampon de filetage ne passe pas selon DIN ISO 1502 / Durchmessertoleranz an den Flanken des Gewindelehrdorns entspricht nicht der DIN ISO 1502

- **Tolerancia de diámetro en los flancos del calibre tampón de rosca pasa según DIN ISO 1502**
  Pitch diameter tolerance of the go thread plug gauge acc. DIN ISO 1502.
  La tolérance de diamètre sur les flancs du calibre tampon de filetage est conforme à la norme DIN ISO 1502 / Durchmessertoleranz an den Flanken des Gewindelehrdorns entspricht der DIN ISO 1502

Rosca exterior /External thread /Filetage externe /Außengewinde

- **Tolerancia de diámetro en los flancos de la rosca exterior según ASME B1.1**
  Pitch diameter tolerance of the external thread acc. ASME B1.1 /
  Tolérance de diamètre sur les flancs du filetage extérieur selon ASME B1.1/ Durchmessertoleranz an den Flanken des Außengewindes nach ASME B1.1

- **Tolerancia de diámetro en los flancos del cojinete según norma HEPYC** Pitch diameter tolerance of the die according to HEPYC standards. / Tolérance de diamètre sur les flancs de roulement selon la norme HEPYC/ Durchmessertoleranz an den Flanken der Schneidbacken gemäß HEPYC-Norm

- **Tolerancia de diámetro en los flancos del calibre anillo de rosca no pasa según ANSI/ASME B1.2**
  Pitch diameter tolerance of the no-go thread ring gauge acc. ANSI/ASME B1.2 / La tolérance de diamètre sur les flancs de la jauge à bague filetée ne passe pas selon ANSI / ASME B1.2 / Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht nicht der ANSI/ASME B1.2

- **Tolerancia de diámetro en los flancos del anillo calibre de rosca pasa según ANSI/ASME B1.2**
  Pitch diameter tolerance of the go thread ring gauge acc. ANSI/ASME B1.2 / Tolérance de diamètre sur les flancs de la bague La jauge de filetage passe selon ANSI / ASME B1.2 / Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht der ANSI/ASME B1.2

Clases de tolerancias para el cálculo de roscas Americanas
Tolerances to calculate Unified and american threads / Classes de tolérance pour le calcul des filetages Américains / Toleranzklassen zur Berechnung von amerikanischen Gewinden

Tolerancia de machos recomendados para clase 2, 3, 2B y 3B, UNC, UNF
Recomended tap for class of thread 2, 3, 2B y 3B, UNC, UNF
Tolérance des tarauds recommandée pour les classes 2, 3, 2B et 3B, UNC, UNF
Empfohlene Gewindetoleranzen für die Klassen 2, 3, 2B und 3B, UNC, UNF

Ø Rosca Thread Ø D inch.	**Paso** / Pictch tpi.		**Clase** Class 2	**Clase** Class 3	**Clase normal** Normal Class 2B	**Clase** Class 3B
	NC UNC	NF UNF				
N°0	..	80	GH1	GH1	GH2	GH1
N°1 N°1	64 ..	.. 72	GH1 GH1	GH1 GH1	GH2 GH2	GH1 GH1
N°2 N°2	56 ..	.. 64	GH1 GH1	GH1 GH1	GH2 GH2	GH1 GH1
N°3 N°3	48 ..	.. 56	GH1 GH1	GH1 GH1	GH2 GH2	GH1 GH1
N°4 N°4	40 ..	.. 48	GH2 GH1	GH1 GH1	GH2 GH2	GH2 GH1
N°5 N°5	40 ..	.. 44	GH2 GH1	GH1 GH1	GH2 GH2	GH2 GH2
N°6 N°6	32 ..	.. 40	GH2 GH2	GH1 GH1	GH3 GH2	GH2 GH2
N°8 N°8	32 ..	.. 36	GH2 GH2	GH1 GH1	GH3 GH2	GH2 GH2
N°10 N°10	24 ..	.. 32	GH3 GH2	GH1 GH1	GH3 GH3	GH3 GH2
N°12 N°12	24 ..	.. 28	GH3 GH3	GH1 GH1	GH3 GH3	GH3 GH3
1/4 1/4	20 ..	.. 28	GH3 GH3	GH2 GH1	GH5 GH4	GH3 GH3
5/16 5/16	18 ..	.. 24	GH3 GH3	GH2 GH1	GH5 GH4	GH3 GH3
3/8 3/8	16 ..	.. 24	GH3 GH3	GH2 GH1	GH5 GH4	GH3 GH3
7/16 7/16	14 ..	.. 20	GH5 GH3	GH3 GH1	GH5 GH5	GH3 GH3
1/2 1/2	13 ..	.. 20	GH5 GH3	GH3 GH1	GH5 GH5	GH3 GH3
9/16 9/16	12 ..	.. 18	GH5 GH3	GH3 GH2	GH5 GH5	GH3 GH3
5/8 5/8	11 ..	.. 18	GH5 GH3	GH3 GH2	GH5 GH5	GH3 GH3
3/4 3/4	10 ..	.. 16	GH5 GH3	GH3 GH2	GH5 GH5	GH5 GH3
7/8 7/8	9 ..	.. 14	GH6 GH4	GH4 GH2	GH6 GH6	GH4 GH4
1" 1" 1"	8	.. 12 ..	GH6 GH4 GH4	GH4 GH2 GH2	GH6 GH6 GH6	GH4 GH4 GH4
1" 1/8 1" 1/8	7 ..	.. 12	GH8 GH4	GH4 GH4	GH8 GH6	GH4 GH4
1" 1/4 1" 1/4	7 ..	.. 12	GH8 GH4	GH4 GH4	GH8 GH6	GH4 GH4
1" 3/8 1" 3/8	6 ..	.. 12	GH8 GH4	GH4 GH4	GH8 GH6	GH4 GH4
1" 1/2 1" 1/2	6 ..	.. 12	GH8 GH4	GH4 GH4	GH8 GH6	GH4 GH4

Fórmula para el cálculo de medidas / Size formula calculation:
Tolerancias Métricas / Metric tolerances

Ø flancos/pitch max.= Ø flancos nominal / Basic pitch Ø + (n°GH x 0,0127) (mm.)
Ø flancos/pitch min.= Ø flancos /pitch max- 0,0127 (mm.) Ø + Ei (mm.)

Tolerancia del diámetro de flancos de los machos de roscar /Tolerances of thread tap pitch diameter / Tolérance du diamètre des flancs des tarauds / Toleranz des Flankendurchmessers des Gewindebohrers

UNC

Ø Rosca Thread Ø **D** inch.	**Paso** Pictch **P** tpi	**Ø Flancos nominal** Basic pitchØ mm.	**Ø Rosca** Thread Ø **D** inch.	**Paso** Pictch **P** tpi	**Ø Flancos nominal** Basic pitchØ mm.
Nº 1	64	1,598	1	8	23,338
Nº 2	56	1,890	1 1/8	7	26,218
Nº 3	48	2,172	1 1/4	7	29,393
Nº 4	40	2,433	1 3/8	6	32,174
Nº 5	40	2,764	1 1/2	6	35,349
Nº 6	32	2,990	1 3/4	5	41,151
Nº 8	32	3,650	2	4,5	47,135
Nº 10	24	4,138	2 1/4	4,5	53,485
Nº 12	24	4,798	2 1/2	4	59,375
1/4	20	5,524	2 3/4	4	65,725
5/16	18	7,021	3	4	72,075
3/8	16	8,494	3 1/4	4	78,425
7/16	14	9,934	3 1/2	4	84,775
1/2	13	11,430	3 3/4	4	91,125
9/16	12	12,913	4	4	97,475
5/8	11	14,376			
3/4	10	17,399			
7/8	9	20,391			

UNF

Ø Rosca Thread Ø **D** inch.	**Paso** Pictch **P** tpi	**Ø Flancos nominal** Basic pitchØ mm.	**Ø Rosca** Thread Ø **D** inch.	**Paso** Pictch **P** tpi	**Ø Flancos nominal** Basic pitchØ mm.
Nº 0	80	1,318	3/8	24	8,837
Nº 1	72	1,626	7/16	20	10,287
Nº 2	64	1,928	1/2	20	11,874
Nº 3	56	2,220	9/16	18	13,371
Nº 4	48	2,502	5/8	18	14,958
Nº 5	44	2,799	3/4	16	18,019
Nº 6	40	3,094	7/8	14	21,046
Nº 8	36	3,708	1	12	24,026
Nº 10	32	4,310	1 1/8	12	27,201
Nº 12	28	4,897	1 1/4	12	30,376
1/4	28	5,761	1 3/8	12	33,551
5/16	24	7,249	1 1/2	12	36,726

TABLAS DE ROSCAS Y PASOS
GRILLES DES FILETAGES ET DES PAS / TABLE OF THREADS AND PITCHES/ TABELLE DER GEWINDE UND STEIGUNGEN

> **Roscas más usuales en pulgadas.**
> **Filetages les plus courants en pouces.**
> **Most common threads in inches.**
> **Gängigste Gewinde in Zoll.**

Ø	W 55º	BSF 55º	GAS 55º	BSB BRASS 55º	UNC 60º	UNF 60º	UNEF NEF 60º	NPS NPT API 60º	UN 60º						UNS 60º					
Nº 0	-	-	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 1	-	-	-	-	64	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 2	-	-	-	-	56	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 3	-	-	-	-	48	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 4	-	-	-	-	40	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 5	-	-	-	-	40	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 6	-	-	-	-	32	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 8	-	-	-	-	32	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 10	-	-	-	-	24	32	-	-	-	-	-	-	-	-	28	36	40	48	56	-
Nº 12	-	-	-	-	24	28	32	-	-	-	-	-	-	-	36	40	48	56	-	-
1/16	60	-	-	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-	-
3/32	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/8	40	-	28	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-	-
5/32	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/16	24	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/32	24	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/4	20	26	19	26	20	28	32	18	-	-	-	-	-	-	24	27	36	40	48	56
9/32	20	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/16	18	22	-	26	18	24	32	-	20	28	-	-	-	-	27	36	40	48	-	-
3/8	16	20	19	26	16	24	32	18	20	28	-	-	-	-	18	27	36	40	-	-
7/16	14	18	-	26	14	20	28	-	16	32	-	-	-	-	18	24	27	-	-	-
1/2	12	16	14	26	13	20	28	14	16	32	-	-	-	-	12	14	18	24	27	-
9/16	12	16	-	26	12	18	24	-	16	20	28	32	-	-	14	27	-	-	-	-
5/8	11	14	14	26	11	18	24	14	12	16	20	28	32	-	14	27	-	-	-	-
11/16	11	14	-	-	-	-	24	-	12	16	20	28	32	-	-	-	-	-	-	-
3/4	10	12	14	26	10	16	20	14	12	28	32	-	-	-	14	18	24	27	-	-
13/16	10	12	-	-	-	-	20	-	12	16	28	32	-	-	-	-	-	-	-	-
7/8	9	11	14	26	9	14	20	-	12	16	28	32	-	-	10	18	24	27	-	-
15/16	-	-	-	-	-	-	20	-	16	28	32	-	-	-	-	-	-	-	-	-
1"	8	10	11	26	8	12	20	11,5	16	28	16	-	28	-	10	14	18	24	27	-
1"1/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-	-
1"1/8	7	9	11	26	7	12	18	-	8	16	20	28	-	-	10	14	24	-	-	-
1"3/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-	-
1"1/4	7	9	11	26	7	12	18	11,5	8	16	20	28	-	-	10	14	24	-	-	-
1"5/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-	-
1"3/8	6	8	11	26	6	12	18	-	6	8	12	16	20	28	10	14	24	-	-	-
1"7/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-	-
1"1/2	6	8	11	26	6	12	18	11,5	6	8	16	20	-	-	10	14	24	-	-	-
1"9/16	-	-	-	-	-	-	18	-	6	8	12	16	20	-	-	-	-	-	-	-
1"5/8	5	8	11	26	-	-	18	-	6	8	12	16	20	-	10	14	24	-	-	-
1"11/16	-	-	-	-	-	-	18	-	6	8	12	16	20	-	-	-	-	-	-	-
1"3/4	5	7	11	26	5	-	-	-	6	8	12	16	20	-	10	14	24	-	-	-
1"13/16	-	-	-	-	-	-	-	-	6	8	12	16	20	-	-	-	-	-	-	-
1"7/8	4,5	-	-	26	-	-	-	-	6	8	12	16	20	-	10	14	24	-	-	-
1"15/16	-	-	-	-	-	-	-	-	6	8	12	16	20	-	-	-	-	-	-	-
2"	4,5	7	11	26	4,5	-	-	11,5	6	8	12	16	20	-	10	14	24	-	-	-

TABLAS DE ROSCAS Y PASOS
GRILLES DES FILETAGES ET DES PAS / TABLE OF THREADS AND PITCHES/
TABELLE DER GEWINDE UND STEIGUNGEN

> Equivalencias en mm de los diámetros de las siguientes roscas.
Équivalences en mm des diamètres des filetages suivants.
Equivalents in mm of the diameters of the following threads.
Äquivalenzen in mm der folgenden Gewindedurchmesser.

BSW/BSF			UNC/UNF			BSP (GAS)			NSP/NPT			PG		
3/32	=	2,381mm	5/8	=	15,875 mm	G1/8	=	9,728 mm	G1"3/8	=	44,323 mm	1/8	=	10,287 mm	PG7	=	12,50 mm
1/8	=	3,175 mm	3/4	=	19,050 mm	G1/4	=	13,157 mm	G1"1/2	=	47,803 mm	1/4	=	13,716 mm	PG9	=	15,20 mm
5/32	=	3,969 mm	7/8	=	22,225 mm	G3/8	=	16,662 mm	G1"5/8	=	51,988 mm	3/8	=	17,145 mm	PG11	=	18,60 mm
3/16	=	4,762 mm	1"	=	25,400 mm	G1/2	=	20,955 mm	G1"3/4	=	53,746 mm	1/2	=	21,336 mm	PG13,5	=	20,40 mm
7/32	=	5,556 mm	1"1/8	=	28,575 mm	G5/8	=	22,911 mm	G2"	=	59,614 mm	3/4	=	26,670 mm	PG16	=	22,50 mm
1/4	=	6,350 mm	1"1/4	=	31,750 mm	G3/4	=	26,441 mm	G2"1/4	=	65,710 mm	1"	=	33,401 mm	PG21	=	28,30 mm
9/32	=	7,144 mm	1"3/8	=	34,925 mm	G7/8	=	30,201 mm	G2"3/8	=	69,390 mm	1"1/4	=	42,164 mm	PG29	=	37,00 mm
5/16	=	7,938 mm	1"1/2	=	38,100 mm	G1"	=	33,249 mm	G2"1/2	=	75,184 mm	1"1/2	=	48,260 mm	PG36	=	47,00 mm
3/8	=	9,525 mm	1"5/8	=	41,275 mm	G1"1/8	=	37,897 mm	G2"3/4	=	81,534 mm	2"	=	60,325 mm	PG42	=	54,00 mm
7/16	=	11,112 mm	1"3/4	=	44,450 mm	G1"1/4	=	41,910 mm	G3"	=	87,844 mm	2"1/2	=	73,025 mm	PG48	=	59,30 mm
1/2	=	12,700 mm	1"7/8	=	47,625 mm							3"	=	88,900 mm			
9/16	=	14,288 mm	2"	=	50,800 mm												

> Equivalencia del paso en hilos por pulgada a mm.
Équivalence du pas en fils par pouce en mm.
Equivalents of pitch in threads per inch to mm.
Äquivalenz der Gewindesteigung pro Zoll zu mm

PASO h/1" PAS h/1" PITCH h/1"	**EQUIV. mm** ÉQUIV. mm EQUIV. mm	**PASO h/1"** PAS h/1" PITCH h/1"	**EQUIV. mm** ÉQUIV. mm EQUIV. mm	**PASO h/1"** PAS h/1" PITCH h/1"	**EQUIV. mm** ÉQUIV. mm EQUIV. mm	**PASO h/1"** PAS h/1" PITCH h/1"	**EQUIV. mm** ÉQUIV. mm EQUIV. mm	**PASO h/1"** PAS h/1" PITCH h/1"	**EQUIV. mm** ÉQUIV. mm EQUIV. mm
80	0,317	44	0,577	26	0,976	16	1,587	9	2,822
72	0,352	40	0,636	24	1,058	14	1,814	8	3,174
64	0,396	36	0,705	22	1,154	13	1,953	7	3,628
60	0,423	32	0,793	20	1,270	12	2,116	6	4,233
56	0,453	28	0,907	19	1,336	11,5	2,208	5	5,080
48	0,523	27	0,940	18	1,411	11	2,309	4,5	5,644

> Equivalencia de las roscas PG a MF.
Équivalence du pas PG à MF.
Equivalents of threads PG to MF.
Äquivalenz von Gewinden PG zu MF.

PG	MF	PG	MF
7 x 20 h.	12 x 1,50	21 x 16 h.	32 x 1,50
9 x 18 h.	16 x 1,50	29 x 16 h.	40 x 1,50
11 x 18 h.	20 x 1,50	36 x 16 h.	50 x 1,50
13,5 x 18 h.	20 x 1,50	48 x 16 h.	63 x 1,50
16 x 18 h.	25 x 1,50		

DIÁMETROS PREVIOS AL ROSCADO
DIAMÈTRES PRÉALABLES AU FILETAGE / DIAMETERS BEFORE THREAD/
DURCHMESSER VOR DEM GEWINDESCHNEIDEN

M				
d1 x p (mm)				⌀a
M	1	x	0,25	0,75
M	1,1	x	0,25	0,85
M	1,2	x	0,25	0,95
M	1,4	x	0,3	1,10
M	1,6	x	0,35	1,25
M	1,7	x	0,35	1,30
M	1,8	x	0,35	1,45
M	2	x	0,4	1,60
M	2,2	x	0,45	1,75
M	2,3	x	0,4	1,90
M	2,5	x	0,45	2,05
M	2,6	x	0,45	2,10
M	3	x	0,5	2,50
M	3,5	x	0,6	2,90
M	4	x	0,7	3,30
M	4,5	x	0,75	3,70
M	5	x	0,8	4,20
M	6	x	1	5,00
M	7	x	1	6,00
M	8	x	1,25	6,80
M	9	x	1,25	7,80
M	10	x	1,5	8,50
M	11	x	1,5	9,50
M	12	x	1,75	10,20
M	14	x	2	12,00
M	16	x	2	14,00
M	18	x	2,5	15,50
M	20	x	2,5	17,50
M	22	x	2,5	19,50
M	24	x	3	21,00
M	27	x	3	24,00
M	30	x	3,5	26,50
M	33	x	3,5	29,50
M	36	x	4	32,00
M	39	x	4	35,00
M	42	x	4,5	37,50
M	45	x	4,5	40,50
M	48	x	5	43,00
M	52	x	5	47,00
M	56	x	5,5	50,50
M	60	x	5,5	54,50
M	64	x	6	58,00
M	68	x	6	62,00

M				
d1 x p (mm)				⌀a
M	3	x	0,6	2,40
M	3,5	x	0,75	2,75
M	4	x	0,75	3,25
M	4	x	0,8	3,20
M	5	x	0,9	4,10
M	5	x	1	4,00
M	5,5	x	0,9	4,60
M	6	x	1,25	4,75
M	8	x	1,5	6,50
M	13	x	1,75	11,25
M	15	x	2	13,00

MF				
d1 x p (mm)				⌀a
M	1	x	0,2	0,80
M	1,1	x	0,2	0,90
M	1,2	x	0,2	1,00
M	1,4	x	0,2	1,20
M	1,6	x	0,2	1,40
M	1,7	x	0,2	1,50
M	1,8	x	0,2	1,60
M	2	x	0,25	1,75
M	2,2	x	0,25	1,95
M	2,3	x	0,25	2,05
M	2,5	x	0,35	2,15
M	2,6	x	0,35	2,25
M	3	x	0,35	2,65
M	3,5	x	0,35	3,15
M	4	x	0,35	3,65
M	4	x	0,5	3,50
M	4,5	x	0,5	4,00
M	5	x	0,5	4,50
M	5,5	x	0,5	5,00
M	6	x	0,5	5,50
M	6	x	0,75	5,20
M	7	x	0,5	6,50
M	7	x	0,75	6,20
M	8	x	0,5	7,50
M	8	x	0,75	7,20
M	8	x	1	7,00
M	9	x	0,75	8,20
M	9	x	1	8,00
M	10	x	0,5	9,50
M	10	x	0,75	9,20
M	10	x	1	9,00
M	10	x	1,25	8,80
M	11	x	0,75	10,20
M	11	x	1	10,00
M	11	x	1,25	9,75
M	12	x	0,75	11,25
M	12	x	1	11,00
M	12	x	1,25	10,80
M	12	x	1,5	10,50
M	13	x	0,75	12,25
M	13	x	1	12,00
M	13	x	1,25	11,75
M	13	x	1,5	11,50
M	14	x	0,75	13,25
M	14	x	1	13,00
M	14	x	1,25	12,80
M	14	x	1,5	12,50
M	15	x	1	14,00
M	15	x	1,25	13,75
M	15	x	1,5	13,50
M	16	x	1	15,00
M	16	x	1,25	14,75
M	16	x	1,5	14,50
M	17	x	1	16,00
M	17	x	1,25	15,75
M	17	x	1,5	15,50
M	18	x	1	17,00
M	18	x	1,25	16,75
M	18	x	1,5	16,50

MF				
d1 x p (mm)				⌀a
M	18	x	2	16,00
M	19	x	1	18,00
M	19	x	1,25	17,75
M	19	x	1,5	17,50
M	20	x	1	19,00
M	20	x	1,25	18,75
M	20	x	1,5	18,50
M	20	x	2	18,00
M	21	x	1	20,00
M	21	x	1,25	19,75
M	21	x	1,5	19,50
M	22	x	1	21,00
M	22	x	1,25	20,75
M	22	x	1,5	20,50
M	22	x	2	20,00
M	23	x	1	22,00
M	23	x	1,5	21,50
M	24	x	1	23,00
M	24	x	1,25	22,75
M	24	x	1,5	22,50
M	24	x	2	22,00
M	25	x	1	24,00
M	25	x	1,25	23,75
M	25	x	1,5	23,50
M	25	x	2	23,00
M	26	x	1	25,00
M	26	x	1,5	24,50
M	26	x	2	24,00
M	27	x	1	26,00
M	27	x	1,5	25,50
M	27	x	2	25,00
M	28	x	1	27,00
M	28	x	1,5	26,50
M	28	x	2	26,00
M	30	x	1	29,00
M	30	x	1,5	28,50
M	30	x	2	28,00
M	30	x	3	27,00
M	32	x	1	31,00
M	32	x	1,5	30,50
M	32	x	2	30,00
M	33	x	1	32,00
M	33	x	1,5	31,50
M	33	x	2	31,00
M	33	x	3	30,00
M	34	x	1,5	32,50
M	34	x	2	32,00
M	35	x	1,5	33,50
M	36	x	1,5	34,50
M	36	x	2	34,00
M	36	x	3	33,00
M	38	x	1,5	36,50
M	38	x	2	36,00
M	39	x	1,5	37,50
M	39	x	2	37,00
M	39	x	3	36,00
M	40	x	1,5	38,50
M	40	x	2	38,00
M	40	x	3	37,00

MF				
d1 x p (mm)				⌀a
M	42	x	1,5	40,50
M	42	x	2	40,00
M	42	x	3	39,00
M	44	x	1,5	42,50
M	45	x	1,5	43,50
M	45	x	2	43,00
M	45	x	3	42,00
M	45	x	4	41,00
M	48	x	1,5	46,50
M	48	x	2	46,00
M	48	x	3	45,00
M	48	x	4	44,00
M	50	x	1,5	48,50
M	50	x	2	48,00
M	50	x	3	47,00
M	52	x	1,5	50,50
M	52	x	2	50,00
M	52	x	3	49,00
M	52	x	4	48,00
M	56	x	1,5	54,50
M	56	x	2	54,00
M	56	x	3	53,00
M	56	x	4	52,00
M	60	x	1,5	58,50
M	60	x	2	58,00
M	60	x	3	57,00
M	60	x	4	56,00
M	63	x	1,5	61,50

BSW			
d1 (") - p (tpi)			⌀a
W	1/16	- 60	1,15
W	3/32	- 48	1,80
W	1/8	- 40	2,50
W	5/32	- 32	3,10
W	3/16	- 24	3,60
W	7/32	- 24	4,40
W	1/4	- 20	5,10
W	9/32	- 20	5,90
W	5/16	- 18	6,50
W	3/8	- 16	7,90
W	7/16	- 14	9,30
W	1/2	- 12	10,50
W	9/16	- 12	12,00
W	5/8	- 11	13,50
W	11/16	- 11	15,00
W	3/4	- 10	16,50
W	13/16	- 10	18,00
W	7/8	- 9	19,25
W	1"	- 8	22,00
W	1"1/8	- 7	24,75
W	1"1/4	- 7	27,75
W	1"3/8	- 6	30,50
W	1"1/2	- 6	33,50
W	1"5/8	- 5	35,50
W	1"3/4	- 5	39,00
W	1"7/8	- 4,5	41,50

DIÁMETROS PREVIOS AL ROSCADO
DIAMÈTRES PRÉALABLES AU FILETAGE / DIAMETERS BEFORE THREAD/
DURCHMESSER VOR DEM GEWINDESCHNEIDEN

BSW

d1 (") - p (tpi)				⌀a
W	2"	-	4,5	44,50
W	2"1/4	-	4	50,00
W	2"1/2	-	4	56,50
W	2"3/4	-	3,5	62,00
W	3"	-	3,5	68,50

UNC

d1 (") - p (tpi)				⌀a
UNC	1"3/4	-	5	39,50
UNC	2"	-	4,5	45,00
UNC	2"1/4	-	4,5	51,50
UNC	2"1/2	-	4	57,25
UNC	2"3/4	-	4	63,50
UNC	3"	-	4	70,00

UNEF

d1 (") - p (tpi)				⌀a
UNEF	1"7/16	-	18	35,10
UNEF	1"1/2	-	18	36,70
UNEF	1"9/16	-	18	38,30
UNEF	1"5/8	-	18	39,90

BSF

d1 (") - p (tpi)				⌀a
BSF	3/16	-	32	4,00
BSF	7/32	-	28	4,50
BSF	1/4	-	26	5,20
BSF	9/32	-	26	6,00
BSF	5/16	-	22	6,60
BSF	3/8	-	20	8,10
BSF	7/16	-	18	9,50
BSF	1/2	-	16	11,00
BSF	9/16	-	16	12,50
BSF	5/8	-	14	14,00
BSF	11/16	-	14	15,60
BSF	3/4	-	12	16,50
BSF	13/16	-	12	18,25
BSF	7/8	-	11	19,50
BSF	1"	-	10	22,50
BSF	1"1/8	-	9	25,50
BSF	1"1/4	-	9	28,75
BSF	1"3/8	-	8	31,50
BSF	1"1/2	-	8	34,50
BSF	1"5/8	-	8	37,50
BSF	1"3/4	-	7	40,50
BSF	2"	-	7	46,50

UNF

d1 (") - p (tpi)				⌀a
UNF	N.0	-	80	1,30
UNF	N.1	-	72	1,60
UNF	N.2	-	64	1,90
UNF	N.3	-	56	2,10
UNF	N.4	-	48	2,40
UNF	N.5	-	44	2,70
UNF	N.6	-	40	3,00
UNF	N.8	-	36	3,50
UNF	N.10	-	32	4,10
UNF	N.12	-	28	4,70
UNF	1/4	-	28	5,50
UNF	5/16	-	24	6,90
UNF	3/8	-	24	8,50
UNF	7/16	-	20	9,90
UNF	1/2	-	20	11,50
UNF	9/16	-	18	12,90
UNF	5/8	-	18	14,50
UNF	3/4	-	16	17,50
UNF	7/8	-	14	20,40
UNF	1"	-	12	23,25
UNF	1"1/8	-	12	26,50
UNF	1"1/4	-	12	29,50
UNF	1"3/8	-	12	32,75
UNF	1"1/2	-	12	36,00

G (BSP)

d1 (") - p (tpi)				⌀a
G1/16		-	28	6,80
G1/8		-	28	8,80
G1/4		-	19	11,80
G3/8		-	19	15,25
G1/2		-	14	19,00
G5/8		-	14	21,00
G3/4		-	14	24,50
G7/8		-	14	28,25
G1"		-	11	30,75
G1"1/8		-	11	35,30
G1"1/4		-	11	39,25
G1"3/8		-	11	41,90
G1"1/2		-	11	45,25
G1"3/4		-	11	51,30
G2"		-	11	57,00
G2"1/4		-	11	63,10
G2"1/2		-	11	72,60
G2"3/4		-	11	79,10
G3"		-	11	85,50
G3"1/4		-	11	91,50
G3"1/2		-	11	97,70
G3"3/4		-	11	104,00
G4"		-	11	110,50

UNC

d1 (") - p (tpi)				⌀a
UNC	N.1	-	64	1,50
UNC	N.2	-	56	1,80
UNC	N.3	-	48	2,10
UNC	N.4	-	40	2,30
UNC	N.5	-	40	2,60
UNC	N.6	-	32	2,85
UNC	N.8	-	32	3,50
UNC	N.10	-	24	3,90
UNC	N.12	-	24	4,50
UNC	1/4	-	20	5,20
UNC	5/16	-	18	6,60
UNC	3/8	-	16	8,00
UNC	7/16	-	14	9,40
UNC	1/2	-	13	10,75
UNC	9/16	-	12	12,20
UNC	5/8	-	11	13,50
UNC	3/4	-	10	16,50
UNC	7/8	-	9	19,50
UNC	1"	-	8	22,25
UNC	1"1/8	-	7	25,00
UNC	1"1/4	-	7	28,25
UNC	1"3/8	-	6	30,75
UNC	1"1/2	-	6	34,00

UNEF

d1 (") - p (tpi)				⌀a
UNEF	N.12	-	32	4,70
UNEF	1/4	-	32	5,55
UNEF	5/16	-	32	7,15
UNEF	3/8	-	32	8,70
UNEF	7/16	-	28	10,20
UNEF	1/2	-	28	11,80
UNEF	9/16	-	24	13,20
UNEF	5/8	-	24	14,80
UNEF	11/16	-	24	16,40
UNEF	3/4	-	20	17,80
UNEF	13/16	-	20	19,40
UNEF	7/8	-	20	20,95
UNEF	15/16	-	20	22,50
UNEF	1"	-	20	24,10
UNEF	1"1/16	-	18	25,60
UNEF	1"1/8	-	18	27,15
UNEF	1"3/16	-	18	28,75
UNEF	1"1/4	-	18	30,35
UNEF	1"5/16	-	18	31,90
UNEF	1"3/8	-	18	33,60

BA

d1 (") - p (tpi)				
BA 7	2,5	-	0,48	2,00
BA 8	2,2	-	0,43	1,80
BA 9	1,9	-	0,39	1,50
BA 10	1,7	-	0,35	1,30
BA 11	1,5	-	0,31	1,20
BA 12	1,3	-	0,28	1,00
BA 13	1,2	-	0,25	0,95
BA 14	1	-	0,23	0,75

PG

d1 (") - p (tpi)				
Pg 7	12,5	-	20	11,40
Pg 9	15,2	-	18	14,00
Pg 11	18,6	-	18	17,25
Pg 13,5	20,4	-	18	19,00
Pg 16	22,5	-	18	21,25
Pg 21	28,3	-	16	26,75
Pg 29	37,0	-	16	35,50
Pg 36	47,0	-	16	45,50
Pg 42	54,0	-	16	52,50
Pg 48	59,3	-	16	58,00

DIÁMETROS PREVIOS AL ROSCADO
DIAMÈTRES PRÉALABLES AU FILETAGE / DIAMETERS BEFORE THREAD/
DURCHMESSER VOR DEM GEWINDESCHNEIDEN

BA

d1 (") - p (tpi)	⌀a
Rp1/16 - 28	6,60
Rp1/8 - 28	8,60
Rp1/4 - 19	11,50
Rp3/8 - 19	15,00
Rp1/2 - 14	18,50
Rp3/4 - 14	24,00
Rp1" - 11	30,25
Rp1"1/4 - 11	39,00
Rp1"1/2 - 11	45,00
Rp2" - 11	56,50
Rp2"1/2 - 11	72,25
Rp3" - 11	85,00

NPSM

d1 (") - p (tpi)	⌀a
NPSM 1/8 - 27	9,10
NPSM 1/4 - 18	12,00
NPSM 3/8 - 18	15,50
NPSM 1/2 - 14	19,00
NPSM 3/4 - 14	24,50
NPSM 1" - 11,5	30,50
NPSM 1"1/4 - 11,5	39,25
NPSM 1"1/2 - 11,5	45,50
NPSM 2" - 11,5	57,50
NPSM 2"1/2 - 8	69,00
NPSM 3" - 8	85,00

M (Laminación Laminage/Lamination)

d1 - p (mm)	○a ± 0,02
M 3 x 0,5	2,76
M 4 x 0,7	3,67
M 5 x 0,8	4,62
M 6 x 1	5,52
M 8 x 1,25	7,40
M 10 x 1,5	9,28
M 12 x 1,75	11,16
M 14 x 2	13,04
M 16 x 2	15,03

Rp

d1 (") - p (tpi)	⌀a
BA 0 6 - 1	5,10
BA 1 5,3 - 0,9	4,50
BA 2 4,7 - 0,81	4,00
BA 3 4,1 - 0,73	3,40
BA 4 3,6 - 0,66	3,00
BA 5 3,2 - 0,59	2,60
BA 6 2,8 - 0,53	2,30

NPT

d1 (") - p (tpi)	L min	⌀a	⌀b	⌀c
NPT 1/16 - 27	12,00	6,20	6,00	6,39
NPT 1/8 - 27	12,00	8,50	8,30	8,74
NPT 1/4 - 18	17,50	11,00	10,70	11,36
NPT 3/8 - 18	17,60	14,50	14,20	14,80
NPT 1/2 - 14	22,80	17,80	17,40	18,32
NPT 3/4 - 14	23,00	23,00	22,50	23,67
NPT 1" - 11,5	27,40	29,00	28,50	29,69
NPT 1"1/4 - 11,5	28,00	37,50	37,00	38,45
NPT 1"1/2 - 11,5	28,40	44,00	43,50	44,52
NPT 2" - 11,5	28,00	56,00	55,50	56,56
NPT 2"1/2 - 8	40,80	66,50	66,00	67,62
NPT 3" - 8	43,00	82,50	82,00	83,53

NPTF

d1 (") - p (tpi)	L min	⌀a	⌀b	⌀c
NPTF 1/16 - 27	12,00	6,20	6,00	6,41
NPTF 1/8 - 27	12,00	8,50	8,30	8,76
NPTF 1/4 - 18	17,50	11,00	10,70	11,40
NPTF 3/8 - 18	17,60	14,50	14,20	14,84
NPTF 1/2 - 14	22,80	17,80	17,40	18,33
NPTF 3/4 - 14	23,00	23,00	22,50	23,68
NPTF 1" - 11,5	27,40	29,00	28,50	29,72
NPTF 1"1/4 - 11,5	28,00	37,50	37,00	38,48
NPTF 1"1/2 - 11,5	28,40	44,00	43,50	44,55
NPTF 2" - 11,5	28,00	56,00	55,50	56,59
NPTF 2"1/2 - 8	40,80	66,50	66,00	67,67
NPTF 3" - 8	43,00	82,50	82,00	83,58

RC

d1 (") - p (tpi)	L min	⌀a	⌀b	⌀c
Rc 1/16 - 28	10,10	6,30	6,00	6,50
Rc 1/8 - 28	10,10	8,30	8,00	8,50
Rc 1/4 - 19	15,00	11,00	10,70	11,35
Rc 3/8 - 19	15,40	14,50	14,15	14,85
Rc 1/2 - 14	20,50	18,10	17,60	18,50
Rc 3/4 - 14	21,80	23,50	23,00	24,00
Rc 1" - 11	26,00	29,60	29,00	30,20
Rc 1"1/4 - 11	28,30	38,10	37,50	38,80
Rc 1"1/2 - 11	28,30	44,00	43,35	44,70
Rc 2" - 11	32,70	55,60	54,90	56,50

RC

d1 (") - p (tpi)	⌀a
UN 1"1/8 - 8	25,40
UN 1"1/4 - 8	28,50
UN 1"3/8 - 8	31,75
UN 1"1/2 - 8	35,00
UN 1"5/8 - 8	38,10
UN 1"3/4 - 8	41,25
UN 2" - 8	47,63
UN 2"1/4 - 8	54,00
UN 2"1/2 - 8	60,35
UN 2"3/4 8	66,70
UN 3" - 8	73,05

EJES PREVIOS AL ROSCADO
AXES PRÉALABLES AU FILETAGE / SHAFTS BEFORE THREAD / ACHSEN VOR DEM GEWINDESCHNEIDEN

M							
d1 x p (mm)						⌀a	
M	1	x	0,25			0,97	
M	1,1	x	0,25			1,07	
M	1,2	x	0,25			1,17	
M	1,4	x	0,3			1,36	
M	1,6	x	0,35			1,54	
M	1,7	x	0,35			1,64	
M	1,8	x	0,35			1,74	
M	2	x	0,4			1,93	
M	2,2	x	0,45			2,13	
M	2,3	x	0,4			2,23	
M	2,5	x	0,45			2,43	
M	2,6	x	0,45			2,53	
M	3	x	0,5			2,92	
M	3,5	x	0,6			3,41	
M	4	x	0,7			3,91	
M	4,5	x	0,75			4,41	
M	5	x	0,8			4,90	
M	6	x	1			5,88	
M	7	x	1			6,88	
M	8	x	1,25			7,87	
M	9	x	1,25			8,87	
M	10	x	1,5			9,85	
M	11	x	1,5			10,85	
M	12	x	1,75			11,83	
M	14	x	2			13,82	
M	16	x	2			15,82	
M	18	x	2,5			17,79	
M	20	x	2,5			19,79	
M	22	x	2,5			21,79	
M	24	x	3			23,77	
M	27	x	3			26,77	
M	30	x	3,5			29,73	
M	33	x	3,5			32,73	
M	36	x	4			35,70	
M	39	x	4			38,70	
M	42	x	4,5			41,69	
M	45	x	4,5			44,69	
M	48	x	5			47,66	
M	52	x	5			51,66	
M	56	x	5,5			55,65	
M	60	x	5,5			59,65	
M	64	x	6			63,62	
M	68	x	6			67,62	

M							
d1 x p (mm)						⌀a	
M	3	x	0,6			2,40	
M	3,5	x	0,75			2,75	
M	4	x	0,75			3,25	
M	4	x	0,8			3,20	
M	5	x	0,9			4,10	
M	5	x	1			4,00	
M	5,5	x	0,9			4,60	
M	6	x	1,25			4,75	
M	8	x	1,5			6,50	
M	13	x	1,75			11,25	
M	15	x	2			13,00	

MF							
d1 x p (mm)						⌀a	
M	2	x	0,25			1,97	
M	2,2	x	0,25			2,17	
M	2,3	x	0,25			2,27	
M	2,5	x	0,35			2,44	
M	2,6	x	0,35			2,54	
M	3	x	0,35			2,94	
M	3,5	x	0,35			3,44	
M	4	x	0,35			3,94	
M	4	x	0,5			3,93	
M	4,5	x	0,5			4,42	
M	5	x	0,5			4,93	
M	5,5	x	0,5			5,42	
M	6	x	0,5			5,93	
M	6	x	0,75			5,90	
M	7	x	0,5			6,92	
M	7	x	0,75			6,90	
M	8	x	0,5			7,93	
M	8	x	0,75			7,90	
M	8	x	1			7,88	
M	9	x	0,75			8,90	
M	9	x	1			8,88	
M	10	x	0,5			9,93	
M	10	x	0,75			9,90	
M	10	x	1			9,88	
M	10	x	1,25			9,86	
M	11	x	0,75			10,90	
M	11	x	1			10,88	
M	11	x	1,25			10,87	
M	12	x	0,75			11,90	
M	12	x	1			11,88	
M	12	x	1,25			11,86	
M	12	x	1,5			11,85	
M	13	x	0,75			12,90	
M	13	x	1			12,88	
M	13	x	1,25			12,87	
M	13	x	1,5			12,85	
M	14	x	0,75			13,90	
M	14	x	1			13,88	
M	14	x	1,25			13,86	
M	14	x	1,5			13,85	
M	15	x	1			14,88	
M	15	x	1,25			14,87	
M	15	x	1,5			14,85	
M	16	x	1			15,88	
M	16	x	1,25			15,87	
M	16	x	1,5			15,85	
M	17	x	1,25			16,87	
M	17	x	1,5			16,85	
M	18	x	1			17,88	
M	18	x	1,25			17,85	
M	18	x	1,5			17,85	
M	18	x	2			17,82	
M	19	x	1			18,88	
M	19	x	1,25			18,87	
M	19	x	1,5			18,85	
M	20	x	1			19,88	
M	20	x	1,25			19,87	
M	20	x	1,5			19,85	
M	20	x	2			19,82	

MF							
d1 x p (mm)						⌀a	
M	21	x	1			20,88	
M	21	x	1,25			20,87	
M	21	x	1,5			20,85	
M	22	x	1			21,88	
M	22	x	1,25			21,87	
M	22	x	1,5			21,85	
M	22	x	2			21,82	
M	23	x	1			22,88	
M	23	x	1,5			22,85	
M	24	x	1			23,88	
M	24	x	1,25			23,87	
M	24	x	1,5			23,85	
M	24	x	2			23,82	
M	25	x	1			24,88	
M	25	x	1,25			24,87	
M	25	x	1,5			24,85	
M	25	x	2			24,82	
M	26	x	1			25,88	
M	26	x	1,5			25,85	
M	26	x	2			25,82	
M	27	x	1			26,88	
M	27	x	1,5			26,85	
M	27	x	2			26,82	
M	28	x	1			27,88	
M	28	x	1,5			27,85	
M	28	x	2			27,82	
M	30	x	1			29,88	
M	30	x	1,5			29,85	
M	30	x	2			29,82	
M	30	x	3			29,76	
M	32	x	1			31,88	
M	32	x	1,5			31,85	
M	32	x	2			31,82	
M	33	x	1			32,88	
M	33	x	1,5			32,85	
M	33	x	2			32,82	
M	33	x	3			32,76	
M	34	x	1,5			33,85	
M	34	x	2			33,82	
M	35	x	1,5			34,85	
M	36	x	1,5			35,85	
M	36	x	2			35,82	
M	36	x	3			35,76	
M	38	x	1,5			37,85	
M	38	x	2			37,82	
M	39	x	1,5			38,85	
M	39	x	2			38,82	
M	39	x	3			38,76	
M	40	x	1,5			39,85	
M	40	x	2			39,82	
M	40	x	3			39,76	
M	42	x	1,5			41,85	
M	42	x	2			41,82	
M	42	x	3			41,76	
M	44	x	1,5			43,75	
M	45	x	1,5			44,85	
M	45	x	2			44,82	
M	45	x	3			44,76	
M	45	x	4			44,70	

MF							
d1 x p (mm)						⌀a	
M	48	x	1,5			47,85	
M	48	x	2			47,82	
M	48	x	3			47,76	
M	48	x	4			47,70	
M	50	x	1,5			49,85	
M	50	x	2			49,82	
M	50	x	3			49,76	
M	52	x	1,5			51,85	
M	52	x	2			51,82	
M	52	x	3			51,76	
M	52	x	4			51,70	
M	56	x	1,5			55,85	
M	56	x	2			55,82	
M	56	x	3			55,76	
M	56	x	4			55,70	
M	60	x	1,5			59,75	
M	60	x	2			59,82	
M	60	x	3			59,76	
M	60	x	4			59,70	
M	63	x	1,5			62,85	

BSW							
d1 (") - p (tpi)						⌀a	
W	1/16	-	60			1,49	
W	3/32	-	48			2,28	
W	1/8	-	40			3,06	
W	5/32	-	32			3,85	
W	3/16	-	24			4,63	
W	7/32	-	24			5,42	
W	1/4	-	20			6,18	
W	5/16	-	18			7,78	
W	3/8	-	16			9,35	
W	7/16	-	14			10,90	
W	1/2	-	12			12,47	
W	9/16	-	12			13,92	
W	5/8	-	11			15,66	
W	11/16	-	11			17,20	
W	3/4	-	10			18,80	
W	7/8	-	9			21,92	
W	1"	-	8			25,11	
W	1"1/8	-	7			28,28	
W	1"1/4	-	7			31,45	
W	1"3/8	-	6			34,57	
W	1"1/2	-	6			37,76	
W	1"5/8	-	5			40,91	
W	1"3/4	-	5			44,05	
W	1"7/8	-	4,5			47,27	
W	2"	-	4,5			50,38	
W	2"1/4	-	4			56,90	
W	2"1/2	-	4			63,20	
W	2"3/4	-	3,5			69,60	
W	3"	-	3,5			76,20	

EJES PREVIOS AL ROSCADO
AXES PRÉALABLES AU FILETAGE / SHAFTS BEFORE THREAD / ACHSEN VOR DEM GEWINDESCHNEIDEN

UNC

d1 (") - p (tpi)	⌀a
UNC N.1- 64	1,79
UNC N.2- 56	2,12
UNC N.3- 48	2,44
UNC N.4- 40	2,76
UNC N.5- 40	3,09
UNC N.6- 32	3,41
UNC N.8- 32	4,07
UNC N.10- 24	4,71
UNC N.12- 24	5,37
UNC 1/4- 20	6,22
UNC 5/16- 18	7,8
UNC 3/8- 16	9,37
UNC 7/16- 14	10,95
UNC 1/2- 13	12,52
UNC 9/16- 12	14,10
UNC 5/8- 11	15,68
UNC 3/4- 10	18,84
UNC 7/8- 9	22,00
UNC 1"- 8	25,16
UNC 1"1/8- 7	28,31
UNC 1"1/4- 7	31,49
UNC 1"3/8- 6	34,63
UNC 1"1/2- 6	37,81
UNC 1"3/4- 5	44,12
UNC 2"- 4,5	50,45
UNC 2"1/4- 4,5	56,80
UNC 2"1/2- 4	63,10
UNC 2"3/4- 4	69,45
UNC 3"- 4	75,80

UNF

d1 (") - p (tpi)	⌀a
UNF N.0- 80	1,47
UNF N.1- 72	1,79
UNF N.2- 64	2,12
UNF N.3- 56	2,44
UNF N.4- 48	2,77
UNF N.5- 44	3,10
UNF N.6- 40	3,42
UNF N.8- 36	4,08
UNF N.10- 32	4,73
UNF N.12- 28	5,38
UNF 1/4- 28	6,24
UNF 5/16- 24	7,82
UNF 3/8- 24	9,41
UNF 7/16- 20	10,98
UNF 1/2- 20	12,56
UNF 9/16- 18	14,14
UNF 5/8- 18	15,73
UNF 3/4- 16	18,89
UNF 7/8- 14	22,05
UNF 1"- 12	25,21
UNF 1"1/8- 12	28,38
UNF 1"1/4- 12	31,56
UNF 1"3/8- 12	34,73
UNF 1"1/2- 12	37,91

UNEF

d1 (") - p (tpi)	⌀a
UNEF N.12- 32	5,39
UNEF 1/4- 32	6,25
UNEF 5/16- 32	7,84
UNEF 3/8- 32	9,42
UNEF 7/16- 28	11,00
UNEF 1/2- 28	12,59
UNEF 9/16- 24	14,18
UNEF 5/8- 24	15,75
UNEF 3/4- 20	18,91
UNEF 7/8- 20	22,09
UNEF 1"- 20	25,26
UNEF 1"1/8- 18	28,40
UNEF 1"1/4- 18	31,59
UNEF 1"3/8- 18	34,76
UNEF 1"1/2- 18	37,94

G (BSP)

d1 (") - p (tpi)	⌀a
G 1/16- 28	7,61
G 1/8- 28	9,62
G 1/4- 19	13,03
G 3/8- 19	16,53
G 1/2- 14	20,81
G 5/8- 14	22,77
G 3/4- 14	26,30
G 7/8- 14	30,06
G 1"- 11	33,07
G 1"1/8- 11	37,71
G 1"1/4- 11	41,73
G 1"3/8- 11	44,14
G 1"1/2- 11	47,62
G 1"3/4- 11	53,56
G 2"- 11	59,43
G 2"1/4- 11	65,49
G 2"1/2- 11	74,94
G 2"3/4- 11	81,27
G 3"- 11	87,57
G 3"1/4- 11	93,68
G 3"1/2- 11	100,01
G 3"3/4- 11	106,35
G 4"- 11	112,68

BA

d1 (") - p (tpi)	⌀a
BA 0 6-1	5,93
BA 1 5,3- 0,9	5,23
BA 2 4,7- 0,81	4,64
BA 3 4,1- 0,73	4,04
BA 4 3,6- 0,66	3,55
BA 5 3,2- 0,59	3,15
BA 6 2,8- 0,53	2,76
BA 7 2,5- 0,48	2,46
BA 8 2,2- 0,43	2,16

PG

d1 (") - p (tpi)	⌀a
Pg 7 12,5- 20	12,40
Pg 9 15,2- 18	15,10
Pg 11 18,6- 18	18,50
Pg 13,5 20,4- 18	20,30
Pg 16 22,5- 18	22,40
Pg 21 28,3- 16	28,15
Pg 29 37,0- 16	36,85
Pg 36 47,0- 16	46,85
Pg 42 54,0- 16	53,85
Pg 48 59,3- 16	59,15

NPSM

d1 (") - p (tpi)	⌀a
NPSM 1/8- 27	4,99
NPSM 1/4- 18	13,24
NPSM 3/8- 18	16,70
NPSM 1/2- 14	20,77
NPSM 3/4- 14	26,13
NPSM 1"- 11,5	32,68
NPSM 1"1/4- 11,5	41,45
NPSM 1"1/2- 11,5	47,52
NPSM 2" - 11,5	59,56

NPT

d1 (") - p (tpi)	L min	⌀a
NPT 1/16- 27	8,40	7,58
NPT 1/8- 27	8,50	9,93
NPT 1/4- 18	12,70	13,18
NPT 3/8- 18	12,90	16,60
NPT 1/2- 14	16,80	20,63
NPT 3/4- 14	17,10	25,95
NPT 1"- 11,5	21,30	32,51
NPT 1"1/4- 11,5	21,90	41,23
NPT 1"1/2- 11,5	22,30	47,30
NPT 2" - 11,5	23,10	59,31

NPTF

d1 (") - p (tpi)	L min	⌀a
NPTF 1/16- 27	8,40	7,58
NPTF 1/8- 27	8,50	9,93
NPTF 1/4- 18	12,70	13,18
NPTF 3/8- 18	12,90	16,60
NPTF 1/2- 14	16,80	20,63
NPTF 3/4- 14	17,10	25,95
NPTF 1"- 11,5	21,30	32,51
NPTF 1"1/4- 11,5	21,90	41,23
NPTF 1"1/2- 11,5	22,30	47,30
NPTF 2" - 11,5	23,10	59,31

R

d1 (") - p (tpi)	L min	⌀a
R 1/8- 28	8,20	9,48
R 1/4- 19	12,10	12,78
R 3/8- 19	12,50	16,26
R 1/2- 14	16,40	20,44
R 3/4- 14	17,70	25,85
R 1"- 11	20,90	32,60
R 1"1/4- 11	23,20	41,12
R 1"1/2- 11	23,20	47,01
R 2" - 11	27,50	58,62

BSF

d1 (") - p (tpi)	⌀a
BSF 3/16 - 32	4,67
BSF 7/32 - 28	5,47
BSF 1/4 - 26	6,25
BSF 5/16 - 22	7,82
BSF 3/8 - 20	9,39
BSF 7/16 - 18	10,97
BSF 1/2 - 16	12,54
BSF 9/16 - 16	14,12
BSF 5/8 - 14	15,71
BSF 11/16 - 14	17,30
BSF 3/4 - 12	18,85
BSF 7/8 - 11	22,02
BSF 1" - 10	25,17
BSF 1"1/8 - 9	24,40
BSF 1"1/4 - 9	31,60
BSF 1"3/8 - 8	34,70
BSF 1"1/2 - 8	37,90
BSF 1"5/8 - 8	41,10
BSF 1"3/4 - 7	44,20
BSF 2" - 7	50,60

TABLA DE CONVERSIÓN DE PULGADAS A MILÍMETROS
TABLE DE CONVERTION DE POUCES À MILIMÈTRES
INCHES TO MILIMETERS CONVERTION TABLE
UMRECHNUNGSTABELLE VON ZOLL IN MILLIMETER

Calculado: 1 pulgada = 25,4 mm. (exactos), ver DIN 4890 (edición 2/75)

Milímetros

Parte de pulgadas	0	1	2	3	4	5	6	7	9	10	11	12
0	0	25,400 0	50,800 0	76,200 0	101,600 0	127,000 0	152,400 0	177,800 0	228,600 0	254,000 0	279,400 0	203,200 0
1/64	0,015 625	0,396 9	25,796 9	51,196 9	76,596 9	101,996 9	127,396 9	152,796 9	178,196 9	228,996 9	254,396 9	279,796 9	203,596 9
1/32	0,031 25	0,793 8	26,193 8	51,593 8	76,993 8	102,393 8	127,793 8	153,193 8	178,593 8	229,393 8	254,793 8	280,193 8	203,393 8
3/64	0,046 875	1,190 6	26,590 6	51,990 6	77,390 6	102,790 6	128,190 6	153,590 6	178,990 6	229,790 6	255,190 6	280,590 6	204,390 6
1/16	0,062 5	1,587 5	26,987 5	52,387 5	77,787 5	103,187 5	128,587 5	153,987 5	179,387 5	260,187 5	255,587 5	280,987 5	204,787 5
5/64	0,078 125	1,984 4	27,384 4	52,784 4	78,181 4	103,584 4	128,984 4	154,384 4	179,784 4	230,584 4	255,984 4	281,384 4	205,180 4
3/32	0,093 75	2,381 2	27,781 2	53,181 2	78,581 2	103,981 2	129,381 2	154,781 2	180,181 2	230,981 2	256,381 2	281,781 2	205,581 2
7/64	0,109 375	2,778 1	28,178 1	53,578 1	78,978 1	104,378 1	129,778 1	155,178 1	180,578 1	231,378 1	256,778 1	282,178 1	205,578 1
1/8	0,125	3,175 0	28,575 0	53,975 0	79,375 2	104,775 0	130,175 0	155,575 0	150,975 0	231,775 0	257,175 0	282,575 0	206,375 0
9/64	0,140 625	3,571 9	28,971 9	54,361 9	79,771 9	105,171 9	130,571 9	155,971 9	181,371 9	232,171 9	257,571 9	282,971 9	206,771 9
5/32	0,156 25	3,968 8	29,368 8	54,768 8	80,186 8	105,568 8	130,968 8	156,368 8	181,768 8	232,568 8	257,968 8	283,368 8	207,168 8
11/64	0,171 875	4,365 6	29,765 6	55,165 6	80,565 6	105,965 6	131,365 6	156,765 6	182,165 6	232,965 6	258,365 6	283,765 6	207,565 6
3/16	0,187 5	4,762 5	30,162 5	55,562 5	80,962 5	106,362 5	131,762 5	157,162 5	182,562 5	233,362 5	258,762 5	284,162 5	207,962 5
13/64	0,203 125	5,159 4	30,559 4	55,959 4	81,359 4	106,759 4	132,159 4	157,559 4	182,959 4	233,759 4	259,159 4	284,559 4	208,359 4
7/32	0,218 75	5,556 2	30,956 2	56,356 2	81,756 2	107,156 2	132,556 2	157,956 2	183,353 2	234,156 2	259,556 2	284,956 2	208,756 2
15/64	0,234 375	5,953 1	31,353 1	56,753 1	82,153 1	107,553 1	132,953 1	158,353 1	183,753 1	234,553 1	259,953 1	285,353 1	209,153 1
1/4	0,25	6,350 0	31,750 0	56,150 0	82,550 0	107,950 0	133,350 0	158,750 0	184,150 0	234,950 0	260,350 0	285,750 0	209,550 0
17/64	0,265 625	6,746 9	32,146 9	57,546 9	82,946 9	108,346 9	133,746 9	159,146 9	184,546 9	235,346 9	260,746 9	286,146 9	209,946 9
9/32	0,281 25	7,143 8	32,543 8	57,943 8	83,343 8	108,743 8	134,143 8	159,543 8	184,943 8	235,743 8	261,143 8	286,543 8	210,343 8
19/64	0,296 875	7,540 6	32,940 6	58,340 6	83,740 6	109,140 6	134,540 6	159,940 6	185,340 6	236,140 6	261,540 6	286,940 6	210,740 6
5/16	0,312 5	7,937 5	33,337 5	58,737 5	84,137 5	109,537 5	134,937 5	160,337 5	185,737 5	236,537 5	261,937 5	287,337 5	211,137 5
21/64	0,328 125	8,334 4	33,734 4	59,134 4	84,534 4	109,934 4	135,334 4	160,734 4	186,134 4	236,934 4	262,334 4	287,734 4	211,534 4
11/32	0,343 75	8,731 2	34,131 2	59,531 2	84,931 2	110,331 2	135,731 2	161,131 2	186,531 2	237,331 2	262,731 2	288,131 2	211,931 2
23/64	0,359 375	9,128 1	34,528 1	59,928 1	85,328 1	110,728 1	136,128 1	161,528 1	186,928 1	237,728 1	263,128 1	288,528 1	212,328 1
3/8	0,375	9,525 0	34,925 0	60,325 0	85,725 0	111,125 0	136,525 0	161,925 0	187,625 0	238,125 0	263,525 0	288,925 0	212,725 0
25/64	0,390 625	9,921 9	35,321 9	60,721 9	86,121 9	111,521 9	136,921 9	162,321 9	187,721 9	238,521 9	263,921 9	289,321 9	213,121 9
13/32	0,406 25	10,318 8	35,718 8	61,118 8	86,518 8	111,918 8	137,318 8	162,718 8	188,118 8	238,918 8	264,318 8	289,718 8	213,518 8
27/64	0,421 875	10,715 6	36,115 6	61,515 6	86,915 6	112,315 6	137,715 6	163,115 6	188,515 6	239,315 6	264,715 6	290,115 6	213,915 6
7/16	0,437 5	11,112 5	36,512 5	61,912 5	87,312 5	112,712 5	138,112 5	163,512 5	188,912 5	239,712 5	265,112 5	290,512 5	214,312 5
29/64	0,453 125	11,509 4	36,909 4	62,309 4	87,709 4	113,109 4	138,509 4	163,909 4	189,309 4	240,109 4	265,509 4	290,909 4	214,709 4
15/32	0,468 75	11,906 2	37,306 2	62,706 2	88,106 2	113,506 2	138,906 2	164,306 2	189,706 2	240,506 2	265,906 2	291,306 2	215,106 2
31/64	0,484 375	12,303 1	37,703 1	63,103 1	88,503 1	113,903 1	139,303 1	164,703 1	190,103 1	240,903 1	266,303 1	291,703 1	215,503 1
1/2	0,5	12,700 0	38,100 0	63,500 0	88,900 0	114,300 0	139,700 0	165,100 0	190,500 0	241,300 0	266,700 0	292,100 0	215,900 0
33/64	0,515 625	13,096 9	38,496 9	63,896 9	89,296 9	114,696 9	140,096 9	165,496 9	190,896 9	241,696 9	267,096 9	292,496 9	216,296 9
17/32	0,531 25	13,493 8	38,893 8	64,293 8	89,693 8	115,093 8	140,493 8	165,893 8	191,293 8	242,093 8	267,493 8	292,893 8	216,693 8
35/64	0,546 875	13,890 6	39,290 6	64,690 6	90,090 6	115,490 6	140,890 6	166,290 6	191,690 6	242,490 6	267,890 6	293,290 6	217,090 6
9/16	0,562 5	14,287 5	39,687 5	65,087 5	90,487 5	115,887 5	141,287 5	166,687 5	192,087 5	242,887 5	268,287 5	293,687 5	217,487 5
37/64	0,578 125	14,684 4	40,084 4	65,484 4	90,884 4	116,284 4	141,684 4	167,084 4	192,484 4	243,284 4	268,684 4	294,084 4	217,884 4
19/32	0,593 75	15,081 2	40,481 2	65,8812	91,281 2	116,681 2	142,081 2	167,481 2	192,881 2	243,681 2	269,081 2	294,481 2	218,281 2
39/64	0,609 375	15,478 1	40,878 1	66,278 1	91,678 1	117,078 1	142,478 1	167,878 1	193,278 1	244,078 1	269,478 1	294,878 1	218,678 1
5/8	0,625	15,875 0	41,275 0	66,675 0	92,075 0	117,475 0	142,875 0	168,275 0	193,675 0	244,475 0	269,875 0	295,275 0	219,075 0
41/64	0,640 625	16,271 9	41,761 9	67,071 9	92,471 9	117,871 9	143,271 9	168,671 9	194,071 9	244,871 9	270,271 9	295,671 9	219,471 9
21/32	0,656 25	16,668 9	42,068 8	67,468 8	92,868 8	118,268 8	143,668 8	169,068 8	194,468 8	245,268 8	270,668 8	296,068 8	219,868 8
43/64	0,671 875	15,065 6	42,465 6	67,865 6	93,265 6	118,665 6	144,065 6	169,465 6	194,865 6	245,665 6	271,065 6	296,465 6	220,265 6
11/16	0,687 5	17,462 5	42,862 5	68,262 5	93,662 5	119,062 5	144,462 5	169,862 5	195,262 5	246,062 5	271,462 5	296,862 5	220,662 5
45/64	0,703 125	15,859 4	43,259 4	68,659 4	94,059 4	119,459 4	144,859 4	170,259 4	195,659 4	246,459 4	271,859 4	297,259 4	221,059 4
23/32	0,718 75	18,256 2	43,656 2	69,056 2	94,456 2	119,856 2	145,256 2	170,652 2	196,056 2	246,856 2	272,256 2	297,656 2	221,456 2
47/64	0,734 375	18,653 1	44,053 1	69,4531	94,853 1	120,253 1	145,653 1	171,053 1	196,453 1	247,253 1	272,653 1	298,053 1	221,853 1
3/4	0,75	19,050 0	44,450 0	69,850 0	95,250 0	120,650 0	146,050 0	171,450 0	196,850 0	247,650 0	273,050 0	298,450 0	222,250 0
49/64	0,765 625	19,446 9	44,846 9	70,246 9	95,646 9	121,046 9	146,446 9	171,846 9	197,246 9	248,046 9	273,466 9	298,846 9	222,646 9
25/32	0,781 25	19,843 8	45,243 8	70,643 8	96,043 8	121,443 8	146,843 8	172,243 8	197,643 8	248,443 8	273,843 8	299,243 8	223,043 8
51/64	0,796 875	20,240 6	45,640 6	71,040 6	96,440 6	121,840 6	147,240 6	172,640 6	198,040 6	248,340 6	274,240 6	299,640 6	223,440 6
13/16	0,812 5	20,637 5	46,037 5	71,437 5	96,837 5	122,237 5	147,637 5	173,077 5	198,437 5	249,237 5	274,637 5	300,037 5	223,837 5
53/64	0,828 125	21,034 4	46,434 4	71,834 4	97,234 4	122,634 4	148,034 4	173,434 4	198,834 4	249,634 4	275,034 4	300,434 4	224,234 4
27/32	0,843 75	21,431 2	46,831 2	72,231 2	97,631 2	123,031 2	148,431 2	173,831 2	199,231 2	250,031 2	275,431 2	300,831 2	224,631 2
55/64	0,859 375	21,828 1	47,228 1	72,628 1	98,028 1	123,428 1	148,828 1	174,228 1	199,628 1	250,428 1	275,828 1	301,228 1	225,028 1
7/8	0,875	22,225 0	47,625 0	73,025 0	98,425 0	123,825 0	149,225 0	174,625 2	200,025 0	250,825 0	276,225 0	301,625 0	225,425 0
57/64	0,890 625	22,621 9	48,021 9	73,421 9	98,821 9	124,221 9	149,621 9	175,021 9	200,421 9	251,221 9	276,621 9	302,021 9	225,821 9
29/32	0,906 25	23,018 8	48,418 8	73,818 8	99,218 8	124,618 8	150,018 8	175,418 8	200,818 8	251,618 8	277,018 8	302,418 8	226,218 8
59/64	0,921 875	23,415 6	48,815 6	74,215 6	99,615 6	125,015 6	150,415 6	175,815 6	201,215 6	252,015 6	277,415 6	302,815 6	226,615 6
15/16	0,937 5	23,812 5	49,212 5	74,612 5	100,012 5	125,412 5	150,812 5	176,212 5	201,612 5	252,412 5	277,812 5	303,212 5	227,012 5
61/64	0,953 125	24,209 4	49,609 4	75,009 4	100,409 4	125,809 4	151,209 4	176,609 4	202,009 4	252,809 4	278,209 4	303,609 4	227,409 4
31/32	0,968 75	24,606 2	50,006 2	75,406 2	100,806 2	126,206 2	151,606 2	177,006 2	202,406 2	253,206 2	278,606 2	304,006 2	227,806 2
63/64	0,984 375	25,003 1	50,403 1	75,803 1	101,203 1	126,603 1	152,003 1	177,403 1	202,803 1	253,603 1	279,003 1	304,403 1	228,203 1

12" = 304,800 0

Ejemplo: 2"1/8 = 53,975

Milímetros

Parte de pulgadas	0	1	2	3	4	5	6	7	9	10	11	12
0	0	25,400 0		76,200 0	101,600 0	127,000 0	152,400 0	177,800 0	203,200 0	228,600 0	254,000 0	279,400 0
1/64	0,015 625	0,396 9	25,796 9		76,596 9	101,996 9	127,396 9	152,796 9	178,196 9	203,596 9	228,996 9	254,396 9	279,796 9
1/32	0,031 25	0,793 8	26,193 8		76,993 8	102,393 8	127,793 8	153,193 8	178,593 8	203,393 8	229,393 8	254,7938	280,193 8
3/64	0,046 875	1,190 6	26,590 6		77,390 6	102,790 6	128,190 6	153,590 6	178,990 6	204,390 6	229,790 6	255,190 6	280,590 6
1/16	0,062 5	1,587 5	26,987 5		77,787 5	103,187 5	128,587 5	153,987 5	179,387 5	204,787 5	230,187 5	255,587 5	280,987 5
5/64	0,078 125	1,984 4	27,384 4		78,181 4	103,584 4	128,984 4	154,384 4	179,784 4	205,184 4	230,584 4	255,984 4	281,384 4
3/32	0,093 75	2,381 2	27,781 2		78,581 2	103,981 2	129,381 2	154,781 2	180,181 2	205,581 2	230,981 2	256,381 2	281,781 2
7/64	0,109 375	2,778 1	28,178 1		78,978 1	104,378 1	129,778 1	155,178 1	180,578 1	205,978 1	231,378 1	256,778 1	282,178 1
1/8				53,975 0	79,375 0	104,775 0	130,175 0	155,575 0	180,975 0	206,375 0	231,775 0	257,175 0	282,575 0
9/64	0,140 625	3,571 9	28,971 9	54,371 9	79,771 9	105,171 9	130,571 9	155,971 9	181,371 9	206,371 9	232,171 9	257,571 9	282,971 9
5/32	0,156 25	3,968 8	29,368 8	54,768 8	80,168 8	105,568 8	130,968 8	156,368 8	181,768 8	207,168 8	232,568 8	257,968 8	283,368 8
11/64	0,171 875	4,365 6	29,765 6	55,165 6	80,565 6	105,965 6	131,365 6	156,765 6	182,165 6	207,165 6	232,965 6	258,365 6	283,765 6

TABLA DE DATOS TÉCNICOS PARA LA INSTALACIÓN DE INSERTOS ROSCADOS
INFORMATION TECHNIQUE POUR L' INSTALLATION DE FILETS RAPPORTES
TECHNICAL DATA SHEET FOR THE INSTALLATION OF WIRE THREAD INSERTS
TABELLE DER TECHNISCHEN DATEN ZUM EINSETZEN VON GEWINDEEINSÄTZEN

Hepyc CUTTING TOOL EXPERTS

			Taladro						Rosca									Inserto					
Rosca	D	p	Diam. (Dt)	Longitud mínima (Lt) mm					"Diam.ext. (Dr ext) min."	"Diam.int (Dr int) min."	"Diam.int. (Dr int) max."	Longitud mínima (Lr) mm					"Diam.ext. (d1) min."	"Diam.ext. (d1) max."	Longitud (W) nº de hilos (min-max)				
			mm	1xd	1,5xd	2xd	2,5xd	3xd	mm	mm	mm	1xd	1,5xd	2xd	2,5xd	3xd	mm	mm	1xd	1,5xd	2xd	2,5xd	3xd
M	2	0,40	2,10	3,80	4,80	5,80	6,80	7,80	2,52	2,09	2,18	2,00	3,00	4,00	5,00	6,00	2,60	2,80	3,0 - 3,3	5,2 - 5,7	7,4 - 8,1	9,6 - 10,5	11,8 - 13,0
M	2,5	0,45	2,60	4,52	5,77	7,02	8,27	9,52	3,08	2,60	2,70	2,50	3,75	5,00	6,25	7,50	3,20	3,70	3,1 - 3,8	5,2 - 6,5	7,4 - 9,2	9,5 - 11,9	11,7 - 14,6
M	3	0,50	3,20	5,25	6,75	8,25	9,75	11,25	3,65	3,11	3,22	3,00	4,50	6,00	7,50	9,00	3,80	4,35	3,4 - 4,3	5,8 - 7,2	8,2 - 10,1	10,5 - 12,8	12,9 - 16,0
M	3,5	0,60	3,70	6,20	7,95	9,70	11,45	13,20	4,28	3,63	3,76	3,50	5,25	7,00	8,75	10,50	4,55	4,75	3,4 - 4,3	5,8 - 7,2	8,2 - 10,1	10,5 - 12,8	12,9 - 16,0
M	4	0,70	4,20	7,15	9,15	11,15	13,15	15,15	4,91	4,15	4,29	4,00	6,00	8,00	10,00	12,00	5,05	5,60	3,4 - 4,0	5,7 - 6,8	8,1 - 9,6	10,5 - 12,3	12,8 - 15,1
M	5	0,80	5,20	8,60	11,10	13,60	16,10	18,60	6,04	5,17	5,33	5,00	7,50	10,00	12,50	15,00	6,25	6,80	3,9 - 4,5	6,5 - 7,6	9,2 - 10,6	11,8 - 13,7	14,4 - 16,7
M	6	1,00	6,30	10,50	13,50	16,50	19,50	22,50	7,30	6,22	6,41	6,00	9,00	12,00	15,00	18,00	7,40	7,95	3,8 - 4,3	6,4 - 7,2	9,1 - 10,1	11,7 - 13,1	14,3 - 16,0
M	7	1,00	7,30	11,50	15,00	18,50	22,00	25,50	8,30	7,22	7,41	7,00	10,50	14,00	17,50	21,00	8,65	9,20	4,6 - 5,3	7,7 - 8,7	10,7 - 12,1	13,7 - 15,6	16,7 - 19,0
M	8	1,25	8,30	13,62	17,62	21,62	25,62	29,62	9,62	8,27	8,48	8,00	12,00	16,00	20,00	24,00	9,80	10,35	4,2 - 4,8	7,1 - 7,8	9,9 - 10,9	12,8 - 14,1	15,6 - 17,2
M	8	1,00	8,30	12,50	16,50	20,50	24,50	28,50	9,30	8,22	8,41	8,00	12,00	16,00	20,00	24,00	9,70	10,25	5,6 - 6,1	9,1 - 10,1	12,5 - 13,8	16,0 - 17,7	19,5 - 21,5
M	9	1,25	9,30	14,62	19,12	23,62	28,13	32,62	10,62	9,27	9,48	9,00	13,50	18,00	22,50	27,00	10,85	11,10	5,1 - 5,5	8,4 - 9,0	11,7 - 12,5	15,0 - 16,1	18,3 - 19,6
M	10	1,50	10,40	16,75	21,75	26,75	31,75	36,75	11,95	10,32	10,56	10,00	15,00	20,00	25,00	30,00	11,95	12,50	4,6 - 5,3	7,7 - 8,2	10,8 - 11,5	13,8 - 14,7	16,9 - 18,0
M	10	1,25	10,30	15,62	20,62	25,62	30,62	35,62	11,62	10,27	10,48	10,00	15,00	20,00	25,00	30,00	12,10	12,65	5,6 - 6,1	9,2 - 10,0	12,7 - 13,8	16,3 - 17,7	19,8 - 21,5
M	10	1,00	10,30	14,50	19,50	24,50	29,50	34,50	11,30	10,22	10,41	10,00	15,00	20,00	25,00	30,00	12,10	12,50	7,3 - 8,1	11,7 - 12,9	16,1 - 17,8	20,5 - 22,6	24,9 - 27,5
M	11	1,50	11,40	17,75	23,25	28,75	34,25	39,75	12,95	11,33	11,56	11,00	16,50	22,00	27,50	33,00	13,10	13,50	5,2 - 5,6	8,6 - 9,2	12,0 - 12,8	15,4 - 16,4	18,7 - 20,0
M	12	1,75	12,40	19,87	25,87	31,87	37,87	43,87	14,27	12,38	12,64	12,00	18,00	24,00	30,00	36,00	14,30	15,00	4,8 - 5,2	7,9 - 8,5	11,1 - 11,9	14,2 - 15,2	17,3 - 18,6
M	12	1,50	12,40	18,75	24,75	30,75	36,75	42,75	14,10	12,32	12,56	12,00	18,00	24,00	30,00	36,00	14,25	14,95	5,6 - 6,1	9,2 - 10,0	12,7 - 13,8	16,2 - 17,7	19,8 - 21,5
M	12	1,25	12,30	17,62	23,62	29,62	35,62	41,62	13,62	12,27	12,48	12,00	18,00	24,00	30,00	36,00	14,30	15,00	7,0 - 7,9	11,2 - 12,5	15,5 - 17,2	19,7 - 21,8	23,9 - 26,5
M	12	1,00	12,30	16,50	22,50	28,50	34,50	40,50	13,30	12,22	12,41	12,00	18,00	24,00	30,00	36,00	14,40	14,80	9,3 - 10,3	14,7 - 16,1	20,0 - 21,9	25,4 - 27,8	30,8 - 33,6
M	14	2,00	14,50	23,00	30,00	37,00	44,00	51,00	16,60	14,43	14,73	14,00	21,00	28,00	35,00	42,00	16,65	17,35	5,0 - 5,5	8,2 - 8,9	11,4 - 12,3	14,6 - 15,8	17,9 - 19,2
M	14	1,50	14,50	20,75	27,75	34,75	41,75	48,75	15,95	14,35	14,56	14,00	21,00	28,00	35,00	42,00	15,96	16,64	6,9 - 7,7	11,1 - 12,2	15,3 - 16,7	19,4 - 21,2	23,6 - 25,7
M	14	1,25	14,40	19,62	26,62	33,62	40,62	47,62	15,62	14,27	14,48	14,00	21,00	28,00	35,00	42,00	15,74	16,00	8,6 - 9,5	13,6 - 14,9	18,6 - 20,4	23,6 - 25,8	28,6 - 31,2
M	14	1,00	14,40	18,50	25,50	32,50	39,50	46,50	15,30	14,22	14,41	14,00	21,00	28,00	35,00	42,00	15,35	15,65	11,1 - 12,2	17,4 - 18,9	23,7 - 25,7	30,0 - 32,5	36,2 - 39,3
M	16	2,00	16,50	25,00	33,00	41,00	49,00	57,00	18,60	16,43	16,73	16,00	24,00	32,00	40,00	48,00	18,90	19,60	5,9 - 6,5	9,5 - 10,2	13,2 - 14,2	16,9 - 18,1	20,5 - 22,0
M	16	1,50	16,50	22,75	30,75	38,75	46,75	54,75	17,95	16,32	16,56	16,00	24,00	32,00	40,00	48,00	18,10	18,40	8,0 - 8,9	12,8 - 13,9	17,5 - 19,2	22,3 - 24,3	27,0 - 29,4
M	18	2,50	18,50	29,25	38,25	47,25	56,25	65,25	21,25	18,54	18,90	18,00	27,00	36,00	45,00	54,00	21,30	22,00	5,1 - 5,7	8,5 - 9,2	11,8 - 12,7	15,2 - 16,3	18,5 - 19,8
M	18	2,00	18,50	27,00	36,00	45,00	54,00	63,00	20,60	18,43	18,73	18,00	27,00	36,00	45,00	54,00	20,80	21,45	6,6 - 7,3	10,8 - 11,7	15,0 - 16,0	19,1 - 20,4	23,1 - 24,7
M	18	1,50	18,50	24,75	33,75	42,75	51,75	60,75	19,95	18,32	18,56	18,00	27,00	36,00	45,00	54,00	20,15	20,80	9,2 - 10,3	14,5 - 16,1	20,0 - 21,9	25,4 - 27,8	30,6 - 33,6
M	20	2,50	20,50	31,25	41,25	51,25	61,25	71,25	23,25	20,54	20,90	20,00	30,00	40,00	50,00	60,00	23,55	24,40	5,8 - 6,5	9,5 - 10,4	13,2 - 14,4	16,8 - 18,3	20,5 - 22,2
M	20	2,00	20,50	29,00	39,00	49,00	59,00	69,00	22,60	20,43	20,73	20,00	30,00	40,00	50,00	60,00	22,80	23,45	7,5 - 8,3	12,0 - 13,1	16,5 - 18,0	21,2 - 22,8	25,7 - 27,7
M	20	1,50	20,50	26,75	36,75	46,75	56,75	66,75	21,95	20,32	20,56	20,00	30,00	40,00	50,00	60,00	22,20	22,80	10,4 - 11,6	16,3 - 18,1	22,3 - 24,6	28,2 - 31,1	34,2 - 37,6
M	22	2,50	22,50	33,25	44,25	55,25	66,25	77,25	25,25	22,54	22,90	22,00	33,00	44,00	55,00	66,00	25,90	26,90	6,4 - 7,3	10,4 - 11,6	14,4 - 16,0	18,4 - 20,3	22,4 - 24,7
M	22	2,00	22,50	31,00	42,00	53,00	64,00	75,00	24,60	22,43	22,73	22,00	33,00	44,00	55,00	66,00	24,85	26,80	8,4 - 9,3	13,3 - 14,6	18,3 - 20,0	23,3 - 25,3	28,3 - 30,6
M	22	1,50	22,50	28,75	39,75	50,75	61,75	72,75	23,95	22,32	22,56	22,00	33,00	44,00	55,00	66,00	24,20	26,80	11,5 - 12,9	18,0 - 20,1	24,3 - 27,2	31,0 - 34,4	37,5 - 41,5
M	24	3,00	24,75	37,50	49,50	61,50	73,50	85,50	27,90	24,65	25,05	24,00	36,00	48,00	60,00	72,00	27,43	29,00	5,8 - 6,5	9,6 - 10,4	13,3 - 14,4	17,0 - 18,3	20,8 - 22,2
M	24	2,00	24,50	33,00	45,00	57,00	69,00	81,00	26,60	24,43	24,73	24,00	36,00	48,00	60,00	72,00	28,60	29,10	9,1 - 10,3	14,5 - 16,1	19,8 - 21,9	25,2 - 27,8	30,5 - 33,6
M	24	1,50	24,50	30,75	42,75	54,75	66,75	78,75	26,02	24,33	24,56	24,00	36,00	48,00	60,00	72,00	26,20	26,80	12,9 - 14,2	20,1 - 22,0	27,3 - 29,9	34,5 - 37,7	41,7 - 45,5
UNC	N.2	56	2,30	4,22	5,31	6,40	7,50	8,58	2,84	2,28	2,44	2,18	3,27	4,36	5,46	6,55	2,79	3,02	2,7 - 3,2	4,7 - 5,5	6,8 - 7,9	8,9 - 10,2	11,0 - 12,6
UNC	N.4	40	3,00	5,69	7,11	8,53	9,95	11,38	3,67	3,00	3,15	2,84	4,26	5,68	7,11	8,53	3,65	4,03	2,3 - 3,2	4,2 - 5,1	6,1 - 7,2	8,0 - 9,3	9,8 - 11,5
UNC	N.5	40	3,40	6,02	7,62	9,19	10,79	12,37	4,00	3,33	3,48	3,17	4,74	6,35	7,92	9,52	4,01	4,04	2,8 - 3,4	4,9 - 5,8	7,1 - 8,2	9,2 - 10,6	11,4 - 13,1
UNC	N.6	32	3,70	7,09	8,84	10,60	12,34	14,10	4,54	3,68	3,89	3,50	5,25	7,00	8,76	10,50	4,52	4,90	2,3 - 2,9	4,2 - 4,9	6,1 - 7,1	8,1 - 9,2	10,0 - 11,3
UNC	N.8	32	4,50	7,75	9,83	11,91	14,00	16,07	5,11	4,34	4,52	4,16	6,24	8,33	10,41	12,50	5,20	5,58	3,1 - 3,6	5,4 - 6,2	7,7 - 8,7	10,0 - 11,3	12,3 - 13,8
UNC	N.10	24	5,20	9,57	11,99	14,40	16,81	19,22	6,20	5,06	5,28	4,82	7,24	9,65	12,06	14,47	6,19	6,58	2,5 - 2,9	4,5 - 5,1	6,6 - 7,3	8,6 - 9,5	10,6 - 11,7
UNC	N.12	24	5,80	10,26	13,00	15,74	18,46	21,23	6,86	5,72	5,92	5,48	8,22	10,97	13,70	16,45	6,85	7,23	3,1 - 3,6	5,5 - 6,1	7,8 - 8,4	10,2 - 11,1	12,5 - 13,6
UNC	1/4	20	6,70	12,06	15,24	18,41	21,59	24,76	8,00	6,62	6,86	6,35	9,52	12,70	15,87	19,05	7,87	8,38	3,0 - 3,3	5,2 - 5,7	7,5 - 8,1	9,8 - 10,5	12,0 - 13,0
UNC	5/16	18	8,30	14,27	18,26	22,22	26,18	30,15	9,77	8,24	8,49	7,92	11,91	15,87	19,84	23,79	9,65	10,16	3,6 - 4,1	6,2 - 6,8	8,8 - 9,6	11,4 - 12,3	14,0 - 15,1
UNC	3/8	16	9,90	16,66	21,43	26,18	30,96	35,71	11,59	9,89	10,12	9,52	14,27	19,05	23,80	28,57	11,48	11,99	4,0 - 4,5	6,7 - 7,3	9,5 - 10,2	12,3 - 13,2	15,1 - 16,1
UNC	7/16	14	11,60	19,27	24,84	30,38	35,94	41,50	13,47	11,51	11,78	11,10	16,66	22,22	27,80	33,32	13,36	14,00	4,0 - 4,6	6,9 - 7,5	9,7 - 10,5	12,5 - 13,5	15,4 - 16,4
UNC	1/2	13	13,00	21,49	27,83	34,18	40,54	46,89	15,23	13,12	13,40	12,70	19,05	25,40	31,75	38,10	15,16	15,80	4,4 - 4,9	7,4 - 8,1	10,5 - 11,2	13,5 - 14,4	16,5 - 17,6
UNC	9/16	12	14,75	23,80	30,96	38,10	45,23	52,37	17,04	14,75	15,03	14,27	21,43	28,57	35,70	42,84	17,75	17,63	4,7 - 5,1	7,8 - 8,5	11,0 - 11,8	14,1 - 15,1	17,3 - 18,4
UNC	5/8	11	16,50	26,26	34,21	42,14	50,09	58,01	18,87	16,38	16,68	15,87	23,80	31,75	39,67	47,62	18,84	19,48	4,8 - 5,3	8,0 - 8,6	11,2 - 12,0	14,4 - 15,3	17,6 - 18,7
UNC	3/4	10	19,75	30,48	40,00	49,53	59,05	68,58	22,35	19,60	19,91	19,05	28,57	38,10	47,62	57,15	22,37	23,01	5,4 - 6,0	8,9 - 9,6	12,5 - 13,2	16,0 - 16,9	19,5 - 20,6
UNC	7/8	9	23,00	34,92	46,02	54,33	68,24	79,37	25,89	22,84	23,18	22,22	33,32	44,45	55,55	66,67	25,95	26,72	5,8 - 6,3	9,5 - 10,1	13,2 - 14,0	16,9 - 17,9	20,6 - 21,8
UNC	1	8	26,00	39,70	52,37	65,07	77,77	90,47	29,52	26,09	26,47	25,40	38,10	50,80	63,50	76,20	29,61	30,38	5,9 - 6,4	9,7 - 10,3	13,5 - 14,3	17,2 - 18,2	21,0 - 22,1
UNC	1"1/8	7	29,50	44,91	59,18	73,48	87,75	102,05	33,29	29,36	29,74	28,57	42,85	57,15	71,50	85,72	33,40	34,42	5,8 - 6,3	9,5 - 10,2	13,2 - 14,1	16,9 - 18,0	20,6 - 21,9
UNC	1"1/4	7	33,00	48,08	63,95	79,83	95,70	111,58	36,46	32,54	32,92	31,75	47,62	63,50	79,37	95,25	36,65	37,67	6,6 - 7,2	10,8 - 11,5	14,9 - 15,9	19,1 - 20,2	23,2 - 24,5
UNC	1"3/8	6	36,00	53,97	71,42	88,90	106,34	123,82	40,42	35,84	36,35	34,92	52,37	69,85	87,30	104,77	40,59	41,73	6,1 - 6,6	10,0 - 10,7	13,9 - 14,7	17,7 - 18,8	21,6 - 22,8
UNC	1"1/2	6	39,00	57,15	76,20	95,25	114,30	133,35	43,60	39,02	39,53	38,10	57,15	76,20	95,25	114,30	43,86	45,00	6,8 - 7,4	11,0 - 11,8	15,3 - 16,2	19,5 - 20,7	23,8 - 25,1
UNF	N.4	48	3,00	5,23	6,65	8,07	9,50	10,92	3,53	2,97	3,12	2,84	4,26	5,69	7,11	8,53	3,73	4,11	3,1 - 3,8	5,3 - 6,5	7,5 - 9,1	9,7 - 11,7	12,0 - 14,3
UNF	N.6	40	3,70	6,35	9,85	11,60	12,20	13,36	4,33	3,66	3,81	3,50	5,26	7,00	8,76	10,51	4,39	4,90	3,1 - 3,8	5,4 - 6,4	7,7 - 9,1	10,0 - 11,7	12,3 - 14,3
UNF	N.8	36	4,40	7,34	9,42	11,50	13,58	15,67	5,08	4,32	4,47	4,16	6,25	8,33	10,41	12,50	5,18	5,69	3,5 - 4,2	6,0 - 7,0	8,5 - 9,8	11,0 - 12,6	13,5 - 15,4
UNF	N.10	32	5,10	8,40	10,82	13,23	15,65	18,06	5,86	5,00	5,18	4,82	7,24	9,65	12,06	14,48	5,99	6,50	3,7 - 4,4	6,3 - 7,3	8,9 - 10,2	11,5 - 13,1	14,3 - 16,0
UNF	1/4	28	6,60	10,44	13,61	16,79	19,96	23,14	7,53	6,55	6,72	6,35	9,52	12,70	15,87	19,05	7,77	8,28	4,6 - 5,3	7,6 - 8,6	10,7 - 12,0	13,7 - 15,3	16,8 - 18,7
UNF	5/16	24	8,20	12,70	16,66	20,62	24,61	28,57	9,31	8,17	8,35	7,92	11,91	15,87	19,84	23,80	9,65	10,16	5,0 - 5,7	8,4 - 9,3	11,6 - 12,9	14,9 - 16,5	18,2 - 20,1
UNF	3/8	24	9,80	14,27	19,05	23,80	28,57	33,32	10,90	9,75	9,93	9,52	14,27	19,05	23,80	28,57	11,38	11,89	6,4 - 7,2	10,4 - 11,5	14,4 - 15,9	18,4 - 20,2	22,4 - 24,6
UNF	7/16	20	11,50	16,81	22,38	27,94	33,50	39,04	12,76	11,39	11,59	11,10	16,66	22,22	27,79	33,32	13,31	13,94	6,2 - 7,0	10,1 - 11,2	13,9 - 15,4	17,8 - 19,6	21,6 - 23,8
UNF	1/2	20	13,00	18,41	24,76	31,11	37,46	43,81	14,35	12,97	13,16	12,70	19,10	25,40	31,75	38,10	15,03	15,67	7,3 - 8,2	11,8 - 13,0	16,2 - 17,9	20,7 - 22,7	25,1 - 27,6
UNF	9/16	18	14,50	20,62	27,79	34,92	42,06	49,20	16,12	14,59	14,79	14,27	21,43	28,57	35,71	42,85	16,91	17,55	7,5 - 8,4	12,1 - 13,4	16,7 - 18,3	21,2 - 23,2	25,8 - 28,2
UNF	5/8	18	16,25	22,22	30,15	38,10	46,02	53,98	17,70	16,18	16,38	15,87	23,80	31,75	39,67	47,62	18,62	19,25	8,6 - 9,5	13,7 - 15,0	18,8 - 20,6	23,9 - 26,1	29,0 - 31,6
UNF	3/4	16	19,50	26,18	35,71	45,23	54,76	64,28	21,11	19,39	19,60	19,05	28,57	38,10	47,62	57,15	22,25	22,88	9,2 - 10,2	14,6 - 16,0	20,0 - 21,6	25,4 - 27,7	30,8 - 33,5
UNF	7/8	14	22,50	30,38	41,50	52,60	63,72	74,83	24,58	22,62	22,84	22,22	33,32	44,45	55,55	66,67	25,93	26,70	9,5 - 10,4	15,0 - 16,4	20,5 - 22,3	26,1 - 28,3	31,5 - 34,3
UNF	1	12	26,00	34,92	47,62	60,32	73,02	85,72	28,15	25,86	26,11	25,40	38,10	50,80	63,50	76,20	29,69	30,45	9,3 - 10,2	14,7 - 16,1	20,2 - 21,9	25,6 - 27,8	31,00 - 33,6
UNF	1"1/8	12	29,00	38,10	52,37	66,67	80,95	95,25	31,33	29,03	29,29	28,57	42,85	57,15	71,42	85,72	33,12	33,88	10,7 - 11,6	16,8 - 18,3	22,9 - 24,9	29,1 - 31,5	35,2 - 38,1
UNF	1"1/4	12	32,50	41,27	57,15	73,02	88,90	104,77	34,50	32,21	32,46	31,75	47,62	63,50	79,37	95,25	36,55	37,31	12,1 - 13,2	18,9 - 20,5	25,7 - 27,9	32,6 - 35,2	39,4 - 42,6
UNF	1"3/8	12	35,50	44,45	61,90	79,37	96,82	114,30	37,68	35,38	35,63	34,80	52,37	69,85	87,30	104,77	40,00	40,90	13,4 - 14,7	20,9 - 22,8	28,4 - 30,9	35,9 - 38,9	43,4 - 46,9
UNF	1"1/2	12	38,50	47,62	66,67	85,72	104,77	123,82	40,85	38,56	38,81	38,10	57,15	76,20	95,25	114,30	43,43	44,32	14,8 - 16,00	23,0 - 25,0	31,2 - 33,8	39,4 - 42,7	47,6 - 51,5
BSW	1/8	40	3,40	6,10	7,59	9,19	10,79	12,37	3,93	3,28	3,43	3,17	4,75	6,35	7,92	9,52	3,98	4,37	2,9 - 3,6	5,0 - 5,9	7,2 - 8,5	9,3 - 10,9	11,5 - 13,5
BSW	3/16	24	5,00	9,52	11,89	14,27	16,66	19,05	6,01	4,98	5,13	4,75	7,14	9,52	11,90	14,27	6,09	6,47	2,5 - 3,0	4,5 - 5,2	6,5 - 7,5	8,6 - 9,8	10,6 - 11,9
BSW	1/4	20	6,70	12,06	15,24	18,41	21,59	24,76	7,84	6,63	6,78	6,35	9,52	12,70	15,87	19,05	7,97	8,38	3,0 - 3,5	5,3 - 6,0	7,6 - 8,6	9,8 - 11,1	12,1 - 13,6
BSW	5/16	18	8,30	15,20	19,20	23,20	27,10	30,14	9,59	8,33	8,48	7,92	11,91	15,87	19,84	23,80	9,78	10,16	3,7 - 4,2	6,3 - 7,0	8,9 - 9,9	11,5 - 12,7	14,1 15,6
BSW	3/8	16	9,90	16,66	21,44	26,18	30,96	35,71	11,39	9,91	10,11	9,52	14,27	19,05	23,80	28,57	11,60	11,99	4,0 - 4,6	6,8 - 7,5	9,6 - 10,6	12,4 - 13,6	15,2 - 16,6
BSW	7/16	14	11,60	19,28	24,84	30,38	35,94	41,50	13,24	11,51	11,76	11,10	16,70	22,20	27,76	33,30	13,51	14,02	4,1 - 4,7	7,0 - 7,7	9,8 - 10,8	12,7 - 13,9	15,5 - 17,00
BSW	1/2	12	13,00	22,22	28,57	34,92	41,27	47,62	15,17	13,08	13,34	12,70	19,05	25,40	31,75	38,10	15,49	16,00	4,0 - 4,6	6,9 - 7,5	9,7 - 10,6	12,5 - 13,7	15,3 - 16,7
BSW	9/16	12	14,75	23,80	30,96	38,10	45,23	52,37	16,76	14,68	14,94	14,27	21,43	28,57	35,71	42,85	17,14	17,65	4,8 - 5,3	7,9 - 8,7	11,1 - 12,1	14,3 - 15,5	17,5 - 18,9
BSW	5/8	11	16,50	26,26	34,21	42,13	50,08	56,74	18,57	16,59	16,84	15,87	23,80	31,75	39,37	47,62	18,97	19,48	4,9 - 5,5	8,1 - 8,8	11,4 - 12,3	14,6 - 15,8	17,8 - 19,3
BSW	3/4	10	19,75	30,48	40,00	49,53	59,05	68,58	22,02	19,84	20,09	19,05	28,57	38,10	47,62	57,15	22,50	23,00	5,5 - 6,1	9,1 - 9,8	12,6 - 13,6	16,2 - 17,4	19,7 - 21,2
BSW	7/8	9	23,00	34,92	46,02	57,15	68,25	79,37	25,52	23,01	23,27	22,22	33,32	44,45	55,55	66,67	26,08	26,72	5,9 - 6,5	9,6 - 10,3	13,3 - 14,4	17,0 - 18,3	20,8 - 22,3
BSW	1"	8	26,00	39,70	52,37	65,07	77,77	90,47	29,10	26,19	26,52	25,40	38,10	50,80	63,50	76,20	29,77	30,40	6,0 - 6,6	9,8 - 10,5	13,6 - 14,6	17,4 - 18,7	21,1 - 22,7
G	1/8	28	9,90	7,29	8,86	10,46	12,03	13,64	10,82	9,91	10,16	3,17	4,75	6,35	7,92	9,53	11,53	12,03	1,6 - 2,0	3,1 - 3,7	4,6 - 5,4	6,3 - 7,1	
G	1/4	19	13,50	12,39	15,57	18,74	21,92	25,10	14,74	13,46	13,72	6,35	9,52	12,70	15,87	19,05	15,72	16,23	2,7 - 3,2	4,8 - 5,6	7,0 - 7,9	9,1 - 10,2	
G	3/8	19	17,00	15,57	20,32	25,09	29,84	34,62	18,25	17,02	17,27	9,52	14,27	19,05	23,80	28,57	19,50	20,01	4,9 - 5,7	8,1 - 9,1	11,3 - 12,7	14,5 - 16,2	
G	1/2	14	21,50	20,82	27,17	33,52	39,87	46,22	23,09	21,34	21,59	12,70	19,05	25,40	31,75	38,10	24,69	25,20	4,8 - 5,5	8,0 - 9,0	11,1 - 12,4	14,3 - 15,9	

2102 HSSE DIN 371

M-MF DIN 13 | Form. C | Tol. 6H | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
M1,0	**0,25**	*56,27*	**40**	**6**	**2,10**	**2,5**
M1,1	**0,25**	*56,27*	**40**	**6**	**2,10**	**2,5**
M1,2	**0,25**	*40,25*	**40**	**6**	**2,10**	**2,5**
M1,4	**0,30**	*40,25*	**40**	**7**	**2,10**	**2,5**
M1,6	**0,35**	*39,53*	**40**	**8**	**2,10**	**2,5**
M1,7	**0,35**	*36,12*	**40**	**8**	**2,10**	**2,5**
M1,8	**0,35**	*37,13*	**40**	**8**	**2,10**	**2,5**
M2,0	**0,40**	*17,27*	**45**	**10**	**2,10**	**2,8**
M2,2	**0,45**	*17,85*	**45**	**10**	**2,10**	**2,8**
M2,3	**0,40**	*17,85*	**45**	**10**	**2,10**	**2,8**
M2,5	**0,45**	*17,27*	**50**	**9**	**2,10**	**2,8**
M2,6	**0,45**	*17,27*	**50**	**9**	**2,10**	**2,8**
M3,0	0,35	*26,24*	56	11	2,70	3,5
M3,0	**0,50**	*11,86*	**56**	**11**	**2,70**	**3,5**
*M3,0	0,60	*19,88*	56	11	2,70	3,5

Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,5	**0,60**	*15,68*	**56**	**12**	**3,00**	**4,0**
*M3,5	0,75	*22,66*	56	11	3,00	4,0
M4,0	0,50	*24,76*	63	13	3,40	4,5
M4,0	**0,70**	*12,13*	**63**	**13**	**3,40**	**4,5**
M4,5	**0,75**	*21,62*	**70**	**14**	**4,90**	**6,0**
M5,0	0,50	*25,45*	70	14	4,90	6,0
*M5,0	0,75	*25,99*	70	16	4,90	6,0
M5,0	**0,80**	*12,17*	**70**	**16**	**4,90**	**6,0**
M6,0	0,75	*21,84*	80	14	4,90	6,0
M6,0	**1,00**	*13,82*	**80**	**19**	**4,90**	**6,0**
M7,0	**1,00**	*16,71*	**80**	**18**	**5,50**	**7,0**
M8,0	0,75	*25,52*	80	18	6,20	8,0
M8,0	**1,25**	*15,53*	**90**	**22**	**6,20**	**8,0**
M9,0	**1,25**	*25,23*	**90**	**22**	**7,00**	**9,0**
M10,0	**1,50**	*17,41*	**100**	**24**	**8,00**	**10,0**

***(Hasta fin de existencias /** Jusqu'à épuisement des stocks / While supplies last)

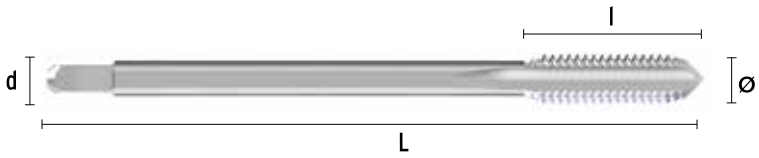
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2101 HSSE DIN 376/374

M-MF DIN 13 | Form. C | Tol. 6H | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	**0,50**	*11,64*	**56**	**11**	**2,00**	**2,2**
*M3,5	0,60	*15,68*	56	13	2,10	2,8
M4,0	**0,70**	*12,13*	**63**	**13**	**2,10**	**2,8**
M5,0	**0,80**	*12,17*	**70**	**16**	**2,70**	**3,5**
*M6,0	0,50	*30,55*	80	18	3,40	4,5
*M6,0	0,75	*20,10*	80	14	3,40	4,5
M6,0	**1,00**	*13,82*	**80**	**19**	**3,40**	**4,5**
*M7,0	0,50	*34,77*	80	19	4,30	5,5
*M7,0	0,75	*26,82*	80	14	4,30	5,5
*M7,0	1,00	*16,71*	80	19	4,30	5,5
*M8,0	0,50	*33,48*	80	19	4,90	6,0
*M8,0	0,75	*24,46*	80	19	4,90	6,0
M8,0	1,00	*19,81*	90	20	4,90	6,0
M8,0	**1,25**	*15,53*	**90**	**22**	**4,90**	**6,0**
*M9,0	0,75	*36,29*	90	22	5,50	7,0
M9,0	1,00	*30,22*	90	20	5,50	7,0
*M9,0	1,25	*25,23*	90	20	5,50	7,0
*M10,0	0,50	*96,17*	90	18	5,50	7,0
M10,0	0,75	*39,13*	90	18	5,50	7,0
M10,0	1,00	*22,00*	90	20	5,50	7,0
M10,0	1,25	*25,17*	100	20	5,50	7,0
M10,0	**1,50**	*17,41*	**100**	**24**	**5,50**	**7,0**
M11,0	1,00	*38,64*	90	20	6,20	8,0
*M11,0	1,25	*38,64*	90	22	6,20	8,0
M11,0	1,50	*31,77*	100	24	6,20	8,0
*M12,0	0,75	*60,37*	100	22	7,00	9,0
M12,0	1,00	*30,05*	100	20	7,00	9,0
M12,0	1,25	*30,39*	100	20	7,00	9,0
M12,0	1,50	*27,18*	100	22	7,00	9,0
M12,0	**1,75**	*22,43*	**110**	**29**	**7,00**	**9,0**
*M13,0	0,75	*103,30*	100	22	9,00	11,0
*M13,0	1,00	*55,81*	100	22	9,00	11,0
*M13,0	1,25	*55,81*	100	22	9,00	11,0
*M13,0	1,50	*55,81*	100	22	9,00	11,0
*M13,0	1,75	*55,81*	110	27	9,00	11,0
*M14,0	0,75	*103,30*	100	22	9,00	11,0
M14,0	1,00	*48,31*	100	20	9,00	11,0
M14,0	1,25	*39,72*	100	20	9,00	11,0
M14,0	1,50	*31,33*	100	20	9,00	11,0
M14,0	**2,00**	*31,08*	**110**	**30**	**9,00**	**11,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M15,0	1,00	*62,22*	100	20	9,00	12,0
*M15,0	1,25	*67,96*	100	22	9,00	12,0
*M15,0	1,50	*55,24*	100	22	9,00	12,0
*M15,0	2,00	*67,60*	110	30	9,00	12,0
M16,0	1,00	*58,63*	100	20	9,00	12,0
*M16,0	1,25	*63,95*	100	22	9,00	12,0
M16,0	1,50	*35,77*	100	22	9,00	12,0
M16,0	**2,00**	*36,53*	**110**	**30**	**9,00**	**12,0**
*M17,0	1,00	*116,62*	100	20	9,00	12,0
*M17,0	1,25	*116,62*	100	22	9,00	12,0
*M17,0	1,50	*116,62*	100	22	9,00	12,0
M18,0	1,00	*65,65*	110	24	11,00	14,0
*M18,0	1,25	*82,98*	110	25	11,00	14,0
M18,0	1,50	*51,27*	110	25	11,00	14,0
M18,0	2,00	*73,74*	125	34	11,00	14,0
M18,0	**2,50**	*52,66*	**125**	**34**	**11,00**	**14,0**
*M19,0	1,00	*153,22*	110	25	11,00	14,0
*M19,0	1,25	*153,13*	110	25	11,00	14,0
*M19,0	1,50	*153,21*	110	25	11,00	14,0
M20,0	1,00	*86,67*	125	24	12,00	16,0
M20,0	1,25	*153,22*	125	25	12,00	16,0
M20,0	1,50	*58,06*	125	25	12,00	16,0
M20,0	2,00	*76,08*	140	27	12,00	16,0
M20,0	**2,50**	*55,96*	**140**	**34**	**12,00**	**16,0**
*M21,0	1,00	*222,44*	125	25	12,00	16,0
*M21,0	1,25	*222,44*	125	25	12,00	16,0
*M21,0	1,50	*163,30*	125	25	12,00	16,0
M22,0	1,00	*97,17*	125	24	14,50	18,0
*M22,0	1,25	*153,22*	125	25	14,50	18,0
M22,0	1,50	*69,88*	125	24	14,50	18,0
M22,0	2,00	*97,17*	140	27	14,50	18,0
M22,0	**2,50**	*70,94*	**140**	**34**	**14,50**	**18,0**
*M23,0	1,00	*222,34*	125	25	14,50	18,0
*M23,0	1,50	*222,34*	125	25	14,50	18,0
M24,0	1,00	*105,94*	140	27	14,50	18,0
*M24,0	1,25	*222,44*	140	28	14,50	18,0
M24,0	1,50	*85,93*	140	27	14,50	18,0
M24,0	2,00	*108,64*	140	27	14,50	18,0
M24,0	**3,00**	*84,96*	**160**	**38**	**14,50**	**18,0**
M25,0	1,00	*287,75*	140	28	14,50	18,0

(**continúa Ref.2101** / suite Réf.2101 / Ref.2101 cont'd)

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

MACHOS DE MÁQUINA
TARAUDS MACHINE / MACHINE TAPS / MASCHINENGEWINDEBOHRER

Ø	P	€	L mm	l mm	⊠ mm	d mm
M25,0	1,50	*133,73*	140	27	14,50	18,0
*M25,0	2,00	*287,75*	140	28	14,50	18,0
*M26,0	1,00	*287,75*	140	28	14,50	18,0
*M26,0	1,50	*115,90*	140	27	14,50	18,0
*M26,0	2,00	*287,75*	140	28	14,50	18,0
*M27,0	1,00	*145,55*	140	27	16,00	20,0
M27,0	1,50	*126,57*	140	27	16,00	20,0
M27,0	2,00	*151,47*	140	27	16,00	20,0
M27,0	**3,00**	*106,04*	**160**	**38**	**16,00**	**20,0**
*M28,0	1,00	*287,75*	140	28	16,00	20,0
M28,0	1,50	*126,57*	140	27	16,00	20,0
M28,0	2,00	*287,75*	140	27	16,00	20,0
*M30,0	1,00	*161,90*	150	27	18,00	22,0
M30,0	1,50	*131,92*	150	27	18,00	22,0
M30,0	2,00	*163,30*	150	27	18,00	22,0
*M30,0	3,00	*179,55*	180	45	18,00	22,0
M30,0	**3,50**	*135,89*	**180**	**40**	**18,00**	**22,0**
*M32,0	1,00	*353,20*	150	28	18,00	22,0
M32,0	1,50	*166,88*	150	27	18,00	22,0
*M32,0	2,00	*353,35*	150	27	18,00	22,0
*M33,0	1,00	*353,35*	160	30	20,00	25,0
M33,0	1,50	*182,89*	160	30	20,00	25,0
M33,0	2,00	*308,20*	160	30	20,00	25,0
*M33,0	3,00	*338,87*	180	50	20,00	25,0
M33,0	**3,50**	*163,30*	**180**	**45**	**20,00**	**25,0**
*M34,0	1,50	*214,91*	170	30	22,00	28,0
*M34,0	2,00	*387,84*	170	30	22,00	28,0
M35,0	1,50	*214,34*	170	30	22,00	28,0
M36,0	1,50	*209,03*	170	30	22,00	28,0
M36,0	2,00	*282,34*	170	30	22,00	28,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M36,0	3,00	*323,90*	200	50	22,00	28,0
M36,0	**4,00**	*208,71*	**200**	**50**	**22,00**	**28,0**
M38,0	1,50	*222,85*	170	30	22,00	28,0
*M38,0	2,00	*456,78*	170	30	22,00	28,0
M39,0	1,50	*337,72*	170	30	24,00	32,0
M39,0	2,00	*337,72*	170	30	24,00	32,0
M39,0	3,00	*457,29*	200	50	24,00	32,0
M39,0	**4,00**	*266,48*	**200**	**55**	**24,00**	**32,0**
M40,0	1,50	*291,51*	170	30	24,00	32,0
M40,0	2,00	*338,62*	170	30	24,00	32,0
*M40,0	3,00	*338,62*	200	60	24,00	32,0
M42,0	1,50	*295,89*	170	30	24,00	32,0
M42,0	2,00	*387,35*	170	30	24,00	32,0
M42,0	3,00	*387,35*	200	50	24,00	32,0
M42,0	**4,50**	*342,55*	**200**	**60**	**24,00**	**32,0**
M45,0	1,50	*366,33*	180	30	29,00	36,0
M45,0	2,00	*465,08*	180	30	29,00	36,0
M45,0	3,00	*465,08*	200	50	29,00	36,0
M45,0	**4,50**	*374,31*	**220**	**60**	**29,00**	**36,0**
M48,0	1,50	*374,31*	190	30	29,00	36,0
M48,0	2,00	*563,66*	190	30	29,00	36,0
M48,0	3,00	*563,63*	225	50	29,00	36,0
M48,0	**5,00**	*460,24*	**250**	**65**	**29,00**	**36,0**
M50,0	1,50	*437,72*	190	30	29,00	36,0
M52,0	1,50	*443,11*	190	32	32,00	40,0
M52,0	2,00	*677,02*	190	32	32,00	40,0
*M52,0	3,00	*695,12*	225	50	32,00	40,0
M52,0	**5,00**	*471,37*	**250**	**65**	**32,00**	**40,0**
***M63,0**	**1,50**	*1.015,56*	**275**	**40**	**32,00**	**40,0**

***(Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)**

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2102/5 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H | LH | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*23,73*	56	10	2,70	3,5
M4,0	0,70	*24,22*	63	12	3,40	4,5
M5,0	0,80	*24,33*	70	14	4,90	6,0

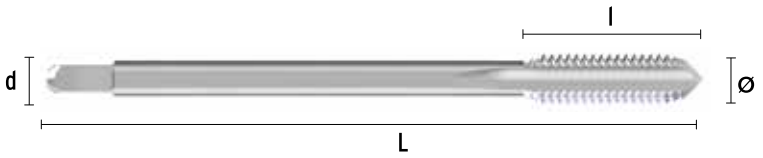
Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*27,61*	80	18	4,90	6,0
M8,0	1,25	*31,09*	90	20	6,20	8,0
M10,0	1,50	*34,82*	100	20	8,00	10,0

2101/5 HSSE DIN 376/374

M-MF DIN 13 | Form. C | Tol. 6H | LH | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
*M5,0	0,80	*24,33*	70	14	2,70	3,5
*M6,0	1,00	*27,61*	80	18	3,40	4,5
*M7,0	1,00	*33,43*	80	18	4,30	5,5
*M8,0	1,00	*39,62*	90	20	4,90	6,0
*M8,0	1,25	*31,09*	90	20	4,90	6,0
*M9,0	1,25	*50,49*	90	20	5,50	7,0
*M10,0	1,00	*43,96*	90	20	5,50	7,0
*M10,0	1,25	*34,82*	90	20	5,50	7,0
*M10,0	1,50	*34,82*	100	20	5,50	7,0
*M12,0	1,25	*60,75*	100	20	7,00	9,0
*M12,0	1,50	*54,34*	100	20	7,00	9,0
M12,0	1,75	*44,88*	110	24	7,00	9,0
*M14,0	1,50	*62,65*	100	20	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M14,0	2,00	*62,14*	110	25	9,00	11,0
*M16,0	1,50	*71,52*	100	20	9,00	12,0
M16,0	2,00	*73,04*	110	32	9,00	12,0
*M18,0	1,50	*102,54*	110	24	11,00	14,0
M18,0	2,50	*110,40*	125	32	11,00	14,0
*M20,0	1,50	*116,12*	125	24	12,00	16,0
M20,0	2,50	*117,25*	140	32	12,00	16,0
*M22,0	1,50	*139,78*	125	24	14,50	18,0
M22,0	2,50	*141,91*	140	32	14,50	18,0
*M24,0	1,50	*171,89*	140	27	14,50	18,0
M24,0	3,00	*169,94*	160	38	14,50	18,0
*M27,0	3,00	*212,06*	160	38	16,00	20,0
*M30,0	3,50	*271,76*	180	40	18,00	22,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2114 HSSE DIN 371

M-MF DIN 13 | Form. A | Tol. 6H | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
*M2,0	0,40	*18,32*	45	8	2,10	2,8
*M2,2	0,45	*19,83*	45	9	2,10	2,8
*M2,3	0,40	*18,89*	45	9	2,10	2,8
*M2,5	0,45	*18,32*	50	9	2,10	2,8
*M2,6	0,45	*18,32*	50	9	2,10	2,8
M3,0	0,50	*13,06*	56	11	2,70	3,5
*M3,5	0,60	*16,63*	56	12	3,00	4,0
M4,0	0,70	*13,32*	63	13	3,40	4,5

Ø	P	€	L mm	l mm	⊠ mm	d mm
M4,5	0,75	*22,90*	70	14	4,90	6,0
M5,0	0,80	*13,39*	70	16	4,90	6,0
M6,0	1,00	*15,19*	80	19	4,90	6,0
M7,0	1,00	*17,37*	80	16	5,50	7,0
M8,0	1,25	*17,08*	90	19	6,20	8,0
*M9,0	1,25	*26,76*	90	19	7,00	9,0
M10,0	1,50	*19,13*	100	22	8,00	10,0

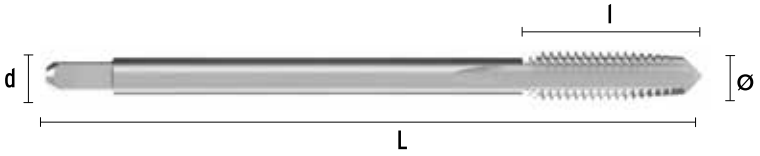
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2113 HSSE DIN 376/374

M-MF DIN 13 | Form. A | Tol. 6H | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
*M3,0	0,50	*13,06*	56	11	2,00	2,2
*M3,5	0,60	*16,63*	56	13	2,10	2,8
M4,0	0,70	*13,32*	63	13	2,10	2,8
M5,0	0,80	*13,39*	70	16	2,70	3,5
M6,0	1,00	*15,19*	80	19	3,40	4,5
*M7,0	1,00	*17,37*	80	19	4,30	5,5
M8,0	1,25	*17,08*	90	22	4,90	6,0
*M9,0	1,25	*26,76*	90	22	5,50	7,0
M10,0	1,50	*19,13*	100	24	5,50	7,0
*M11,0	1,50	*33,70*	100	24	6,20	8,0
M12,0	1,75	*24,70*	110	29	7,00	9,0
*M13,0	1,75	*59,15*	110	29	9,00	11,0
M14,0	2,00	*32,30*	110	30	9,00	11,0
*M15,0	2,00	*71,62*	110	30	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*37,94*	110	32	9,00	12,0
M18,0	2,50	*58,49*	125	34	11,00	14,0
M20,0	2,50	*62,13*	140	34	12,00	16,0
M22,0	2,50	*75,16*	140	34	14,50	18,0
M24,0	3,00	*90,04*	160	38	14,50	18,0
*M27,0	3,00	*112,34*	160	38	16,00	20,0
*M30,0	3,50	*143,98*	180	45	18,00	22,0
*M33,0	3,50	*173,02*	180	50	20,00	25,0
*M36,0	4,00	*221,16*	200	56	22,00	28,0
*M39,0	4,00	*282,33*	200	60	24,00	32,0
*M42,0	4,50	*362,96*	200	60	24,00	32,0
*M45,0	4,50	*396,58*	220	65	29,00	36,0
*M48,0	5,00	*487,65*	250	70	29,00	36,0
*M52,0	5,00	*499,41*	250	70	32,00	40,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2190 HSSE DIN 371

M DIN 13 | Form. E | Tol. 6H | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
										● 25-35							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*13,26*	56	11	2,70	3,5
M4,0	0,70	*13,54*	63	13	3,40	4,5
M5,0	0,80	*13,59*	70	16	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*15,46*	80	19	4,90	6,0
M8,0	1,25	*19,82*	90	22	6,20	8,0
M10,0	1,50	*25,58*	100	24	8,00	10,0

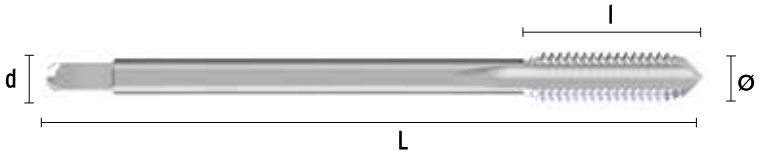
2191 HSSE DIN 376

M DIN 13 | Form. E | Tol. 6H | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
										● 25-35							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*15,46*	80	19	3,40	4,5
M8,0	1,25	*19,82*	90	22	4,90	6,0
M10,0	1,50	*25,58*	100	24	5,50	7,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*34,06*	110	29	7,00	9,0
M14,0	2,00	*40,05*	110	30	9,00	11,0
M16,0	2,00	*48,05*	110	32	9,00	12,0

2180 HSSE-PM DIN 371

M DIN 13 | Form. C | Tol. 6HX | 1,5XD | R | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
						● 15-30	● 10-20			○ 35-50							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*23,82*	56	10	2,70	3,5
M4,0	0,70	*24,31*	63	12	3,40	4,5
M5,0	0,80	*24,31*	70	14	4,90	6,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*25,77*	80	18	4,90	6,0
M8,0	1,25	*30,71*	90	20	6,20	8,0
M10,0	1,50	*37,16*	100	20	8,00	10,0

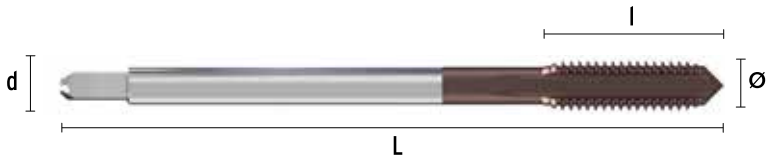
2179 HSSE-PM DIN 376

M DIN 13 | Form. C | Tol. 6HX | 1,5XD | D | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
						● 15-30	● 10-20			○ 35-50							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*30,71*	90	20	4,90	6,0
M10,0	1,50	*37,16*	100	20	5,50	7,0
M12,0	1,75	*46,79*	110	24	7,00	9,0
M14,0	2,00	*59,64*	110	25	9,00	11,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*68,78*	110	32	9,00	12,0
M18,0	2,50	*115,46*	125	32	11,00	14,0
M20,0	2,50	*130,46*	140	32	12,00	16,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

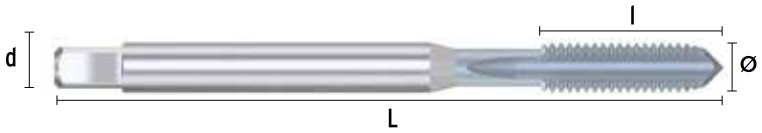
2274 HM DIN 371

M DIN 13 | Form. D | Tol. 6HX | 1,5XD | R | TICN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
															● 3-6	● 2-5	● 1-4

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*99,09*	56	10	2,70	3,5
M4,0	0,70	*102,26*	63	12	3,40	4,5
M5,0	0,80	*105,31*	70	14	4,90	6,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*117,68*	80	18	4,90	6,0
M8,0	1,25	*142,45*	90	20	6,20	8,0
M10,0	1,50	*247,17*	100	20	8,00	10,0

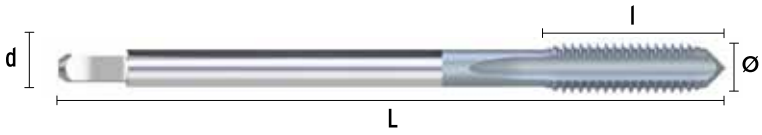
2275 HM DIN 376

M DIN 13 | Form. D | Tol. 6HX | 1,5XD | D | TICN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
															● 3-6	● 2-5	● 1-4

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*420,41*	110	24	7,00	9,0
M14,0	2,00	*420,41*	110	25	9,00	11,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*511,23*	110	32	9,00	12,0

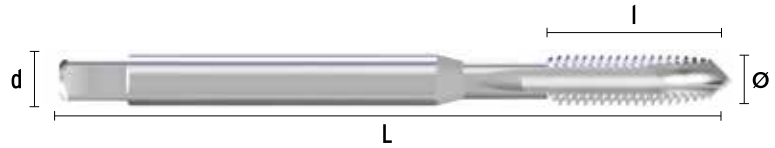
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2104 HSSE DIN 371

M-MF DIN 13 | Form. B "Gun" | Tol. 6H | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	☒ mm	d mm
M2,0	**0,40**	*18,88*	**45**	**10**	**2,10**	**2,8**
M2,2	**0,45**	*18,88*	**45**	**10**	**2,10**	**2,8**
M2,3	**0,45**	*18,88*	**45**	**10**	**2,10**	**2,8**
M2,5	**0,45**	*18,78*	**50**	**9**	**2,10**	**2,8**
M2,6	**0,45**	*18,78*	**50**	**9**	**2,10**	**2,8**
M3,0	0,35	*18,78*	56	10	2,70	3,5
M3,0	**0,50**	*13,38*	**56**	**11**	**2,70**	**3,5**
*M3,0	0,60	*22,20*	56	10	2,70	3,5
M3,5	0,35	*22,20*	56	10	3,00	4,0
M3,5	**0,60**	*17,13*	**56**	**12**	**3,00**	**4,0**
M4,0	0,50	*27,25*	63	12	3,00	4,0
M4,0	**0,70**	*13,67*	**63**	**13**	**3,40**	**4,5**

Ø	P	€	L mm	l mm	☒ mm	d mm
*M4,0	0,75	*19,54*	63	13	3,40	4,5
M4,5	**0,75**	*23,98*	**70**	**14**	**4,90**	**6,0**
M5,0	0,50	*28,01*	70	14	4,90	6,0
M5,0	**0,80**	*13,70*	**70**	**16**	**4,90**	**6,0**
M6,0	0,75	*26,02*	80	14	4,90	6,0
M6,0	**1,00**	*15,03*	**80**	**19**	**4,90**	**6,0**
M7,0	**1,00**	*19,66*	**80**	**18**	**5,50**	**7,0**
M8,0	0,75	*28,38*	80	18	6,20	8,0
M8,0	**1,25**	*16,58*	**90**	**22**	**6,20**	**8,0**
M9,0	**1,25**	*25,73*	**90**	**18**	**7,00**	**9,0**
M10,0	**1,50**	*20,34*	**100**	**24**	**8,00**	**10,0**

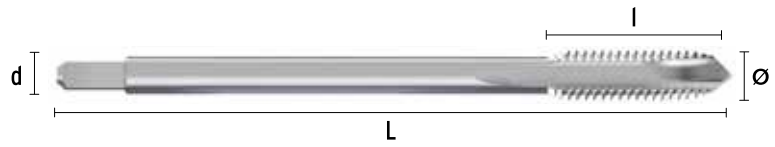
***(Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)**

2103 HSSE DIN 376/374

M-MF DIN 13 | Form. B "Gun" | Tol. 6H | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	☒ mm	d mm
M3,0	**0,50**	*13,38*	**56**	**11**	**2,70**	**3,5**
***M3,5**	**0,60**	*17,14*	**56**	**13**	**3,00**	**4,0**
M4,0	**0,70**	*13,67*	**63**	**13**	**2,10**	**2,8**
***M4,5**	**0,75**	*23,98*	**70**	**16**	**2,70**	**3,5**
M5,0	**0,80**	*13,70*	**70**	**16**	**2,70**	**3,5**
*M6,0	0,75	*22,77*	80	18	3,40	4,5
M6,0	**1,00**	*15,03*	**80**	**19**	**3,40**	**4,5**
*M7,0	0,75	*29,72*	80	18	4,30	5,5
***M7,0**	**1,00**	*19,66*	**80**	**18**	**4,30**	**5,5**
*M8,0	0,75	*28,12*	90	20	4,30	5,5
M8,0	1,00	*21,78*	90	20	4,90	6,0
M8,0	**1,25**	*16,58*	**90**	**22**	**4,90**	**6,0**
M9,0	1,00	*33,23*	90	20	5,50	7,0
*M9,0	1,25	*25,73*	90	20	5,50	7,0
M10,0	0,75	*39,94*	90	18	5,50	7,0

Ø	P	€	L mm	l mm	☒ mm	d mm
M10,0	1,00	*24,27*	90	20	5,50	7,0
M10,0	1,25	*28,91*	100	20	5,50	7,0
M10,0	**1,50**	*20,34*	**100**	**24**	**5,50**	**7,0**
M11,0	1,00	*42,54*	90	20	6,20	8,0
*M11,0	1,25	*42,54*	100	22	6,20	8,0
M11,0	**1,50**	*34,94*	**100**	**22**	**6,20**	**8,0**
M12,0	1,00	*33,07*	100	20	7,00	9,0
M12,0	1,25	*33,43*	100	20	7,00	9,0
M12,0	1,50	*29,85*	100	20	7,00	9,0
M12,0	**1,75**	*25,96*	**110**	**29**	**7,00**	**9,0**
*M13,0	1,00	*61,39*	100	22	9,00	11,0
*M13,0	1,25	*61,35*	100	22	9,00	11,0
*M13,0	1,50	*61,35*	100	22	9,00	11,0
***M13,0**	**1,75**	*61,39*	**110**	**27**	**9,00**	**11,0**
M14,0	1,00	*53,14*	100	20	9,00	11,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

MACHOS DE MÁQUINA
TARAUDS MACHINE / MACHINE TAPS / MASCHINENGEWINDEBOHRER

Ø	P	€	L mm	l mm	⊠ mm	d mm
M14,0	1,25	*43,36*	100	20	9,00	11,0
M14,0	1,50	*34,49*	100	20	9,00	11,0
M14,0	**2,00**	*34,19*	**110**	**30**	**9,00**	**11,0**
M15,0	1,00	*68,29*	100	20	9,00	12,0
*M15,0	1,25	*74,78*	100	22	9,00	12,0
*M15,0	1,50	*60,74*	100	22	9,00	12,0
***M15,0**	**2,00**	*74,36*	**110**	**30**	**9,00**	**12,0**
M16,0	1,00	*64,47*	100	20	9,00	12,0
*M16,0	1,25	*71,47*	100	22	9,00	12,0
M16,0	1,50	*42,98*	100	22	9,00	12,0
M16,0	**2,00**	*42,00*	**110**	**30**	**9,00**	**12,0**
M18,0	1,00	*72,17*	110	24	11,00	14,0
M18,0	1,50	*56,40*	110	24	11,00	14,0
M18,0	2,00	*81,15*	125	27	11,00	14,0
M18,0	**2,50**	*57,07*	**125**	**34**	**11,00**	**14,0**
M20,0	1,00	*95,36*	125	24	12,00	16,0
M20,0	1,50	*63,83*	125	25	12,00	16,0
M20,0	2,00	*83,67*	140	27	12,00	16,0
M20,0	**2,50**	*61,57*	**140**	**34**	**12,00**	**16,0**
M22,0	1,00	*106,89*	125	25	14,50	18,0
M22,0	1,50	*76,86*	125	25	14,50	18,0
M22,0	2,00	*106,89*	140	27	14,50	18,0
M22,0	2,50	*78,03*	140	34	14,50	18,0
M24,0	1,00	*133,16*	140	28	14,50	18,0
M24,0	1,50	*94,48*	140	27	14,50	18,0
M24,0	2,00	*119,49*	140	27	14,50	18,0
M24,0	**3,00**	*92,93*	**160**	**38**	**14,50**	**18,0**
M25,0	1,50	*146,82*	140	27	14,50	18,0
*M25,0	2,00	*316,53*	140	28	14,50	18,0
M26,0	1,50	*121,52*	140	27	14,50	18,0
*M26,0	2,00	*316,53*	140	28	14,50	18,0
M27,0	1,50	*138,90*	140	27	16,00	20,0
M27,0	2,00	*165,63*	140	27	16,00	20,0
M27,0	**3,00**	*116,25*	**160**	**38**	**16,00**	**20,0**
M28,0	1,50	*138,90*	140	27	16,00	20,0
M28,0	2,00	*316,53*	140	27	16,00	20,0
*M30,0	1,00	*197,58*	150	28	18,00	22,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M30,0	1,50	*145,15*	150	27	18,00	22,0
M30,0	2,00	*179,62*	150	27	18,00	22,0
M30,0	**3,50**	*149,38*	**180**	**40**	**18,00**	**22,0**
M32,0	1,50	*183,48*	150	27	18,00	22,0
*M32,0	2,00	*388,71*	150	28	18,00	22,0
M33,0	1,50	*198,56*	160	30	20,00	25,0
M33,0	2,00	*338,97*	160	30	20,00	25,0
M33,0	**3,50**	*187,90*	**180**	**45**	**20,00**	**25,0**
*M34,0	1,50	*229,93*	170	30	22,00	28,0
M35,0	1,50	*242,96*	170	30	22,00	28,0
M36,0	1,50	*229,93*	170	30	22,00	28,0
M36,0	2,00	*310,56*	170	30	22,00	28,0
M36,0	3,00	*356,28*	200	50	22,00	28,0
M36,0	**4,00**	*229,57*	**200**	**50**	**22,00**	**28,0**
M38,0	1,50	*251,05*	170	30	22,00	28,0
M38,0	2,00	*502,48*	170	30	22,00	28,0
M39,0	1,50	*448,17*	170	30	24,00	32,0
M39,0	2,00	*453,35*	170	30	24,00	32,0
M39,0	3,00	*604,43*	170	30	24,00	32,0
M39,0	**4,00**	*293,14*	**200**	**55**	**24,00**	**32,0**
M40,0	1,50	*320,71*	170	30	24,00	32,0
M40,0	2,00	*341,55*	170	30	24,00	32,0
*M40,0	3,00	*396,10*	200	60	24,00	32,0
M42,0	1,50	*326,01*	170	30	24,00	32,0
M42,0	2,00	*486,57*	170	30	24,00	32,0
M42,0	3,00	*486,57*	170	30	24,00	32,0
M42,0	**4,50**	*376,86*	**200**	**60**	**24,00**	**32,0**
M45,0	1,50	*399,19*	180	30	29,00	36,0
M45,0	2,00	*486,57*	180	30	29,00	36,0
M45,0	3,00	*452,93*	200	50	29,00	36,0
M45,0	**4,50**	*411,69*	**220**	**60**	**29,00**	**36,0**
M48,0	1,50	*539,55*	190	30	29,00	36,0
M48,0	2,00	*543,90*	190	30	29,00	36,0
M48,0	3,00	*518,02*	225	50	29,00	36,0
M48,0	**5,00**	*506,24*	**250**	**65**	**29,00**	**36,0**
M50,0	1,50	*486,54*	190	30	29,00	36,0
M52,0	**5,00**	*518,23*	**250**	**65**	**32,00**	**40,0**

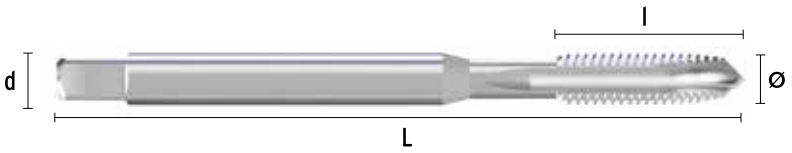
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2104/5 HSSE DIN 371

M-MF DIN 13 | Form. B "Gun" | LH | Tol. 6H | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*25,85*	56	11	2,70	3,5
M4,0	0,70	*26,14*	63	13	3,40	4,5
M5,0	0,80	*27,56*	70	16	4,90	6,0

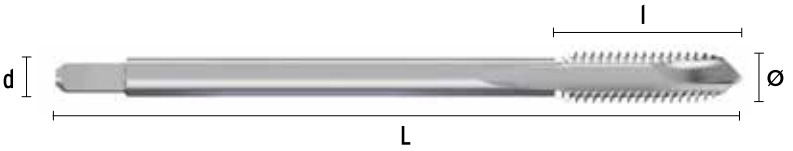
ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*27,56*	80	19	4,90	6,0
M8,0	1,25	*32,19*	90	22	6,20	8,0
M10,0	1,50	*41,23*	100	24	8,00	10,0

2103/5 HSSE DIN 376/374

M-MF DIN 13 | Form. "Gun" B | LH | Tol. 6H | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*58,25*	110	29	7,00	9,0
M16,0	2,00	*85,23*	110	30	9,00	12,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M20,0	2,50	*124,00*	140	34	12,00	16,0
M24,0	3,00	*163,68*	160	38	14,50	18,0

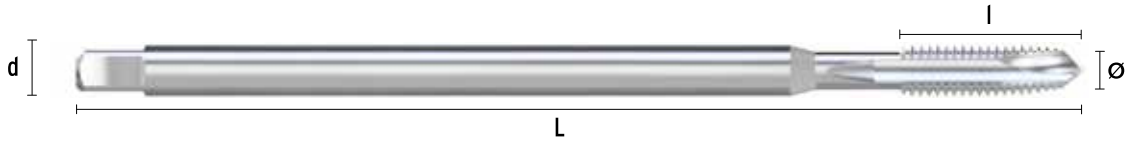
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2111 HSSE DIN 371

M | DIN 13 | Form. B "Gun" | Tol. 6H | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*30,77*	100	10	2,70	3,5
M4,0	0,70	*30,77*	125	12	3,40	4,5
M5,0	0,80	*34,75*	140	14	4,90	6,0
M6,0	1,00	*34,75*	160	18	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
*M8,0	1,25	*45,88*	150	22	6,20	8,0
*M10,0	1,50	*55,68*	150	24	8,00	10,0
*M12,0	1,75	*62,58*	150	29	9,00	12,0

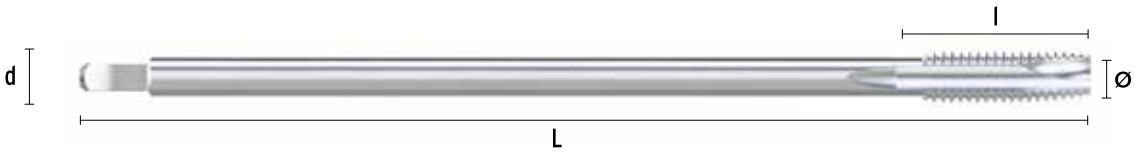
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2272 HSSE DIN 376

M | DIN 13 | Form. B "Gun" | Tol. 6H | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*54,70*	180	20	4,90	6,0
M10,0	1,50	*67,13*	200	20	5,50	7,0
M15,0	1,75	*86,19*	220	24	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*126,20*	220	32	9,00	12,0
M20,0	2,50	*142,00*	250	-	12,00	16,0

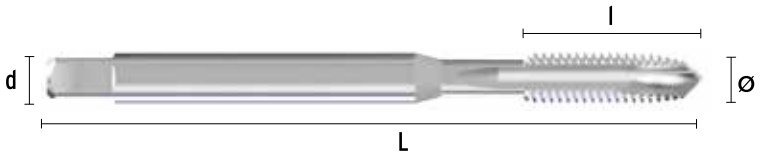
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2110 HSSE DIN 371

M DIN 13 | Form. B "Gun" | Tol. 6H +0,1 | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	☒ mm	d mm
M3,0	0,50	*21,26*	56	11	2,70	3,5
M4,0	0,70	*21,71*	63	13	3,40	4,5
M5,0	0,80	*21,77*	70	14	4,90	6,0

Ø	P	€	L mm	l mm	☒ mm	d mm
M6,0	1,00	*24,74*	80	16	4,90	6,0
M8,0	1,25	*27,85*	90	18	6,20	8,0
M10,0	1,50	*35,07*	100	22	8,00	10,0

2109 HSSE DIN 376

M DIN 13 | Form. B "Gun" | Tol. 6H +0,1 | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	☒ mm	d mm
M8,0	1,25	*27,85*	90	20	4,90	6,0
M10,0	1,50	*35,07*	100	22	5,50	7,0
M12,0	1,75	*44,78*	110	27	7,00	9,0

Ø	P	€	L mm	l mm	☒ mm	d mm
M14,0	2,00	*56,21*	110	30	9,00	11,0
M16,0	2,00	*68,01*	110	30	9,00	12,0

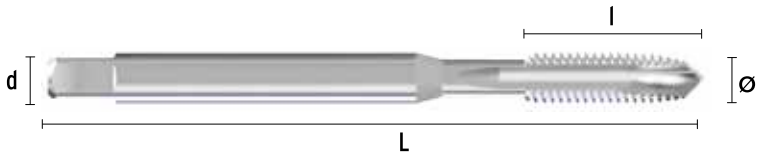
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2168 HSSE DIN 371

M DIN 13 | Form. B "Gun" | Tol. 6G | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*21,02*	56	10	2,70	3,5
M4,0	0,70	*21,02*	63	12	3,40	4,5
M5,0	0,80	*21,02*	70	14	4,90	6,0

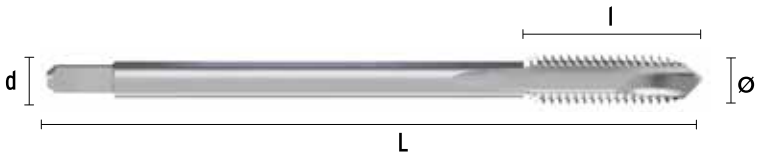
Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*21,20*	80	18	4,90	6,0
M8,0	1,25	*25,43*	90	20	6,20	8,0
M10,0	1,50	*29,89*	100	20	8,00	10,0

2169 HSSE DIN 376

M DIN 13 | Form. B "Gun" | Tol. 6G | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*25,43*	90	20	4,90	6,0
M10,0	1,50	*29,89*	100	20	5,50	7,0
M12,0	1,75	*37,36*	110	24	7,00	9,0
M14,0	2,00	*46,85*	110	25	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*56,67*	110	32	9,00	12,0
M18,0	2,50	*77,85*	125	32	11,00	14,0
M20,0	2,50	*81,38*	140	32	12,00	16,0

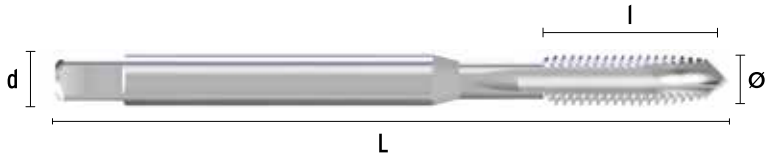
2407 HSSE DIN 371

M DIN 13 | Form. B "Gun" | Tol. 4H | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

NEW



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*19,40*	56	11	2,70	3,5
M4,0	0,70	*19,80*	63	13	3,40	4,5
M5,0	0,80	*19,91*	70	16	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*22,11*	80	19	4,90	6,0
M8,0	1,25	*24,86*	90	22	6,20	8,0
M10,0	1,50	*30,50*	100	24	8,00	10,0

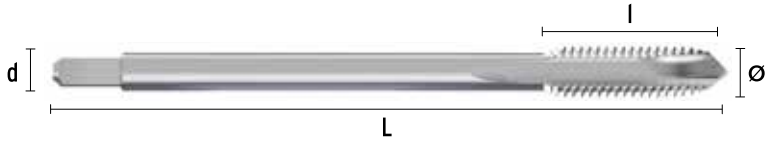
2408 HSSE DIN 376/374

M DIN 13 | Form. B "Gun" | Tol. 4H | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

NEW



Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*37,62*	119	29	7,00	9,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2250 HSSE DIN 371

M DIN13 | Form. B "Gun" | Tol. 6H | 3XD | R | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	*28,27*	**45**	**10**	**2,10**	**2,8**
M2,5	**0,45**	*28,27*	**50**	**9**	**2,10**	**2,8**
M3,0	**0,50**	*14,75*	**56**	**11**	**2,70**	**3,5**
M3,5	**0,60**	*19,51*	**56**	**12**	**3,00**	**4,0**
M4,0	**0,70**	*14,96*	**63**	**13**	**3,40**	**4,5**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M5,0	**0,80**	*15,76*	**70**	**16**	**4,90**	**6,0**
M6,0	**1,00**	*15,76*	**80**	**19**	**4,90**	**6,0**
M8,0	**1,25**	*18,39*	**90**	**22**	**6,20**	**8,0**
M10,0	**1,50**	*23,53*	**100**	**24**	**8,00**	**10,0**

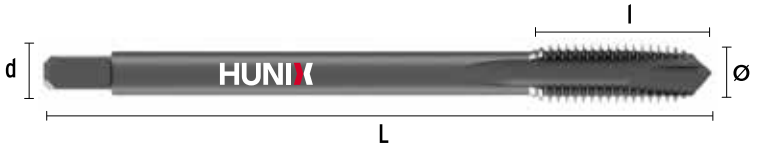
2251 HSSE DIN 376/374

M-MF DIN13 | Form. B "Gun" | Tol. 6H | 3XD | D | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	**0,50**	*17,74*	**56**	**11**	**2,70**	**3,5**
M4,0	**0,70**	*18,93*	**63**	**13**	**2,10**	**2,8**
M5,0	**0,80**	*20,01*	**70**	**16**	**2,70**	**3,5**
M6,0	**1,00**	*20,01*	**80**	**19**	**3,40**	**4,5**
M8,0	1,00	*30,23*	90	20	4,90	6,0
M8,0	**1,25**	*23,29*	**90**	**22**	**4,90**	**6,0**
M10,0	1,00	*34,09*	90	20	5,50	7,0
M10,0	1,25	*39,82*	100	20	5,50	7,0
M10,0	**1,50**	*25,91*	**100**	**24**	**5,50**	**7,0**
M12,0	1,00	*44,09*	100	20	7,00	9,0
M12,0	1,25	*47,73*	100	20	7,00	9,0
M12,0	1,50	*44,09*	100	20	7,00	9,0
M12,0	**1,75**	*33,37*	**110**	**29**	**7,00**	**9,0**
M14,0	1,00	*60,18*	100	20	9,00	11,0
M14,0	1,25	*55,20*	100	20	9,00	11,0
M14,0	1,50	*60,18*	100	20	9,00	11,0
M14,0	**2,00**	*50,09*	**110**	**30**	**9,00**	**11,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	1,00	*69,77*	100	20	9,00	12,0
M16,0	1,50	*61,79*	100	22	9,00	12,0
M16,0	**2,00**	*53,66*	**110**	**30**	**9,00**	**12,0**
M18,0	1,00	*95,88*	110	24	11,00	14,0
M18,0	1,50	*73,69*	110	24	11,00	14,0
M18,0	**2,50**	*73,69*	**125**	**34**	**11,00**	**14,0**
M20,0	1,00	*93,70*	125	24	12,00	16,0
M20,0	1,50	*85,87*	125	25	12,00	16,0
M20,0	**2,50**	*78,05*	**140**	**34**	**12,00**	**16,0**
M22,0	1,00	*133,43*	125	25	14,50	18,0
M22,0	1,50	*111,25*	125	25	14,50	18,0
M22,0	**2,50**	*111,25*	**140**	**34**	**14,50**	**18,0**
M24,0	1,50	*113,34*	140	27	14,50	18,0
M24,0	2,00	*123,65*	140	27	14,50	18,0
M24,0	**3,00**	*103,04*	**160**	**38**	**14,50**	**18,0**
M27,0	3,00	*128,80*	160	38	16,00	20,0
M30,0	3,50	*161,00*	180	40	18,00	22,0

2116 HSSE DIN 371

M DIN 13 | Form. B "Gun" | Tol. 6H | 3XD | R | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

ø	P	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	*29,29*	**45**	**10**	**2,10**	**2,8**
M2,5	**0,45**	*29,29*	**50**	**9**	**2,10**	**2,8**
M3,0	**0,50**	*20,54*	**56**	**11**	**2,70**	**3,5**
M3,5	**0,60**	*24,18*	**56**	**12**	**3,00**	**4,0**
M4,0	**0,70**	*20,71*	**63**	**13**	**3,40**	**4,5**

ø	P	€	L mm	l mm	⊠ mm	d mm
M5,0	**0,80**	*22,65*	**70**	**16**	**4,90**	**6,0**
M6,0	**1,00**	*23,47*	**80**	**19**	**4,90**	**6,0**
M8,0	**1,25**	*28,11*	**90**	**22**	**6,20**	**8,0**
M10,0	**1,50**	*36,96*	**100**	**24**	**8,00**	**10,0**

2115 HSSE DIN 376/374

M-MF DIN13 | Form. B "Gun" | Tol. 6H | 3XD | D | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	**0,50**	*22,66*	**56**	**11**	**2,70**	**3,5**
M4,0	**0,70**	*24,41*	**63**	**13**	**2,10**	**2,8**
M5,0	**0,80**	*26,47*	**70**	**16**	**2,70**	**3,5**
M6,0	**1,00**	*27,35*	**80**	**19**	**3,40**	**4,5**
M8,0	1,00	*42,06*	90	20	4,90	6,0
M8,0	**1,25**	*32,68*	**90**	**22**	**4,90**	**6,0**
M10,0	1,00	*49,58*	90	20	5,50	7,0
M10,0	1,25	*54,15*	100	20	5,50	7,0
M10,0	**1,50**	*41,36*	**100**	**24**	**5,50**	**7,0**
M12,0	1,00	*61,67*	100	20	7,00	9,0
M12,0	1,25	*68,30*	100	20	7,00	9,0
M12,0	1,50	*59,15*	100	20	7,00	9,0
M12,0	**1,75**	*51,28*	**110**	**29**	**7,00**	**9,0**
M14,0	1,00	*81,32*	100	20	9,00	11,0
M14,0	1,25	*75,80*	100	20	9,00	11,0
M14,0	1,50	*78,39*	100	20	9,00	11,0
M14,0	**2,00**	*67,65*	**110**	**30**	**9,00**	**11,0**

ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	1,00	*94,29*	100	20	9,00	12,0
M16,0	1,50	*82,03*	100	22	9,00	12,0
M16,0	**2,00**	*73,28*	**110**	**30**	**9,00**	**12,0**
M18,0	1,00	*116,71*	110	24	11,00	14,0
M18,0	1,50	*104,15*	110	24	11,00	14,0
M18,0	**2,50**	*99,51*	**125**	**34**	**11,00**	**14,0**
M20,0	1,00	*110,73*	125	24	12,00	16,0
M20,0	1,50	*117,28*	125	25	12,00	16,0
M20,0	**2,50**	*108,96*	**140**	**34**	**12,00**	**16,0**
M22,0	1,00	*150,27*	125	25	14,50	18,0
M22,0	1,50	*146,74*	125	25	14,50	18,0
M22,0	**2,50**	*146,80*	**140**	**34**	**14,50**	**18,0**
M24,0	1,50	*159,71*	140	27	14,50	18,0
M24,0	2,00	*175,25*	140	27	14,50	18,0
M24,0	**3,00**	*150,21*	**160**	**38**	**14,50**	**18,0**
M27,0	3,00	*187,76*	160	38	16,00	20,0
M30,0	3,50	*234,70*	180	40	18,00	22,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2254 HSSE-PM DIN 371

M DIN 13 | Form. B "Gun" | Tol. 6HX | 3XD | R | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 20-40	● 15-30	● 10-20	● 5-10	● 5-15	● 5-10	● 10-30	● 10-30	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 2-8	● 2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

NEW

Ø	P	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	*41,20*	**45**	**10**	**2,10**	**2,8**
M3,0	**0,50**	*30,06*	**56**	**5**	**2,70**	**3,5**
M4,0	**0,70**	*31,65*	**63**	**7**	**3,40**	**4,5**
M5,0	**0,80**	*34,38*	**70**	**8**	**4,90**	**6,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	**1,00**	*35,63*	**80**	**10**	**4,90**	**6,0**
M8,0	**1,25**	*42,79*	**90**	**13**	**6,20**	**8,0**
M10,0	**1,50**	*56,28*	**100**	**15**	**8,00**	**10,0**

2255 HSSE-PM DIN 376/374

M DIN 13 | Form. B "Gun" | Tol. 6HX | 3XD | D | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 20-40	● 15-30	● 10-20	● 5-10	● 5-15	● 5-10	● 10-30	● 10-30	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 2-8	● 2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

NEW

Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	**1,25**	*54,45*	**90**	**15**	**4,90**	**6,0**
M10,0	1,00	*63,80*	90	10	5,50	7,0
M10,0	**1,50**	*66,45*	**100**	**17**	**5,50**	**7,0**
M12,0	1,00	*121,85*	100	10	7,00	9,0
M12,0	1,25	*121,85*	100	15	7,00	9,0
M12,0	1,50	*88,85*	100	15	7,00	9,0
M12,0	**1,75**	*77,35*	**110**	**18**	**7,00**	**9,0**
M14,0	1,50	*121,80*	100	15	9,00	11,0
M14,0	**2,00**	*104,55*	**110**	**20**	**9,00**	**11,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	1,50	*122,65*	100	15	9,00	12,0
M16,0	**2,00**	*110,00*	**110**	**20**	**9,00**	**12,0**
M18,0	1,50	*166,95*	110	17	11,00	14,0
M18,0	**2,50**	*166,30*	**125**	**25**	**11,00**	**14,0**
M20,0	1,50	*188,90*	125	17	12,00	16,0
M20,0	**2,50**	*193,15*	**140**	**25**	**12,00**	**16,0**
M22,0	**2,50**	*245,85*	**140**	**25**	**14,50**	**18,0**
M24,0	**3,00**	*249,40*	**160**	**30**	**14,50**	**18,0**

2126 HSSE-PM DIN 371

M DIN 13 | Form. B "Gun" | Tol. 6H | 3XD | R | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
	● 10-15	● 6-10	○ 4-6		● 6-12			● 10-20		○ 4-6		○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*23,44*	56	10	2,70	3,5
M4,0	0,70	*23,78*	63	12	3,40	4,5
M5,0	0,80	*25,70*	70	14	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*26,50*	80	18	4,90	6,0
M8,0	1,25	*31,80*	90	20	6,20	8,0
M10,0	1,50	*41,70*	100	20	8,00	10,0

2125 HSSE-PM DIN 376/374

M-MF DIN13 | Form. B "Gun" | Tol. 6H | 3XD | D | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
	● 10-15	● 6-10	○ 4-6		● 6-12			● 10-20		○ 4-6		○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,00	*49,38*	90	20	4,90	6,0
M8,0	1,25	*36,50*	90	20	4,90	6,0
M10,0	1,00	*51,93*	90	20	5,50	7,0
M10,0	1,25	*69,63*	100	20	5,50	7,0
M10,0	1,50	*45,91*	100	20	5,50	7,0
M12,0	1,00	*67,08*	100	20	7,00	9,0
M12,0	1,25	*71,65*	100	20	7,00	9,0
M12,0	1,50	*67,08*	110	20	7,00	9,0
M12,0	1,75	*58,00*	110	24	7,00	9,0
M14,0	1,25	*84,40*	100	20	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M14,0	1,50	*89,21*	100	20	9,00	11,0
M14,0	2,00	*76,73*	110	25	9,00	11,0
M16,0	1,50	*93,12*	100	20	9,00	12,0
M16,0	2,00	*83,18*	110	32	9,00	12,0
M18,0	1,50	*113,12*	110	24	11,00	14,0
M18,0	2,50	*113,07*	125	32	11,00	14,0
M20,0	1,50	*135,76*	125	24	12,00	16,0
M20,0	2,50	*123,41*	140	32	12,00	16,0
M22,0	2,50	*167,05*	140	32	14,50	18,0
M24,0	3,00	*169,50*	160	38	14,50	18,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2176 HSSE-PM DIN 371

M DIN 13 | Form. B "Gun" | Tol. 6HX | 3XD | R | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
		○ 6-10	● 4-6		○ 4-6			● 10-20		○ 4-6		○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*29,78*	56	10	2,70	3,5
M4,0	0,70	*30,25*	63	12	3,40	4,5
M5,0	0,80	*32,52*	70	14	4,90	6,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*34,62*	80	18	4,90	6,0
M8,0	1,25	*40,38*	90	20	6,20	8,0
M10,0	1,50	*50,44*	100	20	8,00	10,0

2175 HSSE-PM DIN 376

M DIN 13 | Form. B "Gun" | Tol. 6HX | 3XD | D | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
		○ 6-10	● 4-6		○ 4-6			● 10-20		○ 4-6		○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*50,44*	90	20	4,90	6,0
M10,0	1,50	*65,92*	100	20	5,50	7,0
M12,0	1,75	*75,61*	110	24	7,00	9,0
M14,0	2,00	*105,26*	110	25	9,00	11,0

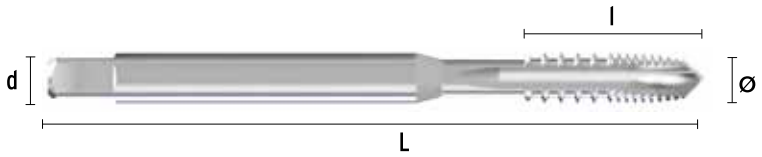
ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*111,21*	110	32	9,00	12,0
M18,0	2,50	*162,65*	125	32	11,00	14,0
M20,0	2,50	*160,58*	140	32	12,00	16,0

2133 HSSE DIN 371

M DIN 13 | B-AZ | Tol. 6H | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
									● 10-20	○ 6-8	○ 10-20	○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	☒ mm	d mm
M3,0	0,50	*21,99*	56	11	2,70	3,5
M4,0	0,70	*21,99*	63	13	3,40	4,5
M5,0	0,80	*21,99*	70	16	4,90	6,0

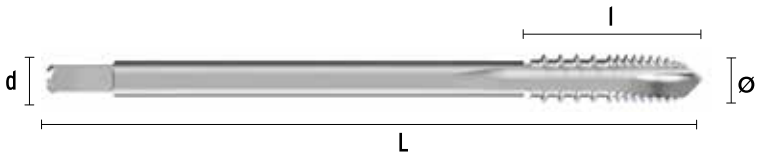
Ø	P	€	L mm	l mm	☒ mm	d mm
M6,0	1,00	*23,16*	80	19	4,90	6,0
M8,0	1,25	*27,70*	90	22	6,20	8,0
M10,0	1,50	*32,63*	100	24	8,00	10,0

2132 HSSE DIN 376

M DIN 13 | B-AZ | Tol. 6H | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
									● 10-20	○ 6-8	○ 10-20	○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	☒ mm	d mm
*M4,0	0,70	*21,99*	63	13	2,10	2,8
*M5,0	0,80	*21,99*	70	16	2,70	3,5
*M6,0	1,00	*23,16*	80	19	3,40	4,5
*M8,0	1,25	*27,70*	90	22	4,90	6,0

Ø	P	€	L mm	l mm	☒ mm	d mm
*M10,0	1,50	*32,63*	100	24	5,50	7,0
M12,0	1,75	*41,17*	110	29	7,00	9,0
M14,0	2,00	*51,27*	110	30	9,00	11,0
M16,0	2,00	*67,98*	110	32	9,00	12,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2258 HSSE-PM DIN 371 SYNCHRO

M DIN 13 | Form. B "Gun" | Tol. 6HX | CNC | 3XD | R | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 20-50	● 15-40	● 10-20	● 5-10	● 5-15	● 5-10	● 10-30	● 10-30	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 2-8	● 2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*28,93*	56	5	2,70	3,5
M4,0	0,70	*32,10*	63	7	3,40	4,5
M5,0	0,80	*33,53*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*34,96*	80	10	4,90	6,0
M8,0	1,25	*42,24*	90	13	6,20	8,0
M10,0	1,50	*55,59*	100	15	8,00	10,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2259 HSSE-PM DIN 376 SYNCHRO

M DIN 13 | Form. B "Gun" | Tol. 6HX | CNC | 3XD | D | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 20-50	● 15-40	● 10-20	● 5-10	● 5-15	● 5-10	● 10-30	● 10-30	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 2-8	● 2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*82,74*	110	18	7,00	9,0
M14,0	2,00	*111,83*	110	20	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*117,69*	110	20	9,00	12,0

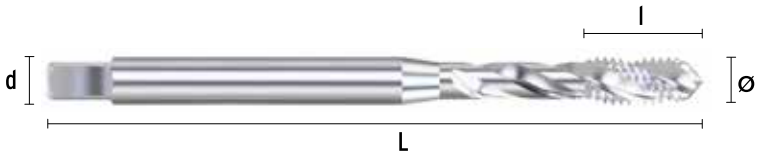
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2106 HSSE DIN 371

M-MF DIN 13 | Form. C | Tol. 6H | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	*37,11*	**45**	**5**	**2,10**	**2,8**
M2,2	**0,45**	*37,11*	**45**	**10**	**2,10**	**2,8**
M2,3	**0,40**	*37,11*	**45**	**10**	**2,10**	**2,8**
M2,5	**0,45**	*37,11*	**50**	**5**	**2,10**	**2,8**
M2,6	**0,45**	*37,11*	**50**	**5**	**2,10**	**2,8**
M3,0	0,35	*37,11*	56	5	2,70	3,5
M3,0	**0,50**	*16,49*	**56**	**6**	**2,70**	**3,5**
M3,5	0,35	*37,11*	56	5	3,00	4,0
M3,5	**0,60**	*20,35*	**56**	**6**	**3,00**	**4,0**
M4,0	0,50	*27,26*	63	7	3,40	4,5
M4,0	**0,70**	*16,49*	**63**	**7**	**3,40**	**4,5**

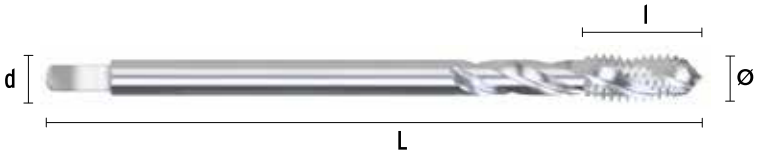
Ø	P	€	L mm	l mm	⊠ mm	d mm
M4,5	**0,75**	*28,09*	**70**	**7**	**4,90**	**6,0**
M5,0	0,50	*38,23*	70	8	4,90	6,0
M5,0	**0,80**	*15,94*	**70**	**8**	**4,90**	**6,0**
M6,0	0,75	*26,84*	80	10	4,90	6,0
M6,0	**1,00**	*17,48*	**80**	**10**	**4,90**	**6,0**
M7,0	**1,00**	*21,40*	**80**	**10**	**5,50**	**7,0**
M8,0	0,75	*31,03*	80	10	6,20	8,0
M8,0	**1,25**	*20,83*	**90**	**14**	**6,20**	**8,0**
M9,0	**1,25**	*36,18*	**90**	**13**	**7,00**	**9,0**
M10,0	**1,50**	*24,23*	**100**	**16**	**8,00**	**10,0**

2105 HSSE DIN 376/374

M-MF DIN13 | Form. C | Tol. 6H | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	**0,50**	*16,49*	**56**	**5**	**2,00**	**2,2**
M4,0	**0,70**	*16,49*	**63**	**7**	**2,10**	**2,8**
M5,0	**0,80**	*15,94*	**70**	**8**	**2,70**	**3,5**
M6,0	**1,00**	*17,48*	**80**	**10**	**3,40**	**4,5**
***M7,0**	**1,00**	*21,40*	**80**	**10**	**4,30**	**5,5**
M8,0	1,00	*25,78*	90	10	4,90	6,0
M8,0	**1,25**	*20,83*	**90**	**14**	**4,90**	**6,0**
M9,0	1,00	*33,22*	90	10	5,50	7,0
***M9,0**	**1,25**	*31,65*	**90**	**13**	**5,50**	**7,0**
M10,0	0,75	*46,92*	90	10	5,50	7,0
M10,0	1,00	*30,44*	90	10	5,50	7,0
M10,0	1,25	*33,09*	100	15	5,50	7,0
M10,0	**1,50**	*24,23*	**100**	**16**	**5,50**	**7,0**
M11,0	1,00	*96,91*	90	10	6,20	8,0
*M11,0	1,25	*86,44*	100	15	6,20	8,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M11,0	**1,50**	*70,61*	**100**	**15**	**6,20**	**8,0**
M12,0	1,00	*39,14*	100	10	7,00	9,0
M12,0	1,25	*37,43*	100	15	7,00	9,0
M12,0	1,50	*36,05*	100	15	7,00	9,0
M12,0	**1,75**	*32,36*	**110**	**18**	**7,00**	**9,0**
M14,0	1,00	*63,21*	100	10	9,00	11,0
M14,0	1,25	*53,98*	100	15	9,00	11,0
M14,0	1,50	*40,65*	100	15	9,00	11,0
M14,0	**2,00**	*41,55*	**110**	**20**	**9,00**	**11,0**
M15,0	1,00	*82,78*	100	10	9,00	12,0
*M15,0	1,50	*60,73*	100	20	9,00	12,0
M16,0	1,00	*132,36*	100	10	9,00	12,0
*M16,0	1,25	*109,86*	100	20	9,00	12,0
M16,0	1,50	*53,04*	100	15	9,00	12,0
M16,0	**2,00**	*50,17*	**110**	**20**	**9,00**	**12,0**

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

MACHOS DE MÁQUINA
TARAUDS MACHINE / MACHINE TAPS / MASCHINENGEWINDEBOHRER

Ø	P	€	L mm	l mm	☐ mm	d mm
M18,0	1,00	*105,38*	110	13	11,00	14,0
M18,0	1,50	*67,14*	110	20	11,00	14,0
M18,0	2,00	*126,53*	125	20	11,00	14,0
M18,0	**2,50**	*67,46*	**125**	**25**	**11,00**	**14,0**
M20,0	1,00	*103,02*	125	13	12,00	16,0
M20,0	1,50	*76,73*	125	20	12,00	16,0
M20,0	2,00	*120,23*	140	20	12,00	16,0
M20,0	**2,50**	*71,87*	**140**	**25**	**12,00**	**16,0**
M22,0	1,00	*101,48*	125	13	14,50	18,0
M22,0	1,50	*82,80*	125	17	14,50	18,0
M22,0	2,00	*113,85*	140	20	14,50	18,0
M22,0	**2,50**	*88,64*	**140**	**27**	**14,50**	**18,0**
M24,0	1,00	*136,07*	140	13	14,50	18,0
M24,0	1,50	*112,51*	140	20	14,50	18,0
M24,0	2,00	*136,07*	140	20	14,50	18,0
M24,0	**3,00**	*108,21*	**160**	**30**	**14,50**	**18,0**
M25,0	1,50	*181,39*	140	20	14,50	18,0
M26,0	1,50	*121,48*	140	20	14,50	18,0
M27,0	1,50	*138,84*	140	20	16,00	20,0
M27,0	2,00	*182,16*	140	20	16,00	20,0
M27,0	**3,00**	*132,54*	**160**	**30**	**16,00**	**20,0**
M28,0	1,50	*138,84*	140	20	16,00	20,0
M28,0	2,00	*227,59*	140	20	16,00	20,0
M30,0	1,50	*173,00*	150	22	18,00	22,0
M30,0	2,00	*365,49*	150	22	18,00	22,0
M30,0	**3,50**	*169,82*	**180**	**35**	**18,00**	**22,0**
M32,0	1,50	*213,49*	150	22	18,00	22,0
M33,0	1,50	*261,80*	160	22	20,00	25,0

Ø	P	€	L mm	l mm	☐ mm	d mm
M33,0	2,00	*287,87*	160	24	20,00	25,0
M33,0	**3,50**	*204,04*	**180**	**35**	**20,00**	**25,0**
M35,0	1,50	*292,05*	170	22	22,00	28,0
M36,0	1,50	*355,91*	170	22	22,00	28,0
M36,0	2,00	*462,55*	170	24	22,00	28,0
M36,0	3,00	*360,80*	200	30	22,00	28,0
M36,0	**4,00**	*275,34*	**200**	**40**	**22,00**	**28,0**
M38,00	1,50	*426,91*	170	24	22,00	28,0
M39,00	1,50	*344,03*	170	25	24,00	32,0
M39,00	2,00	*344,03*	170	25	24,00	32,0
M39,00	3,00	*562,87*	200	30	24,00	32,0
M39,00	**4,00**	*581,63*	**200**	**40**	**24,00**	**32,0**
M40,00	1,50	*469,54*	170	25	24,00	32,0
M40,00	2,00	*381,15*	170	25	24,00	32,0
M42,00	1,50	*504,90*	170	25	24,00	32,0
M42,00	2,00	*425,70*	170	25	24,00	32,0
M42,00	3,00	*425,70*	200	30	24,00	32,0
M42,00	**4,50**	*424,82*	**200**	**45**	**24,00**	**32,0**
M45,00	1,50	*497,48*	180	27	29,00	36,0
M45,00	2,00	*497,48*	180	27	29,00	36,0
M45,00	3,00	*594,00*	200	30	29,00	36,0
M45,00	**4,50**	*779,63*	**220**	**45**	**29,00**	**36,0**
M48,00	1,50	*594,00*	190	27	29,00	36,0
M48,00	2,00	*594,00*	190	27	29,00	36,0
M48,00	3,00	*594,00*	225	33	29,00	36,0
M48,00	**5,00**	*853,88*	**250**	**50**	**29,00**	**36,0**
M50,00	1,50	*693,00*	190	27	29,00	36,0
M52,00	**5,00**	*1.014,75*	**250**	**50**	**32,00**	**40,0**

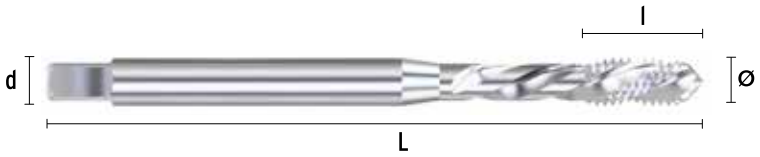
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2106/5 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H | 35° | LH | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*27,56*	56	6	2,70	3,5
M4,0	0,70	*27,90*	63	7	3,40	4,5
M5,0	0,80	*29,45*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*29,45*	80	10	4,90	6,0
M8,0	1,25	*34,35*	90	14	6,20	8,0
M10,0	1,50	*43,95*	100	16	8,00	10,0

2105/5 HSSE DIN 376/374

M DIN13 | Form. C | Tol. 6H | 35° | LH | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*64,70*	110	18	7,00	9,0
M16,0	2,00	*94,63*	110	20	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M20,0	2,50	*137,54*	140	25	12,00	16,0
M24,0	3,00	*181,70*	140	20	14,50	18,0

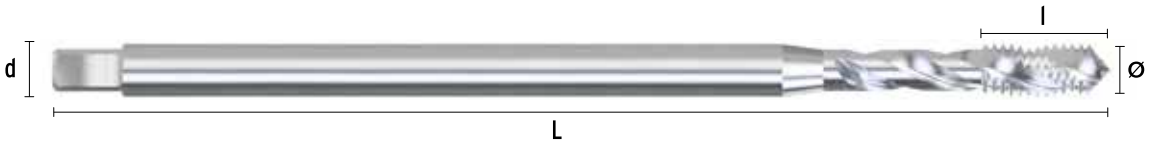
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2112 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*36,34*	100	5	2,70	3,5
M4,0	0,70	*36,34*	125	7	3,40	4,5
M5,0	0,80	*41,91*	140	8	4,90	6,0
M6,0	1,00	*41,91*	160	10	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
*M8,0	1,25	*53,06*	150	14	6,20	8,0
*M10,0	1,50	*64,19*	150	16	8,00	10,0
*M12,0	1,75	*66,79*	150	18	9,00	12,0

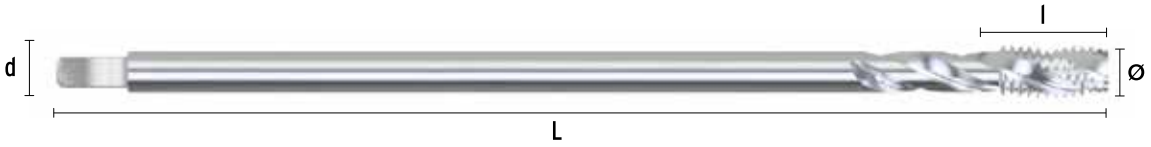
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2273 HSSE DIN 376

M DIN 13 | Form. C | Tol. 6H | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*60,28*	180	15	4,90	6,0
M10,0	1,50	*73,80*	200	17	5,50	7,0
M12,0	1,75	*94,90*	220	18	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*138,84*	220	20	9,00	12,0
M20,0	2,50	*156,15*	250	25	12,00	16,0

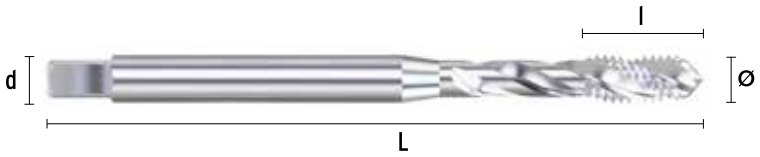
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2166 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H +0,1 | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



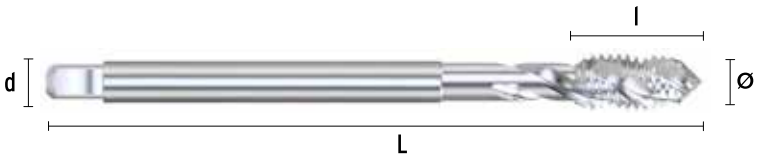
Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*26,63*	56	5	2,70	3,5
M4,0	0,70	*26,63*	63	7	3,40	4,5
M5,0	0,80	*25,71*	70	8	4,90	6,0
M6,0	1,00	*28,19*	80	10	4,90	6,0
M8,0	1,25	*33,65*	90	13	4,90	6,0
M10,0	1,50	*39,90*	110	15	8,00	10,0

2165 HSSE DIN 376

M DIN 13 | Form. C | Tol. 6H +0,1 | 35° | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*33,65*	90	15	4,90	6,0
M10,0	1,50	*39,90*	100	17	5,50	7,0
M12,0	1,75	*44,78*	110	18	7,00	9,0
M14,0	2,00	*64,11*	110	20	9,00	11,0
M16,0	2,00	*77,40*	110	20	9,00	12,0

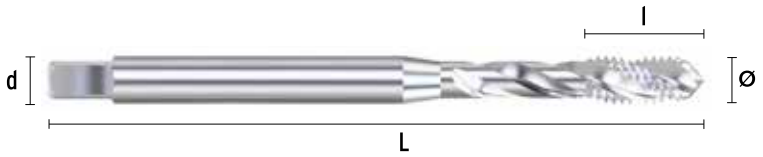
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2170 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6G | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*23,16*	56	5	2,70	3,5
M4,0	0,70	*23,16*	63	7	3,40	4,5
M5,0	0,80	*22,33*	70	8	4,90	6,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*24,50*	80	10	4,90	6,0
M8,0	1,25	*29,25*	90	13	6,20	8,0
M10,0	1,50	*34,66*	110	15	8,00	10,0

2208 HSSE DIN 376

M DIN 13 | Form. C | Tol. 6G | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*29,25*	90	15	4,90	6,0
M10,0	1,50	*34,66*	100	17	5,50	7,0
M12,0	1,75	*46,26*	110	18	7,00	9,0
M14,0	2,00	*53,43*	110	20	9,00	11,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*64,52*	110	20	9,00	12,0
M18,0	2,50	*87,90*	125	25	11,00	14,0
M20,0	2,50	*92,47*	140	25	12,00	16,0

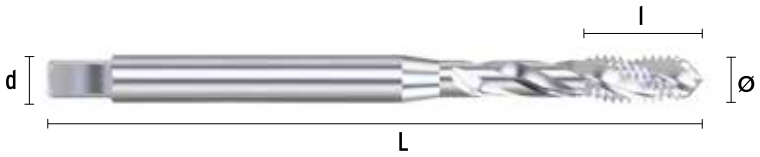
2409 HSSE DIN 371

M DIN 13 | Form. C | Tol. 4H | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

NEW



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*23,29*	56	6	2,70	3,5
M4,0	0,70	*23,76*	63	7	3,40	4,5
M5,0	0,80	*23,89*	70	8	4,90	6,0
M6,0	1,00	*26,53*	80	10	4,90	6,0
M8,0	1,25	*29,83*	90	14	6,20	8,0
M10,0	1,50	*36,61*	100	16	8,00	10,0

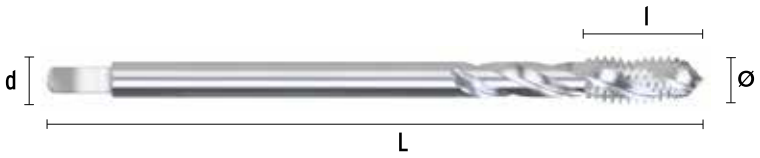
2410 HSSE DIN 376/374

M DIN 13 | Form. C | Tol. 4H | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

NEW



ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*45,14*	110	18	7,00	9,0

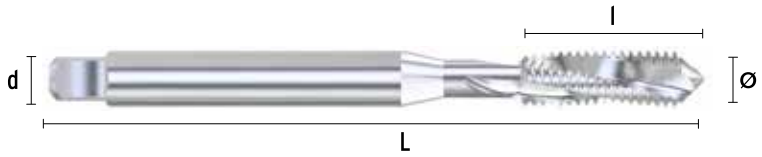
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2108 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H | 15° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
*M2,0	0,40	*20,86*	45	8	2,10	2,8
M3,0	0,50	*17,50*	56	11	2,70	3,5
M4,0	0,70	*16,80*	63	13	3,40	4,5
M5,0	0,80	*16,19*	70	16	4,90	6,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*17,75*	80	19	4,90	6,0
M7,0	1,00	*21,53*	80	19	5,50	7,0
M8,0	1,25	*21,21*	90	22	6,20	8,0
M10,0	1,50	*25,12*	100	24	8,00	10,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2107 HSSE DIN 376/374

M DIN 13 | Form. C | Tol. 6H | 15° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

ø	P	€	L mm	l mm	⊠ mm	d mm
M4,0	0,70	*16,64*	63	13	2,10	2,8
M5,0	0,80	*16,08*	70	16	2,70	3,5
M6,0	1,00	*17,75*	80	19	3,40	4,5
M7,0	1,00	*21,53*	80	19	4,30	5,5
M8,0	1,25	*21,21*	90	22	4,90	6,0
M10,0	1,50	*25,12*	100	24	5,50	7,0
M12,0	1,75	*33,55*	110	29	7,00	9,0
M14,0	2,00	*39,90*	110	30	9,00	11,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*48,20*	110	32	9,00	12,0
M18,0	2,50	*64,85*	125	34	11,00	14,0
M20,0	2,50	*69,08*	140	34	12,00	16,0
M22,0	2,50	*85,20*	140	34	14,50	18,0
M24,0	3,00	*103,51*	160	38	14,50	18,0
*M27,0	3,00	*127,41*	160	38	16,00	20,0
*M30,0	3,50	*163,24*	180	45	18,00	22,0
*M36,0	4,00	*263,23*	200	56	22,00	28,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2252 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H | 35° | 3XD | R | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	*32,13*	**45**	**5**	**2,10**	**2,8**
M2,5	**0,45**	*32,13*	**50**	**5**	**2,10**	**2,8**
M3,0	**0,50**	*17,83*	**56**	**6**	**2,70**	**3,5**
M3,5	**0,60**	*21,38*	**56**	**6**	**3,00**	**4,0**
M4,0	**0,70**	*18,13*	**63**	**7**	**3,40**	**4,5**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M5,0	**0,80**	*19,15*	**70**	**8**	**4,90**	**6,0**
M6,0	**1,00**	*19,15*	**80**	**10**	**4,90**	**6,0**
M8,0	**1,25**	*22,26*	**90**	**14**	**6,20**	**8,0**
M10,0	**1,50**	*28,49*	**100**	**16**	**8,00**	**10,0**

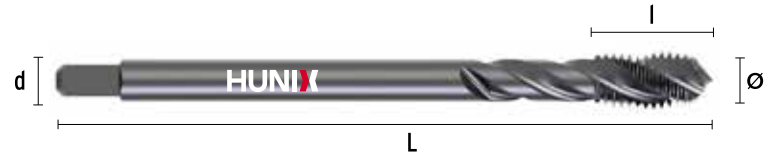
2253 HSSE DIN 376/374

M-MF DIN13 | Form. C | Tol. 6H | 35° | 3XD | D | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	**0,50**	*20,45*	**56**	**5**	**2,00**	**2,2**
M4,0	**0,70**	*20,89*	**63**	**7**	**2,10**	**2,8**
M5,0	**0,80**	*21,97*	**70**	**8**	**2,70**	**3,5**
M6,0	**1,00**	*21,97*	**80**	**10**	**3,40**	**4,5**
M8,0	1,00	*33,29*	90	10	4,90	6,0
M8,0	**1,25**	*25,60*	**90**	**14**	**4,90**	**6,0**
M10,0	1,00	*37,64*	90	10	5,50	7,0
M10,0	1,25	*43,87*	100	15	5,50	7,0
M10,0	**1,50**	*31,38*	**100**	**16**	**5,50**	**7,0**
M12,0	1,00	*48,44*	100	10	7,00	9,0
M12,0	1,25	*52,58*	100	15	7,00	9,0
M12,0	1,50	*48,44*	100	15	7,00	9,0
M12,0	**1,75**	*40,40*	**110**	**18**	**7,00**	**9,0**
M14,0	1,00	*66,14*	100	10	9,00	11,0
M14,0	1,25	*60,71*	100	15	9,00	11,0
M14,0	1,50	*66,14*	100	15	9,00	11,0
M14,0	**2,00**	*55,20*	**110**	**20**	**9,00**	**11,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	1,00	*76,67*	100	10	9,00	12,0
M16,0	1,50	*67,87*	100	15	9,00	12,0
M16,0	**2,00**	*59,03*	**110**	**20**	**9,00**	**12,0**
M18,0	1,00	*105,38*	110	13	11,00	14,0
M18,0	1,50	*81,07*	110	20	11,00	14,0
M18,0	**2,50**	*81,07*	**125**	**25**	**11,00**	**14,0**
M20,0	1,00	*103,04*	125	13	12,00	16,0
M20,0	1,50	*94,41*	125	20	12,00	16,0
M20,0	**2,50**	*85,87*	**140**	**25**	**12,00**	**16,0**
M22,0	1,00	*172,70*	125	13	14,50	18,0
M22,0	1,50	*122,33*	125	17	14,50	18,0
M22,0	**2,50**	*122,33*	**140**	**27**	**14,50**	**18,0**
M24,0	1,50	*124,73*	140	20	14,50	18,0
M24,0	2,00	*136,05*	140	20	14,50	18,0
M24,0	**3,00**	*113,34*	**160**	**30**	**14,50**	**18,0**
M27,0	3,00	*141,68*	160	30	16,00	20,0
M30,0	3,50	*177,10*	180	35	18,00	22,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

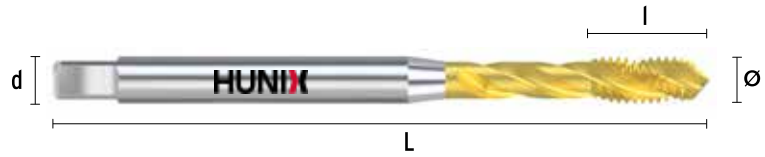
2118 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H | 35° | 3XD | R | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	*34,55*	**45**	**5**	**2,10**	**2,8**
M2,5	**0,45**	*34,55*	**50**	**5**	**2,10**	**2,8**
M3,0	**0,50**	*21,47*	**56**	**6**	**2,70**	**3,5**
M3,5	**0,60**	*27,28*	**56**	**6**	**3,00**	**4,0**
M4,0	**0,70**	*21,65*	**63**	**7**	**3,40**	**4,5**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M5,0	**0,80**	*23,58*	**70**	**8**	**4,90**	**6,0**
M6,0	**1,00**	*24,41*	**80**	**10**	**4,90**	**6,0**
M8,0	**1,25**	*29,34*	**90**	**14**	**6,20**	**8,0**
M10,0	**1,50**	*38,54*	**100**	**16**	**8,00**	**10,0**

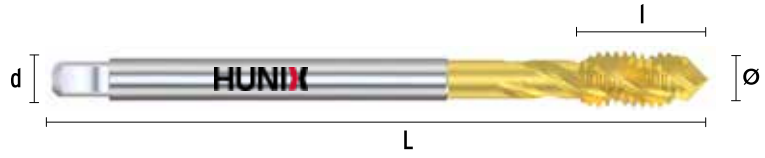
2117 HSSE DIN 376/374

M-MF DIN 13 | Form. C | Tol. 6H | 35° | 3XD | D | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	**0,50**	*23,13*	**56**	**5**	**2,00**	**2,2**
M4,0	**0,70**	*26,52*	**63**	**7**	**2,10**	**2,8**
M5,0	**0,80**	*28,69*	**70**	**8**	**2,70**	**3,5**
M6,0	**1,00**	*29,57*	**80**	**10**	**3,40**	**4,5**
M8,0	1,00	*45,65*	90	10	4,90	6,0
M8,0	**1,25**	*35,32*	**90**	**14**	**4,90**	**6,0**
M10,0	1,00	*53,52*	90	10	5,50	7,0
M10,0	1,25	*58,55*	100	15	5,50	7,0
M10,0	**1,50**	*44,59*	**100**	**16**	**5,50**	**7,0**
M12,0	1,00	*66,54*	100	10	7,00	9,0
M12,0	1,25	*74,04*	100	15	7,00	9,0
M12,0	1,50	*63,78*	100	15	7,00	9,0
M12,0	**1,75**	*55,15*	**110**	**18**	**7,00**	**9,0**
M14,0	1,00	*88,19*	100	10	9,00	11,0
M14,0	1,25	*81,96*	100	15	9,00	11,0
M14,0	1,50	*84,78*	100	15	9,00	11,0
M14,0	**2,00**	*72,93*	**110**	**20**	**9,00**	**11,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	1,00	*102,04*	100	10	9,00	12,0
M16,0	1,50	*88,54*	100	15	9,00	12,0
M16,0	**2,00**	*79,04*	**110**	**20**	**9,00**	**12,0**
M18,0	1,00	*121,67*	110	13	11,00	14,0
M18,0	1,50	*112,07*	110	20	11,00	14,0
M18,0	**2,50**	*107,37*	**125**	**25**	**11,00**	**14,0**
M20,0	1,00	*119,47*	125	13	12,00	16,0
M20,0	1,50	*126,45*	125	20	12,00	16,0
M20,0	**2,50**	*117,28*	**140**	**25**	**12,00**	**16,0**
M22,0	1,00	*162,81*	125	13	14,50	18,0
M22,0	1,50	*158,59*	125	17	14,50	18,0
M22,0	**2,50**	*158,53*	**140**	**27**	**14,50**	**18,0**
M24,0	1,50	*171,73*	140	20	14,50	18,0
M24,0	2,00	*199,43*	140	20	14,50	18,0
M24,0	**3,00**	*161,17*	**160**	**30**	**14,50**	**18,0**
M27,0	3,00	*201,47*	160	30	16,00	20,0
M30,0	3,50	*251,83*	180	35	18,00	22,0

2256 HSSE-PM DIN 371

M DIN 13 | Form. C | Tol. 6HX | 45° | 3XD | R | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 20-40	● 15-30	● 10-20	● 5-10	● 5-15	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 2-8	● 2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

NEW

Ø	P	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	*45,85*	**45**	**10**	**2,10**	**2,8**
M3,0	**0,50**	*34,19*	**56**	**5**	**2,70**	**3,5**
M4,0	**0,70**	*35,98*	**63**	**7**	**3,40**	**4,5**
M5,0	**0,80**	*39,07*	**70**	**8**	**4,90**	**6,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	**1,00**	*40,50*	**80**	**10**	**4,90**	**6,0**
M8,0	**1,25**	*48,63*	**90**	**13**	**6,20**	**8,0**
M10,0	**1,50**	*64,00*	**100**	**15**	**8,00**	**10,0**

2257 HSSE-PM DIN 376/374

M DIN 13 | Form. C | Tol. 6HX | 45° | 3XD | D | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 20-40	● 15-30	● 10-20	● 5-10	● 5-15	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 10-30	● 5-15	● 10-30	● 2-8	● 2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

NEW

Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	**1,25**	*58,90*	**90**	**15**	**4,90**	**6,0**
M10,0	1,00	*74,10*	90	10	5,50	7,0
M10,0	**1,50**	*86,45*	**100**	**17**	**5,50**	**7,0**
M12,0	1,00	*97,90*	100	10	7,00	9,0
M12,0	1,25	*132,45*	100	15	7,00	9,0
M12,0	1,50	*103,35*	100	15	7,00	9,0
M12,0	**1,75**	*89,40*	**110**	**18**	**7,00**	**9,0**
M14,0	1,50	*136,70*	100	15	9,00	11,0
M14,0	**2,00**	*117,70*	**110**	**20**	**9,00**	**11,0**

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	1,50	*142,85*	100	15	9,00	12,0
M16,0	**2,00**	*127,60*	**110**	**20**	**9,00**	**12,0**
M18,0	1,50	*194,55*	110	17	11,00	14,0
M18,0	**2,50**	*179,85*	**125**	**25**	**11,00**	**14,0**
M20,0	1,50	*222,00*	125	17	12,00	16,0
M20,0	**2,50**	*214,65*	**140**	**25**	**12,00**	**16,0**
M22,0	**2,50**	*266,15*	**140**	**25**	**14,50**	**18,0**
M24,0	**3,00**	*261,65*	**160**	**30**	**14,50**	**18,0**

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2124 HSSE-PM DIN 371

M DIN 13 | Form. C | Tol. 6H | 35° | 3XD | R | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
	● 10-15	● 6-10	○ 4-6		● 6-12			● 10-20				○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*25,43*	56	5	2,70	3,5
M4,0	0,70	*25,83*	63	7	3,40	4,5
M5,0	0,80	*27,84*	70	8	4,90	6,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*28,72*	80	10	4,90	6,0
M8,0	1,25	*36,97*	90	13	6,20	8,0
M10,0	1,50	*44,83*	100	15	8,00	10,0

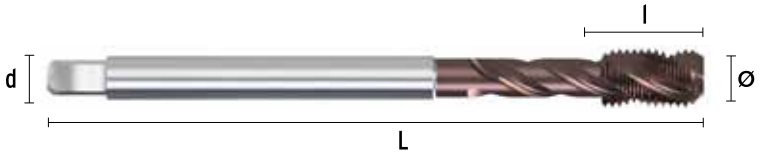
2123 HSSE-PM DIN 376/374

M-MF DIN 13 | Form. C | Tol. 6H | 35° | 3XD | D | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
	● 10-15	● 6-10	○ 4-6		● 6-12			● 10-20				○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,00	*48,81*	90	10	4,90	6,0
M8,0	1,25	*38,36*	90	15	4,90	6,0
M10,0	1,00	*56,20*	90	10	5,50	7,0
M10,0	1,25	*64,63*	100	15	5,50	7,0
M10,0	1,50	*49,32*	100	17	5,50	7,0
M12,0	1,00	*83,75*	100	10	7,00	9,0
M12,0	1,25	*74,83*	100	15	7,00	9,0
M12,0	1,50	*72,59*	100	15	7,00	9,0
M12,0	1,75	*62,58*	110	18	7,00	9,0
M14,0	1,25	*181,03*	100	15	9,00	11,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M14,0	1,50	*96,58*	100	15	9,00	11,0
M14,0	2,00	*83,03*	110	20	9,00	11,0
M16,0	1,50	*100,82*	100	15	9,00	12,0
M16,0	2,00	*89,88*	110	20	9,00	12,0
M18,0	1,50	*122,17*	110	17	11,00	14,0
M18,0	2,50	*122,97*	125	25	11,00	14,0
M20,0	1,50	*143,65*	125	17	12,00	16,0
M20,0	2,50	*133,08*	140	25	12,00	16,0
M22,0	2,50	*180,82*	140	25	14,50	18,0
M24,0	3,00	*196,25*	160	30	14,50	18,0

2178 HSSE-PM DIN 371

M DIN 13 | Form. C | Tol. 6HX | 15º | 3XD | R | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
		○ 6-10	● 4-6		○ 4-6			● 10-20				○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*38,54*	56	10	2,70	3,5
M4,0	0,70	*28,44*	63	12	3,40	4,5
M5,0	0,80	*30,25*	70	14	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*32,36*	80	18	4,90	6,0
M8,0	1,25	*36,97*	90	20	6,20	8,0
M10,0	1,50	*48,44*	100	20	8,00	10,0

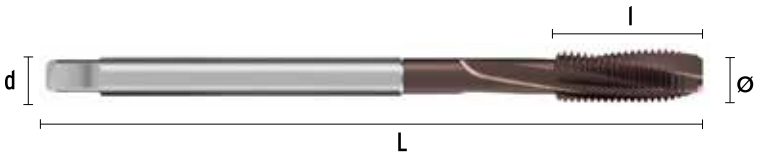
2177 HSSE-PM DIN 376

M DIN 13 | Form. C | Tol. 6HX | 15º | 3XD | D | TIAlSiN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
		○ 6-10	● 4-6		○ 4-6			● 10-20				○ 10-15		○ 4-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*55,11*	90	20	4,90	6,0
M10,0	1,50	*56,79*	100	20	5,50	7,0
M12,0	1,75	*67,52*	110	24	7,00	9,0
M14,0	2,00	*93,71*	110	25	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*97,12*	110	32	9,00	12,0
M18,0	2,50	*161,44*	125	32	11,00	14,0
M20,0	2,50	*149,62*	140	32	12,00	16,0

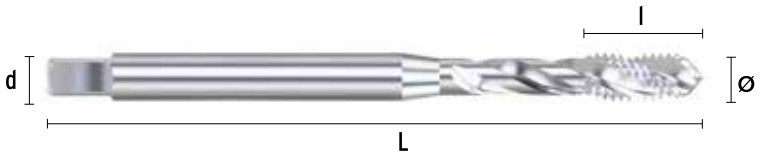
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2182 HSSE DIN 371

M DIN 13 | Form. C | Tol. 6H | 45° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
									● 10-20	○ 6-8	○ 10-20	○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*19,90*	56	6	2,70	3,5
M4,0	0,70	*19,90*	63	7	3,40	4,5
M5,0	0,80	*20,31*	70	8	4,90	6,0

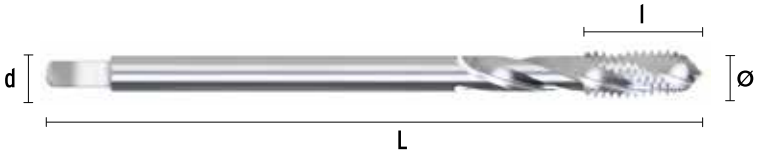
Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*22,02*	80	10	4,90	6,0
M8,0	1,25	*26,29*	90	14	6,20	8,0
M10,0	1,50	*31,06*	100	16	8,00	10,0

2181 HSSE DIN 376

M DIN 13 | Form. C | Tol. 6H | 45° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
									● 10-20	○ 6-8	○ 10-20	○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
*M6,0	1,00	*22,02*	80	18	3,40	4,5
*M8,0	1,25	*26,29*	90	20	4,90	6,0
*M10,0	1,50	*31,06*	100	22	5,50	7,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*36,94*	110	18	7,00	9,0
M14,0	2,00	*53,99*	110	20	9,00	11,0
M16,0	2,00	*72,81*	110	22	9,00	12,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2260 HSSE-PM DIN 371 SYNCHRO

M DIN 13 | Form. C | Tol. 6HX | 45° | CNC | 3XD | R | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
20-50	15-40	10-20	5-10	5-15	5-10	10-40	10-40	5-15	10-40	10-40	5-15	10-40	2-8	2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	☒ mm	d mm
M3,0	0,50	*34,19*	56	5	2,70	3,5
M4,0	0,70	*35,98*	63	7	3,40	4,5
M5,0	0,80	*39,07*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	☒ mm	d mm
M6,0	1,00	*40,50*	80	10	4,90	6,0
M8,0	1,25	*48,63*	90	13	6,20	8,0
M10,0	1,50	*64,00*	100	15	8,00	10,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2261 HSSE-PM DIN 376 SYNCHRO

M DIN 13 | Form. C | Tol. 6HX | 45° | CNC | 3XD | D | HL

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
20-50	15-40	10-20	5-10	5-15	5-10	10-40	10-40	5-15	10-40	10-40	5-15	10-40	2-8	2-15			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	☒ mm	d mm
M12,0	1,75	*95,65*	110	18	7,00	9,0
M14,0	2,00	*125,91*	110	20	9,00	11,0

Ø	P	€	L mm	l mm	☒ mm	d mm
M16,0	2,00	*136,51*	110	20	9,00	12,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

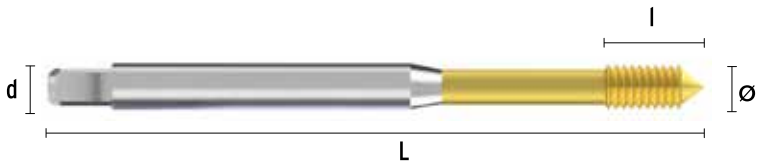
2188 HSSE-PM DIN 371

A>12% | M DIN 13 | Form. C | Tol. 6HX | 1,5XD | R | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternativo

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*33,19*	56	10	2,70	3,5
M4,0	0,70	*33,19*	63	7	3,40	4,5
M5,0	0,80	*34,90*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*37,20*	80	10	4,90	6,0
M8,0	1,25	*44,44*	90	13	6,20	8,0
M10,0	1,50	*54,19*	100	15	8,00	10,0

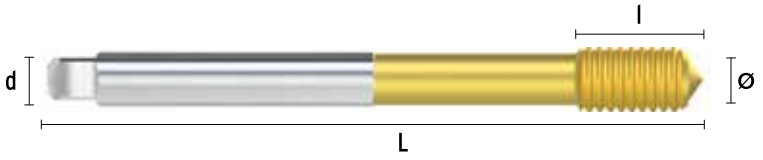
2187 HSSE-PM DIN 376

A>12% | M DIN 13 | Form. C | Tol. 6HX | 1,5XD | D | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternativo

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*70,07*	110	18	7,00	9,0
M14,0	2,00	*94,49*	110	20	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*113,40*	110	20	9,00	12,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

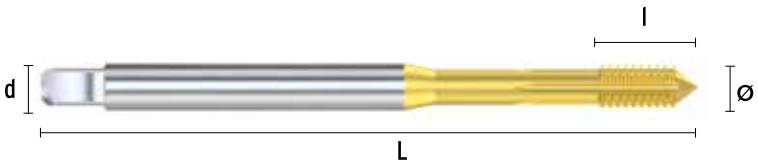
2214 HSSE-PM DIN 371

A>12% | M DIN 13 | Form. C | Tol. 6HX | 3XD | R | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*33,19*	56	10	2,70	3,5
M4,0	0,70	*33,19*	63	7	3,40	4,5
M5,0	0,80	*34,90*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*37,20*	80	10	4,90	6,0
M8,0	1,25	*44,44*	90	13	6,20	8,0
M10,0	1,50	*54,19*	100	15	8,00	10,0

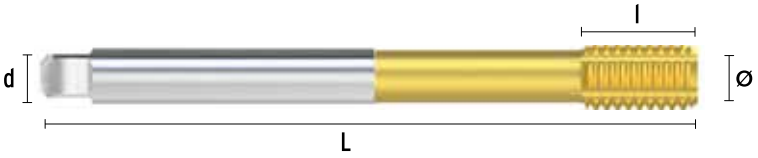
2213 HSSE-PM DIN 376/374

A>12% | M-MF DIN13 | Form. C | Tol. 6HX | 3XD | D | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,00	*72,82*	90	13	4,90	6,0
M8,0	1,25	*62,81*	90	13	4,90	6,0
M10,0	1,00	*59,68*	90	13	5,50	7,0
M10,0	1,25	*93,06*	100	15	5,50	7,0
M10,0	1,50	*74,14*	100	15	5,50	7,0
M12,0	1,00	*92,13*	100	10	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,25	*96,31*	100	15	7,00	9,0
M12,0	1,50	*93,67*	100	15	7,00	9,0
M12,0	1,75	*70,07*	110	18	7,00	9,0
M14,0	2,00	*94,49*	110	20	9,00	11,0
M16,0	1,50	*146,30*	100	15	9,00	12,0
M16,0	2,00	*113,40*	110	20	9,00	12,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

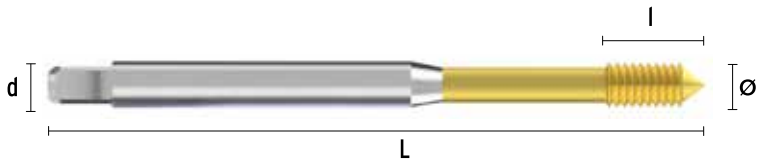
2216 HSSE-PM DIN 371

A>12% | M DIN 13 | Form. C | Tol. 6GX | 1,5XD | R | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*34,85*	56	10	2,70	3,5
M4,0	0,70	*34,85*	63	7	3,40	4,5
M5,0	0,80	*36,65*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*39,06*	80	10	4,90	6,0
M8,0	1,25	*46,66*	90	13	6,20	8,0
M10,0	1,50	*56,90*	100	15	8,00	10,0

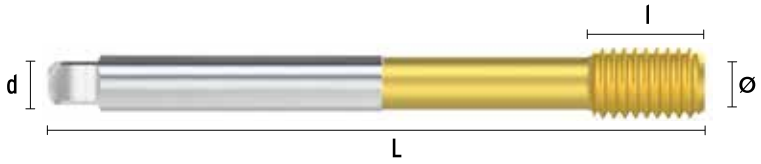
2215 HSSE-PM DIN 376

A>12% | M DIN 13 | Form. C | Tol. 6GX | 1,5XD | D | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*80,96*	110	18	7,00	9,0

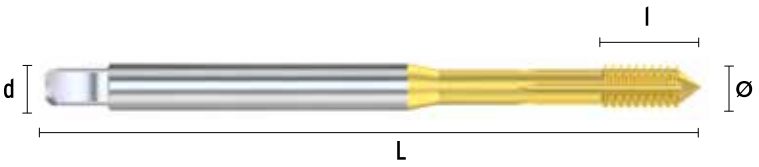
P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2218 HSSE-PM DIN 371 A>12% M DIN 13 Form. C Tol. 6GX 3XD R TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*34,85*	56	10	2,70	3,5
M4,0	0,70	*34,85*	63	7	3,40	4,5
M5,0	0,80	*36,65*	70	8	4,90	6,0

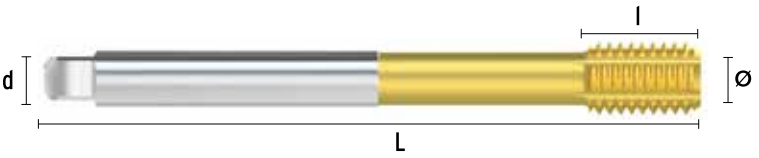
ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*39,06*	80	10	4,90	6,0
M8,0	1,25	*46,66*	90	13	6,20	8,0
M10,0	1,50	*56,90*	100	15	8,00	10,0

2217 HSSE-PM DIN 376 A>12% M DIN 13 Form. C Tol. 6GX 3XD D TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*80,96*	110	18	7,00	9,0

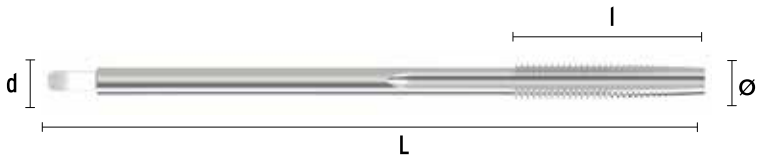
P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2199 HSSE DIN 357

M DIN 13 | Tol. 6H | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25							○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*29,12*	70	22	2,00	2,2
M4,0	0,70	*29,12*	90	25	2,10	2,8
M5,0	0,80	*29,95*	100	28	2,70	3,5
M6,0	1,00	*27,76*	110	32	3,40	4,5
M8,0	1,25	*32,44*	125	40	4,90	6,0
M10,0	1,50	*49,91*	140	45	5,50	7,0
M12,0	1,75	*59,87*	180	50	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M14,0	2,00	*66,52*	200	56	9,00	11,0
M16,0	2,00	*81,51*	200	63	9,00	12,0
M18,0	2,50	*99,79*	220	63	11,00	14,0
M20,0	2,50	*115,58*	250	70	12,00	16,0
M22,0	2,50	*148,01*	280	80	14,50	18,0
M24,0	3,00	*174,60*	280	80	14,50	18,0

2134 HSSE

M DIN 13 | 16-18 tpi | Tol. 6H | D | NIT

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25							○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	d mm
M3,0	0,50	*79,82*	280	12	2,7
M4,0	0,70	*78,69*	280	17	2,1
M5,0	0,80	*78,69*	280	20	2,7
M6,0	1,00	*78,69*	280	25	3,4
M8,0	1,25	*83,47*	280	31	4,9
M10,0	1,50	*96,76*	280	37	5,5
M12,0	1,75	*150,88*	420	43	7,0

Ø	P	€	L mm	l mm	d mm
M14,0	2,00	*145,73*	420	50	9,0
M16,0	2,00	*204,94*	420	50	9,0
M18,0	2,50	*253,10*	530	62	14,2
M20,0	2,50	*334,71*	530	63	12,0
M22,0	2,50	*386,62*	530	62	18,0
M24,0	3,00	*541,51*	530	75	19,2

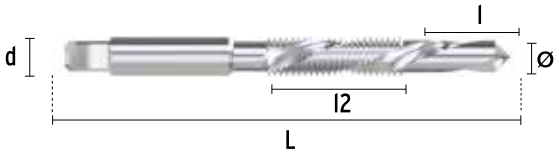
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2806 HSSE DIN 13

M DIN 13 | Tol. 6H

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25							○ 10-15		○ 10-15	● 10-20		○ 10-15		○			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*39,47*	56	16	2,40	3,0
M4,0	0,70	*39,47*	63	18	3,00	4,0
M5,0	0,80	*39,47*	71	20	3,80	5,0
M6,0	1,00	*43,62*	80	22	4,90	6,0

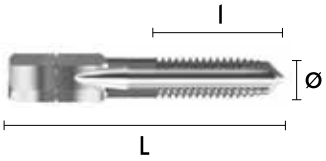
Ø	P	€	L mm	l mm	⊠ mm	d mm
M8,0	1,25	*49,27*	95	26	6,20	8,0
M10,0	1,50	*54,22*	106	30	8,00	10,0
M12,0	1,75	*63,99*	115	32	9,00	12,0

1504 HSS Hex.

M DIN 13 | Tol. 6H | 1/4"

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-45																	

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*8,06*	33	11		
M4,0	0,70	*8,06*	35	12		
M5,0	0,80	*8,06*	36	15		

Ø	P	€	L mm	l mm	⊠ mm	d mm
M6,0	1,00	*8,06*	39	18		
M8,0	1,25	*11,17*	40	19		
M10,0	1,50	*12,78*	41	21		

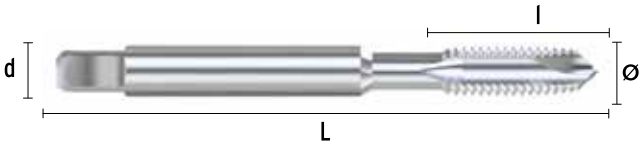
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2248 HSS ISO 529

M DIN 13 | Form. B "Gun" | Tol. 6H | 3XD

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 5-20							○ 5-15		○ 10-15	● 5-15		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternativo



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*6,55*	48	11	2,50	3,2
M4,0	0,70	*6,64*	53	13	3,15	4,0
M5,0	0,80	*8,43*	58	16	4,00	5,0
M6,0	1,00	*8,81*	66	19	5,00	6,3
M8,0	1,25	*9,10*	72	22	6,30	8,0
M10,0	1,50	*11,12*	80	24	8,00	10,0
M12,0	1,75	*16,84*	89	29	7,10	10,2
M14,0	2,00	*17,67*	95	30	9,00	11,2

ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*20,65*	102	32	10,00	12,5
M18,0	2,50	*25,80*	110	37	11,20	14,0
M20,0	2,50	*28,83*	112	37	11,20	14,0
M22,0	2,50	*32,68*	118	38	12,50	16,0
M24,0	3,00	*41,29*	130	45	14,00	18,0
M27,0	3,00	*55,44*	135	45	16,00	20,0
M30,0	3,50	*102,89*	138	48	16,00	20,0

2249 HSS ISO 529

M DIN 13 | Form. C | 35° | Tol. 6H | 3XD

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 5-20							○ 5-15		○ 10-15	● 5-15		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternativo

ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*8,18*	48	11	2,50	3,2
M4,0	0,70	*8,47*	53	13	3,15	4,0
M5,0	0,80	*10,49*	58	16	4,00	5,0
M6,0	1,00	*10,88*	66	19	5,00	6,3
M8,0	1,25	*11,59*	72	22	6,30	8,0
M10,0	1,50	*13,90*	80	24	8,00	10,0
M12,0	1,75	*21,03*	89	29	7,10	10,2
M14,0	2,00	*23,73*	95	30	9,00	11,2

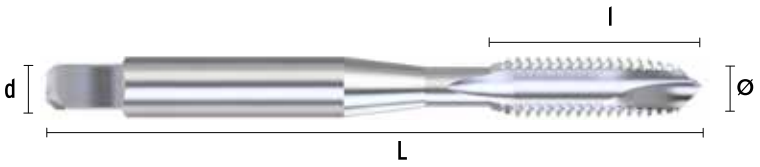
ø	P	€	L mm	l mm	⊠ mm	d mm
M16,0	2,00	*25,80*	102	32	10,00	12,5
M18,0	2,50	*32,38*	112	37	11,20	14,0
M20,0	2,50	*36,29*	112	37	11,20	14,0
M22,0	2,50	*40,77*	118	38	12,50	16,0
M24,0	3,00	*51,49*	130	45	14,00	18,0
M27,0	3,00	*69,20*	135	45	16,00	20,0
M30,0	3,50	*116,27*	138	48	16,00	20,0

2266 HSSE JIS

M DIN13 | Form. B "Gun" | HH1 HH4 | 3XD

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*13,38*	46	11	3,20	4,0
M4,0	0,70	*13,67*	52	13	4,00	5,0
M5,0	0,80	*13,70*	60	16	4,50	5,5
M6,0	1,00	*15,03*	62	19	4,50	6,0
M8,0	1,25	*16,58*	70	22	5,00	6,2
M10,0	1,50	*20,34*	75	24	5,50	7,0

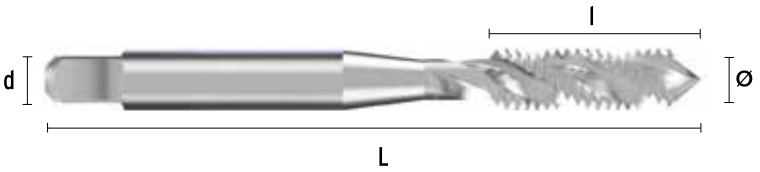
ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*25,96*	82	29	6,50	8,5
M14,0	2,00	*34,19*	88	30	8,00	10,5
M16,0	2,00	*42,00*	95	32	10,00	12,5
M18,0	2,50	*57,07*	100	37	11,00	14,0
M20,0	2,50	*61,57*	105	37	12,00	15,0

2267 HSSE JIS

M DIN13 | Form. C | HH1 HH4 | 35° | 3XD

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*16,49*	46	6	3,20	4,0
M4,0	0,70	*16,49*	52	9	4,00	5,0
M5,0	0,80	*15,94*	60	10	4,50	5,5
M6,0	1,00	*17,48*	62	12	4,50	6,0
M8,0	1,25	*20,83*	70	15	5,00	6,2
M10,0	1,50	*24,23*	75	18	5,50	7,0

ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*32,36*	82	21	6,50	8,5
M14,0	2,00	*41,55*	88	24	8,00	10,5
M16,0	2,00	*50,17*	95	24	10,00	12,5
M18,0	2,50	*67,46*	100	30	11,00	14,0
M20,0	2,50	*71,87*	105	30	12,00	15,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2268 HSSE JIS

M DIN13 | Form. B "Gun" | HH1 HH4 | 3XD | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*14,97*	46	11	3,20	4,0
M4,0	0,70	*15,32*	52	13	4,00	5,0
M5,0	0,80	*15,33*	60	16	4,50	5,5
M6,0	1,00	*16,83*	62	19	4,50	6,0
M8,0	1,25	*18,56*	70	22	5,00	6,2
M10,0	1,50	*22,79*	75	24	5,50	7,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*29,08*	82	29	6,50	8,5
M14,0	2,00	*38,29*	88	30	8,00	10,5
M16,0	2,00	*47,04*	95	32	10,00	12,5
M18,0	2,50	*63,92*	100	37	11,00	14,0
M20,0	2,50	*68,96*	105	37	12,00	15,0

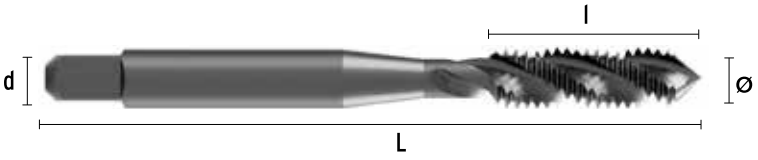
2269 HSSE JIS

M DIN13 | Form. C | HH1 HH4 | 35° | 3XD | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*18,49*	46	6	3,20	4,0
M4,0	0,70	*18,49*	52	9	4,00	5,0
M5,0	0,80	*17,85*	60	10	4,50	5,5
M6,0	1,00	*19,57*	62	12	4,50	6,0
M8,0	1,25	*23,34*	70	15	5,00	6,2
M10,0	1,50	*27,16*	75	18	5,50	7,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*36,25*	82	21	6,50	8,5
M14,0	2,00	*46,53*	88	24	8,00	10,5
M16,0	2,00	*56,19*	95	24	10,00	12,5
M18,0	2,50	*75,56*	100	30	11,00	14,0
M20,0	2,50	*80,51*	105	30	12,00	15,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

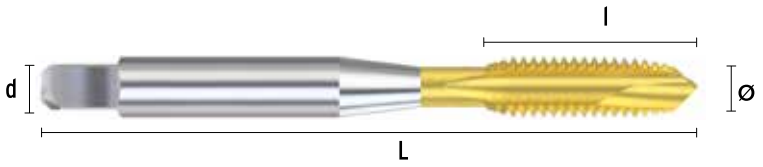
2270 HSSE JIS

M DIN13 | Form. B "Gun" | HH1 HH4 | 3XD | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 12-18			○ 5-10			○ 15-20		○ 15-20	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*18,72*	46	11	3,20	4,0
M4,0	0,70	*20,01*	52	13	4,00	5,0
M5,0	0,80	*20,02*	60	16	4,50	5,5
M6,0	1,00	*21,35*	62	19	4,50	6,0
M8,0	1,25	*24,72*	70	22	5,00	6,2
M10,0	1,50	*32,42*	75	24	5,50	7,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*39,26*	82	29	6,50	8,5
M14,0	2,00	*49,27*	88	30	8,00	10,5
M16,0	2,00	*58,59*	95	32	10,00	12,5
M18,0	2,50	*73,66*	100	37	11,00	14,0
M20,0	2,50	*78,14*	105	37	12,00	15,0

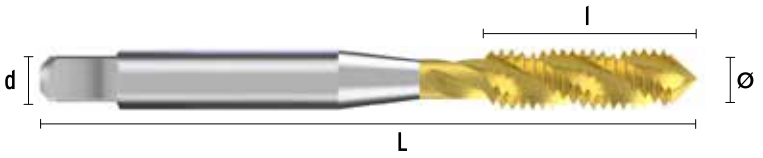
2271 HSSE JIS

M DIN13 | Form. C | HH1 HH4 | 35° | 3XD | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 12-18			○ 5-10			○ 15-20		○ 15-20	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	*22,12*	46	6	3,20	4,0
M4,0	0,70	*23,13*	52	9	4,00	5,0
M5,0	0,80	*22,58*	60	10	4,50	5,5
M6,0	1,00	*24,10*	62	12	4,50	6,0
M8,0	1,25	*29,37*	70	15	5,00	6,2
M10,0	1,50	*36,88*	75	18	5,50	7,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	*46,30*	82	21	6,50	8,5
M14,0	2,00	*57,35*	88	24	8,00	10,5
M16,0	2,00	*67,55*	95	24	10,00	12,5
M18,0	2,50	*84,84*	100	30	11,00	14,0
M20,0	2,50	*89,25*	105	30	12,00	15,0

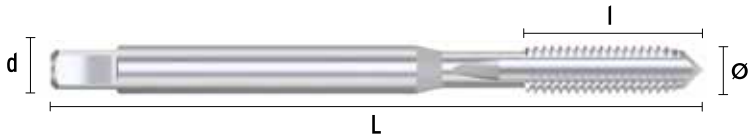
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2148 HSSE DIN 371

UNC ANSI/ASME B1.1 | Form. C | Tol. 2B | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	40,00	*26,36*	56	11	2,70	3,5
Nº5	40,00	*26,36*	56	11	2,70	3,5
Nº6	32,00	*25,09*	56	12	3,00	4,0
Nº8	32,00	*25,09*	63	13	3,40	4,5

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº10	24,00	*26,36*	70	14	4,90	6,0
Nº12	24,00	*27,65*	80	16	4,90	6,0
1/4	20,00	*23,40*	80	16	5,50	7,0
5/16	18,00	*24,88*	90	20	6,20	8,0

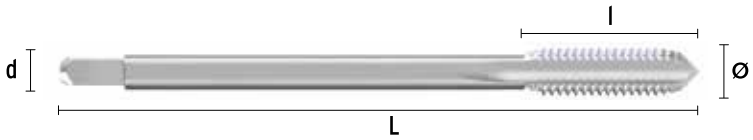
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2147 HSSE DIN 376

UNC ANSI/ASME B1.1 | Form. C | Tol. 2B | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/4	20,00	*23,40*	80	18	3,40	4,5
5/16	18,00	*26,48*	90	20	4,90	6,0
3/8	16,00	*30,21*	100	22	5,50	7,0
7/16	14,00	*41,53*	100	22	6,20	8,0
1/2	13,00	*45,56*	110	27	7,00	9,0
9/16	12,00	*62,05*	110	30	9,00	11,0
5/8	11,00	*60,27*	110	30	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	10,00	*79,65*	125	35	11,00	14,0
7/8	9,00	*104,93*	140	36	14,50	18,0
1	8,00	*137,81*	160	38	16,00	20,0
1"1/8	7,00	*174,00*	180	45	18,00	22,0
1"1/4	7,00	*213,35*	180	45	18,00	22,0
1"1/2	6,00	*359,73*	200	55	24,00	32,0

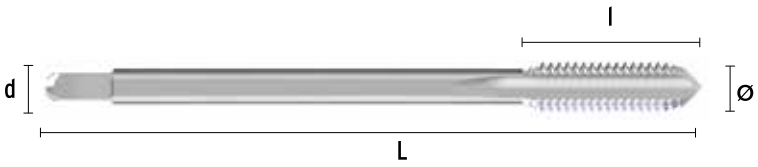
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2147/5 HSSE DIN 376

UNC ANSI/ASME B1.1 | Form. C | LH | Tol. 2B | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	☒ mm	d mm
1/4	20,00	*46,78*	80	18	3,40	4,5
5/16	18,00	*52,94*	90	20	4,90	6,0
3/8	16,00	*60,43*	100	22	5,50	7,0
7/16	14,00	*83,06*	100	22	6,20	8,0
1/2	13,00	*91,11*	110	27	7,00	9,0

ø	P	€	L mm	l mm	☒ mm	d mm
9/16	12,00	*124,10*	110	30	9,00	11,0
5/8	11,00	*120,54*	110	30	9,00	12,0
3/4	10,00	*159,30*	125	35	11,00	14,0
7/8	9,00	*209,89*	140	36	14,50	18,0
1"	8,00	*275,58*	160	38	16,00	20,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

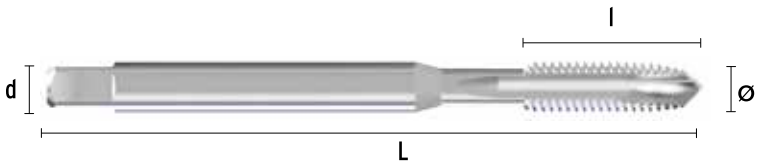
P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2150 HSSE DIN 371

UNC ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	40,00	*24,37*	56	10	2,70	3,5
Nº5	40,00	*22,70*	56	10	2,70	3,5
Nº6	32,00	*22,70*	56	12	3,00	4,0
Nº8	32,00	*22,70*	63	12	3,40	4,5
Nº10	24,00	*22,98*	70	14	4,90	6,0

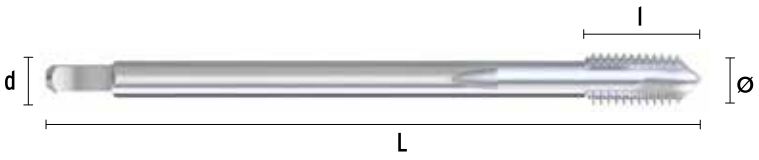
Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	24,00	*24,31*	80	18	4,90	6,0
1/4	20,00	*24,31*	80	18	5,50	7,0
5/16	18,00	*26,26*	90	20	6,20	8,0
3/8	16,00	*31,03*	100	20	8,00	10,0

2149 HSSE DIN 376

UNC ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
*1/4	20,00	*24,31*	80	18	3,40	4,5
*5/16	18,00	*26,26*	90	20	4,90	6,0
*3/8	16,00	*31,03*	100	20	5,50	7,0
7/16	14,00	*44,11*	100	22	6,20	8,0
1/2	13,00	*44,11*	110	24	7,00	9,0
9/16	12,00	*60,17*	110	25	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	11,00	*59,02*	110	32	9,00	12,0
3/4	10,00	*85,86*	125	32	11,00	14,0
7/8	9,00	*122,32*	140	32	14,50	18,0
1"	8,00	*113,36*	160	38	16,00	20,0
1"1/8	7,00	*188,71*	180	40	18,00	22,0
1"1/4	7,00	*194,04*	180	40	18,00	22,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2262 HSSE DIN 371

UNC ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | R | 3XD | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH THREADING TECHNOLOGY

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	40,00	*26,80*	56	10	2,70	3,5
Nº5	40,00	*24,98*	56	10	2,70	3,5
Nº6	32,00	*24,98*	56	12	3,00	4,0
Nº8	32,00	*24,98*	63	12	3,40	4,5
Nº10	24,00	*25,28*	70	14	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	24,00	*26,74*	80	18	4,90	6,0
1/4	20,00	*26,74*	80	18	5,50	7,0
5/16	18,00	*28,89*	90	20	6,20	8,0
3/8	16,00	*34,13*	100	20	8,00	10,0

2263 HSSE DIN 376

UNC ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | D | 3XD | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH THREADING TECHNOLOGY

Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	14,00	*48,50*	100	22	6,20	8,0
1/2	13,00	*48,50*	110	24	7,00	9,0
9/16	12,00	*66,21*	110	25	9,00	11,0
5/8	11,00	*64,93*	110	32	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	10,00	*94,46*	125	32	11,00	14,0
7/8	9,00	*134,56*	140	32	14,50	18,0
1"	8,00	*124,67*	160	38	16,00	20,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

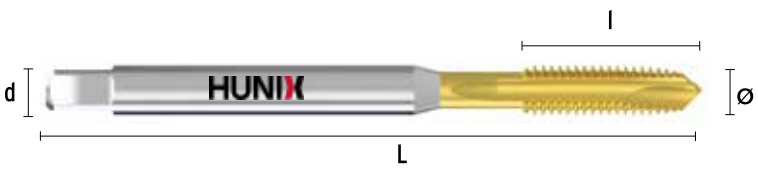
2234 HSSE DIN 371

UNC ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | R | 3XD | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	40,00	*36,61*	56	10	2,70	3,5
Nº5	40,00	*33,02*	56	10	2,70	3,5
Nº6	32,00	*33,02*	56	12	3,00	4,0
Nº8	32,00	*33,02*	63	12	3,40	4,5
Nº10	24,00	*35,49*	70	14	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	24,00	*37,10*	80	18	4,90	6,0
1/4	20,00	*37,10*	80	18	5,50	7,0
5/16	18,00	*41,61*	90	20	6,20	8,0
3/8	16,00	*51,12*	100	20	8,00	10,0

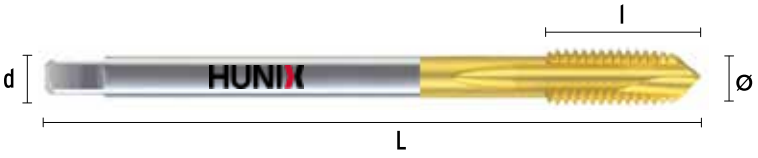
2235 HSSE DIN 376

UNC ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | D | 3XD | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	14,00	*71,47*	100	22	6,20	8,0
1/2	13,00	*73,65*	110	24	7,00	9,0
9/16	12,00	*100,54*	110	25	9,00	11,0
5/8	11,00	*95,33*	110	32	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	10,00	*140,68*	125	32	11,00	14,0
7/8	9,00	*210,80*	140	32	14,50	18,0
1"	8,00	*194,54*	160	38	16,00	20,0

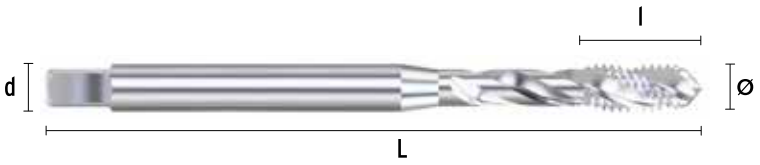
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2152 HSSE DIN 371

UNC ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	40,00	*26,84*	56	5	2,70	3,5
Nº5	40,00	*24,92*	56	7	2,70	3,5
Nº6	32,00	*24,92*	56	6	3,00	4,0
Nº8	32,00	*24,92*	63	7	3,40	4,5
Nº10	24,00	*25,36*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	24,00	*26,79*	80	10	4,90	6,0
1/4	20,00	*26,79*	80	13	5,50	7,0
5/16	18,00	*28,93*	90	13	6,20	8,0
3/8	16,00	*34,16*	100	15	8,00	10,0

2151 HSSE DIN 376

UNC ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
*1/4	20,00	*26,79*	80	13	3,40	4,5
*5/16	18,00	*28,93*	90	13	4,90	6,0
*3/8	16,00	*34,16*	100	16	5,50	7,0
7/16	14,00	*48,46*	100	15	6,20	8,0
1/2	13,00	*48,46*	110	18	7,00	9,0
9/16	12,00	*66,17*	110	20	9,00	11,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	11,00	*64,96*	110	22	9,00	12,0
3/4	10,00	*94,44*	125	25	11,00	14,0
7/8	9,00	*134,53*	140	30	14,50	18,0
1"	8,00	*124,74*	160	30	16,00	20,0
1"1/8	7,00	*207,58*	180	40	18,00	22,0
1"1/4	7,00	*213,44*	180	40	18,00	22,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2264 HSSE DIN 371

UNC ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | R | 3XD | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	40,00	*29,52*	56	5	2,70	3,5
Nº5	40,00	*27,43*	56	7	2,70	3,5
Nº6	32,00	*27,43*	56	6	3,00	4,0
Nº8	32,00	*27,43*	63	7	3,40	4,5
Nº10	24,00	*27,92*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	24,00	*29,44*	80	10	4,90	6,0
1/4	20,00	*29,44*	80	13	5,50	7,0
5/16	18,00	*31,83*	90	13	6,20	8,0
3/8	16,00	*37,55*	100	15	8,00	10,0

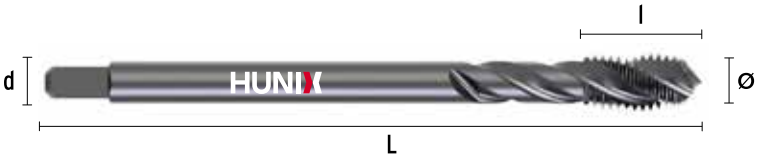
2265 HSSE DIN 376

UNC ANSI/ASME | Form. C | Tol. 2B | 35° | D | 3XD | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	14,00	*53,30*	100	15	6,20	8,0
1/2	13,00	*53,30*	110	18	7,00	9,0
9/16	12,00	*72,75*	110	20	9,00	11,0
5/8	11,00	*71,48*	110	22	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	10,00	*103,85*	125	25	11,00	14,0
7/8	9,00	*147,99*	140	30	14,50	18,0
1"	8,00	*137,19*	160	30	16,00	20,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

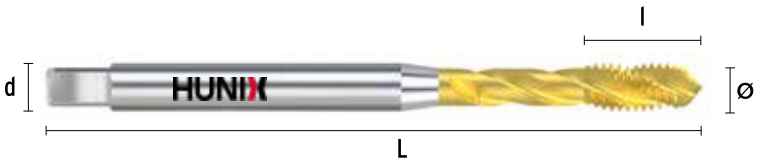
2236 HSSE DIN 371

UNC ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | R | 3XD | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH THREADING TECHNOLOGY



Ø	P	€	L mm	l mm	⊠ mm	d mm
N°4	40,00	*36,61*	56	5	2,70	3,5
N°5	40,00	*36,61*	56	7	2,70	3,5
N°6	32,00	*35,90*	56	6	3,00	4,0
N°8	32,00	*35,90*	63	7	3,40	4,5
N°10	24,00	*38,45*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
N°12	24,00	*40,27*	80	10	4,90	6,0
1/4	20,00	*40,27*	80	13	5,50	7,0
5/16	18,00	*44,92*	90	13	6,20	8,0
3/8	16,00	*55,13*	100	15	8,00	10,0

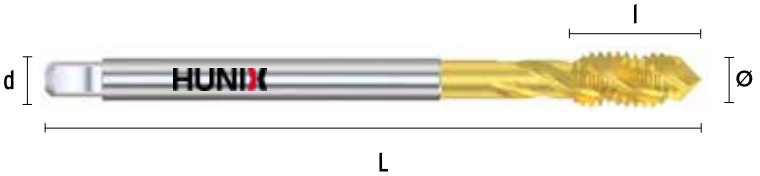
2237 HSSE DIN 376

UNC ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | D | 3XD | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH THREADING TECHNOLOGY



Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	14,00	*77,10*	100	15	6,20	8,0
1/2	13,00	*79,35*	110	18	7,00	9,0
9/16	12,00	*108,64*	110	20	9,00	11,0
5/8	11,00	*102,80*	110	22	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	10,00	*151,72*	125	25	11,00	14,0
7/8	9,00	*227,27*	140	30	14,50	18,0
1"	8,00	*209,04*	160	30	16,00	20,0

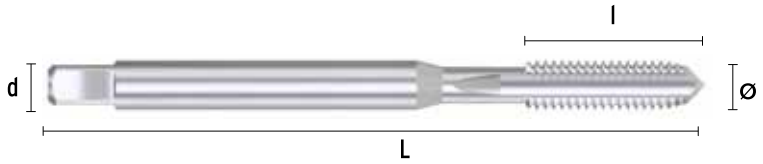
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2154 HSSE DIN 371

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternativo



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*28,88*	56	11	2,70	3,5
Nº5	44,00	*28,88*	56	11	2,70	3,5
Nº6	40,00	*27,68*	56	12	3,00	4,0
Nº8	36,00	*27,68*	63	13	3,40	4,5

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº10	32,00	*27,68*	70	14	4,90	6,0
Nº12	28,00	*28,88*	80	16	4,90	6,0
1/4	28,00	*22,22*	80	16	5,50	7,0
5/16	24,00	*25,54*	90	20	6,20	8,0

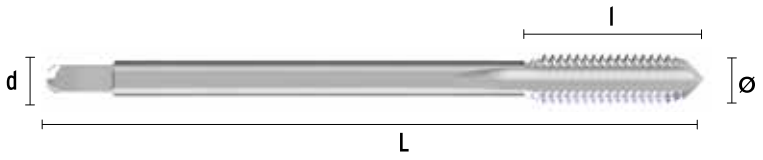
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2153 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternativo



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/4	28,00	*22,22*	80	18	3,40	4,5
5/16	24,00	*25,54*	90	20	4,90	6,0
3/8	24,00	*29,48*	90	20	5,50	7,0
7/16	20,00	*37,77*	100	22	6,20	8,0
1/2	20,00	*40,21*	100	22	7,00	9,0
9/16	18,00	*49,37*	100	22	9,00	11,0
5/8	18,00	*55,59*	100	22	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	16,00	*71,13*	110	25	11,00	14,0
7/8	14,00	*89,47*	125	25	14,50	18,0
1"	12,00	*117,28*	140	27	16,00	20,0
1"1/8	12,00	*176,14*	150	28	18,00	22,0
1"1/4	12,00	*222,62*	150	28	18,00	22,0
1"1/2	12,00	*373,57*	170	30	22,00	28,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

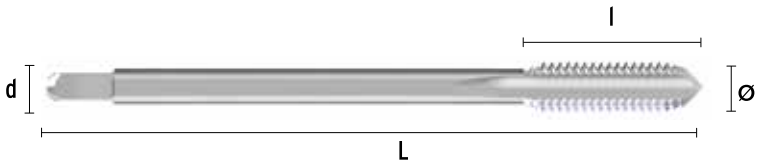
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2153/5 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. C | LH | Tol. 2B | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/4	28,00	*44,41*	80	18	3,40	4,5
5/16	24,00	*51,06*	90	20	4,90	6,0
3/8	24,00	*58,95*	90	20	5,50	7,0
7/16	20,00	*75,52*	100	22	6,20	8,0
1/2	20,00	*80,39*	100	22	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
9/16	18,00	*98,71*	100	22	9,00	11,0
5/8	18,00	*111,18*	100	22	9,00	12,0
3/4	16,00	*142,25*	110	25	11,00	14,0
7/8	14,00	*178,96*	125	25	14,50	18,0
1"	12,00	*234,59*	140	27	16,00	20,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

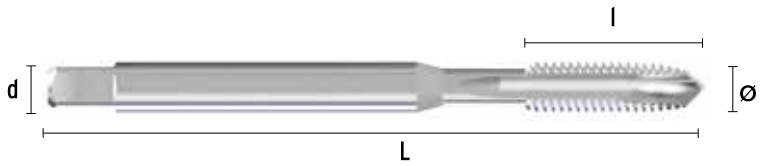
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2156 HSSE DIN 371

UNF ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*25,69*	56	11	2,70	3,5
Nº5	44,00	*25,69*	56	11	2,70	3,5
Nº6	40,00	*25,87*	56	12	3,00	4,0
Nº8	36,00	*26,09*	63	12	3,40	4,5
Nº10	32,00	*26,54*	70	14	4,90	6,0

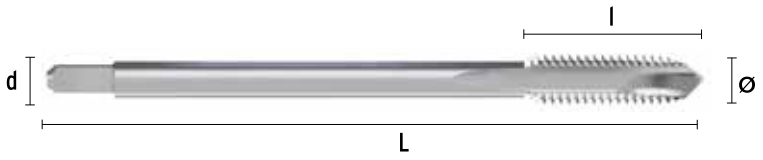
Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	28,00	*27,86*	80	18	4,90	6,0
1/4	28,00	*29,16*	80	18	5,50	7,0
5/16	24,00	*30,23*	90	20	6,20	8,0
3/8	24,00	*35,83*	90	20	8,00	10,0

2155 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
*1/4	28,00	*29,16*	80	19	3,40	4,5
*5/16	24,00	*30,23*	90	22	4,90	6,0
*3/8	24,00	*35,83*	90	20	5,50	7,0
7/16	20,00	*50,68*	100	20	6,20	8,0
1/2	20,00	*50,68*	100	20	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
9/16	18,00	*69,11*	100	20	9,00	11,0
5/8	18,00	*67,87*	100	20	9,00	12,0
3/4	16,00	*98,77*	110	24	11,00	14,0
7/8	14,00	*140,68*	125	24	14,50	18,0
1"	12,00	*130,46*	140	27	14,50	18,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2276 HSSE DIN 371

UNF ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | R | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*28,26*	56	11	2,70	3,5
Nº5	44,00	*28,25*	56	11	2,70	3,5
Nº6	40,00	*28,47*	56	12	3,00	4,0
Nº8	36,00	*28,71*	63	12	3,40	4,5
Nº10	32,00	*29,19*	70	14	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	28,00	*30,65*	80	18	4,90	6,0
1/4	28,00	*32,08*	80	18	5,50	7,0
5/16	24,00	*33,25*	90	20	6,20	8,0
3/8	24,00	*39,40*	90	20	8,00	10,0

2277 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | D | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	20,00	*55,75*	100	20	6,20	8,0
1/2	20,00	*55,75*	100	20	7,00	9,0
9/16	18,00	*76,02*	100	20	9,00	11,0
5/8	18,00	*74,66*	100	20	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	16,00	*108,65*	110	24	11,00	14,0
7/8	14,00	*154,75*	125	24	14,50	18,0
1"	12,00	*143,51*	140	27	14,50	18,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

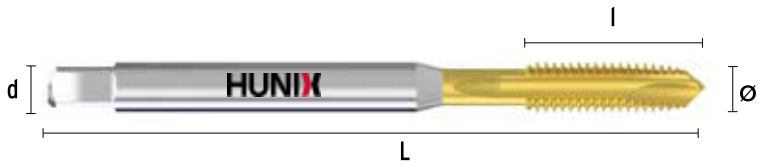
2280 HSSE DIN 371

UNF ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | R | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH THREADING TECHNOLOGY



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*41,72*	56	11	2,70	3,5
Nº5	44,00	*37,64*	56	11	2,70	3,5
Nº6	40,00	*37,64*	56	12	3,00	4,0
Nº8	36,00	*37,64*	63	12	3,40	4,5
Nº10	32,00	*40,13*	70	14	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	28,00	*41,97*	80	18	4,90	6,0
1/4	28,00	*41,97*	80	18	5,50	7,0
5/16	24,00	*47,52*	90	20	6,20	8,0
3/8	24,00	*59,15*	90	20	8,00	10,0

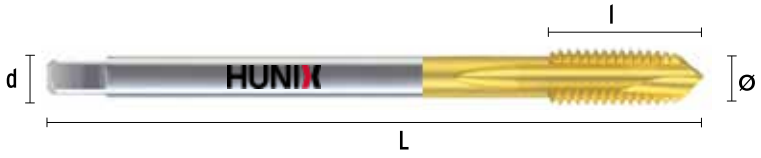
2281 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. B "Gun" | Tol. 2B | 3XD | D | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH THREADING TECHNOLOGY



Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	20,00	*80,69*	100	20	6,20	8,0
1/2	20,00	*84,77*	100	20	7,00	9,0
9/16	18,00	*115,61*	100	20	9,00	11,0
5/8	18,00	*109,55*	100	20	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	16,00	*161,94*	110	24	11,00	14,0
7/8	14,00	*237,83*	125	24	14,50	18,0
1"	12,00	*223,33*	140	27	14,50	18,0

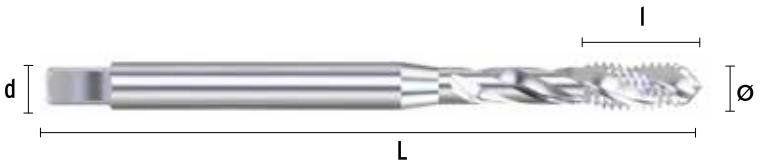
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2158 HSSE DIN 371

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*28,27*	56	5	2,70	3,5
Nº5	44,00	*28,27*	56	5	2,70	3,5
Nº6	40,00	*28,63*	56	6	3,00	4,0
Nº8	36,00	*28,80*	63	7	3,40	4,5
Nº10	32,00	*29,16*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	28,00	*30,67*	80	10	4,90	6,0
1/4	28,00	*32,13*	80	10	5,50	7,0
5/16	24,00	*33,29*	90	13	6,20	8,0
3/8	24,00	*39,46*	90	15	8,00	10,0

2157 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
*1/4	28,00	*32,13*	80	13	3,40	4,5
*5/16	24,00	*33,29*	90	13	4,90	6,0
*3/8	24,00	*39,46*	90	16	5,50	7,0
7/16	20,00	*55,78*	100	15	6,20	8,0
1/2	20,00	*55,78*	100	15	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
9/16	18,00	*76,22*	100	15	9,00	11,0
5/8	18,00	*74,71*	100	15	9,00	12,0
3/4	16,00	*108,64*	110	17	11,00	14,0
7/8	14,00	*154,81*	125	17	14,50	18,0
1"	12,00	*143,44*	140	20	14,50	18,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2278 HSSE DIN 371

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | R | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*31,10*	56	5	2,70	3,5
Nº5	44,00	*31,10*	56	5	2,70	3,5
Nº6	40,00	*31,49*	56	6	3,00	4,0
Nº8	36,00	*31,68*	63	7	3,40	4,5
Nº10	32,00	*32,08*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	28,00	*33,74*	80	10	4,90	6,0
1/4	28,00	*35,34*	80	10	5,50	7,0
5/16	24,00	*36,62*	90	13	6,20	8,0
3/8	24,00	*43,41*	90	15	8,00	10,0

2279 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | D | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	20,00	*61,36*	100	20	6,20	8,0
1/2	20,00	*61,36*	100	20	7,00	9,0
9/16	18,00	*83,84*	100	20	9,00	11,0
5/8	18,00	*82,18*	100	20	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	16,00	*119,49*	110	24	11,00	14,0
7/8	14,00	*170,30*	125	24	14,50	18,0
1"	12,00	*157,78*	140	20	14,50	18,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

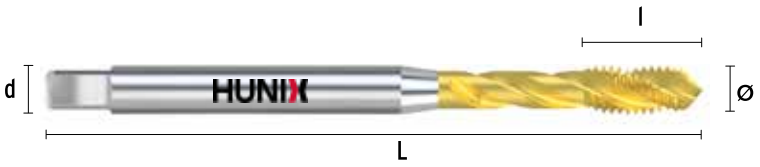
2282 HSSE DIN 371

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | R | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*46,01*	56	5	2,70	3,5
Nº5	44,00	*41,36*	56	5	2,70	3,5
Nº6	40,00	*41,36*	56	6	3,00	4,0
Nº8	36,00	*41,36*	63	7	3,40	4,5
Nº10	32,00	*43,52*	70	8	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº12	28,00	*45,49*	80	10	4,90	6,0
1/4	28,00	*45,49*	80	10	5,50	7,0
5/16	24,00	*51,39*	90	13	6,20	8,0
3/8	24,00	*63,37*	90	15	8,00	10,0

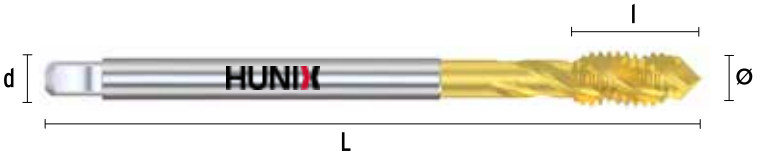
2283 HSSE DIN 374

UNF ANSI/ASME B1.1 | Form. C | Tol. 2B | 35° | 3XD | D | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH



Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	20,00	*87,10*	100	15	6,20	8,0
1/2	20,00	*91,25*	100	15	7,00	9,0
9/16	18,00	*124,97*	100	15	9,00	11,0
5/8	18,00	*117,08*	100	15	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	16,00	*174,47*	110	17	11,00	14,0
7/8	14,00	*256,71*	125	17	14,50	18,0
1"	12,00	*239,32*	140	20	14,50	18,0

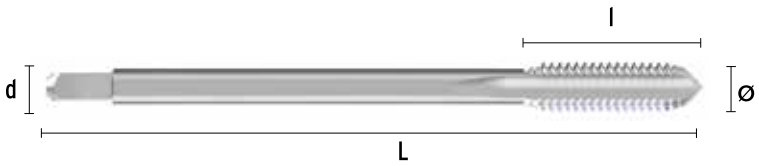
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2189 HSSE DIN 374

UN ANSI/ASME B1.1 | Form. C | Tol. 2B | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1"1/8	8,00	*460,37*	180	45	18,00	22,0
1"1/4	8,00	*593,96*	180	45	18,00	22,0
1"3/8	8,00	*494,77*	200	56	22,00	28,0
1"1/2	8,00	*566,48*	200	60	24,00	32,0

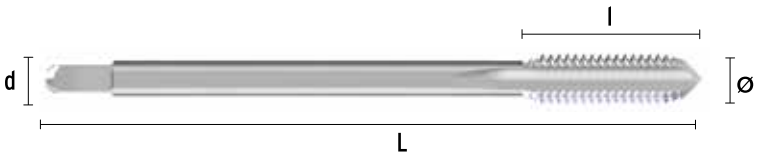
Ø	P	€	L mm	l mm	⊠ mm	d mm
1"5/8	8,00	*576,68*	200	60	24,00	32,0
1"3/4	8,00	*722,94*	200	50	29,00	36,0
2"	8,00	*1.175,12*	225	50	32,00	40,0

2160 HSSE DIN 374

UNEF ANSI/ASME B1.1 | Form. C | Tol. 2B | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/4	32,00	*94,73*	80	18	3,40	4,5
5/16	32,00	*110,34*	90	20	4,90	6,0
3/8	32,00	*126,48*	90	20	5,50	7,0
7/16	28,00	*160,99*	90	22	6,20	8,0
1/2	28,00	*172,26*	100	22	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
9/16	24,00	*206,91*	100	22	9,00	11,0
5/8	24,00	*240,61*	100	22	9,00	12,0
3/4	20,00	*318,86*	110	25	11,00	14,0
1"	20,00	*522,47*	140	28	14,50	18,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

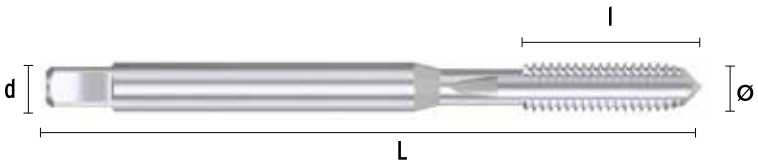
P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2136 HSSE DIN 371

BSW BS 84 | Form. C | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
3/32	48,00	*22,26*	50	10	2,10	2,8
1/8	40,00	*18,60*	56	11	2,70	3,5
5/32	32,00	*18,60*	63	13	3,40	4,5
3/16	24,00	*18,60*	70	16	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
7/32	24,00	*28,27*	80	16	4,90	6,0
1/4	20,00	*20,27*	80	18	5,50	7,0
5/16	18,00	*24,88*	90	20	6,20	8,0
3/8	16,00	*27,49*	100	22	8,00	10,0

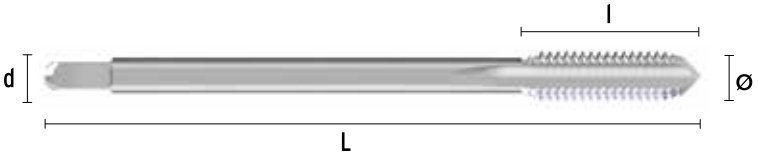
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2135 HSSE DIN 376

BSW BS 84 | Form. C | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	40,00	*18,60*	56	11	2,10	2,8
5/32	32,00	*18,60*	63	13	2,10	2,8
3/16	24,00	*18,60*	70	16	2,70	3,5
7/32	24,00	*28,27*	80	18	3,40	4,5
1/4	20,00	*20,27*	80	18	3,40	4,5
5/16	18,00	*24,88*	90	20	4,90	6,0
3/8	16,00	*27,49*	100	20	5,50	7,0
7/16	14,00	*36,27*	100	22	6,20	8,0
1/2	12,00	*34,78*	110	22	7,00	9,0
9/16	12,00	*49,89*	110	30	9,00	11,0
5/8	11,00	*47,18*	110	28	9,00	12,0
3/4	10,00	*63,14*	125	32	11,00	14,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
7/8	9,00	*85,51*	140	36	14,50	18,0
1"	8,00	*107,55*	160	38	14,50	18,0
1"1/8	7,00	*142,67*	180	45	18,00	22,0
1"1/4	7,00	*207,06*	180	45	18,00	22,0
1"3/8	6,00	*340,43*	200	55	22,00	28,0
1"1/2	6,00	*369,55*	200	55	24,00	32,0
1"5/8	5,00	*539,21*	220	60	24,00	32,0
1"3/4	5,00	*581,71*	220	62	29,00	36,0
1"7/8	4,50	*644,91*	250	70	29,00	36,0
2"	4,50	*832,54*	250	70	32,00	40,0
2"1/4	4,00	*907,35*	280	78	35,00	45,0
2"1/2	4,00	*1.048,11*	315	90	39,00	50,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2136/5 HSSE DIN 371

BSW BS 84 | Form. C | LH | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	40,00	*37,21*	56	11	2,70	3,5
5/32	32,00	*37,21*	63	13	3,40	4,5
3/16	24,00	*37,21*	70	14	4,90	6,0

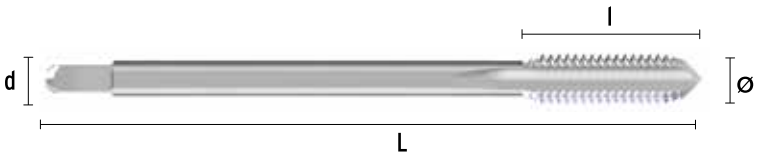
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2135/5 HSSE DIN 376

BSW BS 84 | Form. C | LH | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/4	20,00	*40,55*	80	18	3,40	4,5
5/16	18,00	*49,76*	90	20	4,90	6,0
3/8	16,00	*54,98*	100	22	5,50	7,0
7/16	14,00	*72,52*	100	22	6,20	8,0
1/2	12,00	*69,54*	110	27	7,00	9,0
9/16	12,00	*99,76*	110	30	9,00	11,0
5/8	11,00	*94,39*	110	30	9,00	12,0
3/4	10,00	*126,27*	125	35	11,00	14,0
7/8	9,00	*171,03*	140	36	14,50	18,0
1"	8,00	*215,08*	160	38	14,50	18,0

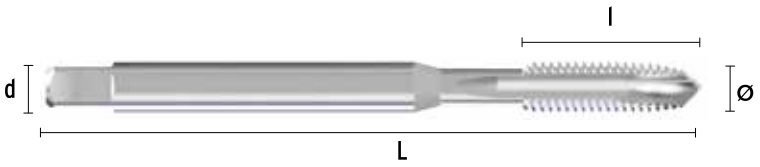
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2138 HSSE DIN 371

BSW BS 84 | Form. B "Gun" | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	40,00	*20,55*	56	11	2,70	3,5
*5/32	32,00	*20,55*	63	13	3,40	4,5
3/16	24,00	*20,55*	70	15	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
1/4	20,00	*23,34*	80	18	5,50	7,0
5/16	18,00	*31,55*	90	20	6,20	8,0
3/8	16,00	*30,21*	100	20	8,00	10,0

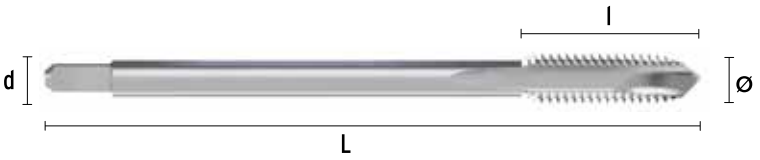
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2137 HSSE DIN 376

BSW BS 84 | Form. B "Gun" | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
*1/4	20,00	*23,34*	80	17	3,40	4,5
*5/16	18,00	*27,32*	90	20	4,90	6,0
*3/8	16,00	*30,21*	100	22	5,50	7,0
7/16	14,00	*38,14*	100	22	6,20	8,0
1/2	12,00	*39,93*	110	27	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
9/16	12,00	*54,85*	110	30	9,00	11,0
5/8	11,00	*51,83*	110	30	9,00	12,0
3/4	10,00	*69,52*	125	35	11,00	14,0
7/8	9,00	*94,03*	140	36	14,50	18,0
1"	8,00	*118,23*	160	38	14,50	18,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2140 HSSE DIN 371

BSW BS 84 | Form. C | 35° | 3XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	40,00	*23,34*	56	7	2,70	3,5
*5/32	32,00	*23,34*	63	7	3,40	4,5
3/16	24,00	*23,34*	70	10	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
1/4	20,00	*31,63*	80	13	5,50	7,0
5/16	18,00	*38,79*	90	14	6,20	8,0
3/8	16,00	*40,94*	100	20	8,00	10,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2139 HSSE DIN 376

BSW BS 84 | Form. C | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø	P	€	L mm	l mm	⊠ mm	d mm
*3/16	24,00	*23,34*	70	14	2,70	3,5
*1/4	20,00	*31,63*	80	16	3,40	4,5
*5/16	18,00	*37,08*	90	18	4,90	6,0
*3/8	16,00	*40,94*	100	20	5,50	7,0
7/16	14,00	*46,50*	100	15	6,20	8,0
1/2	12,00	*44,57*	110	18	7,00	9,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
9/16	12,00	*63,89*	110	22	9,00	11,0
5/8	11,00	*60,45*	110	22	9,00	12,0
3/4	10,00	*80,93*	125	25	11,00	14,0
7/8	9,00	*109,54*	140	30	14,50	18,0
1"	8,00	*137,51*	160	30	16,00	20,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

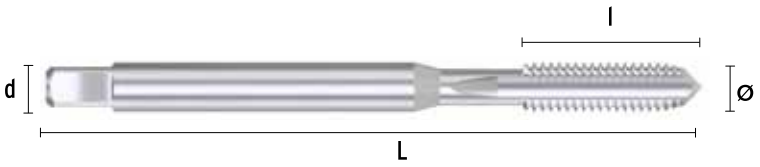
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2141 HSSE DIN 371

BSF BS 84 | Form. C | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
3/16	32,00	*79,84*	70	14	4,90	6,0
1/4	26,00	*33,99*	80	18	3,40	4,5

Ø	P	€	L mm	l mm	⊠ mm	d mm
5/16	22,00	*40,38*	90	20	4,90	6,0
3/8	20,00	*42,42*	100	22	5,50	7,0

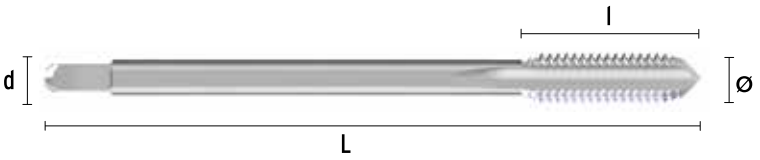
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2142 HSSE DIN 374

BSF BS 84 | Form. C | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	18,00	*57,24*	100	20	6,20	8,0
1/2	16,00	*64,76*	110	22	7,00	9,0
9/16	16,00	*68,54*	110	23	9,00	11,0
5/8	14,00	*91,34*	110	28	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	12,00	*108,12*	125	32	11,00	14,0
7/8	11,00	*150,33*	140	34	14,50	18,0
1"	10,00	*179,50*	140	28	16,00	20,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

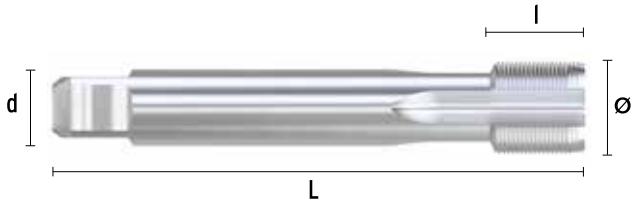
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2144 HSSE DIN 5156

G ISO 228 | Form. C | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*31,43*	90	20	5,50	7,0
1/4	19,00	*44,80*	100	22	9,00	11,0
3/8	19,00	*53,61*	100	22	9,00	12,0
1/2	14,00	*67,75*	125	25	12,00	16,0
5/8	14,00	*84,45*	125	25	14,50	18,0
3/4	14,00	*106,07*	140	28	16,00	20,0
7/8	14,00	*142,59*	150	30	18,00	22,0

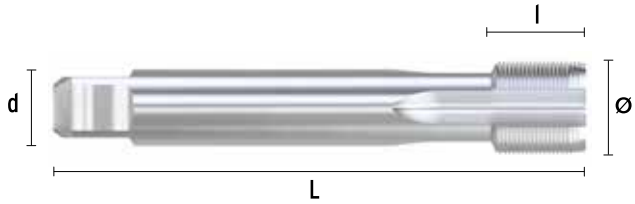
Ø	P	€	L mm	l mm	⊠ mm	d mm
1"	11,00	*164,59*	160	32	20,00	25,0
1"1/8	11,00	*250,15*	170	34	22,00	28,0
1"1/4	11,00	*293,49*	170	34	24,00	32,0
1"3/8	11,00	*367,08*	180	32	29,00	36,0
1"1/2	11,00	*465,84*	190	36	29,00	36,0
1"3/4	11,00	*553,66*	190	36	32,00	40,0
2"	11,00	*705,53*	220	40	35,00	45,0

2144/5 HSSE DIN 5156

G ISO 228 | Form. C | LH | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*62,87*	90	20	5,50	7,0
1/4	19,00	*89,62*	100	22	9,00	11,0
3/8	19,00	*107,20*	100	22	9,00	12,0
1/2	14,00	*135,49*	125	25	12,00	16,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	*168,91*	125	25	14,50	18,0
3/4	14,00	*212,15*	140	28	16,00	20,0
1"	11,00	*329,19*	160	32	20,00	25,0

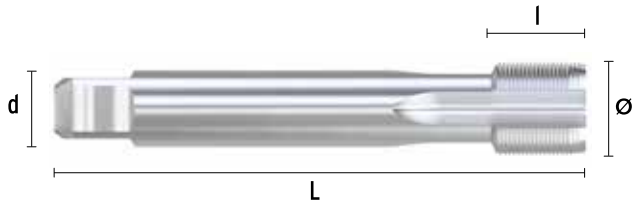
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2192 HSSE DIN 5156

G ISO 228 | Form. E | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
										● 25-35							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*38,12*	90	20	5,50	7,0
1/4	19,00	*58,53*	100	22	9,00	11,0
3/8	19,00	*80,83*	100	22	9,00	12,0
1/2	14,00	*109,07*	125	25	12,00	16,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	*113,95*	125	25	14,50	18,0
3/4	14,00	*160,06*	140	28	16,00	20,0
7/8	14,00	*195,64*	150	28	18,00	22,0
1"	11,00	*244,16*	160	30	20,00	25,0

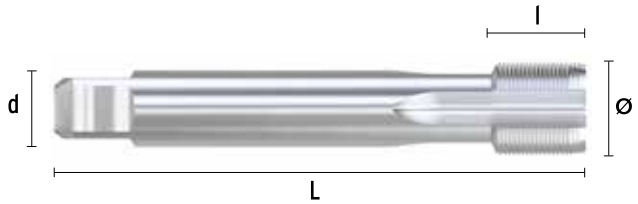
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2206 HSSE DIN 5156

+0,1 | G ISO 228 | Form. E | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
										● 25-35							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*46,46*	90	20	5,50	7,0
1/4	19,00	*69,23*	100	22	9,00	11,0
3/8	19,00	*97,00*	100	22	9,00	12,0
1/2	14,00	*132,42*	125	25	12,00	16,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	*138,49*	125	25	14,50	18,0
3/4	14,00	*192,08*	140	28	16,00	20,0
7/8	14,00	*226,93*	150	28	18,00	22,0
1"	11,00	*283,21*	160	30	20,00	25,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

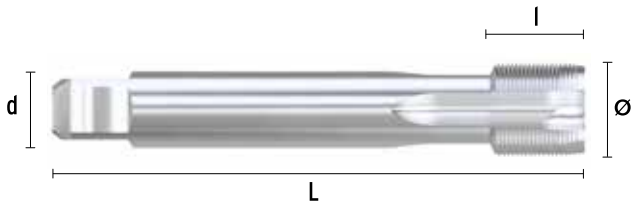
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2145 HSSE DIN 5156

G ISO 228 | Form. B "Gun" | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*36,32*	90	20	5,50	7,0
1/4	19,00	*65,20*	100	22	9,00	11,0
3/8	19,00	*64,32*	100	22	9,00	12,0
1/2	14,00	*85,87*	125	25	12,00	16,0
5/8	14,00	*133,43*	125	25	14,50	18,0
3/4	14,00	*151,79*	140	28	16,00	20,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
7/8	14,00	*193,97*	150	30	18,00	22,0
1"	11,00	*285,58*	160	32	20,00	25,0
1"1/8	11,00	*426,83*	170	30	22,00	28,0
1"1/4	11,00	*424,82*	170	30	24,00	32,0
1"3/8	11,00	*434,94*	190	32	29,00	36,0
1"1/2	11,00	*452,24*	190	32	29,00	36,0

2284 HSSE DIN 5156

G ISO 228 | Form. B "Gun" | 3XD | D | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-10		○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH THREADING TECHNOLOGY

Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*39,95*	90	20	5,50	7,0
1/4	19,00	*71,72*	100	22	9,00	11,0
3/8	19,00	*70,75*	100	22	9,00	12,0
1/2	14,00	*94,46*	125	25	12,00	16,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	*146,77*	125	25	14,50	18,0
3/4	14,00	*166,97*	140	28	16,00	20,0
7/8	14,00	*213,38*	150	30	18,00	22,0
1"	11,00	*314,14*	160	32	20,00	25,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2286 HSSE DIN 5156

G ISO 228 | Form. B "Gun" | 3XD | D | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*61,47*	90	20	5,50	7,0
1/4	19,00	*100,47*	100	22	9,00	11,0
3/8	19,00	*113,07*	100	22	9,00	12,0
1/2	14,00	*143,63*	125	25	12,00	16,0

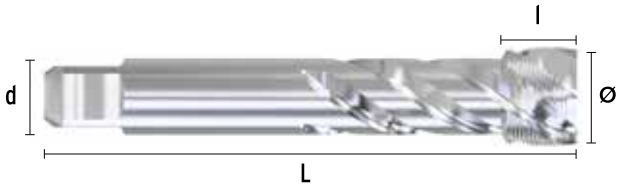
Ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	*217,21*	125	25	14,50	18,0
3/4	14,00	*243,68*	140	28	16,00	20,0
7/8	14,00	*320,14*	150	30	18,00	22,0
1"	11,00	*436,88*	160	32	20,00	25,0

2146 HSSE DIN 5156

G ISO 228 | Form. C | 35° | 3XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*39,82*	90	10	5,50	7,0
1/4	19,00	*71,73*	100	14	9,00	11,0
3/8	19,00	*70,85*	100	15	9,00	12,0
1/2	14,00	*94,41*	125	17	12,00	16,0
5/8	14,00	*146,77*	125	20	14,50	18,0
3/4	14,00	*166,95*	140	20	16,00	20,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
7/8	14,00	*213,49*	150	22	18,00	22,0
1"	11,00	*314,07*	160	24	20,00	25,0
1" 1/8	11,00	*469,52*	170	24	22,00	28,0
1"1/4	11,00	*467,30*	170	25	24,00	32,0
1" 3/8	11,00	*478,43*	190	32	29,00	36,0
1" 1/2	11,00	*497,46*	190	32	29,00	36,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2285 HSSE DIN 5156

G ISO 228 | Form. C | 35° | 3XD | D | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*43,80*	90	10	5,50	7,0
1/4	19,00	*78,90*	100	14	9,00	11,0
3/8	19,00	*77,94*	100	15	9,00	12,0
1/2	14,00	*103,85*	125	17	12,00	16,0

ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	*161,45*	125	20	14,50	18,0
3/4	14,00	*183,63*	140	20	16,00	20,0
7/8	14,00	*234,84*	150	22	18,00	22,0
1"	11,00	*345,48*	160	24	20,00	25,0

2287 HSSE DIN 5156

G ISO 228 | Form. C | 35° | 3XD | D | TIN+

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

MICRO FINISH

ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*66,19*	90	10	5,50	7,0
1/4	19,00	*108,85*	100	14	9,00	11,0
3/8	19,00	*124,41*	100	15	9,00	12,0
1/2	14,00	*154,68*	125	17	12,00	16,0

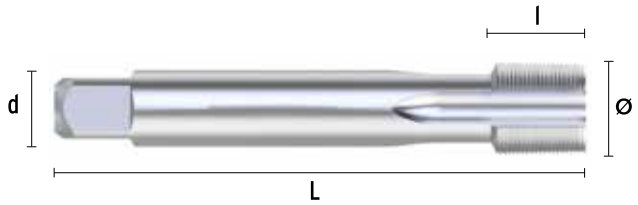
ø	P	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	*234,31*	125	20	14,50	18,0
3/4	14,00	*260,02*	140	20	16,00	20,0
7/8	14,00	*344,85*	150	22	18,00	22,0
1"	11,00	*473,28*	160	24	20,00	25,0

2159 HSSE DIN 5156

Rc DIN 2999 | Form. C | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 7-15	○ 7-10						○ 7-10			○ 7-15							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*52,95*	90	18	5,50	7,0
1/4	19,00	*76,67*	100	22	9,00	11,0
3/8	19,00	*105,73*	100	22	9,00	12,0
1/2	14,00	*147,37*	125	25	12,00	16,0

ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	14,00	*228,43*	140	28	16,00	20,0
*7/8	14,00	*394,37*	150	28	18,00	22,0
1"	11,00	*328,38*	160	33	20,00	25,0

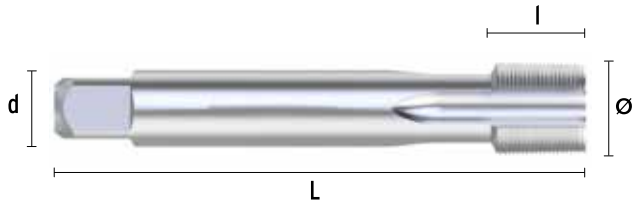
*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2164 HSSE DIN 374

NPT ANSI/ASME B1.20.1 | Form. C | Tol. 6H | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 7-15	○ 7-10						○ 7-10			○ 7-15							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



ø	P	€	L mm	l mm	⊠ mm	d mm
1/16	27,00	*66,39*	90	12	4,90	6,0
1/8	27,00	*52,27*	90	15	5,50	7,0
1/4	18,00	*71,80*	100	20	9,00	11,0
3/8	18,00	*92,76*	110	22	11,00	14,0
1/2	14,00	*123,65*	140	27	14,50	18,0

ø	P	€	L mm	l mm	⊠ mm	d mm
3/4	14,00	*191,88*	140	28	16,00	20,0
1"	11,50	*410,96*	160	35	20,00	25,0
*1"1/4	11,50	*424,30*	190	35	24,00	32,0
*1"1/2	11,50	*716,33*	200	35	29,00	36,0
*2"	11,50	*986,32*	220	35	35,00	45,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

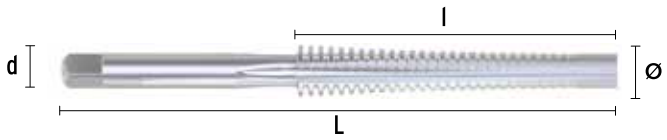
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2212 HSSE

Tr DIN 103 | Tol. 7H

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 2-8	○ 1-5									● 2-6							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
10	2,00	*411,91*	110	63	5,50	7,0
10	3,00	*411,91*	125	75	5,50	7,0
12	3,00	*481,83*	165	111	6,20	8,0
14	3,00	*493,97*	140	85	8,00	10,0
14	4,00	*533,42*	170	112	8,00	10,0
16	4,00	*533,42*	180	116	9,00	11,0
18	4,00	*571,73*	190	120	9,00	12,0

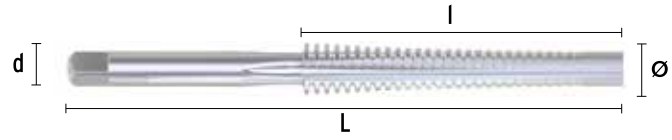
Ø	P	€	L mm	l mm	⊠ mm	d mm
20	4,00	*622,46*	200	124	11,00	14,0
22	5,00	*622,46*	235	155	12,00	16,0
24	5,00	*673,38*	245	160	14,50	18,0
26	5,00	*698,84*	255	165	16,00	20,0
28	5,00	*762,30*	265	170	18,00	22,0
30	6,00	*825,96*	290	185	18,00	22,0
32	6,00	*811,66*	300	191	20,00	25,0

2212/5 HSSE

Tr DIN 103 | Tol. 7H | LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 2-8	○ 1-5									● 2-6							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
10	2,00	*514,83*	110	63	5,50	7,0
10	3,00	*514,83*	125	75	5,50	7,0
12	3,00	*602,27*	165	111	6,20	8,0
14	3,00	*617,45*	140	85	8,00	10,0
14	4,00	*666,82*	170	112	8,00	10,0
16	4,00	*666,82*	180	116	9,00	11,0
18	4,00	*714,60*	190	120	9,00	12,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
20	4,00	*778,06*	200	124	11,00	14,0
22	5,00	*778,06*	235	155	12,00	16,0
24	5,00	*841,73*	245	160	14,50	18,0
26	5,00	*873,57*	255	165	16,00	20,0
28	5,00	*952,78*	265	170	18,00	22,0
30	6,00	*1.032,49*	290	185	18,00	22,0
32	6,00	*1.014,57*	300	191	20,00	25,0

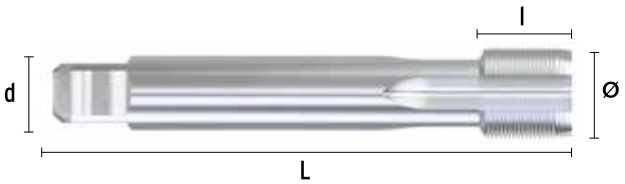
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2163 HSSE DIN 40433

PG DIN 40430 | Form. C | 1,5XD | D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Pg	Ø	P	€	L mm	l mm	⊠ mm	d mm
7,0	12,5	20,00	*48,71*	100	22	7,00	9,0
9,0	15,2	18,00	*67,40*	100	22	9,00	11,0
11,0	18,6	18,00	*87,71*	110	25	11,00	14,0
13,5	20,4	18,00	*98,44*	125	25	12,00	16,0
16,0	22,5	18,00	*115,89*	125	25	14,50	18,0

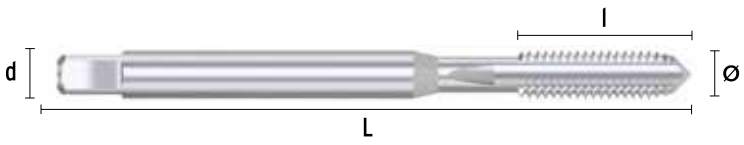
Pg	Ø	P	€	L mm	l mm	⊠ mm	d mm
21,0	28,3	16,00	*183,98*	150	28	18,00	22,0
29,0	37,0	16,00	*311,03*	170	30	22,00	28,0
36,0	47,0	16,00	*545,70*	190	32	29,00	36,0
42,0	54,0	16,00	*888,47*	190	32	32,00	40,0
48,0	59,3	16,00	*1.083,17*	220	40	35,00	45,0

2242 HSSE DIN 371

Vg DIN 7756 | Form. C | 1,5XD | R

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
● 10-25	○ 10-15						○ 10-15			○ 10-20							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
5,0	36,00	*101,67*	70	12	4,90	6,0
5,2	24,00	*101,67*	80	17	4,90	6,0

Ø	P	€	L mm	l mm	⊠ mm	d mm
6,0	32,00	*115,75*	80	14	5,50	7,0
8,0	32,00	*128,79*	80	16	6,20	8,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

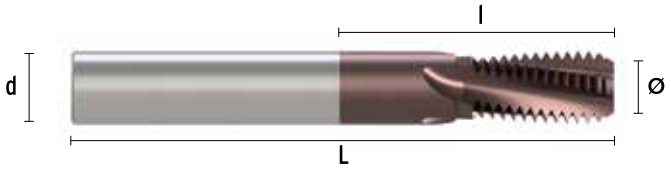
2411 HM-MD

M-MF | 15° | DIN 6535 HA h6 | TIALCN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
120-200	100 - 140	80 - 120	70 - 110	90-180	70-120	120-180	100-150	80 - 120	200-900	60-150	100 - 140	70-170	50-80	30-80	60 - 100	30 - 60	20 - 40

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

NEW



Ø	P		€	d mm	D mm	z	l mm	L mm
M2,0	0,40	1,5xD	*212,83*	4	1,50	3	3,40	50
M2,0	0,40	2,0xD	*234,17*	4	1,50	3	4,60	50
M2,5	0,45	1,5xD	*212,83*	4	1,90	3	4,27	50
M2,5	0,45	2,0xD	*234,17*	4	1,90	3	5,62	50
M3,0	0,50	1,5xD	*212,83*	4	2,30	3	5,25	50
M3,0	0,50	2,0xD	*234,17*	4	2,30	3	6,75	50
M4,0	0,70	1,5xD	*212,83*	4	3,00	3	7,35	50
M4,0	0,70	2,0xD	*234,17*	4	3,00	3	8,75	50
M5,0	0,80	1,5xD	*212,83*	4	3,80	3	8,40	50
M5,0	0,80	2,0xD	*234,17*	4	3,80	3	10.80	50
M6,0	1,00	1,5xD	*247,33*	6	4,50	3	10,50	63
M6,0	1,00	2,0xD	*272,17*	6	4,50	3	13,50	63
M6,0	1,00	2,5xD	*299,17*	6	4,50	3	16,50	63
M8,0	1,25	1,5xD	*247,33*	6	6,00	3	14,37	63
M8,0	1,25	2,0xD	*272,17*	6	6,00	3	18,12	63
M8,0	1,25	2,5xD	*299,17*	6	6,00	3	21,87	63
M10,0	1,00	2,0xD	*344,33*	8	8,00	4	17,50	63
M10,0	1,50	1,5xD	*313,00*	8	7,50	3	17,25	63
M10,0	1,50	2,0xD	*344,33*	8	7,50	3	21,75	76
M10,0	1,50	2,5xD	*378,33*	8	7,50	3	27,75	76
M12,0	1,75	1,5xD	*313,00*	8	8,00	3	20,12	76
M12,0	1,75	2,0xD	*344,33*	8	8,00	3	27,12	76
M12,0	1,75	2,5xD	*378,33*	10	9,00	3	32,37	100
M14,0	1,50	2,0xD	*437,83*	10	10,00	4	23,25	76
M14,0	2,00	2,0xD	*437,83*	10	10,00	3	31,00	100
M14,0	2,00	2,5xD	*481,33*	10	10,00	3	37,00	100
M16,0	1,50	2,0xD	*514,33*	12	12,00	4	29,25	83
M16,0	2,00	2,0xD	*514,33*	12	12,00	4	35,00	100
M16,0	2,00	2,5xD	*565,33*	12	12,00	4	43,00	100
M20,0	1,50	2,0xD	*638,83*	16	16,00	6	35,25	100
M20,0	2,50	2,0xD	*638,83*	14	14,00	4	43,75	100
M20,0	2,50	2,5xD	*739,33*	16	15,00	4	53,75	120
M24,0	3,00	2,0xD	*739,33*	16	16,00	3	52,50	100
M24,0	3,00	2,5xD	*860,00*	18	18,00	3	64,50	120

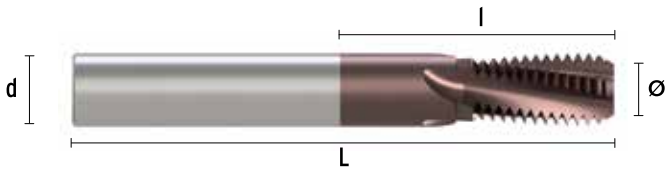
2412 HM-MD

G ISO 228 | 15° | DIN 6535 HA h6 | TIALCN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
120-200	100 - 140	80 - 120	70 - 110	90-180	70-120	120-180	100-150	80 - 120	200-900	60-150	100 - 140	70-170	50-80	30-80	60 - 100	30 - 60	20 - 40

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

NEW



Ø	P	€	d mm	D mm	z	l mm	L mm
1/16 - 1/8	28	*247,33*	6	6	3	10,43	63
1/4 - 3/8	19	*313,00*	8	8	3	15,37	63
1/4 - 3/8	19	*398,17*	10	10	4	22,06	76
1/2 - 7/8	14	*467,33*	12	12	4	20,86	83
1/2 - 7/8	14	*467,33*	12	12	4	28,12	83
1/2 - 7/8	11	*514,33*	16	16	5	28,12	89
1 - 1 1/2	11	*672,50*	12	12	3	26,55	83
1 - 3"	11	*672,50*	16	16	4	40,41	100
≥ 1	11	*860,00*	20	20	5	49,65	120

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

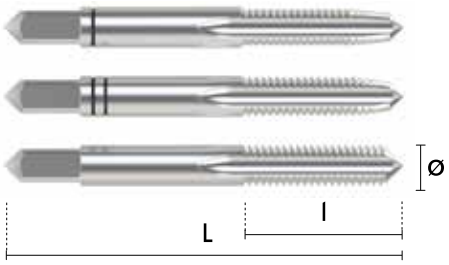
2301 HSS DIN 352/2181

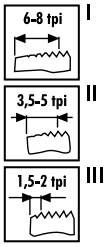
M-MF DIN 13 | Tol. 6H

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3 < M (€/3) MF (€/2)





Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
M1,0	**0,25**	**3**	*81,02*	**32**	**5,5**	**2,10**	**2,5**
M1,1	**0,25**	**3**	*81,02*	**32**	**5,5**	**2,10**	**2,5**
M1,2	**0,25**	**3**	*81,02*	**32**	**5,5**	**2,10**	**2,5**
M1,4	**0,30**	**3**	*81,02*	**32**	**7**	**2,10**	**2,5**
M1,6	**0,35**	**3**	*73,92*	**32**	**8**	**2,10**	**2,5**
M1,7	**0,35**	**3**	*46,68*	**32**	**8**	**2,10**	**2,5**
M1,8	**0,35**	**3**	*69,40*	**32**	**8**	**2,10**	**2,5**
M2,0	**0,40**	**3**	*36,81*	**36**	**8**	**2,10**	**2,8**
M2,2	**0,45**	**3**	*39,65*	**36**	**9**	**2,10**	**2,8**
M2,3	**0,45**	**3**	*39,70*	**36**	**9**	**2,10**	**2,8**
M2,5	**0,45**	**3**	*38,08*	**40**	**9**	**2,10**	**2,8**
M2,6	**0,45**	**3**	*35,03*	**40**	**9**	**2,10**	**2,8**
M3,0	**0,50**	**3**	*20,16*	**40**	**11**	**2,70**	**3,5**
M3,0	0,60	2	*38,66*	40	11	2,70	3,5
M3,5	0,60	2	*27,90*	45	12	3,00	4,0
M3,5	0,75	2	*46,69*	45	14	3,40	4,5
M4,0	0,50	2	*39,32*	45	13	3,40	4,5
M4,0	**0,70**	**3**	*18,56*	**45**	**14**	**3,40**	**4,5**
M4,5	0,75	2	*35,98*	50	16	4,90	6,0
M5,0	0,50	2	*41,81*	50	12	4,90	6,0
M5,0	0,75	2	*38,96*	50	12	4,90	6,0
M5,0	**0,80**	**3**	*20,17*	**50**	**16**	**4,90**	**6,0**
M5,0	1,00	3	*22,40*	50	14	4,90	6,0
M5,5	0,90	2	*136,29*	50	18	4,90	6,0
M6,0	0,50	2	*41,76*	56	14	4,90	6,0
M6,0	0,75	2	*23,52*	56	14	4,90	6,0
M6,0	0,90	2	*136,18*	56	19	4,90	6,0
M6,0	**1,00**	**3**	*20,17*	**56**	**19**	**4,90**	**6,0**
M7,0	0,75	2	*29,69*	56	14	4,90	6,0
M7,0	**1,00**	**3**	*27,84*	**56**	**19**	**4,90**	**6,0**
M8,0	0,50	2	*44,58*	56	18	4,90	6,0
M8,0	0,75	2	*34,74*	56	18	4,90	6,0
M8,0	1,00	2	*23,10*	63	22	4,90	6,0
M8,0	**1,25**	**3**	*24,28*	**63**	**22**	**4,90**	**6,0**
M9,0	1,00	2	*29,85*	63	22	5,50	7,0
M9,0	**1,25**	**3**	*43,09*	**63**	**22**	**5,50**	**7,0**
M10,0	0,50	2	*113,27*	63	18	5,50	7,0
M10,0	0,75	2	*49,79*	63	20	5,50	7,0
M10,0	1,00	2	*25,05*	63	20	5,50	7,0
M10,0	1,25	2	*25,50*	70	24	5,50	7,0
M10,0	**1,50**	**3**	*30,67*	**70**	**24**	**5,50**	**7,0**
M11,0	0,75	2	*124,00*	63	20	6,20	8,0
M11,0	1,00	2	*44,27*	63	20	6,20	8,0
M11,0	1,25	2	*44,27*	70	22	6,20	8,0
M11,0	**1,50**	**3**	*59,42*	**70**	**24**	**6,20**	**8,0**

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
M12,0	0,75	2	*70,85*	70	22	7,00	9,0
M12,0	1,00	2	*43,73*	70	22	7,00	9,0
M12,0	1,25	2	*43,91*	70	22	7,00	9,0
M12,0	1,50	2	*37,35*	70	22	7,00	9,0
M12,0	**1,75**	**3**	*39,87*	**75**	**28**	**7,00**	**9,0**
M13,0	0,75	2	*124,00*	70	20	9,00	11,0
M13,0	1,00	2	*71,69*	70	22	9,00	11,0
M13,0	1,25	2	*71,69*	70	22	9,00	11,0
M13,0	1,50	2	*71,69*	70	22	9,00	11,0
M13,0	**1,75**	**3**	*90,30*	**75**	**30**	**9,00**	**11,0**
M14,0	0,75	2	*124,12*	70	22	9,00	11,0
M14,0	1,00	2	*65,42*	70	22	9,00	11,0
M14,0	1,25	2	*53,67*	70	22	9,00	11,0
M14,0	1,50	2	*41,69*	70	22	9,00	11,0
M14,0	**2,00**	**3**	*52,46*	**80**	**30**	**9,00**	**11,0**
M15,0	1,00	2	*96,70*	70	22	9,00	12,0
M15,0	1,25	2	*101,77*	70	22	9,00	12,0
M15,0	1,50	2	*99,00*	70	22	9,00	12,0
M15,0	**2,00**	**3**	*103,46*	**80**	**32**	**9,00**	**12,0**
M16,0	1,00	2	*91,55*	70	22	9,00	12,0
M16,0	1,25	2	*96,38*	70	22	9,00	12,0
M16,0	1,50	2	*51,98*	70	22	9,00	12,0
M16,0	**2,00**	**3**	*73,86*	**80**	**32**	**9,00**	**12,0**
M17,0	1,00	2	*147,53*	70	22	9,00	12,0
M17,0	1,25	2	*147,53*	70	22	9,00	12,0
M17,0	1,50	2	*147,53*	70	22	9,00	12,0
M18,0	1,00	2	*101,76*	80	22	11,00	14,0
M18,0	1,25	2	*145,42*	80	22	11,00	14,0
M18,0	1,50	2	*68,92*	80	22	11,00	14,0
M18,0	2,00	2	*109,66*	80	22	11,00	14,0
M18,0	**2,50**	**3**	*98,73*	**95**	**34**	**11,00**	**14,0**
M19,0	1,00	2	*214,14*	80	22	11,00	14,0
M19,0	1,25	2	*213,95*	80	22	11,00	14,0
M19,0	1,50	2	*214,14*	80	22	11,00	14,0
M20,0	1,00	2	*135,52*	80	22	12,00	16,0
M20,0	1,25	2	*214,14*	80	22	12,00	16,0
M20,0	1,50	2	*86,00*	80	22	12,00	16,0
M20,0	2,00	2	*113,65*	80	22	12,00	16,0
M20,0	**2,50**	**3**	*110,95*	**95**	**34**	**12,00**	**16,0**
M21,0	1,00	2	*276,73*	80	22	12,00	16,0
M21,0	1,25	2	*276,73*	80	22	12,00	16,0
M21,0	1,50	2	*218,83*	80	22	12,00	16,0
M22,0	1,00	2	*151,18*	80	22	14,50	18,0
M22,0	1,25	2	*214,14*	80	22	14,50	18,0
M22,0	1,50	2	*94,02*	80	22	14,50	18,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M22,0	2,00	2	*151,19*	80	22	14,50	18,0
M22,0	**2,50**	**3**	*136,02*	**100**	**34**	**14,50**	**18,0**
M23,0	1,00	2	*276,47*	80	22	14,50	18,0
M23,0	1,50	2	*276,47*	80	22	14,50	18,0
M24,0	1,00	2	*169,03*	90	22	14,50	18,0
M24,0	1,25	2	*276,73*	90	22	14,50	18,0
M24,0	1,50	2	*120,02*	90	22	14,50	18,0
M24,0	2,00	2	*169,03*	90	22	14,50	18,0
M24,0	**3,00**	**3**	*171,34*	**110**	**38**	**14,50**	**18,0**
M25,0	1,00	2	*242,14*	90	22	14,50	18,0
M25,0	1,25	2	*394,24*	90	22	14,50	18,0
M25,0	1,50	2	*209,36*	90	22	14,50	18,0
M25,0	2,00	2	*405,51*	90	22	14,50	18,0
M26,0	1,00	2	*394,63*	90	22	14,50	18,0
M26,0	1,50	2	*191,22*	90	22	14,50	18,0
M26,0	2,00	2	*394,63*	90	22	14,50	18,0
M27,0	1,00	2	*237,63*	90	22	16,00	20,0
M27,0	1,50	2	*211,88*	90	22	16,00	20,0
M27,0	2,00	2	*234,30*	90	22	16,00	20,0
M27,0	**3,00**	**3**	*220,66*	**110**	**38**	**16,00**	**20,0**
M28,0	1,00	2	*394,61*	90	22	16,00	20,0
M28,0	1,50	2	*212,45*	90	22	16,00	20,0
M28,0	2,00	2	*394,61*	90	22	16,00	20,0
M30,0	1,00	2	*244,85*	90	22	18,00	22,0
M30,0	1,50	2	*220,37*	90	22	18,00	22,0
M30,0	2,00	2	*254,06*	90	22	18,00	22,0
M30,0	**3,50**	**3**	*280,16*	**125**	**45**	**18,00**	**22,0**
M32,0	1,00	2	*512,71*	90	22	18,00	22,0
M32,0	1,50	2	*271,34*	90	22	18,00	22,0
M32,0	2,00	2	*513,17*	90	22	18,00	22,0
M33,0	1,00	2	*513,17*	100	25	20,00	25,0
M33,0	1,50	2	*298,95*	100	25	20,00	25,0
M33,0	2,00	2	*355,44*	100	25	20,00	25,0
M33,0	**3,50**	**3**	*355,44*	**125**	**50**	**20,00**	**25,0**
M34,0	1,50	2	*323,49*	100	25	22,00	28,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M35,0	1,50	2	*415,44*	100	25	22,00	28,0
M36,0	1,50	2	*346,54*	100	25	22,00	28,0
M36,0	2,00	2	*443,45*	125	40	22,00	28,0
M36,0	3,00	2	*604,95*	125	40	22,00	28,0
M36,0	**4,00**	**3**	*457,74*	**150**	**56**	**22,00**	**28,0**
M38,0	1,50	2	*389,80*	100	25	22,00	28,0
M38,0	2,00	2	*699,94*	125	40	22,00	28,0
M39,0	1,50	2	*522,80*	110	25	24,00	32,0
M39,0	2,00	2	*522,80*	125	40	24,00	32,0
M39,0	3,00	2	*508,73*	125	40	24,00	32,0
M39,0	**4,00**	**3**	*508,63*	**150**	**60**	**24,00**	**32,0**
M40,0	1,50	2	*457,81*	110	25	24,00	32,0
M40,0	2,00	2	*531,77*	125	40	24,00	32,0
M40,0	3,00	2	*526,83*	125	40	24,00	32,0
M42,0	1,50	2	*506,39*	110	25	24,00	32,0
M42,0	2,00	2	*608,39*	125	40	24,00	32,0
M42,0	3,00	2	*608,39*	125	40	24,00	32,0
M42,0	**4,50**	**3**	*637,29*	**150**	**60**	**24,00**	**32,0**
M45,0	1,50	2	*570,09*	110	25	29,00	36,0
M45,0	2,00	2	*724,31*	125	40	29,00	36,0
M45,0	3,00	2	*724,31*	125	40	29,00	36,0
M45,0	**4,50**	**3**	*739,21*	**160**	**65**	**29,00**	**36,0**
M48,0	1,50	2	*642,42*	140	40	29,00	36,0
M48,0	2,00	2	*952,96*	140	40	29,00	36,0
M48,0	3,00	2	*876,89*	140	40	29,00	36,0
M48,0	**5,00**	**3**	*887,79*	**180**	**70**	**29,00**	**36,0**
M50,0	1,50	2	*702,55*	140	40	29,00	36,0
M52,0	1,50	2	*745,29*	140	40	32,00	40,0
M52,0	2,00	2	*1.072,21*	140	40	32,00	40,0
M52,0	3,00	2	*995,48*	140	40	32,00	40,0
M52,0	**5,00**	**3**	*1.158,53*	**180**	**70**	**32,00**	**40,0**
M56,0	**5,50**	**3**	*1.673,34*	**200**	**70**	**35,00**	**45,0**
M60,0	**5,50**	**3**	*2.096,99*	**200**	**75**	**35,00**	**45,0**
M63,0	1,50	2	*1.666,75*	160	40	39,00	50,0
M64,0	**6,00**	**3**	*2.618,70*	**220**	**80**	**39,00**	**50,0**

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

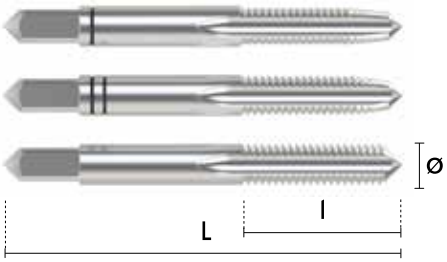
2301/5 HSS DIN 352 Izquierda / A gauche / Left hand

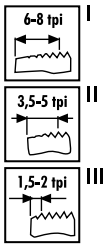
M-MF DIN 13 | Tol. 6H | LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3





Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M3,0	**0,50**	**3**	*40,30*	**40**	**11**	**2,70**	**3,5**
M4,0	**0,70**	**3**	*37,12*	**45**	**13**	**3,40**	**4,5**
M5,0	**0,80**	**3**	*40,34*	**50**	**16**	**4,90**	**6,0**
M6,0	**1,00**	**3**	*40,34*	**56**	**19**	**4,90**	**6,0**
M7,0	**1,00**	**3**	*55,68*	**56**	**19**	**4,90**	**6,0**
M8,0	1,00	2	*46,19*	63	22	4,90	6,0
M8,0	**1,25**	**3**	*48,58*	**63**	**22**	**4,90**	**6,0**
M9,0	**1,25**	**3**	*86,18*	**63**	**22**	**5,50**	**7,0**
M10,0	1,00	2	*50,07*	63	20	5,50	7,0
M10,0	1,25	2	*51,01*	70	24	5,50	7,0
M10,0	**1,50**	**3**	*61,34*	**70**	**24**	**5,50**	**7,0**
M12,0	1,25	2	*87,84*	70	22	7,00	9,0
M12,0	1,50	2	*74,71*	70	22	7,00	9,0
M12,0	**1,75**	**3**	*79,73*	**75**	**29**	**7,00**	**9,0**

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M14,0	1,25	2	*107,34*	70	22	9,00	11,0
M14,0	1,50	2	*83,40*	70	22	9,00	11,0
M14,0	**2,00**	**3**	*104,90*	**80**	**30**	**9,00**	**11,0**
M16,0	1,50	2	*103,95*	70	22	9,00	12,0
M16,0	**2,00**	**3**	*147,71*	**80**	**32**	**9,00**	**12,0**
M18,0	**2,50**	**3**	*197,47*	**95**	**34**	**11,00**	**14,0**
M20,0	1,50	2	*172,02*	80	22	12,00	16,0
M20,0	**2,50**	**3**	*221,89*	**95**	**34**	**12,00**	**16,0**
M22,0	1,50	2	*188,05*	80	22	14,50	18,0
M22,0	**2,50**	**3**	*272,05*	**100**	**34**	**14,50**	**18,0**
M24,0	1,50	2	*240,02*	90	22	14,50	18,0
M24,0	**3,00**	**3**	*342,68*	**110**	**38**	**14,50**	**18,0**
M27,0	**3,00**	**3**	*441,33*	**110**	**38**	**16,00**	**20,0**
M30,0	**3,50**	**3**	*560,29*	**125**	**45**	**18,00**	**22,0**

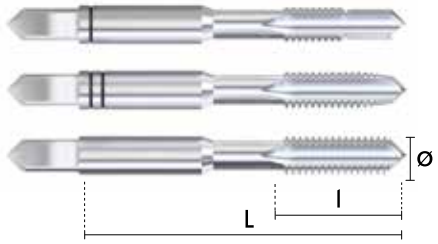
2314 HSSE DIN 352

M DIN 13 | Tol. 6HX

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		○						○							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3



Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	3	*29,54*	40	11	2,70	3,5
M4,0	0,70	3	*29,48*	45	13	3,40	4,5
M5,0	0,80	3	*30,88*	50	16	4,90	6,0
M6,0	1,00	3	*30,98*	56	19	4,90	6,0
M8,0	1,25	3	*35,58*	63	22	4,90	6,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M10,0	1,50	3	*45,82*	70	24	5,50	7,0
M12,0	1,75	3	*65,13*	75	29	7,00	9,0
M14,0	2,00	3	*86,23*	80	30	9,00	11,0
M16,0	2,00	3	*95,11*	80	32	9,00	12,0

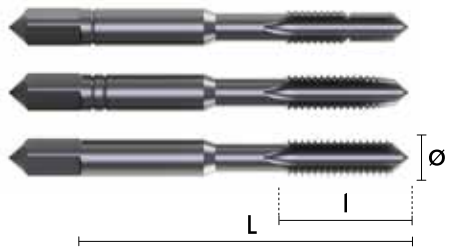
2303 HSSE DIN 352

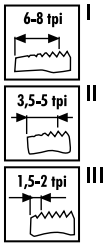
M DIN 13 | Tol. 6HX | VAP

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		●										●			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3





Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M3,0	0,50	3	*30,13*	40	11	2,70	3,5
M4,0	0,70	3	*30,13*	45	13	3,40	4,5
M5,0	0,80	3	*31,34*	50	16	4,90	6,0
M6,0	1,00	3	*31,34*	56	19	4,90	6,0
M8,0	1,25	3	*36,38*	63	22	4,90	6,0
M10,0	1,50	3	*46,82*	70	24	5,50	7,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M12,0	1,75	3	*67,00*	75	29	7,00	9,0
M14,0	2,00	3	*74,22*	80	30	9,00	11,0
M16,0	2,00	3	*101,68*	80	32	9,00	12,0
M18,0	2,50	3	*138,91*	95	40	11,00	14,0
M20,0	2,50	3	*154,21*	95	40	12,00	16,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

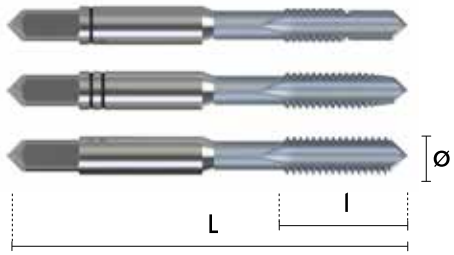
2324 HSSE-PM DIN 352

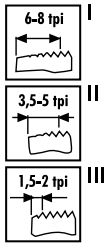
M DIN 13 | Tol. 6HX | TICN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
○	●	●	●		○			○		○							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3





Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
M4,0	0,70	3	*107,26*	45	13	2,70	3,5
M5,0	0,80	3	*108,60*	50	16	4,90	6,0
M6,0	1,00	3	*108,60*	56	19	4,90	6,0
M8,0	1,25	3	*122,41*	63	22	4,90	6,0

Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
M10,0	1,50	3	*151,32*	70	24	5,50	7,0
M12,0	1,75	3	*183,93*	75	29	7,00	9,0
M14,0	2,00	3	*270,43*	80	30	9,00	11,0
M16,0	2,00	3	*270,43*	80	32	9,00	12,0

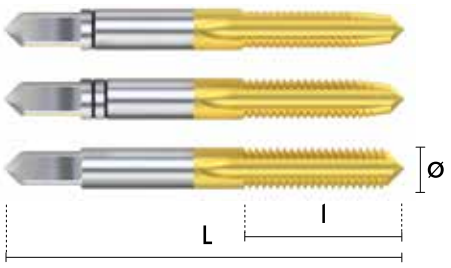
2302 HSS DIN 352

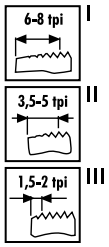
M DIN 13 | Tol. 6H | TIN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○								●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3





Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
M3,0	0,50	3	*45,09*	40	11	2,70	3,5
M4,0	0,70	3	*46,23*	45	13	3,40	4,5
M5,0	0,80	3	*47,25*	50	16	4,90	6,0
M6,0	1,00	3	*47,35*	56	19	4,90	6,0
M8,0	1,25	3	*56,90*	63	22	4,90	6,0

Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
M10,0	1,50	3	*67,56*	70	24	5,50	7,0
M12,0	1,75	3	*103,86*	75	28	7,00	9,0
M14,0	2,00	3	*123,62*	80	30	9,00	11,0
M16,0	2,00	3	*154,35*	80	32	9,00	12,0
M20,0	2,50	3	*167,37*	95	34	12,00	16,0

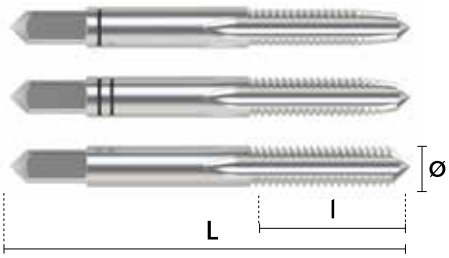
2304 HSS DIN 352

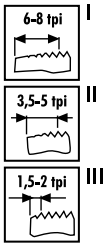
BSW
BS 84

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3





Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
3/32	48,00	3	*37,45*	36	10	2,10	2,8
1/8	40,00	3	*25,83*	40	12	2,70	3,5
5/32	32,00	3	*26,09*	45	14	3,40	4,5
3/16	24,00	3	*25,83*	50	18	4,90	6,0
7/32	24,00	3	*45,95*	50	18	4,90	6,0
1/4	20,00	3	*29,11*	50	19	4,90	6,0
5/16	18,00	3	*35,52*	56	22	4,90	6,0
3/8	16,00	3	*39,04*	70	24	5,50	7,0
7/16	14,00	3	*51,91*	70	24	6,20	8,0
1/2	12,00	3	*56,23*	75	29	7,00	9,0
9/16	12,00	3	*76,49*	80	30	9,00	11,0
5/8	11,00	3	*87,92*	80	32	9,00	12,0
3/4	10,00	3	*125,18*	95	40	11,00	14,0
7/8	9,00	3	*183,14*	100	40	14,50	18,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1"	8,00	3	*223,65*	110	50	14,50	18,0
1"1/8	7,00	3	*333,25*	132	56	18,00	22,0
1"1/4	7,00	3	*403,13*	132	56	18,00	22,0
1"3/8	6,00	3	*501,36*	150	63	22,00	28,0
1"1/2	6,00	3	*603,59*	150	63	24,00	32,0
1"5/8	5,00	3	*905,47*	160	70	24,00	32,0
1"3/4	5,00	3	*1114,41*	160	70	29,00	36,0
1"7/8	4,50	3	*1439,36*	190	80	29,00	36,0
2"	4,50	3	*1511,05*	190	80	32,00	40,0
2"1/4	4,00	3	*1997,42*	220	80	35,00	45,0
2"1/2	4,00	3	*2429,88*	220	80	39,00	50,0
2"3/4	3,50	3	*3469,58*	240	80	39,00	50,0
3"	3,50	3	*4013,92*	240	80	39,00	50,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2304/5 HSS DIN 352 Izquierda / A gauche / Left hand

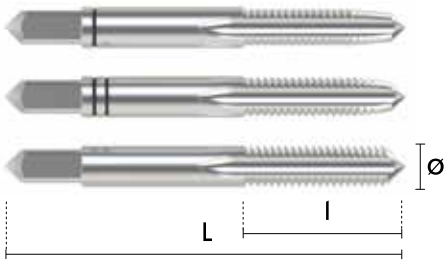
BSW
BS 84

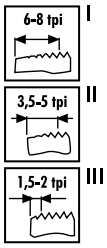
LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
PVP = €/3





Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
1/8	40,00	3	*51,68*	40	12	2,70	3,5
5/32	32,00	3	*52,18*	45	14	3,40	4,5
3/16	24,00	3	*51,68*	50	18	4,90	6,0
1/4	20,00	3	*58,18*	50	19	4,90	6,0
5/16	18,00	3	*71,03*	56	22	4,90	6,0
3/8	16,00	3	*78,07*	70	24	5,50	7,0
7/16	14,00	3	*103,82*	70	24	6,20	8,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
1/2	12,00	3	*112,44*	75	29	7,00	9,0
9/16	12,00	3	*152,98*	80	30	9,00	11,0
5/8	11,00	3	*175,85*	80	32	9,00	12,0
3/4	10,00	3	*250,35*	95	40	11,00	14,0
7/8	9,00	3	*366,24*	100	40	14,50	18,0
1"	8,00	3	*447,30*	110	50	14,50	18,0

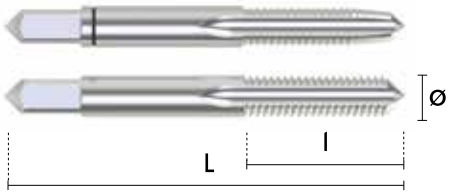
2305 HSS DIN 2181

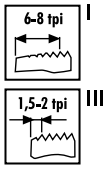
BSF
BS 84

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
PVP = €/2





Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
3/16	32,00	2	*98,97*	50	14	4,90	6,0
1/4	26,00	2	*40,79*	50	18	4,90	6,0
5/16	22,00	2	*47,59*	56	22	4,90	6,0
3/8	20,00	2	*55,06*	63	22	5,50	7,0
7/16	18,00	2	*66,07*	63	22	6,20	8,0
1/2	16,00	2	*74,70*	75	24	7,00	9,0
9/16	16,00	2	*89,58*	80	28	9,00	11,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
5/8	14,00	2	*116,95*	80	28	9,00	12,0
3/4	12,00	2	*179,20*	95	32	11,00	14,0
7/8	11,00	2	*213,87*	100	36	14,50	18,0
1"	10,00	2	*300,20*	110	40	14,50	18,0
1",1/8	9,00	2	*619,45*	110	22	18,00	22,0
1",1/4	9,00	2	*707,26*	110	22	18,00	22,0
1",1/2	9,00	2	*1077,86*	125	40	24,00	32,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

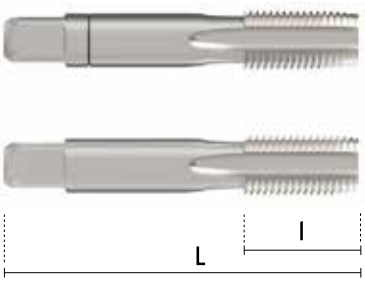
2306 HSS DIN 5157

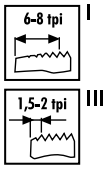
G ISO 228

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/2





Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	2	*33,03*	63	20	5,50	7,0
1/4	19,00	2	*46,52*	70	22	9,00	11,0
3/8	19,00	2	*58,59*	70	22	9,00	12,0
1/2	16,00	2	*81,94*	75	24	7,00	9,0
5/8	14,00	2	*108,23*	80	22	14,50	18,0
3/4	14,00	2	*127,94*	90	22	16,00	20,0
7/8	14,00	2	*175,99*	90	22	18,00	22,0
1"	11,00	2	*203,67*	100	25	20,00	25,0
1"1/8	11,00	2	*302,57*	125	40	22,00	28,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1"1/4	11,00	2	*329,66*	125	40	24,00	32,0
1"3/8	11,00	2	*447,82*	140	40	29,00	36,0
1"1/2	11,00	2	*498,30*	140	40	29,00	36,0
1"3/4	11,00	2	*828,41*	140	40	32,00	40,0
2"	11,00	2	*918,34*	160	40	35,00	45,0
2"1/4	11,00	2	*1562,43*	160	40	39,00	50,0
2"1/2	11,00	2	*2348,53*	160	40	39,00	50,0
2"3/4	11,00	2	*2847,59*	160	40	39,00	50,0
3"	11,00	2	*2963,55*	160	40	39,00	50,0

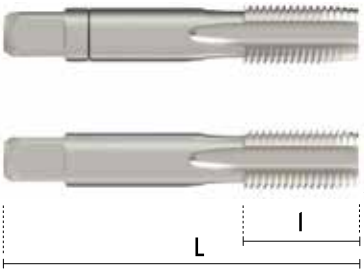
2306/5 HSS DIN 5157 Izquierda / A gauche / Left hand

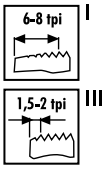
G ISO 228 LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/2





Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	2	*66,08*	63	20	5,50	7,0
1/4	19,00	2	*93,04*	70	22	9,00	11,0
3/8	19,00	2	*117,15*	70	22	9,00	12,0
1/2	14,00	2	*163,87*	80	22	12,00	16,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	2	*216,44*	80	22	14,50	18,0
3/4	14,00	2	*255,88*	90	22	16,00	20,0
1"	11,00	2	*407,37*	100	25	20,00	25,0

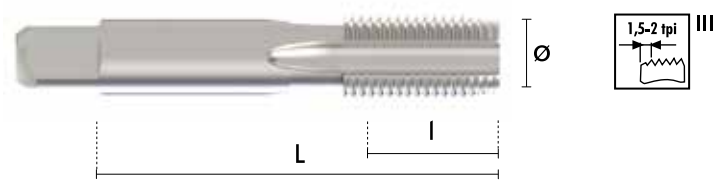
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2316 HSSE DIN 5157

G
ISO 228

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
										●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
1/8	28,00	1	*19,54*	63	20	5,50	7,0
1/4	19,00	1	*31,81*	70	22	9,00	11,0
3/8	19,00	1	*34,79*	70	22	9,00	11,0
1/2	14,00	1	*55,66*	80	22	12,00	16,0

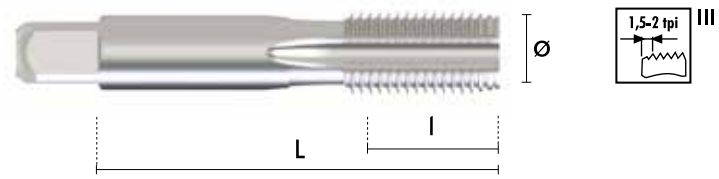
Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
5/8	14,00	1	*74,40*	80	22	14,50	18,0
3/4	14,00	1	*87,03*	90	22	16,00	20,0
7/8	14,00	1	*125,80*	90	22	18,00	22,0
1"	11,00	1	*144,21*	100	25	20,00	25,0

2317 HSSE DIN 5157

G
ISO 228
+0,1

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
										●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
1/8	28,00	1	*21,45*	63	20	5,50	7,0
1/4	19,00	1	*35,01*	70	22	9,00	11,0
3/8	19,00	1	*38,41*	70	22	9,00	11,0
1/2	14,00	1	*63,61*	80	22	12,00	16,0

Ø	P	Nº	€	L mm	l mm	☒ mm	d mm
5/8	14,00	1	*81,83*	80	22	14,50	18,0
3/4	14,00	1	*95,70*	90	22	16,00	20,0
7/8	14,00	1	*138,38*	90	22	18,00	22,0
1"	11,00	1	*158,63*	100	25	20,00	25,0

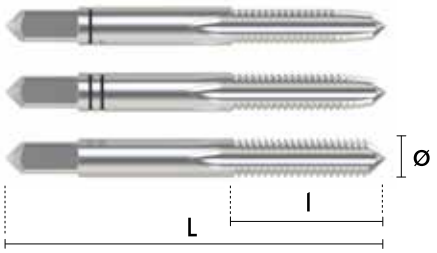
2307 HSS DIN 352

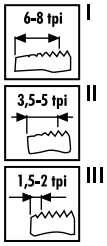
UNC ANSI/ASME B1.1 | Tol. 2B

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3





Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
Nº4	40,00	3	*51,00*	40	12	2,70	3,5
Nº5	40,00	3	*48,76*	40	12	2,70	3,5
Nº6	32,00	3	*48,76*	45	14	3,00	4,0
Nº18	32,00	3	*48,76*	45	14	3,40	4,5
Nº10	24,00	3	*48,76*	50	16	4,90	6,0
Nº12	24,00	3	*48,76*	50	18	4,90	6,0
1/4	20,00	3	*39,46*	50	19	4,90	6,0
5/16	18,00	3	*45,08*	56	22	4,90	6,0
3/8	16,00	3	*50,96*	70	24	5,50	7,0
7/16	14,00	3	*66,33*	70	24	6,20	8,0
1/2	13,00	3	*76,35*	75	29	7,00	9,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
9/16	12,00	3	*90,14*	80	30	9,00	11,0
5/8	11,00	3	*124,35*	80	32	9,00	12,0
3/4	10,00	3	*169,29*	95	40	11,00	14,0
7/8	9,00	3	*208,51*	100	40	14,50	18,0
1"	8,00	3	*281,60*	110	50	14,50	18,0
1"1/8	7,00	3	*429,87*	132	56	18,00	22,0
1"1/4	7,00	3	*541,10*	132	56	18,00	22,0
1"3/8	6,00	3	*686,42*	150	63	22,00	28,0
1"1/2	6,00	3	*842,81*	150	63	24,00	32,0
1"3/4	5,00	3	*1049,96*	160	70	29,00	36,0
2"	4,50	3	*1207,03*	190	80	32,00	40,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

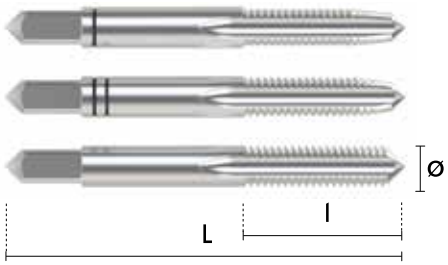
2307/5 HSS DIN 352 Izquierda / A gauche / Left hand

UNC ANSI/ASME B1.1 | Tol. 2B | LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3



Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
1/4	20,00	3	*78,93*	50	19	4,90	6,0
5/16	18,00	3	*90,14*	56	22	4,90	6,0
3/8	16,00	3	*101,93*	70	24	5,50	7,0
7/16	14,00	3	*132,70*	70	24	6,20	8,0
1/2	13,00	3	*152,70*	75	29	7,00	9,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
9/16	12,00	3	*180,28*	80	30	9,00	11,0
5/8	11,00	3	*248,67*	80	32	9,00	12,0
3/4	10,00	3	*338,59*	95	40	11,00	14,0
7/8	9,00	3	*416,99*	100	40	14,50	18,0
1"	8,00	3	*563,20*	110	50	14,50	18,0

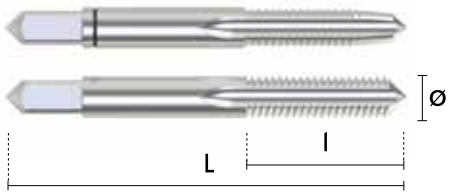
2308 HSS DIN 2181

UNF ANSI/ASME B1.1 | Tol. 2B

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/2



Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
Nº4	48,00	2	*38,73*	36	11	2,70	3,5
Nº5	44,00	2	*38,73*	36	11	2,70	3,5
Nº6	40,00	2	*37,00*	40	12	3,40	4,5
Nº8	36,00	2	*37,00*	40	12	3,40	4,5
Nº10	32,00	2	*37,00*	45	14	4,90	6,0
Nº12	28,00	2	*38,73*	50	14	4,90	6,0
1/4	28,00	2	*26,68*	50	18	4,90	6,0
5/16	24,00	2	*28,55*	56	22	4,90	6,0
3/8	24,00	2	*33,01*	63	22	5,50	7,0
7/16	20,00	2	*43,83*	63	22	6,20	8,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
1/2	20,00	2	*44,82*	75	24	7,00	9,0
9/16	18,00	2	*58,37*	80	28	9,00	11,0
5/8	18,00	2	*75,40*	80	28	9,00	12,0
3/4	16,00	2	*101,29*	95	32	11,00	14,0
7/8	14,00	2	*130,17*	100	36	14,50	18,0
1"	12,00	2	*172,58*	110	40	14,50	18,0
1"1/8	12,00	2	*268,74*	110	50	18,00	22,0
1"1/4	12,00	2	*338,99*	132	56	18,00	22,0
1"3/8	12,00	2	*430,51*	132	56	22,00	28,0
1"1/2	12,00	2	*527,13*	150	63	24,00	32,0

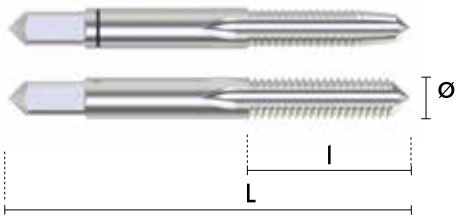
2308/5 HSS DIN 2181 Izquierda / A gauche / Left hand

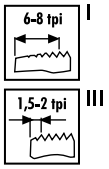
UNF ANSI/ASME B1.1 | Tol. 2B | LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
PVP = €/2





Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1/4	28,00	2	*53,34*	50	18	4,90	6,0
5/16	24,00	2	*57,11*	56	22	4,90	6,0
3/8	24,00	2	*66,02*	63	22	5,50	7,0
7/16	20,00	2	*87,64*	63	22	6,20	8,0
1/2	20,00	2	*89,61*	75	24	7,00	9,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
9/16	18,00	2	*116,73*	80	28	9,00	11,0
5/8	18,00	2	*150,75*	80	28	9,00	12,0
3/4	16,00	2	*202,60*	95	32	11,00	14,0
7/8	14,00	2	*260,36*	100	36	14,50	18,0
1"	12,00	2	*345,16*	110	40	14,50	18,0

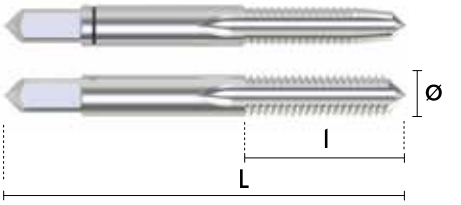
2315 HSS DIN 2184

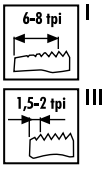
UN ANSI/ASME B1.1 | Tol. 2B

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
PVP = €/2





Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1"1/8	8,00	2	*238,02*	125	40	18,00	22,0
1"1/4	8,00	2	*307,08*	125	40	18,00	22,0
1"3/8	8,00	2	*348,33*	125	40	22,00	28,0
1"1/2	8,00	2	*457,36*	125	40	24,00	32,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1"5/8	8,00	2	*534,98*	125	40	24,00	32,0
1"3/4	8,00	2	*651,71*	125	40	29,00	36,0
2"	8,00	2	*698,29*	140	40	32,00	40,0

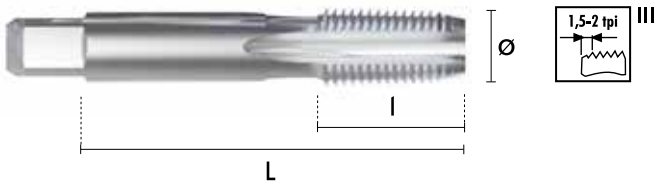
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2309 HSS DIN 5157

Rc
DIN 2999

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	1	*34,81*	59	15	6,30	8,0
1/4	19,00	1	*49,10*	67	19	8,00	10,0
3/8	19,00	1	*68,18*	75	21	10,00	12,5
1/2	14,00	1	*95,43*	87	26	12,50	16,0

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
5/8	14,00	1	*174,65*	80	36	14,50	18,0
3/4	14,00	1	*161,97*	85	28	16,00	20,0
7/8	14,00	1	*291,08*	100	36	18,00	22,0
1"	11,00	1	*246,57*	109	33	20,00	25,0

2310 HSS DIN 2181

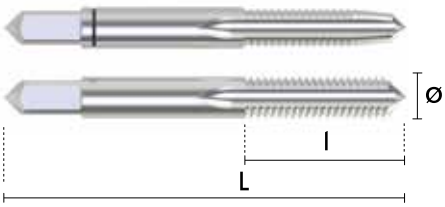
UNEF
ANSI/ASME B1.1

Tol. 2B

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/2



Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
1/4	32,00	2	*109,69*	56	14	4,90	6,0
5/16	32,00	2	*122,56*	56	18	4,90	6,0
3/8	32,00	2	*140,23*	63	20	5,50	7,0
7/16	28,00	2	*178,49*	63	20	6,20	8,0
1/2	28,00	2	*201,69*	70	22	7,00	9,0

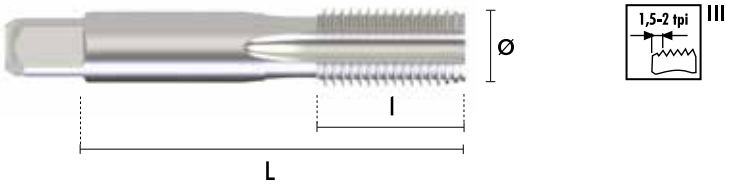
Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
9/16	24,00	2	*235,93*	70	22	9,00	11,0
5/8	24,00	2	*328,39*	70	22	9,00	12,0
3/4	20,00	2	*486,31*	80	22	11,00	14,0
1"	20,00	2	*695,82*	90	22	14,50	18,0

2312 HSS DIN 40432

PG
DIN 40430

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



PG	Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
7,0	12,5	20,00	1	*36,62*	70	22	7,00	9,0
9,0	15,2	18,00	1	*46,56*	70	22	9,00	12,0
11,0	18,6	18,00	1	*64,64*	80	22	11,00	14,0
13,5	20,4	18,00	1	*70,90*	80	22	12,00	16,0
16,0	22,5	18,00	1	*85,12*	80	22	14,50	18,0

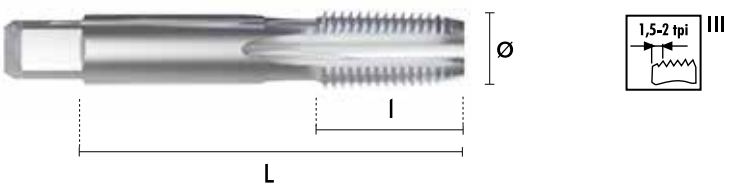
PG	Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
21,0	28,3	16,00	1	*125,20*	90	22	18,00	22,0
29,0	37,0	16,00	1	*248,56*	100	25	22,00	28,0
36,0	47,0	16,00	1	*415,20*	140	40	29,00	36,0
42,0	54,0	16,00	1	*493,09*	140	40	32,00	40,0
48,0	59,3	16,00	1	*621,85*	160	40	35,00	45,0

2313 HSS

NPT
ANSI/ASME B1.20.1

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
1/16	27,00	1	*30,21*	65	19	5,50	7,0
1/8	27,00	1	*30,21*	65	19	5,50	7,0
1/4	18,00	1	*42,37*	70	25	9,00	11,0
3/8	18,00	1	*58,46*	75	26	9,00	12,0
1/2	14,00	1	*81,76*	80	31	12,00	16,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
3/4	14,00	1	*125,01*	100	33	16,00	20,0
1"	11,50	1	*139,19*	110	38	20,00	25,0
1"1/4	11,50	1	*228,22*	125	41	24,00	32,0
1"1/2	11,50	1	*346,79*	140	42	29,00	36,0
2"	11,50	1	*541,37*	160	44	29,00	36,0

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2321 HSS DIN 352/2181

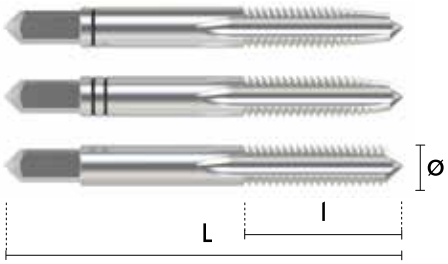
M-MF
DIN 13

Tol.
6H

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3



Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M2,0	**0,40**	**3**	*36,81*	**36**	**8**	**2,10**	**2,8**
M2,5	**0,45**	**3**	*38,08*	**40**	**9**	**2,10**	**2,8**
M3,0	**0,50**	**3**	*20,16*	**40**	**11**	**2,70**	**3,5**
M4,0	**0,70**	**3**	*18,56*	**45**	**13**	**3,40**	**4,5**
M5,0	**0,80**	**3**	*20,17*	**50**	**16**	**4,90**	**6,0**
M6,0	**1,00**	**3**	*20,17*	**56**	**19**	**4,90**	**6,0**
M7,0	**1,00**	**3**	*27,84*	**56**	**19**	**4,90**	**6,0**
M8,0	1,00	2	*23,10*	63	22	4,90	6,0
M8,0	**1,25**	**3**	*24,28*	**63**	**22**	**4,90**	**6,0**
M9,0	1,00	2	*29,85*	63	22	5,50	7,0
M9,0	**1,25**	**3**	*43,09*	**63**	**22**	**5,50**	**7,0**
M10,0	1,00	2	*25,05*	63	20	5,50	7,0
M10,0	1,25	2	*25,50*	70	24	5,50	7,0
M10,0	**1,50**	**3**	*30,67*	**70**	**24**	**5,50**	**7,0**
M11,0	1,00	2	*44,27*	63	20	6,20	8,0
M11,0	1,25	2	*44,27*	70	24	6,20	8,0
M11,0	**1,50**	**3**	*59,42*	**70**	**24**	**6,20**	**8,0**
M12,0	1,00	2	*43,73*	70	22	7,00	9,0
M12,0	1,25	2	*43,91*	70	22	7,00	9,0
M12,0	1,50	2	*37,35*	70	22	7,00	9,0
M12,0	**1,75**	**3**	*39,87*	**75**	**28**	**7,00**	**9,0**
M14,0	1,00	2	*65,42*	70	22	9,00	11,0
M14,0	1,25	2	*53,67*	70	22	9,00	11,0
M14,0	1,50	2	*41,69*	70	22	9,00	11,0
M14,0	**2,00**	**3**	*52,46*	**80**	**30**	**9,00**	**11,0**

Ø	P	Nº	€	L mm	l mm	⊠ mm	d mm
M16,0	1,00	2	*91,55*	70	22	9,00	12,0
M16,0	1,25	2	*96,38*	70	22	9,00	12,0
M16,0	1,50	2	*51,98*	70	22	9,00	12,0
M16,0	**2,00**	**3**	*73,86*	**80**	**32**	**9,00**	**12,0**
M18,0	1,50	2	*68,92*	80	22	11,00	14,0
M18,0	2,00	2	*109,66*	80	22	11,00	14,0
M18,0	**2,50**	**3**	*98,73*	**95**	**34**	**11,00**	**14,0**
M20,0	1,50	2	*86,00*	80	22	12,00	16,0
M20,0	2,00	2	*113,65*	80	22	12,00	16,0
M20,0	**2,50**	**3**	*110,95*	**95**	**34**	**12,00**	**16,0**
M22,0	1,50	2	*94,02*	80	22	14,50	18,0
M22,0	2,00	2	*151,19*	80	22	14,50	18,0
M22,0	**2,50**	**3**	*136,02*	**100**	**34**	**14,50**	**18,0**
M24,0	1,50	2	*120,02*	90	22	14,50	18,0
M24,0	**2,00**	**3**	*169,03*	**90**	**22**	**14,50**	**18,0**
M24,0	3,00	2	*171,34*	110	38	14,50	18,0
M26,0	1,50	2	*191,22*	90	22	14,50	18,0
M26,0	2,00	2	*394,63*	90	22	14,50	18,0
M27,0	**3,00**	**3**	*220,66*	**110**	**38**	**16,00**	**20,0**
M28,0	1,50	2	*212,45*	90	22	16,00	20,0
M30,0	**3,50**	**3**	*280,16*	**125**	**45**	**18,00**	**22,0**
M33,0	**3,50**	**3**	*355,44*	**125**	**50**	**20,00**	**25,0**
M36,0	**4,00**	**3**	*457,74*	**150**	**56**	**22,00**	**28,0**
M39,0	**4,00**	**3**	*508,63*	**150**	**60**	**24,00**	**32,0**
M42,0	**4,50**	**3**	*637,29*	**150**	**60**	**24,00**	**32,0**

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

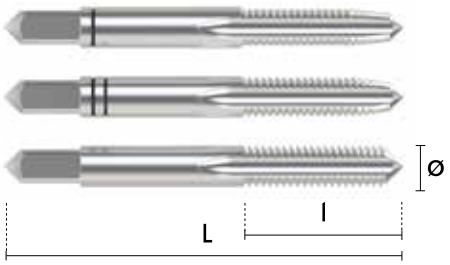
2322 HSS DIN 352

UNC ANSI/ASME B1.1 — Tol. 2B

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/3



Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
Nº4	40,00	3	*51,00*	40	12	2,70	3,5
Nº5	40,00	3	*48,76*	40	12	2,70	3,5
Nº6	32,00	3	*48,76*	45	14	3,00	4,0
Nº18	32,00	3	*48,76*	45	14	3,40	4,5
Nº10	24,00	3	*48,76*	50	16	4,90	6,0
Nº12	24,00	3	*48,76*	50	18	4,90	6,0
1/4	20,00	3	*39,46*	50	19	4,90	6,0
5/16	18,00	3	*45,08*	56	22	4,90	6,0
3/8	16,00	3	*50,96*	70	24	5,50	7,0
7/16	14,00	3	*66,33*	70	24	6,20	8,0
1/2	13,00	3	*76,35*	75	29	7,00	9,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
9/16	12,00	3	*90,14*	80	30	9,00	11,0
5/8	11,00	3	*124,35*	80	32	9,00	12,0
3/4	10,00	3	*169,29*	95	40	11,00	14,0
7/8	9,00	3	*208,51*	100	40	14,50	18,0
1"	8,00	3	*281,60*	110	50	14,50	18,0
1"1/8	7,00	3	*429,87*	132	56	18,00	22,0
1"1/4	7,00	3	*541,10*	132	56	18,00	22,0
1"3/8	6,00	3	*686,42*	150	63	22,00	28,0
1"1/2	6,00	3	*842,81*	150	63	24,00	32,0
1"3/4	5,00	3	*1049,96*	160	70	29,00	36,0
2"	4,50	3	*1207,03*	190	80	32,00	40,0

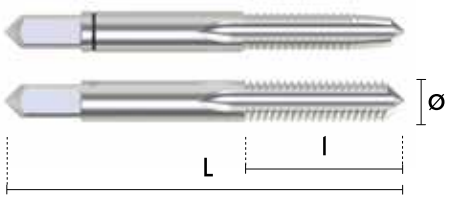
2323 HSS DIN 2181 Perfil completo / Profil complet / Non serial form

UNF ANSI/ASME B1.1 — Tol. 2B

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Macho 3º
Taraud 3º
Tap 3º
Gewindebohrer 3º
} PVP = €/2



Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
Nº4	48,00	2	*38,73*	36	11	2,70	3,5
Nº5	44,00	2	*38,73*	36	11	2,70	3,5
Nº6	40,00	2	*37,00*	40	12	3,40	4,5
Nº8	36,00	2	*37,00*	40	12	3,40	4,5
Nº10	32,00	2	*37,00*	45	14	4,90	6,0
Nº12	28,00	2	*38,73*	50	14	4,90	6,0
1/4	28,00	2	*26,68*	50	18	4,90	6,0
5/16	24,00	2	*28,55*	56	22	4,90	6,0
3/8	24,00	2	*33,01*	63	22	5,50	7,0
7/16	20,00	2	*43,83*	63	22	6,20	8,0

Ø	P	Nº	€	L mm	l mm	☐ mm	d mm
1/2	20,00	2	*44,82*	75	24	7,00	9,0
9/16	18,00	2	*58,37*	80	28	9,00	11,0
5/8	18,00	2	*75,40*	80	28	9,00	12,0
3/4	16,00	2	*101,29*	95	32	11,00	14,0
7/8	14,00	2	*130,17*	100	36	14,50	18,0
1"	12,00	2	*172,58*	110	40	14,50	18,0
1"1/8	12,00	2	*268,74*	110	50	18,00	22,0
1"1/4	12,00	2	*338,99*	132	56	18,00	22,0
1"3/8	12,00	2	*430,51*	132	56	22,00	28,0
1"1/2	12,00	2	*527,13*	150	63	24,00	32,0

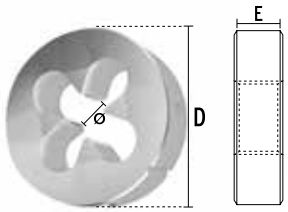
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

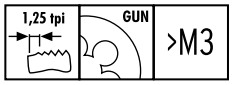
2501 HSS DIN EN 22568

M-MF DIN 13 | Tol. 6g

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

	Ø	P	€	D mm	E mm	
**	**M1,0**	**0,25**	*53,96*	**16**	**5**	**1**
**	**M1,1**	**0,25**	*89,10*	**16**	**5**	**1**
**	**M1,2**	**0,25**	*83,60*	**16**	**5**	**1**
**	**M1,4**	**0,30**	*76,60*	**16**	**5**	**1**
	M1,6	**0,35**	*72,38*	**16**	**5**	**1**
	M1,7	**0,35**	*72,38*	**16**	**5**	**1**
	M1,8	**0,35**	*72,38*	**16**	**5**	**1**
	M2,0	**0,40**	*30,63*	**16**	**5**	**1**
	M2,2	**0,45**	*71,70*	**16**	**5**	**1**
	M2,3	**0,40**	*30,63*	**16**	**5**	**1**
	M2,5	**0,45**	*30,63*	**16**	**5**	**1**
	M2,6	**0,45**	*30,63*	**16**	**5**	**1**
	M3,0	**0,50**	*26,34*	**20**	**5**	**1**
	M3,0	0,60	*34,21*	20	5	1
	M3,5	0,60	*27,19*	20	5	1
	M3,5	0,75	*88,25*	20	5	1
	M4,0	0,50	*32,53*	20	5	1
	M4,0	**0,70**	*26,34*	**20**	**5**	**1**
	M4,5	**0,75**	*35,52*	**20**	**7**	**1**
	M5,0	0,50	*35,88*	20	5	1
	M5,0	0,75	*38,10*	20	7	1
	M5,0	**0,80**	*26,34*	**20**	**7**	**1**
	M5,5	0,90	*88,25*	20	7	1
	M6,0	0,50	*34,92*	20	7	1
	M6,0	0,75	*32,25*	20	7	1
	M6,0	**1,00**	*26,34*	**20**	**7**	**1**
	M7,0	0,75	*34,02*	25	9	1
	M7,0	**1,00**	*28,72*	**25**	**9**	**1**
	M8,0	0,50	*41,92*	25	9	1
	M8,0	0,75	*34,02*	25	9	1
	M8,0	1,00	*34,02*	25	9	1
	M8,0	**1,25**	*27,52*	**25**	**9**	**1**
	M9,0	1,00	*37,92*	25	9	1
	M9,0	**1,25**	*40,50*	**25**	**9**	**1**
	M10,0	0,50	*71,51*	30	11	1
	M10,0	0,75	*52,97*	30	11	1
	M10,0	1,00	*36,06*	30	11	1
	M10,0	1,25	*45,17*	30	11	1
	M10,0	**1,50**	*39,27*	**30**	**11**	**1**
	M11,0	0,75	*97,92*	30	11	1
	M11,0	1,00	*52,68*	30	11	1
	M11,0	1,25	*56,46*	30	11	1
	M11,0	**1,50**	*52,66*	**30**	**11**	**1**
	M12,0	0,75	*61,20*	38	10	1
	M12,0	1,00	*52,66*	38	10	1
	M12,0	1,25	*52,66*	38	10	1
	M12,0	1,50	*47,03*	38	10	1

	Ø	P	€	D mm	E mm	
	M12,0	**1,75**	*43,17*	**38**	**14**	**1**
	M13,0	0,75	*97,92*	38	10	1
	M13,0	1,00	*61,90*	38	10	1
	M13,0	1,50	*64,56*	38	10	1
	M13,0	**1,75**	*64,56*	**38**	**14**	**1**
	M14,0	0,75	*96,20*	38	10	1
	M14,0	1,00	*57,78*	38	10	1
	M14,0	1,25	*57,41*	38	10	1
	M14,0	1,50	*49,17*	38	10	1
	M14,0	**2,00**	*43,17*	**38**	**14**	**1**
	M15,0	1,00	*70,17*	38	10	1
	M15,0	1,50	*70,17*	38	10	1
	M15,0	**2,00**	*86,53*	**38**	**14**	**1**
	M16,0	1,00	*73,04*	45	14	1
	M16,0	1,25	*66,41*	45	14	1
	M16,0	1,50	*54,74*	45	14	1
	M16,0	**2,00**	*58,00*	**45**	**18**	**1**
	M17,0	1,00	*104,43*	45	14	1
	M17,0	1,25	*104,43*	45	14	1
	M17,0	1,50	*104,43*	45	14	1
	M18,0	1,00	*76,37*	45	14	1
	M18,0	1,25	*86,81*	45	14	1
	M18,0	1,50	*67,54*	45	14	1
	M18,0	2,00	*76,37*	45	14	1
	M18,0	**2,50**	*58,00*	**45**	**18**	**1**
	M19,0	1,00	*169,27*	45	14	1
	M19,0	1,25	*169,27*	45	14	1
	M19,0	1,50	*172,30*	45	14	1
	M20,0	1,00	*76,06*	45	14	1
	M20,0	1,25	*169,27*	45	14	1
	M20,0	1,50	*69,71*	45	14	1
	M20,0	2,00	*76,61*	45	14	1
	M20,0	**2,50**	*58,00*	**45**	**18**	**1**
	M21,0	1,00	*196,34*	45	16	1
	M21,0	1,25	*196,34*	45	14	1
	M21,0	1,50	*161,83*	45	14	1
	M22,0	1,00	*103,86*	55	16	1
	M22,0	1,25	*169,27*	55	16	1
	M22,0	1,50	*89,35*	55	16	1
	M22,0	2,00	*99,41*	55	16	1
	M22,0	**2,50**	*85,33*	**55**	**22**	**1**
	M23,0	1,50	*196,34*	55	16	1
	M24,0	1,00	*99,41*	55	16	1
	M24,0	1,25	*169,27*	55	16	1
	M24,0	1,50	*89,35*	55	16	1
	M24,0	2,00	*99,41*	55	16	1
	M24,0	**3,00**	*85,33*	**55**	**22**	**1**

**Tol. 6h

(**continúa Ref.2501** / suite Réf.2501 / Ref.2501 cont'd)

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

(**continúa Ref.2501** / suite Réf.2501 / Ref.2501 cont'd)

Ø	P	€	D mm	E mm	
M25,0	1,00	*153,73*	55	16	1
M25,0	1,50	*129,80*	55	16	1
M26,0	1,00	*223,00*	55	16	1
M26,0	1,50	*122,86*	55	16	1
M26,0	2,00	*223,00*	55	16	1
M27,0	1,00	*137,24*	65	18	1
M27,0	1,50	*135,12*	65	18	1
M27,0	2,00	*146,95*	65	18	1
M27,0	**3,00**	*122,86*	**65**	**25**	**1**
M28,0	1,00	*223,00*	65	18	1
M28,0	1,50	*135,12*	65	18	1
M28,0	2,00	*223,00*	65	18	1
M30,0	1,00	*150,89*	65	18	1
M30,0	1,50	*135,09*	65	18	1
M30,0	2,00	*150,89*	65	18	1
M30,0	**3,50**	*126,75*	**65**	**25**	**1**
M32,0	1,00	*226,98*	65	18	1
M32,0	1,50	*142,76*	65	18	1
M32,0	2,00	*223,00*	65	18	1
M33,0	1,50	*135,12*	65	18	1
M33,0	2,00	*147,14*	65	18	1
M33,0	**3,50**	*126,75*	**65**	**25**	**1**
M34,0	1,50	*140,96*	65	18	1
M34,0	2,00	*316,23*	65	18	1
M35,0	1,50	*146,23*	65	18	1
M35,0	2,00	*316,23*	65	18	1
M36,0	1,50	*138,40*	65	18	1
M36,0	2,00	*147,14*	65	18	1
M36,0	3,00	*160,13*	65	25	1
M36,0	**4,00**	*131,42*	**65**	**25**	**1**

Ø	P	€	D mm	E mm	
M38,0	1,50	*209,34*	75	20	1
M38,0	2,00	*400,73*	75	20	1
M39,0	1,50	*210,36*	75	20	1
M39,0	2,00	*222,12*	75	20	1
M39,0	3,00	*252,42*	75	30	1
M39,0	**4,00**	*197,27*	**75**	**30**	**1**
M40,0	1,50	*218,40*	75	20	1
M40,0	2,00	*222,12*	75	20	1
M40,0	3,00	*242,26*	75	30	1
M42,0	1,50	*287,10*	75	20	1
M42,0	2,00	*320,94*	75	20	1
M42,0	3,00	*334,83*	75	30	1
M42,0	**4,50**	*197,27*	**75**	**30**	**1**
M45,0	1,50	*287,10*	90	22	1
M45,0	2,00	*320,94*	90	22	1
M45,0	3,00	*334,83*	90	36	1
M45,0	**4,50**	*301,70*	**90**	**36**	**1**
M48,0	1,50	*288,91*	90	22	1
M48,0	2,00	*295,35*	90	22	1
M48,0	3,00	*320,94*	90	36	1
M48,0	**5,00**	*302,06*	**90**	**36**	**1**
M50,0	1,50	*287,10*	90	22	1
M52,0	1,50	*287,10*	90	22	1
M52,0	2,00	*333,67*	90	22	1
M52,0	3,00	*364,14*	90	36	1
M52,0	**5,00**	*302,06*	**90**	**36**	**1**
M56,0	**5,50**	*539,26*	**105**	**36**	**1**
M60,0	**5,50**	*539,26*	**105**	**36**	**1**
M63,0	1,50	*1017,80*	105	22	1
M64,0	**6,00**	*644,81*	**120**	**36**	**1**

P Aceros / Aciers / Steels / Stähle

M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl

K Fundicion / Fonte / Cast Iron / Gusseisen

N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle

S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen

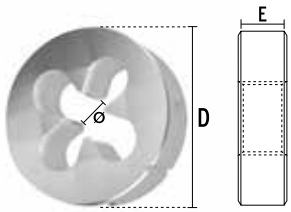
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

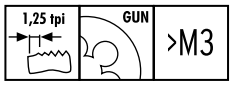
2501/5 HSS DIN EN 22568 Izquierda / A gauche / Left hand

M-MF DIN 13 | Tol. 6g | LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
M3,0	0,50	*52,68*	20	5	1
M4,0	0,70	*52,68*	20	5	1
M5,0	0,80	*52,68*	20	7	1
M6,0	1,00	*52,68*	20	7	1
M7,0	1,00	*57,43*	25	9	1
M8,0	1,00	*67,99*	25	9	1
M8,0	1,25	*55,02*	25	9	1
M10,0	1,00	*72,14*	30	11	1
M10,0	1,25	*90,34*	30	11	1
M10,0	1,50	*78,56*	30	11	1
M12,0	1,25	*105,32*	38	10	1
M12,0	1,50	*78,56*	38	10	1
M12,0	1,75	*86,34*	38	14	1
M14,0	1,50	*98,38*	38	10	1

Ø	P	€	D mm	E mm	
M14,0	2,00	*86,33*	38	14	1
M16,0	1,50	*109,49*	45	14	1
M16,0	2,00	*116,01*	45	18	1
M18,0	1,50	*135,09*	45	14	1
M18,0	2,50	*116,01*	45	18	1
M20,0	1,50	*139,40*	45	14	1
M20,0	2,50	*116,01*	45	18	1
M22,0	1,50	*178,72*	55	16	1
M22,0	2,50	*170,66*	55	22	1
M24,0	1,50	*178,72*	55	16	1
M24,0	3,00	*170,66*	55	22	1
M27,0	3,00	*245,71*	65	25	1
M30,0	3,50	*253,51*	65	25	1

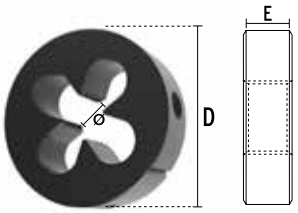
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2514 HSSE DIN EN 22568

M DIN 13 | Tol. 6g | NIT | 2 tpi | GUN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		○						○							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	D mm	E mm	
M3,0	0,50	*42,22*	20	5	1
M4,0	0,70	*42,22*	20	5	1
M5,0	0,80	*42,22*	20	7	1
M6,0	1,00	*42,22*	20	7	1
M8,0	1,25	*44,11*	25	9	1

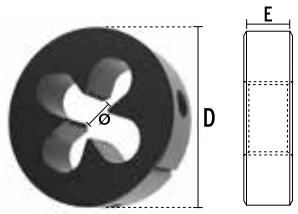
Ø	P	€	D mm	E mm	
M10,0	1,50	*62,92*	30	11	1
M12,0	1,75	*69,18*	38	14	1
M14,0	2,00	*71,94*	38	14	1
M16,0	2,00	*96,61*	45	18	1

2512 HSSE DIN EN 22568

M DIN 13 | Tol. 6g | VAP | 2 tpi | GUN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		●									○				

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	D mm	E mm	
M3,0	0,50	*35,85*	20	5	1
M4,0	0,70	*35,85*	20	5	1
M5,0	0,80	*35,85*	20	7	1
M6,0	1,00	*35,85*	20	7	1
M8,0	1,25	*37,45*	25	9	1
M10,0	1,50	*53,48*	30	11	1

Ø	P	€	D mm	E mm	
M12,0	1,75	*58,79*	38	14	1
M14,0	2,00	*59,96*	38	14	1
M16,0	2,00	*80,51*	45	18	1
M18,0	2,50	*80,51*	45	18	1
M20,0	2,50	*80,51*	45	18	1

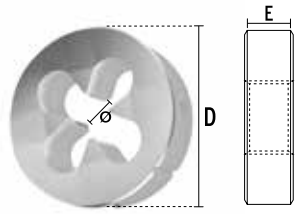
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

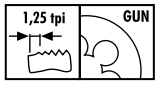
2502 HSS DIN EN 22568

BSW
BS 84

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
3/32	48,00	*36,28*	16	5	1
1/8	40,00	*29,42*	20	5	1
5/32	32,00	*29,42*	20	7	1
3/16	24,00	*29,42*	20	7	1
7/32	24,00	*29,42*	20	7	1
1/4	20,00	*29,42*	20	7	1
5/16	18,00	*30,68*	25	9	1
3/8	16,00	*44,44*	30	11	1
7/16	14,00	*44,44*	30	11	1
1/2	12,00	*44,44*	38	14	1
9/16	12,00	*53,23*	38	14	1
5/8	11,00	*64,65*	45	18	1

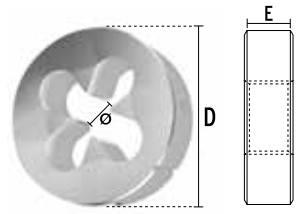
Ø	P	€	D mm	E mm	
3/4	10,00	*64,64*	45	18	1
7/8	9,00	*95,07*	55	22	1
1"	8,00	*95,07*	55	22	1
1"1/8	7,00	*149,67*	65	25	1
1"1/4	7,00	*149,67*	65	25	1
1"3/8	6,00	*152,44*	65	25	1
1"1/2	6,00	*231,69*	75	30	1
1"5/8	5,00	*307,97*	75	30	1
1"3/4	5,00	*387,57*	90	36	1
1"7/8	4,50	*424,05*	90	36	1
2"	4,50	*403,69*	90	36	1

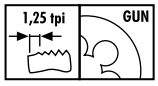
2502/5 HSS DIN EN 22568 Izquierda / A gauche / Left hand / Links

BSW
BS 84
LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ti	Ni	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1/8	40,00	*58,83*	20	5	1
5/32	32,00	*58,83*	20	5	1
3/16	24,00	*58,83*	20	7	1
1/4	20,00	*58,83*	20	7	1
5/16	18,00	*61,36*	25	9	1
3/8	16,00	*88,87*	30	11	1

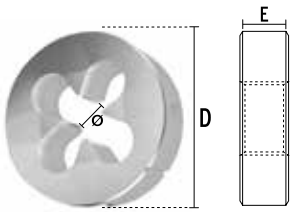
Ø	P	€	D mm	E mm	
7/16	14,00	*88,87*	38	11	1
1/2	12,00	*88,87*	38	14	1
9/16	12,00	*106,47*	38	14	1
5/8	11,00	*129,32*	45	18	1
7/8	9,00	*190,16*	55	22	1
1"	8,00	*190,16*	55	22	1

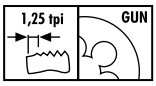
2503 HSS DIN EN 22568

BSF
BS 84

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
3/16	32,00	*133,13*	20	7	1
1/4	26,00	*46,35*	20	7	1
5/16	22,00	*46,22*	25	9	1
3/8	20,00	*81,05*	30	11	1
7/16	18,00	*81,05*	30	11	1
1/2	16,00	*81,05*	38	10	1

Ø	P	€	D mm	E mm	
9/16	16,00	*90,38*	38	10	1
5/8	14,00	*114,19*	45	14	1
3/4	12,00	*114,19*	45	14	1
7/8	11,00	*168,85*	55	22	1
1"	10,00	*168,85*	55	22	1

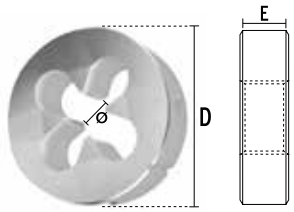
***(Hasta fin de existencias /** Jusqu'à épuisement des stocks / While supplies last)

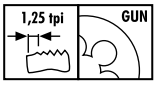
2504 HSS DIN EN 24231

G
ISO 228

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1/8	28,00	*47,34*	30	11	1
1/4	19,00	*47,34*	38	10	1
3/8	19,00	*61,20*	45	14	1
1/2	14,00	*61,20*	45	14	1
5/8	14,00	*84,86*	55	16	1
3/4	14,00	*126,85*	55	16	1
7/8	14,00	*132,79*	65	18	1

Ø	P	€	D mm	E mm	
1"	11,00	*132,79*	65	18	1
1"1/8	11,00	*189,27*	75	20	1
1"1/4	11,00	*186,28*	75	20	1
1"3/8	11,00	*293,64*	90	22	1
1"1/2	11,00	*285,36*	90	22	1
1"3/4	11,00	*293,64*	105	22	1
2"	11,00	*353,40*	105	22	1

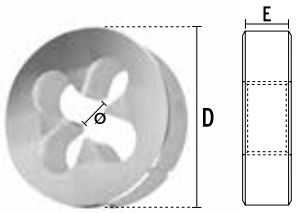
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

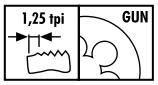
2504/5 HSS DIN EN 24231 Izquierda / A gauche / Left hand / Links

G ISO 228 — LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1/8	28,00	*94,65*	30	11	1
1/4	19,00	*94,65*	38	10	1
3/8	19,00	*122,40*	45	14	1
1/2	14,00	*122,40*	45	14	1

Ø	P	€	D mm	E mm	
5/8	14,00	*169,76*	55	16	1
3/4	14,00	*253,72*	55	16	1
7/8	14,00	*265,58*	65	18	1
1"	11,00	*265,58*	65	18	1

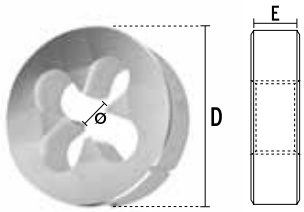
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2522 HSS DIN EN 24231

1,5 tpi | GUN | G ISO 228

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
										●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	D mm	E mm	
1/8	28,00	*56,28*	30	11	1
1/4	19,00	*56,28*	38	10	1
3/8	19,00	*72,82*	45	14	1
1/2	14,00	*72,82*	45	14	1

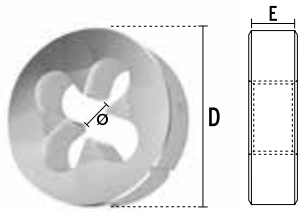
Ø	P	€	D mm	E mm	
5/8	14,00	*115,00*	55	16	1
3/4	14,00	*150,82*	55	16	1
7/8	14,00	*157,89*	65	18	1
1"	11,00	*157,89*	65	18	1

2521 HSS DIN EN 24231

2 tpi | GUN | - 0,1 | G ISO 228

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
										●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	D mm	E mm	
1/8	28,00	*61,89*	30	11	1
1/4	19,00	*61,89*	38	10	1
3/8	19,00	*80,09*	45	14	1
1/2	14,00	*80,09*	45	14	1

Ø	P	€	D mm	E mm	
5/8	14,00	*159,78*	55	16	1
3/4	14,00	*165,90*	55	16	1
7/8	14,00	*201,69*	65	18	1
1"	11,00	*201,69*	65	18	1

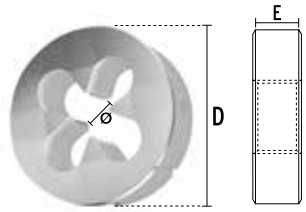
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2505 HSS DIN EN 22568

UNC ANSI/ASME B1.1 | Tol. 2A

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



PVP = € + 10%

Ø	P	€	D mm	E mm	
N°4	40,00	*37,81*	20	5	1
N°5	40,00	*37,81*	20	5	1
N°6	32,00	*37,81*	20	5	1
N°8	32,00	*37,81*	20	7	1
N°10	24,00	*37,81*	20	7	1
N°12	24,00	*37,81*	20	7	1
1/4	20,00	*34,80*	20	7	1
5/16	18,00	*34,02*	25	9	1
3/8	16,00	*50,09*	30	11	1
7/16	14,00	*50,09*	30	11	1
1/2	13,00	*51,55*	38	14	1

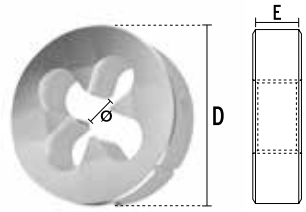
Ø	P	€	D mm	E mm	
9/16	12,00	*53,93*	38	14	1
5/8	11,00	*70,78*	45	18	1
3/4	10,00	*70,78*	45	18	1
7/8	9,00	*92,58*	55	22	1
1"	8,00	*92,58*	55	22	1
1"1/8	7,00	*137,50*	65	25	1
1"1/4	7,00	*137,50*	65	25	1
1"3/8	6,00	*137,50*	65	25	1
1"1/2	6,00	*214,41*	75	30	1
1"3/4	5,00	*459,44*	90	36	1
2"	4,50	*465,64*	90	36	1

2505/5 HSS DIN EN 22568 Izquierda / A gauche / Left hand / Links

UNC ANSI/ASME B1.1 | Tol. 2A | LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



PVP = € + 10%

Ø	P	€	D mm	E mm	
1/4	20,00	*69,61*	20	7	1
5/16	18,00	*67,99*	25	9	1
3/8	16,00	*100,18*	30	11	1
7/16	14,00	*100,18*	30	11	1
1/2	13,00	*103,07*	38	14	1

Ø	P	€	D mm	E mm	
9/16	12,00	*107,90*	38	14	1
5/8	11,00	*141,55*	45	18	1
3/4	10,00	*141,55*	45	18	1
7/8	9,00	*185,19*	55	22	1
1"	7,00	*185,19*	55	22	1

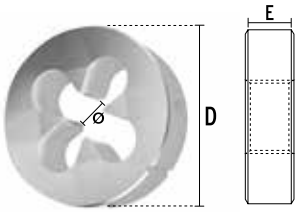
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

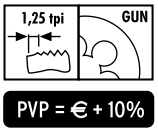
2506 HSS DIN EN 22568

UNF ANSI/ASME B1.1 | Tol. 2A

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
Nº4	48,00	*38,14*	16	5	1
Nº5	44,00	*38,14*	20	5	1
Nº6	40,00	*38,14*	20	5	1
Nº8	36,00	*38,14*	20	7	1
Nº10	32,00	*38,14*	20	7	1
Nº12	28,00	*37,40*	20	7	1
1/4	28,00	*30,21*	20	7	1
5/16	24,00	*35,91*	25	9	1
3/8	24,00	*50,40*	30	11	1
7/16	20,00	*46,34*	30	11	1

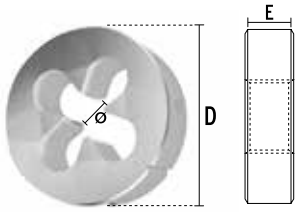
Ø	P	€	D mm	E mm	
1/2	20,00	*52,92*	38	10	1
9/16	18,00	*56,99*	38	10	1
5/8	18,00	*72,83*	45	14	1
3/4	16,00	*72,83*	45	14	1
7/8	14,00	*97,82*	55	16	1
1"	12,00	*97,82*	55	16	1
1"1/8	12,00	*150,65*	65	18	1
1"1/4	12,00	*150,65*	65	18	1
1"3/8	12,00	*225,31*	65	18	1
1"1/2	12,00	*225,31*	75	20	1

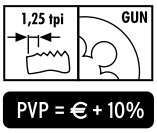
2506/5 HSS DIN EN 22568 Izquierda / A gauche / Left hand / Links

UNF ANSI/ASME B1.1 | Tol. 2A | LH

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1/4	28,00	*60,44*	20	7	1
5/16	24,00	*71,84*	25	9	1
3/8	24,00	*100,80*	30	11	1
7/16	20,00	*92,69*	30	11	1
1/2	20,00	*105,82*	38	10	1

Ø	P	€	D mm	E mm	
9/16	18,00	*113,97*	38	10	1
5/8	18,00	*145,65*	45	14	1
3/4	16,00	*145,65*	45	14	1
7/8	14,00	*195,62*	55	16	1
1"	12,00	*195,62*	55	16	1

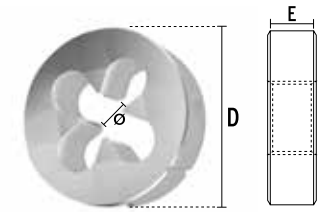
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

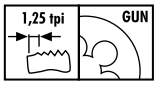
2507 HSS DIN EN 24230

R
DIN 2999

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1/8	28,00	*111,38*	30	11	1
1/4	19,00	*111,38*	38	14	1
3/8	19,00	*145,08*	45	18	1

Ø	P	€	D mm	E mm	
1/2	14,00	*145,08*	55	22	1
3/4	14,00	*273,93*	55	22	1
1"	11,00	*291,86*	65	25	1

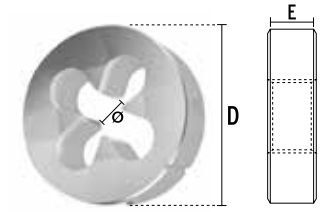
2508 HSS DIN EN 22568

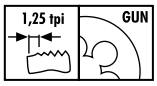
UNEF
ANSI/ASME B1.1

Tol.
2A

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1/4	32,00	*113,87*	20	7	1
5/16	32,00	*113,87*	25	9	1
3/8	32,00	*176,79*	30	11	1
7/16	28,00	*176,79*	30	11	1
1/2	28,00	*176,79*	38	10	1

Ø	P	€	D mm	E mm	
9/16	24,00	*176,79*	38	12	1
5/8	24,00	*283,36*	45	14	1
3/4	20,00	*283,36*	45	14	1
1"	20,00	*346,32*	55	16	1

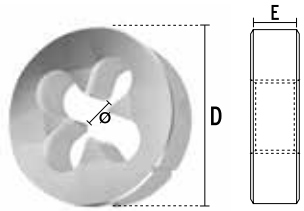
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

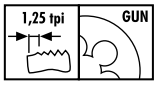
2520 HSS DIN EN 22568

UN ANSI/ASME B1.1 | Tol. 2A

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1"1/8	8,00	*376,78*	65	25	1
1"1/4	8,00	*376,78*	65	25	1
1"3/8	8,00	*404,19*	65	25	1
1"1/2	8,00	*427,78*	75	30	1

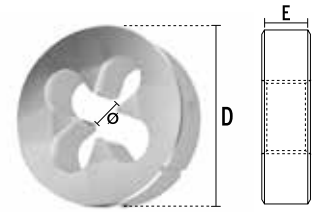
Ø	P	€	D mm	E mm	
1"5/8	8,00	*539,51*	75	30	1
1"3/4	8,00	*656,25*	90	36	1
2"	8,00	*656,25*	90	36	1

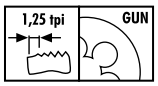
2510 HSS DIN 40434

PG DIN 40430

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Pg	Ø	P	€	D mm	E mm	
7,0	12,5	20,00	*67,63*	38	10	1
9,0	15,2	18,00	*67,63*	45	14	1
11,0	18,6	18,00	*84,70*	45	14	1
13,5	20,4	18,00	*84,70*	45	14	1
16,0	22,5	18,00	*109,21*	55	16	1

Pg	Ø	P	€	D mm	E mm	
21,0	28,3	16,00	*155,23*	65	18	1
29,0	37,0	16,00	*155,23*	65	18	1
36,0	47,0	16,00	*397,84*	90	22	1
42,0	54,0	16,00	*397,84*	105	22	1
48,0	59,3	16,00	*527,62*	105	22	1

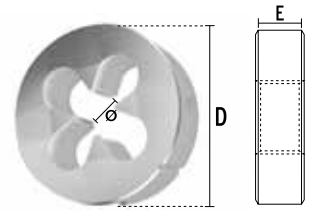
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

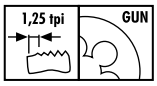
2509 HSS DIN EN 24230

NPT
ANSI/ASME B1.20.1

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative





PVP = € + 10%

Ø	P	€	D mm	E mm	
1/16	27,00	*86,09*	25	9	1
1/8	27,00	*71,03*	30	11	1
1/4	18,00	*71,03*	38	14	1
3/8	18,00	*92,76*	45	18	1
1/2	14,00	*92,76*	45	18	1

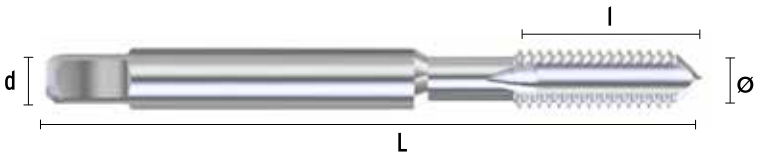
Ø	P	€	D mm	E mm	
3/4	14,00	*169,64*	55	22	1
1"	11,50	*203,98*	65	25	1
1"1/4	11,50	*253,47*	75	25	1
1"1/2	11,50	*353,58*	90	25	1
2"	11,50	*492,30*	105	25	1

2701 HSS ISO 529

Tol. 4H | EG-M (STI) | Form. D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	☐ mm	d mm
M2,0	0,40	*13,92*	44,5	9,5	2,24	2,80
M2,2	0,45	*13,92*	44,5	9,5	2,24	2,80
M2,5	0,45	*13,92*	48	11	2,50	3,15
M3,0	0,50	*9,03*	53	13	3,15	4,00
M3,5	0,60	*9,03*	53	13	3,55	4,50
M4,0	0,70	*10,96*	58	16	4,00	5,00
M5,0	0,80	*11,32*	66	19	5,00	6,30
M6,0	1,00	*11,32*	72	22	6,30	8,00
M7,0	1,00	*18,22*	72	22	7,10	9,00
M8,0	1,00	*18,22*	80	24	8,00	10,00
M8,0	1,25	*15,65*	80	24	8,00	10,00
M9,0	1,25	*22,64*	85	25	6,30	8,00
M10,0	1,00	*22,09*	85	25	6,30	8,00
M10,0	1,25	*22,09*	85	25	6,30	8,00
M10,0	1,50	*20,34*	89	29	7,10	9,00
M11,0	1,50	*25,96*	89	29	7,10	9,00
M12,0	1,00	*31,58*	95	30	9,00	11,20
M12,0	1,25	*31,58*	95	30	9,00	11,20
M12,0	1,50	*31,58*	95	30	9,00	11,20
M12,0	1,75	*22,38*	95	30	9,00	11,20

Ø	P	€	L mm	l mm	☐ mm	d mm
M14,0	1,25	*36,99*	102	32	10,00	12,50
M14,0	1,50	*36,99*	102	32	10,00	12,50
M14,0	1,75	*36,99*	102	32	10,00	12,50
M14,0	2,00	*31,01*	102	32	10,00	12,50
M15,0	1,50	*38,90*	102	32	10,00	12,50
M15,0	2,00	*38,90*	112	37	11,20	14,00
M16,0	1,50	*38,90*	104	29	11,20	14,00
M16,0	2,00	*38,90*	112	37	11,20	14,00
M18,0	1,50	*38,90*	104	29	11,20	14,00
M18,0	2,00	*48,64*	104	29	11,20	14,00
M18,0	2,50	*48,64*	118	38	12,50	16,00
M20,0	1,50	*53,95*	113	33	12,50	16,00
M20,0	2,00	*53,95*	113	33	12,50	16,00
M20,0	2,50	*53,95*	118	38	12,50	16,00
M22,0	1,50	*60,96*	120	35	14,00	18,00
M22,0	2,00	*60,96*	120	35	14,00	18,00
M22,0	2,50	*60,96*	130	45	14,00	18,00
M24,0	1,50	*76,83*	120	35	14,00	18,00
M24,0	2,00	*76,83*	127	37	16,00	20,00
M24,0	3,00	*76,83*	138	48	16,00	20,00

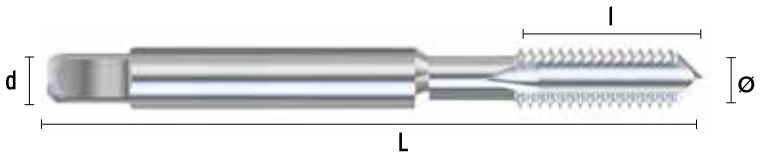
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2702 HSS ISO 529

Tol. 3B | EG-UNC (STI) | Form. D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº2	56,00	*22,83*	48	9,5	2,50	3,15
Nº4	40,00	*22,83*	53	13	3,15	4,00
Nº6	32,00	*22,83*	58	16	4,00	5,00
Nº8	32,00	*22,83*	62	17	4,50	5,60
Nº10	24,00	*15,27*	66	19	5,00	6,30
Nº12	24,00	*15,27*	66	19	5,60	7,10
1/4	20,00	*15,27*	72	22	6,30	8,00
5/16	18,00	*16,11*	80	24	8,00	10,00
3/8	16,00	*17,39*	85	25	6,30	8,00

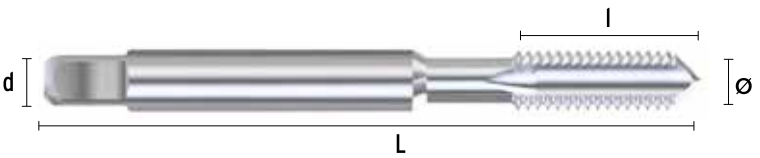
Ø	P	€	L mm	l mm	⊠ mm	d mm
7/16	14,00	*24,57*	95	30	9,00	11,20
1/2	13,00	*26,43*	102	32	10,00	12,50
9/16	12,00	*41,04*	112	37	11,20	14,00
5/8	11,00	*49,25*	112	37	11,20	14,00
11/16	11,00	*65,52*	112	37	11,20	14,00
3/4	10,00	*65,52*	118	38	12,50	16,00
7/8	9,00	*75,83*	130	45	14,00	18,00
1"	8,00	*75,83*	138	48	16,00	20,00

2703 HSS ISO 529

Tol. 3BH | EG-UNF (STI) | Form. D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
Nº4	48,00	*22,83*	53	13	3,15	4,00
Nº6	40,00	*22,83*	53	13	3,55	4,50
Nº8	36,00	*22,83*	62	17	4,50	5,60
Nº10	32,00	*15,27*	66	19	5,00	6,30
1/4	28,00	*15,27*	69	19	6,30	8,00
5/16	24,00	*16,11*	76	20	8,00	10,00
3/8	24,00	*17,39*	82	22	6,30	8,00
7/16	20,00	*24,57*	84	24	7,10	9,00

Ø	P	€	L mm	l mm	⊠ mm	d mm
1/2	20,00	*26,43*	90	25	9,00	11,20
9/16	18,00	*41,04*	104	29	10,00	12,50
5/8	18,00	*49,25*	104	29	11,20	14,00
3/4	16,00	*65,52*	104	29	11,20	14,00
7/8	14,00	*75,83*	120	35	14,00	18,00
1"	14,00	*75,83*	127	37	16,00	20,00
1"	12,00	*75,83*	127	37	16,00	20,00

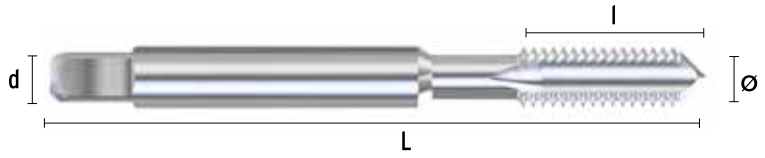
P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

2704 HSS ISO 529

EG-W (STI) | Form. D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	40,00	*15,27*	53	13	3,15	4,00
3/16	24,00	*15,27*	66	19	5,00	6,30
1/4	20,00	*15,27*	72	22	6,30	8,00
5/16	18,00	*16,11*	80	24	8,00	10,00
3/8	16,00	*17,39*	85	25	6,30	8,00
7/16	14,00	*24,57*	95	30	9,00	11,20
1/2	12,00	*26,43*	102	32	10,00	12,50

Ø	P	€	L mm	l mm	⊠ mm	d mm
9/16	12,00	*41,04*	102	32	10,00	12,50
5/8	11,00	*49,25*	112	37	11,20	14,00
11/16	11,00	*65,52*	112	37	11,20	14,00
3/4	10,00	*65,52*	118	38	12,50	16,00
7/8	9,00	*75,83*	130	45	14,00	18,00
1"	8,00	*75,83*	138	48	16,00	20,00

2715 HSS ISO 529

EG-G (STI) | Form. D

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●							

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

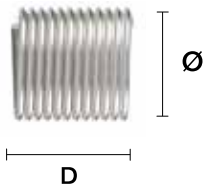
Ø	P	€	L mm	l mm	⊠ mm	d mm
1/8	28,00	*17,76*	59	15	6,30	8,00
1/4	19,00	*20,15*	67	19	9,00	11,20

Ø	P	€	L mm	l mm	⊠ mm	d mm
3/8	19,00	*26,52*	75	21	11,20	14,00
1/2	14,00	*42,96*	87	26	12,50	16,00

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

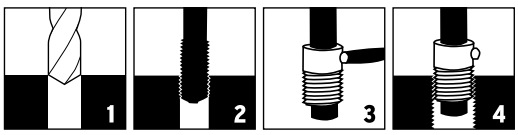
2705 DIN 8140

M DIN 8140 | Tol. 6H



Ø	P	Dmm. 1,0 Ø €	1,5 Ø €	2,0 Ø €	2,5 Ø* €	3,0 Ø* €	
M2,0	0,40	0,40	0,42	0,43	0,46	0,51	10
M2,2	0,45	0,38	0,40	0,42	0,43	0,38	10
M2,5	0,45	0,32	0,36	0,38	0,40	0,43	10
M3,0	0,50	0,29	0,30	0,32	0,40	0,43	10
M3,5	0,60	0,38	0,40	0,42	0,43	0,48	10
M4,0	0,70	0,29	0,30	0,32	0,38	0,42	10
M5,0	0,80	0,29	0,30	0,32	0,38	0,42	10
M6,0	1,00	0,29	0,30	0,32	0,38	0,42	10
M7,0	1,00	0,32	0,36	0,38	0,46	0,51	10
M8,0	1,00	0,36	0,40	0,48	0,67	0,78	10
M8,0	1,25	0,32	0,40	0,46	0,57	0,69	10
M9,0	1,25	0,50	0,57	0,70	0,88	1,02	10
M10,0	1,00	0,38	0,46	0,60	0,85	1,02	10
M10,0	1,25	0,38	0,46	0,60	0,85	1,02	10
M10,0	1,50	0,38	0,46	0,60	0,74	0,90	10
M11,0	1,50	0,51	0,81	1,08	1,47	1,82	10
M12,0	1,00	0,46	0,72	0,96	1,47	1,82	10
M12,0	1,25	0,46	0,72	0,96	1,47	1,82	10
M12,0	1,50	0,46	0,72	0,96	1,47	1,82	10
M12,0	1,75	0,46	0,72	0,96	1,30	1,62	10
M14,0	1,00	1,12	1,42	1,82	2,26	2,60	10
M14,0	1,25	1,12	1,42	1,82	2,26	2,60	10
M14,0	1,50	1,12	1,42	1,82	2,26	2,60	10
M14,0	2,00	0,80	1,01	1,28	2,26	2,60	10
M16,0	1,50	1,51	1,87	2,31	2,80	3,29	10
M16,0	2,00	1,06	1,31	1,62	2,80	3,32	10
M18,0	1,50	2,05	2,67	3,25	3,86	4,43	10
M18,0	2,00	2,05	2,67	3,28	3,86	4,41	10
M18,0	2,50	1,63	2,16	2,61	3,86	4,41	10
M20,0	1,50	2,47	3,23	3,92	5,07	5,82	10
M20,0	2,00	2,47	3,23	3,92	5,07	5,82	10
M20,0	2,50	1,98	2,59	3,14	5,07	5,82	10
M22,0	1,50	3,41	4,27	5,29	6,86	7,98	5
M22,0	2,00	3,41	4,27	5,29	6,86	7,98	5
M22,0	2,50	2,73	3,41	4,23	6,86	7,98	5
M24,0	1,50	4,27	5,60	6,81			5
M24,0	2,00	4,27	5,60	6,81			5
M24,0	3,00	4,27	5,60	6,81			5

*** Bajo pedido**
Sur commande
To-order

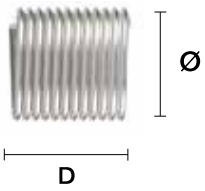


MODO DE EMPLEO / MODE D´EMPLOI / HOW TO USE
1- Taladrado previo / Perçage préalable / Previous drilling
2- Roscado previo / Taraudage préalable / Previous threading
3- Instalación del inserto en la herramienta / Pose de l'insert dans l'outil / Placement of the insert in the tool
4- Introducción del inserto en la rosca / Introduction de l'insert dans le filet / Introduction of the insert in the coil

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

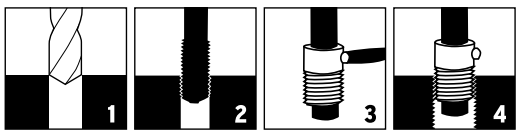
2706 DIN 8140

UNC ANSI/ASME B18.29.1 | Tol. 2B



Ø	P	Dmm. 1,0 Ø €	1,5 Ø €	2,0 Ø €	2,5 Ø* €	3,0 Ø* €	
Nº 2	56,00	*0,67*	*0,57*	*0,81*	*0,88*	*0,95*	10
Nº 4	40,00	*0,51*	*0,46*	*0,57*	*0,69*	*0,74*	10
Nº 5	40,00	*0,56*	*0,51*	*0,65*	*0,74*	*0,84*	10
Nº 6	32,00	*0,51*	*0,46*	*0,57*	*0,69*	*0,74*	10
Nº 8	32,00	*0,51*	*0,46*	*0,57*	*0,70*	*0,81*	10
Nº 10	24,00	*0,51*	*0,56*	*0,57*	*0,70*	*0,81*	10
Nº 12	24,00	*0,57*	*0,60*	*0,70*	*0,69*	*0,74*	10
1/4	20,00	*0,51*	*0,46*	*0,57*	*0,72*	*0,72*	10
5/16	18,00	*0,57*	*0,56*	*0,69*	*1,12*	*1,20*	10
3/8	16,00	*0,67*	*0,67*	*1,06*	*1,45*	*1,74*	10
7/16	14,00	*0,75*	*0,75*	*1,24*	*1,74*	*2,07*	10
1/2	13,00	*0,84*	*1,03*	*1,70*	*2,50*	*3,11*	10
9/16	12,00	*1,57*	*1,76*	*2,95*	*3,63*	*4,21*	5
5/8	11,00	*2,14*	*2,28*	*3,74*	*4,48*	*5,33*	5
3/4	10,00	*2,88*	*3,29*	*5,27*	*6,20*	*7,13*	5
7/8	9,00	*4,59*	*4,38*	*7,08*	*8,38*	*9,76*	5
1"	8,00	*5,76*	*5,69*	*9,13*	*11,94*	*13,72*	5

*** Bajo pedido**
Sur commande
To-order

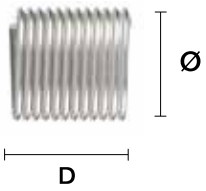


MODO DE EMPLEO / MODE D´EMPLOI / HOW TO USE
1- Taladrado previo / Perçage préalable / Previous drilling
2- Roscado previo / Taraudage préalable / Previous threading
3- Instalación del inserto en la herramienta / Pose de l'insert dans l'outil / Placement of the insert in the tool
4- Introducción del inserto en la rosca / Introduction de l'insert dans le filet / Introduction of the insert in the coil

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
N Metales no ferrosos / Métal non Ferraux / Non Ferrous metals / NE-Metalle
S Titanio y Superaleaciones / Titanium et Supealliages / Titanium and Superalloys / Titan und Superlegierungen
H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

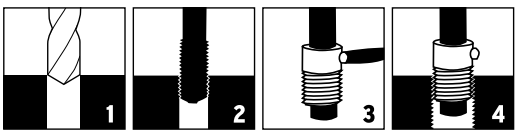
2707 DIN 8140

UNF ANSI/ASME B18.29.1 | Tol. 2B



Ø	P	Dmm. 1,0 Ø €	1,5 Ø €	2,0 Ø €	2,5 Ø* €	3,0 Ø* €	
4	48,00	*0,51*	*0,46*	*0,57*	*0,69*	*0,74*	10
6	40,00	*0,51*	*0,46*	*0,57*	*0,69*	*0,74*	10
8	36,00	*0,57*	*0,46*	*0,65*	*0,70*	*0,81*	10
10	32,00	*0,51*	*0,46*	*0,57*	*0,72*	*0,81*	10
1/4	28,00	*0,51*	*0,46*	*0,57*	*0,70*	*0,81*	10
5/16	24,00	*0,57*	*0,57*	*0,84*	*1,12*	*1,33*	10
3/8	24,00	*0,67*	*0,67*	*1,06*	*1,45*	*1,74*	10
7/16	20,00	*0,75*	*0,75*	*1,24*	*1,72*	*2,07*	10
1/2	20,00	*0,81*	*1,03*	*1,70*	*2,50*	*3,11*	10
9/16	18,00	*1,65*	*1,76*	*2,95*	*3,63*	*4,21*	5
5/8	18,00	*2,23*	*2,28*	*3,74*	*4,48*	*5,33*	5
3/4	16,00	*3,02*	*3,29*	*5,27*	*6,20*	*7,13*	5
7/8	14,00	*4,59*	*4,38*	*7,08*	*8,38*	*9,76*	5
1"	12,00	*5,76*	*5,69*	*9,13*	*11,94*	*13,72*	5
1"1/8	12,00	*9,62*	*9,57*	*14,51*			5
1"1/4	12,00	*10,64*	*16,53*				5
1"3/8	12,00	*12,62*	*11,88*				5
1"1/2	12,00	*13,31*	*14,38*				5

*** Bajo pedido**
Sur commande
To-order



MODO DE EMPLEO / MODE D´EMPLOI / HOW TO USE
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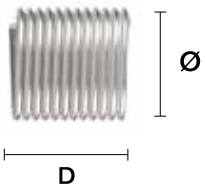
P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundicion Fonte Cast Iron Gusseisen	N	Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle	S	Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien

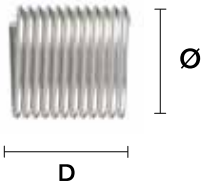
2708 DIN 8140 — BSW BS 84 — Tol. 2B



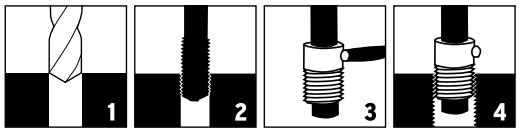
Ø	P	Dmm. 1,0 Ø €	1,5 Ø €	2,0 Ø €	2,5 Ø* €	3,0 Ø* €	
1/8	48,00	*0,65*	*0,51*	*0,70*	*0,74*	*0,84*	10
3/16	24,00	*0,57*	*0,46*	*0,65*	*0,74*	*0,84*	10
1/4	20,00	*0,57*	*0,46*	*0,65*	*0,78*	*0,90*	10
5/16	18,00	*0,65*	*0,57*	*0,91*	*1,24*	*1,45*	10
3/8	16,00	*0,72*	*0,67*	*1,17*	*1,57*	*1,91*	10
7/16	14,00	*0,84*	*0,75*	*1,37*	*1,91*	*2,28*	10
1/2	12,00	*0,81*	*1,24*	*1,70*	*2,73*	*3,40*	10
9/16	12,00	*1,82*	*1,96*	*2,95*	*3,98*	*4,61*	5
5/8	11,00	*2,44*	*2,28*	*3,74*	*4,93*	*5,82*	5
3/4	10,00	*3,34*	*3,29*	*4,43*	*5,73*	*7,83*	5
7/8	9,00	*4,17*	*3,50*	*6,44*	*8,35*	*9,74*	5
1"	8,00	*5,24*	*4,57*	*8,31*	*10,84*	*12,47*	5

*** Bajo pedido**
Sur commande
To-order

2716 DIN 8140 — G ISO 229 — Tol. 2B



Ø	P	Dmm. 1,0 Ø €	1,5 Ø €	2,0 Ø €	
1/8	28,00	*0,60*	*0,87*	*0,95*	10
1/4	19,00	*0,82*	*1,18*	*1,33*	10
3/8	19,00	*0,73*	*1,34*	*1,52*	10
1/2	14,00	*1,26*	*1,93*	*2,02*	10



MODO DE EMPLEO / MODE D´EMPLOI / HOW TO USE
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P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2709 Insertador / Appareil de pose manuel / Insert Tool / Einsatzwerkzeug

nº	Ø x P mm	UNC/UNF/BSW/BSF/BSP		€
2	M 2,00 x 0,40 M 2,20 x 0,45	UNC Nº 2	1	*26,24*
3	M 2,50 x 0,45		1	*26,24*
4	M 3,00 x 0,50	UNC Nº 5, UNC/UNF Nº 4, BSW 18	1	*19,80*
5	M 3,50 x 0,60	UNC/UNF Nº 6	1	*19,80*
6	M 4,00 x 0,70	UNC, UNF Nº 8	1	*19,80*
7		BSW 3/16, UNC Nº 10	1	*19,80*
8	M 5,00 x 0,80	UNF Nº 10, UNC Nº 12, BSF 3/16	1	*19,80*
9	M 6,00 x 1,00	UNC, UNF 1/4, BSW, BSF 1/4	1	*19,80*
10	M 7,00 x 1,00		1	*19,80*
11	M 8,00 x 1,00 M 8,00 x 1,25	UNF, BSF 5/16 UNC, BSW 5/16	1	*19,80*
12	M 9,00 x 1,00 M 9,00 x 1,25		1	*19,80*
13	M 10,00 x 1,00 M 10,00 x 1,25 M 10,00 x 1,50	UNF, BSF 3/8 UNC, BSW 3/8 G 1/18	1	*19,80*
14	M 11,00 x 1,25 M 11,00 x 1,50	UNC, UNF 7/16, BSW, BSF 7/16	1	*21,12*
15	M 12,00 x 1,00 M 12,00 x 1,25 M 12,00 x 1,50 M 12,00 x 1,75	UNC, UNF 1/2, BSW, BSF 1/2	1	*23,69*
16	M 14,00 x 1,50 M 14,00 x 2,00	UNC, UNF 9/16, BSW, BSF 9/16 G 1/4, G 3/8	1	*26,36*
17	M 14,00 x 1,00 M 14,00 x 1,25		1	*26,36*
18	M 16,00 x 1,50 M 16,00 x 2,00	UNC, UNF 5/8, BSW, BSF 5/8	1	*26,36*
20	M 18,00 x 1,50 M 18,00 x 2,00 M 18,00 x 2,50	UNC 3/4, BSW, BSF 3/4	1	*32,90*
21	M 20,00 x 1,50 M 20,00 x 2,00 M 20,00 x 2,50	UNF 3/4	1	*32,90*
22	M 22,00 x 1,50 M 22,00 x 2,00 M 22,00 x 2,50	UNC, UNF 7/8, BSW, BSF 7/8 G 1/2	1	*32,90*
23	M 24,00 x 1,50 M 24,00 x 2,00 M 24,00 x 3,00	UNC, UNF 1", BSW, BSF 1"	1	*52,75*

2710 Rompe Arrastre / Rupteur / Tang break tool / Zapfenbrecher

nº	Ø x P mm	UNC/UNF/BSW/BSF/BSP		€
2	M 2,00 x 0,40 M 2,20 x 0,45	UNC Nº 2	1	*6,26*
3	M 2,50 x 0,45		1	*6,26*
4	M 3,00 x 0,50	UNC, UNF Nº 4	1	*6,26*
5	M 3,50 x 0,60	UNC, UNF Nº 6	1	*6,26*
6	M 4,00 x 0,70	UNC Nº 10, UNC/UNF Nº 8, BSF 3/16	1	*6,26*
8	M 5,00 x 0,80		1	*7,87*
9	M 6,00 x 1,00	UNC/UNF 1/4, BSW/BSF 1/4	1	*7,87*
11	M 7,00 x 1,00 M 8,00 x 1,00 M 8,00 x 1,25	UNC/UNF 5/16, BSW/BSF 5/16	1	*10,26*
12	M 9,00 x 1,00 M 9,00 x 1,25	BSF 3/8	1	*10,26*
13	M 10,00 x 1,00 M 10,00 x 1,25 M 10,00 x 1,50	UNF 3/8 UNC, BSW 3/8 G 1/8	1	*10,26*
14	M 11,00 x 1,25 M 11,00 x 1,50	UNC/UNF 7/16, BSW/BSF 7/16	1	*10,26*
15	M 12,00 x 1,00 M 12,00 x 1,25 M 12,00 x 1,50 M 12,00 x 1,75	UNC/UNF 1/2, BSW/BSF 1/2 G 1/4	1	*10,26*

P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2711 Kits / Sets / Sätze

EG-M (STI)

Ø	P				1,5D	€
M2,0	0,40	2,10	No. 2	No. 2	10	*64,47*
M2,5	0,45	2,60	No. 3	No. 3	10	*63,88*
M3,0	0,50	3,20	No. 4	No. 4	10	*52,31*
M3,5	0,60	3,70	No. 5	No. 5	10	*53,15*
M4,0	0,70	4,20	No. 6	No. 6	10	*54,37*
M5,0	0,80	5,20	No. 8	No. 8	10	*57,45*
M6,0	1,00	6,30	No. 9	No. 9	10	*57,49*
M7,0	1,00	7,30	No. 10	No. 11	10	*68,01*
M8,0	1,00	8,30	No. 11	No. 11	10	*66,88*
M8,0	1,25	8,30	No. 11	No. 11	10	*69,45*
M9,0	1,25	9,30	No. 12		10	*66,45*
M10,0	1,00	10,30	No. 13		10	*66,05*
M10,0	1,25	10,30	No. 13		10	*66,05*
M10,0	1,50	10,40	No. 13		10	*64,30*
M11,0	1,50	11,40	No. 14		5	*72,35*
M12,0	1,00	12,30	No. 15		5	*81,67*
M12,0	1,25	12,30	No. 15		5	*81,67*
M12,0	1,50	12,40	No. 15		5	*81,67*
M12,0	1,75	12,40	No. 15		5	*72,47*
M14,0	1,00		No. 17		5	*83,40*
M14,0	1,25		No. 17		5	*83,40*
M14,0	1,50		No. 16		5	*83,40*
M14,0	2,00		No. 16		5	*71,66*
M16,0	1,50		No. 18		5	*87,46*
M16,0	2,00		No. 18		5	*87,46*
M18,0	1,50		No. 20		5	*107,90*
M18,0	2,00		No. 20		5	*107,90*
M18,0	2,50		No. 20		5	*107,90*
M20,0	1,50		No. 21		5	*115,89*
M20,0	2,00		No. 21		5	*115,89*
M20,0	2,50		No. 21		5	*115,89*
M22,0	1,50		No. 22		5	*128,18*
M22,0	2,00		No. 22		5	*128,18*
M22,0	2,50		No. 22		5	*128,18*
M24,0	1,50		No. 23		5	*170,38*
M24,0	2,00		No. 23		5	*170,38*
M24,0	3,00		No. 23		5	*170,38*

2712 Kits / Sets / Sätze

EG-UNC (STI)

Ø	P				1,5D	€
N°2	56,00	2,30	No. 2	No. 2	10	*75,04*
N°4	40,00	3,00	No. 4	No. 4	10	*67,39*
N°6	32,00	3,70	No. 5	No. 5	10	*67,56*
N°8	32,00	4,50	No. 6	No. 6	10	*67,80*
N°10	24,00	5,20	No. 7	No. 6	10	*61,87*
N°12	24,00	5,80	No. 8	No. 8	10	*63,98*
1/4	20,00	6,70	No. 9	No. 9	10	*63,30*
5/16	18,00	8,30	No. 11	No. 11	10	*68,98*
3/8	16,00	9,90	No. 13		10	*62,67*
7/16	14,00	11,60	No. 14		10	*71,20*
1/2	13,00	13,00	No. 15		10	*77,21*
9/16	12,00		No. 16		10	*89,09*
5/8	11,00		No. 18		10	*99,87*
3/4	10,00		No. 20		10	*127,78*
7/8	9,00		No. 22		5	*143,48*
1"	8,00		No. 23		5	*169,92*

P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
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S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2713 Kits / Sets / Sätze

EG-UNF (STI)

Ø	P				1,5D	€
N°4	48,00	3,00	No. 4	No. 4	10	*69,65*
N°6	40,00	3,70	No. 5	No. 5	10	*70,14*
N°8	36,00	4,40	No. 6	No. 6	10	*70,37*
N°10	32,00	5,10	No. 8	No. 8	10	*64,82*
1/4	28,00	6,60	No. 9	No. 9	10	*65,88*
5/16	24,00	8,20	No. 11	No. 11	10	*71,76*
3/8	24,00	9,80	No. 13	No. 13	10	*65,24*
7/16	20,00	11,50	No. 14		5	*82,22*
1/2	20,00	13,00	No. 15		5	*90,09*
9/16	18,00		No. 16		5	*101,98*
5/8	18,00		No. 18		5	*112,75*
3/4	16,00		No. 21		5	*166,43*
7/8	14,00		No. 22		5	*182,12*
1"	12,00		No. 23		5	*208,58*

2714 Kits / Sets / Sätze — EG-W (STI)

Ø	P				1,5 D	€
1/8	40,00	3,40	No. 4	No. 4	10	*63,11*
3/16	24,00	5,00	No. 8	No. 8	10	*65,88*
1/4	20,00	6,70	No. 9	No. 9	10	*65,88*
5/16	18,00	8,30	No. 11	No. 11	10	*71,76*
3/8	16,00	9,90	No. 13	No. 13	10	*65,24*
7/16	14,00	11,60	No. 14		5	*82,22*
1/2	12,00	13,00	No. 15		5	*91,13*
9/16	12,00		No. 16		5	*103,02*
5/8	11,00		No. 18		5	*112,75*
3/4	10,00		No. 20		5	*166,43*
7/8	9,00		No. 22		5	*177,77*
1"	8,00		No. 23		4	*202,88*

2717 Kits / Sets / Sätze — EG-G (STI)

Ø	P				1,5 D	€
1/8	28,00	9,90	No. 13	No. 13	5	*104,31*
1/4	19,00	13,50	No. 16	No. 15	5	*110,14*
3/8	19,00	17,00	No. 16		5	*126,59*
1/2	14,00				5	*166,41*

P Aceros / Aciers / Steels / Stähle
M Aceros Inox / Aciers Inox / Stainless Steels / Edelstahl
K Fundicion / Fonte / Cast Iron / Gusseisen
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H Materiales Duros / Materiels Durs / Hard materials / Hartmaterialien

7167 Multi-kits / Multi-kits

EG-M (STI)

Ø	P				1,5 D
M5,0	0,80	5,20	No. 8	No. 8	10
M6,0	1,00	6,30	No. 9	No. 9	10
M8,0	1,25	8,30	No. 11	No. 11	10
M10,0	1,50	10,40	No. 13		10
M12,0	1,75	12,40	No. 15		10

€	*406,20*

P Aceros Aciers Steels Stähle
M Aceros Inox Aciers Inox Stainless Steels Edelstahl
K Fundicion Fonte Cast Iron Gusseisen
N Metales no ferrosos Métal non Ferraux Non Ferrous metals NE-Metalle
S Titanio y Superaleaciones Titanium et Supealliages Titanium and Superalloys Titan und Superlegierungen
H Materiales Duros Materiels Durs Hard materials Hartmaterialien

2901/1 DIN ISO 1502

PASA NO PASA | CTPNP | M-MF DIN 13 | Tol. 6H

Ø	P	€	
M1,0	0,25	*323,78*	1
M1,1	0,25	*323,78*	1
M1,2	0,25	*309,33*	1
M1,4	0,30	*309,33*	1
M1,6	0,35	*260,18*	1
M1,8	0,35	*228,38*	1
M2,0	0,40	*147,44*	1
M2,2	0,45	*211,25*	1
M2,5	0,45	*130,09*	1
M3,0	0,50	*121,42*	1
M4,0	0,50	*239,94*	1
M4,0	0,70	*115,64*	1
M4,5	0,75	*127,81*	1
M5,0	0,50	*234,16*	1
M5,0	0,80	*112,74*	1
M6,0	0,50	*234,16*	1
M6,0	0,75	*159,00*	1
M6,0	1,00	*106,96*	1
M7,0	1,00	*106,96*	1
M8,0	0,50	*234,16*	1
M8,0	0,75	*170,56*	1
M8,0	1,00	*153,22*	1
M8,0	1,25	*112,74*	1
M9,0	1,25	*115,64*	1
M10,0	0,50	*251,51*	1
M10,0	0,75	*173,46*	1
M10,0	1,00	*159,00*	1
M10,0	1,25	*187,91*	1
M10,0	1,50	*118,53*	1
M12,0	0,50	*268,86*	1

Ø	P	€	
M12,0	0,75	*182,13*	1
M12,0	1,00	*173,46*	1
M12,0	1,25	*182,13*	1
M12,0	1,50	*185,02*	1
M12,0	1,75	*124,31*	1
M14,0	1,00	*182,13*	1
M14,0	1,25	*196,58*	1
M14,0	1,50	*170,56*	1
M14,0	2,00	*132,98*	1
M16,0	1,00	*196,58*	1
M16,0	1,50	*176,34*	1
M16,0	2,00	*141,66*	1
M18,0	1,00	*199,47*	1
M18,0	1,50	*185,02*	1
M18,0	2,50	*153,22*	1
M20,0	1,00	*213,93*	1
M20,0	1,50	*196,58*	1
M20,0	2,00	*196,58*	1
M20,0	2,50	*164,78*	1
M22,0	1,00	*237,06*	1
M22,0	1,50	*219,71*	1
M22,0	2,50	*170,56*	1
M24,0	1,00	*254,40*	1
M24,0	1,50	*231,27*	1
M24,0	2,00	*231,27*	1
M24,0	3,00	*190,80*	1
M25,0	1,00	*260,18*	1
M25,0	1,50	*237,06*	1
M25,0	2,00	*237,06*	1
M27,0	1,00	*274,64*	1

Ø	P	€	
M27,0	1,50	*251,51*	1
M27,0	2,00	*251,51*	1
M27,0	3,00	*208,14*	1
M30,0	1,00	*309,33*	1
M30,0	1,50	*277,53*	1
M30,0	2,00	*277,53*	1
M30,0	3,00	*318,00*	1
M30,0	3,50	*228,38*	1
M32,0	1,00	*309,33*	1
M32,0	1,50	*283,31*	1
M32,0	2,00	*283,31*	1
M33,0	1,00	*312,22*	1
M33,0	1,50	*289,09*	1
M33,0	2,00	*289,09*	1
M33,0	3,00	*326,67*	1
M33,0	3,50	*251,51*	1
M36,0	1,00	*335,34*	1
M36,0	1,50	*309,33*	1
M36,0	2,00	*309,33*	1
M36,0	3,00	*309,33*	1
M36,0	4,00	*271,74*	1
M39,0	1,50	*335,34*	1
M39,0	2,00	*335,34*	1
M39,0	3,00	*393,16*	1
M39,0	4,00	*294,87*	1
M40,0	1,50	*355,58*	1
M40,0	2,00	*355,58*	1
M40,0	3,00	*398,94*	1

2901/4 DIN ISO 1502

PASA | CTP | M-MF DIN 13 | Tol. 6H

Ø	P	€	
M42,0	1,50	*208,14*	1
M42,0	2,00	*208,14*	1
M42,0	3,00	*239,94*	1
M42,0	4,50	*199,47*	1
M45,0	1,50	*216,82*	1
M45,0	2,00	*219,71*	1
M45,0	3,00	*251,51*	1

Ø	P	€	
M45,0	4,50	*213,93*	1
M48,0	1,50	*225,49*	1
M48,0	2,00	*231,27*	1
M48,0	3,00	*263,07*	1
M48,0	5,00	*231,27*	1
M50,0	1,50	*237,06*	1
M50,0	2,00	*239,94*	1

Ø	P	€	
M50,0	3,00	*274,64*	1
M52,0	1,50	*242,84*	1
M52,0	2,00	*251,51*	1
M52,0	3,00	*289,09*	1
M52,0	5,00	*242,84*	1

2901/5 DIN ISO 1502

NO PASA | CTNP | M-MF DIN 13 | Tol. 6H

Ø	P	€	
M42,0	1,50	*208,14*	1
M42,0	2,00	*208,14*	1
M42,0	3,00	*239,94*	1
M42,0	4,50	*199,47*	1
M45,0	1,50	*216,82*	1
M45,0	2,00	*219,71*	1
M45,0	3,00	*251,51*	1

Ø	P	€	
M45,0	4,50	*213,93*	1
M48,0	1,50	*225,49*	1
M48,0	2,00	*231,27*	1
M48,0	3,00	*263,07*	1
M48,0	5,00	*231,27*	1
M50,0	1,50	*237,06*	1
M50,0	2,00	*239,94*	1

Ø	P	€	
M50,0	3,00	*274,64*	1
M52,0	1,50	*242,84*	1
M52,0	2,00	*251,51*	1
M52,0	3,00	*289,09*	1
M52,0	5,00	*242,84*	1

2901/2 DIN ISO 1502

PASA | CAP | M-MF DIN 13 | Tol. 6g

Ø	P	€	
M2,0	0,40	*164,78*	1
M2,2	0,45	*193,69*	1
M2,5	0,45	*127,20*	1
M3,0	0,50	*124,31*	1
M4,0	0,50	*257,29*	1
M4,0	0,70	*115,64*	1
M4,5	0,75	*115,64*	1
M5,0	0,50	*257,29*	1
M5,0	0,80	*115,64*	1
M6,0	0,50	*257,29*	1
M6,0	0,75	*159,00*	1
M6,0	1,00	*115,64*	1
M7,0	1,00	*147,44*	1
M8,0	0,50	*248,62*	1
M8,0	0,75	*179,24*	1
M8,0	1,00	*138,76*	1
M8,0	1,25	*115,64*	1
M9,0	1,25	*159,00*	1
M10,0	0,50	*286,20*	1
M10,0	0,75	*199,47*	1
M10,0	1,00	*153,22*	1
M10,0	1,25	*187,91*	1
M10,0	1,50	*130,09*	1
M12,0	0,50	*326,67*	1
M12,0	0,75	*237,06*	1
M12,0	1,00	*173,46*	1
M12,0	1,25	*211,04*	1
M12,0	1,50	*164,78*	1
M12,0	1,75	*150,33*	1
M14,0	1,00	*185,02*	1
M14,0	1,25	*265,96*	1
M14,0	1,50	*170,56*	1
M14,0	2,00	*164,78*	1
M16,0	1,00	*199,47*	1

Ø	P	€	
M16,0	1,50	*185,02*	1
M16,0	2,00	*179,24*	1
M18,0	1,00	*213,93*	1
M18,0	1,50	*199,47*	1
M18,0	2,50	*205,26*	1
M20,0	1,00	*228,38*	1
M20,0	1,50	*213,93*	1
M20,0	2,00	*228,38*	1
M20,0	2,50	*228,38*	1
M22,0	1,00	*280,42*	1
M22,0	1,50	*228,38*	1
M22,0	2,50	*245,73*	1
M24,0	1,00	*265,96*	1
M24,0	1,50	*248,62*	1
M24,0	2,00	*257,29*	1
M24,0	3,00	*260,18*	1
M25,0	1,00	*312,22*	1
M25,0	1,50	*254,40*	1
M25,0	2,00	*257,29*	1
M27,0	1,00	*335,34*	1
M27,0	1,50	*265,96*	1
M27,0	2,00	*280,42*	1
M27,0	3,00	*289,09*	1
M30,0	1,00	*318,00*	1
M30,0	1,50	*286,20*	1
M30,0	2,00	*286,20*	1
M30,0	3,00	*320,89*	1
M30,0	3,50	*318,00*	1
M32,0	1,00	*341,13*	1
M32,0	1,50	*306,44*	1
M32,0	2,00	*306,44*	1
M33,0	1,00	*349,80*	1
M33,0	1,50	*312,22*	1
M33,0	2,00	*318,00*	1

Ø	P	€	
M33,0	3,00	*338,24*	1
M33,0	3,50	*344,02*	1
M36,0	1,00	*375,82*	1
M36,0	1,50	*332,46*	1
M36,0	2,00	*349,80*	1
M36,0	3,00	*390,27*	1
M36,0	4,00	*370,04*	1
M39,0	1,50	*367,14*	1
M39,0	2,00	*381,60*	1
M39,0	3,00	*396,06*	1
M39,0	4,00	*401,84*	1
M40,0	1,50	*367,14*	1
M40,0	2,00	*390,27*	1
M40,0	3,00	*407,62*	1
M42,0	1,50	*381,60*	1
M42,0	2,00	*318,00*	1
M42,0	3,00	*419,18*	1
M42,0	4,50	*436,53*	1
M45,0	1,50	*401,84*	1
M45,0	2,00	*326,67*	1
M45,0	3,00	*424,96*	1
M45,0	4,50	*462,54*	1
M48,0	1,50	*424,96*	1
M48,0	2,00	*332,46*	1
M48,0	3,00	*439,42*	1
M48,0	5,00	*488,56*	1
M50,0	1,50	*439,42*	1
M50,0	2,00	*346,91*	1
M50,0	3,00	*450,98*	1
M52,0	1,50	*462,54*	1
M52,0	2,00	*355,58*	1
M52,0	3,00	*491,46*	1
M52,0	5,00	*526,14*	1

2901/3 DIN ISO 1502

NO PASA | CANP | M-MF DIN 13 | Tol. 6g

Ø	P	€	
M2,0	0,40	*164,78*	1
M2,2	0,45	*193,69*	1
M2,5	0,45	*127,20*	1
M3,0	0,50	*124,31*	1
M4,0	0,50	*257,29*	1
M4,0	0,70	*115,64*	1
M4,5	0,75	*115,64*	1
M5,0	0,50	*257,29*	1
M5,0	0,80	*115,64*	1
M6,0	0,50	*257,29*	1
M6,0	0,75	*159,00*	1
M6,0	1,00	*115,64*	1
M7,0	1,00	*147,44*	1
M8,0	0,50	*248,62*	1
M8,0	0,75	*179,24*	1
M8,0	1,00	*138,76*	1
M8,0	1,25	*115,64*	1
M9,0	1,25	*159,00*	1
M10,0	0,50	*286,20*	1
M10,0	0,75	*199,47*	1
M10,0	1,00	*153,22*	1
M10,0	1,25	*187,91*	1
M10,0	1,50	*130,09*	1
M12,0	0,50	*326,67*	1
M12,0	0,75	*237,06*	1
M12,0	1,00	*173,46*	1
M12,0	1,25	*211,04*	1
M12,0	1,50	*164,78*	1
M12,0	1,75	*150,33*	1
M14,0	1,00	*185,02*	1
M14,0	1,25	*265,96*	1
M14,0	1,50	*170,56*	1
M14,0	2,00	*164,78*	1
M16,0	1,00	*199,47*	1
M16,0	1,50	*185,02*	1
M16,0	2,00	*179,24*	1
M18,0	1,00	*213,93*	1
M18,0	1,50	*199,47*	1
M18,0	2,50	*205,26*	1
M20,0	1,00	*228,38*	1
M20,0	1,50	*213,93*	1
M20,0	2,00	*228,38*	1
M20,0	2,50	*228,38*	1
M22,0	1,00	*280,42*	1
M22,0	1,50	*228,38*	1
M22,0	2,50	*245,73*	1
M24,0	1,00	*265,96*	1
M24,0	1,50	*248,62*	1
M24,0	2,00	*257,29*	1
M24,0	3,00	*260,18*	1
M25,0	1,00	*312,22*	1
M25,0	1,50	*254,40*	1
M25,0	2,00	*257,29*	1
M27,0	1,00	*335,34*	1
M27,0	1,50	*265,96*	1
M27,0	2,00	*280,42*	1
M27,0	3,00	*289,09*	1
M30,0	1,00	*318,00*	1
M30,0	1,50	*286,20*	1
M30,0	2,00	*286,20*	1
M30,0	3,00	*320,89*	1
M30,0	3,50	*318,00*	1
M32,0	1,00	*341,13*	1
M32,0	1,50	*306,44*	1
M32,0	2,00	*306,44*	1
M33,0	1,00	*349,80*	1
M33,0	1,50	*312,22*	1
M33,0	2,00	*318,00*	1
M33,0	3,00	*338,24*	1
M33,0	3,50	*344,02*	1
M36,0	1,00	*375,82*	1
M36,0	1,50	*332,46*	1
M36,0	2,00	*349,80*	1
M36,0	3,00	*370,04*	1
M36,0	4,00	*370,04*	1
M39,0	1,50	*367,14*	1
M39,0	2,00	*381,60*	1
M39,0	3,00	*396,06*	1
M39,0	4,00	*401,84*	1
M40,0	1,50	*367,14*	1
M40,0	2,00	*390,27*	1
M40,0	3,00	*407,62*	1
M42,0	1,50	*381,60*	1
M42,0	2,00	*318,00*	1
M42,0	3,00	*419,18*	1
M42,0	4,50	*436,53*	1
M45,0	1,50	*401,84*	1
M45,0	2,00	*326,67*	1
M45,0	3,00	*424,96*	1
M45,0	4,50	*462,54*	1
M48,0	1,50	*424,96*	1
M48,0	2,00	*332,46*	1
M48,0	3,00	*439,42*	1
M48,0	5,00	*488,56*	1
M50,0	1,50	*439,42*	1
M50,0	2,00	*346,91*	1
M50,0	3,00	*450,98*	1
M52,0	1,50	*462,54*	1
M52,0	2,00	*355,58*	1
M52,0	3,00	*491,46*	1
M52,0	5,00	*526,14*	1

2902/1 ISO 228-2

PASA NO PASA | CTPNP | G ISO 228

Ø	P	€	
1/8	28,00	*170,56*	1
1/4	19,00	*182,13*	1
3/8	19,00	*211,04*	1

Ø	P	€	
1/2	14,00	*239,94*	1
5/8	14,00	*254,40*	1
3/4	14,00	*277,53*	1

Ø	P	€	
7/8	14,00	*309,33*	1
1"	11,00	*326,67*	1
1"1/8	7,00	*370,04*	1

2902/4 ISO 228-2

PASA | CTP | G ISO 228

Ø	P	€	
1"1/4	11,00	*228,38*	1
1"1/2	11,00	*265,96*	1

Ø	P	€	
1"3/4	11,00	*300,66*	1
2"	11,00	*329,56*	1

Ø	P	€	
2"1/4	11,00	*358,47*	1
2"1/2	11,00	*413,40*	1

2902/5 ISO 228-2

NO PASA | CTNP | G ISO 228

Ø	P	€	
1"1/4	11,00	*228,38*	1
1"1/2	11,00	*265,96*	1

Ø	P	€	
1"3/4	11,00	*300,66*	1
2"	11,00	*329,56*	1

Ø	P	€	
2"1/4	11,00	*358,47*	1
2"1/2	11,00	*413,40*	1

2902/2 DIN ISO 228-2

PASA | CAP | Tol. A | G ISO 228

Ø	P	€	
1/8	28,00	*187,91*	1
1/4	19,00	*219,71*	1
3/8	19,00	*263,07*	1
1/2	14,00	*254,40*	1
5/8	14,00	*274,64*	1

Ø	P	€	
3/4	14,00	*291,98*	1
7/8	14,00	*329,56*	1
1"	11,00	*361,36*	1
1"1/8	11,00	*410,51*	1
1"1/4	11,00	*448,09*	1

Ø	P	€	
1"1/2	11,00	*503,02*	1
1"3/4	11,00	*555,06*	1
2"	11,00	*612,87*	1
2"1/4	11,00	*662,02*	1
2"1/2	11,00	*751,64*	1

2902/3 DIN ISO 228-2

NO PASA | CANP | Tol. A | G ISO 228

Ø	P	€	
1/8	28,00	*187,91*	1
1/4	19,00	*219,71*	1
3/8	19,00	*263,07*	1
1/2	14,00	*254,40*	1
5/8	14,00	*274,64*	1

Ø	P	€	
3/4	14,00	*291,98*	1
7/8	14,00	*329,56*	1
1"	11,00	*361,36*	1
1"1/8	11,00	*410,51*	1
1"1/4	11,00	*448,09*	1

Ø	P	€	
1"1/2	11,00	*503,02*	1
1"3/4	11,00	*555,06*	1
2"	11,00	*612,87*	1
2"1/4	11,00	*662,02*	1
2"1/2	11,00	*751,64*	1

2903/1 BS 919

PASA NO PASA | CTPNP | BSW BS 84

Ø	P	€		Ø	P	€		Ø	P	€	
1/8	40,00	*254,40*	1	1/2	12,00	*254,40*	1	7/8	9,00	*367,14*	1
1/4	20,00	*222,60*	1	5/8	11,00	*286,20*	1	1"	8,00	*422,07*	1
3/8	16,00	*234,16*	1	3/4	10,00	*329,56*	1				

2903/2 BS 919

PASA | CAP | BSW BS 84

Ø	P	€		Ø	P	€		Ø	P	€	
1/8	40,00	*211,04*	1	1/2	12,00	*225,49*	1	7/8	9,00	*349,80*	1
1/4	20,00	*179,24*	1	5/8	11,00	*263,07*	1	1"	8,00	*390,27*	1
3/8	16,00	*202,36*	1	3/4	10,00	*306,44*	1				

2903/3 BS 919

NO PASA | CANP | BSW BS 84

Ø	P	€		Ø	P	€		Ø	P	€	
1/8	40,00	*211,04*	1	1/2	12,00	*225,49*	1	7/8	9,00	*349,80*	1
1/4	20,00	*179,24*	1	5/8	11,00	*263,07*	1	1"	8,00	*390,27*	1
3/8	16,00	*202,36*	1	3/4	10,00	*306,44*	1				

2904/1 ANSI / ASME B1.2

PASA NO PASA | CTPNP | UNC ANSI/ASME B1.1 | Tol. 2B

Ø	P	€	
N°4	40,00	*260,18*	1
N°5	40,00	*274,64*	1
N°6	32,00	*164,78*	1
N°8	32,00	*159,00*	1
N°10	24,00	*156,11*	1
N°12	24,00	*150,33*	1
1/4	20,00	*150,33*	1

Ø	P	€	
5/16	18,00	*156,11*	1
3/8	16,00	*156,11*	1
7/16	14,00	*164,78*	1
1/2	13,00	*176,34*	1
9/16	12,00	*182,13*	1
5/8	11,00	*196,58*	1
3/4	10,00	*219,71*	1

Ø	P	€	
7/8	9,00	*248,62*	1
1"	8,00	*277,53*	1
1"1/8	7,00	*306,44*	1
1"1/4	7,00	*332,46*	1
1"3/8	6,00	*358,47*	1
1"1/2	6,00	*396,06*	1

2904/2 ANSI / ASME B1.2

PASA | CAP | UNC ANSI/ASME B1.1 | Tol. 2A

Ø	P	€	
N°4	40,00	*239,94*	1
N°5	40,00	*179,24*	1
N°6	32,00	*176,34*	1
N°8	32,00	*164,78*	1
N°10	24,00	*159,00*	1
N°12	24,00	*153,22*	1
1/4	20,00	*153,22*	1

Ø	P	€	
5/16	18,00	*164,78*	1
3/8	16,00	*176,34*	1
7/16	14,00	*187,91*	1
1/2	13,00	*211,04*	1
9/16	12,00	*234,16*	1
5/8	11,00	*254,40*	1
3/4	10,00	*289,09*	1

Ø	P	€	
7/8	9,00	*335,34*	1
1"	8,00	*375,82*	1
1"1/8	7,00	*416,29*	1
1"1/4	7,00	*477,00*	1
1"3/8	6,00	*526,14*	1
1"1/2	6,00	*560,84*	1

2904/3 ANSI / ASME B1.2

NO PASA | CANP | UNC ANSI/ASME B1.1 | Tol. 2A

Ø	P	€	
N°4	40,00	*239,94*	1
N°5	40,00	*179,24*	1
N°6	32,00	*176,34*	1
N°8	32,00	*164,78*	1
N°10	24,00	*159,00*	1
N°12	24,00	*153,22*	1
1/4	20,00	*153,22*	1

Ø	P	€	
5/16	18,00	*164,78*	1
3/8	16,00	*176,34*	1
7/16	14,00	*187,91*	1
1/2	13,00	*211,04*	1
9/16	12,00	*234,16*	1
5/8	11,00	*254,40*	1
3/4	10,00	*289,09*	1

Ø	P	€	
7/8	9,00	*335,34*	1
1"	8,00	*375,82*	1
1"1/8	7,00	*416,29*	1
1"1/4	7,00	*477,00*	1
1"3/8	7,00	*526,14*	1
1"1/2	7,00	*560,84*	1

2905/1 ANSI / ASME B1.2

PASA NO PASA | CTPNP | UNF ANSI/ASME B1.1 | Tol. 2B

Ø	P	€	
Nº4	48,00	*260,18*	1
Nº5	44,00	*170,56*	1
Nº6	40,00	*164,78*	1
Nº8	36,00	*159,00*	1
Nº10	32,00	*156,11*	1
Nº12	28,00	*175,74*	1
1/4	28,00	*150,33*	1

Ø	P	€	
3/8	24,00	*156,11*	1
5/16	24,00	*156,11*	1
1/2	20,00	*176,34*	1
7/16	20,00	*164,78*	1
5/8	18,00	*187,91*	1
9/16	18,00	*182,13*	1
3/4	16,00	*208,14*	1

Ø	P	€	
7/8	14,00	*228,38*	1
1"	12,00	*254,40*	1
1"1/8	12,00	*277,53*	1
1"1/4	12,00	*291,98*	1
1"3/8	8,00	*318,00*	1
1"1/2	12,00	*349,80*	1

2905/2 ANSI / ASME B1.2

PASA | CAP | UNF ANSI/ASME B1.1 | Tol. 2A

Ø	P	€	
Nº4	48,00	*237,06*	1
Nº5	44,00	*179,24*	1
Nº6	40,00	*176,34*	1
Nº8	36,00	*164,78*	1
Nº10	32,00	*159,00*	1
Nº12	28,00	*159,00*	1
1/4	28,00	*153,22*	1

Ø	P	€	
3/8	24,00	*176,34*	1
5/16	24,00	*164,78*	1
1/2	20,00	*211,04*	1
7/16	20,00	*187,91*	1
5/8	18,00	*254,40*	1
9/16	18,00	*234,16*	1
3/4	16,00	*289,09*	1

Ø	P	€	
7/8	14,00	*335,34*	1
1"	12,00	*375,82*	1
1"1/8	12,00	*439,42*	1
1"1/4	12,00	*477,00*	1
1"3/8	8,00	*526,14*	1
1"1/2	12,00	*560,84*	1

2905/3 ANSI / ASME B1.2

NO PASA | CANP | UNF ANSI/ASME B1.1 | Tol. 2A

Ø	P	€	
Nº4	48,00	*237,06*	1
Nº5	44,00	*179,24*	1
Nº6	40,00	*176,34*	1
Nº8	36,00	*164,78*	1
Nº10	32,00	*159,00*	1
Nº12	28,00	*159,00*	1
1/4	28,00	*153,22*	1

Ø	P	€	
3/8	24,00	*176,34*	1
5/16	24,00	*164,78*	1
1/2	20,00	*211,04*	1
7/16	20,00	*187,91*	1
5/8	18,00	*254,40*	1
9/16	18,00	*234,16*	1
3/4	16,00	*289,09*	1

Ø	P	€	
7/8	14,00	*335,34*	1
1"	12,00	*375,82*	1
1"1/8	12,00	*439,42*	1
1"1/4	12,00	*477,00*	1
1"3/8	8,00	*526,14*	1
1"1/2	12,00	*560,84*	1

2906/1 ANSI / ASME B1.20.1

PASA NO PASA | CTPNP | NPT ANSI/ASME B1.1

Ø	P	€	
1/16	27,00	*332,46*	1
1/8	27,00	*364,26*	1
1/4	18,00	*384,49*	1
3/8	18,00	*413,40*	1
1/2	14,00	*448,09*	1

Ø	P	€	
3/4	14,00	*500,13*	1
1"	11,50	*575,29*	1
1"1/4	11,50	*685,14*	1
1"1/2	11,50	*766,09*	1
2"	11,50	*994,88*	1

2906/2 ANSI / ASME B1.20.1

PASA NO PASA | CAPNP | NPT ANSI/ASME B1.1

Ø	P	€	
1/16	27,00	*576,82*	1
1/8	27,00	*607,09*	1
1/4	18,00	*636,00*	1
3/8	18,00	*604,20*	1
1/2	14,00	*653,34*	1

Ø	P	€	
3/4	14,00	*714,06*	1
1"	11,50	*803,67*	1
1"1/4	11,50	*939,54*	1
1"1/2	11,50	*1037,84*	1
2"	11,50	*1260,44*	1

2907/1 DIN 7162

PASA NO PASA | H7 | CTLPNP

Ø	€	
1	78,06	1
2	86,73	1
3	86,73	1
4	78,06	1
5	78,06	1
6	78,06	1
7	72,27	1
8	72,27	1
9	72,27	1
10	72,27	1
11	83,84	1
12	83,84	1
13	83,84	1
14	83,84	1
15	89,62	1
16	89,62	1
17	89,62	1
18	89,62	1

Ø	€	
19	101,18	1
20	101,18	1
21	101,18	1
22	101,18	1
23	106,96	1
24	106,96	1
25	106,96	1
26	106,96	1
27	106,96	1
28	118,53	1
30	118,53	1
32	118,53	1
33	132,98	1
34	132,98	1
35	132,98	1
36	132,98	1
37	132,98	1
38	132,98	1

Ø	€	
40	141,66	1
42	141,66	1
44	159,00	1
45	159,00	1
46	159,00	1
47	159,00	1
48	159,00	1
50	196,58	1
52	196,58	1
55	196,58	1
58	239,94	1
60	239,94	1
62	239,94	1
65	257,29	1
68	257,29	1
70	257,29	1

2907/4 DIN 7162

PASA | H7 | CTLP

Ø	€	
72	170,56	1
75	170,56	1
78	187,91	1
80	187,91	1

2907/5 DIN 7162

NO PASA | H7 | CTLNP

Ø	€	
72	*170,56*	1
75	*170,56*	1
78	*187,91*	1
80	*187,91*	1

2907/2 DIN 2250-C

CAL

Ø	€	
4	*265,96*	1
5	*265,96*	1
6	*213,93*	1
7	*213,93*	1
8	*213,93*	1
9	*213,93*	1
10	*213,93*	1
11	*219,71*	1
12	*219,71*	1
13	*219,71*	1
14	*219,71*	1
15	*239,94*	1
16	*239,94*	1
17	*239,94*	1
18	*239,94*	1
19	*248,62*	1
20	*248,62*	1
21	*248,62*	1
22	*248,62*	1

Ø	€	
23	*263,07*	1
24	*263,07*	1
25	*263,07*	1
26	*263,07*	1
27	*263,07*	1
28	*277,53*	1
30	*277,53*	1
32	*277,53*	1
33	*300,66*	1
34	*300,66*	1
35	*300,66*	1
36	*300,66*	1
37	*300,66*	1
38	*300,66*	1
40	*326,67*	1
42	*326,67*	1
44	*341,13*	1
45	*341,13*	1
46	*341,13*	1

Ø	€	
47	*341,13*	1
48	*341,13*	1
50	*361,36*	1
52	*361,36*	1
55	*361,36*	1
58	*381,60*	1
60	*381,60*	1
62	*381,60*	1
65	*401,84*	1
68	*401,84*	1
70	*401,84*	1
72	*427,86*	1
75	*427,86*	1
78	*468,33*	1
80	*468,33*	1
82	*468,33*	1
85	*517,47*	1
90	*517,47*	1

2801 Giramachos / Tourne-à-gauche / Tap turners / Schneideisenhalter

Ø	Nº	€	mm	
M1 - M12	1	*18,85*	2,00 - 7	1
M4 - M12	2	*25,19*	3,00 - 9,00	1
M5 - M20	3	*35,84*	4,90 - 12,00	1
M10 - M27	4	*57,18*	5,50- 16,00	1

Ø	Nº	€	mm	
M13 - M32	5	*120,18*	7,00 - 20,00	1
M18 - M42	6	*120,18*	11,00 - 24,00	1
M25 - M52	7	*208,37*	16,00 - 32,00	1
M45 - M60	8	*301,15*	25,00- 36,00	1

2802 Volvedor / Porte-filière / Tap wrench / Windeisen

Ø Ext.	H mm	€	
16,00	5,00	*10,45*	1
20,00	5,00	*10,68*	1
20,00	7,00	*10,71*	1
20,60	6,35	*10,68*	1
25,00	9,00	*12,71*	1
25,40	9,50	*12,71*	1
30,00	11,00	*14,32*	1
38,00	14,00	*18,88*	1
38,10	12,70	*18,88*	1
45,00	14,00	*23,46*	1
45,00	18,00	*23,46*	1

Ø Ext.	H mm	€	
50,80	15,90	*30,71*	1
55,00	16,00	*30,71*	1
55,00	22,00	*30,71*	1
65,00	18,00	*47,17*	1
65,00	25,00	*47,17*	1
75,00	20,00	*75,45*	1
75,00	30,00	*75,44*	1
90,00	22,00	*95,56*	1
90,00	36,00	*95,57*	1
105,00	22,00	*102,04*	1
105,00	36,00	*102,05*	1

2803 Giramacho T / Tourne-à-gauce en T / Tap turner in T / T-Typ Schneideisenhalter

M DIN	M ISO	€	L mm	gr	mm	
M3 - 10	M3 - 6	*21,81*	85	180	2,60 - 5,50	1
M5 - 12	M6 - 12	*28,46*	110	300	4,60 - 8,00	1
M13- 20	M14 - 20	*132,20*	117	400	9,00 - 12,50	1

2804 Giramacho T / Tourne-à-gauce en T / Tap turner in T / T-Typ Schneideisenhalter

M DIN	M ISO	€	L mm	gr	mm	
M3-10	M3-6	*34,93*	250	250	2,60 - 5,50	1
M5-12	M6-12	*41,63*	300	440	4,60 - 8,00	1

2805 Extractor / Extracteur / Extractor / Auszieher

M	Z	€	
M3	3	*35,30*	1
M4	3	*35,30*	1
M5	3	*35,30*	1
M6	3	*36,19*	1
M8	4,3	*38,14*	1

M	Z	€	
M10	4,3	*39,57*	1
M12	4,3	*42,61*	1
M14	4,3	*58,69*	1
M16	4,3	*64,00*	1

2808 Alargador / Adaptateur / Extension piece / Verlängerungsstück

mm	€	L mm	
2,10	*6,84*	60	1
2,40	*6,84*	60	1
2,70	*6,84*	80	1
3,00	*6,84*	90	1
3,40	*10,71*	95	1
3,80	*11,21*	95	1
4,30	*11,96*	110	1
4,90	*12,48*	110	1
5,50	*13,07*	115	1
6,20	*16,85*	120	1
7,00	*17,56*	125	1

mm	€	L mm	
8,00	*19,91*	130	1
9,00	*23,54*	130	1
10,00	*28,44*	130	1
11,00	*32,96*	150	1
12,00	*35,52*	155	1
13,00	*49,07*	155	1
14,50	*56,35*	175	1
16,00	*59,59*	180	1
18,00	*67,94*	200	1
20,00	*90,55*	220	1

2834 Extractor / Extracteur / Extractor / Auszieher

M	ø mm	€	L mm	mm	
M3 - 6	1,80 - 7,00	*2,36*	50	2,70	1
M6 - 8	3,20 - 10,00	*2,36*	57	3,80	1
M8 - 11	4,50 - 13,00	*2,80*	64	4,90	1
M11 - 14	6,50 - 16,00	*3,46*	71	7,00	1
M14 - 18	8,50 - 21,00	*4,47*	79	9,00	1
M18 - 24	12,00	*7,20*	85	12,00	1
M24 - 33	15,30	*11,06*	92	14,50	1
M33 - 45	20,00	*16,17*	100	18,00	1

JUEGOS / JEUX / SETS

M	Pcs.	€	
M3 - 18	5	*17,77*	1
M3 - 24	6	*25,08*	1
M3 - 45	8	*52,54*	1

2846 Aceite / Huile / Oil / Öl

Envase /Emballage/ Packaging	Litr.	€	
Aerosol /Pulvérisateur/ Spray	400 ml	*23,21*	1
Granel /Vrac/ Bulk	1 l.	*31,41*	1
Granel /Vrac/ Bulk	5 l.	*113,95*	1

2821 Macho 3º / Taraud 3º / Tap 3º / Gewindebohrer 3º

M
DIN 13

HSS
(1101 + 2301/3)

HSSCO
(1105 + 2314/3)

HSSCO INOX
(1105 + 2303/3)

	Machos Tarauds / Taps	Brocas Forets / Drill-bits	Giramachos nº Tourne-à-gauche nº Tap turner nº	€
HSS	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	1,50	*113,06*
HSSCO	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	1,50	*158,78*
HSSCO INOX	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	1,50	*141,94*

2822/2840 Juegos de machos / Jeux de taraud / Tap set

M
DIN 13

>2822
(2301)

>2840
(1101 + 2301)

Ref.	Machos Tarauds / Taps	Brocas Forets / Drill-bits		€
2822 (2301)	M3-4-5-6-8-10-12	-		*190,39*
2840 (2301)	M3-4-5-6-8-10-12	(1101)	2,50-3,30-4,20-5,00-6,80-8,50-10,20	*207,71*

2824 M3-12

Form. B "Gun" | M 3-4-5-6-8-10-12 | 7

>HSS E (2103/2014)

>HSSE-PM (2125/2126)

>HSSE VAP (2250/2251)

>HSSE TIN (2115/2116)

REF.	€
HSS E	*128,60*
HSSE-PM	*236,79*
HSSE VAP	*145,83*
HSSE TIN	*210,58*

2825 M3-12

M 3-4-5-6-8-10-12 | 7

>HSS E (2105/2106)

>HSSE-PM (2123/2124)

>HSSE VAP (2252/2253)

>HSSE TIN (2117/2118)

REF.	€
HSS E	*152,86*
HSSE-PM	*257,29*
HSSE VAP	*173,67*
HSSE TIN	*220,63*

2850 M3-12

Form B | M 3-4-5-6-8-10-12 | Ø 2,5-3,3-4,2-5-6, 8-8,5-10,2 | 14

>HSSE + HSSCO (1105 + 2103/2104)

>HSSEVAP + HSSCO (1105 + 2250/2251)

REF.	€
HSSE+HSSCO	*164,66*
HSSEVAP(INOX)+HSSCO	*181,90*

2851 M3-12

M 3-4-5-6-8-10-12 | Ø 2,5-3,3-4,2-5-6, 8-8,5-10,2 | 14

>HSSE + HSSCO (1105 + 2105/2106)

>HSSEVAP + HSSCO (1105 + 2252/2253)

REF.	€
HSSE+HSSCO	*188,92*
HSSEVAP(INOX)+HSSCO	*209,73*

2809/2810 M3-12 — M DIN 13

›2809
(1101 + 2301 + 2501)

›2810
(2301 + 2501)

Ref.	**Machos y cojinetes** Tarauds et filières Taps and bearing	**Brocas** Forets/Drill-bits	**Volvedores** Porte-filières Tap wrench	**Giramachos nº** Tourne-à-gauche nº Tap turner nº	**Carraca nº** Cliquet nº Ratchet nº	€
2809	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	20x5-20x7-25x9-30x11-38x40	1-2	-	*359,18*
2810	M3-4-5-6-8-10-12	-	25x9	1-1/2	1	*245,43*

2811/2812 M3-20 / M5-20 — M DIN 13

›2811/2812
(2301 + 2501)

Ref.	**Machos y cojinetes** Tarauds et filières Taps and bearing	**Volvedores** Porte-filières Tap wrench	**Giramachos nº** Tourne-à-gauche nº Tap turner nº	**Carraca nº** Cliquet nº Ratchet nº	€
2811	M3-4-5-6-8-10-12-14-16-18-20	20x5-20x7-25x9-30x11-38x14-45x18	1 - 3	1 - 2	*718,33*
2812	M5-6-8-10-12-14-16-18-20	20x7-25x9-30x11-38x14-45x18	1 - 3	1 - 2	*682,43*

2813/2814 M3-24 / M5-30 — M DIN 13

›2813/2814
(2301 + 2501)

Ref.	**Machos y cojinetes** Tarauds et filières Taps and bearing	**Volvedores** Porte-filières Tap wrench	**Giramachos nº** Tourne-à-gauche nº Tap turner nº	€
2813	M3-4-5-6-8-10-12-14-16-18-20-22-24	20x5-20x7-25x9-30x11-38x14-45x18-55x22	1 - 4	*1122,38*
2814	M5-6-8-10-12-14-16-18-20-22-24-27-30	20x7-25x9-30x11-38x14-45x18-55x22-65x25	3 - 5	*1904,75*

2841/2842 MF3-12 / MF6-20 — MF DIN 13

›2841
(2301 + 2501)

›2842
(2301 + 2501)

Ref.	**Machos y cojinetes** Tarauds et filières Taps and bearing	**Volvedores** Porte-filières Tap wrench	**Giramachos nº** Tourne-à-gauche nº Tap turner nº	**Carraca nº** Cliquet nº Ratchet nº	€
2841	M3x0,35-4x0,50-5x0,50-6x0,75-8x0,75 8x1,00-10x1,00-12x1,50	20x5-25x9-30x11-38x10	1 - 2	1	*737,04*
2842	M6x0,75-8x0,75-8x1,00-10x1,00-12x1,00-12x1,50 14x1,25-14x1,50-16x1,50-18x1,50-20x1,50	20x7-25x9-30x11-38x10-45x14	1 - 3	1	*1236,51*

2815/2816/2817 W1/8-1/2, W1/4-1/2, W1/4-1"

BSW
BS 84

›2815
(2304 + 2502)

›2816
(2304 + 2502)

›2817
(2304 + 2502)

Ref.	**Machos y cojinetes** Tarauds et filières Taps and bearing	**Volvedores** Porte-filières Tap wrench	**Giramachos nº** Tourne-à-gauche nº Tap turner nº	**Carraca nº** Cliquet nº Ratchet nº	€
2815	W1/8-3/16-1/4-5/16-3/8-7/16-1/2	20x5-20x7-25x9-30x11-38x14	1 - 2	1	*589,02*
2816	W1/4-5/16-3/8-7/16-1/2	20x7-25x9-30x11-38x14	1 - 2	1	*499,24*
2817	W1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	20x7-25x9-30x11-38x14-45x18-55x22	1 - 4	-	*1376,8*

2843/2818 UNC1/4", UNF1/4-1"

UNC
ANSI/ASME B1.1

UNF
ANSI/ASME B1.1

›2843/2818
(2307 + 2505)

Ref.	**Machos y cojinetes** Tarauds et filières Taps and bearing	**Volvedores** Porte-filières Tap wrench	**Giramachos nº** Tourne-à-gauche nº Tap turner nº	€
2843	UNC1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	20x7-25x9-30x11-38x14-45x18-55x22	1 - 4	*1983,12*
2818	UNF1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	20x7-25x9-30x11-38x10-45x14-55x16	1 - 4	*1257,05*

2819/2820 BSP1/8-1", BSP1/4-1"1/2

G
ISO 228

>2819
(2306 + 2504)

>2820
(2306 + 2504)

Ref.	**Machos y cojinetes** Tarauds et filières Taps and bearing	**Volvedores** Porte-filières Tap wrench	**Giramachos nº** Tourne-à-gauche nº Tap turner nº	€
2819	BSP1/8-1/4-3/8-1/2-3 4-1"	30x11-38x10-45x14-65x18-55x18	1 - 3 - 5	*969,73*
2820	BSP1/4-3/8-1/2-3/4-1"-1"1/4-1"1/2	38x10-45x14-65x18-75x20-90x22	2 - 4 - 7	*2262,73*