MITSUBISHI MATERIALS

HERRAMIENTAS DE TALADRADO

DIAEDGE

NEW

MITSUBISHI MATERIALS

LES PRESENTA SU
NUEVO CATÁLOGO GENERAL C009 – 2022/2023

ESPECÍFICO, COMPACTO, PRÁCTICO.

Los productos de Mitsubishi Materials se mostrarán ahora en catálogos individuales, divididos por gamas de productos para ofrecer a los usuarios un acceso rápido y fácil a la información de los productos que necesiten.

El nuevo catálogo se comprende en los siguientes cinco volúmenes:

- **HERRAMIENTAS DE TORNEADO**
- **HERRAMIENTAS DE TALADRADO**
- **FRESADO INTEGRAL**
- **FRESADO CON PLACAS INTERCAMBIABLES**
- **MPLUS**

NUEVO DISEÑO

MANEJO SENCILLO

MAYOR FLEXIBILIDAD

ÁREAS DE APLICACIÓN INDIVIDUALES

La caja nos permite un fácil almacenamiento y ofrece un espacio para que pueda añadir los próximos catálogos suplementarios, incluidas las novedades que se publicarán dentro de los 2 años de vigencia del catálogo general. Cada catálogo/folleto de novedades actualizará la versión anterior, por lo tanto, puede reemplazar las versiones antiguas si es necesario.

NOTAS:

- Con esta publicación, todos los catálogos generales y catálogos/folletos de novedades anteriores pierden su validez.
- Los catálogos/folletos de novedades de productos se publican dos veces al año, en abril y en octubre.
- El nuevo catálogo general se puede solicitar solo como un conjunto de cinco. **Número de pedido: C009S**

VERSIÓN DIGITAL

Para acceder a la versión digital del catálogo, por favor, escanee el código QR o visite www.mhg-mediastore.net

HERRAMIENTAS DE TALADRADO

RENDIMIENTO: REDEFINICIÓN DE LOS PARÁMETROS

La industria de fabricación moderna avanza con rapidez, por lo que Mitsubishi Materials se esfuerza continuamente por mantenerse al día en el mercado.

En contacto constante con nuestros socios y clientes, ofrecemos soluciones para cualquier situación.

Desde la broca de placa intercambiable MVX para agujeros con una profundidad de hasta 6 x D, hasta la MPS1 de gran profundidad, Mitsubishi Materials cuenta con soluciones individuales para todas las aplicaciones de taladrado.

DIAEDGE

CREAMOS UN FUTURO MEJOR

JUNTO A NUESTROS CLIENTES

Anunciamos el lanzamiento de DIAEDGE, una nueva marca de producto que une nuestras tecnologías avanzadas de corte con la emoción de todos aquellos que las usan.

Nuestro objetivo no es solo ofrecer valor con nuestras herramientas, sino también desarrollar nuevas ideas con nuestros clientes, compartir nuestra inspiración con ellos y seguir afrontando nuevos desafíos.

MITSUBISHI MATERIALS

2022/2023

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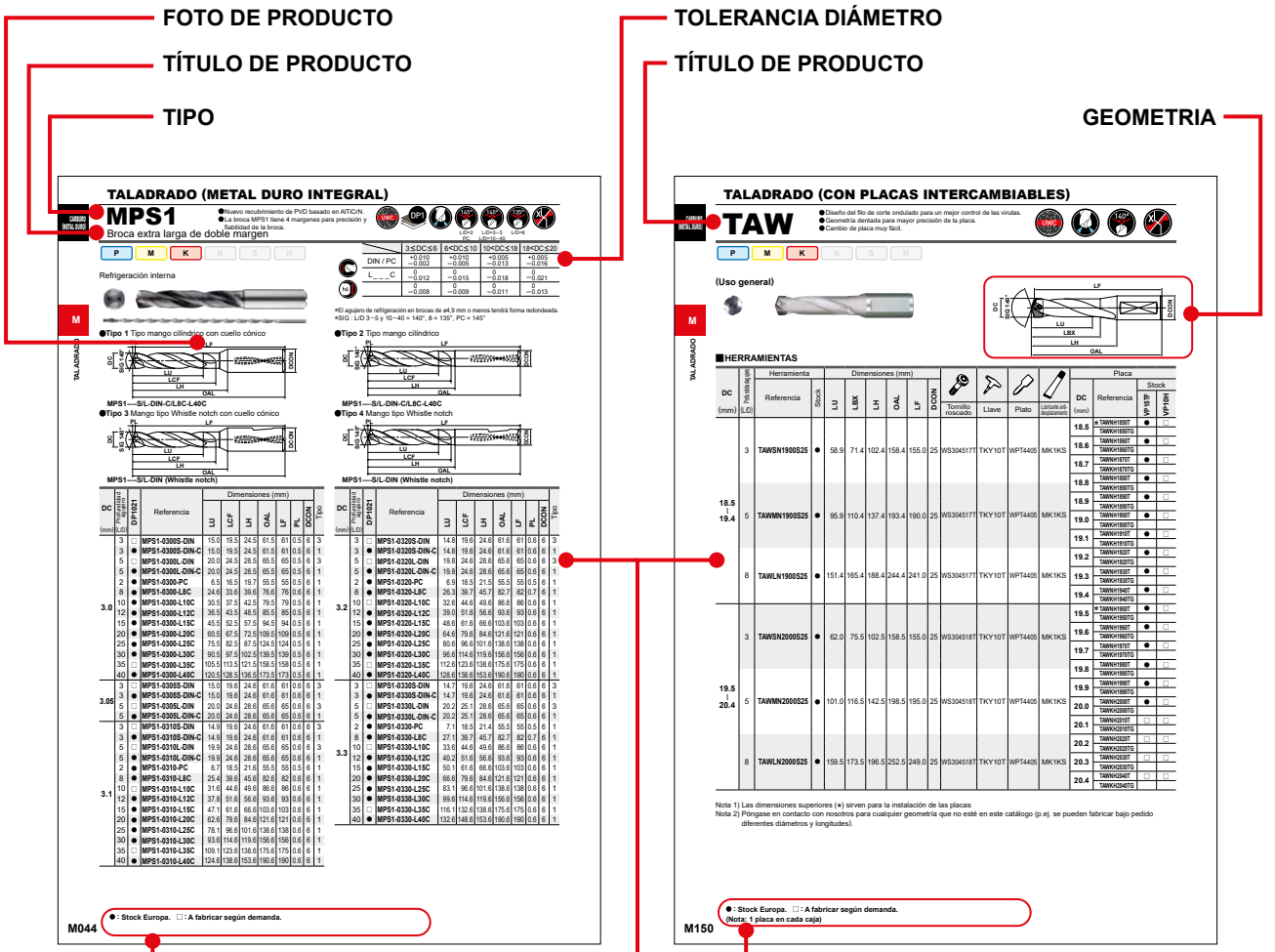
COMO INTERPRETAR LA PÁGINA ESTÁNDAR DE BROCAS

●Como está organizada esta página

①Organizada según aplicación para cada broca.



PRODUCTO ESTÁNDAR
Indica el diámetro, referencia, situación de stock, número de hélices, dimensiones, según tipo de productos.

LEYENDA PARA SITUACIÓN DE STOCK
se muestra en la parte izquierda de cada doble página.

HERRAMIENTAS PARA TALADRAR

IDENTIFICACIÓN DEL CÓDIGO DE PRODUCTO **M002**
DESCRIPCIONES DE LOS SÍMBOLOS **M003**
CLASIFICACIÓN DE LAS BROCAS **M004**

ESTÁNDAR DE BROCAS

METAL DURO INTEGRAL

MSE ..... [Micro Broca] **M008**
MSP ..... [Broca punteadora] **M011**
DLE ..... [Broca de metal duro para centrado y biselado] **M012**
MINI-MFE ..... [Broca de base plana de metal duro] **M018**
NEW **MINI-DWAE** ..... [Para tornos multihusillos y pequeños tornos CNC] **M020**
NEW **DWAE** ..... [Para tornos multihusillos y pequeños tornos CNC] **M021**
MINI-MVS ..... [Broca de doble margen con refrigeración interna] **M036**
MINI-MWS ..... [Broca de margen simple con refrigeración interna] **M040**
MPS1 ..... [Broca extra larga de doble margen] **M044**
MPS ..... [Broca extra larga de doble margen] **M062**
MSL ..... [Broca extra larga con doble margen] **M074**
MICRO-MGS ..... [Micro GUN DRILL con refrigeración interna] **M079**
MMS ..... [Broca con un solo agujero de refrigeración para inoxidable] **M082**
NEW **DSAS** ..... [Para mecanizado de aleaciones termorresistentes] **M096**
MNS ..... [Broca para aluminio con 4 agujeros refrigerantes] **M100**
MAE/MAS ..... [Broca de alta precision para aluminio] **M124**
MHS ..... [Broca de precisión para materiales endurecidos] **M130**

PARA CFRP

MCC ..... [Para máquina CNC / CFRP] **M188**
MCA ..... [Para máquina CNC / CFRP + Al] **M189**
MCT ..... [Para máquina CNC / CFRP + Ti] **M190**
MCW ..... [Para máquina CNC / alta precisión en material apilado y CFRP] **M191**
MCCH ..... [Para herramienta manual / CFRP] **M192**
MCAH ..... [Para herramienta manual / CFRP + Al] **M193**

CON PLACAS INTERCAMBIABLES

STAW ..... [Broca con placa intercambiable de pequeño diámetro] **M141**
TAW ..... [Broca con placa intercambiable] **M150**
MVX ..... [Broca con placa intercambiable] **M160**
JUST FIT SLEEVE **M172**

BROCAS HSS

BROCAS VIOLET

VAPDS ..... [Broca corta para acero] **M174**
VAPDM ..... [Broca media para acero] **M179**
VSD ..... [Broca larga para acero inoxidable] **M183**
VAPDSCB ..... [Broca de acero para mandrinado] **M185**

*Índice por orden alfabetico

M012 **DLE**
M096 **DSAS**
M021 **DWAE**
M172 **JFS (CASQUILLO)**
M124 **MAE**
M124 **MAS**
M189 **MCA**
M193 **MCAH**
M188 **MCC**
M192 **MCCH**
M190 **MCT**
M191 **MCW**
M130 **MHS**
M079 **MICRO-MGS**
M020 **MINI-DWAE**
M018 **MINI-MFE**
M036 **MINI MVS**
M040 **MINI MWS**
M082 **MMS**
M100 **MNS**
M062 **MPS**
M044 **MPS1**
M008 **MSE**
M074 **MSL**
M011 **MSP**
M160 **MVX**
M168 **MVX (PLACAS)**
M141 **STAW**
M144 **STAW (PLACAS)**
M150 **TAW**
M155 **TAW (PLACAS)**
M179 **VAPDM**
M174 **VAPDS**
M185 **VAPDSCB**
M183 **VSD**

⚠ Las referencias marcadas en gris (MPS, MSL) van a ser descatalogadas y sustituidas por la gama MPS1, por ello le recomendamos cambiar todas las referencias gradualmente en los próximos pedidos.

IDENTIFICACIÓN DEL CÓDIGO DE PRODUCTO

CÓDIGO DE PRODUCTO DE LAS BROCAS

MV **S** **0300** **X** **S**

Nombre de la broca

DLE : Brocas DLE
DSA : Brocas DSAS
DWA : Brocas DWAE
MPS1 : Brocas MPS1
MV : Brocas MVS
MW : Brocas MWS
MF : Brocas MFE
MG : Brocas MGS
MSL : Brocas MSL
MP : Brocas MPS
MA : Brocas MAE/MAS
MS : Brocas MSE
MM : Brocas MMS
MN : Brocas MNS
MH : Brocas MHS
MC : Brocas MC

Tipo de refrigeración

E : Refrigeración externa
S : Refrigeración interna

Diámetro

Ejemplo
0050 → ϕ 0.5
0300 → ϕ 3.0

L/D

S : 2D
M : 3D
L : 5D
(Las brocas MAE / MAS son 6D)
L8C : 8D
L10C : 10D
L12C : 12D
L15C : 15D
L20C : 20D
L25C : 25D
L30C : 30D
L40C : 40D
X : 12D
X8DB : 8D
X10DB : 10D
X15DB : 15D
X20DB : 20D
X25DB : 25D
X30DB : 30D

Tipo de diámetro del mango

A : Mango con el mismo diámetro de la broca
B : Mango con diámetro fijo
C : Tipo mango cilíndrico
S*** : Diámetro del mango

* Excepciones incluidas parcialmente.

VA **PD** **S** **D0050**

Nombre de la broca

VA : Brocas de precisión con recubrimiento Violet (Alto grado, Acero rápido)
V : Brocas Violet

Aplicaciones

SD : Broca recta de uso general
PD : Para mecanizado de alta precisión

Longitud de la hélice

S : Corto
M : Medio

Diámetro

Ejemplo
D0300 → ϕ 3.0
D0050 → ϕ 0.5

* Excepciones incluidas parcialmente.

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DESCRIPCIONES DE LOS SÍMBOLOS

Material

Metal duro de ultra micro-grano
El metal duro de ultra-micrograno se utiliza para las herramientas de corte.

HSS de aleación de alto grado
La HSS de aleación de alto grado se utiliza para las herramientas de corte.

Acero rápido de cobalto
El acero rápido con contenido en cobalto se utiliza como material de sustrato.

Acero rápido
El acero rápido se utiliza como material de substrato.

Núcleo de la broca

Reducción del alma X
La reducción del alma X se utiliza en el filo de corte de la broca.

Reducción del alma Z
La reducción del alma Z se utiliza en el filo de corte de la broca.

Reducción del alma XR
La reducción del alma XR se utiliza en el filo de corte de la broca.

Reducción del alma N
La reducción del alma N se utiliza en el filo de corte de la broca.

Tolerancia

Tolerancia del diámetro de la broca

Tolerancia del diámetro del mango

Agujero de refrigeración

Con agujero de refrigeración

Rango de aplicación según el material de trabajo

1ª Recomendación

P M K N S H

No recomendada

P M K N S H

Recubrimiento

Recubrimiento MIRACLE
Recubrimiento original (Al,Ti)N.
También apto para corte seco.

Recubrimiento PVD
DP102A es una calidad de metal duro convencional recubierto por PVD especializado para brocas de diámetro pequeño, con una resistencia al desgaste mejorada.

Recubrimiento PVD
Ofrece una excelente resistencia al desgaste con un amplio rango de materiales de trabajo; acero, materiales a base de hierro fundido y aleaciones de aluminio.

Recubrimiento PVD
Metal duro convencional de ultramicrograno óptimo para acero inoxidable, y un recubrimiento por PVD con una excelente resistencia al calor y lubricidad.

Recubrimiento PVD
DP9020 ofrece alta resistencia al desgaste y a la rotura, por lo que ofrece una larga vida útil de la herramienta.

Recubrimiento VIOLET
Prolonga la vida de la herramienta 2 o 3 veces más que los productos con recubrimiento TiN.

Recubrimiento de diamante CVD
La tecnología exclusiva multigrano y multicapa de control de cristal de diamante mejora drásticamente la resistencia al desgaste y la suavidad.

Ángulo de filo de corte

Ángulo de la punta
Indica el ángulo de la broca en la punta.

CLASIFICACIÓN DE LAS BROCAS

Material	Diámetro	Profundidad agujero (L/D)	Nombre de producto	Refrigeración	Recubrimiento	Material P: Acero carbono, Acero aleado	Material M: Acero Inoxidable	Material K: Fundición	Material N: Aleación ligera	Material S: Aleaciones termo-resistentes	Material H: Acero endurecido	Forma	Página: Dimensiones	Página: Condiciones de corte
Integral Metal Duro	ϕ0.1 −ϕ0.99	5−12	**MSE**	Externa	VP	◎	○	◎	○	○		MSP= broca piloto para MSE	M008	M009
	ϕ1.0 −ϕ16.0	–	**DLE**	Externa	DP1 DP1A	◎	◎	◎				SIG=60°, 90°, 120°, 145°	M012	M016
	ϕ0.75 −ϕ2.95	2	**MINI-MFE**	Externa	DP1A	◎	◎	◎	○				M018	M019
	ϕ1.0 −ϕ2.9	2,4	NEW **MINI-DWAE**	Externa	DP1A	◎	◎	◎					M020	M027
	ϕ3.0 −ϕ14.0	2,4	NEW **DWAE**	Externa	DP1A	◎	◎	◎					M021	M027
	ϕ1.0 −ϕ2.9	*2−30	**MINI-MVS**	Interna	DP1	◎	◎	○	○	○			M036	M038
	ϕ0.5 −ϕ0.99	1−12	**MINI-MWS**	Interna	VP	◎	◎	○	○	○			M040	M042
	ϕ3.0 −ϕ20.0	3−40	**MPS1**	Interna	DP1	◎	○	◎				MPS1-xxxx-PC=broca piloto para MPS1	M044	M059
	ϕ3.0 −ϕ20.0	3−40	**MPS**	Interna	VP	◎	○	◎		○			M062	M077
	ϕ3.0 −ϕ14.0	20−30	**MSL**	Interna	VP	◎	◎	◎		○			M074	M077
	ϕ0.95 −ϕ12.0	1−30	**MHS**	Interna	VP	○	○			○	◎		M130	M138
	ϕ3.0 −ϕ20.0	3, 5	**MMS**	Interna	DP7		◎						M082	M094
	ϕ3.0 −ϕ12.0	3	NEW **DSAS**	Interna	DP9					◎			M096	M099
	ϕ0.7 −ϕ3.0	−80	**MICRO-MGS**	Interna	–	◎	◎	◎	◎				M079	M080

*2= Broca para el agujero guía. La tolerancia es +0.014 y la profundidad del agujero es DCx2.

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Material	Diámetro	Profundidad agujero (L/D)	Nombre de producto	Refrigeración	Recubrimiento	Material P: Acero carbono, Acero aleado	Material M: Acero Inoxidable	Material K: Fundición	Material N: Aleación ligera	Material S: Aleaciones termo-resistentes	Material H: Acero endurecido	Forma	Página: Dimensiones	Página: Condiciones de corte
Integral Metal Duro	ϕ3.0 −ϕ16.0	3	**MAE**	Externa	–			○	◎				M124	M129
Integral Metal Duro	ϕ3.0 −ϕ16.0	3, 6	**MAS**	Interna	–			○	◎				M124	M129
Integral Metal Duro	ϕ3.0 −ϕ20.0	3 − 30	**MNS**	Interna	–				◎				M100	M120
Integral Metal Duro	ϕ4.76 −ϕ11.14	3	**MCC**	Externa	DD	Para CFRP							M188	M188
Integral Metal Duro	ϕ6.38 −ϕ9.55	5	**MCA**	Interna	DD	Para CFRP + Al							M189	M189
Integral Metal Duro	ϕ6.38 −ϕ9.55	5	**MCT**	Interna	–	Para CFRP + Ti							M190	M190
Integral Metal Duro	ϕ6.38 −ϕ9.55	5	**MCW**	Interna	DD	Para alta precisión en material apilado y CFRP							M191	M191
Integral Metal Duro	ϕ2.5 −ϕ9.55	2 − 15	**MCCH**	Externa	–	Para CFRP							M192	Manual de herramienta
Integral Metal Duro	ϕ2.5 −ϕ9.55	3 − 15	**MCAH**	Externa	–	Para CFRP+ Al							M193	Manual de herramienta
Acero rápido	ϕ0.5 −ϕ13.0	2 − 3	**VAPDS**	Externa	V	◎	○	○					M174	M178
Acero rápido	ϕ0.5 −ϕ32.0	3 − 6	**VAPDM**	Externa	V	◎	○	○					M179	M182
Acero rápido	ϕ0.5 −ϕ13.0	3 − 6	**VSD**	Externa	V	◎	○						M183	M184
Acero rápido	ϕ2.0 −ϕ32.0	2 − 3	**VAPDSCB**	Externa	V	◎	○	○	○				M185	M187
Intercambiable	ϕ10.0 −ϕ18.4	1.5 − 8	**STAW**	Interna	VP	◎	○	◎					M141	M146
Intercambiable	ϕ18.5 −ϕ30.4	3 − 8	**TAW**	Interna	VP	◎	○	◎					M150	M157
Intercambiable	ϕ17.0 −ϕ63.0	2 − 6	**MVX**	Interna	–	◎	○	◎	○		○		M160	M169

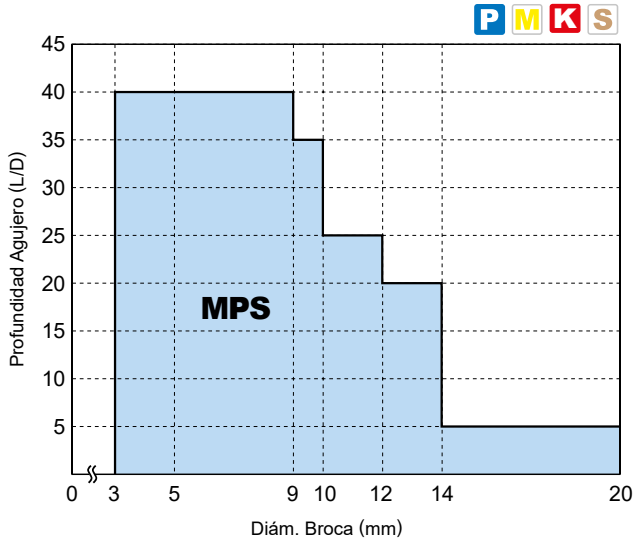
◎ : 1ª Recomendación / ○ : 2ª Recomendación

SERIE DE BROCAS

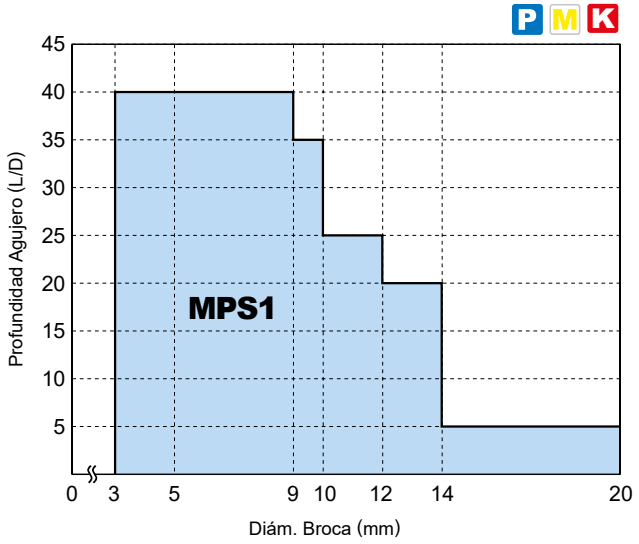
1ª Recomendación
P M K N S H
2ª Recomendación
P M K N S H

■INTEGRAL METAL DURO

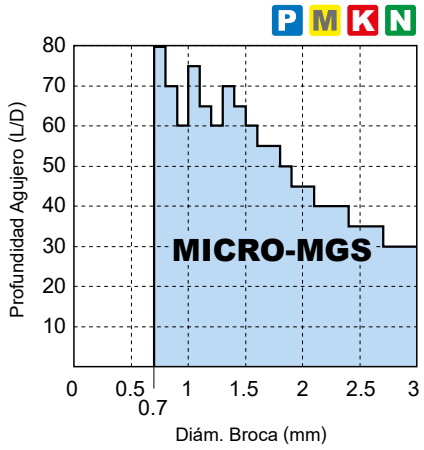
MPS (Tipo doble margen)



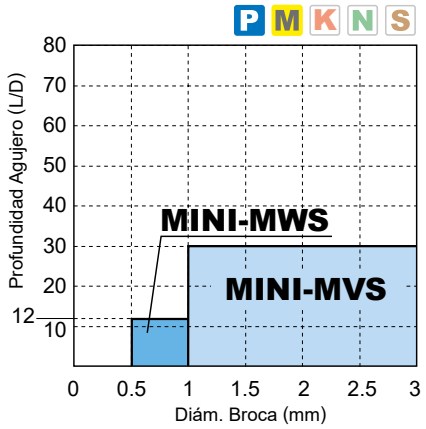
MPS1 (Tipo doble margen)



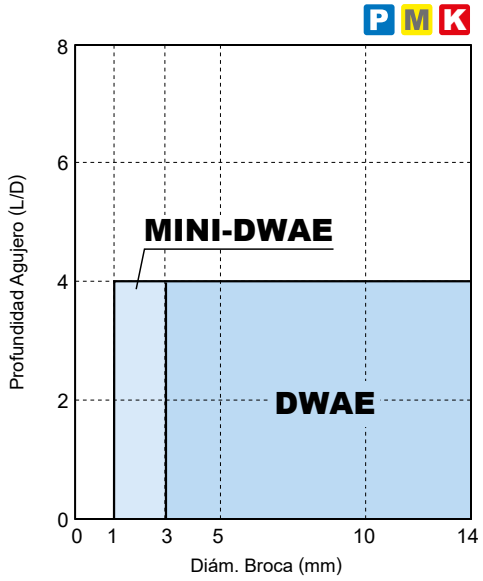
MICRO-MGS



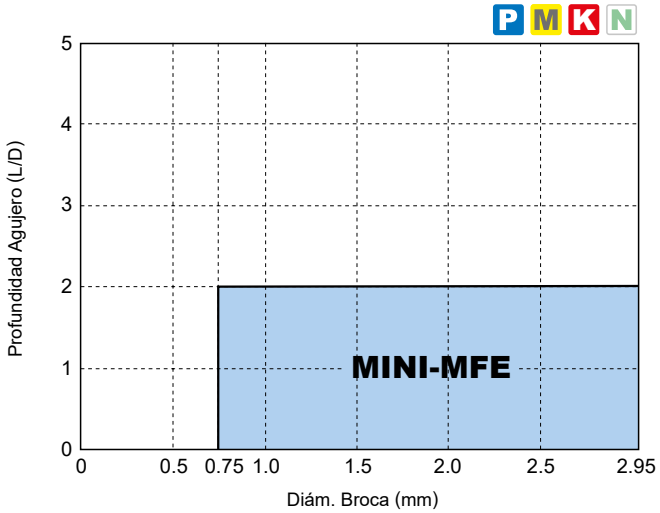
MINI-MVS,MINI-MWS



MINI-DWAE,DWAE



MINI-MFE



1ª Recomendación

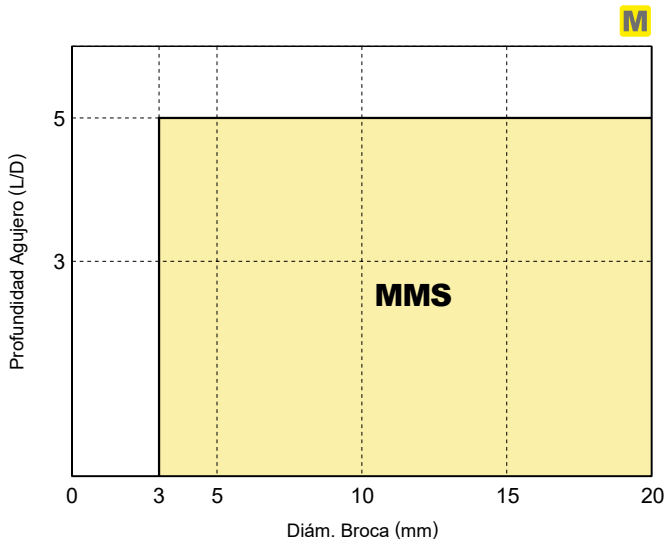
P M K N S H

2ª Recomendación

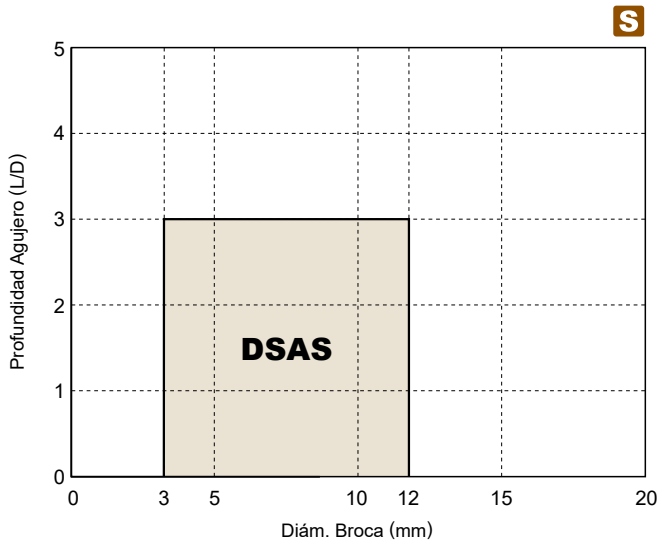
P M K N S H

■INTEGRAL METAL DURO

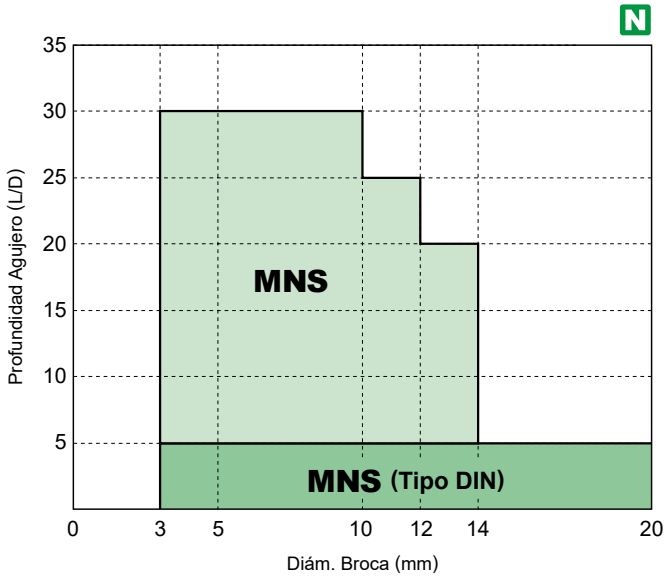
MMS (Para acero inoxidable)



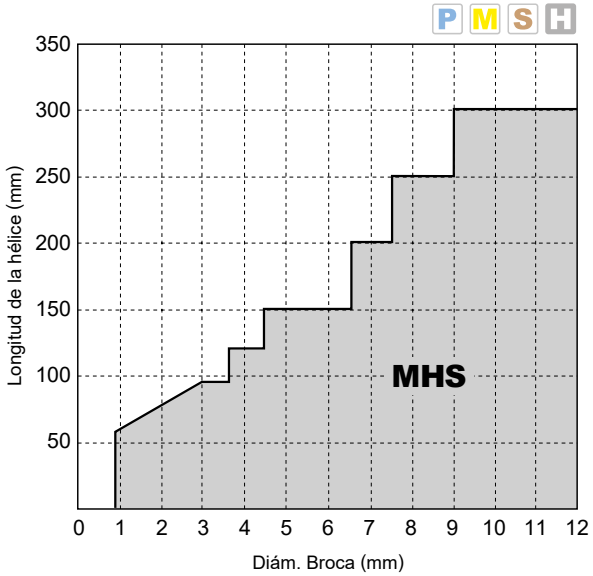
DSAS (para un mecanizado de aleaciones termorresistentes)



MNS (Para mecanizado de aleaciones de aluminio)

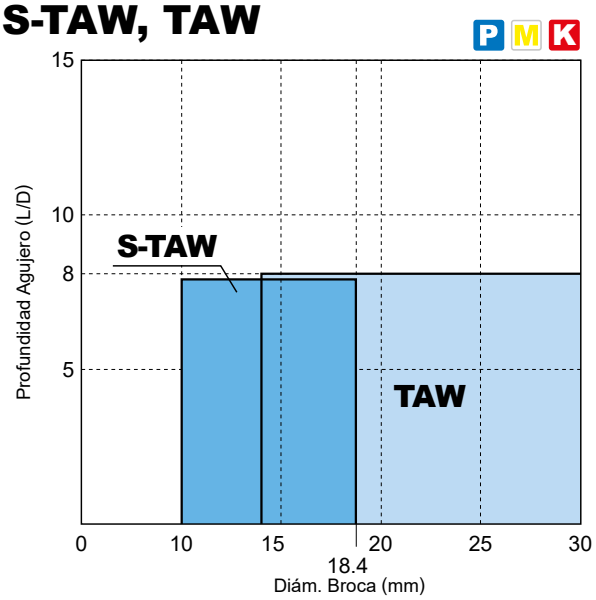


MHS (Para mecanizado de moldes y matrices)

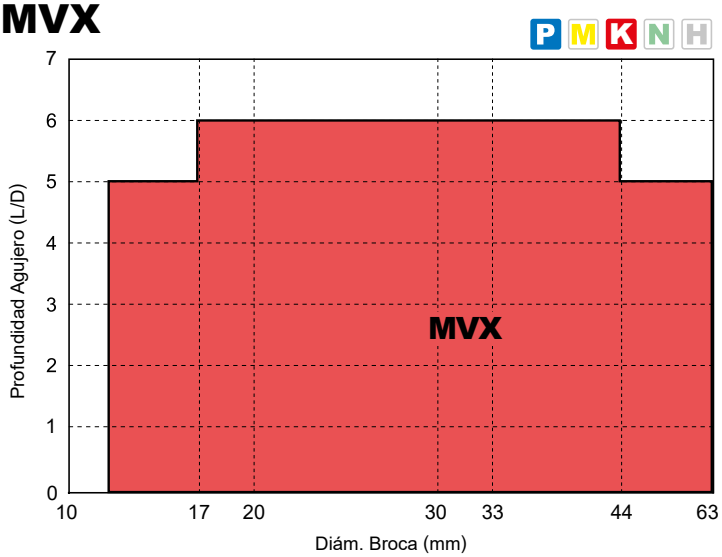


■CON PLACAS INTERCAMBIABLES

S-TAW, TAW



MVX



M

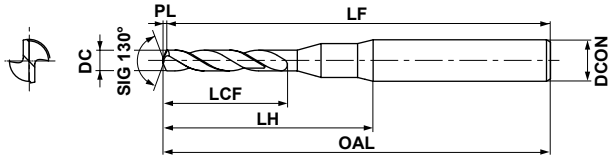
TALADRADO

MSE

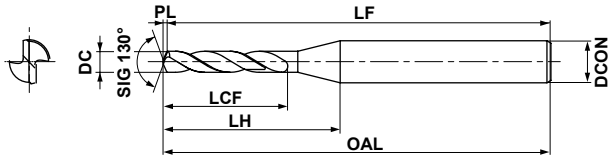
- Ancho de la hélice para prevenir la aglomeración de virutas.
- Estable, pequeños diámetros de mecanizado.

P | M | K | N | S | H

Refrigeración externa



Tipo 1



Tipo 2

0.10≤DC≤0.99	$^{0}_{-0.009}$
DCON=3	$^{0}_{-0.006}$

- Las brocas MSE pueden utilizarse con herramientas de amarre por calor.

DC (mm)	VP20MF	VP15TF	Referencia	Dimensiones (mm) LCF	LH	OAL	LF	PL	DCON	Tipo
0.10	●		MSE0010SB	1.2	9.7	38.0	38	0.02	3	1
0.11	●		MSE0011SB	1.2	9.7	38.0	38	0.03	3	1
0.12	●		MSE0012SB	1.4	9.7	38.0	38	0.03	3	1
0.13	●		MSE0013SB	1.4	9.7	38.0	38	0.03	3	1
0.14	●		MSE0014SB	2.0	9.7	38.0	38	0.03	3	1
0.15	●		MSE0015SB	2.0	9.7	38.0	38	0.03	3	1
0.16	●		MSE0016SB	2.0	9.7	38.0	38	0.04	3	1
0.17	●		MSE0017SB	2.0	9.7	38.0	38	0.04	3	1
0.18	●		MSE0018SB	2.0	9.7	38.0	38	0.04	3	1
0.19	●		MSE0019SB	2.0	9.7	38.0	38	0.04	3	1
0.20	●		MSE0020SB	2.6	9.8	38.1	38	0.05	3	1
0.21	●		MSE0021SB	2.6	9.8	38.1	38	0.05	3	1
0.22	●		MSE0022SB	2.6	9.8	38.1	38	0.05	3	1
0.23	●		MSE0023SB	2.6	9.8	38.1	38	0.05	3	1
0.24	●		MSE0024SB	3.1	9.8	38.1	38	0.06	3	1
0.25	●		MSE0025SB	3.1	9.8	38.1	38	0.06	3	1
0.26	●		MSE0026SB	3.1	9.8	38.1	38	0.06	3	1
0.27	●		MSE0027SB	3.1	9.8	38.1	38	0.06	3	1
0.28	●		MSE0028SB	3.1	9.8	38.1	38	0.07	3	1
0.29	●		MSE0029SB	3.1	9.8	38.1	38	0.07	3	1
0.30		●	MSE0030SB	5.1	10.3	38.1	38	0.07	3	2
0.31		●	MSE0031SB	5.1	10.3	38.1	38	0.07	3	2
0.32		●	MSE0032SB	5.1	10.3	38.1	38	0.07	3	2
0.33		●	MSE0033SB	5.1	10.3	38.1	38	0.08	3	2
0.34		●	MSE0034SB	6.1	11.3	38.1	38	0.08	3	2
0.35		●	MSE0035SB	6.1	11.2	38.1	38	0.08	3	2
0.36		●	MSE0036SB	6.1	11.2	38.1	38	0.08	3	2
0.37		●	MSE0037SB	6.1	11.2	38.1	38	0.09	3	2
0.38		●	MSE0038SB	6.1	11.2	38.1	38	0.09	3	2
0.39		●	MSE0039SB	6.1	11.2	38.1	38	0.09	3	2
0.40		●	MSE0040SB	7.1	12.2	38.1	38	0.09	3	2
0.41		●	MSE0041SB	7.1	12.1	38.1	38	0.10	3	2
0.42		●	MSE0042SB	7.1	12.1	38.1	38	0.10	3	2
0.43		●	MSE0043SB	7.1	12.1	38.1	38	0.10	3	2

DC (mm)	VP20MF	VP15TF	Referencia	Dimensiones (mm) LCF	LH	OAL	LF	PL	DCON	Tipo
0.44		●	MSE0044SB	7.1	12.1	38.1	38	0.10	3	2
0.45		●	MSE0045SB	7.1	12.1	38.1	38	0.10	3	2
0.46		●	MSE0046SB	7.1	12.0	38.1	38	0.11	3	2
0.47		●	MSE0047SB	7.1	12.0	38.1	38	0.11	3	2
0.48		●	MSE0048SB	7.1	12.0	38.1	38	0.11	3	2
0.49		●	MSE0049SB	7.1	12.0	38.1	38	0.11	3	2
0.50		●	MSE0050SB	7.1	12.0	38.1	38	0.12	3	2
0.51		●	MSE0051SB	7.1	11.9	38.1	38	0.12	3	2
0.52		●	MSE0052SB	7.1	11.9	38.1	38	0.12	3	2
0.53		●	MSE0053SB	7.1	11.9	38.1	38	0.12	3	2
0.54		●	MSE0054SB	7.1	11.9	38.1	38	0.13	3	2
0.55		●	MSE0055SB	7.1	11.9	38.1	38	0.13	3	2
0.56		●	MSE0056SB	7.1	11.9	38.1	38	0.13	3	2
0.57		●	MSE0057SB	7.1	11.8	38.1	38	0.13	3	2
0.58		●	MSE0058SB	7.1	11.8	38.1	38	0.14	3	2
0.59		●	MSE0059SB	7.1	11.8	38.1	38	0.14	3	2
0.60		●	MSE0060SB	7.1	11.8	38.1	38	0.14	3	2
0.61		●	MSE0061SB	7.1	11.8	38.1	38	0.14	3	2
0.62		●	MSE0062SB	7.1	11.7	38.1	38	0.14	3	2
0.63		●	MSE0063SB	7.2	11.8	38.2	38	0.15	3	2
0.64		●	MSE0064SB	7.2	11.8	38.2	38	0.15	3	2
0.65		●	MSE0065SB	7.2	11.8	38.2	38	0.15	3	2
0.66		●	MSE0066SB	7.2	11.8	38.2	38	0.15	3	2
0.67		●	MSE0067SB	7.2	11.7	38.2	38	0.16	3	2
0.68		●	MSE0068SB	7.2	11.7	38.2	38	0.16	3	2
0.69		●	MSE0069SB	7.2	11.7	38.2	38	0.16	3	2
0.70		●	MSE0070SB	8.2	12.7	38.2	38	0.16	3	2
0.71		●	MSE0071SB	8.2	12.7	38.2	38	0.17	3	2
0.72		●	MSE0072SB	8.2	12.7	38.2	38	0.17	3	2
0.73		●	MSE0073SB	8.2	12.6	38.2	38	0.17	3	2
0.74		●	MSE0074SB	8.2	12.6	38.2	38	0.17	3	2
0.75		●	MSE0075SB	8.2	12.6	38.2	38	0.17	3	2
0.76		●	MSE0076SB	8.2	12.6	38.2	38	0.18	3	2
0.77		●	MSE0077SB	8.2	12.6	38.2	38	0.18	3	2

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.

DC (mm)	VP20MF	VP15TF	Referencia	Dimensiones (mm) LCF	LH	OAL	LF	PL	DCON	Tipo
0.78		●	**MSE0078SB**	8.2	12.5	38.2	38	0.18	3	2
0.79		●	**MSE0079SB**	8.2	12.5	38.2	38	0.18	3	2
0.80		●	**MSE0080SB**	10.2	14.5	38.2	38	0.19	3	2
0.81		●	**MSE0081SB**	10.2	14.5	38.2	38	0.19	3	2
0.82		●	**MSE0082SB**	10.2	14.5	38.2	38	0.19	3	2
0.83		●	**MSE0083SB**	10.2	14.5	38.2	38	0.19	3	2
0.84		●	**MSE0084SB**	10.2	14.4	38.2	38	0.20	3	2
0.85		●	**MSE0085SB**	10.2	14.4	38.2	38	0.20	3	2
0.86		●	**MSE0086SB**	10.2	14.4	38.2	38	0.20	3	2
0.87		●	**MSE0087SB**	10.2	14.4	38.2	38	0.20	3	2
0.88		●	**MSE0088SB**	10.2	14.4	38.2	38	0.21	3	2

DC (mm)	VP20MF	VP15TF	Referencia	Dimensiones (mm) LCF	LH	OAL	LF	PL	DCON	Tipo
0.89		●	**MSE0089SB**	10.2	14.3	38.2	38	0.21	3	2
0.90		●	**MSE0090SB**	10.2	14.3	38.2	38	0.21	3	2
0.91		●	**MSE0091SB**	10.2	14.3	38.2	38	0.21	3	2
0.92		●	**MSE0092SB**	10.2	14.3	38.2	38	0.21	3	2
0.93		●	**MSE0093SB**	10.2	14.3	38.2	38	0.22	3	2
0.94		●	**MSE0094SB**	10.2	14.2	38.2	38	0.22	3	2
0.95		●	**MSE0095SB**	10.2	14.2	38.2	38	0.22	3	2
0.96		●	**MSE0096SB**	10.2	14.2	38.2	38	0.22	3	2
0.97		●	**MSE0097SB**	10.2	14.2	38.2	38	0.23	3	2
0.98		●	**MSE0098SB**	10.2	14.2	38.2	38	0.23	3	2
0.99		●	**MSE0099SB**	10.2	14.2	38.2	38	0.23	3	2

CONDICIONES DE CORTE RECOMENDADAS

Material	P						P				
	Acero dulce (≤180HB) Ck10						Acero al carbono, Acero aleado (180−280HB) Ck45, 41CrMo4				
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Paso (mm)	Avance de mesa (mm/min)		Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Paso (mm)	Avance de mesa (mm/min)
0.10	6	20000	0.002 (0.001−0.003)	0.02	40		6	20000	0.002 (0.001−0.003)	0.02	40
0.12	8	20000	0.002 (0.001−0.003)	0.02	40		8	20000	0.002 (0.001−0.003)	0.02	40
0.16	10	20000	0.002 (0.001−0.003)	0.02	40		10	20000	0.002 (0.001−0.003)	0.02	40
0.20	13	20000	0.003 (0.002−0.004)	0.04	60		13	20000	0.003 (0.002−0.004)	0.04	60
0.25	16	20000	0.003 (0.002−0.004)	0.04	60		16	20000	0.003 (0.002−0.004)	0.04	60
0.32	20	20000	0.004 (0.003−0.005)	0.05	80		20	20000	0.004 (0.003−0.005)	0.05	80
0.40	25	20000	0.004 (0.003−0.005)	0.05	80		25	20000	0.004 (0.003−0.005)	0.05	80
0.50	31	20000	0.006 (0.005−0.007)	0.10	120		31	20000	0.006 (0.005−0.007)	0.10	120
0.63	40	20000	0.008 (0.006−0.010)	0.10	160		40	20000	0.008 (0.006−0.010)	0.10	160
0.80	50	20000	0.020 (0.015−0.025)	0.30	400		50	20000	0.015 (0.012−0.018)	0.30	300
0.99	62	20000	0.040 (0.030−0.050)	0.30	800		62	20000	0.020 (0.015−0.025)	0.30	400

Material	P						P				
	Acero al carbono, Acero aleado (280−350HB) 36CrNiMo4						Acero Pre-endurecido (35−45HRC) X36CrMo17				
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Paso (mm)	Avance de mesa (mm/min)		Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Paso (mm)	Avance de mesa (mm/min)
0.10	6	20000	0.002 (0.001−0.003)	0.02	40		6	20000	0.002 (0.001−0.003)	0.02	40
0.12	8	20000	0.002 (0.001−0.003)	0.02	40		8	20000	0.002 (0.001−0.003)	0.02	40
0.16	10	20000	0.002 (0.001−0.003)	0.02	40		10	20000	0.002 (0.001−0.003)	0.02	40
0.20	13	20000	0.003 (0.002−0.004)	0.04	60		13	20000	0.003 (0.002−0.004)	0.04	60
0.25	16	20000	0.003 (0.002−0.004)	0.04	60		16	20000	0.003 (0.002−0.004)	0.04	60
0.32	20	20000	0.004 (0.003−0.005)	0.05	80		20	20000	0.004 (0.003−0.005)	0.05	80
0.40	25	20000	0.004 (0.003−0.005)	0.05	80		25	20000	0.004 (0.003−0.005)	0.05	80
0.50	31	20000	0.006 (0.005−0.007)	0.10	120		31	20000	0.006 (0.005−0.007)	0.10	120
0.63	40	20000	0.008 (0.006−0.010)	0.10	160		40	20000	0.008 (0.006−0.010)	0.10	160
0.80	50	20000	0.015 (0.012−0.018)	0.30	300		50	20000	0.015 (0.012−0.018)	0.30	300
0.99	62	20000	0.020 (0.015−0.025)	0.30	400		62	20000	0.020 (0.015−0.025)	0.30	400

Nota 1) Cuando taladramos agujeros desde 0.3mm se recomienda el uso de una broca punteadora.
Nota 2) Cambiar las condiciones de corte dependiendo de la maquina y de la rigidez del material.
Nota 3) Cuando taladramos agujeros por encima de DCx5, reducir las condiciones.
Nota 4) Se recomienda el uso de fluido soluble en agua (diluido 20 veces) para taladrado utilizando las condiciones de arriba.
Bajar las revoluciones si se utiliza otro tipo de refrigerante.
Nota 5) El material a trabajar marcado por "_" en las condiciones de la tabla de arriba, será complicado taladrarlo con refrigeración interna.
Se recomienda la refrigeración interna en MWS y VAPDSSUS.

MSE

- Ancho de la hélice para prevenir la aglomeración de virutas.
- Estable, pequeños diámetros de mecanizado.

CONDICIONES DE CORTE RECOMENDADAS

Material	M						K					
	Acero Inoxidable Austenítico (≤200HB) X5CrNi1810, X5CrNiMo17-12-2						Fundición gris (≤350MPa) GG30					
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Paso (mm)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Paso (mm)	Avance de mesa (mm/min)
0.10	6	20000	0.002	(0.001—0.003)	0.02	40	6	20000	0.002	(0.001—0.003)	0.02	40
0.12	8	20000	0.002	(0.001—0.003)	0.02	40	8	20000	0.002	(0.001—0.003)	0.02	40
0.16	10	20000	0.002	(0.001—0.003)	0.02	40	10	20000	0.002	(0.001—0.003)	0.02	40
0.20	11	18000	0.003	(0.002—0.004)	0.04	54	13	20000	0.003	(0.002—0.004)	0.04	60
0.25	14	18000	0.003	(0.002—0.004)	0.04	54	16	20000	0.003	(0.002—0.004)	0.04	60
0.32	15	15000	0.004	(0.003—0.005)	0.05	60	20	20000	0.004	(0.003—0.005)	0.05	80
0.40	19	15000	0.004	(0.003—0.005)	0.05	60	25	20000	0.004	(0.003—0.005)	0.05	80
0.50	16	10000	0.006	(0.005—0.007)	0.10	60	31	20000	0.006	(0.005—0.007)	0.10	120
0.63	20	10000	0.008	(0.006—0.010)	0.10	80	40	20000	0.008	(0.006—0.010)	0.10	160
0.80	15	6000	0.015	(0.012—0.018)	0.20	90	50	20000	0.020	(0.015—0.025)	0.30	400
0.99	19	6000	0.020	(0.015—0.025)	0.20	120	62	20000	0.040	(0.030—0.050)	0.30	800

Material	N						S					
	Aleación de aluminio (Si<5%)						Aleación termo-resistente Inconel718					
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Paso (mm)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Paso (mm)	Avance de mesa (mm/min)
0.10	6	20000	0.002	(0.001—0.003)	0.05	40	2	7000	0.001	(0.0005—0.001)	0.02	7
0.12	8	20000	0.003	(0.002—0.004)	0.05	60	3	7000	0.001	(0.0005—0.001)	0.02	7
0.16	10	20000	0.004	(0.003—0.005)	0.05	80	4	7000	0.001	(0.0005—0.001)	0.02	7
0.20	13	20000	0.006	(0.005—0.007)	0.10	120	3	5000	0.002	(0.001—0.002)	0.04	10
0.25	16	20000	0.008	(0.006—0.010)	0.10	160	4	5000	0.002	(0.001—0.002)	0.04	10
0.32	20	20000	0.010	(0.008—0.012)	0.30	200	4	4000	0.002	(0.001—0.002)	0.05	8
0.40	25	20000	0.020	(0.015—0.025)	0.30	400	5	4000	0.002	(0.001—0.002)	0.05	8
0.50	31	20000	0.030	(0.025—0.035)	0.50	600	5	3000	0.003	(0.001—0.003)	0.10	9
0.63	40	20000	0.040	(0.035—0.045)	0.50	800	6	3000	0.004	(0.002—0.004)	0.10	12
0.80	50	20000	0.050	(0.045—0.055)	0.80	1000	5	1800	0.006	(0.004—0.006)	0.20	10.8
0.99	62	20000	0.060	(0.055—0.065)	0.80	1200	6	1800	0.010	(0.008—0.010)	0.20	18

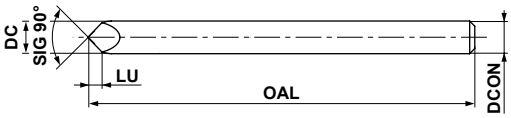
Nota 1) Cuando taladramos agujeros desde 0.3mm se recomienda el uso de una broca punteadora.
Nota 2) Cambiar las condiciones de corte dependiendo de la maquina y de la rigidez del material.
Nota 3) Cuando taladramos agujeros por encima de DCx5, reducir las condiciones.
Nota 4) Se recomienda el uso de fluido soluble en agua (diluido 20 veces) para taladrado utilizando las condiciones de arriba.
Bajar las revoluciones si se utiliza otro tipo de refrigerante.
Nota 5) El material a trabajar marcado por "_" en las condiciones de la tabla de arriba, será complicado taladrarlo con refrigeración interna.
Se recomienda la refrigeración interna en MWS y VAPDSSUS.

MSP

BROCA PUNTEADORA

UWC VP 90°

P M K N S H



Referencia	Calidad	Stock	Dimensiones (mm)				Rango de diámetro (mm)
			DC	LU	OAL	DCON	
MSP0300SB	**VP15TF**	●	3.0	1.5	38.0	3.0	**0.1−3.0**

CONDICIONES DE CORTE RECOMENDADAS

Rango de diámetro (mm)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)
0.1−3.0	10000	0.0005 (0.00025−0.001)	5

● : Stock Europa.

DLE

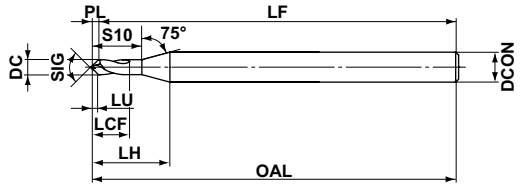
Serie de brocas destacadas en el mercado

UWC DP1 DP1A 60° 90° 120° 145° X

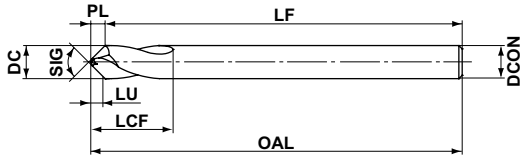
P M K N S H

Refrigeración externa

Ángulo de la punta SIG 60°, 90°

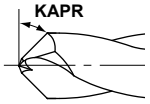


Tipo 1



Tipo 2

Ángulo de la punta SIG 120°, 145°



h7

DCON=3	3<DCON≤6	6<DCON≤10	10<DCON≤16
0 −0.010	0 −0.012	0 −0.015	0 −0.018

	DC (mm)	SIG	DP1020	DP102A	Referencia	Dimensiones (mm) LU	LCF	LH	S10	OAL	LF	PL	KAPR	DCON	Tipo
NEW	3.0	60°	●		**DLE0300S030P060**	2.0	9	—	—	45	42.9	2.1	60°	3	2
NEW	4.0	60°	●		**DLE0400S040P060**	2.7	12	—	—	50	47.2	2.8	60°	4	2
NEW	5.0	60°	●		**DLE0500S050P060**	3.4	14	—	—	60	56.5	3.5	60°	5	2
NEW	6.0	60°	●		**DLE0600S060P060**	4.0	15	—	—	66	61.8	4.2	60°	6	2
NEW	7.0	60°	●		**DLE0700S070P060**	4.7	18	—	—	74	69.1	4.9	60°	7	2
NEW	8.0	60°	●		**DLE0800S080P060**	5.4	20	—	—	74	68.4	5.6	60°	8	2
NEW	10.0	60°	●		**DLE1000S100P060**	6.8	24	—	—	84	77.0	7.0	60°	10	2
NEW	12.0	60°	●		**DLE1200S120P060**	8.1	28	—	—	95	86.6	8.4	60°	12	2
NEW	1.0	90°		●	**DLE0100S030P090**	0.35	2	6.7	3.0	45	44.6	0.4	45°	3	1
NEW	1.5	90°		●	**DLE0150S030P090**	0.55	3	7.3	4.5	45	44.4	0.6	45°	3	1
NEW	2.0	90°		●	**DLE0200S030P090**	0.8	4	7.9	6.1	45	44.1	0.9	45°	3	1
NEW	2.5	90°		●	**DLE0250S030P090**	1.0	5	7.9	7.1	45	43.9	1.1	45°	3	1
	3.0	90°	●		**DLE0300S030P090**	1.2	9	—	—	45	43.7	1.3	45°	3	2
	4.0	90°	●		**DLE0400S040P090**	1.6	12	—	—	50	48.3	1.7	45°	4	2
	5.0	90°	●		**DLE0500S050P090**	2.0	14	—	—	60	57.9	2.1	45°	5	2
	6.0	90°	●		**DLE0600S060P090**	2.4	15	—	—	66	63.4	2.6	45°	6	2
	7.0	90°	●		**DLE0700S070P090**	2.8	18	—	—	74	71.0	3.0	45°	7	2
	8.0	90°	●		**DLE0800S080P090**	3.2	20	—	—	74	70.6	3.4	45°	8	2
	10.0	90°	●		**DLE1000S100P090**	4.1	24	—	—	84	79.7	4.3	45°	10	2
	12.0	90°	●		**DLE1200S120P090**	4.9	28	—	—	95	89.9	5.1	45°	12	2
	16.0	90°	●		**DLE1600S160P090**	6.6	35	—	—	113	106.2	6.8	45°	16	2

Nota 1) En un área de aproximadamente **DC**/4, que es el área de los ángulos de punta de dos pasos, el área central no tendrá una base con agujeros de 60° y 90°. El biselado tampoco es posible en esta área.

Nota 2) El diámetro de centrado debe ser menor que el diámetro de la broca (diámetro de procesamiento) **DC** y la longitud útil **LU** debe utilizarse a modo de guía.

● : Stock Europa. ★ : Stock Japón.

DC (mm)	SIG	DP1020	DP102A	Referencia	Dimensiones (mm) LU	LCF	LH	S10	OAL	LF	PL	KAPR	DCON	Tipo
NEW 3.0	120°	●		**DLE0300S030P120**	0.8	9	—	—	45	44.1	0.9	30°	3	2
NEW 4.0	120°	●		**DLE0400S040P120**	1.1	12	—	—	50	48.8	1.2	30°	4	2
NEW 5.0	120°	●		**DLE0500S050P120**	1.3	14	—	—	60	58.6	1.4	30°	5	2
NEW 6.0	120°	●		**DLE0600S060P120**	1.6	15	—	—	66	64.3	1.7	30°	6	2
NEW 7.0	120°	●		**DLE0700S070P120**	1.9	18	—	—	74	72.0	2.0	30°	7	2
NEW 8.0	120°	●		**DLE0800S080P120**	2.2	20	—	—	74	71.7	2.3	30°	8	2
NEW 10.0	120°	●		**DLE1000S100P120**	2.8	24	—	—	84	81.1	2.9	30°	10	2
NEW 12.0	120°	●		**DLE1200S120P120**	3.3	28	—	—	95	91.5	3.5	30°	12	2
NEW 3.0	145°	●		**DLE0300S030P145**	0.4	9	—	—	45	44.5	0.5	17.5°	3	2
NEW 4.0	145°	●		**DLE0400S040P145**	0.5	12	—	—	50	49.4	0.6	17.5°	4	2
NEW 5.0	145°	●		**DLE0500S050P145**	0.7	14	—	—	60	59.2	0.8	17.5°	5	2
NEW 6.0	145°	●		**DLE0600S060P145**	0.8	15	—	—	66	65.1	0.9	17.5°	6	2
NEW 7.0	145°	●		**DLE0700S070P145**	1.0	18	—	—	74	72.9	1.1	17.5°	7	2
NEW 8.0	145°	●		**DLE0800S080P145**	1.1	20	—	—	74	72.7	1.3	17.5°	8	2
NEW 10.0	145°	●		**DLE1000S100P145**	1.4	24	—	—	84	82.4	1.6	17.5°	10	2
NEW 12.0	145°	●		**DLE1200S120P145**	1.7	28	—	—	95	93.1	1.9	17.5°	12	2

Nota 1) El diámetro de centrado debe ser menor que el diámetro de la broca (diámetro de procesamiento) **DC** y la longitud útil **LU** debe utilizarse a modo de guía.

CONDICIONES DE CORTE ➢ M016
GUIA OPERACIONAL ➢ M016
DATOS TÉCNICOS ➢ P001

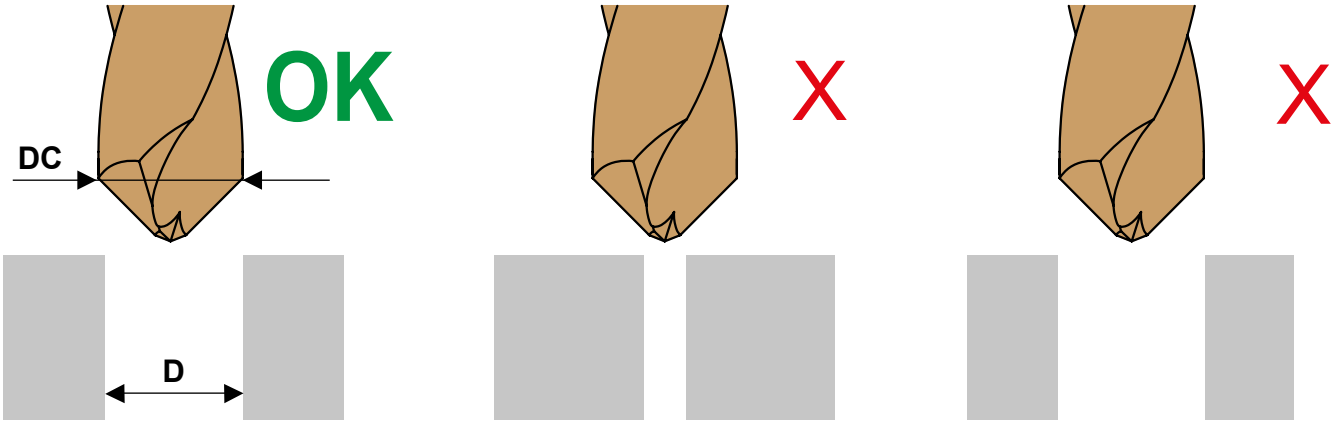
DLE

Serie de brocas destacadas en el mercado

SELECCIÓN DEL DIÁMETRO DE LA BROCA

PARA REALIZAR EL BISELADO

Seleccione el diámetro de la broca (diámetro de corte) **DC e**n relación con el diámetro del agujero guía **D**, dentro de un rango de **D** < **DC** < **2D**.



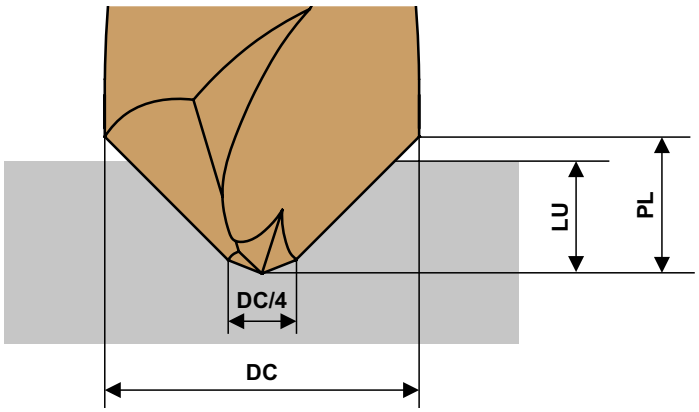
Ejemplo) Si el diámetro del agujero guía **D** es de 5 mm: el diámetro de la broca **DC** debe ser igual o mayor de 6 mm pero menor de 10 mm. Seleccione un **DC** de 6 mm, 7 mm u 8 mm.

Si DC es igual o mayor que 2D:
Si el diámetro de broca **DC** es demasiado grande comparado con el diámetro del agujero guía **D** (igual o mayor que **2D**), no podrá realizarse el biselado.

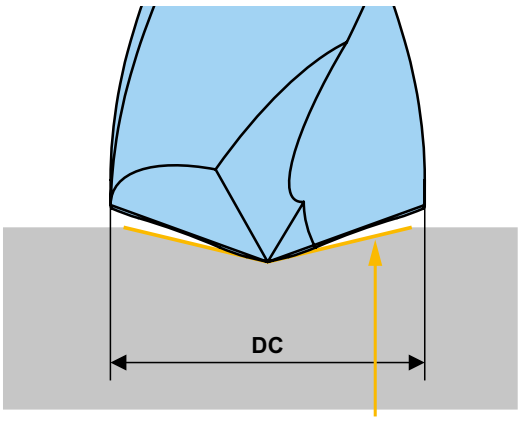
Si DC es un diámetro de broca igual a D:
No puede realizarse el biselado si el diámetro de la broca **DC** es igual al diámetro del agujero guía **D**.

PARA REALIZAR EL CENTRADO

El diámetro de centrado debe ser menor que el diámetro de la broca (diámetro de procesamiento) **DC** y la longitud útil **LU** debe utilizarse a modo de guía.
El área central de agujeros (aprox. 25 % del diámetro completo) formada por ángulos de punta de dos pasos no tendrá sus respectivos ángulos de 60º y 90º. El biselado tampoco es posible en las áreas centrales.
Seleccione una broca de centrado con un ángulo de punta más grande que el de la broca de agujero final si desea hacer contacto inicial con el centro.

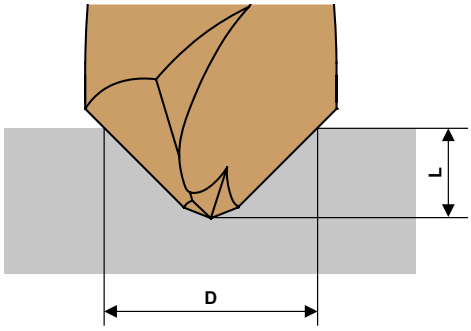


Siguiente proceso de taladrado



Centrado del ángulo de la punta SIG 145°

Tabla de profundidad de taladrado (L) por diámetro de herramienta



(mm)

DC	SIG 90°			
	Min.		Max.	
	D	L	D	L
1.0	0.5	0.18	0.8	0.33
1.5	0.8	0.29	1.3	0.54
2.0	1.0	0.35	1.9	0.8
2.5	1.3	0.47	2.4	1.0
3.0	1.5	0.5	2.8	1.2
4.0	2.0	0.7	3.8	1.6
5.0	2.5	0.9	4.7	2.0
6.0	3.0	1.1	5.7	2.4
7.0	3.5	1.2	6.6	2.8
8.0	4.0	1.4	7.6	3.2
10.0	5.0	1.8	9.7	4.1
12.0	6.0	2.1	11.6	4.9
16.0	8.0	2.8	15.5	6.6

(mm)

DC	SIG 60°				SIG 120°				SIG 145°			
	Min.		Max.		Min.		Max.		Min.		Max.	
	D	L	D	L	D	L	D	L	D	L	D	L
3.0	1.5	0.8	2.9	2.0	1.5	0.4	2.8	0.8	1.5	0.2	2.5	0.4
4.0	2.0	1.1	3.9	2.7	2.0	0.6	3.8	1.1	2.0	0.3	3.2	0.5
5.0	2.5	1.3	4.9	3.4	2.5	0.7	4.5	1.3	2.5	0.4	4.4	0.7
6.0	3.0	1.6	5.8	4.0	3.0	0.9	5.5	1.6	3.0	0.5	5.1	0.8
7.0	3.5	1.9	6.8	4.7	3.5	1.0	6.6	1.9	3.5	0.6	6.3	1.0
8.0	4.0	2.1	7.8	5.4	4.0	1.2	7.6	2.2	4.0	0.6	7.0	1.1
10.0	5.0	2.7	9.8	6.8	5.0	1.4	9.7	2.8	5.0	0.8	8.9	1.4
12.0	6.0	3.2	11.6	8.1	6.0	1.7	11.4	3.3	6.0	0.9	10.8	1.7

DLE

Serie de brocas destacadas en el mercado

Punta con ángulo SIG de 90°

CONDICIONES DE CORTE RECOMENDADAS

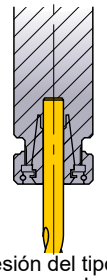
Material	P					
	Acero dulce (≤180HB) DIN C10E etc.		Acero al carbono, Acero aleado (180−280HB) DIN Ck45, 41CrMo4 etc.		Acero al carbono, Acero aleado (280−350HB) DIN 40CrNiMoA etc.	
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)
3.0	7900	0.05 (0.03−0.07)	6800	0.05 (0.03−0.07)	6300	0.04 (0.02−0.06)
4.0	5900	0.05 (0.03−0.07)	5100	0.05 (0.03−0.07)	4700	0.04 (0.02−0.06)
5.0	5000	0.06 (0.04−0.08)	4400	0.06 (0.04−0.08)	4100	0.05 (0.03−0.07)
6.0	4200	0.06 (0.04−0.08)	3700	0.06 (0.04−0.08)	3400	0.05 (0.03−0.07)
7.0	3600	0.07 (0.04−0.09)	3100	0.07 (0.04−0.09)	2900	0.05 (0.03−0.07)
8.0	3100	0.07 (0.04−0.09)	2700	0.07 (0.04−0.09)	2500	0.05 (0.03−0.07)
10.0	2700	0.08 (0.04−0.10)	2300	0.08 (0.04−0.10)	2200	0.06 (0.03−0.08)
12.0	2200	0.08 (0.04−0.10)	1900	0.08 (0.04−0.10)	1800	0.06 (0.03−0.08)

Material	M		K			
	Acero Inoxidable Austenítico (≤200HB) DIN X5CrNi189, X5CrNiMo1810 etc.		Fundición gris (≤350MPa) DIN GG30 etc.		Fundición dúctil (≤450MPa) DIN GGG40.3 etc.	
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)
3.0	1500	0.03 (0.01−0.05)	7900	0.05 (0.03−0.07)	5800	0.05 (0.03−0.07)
4.0	1100	0.03 (0.01−0.05)	5900	0.05 (0.03−0.07)	4300	0.05 (0.03−0.07)
5.0	1200	0.04 (0.02−0.06)	5000	0.06 (0.04−0.08)	3800	0.06 (0.04−0.08)
6.0	1000	0.04 (0.02−0.06)	4200	0.06 (0.04−0.08)	3100	0.06 (0.04−0.08)
7.0	900	0.04 (0.02−0.06)	3600	0.07 (0.04−0.09)	2700	0.06 (0.04−0.08)
8.0	790	0.04 (0.02−0.06)	3100	0.07 (0.04−0.09)	2300	0.06 (0.04−0.08)
10.0	630	0.04 (0.02−0.06)	2700	0.08 (0.04−0.10)	1900	0.07 (0.04−0.09)
12.0	530	0.04 (0.02−0.06)	2200	0.08 (0.04−0.10)	1500	0.07 (0.04−0.09)

Nota 1) Utilice una herramienta más grande (DC) que el agujero central requerido, pero inferior a 2 x DC.
Nota 2) Reduzca la velocidad de avance cuando centre en superficies en curva o inclinadas.
Nota 3) Reduzca las condiciones de corte cuando realice un ranurado en V o el biselado del borde.
Nota 4) Cuando se generen vibraciones de traqueteo o ruido anómalo, acorte el tiempo de parada o reduzca las revoluciones.
Nota 5) Al realizar el centrado, no supere la LU (longitud útil).

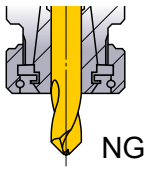
■ GUIA OPERACIONAL

Amarre de la broca



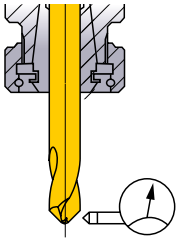
La presión del tipo de tornillo amarra la broca con seguridad.

Longitud de la broca



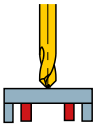
No sujetar en las hélices.

Tolerancia de instalación

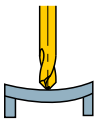


Salto radial
≤ 0.03mm

Pieza delgada

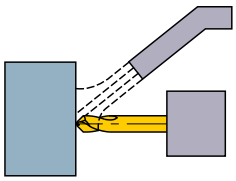


OK
Sujetar la pieza



X
Si se produce un doblamiento

Método de refrigeración



Dos formas de refrigeración, al centro y en la punta.

Punta con ángulo SIG de 90°, 120° y 145°

CONDICIONES DE CORTE RECOMENDADAS

Material	P					
	Acero dulce (≤180HB) DIN C10E etc.		Acero al carbono, Acero aleado (180−280HB) DIN Ck45, 41CrMo4 etc.		Acero al carbono, Acero aleado (280−350HB) DIN 40CrNiMoA etc.	
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)
1.0	9500	0.02 (0.01−0.03)	6300	0.02 (0.01−0.03)	4700	0.02 (0.01−0.03)
1.5	9500	0.02 (0.01−0.03)	7400	0.02 (0.01−0.03)	6300	0.02 (0.01−0.03)
2.0	9500	0.04 (0.03−0.05)	7900	0.04 (0.03−0.05)	7100	0.04 (0.03−0.05)
2.5	9500	0.04 (0.03−0.05)	8200	0.04 (0.03−0.05)	7600	0.04 (0.03−0.05)
3.0	7900	0.06 (0.04−0.08)	6800	0.06 (0.04−0.08)	6300	0.05 (0.03−0.07)
4.0	5900	0.06 (0.04−0.08)	5100	0.06 (0.04−0.08)	4700	0.05 (0.03−0.07)
5.0	5000	0.07 (0.05−0.09)	4400	0.07 (0.05−0.09)	4100	0.06 (0.04−0.08)
6.0	4200	0.07 (0.05−0.09)	3700	0.07 (0.05−0.09)	3400	0.06 (0.04−0.08)
7.0	3600	0.08 (0.05−0.10)	3100	0.08 (0.05−0.10)	2900	0.06 (0.04−0.08)
8.0	3100	0.08 (0.05−0.10)	2700	0.08 (0.05−0.10)	2500	0.06 (0.04−0.08)
10.0	2700	0.09 (0.05−0.11)	2300	0.09 (0.05−0.11)	2200	0.07 (0.04−0.09)
12.0	2200	0.09 (0.05−0.11)	1900	0.09 (0.05−0.11)	1800	0.07 (0.04−0.09)
16.0	1700	0.12 (0.10−0.14)	1500	0.12 (0.10−0.14)	1400	0.08 (0.06−0.10)

Material	M		K			
	Acero Inoxidable Austenítico (≤200HB) DIN X5CrNi189, X5CrNiMo1810 etc.		Fundición gris (≤350MPa) DIN GG30 etc.		Fundición dúctil (≤450MPa) DIN GGG40.3 etc.	
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)
1.0	6300	0.01 (0.005−0.015)	9500	0.02 (0.01−0.03)	3100	0.02 (0.01−0.03)
1.5	4200	0.01 (0.005−0.015)	9500	0.02 (0.01−0.03)	5300	0.02 (0.01−0.03)
2.0	3100	0.04 (0.03−0.05)	9500	0.04 (0.03−0.05)	6300	0.04 (0.03−0.05)
2.5	2500	0.04 (0.03−0.05)	9500	0.04 (0.03−0.05)	7000	0.04 (0.03−0.05)
3.0	2100	0.04 (0.02−0.06)	7900	0.06 (0.04−0.08)	5800	0.06 (0.04−0.08)
4.0	1600	0.04 (0.02−0.06)	5900	0.06 (0.04−0.08)	4300	0.06 (0.04−0.08)
5.0	1200	0.06 (0.04−0.08)	5000	0.07 (0.05−0.09)	3800	0.07 (0.05−0.09)
6.0	1000	0.06 (0.04−0.08)	4200	0.07 (0.05−0.09)	3100	0.07 (0.05−0.09)
7.0	900	0.06 (0.04−0.08)	3600	0.08 (0.05−0.10)	2700	0.07 (0.05−0.09)
8.0	790	0.06 (0.04−0.08)	3100	0.08 (0.05−0.10)	2300	0.07 (0.05−0.09)
10.0	630	0.06 (0.04−0.08)	2700	0.09 (0.05−0.11)	1900	0.08 (0.05−0.10)
12.0	530	0.06 (0.04−0.08)	2200	0.09 (0.05−0.11)	1500	0.08 (0.05−0.10)
16.0	390	0.08 (0.06−0.10)	1700	0.12 (0.10−0.14)	1100	0.11 (0.09−0.13)

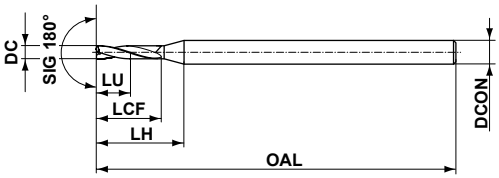
Nota 1) Utilice una herramienta más grande (DC) que el agujero central requerido, pero inferior a 2 x DC.
Nota 2) Reduzca la velocidad de avance cuando taladre en superficies en curva o inclinadas.
Nota 3) Reduzca las condiciones de corte cuando realice un ranurado en V o el biselado del borde.
Nota 4) Cuando se generen vibraciones de traqueteo o ruido anómalo, acorte el tiempo de permanencia o reduzca las revoluciones.
Nota 5) Al realizar el centrado, no supere la LU (longitud útil).

MINI-MFE para Pequeño Diámetro

UWC DP1A 180° XR

P M K N S H

Refrigeración externa



Tipo 1

0.75≤DC≤2.95	
0 −0.014	
DCON=3	DCON=4
0 −0.006	0 −0.008

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	DCON	Tipo
0.75	2	★	**MFE0075X02S030**	1.5	3.0	7.7	45	3	1
0.80	2	★	**MFE0080X02S030**	1.6	3.2	7.8	45	3	1
0.85	2	★	**MFE0085X02S030**	1.7	3.4	7.9	45	3	1
0.90	2	★	**MFE0090X02S030**	1.8	3.6	8.0	45	3	1
0.95	2	★	**MFE0095X02S030**	1.9	3.8	8.1	45	3	1
1.00	2	★	**MFE0100X02S030**	2.0	4.0	8.2	45	3	1
1.05	2	★	**MFE0105X02S030**	2.1	4.2	8.3	45	3	1
1.10	2	★	**MFE0110X02S030**	2.2	4.4	8.4	45	3	1
1.15	2	★	**MFE0115X02S030**	2.3	4.6	8.6	45	3	1
1.20	2	★	**MFE0120X02S030**	2.4	4.8	8.7	45	3	1
1.25	2	★	**MFE0125X02S030**	2.5	5.0	8.8	45	3	1
1.30	2	★	**MFE0130X02S030**	2.6	5.2	8.9	45	3	1
1.35	2	★	**MFE0135X02S030**	2.7	5.4	9.0	45	3	1
1.40	2	★	**MFE0140X02S030**	2.8	5.6	9.1	45	3	1
1.45	2	★	**MFE0145X02S030**	2.9	5.8	9.2	45	3	1
1.50	2	★	**MFE0150X02S030**	3.0	6.0	9.3	45	3	1
1.55	2	★	**MFE0155X02S030**	3.1	6.2	9.4	45	3	1
1.60	2	★	**MFE0160X02S030**	3.2	6.4	9.5	45	3	1
1.65	2	★	**MFE0165X02S030**	3.3	6.6	9.6	45	3	1
1.70	2	★	**MFE0170X02S030**	3.4	6.8	9.7	45	3	1
1.75	2	★	**MFE0175X02S030**	3.5	7.0	9.8	45	3	1
1.80	2	★	**MFE0180X02S030**	3.6	7.2	9.9	45	3	1
1.85	2	★	**MFE0185X02S030**	3.7	7.4	10.0	45	3	1
1.90	2	★	**MFE0190X02S030**	3.8	7.6	10.2	45	3	1
1.95	2	★	**MFE0195X02S030**	3.9	7.8	10.3	45	3	1
2.00	2	★	**MFE0200X02S040**	4.0	8.0	12.2	50	4	1
2.05	2	★	**MFE0205X02S040**	4.1	8.2	12.3	50	4	1
2.10	2	★	**MFE0210X02S040**	4.2	8.4	12.4	50	4	1
2.15	2	★	**MFE0215X02S040**	4.3	8.6	12.6	50	4	1
2.20	2	★	**MFE0220X02S040**	4.4	8.8	12.7	50	4	1
2.25	2	★	**MFE0225X02S040**	4.5	9.0	12.8	50	4	1
2.30	2	★	**MFE0230X02S040**	4.6	9.2	12.9	50	4	1
2.35	2	★	**MFE0235X02S040**	4.7	9.4	13.0	50	4	1
2.40	2	★	**MFE0240X02S040**	4.8	9.6	13.1	50	4	1
2.45	2	★	**MFE0245X02S040**	4.9	9.8	13.2	50	4	1
2.50	2	★	**MFE0250X02S040**	5.0	10.0	13.3	50	4	1
2.55	2	★	**MFE0255X02S040**	5.1	10.2	13.4	50	4	1
2.60	2	★	**MFE0260X02S040**	5.2	10.4	13.5	50	4	1
2.65	2	★	**MFE0265X02S040**	5.3	10.6	13.6	50	4	1
2.70	2	★	**MFE0270X02S040**	5.4	10.8	13.7	50	4	1
2.75	2	★	**MFE0275X02S040**	5.5	11.0	13.8	50	4	1
2.80	2	★	**MFE0280X02S040**	5.6	11.2	13.9	50	4	1
2.85	2	★	**MFE0285X02S040**	5.7	11.4	14.0	50	4	1
2.90	2	★	**MFE0290X02S040**	5.8	11.6	14.2	50	4	1
2.95	2	★	**MFE0295X02S040**	5.9	11.8	14.3	50	4	1

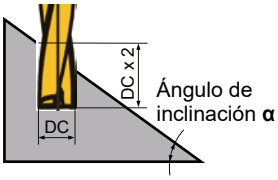
★ : Stock Japón.

CONDICIONES DE CORTE RECOMENDADAS

Material		P					
		Acero dulce (≤180HB) C10E etc.		Acero al carbono, Acero aleado (180—280HB) DIN Ck45, 41CrMo4 etc.		Acero al carbono, Acero aleado (280—350HB) DIN 40CrNiMoA etc.	
Diámetro Broca **DC** (mm)	**L/D**	Revoluciones (min^{-1})	α=0° Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	α=0° Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	α=0° Avance (min.—max.) (mm/rev)
0.75	**≤2**	23300	0.030 (0.010—0.050)	19000	0.030 (0.010—0.050)	16900	0.030 (0.010—0.050)
1.0	**≤2**	17500	0.030 (0.010—0.050)	14300	0.030 (0.010—0.050)	12700	0.030 (0.010—0.050)
1.5	**≤2**	12200	0.035 (0.015—0.055)	10000	0.035 (0.015—0.055)	8400	0.035 (0.015—0.050)
2.0	**≤2**	9500	0.040 (0.020—0.060)	7900	0.040 (0.020—0.060)	6700	0.040 (0.020—0.060)
2.5	**≤2**	7900	0.050 (0.030—0.070)	6600	0.050 (0.030—0.070)	5700	0.050 (0.030—0.070)
2.95	**≤2**	7900	0.060 (0.040—0.080)	7900	0.060 (0.040—0.080)	6800	0.060 (0.040—0.080)

Material		M		K			
		Acero Inoxidable Austenítico (≤200HB) DIN X5CrNi189, X5CrNiMo1810 etc.		Fundición gris (≤350MPa) DIN GG30 etc.		Fundición dúctil (≤450MPa) DIN GGG40.3 etc.	
Diámetro Broca **DC** (mm)	**L/D**	Revoluciones (min^{-1})	α=0° Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	α=0° Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	α=0° Avance (min.—max.) (mm/rev)
0.75	**≤2**	10600	0.007 (0.003—0.011)	23300	0.030 (0.010—0.050)	16900	0.010 (0.005—0.015)
1.0	**≤2**	7900	0.007 (0.003—0.011)	17500	0.030 (0.010—0.050)	12700	0.010 (0.005—0.015)
1.5	**≤2**	5300	0.010 (0.005—0.015)	12200	0.035 (0.015—0.055)	10000	0.020 (0.010—0.030)
2.0	**≤2**	4700	0.015 (0.010—0.020)	9500	0.040 (0.020—0.060)	8700	0.030 (0.015—0.045)
2.5	**≤2**	3800	0.015 (0.010—0.020)	7900	0.050 (0.030—0.070)	7300	0.045 (0.025—0.065)
2.95	**≤2**	3100	0.020 (0.010—0.030)	7900	0.060 (0.040—0.080)	6800	0.050 (0.040—0.060)

Material		N
		Aleación de aluminio (Si<5%) JIS A6061, A7075 etc.
Diámetro Broca **DC** (mm)	**L/D**	Revoluciones (min^{-1}) / α=0° Avance (min.—max.) (mm/rev)
0.75	**≤2**	42400 / 0.020 (0.010—0.030)
1.0	**≤2**	31800 / 0.020 (0.010—0.030)
1.5	**≤2**	21200 / 0.020 (0.010—0.030)
2.0	**≤2**	17500 / 0.050 (0.030—0.070)
2.5	**≤2**	14000 / 0.060 (0.040—0.090)
2.95	**≤2**	11600 / 0.060 (0.040—0.090)



Nota 1) La profundidad recomendada del agujero es DC×2. Esta debería ser la profundidad desde la superficie superior del material de trabajo cuando se trabaje sobre superficies con ángulo. (Consulte el diagrama)

Nota 2) En la tabla de corte anterior se da por hecho que se taladra en una superficie plana.
Para taladrar en superficies anguladas, ajuste la velocidad de avance de acuerdo con el ángulo de inclinación.
Si el ángulo de inclinación α es de 30° o menos, ajuste la velocidad de avance al 70 % o menos como guía.
Si el ángulo de inclinación α es mayor de 30°, ajuste la velocidad de avance al 50 % o menos como guía.

Nota 3) Este producto es una herramienta diseñada para taladrar agujeros. No puede usarse para mecanizado cruzado o helicoidal.

MINI-DWAE

NEW

Diámetro pequeño

UWC DP1A 135° XR X

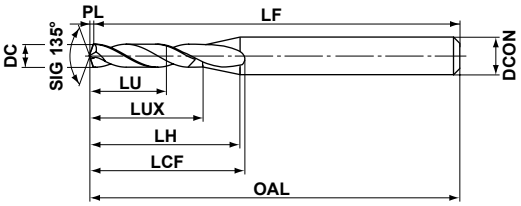
DC<2.0

P M K N S H

Refrigeración externa

DC<2.0

DC≥2.0



Tipo 1

DC≤3	
0 −0.014	

DCON=3	DCON=4
0 −0.006	0 −0.008

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm) LU	LUX	LCF	LH	OAL	LF	PL	DCON	Tipo
1.0	2	●	DWAE0100X02S030	2.2	5.0	7.7	8.7	45.0	44.8	0.2	3	1
1.0	4	●	DWAE0100X04S030	4.2	7.0	9.9	10.7	45.0	44.8	0.2	3	1
1.1	2	★	DWAE0110X02S030	2.4	5.4	8.1	8.9	45.0	44.8	0.2	3	1
1.1	4	★	DWAE0110X04S030	4.6	7.6	10.5	11.1	45.0	44.8	0.2	3	1
1.2	2	★	DWAE0120X02S030	2.6	5.8	8.5	9.2	45.0	44.8	0.2	3	1
1.2	4	★	DWAE0120X04S030	5.0	8.2	11.1	11.6	45.0	44.8	0.2	3	1
1.3	2	★	DWAE0130X02S030	2.9	6.3	9.0	9.5	45.0	44.7	0.3	3	1
1.3	4	★	DWAE0130X04S030	5.5	8.9	11.9	12.1	45.0	44.7	0.3	3	1
1.4	2	★	DWAE0140X02S030	3.1	6.7	9.4	9.7	45.0	44.7	0.3	3	1
1.4	4	★	DWAE0140X04S030	5.9	9.5	12.5	12.5	45.0	44.7	0.3	3	1
1.5	2	●	DWAE0150X02S030	3.3	7.1	9.8	9.9	45.0	44.7	0.3	3	1
1.5	4	●	DWAE0150X04S030	6.3	10.1	13.1	12.9	45.0	44.7	0.3	3	1
1.6	2	★	DWAE0160X02S030	3.5	7.5	10.2	10.1	45.0	44.7	0.3	3	1
1.6	4	★	DWAE0160X04S030	6.7	10.7	13.7	13.3	45.0	44.7	0.3	3	1
1.7	2	★	DWAE0170X02S030	3.8	8.0	10.7	10.4	45.0	44.6	0.4	3	1
1.7	4	★	DWAE0170X04S030	7.2	11.4	14.4	13.8	45.0	44.6	0.4	3	1
1.8	2	★	DWAE0180X02S030	4.0	8.4	11.1	10.6	45.0	44.6	0.4	3	1
1.8	4	★	DWAE0180X04S030	7.6	12.0	15.1	14.2	45.0	44.6	0.4	3	1
1.9	2	★	DWAE0190X02S030	4.2	8.8	11.5	10.9	45.0	44.6	0.4	3	1
1.9	4	★	DWAE0190X04S030	8.0	12.6	15.7	14.7	45.0	44.6	0.4	3	1
2.0	2	●	DWAE0200X02S040	4.4	9.2	12.8	12.9	50.0	49.6	0.4	4	1
2.0	4	●	DWAE0200X04S040	8.4	13.2	17.2	16.9	50.0	49.6	0.4	4	1
2.1	2	★	DWAE0210X02S040	4.6	9.6	13.2	13.1	50.0	49.6	0.4	4	1
2.1	4	★	DWAE0210X04S040	8.8	13.8	17.8	17.3	50.0	49.6	0.4	4	1
2.2	2	★	DWAE0220X02S040	4.9	10.1	13.7	13.5	50.0	49.5	0.5	4	1
2.2	4	★	DWAE0220X04S040	9.3	14.5	18.5	17.9	50.0	49.5	0.5	4	1
2.3	2	★	DWAE0230X02S040	5.1	10.5	14.1	13.7	50.0	49.5	0.5	4	1
2.3	4	★	DWAE0230X04S040	9.7	15.1	19.2	18.3	50.0	49.5	0.5	4	1
2.4	2	★	DWAE0240X02S040	5.3	10.9	14.5	13.9	50.0	49.5	0.5	4	1
2.4	4	★	DWAE0240X04S040	10.1	15.7	19.8	18.7	50.0	49.5	0.5	4	1
2.5	2	●	DWAE0250X02S040	5.5	11.3	14.9	14.1	50.0	49.5	0.5	4	1
2.5	4	●	DWAE0250X04S040	10.5	16.3	20.4	19.1	50.0	49.5	0.5	4	1
2.6	2	★	DWAE0260X02S040	5.7	11.7	15.3	14.3	50.0	49.5	0.5	4	1
2.6	4	★	DWAE0260X04S040	10.9	16.9	21.0	19.5	50.0	49.5	0.5	4	1
2.7	2	★	DWAE0270X02S040	6.0	12.2	15.8	14.6	50.0	49.4	0.6	4	1
2.7	4	★	DWAE0270X04S040	11.4	17.6	21.7	20.0	50.0	49.4	0.6	4	1
2.8	2	★	DWAE0280X02S040	6.2	12.6	16.2	14.8	50.0	49.4	0.6	4	1
2.8	4	★	DWAE0280X04S040	11.8	18.2	22.4	20.4	50.0	49.4	0.6	4	1
2.9	2	★	DWAE0290X02S040	6.4	13.0	16.6	15.1	50.0	49.4	0.6	4	1
2.9	4	★	DWAE0290X04S040	12.2	18.8	23.0	20.9	50.0	49.4	0.6	4	1

● : Stock Europa. ★ : Stock Japón.

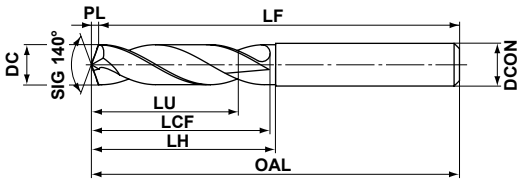
DWAE

NEW

UWC DP1A 140° Z

P M K N S H

Refrigeración externa



Tipo 1

DC=3	3<DC≤6	6<DC≤10	10<DC≤14
0 −0.014	0 −0.018	0 −0.022	0 −0.027
DCON=3	**3<DCON≤6**	**6<DCON≤10**	**10<DCON≤14**
0 −0.006	0 −0.008	0 −0.009	0 −0.011

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.0	2	●	**DWAE0300X02S030**	6.5	12.5	14.5	45.5	45	0.5	3	1
3.0	4	●	**DWAE0300X04S030**	12.5	21.5	23.5	55.5	55	0.5	3	1
3.1	2	●	**DWAE0310X02S040**	6.8	12.6	14.6	55.6	55	0.6	4	1
3.1	4	●	**DWAE0310X04S040**	13.0	21.6	23.6	60.6	60	0.6	4	1
3.2	2	●	**DWAE0320X02S040**	7.0	13.6	15.6	55.6	55	0.6	4	1
3.2	4	●	**DWAE0320X04S040**	13.4	22.6	24.6	60.6	60	0.6	4	1
3.3	2	●	**DWAE0330X02S040**	7.2	13.6	15.6	55.6	55	0.6	4	1
3.3	4	●	**DWAE0330X04S040**	13.8	23.6	25.6	60.6	60	0.6	4	1
3.4	2	●	**DWAE0340X02S040**	7.4	13.6	15.6	55.6	55	0.6	4	1
3.4	4	●	**DWAE0340X04S040**	14.2	23.6	25.6	60.6	60	0.6	4	1
3.5	2	●	**DWAE0350X02S040**	7.6	14.6	16.6	55.6	55	0.6	4	1
3.5	4	●	**DWAE0350X04S040**	14.6	24.6	26.6	60.6	60	0.6	4	1
3.6	2	●	**DWAE0360X02S040**	7.9	14.7	16.7	55.7	55	0.7	4	1
3.6	4	●	**DWAE0360X04S040**	15.1	25.7	27.7	60.7	60	0.7	4	1
3.7	2	●	**DWAE0370X02S040**	8.1	14.7	16.7	55.7	55	0.7	4	1
3.7	4	●	**DWAE0370X04S040**	15.5	25.7	27.7	60.7	60	0.7	4	1
3.8	2	●	**DWAE0380X02S040**	8.3	15.7	17.7	55.7	55	0.7	4	1
3.8	4	●	**DWAE0380X04S040**	15.9	26.7	28.7	60.7	60	0.7	4	1
3.9	2	●	**DWAE0390X02S040**	8.5	15.7	17.7	55.7	55	0.7	4	1
3.9	4	●	**DWAE0390X04S040**	16.3	27.7	29.7	60.7	60	0.7	4	1
4.0	2	●	**DWAE0400X02S040**	8.7	15.7	17.7	55.7	55	0.7	4	1
4.0	4	●	**DWAE0400X04S040**	16.7	27.7	29.7	60.7	60	0.7	4	1
4.1	2	●	**DWAE0410X02S050**	8.9	16.7	18.7	62.7	62	0.7	5	1
4.1	4	●	**DWAE0410X04S050**	17.1	28.7	30.7	80.7	80	0.7	5	1
4.2	2	●	**DWAE0420X02S050**	9.2	16.8	18.8	62.8	62	0.8	5	1
4.2	4	●	**DWAE0420X04S050**	17.6	29.8	31.8	80.8	80	0.8	5	1
4.3	2	●	**DWAE0430X02S050**	9.4	17.8	19.8	62.8	62	0.8	5	1
4.3	4	●	**DWAE0430X04S050**	18.0	30.8	32.8	80.8	80	0.8	5	1
4.4	2	●	**DWAE0440X02S050**	9.6	17.8	19.8	62.8	62	0.8	5	1
4.4	4	●	**DWAE0440X04S050**	18.4	30.8	32.8	80.8	80	0.8	5	1

CONDICIONES DE CORTE ➤ M027
DATOS TÉCNICOS ➤ P001

DWAE NEW

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm)							Tipo
				LU	LCF	LH	OAL	LF	PL	DCON	
4.5	2	●	DWAE0450X02S050	9.8	17.8	19.8	62.8	62	0.8	5	1
4.5	4	●	DWAE0450X04S050	18.8	31.8	33.8	80.8	80	0.8	5	1
4.6	2	●	DWAE0460X02S050	10.0	18.8	20.8	62.8	62	0.8	5	1
4.6	4	●	DWAE0460X04S050	19.2	32.8	34.8	80.8	80	0.8	5	1
4.7	2	●	DWAE0470X02S050	10.3	18.9	20.9	62.9	62	0.9	5	1
4.7	4	●	DWAE0470X04S050	19.7	32.9	34.9	80.9	80	0.9	5	1
4.8	2	●	DWAE0480X02S050	10.5	18.9	20.9	62.9	62	0.9	5	1
4.8	4	●	DWAE0480X04S050	20.1	33.9	35.9	80.9	80	0.9	5	1
4.9	2	●	DWAE0490X02S050	10.7	19.9	21.9	62.9	62	0.9	5	1
4.9	4	●	DWAE0490X04S050	20.5	34.9	36.9	80.9	80	0.9	5	1
5.0	2	●	DWAE0500X02S050	10.9	19.9	21.9	62.9	62	0.9	5	1
5.0	4	●	DWAE0500X04S050	20.9	34.9	36.9	80.9	80	0.9	5	1
5.1	2	★	DWAE0510X02S060	11.1	21.9	23.9	66.9	66	0.9	6	1
5.1	4	★	DWAE0510X04S060	21.3	35.9	37.9	80.9	80	0.9	6	1
5.2	2	●	DWAE0520X02S060	11.3	21.9	23.9	66.9	66	0.9	6	1
5.2	4	●	DWAE0520X04S060	21.7	36.9	38.9	80.9	80	0.9	6	1
5.3	2	★	DWAE0530X02S060	11.6	22.0	24.0	67.0	66	1.0	6	1
5.3	4	★	DWAE0530X04S060	22.2	37.0	39.0	81.0	80	1.0	6	1
5.4	2	●	DWAE0540X02S060	11.8	22.0	24.0	67.0	66	1.0	6	1
5.4	4	●	DWAE0540X04S060	22.6	38.0	40.0	81.0	80	1.0	6	1
5.5	2	★	DWAE0550X02S060	12.0	22.0	24.0	67.0	66	1.0	6	1
5.5	4	★	DWAE0550X04S060	23.0	39.0	41.0	81.0	80	1.0	6	1
5.6	2	●	DWAE0560X02S060	12.2	24.0	26.0	67.0	66	1.0	6	1
5.6	4	●	DWAE0560X04S060	23.4	39.0	41.0	81.0	80	1.0	6	1
5.7	2	★	DWAE0570X02S060	12.4	24.0	26.0	67.0	66	1.0	6	1
5.7	4	★	DWAE0570X04S060	23.8	39.0	41.0	81.0	80	1.0	6	1
5.8	2	●	DWAE0580X02S060	12.7	24.1	26.1	67.1	66	1.1	6	1
5.8	4	●	DWAE0580X04S060	24.3	41.1	43.1	81.1	80	1.1	6	1
5.9	2	★	DWAE0590X02S060	12.9	24.1	26.1	67.1	66	1.1	6	1
5.9	4	★	DWAE0590X04S060	24.7	41.1	43.1	81.1	80	1.1	6	1
6.0	2	●	DWAE0600X02S060	13.1	24.1	26.1	67.1	66	1.1	6	1
6.0	4	●	DWAE0600X04S060	25.1	42.1	44.1	81.1	80	1.1	6	1
6.1	2	★	DWAE0610X02S070	13.3	26.1	28.1	75.1	74	1.1	7	1
6.1	4	★	DWAE0610X04S070	25.5	44.1	46.1	84.1	83	1.1	7	1
6.2	2	●	DWAE0620X02S070	13.5	26.1	28.1	75.1	74	1.1	7	1
6.2	4	●	DWAE0620X04S070	25.9	44.1	46.1	84.1	83	1.1	7	1
6.3	2	★	DWAE0630X02S070	13.7	26.1	28.1	75.1	74	1.1	7	1
6.3	4	★	DWAE0630X04S070	26.3	44.1	46.1	84.1	83	1.1	7	1
6.4	2	●	DWAE0640X02S070	14.0	26.2	28.2	75.2	74	1.2	7	1
6.4	4	●	DWAE0640X04S070	26.8	44.2	46.2	84.2	83	1.2	7	1
6.5	2	★	DWAE0650X02S070	14.2	26.2	28.2	75.2	74	1.2	7	1
6.5	4	★	DWAE0650X04S070	27.2	44.2	46.2	84.2	83	1.2	7	1

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm)							Tipo
				LU	LCF	LH	OAL	LF	PL	DCON	
6.6	2	●	**DWAE0660X02S070**	14.4	28.2	30.2	75.2	74	1.2	7	1
6.6	4	●	**DWAE0660X04S070**	27.6	46.2	48.2	84.2	83	1.2	7	1
6.7	2	★	**DWAE0670X02S070**	14.6	28.2	30.2	75.2	74	1.2	7	1
6.7	4	★	**DWAE0670X04S070**	28.0	46.2	48.2	84.2	83	1.2	7	1
6.8	2	●	**DWAE0680X02S070**	14.8	28.2	30.2	75.2	74	1.2	7	1
6.8	4	●	**DWAE0680X04S070**	28.4	46.2	48.2	84.2	83	1.2	7	1
6.9	2	★	**DWAE0690X02S070**	15.1	28.3	30.3	75.3	74	1.3	7	1
6.9	4	★	**DWAE0690X04S070**	28.9	46.3	48.3	84.3	83	1.3	7	1
7.0	2	●	**DWAE0700X02S070**	15.3	28.3	30.3	75.3	74	1.3	7	1
7.0	4	●	**DWAE0700X04S070**	29.3	46.3	48.3	84.3	83	1.3	7	1
7.1	2	★	**DWAE0710X02S080**	15.5	29.3	31.3	80.3	79	1.3	8	1
7.1	4	★	**DWAE0710X04S080**	29.7	51.3	53.3	91.3	90	1.3	8	1
7.2	2	●	**DWAE0720X02S080**	15.7	29.3	31.3	80.3	79	1.3	8	1
7.2	4	●	**DWAE0720X04S080**	30.1	51.3	53.3	91.3	90	1.3	8	1
7.3	2	★	**DWAE0730X02S080**	15.9	29.3	31.3	80.3	79	1.3	8	1
7.3	4	★	**DWAE0730X04S080**	30.5	51.3	53.3	91.3	90	1.3	8	1
7.4	2	●	**DWAE0740X02S080**	16.1	29.3	31.3	80.3	79	1.3	8	1
7.4	4	●	**DWAE0740X04S080**	30.9	51.3	53.3	91.3	90	1.3	8	1
7.5	2	★	**DWAE0750X02S080**	16.4	29.4	31.4	80.4	79	1.4	8	1
7.5	4	★	**DWAE0750X04S080**	31.4	51.4	53.4	91.4	90	1.4	8	1
7.6	2	●	**DWAE0760X02S080**	16.6	31.4	33.4	80.4	79	1.4	8	1
7.6	4	●	**DWAE0760X04S080**	31.8	53.4	55.4	91.4	90	1.4	8	1
7.7	2	★	**DWAE0770X02S080**	16.8	31.4	33.4	80.4	79	1.4	8	1
7.7	4	★	**DWAE0770X04S080**	32.2	53.4	55.4	91.4	90	1.4	8	1
7.8	2	●	**DWAE0780X02S080**	17.0	31.4	33.4	80.4	79	1.4	8	1
7.8	4	●	**DWAE0780X04S080**	32.6	53.4	55.4	91.4	90	1.4	8	1
7.9	2	★	**DWAE0790X02S080**	17.2	31.4	33.4	80.4	79	1.4	8	1
7.9	4	★	**DWAE0790X04S080**	33.0	53.4	55.4	91.4	90	1.4	8	1
8.0	2	●	**DWAE0800X02S080**	17.5	31.5	33.5	80.5	79	1.5	8	1
8.0	4	●	**DWAE0800X04S080**	33.5	53.5	55.5	91.5	90	1.5	8	1
8.1	2	★	**DWAE0810X02S090**	17.7	33.5	35.5	85.5	84	1.5	9	1
8.1	4	★	**DWAE0810X04S090**	33.9	57.5	59.5	99.5	98	1.5	9	1
8.2	2	●	**DWAE0820X02S090**	17.9	33.5	35.5	85.5	84	1.5	9	1
8.2	4	●	**DWAE0820X04S090**	34.3	57.5	59.5	99.5	98	1.5	9	1
8.3	2	★	**DWAE0830X02S090**	18.1	33.5	35.5	85.5	84	1.5	9	1
8.3	4	★	**DWAE0830X04S090**	34.7	57.5	59.5	99.5	98	1.5	9	1
8.4	2	●	**DWAE0840X02S090**	18.3	33.5	35.5	85.5	84	1.5	9	1
8.4	4	●	**DWAE0840X04S090**	35.1	57.5	59.5	99.5	98	1.5	9	1
8.5	2	★	**DWAE0850X02S090**	18.5	33.5	35.5	85.5	84	1.5	9	1
8.5	4	★	**DWAE0850X04S090**	35.5	57.5	59.5	99.5	98	1.5	9	1
8.6	2	●	**DWAE0860X02S090**	18.8	34.6	36.6	85.6	84	1.6	9	1
8.6	4	●	**DWAE0860X04S090**	36.0	61.6	63.6	99.6	98	1.6	9	1
8.7	2	★	**DWAE0870X02S090**	19.0	34.6	36.6	85.6	84	1.6	9	1
8.7	4	★	**DWAE0870X04S090**	36.4	61.6	63.6	99.6	98	1.6	9	1

CONDICIONES DE CORTE ➢ M027
DATOS TÉCNICOS ➢ P001

DWAE NEW

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm)							Tipo
				LU	LCF	LH	OAL	LF	PL	DCON	
8.8	2	●	DWAE0880X02S090	19.2	34.6	36.6	85.6	84	1.6	9	1
8.8	4	●	DWAE0880X04S090	36.8	61.6	63.6	99.6	98	1.6	9	1
8.9	2	★	DWAE0890X02S090	19.4	34.6	36.6	85.6	84	1.6	9	1
8.9	4	★	DWAE0890X04S090	37.2	61.6	63.6	99.6	98	1.6	9	1
9.0	2	●	DWAE0900X02S090	19.6	34.6	36.6	85.6	84	1.6	9	1
9.0	4	●	DWAE0900X04S090	37.6	61.6	63.6	99.6	98	1.6	9	1
9.1	2	★	DWAE0910X02S100	19.9	36.7	38.7	90.7	89	1.7	10	1
9.1	4	★	DWAE0910X04S100	38.1	63.7	65.7	106.7	105	1.7	10	1
9.2	2	●	DWAE0920X02S100	20.1	36.7	38.7	90.7	89	1.7	10	1
9.2	4	●	DWAE0920X04S100	38.5	63.7	65.7	106.7	105	1.7	10	1
9.3	2	★	DWAE0930X02S100	20.3	36.7	38.7	90.7	89	1.7	10	1
9.3	4	★	DWAE0930X04S100	38.9	63.7	65.7	106.7	105	1.7	10	1
9.4	2	●	DWAE0940X02S100	20.5	36.7	38.7	90.7	89	1.7	10	1
9.4	4	●	DWAE0940X04S100	39.3	63.7	65.7	106.7	105	1.7	10	1
9.5	2	★	DWAE0950X02S100	20.7	36.7	38.7	90.7	89	1.7	10	1
9.5	4	★	DWAE0950X04S100	39.7	63.7	65.7	106.7	105	1.7	10	1
9.6	2	●	DWAE0960X02S100	20.9	37.7	39.7	90.7	89	1.7	10	1
9.6	4	●	DWAE0960X04S100	40.1	66.7	68.7	106.7	105	1.7	10	1
9.7	2	★	DWAE0970X02S100	21.2	37.8	39.8	90.8	89	1.8	10	1
9.7	4	★	DWAE0970X04S100	40.6	66.8	68.8	106.8	105	1.8	10	1
9.8	2	●	DWAE0980X02S100	21.4	37.8	39.8	90.8	89	1.8	10	1
9.8	4	●	DWAE0980X04S100	41.0	66.8	68.8	106.8	105	1.8	10	1
9.9	2	★	DWAE0990X02S100	21.6	37.8	39.8	90.8	89	1.8	10	1
9.9	4	★	DWAE0990X04S100	41.4	66.8	68.8	106.8	105	1.8	10	1
10.0	2	●	DWAE1000X02S100	21.8	37.8	39.8	90.8	89	1.8	10	1
10.0	4	●	DWAE1000X04S100	41.8	66.8	68.8	106.8	105	1.8	10	1
10.1	2	●	DWAE1010X02S110	22.0	40.8	42.8	101.8	100	1.8	11	1
10.1	4	●	DWAE1010X04S110	42.2	71.8	73.8	115.8	114	1.8	11	1
10.2	2	●	DWAE1020X02S110	22.3	40.9	42.9	101.9	100	1.9	11	1
10.2	4	●	DWAE1020X04S110	42.7	71.9	73.9	115.9	114	1.9	11	1
10.3	2	●	DWAE1030X02S110	22.5	40.9	42.9	101.9	100	1.9	11	1
10.3	4	●	DWAE1030X04S110	43.1	71.9	73.9	115.9	114	1.9	11	1
10.4	2	●	DWAE1040X02S110	22.7	40.9	42.9	101.9	100	1.9	11	1
10.4	4	●	DWAE1040X04S110	43.5	71.9	73.9	115.9	114	1.9	11	1
10.5	2	●	DWAE1050X02S110	22.9	40.9	42.9	101.9	100	1.9	11	1
10.5	4	●	DWAE1050X04S110	43.9	71.9	73.9	115.9	114	1.9	11	1
10.6	2	●	DWAE1060X02S110	23.1	41.9	43.9	101.9	100	1.9	11	1
10.6	4	●	DWAE1060X04S110	44.3	72.9	74.9	115.9	114	1.9	11	1
10.7	2	●	DWAE1070X02S110	23.3	41.9	43.9	101.9	100	1.9	11	1
10.7	4	●	DWAE1070X04S110	44.7	72.9	74.9	115.9	114	1.9	11	1
10.8	2	●	DWAE1080X02S110	23.6	42.0	44.0	102.0	100	2.0	11	1
10.8	4	●	DWAE1080X04S110	45.2	73.0	75.0	116.0	114	2.0	11	1

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm)							Tipo
				LU	LCF	LH	OAL	LF	PL	DCON	
10.9	2	●	**DWAE1090X02S110**	23.8	42.0	44.0	102.0	100	2.0	11	1
10.9	4	●	**DWAE1090X04S110**	45.6	73.0	75.0	116.0	114	2.0	11	1
11.0	2	●	**DWAE1100X02S110**	24.0	42.0	44.0	102.0	100	2.0	11	1
11.0	4	●	**DWAE1100X04S110**	46.0	73.0	75.0	116.0	114	2.0	11	1
11.1	2	●	**DWAE1110X02S120**	24.2	45.0	47.0	102.0	100	2.0	12	1
11.1	4	●	**DWAE1110X04S120**	46.4	77.0	79.0	123.0	121	2.0	12	1
11.2	2	●	**DWAE1120X02S120**	24.4	45.0	47.0	102.0	100	2.0	12	1
11.2	4	●	**DWAE1120X04S120**	46.8	77.0	79.0	123.0	121	2.0	12	1
11.3	2	●	**DWAE1130X02S120**	24.7	45.1	47.1	102.1	100	2.1	12	1
11.3	4	●	**DWAE1130X04S120**	47.3	77.1	79.1	123.1	121	2.1	12	1
11.4	2	●	**DWAE1140X02S120**	24.9	45.1	47.1	102.1	100	2.1	12	1
11.4	4	●	**DWAE1140X04S120**	47.7	77.1	79.1	123.1	121	2.1	12	1
11.5	2	●	**DWAE1150X02S120**	25.1	45.1	47.1	102.1	100	2.1	12	1
11.5	4	●	**DWAE1150X04S120**	48.1	77.1	79.1	123.1	121	2.1	12	1
11.6	2	●	**DWAE1160X02S120**	25.3	47.1	49.1	102.1	100	2.1	12	1
11.6	4	●	**DWAE1160X04S120**	48.5	79.1	81.1	123.1	121	2.1	12	1
11.7	2	●	**DWAE1170X02S120**	25.5	47.1	49.1	102.1	100	2.1	12	1
11.7	4	●	**DWAE1170X04S120**	48.9	79.1	81.1	123.1	121	2.1	12	1
11.8	2	●	**DWAE1180X02S120**	25.7	47.1	49.1	102.1	100	2.1	12	1
11.8	4	●	**DWAE1180X04S120**	49.3	79.1	81.1	123.1	121	2.1	12	1
11.9	2	●	**DWAE1190X02S120**	26.0	47.2	49.2	102.2	100	2.2	12	1
11.9	4	●	**DWAE1190X04S120**	49.8	79.2	81.2	123.2	121	2.2	12	1
12.0	2	●	**DWAE1200X02S120**	26.2	47.2	49.2	102.2	100	2.2	12	1
12.0	4	●	**DWAE1200X04S120**	50.2	79.2	81.2	123.2	121	2.2	12	1
12.1	2	●	**DWAE1210X02S130**	26.4	49.2	51.2	102.2	100	2.2	13	1
12.1	4	●	**DWAE1210X04S130**	50.6	82.2	84.2	139.2	137	2.2	13	1
12.2	2	●	**DWAE1220X02S130**	26.6	49.2	51.2	102.2	100	2.2	13	1
12.2	4	●	**DWAE1220X04S130**	51.0	82.2	84.2	139.2	137	2.2	13	1
12.3	2	●	**DWAE1230X02S130**	26.8	49.2	51.2	102.2	100	2.2	13	1
12.3	4	●	**DWAE1230X04S130**	51.4	82.2	84.2	139.2	137	2.2	13	1
12.4	2	●	**DWAE1240X02S130**	27.1	49.3	51.3	102.3	100	2.3	13	1
12.4	4	●	**DWAE1240X04S130**	51.9	82.3	84.3	139.3	137	2.3	13	1
12.5	2	●	**DWAE1250X02S130**	27.3	49.3	51.3	102.3	100	2.3	13	1
12.5	4	●	**DWAE1250X04S130**	52.3	82.3	84.3	139.3	137	2.3	13	1
12.6	2	●	**DWAE1260X02S130**	27.5	52.3	54.3	102.3	100	2.3	13	1
12.6	4	●	**DWAE1260X04S130**	52.7	84.3	86.3	139.3	137	2.3	13	1
12.7	2	●	**DWAE1270X02S130**	27.7	52.3	54.3	102.3	100	2.3	13	1
12.7	4	●	**DWAE1270X04S130**	53.1	84.3	86.3	139.3	137	2.3	13	1
12.8	2	●	**DWAE1280X02S130**	27.9	52.3	54.3	102.3	100	2.3	13	1
12.8	4	●	**DWAE1280X04S130**	53.5	84.3	86.3	139.3	137	2.3	13	1
12.9	2	●	**DWAE1290X02S130**	28.1	52.3	54.3	102.3	100	2.3	13	1
12.9	4	●	**DWAE1290X04S130**	53.9	84.3	86.3	139.3	137	2.3	13	1

CONDICIONES DE CORTE ➢ M027
DATOS TÉCNICOS ➢ P001

DWAE NEW

DC (mm)	Profundidad agujero (L/D)	DP102A	Referencia	Dimensiones (mm)							Tipo
				LU	LCF	LH	OAL	LF	PL	DCON	
13.0	2	●	**DWAE1300X02S130**	28.4	52.4	54.4	102.4	100	2.4	13	1
13.0	4	●	**DWAE1300X04S130**	54.4	84.4	86.4	139.4	137	2.4	13	1
13.1	2	●	**DWAE1310X02S140**	28.6	55.4	57.4	102.4	100	2.4	14	1
13.1	4	●	**DWAE1310X04S140**	54.8	92.4	94.4	149.4	147	2.4	14	1
13.2	2	●	**DWAE1320X02S140**	28.8	55.4	57.4	102.4	100	2.4	14	1
13.2	4	●	**DWAE1320X04S140**	55.2	92.4	94.4	149.4	147	2.4	14	1
13.3	2	●	**DWAE1330X02S140**	29.0	55.4	57.4	102.4	100	2.4	14	1
13.3	4	●	**DWAE1330X04S140**	55.6	92.4	94.4	149.4	147	2.4	14	1
13.4	2	●	**DWAE1340X02S140**	29.2	55.4	57.4	102.4	100	2.4	14	1
13.4	4	●	**DWAE1340X04S140**	56.0	92.4	94.4	149.4	147	2.4	14	1
13.5	2	●	**DWAE1350X02S140**	29.5	55.5	57.5	102.5	100	2.5	14	1
13.5	4	●	**DWAE1350X04S140**	56.5	92.5	94.5	149.5	147	2.5	14	1
13.6	2	●	**DWAE1360X02S140**	29.7	57.5	59.5	102.5	100	2.5	14	1
13.6	4	●	**DWAE1360X04S140**	56.9	97.5	99.5	149.5	147	2.5	14	1
13.7	2	●	**DWAE1370X02S140**	29.9	57.5	59.5	102.5	100	2.5	14	1
13.7	4	●	**DWAE1370X04S140**	57.3	97.5	99.5	149.5	147	2.5	14	1
13.8	2	●	**DWAE1380X02S140**	30.1	57.5	59.5	102.5	100	2.5	14	1
13.8	4	●	**DWAE1380X04S140**	57.7	97.5	99.5	149.5	147	2.5	14	1
13.9	2	●	**DWAE1390X02S140**	30.3	57.5	59.5	102.5	100	2.5	14	1
13.9	4	●	**DWAE1390X04S140**	58.1	97.5	99.5	149.5	147	2.5	14	1
14.0	2	●	**DWAE1400X02S140**	30.5	57.5	59.5	102.5	100	2.5	14	1
14.0	4	●	**DWAE1400X04S140**	58.5	97.5	99.5	149.5	147	2.5	14	1

● : Stock Europa.

CONDICIONES DE CORTE RECOMENDADAS

Material	P							
	Acero dulce (≤180 HB) EU S275JR, Ck10, etc.				Acero al carbono, acero aleado (180-250 HB) C45, 42CrMo4, etc.			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
1.0	30	9500	0.03 (0.02—0.04)	285	30	9500	0.03 (0.02—0.04)	285
1.5	30	6300	0.05 (0.03—0.06)	315	30	6300	0.05 (0.03—0.06)	315
2.0	55	8700	0.06 (0.04—0.08)	520	55	8700	0.06 (0.04—0.08)	520
2.5	55	7000	0.08 (0.05—0.10)	560	55	7000	0.08 (0.05—0.10)	560
3.0	65	6800	0.09 (0.07—0.11)	610	60	6300	0.09 (0.07—0.11)	565
4.0	70	5500	0.12 (0.09—0.14)	660	65	5100	0.12 (0.09—0.14)	610
5.0	70	4400	0.15 (0.11—0.18)	660	65	4100	0.15 (0.11—0.18)	615
6.0	80	4200	0.18 (0.14—0.21)	755	75	3900	0.18 (0.14—0.21)	700
7.0	80	3600	0.21 (0.16—0.25)	755	75	3400	0.21 (0.16—0.25)	715
8.0	85	3300	0.23 (0.18—0.28)	760	80	3100	0.23 (0.18—0.28)	715
10.0	90	2800	0.27 (0.21—0.32)	755	85	2700	0.27 (0.21—0.32)	730
12.0	95	2500	0.28 (0.22—0.34)	700	90	2300	0.28 (0.22—0.34)	645
14.0	95	2100	0.29 (0.23—0.35)	610	90	2000	0.29 (0.23—0.35)	580

Material	P				M			
	Acero al carbono, acero aleado (280-350 HB) 40CrNiMo, etc.				Acero inoxidable austenítico (≤200 HB) Aceros inoxidables ferríticos y martensíticos (>200HB) X12CrS13, X30Cr13, etc.			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
1.0	25	7900	0.02 (0.01—0.03)	160	30	9500	0.02 (0.01—0.03)	190
1.5	25	5300	0.04 (0.02—0.05)	210	30	6300	0.04 (0.02—0.05)	250
2.0	50	7900	0.05 (0.03—0.07)	395	35	5500	0.04 (0.02—0.06)	220
2.5	50	6300	0.07 (0.04—0.09)	440	35	4400	0.06 (0.03—0.08)	265
3.0	55	5800	0.08 (0.06—0.09)	465	40	4200	0.07 (0.04—0.10)	295
4.0	60	4700	0.11 (0.08—0.13)	515	40	3100	0.08 (0.05—0.10)	250
5.0	60	3800	0.13 (0.10—0.16)	495	40	2500	0.10 (0.05—0.15)	250
6.0	70	3700	0.16 (0.12—0.19)	590	40	2100	0.11 (0.06—0.15)	230
7.0	70	3100	0.18 (0.14—0.22)	560	40	1800	0.12 (0.06—0.18)	215
8.0	75	2900	0.21 (0.16—0.25)	610	40	1500	0.13 (0.06—0.20)	195
10.0	80	2500	0.24 (0.20—0.28)	600	40	1200	0.14 (0.08—0.20)	170
12.0	85	2200	0.25 (0.20—0.30)	550	40	1000	0.18 (0.10—0.25)	180
14.0	85	1900	0.25 (0.20—0.30)	475	40	900	0.18 (0.10—0.25)	160

Nota 1) Las condiciones de corte anteriores reflejan el uso de refrigerante hidrosoluble. En el caso del acero inoxidable, se recomienda el uso de refrigerante no hidrosoluble.
Nota 2) Cuando utilice un refrigerante no hidrosoluble, reduzca la velocidad de corte en un 20 % para garantizar una lubricación adecuada.
Nota 3) Compruebe el estado de las virutas y realice el mecanizado por pasos si es necesario. * Referencia de la longitud del paso: de 0,2 a 1,0 DC
Nota 4) Ajuste las condiciones de corte en función de la máquina-herramienta, así como la rigidez de sujeción de la pieza de trabajo, la geometría de mecanizado, etc.
Nota 5) No se recomienda mecanizar a profundidades que excedan la longitud de la hélice (LU).
Nota 6) Sujete la broca de tal forma que la desviación de la misma no supere los 0,03 mm.
Nota 7) No sujete la parte de la hélice de la broca.

CONDICIONES DE CORTE RECOMENDADAS

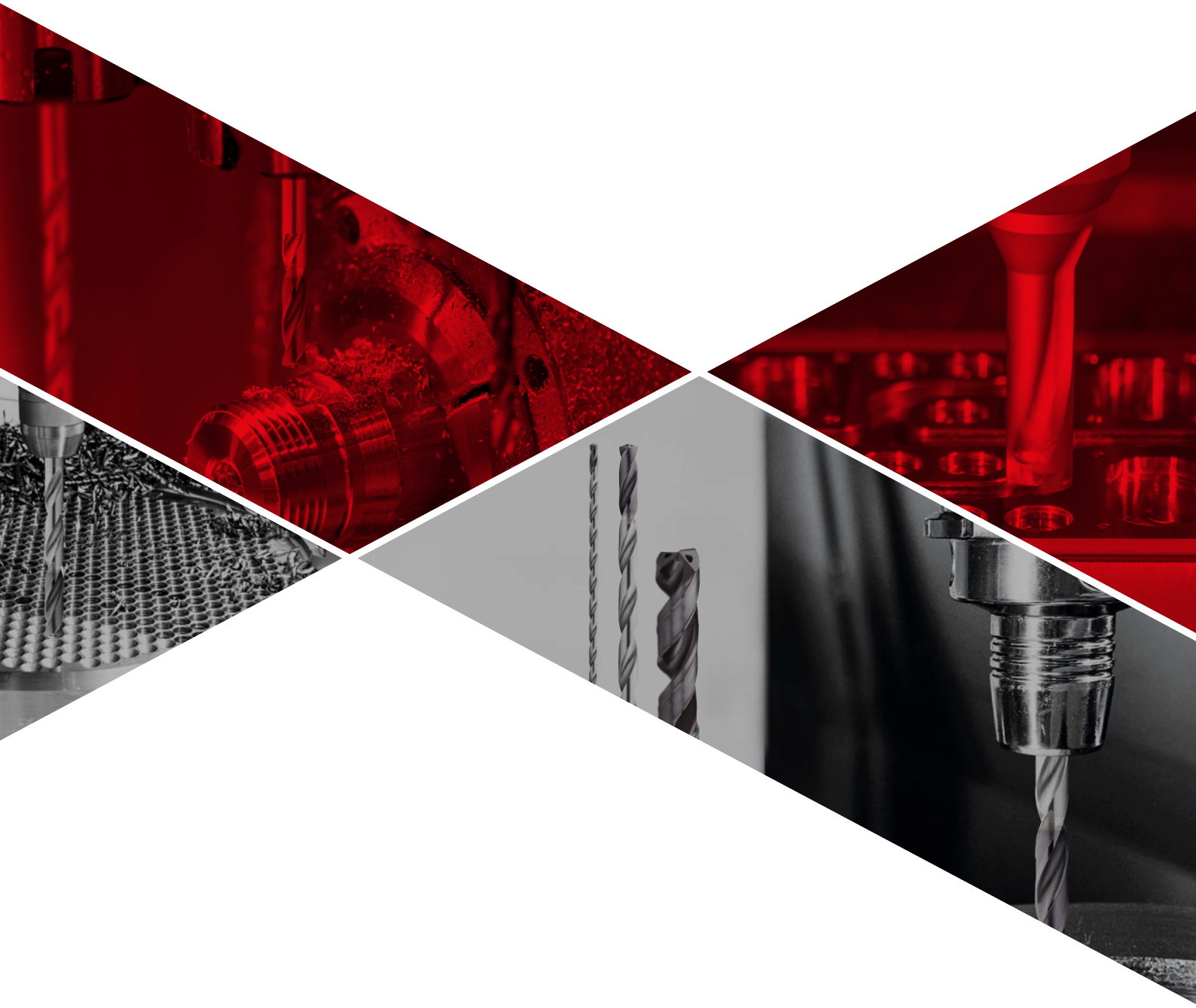
Material	K							
	Fundición gris (≤350 MPa) GG30, etc.				Fundición dúctil (≤450 MPa) EN-GJS-450-10, etc.			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
1.0	30	9500	0.03 (0.02—0.04)	285	25	7900	0.02 (0.01—0.03)	160
1.5	30	6300	0.05 (0.03—0.06)	315	25	5300	0.04 (0.02—0.05)	210
2.0	55	8700	0.06 (0.04—0.08)	520	50	7900	0.05 (0.03—0.07)	395
2.5	55	7000	0.08 (0.05—0.10)	560	50	6300	0.07 (0.04—0.09)	440
3.0	65	6800	0.09 (0.07—0.11)	610	55	5800	0.09 (0.05—0.12)	520
4.0	70	5500	0.12 (0.09—0.14)	660	60	4700	0.12 (0.07—0.17)	565
5.0	70	4400	0.15 (0.11—0.18)	660	60	3800	0.14 (0.08—0.20)	530
6.0	80	4200	0.18 (0.14—0.21)	755	70	3700	0.15 (0.10—0.20)	555
7.0	80	3600	0.21 (0.16—0.25)	755	70	3100	0.18 (0.12—0.23)	560
8.0	85	3300	0.23 (0.18—0.28)	760	75	2900	0.20 (0.15—0.25)	580
10.0	90	2800	0.27 (0.21—0.32)	755	80	2500	0.23 (0.18—0.28)	575
12.0	95	2500	0.28 (0.22—0.34)	700	85	2200	0.25 (0.20—0.30)	550
14.0	95	2100	0.29 (0.23—0.35)	610	85	1900	0.25 (0.20—0.30)	475

Nota 1) Las condiciones de corte anteriores reflejan el uso de refrigerante hidrosoluble. En el caso del acero inoxidable, se recomienda el uso de refrigerante no hidrosoluble.
Nota 2) Cuando utilice un refrigerante no hidrosoluble, reduzca la velocidad de corte en un 20 % para garantizar una lubricación adecuada.
Nota 3) Compruebe el estado de las virutas y realice el mecanizado por pasos si es necesario. * Referencia de la longitud del paso: de 0,2 a 1,0 DC
Nota 4) Ajuste las condiciones de corte en función de la máquina-herramienta, así como la rigidez de sujeción de la pieza de trabajo, la geometría de mecanizado, etc.
Nota 5) No se recomienda mecanizar a profundidades que excedan la longitud de la hélice (LU).
Nota 6) Sujete la broca de tal forma que la desviación de la misma no supere los 0,03 mm.
Nota 7) No sujete la parte de la hélice de la broca.

Notas

Notas

SERIE DE BROCAS



Notas

DIAEDGE

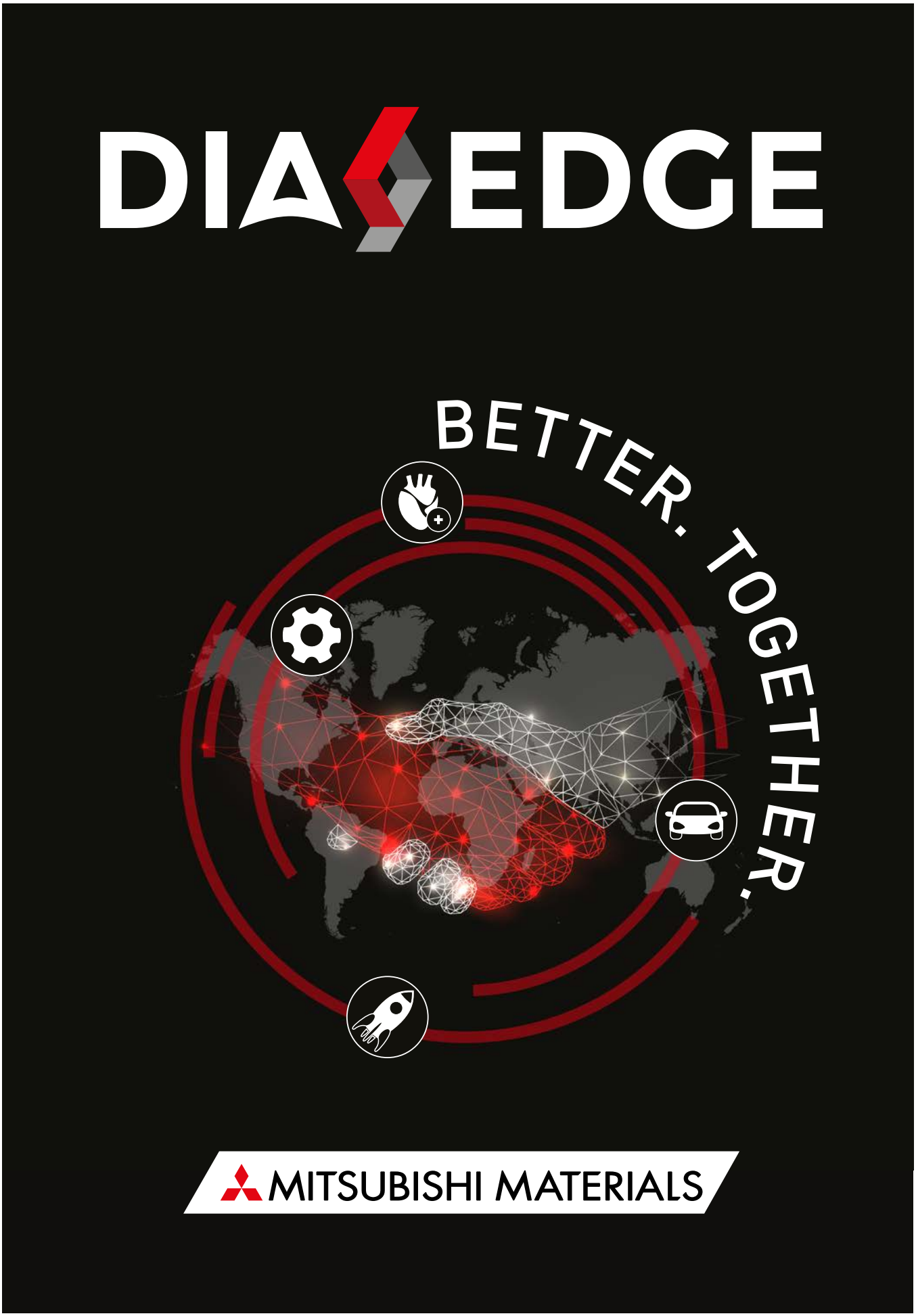
CREAMOS UN FUTURO MEJOR

JUNTO A NUESTROS CLIENTES

Anunciamos el lanzamiento de DIAEDGE, una nueva marca de producto que une nuestras tecnologías avanzadas de corte con la emoción de todos aquellos que las usan.

Nuestro objetivo no es solo ofrecer valor con nuestras herramientas, sino también desarrollar nuevas ideas con nuestros clientes, compartir nuestra inspiración con ellos y seguir afrontando nuevos desafíos.

MITSUBISHI MATERIALS


DIA EDGE
BETTER. TOGETHER.
MITSUBISHI MATERIALS

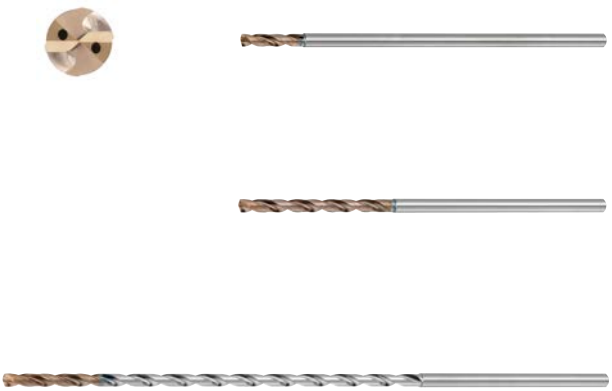
HERRAMIENTAS DE TALADRADO

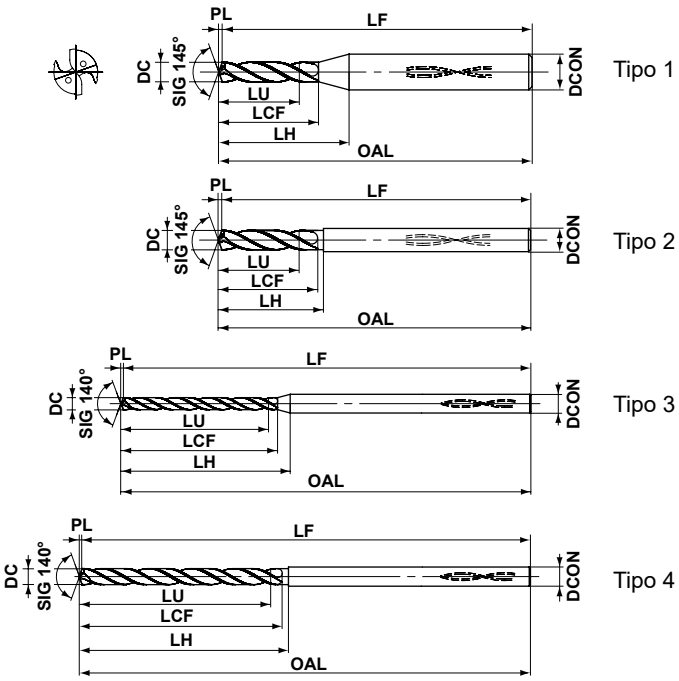
MINI-MVS

- Filo de corte recto que combina una mejora en la evacuación de las virutas y en la resistencia del propio filo de corte.
- El margen simple permite alcanzar un equilibrio óptimo y una gran precisión en el taladrado de diámetros pequeños.

P | M | K | N | S | H

Refrigeración interna





Referencia	1≤DC≤2.9
MVS-**X02**- (taladrado guía)	$^{+0.014}_{0}$
Otros	$^{0}_{-0.014}$
Referencia	**DCON**
MVS	$^{0}_{-0.006}$

DC (mm)	Profundidad agujero (L/D)	DP1020	Referencia	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
1.0	*2	●	MVS0100X02S030	2.2	5.2	8.9	55.2	55	0.2	3	1
	7	●	MVS0100X07S030	7.2	10.2	14.2	55.2	55	0.2	3	3
	12	●	MVS0100X12S030	12.2	15.2	19.2	55.2	55	0.2	3	3
	20	●	MVS0100X20S030	20.2	24.2	28.2	60.2	60	0.2	3	3
	25	●	MVS0100X25S030	25.2	28.2	32.2	66.2	66	0.2	3	3
	30	●	MVS0100X30S030	30.2	33.2	37.2	72.2	72	0.2	3	3
1.1	*2	●	MVS0110X02S030	2.4	5.6	9.1	55.2	55	0.2	3	1
	7	●	MVS0110X07S030	7.9	11.2	15.2	55.2	55	0.2	3	3
	12	●	MVS0110X12S030	13.4	17.2	21.2	55.2	55	0.2	3	3
	20	●	MVS0110X20S030	22.2	25.2	29.2	60.2	60	0.2	3	3
	25	●	MVS0110X25S030	27.7	31.2	34.2	66.2	66	0.2	3	3
	30	●	MVS0110X30S030	33.2	36.2	40.2	72.2	72	0.2	3	3
1.2	*2	●	MVS0120X02S030	2.6	6.2	9.6	55.2	55	0.2	3	1
	7	●	MVS0120X07S030	8.6	12.2	15.2	55.2	55	0.2	3	3
	12	●	MVS0120X12S030	14.6	18.2	21.2	55.2	55	0.2	3	3
	20	●	MVS0120X20S030	24.2	28.2	31.2	60.2	60	0.2	3	3
	25	●	MVS0120X25S030	30.2	34.2	37.2	66.2	66	0.2	3	3
	30	●	MVS0120X30S030	36.2	40.2	43.2	72.2	72	0.2	3	3
1.3	*2	●	MVS0130X02S030	2.8	6.6	9.8	55.2	55	0.2	3	1
	7	●	MVS0130X07S030	9.3	13.2	16.2	55.2	55	0.2	3	3
	12	●	MVS0130X12S030	15.8	20.2	23.2	55.2	55	0.2	3	3
	20	●	MVS0130X20S030	26.2	30.2	33.2	68.2	68	0.2	3	3
	25	●	MVS0130X25S030	32.7	36.2	40.2	74.2	74	0.2	3	3
	30	●	MVS0130X30S030	39.2	43.2	46.2	82.2	82	0.2	3	3

DC (mm)	Profundidad agujero (L/D)	DP1020	Referencia	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
1.4	*2	●	MVS0140X02S030	3.0	7.2	10.2	55.2	55	0.2	3	1
	7	●	MVS0140X07S030	10.1	14.3	17.3	55.3	55	0.3	3	3
	12	●	MVS0140X12S030	17.1	21.3	24.3	55.3	55	0.3	3	3
	20	●	MVS0140X20S030	28.3	32.3	35.3	68.3	68	0.3	3	3
	25	●	MVS0140X25S030	35.3	39.3	42.3	74.3	74	0.3	3	3
	30	●	MVS0140X30S030	42.3	46.3	49.3	82.3	82	0.3	3	3
1.5	*2	●	MVS0150X02S030	3.2	7.6	10.4	55.2	55	0.2	3	1
	7	●	MVS0150X07S030	10.8	15.3	18.3	55.3	55	0.3	3	3
	12	●	MVS0150X12S030	18.3	23.3	26.3	55.3	55	0.3	3	3
	20	●	MVS0150X20S030	30.3	35.3	37.3	68.3	68	0.3	3	3
	25	●	MVS0150X25S030	37.8	42.3	45.3	74.3	74	0.3	3	3
	30	●	MVS0150X30S030	45.3	50.3	52.3	82.3	82	0.3	3	3
1.6	*2	●	MVS0160X02S030	3.5	8.3	10.9	68.3	68	0.3	3	1
	7	●	MVS0160X07S030	11.5	16.3	19.3	68.3	68	0.3	3	3
	12	●	MVS0160X12S030	19.5	24.3	27.3	68.3	68	0.3	3	3
	20	●	MVS0160X20S030	32.3	37.3	39.3	78.3	78	0.3	3	3
	25	●	MVS0160X25S030	40.3	45.3	47.3	86.3	86	0.3	3	3
	30	●	MVS0160X30S030	48.3	53.3	55.3	95.3	95	0.3	3	3
1.7	*2	●	MVS0170X02S030	3.7	8.7	11.1	68.3	68	0.3	3	1
	7	●	MVS0170X07S030	12.2	17.3	19.3	68.3	68	0.3	3	3
	12	●	MVS0170X12S030	20.7	26.3	28.3	68.3	68	0.3	3	3
	20	●	MVS0170X20S030	34.3	39.3	42.3	78.3	78	0.3	3	3
	25	●	MVS0170X25S030	42.8	48.3	50.3	86.3	86	0.3	3	3
	30	●	MVS0170X30S030	51.3	56.3	59.3	95.3	95	0.3	3	3

*2= Broca para el agujero guía. La tolerancia es +0.014 y la profundidad del agujero es DCx2.

● : **Stock Europa.**

DC (mm)	Profundidad agujero (L/D)	DP1020	Referencia	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
1.8	*2	●	MVS0180X02S030	3.9	9.3	11.5	68.3	68	0.3	3	1
	7	●	MVS0180X07S030	12.9	18.3	20.3	68.3	68	0.3	3	3
	12	●	MVS0180X12S030	21.9	27.3	29.3	68.3	68	0.3	3	3
	20	●	MVS0180X20S030	36.3	41.3	44.3	84.3	84	0.3	3	3
	25	●	MVS0180X25S030	45.3	50.3	53.3	94.3	94	0.3	3	3
	30	●	MVS0180X30S030	54.3	59.3	62.3	102.3	102	0.3	3	3
1.9	*2	●	MVS0190X02S030	4.1	9.7	11.8	68.3	68	0.3	3	1
	7	●	MVS0190X07S030	13.6	19.3	21.3	68.3	68	0.3	3	3
	12	●	MVS0190X12S030	23.1	29.3	31.3	68.3	68	0.3	3	3
	20	●	MVS0190X20S030	38.3	44.3	46.3	84.3	84	0.3	3	3
	25	●	MVS0190X25S030	47.8	53.3	55.3	94.3	94	0.3	3	3
	30	●	MVS0190X30S030	57.3	63.3	65.3	102.3	102	0.3	3	3
2.0	*2	●	MVS0200X02S030	4.3	10.3	12.2	68.3	68	0.3	3	1
	7	●	MVS0200X07S030	14.4	20.4	22.4	68.4	68	0.4	3	3
	12	●	MVS0200X12S030	24.4	30.4	32.4	68.4	68	0.4	3	3
	20	●	MVS0200X20S030	40.4	46.4	48.4	84.4	84	0.4	3	3
	25	●	MVS0200X25S030	50.4	56.4	58.4	94.4	94	0.4	3	3
	30	●	MVS0200X30S030	60.4	66.4	68.4	102.4	102	0.4	3	3
2.1	*2	●	MVS0210X02S030	4.5	10.7	12.4	74.3	74	0.3	3	1
	7	●	MVS0210X07S030	15.1	21.4	23.4	74.4	74	0.4	3	3
	12	●	MVS0210X12S030	25.6	32.4	34.4	74.4	74	0.4	3	3
	20	●	MVS0210X20S030	42.4	48.4	50.4	94.4	94	0.4	3	3
	25	●	MVS0210X25S030	52.9	59.4	60.4	107.4	107	0.4	3	3
	30	●	MVS0210X30S030	63.4	69.4	71.4	118.4	118	0.4	3	3
2.2	*2	●	MVS0220X02S030	4.7	11.3	12.8	74.3	74	0.3	3	1
	7	●	MVS0220X07S030	15.8	22.4	23.4	74.4	74	0.4	3	3
	12	●	MVS0220X12S030	26.8	33.4	34.4	74.4	74	0.4	3	3
	20	●	MVS0220X20S030	44.4	51.4	52.4	94.4	94	0.4	3	3
	25	●	MVS0220X25S030	55.4	62.4	63.4	107.4	107	0.4	3	3
	30	●	MVS0220X30S030	66.4	73.4	74.4	118.4	118	0.4	3	3
2.3	*2	●	MVS0230X02S030	5.0	11.8	13.1	74.4	74	0.4	3	1
	7	●	MVS0230X07S030	16.5	23.4	24.4	74.4	74	0.4	3	3
	12	●	MVS0230X12S030	28.0	35.4	36.4	74.4	74	0.4	3	3
	20	●	MVS0230X20S030	46.4	53.4	54.4	94.4	94	0.4	3	3
	25	●	MVS0230X25S030	57.9	64.4	66.4	107.4	107	0.4	3	3
	30	●	MVS0230X30S030	69.4	76.4	77.4	118.4	118	0.4	3	3
2.4	*2	●	MVS0240X02S030	5.2	12.4	13.5	74.4	74	0.4	3	1
	7	●	MVS0240X07S030	17.2	24.4	25.4	74.4	74	0.4	3	3
	12	●	MVS0240X12S030	29.2	36.4	37.4	74.4	74	0.4	3	3
	20	●	MVS0240X20S030	48.4	55.4	56.4	94.4	94	0.4	3	3
	25	●	MVS0240X25S030	60.4	67.4	68.4	107.4	107	0.4	3	3
	30	●	MVS0240X30S030	72.4	79.4	80.4	118.4	118	0.4	3	3
2.5	*2	●	MVS0250X02S030	5.4	12.8	13.7	74.4	74	0.4	3	1
	7	●	MVS0250X07S030	18.0	25.5	26.5	74.5	74	0.5	3	3
	12	●	MVS0250X12S030	30.5	38.5	39.5	74.5	74	0.5	3	3
	20	●	MVS0250X20S030	50.5	58.5	59.5	94.5	94	0.5	3	3
	25	●	MVS0250X25S030	63.0	70.5	71.5	107.5	107	0.5	3	3
	30	●	MVS0250X30S030	75.5	83.5	84.5	118.5	118	0.5	3	3

DC (mm)	Profundidad agujero (L/D)	DP1020	Referencia	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
2.6	*2	●	MVS0260X02S030	5.6	13.4	13.4	81.4	81	0.4	3	2
	7	●	MVS0260X07S030	18.7	26.5	26.5	81.5	81	0.5	3	4
	12	●	MVS0260X12S030	31.7	39.5	39.5	81.5	81	0.5	3	4
	20	●	MVS0260X20S030	52.5	60.5	60.5	103.5	103	0.5	3	4
	25	●	MVS0260X25S030	65.5	73.5	73.5	117.5	117	0.5	3	4
	30	●	MVS0260X30S030	78.5	86.5	86.5	132.5	132	0.5	3	4
2.7	*2	●	MVS0270X02S030	5.8	13.8	13.8	81.4	81	0.4	3	2
	7	●	MVS0270X07S030	19.4	27.5	27.5	81.5	81	0.5	3	4
	12	●	MVS0270X12S030	32.9	41.5	41.5	81.5	81	0.5	3	4
	20	●	MVS0270X20S030	54.5	62.5	62.5	103.5	103	0.5	3	4
	25	●	MVS0270X25S030	68.0	76.5	76.5	117.5	117	0.5	3	4
	30	●	MVS0270X30S030	81.5	89.5	89.5	132.5	132	0.5	3	4
2.8	*2	●	MVS0280X02S030	6.0	14.4	14.4	81.4	81	0.4	3	2
	7	●	MVS0280X07S030	20.1	28.5	28.5	81.5	81	0.5	3	4
	12	●	MVS0280X12S030	34.1	42.5	42.5	81.5	81	0.5	3	4
	20	●	MVS0280X20S030	56.5	64.5	64.5	103.5	103	0.5	3	4
	25	●	MVS0280X25S030	70.5	78.5	78.5	117.5	117	0.5	3	4
	30	●	MVS0280X30S030	84.5	92.5	92.5	132.5	132	0.5	3	4
2.9	*2	●	MVS0290X02S030	6.3	14.9	14.9	81.5	81	0.5	3	2
	7	●	MVS0290X07S030	20.8	29.5	29.5	81.5	81	0.5	3	4
	12	●	MVS0290X12S030	35.3	44.5	44.5	81.5	81	0.5	3	4
	20	●	MVS0290X20S030	58.5	67.5	67.5	103.5	103	0.5	3	4
	25	●	MVS0290X25S030	73.0	81.5	81.5	117.5	117	0.5	3	4
	30	●	MVS0290X30S030	87.5	96.5	96.5	132.5	132	0.5	3	4

*2= Broca para el agujero guía. La tolerancia es +0.014 y la profundidad del agujero es DCx2.

CONDICIONES DE CORTE ➤ M038
GUIA OPERACIONAL ➤ M039
DATOS TÉCNICOS ➤ P001

MINI-MVS

CONDICIONES DE CORTE RECOMENDADAS

Material		P					
		Acero Dulce (≤180HB)		Acero al carbono Acero aleado (180—280HB)		Acero al carbono Acero aleado (280—350HB)	
Diámetro Broca DC (mm)	L/D	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)
1.0	2*,7DC	15900	0.04 (0.02—0.05)	15900	0.04 (0.02—0.05)	12700	0.04 (0.02—0.05)
	≥ 12DC	15900	0.02 (0.01—0.03)	12700	0.02 (0.01—0.03)	9500	0.02 (0.01—0.03)
1.5	2*,7DC	10600	0.05 (0.03—0.08)	10600	0.05 (0.03—0.08)	8400	0.05 (0.03—0.08)
	≥ 12DC	10600	0.05 (0.02—0.08)	8400	0.05 (0.03—0.08)	6300	0.05 (0.02—0.08)
2.0	2*,7DC	7900	0.07 (0.04—0.10)	7900	0.07 (0.04—0.10)	6300	0.07 (0.04—0.10)
	≥ 12DC	7900	0.07 (0.04—0.10)	7900	0.07 (0.04—0.10)	7900	0.07 (0.04—0.10)
2.5	2*,7DC	7600	0.09 (0.05—0.13)	7600	0.09 (0.05—0.13)	6300	0.09 (0.05—0.13)
	≥ 12DC	7600	0.09 (0.06—0.13)	6300	0.09 (0.06—0.13)	6300	0.08 (0.05—0.13)

Material		M		K			
		Acero Inoxidable Austenítico (≤200HB)		Fundición gris (≤350MPa)		Fundición dúctil (≤450MPa)	
Diámetro Broca DC (mm)	L/D	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)
1.0	2*,7DC	9500	0.03 (0.02—0.05)	15900	0.04 (0.02—0.05)	12700	0.04 (0.02—0.05)
	≥ 12DC	9500	0.02 (0.01—0.03)	12700	0.02 (0.01—0.03)	9500	0.02 (0.01—0.03)
1.5	2*,7DC	6300	0.05 (0.03—0.07)	10600	0.05 (0.03—0.08)	8400	0.05 (0.03—0.08)
	≥ 12DC	6300	0.05 (0.02—0.08)	8400	0.05 (0.03—0.08)	6300	0.05 (0.02—0.08)
2.0	2*,7DC	4700	0.06 (0.04—0.08)	7900	0.07 (0.04—0.10)	6300	0.07 (0.04—0.10)
	≥ 12DC	4700	0.07 (0.04—0.10)	7900	0.07 (0.04—0.10)	7900	0.07 (0.04—0.10)
2.5	2*,7DC	5000	0.08 (0.05—0.10)	7600	0.09 (0.05—0.13)	6300	0.09 (0.05—0.13)
	≥ 12DC	3800	0.08 (0.05—0.12)	6300	0.09 (0.06—0.13)	6300	0.08 (0.05—0.12)

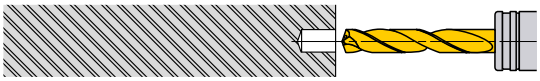
Material		N		S	
		Aleación de aluminio (Si<5%)		Aleación termo-resistente	
Diámetro Broca DC (mm)	L/D	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)
1.0	2*,7DC	19000	0.05 (0.03—0.08)	3100	0.02 (0.01—0.03)
	≥ 12DC	15900	0.05 (0.03—0.08)	3100	0.02 (0.01—0.03)
1.5	2*,7DC	16900	0.07 (0.05—0.12)	2100	0.03 (0.02—0.04)
	≥ 12DC	14800	0.08 (0.05—0.12)	2100	0.03 (0.02—0.04)
2.0	2*,7DC	14300	0.10 (0.06—0.15)	2300	0.04 (0.03—0.05)
	≥ 12DC	12700	0.11 (0.06—0.15)	2300	0.04 (0.03—0.05)
2.5	2*,7DC	12700	0.13 (0.08—0.20)	1900	0.05 (0.04—0.06)
	≥ 12DC	11400	0.14 (0.08—0.20)	1900	0.05 (0.04—0.06)

*2= Broca para el agujero guía. Profundidad del agujero de DCx2.

■ INSTRUCCIONES OPERATIVAS PARA LA BROCA LARGA MINI-MVS (L/D ≥ 10)

TALADRADO DE CARA PLANA ● Taladrado de agujero guía

■ 1. Taladrado de agujero guía.

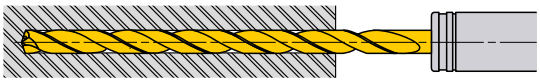


①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 2. Corte inicial con la broca larga

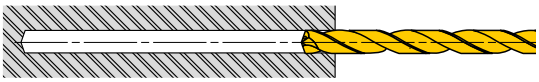
①1. Realice el agujero guía a bajas revoluciones.
(Revoluciones a 1000min^{-1}, vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 3. Taladrado del agujero profundo.



①Comience a cortar a la velocidad y avance recomendados con un ciclo ininterrumpido (avance continuo).

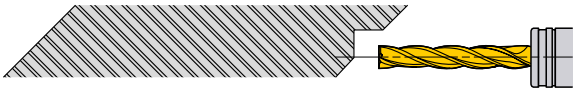
■ 4. Retracción de la broca



①Una vez taladrado, reduzca las revoluciones de corte aprox. a 0.5-1mm. del extremo del agujero. (Revoluciones en torno a 1000min^{-1})
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.
③Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.

TALADRADO INTERRUMPIDO ● Taladrado e inserción en caras o ángulos irregulares.

■ 1. Refrentado puntual

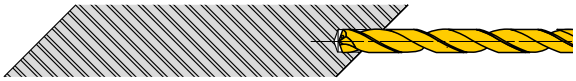


①Mecanice un plano en la cara irregular utilizando una broca o fresa para ranurado capaz de hacer refrentado puntual. El diámetro del punto debe tener el mismo tamaño del agujero profundo requerido.

■ 2. Taladrado de agujero guía

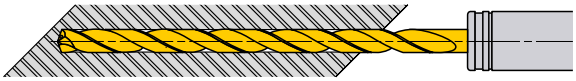
①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 3. Corte inicial con la broca larga



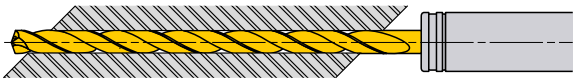
①Efectúe el agujero guía a bajas revoluciones. (Revoluciones a 1000min^{-1} vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 4. Taladre el agujero profundo



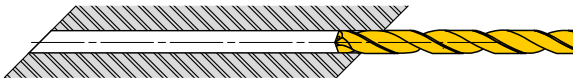
①Comience a cortar a la velocidad y avance recomendados con un ciclo sin perforación (avance continuo).

■ 5. Inserción



①Durante la inserción, el filo de corte puede resultar dañado
②Disminuya la velocidad de avance durante la inserción de la broca.

■ 6. Retracción de la broca



①Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.

MINI-MWS

- Micro brocas con refrigeración interior para un taladrado estable de agujeros profundos.
- Para un taladrado eficiente y de alta precisión de aceros al carbono y de materiales de difícil mecanizado.

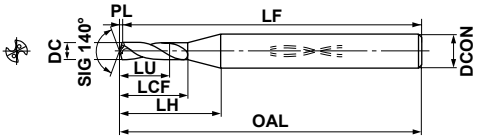
P | M | K | N | S | H

Refrigeración interna

0.5≤DC<1
+0.009 / 0
0 / −0.006

Tipo SB

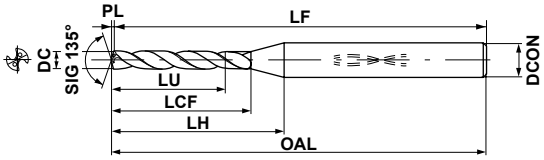
(Para agujero previo)



Tipo 1

0.5≤DC<1
0 / −0.009
0 / −0.006

Tipo LB/XB



Tipo 2

- Las brocas MWS pueden utilizarse con herramientas de amarre por calor.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
0.50	1	●	MWS0050SB	0.6	2.6	7.3	47.1	47	0.09	3	1
	5	★	MWS0050LB	2.6	8.1	13.1	47.1	47	0.10	3	2
	12	★	MWS0050XB	6.1	16.1	21.1	47.1	47	0.10	3	2
0.51	1	★	MWS0051SB	0.6	2.7	7.3	47.1	47	0.09	3	1
	5	★	MWS0051LB	2.7	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0051XB	6.2	16.1	21.1	47.1	47	0.11	3	2
0.52	1	★	MWS0052SB	0.6	2.7	7.3	47.1	47	0.09	3	1
	5	★	MWS0052LB	2.7	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0052XB	6.4	16.1	21.1	47.1	47	0.11	3	2
0.53	1	★	MWS0053SB	0.6	2.7	7.3	47.1	47	0.10	3	1
	5	★	MWS0053LB	2.8	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0053XB	6.5	16.1	21.1	47.1	47	0.11	3	2
0.54	1	★	MWS0054SB	0.6	2.7	7.3	47.1	47	0.10	3	1
	5	★	MWS0054LB	2.8	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0054XB	6.6	16.1	21.1	47.1	47	0.11	3	2
0.55	1	●	MWS0055SB	0.7	2.7	7.3	47.1	47	0.10	3	1
	5	★	MWS0055LB	2.9	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0055XB	6.7	16.1	21.1	47.1	47	0.11	3	2
0.56	1	★	MWS0056SB	0.7	3.0	7.6	47.1	47	0.10	3	1
	5	★	MWS0056LB	2.9	8.1	13.1	47.1	47	0.12	3	2
	12	★	MWS0056XB	6.8	16.1	21.1	47.1	47	0.12	3	2
0.57	1	★	MWS0057SB	0.7	3.0	7.5	47.1	47	0.10	3	1
	5	★	MWS0057LB	3.0	8.1	13.1	47.1	47	0.12	3	2
	12	★	MWS0057XB	7.0	16.1	21.1	47.1	47	0.12	3	2

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
0.58	1	★	MWS0058SB	0.7	3.0	7.5	47.1	47	0.11	3	1
	5	★	MWS0058LB	3.0	8.1	13.1	47.1	47	0.12	3	2
	12	★	MWS0058XB	7.1	16.1	21.1	47.1	47	0.12	3	2
0.59	1	★	MWS0059SB	0.7	3.0	7.5	47.1	47	0.11	3	1
	5	★	MWS0059LB	3.1	8.1	12.1	47.1	47	0.12	3	2
	12	★	MWS0059XB	7.2	16.1	20.1	47.1	47	0.12	3	2
0.60	1	●	MWS0060SB	0.7	3.0	7.5	47.1	47	0.11	3	1
	5	★	MWS0060LB	3.1	8.1	12.1	47.1	47	0.12	3	2
	12	★	MWS0060XB	7.3	16.1	20.1	47.1	47	0.12	3	2
0.61	1	★	MWS0061SB	0.7	3.2	7.7	47.1	47	0.11	3	1
	5	★	MWS0061LB	3.2	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0061XB	7.5	16.1	20.1	47.1	47	0.13	3	2
0.62	1	★	MWS0062SB	0.7	3.2	7.6	47.1	47	0.11	3	1
	5	★	MWS0062LB	3.2	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0062XB	7.6	16.1	20.1	47.1	47	0.13	3	2
0.63	1	★	MWS0063SB	0.7	3.2	7.6	47.1	47	0.11	3	1
	5	★	MWS0063LB	3.3	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0063XB	7.7	16.1	20.1	47.1	47	0.13	3	2
0.64	1	★	MWS0064SB	0.8	3.2	7.6	47.1	47	0.12	3	1
	5	★	MWS0064LB	3.3	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0064XB	7.8	16.1	20.1	47.1	47	0.13	3	2
0.65	1	●	MWS0065SB	0.8	3.2	7.6	47.1	47	0.12	3	1
	5	★	MWS0065LB	3.4	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0065XB	7.9	16.1	20.1	47.1	47	0.13	3	2

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
0.66	1	★	MWS0066SB	0.8	3.5	7.9	47.1	47	0.12	3	1
	5	★	MWS0066LB	3.4	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0066XB	8.1	16.1	20.1	47.1	47	0.14	3	2
0.67	1	★	MWS0067SB	0.8	3.5	7.8	47.1	47	0.12	3	1
	5	★	MWS0067LB	3.5	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0067XB	8.2	16.1	20.1	47.1	47	0.14	3	2
0.68	1	★	MWS0068SB	0.8	3.5	7.8	47.1	47	0.12	3	1
	5	★	MWS0068LB	3.5	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0068XB	8.3	16.1	20.1	47.1	47	0.14	3	2
0.69	1	★	MWS0069SB	0.8	3.5	7.8	47.1	47	0.13	3	1
	5	★	MWS0069LB	3.6	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0069XB	8.4	16.1	20.1	47.1	47	0.14	3	2
0.70	1	●	MWS0070SB	0.8	3.5	7.8	47.1	47	0.13	3	1
	5	★	MWS0070LB	3.6	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0070XB	8.5	16.1	20.1	47.1	47	0.14	3	2
0.71	1	★	MWS0071SB	0.8	3.7	8.0	50.1	50	0.13	3	1
	5	★	MWS0071LB	3.7	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0071XB	8.7	20.1	24.1	50.1	50	0.15	3	2
0.72	1	★	MWS0072SB	0.9	3.7	8.0	50.1	50	0.13	3	1
	5	★	MWS0072LB	3.8	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0072XB	8.8	20.1	24.1	50.1	50	0.15	3	2
0.73	1	★	MWS0073SB	0.9	3.7	7.9	50.1	50	0.13	3	1
	5	★	MWS0073LB	3.8	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0073XB	8.9	20.1	24.1	50.1	50	0.15	3	2
0.74	1	★	MWS0074SB	0.9	3.7	7.9	50.1	50	0.13	3	1
	5	★	MWS0074LB	3.9	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0074XB	9.0	20.1	24.1	50.1	50	0.15	3	2
0.75	1	●	MWS0075SB	0.9	3.7	7.9	50.1	50	0.14	3	1
	5	★	MWS0075LB	3.9	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0075XB	9.2	20.1	24.1	50.1	50	0.16	3	2
0.76	1	★	MWS0076SB	0.9	4.0	8.2	50.1	50	0.14	3	1
	5	★	MWS0076LB	4.0	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0076XB	9.3	20.1	24.1	50.1	50	0.16	3	2
0.77	1	★	MWS0077SB	0.9	4.0	8.2	50.1	50	0.14	3	1
	5	★	MWS0077LB	4.0	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0077XB	9.4	20.1	24.1	50.1	50	0.16	3	2
0.78	1	★	MWS0078SB	0.9	4.0	8.1	50.1	50	0.14	3	1
	5	★	MWS0078LB	4.1	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0078XB	9.5	20.1	24.1	50.1	50	0.16	3	2
0.79	1	★	MWS0079SB	0.9	4.0	8.1	50.1	50	0.14	3	1
	5	★	MWS0079LB	4.1	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0079XB	9.6	20.1	24.1	50.1	50	0.16	3	2
0.80	1	●	MWS0080SB	1.0	4.1	8.2	50.2	50	0.15	3	1
	5	★	MWS0080LB	4.2	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0080XB	9.8	20.2	24.2	50.2	50	0.17	3	2
0.81	1	★	MWS0081SB	1.0	4.3	8.4	50.2	50	0.15	3	1
	5	★	MWS0081LB	4.2	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0081XB	9.9	20.2	24.2	50.2	50	0.17	3	2
0.82	1	★	MWS0082SB	1.0	4.3	8.4	50.2	50	0.15	3	1
	5	★	MWS0082LB	4.3	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0082XB	10.0	20.2	24.2	50.2	50	0.17	3	2

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
0.83	1	★	MWS0083SB	1.0	4.3	8.3	50.2	50	0.15	3	1
	5	★	MWS0083LB	4.3	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0083XB	10.1	20.2	24.2	50.2	50	0.17	3	2
0.84	1	★	MWS0084SB	1.0	4.3	8.3	50.2	50	0.15	3	1
	5	★	MWS0084LB	4.4	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0084XB	10.3	20.2	24.2	50.2	50	0.17	3	2
0.85	1	●	MWS0085SB	1.0	4.3	8.3	50.2	50	0.15	3	1
	5	★	MWS0085LB	4.4	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0085XB	10.4	20.2	24.2	50.2	50	0.18	3	2
0.86	1	★	MWS0086SB	1.0	4.6	8.6	50.2	50	0.16	3	1
	5	★	MWS0086LB	4.5	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0086XB	10.5	20.2	24.2	50.2	50	0.18	3	2
0.87	1	★	MWS0087SB	1.0	4.6	8.6	50.2	50	0.16	3	1
	5	★	MWS0087LB	4.5	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0087XB	10.6	20.2	24.2	50.2	50	0.18	3	2
0.88	1	★	MWS0088SB	1.0	4.6	8.6	50.2	50	0.16	3	1
	5	★	MWS0088LB	4.6	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0088XB	10.7	20.2	24.2	50.2	50	0.18	3	2
0.89	1	★	MWS0089SB	1.1	4.6	8.5	50.2	50	0.16	3	1
	5	★	MWS0089LB	4.6	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0089XB	10.9	20.2	24.2	50.2	50	0.18	3	2
0.90	1	●	MWS0090SB	1.1	4.6	8.5	50.2	50	0.16	3	1
	5	★	MWS0090LB	4.7	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0090XB	11.0	20.2	24.2	50.2	50	0.19	3	2
0.91	1	★	MWS0091SB	1.1	4.8	8.7	50.2	50	0.17	3	1
	5	★	MWS0091LB	4.7	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0091XB	11.1	20.2	24.2	50.2	50	0.19	3	2
0.92	1	★	MWS0092SB	1.1	4.8	8.7	50.2	50	0.17	3	1
	5	★	MWS0092LB	4.8	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0092XB	11.2	20.2	24.2	50.2	50	0.19	3	2
0.93	1	★	MWS0093SB	1.1	4.8	8.7	50.2	50	0.17	3	1
	5	★	MWS0093LB	4.8	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0093XB	11.4	20.2	24.2	50.2	50	0.19	3	2
0.94	1	★	MWS0094SB	1.1	4.8	8.6	50.2	50	0.17	3	1
	5	★	MWS0094LB	4.9	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0094XB	11.5	20.2	24.2	50.2	50	0.19	3	2
0.95	1	●	MWS0095SB	1.1	4.8	8.6	50.2	50	0.17	3	1
	5	★	MWS0095LB	5.0	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0095XB	11.6	20.2	24.2	50.2	50	0.20	3	2
0.96	1	★	MWS0096SB	1.1	5.1	8.9	50.2	50	0.17	3	1
	5	★	MWS0096LB	5.0	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0096XB	11.7	20.2	24.2	50.2	50	0.20	3	2
0.97	1	★	MWS0097SB	1.2	5.1	8.9	50.2	50	0.18	3	1
	5	★	MWS0097LB	5.1	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0097XB	11.8	20.2	24.2	50.2	50	0.20	3	2
0.98	1	★	MWS0098SB	1.2	5.1	8.9	50.2	50	0.18	3	1
	5	★	MWS0098LB	5.1	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0098XB	12.0	20.2	24.2	50.2	50	0.20	3	2
0.99	1	★	MWS0099SB	1.2	5.1	8.9	50.2	50	0.18	3	1
	5	★	MWS0099LB	5.2	10.2	14.2	50.2	50	0.21	3	2
	12	★	MWS0099XB	12.1	20.2	24.2	50.2	50	0.21	3	2

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

CONDICIONES DE CORTE ➤ M042
GUIA OPERACIONAL ➤ M043
DATOS TÉCNICOS ➤ P001

MINI-MWS

CONDICIONES DE CORTE RECOMENDADAS

■ Broca tipo SB/LB/XB (L/D<10)

Material	P							
	Acero Dulce (≤180HB) Ck10				Acero al carbono, Acero aleado (180—280HB) Ck45, 42CrMo4			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
0.5	40	25400	0.010 (0.005—0.015)	250	40	25400	0.010 (0.005—0.015)	250
0.63	40	20200	0.014 (0.008—0.020)	280	40	20200	0.014 (0.008—0.020)	280
0.8	45	17900	0.028 (0.016—0.040)	500	45	17900	0.028 (0.016—0.040)	500
1.0	50	15900	0.035 (0.020—0.050)	555	50	15900	0.035 (0.020—0.050)	555

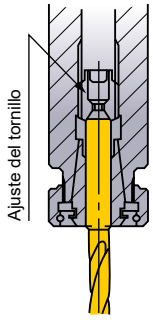
Material	P				M			
	Acero al carbono, Acero aleado (280—350HB) 36CrNiMo4				Acero Inoxidable Austenítico (≤200HB) X5CrNi1810, X5CrNiMo17-12-2			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
0.5	30	19000	0.010 (0.005—0.015)	190	20	12700	0.008 (0.005—0.010)	100
0.63	30	15100	0.014 (0.008—0.020)	210	20	10100	0.010 (0.008—0.013)	100
0.8	35	13900	0.028 (0.016—0.040)	385	25	9900	0.020 (0.016—0.026)	195
1.0	40	12700	0.035 (0.020—0.050)	440	30	9500	0.030 (0.020—0.044)	285

Material	K							
	Fundición gris (≤350MPa) GG30				Fundición dúctil (≤450MPa) GGG45			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
0.5	40	25400	0.010 (0.005—0.015)	250	30	19000	0.010 (0.005—0.015)	190
0.63	40	20200	0.014 (0.008—0.020)	280	30	15100	0.014 (0.008—0.020)	210
0.8	45	17900	0.028 (0.016—0.040)	500	35	13900	0.028 (0.016—0.040)	385
1.0	50	15900	0.035 (0.020—0.050)	555	40	12700	0.035 (0.020—0.050)	440

Material	N				S			
	Aleación de aluminio (Si<5%)				Aleación termo-resistente Inconel718			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
0.5	40	25400	0.014 (0.008—0.020)	355	10	6300	0.006 (0.004—0.008)	35
0.63	40	20200	0.020 (0.012—0.030)	400	10	5000	0.008 (0.007—0.010)	40
0.8	45	17900	0.036 (0.024—0.050)	640	10	3900	0.016 (0.013—0.021)	60
1.0	60	19000	0.050 (0.030—0.075)	950	10	3100	0.020 (0.016—0.027)	60

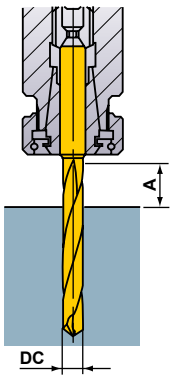
GUIA OPERACIONAL

Amarre de la broca



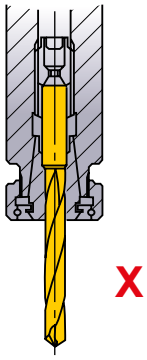
La presión del tipo de tornillo amarra la broca con seguridad.

Longitud de la broca



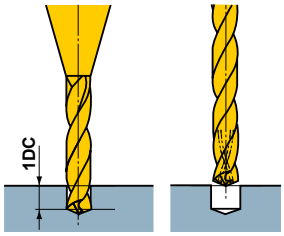
A ≥ DC x 2.0

Instalación de la broca



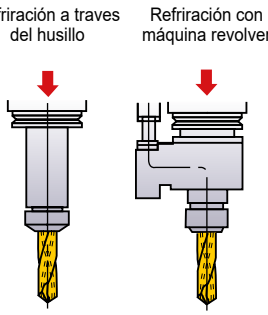
No sujetar en las hélices.

Instalación de la broca



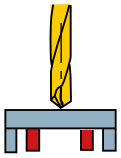
①Para realizar un taladrado previo, utilizar la broca tipo SB.
②Utilizar el agujero previo como una guia, cuando utilizamos una broca con agujero de lubricación. Dependiendo de las condiciones de corte se recomienda punzeado previo.

Tipos de refrigeración



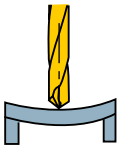
Presión de refrigeración recomendada: ≥30 bar
Se requieren al menos 15 bar.

Pieza delgada



Sujetar la pieza

OK



Si se produce un doblamiento

X

Utilización del refrigerante

1) Pequeñas particulas bloquean el agujero de salida en pqueños diámetros. Utilice siempre un filtro fino como medida preventiva.

2) Pequeñas particulas del aceite viejo ensucian y se adhieren al refrigerante y no permite un flujo eficaz. Se recomienda un cambio regular del aceite.

NOTAS DE UTILIZACIÓN

●Por favor utilizar un filtro de malla fina para el refrigerante para prevenir que se bloquee el agujero de aceite refrigerante.

MPS1

Broca extra larga de doble margen

- Nuevo recubrimiento de PVD basado en AlTiCrN.
- La broca MPS1 tiene 4 margenes para precisión y fiabilidad de la broca.

UWC DP1 145° 140° 135° X

L/D=2 PC L/D=3−5 L/D=10−40 L/D=8

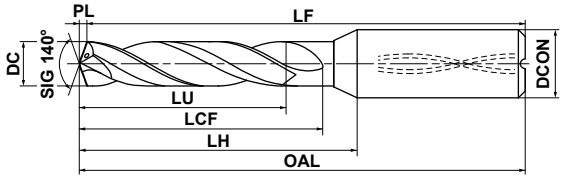
P M K N S H

Refrigeración interna

	3≤DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
DIN / PC	+0.010 −0.002	+0.010 −0.005	+0.005 −0.013	+0.005 −0.016
L___C	0 −0.012	0 −0.015	0 −0.018	0 −0.021
h6	0 −0.008	0 −0.009	0 −0.011	0 −0.013

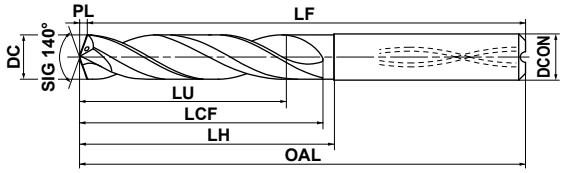
*El agujero de refrigeración en brocas de ø4,9 mm o menos tendrá forma redondeada.
*SIG : L/D 3−5 y 10−40 = 140°, 8 = 135°, PC = 145°

●**Tipo 1** Tipo mango cilíndrico con cuello cónico



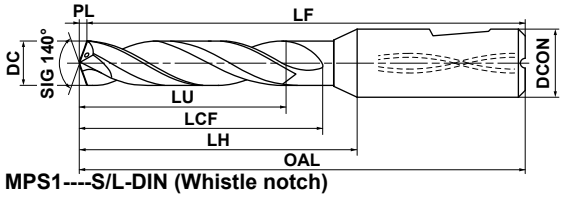
MPS1----S/L-DIN-C/L8C-L40C

●**Tipo 2** Tipo mango cilíndrico



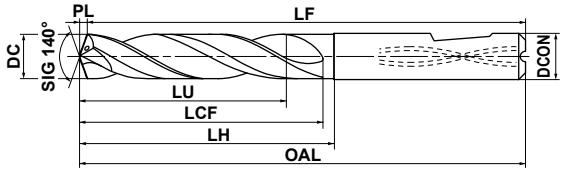
MPS1----S/L-DIN-C/L8C-L40C

●**Tipo 3** Mango tipo Whistle notch con cuello cónico



MPS1----S/L-DIN (Whistle notch)

●**Tipo 4** Mango tipo Whistle notch



MPS1----S/L-DIN (Whistle notch)

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.0	3	□	MPS1-0300S-DIN	15.0	19.5	24.5	61.5	61	0.5	6	3
	3	●	MPS1-0300S-DIN-C	15.0	19.5	24.5	61.5	61	0.5	6	1
	5	□	MPS1-0300L-DIN	20.0	24.5	28.5	65.5	65	0.5	6	3
	5	●	MPS1-0300L-DIN-C	20.0	24.5	28.5	65.5	65	0.5	6	1
	2	●	MPS1-0300-PC	6.5	16.5	19.7	55.5	55	0.5	6	1
	8	●	MPS1-0300-L8C	24.6	33.6	39.6	76.6	76	0.6	6	1
	10	●	MPS1-0300-L10C	30.5	37.5	42.5	79.5	79	0.5	6	1
	12	●	MPS1-0300-L12C	36.5	43.5	48.5	85.5	85	0.5	6	1
	15	●	MPS1-0300-L15C	45.5	52.5	57.5	94.5	94	0.5	6	1
	20	●	MPS1-0300-L20C	60.5	67.5	72.5	109.5	109	0.5	6	1
	25	●	MPS1-0300-L25C	75.5	82.5	87.5	124.5	124	0.5	6	1
	30	●	MPS1-0300-L30C	90.5	97.5	102.5	139.5	139	0.5	6	1
	35	□	MPS1-0300-L35C	105.5	113.5	121.5	158.5	158	0.5	6	1
	40	●	MPS1-0300-L40C	120.5	128.5	136.5	173.5	173	0.5	6	1
3.05	3	□	MPS1-0305S-DIN	15.0	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0305S-DIN-C	15.0	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0305L-DIN	20.0	24.6	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0305L-DIN-C	20.0	24.6	28.6	65.6	65	0.6	6	1
3.1	3	□	MPS1-0310S-DIN	14.9	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0310S-DIN-C	14.9	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0310L-DIN	19.9	24.6	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0310L-DIN-C	19.9	24.6	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0310-PC	6.7	18.5	21.6	55.5	55	0.5	6	1
	8	●	MPS1-0310-L8C	25.4	39.6	45.6	82.6	82	0.6	6	1
	10	□	MPS1-0310-L10C	31.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0310-L12C	37.8	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0310-L15C	47.1	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0310-L20C	62.6	79.6	84.6	121.6	121	0.6	6	1
	25	●	MPS1-0310-L25C	78.1	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0310-L30C	93.6	114.6	119.6	156.6	156	0.6	6	1
	35	□	MPS1-0310-L35C	109.1	123.6	138.6	175.6	175	0.6	6	1
	40	●	MPS1-0310-L40C	124.6	138.6	153.6	190.6	190	0.6	6	1

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.2	3	□	MPS1-0320S-DIN	14.8	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0320S-DIN-C	14.8	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0320L-DIN	19.8	24.6	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0320L-DIN-C	19.8	24.6	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0320-PC	6.9	18.5	21.5	55.5	55	0.5	6	1
	8	●	MPS1-0320-L8C	26.3	39.7	45.7	82.7	82	0.7	6	1
	10	□	MPS1-0320-L10C	32.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0320-L12C	39.0	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0320-L15C	48.6	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0320-L20C	64.6	79.6	84.6	121.6	121	0.6	6	1
	25	●	MPS1-0320-L25C	80.6	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0320-L30C	96.6	114.6	119.6	156.6	156	0.6	6	1
	35	□	MPS1-0320-L35C	112.6	123.6	138.6	175.6	175	0.6	6	1
	40	●	MPS1-0320-L40C	128.6	138.6	153.6	190.6	190	0.6	6	1
3.3	3	□	MPS1-0330S-DIN	14.7	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0330S-DIN-C	14.7	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0330L-DIN	20.2	25.1	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0330L-DIN-C	20.2	25.1	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0330-PC	7.1	18.5	21.4	55.5	55	0.5	6	1
	8	●	MPS1-0330-L8C	27.1	39.7	45.7	82.7	82	0.7	6	1
	10	□	MPS1-0330-L10C	33.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0330-L12C	40.2	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0330-L15C	50.1	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0330-L20C	66.6	79.6	84.6	121.6	121	0.6	6	1
	25	●	MPS1-0330-L25C	83.1	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0330-L30C	99.6	114.6	119.6	156.6	156	0.6	6	1
	35	□	MPS1-0330-L35C	116.1	132.6	138.6	175.6	175	0.6	6	1
	40	●	MPS1-0330-L40C	132.6	148.6	153.6	190.6	190	0.6	6	1

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.4	3	□	MPS1-0340S-DIN	14.5	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0340S-DIN-C	14.5	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0340L-DIN	20.0	25.1	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0340L-DIN-C	20.0	25.1	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0340-PC	7.3	18.5	21.3	55.5	55	0.5	6	1
	8	●	MPS1-0340-L8C	27.9	39.7	45.7	82.7	82	0.7	6	1
	10	□	MPS1-0340-L10C	34.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0340-L12C	41.4	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0340-L15C	51.6	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0340-L20C	68.6	79.6	84.6	121.6	121	0.6	6	1
	25	●	MPS1-0340-L25C	85.6	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0340-L30C	102.6	114.6	119.6	156.6	156	0.6	6	1
	35	□	MPS1-0340-L35C	119.6	132.6	138.6	175.6	175	0.6	6	1
	40	●	MPS1-0340-L40C	136.6	148.6	153.6	190.6	190	0.6	6	1
3.5	3	□	MPS1-0350S-DIN	14.4	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0350S-DIN-C	14.4	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0350L-DIN	19.9	25.1	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0350L-DIN-C	19.9	25.1	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0350-PC	7.6	18.6	21.2	55.6	55	0.6	6	1
	8	●	MPS1-0350-L8C	28.7	39.7	45.7	82.7	82	0.7	6	1
	10	□	MPS1-0350-L10C	35.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0350-L12C	42.6	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0350-L15C	53.1	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0350-L20C	70.6	79.6	84.6	121.6	121	0.6	6	1
	25	●	MPS1-0350-L25C	88.1	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0350-L30C	105.6	114.6	119.6	156.6	156	0.6	6	1
	35	□	MPS1-0350-L35C	123.1	132.6	138.6	175.6	175	0.6	6	1
	40	●	MPS1-0350-L40C	140.6	148.6	153.6	190.6	190	0.6	6	1
3.6	3	□	MPS1-0360S-DIN	14.3	19.7	24.7	61.7	61	0.7	6	3
	3	●	MPS1-0360S-DIN-C	14.3	19.7	24.7	61.7	61	0.7	6	1
	5	□	MPS1-0360L-DIN	19.8	25.2	28.7	65.7	65	0.7	6	3
	5	●	MPS1-0360L-DIN-C	19.8	25.2	28.7	65.7	65	0.7	6	1
	2	●	MPS1-0360-PC	7.8	20.6	23.1	55.6	55	0.6	6	1
	8	●	MPS1-0360-L8C	29.5	44.7	50.7	87.7	87	0.7	6	1
	10	□	MPS1-0360-L10C	36.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0360-L12C	43.9	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0360-L15C	54.7	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0360-L20C	72.7	90.7	95.7	132.7	132	0.7	6	1
	25	□	MPS1-0360-L25C	90.7	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0360-L30C	108.7	130.7	135.7	172.7	172	0.7	6	1
	35	□	MPS1-0360-L35C	126.7	143.7	155.7	192.7	192	0.7	6	1
	40	●	MPS1-0360-L40C	144.7	160.7	175.7	212.7	212	0.7	6	1
3.7	3	□	MPS1-0370S-DIN	14.1	19.7	24.7	61.7	61	0.7	6	3
	3	●	MPS1-0370S-DIN-C	14.1	19.7	24.7	61.7	61	0.7	6	1
	5	□	MPS1-0370L-DIN	20.1	25.7	28.7	65.7	65	0.7	6	3
	5	●	MPS1-0370L-DIN-C	20.1	25.7	28.7	65.7	65	0.7	6	1
	2	●	MPS1-0370-PC	8.0	20.6	23.1	55.6	55	0.6	6	1
	8	●	MPS1-0370-L8C	30.4	44.8	50.8	87.8	87	0.8	6	1
	10	□	MPS1-0370-L10C	37.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0370-L12C	45.1	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0370-L15C	56.2	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0370-L20C	74.7	90.7	95.7	132.7	132	0.7	6	1
	25	●	MPS1-0370-L25C	93.2	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0370-L30C	111.7	130.7	135.7	172.7	172	0.7	6	1
	35	□	MPS1-0370-L35C	130.2	143.7	155.7	192.7	192	0.7	6	1
	40	●	MPS1-0370-L40C	148.7	160.7	175.7	212.7	212	0.7	6	1

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.8	3	□	MPS1-0380S-DIN	18.0	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0380S-DIN-C	18.0	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0380L-DIN	28.0	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0380L-DIN-C	28.0	33.7	36.7	73.7	73	0.7	6	1
	2	●	MPS1-0380-PC	8.2	20.6	23.0	55.6	55	0.6	6	1
	8	●	MPS1-0380-L8C	31.2	44.8	50.8	87.8	87	0.8	6	1
	10	□	MPS1-0380-L10C	38.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0380-L12C	46.3	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0380-L15C	57.7	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0380-L20C	76.7	90.7	95.7	132.7	132	0.7	6	1
	25	●	MPS1-0380-L25C	95.7	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0380-L30C	114.7	130.7	135.7	172.7	172	0.7	6	1
	35	□	MPS1-0380-L35C	133.7	150.7	155.7	192.7	192	0.7	6	1
	40	●	MPS1-0380-L40C	152.7	170.7	175.7	212.7	212	0.7	6	1
3.9	3	□	MPS1-0390S-DIN	17.9	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0390S-DIN-C	17.9	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0390L-DIN	27.9	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0390L-DIN-C	27.9	33.7	36.7	73.7	73	0.7	6	1
	2	●	MPS1-0390-PC	8.4	20.6	22.9	55.6	55	0.6	6	1
	8	●	MPS1-0390-L8C	32.0	44.8	50.8	87.8	87	0.8	6	1
	10	□	MPS1-0390-L10C	39.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0390-L12C	47.5	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0390-L15C	59.2	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0390-L20C	78.7	90.7	95.7	132.7	132	0.7	6	1
	25	□	MPS1-0390-L25C	98.2	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0390-L30C	117.7	130.7	135.7	172.7	172	0.7	6	1
	35	□	MPS1-0390-L35C	137.2	150.7	155.7	192.7	192	0.7	6	1
	40	●	MPS1-0390-L40C	156.7	170.7	175.7	212.7	212	0.7	6	1
4.0	3	□	MPS1-0400S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0400S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0400L-DIN	27.7	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0400L-DIN-C	27.7	33.7	36.7	73.7	73	0.7	6	1
	2	●	MPS1-0400-PC	8.6	20.6	22.8	55.6	55	0.6	6	1
	8	●	MPS1-0400-L8C	32.8	44.8	50.8	87.8	87	0.8	6	1
	10	●	MPS1-0400-L10C	40.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0400-L12C	48.7	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0400-L15C	60.7	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0400-L20C	80.7	90.7	95.7	132.7	132	0.7	6	1
	25	●	MPS1-0400-L25C	100.7	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0400-L30C	120.7	130.7	135.7	172.7	172	0.7	6	1
	35	□	MPS1-0400-L35C	140.7	150.7	155.7	192.7	192	0.7	6	1
	40	●	MPS1-0400-L40C	160.7	170.7	175.7	212.7	212	0.7	6	1
4.05	3	□	MPS1-0405S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0405S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0405L-DIN	27.7	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0405L-DIN-C	27.7	33.7	36.7	73.7	73	0.7	6	1

CONDICIONES DE CORTE ➤ M059
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.1	3	□	MPS1-0410S-DIN	17.6	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0410S-DIN-C	17.6	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0410L-DIN	27.6	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0410L-DIN-C	27.6	33.7	36.7	73.7	73	0.7	6	1
	2	●	MPS1-0410-PC	8.8	22.6	24.7	62.6	62	0.6	6	1
	8	●	MPS1-0410-L8C	33.6	50.8	55.8	92.8	92	0.8	6	1
	10	□	MPS1-0410-L10C	41.7	58.7	62.7	99.7	99	0.7	6	1
	12	●	MPS1-0410-L12C	49.9	67.7	71.7	108.7	108	0.7	6	1
	15	●	MPS1-0410-L15C	62.2	80.7	84.7	121.7	121	0.7	6	1
	20	●	MPS1-0410-L20C	82.7	103.7	107.7	144.7	144	0.7	6	1
	25	●	MPS1-0410-L25C	103.2	125.7	129.7	166.7	166	0.7	6	1
	30	●	MPS1-0410-L30C	123.7	148.7	152.7	189.7	189	0.7	6	1
	35	□	MPS1-0410-L35C	144.2	164.7	174.7	211.7	211	0.7	6	1
	40	●	MPS1-0410-L40C	164.7	184.7	198.7	235.7	235	0.7	6	1
4.2	3	□	MPS1-0420S-DIN	17.5	23.8	28.8	65.8	65	0.8	6	3
	3	●	MPS1-0420S-DIN-C	17.5	23.8	28.8	65.8	65	0.8	6	1
	5	□	MPS1-0420L-DIN	28.0	34.3	36.8	73.8	73	0.8	6	3
	5	●	MPS1-0420L-DIN-C	28.0	34.3	36.8	73.8	73	0.8	6	1
	2	●	MPS1-0420-PC	9.1	22.7	24.6	62.7	62	0.7	6	1
	8	●	MPS1-0420-L8C	34.5	50.9	55.9	92.9	92	0.9	6	1
	10	□	MPS1-0420-L10C	42.8	58.8	62.8	99.8	99	0.8	6	1
	12	●	MPS1-0420-L12C	51.2	67.8	71.8	108.8	108	0.8	6	1
	15	●	MPS1-0420-L15C	63.8	80.8	84.8	121.8	121	0.8	6	1
	20	●	MPS1-0420-L20C	84.8	103.8	107.8	144.8	144	0.8	6	1
	25	●	MPS1-0420-L25C	105.8	125.8	129.8	166.8	166	0.8	6	1
	30	●	MPS1-0420-L30C	126.8	148.8	152.8	189.8	189	0.8	6	1
	35	●	MPS1-0420-L35C	147.8	164.8	174.8	211.8	211	0.8	6	1
	40	●	MPS1-0420-L40C	168.8	184.8	198.8	235.8	235	0.8	6	1
4.3	3	□	MPS1-0430S-DIN	17.3	23.8	28.8	65.8	65	0.8	6	3
	3	●	MPS1-0430S-DIN-C	17.3	23.8	28.8	65.8	65	0.8	6	1
	5	□	MPS1-0430L-DIN	27.8	34.3	36.8	73.8	73	0.8	6	3
	5	●	MPS1-0430L-DIN-C	27.8	34.3	36.8	73.8	73	0.8	6	1
	2	●	MPS1-0430-PC	9.3	22.7	24.5	62.7	62	0.7	6	1
	8	●	MPS1-0430-L8C	35.3	50.9	55.9	92.9	92	0.9	6	1
	10	□	MPS1-0430-L10C	43.8	58.8	62.8	99.8	99	0.8	6	1
	12	●	MPS1-0430-L12C	52.4	67.8	71.8	108.8	108	0.8	6	1
	15	●	MPS1-0430-L15C	65.3	80.8	84.8	121.8	121	0.8	6	1
	20	●	MPS1-0430-L20C	86.8	103.8	107.8	144.8	144	0.8	6	1
	25	●	MPS1-0430-L25C	108.3	125.8	129.8	166.8	166	0.8	6	1
	30	●	MPS1-0430-L30C	129.8	148.8	152.8	189.8	189	0.8	6	1
	35	□	MPS1-0430-L35C	151.3	170.8	174.8	211.8	211	0.8	6	1
	40	●	MPS1-0430-L40C	172.8	194.8	198.8	235.8	235	0.8	6	1
4.4	3	□	MPS1-0440S-DIN	17.2	23.8	28.8	65.8	65	0.8	6	3
	3	●	MPS1-0440S-DIN-C	17.2	23.8	28.8	65.8	65	0.8	6	1
	5	□	MPS1-0440L-DIN	27.7	34.3	36.8	73.8	73	0.8	6	3
	5	●	MPS1-0440L-DIN-C	27.7	34.3	36.8	73.8	73	0.8	6	1
	2	●	MPS1-0440-PC	9.5	22.7	24.4	62.7	62	0.7	6	1
	8	●	MPS1-0440-L8C	36.1	50.9	55.9	92.9	92	0.9	6	1
	10	□	MPS1-0440-L10C	44.8	58.8	62.8	99.8	99	0.8	6	1
	12	●	MPS1-0440-L12C	53.6	67.8	71.8	108.8	108	0.8	6	1
	15	●	MPS1-0440-L15C	66.8	80.8	84.8	121.8	121	0.8	6	1
	20	□	MPS1-0440-L20C	88.8	103.8	107.8	144.8	144	0.8	6	1
	25	□	MPS1-0440-L25C	110.8	125.8	129.8	166.8	166	0.8	6	1
	30	□	MPS1-0440-L30C	132.8	148.8	152.8	189.8	189	0.8	6	1
	35	□	MPS1-0440-L35C	154.8	170.8	174.8	211.8	211	0.8	6	1
	40	●	MPS1-0440-L40C	176.8	194.8	198.8	235.8	235	0.8	6	1

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.5	3	□	MPS1-0450S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	3
	3	●	MPS1-0450S-DIN-C	17.1	23.8	28.8	65.8	65	0.8	6	1
	5	□	MPS1-0450L-DIN	27.6	34.3	36.8	73.8	73	0.8	6	3
	5	●	MPS1-0450L-DIN-C	27.6	34.3	36.8	73.8	73	0.8	6	1
	2	●	MPS1-0450-PC	9.7	22.7	24.3	62.7	62	0.7	6	1
	8	●	MPS1-0450-L8C	36.9	50.9	55.9	92.9	92	0.9	6	1
	10	□	MPS1-0450-L10C	45.8	58.8	62.8	99.8	99	0.8	6	1
	12	●	MPS1-0450-L12C	54.8	67.8	71.8	108.8	108	0.8	6	1
	15	●	MPS1-0450-L15C	68.3	80.8	84.8	121.8	121	0.8	6	1
	20	●	MPS1-0450-L20C	90.8	103.8	107.8	144.8	144	0.8	6	1
	25	●	MPS1-0450-L25C	113.3	125.8	129.8	166.8	166	0.8	6	1
	30	●	MPS1-0450-L30C	135.8	148.8	152.8	189.8	189	0.8	6	1
	35	□	MPS1-0450-L35C	158.3	170.8	174.8	211.8	211	0.8	6	1
	40	●	MPS1-0450-L40C	180.8	194.8	198.8	235.8	235	0.8	6	1
4.6	3	□	MPS1-0460S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	4
	3	●	MPS1-0460S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	2
	5	□	MPS1-0460L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4
	5	●	MPS1-0460L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	2
	2	●	MPS1-0460-PC	9.9	24.7	27.7	62.7	62	0.7	6	2
	8	●	MPS1-0460-L8C	37.8	56.0	59.0	96.0	95	1.0	6	2
	10	□	MPS1-0460-L10C	46.8	65.8	68.8	105.8	105	0.8	6	2
	12	●	MPS1-0460-L12C	56.0	75.8	78.8	115.8	115	0.8	6	2
	15	●	MPS1-0460-L15C	69.8	90.8	93.8	130.8	130	0.8	6	2
	20	●	MPS1-0460-L20C	92.8	115.8	118.8	155.8	155	0.8	6	2
	25	●	MPS1-0460-L25C	115.8	140.8	143.8	180.8	180	0.8	6	2
	30	●	MPS1-0460-L30C	138.8	165.8	168.8	205.8	205	0.8	6	2
	35	□	MPS1-0460-L35C	161.8	184.8	192.8	229.8	229	0.8	6	2
	40	●	MPS1-0460-L40C	184.8	204.8	217.8	254.8	254	0.8	6	2
4.65	3	□	MPS1-0465S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	4
	3	●	MPS1-0465S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	2
	5	□	MPS1-0465L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4
	5	●	MPS1-0465L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	2
4.7	3	□	MPS1-0470S-DIN	16.8	23.9	28.9	65.9	65	0.9	6	4
	3	●	MPS1-0470S-DIN-C	16.8	23.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0470L-DIN	28.8	35.9	36.9	73.9	73	0.9	6	4
	5	●	MPS1-0470L-DIN-C	28.8	35.9	36.9	73.9	73	0.9	6	2
	2	●	MPS1-0470-PC	10.1	24.7	27.7	62.7	62	0.7	6	2
	8	●	MPS1-0470-L8C	38.6	56.0	59.0	96.0	95	1.0	6	2
	10	□	MPS1-0470-L10C	47.9	65.9	68.9	105.9	105	0.9	6	2
	12	●	MPS1-0470-L12C	57.3	75.9	78.9	115.9	115	0.9	6	2
	15	●	MPS1-0470-L15C	71.4	90.9	93.9	130.9	130	0.9	6	2
	20	●	MPS1-0470-L20C	94.9	115.9	118.9	155.9	155	0.9	6	2
	25	●	MPS1-0470-L25C	118.4	140.9	143.9	180.9	180	0.9	6	2
	30	●	MPS1-0470-L30C	141.9	165.9	168.9	205.9	205	0.9	6	2
	35	□	MPS1-0470-L35C	165.4	184.9	192.9	229.9	229	0.9	6	2
	40	●	MPS1-0470-L40C	188.9	204.9	217.9	254.9	254	0.9	6	2

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.8	3	□	MPS1-0480S-DIN	20.7	27.9	28.9	65.9	65	0.9	6	4
	3	●	MPS1-0480S-DIN-C	20.7	27.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0480L-DIN	36.7	43.9	44.9	81.9	81	0.9	6	4
	5	●	MPS1-0480L-DIN-C	36.7	43.9	44.9	81.9	81	0.9	6	2
	2	●	MPS1-0480-PC	10.4	24.8	27.8	62.8	62	0.8	6	2
	8	●	MPS1-0480-L8C	39.4	56.0	59.0	96.0	95	1.0	6	2
	10	□	MPS1-0480-L10C	48.9	65.9	68.9	105.9	105	0.9	6	2
	12	●	MPS1-0480-L12C	58.5	75.9	78.9	115.9	115	0.9	6	2
	15	●	MPS1-0480-L15C	72.9	90.9	93.9	130.9	130	0.9	6	2
	20	●	MPS1-0480-L20C	96.9	115.9	118.9	155.9	155	0.9	6	2
	25	●	MPS1-0480-L25C	120.9	140.9	143.9	180.9	180	0.9	6	2
	30	●	MPS1-0480-L30C	144.9	165.9	168.9	205.9	205	0.9	6	2
	35	□	MPS1-0480-L35C	168.9	190.9	192.9	229.9	229	0.9	6	2
	40	●	MPS1-0480-L40C	192.9	215.9	217.9	254.9	254	0.9	6	2
4.9	3	□	MPS1-0490S-DIN	20.5	27.9	28.9	65.9	65	0.9	6	4
	3	●	MPS1-0490S-DIN-C	20.5	27.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0490L-DIN	36.5	43.9	44.9	81.9	81	0.9	6	4
	5	●	MPS1-0490L-DIN-C	36.5	43.9	44.9	81.9	81	0.9	6	2
	2	●	MPS1-0490-PC	10.6	24.8	27.8	62.8	62	0.8	6	2
	8	●	MPS1-0490-L8C	40.2	56.0	59.0	96.0	95	1.0	6	2
	10	□	MPS1-0490-L10C	49.9	65.9	68.9	105.9	105	0.9	6	2
	12	●	MPS1-0490-L12C	59.7	75.9	78.9	115.9	115	0.9	6	2
	15	●	MPS1-0490-L15C	74.4	90.9	93.9	130.9	130	0.9	6	2
	20	□	MPS1-0490-L20C	98.9	115.9	118.9	155.9	155	0.9	6	2
	25	●	MPS1-0490-L25C	123.4	140.9	143.9	180.9	180	0.9	6	2
	30	●	MPS1-0490-L30C	147.9	165.9	168.9	205.9	205	0.9	6	2
	35	□	MPS1-0490-L35C	172.4	190.9	192.9	229.9	229	0.9	6	2
	40	●	MPS1-0490-L40C	196.9	215.9	217.9	254.9	254	0.9	6	2
5.0	3	□	MPS1-0500S-DIN	20.4	27.9	28.9	65.9	65	0.9	6	4
	3	●	MPS1-0500S-DIN-C	20.4	27.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0500L-DIN	36.4	43.9	44.9	81.9	81	0.9	6	4
	5	●	MPS1-0500L-DIN-C	36.4	43.9	44.9	81.9	81	0.9	6	2
	2	●	MPS1-0500-PC	10.8	24.8	25.8	62.8	62	0.8	6	2
	8	●	MPS1-0500-L8C	41.0	56.0	59.0	96.0	95	1.0	6	2
	10	●	MPS1-0500-L10C	50.9	65.9	68.9	105.9	105	0.9	6	2
	12	●	MPS1-0500-L12C	60.9	75.9	78.9	115.9	115	0.9	6	2
	15	●	MPS1-0500-L15C	75.9	90.9	93.9	130.9	130	0.9	6	2
	20	●	MPS1-0500-L20C	100.9	115.9	118.9	155.9	155	0.9	6	2
	25	●	MPS1-0500-L25C	125.9	140.9	143.9	180.9	180	0.9	6	2
	30	●	MPS1-0500-L30C	150.9	165.9	168.9	205.9	205	0.9	6	2
	35	□	MPS1-0500-L35C	175.9	190.9	192.9	229.9	229	0.9	6	2
	40	●	MPS1-0500-L40C	200.9	215.9	217.9	254.9	254	0.9	6	2
5.05	3	□	MPS1-0505S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	4
	3	●	MPS1-0505S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0505L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	4
	5	●	MPS1-0505L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.1	3	□	MPS1-0510S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	4
	3	●	MPS1-0510S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0510L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	4
	5	●	MPS1-0510L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	2
	2	●	MPS1-0510-PC	11.0	26.8	28.8	66.8	66	0.8	6	2
	8	●	MPS1-0510-L8C	41.9	62.1	65.1	102.1	101	1.1	6	2
	10	□	MPS1-0510-L10C	51.9	72.9	75.9	112.9	112	0.9	6	2
	12	●	MPS1-0510-L12C	62.1	83.9	86.9	123.9	123	0.9	6	2
	15	●	MPS1-0510-L15C	77.4	99.9	102.9	139.9	139	0.9	6	2
	20	●	MPS1-0510-L20C	102.9	127.9	130.9	167.9	167	0.9	6	2
	25	●	MPS1-0510-L25C	128.4	154.9	157.9	194.9	194	0.9	6	2
	30	●	MPS1-0510-L30C	153.9	182.9	185.9	222.9	222	0.9	6	2
	35	□	MPS1-0510-L35C	179.4	203.9	211.9	248.9	248	0.9	6	2
	40	●	MPS1-0510-L40C	204.9	230.9	241.9	278.9	278	0.9	6	2
5.2	3	□	MPS1-0520S-DIN	20.1	27.9	28.9	65.9	65	0.9	6	4
	3	●	MPS1-0520S-DIN-C	20.1	27.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0520L-DIN	36.1	43.9	44.9	81.9	81	0.9	6	4
	5	●	MPS1-0520L-DIN-C	36.1	43.9	44.9	81.9	81	0.9	6	2
	2	●	MPS1-0520-PC	11.2	26.8	28.8	66.8	66	0.8	6	2
	8	●	MPS1-0520-L8C	42.7	62.1	65.1	102.1	101	1.1	6	2
	10	□	MPS1-0520-L10C	52.9	72.9	75.9	112.9	112	0.9	6	2
	12	●	MPS1-0520-L12C	63.3	83.9	86.9	123.9	123	0.9	6	2
	15	●	MPS1-0520-L15C	78.9	99.9	102.9	139.9	139	0.9	6	2
	20	●	MPS1-0520-L20C	104.9	127.9	130.9	167.9	167	0.9	6	2
	25	●	MPS1-0520-L25C	130.9	154.9	157.9	194.9	194	0.9	6	2
	30	●	MPS1-0520-L30C	156.9	182.9	185.9	222.9	222	0.9	6	2
	35	□	MPS1-0520-L35C	182.9	203.9	211.9	248.9	248	0.9	6	2
	40	●	MPS1-0520-L40C	208.9	230.9	241.9	278.9	278	0.9	6	2
5.3	3	□	MPS1-0530S-DIN	20.0	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0530S-DIN-C	20.0	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0530L-DIN	36.0	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0530L-DIN-C	36.0	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0530-PC	11.4	26.8	28.8	66.8	66	0.8	6	2
	8	●	MPS1-0530-L8C	43.5	62.1	65.1	102.1	101	1.1	6	2
	10	□	MPS1-0530-L10C	54.0	73.0	76.0	113.0	112	1.0	6	2
	12	●	MPS1-0530-L12C	64.6	84.0	87.0	124.0	123	1.0	6	2
	15	●	MPS1-0530-L15C	80.5	100.0	103.0	140.0	139	1.0	6	2
	20	□	MPS1-0530-L20C	107.0	128.0	131.0	168.0	167	1.0	6	2
	25	●	MPS1-0530-L25C	133.5	155.0	158.0	195.0	194	1.0	6	2
	30	●	MPS1-0530-L30C	160.0	183.0	186.0	223.0	222	1.0	6	2
	35	□	MPS1-0530-L35C	186.5	210.0	212.0	249.0	248	1.0	6	2
	40	●	MPS1-0530-L40C	213.0	241.0	242.0	279.0	278	1.0	6	2
5.4	3	□	MPS1-0540S-DIN	19.9	28.0	29.0	66.0	65	1.0	6	2
	3	●	MPS1-0540S-DIN-C	19.9	28.0	29.0	66.0	65	1.0	6	4
	5	□	MPS1-0540L-DIN	35.9	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0540L-DIN-C	35.9	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0540-PC	11.7	26.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0540-L8C	44.3	62.1	65.1	102.1	101	1.1	6	2
	10	□	MPS1-0540-L10C	55.0	73.0	76.0	113.0	112	1.0	6	2
	12	●	MPS1-0540-L12C	65.8	84.0	87.0	124.0	123	1.0	6	2
	15	●	MPS1-0540-L15C	82.0	100.0	103.0	140.0	139	1.0	6	2
	20	●	MPS1-0540-L20C	109.0	128.0	131.0	168.0	167	1.0	6	2
	25	□	MPS1-0540-L25C	136.0	155.0	158.0	195.0	194	1.0	6	2
	30	□	MPS1-0540-L30C	163.0	183.0	186.0	223.0	222	1.0	6	2
	35	□	MPS1-0540-L35C	190.0	210.0	212.0	249.0	248	1.0	6	2
	40	●	MPS1-0540-L40C	217.0	241.0	242.0	279.0	278	1.0	6	2

CONDICIONES DE CORTE ➤ M059
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.5	3	□	MPS1-0550S-DIN	19.8	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0550S-DIN-C	19.8	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0550L-DIN	35.8	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0550L-DIN-C	35.8	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0550-PC	11.9	26.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0550-L8C	45.1	62.1	65.1	102.1	101	1.1	6	2
	10	□	MPS1-0550-L10C	56.0	73.0	76.0	113.0	112	1.0	6	2
	12	●	MPS1-0550-L12C	67.0	84.0	87.0	124.0	123	1.0	6	2
	15	●	MPS1-0550-L15C	83.5	100.0	103.0	140.0	139	1.0	6	2
	20	●	MPS1-0550-L20C	111.0	128.0	131.0	168.0	167	1.0	6	2
	25	●	MPS1-0550-L25C	138.5	155.0	158.0	195.0	194	1.0	6	2
	30	●	MPS1-0550-L30C	166.0	183.0	186.0	223.0	222	1.0	6	2
	35	□	MPS1-0550-L35C	193.5	210.0	212.0	249.0	248	1.0	6	2
	40	●	MPS1-0550-L40C	221.0	241.0	242.0	279.0	278	1.0	6	2
5.55	3	□	MPS1-0555S-DIN	19.7	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0555S-DIN-C	19.7	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0555L-DIN	35.7	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0555L-DIN-C	35.7	44.0	45.0	82.0	81	1.0	6	2
5.6	3	□	MPS1-0560S-DIN	19.6	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0560S-DIN-C	19.6	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0560L-DIN	35.6	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0560L-DIN-C	35.6	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0560-PC	12.1	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0560-L8C	46.0	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0560-L10C	57.0	79.0	82.0	119.0	118	1.0	6	2
	12	●	MPS1-0560-L12C	68.2	91.0	94.0	131.0	130	1.0	6	2
	15	●	MPS1-0560-L15C	85.0	109.0	112.0	149.0	148	1.0	6	2
	20	□	MPS1-0560-L20C	113.0	139.0	142.0	179.0	178	1.0	6	2
	25	□	MPS1-0560-L25C	141.0	169.0	172.0	209.0	208	1.0	6	2
	30	●	MPS1-0560-L30C	169.0	199.0	202.0	239.0	238	1.0	6	2
	35	□	MPS1-0560-L35C	197.0	223.0	231.0	268.0	267	1.0	6	2
	40	●	MPS1-0560-L40C	225.0	251.0	262.0	299.0	298	1.0	6	2
5.7	3	□	MPS1-0570S-DIN	19.5	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0570S-DIN-C	19.5	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0570L-DIN	35.5	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0570L-DIN-C	35.5	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0570-PC	12.3	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0570-L8C	46.8	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0570-L10C	58.0	79.0	82.0	119.0	118	1.0	6	2
	12	●	MPS1-0570-L12C	69.4	91.0	94.0	131.0	130	1.0	6	2
	15	●	MPS1-0570-L15C	86.5	109.0	112.0	149.0	148	1.0	6	2
	20	□	MPS1-0570-L20C	115.0	139.0	142.0	179.0	178	1.0	6	2
	25	●	MPS1-0570-L25C	143.5	169.0	172.0	209.0	208	1.0	6	2
	30	□	MPS1-0570-L30C	172.0	199.0	202.0	239.0	238	1.0	6	2
	35	□	MPS1-0570-L35C	200.5	223.0	231.0	268.0	267	1.0	6	2
	40	●	MPS1-0570-L40C	229.0	251.0	262.0	299.0	298	1.0	6	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.8	3	□	MPS1-0580S-DIN	19.4	28.1	29.1	66.1	65	1.1	6	4
	3	●	MPS1-0580S-DIN-C	19.4	28.1	29.1	66.1	65	1.1	6	2
	5	□	MPS1-0580L-DIN	35.4	44.1	45.1	82.1	81	1.1	6	4
	5	●	MPS1-0580L-DIN-C	35.4	44.1	45.1	82.1	81	1.1	6	2
	2	●	MPS1-0580-PC	12.5	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0580-L8C	47.6	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0580-L10C	59.1	79.1	82.1	119.1	118	1.1	6	2
	12	●	MPS1-0580-L12C	70.7	91.1	94.1	131.1	130	1.1	6	2
	15	●	MPS1-0580-L15C	88.1	109.1	112.1	149.1	148	1.1	6	2
	20	●	MPS1-0580-L20C	117.1	139.1	142.1	179.1	178	1.1	6	2
	25	□	MPS1-0580-L25C	146.1	169.1	172.1	209.1	208	1.1	6	2
	30	●	MPS1-0580-L30C	175.1	199.1	202.1	239.1	238	1.1	6	2
	35	□	MPS1-0580-L35C	204.1	229.1	231.1	268.1	267	1.1	6	2
	40	●	MPS1-0580-L40C	233.1	261.1	262.1	299.1	298	1.1	6	2
5.9	3	□	MPS1-0590S-DIN	19.2	28.1	29.1	66.1	65	1.1	6	4
	3	●	MPS1-0590S-DIN-C	19.2	28.1	29.1	66.1	65	1.1	6	2
	5	□	MPS1-0590L-DIN	35.2	44.1	45.1	82.1	81	1.1	6	4
	5	●	MPS1-0590L-DIN-C	35.2	44.1	45.1	82.1	81	1.1	6	2
	2	●	MPS1-0590-PC	12.7	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0590-L8C	48.4	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0590-L10C	60.1	79.1	82.1	119.1	118	1.1	6	2
	12	●	MPS1-0590-L12C	71.9	91.1	94.1	131.1	130	1.1	6	2
	15	●	MPS1-0590-L15C	89.6	109.1	112.1	149.1	148	1.1	6	2
	20	●	MPS1-0590-L20C	119.1	139.1	142.1	179.1	178	1.1	6	2
	25	●	MPS1-0590-L25C	148.6	169.1	172.1	209.1	208	1.1	6	2
	30	□	MPS1-0590-L30C	178.1	199.1	202.1	239.1	238	1.1	6	2
	35	□	MPS1-0590-L35C	207.6	229.1	231.1	268.1	267	1.1	6	2
	40	●	MPS1-0590-L40C	237.1	261.1	262.1	299.1	298	1.1	6	2
6.0	3	□	MPS1-0600S-DIN	19.1	28.1	29.1	66.1	65	1.1	6	4
	3	●	MPS1-0600S-DIN-C	19.1	28.1	29.1	66.1	65	1.1	6	2
	5	□	MPS1-0600L-DIN	35.1	44.1	45.1	82.1	81	1.1	6	4
	5	●	MPS1-0600L-DIN-C	35.1	44.1	45.1	82.1	81	1.1	6	2
	2	●	MPS1-0600-PC	12.9	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0600-L8C	49.2	67.2	70.2	107.2	106	1.2	6	2
	10	●	MPS1-0600-L10C	61.1	79.1	82.1	119.1	118	1.1	6	2
	12	●	MPS1-0600-L12C	73.1	91.1	94.1	131.1	130	1.1	6	2
	15	●	MPS1-0600-L15C	91.1	109.1	112.1	149.1	148	1.1	6	2
	20	●	MPS1-0600-L20C	121.1	139.1	142.1	179.1	178	1.1	6	2
	25	●	MPS1-0600-L25C	151.1	169.1	172.1	209.1	208	1.1	6	2
	30	●	MPS1-0600-L30C	181.1	199.1	202.1	239.1	238	1.1	6	2
	35	□	MPS1-0600-L35C	211.1	229.1	231.1	268.1	267	1.1	6	2
	40	●	MPS1-0600-L40C	241.1	261.1	262.1	299.1	298	1.1	6	2
6.05	3	□	MPS1-0605S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	4
	3	●	MPS1-0605S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	2
	5	□	MPS1-0605L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	4
	5	●	MPS1-0605L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	2

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.1	3	□	MPS1-0610S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	4
	3	●	MPS1-0610S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	2
	5	□	MPS1-0610L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	4
	5	●	MPS1-0610L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	2
	2	●	MPS1-0610-PC	13.2	32.0	35.0	75.0	74	1.0	8	2
	8	●	MPS1-0610-L8C	50.1	73.3	76.3	113.3	112	1.3	8	2
	10	□	MPS1-0610-L10C	62.1	86.1	89.1	126.1	125	1.1	8	2
	12	●	MPS1-0610-L12C	74.3	99.1	102.1	139.1	138	1.1	8	2
	15	●	MPS1-0610-L15C	92.6	118.1	121.1	158.1	157	1.1	8	2
	20	●	MPS1-0610-L20C	123.1	151.1	154.1	191.1	190	1.1	8	2
	25	●	MPS1-0610-L25C	153.6	183.1	186.1	223.1	222	1.1	8	2
	30	●	MPS1-0610-L30C	184.1	216.1	219.1	256.1	255	1.1	8	2
	35	□	MPS1-0610-L35C	214.6	241.1	250.1	287.1	286	1.1	8	2
	40	●	MPS1-0610-L40C	245.1	271.1	284.1	321.1	320	1.1	8	2
6.2	3	□	MPS1-0620S-DIN	24.8	34.1	42.1	79.1	78	1.1	8	4
	3	●	MPS1-0620S-DIN-C	24.8	34.1	42.1	79.1	78	1.1	8	2
	5	□	MPS1-0620L-DIN	43.8	53.1	54.1	91.1	90	1.1	8	4
	5	●	MPS1-0620L-DIN-C	43.8	53.1	54.1	91.1	90	1.1	8	2
	2	●	MPS1-0620-PC	13.4	32.0	35.0	75.0	74	1.0	8	2
	8	●	MPS1-0620-L8C	50.9	73.3	76.3	113.3	112	1.3	8	2
	10	□	MPS1-0620-L10C	63.1	86.1	89.1	126.1	125	1.1	8	2
	12	●	MPS1-0620-L12C	75.5	99.1	102.1	139.1	138	1.1	8	2
	15	●	MPS1-0620-L15C	94.1	118.1	121.1	158.1	157	1.1	8	2
	20	●	MPS1-0620-L20C	125.1	151.1	154.1	191.1	190	1.1	8	2
	25	□	MPS1-0620-L25C	156.1	183.1	186.1	223.1	222	1.1	8	2
	30	●	MPS1-0620-L30C	187.1	216.1	219.1	256.1	255	1.1	8	2
	35	□	MPS1-0620-L35C	218.1	241.1	250.1	287.1	286	1.1	8	2
	40	●	MPS1-0620-L40C	249.1	271.1	284.1	321.1	320	1.1	8	2
6.3	3	□	MPS1-0630S-DIN	24.7	34.1	42.1	79.1	78	1.1	8	4
	3	●	MPS1-0630S-DIN-C	24.7	34.1	42.1	79.1	78	1.1	8	2
	5	□	MPS1-0630L-DIN	43.7	53.1	54.1	91.1	90	1.1	8	4
	5	●	MPS1-0630L-DIN-C	43.7	53.1	54.1	91.1	90	1.1	8	2
	2	●	MPS1-0630-PC	13.6	32.0	35.0	75.0	74	1.0	8	2
	8	●	MPS1-0630-L8C	51.7	73.3	76.3	113.3	112	1.3	8	2
	10	□	MPS1-0630-L10C	64.1	86.1	89.1	126.1	125	1.1	8	2
	12	●	MPS1-0630-L12C	76.7	99.1	102.1	139.1	138	1.1	8	2
	15	●	MPS1-0630-L15C	95.6	118.1	121.1	158.1	157	1.1	8	2
	20	●	MPS1-0630-L20C	127.1	151.1	154.1	191.1	190	1.1	8	2
	25	□	MPS1-0630-L25C	158.6	183.1	186.1	223.1	222	1.1	8	2
	30	●	MPS1-0630-L30C	190.1	216.1	219.1	256.1	255	1.1	8	2
	35	□	MPS1-0630-L35C	221.6	248.1	250.1	287.1	286	1.1	8	2
	40	●	MPS1-0630-L40C	253.1	281.1	284.1	321.1	320	1.1	8	2
6.4	3	□	MPS1-0640S-DIN	24.6	34.2	42.2	79.2	78	1.2	8	4
	3	●	MPS1-0640S-DIN-C	24.6	34.2	42.2	79.2	78	1.2	8	2
	5	□	MPS1-0640L-DIN	43.6	53.2	54.2	91.2	90	1.2	8	4
	5	●	MPS1-0640L-DIN-C	43.6	53.2	54.2	91.2	90	1.2	8	2
	2	●	MPS1-0640-PC	13.8	32.0	35.0	75.0	74	1.0	8	2
	8	●	MPS1-0640-L8C	52.5	73.3	76.3	113.3	112	1.3	8	2
	10	□	MPS1-0640-L10C	65.2	86.2	89.2	126.2	125	1.2	8	2
	12	●	MPS1-0640-L12C	78.0	99.2	102.2	139.2	138	1.2	8	2
	15	●	MPS1-0640-L15C	97.2	118.2	121.2	158.2	157	1.2	8	2
	20	●	MPS1-0640-L20C	129.2	151.2	154.2	191.2	190	1.2	8	2
	25	●	MPS1-0640-L25C	161.2	183.2	186.2	223.2	222	1.2	8	2
	30	●	MPS1-0640-L30C	193.2	216.2	219.2	256.2	255	1.2	8	2
	35	□	MPS1-0640-L35C	225.2	248.2	250.2	287.2	286	1.2	8	2
	40	●	MPS1-0640-L40C	257.2	281.2	284.2	321.2	320	1.2	8	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.5	3	□	MPS1-0650S-DIN	24.4	34.2	42.2	79.2	78	1.2	8	4
	3	●	MPS1-0650S-DIN-C	24.4	34.2	42.2	79.2	78	1.2	8	2
	5	□	MPS1-0650L-DIN	43.4	53.2	54.2	91.2	90	1.2	8	4
	5	●	MPS1-0650L-DIN-C	43.4	53.2	54.2	91.2	90	1.2	8	2
	2	●	MPS1-0650-PC	14.0	32.0	35.0	75.0	74	1.0	8	2
	8	●	MPS1-0650-L8C	53.3	73.3	76.3	113.3	112	1.3	8	2
	10	□	MPS1-0650-L10C	66.2	86.2	89.2	126.2	125	1.2	8	2
	12	●	MPS1-0650-L12C	79.2	99.2	102.2	139.2	138	1.2	8	2
	15	●	MPS1-0650-L15C	98.7	118.2	121.2	158.2	157	1.2	8	2
	20	●	MPS1-0650-L20C	131.2	151.2	154.2	191.2	190	1.2	8	2
	25	●	MPS1-0650-L25C	163.7	183.2	186.2	223.2	222	1.2	8	2
	30	●	MPS1-0650-L30C	196.2	216.2	219.2	256.2	255	1.2	8	2
	35	□	MPS1-0650-L35C	228.7	248.2	250.2	287.2	286	1.2	8	2
	40	●	MPS1-0650-L40C	261.2	281.2	284.2	321.2	320	1.2	8	2
6.6	3	□	MPS1-0660S-DIN	24.3	34.2	42.2	79.2	78	1.2	8	4
	3	●	MPS1-0660S-DIN-C	24.3	34.2	42.2	79.2	78	1.2	8	2
	5	□	MPS1-0660L-DIN	43.3	53.2	54.2	91.2	90	1.2	8	4
	5	●	MPS1-0660L-DIN-C	43.3	53.2	54.2	91.2	90	1.2	8	2
	2	●	MPS1-0660-PC	14.2	35.0	37.0	75.0	74	1.0	8	2
	8	●	MPS1-0660-L8C	54.2	78.4	81.4	118.4	117	1.4	8	2
	10	□	MPS1-0660-L10C	67.2	92.2	95.2	132.2	131	1.2	8	2
	12	●	MPS1-0660-L12C	80.4	106.2	109.2	146.2	145	1.2	8	2
	15	●	MPS1-0660-L15C	100.2	127.2	130.2	167.2	166	1.2	8	2
	20	□	MPS1-0660-L20C	133.2	162.2	165.2	202.2	201	1.2	8	2
	25	●	MPS1-0660-L25C	166.2	197.2	200.2	237.2	236	1.2	8	2
	30	●	MPS1-0660-L30C	199.2	232.2	235.2	272.2	271	1.2	8	2
	35	□	MPS1-0660-L35C	232.2	267.2	269.2	306.2	305	1.2	8	2
	40	●	MPS1-0660-L40C	265.2	301.2	304.2	341.2	340	1.2	8	2
6.7	3	□	MPS1-0670S-DIN	24.2	34.2	42.2	79.2	78	1.2	8	4
	3	●	MPS1-0670S-DIN-C	24.2	34.2	42.2	79.2	78	1.2	8	2
	5	□	MPS1-0670L-DIN	43.2	53.2	54.2	91.2	90	1.2	8	4
	5	●	MPS1-0670L-DIN-C	43.2	53.2	54.2	91.2	90	1.2	8	2
	2	●	MPS1-0670-PC	14.5	35.1	37.1	75.1	74	1.1	8	2
	8	●	MPS1-0670-L8C	55.0	78.4	81.4	118.4	117	1.4	8	2
	10	□	MPS1-0670-L10C	68.2	92.2	95.2	132.2	131	1.2	8	2
	12	●	MPS1-0670-L12C	81.6	106.2	109.2	146.2	145	1.2	8	2
	15	●	MPS1-0670-L15C	101.7	127.2	130.2	167.2	166	1.2	8	2
	20	□	MPS1-0670-L20C	135.2	162.2	165.2	202.2	201	1.2	8	2
	25	□	MPS1-0670-L25C	168.7	197.2	200.2	237.2	236	1.2	8	2
	30	●	MPS1-0670-L30C	202.2	232.2	235.2	272.2	271	1.2	8	2
	35	□	MPS1-0670-L35C	235.7	267.2	269.2	306.2	305	1.2	8	2
	40	●	MPS1-0670-L40C	269.2	301.2	304.2	341.2	340	1.2	8	2
6.8	3	□	MPS1-0680S-DIN	24.0	34.2	42.2	79.2	78	1.2	8	4
	3	●	MPS1-0680S-DIN-C	24.0	34.2	42.2	79.2	78	1.2	8	2
	5	□	MPS1-0680L-DIN	43.0	53.2	54.2	91.2	90	1.2	8	4
	5	●	MPS1-0680L-DIN-C	43.0	53.2	54.2	91.2	90	1.2	8	2
	2	●	MPS1-0680-PC	14.7	35.1	37.1	75.1	74	1.1	8	2
	8	●	MPS1-0680-L8C	55.8	78.4	81.4	118.4	117	1.4	8	2
	10	□	MPS1-0680-L10C	69.2	92.2	95.2	132.2	131	1.2	8	2
	12	●	MPS1-0680-L12C	82.8	106.2	109.2	146.2	145	1.2	8	2
	15	●	MPS1-0680-L15C	103.2	127.2	130.2	167.2	166	1.2	8	2
	20	●	MPS1-0680-L20C	137.2	162.2	165.2	202.2	201	1.2	8	2
	25	●	MPS1-0680-L25C	171.2	197.2	200.2	237.2	236	1.2	8	2
	30	●	MPS1-0680-L30C	205.2	232.2	235.2	272.2	271	1.2	8	2
	35	□	MPS1-0680-L35C	239.2	267.2	269.2	306.2	305	1.2	8	2
	40	●	MPS1-0680-L40C	273.2	301.2	304.2	341.2	340	1.2	8	2

CONDICIONES DE CORTE ➤ M059
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.9	3	□	MPS1-0690S-DIN	23.9	34.3	42.3	79.3	78	1.3	8	4
	3	●	MPS1-0690S-DIN-C	23.9	34.3	42.3	79.3	78	1.3	8	2
	5	□	MPS1-0690L-DIN	42.9	53.3	54.3	91.3	90	1.3	8	4
	5	●	MPS1-0690L-DIN-C	42.9	53.3	54.3	91.3	90	1.3	8	2
	2	●	MPS1-0690-PC	14.9	35.1	37.1	75.1	74	1.1	8	2
	8	●	MPS1-0690-L8C	56.6	78.4	81.4	118.4	117	1.4	8	2
	10	□	MPS1-0690-L10C	70.3	92.3	95.3	132.3	131	1.3	8	2
	12	●	MPS1-0690-L12C	84.1	106.3	109.3	146.3	145	1.3	8	2
	15	●	MPS1-0690-L15C	104.8	127.3	130.3	167.3	166	1.3	8	2
	20	●	MPS1-0690-L20C	139.3	162.3	165.3	202.3	201	1.3	8	2
	25	●	MPS1-0690-L25C	173.8	197.3	200.3	237.3	236	1.3	8	2
	30	●	MPS1-0690-L30C	208.3	232.3	235.3	272.3	271	1.3	8	2
	35	□	MPS1-0690-L35C	242.8	267.3	269.3	306.3	305	1.3	8	2
	40	●	MPS1-0690-L40C	277.3	301.3	304.3	341.3	340	1.3	8	2
7.0	3	□	MPS1-0700S-DIN	23.8	34.3	42.3	79.3	78	1.3	8	4
	3	●	MPS1-0700S-DIN-C	23.8	34.3	42.3	79.3	78	1.3	8	2
	5	□	MPS1-0700L-DIN	42.8	53.3	54.3	91.3	90	1.3	8	4
	5	●	MPS1-0700L-DIN-C	42.8	53.3	54.3	91.3	90	1.3	8	2
	2	●	MPS1-0700-PC	15.1	35.1	37.1	75.1	74	1.1	8	2
	8	●	MPS1-0700-L8C	57.4	78.4	81.4	118.4	117	1.4	8	2
	10	●	MPS1-0700-L10C	71.3	92.3	95.3	132.3	131	1.3	8	2
	12	●	MPS1-0700-L12C	85.3	106.3	109.3	146.3	145	1.3	8	2
	15	●	MPS1-0700-L15C	106.3	127.3	130.3	167.3	166	1.3	8	2
	20	●	MPS1-0700-L20C	141.3	162.3	165.3	202.3	201	1.3	8	2
	25	●	MPS1-0700-L25C	176.3	197.3	200.3	237.3	236	1.3	8	2
	30	●	MPS1-0700-L30C	211.3	232.3	235.3	272.3	271	1.3	8	2
	35	□	MPS1-0700-L35C	246.3	267.3	269.3	306.3	305	1.3	8	2
	40	●	MPS1-0700-L40C	281.3	301.3	304.3	341.3	340	1.3	8	2
7.1	3	□	MPS1-0710S-DIN	30.6	41.3	42.3	79.3	78	1.3	8	4
	3	●	MPS1-0710S-DIN-C	30.6	41.3	42.3	79.3	78	1.3	8	2
	5	□	MPS1-0710L-DIN	42.6	53.3	54.3	91.3	90	1.3	8	4
	5	●	MPS1-0710L-DIN-C	42.6	53.3	54.3	91.3	90	1.3	8	2
	2	●	MPS1-0710-PC	15.3	35.1	38.1	80.1	79	1.1	8	2
	8	●	MPS1-0710-L8C	58.3	84.5	87.5	124.5	123	1.5	8	2
	10	□	MPS1-0710-L10C	72.3	99.3	102.3	139.3	138	1.3	8	2
	12	●	MPS1-0710-L12C	86.5	114.3	117.3	154.3	153	1.3	8	2
	15	●	MPS1-0710-L15C	107.8	136.3	139.3	176.3	175	1.3	8	2
	20	●	MPS1-0710-L20C	143.3	174.3	177.3	214.3	213	1.3	8	2
	25	●	MPS1-0710-L25C	178.8	211.3	214.3	251.3	250	1.3	8	2
	30	●	MPS1-0710-L30C	214.3	249.3	252.3	289.3	288	1.3	8	2
	35	□	MPS1-0710-L35C	249.8	286.3	288.3	325.3	324	1.3	8	2
	40	●	MPS1-0710-L40C	285.3	321.3	323.3	360.3	359	1.3	8	2
7.2	3	□	MPS1-0720S-DIN	30.5	41.3	42.3	79.3	78	1.3	8	4
	3	●	MPS1-0720S-DIN-C	30.5	41.3	42.3	79.3	78	1.3	8	2
	5	□	MPS1-0720L-DIN	42.5	53.3	54.3	91.3	90	1.3	8	4
	5	●	MPS1-0720L-DIN-C	42.5	53.3	54.3	91.3	90	1.3	8	2
	2	●	MPS1-0720-PC	15.5	35.1	38.1	80.1	79	1.1	8	2
	8	●	MPS1-0720-L8C	59.1	84.5	87.5	124.5	123	1.5	8	2
	10	□	MPS1-0720-L10C	73.3	99.3	102.3	139.3	138	1.3	8	2
	12	●	MPS1-0720-L12C	87.7	114.3	117.3	154.3	153	1.3	8	2
	15	□	MPS1-0720-L15C	109.3	136.3	139.3	176.3	175	1.3	8	2
	20	□	MPS1-0720-L20C	145.3	174.3	177.3	214.3	213	1.3	8	2
	25	□	MPS1-0720-L25C	181.3	211.3	214.3	251.3	250	1.3	8	2
	30	□	MPS1-0720-L30C	217.3	249.3	252.3	289.3	288	1.3	8	2
	35	□	MPS1-0720-L35C	253.3	286.3	288.3	325.3	324	1.3	8	2
	40	●	MPS1-0720-L40C	289.3	321.3	323.3	360.3	359	1.3	8	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.3	3	□	MPS1-0730S-DIN	30.4	41.3	42.3	79.3	78	1.3	8	4
	3	●	MPS1-0730S-DIN-C	30.4	41.3	42.3	79.3	78	1.3	8	2
	5	□	MPS1-0730L-DIN	42.4	53.3	54.3	91.3	90	1.3	8	4
	5	●	MPS1-0730L-DIN-C	42.4	53.3	54.3	91.3	90	1.3	8	2
	2	●	MPS1-0730-PC	15.8	35.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0730-L8C	59.9	84.5	87.5	124.5	123	1.5	8	2
	10	□	MPS1-0730-L10C	74.3	99.3	102.3	139.3	138	1.3	8	2
	12	●	MPS1-0730-L12C	88.9	114.3	117.3	154.3	153	1.3	8	2
	15	□	MPS1-0730-L15C	110.8	136.3	139.3	176.3	175	1.3	8	2
	20	□	MPS1-0730-L20C	147.3	174.3	177.3	214.3	213	1.3	8	2
	25	□	MPS1-0730-L25C	183.8	211.3	214.3	251.3	250	1.3	8	2
	30	□	MPS1-0730-L30C	220.3	249.3	252.3	289.3	288	1.3	8	2
	35	□	MPS1-0730-L35C	256.8	286.3	288.3	325.3	324	1.3	8	2
	40	●	MPS1-0730-L40C	293.3	321.3	323.3	360.3	359	1.3	8	2
7.4	3	□	MPS1-0740S-DIN	30.2	41.3	42.3	79.3	78	1.3	8	4
	3	●	MPS1-0740S-DIN-C	30.2	41.3	42.3	79.3	78	1.3	8	2
	5	□	MPS1-0740L-DIN	42.2	53.3	54.3	91.3	90	1.3	8	4
	5	●	MPS1-0740L-DIN-C	42.2	53.3	54.3	91.3	90	1.3	8	2
	2	●	MPS1-0740-PC	16.0	35.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0740-L8C	60.7	84.5	87.5	124.5	123	1.5	8	2
	10	□	MPS1-0740-L10C	75.3	99.3	102.3	139.3	138	1.3	8	2
	12	●	MPS1-0740-L12C	90.1	114.3	117.3	154.3	153	1.3	8	2
	15	□	MPS1-0740-L15C	112.3	136.3	139.3	176.3	175	1.3	8	2
	20	□	MPS1-0740-L20C	149.3	174.3	177.3	214.3	213	1.3	8	2
	25	□	MPS1-0740-L25C	186.3	211.3	214.3	251.3	250	1.3	8	2
	30	□	MPS1-0740-L30C	223.3	249.3	252.3	289.3	288	1.3	8	2
	35	□	MPS1-0740-L35C	260.3	286.3	288.3	325.3	324	1.3	8	2
	40	●	MPS1-0740-L40C	297.3	321.3	323.3	360.3	359	1.3	8	2
7.5	3	□	MPS1-0750S-DIN	30.1	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0750S-DIN-C	30.1	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0750L-DIN	42.1	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0750L-DIN-C	42.1	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0750-PC	16.2	35.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0750-L8C	61.6	84.6	87.6	124.6	123	1.6	8	2
	10	□	MPS1-0750-L10C	76.4	99.4	102.4	139.4	138	1.4	8	2
	12	●	MPS1-0750-L12C	91.4	114.4	117.4	154.4	153	1.4	8	2
	15	●	MPS1-0750-L15C	113.9	136.4	139.4	176.4	175	1.4	8	2
	20	●	MPS1-0750-L20C	151.4	174.4	177.4	214.4	213	1.4	8	2
	25	●	MPS1-0750-L25C	188.9	211.4	214.4	251.4	250	1.4	8	2
	30	●	MPS1-0750-L30C	226.4	249.4	252.4	289.4	288	1.4	8	2
	35	□	MPS1-0750-L35C	263.9	286.4	288.4	325.4	324	1.4	8	2
	40	●	MPS1-0750-L40C	301.4	321.4	323.4	360.4	359	1.4	8	2
7.6	3	□	MPS1-0760S-DIN	30.0	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0760S-DIN-C	30.0	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0760L-DIN	42.0	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0760L-DIN-C	42.0	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0760-PC	16.4	38.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0760-L8C	62.4	89.6	92.6	129.6	128	1.6	8	2
	10	□	MPS1-0760-L10C	77.4	105.4	108.4	145.4	144	1.4	8	2
	12	●	MPS1-0760-L12C	92.6	121.4	124.4	161.4	160	1.4	8	2
	15	●	MPS1-0760-L15C	115.4	145.4	148.4	185.4	184	1.4	8	2
	20	□	MPS1-0760-L20C	153.4	185.4	188.4	225.4	224	1.4	8	2
	25	●	MPS1-0760-L25C	191.4	225.4	228.4	265.4	264	1.4	8	2
	30	□	MPS1-0760-L30C	229.4	265.4	268.4	305.4	304	1.4	8	2
	35	□	MPS1-0760-L35C	267.4	305.4	307.4	344.4	343	1.4	8	2
	40	●	MPS1-0760-L40C	305.4	341.4	342.4	379.4	378	1.4	8	2

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.7	3	□	MPS1-0770S-DIN	29.9	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0770S-DIN-C	29.9	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0770L-DIN	41.9	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0770L-DIN-C	41.9	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0770-PC	16.6	38.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0770-L8C	63.2	89.6	92.6	129.6	128	1.6	8	2
	10	□	MPS1-0770-L10C	78.4	105.4	108.4	145.4	144	1.4	8	2
	12	●	MPS1-0770-L12C	93.8	121.4	124.4	161.4	160	1.4	8	2
	15	●	MPS1-0770-L15C	116.9	145.4	148.4	185.4	184	1.4	8	2
	20	□	MPS1-0770-L20C	155.4	185.4	188.4	225.4	224	1.4	8	2
	25	●	MPS1-0770-L25C	193.9	225.4	228.4	265.4	264	1.4	8	2
	30	□	MPS1-0770-L30C	232.4	265.4	268.4	305.4	304	1.4	8	2
	35	□	MPS1-0770-L35C	270.9	305.4	307.4	344.4	343	1.4	8	2
	40	●	MPS1-0770-L40C	309.4	341.4	342.4	379.4	378	1.4	8	2
7.8	3	□	MPS1-0780S-DIN	29.7	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0780S-DIN-C	29.7	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0780L-DIN	41.7	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0780L-DIN-C	41.7	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0780-PC	16.8	38.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0780-L8C	64.0	89.6	92.6	129.6	128	1.6	8	2
	10	□	MPS1-0780-L10C	79.4	105.4	108.4	145.4	144	1.4	8	2
	12	●	MPS1-0780-L12C	95.0	121.4	124.4	161.4	160	1.4	8	2
	15	●	MPS1-0780-L15C	118.4	145.4	148.4	185.4	184	1.4	8	2
	20	□	MPS1-0780-L20C	157.4	185.4	188.4	225.4	224	1.4	8	2
	25	□	MPS1-0780-L25C	196.4	225.4	228.4	265.4	264	1.4	8	2
	30	●	MPS1-0780-L30C	235.4	265.4	268.4	305.4	304	1.4	8	2
	35	□	MPS1-0780-L35C	274.4	305.4	307.4	344.4	343	1.4	8	2
	40	●	MPS1-0780-L40C	313.4	341.4	342.4	379.4	378	1.4	8	2
7.9	3	□	MPS1-0790S-DIN	29.6	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0790S-DIN-C	29.6	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0790L-DIN	41.6	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0790L-DIN-C	41.6	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0790-PC	17.0	38.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0790-L8C	64.8	89.6	92.6	129.6	128	1.6	8	2
	10	□	MPS1-0790-L10C	80.4	105.4	108.4	145.4	144	1.4	8	2
	12	●	MPS1-0790-L12C	96.2	121.4	124.4	161.4	160	1.4	8	2
	15	□	MPS1-0790-L15C	119.9	145.4	148.4	185.4	184	1.4	8	2
	20	□	MPS1-0790-L20C	159.4	185.4	188.4	225.4	224	1.4	8	2
	25	●	MPS1-0790-L25C	198.9	225.4	228.4	265.4	264	1.4	8	2
	30	●	MPS1-0790-L30C	238.4	265.4	268.4	305.4	304	1.4	8	2
	35	□	MPS1-0790-L35C	277.9	305.4	307.4	344.4	343	1.4	8	2
	40	●	MPS1-0790-L40C	317.4	341.4	342.4	379.4	378	1.4	8	2
8.0	3	□	MPS1-0800S-DIN	29.5	41.5	42.5	79.5	78	1.5	8	4
	3	●	MPS1-0800S-DIN-C	29.5	41.5	42.5	79.5	78	1.5	8	2
	5	□	MPS1-0800L-DIN	41.5	53.5	54.5	91.5	90	1.5	8	4
	5	●	MPS1-0800L-DIN-C	41.5	53.5	54.5	91.5	90	1.5	8	2
	2	●	MPS1-0800-PC	17.3	38.3	38.3	80.3	79	1.3	8	2
	8	●	MPS1-0800-L8C	65.7	89.7	92.7	129.7	128	1.7	8	2
	10	●	MPS1-0800-L10C	81.5	105.5	108.5	145.5	144	1.5	8	2
	12	●	MPS1-0800-L12C	97.5	121.5	124.5	161.5	160	1.5	8	2
	15	●	MPS1-0800-L15C	121.5	145.5	148.5	185.5	184	1.5	8	2
	20	●	MPS1-0800-L20C	161.5	185.5	188.5	225.5	224	1.5	8	2
	25	●	MPS1-0800-L25C	201.5	225.5	228.5	265.5	264	1.5	8	2
	30	●	MPS1-0800-L30C	241.5	265.5	268.5	305.5	304	1.5	8	2
	35	□	MPS1-0800-L35C	281.5	305.5	307.5	344.5	343	1.5	8	2
	40	●	MPS1-0800-L40C	321.5	341.5	342.5	379.5	378	1.5	8	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.05	3	□	MPS1-0805S-DIN	34.4	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0805S-DIN-C	34.4	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0805L-DIN	48.4	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0805L-DIN-C	48.4	60.5	61.5	102.5	101	1.5	10	2
8.1	3	□	MPS1-0810S-DIN	34.3	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0810S-DIN-C	34.3	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0810L-DIN	48.3	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0810L-DIN-C	48.3	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0810-PC	17.5	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0810-L8C	66.5	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0810-L10C	82.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0810-L12C	98.7	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0810-L15C	123.0	154.5	157.5	198.5	197	1.5	10	2
	20	●	MPS1-0810-L20C	163.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0810-L25C	204.0	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0810-L30C	244.5	282.5	284.5	325.5	324	1.5	10	2
	35	□	MPS1-0810-L35C	285.0	324.5	326.5	367.5	366	1.5	10	2
	40	●	MPS1-0810-L40C	325.5	366.5	370.5	411.5	410	1.5	10	2
8.2	3	□	MPS1-0820S-DIN	34.2	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0820S-DIN-C	34.2	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0820L-DIN	48.2	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0820L-DIN-C	48.2	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0820-PC	17.7	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0820-L8C	67.3	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0820-L10C	83.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0820-L12C	99.9	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0820-L15C	124.5	154.5	157.5	198.5	197	1.5	10	2
	20	●	MPS1-0820-L20C	165.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0820-L25C	206.5	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0820-L30C	247.5	282.5	284.5	325.5	324	1.5	10	2
	35	□	MPS1-0820-L35C	288.5	324.5	326.5	367.5	366	1.5	10	2
	40	●	MPS1-0820-L40C	329.5	366.5	370.5	411.5	410	1.5	10	2
8.3	3	□	MPS1-0830S-DIN	34.1	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0830S-DIN-C	34.1	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0830L-DIN	48.1	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0830L-DIN-C	48.1	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0830-PC	17.9	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0830-L8C	68.1	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0830-L10C	84.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0830-L12C	101.1	129.5	132.5	173.5	172	1.5	10	2
	15	□	MPS1-0830-L15C	126.0	154.5	157.5	198.5	197	1.5	10	2
	20	□	MPS1-0830-L20C	167.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0830-L25C	209.0	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0830-L30C	250.5	282.5	284.5	325.5	324	1.5	10	2
	35	□	MPS1-0830-L35C	292.0	324.5	326.5	367.5	366	1.5	10	2
	40	●	MPS1-0830-L40C	333.5	366.5	370.5	411.5	410	1.5	10	2

CONDICIONES DE CORTE ➤ M059
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.4	3	□	MPS1-0840S-DIN	33.9	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0840S-DIN-C	33.9	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0840L-DIN	47.9	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0840L-DIN-C	47.9	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0840-PC	18.1	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0840-L8C	68.9	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0840-L10C	85.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0840-L12C	102.3	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0840-L15C	127.5	154.5	157.5	198.5	197	1.5	10	2
	20	□	MPS1-0840-L20C	169.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0840-L25C	211.5	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0840-L30C	253.5	282.5	284.5	325.5	324	1.5	10	2
	35	□	MPS1-0840-L35C	295.5	324.5	326.5	367.5	366	1.5	10	2
	40	●	MPS1-0840-L40C	337.5	366.5	370.5	411.5	410	1.5	10	2
8.5	3	□	MPS1-0850S-DIN	33.8	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0850S-DIN-C	33.8	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0850L-DIN	47.8	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0850L-DIN-C	47.8	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0850-PC	18.3	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0850-L8C	69.8	95.8	98.8	139.8	138	1.8	10	2
	10	□	MPS1-0850-L10C	86.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0850-L12C	103.5	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0850-L15C	129.0	154.5	157.5	198.5	197	1.5	10	2
	20	●	MPS1-0850-L20C	171.5	197.5	200.5	241.5	240	1.5	10	2
	25	●	MPS1-0850-L25C	214.0	239.5	242.5	283.5	282	1.5	10	2
	30	●	MPS1-0850-L30C	256.5	282.5	284.5	325.5	324	1.5	10	2
	35	□	MPS1-0850-L35C	299.0	324.5	326.5	367.5	366	1.5	10	2
	40	●	MPS1-0850-L40C	341.5	366.5	370.5	411.5	410	1.5	10	2
8.6	3	□	MPS1-0860S-DIN	33.7	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0860S-DIN-C	33.7	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0860L-DIN	47.7	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0860L-DIN-C	47.7	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0860-PC	18.6	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0860-L8C	70.6	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0860-L10C	87.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0860-L12C	104.8	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0860-L15C	130.6	163.6	166.6	207.6	206	1.6	10	2
	20	□	MPS1-0860-L20C	173.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0860-L25C	216.6	253.6	256.6	297.6	296	1.6	10	2
	30	●	MPS1-0860-L30C	259.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0860-L35C	302.6	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0860-L40C	345.6	391.6	394.6	435.6	434	1.6	10	2
8.7	3	□	MPS1-0870S-DIN	33.5	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0870S-DIN-C	33.5	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0870L-DIN	47.5	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0870L-DIN-C	47.5	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0870-PC	18.8	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0870-L8C	71.4	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0870-L10C	88.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0870-L12C	106.0	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0870-L15C	132.1	163.6	166.6	207.6	206	1.6	10	2
	20	□	MPS1-0870-L20C	175.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0870-L25C	219.1	253.6	256.6	297.6	296	1.6	10	2
	30	□	MPS1-0870-L30C	262.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0870-L35C	306.1	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0870-L40C	349.6	391.6	394.6	435.6	434	1.6	10	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.8	3	□	MPS1-0880S-DIN	33.4	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0880S-DIN-C	33.4	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0880L-DIN	47.4	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0880L-DIN-C	47.4	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0880-PC	19.0	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0880-L8C	72.2	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0880-L10C	89.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0880-L12C	107.2	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0880-L15C	133.6	163.6	166.6	207.6	206	1.6	10	2
	20	●	MPS1-0880-L20C	177.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0880-L25C	221.6	253.6	256.6	297.6	296	1.6	10	2
	30	●	MPS1-0880-L30C	265.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0880-L35C	309.6	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0880-L40C	353.6	391.6	394.6	435.6	434	1.6	10	2
8.9	3	□	MPS1-0890S-DIN	33.3	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0890S-DIN-C	33.3	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0890L-DIN	47.3	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0890L-DIN-C	47.3	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0890-PC	19.2	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0890-L8C	73.0	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0890-L10C	90.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0890-L12C	108.4	136.6	139.6	180.6	179	1.6	10	2
	15	□	MPS1-0890-L15C	135.1	163.6	166.6	207.6	206	1.6	10	2
	20	□	MPS1-0890-L20C	179.6	208.6	211.6	252.6	251	1.6	10	2
	25	□	MPS1-0890-L25C	224.1	253.6	256.6	297.6	296	1.6	10	2
	30	□	MPS1-0890-L30C	268.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0890-L35C	313.1	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0890-L40C	357.6	391.6	394.6	435.6	434	1.6	10	2
9.0	3	□	MPS1-0900S-DIN	33.1	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0900S-DIN-C	33.1	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0900L-DIN	47.1	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0900L-DIN-C	47.1	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0900-PC	19.4	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0900-L8C	73.9	100.9	103.9	144.9	143	1.9	10	2
	10	●	MPS1-0900-L10C	91.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0900-L12C	109.6	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0900-L15C	136.6	163.6	166.6	207.6	206	1.6	10	2
	20	●	MPS1-0900-L20C	181.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0900-L25C	226.6	253.6	256.6	297.6	296	1.6	10	2
	30	●	MPS1-0900-L30C	271.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0900-L35C	316.6	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0900-L40C	361.6	391.6	394.6	435.6	434	1.6	10	2
9.1	3	□	MPS1-0910S-DIN	33.0	46.7	47.7	88.7	87	1.7	10	4
	3	●	MPS1-0910S-DIN-C	33.0	46.7	47.7	88.7	87	1.7	10	2
	5	□	MPS1-0910L-DIN	47.0	60.7	61.7	102.7	101	1.7	10	4
	5	●	MPS1-0910L-DIN-C	47.0	60.7	61.7	102.7	101	1.7	10	2
	2	●	MPS1-0910-PC	19.6	41.4	44.4	90.4	89	1.4	10	2
	8	●	MPS1-0910-L8C	74.7	106.9	109.9	150.9	149	1.9	10	2
	10	□	MPS1-0910-L10C	92.7	125.7	128.7	169.7	168	1.7	10	2
	12	●	MPS1-0910-L12C	110.9	144.7	147.7	188.7	187	1.7	10	2
	15	●	MPS1-0910-L15C	138.2	172.7	175.7	216.7	215	1.7	10	2
	20	□	MPS1-0910-L20C	183.7	220.7	223.7	264.7	263	1.7	10	2
	25	□	MPS1-0910-L25C	229.2	267.7	270.7	311.7	310	1.7	10	2
	30	●	MPS1-0910-L30C	274.7	315.7	318.7	359.7	358	1.7	10	2
	35	□	MPS1-0910-L35C	320.2	362.7	364.7	405.7	404	1.7	10	2

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
9.2	3	□	MPS1-0920S-DIN	32.9	46.7	47.7	88.7	87	1.7	10	4
	3	●	MPS1-0920S-DIN-C	32.9	46.7	47.7	88.7	87	1.7	10	2
	5	□	MPS1-0920L-DIN	46.9	60.7	61.7	102.7	101	1.7	10	4
	5	●	MPS1-0920L-DIN-C	46.9	60.7	61.7	102.7	101	1.7	10	2
	2	●	MPS1-0920-PC	19.9	41.5	44.5	90.5	89	1.5	10	2
	8	●	MPS1-0920-L8C	75.5	106.9	109.9	150.9	149	1.9	10	2
	10	□	MPS1-0920-L10C	93.7	125.7	128.7	169.7	168	1.7	10	2
	12	●	MPS1-0920-L12C	112.1	144.7	147.7	188.7	187	1.7	10	2
	15	●	MPS1-0920-L15C	139.7	172.7	175.7	216.7	215	1.7	10	2
	20	□	MPS1-0920-L20C	185.7	220.7	223.7	264.7	263	1.7	10	2
	25	□	MPS1-0920-L25C	231.7	267.7	270.7	311.7	310	1.7	10	2
	30	□	MPS1-0920-L30C	277.7	315.7	318.7	359.7	358	1.7	10	2
	35	□	MPS1-0920-L35C	323.7	362.7	364.7	405.7	404	1.7	10	2
9.3	3	□	MPS1-0930S-DIN	32.7	46.7	47.7	88.7	87	1.7	10	4
	3	●	MPS1-0930S-DIN-C	32.7	46.7	47.7	88.7	87	1.7	10	2
	5	□	MPS1-0930L-DIN	46.7	60.7	61.7	102.7	101	1.7	10	4
	5	●	MPS1-0930L-DIN-C	46.7	60.7	61.7	102.7	101	1.7	10	2
	2	●	MPS1-0930-PC	20.1	41.5	44.5	90.5	89	1.5	10	2
	8	●	MPS1-0930-L8C	76.3	106.9	109.9	150.9	149	1.9	10	2
	10	□	MPS1-0930-L10C	94.7	125.7	128.7	169.7	168	1.7	10	2
	12	●	MPS1-0930-L12C	113.3	144.7	147.7	188.7	187	1.7	10	2
	15	□	MPS1-0930-L15C	141.2	172.7	175.7	216.7	215	1.7	10	2
	20	□	MPS1-0930-L20C	187.7	220.7	223.7	264.7	263	1.7	10	2
	25	□	MPS1-0930-L25C	234.2	267.7	270.7	311.7	310	1.7	10	2
	30	□	MPS1-0930-L30C	280.7	315.7	318.7	359.7	358	1.7	10	2
	35	□	MPS1-0930-L35C	327.2	362.7	364.7	405.7	404	1.7	10	2
9.4	3	□	MPS1-0940S-DIN	32.6	46.7	47.7	88.7	87	1.7	10	4
	3	●	MPS1-0940S-DIN-C	32.6	46.7	47.7	88.7	87	1.7	10	2
	5	□	MPS1-0940L-DIN	46.6	60.7	61.7	102.7	101	1.7	10	4
	5	●	MPS1-0940L-DIN-C	46.6	60.7	61.7	102.7	101	1.7	10	2
	2	●	MPS1-0940-PC	20.3	41.5	44.5	90.5	89	1.5	10	2
	8	●	MPS1-0940-L8C	77.1	106.9	109.9	150.9	149	1.9	10	2
	10	□	MPS1-0940-L10C	95.7	125.7	128.7	169.7	168	1.7	10	2
	12	●	MPS1-0940-L12C	114.5	144.7	147.7	188.7	187	1.7	10	2
	15	□	MPS1-0940-L15C	142.7	172.7	175.7	216.7	215	1.7	10	2
	20	□	MPS1-0940-L20C	189.7	220.7	223.7	264.7	263	1.7	10	2
	25	□	MPS1-0940-L25C	236.7	267.7	270.7	311.7	310	1.7	10	2
	30	□	MPS1-0940-L30C	283.7	315.7	318.7	359.7	358	1.7	10	2
	35	□	MPS1-0940-L35C	330.7	362.7	364.7	405.7	404	1.7	10	2
9.5	3	□	MPS1-0950S-DIN	32.5	46.7	47.7	88.7	87	1.7	10	4
	3	●	MPS1-0950S-DIN-C	32.5	46.7	47.7	88.7	87	1.7	10	2
	5	□	MPS1-0950L-DIN	46.5	60.7	61.7	102.7	101	1.7	10	4
	5	●	MPS1-0950L-DIN-C	46.5	60.7	61.7	102.7	101	1.7	10	2
	2	●	MPS1-0950-PC	20.5	41.5	44.5	90.5	89	1.5	10	2
	8	●	MPS1-0950-L8C	78.0	107.0	110.0	151.0	149	2.0	10	2
	10	□	MPS1-0950-L10C	96.7	125.7	128.7	169.7	168	1.7	10	2
	12	●	MPS1-0950-L12C	115.7	144.7	147.7	188.7	187	1.7	10	2
	15	●	MPS1-0950-L15C	144.2	172.7	175.7	216.7	215	1.7	10	2
	20	●	MPS1-0950-L20C	191.7	220.7	223.7	264.7	263	1.7	10	2
	25	●	MPS1-0950-L25C	239.2	267.7	270.7	311.7	310	1.7	10	2
	30	●	MPS1-0950-L30C	286.7	315.7	318.7	359.7	358	1.7	10	2
	35	□	MPS1-0950-L35C	334.2	362.7	364.7	405.7	404	1.7	10	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
9.6	3	□	MPS1-0960S-DIN	32.3	46.7	47.7	88.7	87	1.7	10	4
	3	●	MPS1-0960S-DIN-C	32.3	46.7	47.7	88.7	87	1.7	10	2
	5	□	MPS1-0960L-DIN	46.3	60.7	61.7	102.7	101	1.7	10	4
	5	●	MPS1-0960L-DIN-C	46.3	60.7	61.7	102.7	101	1.7	10	2
	2	●	MPS1-0960-PC	20.7	44.5	44.5	90.5	89	1.5	10	2
	8	●	MPS1-0960-L8C	78.8	112.0	115.0	156.0	154	2.0	10	2
	10	□	MPS1-0960-L10C	97.7	131.7	134.7	175.7	174	1.7	10	2
	12	●	MPS1-0960-L12C	116.9	151.7	154.7	195.7	194	1.7	10	2
	15	●	MPS1-0960-L15C	145.7	181.7	184.7	225.7	224	1.7	10	2
	20	□	MPS1-0960-L20C	193.7	231.7	234.7	275.7	274	1.7	10	2
	25	□	MPS1-0960-L25C	241.7	281.7	284.7	325.7	324	1.7	10	2
	30	□	MPS1-0960-L30C	289.7	331.7	334.7	375.7	374	1.7	10	2
	35	□	MPS1-0960-L35C	337.7	381.7	383.7	424.7	423	1.7	10	2
9.7	3	□	MPS1-0970S-DIN	32.2	46.8	47.8	88.8	87	1.8	10	4
	3	●	MPS1-0970S-DIN-C	32.2	46.8	47.8	88.8	87	1.8	10	2
	5	□	MPS1-0970L-DIN	46.2	60.8	61.8	102.8	101	1.8	10	4
	5	●	MPS1-0970L-DIN-C	46.2	60.8	61.8	102.8	101	1.8	10	2
	2	●	MPS1-0970-PC	20.9	44.5	44.5	90.5	89	1.5	10	2
	8	●	MPS1-0970-L8C	79.6	112.0	115.0	156.0	154	2.0	10	2
	10	□	MPS1-0970-L10C	98.8	131.8	134.8	175.8	174	1.8	10	2
	12	●	MPS1-0970-L12C	118.2	151.8	154.8	195.8	194	1.8	10	2
	15	●	MPS1-0970-L15C	147.3	181.8	184.8	225.8	224	1.8	10	2
	20	□	MPS1-0970-L20C	195.8	231.8	234.8	275.8	274	1.8	10	2
	25	□	MPS1-0970-L25C	244.3	281.8	284.8	325.8	324	1.8	10	2
	30	□	MPS1-0970-L30C	292.8	331.8	334.8	375.8	374	1.8	10	2
	35	□	MPS1-0970-L35C	341.3	381.8	383.8	424.8	423	1.8	10	2
9.8	3	□	MPS1-0980S-DIN	32.1	46.8	47.8	88.8	87	1.8	10	4
	3	●	MPS1-0980S-DIN-C	32.1	46.8	47.8	88.8	87	1.8	10	2
	5	□	MPS1-0980L-DIN	46.1	60.8	61.8	102.8	101	1.8	10	4
	5	●	MPS1-0980L-DIN-C	46.1	60.8	61.8	102.8	101	1.8	10	2
	2	●	MPS1-0980-PC	21.1	44.5	44.5	90.5	89	1.5	10	2
	8	●	MPS1-0980-L8C	80.4	112.0	115.0	156.0	154	2.0	10	2
	10	□	MPS1-0980-L10C	99.8	131.8	134.8	175.8	174	1.8	10	2
	12	●	MPS1-0980-L12C	119.4	151.8	154.8	195.8	194	1.8	10	2
	15	●	MPS1-0980-L15C	148.8	181.8	184.8	225.8	224	1.8	10	2
	20	●	MPS1-0980-L20C	197.8	231.8	234.8	275.8	274	1.8	10	2
	25	□	MPS1-0980-L25C	246.8	281.8	284.8	325.8	324	1.8	10	2
	30	●	MPS1-0980-L30C	295.8	331.8	334.8	375.8	374	1.8	10	2
	35	□	MPS1-0980-L35C	344.8	381.8	383.8	424.8	423	1.8	10	2
9.9	3	□	MPS1-0990S-DIN	32.0	46.8	47.8	88.8	87	1.8	10	4
	3	●	MPS1-0990S-DIN-C	32.0	46.8	47.8	88.8	87	1.8	10	2
	5	□	MPS1-0990L-DIN	46.0	60.8	61.8	102.8	101	1.8	10	4
	5	●	MPS1-0990L-DIN-C	46.0	60.8	61.8	102.8	101	1.8	10	2
	2	●	MPS1-0990-PC	21.4	44.6	44.6	90.6	89	1.6	10	2
	8	●	MPS1-0990-L8C	81.3	112.1	115.1	156.1	154	2.1	10	2
	10	□	MPS1-0990-L10C	100.8	131.8	134.8	175.8	174	1.8	10	2
	12	●	MPS1-0990-L12C	120.6	151.8	154.8	195.8	194	1.8	10	2
	15	●	MPS1-0990-L15C	150.3	181.8	184.8	225.8	224	1.8	10	2
	20	□	MPS1-0990-L20C	199.8	231.8	234.8	275.8	274	1.8	10	2
	25	□	MPS1-0990-L25C	249.3	281.8	284.8	325.8	324	1.8	10	2
	30	□	MPS1-0990-L30C	298.8	331.8	334.8	375.8	374	1.8	10	2
	35	□	MPS1-0990-L35C	348.3	381.8	383.8	424.8	423	1.8	10	2

CONDICIONES DE CORTE ➤ M059
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.0	3	□	MPS1-1000S-DIN	31.8	46.8	47.8	88.8	87	1.8	10	4
	3	●	MPS1-1000S-DIN-C	31.8	46.8	47.8	88.8	87	1.8	10	2
	5	□	MPS1-1000L-DIN	45.8	60.8	61.8	102.8	101	1.8	10	4
	5	●	MPS1-1000L-DIN-C	45.8	60.8	61.8	102.8	101	1.8	10	2
	2	●	MPS1-1000-PC	21.6	44.6	44.6	90.6	89	1.6	10	2
	8	●	MPS1-1000-L8C	82.1	112.1	115.1	156.1	154	2.1	10	2
	10	●	MPS1-1000-L10C	101.8	131.8	134.8	175.8	174	1.8	10	2
	12	●	MPS1-1000-L12C	121.8	151.8	154.8	195.8	194	1.8	10	2
	15	●	MPS1-1000-L15C	151.8	181.8	184.8	225.8	224	1.8	10	2
	20	●	MPS1-1000-L20C	201.8	231.8	234.8	275.8	274	1.8	10	2
	25	●	MPS1-1000-L25C	251.8	281.8	284.8	325.8	324	1.8	10	2
	30	●	MPS1-1000-L30C	301.8	331.8	334.8	375.8	374	1.8	10	2
	35	□	MPS1-1000-L35C	351.8	381.8	383.8	424.8	423	1.8	10	2
10.05	3	□	MPS1-1005S-DIN	39.8	54.8	55.8	101.8	100	1.8	12	4
	3	●	MPS1-1005S-DIN-C	39.8	54.8	55.8	101.8	100	1.8	12	2
	5	□	MPS1-1005L-DIN	55.8	70.8	71.8	117.8	116	1.8	12	4
	5	●	MPS1-1005L-DIN-C	55.8	70.8	71.8	117.8	116	1.8	12	2
10.1	3	□	MPS1-1010S-DIN	39.7	54.8	55.8	101.8	100	1.8	12	4
	3	●	MPS1-1010S-DIN-C	39.7	54.8	55.8	101.8	100	1.8	12	2
	5	□	MPS1-1010L-DIN	55.7	70.8	71.8	117.8	116	1.8	12	4
	5	●	MPS1-1010L-DIN-C	55.7	70.8	71.8	117.8	116	1.8	12	2
	2	●	MPS1-1010-PC	21.8	44.6	47.6	96.6	95	1.6	12	2
	8	●	MPS1-1010-L8C	82.9	118.1	121.1	167.1	165	2.1	12	2
	10	□	MPS1-1010-L10C	102.8	138.8	141.8	187.8	186	1.8	12	2
	12	●	MPS1-1010-L12C	123.0	159.8	162.8	208.8	207	1.8	12	2
	15	●	MPS1-1010-L15C	153.3	190.8	193.8	239.8	238	1.8	12	2
	20	●	MPS1-1010-L20C	203.8	243.8	246.8	292.8	291	1.8	12	2
	25	□	MPS1-1010-L25C	254.3	295.8	298.8	344.8	343	1.8	12	2
10.2	3	□	MPS1-1020S-DIN	39.6	54.9	55.9	101.9	100	1.9	12	4
	3	●	MPS1-1020S-DIN-C	39.6	54.9	55.9	101.9	100	1.9	12	2
	5	□	MPS1-1020L-DIN	55.6	70.9	71.9	117.9	116	1.9	12	4
	5	●	MPS1-1020L-DIN-C	55.6	70.9	71.9	117.9	116	1.9	12	2
	2	●	MPS1-1020-PC	22.0	44.6	47.6	96.6	95	1.6	12	2
	8	●	MPS1-1020-L8C	83.7	118.1	121.1	167.1	165	2.1	12	2
	10	□	MPS1-1020-L10C	103.9	138.9	141.9	187.9	186	1.9	12	2
	12	●	MPS1-1020-L12C	124.3	159.9	162.9	208.9	207	1.9	12	2
	15	●	MPS1-1020-L15C	154.9	190.9	193.9	239.9	238	1.9	12	2
	20	●	MPS1-1020-L20C	205.9	243.9	246.9	292.9	291	1.9	12	2
	25	□	MPS1-1020-L25C	256.9	295.9	298.9	344.9	343	1.9	12	2
10.3	3	□	MPS1-1030S-DIN	39.4	54.9	55.9	101.9	100	1.9	12	4
	3	●	MPS1-1030S-DIN-C	39.4	54.9	55.9	101.9	100	1.9	12	2
	5	□	MPS1-1030L-DIN	55.4	70.9	71.9	117.9	116	1.9	12	4
	5	●	MPS1-1030L-DIN-C	55.4	70.9	71.9	117.9	116	1.9	12	2
	2	●	MPS1-1030-PC	22.2	44.6	47.6	96.6	95	1.6	12	2
	8	●	MPS1-1030-L8C	84.5	118.1	121.1	167.1	165	2.1	12	2
	10	□	MPS1-1030-L10C	104.9	138.9	141.9	187.9	186	1.9	12	2
	12	●	MPS1-1030-L12C	125.5	159.9	162.9	208.9	207	1.9	12	2
	15	□	MPS1-1030-L15C	156.4	190.9	193.9	239.9	238	1.9	12	2
	20	□	MPS1-1030-L20C	207.9	243.9	246.9	292.9	291	1.9	12	2
	25	□	MPS1-1030-L25C	259.4	295.9	298.9	344.9	343	1.9	12	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.4	3	□	MPS1-1040S-DIN	39.3	54.9	55.9	101.9	100	1.9	12	4
	3	●	MPS1-1040S-DIN-C	39.3	54.9	55.9	101.9	100	1.9	12	2
	5	□	MPS1-1040L-DIN	55.3	70.9	71.9	117.9	116	1.9	12	4
	5	●	MPS1-1040L-DIN-C	55.3	70.9	71.9	117.9	116	1.9	12	2
	2	●	MPS1-1040-PC	22.4	44.6	47.6	96.6	95	1.6	12	2
	8	●	MPS1-1040-L8C	85.4	118.2	121.2	167.2	165	2.2	12	2
	10	□	MPS1-1040-L10C	105.9	138.9	141.9	187.9	186	1.9	12	2
	12	●	MPS1-1040-L12C	126.7	159.9	162.9	208.9	207	1.9	12	2
	15	□	MPS1-1040-L15C	157.9	190.9	193.9	239.9	238	1.9	12	2
	20	□	MPS1-1040-L20C	209.9	243.9	246.9	292.9	291	1.9	12	2
	25	□	MPS1-1040-L25C	261.9	295.9	298.9	344.9	343	1.9	12	2
10.5	3	□	MPS1-1050S-DIN	39.2	54.9	55.9	101.9	100	1.9	12	4
	3	●	MPS1-1050S-DIN-C	39.2	54.9	55.9	101.9	100	1.9	12	2
	5	□	MPS1-1050L-DIN	55.2	70.9	71.9	117.9	116	1.9	12	4
	5	●	MPS1-1050L-DIN-C	55.2	70.9	71.9	117.9	116	1.9	12	2
	2	●	MPS1-1050-PC	22.7	44.7	47.7	96.7	95	1.7	12	2
	8	●	MPS1-1050-L8C	86.2	118.2	121.2	167.2	165	2.2	12	2
	10	□	MPS1-1050-L10C	106.9	138.9	141.9	187.9	186	1.9	12	2
	12	●	MPS1-1050-L12C	127.9	159.9	162.9	208.9	207	1.9	12	2
	15	●	MPS1-1050-L15C	159.4	190.9	193.9	239.9	238	1.9	12	2
	20	●	MPS1-1050-L20C	211.9	243.9	246.9	292.9	291	1.9	12	2
	25	●	MPS1-1050-L25C	264.4	295.9	298.9	344.9	343	1.9	12	2
10.6	3	□	MPS1-1060S-DIN	39.0	54.9	55.9	101.9	100	1.9	12	4
	3	●	MPS1-1060S-DIN-C	39.0	54.9	55.9	101.9	100	1.9	12	2
	5	□	MPS1-1060L-DIN	55.0	70.9	71.9	117.9	116	1.9	12	4
	5	●	MPS1-1060L-DIN-C	55.0	70.9	71.9	117.9	116	1.9	12	2
	2	□	MPS1-1060-PC	22.9	48.7	49.7	96.7	95	1.7	12	2
	8	●	MPS1-1060-L8C	87.0	123.2	126.2	172.2	170	2.2	12	2
	10	□	MPS1-1060-L10C	107.9	144.9	147.9	193.9	192	1.9	12	2
	12	□	MPS1-1060-L12C	129.1	166.9	169.9	215.9	214	1.9	12	2
	15	□	MPS1-1060-L15C	160.9	199.9	202.9	248.9	247	1.9	12	2
	20	□	MPS1-1060-L20C	213.9	254.9	257.9	303.9	302	1.9	12	2
	25	□	MPS1-1060-L25C	266.9	309.9	312.9	358.9	357	1.9	12	2
10.7	3	□	MPS1-1070S-DIN	38.9	54.9	55.9	101.9	100	1.9	12	4
	3	●	MPS1-1070S-DIN-C	38.9	54.9	55.9	101.9	100	1.9	12	2
	5	□	MPS1-1070L-DIN	54.9	70.9	71.9	117.9	116	1.9	12	4
	5	●	MPS1-1070L-DIN-C	54.9	70.9	71.9	117.9	116	1.9	12	2
	2	●	MPS1-1070-PC	23.1	48.7	49.7	96.7	95	1.7	12	2
	8	●	MPS1-1070-L8C	87.8	123.2	126.2	172.2	170	2.2	12	2
	10	□	MPS1-1070-L10C	108.9	144.9	147.9	193.9	192	1.9	12	2
	12	●	MPS1-1070-L12C	130.3	166.9	169.9	215.9	214	1.9	12	2
	15	□	MPS1-1070-L15C	162.4	199.9	202.9	248.9	247	1.9	12	2
	20	□	MPS1-1070-L20C	215.9	254.9	257.9	303.9	302	1.9	12	2
	25	□	MPS1-1070-L25C	269.4	309.9	312.9	358.9	357	1.9	12	2
10.8	3	□	MPS1-1080S-DIN	38.8	55.0	56.0	102.0	100	2.0	12	4
	3	●	MPS1-1080S-DIN-C	38.8	55.0	56.0	102.0	100	2.0	12	2
	5	□	MPS1-1080L-DIN	54.8	71.0	72.0	118.0	116	2.0	12	4
	5	●	MPS1-1080L-DIN-C	54.8	71.0	72.0	118.0	116	2.0	12	2
	2	●	MPS1-1080-PC	23.3	48.7	49.7	96.7	95	1.7	12	2
	8	●	MPS1-1080-L8C	88.6	123.2	126.2	172.2	170	2.2	12	2
	10	□	MPS1-1080-L10C	110.0	145.0	148.0	194.0	192	2.0	12	2
	12	●	MPS1-1080-L12C	131.6	167.0	170.0	216.0	214	2.0	12	2
	15	□	MPS1-1080-L15C	164.0	200.0	203.0	249.0	247	2.0	12	2
	20	□	MPS1-1080-L20C	218.0	255.0	258.0	304.0	302	2.0	12	2
	25	□	MPS1-1080-L25C	272.0	310.0	313.0	359.0	357	2.0	12	2

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MPS1-1090S-DIN	38.6	55.0	56.0	102.0	100	2.0	12	4
	3	●	MPS1-1090S-DIN-C	38.6	55.0	56.0	102.0	100	2.0	12	2
	5	□	MPS1-1090L-DIN	54.6	71.0	72.0	118.0	116	2.0	12	4
	5	●	MPS1-1090L-DIN-C	54.6	71.0	72.0	118.0	116	2.0	12	2
	2	□	MPS1-1090-PC	23.5	48.7	49.7	96.7	95	1.7	12	2
10.9	8	●	MPS1-1090-L8C	89.5	123.3	126.3	172.3	170	2.3	12	2
	10	□	MPS1-1090-L10C	111.0	145.0	148.0	194.0	192	2.0	12	2
	12	□	MPS1-1090-L12C	132.8	167.0	170.0	216.0	214	2.0	12	2
	15	□	MPS1-1090-L15C	165.5	200.0	203.0	249.0	247	2.0	12	2
	20	□	MPS1-1090-L20C	220.0	255.0	258.0	304.0	302	2.0	12	2
	25	□	MPS1-1090-L25C	274.5	310.0	313.0	359.0	357	2.0	12	2
	3	□	MPS1-1100S-DIN	38.5	55.0	56.0	102.0	100	2.0	12	4
	3	●	MPS1-1100S-DIN-C	38.5	55.0	56.0	102.0	100	2.0	12	2
	5	□	MPS1-1100L-DIN	54.5	71.0	72.0	118.0	116	2.0	12	4
	5	●	MPS1-1100L-DIN-C	54.5	71.0	72.0	118.0	116	2.0	12	2
	2	●	MPS1-1100-PC	23.7	48.7	49.7	96.7	95	1.7	12	2
11.0	8	●	MPS1-1100-L8C	90.3	123.3	126.3	172.3	170	2.3	12	2
	10	□	MPS1-1100-L10C	112.0	145.0	148.0	194.0	192	2.0	12	2
	12	●	MPS1-1100-L12C	134.0	167.0	170.0	216.0	214	2.0	12	2
	15	●	MPS1-1100-L15C	167.0	200.0	203.0	249.0	247	2.0	12	2
	20	●	MPS1-1100-L20C	222.0	255.0	258.0	304.0	302	2.0	12	2
	25	●	MPS1-1100-L25C	277.0	310.0	313.0	359.0	357	2.0	12	2
	3	□	MPS1-1110S-DIN	38.4	55.0	56.0	102.0	100	2.0	12	4
	3	●	MPS1-1110S-DIN-C	38.4	55.0	56.0	102.0	100	2.0	12	2
	5	□	MPS1-1110L-DIN	54.4	71.0	72.0	118.0	116	2.0	12	4
	5	●	MPS1-1110L-DIN-C	54.4	71.0	72.0	118.0	116	2.0	12	2
	2	●	MPS1-1110-PC	23.9	48.7	51.7	96.7	95	1.7	12	2
11.1	8	●	MPS1-1110-L8C	91.1	129.3	132.3	178.3	176	2.3	12	2
	10	□	MPS1-1110-L10C	113.0	152.0	155.0	201.0	199	2.0	12	2
	12	●	MPS1-1110-L12C	135.2	175.0	178.0	224.0	222	2.0	12	2
	15	●	MPS1-1110-L15C	168.5	209.0	212.0	258.0	256	2.0	12	2
	20	□	MPS1-1110-L20C	224.0	267.0	270.0	316.0	314	2.0	12	2
	25	●	MPS1-1110-L25C	279.5	324.0	327.0	373.0	371	2.0	12	2
	3	□	MPS1-1120S-DIN	38.2	55.0	56.0	102.0	100	2.0	12	4
	3	●	MPS1-1120S-DIN-C	38.2	55.0	56.0	102.0	100	2.0	12	2
	5	□	MPS1-1120L-DIN	54.2	71.0	72.0	118.0	116	2.0	12	4
	5	●	MPS1-1120L-DIN-C	54.2	71.0	72.0	118.0	116	2.0	12	2
	2	●	MPS1-1120-PC	24.2	48.8	51.8	96.8	95	1.8	12	2
11.2	8	●	MPS1-1120-L8C	91.9	129.3	132.3	178.3	176	2.3	12	2
	10	□	MPS1-1120-L10C	114.0	152.0	155.0	201.0	199	2.0	12	2
	12	□	MPS1-1120-L12C	136.4	175.0	178.0	224.0	222	2.0	12	2
	15	●	MPS1-1120-L15C	170.0	209.0	212.0	258.0	256	2.0	12	2
	20	□	MPS1-1120-L20C	226.0	267.0	270.0	316.0	314	2.0	12	2
	25	□	MPS1-1120-L25C	282.0	324.0	327.0	373.0	371	2.0	12	2
	3	□	MPS1-1130S-DIN	38.1	55.1	56.1	102.1	100	2.1	12	4
	3	●	MPS1-1130S-DIN-C	38.1	55.1	56.1	102.1	100	2.1	12	2
	5	□	MPS1-1130L-DIN	54.1	71.1	72.1	118.1	116	2.1	12	4
	5	●	MPS1-1130L-DIN-C	54.1	71.1	72.1	118.1	116	2.1	12	2
	2	□	MPS1-1130-PC	24.4	48.8	51.8	96.8	95	1.8	12	2
11.3	8	●	MPS1-1130-L8C	92.7	129.3	132.3	178.3	176	2.3	12	2
	10	□	MPS1-1130-L10C	115.1	152.1	155.1	201.1	199	2.1	12	2
	12	□	MPS1-1130-L12C	137.7	175.1	178.1	224.1	222	2.1	12	2
	15	□	MPS1-1130-L15C	171.6	209.1	212.1	258.1	256	2.1	12	2
	20	□	MPS1-1130-L20C	228.1	267.1	270.1	316.1	314	2.1	12	2
	25	□	MPS1-1130-L25C	284.6	324.1	327.1	373.1	371	2.1	12	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MPS1-1140S-DIN	38.0	55.1	56.1	102.1	100	2.1	12	4
	3	●	MPS1-1140S-DIN-C	38.0	55.1	56.1	102.1	100	2.1	12	2
	5	□	MPS1-1140L-DIN	54.0	71.1	72.1	118.1	116	2.1	12	4
	5	●	MPS1-1140L-DIN-C	54.0	71.1	72.1	118.1	116	2.1	12	2
	2	□	MPS1-1140-PC	24.6	48.8	51.8	96.8	95	1.8	12	2
11.4	8	●	MPS1-1140-L8C	93.6	129.4	132.4	178.4	176	2.4	12	2
	10	□	MPS1-1140-L10C	116.1	152.1	155.1	201.1	199	2.1	12	2
	12	□	MPS1-1140-L12C	138.9	175.1	178.1	224.1	222	2.1	12	2
	15	□	MPS1-1140-L15C	173.1	209.1	212.1	258.1	256	2.1	12	2
	20	□	MPS1-1140-L20C	230.1	267.1	270.1	316.1	314	2.1	12	2
	25	□	MPS1-1140-L25C	287.1	324.1	327.1	373.1	371	2.1	12	2
	3	□	MPS1-1150S-DIN	37.8	55.1	56.1	102.1	100	2.1	12	4
	3	●	MPS1-1150S-DIN-C	37.8	55.1	56.1	102.1	100	2.1	12	2
	5	□	MPS1-1150L-DIN	53.8	71.1	72.1	118.1	116	2.1	12	4
	5	●	MPS1-1150L-DIN-C	53.8	71.1	72.1	118.1	116	2.1	12	2
	2	●	MPS1-1150-PC	24.8	48.8	51.8	96.8	95	1.8	12	2
11.5	8	●	MPS1-1150-L8C	94.4	129.4	132.4	178.4	176	2.4	12	2
	10	□	MPS1-1150-L10C	117.1	152.1	155.1	201.1	199	2.1	12	2
	12	●	MPS1-1150-L12C	140.1	175.1	178.1	224.1	222	2.1	12	2
	15	●	MPS1-1150-L15C	174.6	209.1	212.1	258.1	256	2.1	12	2
	20	●	MPS1-1150-L20C	232.1	267.1	270.1	316.1	314	2.1	12	2
	25	●	MPS1-1150-L25C	289.6	324.1	327.1	373.1	371	2.1	12	2
	3	□	MPS1-1160S-DIN	37.7	55.1	56.1	102.1	100	2.1	12	4
	3	●	MPS1-1160S-DIN-C	37.7	55.1	56.1	102.1	100	2.1	12	2
	5	□	MPS1-1160L-DIN	53.7	71.1	72.1	118.1	116	2.1	12	4
	5	●	MPS1-1160L-DIN-C	53.7	71.1	72.1	118.1	116	2.1	12	2
	2	□	MPS1-1160-PC	25.0	48.8	48.8	96.8	95	1.8	12	2
11.6	8	●	MPS1-1160-L8C	95.2	134.4	137.4	183.4	181	2.4	12	2
	10	□	MPS1-1160-L10C	118.1	158.1	161.1	207.1	205	2.1	12	2
	12	□	MPS1-1160-L12C	141.3	182.1	185.1	231.1	229	2.1	12	2
	15	□	MPS1-1160-L15C	176.1	218.1	221.1	267.1	265	2.1	12	2
	20	□	MPS1-1160-L20C	234.1	278.1	281.1	327.1	325	2.1	12	2
	25	□	MPS1-1160-L25C	292.1	338.1	341.1	387.1	385	2.1	12	2
	3	□	MPS1-1170S-DIN	37.6	55.1	56.1	102.1	100	2.1	12	4
	3	●	MPS1-1170S-DIN-C	37.6	55.1	56.1	102.1	100	2.1	12	2
	5	□	MPS1-1170L-DIN	53.6	71.1	72.1	118.1	116	2.1	12	4
	5	●	MPS1-1170L-DIN-C	53.6	71.1	72.1	118.1	116	2.1	12	2
	2	●	MPS1-1170-PC	25.2	48.8	48.8	96.8	95	1.8	12	2
11.7	8	●	MPS1-1170-L8C	96.0	134.4	137.4	183.4	181	2.4	12	2
	10	□	MPS1-1170-L10C	119.1	158.1	161.1	207.1	205	2.1	12	2
	12	●	MPS1-1170-L12C	142.5	182.1	185.1	231.1	229	2.1	12	2
	15	●	MPS1-1170-L15C	177.6	218.1	221.1	267.1	265	2.1	12	2
	20	□	MPS1-1170-L20C	236.1	278.1	281.1	327.1	325	2.1	12	2
	25	□	MPS1-1170-L25C	294.6	338.1	341.1	387.1	385	2.1	12	2
	3	□	MPS1-1180S-DIN	37.4	55.1	56.1	102.1	100	2.1	12	4
	3	●	MPS1-1180S-DIN-C	37.4	55.1	56.1	102.1	100	2.1	12	2
	5	□	MPS1-1180L-DIN	53.4	71.1	72.1	118.1	116	2.1	12	4
	5	●	MPS1-1180L-DIN-C	53.4	71.1	72.1	118.1	116	2.1	12	2
	2	●	MPS1-1180-PC	25.5	48.9	48.9	96.9	95	1.9	12	2
11.8	8	●	MPS1-1180-L8C	96.8	134.4	137.4	183.4	181	2.4	12	2
	10	□	MPS1-1180-L10C	120.1	158.1	161.1	207.1	205	2.1	12	2
	12	●	MPS1-1180-L12C	143.7	182.1	185.1	231.1	229	2.1	12	2
	15	●	MPS1-1180-L15C	179.1	218.1	221.1	267.1	265	2.1	12	2
	20	□	MPS1-1180-L20C	238.1	278.1	281.1	327.1	325	2.1	12	2
	25	□	MPS1-1180-L25C	297.1	338.1	341.1	387.1	385	2.1	12	2

CONDICIONES DE CORTE ➤ M059
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
11.9	3	□	MPS1-1190S-DIN	37.3	55.2	56.2	102.2	100	2.2	12	4
	3	●	MPS1-1190S-DIN-C	37.3	55.2	56.2	102.2	100	2.2	12	2
	5	□	MPS1-1190L-DIN	53.3	71.2	72.2	118.2	116	2.2	12	4
	5	●	MPS1-1190L-DIN-C	53.3	71.2	72.2	118.2	116	2.2	12	2
	2	□	MPS1-1190-PC	25.7	48.9	48.9	96.9	95	1.9	12	2
	8	●	MPS1-1190-L8C	97.7	134.5	137.5	183.5	181	2.5	12	2
	10	□	MPS1-1190-L10C	121.2	158.2	161.2	207.2	205	2.2	12	2
	12	□	MPS1-1190-L12C	145.0	182.2	185.2	231.2	229	2.2	12	2
	15	□	MPS1-1190-L15C	180.7	218.2	221.2	267.2	265	2.2	12	2
	20	□	MPS1-1190-L20C	240.2	278.2	281.2	327.2	325	2.2	12	2
	25	□	MPS1-1190-L25C	299.7	338.2	341.2	387.2	385	2.2	12	2
12.0	3	□	MPS1-1200S-DIN	37.2	55.2	56.2	102.2	100	2.2	12	4
	3	●	MPS1-1200S-DIN-C	37.2	55.2	56.2	102.2	100	2.2	12	2
	5	□	MPS1-1200L-DIN	53.2	71.2	72.2	118.2	116	2.2	12	4
	5	●	MPS1-1200L-DIN-C	53.2	71.2	72.2	118.2	116	2.2	12	2
	2	●	MPS1-1200-PC	25.9	48.9	48.9	96.9	95	1.9	12	2
	8	●	MPS1-1200-L8C	98.5	134.5	137.5	183.5	181	2.5	12	2
	10	□	MPS1-1200-L10C	122.2	158.2	161.2	207.2	205	2.2	12	2
	12	●	MPS1-1200-L12C	146.2	182.2	185.2	231.2	229	2.2	12	2
	15	●	MPS1-1200-L15C	182.2	218.2	221.2	267.2	265	2.2	12	2
	20	●	MPS1-1200-L20C	242.2	278.2	281.2	327.2	325	2.2	12	2
	25	●	MPS1-1200-L25C	302.2	338.2	341.2	387.2	385	2.2	12	2
12.05	3	□	MPS1-1205S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	4
	3	●	MPS1-1205S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	2
	5	□	MPS1-1205L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	4
	5	●	MPS1-1205L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	2
12.1	3	□	MPS1-1210S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	4
	3	●	MPS1-1210S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	2
	5	□	MPS1-1210L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	4
	5	●	MPS1-1210L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	2
	2	●	MPS1-1210-PC	26.1	52.9	55.9	103.9	102	1.9	14	2
	8	●	MPS1-1210-L8C	99.3	140.5	143.5	189.5	187	2.5	14	2
	10	□	MPS1-1210-L10C	123.2	165.2	168.2	214.2	212	2.2	14	2
	12	●	MPS1-1210-L12C	147.4	190.2	193.2	239.2	237	2.2	14	2
	15	●	MPS1-1210-L15C	183.7	227.2	230.2	276.2	274	2.2	14	2
	20	□	MPS1-1210-L20C	244.2	290.2	293.2	339.2	337	2.2	14	2
12.2	3	□	MPS1-1220S-DIN	41.9	60.2	61.2	107.2	105	2.2	14	4
	3	●	MPS1-1220S-DIN-C	41.9	60.2	61.2	107.2	105	2.2	14	2
	5	□	MPS1-1220L-DIN	58.9	77.2	78.2	124.2	122	2.2	14	4
	5	●	MPS1-1220L-DIN-C	58.9	77.2	78.2	124.2	122	2.2	14	2
	2	●	MPS1-1220-PC	26.3	52.9	55.9	103.9	102	1.9	14	2
	8	●	MPS1-1220-L8C	100.1	140.5	143.5	189.5	187	2.5	14	2
	10	□	MPS1-1220-L10C	124.2	165.2	168.2	214.2	212	2.2	14	2
	12	●	MPS1-1220-L12C	148.6	190.2	193.2	239.2	237	2.2	14	2
	15	●	MPS1-1220-L15C	185.2	227.2	230.2	276.2	274	2.2	14	2
	20	□	MPS1-1220-L20C	246.2	290.2	293.2	339.2	337	2.2	14	2
12.3	3	□	MPS1-1230S-DIN	41.8	60.2	61.2	107.2	105	2.2	14	4
	3	●	MPS1-1230S-DIN-C	41.8	60.2	61.2	107.2	105	2.2	14	2
	5	□	MPS1-1230L-DIN	58.8	77.2	78.2	124.2	122	2.2	14	4
	5	●	MPS1-1230L-DIN-C	58.8	77.2	78.2	124.2	122	2.2	14	2
	2	□	MPS1-1230-PC	26.5	52.9	55.9	103.9	102	1.9	14	2
	8	●	MPS1-1230-L8C	100.9	140.5	143.5	189.5	187	2.5	14	2
	10	□	MPS1-1230-L10C	125.2	165.2	168.2	214.2	212	2.2	14	2
	12	□	MPS1-1230-L12C	149.8	190.2	193.2	239.2	237	2.2	14	2
	15	□	MPS1-1230-L15C	186.7	227.2	230.2	276.2	274	2.2	14	2
	20	□	MPS1-1230-L20C	248.2	290.2	293.2	339.2	337	2.2	14	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
12.4	3	□	MPS1-1240S-DIN	41.7	60.3	61.3	107.3	105	2.3	14	4
	3	●	MPS1-1240S-DIN-C	41.7	60.3	61.3	107.3	105	2.3	14	2
	5	□	MPS1-1240L-DIN	58.7	77.3	78.3	124.3	122	2.3	14	4
	5	●	MPS1-1240L-DIN-C	58.7	77.3	78.3	124.3	122	2.3	14	2
	2	□	MPS1-1240-PC	26.8	53.0	56.0	104.0	102	2.0	14	2
	8	●	MPS1-1240-L8C	101.8	140.6	143.6	189.6	187	2.6	14	2
	10	□	MPS1-1240-L10C	126.3	165.3	168.3	214.3	212	2.3	14	2
	12	□	MPS1-1240-L12C	151.1	190.3	193.3	239.3	237	2.3	14	2
	15	□	MPS1-1240-L15C	188.3	227.3	230.3	276.3	274	2.3	14	2
	20	□	MPS1-1240-L20C	250.3	290.3	293.3	339.3	337	2.3	14	2
12.5	3	□	MPS1-1250S-DIN	41.5	60.3	61.3	107.3	105	2.3	14	4
	3	●	MPS1-1250S-DIN-C	41.5	60.3	61.3	107.3	105	2.3	14	2
	5	□	MPS1-1250L-DIN	58.5	77.3	78.3	124.3	122	2.3	14	4
	5	●	MPS1-1250L-DIN-C	58.5	77.3	78.3	124.3	122	2.3	14	2
	2	●	MPS1-1250-PC	27.0	53.0	56.0	104.0	102	2.0	14	2
	8	●	MPS1-1250-L8C	102.6	140.6	143.6	189.6	187	2.6	14	2
	10	□	MPS1-1250-L10C	127.3	165.3	168.3	214.3	212	2.3	14	2
	12	●	MPS1-1250-L12C	152.3	190.3	193.3	239.3	237	2.3	14	2
	15	●	MPS1-1250-L15C	189.8	227.3	230.3	276.3	274	2.3	14	2
	20	□	MPS1-1250-L20C	252.3	290.3	293.3	339.3	337	2.3	14	2
12.6	3	□	MPS1-1260S-DIN	41.4	60.3	61.3	107.3	105	2.3	14	4
	3	●	MPS1-1260S-DIN-C	41.4	60.3	61.3	107.3	105	2.3	14	2
	5	□	MPS1-1260L-DIN	58.4	77.3	78.3	124.3	122	2.3	14	4
	5	●	MPS1-1260L-DIN-C	58.4	77.3	78.3	124.3	122	2.3	14	2
	2	□	MPS1-1260-PC	27.2	53.0	55.0	104.0	102	2.0	14	2
	8	●	MPS1-1260-L8C	103.4	145.6	148.6	194.6	192	2.6	14	2
	10	□	MPS1-1260-L10C	128.3	171.3	174.3	220.3	218	2.3	14	2
	12	□	MPS1-1260-L12C	153.5	197.3	200.3	246.3	244	2.3	14	2
	15	□	MPS1-1260-L15C	191.3	236.3	239.3	285.3	283	2.3	14	2
	20	□	MPS1-1260-L20C	254.3	301.3	304.3	350.3	348	2.3	14	2
12.7	3	□	MPS1-1270S-DIN	41.3	60.3	61.3	107.3	105	2.3	14	4
	3	●	MPS1-1270S-DIN-C	41.3	60.3	61.3	107.3	105	2.3	14	2
	5	□	MPS1-1270L-DIN	58.3	77.3	78.3	124.3	122	2.3	14	4
	5	●	MPS1-1270L-DIN-C	58.3	77.3	78.3	124.3	122	2.3	14	2
	2	●	MPS1-1270-PC	27.4	53.0	55.0	104.0	102	2.0	14	2
	8	●	MPS1-1270-L8C	104.2	145.6	148.6	194.6	192	2.6	14	2
	10	□	MPS1-1270-L10C	129.3	171.3	174.3	220.3	218	2.3	14	2
	12	●	MPS1-1270-L12C	154.7	197.3	200.3	246.3	244	2.3	14	2
	15	□	MPS1-1270-L15C	192.8	236.3	239.3	285.3	283	2.3	14	2
	20	□	MPS1-1270-L20C	256.3	301.3	304.3	350.3	348	2.3	14	2
12.8	3	□	MPS1-1280S-DIN	41.1	60.3	61.3	107.3	105	2.3	14	4
	3	●	MPS1-1280S-DIN-C	41.1	60.3	61.3	107.3	105	2.3	14	2
	5	□	MPS1-1280L-DIN	58.1	77.3	78.3	124.3	122	2.3	14	4
	5	●	MPS1-1280L-DIN-C	58.1	77.3	78.3	124.3	122	2.3	14	2
	2	●	MPS1-1280-PC	27.6	53.0	55.0	104.0	102	2.0	14	2
	8	●	MPS1-1280-L8C	105.1	145.7	148.7	194.7	192	2.7	14	2
	10	□	MPS1-1280-L10C	130.3	171.3	174.3	220.3	218	2.3	14	2
	12	●	MPS1-1280-L12C	155.9	197.3	200.3	246.3	244	2.3	14	2
	15	□	MPS1-1280-L15C	194.3	236.3	239.3	285.3	283	2.3	14	2
	20	□	MPS1-1280-L20C	258.3	301.3	304.3	350.3	348	2.3	14	2

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
12.9	3	□	MPS1-1290S-DIN	41.0	60.3	61.3	107.3	105	2.3	14	4
	3	●	MPS1-1290S-DIN-C	41.0	60.3	61.3	107.3	105	2.3	14	2
	5	□	MPS1-1290L-DIN	58.0	77.3	78.3	124.3	122	2.3	14	4
	5	●	MPS1-1290L-DIN-C	58.0	77.3	78.3	124.3	122	2.3	14	2
	2	□	MPS1-1290-PC	27.8	53.0	55.0	104.0	102	2.0	14	2
	8	●	MPS1-1290-L8C	105.9	145.7	148.7	194.7	192	2.7	14	2
	10	□	MPS1-1290-L10C	131.3	171.3	174.3	220.3	218	2.3	14	2
	12	□	MPS1-1290-L12C	157.1	197.3	200.3	246.3	244	2.3	14	2
	15	□	MPS1-1290-L15C	195.8	236.3	239.3	285.3	283	2.3	14	2
	20	□	MPS1-1290-L20C	260.3	301.3	304.3	350.3	348	2.3	14	2
13.0	3	□	MPS1-1300S-DIN	40.9	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1300S-DIN-C	40.9	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1300L-DIN	57.9	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1300L-DIN-C	57.9	77.4	78.4	124.4	122	2.4	14	2
	2	●	MPS1-1300-PC	28.0	53.0	55.0	104.0	102	2.0	14	2
	8	●	MPS1-1300-L8C	106.7	145.7	148.7	194.7	192	2.7	14	2
	10	□	MPS1-1300-L10C	132.4	171.4	174.4	220.4	218	2.4	14	2
	12	●	MPS1-1300-L12C	158.4	197.4	200.4	246.4	244	2.4	14	2
	15	●	MPS1-1300-L15C	197.4	236.4	239.4	285.4	283	2.4	14	2
	20	●	MPS1-1300-L20C	262.4	301.4	304.4	350.4	348	2.4	14	2
13.1	3	□	MPS1-1310S-DIN	40.7	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1310S-DIN-C	40.7	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1310L-DIN	57.7	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1310L-DIN-C	57.7	77.4	78.4	124.4	122	2.4	14	2
	2	□	MPS1-1310-PC	28.3	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1310-L8C	107.5	151.7	154.7	200.7	198	2.7	14	2
	10	□	MPS1-1310-L10C	133.4	178.4	181.4	227.4	225	2.4	14	2
	12	□	MPS1-1310-L12C	159.6	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1310-L15C	198.9	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1310-L20C	264.4	313.4	316.4	362.4	360	2.4	14	2
13.2	3	□	MPS1-1320S-DIN	40.6	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1320S-DIN-C	40.6	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1320L-DIN	57.6	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1320L-DIN-C	57.6	77.4	78.4	124.4	122	2.4	14	2
	2	●	MPS1-1320-PC	28.5	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1320-L8C	108.3	151.7	154.7	200.7	198	2.7	14	2
	10	□	MPS1-1320-L10C	134.4	178.4	181.4	227.4	225	2.4	14	2
	12	●	MPS1-1320-L12C	160.8	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1320-L15C	200.4	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1320-L20C	266.4	313.4	316.4	362.4	360	2.4	14	2
13.3	3	□	MPS1-1330S-DIN	40.5	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1330S-DIN-C	40.5	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1330L-DIN	57.5	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1330L-DIN-C	57.5	77.4	78.4	124.4	122	2.4	14	2
	2	□	MPS1-1330-PC	28.7	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1330-L8C	109.2	151.8	154.8	200.8	198	2.8	14	2
	10	□	MPS1-1330-L10C	135.4	178.4	181.4	227.4	225	2.4	14	2
	12	□	MPS1-1330-L12C	162.0	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1330-L15C	201.9	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1330-L20C	268.4	313.4	316.4	362.4	360	2.4	14	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
13.4	3	□	MPS1-1340S-DIN	40.3	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1340S-DIN-C	40.3	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1340L-DIN	57.3	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1340L-DIN-C	57.3	77.4	78.4	124.4	122	2.4	14	2
	2	□	MPS1-1340-PC	28.9	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1340-L8C	110.0	151.8	154.8	200.8	198	2.8	14	2
	10	□	MPS1-1340-L10C	136.4	178.4	181.4	227.4	225	2.4	14	2
	12	□	MPS1-1340-L12C	163.2	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1340-L15C	203.4	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1340-L20C	270.4	313.4	316.4	362.4	360	2.4	14	2
13.5	3	□	MPS1-1350S-DIN	40.2	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1350S-DIN-C	40.2	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1350L-DIN	57.2	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1350L-DIN-C	57.2	77.5	78.5	124.5	122	2.5	14	2
	2	●	MPS1-1350-PC	29.1	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1350-L8C	110.8	151.8	154.8	200.8	198	2.8	14	2
	10	□	MPS1-1350-L10C	137.5	178.5	181.5	227.5	225	2.5	14	2
	12	●	MPS1-1350-L12C	164.5	205.5	208.5	254.5	252	2.5	14	2
	15	□	MPS1-1350-L15C	205.0	245.5	248.5	294.5	292	2.5	14	2
	20	□	MPS1-1350-L20C	272.5	313.5	316.5	362.5	360	2.5	14	2
13.6	3	□	MPS1-1360S-DIN	40.1	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1360S-DIN-C	40.1	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1360L-DIN	57.1	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1360L-DIN-C	57.1	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1360-PC	29.3	56.1	56.1	109.1	107	2.1	14	2
	8	●	MPS1-1360-L8C	111.6	156.8	159.8	205.8	203	2.8	14	2
	10	□	MPS1-1360-L10C	138.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1360-L12C	165.7	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1360-L15C	206.5	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1360-L20C	274.5	324.5	327.5	373.5	371	2.5	14	2
13.7	3	□	MPS1-1370S-DIN	39.9	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1370S-DIN-C	39.9	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1370L-DIN	56.9	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1370L-DIN-C	56.9	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1370-PC	29.6	56.2	56.2	109.2	107	2.2	14	2
	8	●	MPS1-1370-L8C	112.4	156.8	159.8	205.8	203	2.8	14	2
	10	□	MPS1-1370-L10C	139.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1370-L12C	166.9	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1370-L15C	208.0	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1370-L20C	276.5	324.5	327.5	373.5	371	2.5	14	2
13.8	3	□	MPS1-1380S-DIN	39.8	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1380S-DIN-C	39.8	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1380L-DIN	56.8	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1380L-DIN-C	56.8	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1380-PC	29.8	56.2	56.2	109.2	107	2.2	14	2
	8	●	MPS1-1380-L8C	113.3	156.9	159.9	205.9	203	2.9	14	2
	10	□	MPS1-1380-L10C	140.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1380-L12C	168.1	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1380-L15C	209.5	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1380-L20C	278.5	324.5	327.5	373.5	371	2.5	14	2

CONDICIONES DE CORTE ➤ M059
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
13.9	3	□	MPS1-1390S-DIN	39.7	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1390S-DIN-C	39.7	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1390L-DIN	56.7	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1390L-DIN-C	56.7	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1390-PC	30.0	56.2	56.2	109.2	107	2.2	14	2
	8	●	MPS1-1390-L8C	114.1	156.9	159.9	205.9	203	2.9	14	2
	10	□	MPS1-1390-L10C	141.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1390-L12C	169.3	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1390-L15C	211.0	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1390-L20C	280.5	324.5	327.5	373.5	371	2.5	14	2
14.0	3	□	MPS1-1400S-DIN	39.5	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1400S-DIN-C	39.5	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1400L-DIN	56.5	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1400L-DIN-C	56.5	77.5	78.5	124.5	122	2.5	14	2
	2	●	MPS1-1400-PC	30.2	56.2	56.2	109.2	107	2.2	14	2
	8	●	MPS1-1400-L8C	114.9	156.9	159.9	205.9	203	2.9	14	2
	10	□	MPS1-1400-L10C	142.5	184.5	187.5	233.5	231	2.5	14	2
	12	●	MPS1-1400-L12C	170.5	212.5	215.5	261.5	259	2.5	14	2
	15	●	MPS1-1400-L15C	212.5	254.5	257.5	303.5	301	2.5	14	2
	20	●	MPS1-1400-L20C	282.5	324.5	327.5	373.5	371	2.5	14	2
14.2	3	□	MPS1-1420S-DIN	43.3	64.6	65.6	114.6	112	2.6	16	4
	3	●	MPS1-1420S-DIN-C	43.3	64.6	65.6	114.6	112	2.6	16	2
	5	□	MPS1-1420L-DIN	61.3	82.6	83.6	132.6	130	2.6	16	4
	5	●	MPS1-1420L-DIN-C	61.3	82.6	83.6	132.6	130	2.6	16	2
14.5	3	□	MPS1-1450S-DIN	42.9	64.6	65.6	114.6	112	2.6	16	4
	3	●	MPS1-1450S-DIN-C	42.9	64.6	65.6	114.6	112	2.6	16	2
	5	□	MPS1-1450L-DIN	60.9	82.6	83.6	132.6	130	2.6	16	4
	5	●	MPS1-1450L-DIN-C	60.9	82.6	83.6	132.6	130	2.6	16	2
15.0	3	□	MPS1-1500S-DIN	42.2	64.7	65.7	114.7	112	2.7	16	4
	3	●	MPS1-1500S-DIN-C	42.2	64.7	65.7	114.7	112	2.7	16	2
	5	□	MPS1-1500L-DIN	60.2	82.7	83.7	132.7	130	2.7	16	4
	5	●	MPS1-1500L-DIN-C	60.2	82.7	83.7	132.7	130	2.7	16	2
15.5	3	□	MPS1-1550S-DIN	41.6	64.8	65.8	114.8	112	2.8	16	4
	3	●	MPS1-1550S-DIN-C	41.6	64.8	65.8	114.8	112	2.8	16	2
	5	□	MPS1-1550L-DIN	59.6	82.8	83.8	132.8	130	2.8	16	4
	5	●	MPS1-1550L-DIN-C	59.6	82.8	83.8	132.8	130	2.8	16	2
16.0	3	□	MPS1-1600S-DIN	40.9	64.9	65.9	114.9	112	2.9	16	4
	3	●	MPS1-1600S-DIN-C	40.9	64.9	65.9	114.9	112	2.9	16	2
	5	□	MPS1-1600L-DIN	58.9	82.9	83.9	132.9	130	2.9	16	4
	5	●	MPS1-1600L-DIN-C	58.9	82.9	83.9	132.9	130	2.9	16	2
16.5	3	□	MPS1-1650S-DIN	48.3	73.0	74.0	123.0	120	3.0	18	4
	3	●	MPS1-1650S-DIN-C	48.3	73.0	74.0	123.0	120	3.0	18	2
	5	□	MPS1-1650L-DIN	68.3	93.0	94.0	143.0	140	3.0	18	4
	5	●	MPS1-1650L-DIN-C	68.3	93.0	94.0	143.0	140	3.0	18	2
17.0	3	□	MPS1-1700S-DIN	47.6	73.1	74.1	123.1	120	3.1	18	4
	3	●	MPS1-1700S-DIN-C	47.6	73.1	74.1	123.1	120	3.1	18	2
	5	□	MPS1-1700L-DIN	67.6	93.1	94.1	143.1	140	3.1	18	4
	5	●	MPS1-1700L-DIN-C	67.6	93.1	94.1	143.1	140	3.1	18	2
17.5	3	□	MPS1-1750S-DIN	46.9	73.2	74.2	123.2	120	3.2	18	4
	3	●	MPS1-1750S-DIN-C	46.9	73.2	74.2	123.2	120	3.2	18	2
	5	□	MPS1-1750L-DIN	66.9	93.2	94.2	143.2	140	3.2	18	4
	5	●	MPS1-1750L-DIN-C	66.9	93.2	94.2	143.2	140	3.2	18	2
18.0	3	□	MPS1-1800S-DIN	46.3	73.3	74.3	123.3	120	3.3	18	4
	3	●	MPS1-1800S-DIN-C	46.3	73.3	74.3	123.3	120	3.3	18	2
	5	□	MPS1-1800L-DIN	66.3	93.3	94.3	143.3	140	3.3	18	4
	5	●	MPS1-1800L-DIN-C	66.3	93.3	94.3	143.3	140	3.3	18	2

DC (mm)	Profundidad agujero (L/D)	DP1021	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
18.5	3	□	MPS1-1850S-DIN	51.6	79.4	80.4	131.4	128	3.4	20	4
	3	●	MPS1-1850S-DIN-C	51.6	79.4	80.4	131.4	128	3.4	20	2
	5	□	MPS1-1850L-DIN	73.6	101.4	102.4	153.4	150	3.4	20	4
	5	●	MPS1-1850L-DIN-C	73.6	101.4	102.4	153.4	150	3.4	20	2
19.0	3	□	MPS1-1900S-DIN	51.0	79.5	80.5	131.5	128	3.5	20	4
	3	●	MPS1-1900S-DIN-C	51.0	79.5	80.5	131.5	128	3.5	20	2
	5	□	MPS1-1900L-DIN	73.0	101.5	102.5	153.5	150	3.5	20	4
	5	●	MPS1-1900L-DIN-C	73.0	101.5	102.5	153.5	150	3.5	20	2
19.5	3	□	MPS1-1950S-DIN	50.3	79.5	80.5	131.5	128	3.5	20	4
	3	●	MPS1-1950S-DIN-C	50.3	79.5	80.5	131.5	128	3.5	20	2
	5	□	MPS1-1950L-DIN	72.3	101.5	102.5	153.5	150	3.5	20	4
	5	●	MPS1-1950L-DIN-C	72.3	101.5	102.5	153.5	150	3.5	20	2
20.0	3	□	MPS1-2000S-DIN	49.6	79.6	80.6	131.6	128	3.6	20	4
	3	●	MPS1-2000S-DIN-C	49.6	79.6	80.6	131.6	128	3.6	20	2
	5	□	MPS1-2000L-DIN	71.6	101.6	102.6	153.6	150	3.6	20	4
	5	●	MPS1-2000L-DIN-C	71.6	101.6	102.6	153.6	150	3.6	20	2

● : Stock Europa. □ : A fabricar según demanda.

CONDICIONES DE CORTE RECOMENDADAS

● BROCAS MPS1 (3xDC – 40xDC)

DC	L x DC		P			M	K		
			Acero dulce, Acero al carbono, Acero aleado			Acero inoxidable	Fundición		
			≤ 180 HB	180–250 HB	280–350 HB		≤ 350 MPa	≤ 450 MPa	≤ 800 MPa
3	3–8	Vc m/min	100 (60–150)	90 (60–140)	80 (50–110)	40 (20–50)	90 (60–100)	80 (50–90)	60 (40–80)
		f mm/rev.	0.15 (0.1–0.2)	0.15 (0.1–0.19)	0.12 (0.1–0.14)	0.08 (0.06–0.12)	0.15 (0.1–0.2)	0.12 (0.08–0.16)	0.09 (0.06–0.12)
	10–25	Vc m/min	90 (40–110)	90 (40–110)	80 (40–90)	40 (20–60)	90 (40–110)	90 (40–110)	—
		f mm/rev.	0.17 (0.1–0.24)	0.17 (0.1–0.24)	0.15 (0.09–0.22)	0.07 (0.05–0.09)	0.19 (0.11–0.26)	0.17 (0.1–0.24)	—
	30–40	Vc m/min	75 (40–95)	75 (40–85)	65 (40–75)	30 (20–50)	75 (45–95)	30 (20–50)	—
		f mm/rev.	0.14 (0.08–0.19)	0.14 (0.08–0.19)	0.15 (0.07–0.18)	0.06 (0.04–0.07)	0.15 (0.09–0.21)	0.14 (0.08–0.19)	—
4	3–8	Vc m/min	120 (70–170)	100 (70–160)	90 (60–120)	40 (30–50)	100 (70–110)	90 (60–100)	70 (50–90)
		f mm/rev.	0.19 (0.12–0.25)	0.18 (0.12–0.24)	0.15 (0.12–0.18)	0.09 (0.07–0.13)	0.21 (0.12–0.3)	0.17 (0.1–0.24)	0.13 (0.08–0.18)
	10–25	Vc m/min	90 (40–110)	90 (40–110)	80 (40–90)	40 (20–60)	90 (40–110)	90 (40–110)	—
		f mm/rev.	0.2 (0.12–0.3)	0.2 (0.12–0.3)	0.18 (0.11–0.27)	0.08 (0.06–0.1)	0.22(0.13–0.33)	0.2 (0.12–0.3)	—
	30–40	Vc m/min	75 (40–95)	75 (40–85)	65 (40–75)	30 (20–50)	75 (45–95)	30 (20–50)	—
		f mm/rev.	0.16 (0.1–0.24)	0.16 (0.1–0.24)	0.18 (0.09–0.22)	0.06 (0.05–0.08)	0.18 (0.1–0.26)	0.16 (0.1–0.24)	—
5	3–8	Vc m/min	130 (80–190)	110 (80–180)	90 (70–140)	40 (30–50)	110 (80–130)	90 (70–120)	70 (60–100)
		f mm/rev.	0.23 (0.15–0.3)	0.22 (0.15–0.29)	0.19 (0.15–0.22)	0.11 (0.08–0.16)	0.25 (0.15–0.35)	0.21 (0.14–0.28)	0.17 (0.12–0.22)
	10–25	Vc m/min	90 (40–110)	90 (40–110)	80 (40–90)	40 (20–60)	90 (40–110)	90 (40–110)	—
		f mm/rev.	0.25 (0.15–0.35)	0.25 (0.15–0.35)	0.22 (0.14–0.32)	0.1 (0.07–0.12)	0.28 (0.17–0.39)	0.25 (0.15–0.35)	—
	30–40	Vc m/min	75 (40–95)	75 (40–85)	65 (40–75)	30 (20–50)	75 (45–95)	30 (20–50)	—
		f mm/rev.	0.2 (0.12–0.28)	0.2 (0.12–0.28)	0.22 (0.11–0.26)	0.08 (0.06–0.1)	0.22 (0.13–0.31)	0.2 (0.12–0.28)	—
6	3–8	Vc m/min	140 (90–210)	120 (90–190)	100 (80–150)	50 (40–70)	120 (90–140)	100 (80–130)	80 (70–110)
		f mm/rev.	0.27 (0.18–0.35)	0.26 (0.18–0.33)	0.22 (0.18–0.25)	0.14 (0.11–0.18)	0.29 (0.18–0.4)	0.25 (0.16–0.34)	0.2 (014–0.26)
	10–25	Vc m/min	110 (70–120)	100 (60–110)	90 (40–110)	50 (20–60)	100 (60–110)	100 (60–110)	—
		f mm/rev.	0.27 (0.17–0.37)	0.24 (0.15–0.33)	0.24 (0.15–0.33)	0.12 (0.08–0.16)	0.3 (0.19–0.41)	0.27 (0.17–0.37)	—
	30–40	Vc m/min	90 (40–110)	80 (40–90)	75 (40–85)	40 (20–60)	90 (60–110)	40 (30–60)	—
		f mm/rev.	0.22 (0.14–0.3)	0.22 (0.14–0.3)	0.24 (0.12–0.26)	0.1 (0.06–0.13)	0.24 (0.15–0.33)	0.22 (0.14–0.3)	—
8	3–8	Vc m/min	160 (100–240)	140 (100–220)	120 (90–170)	50 (40–70)	140 (100–160)	120 (90–150)	100 (80–130)
		f mm/rev.	0.3 (0.2–0.4)	0.29 (0.2–0.38)	0.24 (0.2–0.27)	0.15 (0.12–0.2)	0.33 (0.2–0.45)	0.28 (0.18–0.38)	0.23 (0.16–0.3)
	10–25	Vc m/min	110 (70–120)	100 (60–110)	90 (40–110)	50 (20–60)	100 (60–110)	100 (60–110)	—
		f mm/rev.	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.27 (0.18–0.36)	0.14 (0.1–0.17)	0.33 (0.22–0.44)	0.3 (0.2–0.4)	—
	30–40	Vc m/min	90 (40–110)	80 (40–90)	75 (40–85)	40 (20–50)	90 (60–100)	40 (30–60)	—
		f mm/rev.	0.24 (0.16–0.32)	0.24 (0.16–0.32)	0.27 (0.14–0.29)	0.11 (0.08–0.14)	0.26 (0.18–0.35)	0.24 (0.16–0.32)	—
10	3–8	Vc m/min	170 (100–250)	150 (100–230)	130 (90–180)	50 (40–70)	150 (100–170)	130 (90–160)	110 (80–140)
		f mm/rev.	0.33 (0.2–0.45)	0.32 (0.2–0.43)	0.25 (0.2–0.3)	0.16 (0.12–0.22)	0.35 (0.2–0.5)	0.29 (0.18–0.4)	0.24 (0.16–0.32)
	10–25	Vc m/min	110 (70–120)	100 (60–110)	90 (40–110)	50 (20–60)	100 (60–110)	100 (60–110)	—
		f mm/rev.	0.32 (0.22–0.42)	0.32 (0.22–0.42)	0.29 (0.2–0.38)	0.15 (0.12–0.18)	0.35 (0.24–0.46)	0.32 (0.22–0.42)	—
	30–40	Vc m/min	90 (40–110)	80 (40–90)	75 (40–95)	40 (20–50)	90 (60–100)	40 (30–60)	—
		f mm/rev.	0.26 (0.18–0.34)	0.26 (0.18–0.34)	0.29 (0.16–0.3)	0.12 (0.1–0.14)	0.28 (0.19–0.37)	0.26 (0.18–0.34)	—
12	3–8	Vc m/min	180 (100–250)	160 (100–230)	140 (90–180)	50 (40–70)	160 (100–170)	140 (90–160)	110 (80–140)
		f mm/rev.	0.35 (0.2–0.5)	0.34 (0.2–0.48)	0.27 (0.2–0.34)	0.18 (0.14–0.24)	0.4 (0.2–0.6)	0.31 (0.18–0.44)	0.25 (0.16–0.34)
	10–25	Vc m/min	130 (90–150)	120 (80–140)	100 (60–110)	60 (25–65)	120 (90–140)	120 (90–140)	—
		f mm/rev.	0.34 (0.24–0.44)	0.34 (0.24–0.44)	0.3 (0.22–0.4)	0.17 (0.14–0.19)	0.37 (0.26–0.48)	0.34 (0.24–0.44)	—
	30–40	Vc m/min	105 (55–125)	95 (55–105)	80 (40–100)	50 (20–60)	105 (65–115)	50 (40–70)	—
		f mm/rev.	0.27 (0.19–0.35)	0.27 (0.19–0.35)	0.3 (0.18–0.32)	0.14 (0.11–0.15)	0.3 (0.21–0.38)	0.27 (0.19–0.35)	—
16	3–8	Vc m/min	180 (100–250)	160 (100–230)	140 (90–180)	50 (40–70)	160 (100–170)	140 (90–160)	110 (80–140)
		f mm/rev.	0.38 (0.2–0.55)	0.36 (0.2–0.52)	0.28 (0.2–0.36)	0.19 (0.15–0.26)	0.43 (0.2–0..65)	0.33 (0.18–0.48)	0.27 (0.16–0.38)
	10–25	Vc m/min	130 (90–150)	120 (80–140)	100 (60–110)	60 (25–65)	120 (90–140)	120 (90–140)	—
		f mm/rev.	0.36 (0.26–0.46)	0.36 (0.26–0.46)	0.32 (0.23–0.41)	0.17 (0.14–0.19)	0.4 (0.29–0.48)	0.36 (0.26–0.46)	—
20	3–8	Vc m/min	180 (100–250)	160 (100–230)	140 (90–180)	50 (40–70)	160 (100–170)	140 (90–160)	110 (80–140)
		f mm/rev.	0.4 (0.2–0.6)	0.39 (0.2–0.57)	0.3 (0.2–0.4)	0.21 (0.16–0.28)	0.45 (0.2–0.7)	0.35 (0.18–0.52)	0.28 (0.16–0.4)

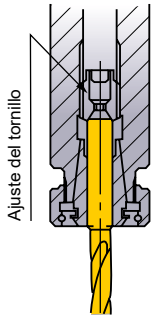
GUIA OPERACIONAL ➤ M060
DATOS TÉCNICOS ➤ P001

MPS1

Broca extra larga de doble margen

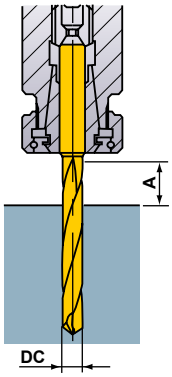
■ INSTRUCCIONES OPERATIVAS PARA LA BROCA LARGA MPS1

Amarre de la broca



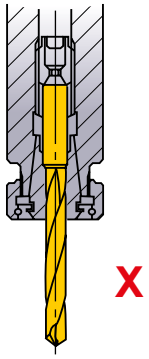
La presión del tipo de tornillo amarra la broca con seguridad.

Longitud de la broca



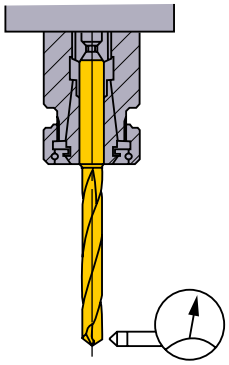
A ≥ DC x 1.5

Instalación de la broca



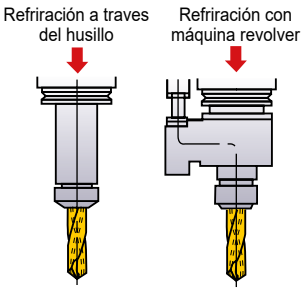
No sujetar en las hélices.

Tolerancia de instalación



Salto radial ≤ 0.03mm

Tipos de refrigeración



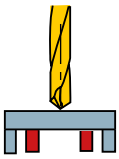
La presión del refrigerante es aproximadamente.
5—10 bar (<ϕ5:2—30 bar).

Utilización del refrigerante

1) Pequeñas particulas bloquean el agujero de salida en pequeños diámetros. Utilice siempre un filtro fino como medida preventiva.

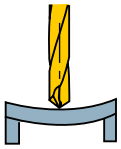
2) Pequeñas particulas del aceite viejo ensucian y se adhieren al refrigerante y no permite un flujo eficaz. Se recomienda un cambio regular del aceite.

Pieza delgada



OK

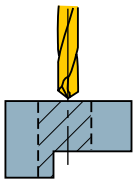
Sujetar la pieza



X

Si se produce un doblamiento

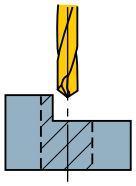
Corte interrumpido



Proceso

OK

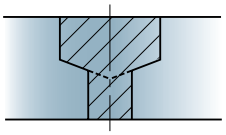
①Bajar el avance cuando taladramos partes en corte interrumpido.



Se requiere mecanizar previamente

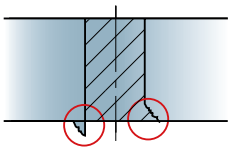
①Refrentar con fresa integral antes de taladrar.

Agujero previo



①Se divide en dos procesos.
②Primero taladrar el agujero grande.
*Una herramienta para ambos mecanizados, chaflanar y refrentar se puede pedir para producir.

Rebabas y astillado en el material

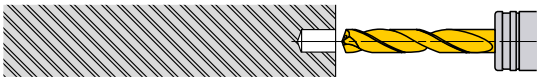


①Bajar el avance a un 50% al final del mecanizado.
②Añadir 45° de chaflan.
③Cambiar el punto del ángulo.

CÓMO UTILIZAR BROCAS DE TIPO LARGO

TALADRADO DE CARA PLANA ● Taladrado de agujero guía

■ 1. Taladrado de agujero guía.

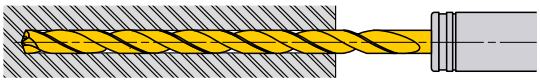


①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 2. Corte inicial con la broca larga

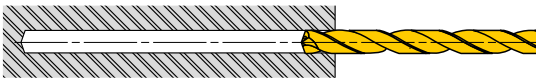
①1. Realice el agujero guía a bajas revoluciones.
(Revoluciones a 1000min^{-1}, vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 3. Taladrado del agujero profundo.



①Comience a cortar a la velocidad y avance recomendados con un ciclo ininterrumpido (avance continuo).

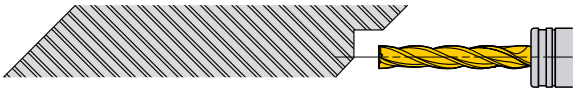
■ 4. Retracción de la broca



①Una vez taladrado, reduzca las revoluciones de corte aprox. a 0.5-1mm. del extremo del agujero. (Revoluciones en torno a 1000min^{-1})
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.
③Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.

TALADRADO INTERRUMPIDO ● Taladrado e inserción en caras o ángulos irregulares.

■ 1. Refrentado puntual

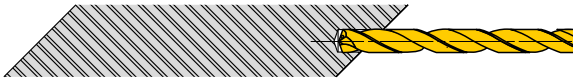


①Mecanice un plano en la cara irregular utilizando una broca o fresa para ranurado capaz de hacer refrentado puntual. El diámetro del punto debe tener el mismo tamaño del agujero profundo requerido.

■ 2. Taladrado de agujero guía

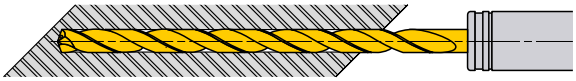
①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 3. Corte inicial con la broca larga



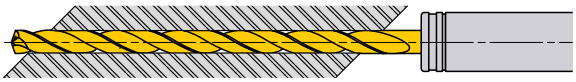
①Efectúe el agujero guía a bajas revoluciones. (Revoluciones a 1000min^{-1} vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 4. Taladre el agujero profundo



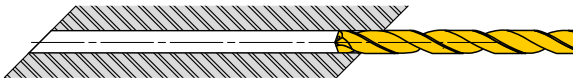
①Comience a cortar a la velocidad y avance recomendados con un ciclo sin perforación (avance continuo).

■ 5. Inserción



①Durante la inserción, el filo de corte puede resultar dañado
②Disminuya la velocidad de avance durante la inserción de la broca.

■ 6. Retracción de la broca



①Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.

TALADRADO (METAL DURO INTEGRAL)

MPS

Broca extra larga de doble margen

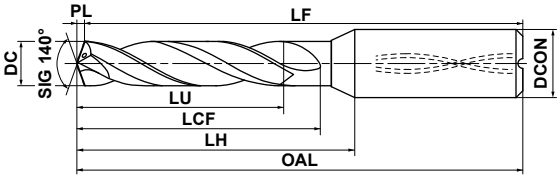
- Desde 3—40 L/D profundidad del agujero.
- La broca MPS tiene 4 margenes para precisión y fiabilidad de la broca.

P | M | K | N | S | H

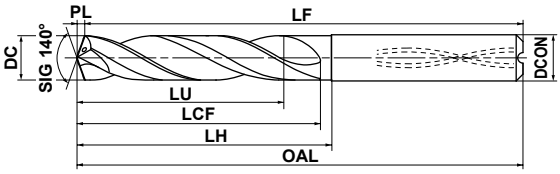
Refrigeración interna

	3≤D1≤6	6<D1≤10	10<D1≤18	18<D1≤20
Tipo DIN	+0.010 −0.002	+0.010 −0.005	+0.005 −0.013	+0.005 −0.016
Otros	0 −0.012	0 −0.015	0 −0.018	0 −0.021
h6	0 −0.008	0 −0.009	0 −0.011	0 −0.013

●**Tipo 1** Tipo mango cilíndrico con cuello cónico



●**Tipo 2** Tipo mango cilíndrico



DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.0	3	□	MPS0300S-DIN-C	15.0	19.5	24.5	61.5	61	0.5	6	1
	5	□	MPS0300L-DIN-C	23.0	27.5	28.5	65.5	65	0.5	6	1
	8	□	MPS0300-L8C	24.5	33.5	36.5	73.5	73	0.5	6	1
	10	□	MPS0300-L10C	30.5	39.5	42.5	79.5	79	0.5	6	1
	12	□	MPS0300-L12C	36.5	45.5	48.5	85.5	85	0.5	6	1
	15	□	MPS0300-L15C	45.5	54.5	57.5	94.5	94	0.5	6	1
	20	□	MPS0300-L20C	60.5	69.5	72.5	109.5	109	0.5	6	1
	25	□	MPS0300-L25C	75.5	84.5	87.5	124.5	124	0.5	6	1
	30	□	MPS0300-L30C	90.5	99.5	102.5	139.5	139	0.5	6	1
	35	□	MPS0300-L35C	105.5	115.5	121.5	158.5	158	0.5	6	1
	40	□	MPS0300-L40C	120.5	130.5	136.5	173.5	173	0.5	6	1
3.05	3	□	MPS0305S-DIN-C	15.0	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS0305L-DIN-C	23.0	27.6	28.6	65.6	65	0.6	6	1
3.1	3	□	MPS0310S-DIN-C	14.9	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS0310L-DIN-C	22.9	27.6	28.6	65.6	65	0.6	6	1
	8	□	MPS0310-L8C	25.4	39.6	42.6	79.6	79	0.6	6	1
	10	□	MPS0310-L10C	31.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MPS0310-L12C	37.8	53.6	56.6	93.6	93	0.6	6	1
	15	□	MPS0310-L15C	47.1	63.6	66.6	103.6	103	0.6	6	1
	20	□	MPS0310-L20C	62.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MPS0310-L25C	78.1	98.6	101.6	138.6	138	0.6	6	1
	30	□	MPS0310-L30C	93.6	116.6	119.6	156.6	156	0.6	6	1
	35	□	MPS0310-L35C	109.1	125.6	138.6	175.6	175	0.6	6	1
	40	□	MPS0310-L40C	124.6	140.6	153.6	190.6	190	0.6	6	1
3.2	3	□	MPS0320S-DIN-C	14.8	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS0320L-DIN-C	22.8	27.6	28.6	65.6	65	0.6	6	1
	8	□	MPS0320-L8C	26.2	39.6	42.6	79.6	79	0.6	6	1
	10	□	MPS0320-L10C	32.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MPS0320-L12C	39.0	53.6	56.6	93.6	93	0.6	6	1
	15	□	MPS0320-L15C	48.6	63.6	66.6	103.6	103	0.6	6	1
	20	□	MPS0320-L20C	64.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MPS0320-L25C	80.6	98.6	101.6	138.6	138	0.6	6	1
	30	□	MPS0320-L30C	96.6	116.6	119.6	156.6	156	0.6	6	1
	35	□	MPS0320-L35C	112.6	125.6	138.6	175.6	175	0.6	6	1
	40	□	MPS0320-L40C	128.6	140.6	153.6	190.6	190	0.6	6	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.3	3	□	MPS0330S-DIN-C	14.7	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS0330L-DIN-C	22.7	27.6	28.6	65.6	65	0.6	6	1
	8	□	MPS0330-L8C	27.0	39.6	42.6	79.6	79	0.6	6	1
	10	□	MPS0330-L10C	33.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MPS0330-L12C	40.2	53.6	56.6	93.6	93	0.6	6	1
	15	□	MPS0330-L15C	50.1	63.6	66.6	103.6	103	0.6	6	1
	20	□	MPS0330-L20C	66.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MPS0330-L25C	83.1	98.6	101.6	138.6	138	0.6	6	1
	30	□	MPS0330-L30C	99.6	116.6	119.6	156.6	156	0.6	6	1
	35	□	MPS0330-L35C	116.1	134.6	138.6	175.6	175	0.6	6	1
	40	□	MPS0330-L40C	132.6	150.6	153.6	190.6	190	0.6	6	1
3.4	3	□	MPS0340S-DIN-C	14.5	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS0340L-DIN-C	22.5	27.6	28.6	65.6	65	0.6	6	1
	8	□	MPS0340-L8C	27.8	39.6	42.6	79.6	79	0.6	6	1
	10	□	MPS0340-L10C	34.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MPS0340-L12C	41.4	53.6	56.6	93.6	93	0.6	6	1
	15	□	MPS0340-L15C	51.6	63.6	66.6	103.6	103	0.6	6	1
	20	□	MPS0340-L20C	68.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MPS0340-L25C	85.6	98.6	101.6	138.6	138	0.6	6	1
	30	□	MPS0340-L30C	102.6	116.6	119.6	156.6	156	0.6	6	1
	35	□	MPS0340-L35C	119.6	134.6	138.6	175.6	175	0.6	6	1
	40	□	MPS0340-L40C	136.6	150.6	153.6	190.6	190	0.6	6	1
3.5	3	□	MPS0350S-DIN-C	14.4	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS0350L-DIN-C	22.4	27.6	28.6	65.6	65	0.6	6	1
	8	□	MPS0350-L8C	28.6	39.6	42.6	79.6	79	0.6	6	1
	10	□	MPS0350-L10C	35.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MPS0350-L12C	42.6	53.6	56.6	93.6	93	0.6	6	1
	15	□	MPS0350-L15C	53.1	63.6	66.6	103.6	103	0.6	6	1
	20	□	MPS0350-L20C	70.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MPS0350-L25C	88.1	98.6	101.6	138.6	138	0.6	6	1
	30	□	MPS0350-L30C	105.6	116.6	119.6	156.6	156	0.6	6	1
	35	□	MPS0350-L35C	123.1	134.6	138.6	175.6	175	0.6	6	1
	40	□	MPS0350-L40C	140.6	150.6	153.6	190.6	190	0.6	6	1

⚠ Las referencias marcadas en gris (MPS, MSL) van a ser descatalogadas y sustituidas por la gama MPS1, por ello le recomendamos cambiar todas las referencias gradualmente en los próximos pedidos.

□ : **A fabricar según demanda.**

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.6	3	☐	MPS0360S-DIN-C	14.3	19.7	24.7	61.7	61	0.7	6	1
	5	☐	MPS0360L-DIN-C	22.3	27.7	28.7	65.7	65	0.7	6	1
	8	☐	MPS0360-L8C	29.5	44.7	47.7	84.7	84	0.7	6	1
	10	☐	MPS0360-L10C	36.7	52.7	55.7	92.7	92	0.7	6	1
	12	☐	MPS0360-L12C	43.9	60.7	63.7	100.7	100	0.7	6	1
	15	☐	MPS0360-L15C	54.7	72.7	75.7	112.7	112	0.7	6	1
	20	☐	MPS0360-L20C	72.7	92.7	95.7	132.7	132	0.7	6	1
	25	☐	MPS0360-L25C	90.7	112.7	115.7	152.7	152	0.7	6	1
	30	☐	MPS0360-L30C	108.7	132.7	135.7	172.7	172	0.7	6	1
	35	☐	MPS0360-L35C	126.7	145.7	155.7	192.7	192	0.7	6	1
	40	☐	MPS0360-L40C	144.7	162.7	175.7	212.7	212	0.7	6	1
3.7	3	☐	MPS0370S-DIN-C	14.1	19.7	24.7	61.7	61	0.7	6	1
	5	☐	MPS0370L-DIN-C	22.1	27.7	28.7	65.7	65	0.7	6	1
	8	☐	MPS0370-L8C	30.3	44.7	47.7	84.7	84	0.7	6	1
	10	☐	MPS0370-L10C	37.7	52.7	55.7	92.7	92	0.7	6	1
	12	☐	MPS0370-L12C	45.1	60.7	63.7	100.7	100	0.7	6	1
	15	☐	MPS0370-L15C	56.2	72.7	75.7	112.7	112	0.7	6	1
	20	☐	MPS0370-L20C	74.7	92.7	95.7	132.7	132	0.7	6	1
	25	☐	MPS0370-L25C	93.2	112.7	115.7	152.7	152	0.7	6	1
	30	☐	MPS0370-L30C	111.7	132.7	135.7	172.7	172	0.7	6	1
	35	☐	MPS0370-L35C	130.2	145.7	155.7	192.7	192	0.7	6	1
	40	☐	MPS0370-L40C	148.7	162.7	175.7	212.7	212	0.7	6	1
3.8	3	☐	MPS0380S-DIN-C	18.0	23.7	28.7	65.7	65	0.7	6	1
	5	☐	MPS0380L-DIN-C	30.0	35.7	36.7	73.7	73	0.7	6	1
	8	☐	MPS0380-L8C	31.1	44.7	47.7	84.7	84	0.7	6	1
	10	☐	MPS0380-L10C	38.7	52.7	55.7	92.7	92	0.7	6	1
	12	☐	MPS0380-L12C	46.3	60.7	63.7	100.7	100	0.7	6	1
	15	☐	MPS0380-L15C	57.7	72.7	75.7	112.7	112	0.7	6	1
	20	☐	MPS0380-L20C	76.7	92.7	95.7	132.7	132	0.7	6	1
	25	☐	MPS0380-L25C	95.7	112.7	115.7	152.7	152	0.7	6	1
	30	☐	MPS0380-L30C	114.7	132.7	135.7	172.7	172	0.7	6	1
	35	☐	MPS0380-L35C	133.7	152.7	155.7	192.7	192	0.7	6	1
	40	☐	MPS0380-L40C	152.7	172.7	175.7	212.7	212	0.7	6	1
3.9	3	☐	MPS0390S-DIN-C	17.9	23.7	28.7	65.7	65	0.7	6	1
	5	☐	MPS0390L-DIN-C	29.9	35.7	36.7	73.7	73	0.7	6	1
	8	☐	MPS0390-L8C	31.9	44.7	47.7	84.7	84	0.7	6	1
	10	☐	MPS0390-L10C	39.7	52.7	55.7	92.7	92	0.7	6	1
	12	☐	MPS0390-L12C	47.5	60.7	63.7	100.7	100	0.7	6	1
	15	☐	MPS0390-L15C	59.2	72.7	75.7	112.7	112	0.7	6	1
	20	☐	MPS0390-L20C	78.7	92.7	95.7	132.7	132	0.7	6	1
	25	☐	MPS0390-L25C	98.2	112.7	115.7	152.7	152	0.7	6	1
	30	☐	MPS0390-L30C	117.7	132.7	135.7	172.7	172	0.7	6	1
	35	☐	MPS0390-L35C	137.2	152.7	155.7	192.7	192	0.7	6	1
	40	☐	MPS0390-L40C	156.7	172.7	175.7	212.7	212	0.7	6	1
4.0	3	☐	MPS0400S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	☐	MPS0400L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	1
	8	☐	MPS0400-L8C	32.7	44.7	47.7	84.7	84	0.7	6	1
	10	☐	MPS0400-L10C	40.7	52.7	55.7	92.7	92	0.7	6	1
	12	☐	MPS0400-L12C	48.7	60.7	63.7	100.7	100	0.7	6	1
	15	☐	MPS0400-L15C	60.7	72.7	75.7	112.7	112	0.7	6	1
	20	☐	MPS0400-L20C	80.7	92.7	95.7	132.7	132	0.7	6	1
	25	☐	MPS0400-L25C	100.7	112.7	115.7	152.7	152	0.7	6	1
	30	☐	MPS0400-L30C	120.7	132.7	135.7	172.7	172	0.7	6	1
	35	☐	MPS0400-L35C	140.7	152.7	155.7	192.7	192	0.7	6	1
	40	☐	MPS0400-L40C	160.7	172.7	175.7	212.7	212	0.7	6	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.05	3	☐	MPS0405S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	☐	MPS0405L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	1
4.1	3	☐	MPS0410S-DIN-C	17.6	23.7	28.7	65.7	65	0.7	6	1
	5	☐	MPS0410L-DIN-C	29.6	35.7	36.7	73.7	73	0.7	6	1
	8	☐	MPS0410-L8C	33.5	50.7	53.7	90.7	90	0.7	6	1
	10	☐	MPS0410-L10C	41.7	59.7	62.7	99.7	99	0.7	6	1
	12	☐	MPS0410-L12C	49.9	68.7	71.7	108.7	108	0.7	6	1
	15	☐	MPS0410-L15C	62.2	81.7	84.7	121.7	121	0.7	6	1
	20	☐	MPS0410-L20C	82.7	104.7	107.7	144.7	144	0.7	6	1
	25	☐	MPS0410-L25C	103.2	126.7	129.7	166.7	166	0.7	6	1
	30	☐	MPS0410-L30C	123.7	149.7	152.7	189.7	189	0.7	6	1
	35	☐	MPS0410-L35C	144.2	165.7	174.7	211.7	211	0.7	6	1
	40	☐	MPS0410-L40C	164.7	185.7	198.7	235.7	235	0.7	6	1
4.2	3	☐	MPS0420S-DIN-C	17.5	23.8	28.8	65.8	65	0.8	6	1
	5	☐	MPS0420L-DIN-C	29.5	35.8	36.8	73.8	73	0.8	6	1
	8	☐	MPS0420-L8C	34.4	50.8	53.8	90.8	90	0.8	6	1
	10	☐	MPS0420-L10C	42.8	59.8	62.8	99.8	99	0.8	6	1
	12	☐	MPS0420-L12C	51.2	68.8	71.8	108.8	108	0.8	6	1
	15	☐	MPS0420-L15C	63.8	81.8	84.8	121.8	121	0.8	6	1
	20	☐	MPS0420-L20C	84.8	104.8	107.8	144.8	144	0.8	6	1
	25	☐	MPS0420-L25C	105.8	126.8	129.8	166.8	166	0.8	6	1
	30	☐	MPS0420-L30C	126.8	149.8	152.8	189.8	189	0.8	6	1
	35	☐	MPS0420-L35C	147.8	165.8	174.8	211.8	211	0.8	6	1
	40	☐	MPS0420-L40C	168.8	185.8	198.8	235.8	235	0.8	6	1
4.3	3	☐	MPS0430S-DIN-C	17.3	23.8	28.8	65.8	65	0.8	6	1
	5	☐	MPS0430L-DIN-C	29.3	35.8	36.8	73.8	73	0.8	6	1
	8	☐	MPS0430-L8C	35.2	50.8	53.8	90.8	90	0.8	6	1
	10	☐	MPS0430-L10C	43.8	59.8	62.8	99.8	99	0.8	6	1
	12	☐	MPS0430-L12C	52.4	68.8	71.8	108.8	108	0.8	6	1
	15	☐	MPS0430-L15C	65.3	81.8	84.8	121.8	121	0.8	6	1
	20	☐	MPS0430-L20C	86.8	104.8	107.8	144.8	144	0.8	6	1
	25	☐	MPS0430-L25C	108.3	126.8	129.8	166.8	166	0.8	6	1
	30	☐	MPS0430-L30C	129.8	149.8	152.8	189.8	189	0.8	6	1
	35	☐	MPS0430-L35C	151.3	171.8	174.8	211.8	211	0.8	6	1
	40	☐	MPS0430-L40C	172.8	195.8	198.8	235.8	235	0.8	6	1
4.4	3	☐	MPS0440S-DIN-C	17.2	23.8	28.8	65.8	65	0.8	6	1
	5	☐	MPS0440L-DIN-C	29.2	35.8	36.8	73.8	73	0.8	6	1
	8	☐	MPS0440-L8C	36.0	50.8	53.8	90.8	90	0.8	6	1
	10	☐	MPS0440-L10C	44.8	59.8	62.8	99.8	99	0.8	6	1
	12	☐	MPS0440-L12C	53.6	68.8	71.8	108.8	108	0.8	6	1
	15	☐	MPS0440-L15C	66.8	81.8	84.8	121.8	121	0.8	6	1
	20	☐	MPS0440-L20C	88.8	104.8	107.8	144.8	144	0.8	6	1
	25	☐	MPS0440-L25C	110.8	126.8	129.8	166.8	166	0.8	6	1
	30	☐	MPS0440-L30C	132.8	149.8	152.8	189.8	189	0.8	6	1
	35	☐	MPS0440-L35C	154.8	171.8	174.8	211.8	211	0.8	6	1
	40	☐	MPS0440-L40C	176.8	195.8	198.8	235.8	235	0.8	6	1
4.5	3	☐	MPS0450S-DIN-C	17.1	23.8	28.8	65.8	65	0.8	6	1
	5	☐	MPS0450L-DIN-C	29.1	35.8	36.8	73.8	73	0.8	6	1
	8	☐	MPS0450-L8C	36.8	50.8	53.8	90.8	90	0.8	6	1
	10	☐	MPS0450-L10C	45.8	59.8	62.8	99.8	99	0.8	6	1
	12	☐	MPS0450-L12C	54.8	68.8	71.8	108.8	108	0.8	6	1
	15	☐	MPS0450-L15C	68.3	81.8	84.8	121.8	121	0.8	6	1
	20	☐	MPS0450-L20C	90.8	104.8	107.8	144.8	144	0.8	6	1
	25	☐	MPS0450-L25C	113.3	126.8	129.8	166.8	166	0.8	6	1
	30	☐	MPS0450-L30C	135.8	149.8	152.8	189.8	189	0.8	6	1
	35	☐	MPS0450-L35C	158.3	171.8	174.8	211.8	211	0.8	6	1
	40	☐	MPS0450-L40C	180.8	195.8	198.8	235.8	235	0.8	6	1

CONDICIONES DE CORTE ➤ M077
DATOS TÉCNICOS ➤ P001

MPS

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.6	3	☐	MPS0460S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	1
	5	☐	MPS0460L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	1
	8	☐	MPS0460-L8C	37.6	55.8	58.8	95.8	95	0.8	6	1
	10	☐	MPS0460-L10C	46.8	65.8	68.8	105.8	105	0.8	6	1
	12	☐	MPS0460-L12C	56.0	75.8	78.8	115.8	115	0.8	6	1
	15	☐	MPS0460-L15C	69.8	90.8	93.8	130.8	130	0.8	6	1
	20	☐	MPS0460-L20C	92.8	115.8	118.8	155.8	155	0.8	6	1
	25	☐	MPS0460-L25C	115.8	140.8	143.8	180.8	180	0.8	6	1
	30	☐	MPS0460-L30C	138.8	165.8	168.8	205.8	205	0.8	6	1
	35	☐	MPS0460-L35C	161.8	184.8	192.8	229.8	229	0.8	6	1
	40	☐	MPS0460-L40C	184.8	204.8	217.8	254.8	254	0.8	6	1
4.65	3	☐	MPS0465S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	1
	5	☐	MPS0465L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	1
4.7	3	☐	MPS0470S-DIN-C	16.8	23.9	28.9	65.9	65	0.9	6	1
	5	☐	MPS0470L-DIN-C	28.8	35.9	36.9	73.9	73	0.9	6	1
	8	☐	MPS0470-L8C	38.5	55.9	58.9	95.9	95	0.9	6	1
	10	☐	MPS0470-L10C	47.9	65.9	68.9	105.9	105	0.9	6	1
	12	☐	MPS0470-L12C	57.3	75.9	78.9	115.9	115	0.9	6	1
	15	☐	MPS0470-L15C	71.4	90.9	93.9	130.9	130	0.9	6	1
	20	☐	MPS0470-L20C	94.9	115.9	118.9	155.9	155	0.9	6	1
	25	☐	MPS0470-L25C	118.4	140.9	143.9	180.9	180	0.9	6	1
	30	☐	MPS0470-L30C	141.9	165.9	168.9	205.9	205	0.9	6	1
	35	☐	MPS0470-L35C	165.4	184.9	192.9	229.9	229	0.9	6	1
	40	☐	MPS0470-L40C	188.9	204.9	217.9	254.9	254	0.9	6	1
4.8	3	☐	MPS0480S-DIN-C	20.7	27.9	28.9	65.9	65	0.9	6	1
	5	☐	MPS0480L-DIN-C	36.7	43.9	44.9	81.9	81	0.9	6	1
	8	☐	MPS0480-L8C	39.3	55.9	58.9	95.9	95	0.9	6	1
	10	☐	MPS0480-L10C	48.9	65.9	68.9	105.9	105	0.9	6	1
	12	☐	MPS0480-L12C	58.5	75.9	78.9	115.9	115	0.9	6	1
	15	☐	MPS0480-L15C	72.9	90.9	93.9	130.9	130	0.9	6	1
	20	☐	MPS0480-L20C	96.9	115.9	118.9	155.9	155	0.9	6	1
	25	☐	MPS0480-L25C	120.9	140.9	143.9	180.9	180	0.9	6	1
	30	☐	MPS0480-L30C	144.9	165.9	168.9	205.9	205	0.9	6	1
	35	☐	MPS0480-L35C	168.9	190.9	192.9	229.9	229	0.9	6	1
	40	☐	MPS0480-L40C	192.9	215.9	217.9	254.9	254	0.9	6	1
4.9	3	☐	MPS0490S-DIN-C	20.5	27.9	28.9	65.9	65	0.9	6	1
	5	☐	MPS0490L-DIN-C	36.5	43.9	44.9	81.9	81	0.9	6	1
	8	☐	MPS0490-L8C	40.1	55.9	58.9	95.9	95	0.9	6	1
	10	☐	MPS0490-L10C	49.9	65.9	68.9	105.9	105	0.9	6	1
	12	☐	MPS0490-L12C	59.7	75.9	78.9	115.9	115	0.9	6	1
	15	☐	MPS0490-L15C	74.4	90.9	93.9	130.9	130	0.9	6	1
	20	☐	MPS0490-L20C	98.9	115.9	118.9	155.9	155	0.9	6	1
	25	☐	MPS0490-L25C	123.4	140.9	143.9	180.9	180	0.9	6	1
	30	☐	MPS0490-L30C	147.9	165.9	168.9	205.9	205	0.9	6	1
	35	☐	MPS0490-L35C	172.4	190.9	192.9	229.9	229	0.9	6	1
	40	☐	MPS0490-L40C	196.9	215.9	217.9	254.9	254	0.9	6	1
5.0	3	☐	MPS0500S-DIN-C	20.4	27.9	28.9	65.9	65	0.9	6	1
	5	☐	MPS0500L-DIN-C	36.4	43.9	44.9	81.9	81	0.9	6	1
	8	☐	MPS0500-L8C	40.9	55.9	58.9	95.9	95	0.9	6	1
	10	☐	MPS0500-L10C	50.9	65.9	68.9	105.9	105	0.9	6	1
	12	☐	MPS0500-L12C	60.9	75.9	78.9	115.9	115	0.9	6	1
	15	☐	MPS0500-L15C	75.9	90.9	93.9	130.9	130	0.9	6	1
	20	☐	MPS0500-L20C	100.9	115.9	118.9	155.9	155	0.9	6	1
	25	☐	MPS0500-L25C	125.9	140.9	143.9	180.9	180	0.9	6	1
	30	☐	MPS0500-L30C	150.9	165.9	168.9	205.9	205	0.9	6	1
	35	☐	MPS0500-L35C	175.9	190.9	192.9	229.9	229	0.9	6	1
	40	☐	MPS0500-L40C	200.9	215.9	217.9	254.9	254	0.9	6	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.05	3	☐	MPS0505S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	1
	5	☐	MPS0505L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	1
5.1	3	☐	MPS0510S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	1
	5	☐	MPS0510L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	1
	8	☐	MPS0510-L8C	41.7	61.9	64.9	101.9	101	0.9	6	1
	10	☐	MPS0510-L10C	51.9	72.9	75.9	112.9	112	0.9	6	1
	12	☐	MPS0510-L12C	62.1	83.9	86.9	123.9	123	0.9	6	1
	15	☐	MPS0510-L15C	77.4	99.9	102.9	139.9	139	0.9	6	1
	20	☐	MPS0510-L20C	102.9	127.9	130.9	167.9	167	0.9	6	1
	25	☐	MPS0510-L25C	128.4	154.9	157.9	194.9	194	0.9	6	1
	30	☐	MPS0510-L30C	153.9	182.9	185.9	222.9	222	0.9	6	1
	35	☐	MPS0510-L35C	179.4	203.9	211.9	248.9	248	0.9	6	1
	40	☐	MPS0510-L40C	204.9	230.9	241.9	278.9	278	0.9	6	1
5.2	3	☐	MPS0520S-DIN-C	20.1	27.9	28.9	65.9	65	0.9	6	1
	5	☐	MPS0520L-DIN-C	36.1	43.9	44.9	81.9	81	0.9	6	1
	8	☐	MPS0520-L8C	42.5	61.9	64.9	101.9	101	0.9	6	1
	10	☐	MPS0520-L10C	52.9	72.9	75.9	112.9	112	0.9	6	1
	12	☐	MPS0520-L12C	63.3	83.9	86.9	123.9	123	0.9	6	1
	15	☐	MPS0520-L15C	78.9	99.9	102.9	139.9	139	0.9	6	1
	20	☐	MPS0520-L20C	104.9	127.9	130.9	167.9	167	0.9	6	1
	25	☐	MPS0520-L25C	130.9	154.9	157.9	194.9	194	0.9	6	1
	30	☐	MPS0520-L30C	156.9	182.9	185.9	222.9	222	0.9	6	1
	35	☐	MPS0520-L35C	182.9	203.9	211.9	248.9	248	0.9	6	1
	40	☐	MPS0520-L40C	208.9	230.9	241.9	278.9	278	0.9	6	1
5.3	3	☐	MPS0530S-DIN-C	20.0	28.0	29.0	66.0	65	1.0	6	1
	5	☐	MPS0530L-DIN-C	36.0	44.0	45.0	82.0	81	1.0	6	1
	8	☐	MPS0530-L8C	43.4	62.0	65.0	102.0	101	1.0	6	1
	10	☐	MPS0530-L10C	54.0	73.0	76.0	113.0	112	1.0	6	1
	12	☐	MPS0530-L12C	64.6	84.0	87.0	124.0	123	1.0	6	1
	15	☐	MPS0530-L15C	80.5	100.0	103.0	140.0	139	1.0	6	1
	20	☐	MPS0530-L20C	107.0	128.0	131.0	168.0	167	1.0	6	1
	25	☐	MPS0530-L25C	133.5	155.0	158.0	195.0	194	1.0	6	1
	30	☐	MPS0530-L30C	160.0	183.0	186.0	223.0	222	1.0	6	1
	35	☐	MPS0530-L35C	186.5	210.0	212.0	249.0	248	1.0	6	1
	40	☐	MPS0530-L40C	213.0	241.0	242.0	279.0	278	1.0	6	1
5.4	3	☐	MPS0540S-DIN-C	19.9	28.0	29.0	66.0	65	1.0	6	1
	5	☐	MPS0540L-DIN-C	35.9	44.0	45.0	82.0	81	1.0	6	1
	8	☐	MPS0540-L8C	44.2	62.0	65.0	102.0	101	1.0	6	1
	10	☐	MPS0540-L10C	55.0	73.0	76.0	113.0	112	1.0	6	1
	12	☐	MPS0540-L12C	65.8	84.0	87.0	124.0	123	1.0	6	1
	15	☐	MPS0540-L15C	82.0	100.0	103.0	140.0	139	1.0	6	1
	20	☐	MPS0540-L20C	109.0	128.0	131.0	168.0	167	1.0	6	1
	25	☐	MPS0540-L25C	136.0	155.0	158.0	195.0	194	1.0	6	1
	30	☐	MPS0540-L30C	163.0	183.0	186.0	223.0	222	1.0	6	1
	35	☐	MPS0540-L35C	190.0	210.0	212.0	249.0	248	1.0	6	1
	40	☐	MPS0540-L40C	217.0	241.0	242.0	279.0	278	1.0	6	1
5.5	3	☐	MPS0550S-DIN-C	19.8	28.0	29.0	66.0	65	1.0	6	1
	5	☐	MPS0550L-DIN-C	35.8	44.0	45.0	82.0	81	1.0	6	1
	8	☐	MPS0550-L8C	45.0	62.0	65.0	102.0	101	1.0	6	1
	10	☐	MPS0550-L10C	56.0	73.0	76.0	113.0	112	1.0	6	1
	12	☐	MPS0550-L12C	67.0	84.0	87.0	124.0	123	1.0	6	1
	15	☐	MPS0550-L15C	83.5	100.0	103.0	140.0	139	1.0	6	1
	20	☐	MPS0550-L20C	111.0	128.0	131.0	168.0	167	1.0	6	1
	25	☐	MPS0550-L25C	138.5	155.0	158.0	195.0	194	1.0	6	1
	30	☐	MPS0550-L30C	166.0	183.0	186.0	223.0	222	1.0	6	1
	35	☐	MPS0550-L35C	193.5	210.0	212.0	249.0	248	1.0	6	1
	40	☐	MPS0550-L40C	221.0	241.0	242.0	279.0	278	1.0	6	1

☐ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.55	3	☐	MPS0555S-DIN-C	19.7	28.0	29.0	66.0	65	1.0	6	1
	5	☐	MPS0555L-DIN-C	35.7	44.0	45.0	82.0	81	1.0	6	1
5.6	3	☐	MPS0560S-DIN-C	19.6	28.0	29.0	66.0	65	1.0	6	1
	5	☐	MPS0560L-DIN-C	35.6	44.0	45.0	82.0	81	1.0	6	1
	8	☐	MPS0560-L8C	45.8	67.0	70.0	107.0	106	1.0	6	1
	10	☐	MPS0560-L10C	57.0	79.0	82.0	119.0	118	1.0	6	1
	12	☐	MPS0560-L12C	68.2	91.0	94.0	131.0	130	1.0	6	1
	15	☐	MPS0560-L15C	85.0	109.0	112.0	149.0	148	1.0	6	1
	20	☐	MPS0560-L20C	113.0	139.0	142.0	179.0	178	1.0	6	1
	25	☐	MPS0560-L25C	141.0	169.0	172.0	209.0	208	1.0	6	1
	30	☐	MPS0560-L30C	169.0	199.0	202.0	239.0	238	1.0	6	1
	35	☐	MPS0560-L35C	197.0	223.0	231.0	268.0	267	1.0	6	1
	40	☐	MPS0560-L40C	225.0	251.0	262.0	299.0	298	1.0	6	1
5.7	3	☐	MPS0570S-DIN-C	19.5	28.0	29.0	66.0	65	1.0	6	1
	5	☐	MPS0570L-DIN-C	35.5	44.0	45.0	82.0	81	1.0	6	1
	8	☐	MPS0570-L8C	46.6	67.0	70.0	107.0	106	1.0	6	1
	10	☐	MPS0570-L10C	58.0	79.0	82.0	119.0	118	1.0	6	1
	12	☐	MPS0570-L12C	69.4	91.0	94.0	131.0	130	1.0	6	1
	15	☐	MPS0570-L15C	86.5	109.0	112.0	149.0	148	1.0	6	1
	20	☐	MPS0570-L20C	115.0	139.0	142.0	179.0	178	1.0	6	1
	25	☐	MPS0570-L25C	143.5	169.0	172.0	209.0	208	1.0	6	1
	30	☐	MPS0570-L30C	172.0	199.0	202.0	239.0	238	1.0	6	1
	35	☐	MPS0570-L35C	200.5	223.0	231.0	268.0	267	1.0	6	1
	40	☐	MPS0570-L40C	229.0	251.0	262.0	299.0	298	1.0	6	1
5.8	3	☐	MPS0580S-DIN-C	19.4	28.1	29.1	66.1	65	1.1	6	1
	5	☐	MPS0580L-DIN-C	35.4	44.1	45.1	82.1	81	1.1	6	1
	8	☐	MPS0580-L8C	47.5	67.1	70.1	107.1	106	1.1	6	1
	10	☐	MPS0580-L10C	59.1	79.1	82.1	119.1	118	1.1	6	1
	12	☐	MPS0580-L12C	70.7	91.1	94.1	131.1	130	1.1	6	1
	15	☐	MPS0580-L15C	88.1	109.1	112.1	149.1	148	1.1	6	1
	20	☐	MPS0580-L20C	117.1	139.1	142.1	179.1	178	1.1	6	1
	25	☐	MPS0580-L25C	146.1	169.1	172.1	209.1	208	1.1	6	1
	30	☐	MPS0580-L30C	175.1	199.1	202.1	239.1	238	1.1	6	1
	35	☐	MPS0580-L35C	204.1	229.1	231.1	268.1	267	1.1	6	1
	40	☐	MPS0580-L40C	233.1	261.1	262.1	299.1	298	1.1	6	1
5.9	3	☐	MPS0590S-DIN-C	19.2	28.1	29.1	66.1	65	1.1	6	1
	5	☐	MPS0590L-DIN-C	35.2	44.1	45.1	82.1	81	1.1	6	1
	8	☐	MPS0590-L8C	48.3	67.1	70.1	107.1	106	1.1	6	1
	10	☐	MPS0590-L10C	60.1	79.1	82.1	119.1	118	1.1	6	1
	12	☐	MPS0590-L12C	71.9	91.1	94.1	131.1	130	1.1	6	1
	15	☐	MPS0590-L15C	89.6	109.1	112.1	149.1	148	1.1	6	1
	20	☐	MPS0590-L20C	119.1	139.1	142.1	179.1	178	1.1	6	1
	25	☐	MPS0590-L25C	148.6	169.1	172.1	209.1	208	1.1	6	1
	30	☐	MPS0590-L30C	178.1	199.1	202.1	239.1	238	1.1	6	1
	35	☐	MPS0590-L35C	207.6	229.1	231.1	268.1	267	1.1	6	1
	40	☐	MPS0590-L40C	237.1	261.1	262.1	299.1	298	1.1	6	1
6.0	3	☐	MPS0600S-DIN-C	19.1	28.1	29.1	66.1	65	1.1	6	2
	5	☐	MPS0600L-DIN-C	35.1	44.1	45.1	82.1	81	1.1	6	2
	8	☐	MPS0600-L8C	49.1	67.1	70.1	107.1	106	1.1	6	2
	10	☐	MPS0600-L10C	61.1	79.1	82.1	119.1	118	1.1	6	2
	12	☐	MPS0600-L12C	73.1	91.1	94.1	131.1	130	1.1	6	2
	15	☐	MPS0600-L15C	91.1	109.1	112.1	149.1	148	1.1	6	2
	20	☐	MPS0600-L20C	121.1	139.1	142.1	179.1	178	1.1	6	2
	25	☐	MPS0600-L25C	151.1	169.1	172.1	209.1	208	1.1	6	2
	30	☐	MPS0600-L30C	181.1	199.1	202.1	239.1	238	1.1	6	2
	35	☐	MPS0600-L35C	211.1	229.1	231.1	268.1	267	1.1	6	2
	40	☐	MPS0600-L40C	241.1	261.1	262.1	299.1	298	1.1	6	2

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.05	3	☐	MPS0605S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	1
	5	☐	MPS0605L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	1
6.1	3	☐	MPS0610S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	1
	5	☐	MPS0610L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	1
	8	☐	MPS0610-L8C	49.9	73.1	76.1	113.1	112	1.1	8	1
	10	☐	MPS0610-L10C	62.1	86.1	89.1	126.1	125	1.1	8	1
	12	☐	MPS0610-L12C	74.3	99.1	102.1	139.1	138	1.1	8	1
	15	☐	MPS0610-L15C	92.6	118.1	121.1	158.1	157	1.1	8	1
	20	☐	MPS0610-L20C	123.1	151.1	154.1	191.1	190	1.1	8	1
	25	☐	MPS0610-L25C	153.6	183.1	186.1	223.1	222	1.1	8	1
	30	☐	MPS0610-L30C	184.1	216.1	219.1	256.1	255	1.1	8	1
	35	☐	MPS0610-L35C	214.6	241.1	250.1	287.1	286	1.1	8	1
	40	☐	MPS0610-L40C	245.1	271.1	284.1	321.1	320	1.1	8	1
6.2	3	☐	MPS0620S-DIN-C	24.8	34.1	42.1	79.1	78	1.1	8	1
	5	☐	MPS0620L-DIN-C	43.8	53.1	54.1	91.1	90	1.1	8	1
	8	☐	MPS0620-L8C	50.7	73.1	76.1	113.1	112	1.1	8	1
	10	☐	MPS0620-L10C	63.1	86.1	89.1	126.1	125	1.1	8	1
	12	☐	MPS0620-L12C	75.5	99.1	102.1	139.1	138	1.1	8	1
	15	☐	MPS0620-L15C	94.1	118.1	121.1	158.1	157	1.1	8	1
	20	☐	MPS0620-L20C	125.1	151.1	154.1	191.1	190	1.1	8	1
	25	☐	MPS0620-L25C	156.1	183.1	186.1	223.1	222	1.1	8	1
	30	☐	MPS0620-L30C	187.1	216.1	219.1	256.1	255	1.1	8	1
	35	☐	MPS0620-L35C	218.1	241.1	250.1	287.1	286	1.1	8	1
	40	☐	MPS0620-L40C	249.1	271.1	284.1	321.1	320	1.1	8	1
6.3	3	☐	MPS0630S-DIN-C	24.7	34.1	42.1	79.1	78	1.1	8	1
	5	☐	MPS0630L-DIN-C	43.7	53.1	54.1	91.1	90	1.1	8	1
	8	☐	MPS0630-L8C	51.5	73.1	76.1	113.1	112	1.1	8	1
	10	☐	MPS0630-L10C	64.1	86.1	89.1	126.1	125	1.1	8	1
	12	☐	MPS0630-L12C	76.7	99.1	102.1	139.1	138	1.1	8	1
	15	☐	MPS0630-L15C	95.6	118.1	121.1	158.1	157	1.1	8	1
	20	☐	MPS0630-L20C	127.1	151.1	154.1	191.1	190	1.1	8	1
	25	☐	MPS0630-L25C	158.6	183.1	186.1	223.1	222	1.1	8	1
	30	☐	MPS0630-L30C	190.1	216.1	219.1	256.1	255	1.1	8	1
	35	☐	MPS0630-L35C	221.6	248.1	250.1	287.1	286	1.1	8	1
	40	☐	MPS0630-L40C	253.1	281.1	284.1	321.1	320	1.1	8	1
6.4	3	☐	MPS0640S-DIN-C	24.6	34.2	42.2	79.2	78	1.2	8	1
	5	☐	MPS0640L-DIN-C	43.6	53.2	54.2	91.2	90	1.2	8	1
	8	☐	MPS0640-L8C	52.4	73.2	76.2	113.2	112	1.2	8	1
	10	☐	MPS0640-L10C	65.2	86.2	89.2	126.2	125	1.2	8	1
	12	☐	MPS0640-L12C	78.0	99.2	102.2	139.2	138	1.2	8	1
	15	☐	MPS0640-L15C	97.2	118.2	121.2	158.2	157	1.2	8	1
	20	☐	MPS0640-L20C	129.2	151.2	154.2	191.2	190	1.2	8	1
	25	☐	MPS0640-L25C	161.2	183.2	186.2	223.2	222	1.2	8	1
	30	☐	MPS0640-L30C	193.2	216.2	219.2	256.2	255	1.2	8	1
	35	☐	MPS0640-L35C	225.2	248.2	250.2	287.2	286	1.2	8	1
	40	☐	MPS0640-L40C	257.2	281.2	284.2	321.2	320	1.2	8	1
6.5	3	☐	MPS0650S-DIN-C	24.4	34.2	42.2	79.2	78	1.2	8	1
	5	☐	MPS0650L-DIN-C	43.4	53.2	54.2	91.2	90	1.2	8	1
	8	☐	MPS0650-L8C	53.2	73.2	76.2	113.2	112	1.2	8	1
	10	☐	MPS0650-L10C	66.2	86.2	89.2	126.2	125	1.2	8	1
	12	☐	MPS0650-L12C	79.2	99.2	102.2	139.2	138	1.2	8	1
	15	☐	MPS0650-L15C	98.7	118.2	121.2	158.2	157	1.2	8	1
	20	☐	MPS0650-L20C	131.2	151.2	154.2	191.2	190	1.2	8	1
	25	☐	MPS0650-L25C	163.7	183.2	186.2	223.2	222	1.2	8	1
	30	☐	MPS0650-L30C	196.2	216.2	219.2	256.2	255	1.2	8	1
	35	☐	MPS0650-L35C	228.7	248.2	250.2	287.2	286	1.2	8	1
	40	☐	MPS0650-L40C	261.2	281.2	284.2	321.2	320	1.2	8	1

CONDICIONES DE CORTE ➤ M077
DATOS TÉCNICOS ➤ P001

MPS

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.6	3	☐	MPS0660S-DIN-C	24.3	34.2	42.2	79.2	78	1.2	8	1
	5	☐	MPS0660L-DIN-C	43.3	53.2	54.2	91.2	90	1.2	8	1
	8	☐	MPS0660-L8C	54.0	78.2	81.2	118.2	117	1.2	8	1
	10	☐	MPS0660-L10C	67.2	92.2	95.2	132.2	131	1.2	8	1
	12	☐	MPS0660-L12C	80.4	106.2	109.2	146.2	145	1.2	8	1
	15	☐	MPS0660-L15C	100.2	127.2	130.2	167.2	166	1.2	8	1
	20	☐	MPS0660-L20C	133.2	162.2	165.2	202.2	201	1.2	8	1
	25	☐	MPS0660-L25C	166.2	197.2	200.2	237.2	236	1.2	8	1
	30	☐	MPS0660-L30C	199.2	232.2	235.2	272.2	271	1.2	8	1
	35	☐	MPS0660-L35C	232.2	267.2	269.2	306.2	305	1.2	8	1
	40	☐	MPS0660-L40C	265.2	301.2	304.2	341.2	340	1.2	8	1
6.7	3	☐	MPS0670S-DIN-C	24.2	34.2	42.2	79.2	78	1.2	8	1
	5	☐	MPS0670L-DIN-C	43.2	53.2	54.2	91.2	90	1.2	8	1
	8	☐	MPS0670-L8C	54.8	78.2	81.2	118.2	117	1.2	8	1
	10	☐	MPS0670-L10C	68.2	92.2	95.2	132.2	131	1.2	8	1
	12	☐	MPS0670-L12C	81.6	106.2	109.2	146.2	145	1.2	8	1
	15	☐	MPS0670-L15C	101.7	127.2	130.2	167.2	166	1.2	8	1
	20	☐	MPS0670-L20C	135.2	162.2	165.2	202.2	201	1.2	8	1
	25	☐	MPS0670-L25C	168.7	197.2	200.2	237.2	236	1.2	8	1
	30	☐	MPS0670-L30C	202.2	232.2	235.2	272.2	271	1.2	8	1
	35	☐	MPS0670-L35C	235.7	267.2	269.2	306.2	305	1.2	8	1
	40	☐	MPS0670-L40C	269.2	301.2	304.2	341.2	340	1.2	8	1
6.8	3	☐	MPS0680S-DIN-C	24.0	34.2	42.2	79.2	78	1.2	8	1
	5	☐	MPS0680L-DIN-C	43.0	53.2	54.2	91.2	90	1.2	8	1
	8	☐	MPS0680-L8C	55.6	78.2	81.2	118.2	117	1.2	8	1
	10	☐	MPS0680-L10C	69.2	92.2	95.2	132.2	131	1.2	8	1
	12	☐	MPS0680-L12C	82.8	106.2	109.2	146.2	145	1.2	8	1
	15	☐	MPS0680-L15C	103.2	127.2	130.2	167.2	166	1.2	8	1
	20	☐	MPS0680-L20C	137.2	162.2	165.2	202.2	201	1.2	8	1
	25	☐	MPS0680-L25C	171.2	197.2	200.2	237.2	236	1.2	8	1
	30	☐	MPS0680-L30C	205.2	232.2	235.2	272.2	271	1.2	8	1
	35	☐	MPS0680-L35C	239.2	267.2	269.2	306.2	305	1.2	8	1
	40	☐	MPS0680-L40C	273.2	301.2	304.2	341.2	340	1.2	8	1
6.9	3	☐	MPS0690S-DIN-C	23.9	34.3	42.3	79.3	78	1.3	8	1
	5	☐	MPS0690L-DIN-C	42.9	53.3	54.3	91.3	90	1.3	8	1
	8	☐	MPS0690-L8C	56.5	78.3	81.3	118.3	117	1.3	8	1
	10	☐	MPS0690-L10C	70.3	92.3	95.3	132.3	131	1.3	8	1
	12	☐	MPS0690-L12C	84.1	106.3	109.3	146.3	145	1.3	8	1
	15	☐	MPS0690-L15C	104.8	127.3	130.3	167.3	166	1.3	8	1
	20	☐	MPS0690-L20C	139.3	162.3	165.3	202.3	201	1.3	8	1
	25	☐	MPS0690-L25C	173.8	197.3	200.3	237.3	236	1.3	8	1
	30	☐	MPS0690-L30C	208.3	232.3	235.3	272.3	271	1.3	8	1
	35	☐	MPS0690-L35C	242.8	267.3	269.3	306.3	305	1.3	8	1
	40	☐	MPS0690-L40C	277.3	301.3	304.3	341.3	340	1.3	8	1
7.0	3	☐	MPS0700S-DIN-C	23.8	34.3	42.3	79.3	78	1.3	8	1
	5	☐	MPS0700L-DIN-C	42.8	53.3	54.3	91.3	90	1.3	8	1
	8	☐	MPS0700-L8C	57.3	78.3	81.3	118.3	117	1.3	8	1
	10	☐	MPS0700-L10C	71.3	92.3	95.3	132.3	131	1.3	8	1
	12	☐	MPS0700-L12C	85.3	106.3	109.3	146.3	145	1.3	8	1
	15	☐	MPS0700-L15C	106.3	127.3	130.3	167.3	166	1.3	8	1
	20	☐	MPS0700-L20C	141.3	162.3	165.3	202.3	201	1.3	8	1
	25	☐	MPS0700-L25C	176.3	197.3	200.3	237.3	236	1.3	8	1
	30	☐	MPS0700-L30C	211.3	232.3	235.3	272.3	271	1.3	8	1
	35	☐	MPS0700-L35C	246.3	267.3	269.3	306.3	305	1.3	8	1
	40	☐	MPS0700-L40C	281.3	301.3	304.3	341.3	340	1.3	8	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.1	3	☐	MPS0710S-DIN-C	30.6	41.3	42.3	79.3	78	1.3	8	1
	5	☐	MPS0710L-DIN-C	42.6	53.3	54.3	91.3	90	1.3	8	1
	8	☐	MPS0710-L8C	58.1	84.3	87.3	124.3	123	1.3	8	1
	10	☐	MPS0710-L10C	72.3	99.3	102.3	139.3	138	1.3	8	1
	12	☐	MPS0710-L12C	86.5	114.3	117.3	154.3	153	1.3	8	1
	15	☐	MPS0710-L15C	107.8	136.3	139.3	176.3	175	1.3	8	1
	20	☐	MPS0710-L20C	143.3	174.3	177.3	214.3	213	1.3	8	1
	25	☐	MPS0710-L25C	178.8	211.3	214.3	251.3	250	1.3	8	1
	30	☐	MPS0710-L30C	214.3	249.3	252.3	289.3	288	1.3	8	1
	35	☐	MPS0710-L35C	249.8	286.3	288.3	325.3	324	1.3	8	1
	40	☐	MPS0710-L40C	285.3	321.3	323.3	360.3	359	1.3	8	1
7.2	3	☐	MPS0720S-DIN-C	30.5	41.3	42.3	79.3	78	1.3	8	1
	5	☐	MPS0720L-DIN-C	42.5	53.3	54.3	91.3	90	1.3	8	1
	8	☐	MPS0720-L8C	58.9	84.3	87.3	124.3	123	1.3	8	1
	10	☐	MPS0720-L10C	73.3	99.3	102.3	139.3	138	1.3	8	1
	12	☐	MPS0720-L12C	87.7	114.3	117.3	154.3	153	1.3	8	1
	15	☐	MPS0720-L15C	109.3	136.3	139.3	176.3	175	1.3	8	1
	20	☐	MPS0720-L20C	145.3	174.3	177.3	214.3	213	1.3	8	1
	25	☐	MPS0720-L25C	181.3	211.3	214.3	251.3	250	1.3	8	1
	30	☐	MPS0720-L30C	217.3	249.3	252.3	289.3	288	1.3	8	1
	35	☐	MPS0720-L35C	253.3	286.3	288.3	325.3	324	1.3	8	1
	40	☐	MPS0720-L40C	289.3	321.3	323.3	360.3	359	1.3	8	1
7.3	3	☐	MPS0730S-DIN-C	30.4	41.3	42.3	79.3	78	1.3	8	1
	5	☐	MPS0730L-DIN-C	42.4	53.3	54.3	91.3	90	1.3	8	1
	8	☐	MPS0730-L8C	59.7	84.3	87.3	124.3	123	1.3	8	1
	10	☐	MPS0730-L10C	74.3	99.3	102.3	139.3	138	1.3	8	1
	12	☐	MPS0730-L12C	88.9	114.3	117.3	154.3	153	1.3	8	1
	15	☐	MPS0730-L15C	110.8	136.3	139.3	176.3	175	1.3	8	1
	20	☐	MPS0730-L20C	147.3	174.3	177.3	214.3	213	1.3	8	1
	25	☐	MPS0730-L25C	183.8	211.3	214.3	251.3	250	1.3	8	1
	30	☐	MPS0730-L30C	220.3	249.3	252.3	289.3	288	1.3	8	1
	35	☐	MPS0730-L35C	256.8	286.3	288.3	325.3	324	1.3	8	1
	40	☐	MPS0730-L40C	293.3	321.3	323.3	360.3	359	1.3	8	1
7.4	3	☐	MPS0740S-DIN-C	30.2	41.3	42.3	79.3	78	1.3	8	1
	5	☐	MPS0740L-DIN-C	42.2	53.3	54.3	91.3	90	1.3	8	1
	8	☐	MPS0740-L8C	60.5	84.3	87.3	124.3	123	1.3	8	1
	10	☐	MPS0740-L10C	75.3	99.3	102.3	139.3	138	1.3	8	1
	12	☐	MPS0740-L12C	90.1	114.3	117.3	154.3	153	1.3	8	1
	15	☐	MPS0740-L15C	112.3	136.3	139.3	176.3	175	1.3	8	1
	20	☐	MPS0740-L20C	149.3	174.3	177.3	214.3	213	1.3	8	1
	25	☐	MPS0740-L25C	186.3	211.3	214.3	251.3	250	1.3	8	1
	30	☐	MPS0740-L30C	223.3	249.3	252.3	289.3	288	1.3	8	1
	35	☐	MPS0740-L35C	260.3	286.3	288.3	325.3	324	1.3	8	1
	40	☐	MPS0740-L40C	297.3	321.3	323.3	360.3	359	1.3	8	1
7.5	3	☐	MPS0750S-DIN-C	30.1	41.4	42.4	79.4	78	1.4	8	1
	5	☐	MPS0750L-DIN-C	42.1	53.4	54.4	91.4	90	1.4	8	1
	8	☐	MPS0750-L8C	61.4	84.4	87.4	124.4	123	1.4	8	1
	10	☐	MPS0750-L10C	76.4	99.4	102.4	139.4	138	1.4	8	1
	12	☐	MPS0750-L12C	91.4	114.4	117.4	154.4	153	1.4	8	1
	15	☐	MPS0750-L15C	113.9	136.4	139.4	176.4	175	1.4	8	1
	20	☐	MPS0750-L20C	151.4	174.4	177.4	214.4	213	1.4	8	1
	25	☐	MPS0750-L25C	188.9	211.4	214.4	251.4	250	1.4	8	1
	30	☐	MPS0750-L30C	226.4	249.4	252.4	289.4	288	1.4	8	1
	35	☐	MPS0750-L35C	263.9	286.4	288.4	325.4	324	1.4	8	1
	40	☐	MPS0750-L40C	301.4	321.4	323.4	360.4	359	1.4	8	1

☐ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.6	3	☐	MPS0760S-DIN-C	30.0	41.4	42.4	79.4	78	1.4	8	1
	5	☐	MPS0760L-DIN-C	42.0	53.4	54.4	91.4	90	1.4	8	1
	8	☐	MPS0760-L8C	62.2	89.4	92.4	129.4	128	1.4	8	1
	10	☐	MPS0760-L10C	77.4	105.4	108.4	145.4	144	1.4	8	1
	12	☐	MPS0760-L12C	92.6	121.4	124.4	161.4	160	1.4	8	1
	15	☐	MPS0760-L15C	115.4	145.4	148.4	185.4	184	1.4	8	1
	20	☐	MPS0760-L20C	153.4	185.4	188.4	225.4	224	1.4	8	1
	25	☐	MPS0760-L25C	191.4	225.4	228.4	265.4	264	1.4	8	1
	30	☐	MPS0760-L30C	229.4	265.4	268.4	305.4	304	1.4	8	1
	35	☐	MPS0760-L35C	267.4	305.4	307.4	344.4	343	1.4	8	1
	40	☐	MPS0760-L40C	305.4	341.4	342.4	379.4	378	1.4	8	1
7.7	3	☐	MPS0770S-DIN-C	29.9	41.4	42.4	79.4	78	1.4	8	1
	5	☐	MPS0770L-DIN-C	41.9	53.4	54.4	91.4	90	1.4	8	1
	8	☐	MPS0770-L8C	63.0	89.4	92.4	129.4	128	1.4	8	1
	10	☐	MPS0770-L10C	78.4	105.4	108.4	145.4	144	1.4	8	1
	12	☐	MPS0770-L12C	93.8	121.4	124.4	161.4	160	1.4	8	1
	15	☐	MPS0770-L15C	116.9	145.4	148.4	185.4	184	1.4	8	1
	20	☐	MPS0770-L20C	155.4	185.4	188.4	225.4	224	1.4	8	1
	25	☐	MPS0770-L25C	193.9	225.4	228.4	265.4	264	1.4	8	1
	30	☐	MPS0770-L30C	232.4	265.4	268.4	305.4	304	1.4	8	1
	35	☐	MPS0770-L35C	270.9	305.4	307.4	344.4	343	1.4	8	1
	40	☐	MPS0770-L40C	309.4	341.4	342.4	379.4	378	1.4	8	1
7.8	3	☐	MPS0780S-DIN-C	29.7	41.4	42.4	79.4	78	1.4	8	1
	5	☐	MPS0780L-DIN-C	41.7	53.4	54.4	91.4	90	1.4	8	1
	8	☐	MPS0780-L8C	63.8	89.4	92.4	129.4	128	1.4	8	1
	10	☐	MPS0780-L10C	79.4	105.4	108.4	145.4	144	1.4	8	1
	12	☐	MPS0780-L12C	95.0	121.4	124.4	161.4	160	1.4	8	1
	15	☐	MPS0780-L15C	118.4	145.4	148.4	185.4	184	1.4	8	1
	20	☐	MPS0780-L20C	157.4	185.4	188.4	225.4	224	1.4	8	1
	25	☐	MPS0780-L25C	196.4	225.4	228.4	265.4	264	1.4	8	1
	30	☐	MPS0780-L30C	235.4	265.4	268.4	305.4	304	1.4	8	1
	35	☐	MPS0780-L35C	274.4	305.4	307.4	344.4	343	1.4	8	1
	40	☐	MPS0780-L40C	313.4	341.4	342.4	379.4	378	1.4	8	1
7.9	3	☐	MPS0790S-DIN-C	29.6	41.4	42.4	79.4	78	1.4	8	1
	5	☐	MPS0790L-DIN-C	41.6	53.4	54.4	91.4	90	1.4	8	1
	8	☐	MPS0790-L8C	64.6	89.4	92.4	129.4	128	1.4	8	1
	10	☐	MPS0790-L10C	80.4	105.4	108.4	145.4	144	1.4	8	1
	12	☐	MPS0790-L12C	96.2	121.4	124.4	161.4	160	1.4	8	1
	15	☐	MPS0790-L15C	119.9	145.4	148.4	185.4	184	1.4	8	1
	20	☐	MPS0790-L20C	159.4	185.4	188.4	225.4	224	1.4	8	1
	25	☐	MPS0790-L25C	198.9	225.4	228.4	265.4	264	1.4	8	1
	30	☐	MPS0790-L30C	238.4	265.4	268.4	305.4	304	1.4	8	1
	35	☐	MPS0790-L35C	277.9	305.4	307.4	344.4	343	1.4	8	1
	40	☐	MPS0790-L40C	317.4	341.4	342.4	379.4	378	1.4	8	1
8.0	3	☐	MPS0800S-DIN-C	29.5	41.5	42.5	79.5	78	1.5	8	2
	5	☐	MPS0800L-DIN-C	41.5	53.5	54.5	91.5	90	1.5	8	2
	8	☐	MPS0800-L8C	65.5	89.5	92.5	129.5	128	1.5	8	2
	10	☐	MPS0800-L10C	81.5	105.5	108.5	145.5	144	1.5	8	2
	12	☐	MPS0800-L12C	97.5	121.5	124.5	161.5	160	1.5	8	2
	15	☐	MPS0800-L15C	121.5	145.5	148.5	185.5	184	1.5	8	2
	20	☐	MPS0800-L20C	161.5	185.5	188.5	225.5	224	1.5	8	2
	25	☐	MPS0800-L25C	201.5	225.5	228.5	265.5	264	1.5	8	2
	30	☐	MPS0800-L30C	241.5	265.5	268.5	305.5	304	1.5	8	2
	35	☐	MPS0800-L35C	281.5	305.5	307.5	344.5	343	1.5	8	2
	40	☐	MPS0800-L40C	321.5	341.5	342.5	379.5	378	1.5	8	2

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.05	3	☐	MPS0805S-DIN-C	34.4	46.5	47.5	88.5	87	1.5	10	1
	5	☐	MPS0805L-DIN-C	48.4	60.5	61.5	102.5	101	1.5	10	1
8.1	3	☐	MPS0810S-DIN-C	34.3	46.5	47.5	88.5	87	1.5	10	1
	5	☐	MPS0810L-DIN-C	48.3	60.5	61.5	102.5	101	1.5	10	1
	8	☐	MPS0810-L8C	66.3	95.5	98.5	139.5	138	1.5	10	1
	10	☐	MPS0810-L10C	82.5	112.5	115.5	156.5	155	1.5	10	1
	12	☐	MPS0810-L12C	98.7	129.5	132.5	173.5	172	1.5	10	1
	15	☐	MPS0810-L15C	123.0	154.5	157.5	198.5	197	1.5	10	1
	20	☐	MPS0810-L20C	163.5	197.5	200.5	241.5	240	1.5	10	1
	25	☐	MPS0810-L25C	204.0	239.5	242.5	283.5	282	1.5	10	1
	30	☐	MPS0810-L30C	244.5	281.5	284.5	325.5	324	1.5	10	1
	35	☐	MPS0810-L35C	285.0	324.5	326.5	367.5	366	1.5	10	1
	40	☐	MPS0810-L40C	325.5	366.5	370.5	411.5	410	1.5	10	1
8.2	3	☐	MPS0820S-DIN-C	34.2	46.5	47.5	88.5	87	1.5	10	1
	5	☐	MPS0820L-DIN-C	48.2	60.5	61.5	102.5	101	1.5	10	1
	8	☐	MPS0820-L8C	67.1	95.5	98.5	139.5	138	1.5	10	1
	10	☐	MPS0820-L10C	83.5	112.5	115.5	156.5	155	1.5	10	1
	12	☐	MPS0820-L12C	99.9	129.5	132.5	173.5	172	1.5	10	1
	15	☐	MPS0820-L15C	124.5	154.5	157.5	198.5	197	1.5	10	1
	20	☐	MPS0820-L20C	165.5	197.5	200.5	241.5	240	1.5	10	1
	25	☐	MPS0820-L25C	206.5	239.5	242.5	283.5	282	1.5	10	1
	30	☐	MPS0820-L30C	247.5	281.5	284.5	325.5	324	1.5	10	1
	35	☐	MPS0820-L35C	288.5	324.5	326.5	367.5	366	1.5	10	1
	40	☐	MPS0820-L40C	329.5	366.5	370.5	411.5	410	1.5	10	1
8.3	3	☐	MPS0830S-DIN-C	34.1	46.5	47.5	88.5	87	1.5	10	1
	5	☐	MPS0830L-DIN-C	48.1	60.5	61.5	102.5	101	1.5	10	1
	8	☐	MPS0830-L8C	67.9	95.5	98.5	139.5	138	1.5	10	1
	10	☐	MPS0830-L10C	84.5	112.5	115.5	156.5	155	1.5	10	1
	12	☐	MPS0830-L12C	101.1	129.5	132.5	173.5	172	1.5	10	1
	15	☐	MPS0830-L15C	126.0	154.5	157.5	198.5	197	1.5	10	1
	20	☐	MPS0830-L20C	167.5	197.5	200.5	241.5	240	1.5	10	1
	25	☐	MPS0830-L25C	209.0	239.5	242.5	283.5	282	1.5	10	1
	30	☐	MPS0830-L30C	250.5	281.5	284.5	325.5	324	1.5	10	1
	35	☐	MPS0830-L35C	292.0	324.5	326.5	367.5	366	1.5	10	1
	40	☐	MPS0830-L40C	333.5	366.5	370.5	411.5	410	1.5	10	1
8.4	3	☐	MPS0840S-DIN-C	33.9	46.5	47.5	88.5	87	1.5	10	1
	5	☐	MPS0840L-DIN-C	47.9	60.5	61.5	102.5	101	1.5	10	1
	8	☐	MPS0840-L8C	68.7	95.5	98.5	139.5	138	1.5	10	1
	10	☐	MPS0840-L10C	85.5	112.5	115.5	156.5	155	1.5	10	1
	12	☐	MPS0840-L12C	102.3	129.5	132.5	173.5	172	1.5	10	1
	15	☐	MPS0840-L15C	127.5	154.5	157.5	198.5	197	1.5	10	1
	20	☐	MPS0840-L20C	169.5	197.5	200.5	241.5	240	1.5	10	1
	25	☐	MPS0840-L25C	211.5	239.5	242.5	283.5	282	1.5	10	1
	30	☐	MPS0840-L30C	253.5	281.5	284.5	325.5	324	1.5	10	1
	35	☐	MPS0840-L35C	295.5	324.5	326.5	367.5	366	1.5	10	1
	40	☐	MPS0840-L40C	337.5	366.5	370.5	411.5	410	1.5	10	1
8.5	3	☐	MPS0850S-DIN-C	33.8	46.5	47.5	88.5	87	1.5	10	1
	5	☐	MPS0850L-DIN-C	47.8	60.5	61.5	102.5	101	1.5	10	1
	8	☐	MPS0850-L8C	69.5	95.5	98.5	139.5	138	1.5	10	1
	10	☐	MPS0850-L10C	86.5	112.5	115.5	156.5	155	1.5	10	1
	12	☐	MPS0850-L12C	103.5	129.5	132.5	173.5	172	1.5	10	1
	15	☐	MPS0850-L15C	129.0	154.5	157.5	198.5	197	1.5	10	1
	20	☐	MPS0850-L20C	171.5	197.5	200.5	241.5	240	1.5	10	1
	25	☐	MPS0850-L25C	214.0	239.5	242.5	283.5	282	1.5	10	1
	30	☐	MPS0850-L30C	256.5	281.5	284.5	325.5	324	1.5	10	1
	35	☐	MPS0850-L35C	299.0	324.5	326.5	367.5	366	1.5	10	1
	40	☐	MPS0850-L40C	341.5	366.5	370.5	411.5	410	1.5	10	1

CONDICIONES DE CORTE ➤ M077
DATOS TÉCNICOS ➤ P001

MPS

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.6	3	□	MPS0860S-DIN-C	33.7	46.6	47.6	88.6	87	1.6	10	1
	5	□	MPS0860L-DIN-C	47.7	60.6	61.6	102.6	101	1.6	10	1
	8	□	MPS0860-L8C	70.4	100.6	103.6	144.6	143	1.6	10	1
	10	□	MPS0860-L10C	87.6	118.6	121.6	162.6	161	1.6	10	1
	12	□	MPS0860-L12C	104.8	136.6	139.6	180.6	179	1.6	10	1
	15	□	MPS0860-L15C	130.6	163.6	166.6	207.6	206	1.6	10	1
	20	□	MPS0860-L20C	173.6	208.6	211.6	252.6	251	1.6	10	1
	25	□	MPS0860-L25C	216.6	253.6	256.6	297.6	296	1.6	10	1
	30	□	MPS0860-L30C	259.6	297.6	300.6	341.6	340	1.6	10	1
	35	□	MPS0860-L35C	302.6	343.6	345.6	386.6	385	1.6	10	1
	40	□	MPS0860-L40C	345.6	391.6	394.6	435.6	434	1.6	10	1
8.7	3	□	MPS0870S-DIN-C	33.5	46.6	47.6	88.6	87	1.6	10	1
	5	□	MPS0870L-DIN-C	47.5	60.6	61.6	102.6	101	1.6	10	1
	8	□	MPS0870-L8C	71.2	100.6	103.6	144.6	143	1.6	10	1
	10	□	MPS0870-L10C	88.6	118.6	121.6	162.6	161	1.6	10	1
	12	□	MPS0870-L12C	106.0	136.6	139.6	180.6	179	1.6	10	1
	15	□	MPS0870-L15C	132.1	163.6	166.6	207.6	206	1.6	10	1
	20	□	MPS0870-L20C	175.6	208.6	211.6	252.6	251	1.6	10	1
	25	□	MPS0870-L25C	219.1	253.6	256.6	297.6	296	1.6	10	1
	30	□	MPS0870-L30C	262.6	297.6	300.6	341.6	340	1.6	10	1
	35	□	MPS0870-L35C	306.1	343.6	345.6	386.6	385	1.6	10	1
	40	□	MPS0870-L40C	349.6	391.6	394.6	435.6	434	1.6	10	1
8.8	3	□	MPS0880S-DIN-C	33.4	46.6	47.6	88.6	87	1.6	10	1
	5	□	MPS0880L-DIN-C	47.4	60.6	61.6	102.6	101	1.6	10	1
	8	□	MPS0880-L8C	72.0	100.6	103.6	144.6	143	1.6	10	1
	10	□	MPS0880-L10C	89.6	118.6	121.6	162.6	161	1.6	10	1
	12	□	MPS0880-L12C	107.2	136.6	139.6	180.6	179	1.6	10	1
	15	□	MPS0880-L15C	133.6	163.6	166.6	207.6	206	1.6	10	1
	20	□	MPS0880-L20C	177.6	208.6	211.6	252.6	251	1.6	10	1
	25	□	MPS0880-L25C	221.6	253.6	256.6	297.6	296	1.6	10	1
	30	□	MPS0880-L30C	265.6	297.6	300.6	341.6	340	1.6	10	1
	35	□	MPS0880-L35C	309.6	343.6	345.6	386.6	385	1.6	10	1
	40	□	MPS0880-L40C	353.6	391.6	394.6	435.6	434	1.6	10	1
8.9	3	□	MPS0890S-DIN-C	33.3	46.6	47.6	88.6	87	1.6	10	1
	5	□	MPS0890L-DIN-C	47.3	60.6	61.6	102.6	101	1.6	10	1
	8	□	MPS0890-L8C	72.8	100.6	103.6	144.6	143	1.6	10	1
	10	□	MPS0890-L10C	90.6	118.6	121.6	162.6	161	1.6	10	1
	12	□	MPS0890-L12C	108.4	136.6	139.6	180.6	179	1.6	10	1
	15	□	MPS0890-L15C	135.1	163.6	166.6	207.6	206	1.6	10	1
	20	□	MPS0890-L20C	179.6	208.6	211.6	252.6	251	1.6	10	1
	25	□	MPS0890-L25C	224.1	253.6	256.6	297.6	296	1.6	10	1
	30	□	MPS0890-L30C	268.6	297.6	300.6	341.6	340	1.6	10	1
	35	□	MPS0890-L35C	313.1	343.6	345.6	386.6	385	1.6	10	1
	40	□	MPS0890-L40C	357.6	391.6	394.6	435.6	434	1.6	10	1
9.0	3	□	MPS0900S-DIN-C	33.1	46.6	47.6	88.6	87	1.6	10	1
	5	□	MPS0900L-DIN-C	47.1	60.6	61.6	102.6	101	1.6	10	1
	8	□	MPS0900-L8C	73.6	100.6	103.6	144.6	143	1.6	10	1
	10	□	MPS0900-L10C	91.6	118.6	121.6	162.6	161	1.6	10	1
	12	□	MPS0900-L12C	109.6	136.6	139.6	180.6	179	1.6	10	1
	15	□	MPS0900-L15C	136.6	163.6	166.6	207.6	206	1.6	10	1
	20	□	MPS0900-L20C	181.6	208.6	211.6	252.6	251	1.6	10	1
	25	□	MPS0900-L25C	226.6	253.6	256.6	297.6	296	1.6	10	1
	30	□	MPS0900-L30C	271.6	297.6	300.6	341.6	340	1.6	10	1
	35	□	MPS0900-L35C	316.6	343.6	345.6	386.6	385	1.6	10	1
	40	□	MPS0900-L40C	361.6	391.6	394.6	435.6	434	1.6	10	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
9.1	3	□	MPS0910S-DIN-C	33.0	46.7	47.7	88.7	87	1.7	10	1
	5	□	MPS0910L-DIN-C	47.0	60.7	61.7	102.7	101	1.7	10	1
	8	□	MPS0910-L8C	74.5	106.7	109.7	150.7	149	1.7	10	1
	10	□	MPS0910-L10C	92.7	125.7	128.7	169.7	168	1.7	10	1
	12	□	MPS0910-L12C	110.9	144.7	147.7	188.7	187	1.7	10	1
	15	□	MPS0910-L15C	138.2	172.7	175.7	216.7	215	1.7	10	1
	20	□	MPS0910-L20C	183.7	220.7	223.7	264.7	263	1.7	10	1
	25	□	MPS0910-L25C	229.2	267.7	270.7	311.7	310	1.7	10	1
	30	□	MPS0910-L30C	274.7	315.7	318.7	359.7	358	1.7	10	1
	35	□	MPS0910-L35C	320.2	362.7	364.7	405.7	404	1.7	10	1
9.2	3	□	MPS0920S-DIN-C	32.9	46.7	47.7	88.7	87	1.7	10	1
	5	□	MPS0920L-DIN-C	46.9	60.7	61.7	102.7	101	1.7	10	1
	8	□	MPS0920-L8C	75.3	106.7	109.7	150.7	149	1.7	10	1
	10	□	MPS0920-L10C	93.7	125.7	128.7	169.7	168	1.7	10	1
	12	□	MPS0920-L12C	112.1	144.7	147.7	188.7	187	1.7	10	1
	15	□	MPS0920-L15C	139.7	172.7	175.7	216.7	215	1.7	10	1
	20	□	MPS0920-L20C	185.7	220.7	223.7	264.7	263	1.7	10	1
	25	□	MPS0920-L25C	231.7	267.7	270.7	311.7	310	1.7	10	1
	30	□	MPS0920-L30C	277.7	315.7	318.7	359.7	358	1.7	10	1
	35	□	MPS0920-L35C	323.7	362.7	364.7	405.7	404	1.7	10	1
9.3	3	□	MPS0930S-DIN-C	32.7	46.7	47.7	88.7	87	1.7	10	1
	5	□	MPS0930L-DIN-C	46.7	60.7	61.7	102.7	101	1.7	10	1
	8	□	MPS0930-L8C	76.1	106.7	109.7	150.7	149	1.7	10	1
	10	□	MPS0930-L10C	94.7	125.7	128.7	169.7	168	1.7	10	1
	12	□	MPS0930-L12C	113.3	144.7	147.7	188.7	187	1.7	10	1
	15	□	MPS0930-L15C	141.2	172.7	175.7	216.7	215	1.7	10	1
	20	□	MPS0930-L20C	187.7	220.7	223.7	264.7	263	1.7	10	1
	25	□	MPS0930-L25C	234.2	267.7	270.7	311.7	310	1.7	10	1
	30	□	MPS0930-L30C	280.7	315.7	318.7	359.7	358	1.7	10	1
	35	□	MPS0930-L35C	327.2	362.7	364.7	405.7	404	1.7	10	1
9.4	3	□	MPS0940S-DIN-C	32.6	46.7	47.7	88.7	87	1.7	10	1
	5	□	MPS0940L-DIN-C	46.6	60.7	61.7	102.7	101	1.7	10	1
	8	□	MPS0940-L8C	76.9	106.7	109.7	150.7	149	1.7	10	1
	10	□	MPS0940-L10C	95.7	125.7	128.7	169.7	168	1.7	10	1
	12	□	MPS0940-L12C	114.5	144.7	147.7	188.7	187	1.7	10	1
	15	□	MPS0940-L15C	142.7	172.7	175.7	216.7	215	1.7	10	1
	20	□	MPS0940-L20C	189.7	220.7	223.7	264.7	263	1.7	10	1
	25	□	MPS0940-L25C	236.7	267.7	270.7	311.7	310	1.7	10	1
	30	□	MPS0940-L30C	283.7	315.7	318.7	359.7	358	1.7	10	1
	35	□	MPS0940-L35C	330.7	362.7	364.7	405.7	404	1.7	10	1
9.5	3	□	MPS0950S-DIN-C	32.5	46.7	47.7	88.7	87	1.7	10	1
	5	□	MPS0950L-DIN-C	46.5	60.7	61.7	102.7	101	1.7	10	1
	8	□	MPS0950-L8C	77.7	106.7	109.7	150.7	149	1.7	10	1
	10	□	MPS0950-L10C	96.7	125.7	128.7	169.7	168	1.7	10	1
	12	□	MPS0950-L12C	115.7	144.7	147.7	188.7	187	1.7	10	1
	15	□	MPS0950-L15C	144.2	172.7	175.7	216.7	215	1.7	10	1
	20	□	MPS0950-L20C	191.7	220.7	223.7	264.7	263	1.7	10	1
	25	□	MPS0950-L25C	239.2	267.7	270.7	311.7	310	1.7	10	1
	30	□	MPS0950-L30C	286.7	315.7	318.7	359.7	358	1.7	10	1
	35	□	MPS0950-L35C	334.2	362.7	364.7	405.7	404	1.7	10	1
9.6	3	□	MPS0960S-DIN-C	32.3	46.7	47.7	88.7	87	1.7	10	1
	5	□	MPS0960L-DIN-C	46.3	60.7	61.7	102.7	101	1.7	10	1
	8	□	MPS0960-L8C	78.5	111.7	114.7	155.7	154	1.7	10	1
	10	□	MPS0960-L10C	97.7	131.7	134.7	175.7	174	1.7	10	1
	12	□	MPS0960-L12C	116.9	151.7	154.7	195.7	194	1.7	10	1
	15	□	MPS0960-L15C	145.7	181.7	184.7	225.7	224	1.7	10	1

□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
9.6	20	☐	MPS0960-L20C	193.7	231.7	234.7	275.7	274	1.7	10	1
	25	☐	MPS0960-L25C	241.7	281.7	284.7	325.7	324	1.7	10	1
	30	☐	MPS0960-L30C	289.7	331.7	334.7	375.7	374	1.7	10	1
	35	☐	MPS0960-L35C	337.7	381.7	383.7	424.7	423	1.7	10	1
9.7	3	☐	MPS0970S-DIN-C	32.2	46.8	47.8	88.8	87	1.8	10	1
	5	☐	MPS0970L-DIN-C	46.2	60.8	61.8	102.8	101	1.8	10	1
	8	☐	MPS0970-L8C	79.4	111.8	114.8	155.8	154	1.8	10	1
	10	☐	MPS0970-L10C	98.8	131.8	134.8	175.8	174	1.8	10	1
	12	☐	MPS0970-L12C	118.2	151.8	154.8	195.8	194	1.8	10	1
	15	☐	MPS0970-L15C	147.3	181.8	184.8	225.8	224	1.8	10	1
	20	☐	MPS0970-L20C	195.8	231.8	234.8	275.8	274	1.8	10	1
	25	☐	MPS0970-L25C	244.3	281.8	284.8	325.8	324	1.8	10	1
	30	☐	MPS0970-L30C	292.8	331.8	334.8	375.8	374	1.8	10	1
	35	☐	MPS0970-L35C	341.3	381.8	383.8	424.8	423	1.8	10	1
9.8	3	☐	MPS0980S-DIN-C	32.1	46.8	47.8	88.8	87	1.8	10	1
	5	☐	MPS0980L-DIN-C	46.1	60.8	61.8	102.8	101	1.8	10	1
	8	☐	MPS0980-L8C	80.2	111.8	114.8	155.8	154	1.8	10	1
	10	☐	MPS0980-L10C	99.8	131.8	134.8	175.8	174	1.8	10	1
	12	☐	MPS0980-L12C	119.4	151.8	154.8	195.8	194	1.8	10	1
	15	☐	MPS0980-L15C	148.8	181.8	184.8	225.8	224	1.8	10	1
	20	☐	MPS0980-L20C	197.8	231.8	234.8	275.8	274	1.8	10	1
	25	☐	MPS0980-L25C	246.8	281.8	284.8	325.8	324	1.8	10	1
	30	☐	MPS0980-L30C	295.8	331.8	334.8	375.8	374	1.8	10	1
	35	☐	MPS0980-L35C	344.8	381.8	383.8	424.8	423	1.8	10	1
9.9	3	☐	MPS0990S-DIN-C	32.0	46.8	47.8	88.8	87	1.8	10	1
	5	☐	MPS0990L-DIN-C	46.0	60.8	61.8	102.8	101	1.8	10	1
	8	☐	MPS0990-L8C	81.0	111.8	114.8	155.8	154	1.8	10	1
	10	☐	MPS0990-L10C	100.8	131.8	134.8	175.8	174	1.8	10	1
	12	☐	MPS0990-L12C	120.6	151.8	154.8	195.8	194	1.8	10	1
	15	☐	MPS0990-L15C	150.3	181.8	184.8	225.8	224	1.8	10	1
	20	☐	MPS0990-L20C	199.8	231.8	234.8	275.8	274	1.8	10	1
	25	☐	MPS0990-L25C	249.3	281.8	284.8	325.8	324	1.8	10	1
	30	☐	MPS0990-L30C	298.8	331.8	334.8	375.8	374	1.8	10	1
	35	☐	MPS0990-L35C	348.3	381.8	383.8	424.8	423	1.8	10	1
10.0	3	☐	MPS1000S-DIN-C	31.8	46.8	47.8	88.8	87	1.8	10	2
	5	☐	MPS1000L-DIN-C	45.8	60.8	61.8	102.8	101	1.8	10	2
	8	☐	MPS1000-L8C	81.8	111.8	114.8	155.8	154	1.8	10	2
	10	☐	MPS1000-L10C	101.8	131.8	134.8	175.8	174	1.8	10	2
	12	☐	MPS1000-L12C	121.8	151.8	154.8	195.8	194	1.8	10	2
	15	☐	MPS1000-L15C	151.8	181.8	184.8	225.8	224	1.8	10	2
	20	☐	MPS1000-L20C	201.8	231.8	234.8	275.8	274	1.8	10	2
	25	☐	MPS1000-L25C	251.8	281.8	284.8	325.8	324	1.8	10	2
	30	☐	MPS1000-L30C	301.8	331.8	334.8	375.8	374	1.8	10	2
	35	☐	MPS1000-L35C	351.8	381.8	383.8	424.8	423	1.8	10	2
10.05	3	☐	MPS1005S-DIN-C	39.8	54.8	55.8	101.8	100	1.8	12	1
	5	☐	MPS1005L-DIN-C	55.8	70.8	71.8	117.8	116	1.8	12	1
10.1	3	☐	MPS1010S-DIN-C	39.7	54.8	55.8	101.8	100	1.8	12	1
	5	☐	MPS1010L-DIN-C	55.7	70.8	71.8	117.8	116	1.8	12	1
	8	☐	MPS1010-L8C	82.6	117.8	120.8	166.8	165	1.8	12	1
	10	☐	MPS1010-L10C	102.8	138.8	141.8	187.8	186	1.8	12	1
	12	☐	MPS1010-L12C	123.0	159.8	162.8	208.8	207	1.8	12	1
	15	☐	MPS1010-L15C	153.3	190.8	193.8	239.8	238	1.8	12	1
	20	☐	MPS1010-L20C	203.8	243.8	246.8	292.8	291	1.8	12	1
	25	☐	MPS1010-L25C	254.3	295.8	298.8	344.8	343	1.8	12	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.2	3	☐	MPS1020S-DIN-C	39.6	54.9	55.9	101.9	100	1.9	12	1
	5	☐	MPS1020L-DIN-C	55.6	70.9	71.9	117.9	116	1.9	12	1
	8	☐	MPS1020-L8C	83.5	117.9	120.9	166.9	165	1.9	12	1
	10	☐	MPS1020-L10C	103.9	138.9	141.9	187.9	186	1.9	12	1
	12	☐	MPS1020-L12C	124.3	159.9	162.9	208.9	207	1.9	12	1
	15	☐	MPS1020-L15C	154.9	190.9	193.9	239.9	238	1.9	12	1
	20	☐	MPS1020-L20C	205.9	243.9	246.9	292.9	291	1.9	12	1
	25	☐	MPS1020-L25C	256.9	295.9	298.9	344.9	343	1.9	12	1
10.3	3	☐	MPS1030S-DIN-C	39.4	54.9	55.9	101.9	100	1.9	12	1
	5	☐	MPS1030L-DIN-C	55.4	70.9	71.9	117.9	116	1.9	12	1
	8	☐	MPS1030-L8C	84.3	117.9	120.9	166.9	165	1.9	12	1
	10	☐	MPS1030-L10C	104.9	138.9	141.9	187.9	186	1.9	12	1
	12	☐	MPS1030-L12C	125.5	159.9	162.9	208.9	207	1.9	12	1
	15	☐	MPS1030-L15C	156.4	190.9	193.9	239.9	238	1.9	12	1
	20	☐	MPS1030-L20C	207.9	243.9	246.9	292.9	291	1.9	12	1
	25	☐	MPS1030-L25C	259.4	295.9	298.9	344.9	343	1.9	12	1
10.4	3	☐	MPS1040S-DIN-C	39.3	54.9	55.9	101.9	100	1.9	12	1
	5	☐	MPS1040L-DIN-C	55.3	70.9	71.9	117.9	116	1.9	12	1
	8	☐	MPS1040-L8C	85.1	117.9	120.9	166.9	165	1.9	12	1
	10	☐	MPS1040-L10C	105.9	138.9	141.9	187.9	186	1.9	12	1
	12	☐	MPS1040-L12C	126.7	159.9	162.9	208.9	207	1.9	12	1
	15	☐	MPS1040-L15C	157.9	190.9	193.9	239.9	238	1.9	12	1
	20	☐	MPS1040-L20C	209.9	243.9	246.9	292.9	291	1.9	12	1
	25	☐	MPS1040-L25C	261.9	295.9	298.9	344.9	343	1.9	12	1
10.5	3	☐	MPS1050S-DIN-C	39.2	54.9	55.9	101.9	100	1.9	12	1
	5	☐	MPS1050L-DIN-C	55.2	70.9	71.9	117.9	116	1.9	12	1
	8	☐	MPS1050-L8C	85.9	117.9	120.9	166.9	165	1.9	12	1
	10	☐	MPS1050-L10C	106.9	138.9	141.9	187.9	186	1.9	12	1
	12	☐	MPS1050-L12C	127.9	159.9	162.9	208.9	207	1.9	12	1
	15	☐	MPS1050-L15C	159.4	190.9	193.9	239.9	238	1.9	12	1
	20	☐	MPS1050-L20C	211.9	243.9	246.9	292.9	291	1.9	12	1
	25	☐	MPS1050-L25C	264.4	295.9	298.9	344.9	343	1.9	12	1
10.6	3	☐	MPS1060S-DIN-C	39.0	54.9	55.9	101.9	100	1.9	12	1
	5	☐	MPS1060L-DIN-C	55.0	70.9	71.9	117.9	116	1.9	12	1
	8	☐	MPS1060-L8C	86.7	122.9	125.9	171.9	170	1.9	12	1
	10	☐	MPS1060-L10C	107.9	144.9	147.9	193.9	192	1.9	12	1
	12	☐	MPS1060-L12C	129.1	166.9	169.9	215.9	214	1.9	12	1
	15	☐	MPS1060-L15C	160.9	197.9	202.9	248.9	247	1.9	12	1
	20	☐	MPS1060-L20C	213.9	254.9	257.9	303.9	302	1.9	12	1
	25	☐	MPS1060-L25C	266.9	309.9	312.9	358.9	357	1.9	12	1
10.7	3	☐	MPS1070S-DIN-C	38.9	54.9	55.9	101.9	100	1.9	12	1
	5	☐	MPS1070L-DIN-C	54.9	70.9	71.9	117.9	116	1.9	12	1
	8	☐	MPS1070-L8C	87.5	122.9	125.9	171.9	170	1.9	12	1
	10	☐	MPS1070-L10C	108.9	144.9	147.9	193.9	192	1.9	12	1
	12	☐	MPS1070-L12C	130.3	166.9	169.9	215.9	214	1.9	12	1
	15	☐	MPS1070-L15C	162.4	197.9	202.9	248.9	247	1.9	12	1
	20	☐	MPS1070-L20C	215.9	254.9	257.9	303.9	302	1.9	12	1
	25	☐	MPS1070-L25C	269.4	309.9	312.9	358.9	357	1.9	12	1
10.8	3	☐	MPS1080S-DIN-C	38.8	55.0	56.0	102.0	100	2.0	12	1
	5	☐	MPS1080L-DIN-C	54.8	71.0	72.0	118.0	116	2.0	12	1
	8	☐	MPS1080-L8C	88.4	123.0	126.0	172.0	170	2.0	12	1
	10	☐	MPS1080-L10C	110.0	145.0	148.0	194.0	192	2.0	12	1
	12	☐	MPS1080-L12C	131.6	167.0	170.0	216.0	214	2.0	12	1
	15	☐	MPS1080-L15C	164.0	198.0	203.0	249.0	247	2.0	12	1
	20	☐	MPS1080-L20C	218.0	255.0	258.0	304.0	302	2.0	12	1
	25	☐	MPS1080-L25C	272.0	310.0	313.0	359.0	357	2.0	12	1

CONDICIONES DE CORTE ➤ M077
DATOS TÉCNICOS ➤ P001

MPS

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.9	3	☐	MPS1090S-DIN-C	38.6	55.0	56.0	102.0	100	2.0	12	1
	5	☐	MPS1090L-DIN-C	54.6	71.0	72.0	118.0	116	2.0	12	1
	8	☐	MPS1090-L8C	89.2	123.0	126.0	172.0	170	2.0	12	1
	10	☐	MPS1090-L10C	111.0	145.0	148.0	194.0	192	2.0	12	1
	12	☐	MPS1090-L12C	132.8	167.0	170.0	216.0	214	2.0	12	1
	15	☐	MPS1090-L15C	165.5	198.0	203.0	249.0	247	2.0	12	1
	20	☐	MPS1090-L20C	220.0	255.0	258.0	304.0	302	2.0	12	1
	25	☐	MPS1090-L25C	274.5	310.0	313.0	359.0	357	2.0	12	1
11.0	3	☐	MPS1100S-DIN-C	38.5	55.0	56.0	102.0	100	2.0	12	1
	5	☐	MPS1100L-DIN-C	54.5	71.0	72.0	118.0	116	2.0	12	1
	8	☐	MPS1100-L8C	90.0	123.0	126.0	172.0	170	2.0	12	1
	10	☐	MPS1100-L10C	112.0	145.0	148.0	194.0	192	2.0	12	1
	12	☐	MPS1100-L12C	134.0	167.0	170.0	216.0	214	2.0	12	1
	15	☐	MPS1100-L15C	167.0	198.0	203.0	249.0	247	2.0	12	1
	20	☐	MPS1100-L20C	222.0	255.0	258.0	304.0	302	2.0	12	1
	25	☐	MPS1100-L25C	277.0	310.0	313.0	359.0	357	2.0	12	1
11.1	3	☐	MPS1110S-DIN-C	38.4	55.0	56.0	102.0	100	2.0	12	1
	5	☐	MPS1110L-DIN-C	54.4	71.0	72.0	118.0	116	2.0	12	1
	8	☐	MPS1110-L8C	90.8	129.0	132.0	178.0	176	2.0	12	1
	10	☐	MPS1110-L10C	113.0	152.0	155.0	201.0	199	2.0	12	1
	12	☐	MPS1110-L12C	135.2	175.0	178.0	224.0	222	2.0	12	1
	15	☐	MPS1110-L15C	168.5	209.0	212.0	258.0	256	2.0	12	1
	20	☐	MPS1110-L20C	224.0	267.0	270.0	316.0	314	2.0	12	1
	25	☐	MPS1110-L25C	279.5	324.0	327.0	373.0	371	2.0	12	1
11.2	3	☐	MPS1120S-DIN-C	38.2	55.0	56.0	102.0	100	2.0	12	1
	5	☐	MPS1120L-DIN-C	54.2	71.0	72.0	118.0	116	2.0	12	1
	8	☐	MPS1120-L8C	91.6	129.0	132.0	178.0	176	2.0	12	1
	10	☐	MPS1120-L10C	114.0	152.0	155.0	201.0	199	2.0	12	1
	12	☐	MPS1120-L12C	136.4	175.0	178.0	224.0	222	2.0	12	1
	15	☐	MPS1120-L15C	170.0	209.0	212.0	258.0	256	2.0	12	1
	20	☐	MPS1120-L20C	226.0	267.0	270.0	316.0	314	2.0	12	1
	25	☐	MPS1120-L25C	282.0	324.0	327.0	373.0	371	2.0	12	1
11.3	3	☐	MPS1130S-DIN-C	38.1	55.1	56.1	102.1	100	2.1	12	1
	5	☐	MPS1130L-DIN-C	54.1	71.1	72.1	118.1	116	2.1	12	1
	8	☐	MPS1130-L8C	92.5	129.1	132.1	178.1	176	2.1	12	1
	10	☐	MPS1130-L10C	115.1	152.1	155.1	201.1	199	2.1	12	1
	12	☐	MPS1130-L12C	137.7	175.1	178.0	224.0	222	2.1	12	1
	15	☐	MPS1130-L15C	171.6	209.1	212.1	258.1	256	2.1	12	1
	20	☐	MPS1130-L20C	228.1	267.1	270.1	316.1	314	2.1	12	1
	25	☐	MPS1130-L25C	284.6	324.1	327.1	373.1	371	2.1	12	1
11.4	3	☐	MPS1140S-DIN-C	38.0	55.1	56.1	102.1	100	2.1	12	1
	5	☐	MPS1140L-DIN-C	54.0	71.1	72.1	118.1	116	2.1	12	1
	8	☐	MPS1140-L8C	93.3	129.1	132.1	178.1	176	2.1	12	1
	10	☐	MPS1140-L10C	116.1	152.1	155.1	201.1	199	2.1	12	1
	12	☐	MPS1140-L12C	138.9	175.1	178.0	224.0	222	2.1	12	1
	15	☐	MPS1140-L15C	173.1	209.1	212.1	258.1	256	2.1	12	1
	20	☐	MPS1140-L20C	230.1	267.1	270.1	316.1	314	2.1	12	1
	25	☐	MPS1140-L25C	287.1	324.1	327.1	373.1	371	2.1	12	1
11.5	3	☐	MPS1150S-DIN-C	37.8	55.1	56.1	102.1	100	2.1	12	1
	5	☐	MPS1150L-DIN-C	53.8	71.1	72.1	118.1	116	2.1	12	1
	8	☐	MPS1150-L8C	94.1	129.1	132.1	178.1	176	2.1	12	1
	10	☐	MPS1150-L10C	117.1	152.1	155.1	201.1	199	2.1	12	1
	12	☐	MPS1150-L12C	140.1	175.1	178.0	224.0	222	2.1	12	1
	15	☐	MPS1150-L15C	174.6	209.1	212.1	258.1	256	2.1	12	1
	20	☐	MPS1150-L20C	232.1	267.1	270.1	316.1	314	2.1	12	1
	25	☐	MPS1150-L25C	289.6	324.1	327.1	373.1	371	2.1	12	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
11.6	3	☐	MPS1160S-DIN-C	37.7	55.1	56.1	102.1	100	2.1	12	1
	5	☐	MPS1160L-DIN-C	53.7	71.1	72.1	118.1	116	2.1	12	1
	8	☐	MPS1160-L8C	94.9	134.1	137.1	183.1	181	2.1	12	1
	10	☐	MPS1160-L10C	118.1	158.1	161.1	207.1	205	2.1	12	1
	12	☐	MPS1160-L12C	141.3	182.1	185.1	231.1	229	2.1	12	1
	15	☐	MPS1160-L15C	176.1	218.1	221.1	267.1	265	2.1	12	1
	20	☐	MPS1160-L20C	234.1	278.1	281.1	327.1	325	2.1	12	1
	25	☐	MPS1160-L25C	292.1	338.1	341.1	387.1	385	2.1	12	1
11.7	3	☐	MPS1170S-DIN-C	37.6	55.1	56.1	102.1	100	2.1	12	1
	5	☐	MPS1170L-DIN-C	53.6	71.1	72.1	118.1	116	2.1	12	1
	8	☐	MPS1170-L8C	95.7	134.1	137.1	183.1	181	2.1	12	1
	10	☐	MPS1170-L10C	119.1	158.1	161.1	207.1	205	2.1	12	1
	12	☐	MPS1170-L12C	142.5	182.1	185.1	231.1	229	2.1	12	1
	15	☐	MPS1170-L15C	177.6	218.1	221.1	267.1	265	2.1	12	1
	20	☐	MPS1170-L20C	236.1	278.1	281.1	327.1	325	2.1	12	1
	25	☐	MPS1170-L25C	294.6	338.1	341.1	387.1	385	2.1	12	1
11.8	3	☐	MPS1180S-DIN-C	37.4	55.1	56.1	102.1	100	2.1	12	1
	5	☐	MPS1180L-DIN-C	53.4	71.1	72.1	118.1	116	2.1	12	1
	8	☐	MPS1180-L8C	96.5	134.1	137.1	183.1	181	2.1	12	1
	10	☐	MPS1180-L10C	120.1	158.1	161.1	207.1	205	2.1	12	1
	12	☐	MPS1180-L12C	143.7	182.1	185.1	231.1	229	2.1	12	1
	15	☐	MPS1180-L15C	179.1	218.1	221.1	267.1	265	2.1	12	1
	20	☐	MPS1180-L20C	238.1	278.1	281.1	327.1	325	2.1	12	1
	25	☐	MPS1180-L25C	297.1	338.1	341.1	387.1	385	2.1	12	1
11.9	3	☐	MPS1190S-DIN-C	37.3	55.2	56.2	102.2	100	2.2	12	1
	5	☐	MPS1190L-DIN-C	53.3	71.2	72.2	118.2	116	2.2	12	1
	8	☐	MPS1190-L8C	97.4	134.2	137.2	183.2	181	2.2	12	1
	10	☐	MPS1190-L10C	121.2	158.2	161.2	207.2	205	2.2	12	1
	12	☐	MPS1190-L12C	145.0	182.2	185.2	231.2	229	2.2	12	1
	15	☐	MPS1190-L15C	180.7	218.2	221.2	267.2	265	2.2	12	1
	20	☐	MPS1190-L20C	240.2	278.2	281.2	327.2	325	2.2	12	1
	25	☐	MPS1190-L25C	299.7	338.2	341.2	387.2	385	2.2	12	1
12.0	3	☐	MPS1200S-DIN-C	37.2	55.2	56.2	102.2	100	2.2	12	2
	5	☐	MPS1200L-DIN-C	53.2	71.2	72.2	118.2	116	2.2	12	2
	8	☐	MPS1200-L8C	98.2	134.2	137.2	183.2	181	2.2	12	2
	10	☐	MPS1200-L10C	122.2	158.2	161.2	207.2	205	2.2	12	2
	12	☐	MPS1200-L12C	146.2	182.2	185.2	231.2	229	2.2	12	2
	15	☐	MPS1200-L15C	182.2	218.2	221.2	267.2	265	2.2	12	2
	20	☐	MPS1200-L20C	242.2	278.2	281.2	327.2	325	2.2	12	2
	25	☐	MPS1200-L25C	302.2	338.2	341.2	387.2	385	2.2	12	2
12.05	3	☐	MPS1205S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	1
	5	☐	MPS1205L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	1
12.1	3	☐	MPS1210S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	1
	5	☐	MPS1210L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	1
	8	☐	MPS1210-L8C	99.0	140.2	143.2	189.2	187	2.2	14	1
	10	☐	MPS1210-L10C	123.2	165.2	168.2	214.2	212	2.2	14	1
	12	☐	MPS1210-L12C	147.4	190.2	193.2	239.2	237	2.2	14	1
	15	☐	MPS1210-L15C	183.7	227.2	230.2	276.2	274	2.2	14	1
	20	☐	MPS1210-L20C	244.2	290.2	293.2	339.2	337	2.2	14	1
12.2	3	☐	MPS1220S-DIN-C	41.9	60.2	61.2	107.2	105	2.2	14	1
	5	☐	MPS1220L-DIN-C	58.9	77.2	78.2	124.2	122	2.2	14	1
	8	☐	MPS1220-L8C	99.8	140.2	143.2	189.2	187	2.2	14	1
	10	☐	MPS1220-L10C	124.2	165.2	168.2	214.2	212	2.2	14	1
	12	☐	MPS1220-L12C	148.6	190.2	193.2	239.2	237	2.2	14	1
	15	☐	MPS1220-L15C	185.2	227.2	230.2	276.2	274	2.2	14	1
	20	☐	MPS1220-L20C	246.2	290.2	293.2	339.2	337	2.2	14	1

☐ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	☐	**MPS1230S-DIN-C**	41.8	60.2	61.2	107.2	105	2.2	14	1
	5	☐	**MPS1230L-DIN-C**	58.8	77.2	78.2	124.2	122	2.2	14	1
	8	☐	**MPS1230-L8C**	100.6	140.2	143.2	189.2	187	2.2	14	1
12.3	10	☐	**MPS1230-L10C**	125.2	165.2	168.2	214.2	212	2.2	14	1
	12	☐	**MPS1230-L12C**	149.8	190.2	193.2	239.2	237	2.2	14	1
	15	☐	**MPS1230-L15C**	186.7	227.2	230.2	276.2	274	2.2	14	1
	20	☐	**MPS1230-L20C**	248.2	290.2	293.2	339.2	337	2.2	14	1
	3	☐	**MPS1240S-DIN-C**	41.7	60.3	61.3	107.3	105	2.3	14	1
	5	☐	**MPS1240L-DIN-C**	58.7	77.3	78.3	124.3	122	2.3	14	1
	8	☐	**MPS1240-L8C**	101.5	140.3	143.3	189.3	187	2.3	14	1
12.4	10	☐	**MPS1240-L10C**	126.3	165.3	168.3	214.3	212	2.3	14	1
	12	☐	**MPS1240-L12C**	151.1	190.3	193.3	239.3	237	2.3	14	1
	15	☐	**MPS1240-L15C**	188.3	227.3	230.3	276.3	274	2.3	14	1
	20	☐	**MPS1240-L20C**	250.3	290.3	293.3	339.3	337	2.3	14	1
	3	☐	**MPS1250S-DIN-C**	41.5	60.3	61.3	107.3	105	2.3	14	1
	5	☐	**MPS1250L-DIN-C**	58.5	77.3	78.3	124.3	122	2.3	14	1
	8	☐	**MPS1250-L8C**	102.3	140.3	143.3	189.3	187	2.3	14	1
12.5	10	☐	**MPS1250-L10C**	127.3	165.3	168.3	214.3	212	2.3	14	1
	12	☐	**MPS1250-L12C**	152.3	190.3	193.3	239.3	237	2.3	14	1
	15	☐	**MPS1250-L15C**	189.8	227.3	230.3	276.3	274	2.3	14	1
	20	☐	**MPS1250-L20C**	252.3	290.3	293.3	339.3	337	2.3	14	1
	3	☐	**MPS1260S-DIN-C**	41.4	60.3	61.3	107.3	105	2.3	14	1
	5	☐	**MPS1260L-DIN-C**	58.4	77.3	78.3	124.3	122	2.3	14	1
	8	☐	**MPS1260-L8C**	103.1	145.3	148.3	194.3	192	2.3	14	1
12.6	10	☐	**MPS1260-L10C**	128.3	171.3	174.3	220.3	218	2.3	14	1
	12	☐	**MPS1260-L12C**	153.5	197.3	200.3	246.3	244	2.3	14	1
	15	☐	**MPS1260-L15C**	191.3	236.3	239.3	285.3	283	2.3	14	1
	20	☐	**MPS1260-L20C**	254.3	301.3	304.3	350.3	348	2.3	14	1
	3	☐	**MPS1270S-DIN-C**	41.3	60.3	61.3	107.3	105	2.3	14	1
	5	☐	**MPS1270L-DIN-C**	58.3	77.3	78.3	124.3	122	2.3	14	1
	8	☐	**MPS1270-L8C**	103.9	145.3	148.3	194.3	192	2.3	14	1
12.7	10	☐	**MPS1270-L10C**	129.3	171.3	174.3	220.3	218	2.3	14	1
	12	☐	**MPS1270-L12C**	154.7	197.3	200.3	246.3	244	2.3	14	1
	15	☐	**MPS1270-L15C**	192.8	236.3	239.3	285.3	283	2.3	14	1
	20	☐	**MPS1270-L20C**	256.3	301.3	304.3	350.3	348	2.3	14	1
	3	☐	**MPS1280S-DIN-C**	41.1	60.3	61.3	107.3	105	2.3	14	1
	5	☐	**MPS1280L-DIN-C**	58.1	77.3	78.3	124.3	122	2.3	14	1
	8	☐	**MPS1280-L8C**	104.7	145.3	148.3	194.3	192	2.3	14	1
12.8	10	☐	**MPS1280-L10C**	130.3	171.3	174.3	220.3	218	2.3	14	1
	12	☐	**MPS1280-L12C**	155.9	197.3	200.3	246.3	244	2.3	14	1
	15	☐	**MPS1280-L15C**	194.3	236.3	239.3	285.3	283	2.3	14	1
	20	☐	**MPS1280-L20C**	258.3	301.3	304.3	350.3	348	2.3	14	1
	3	☐	**MPS1290S-DIN-C**	41.0	60.3	61.3	107.3	105	2.3	14	1
	5	☐	**MPS1290L-DIN-C**	58.0	77.3	78.3	124.3	122	2.3	14	1
	8	☐	**MPS1290-L8C**	105.5	145.3	148.3	194.3	192	2.3	14	1
12.9	10	☐	**MPS1290-L10C**	131.3	171.3	174.3	220.3	218	2.3	14	1
	12	☐	**MPS1290-L12C**	157.1	197.3	200.3	246.3	244	2.3	14	1
	15	☐	**MPS1290-L15C**	195.8	236.3	239.3	285.3	283	2.3	14	1
	20	☐	**MPS1290-L20C**	260.3	301.3	304.3	350.3	348	2.3	14	1
	3	☐	**MPS1300S-DIN-C**	40.9	60.4	61.4	107.4	105	2.4	14	1
	5	☐	**MPS1300L-DIN-C**	57.9	77.4	78.4	124.4	122	2.4	14	1
	8	☐	**MPS1300-L8C**	106.4	145.4	148.4	194.4	192	2.4	14	1
13.0	10	☐	**MPS1300-L10C**	132.4	171.4	174.4	220.4	218	2.4	14	1
	12	☐	**MPS1300-L12C**	158.4	197.4	200.4	246.4	244	2.4	14	1
	15	☐	**MPS1300-L15C**	197.4	236.4	239.4	285.4	283	2.4	14	1
	20	☐	**MPS1300-L20C**	262.4	301.4	304.4	350.4	348	2.4	14	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	☐	**MPS1310S-DIN-C**	40.7	60.4	61.4	107.4	105	2.4	14	1
	5	☐	**MPS1310L-DIN-C**	57.7	77.4	78.4	124.4	122	2.4	14	1
	8	☐	**MPS1310-L8C**	107.2	151.4	154.4	200.4	198	2.4	14	1
13.1	10	☐	**MPS1310-L10C**	133.4	178.4	181.4	227.4	225	2.4	14	1
	12	☐	**MPS1310-L12C**	159.6	205.4	208.4	254.4	252	2.4	14	1
	15	☐	**MPS1310-L15C**	198.9	245.4	248.4	294.4	292	2.4	14	1
	20	☐	**MPS1310-L20C**	264.4	313.4	316.4	362.4	360	2.4	14	1
	3	☐	**MPS1320S-DIN-C**	40.6	60.4	61.4	107.4	105	2.4	14	1
	5	☐	**MPS1320L-DIN-C**	57.6	77.4	78.4	124.4	122	2.4	14	1
	8	☐	**MPS1320-L8C**	108.0	151.4	154.4	200.4	198	2.4	14	1
13.2	10	☐	**MPS1320-L10C**	134.4	178.4	181.4	227.4	225	2.4	14	1
	12	☐	**MPS1320-L12C**	160.8	205.4	208.4	254.4	252	2.4	14	1
	15	☐	**MPS1320-L15C**	200.4	245.4	248.4	294.4	292	2.4	14	1
	20	☐	**MPS1320-L20C**	266.4	313.4	316.4	362.4	360	2.4	14	1
	3	☐	**MPS1330S-DIN-C**	40.5	60.4	61.4	107.4	105	2.4	14	1
	5	☐	**MPS1330L-DIN-C**	57.5	77.4	78.4	124.4	122	2.4	14	1
	8	☐	**MPS1330-L8C**	108.8	151.4	154.4	200.4	198	2.4	14	1
13.3	10	☐	**MPS1330-L10C**	135.4	178.4	181.4	227.4	225	2.4	14	1
	12	☐	**MPS1330-L12C**	162.0	205.4	208.4	254.4	252	2.4	14	1
	15	☐	**MPS1330-L15C**	201.9	245.4	248.4	294.4	292	2.4	14	1
	20	☐	**MPS1330-L20C**	268.4	313.4	316.4	362.4	360	2.4	14	1
	3	☐	**MPS1340S-DIN-C**	40.3	60.4	61.4	107.4	105	2.4	14	1
	5	☐	**MPS1340L-DIN-C**	57.3	77.4	78.4	124.4	122	2.4	14	1
	8	☐	**MPS1340-L8C**	109.6	151.4	154.4	200.4	198	2.4	14	1
13.4	10	☐	**MPS1340-L10C**	136.4	178.4	181.4	227.4	225	2.4	14	1
	12	☐	**MPS1340-L12C**	163.2	205.4	208.4	254.4	252	2.4	14	1
	15	☐	**MPS1340-L15C**	203.4	245.4	248.4	294.4	292	2.4	14	1
	20	☐	**MPS1340-L20C**	270.4	313.4	316.4	362.4	360	2.4	14	1
	3	☐	**MPS1350S-DIN-C**	40.2	60.5	61.5	107.5	105	2.5	14	1
	5	☐	**MPS1350L-DIN-C**	57.2	77.5	78.5	124.5	122	2.5	14	1
	8	☐	**MPS1350-L8C**	110.5	151.5	154.5	200.5	198	2.5	14	1
13.5	10	☐	**MPS1350-L10C**	137.5	178.5	181.5	227.5	225	2.5	14	1
	12	☐	**MPS1350-L12C**	164.5	205.5	208.5	254.5	252	2.5	14	1
	15	☐	**MPS1350-L15C**	205.0	245.5	248.5	294.5	292	2.5	14	1
	20	☐	**MPS1350-L20C**	272.5	313.5	316.5	362.5	360	2.5	14	1
	3	☐	**MPS1360S-DIN-C**	40.1	60.5	61.5	107.5	105	2.5	14	1
	5	☐	**MPS1360L-DIN-C**	57.1	77.5	78.5	124.5	122	2.5	14	1
	8	☐	**MPS1360-L8C**	111.3	156.5	159.5	205.5	203	2.5	14	1
13.6	10	☐	**MPS1360-L10C**	138.5	184.5	187.5	233.5	231	2.5	14	1
	12	☐	**MPS1360-L12C**	165.7	212.5	215.5	261.5	259	2.5	14	1
	15	☐	**MPS1360-L15C**	206.5	254.5	257.5	303.5	301	2.5	14	1
	20	☐	**MPS1360-L20C**	274.5	324.5	327.5	373.5	371	2.5	14	1
	3	☐	**MPS1370S-DIN-C**	39.9	60.5	61.5	107.5	105	2.5	14	1
	5	☐	**MPS1370L-DIN-C**	56.9	77.5	78.5	124.5	122	2.5	14	1
	8	☐	**MPS1370-L8C**	112.1	156.5	159.5	205.5	203	2.5	14	1
13.7	10	☐	**MPS1370-L10C**	139.5	184.5	187.5	233.5	231	2.5	14	1
	12	☐	**MPS1370-L12C**	166.9	212.5	215.5	261.5	259	2.5	14	1
	15	☐	**MPS1370-L15C**	208.0	254.5	257.5	303.5	301	2.5	14	1
	20	☐	**MPS1370-L20C**	276.5	324.5	327.5	373.5	371	2.5	14	1
	3	☐	**MPS1380S-DIN-C**	39.8	60.5	61.5	107.5	105	2.5	14	1
	5	☐	**MPS1380L-DIN-C**	56.8	77.5	78.5	124.5	122	2.5	14	1
	8	☐	**MPS1380-L8C**	112.9	156.5	159.5	205.5	203	2.5	14	1
13.8	10	☐	**MPS1380-L10C**	140.5	184.5	187.5	233.5	231	2.5	14	1
	12	☐	**MPS1380-L12C**	168.1	212.5	215.5	261.5	259	2.5	14	1
	15	☐	**MPS1380-L15C**	209.5	254.5	257.5	303.5	301	2.5	14	1
	20	☐	**MPS1380-L20C**	278.5	324.5	327.5	373.5	371	2.5	14	1

CONDICIONES DE CORTE ➤ M077
DATOS TÉCNICOS ➤ P001

MPS

Broca extra larga de doble margen

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
13.9	3	☐	MPS1390S-DIN-C	39.7	60.5	61.5	107.5	105	2.5	14	1
	5	☐	MPS1390L-DIN-C	56.7	77.5	78.5	124.5	122	2.5	14	1
	8	☐	MPS1390-L8C	113.7	156.5	159.5	205.5	203	2.5	14	1
	10	☐	MPS1390-L10C	141.5	184.5	187.5	233.5	231	2.5	14	1
	12	☐	MPS1390-L12C	169.3	212.5	215.5	261.5	259	2.5	14	1
	15	☐	MPS1390-L15C	211.0	254.5	257.5	303.5	301	2.5	14	1
	20	☐	MPS1390-L20C	280.5	324.5	327.5	373.5	371	2.5	14	1
14.0	3	☐	MPS1400S-DIN-C	39.5	60.5	61.5	107.5	105	2.5	14	2
	5	☐	MPS1400L-DIN-C	56.5	77.5	78.5	124.5	122	2.5	14	2
	8	☐	MPS1400-L8C	114.5	156.5	159.5	205.5	203	2.5	14	2
	10	☐	MPS1400-L10C	142.5	184.5	187.5	233.5	231	2.5	14	2
	12	☐	MPS1400-L12C	170.5	212.5	215.5	261.5	259	2.5	14	2
	15	☐	MPS1400-L15C	212.5	254.5	257.5	303.5	301	2.5	14	2
	20	☐	MPS1400-L20C	282.5	324.5	327.5	373.5	371	2.5	14	2
14.1	3	☐	MPS1410S-DIN-C	43.4	64.6	65.6	114.6	112	2.6	16	1
	5	☐	MPS1410L-DIN-C	61.4	82.6	83.6	132.6	130	2.6	16	1
14.2	3	☐	MPS1420S-DIN-C	43.3	64.6	65.6	114.6	112	2.6	16	1
	5	☐	MPS1420L-DIN-C	61.3	82.6	83.6	132.6	130	2.6	16	1
14.3	3	☐	MPS1430S-DIN-C	43.2	64.6	65.6	114.6	112	2.6	16	1
	5	☐	MPS1430L-DIN-C	61.2	82.6	83.6	132.6	130	2.6	16	1
14.4	3	☐	MPS1440S-DIN-C	43.0	64.6	65.6	114.6	112	2.6	16	1
	5	☐	MPS1440L-DIN-C	61.0	82.6	83.6	132.6	130	2.6	16	1
14.5	3	☐	MPS1450S-DIN-C	42.9	64.6	65.6	114.6	112	2.6	16	1
	5	☐	MPS1450L-DIN-C	60.9	82.6	83.6	132.6	130	2.6	16	1
14.6	3	☐	MPS1460S-DIN-C	42.8	64.7	65.7	114.7	112	2.7	16	1
	5	☐	MPS1460L-DIN-C	60.8	82.7	83.7	132.7	130	2.7	16	1
14.7	3	☐	MPS1470S-DIN-C	42.6	64.7	65.7	114.7	112	2.7	16	1
	5	☐	MPS1470L-DIN-C	60.6	82.7	83.7	132.7	130	2.7	16	1
14.8	3	☐	MPS1480S-DIN-C	42.5	64.7	65.7	114.7	112	2.7	16	1
	5	☐	MPS1480L-DIN-C	60.5	82.7	83.7	132.7	130	2.7	16	1
14.9	3	☐	MPS1490S-DIN-C	42.4	64.7	65.7	114.7	112	2.7	16	1
	5	☐	MPS1490L-DIN-C	60.4	82.7	83.7	132.7	130	2.7	16	1
15.0	3	☐	MPS1500S-DIN-C	42.2	64.7	65.7	114.7	112	2.7	16	1
	5	☐	MPS1500L-DIN-C	60.2	82.7	83.7	132.7	130	2.7	16	1
15.1	3	☐	MPS1510S-DIN-C	42.1	64.7	65.7	114.7	112	2.7	16	1
	5	☐	MPS1510L-DIN-C	60.1	82.7	83.7	132.7	130	2.7	16	1
15.2	3	☐	MPS1520S-DIN-C	42.0	64.8	65.8	114.8	112	2.8	16	1
	5	☐	MPS1520L-DIN-C	60.0	82.8	83.8	132.8	130	2.8	16	1
15.3	3	☐	MPS1530S-DIN-C	41.8	64.8	65.8	114.8	112	2.8	16	1
	5	☐	MPS1530L-DIN-C	59.8	82.8	83.8	132.8	130	2.8	16	1
15.4	3	☐	MPS1540S-DIN-C	41.7	64.8	65.8	114.8	112	2.8	16	1
	5	☐	MPS1540L-DIN-C	59.7	82.8	83.8	132.8	130	2.8	16	1
15.5	3	☐	MPS1550S-DIN-C	41.6	64.8	65.8	114.8	112	2.8	16	1
	5	☐	MPS1550L-DIN-C	59.6	82.8	83.8	132.8	130	2.8	16	1
15.6	3	☐	MPS1560S-DIN-C	41.4	64.8	65.8	114.8	112	2.8	16	1
	5	☐	MPS1560L-DIN-C	59.4	82.8	83.8	132.8	130	2.8	16	1
15.7	3	☐	MPS1570S-DIN-C	41.3	64.9	65.9	114.9	112	2.9	16	1
	5	☐	MPS1570L-DIN-C	59.3	82.9	83.9	132.9	130	2.9	16	1
15.8	3	☐	MPS1580S-DIN-C	41.2	64.9	65.9	114.9	112	2.9	16	1
	5	☐	MPS1580L-DIN-C	59.2	82.9	83.9	132.9	130	2.9	16	1
15.9	3	☐	MPS1590S-DIN-C	41.0	64.9	65.9	114.9	112	2.9	16	1
	5	☐	MPS1590L-DIN-C	59.0	82.9	83.9	132.9	130	2.9	16	1
16.0	3	☐	MPS1600S-DIN-C	40.9	64.9	65.9	114.9	112	2.9	16	2
	5	☐	MPS1600L-DIN-C	58.9	82.9	83.9	132.9	130	2.9	16	2
16.1	3	☐	MPS1610S-DIN-C	48.8	72.9	73.9	122.9	120	2.9	18	1
	5	☐	MPS1610L-DIN-C	68.8	92.9	93.9	142.9	140	2.9	18	1

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
16.2	3	☐	MPS1620S-DIN-C	48.6	72.9	73.9	122.9	120	2.9	18	1
	5	☐	MPS1620L-DIN-C	68.6	92.9	93.9	142.9	140	2.9	18	1
16.3	3	☐	MPS1630S-DIN-C	48.5	73.0	74.0	123.0	120	3.0	18	1
	5	☐	MPS1630L-DIN-C	68.5	93.0	94.0	143.0	140	3.0	18	1
16.4	3	☐	MPS1640S-DIN-C	48.4	73.0	74.0	123.0	120	3.0	18	1
	5	☐	MPS1640L-DIN-C	68.4	93.0	94.0	143.0	140	3.0	18	1
16.5	3	☐	MPS1650S-DIN-C	48.3	73.0	74.0	123.0	120	3.0	18	1
	5	☐	MPS1650L-DIN-C	68.3	93.0	94.0	143.0	140	3.0	18	1
16.6	3	☐	MPS1660S-DIN-C	48.1	73.0	74.0	123.0	120	3.0	18	1
	5	☐	MPS1660L-DIN-C	68.1	93.0	94.0	143.0	140	3.0	18	1
16.7	3	☐	MPS1670S-DIN-C	48.0	73.0	74.0	123.0	120	3.0	18	1
	5	☐	MPS1670L-DIN-C	68.0	93.0	94.0	143.0	140	3.0	18	1
16.8	3	☐	MPS1680S-DIN-C	47.9	73.1	74.1	123.1	120	3.1	18	1
	5	☐	MPS1680L-DIN-C	67.9	93.1	94.1	143.1	140	3.1	18	1
16.9	3	☐	MPS1690S-DIN-C	47.7	73.1	74.1	123.1	120	3.1	18	1
	5	☐	MPS1690L-DIN-C	67.7	93.1	94.1	143.1	140	3.1	18	1
17.0	3	☐	MPS1700S-DIN-C	47.6	73.1	74.1	123.1	120	3.1	18	1
	5	☐	MPS1700L-DIN-C	67.6	93.1	94.1	143.1	140	3.1	18	1
17.1	3	☐	MPS1710S-DIN-C	47.5	73.1	74.1	123.1	120	3.1	18	1
	5	☐	MPS1710L-DIN-C	67.5	93.1	94.1	143.1	140	3.1	18	1
17.2	3	☐	MPS1720S-DIN-C	47.3	73.1	74.1	123.1	120	3.1	18	1
	5	☐	MPS1720L-DIN-C	67.3	93.1	94.1	143.1	140	3.1	18	1
17.3	3	☐	MPS1730S-DIN-C	47.2	73.1	74.1	123.1	120	3.1	18	1
	5	☐	MPS1730L-DIN-C	67.2	93.1	94.1	143.1	140	3.1	18	1
17.4	3	☐	MPS1740S-DIN-C	47.1	73.2	74.2	123.2	120	3.2	18	1
	5	☐	MPS1740L-DIN-C	67.1	93.2	94.2	143.2	140	3.2	18	1
17.5	3	☐	MPS1750S-DIN-C	46.9	73.2	74.2	123.2	120	3.2	18	1
	5	☐	MPS1750L-DIN-C	66.9	93.2	94.2	143.2	140	3.2	18	1
17.6	3	☐	MPS1760S-DIN-C	46.8	73.2	74.2	123.2	120	3.2	18	1
	5	☐	MPS1760L-DIN-C	66.8	93.2	94.2	143.2	140	3.2	18	1
17.7	3	☐	MPS1770S-DIN-C	46.7	73.2	74.2	123.2	120	3.2	18	1
	5	☐	MPS1770L-DIN-C	66.7	93.2	94.2	143.2	140	3.2	18	1
17.8	3	☐	MPS1780S-DIN-C	46.5	73.2	74.2	123.2	120	3.2	18	1
	5	☐	MPS1780L-DIN-C	66.5	93.2	94.2	143.2	140	3.2	18	1
17.9	3	☐	MPS1790S-DIN-C	46.4	73.3	74.3	123.3	120	3.3	18	1
	5	☐	MPS1790L-DIN-C	66.4	93.3	94.3	143.3	140	3.3	18	1
18.0	3	☐	MPS1800S-DIN-C	46.3	73.3	74.3	123.3	120	3.3	18	2
	5	☐	MPS1800L-DIN-C	66.3	93.3	94.3	143.3	140	3.3	18	2
18.1	3	☐	MPS1810S-DIN-C	52.1	79.3	80.3	131.3	128	3.3	20	1
	5	☐	MPS1810L-DIN-C	74.1	101.3	102.3	153.3	150	3.3	20	1
18.2	3	☐	MPS1820S-DIN-C	52.0	79.3	80.3	131.3	128	3.3	20	1
	5	☐	MPS1820L-DIN-C	74.0	101.3	102.3	153.3	150	3.3	20	1
18.3	3	☐	MPS1830S-DIN-C	51.9	79.3	80.3	131.3	128	3.3	20	1
	5	☐	MPS1830L-DIN-C	73.9	101.3	102.3	153.3	150	3.3	20	1
18.4	3	☐	MPS1840S-DIN-C	51.7	79.3	80.3	131.3	128	3.3	20	1
	5	☐	MPS1840L-DIN-C	73.7	101.3	102.3	153.3	150	3.3	20	1
18.5	3	☐	MPS1850S-DIN-C	51.6	79.4	80.4	131.4	128	3.4	20	1
	5	☐	MPS1850L-DIN-C	73.6	101.4	102.4	153.4	150	3.4	20	1
18.6	3	☐	MPS1860S-DIN-C	51.5	79.4	80.4	131.4	128	3.4	20	1
	5	☐	MPS1860L-DIN-C	73.5	101.4	102.4	153.4	150	3.4	20	1
18.7	3	☐	MPS1870S-DIN-C	51.4	79.4	80.4	131.4	128	3.4	20	1
	5	☐	MPS1870L-DIN-C	73.4	101.4	102.4	153.4	150	3.4	20	1
18.8	3	☐	MPS1880S-DIN-C	51.2	79.4	80.4	131.4	128	3.4	20	1
	5	☐	MPS1880L-DIN-C	73.2	101.4	102.4	153.4	150	3.4	20	1
18.9	3	☐	MPS1890S-DIN-C	51.1	79.4	80.4	131.4	128	3.4	20	1
	5	☐	MPS1890L-DIN-C	73.1	101.4	102.4	153.4	150	3.4	20	1

☐ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
19.0	3	☐	MPS1900S-DIN-C	51.0	79.5	80.5	131.5	128	3.5	20	1
	5	☐	MPS1900L-DIN-C	73.0	101.5	102.5	153.5	150	3.5	20	1
19.1	3	☐	MPS1910S-DIN-C	50.8	79.5	80.5	131.5	128	3.5	20	1
	5	☐	MPS1910L-DIN-C	72.8	101.5	102.5	153.5	150	3.5	20	1
19.2	3	☐	MPS1920S-DIN-C	50.7	79.5	80.5	131.5	128	3.5	20	1
	5	☐	MPS1920L-DIN-C	72.7	101.5	102.5	153.5	150	3.5	20	1
19.3	3	☐	MPS1930S-DIN-C	50.6	79.5	80.5	131.5	128	3.5	20	1
	5	☐	MPS1930L-DIN-C	72.6	101.5	102.5	153.5	150	3.5	20	1
19.4	3	☐	MPS1940S-DIN-C	50.4	79.5	80.5	131.5	128	3.5	20	1
	5	☐	MPS1940L-DIN-C	72.4	101.5	102.5	153.5	150	3.5	20	1
19.5	3	☐	MPS1950S-DIN-C	50.3	79.5	80.5	131.5	128	3.5	20	1
	5	☐	MPS1950L-DIN-C	72.3	101.5	102.5	153.5	150	3.5	20	1
19.6	3	☐	MPS1960S-DIN-C	50.2	79.6	80.6	131.6	128	3.6	20	1
	5	☐	MPS1960L-DIN-C	72.2	101.6	102.6	153.6	150	3.6	20	1
19.7	3	☐	MPS1970S-DIN-C	50.0	79.6	80.6	131.6	128	3.6	20	1
	5	☐	MPS1970L-DIN-C	72.0	101.6	102.6	153.6	150	3.6	20	1
19.8	3	☐	MPS1980S-DIN-C	49.9	79.6	80.6	131.6	128	3.6	20	1
	5	☐	MPS1980L-DIN-C	71.9	101.6	102.6	153.6	150	3.6	20	1
19.9	3	☐	MPS1990S-DIN-C	49.8	79.6	80.6	131.6	128	3.6	20	1
	5	☐	MPS1990L-DIN-C	71.8	101.6	102.6	153.6	150	3.6	20	1
20.0	3	☐	MPS2000S-DIN-C	49.6	79.6	80.6	131.6	128	3.6	20	2
	5	☐	MPS2000L-DIN-C	71.6	101.6	102.6	153.6	150	3.6	20	2

CONDICIONES DE CORTE ➢ M077
DATOS TÉCNICOS ➢ P001

MSL

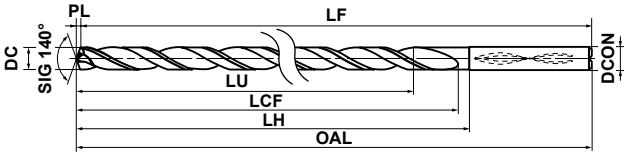
Broca extra larga con doble margen

- Desde 20—30 L/D profundidad del agujero.
- Broca estándar MSL para un taladrado fiable y seguro.

P | M | K | N | S | H

Refrigeración interna

●Tipo mango cilíndrico



3.0≤DC≤6.0	6.0<DC≤10.0	10.0<DC≤14.0
0 −0.012	0 −0.015	0 −0.018
0 −0.008	0 −0.009	0 −0.011

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON
3.0	20	□	MSL0300-L20C	60.5	69.5	72.5	109.5	109	0.5	6
	25	□	MSL0300-L25C	75.5	84.5	87.5	124.5	124	0.5	6
	30	□	MSL0300-L30C	90.5	99.5	102.5	139.5	139	0.5	6
3.1	20	□	MSL0310-L20C	62.6	81.6	84.6	121.6	121	0.6	6
	25	□	MSL0310-L25C	78.1	98.6	101.6	138.6	138	0.6	6
	30	□	MSL0310-L30C	93.6	116.6	119.6	156.6	156	0.6	6
3.2	20	□	MSL0320-L20C	64.6	81.6	84.6	121.6	121	0.6	6
	25	□	MSL0320-L25C	80.6	98.6	101.6	138.6	138	0.6	6
	30	□	MSL0320-L30C	96.6	116.6	119.6	156.6	156	0.6	6
3.3	20	□	MSL0330-L20C	66.6	81.6	84.6	121.6	121	0.6	6
	25	□	MSL0330-L25C	83.1	98.6	101.6	138.6	138	0.6	6
	30	□	MSL0330-L30C	99.6	116.6	119.6	156.6	156	0.6	6
3.4	20	□	MSL0340-L20C	68.6	81.6	84.6	121.6	121	0.6	6
	25	□	MSL0340-L25C	85.6	98.6	101.6	138.6	138	0.6	6
	30	□	MSL0340-L30C	102.6	116.6	119.6	156.6	156	0.6	6
3.5	20	□	MSL0350-L20C	70.6	81.6	84.6	121.6	121	0.6	6
	25	□	MSL0350-L25C	88.1	98.6	101.6	138.6	138	0.6	6
	30	□	MSL0350-L30C	105.6	116.6	119.6	156.6	156	0.6	6
3.6	20	□	MSL0360-L20C	72.7	92.7	95.7	132.7	132	0.7	6
	25	□	MSL0360-L25C	90.7	112.7	115.7	152.7	152	0.7	6
	30	□	MSL0360-L30C	108.7	132.7	135.7	172.7	172	0.7	6
3.7	20	□	MSL0370-L20C	74.7	92.7	95.7	132.7	132	0.7	6
	25	□	MSL0370-L25C	93.2	112.7	115.7	152.7	152	0.7	6
	30	□	MSL0370-L30C	111.7	132.7	135.7	172.7	172	0.7	6
3.8	20	□	MSL0380-L20C	76.7	92.7	95.7	132.7	132	0.7	6
	25	□	MSL0380-L25C	95.7	112.7	115.7	152.7	152	0.7	6
	30	□	MSL0380-L30C	114.7	132.7	135.7	172.7	172	0.7	6
3.9	20	□	MSL0390-L20C	78.7	92.7	95.7	132.7	132	0.7	6
	25	□	MSL0390-L25C	98.2	112.7	115.7	152.7	152	0.7	6
	30	□	MSL0390-L30C	117.7	132.7	135.7	172.7	172	0.7	6
4.0	20	□	MSL0400-L20C	80.7	92.7	95.7	132.7	132	0.7	6
	25	□	MSL0400-L25C	100.7	112.7	115.7	152.7	152	0.7	6
	30	□	MSL0400-L30C	120.7	132.7	135.7	172.7	172	0.7	6
4.1	20	□	MSL0410-L20C	82.7	104.7	107.7	144.7	144	0.7	6
	25	□	MSL0410-L25C	103.2	126.7	129.7	166.7	166	0.7	6
	30	□	MSL0410-L30C	123.7	149.7	152.7	189.7	189	0.7	6
4.2	20	□	MSL0420-L20C	84.8	104.8	107.8	144.8	144	0.8	6
	25	□	MSL0420-L25C	105.8	126.8	129.8	166.8	166	0.8	6
	30	□	MSL0420-L30C	126.8	149.8	152.8	189.8	189	0.8	6
4.3	20	□	MSL0430-L20C	86.8	104.8	107.8	144.8	144	0.8	6
	25	□	MSL0430-L25C	108.3	126.8	129.8	166.8	166	0.8	6
	30	□	MSL0430-L30C	129.8	149.8	152.8	189.8	189	0.8	6

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON
4.4	20	□	MSL0440-L20C	88.8	104.8	107.8	144.8	144	0.8	6
	25	□	MSL0440-L25C	110.8	126.8	129.8	166.8	166	0.8	6
	30	□	MSL0440-L30C	132.8	149.8	152.8	189.8	189	0.8	6
4.5	20	□	MSL0450-L20C	90.8	104.8	107.8	144.8	144	0.8	6
	25	□	MSL0450-L25C	113.3	126.8	129.8	166.8	166	0.8	6
	30	□	MSL0450-L30C	135.8	149.8	152.8	189.8	189	0.8	6
4.6	20	□	MSL0460-L20C	92.8	115.8	118.8	155.8	155	0.8	6
	25	□	MSL0460-L25C	115.8	140.8	143.8	180.8	180	0.8	6
	30	□	MSL0460-L30C	138.8	165.8	168.8	205.8	205	0.8	6
4.7	20	□	MSL0470-L20C	94.9	115.9	118.9	155.9	155	0.9	6
	25	□	MSL0470-L25C	118.4	140.9	143.9	180.9	180	0.9	6
	30	□	MSL0470-L30C	141.9	165.9	168.9	205.9	205	0.9	6
4.8	20	□	MSL0480-L20C	96.9	115.9	118.9	155.9	155	0.9	6
	25	□	MSL0480-L25C	120.9	140.9	143.9	180.9	180	0.9	6
	30	□	MSL0480-L30C	144.9	165.9	168.9	205.9	205	0.9	6
4.9	20	□	MSL0490-L20C	98.9	115.9	118.9	155.9	155	0.9	6
	25	□	MSL0490-L25C	123.4	140.9	143.9	180.9	180	0.9	6
	30	□	MSL0490-L30C	147.9	165.9	168.9	205.9	205	0.9	6
5.0	20	□	MSL0500-L20C	100.9	115.9	118.9	155.9	155	0.9	6
	25	□	MSL0500-L25C	125.9	140.9	143.9	180.9	180	0.9	6
	30	□	MSL0500-L30C	150.9	165.9	168.9	205.9	205	0.9	6
5.1	20	□	MSL0510-L20C	102.9	127.9	130.9	167.9	167	0.9	6
	25	□	MSL0510-L25C	128.4	154.9	157.9	194.9	194	0.9	6
	30	□	MSL0510-L30C	153.9	182.9	185.9	222.9	222	0.9	6
5.2	20	□	MSL0520-L20C	104.9	127.9	130.9	167.9	167	0.9	6
	25	□	MSL0520-L25C	130.9	154.9	157.9	194.9	194	0.9	6
	30	□	MSL0520-L30C	156.9	182.9	185.9	222.9	222	0.9	6
5.3	20	□	MSL0530-L20C	107.0	128.0	131.0	168.0	167	1.0	6
	25	□	MSL0530-L25C	133.5	155.0	158.0	195.0	194	1.0	6
	30	□	MSL0530-L30C	160.0	183.0	186.0	223.0	222	1.0	6
5.4	20	□	MSL0540-L20C	109.0	128.0	131.0	168.0	167	1.0	6
	25	□	MSL0540-L25C	136.0	155.0	158.0	195.0	194	1.0	6
	30	□	MSL0540-L30C	163.0	183.0	186.0	223.0	222	1.0	6
5.5	20	□	MSL0550-L20C	111.0	128.0	131.0	168.0	167	1.0	6
	25	□	MSL0550-L25C	138.5	155.0	158.0	195.0	194	1.0	6
	30	□	MSL0550-L30C	166.0	183.0	186.0	223.0	222	1.0	6
5.6	20	□	MSL0560-L20C	113.0	139.0	142.0	179.0	178	1.0	6
	25	□	MSL0560-L25C	141.0	169.0	172.0	209.0	208	1.0	6
	30	□	MSL0560-L30C	169.0	199.0	202.0	239.0	238	1.0	6
5.7	20	□	MSL0570-L20C	115.0	139.0	142.0	179.0	178	1.0	6
	25	□	MSL0570-L25C	143.5	169.0	172.0	209.0	208	1.0	6
	30	□	MSL0570-L30C	172.0	199.0	202.0	239.0	238	1.0	6

⚠ Las referencias marcadas en gris (MPS, MSL) van a ser descatalogadas y sustituidas por la gama MPS1, por ello le recomendamos cambiar todas las referencias gradualmente en los próximos pedidos.

□ : **A fabricar según demanda.**

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON
5.8	20	□	**MSL0580-L20C**	117.1	139.1	142.1	179.1	178	1.1	6
	25	□	**MSL0580-L25C**	146.1	169.1	172.1	209.1	208	1.1	6
	30	□	**MSL0580-L30C**	175.1	199.1	202.1	239.1	238	1.1	6
5.9	20	□	**MSL0590-L20C**	119.1	139.1	142.1	179.1	178	1.1	6
	25	□	**MSL0590-L25C**	148.6	169.1	172.1	209.1	208	1.1	6
	30	□	**MSL0590-L30C**	178.1	199.1	202.1	239.1	238	1.1	6
6.0	20	□	**MSL0600-L20C**	121.1	139.1	142.1	179.1	178	1.1	6
	25	□	**MSL0600-L25C**	151.1	169.1	172.1	209.1	208	1.1	6
	30	□	**MSL0600-L30C**	181.1	199.1	202.1	239.1	238	1.1	6
6.1	20	□	**MSL0610-L20C**	123.1	151.1	154.1	191.1	190	1.1	8
	25	□	**MSL0610-L25C**	153.6	183.1	186.1	223.1	222	1.1	8
	30	□	**MSL0610-L30C**	184.1	216.1	219.1	256.1	255	1.1	8
6.2	20	□	**MSL0620-L20C**	125.1	151.1	154.1	191.1	190	1.1	8
	25	□	**MSL0620-L25C**	156.1	183.1	186.1	223.1	222	1.1	8
	30	□	**MSL0620-L30C**	187.1	216.1	219.1	256.1	255	1.1	8
6.3	20	□	**MSL0630-L20C**	127.1	151.1	154.1	191.1	190	1.1	8
	25	□	**MSL0630-L25C**	158.6	183.1	186.1	223.1	222	1.1	8
	30	□	**MSL0630-L30C**	190.1	216.1	219.1	256.1	255	1.1	8
6.4	20	□	**MSL0640-L20C**	129.2	151.2	154.2	191.2	190	1.2	8
	25	□	**MSL0640-L25C**	161.2	183.2	186.2	223.2	222	1.2	8
	30	□	**MSL0640-L30C**	193.2	216.2	219.2	256.2	255	1.2	8
6.5	20	□	**MSL0650-L20C**	131.2	151.2	154.2	191.2	190	1.2	8
	25	□	**MSL0650-L25C**	163.7	183.2	186.2	223.2	222	1.2	8
	30	□	**MSL0650-L30C**	196.2	216.2	219.2	256.2	255	1.2	8
6.6	20	□	**MSL0660-L20C**	133.2	162.2	165.2	202.2	201	1.2	8
	25	□	**MSL0660-L25C**	166.2	197.2	200.2	237.2	236	1.2	8
	30	□	**MSL0660-L30C**	199.2	232.2	235.2	272.2	271	1.2	8
6.7	20	□	**MSL0670-L20C**	135.2	162.2	165.2	202.2	201	1.2	8
	25	□	**MSL0670-L25C**	168.7	197.2	200.2	237.2	236	1.2	8
	30	□	**MSL0670-L30C**	202.2	232.2	235.2	272.2	271	1.2	8
6.8	20	□	**MSL0680-L20C**	137.2	162.2	165.2	202.2	201	1.2	8
	25	□	**MSL0680-L25C**	171.2	197.2	200.2	237.2	236	1.2	8
	30	□	**MSL0680-L30C**	205.2	232.2	235.2	272.2	271	1.2	8
6.9	20	□	**MSL0690-L20C**	139.3	162.3	165.3	202.3	201	1.3	8
	25	□	**MSL0690-L25C**	173.8	197.3	200.3	237.3	236	1.3	8
	30	□	**MSL0690-L30C**	208.3	232.3	235.3	272.3	271	1.3	8
7.0	20	□	**MSL0700-L20C**	141.3	162.3	165.3	202.3	201	1.3	8
	25	□	**MSL0700-L25C**	176.3	197.3	200.3	237.3	236	1.3	8
	30	□	**MSL0700-L30C**	211.3	232.3	235.3	272.3	271	1.3	8
7.1	20	□	**MSL0710-L20C**	143.3	174.3	177.3	214.3	213	1.3	8
	25	□	**MSL0710-L25C**	178.8	211.3	214.3	251.3	250	1.3	8
	30	□	**MSL0710-L30C**	214.3	249.3	252.3	289.3	288	1.3	8
7.2	20	□	**MSL0720-L20C**	145.3	174.3	177.3	214.3	213	1.3	8
	25	□	**MSL0720-L25C**	181.3	211.3	214.3	251.3	250	1.3	8
	30	□	**MSL0720-L30C**	217.3	249.3	252.3	289.3	288	1.3	8
7.3	20	□	**MSL0730-L20C**	147.3	174.3	177.3	214.3	213	1.3	8
	25	□	**MSL0730-L25C**	183.8	211.3	214.3	251.3	250	1.3	8
	30	□	**MSL0730-L30C**	220.3	249.3	252.3	289.3	288	1.3	8
7.4	20	□	**MSL0740-L20C**	149.3	174.3	177.3	214.3	213	1.3	8
	25	□	**MSL0740-L25C**	186.3	211.3	214.3	251.3	250	1.3	8
	30	□	**MSL0740-L30C**	223.3	249.3	252.3	289.3	288	1.3	8
7.5	20	□	**MSL0750-L20C**	151.4	174.4	177.4	214.4	213	1.4	8
	25	□	**MSL0750-L25C**	188.9	211.4	214.4	251.4	250	1.4	8
	30	□	**MSL0750-L30C**	226.4	249.4	252.4	289.4	288	1.4	8

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON
7.6	20	□	**MSL0760-L20C**	153.4	185.4	188.4	225.4	224	1.4	8
	25	□	**MSL0760-L25C**	191.4	225.4	228.4	265.4	264	1.4	8
	30	□	**MSL0760-L30C**	229.4	265.4	268.4	305.4	304	1.4	8
7.7	20	□	**MSL0770-L20C**	155.4	185.4	188.4	225.4	224	1.4	8
	25	□	**MSL0770-L25C**	193.9	225.4	228.4	265.4	264	1.4	8
	30	□	**MSL0770-L30C**	232.4	265.4	268.4	305.4	304	1.4	8
7.8	20	□	**MSL0780-L20C**	157.4	185.4	188.4	225.4	224	1.4	8
	25	□	**MSL0780-L25C**	196.4	225.4	228.4	265.4	264	1.4	8
	30	□	**MSL0780-L30C**	235.4	265.4	268.4	305.4	304	1.4	8
7.9	20	□	**MSL0790-L20C**	159.4	185.4	188.4	225.4	224	1.4	8
	25	□	**MSL0790-L25C**	198.9	225.4	228.4	265.4	264	1.4	8
	30	□	**MSL0790-L30C**	238.4	265.4	268.4	305.4	304	1.4	8
8.0	20	□	**MSL0800-L20C**	161.5	185.5	188.5	225.5	224	1.5	8
	25	□	**MSL0800-L25C**	201.5	225.5	228.5	265.5	264	1.5	8
	30	□	**MSL0800-L30C**	241.5	265.5	268.5	305.5	304	1.5	8
8.1	20	□	**MSL0810-L20C**	163.5	197.5	200.5	241.5	240	1.5	10
	25	□	**MSL0810-L25C**	204.0	239.5	242.5	283.5	282	1.5	10
	30	□	**MSL0810-L30C**	244.5	281.5	284.5	325.5	324	1.5	10
8.2	20	□	**MSL0820-L20C**	165.5	197.5	200.5	241.5	240	1.5	10
	25	□	**MSL0820-L25C**	206.5	239.5	242.5	283.5	282	1.5	10
	30	□	**MSL0820-L30C**	247.5	281.5	284.5	325.5	324	1.5	10
8.3	20	□	**MSL0830-L20C**	167.5	197.5	200.5	241.5	240	1.5	10
	25	□	**MSL0830-L25C**	209.0	239.5	242.5	283.5	282	1.5	10
	30	□	**MSL0830-L30C**	250.5	281.5	284.5	325.5	324	1.5	10
8.4	20	□	**MSL0840-L20C**	169.5	197.5	200.5	241.5	240	1.5	10
	25	□	**MSL0840-L25C**	211.5	239.5	242.5	283.5	282	1.5	10
	30	□	**MSL0840-L30C**	253.5	281.5	284.5	325.5	324	1.5	10
8.5	20	□	**MSL0850-L20C**	171.5	197.5	200.5	241.5	240	1.5	10
	25	□	**MSL0850-L25C**	214.0	239.5	242.5	283.5	282	1.5	10
	30	□	**MSL0850-L30C**	256.5	281.5	284.5	325.5	324	1.5	10
8.6	20	□	**MSL0860-L20C**	173.6	208.6	211.6	252.6	251	1.6	10
	25	□	**MSL0860-L25C**	216.6	253.6	256.6	297.6	296	1.6	10
	30	□	**MSL0860-L30C**	259.6	297.6	300.6	341.6	340	1.6	10
8.7	20	□	**MSL0870-L20C**	175.6	208.6	211.6	252.6	251	1.6	10
	25	□	**MSL0870-L25C**	219.1	253.6	256.6	297.6	296	1.6	10
	30	□	**MSL0870-L30C**	262.6	297.6	300.6	341.6	340	1.6	10
8.8	20	□	**MSL0880-L20C**	177.6	208.6	211.6	252.6	251	1.6	10
	25	□	**MSL0880-L25C**	221.6	253.6	256.6	297.6	296	1.6	10
	30	□	**MSL0880-L30C**	265.6	297.6	300.6	341.6	340	1.6	10
8.9	20	□	**MSL0890-L20C**	179.6	208.6	211.6	252.6	251	1.6	10
	25	□	**MSL0890-L25C**	224.1	253.6	256.6	297.6	296	1.6	10
	30	□	**MSL0890-L30C**	268.6	297.6	300.6	341.6	340	1.6	10
9.0	20	□	**MSL0900-L20C**	181.6	208.6	211.6	252.6	251	1.6	10
	25	□	**MSL0900-L25C**	226.6	253.6	256.6	297.6	296	1.6	10
	30	□	**MSL0900-L30C**	271.6	297.6	300.6	341.6	340	1.6	10
9.1	20	□	**MSL0910-L20C**	183.7	220.7	223.7	264.7	263	1.7	10
	25	□	**MSL0910-L25C**	229.2	267.7	270.7	311.7	310	1.7	10
	30	□	**MSL0910-L30C**	274.7	315.7	318.7	359.7	358	1.7	10
9.2	20	□	**MSL0920-L20C**	185.7	220.7	223.7	264.7	263	1.7	10
	25	□	**MSL0920-L25C**	231.7	267.7	270.7	311.7	310	1.7	10
	30	□	**MSL0920-L30C**	277.7	315.7	318.7	359.7	358	1.7	10
9.3	20	□	**MSL0930-L20C**	187.7	220.7	223.7	264.7	263	1.7	10
	25	□	**MSL0930-L25C**	234.2	267.7	270.7	311.7	310	1.7	10
	30	□	**MSL0930-L30C**	280.7	315.7	318.7	359.7	358	1.7	10

CONDICIONES DE CORTE ➤ M077
DATOS TÉCNICOS ➤ P001

MSL

Broca extra larga con doble margen

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON
9.4	20	□	**MSL0940-L20C**	189.7	220.7	223.7	264.7	263	1.7	10
	25	□	**MSL0940-L25C**	236.7	267.7	270.7	311.7	310	1.7	10
	30	□	**MSL0940-L30C**	283.7	315.7	318.7	359.7	358	1.7	10
9.5	20	□	**MSL0950-L20C**	191.7	220.7	223.7	264.7	263	1.7	10
	25	□	**MSL0950-L25C**	239.2	267.7	270.7	311.7	310	1.7	10
	30	□	**MSL0950-L30C**	286.7	315.7	318.7	359.7	358	1.7	10
9.6	20	□	**MSL0960-L20C**	193.7	231.7	234.7	275.7	274	1.7	10
	25	□	**MSL0960-L25C**	241.7	281.7	284.7	325.7	324	1.7	10
	30	□	**MSL0960-L30C**	289.7	331.7	334.7	375.7	374	1.7	10
9.7	20	□	**MSL0970-L20C**	195.8	231.8	234.8	275.8	274	1.8	10
	25	□	**MSL0970-L25C**	244.3	281.8	284.8	325.8	324	1.8	10
	30	□	**MSL0970-L30C**	292.8	331.8	334.8	375.8	374	1.8	10
9.8	20	□	**MSL0980-L20C**	197.8	231.8	234.8	275.8	274	1.8	10
	25	□	**MSL0980-L25C**	246.8	281.8	284.8	325.8	324	1.8	10
	30	□	**MSL0980-L30C**	295.8	331.8	334.8	375.8	374	1.8	10
9.9	20	□	**MSL0990-L20C**	199.8	231.8	234.8	275.8	274	1.8	10
	25	□	**MSL0990-L25C**	249.3	281.8	284.8	325.8	324	1.8	10
	30	□	**MSL0990-L30C**	298.8	331.8	334.8	375.8	374	1.8	10
10.0	20	□	**MSL1000-L20C**	201.8	231.8	234.8	275.8	274	1.8	10
	25	□	**MSL1000-L25C**	251.8	281.8	284.8	325.8	324	1.8	10
	30	□	**MSL1000-L30C**	301.8	331.8	334.8	375.8	374	1.8	10
10.1	20	□	**MSL1010-L20C**	203.8	243.8	246.8	292.8	291	1.8	12
	25	□	**MSL1010-L25C**	254.3	295.8	298.8	344.8	343	1.8	12
10.2	20	□	**MSL1020-L20C**	205.9	243.9	246.9	292.9	291	1.9	12
	25	□	**MSL1020-L25C**	256.9	295.9	298.9	344.9	343	1.9	12
10.3	20	□	**MSL1030-L20C**	207.9	243.9	246.9	292.9	291	1.9	12
	25	□	**MSL1030-L25C**	259.4	295.9	298.9	344.9	343	1.9	12
10.4	20	□	**MSL1040-L20C**	209.9	243.9	246.9	292.9	291	1.9	12
	25	□	**MSL1040-L25C**	261.9	295.9	298.9	344.9	343	1.9	12
10.5	20	□	**MSL1050-L20C**	211.9	243.9	246.9	292.9	291	1.9	12
	25	□	**MSL1050-L25C**	264.4	295.9	298.9	344.9	343	1.9	12
10.6	20	□	**MSL1060-L20C**	213.9	254.9	257.9	303.9	302	1.9	12
	25	□	**MSL1060-L25C**	266.9	309.9	312.9	358.9	357	1.9	12
10.7	20	□	**MSL1070-L20C**	215.9	254.9	257.9	303.9	302	1.9	12
	25	□	**MSL1070-L25C**	269.4	309.9	312.9	358.9	357	1.9	12
10.8	20	□	**MSL1080-L20C**	218.0	255.0	258.0	304.0	302	2.0	12
	25	□	**MSL1080-L25C**	272.0	310.0	313.0	359.0	357	2.0	12
10.9	20	□	**MSL1090-L20C**	220.0	255.0	258.0	304.0	302	2.0	12
	25	□	**MSL1090-L25C**	274.5	310.0	313.0	359.0	357	2.0	12
11.0	20	□	**MSL1100-L20C**	222.0	255.0	258.0	304.0	302	2.0	12
	25	□	**MSL1100-L25C**	277.0	310.0	313.0	359.0	357	2.0	12
11.1	20	□	**MSL1110-L20C**	224.0	267.0	270.0	316.0	314	2.0	12
	25	□	**MSL1110-L25C**	279.5	324.0	327.0	373.0	371	2.0	12
11.2	20	□	**MSL1120-L20C**	226.0	267.0	270.0	316.0	314	2.0	12
	25	□	**MSL1120-L25C**	282.0	324.0	327.0	373.0	371	2.0	12
11.3	20	□	**MSL1130-L20C**	228.1	267.1	270.1	316.1	314	2.1	12
	25	□	**MSL1130-L25C**	284.6	324.1	327.1	373.1	371	2.1	12
11.4	20	□	**MSL1140-L20C**	230.1	267.1	270.1	316.1	314	2.1	12
	25	□	**MSL1140-L25C**	287.1	324.1	327.1	373.1	371	2.1	12
11.5	20	□	**MSL1150-L20C**	232.1	267.1	270.1	316.1	314	2.1	12
	25	□	**MSL1150-L25C**	289.6	324.1	327.1	373.1	371	2.1	12
11.6	20	□	**MSL1160-L20C**	234.1	278.1	281.1	327.1	325	2.1	12
	25	□	**MSL1160-L25C**	292.1	338.1	341.1	387.1	385	2.1	12

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON
11.7	20	□	**MSL1170-L20C**	236.1	278.1	281.1	327.1	325	2.1	12
	25	□	**MSL1170-L25C**	294.6	338.1	341.1	387.1	385	2.1	12
11.8	20	□	**MSL1180-L20C**	238.1	278.1	281.1	327.1	325	2.1	12
	25	□	**MSL1180-L25C**	297.1	338.1	341.1	387.1	385	2.1	12
11.9	20	□	**MSL1190-L20C**	240.2	278.2	281.2	327.2	325	2.2	12
	25	□	**MSL1190-L25C**	299.7	338.2	341.2	387.2	385	2.2	12
12.0	20	□	**MSL1200-L20C**	242.2	278.2	281.2	327.2	325	2.2	12
	25	□	**MSL1200-L25C**	302.2	338.2	341.2	387.2	385	2.2	12
12.1	20	□	**MSL1210-L20C**	244.2	290.2	293.2	339.2	337	2.2	14
12.2	20	□	**MSL1220-L20C**	246.2	290.2	293.2	339.2	337	2.2	14
12.3	20	□	**MSL1230-L20C**	248.2	290.2	293.2	339.2	337	2.2	14
12.4	20	□	**MSL1240-L20C**	250.3	290.3	293.3	339.3	337	2.3	14
12.5	20	□	**MSL1250-L20C**	252.3	290.3	293.3	339.3	337	2.3	14
12.6	20	□	**MSL1260-L20C**	254.3	301.3	304.3	350.3	348	2.3	14
12.7	20	□	**MSL1270-L20C**	256.3	301.3	304.3	350.3	348	2.3	14
12.8	20	□	**MSL1280-L20C**	258.3	301.3	304.3	350.3	348	2.3	14
12.9	20	□	**MSL1290-L20C**	260.3	301.3	304.3	350.3	348	2.3	14
13.0	20	□	**MSL1300-L20C**	262.4	301.4	304.4	350.4	348	2.4	14
13.1	20	□	**MSL1310-L20C**	264.4	313.4	316.4	362.4	360	2.4	14
13.2	20	□	**MSL1320-L20C**	266.4	313.4	316.4	362.4	360	2.4	14
13.3	20	□	**MSL1330-L20C**	268.4	313.4	316.4	362.4	360	2.4	14
13.4	20	□	**MSL1340-L20C**	270.4	313.4	316.4	362.4	360	2.4	14
13.5	20	□	**MSL1350-L20C**	272.5	313.5	316.5	362.5	360	2.5	14
13.6	20	□	**MSL1360-L20C**	274.5	324.5	327.5	373.5	371	2.5	14
13.7	20	□	**MSL1370-L20C**	276.5	324.5	327.5	373.5	371	2.5	14
13.8	20	□	**MSL1380-L20C**	278.5	324.5	327.5	373.5	371	2.5	14
13.9	20	□	**MSL1390-L20C**	280.5	324.5	327.5	373.5	371	2.5	14
14.0	20	□	**MSL1400-L20C**	282.5	324.5	327.5	373.5	371	2.5	14

□ : A fabricar según demanda.

MPS/MSL

CONDICIONES DE CORTE RECOMENDADAS

● BROCAS MPS (3xDC, 5xDC, 8xDC, 12xDC)

Material		Diámetro Broca / Condición / Dureza	ϕ3.0−ϕ6.0		ϕ6.0−ϕ10.0		ϕ10.0−ϕ14.0		ϕ14.0−ϕ20.0	
			Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)
P	Acero dulce	≤180HB	110 (50−120)	0.20 (0.15−0.25)	130 (80−140)	0.25 (0.20−0.35)	150 (90−170)	0.30 (0.20−0.40)	160 (100−180)	0.35 (0.20−0.40)
P	Acero al carbono Acero aleado	180−280HB	90 (50−100)	0.20 (0.15−0.25)	110 (70−120)	0.25 (0.20−0.35)	130 (80−140)	0.25 (0.20−0.40)	140 (100−150)	0.30 (0.20−0.40)
P	Acero al carbono Acero aleado	280−350HB	80 (40−90)	0.20 (0.15−0.30)	90 (60−110)	0.25 (0.15−0.30)	110 (70−130)	0.25 (0.15−0.40)	120 (90−140)	0.30 (0.20−0.40)
M	Acero inoxidable	≤200HB	50 (20−100)	0.10 (0.05−0.15)	60 (40−120)	0.20 (0.10−0.25)	70 (50−120)	0.25 (0.15−0.30)	80 (60−120)	0.25 (0.15−0.30)
K	Fundición	Resistencia a la tracción ≤350MPa	100 (70−120)	0.25 (0.15−0.30)	130 (100−140)	0.30 (0.20−0.35)	150 (110−160)	0.35 (0.25−0.40)	160 (120−170)	0.35 (0.25−0.40)
K	Fundición dúctil	Resistencia a la tracción ≤450MPa	60 (30−80)	0.20 (0.15−0.25)	70 (40−90)	0.20 (0.15−0.30)	90 (50−110)	0.25 (0.20−0.40)	100 (60−110)	0.3 (0.20−0.40)
S	Aleaciones termo resistentes	–	20 (10−25)	0.10 (0.05−0.15)	25 (15−30)	0.12 (0.05−0.15)	25 (15−30)	0.15 (0.10−0.20)	30 (25−35)	0.15 (0.10−0.20)

● BROCA MPS (L/D=15−30), BROCA MSL (L/D=20−30)

Material		Diámetro Broca / Condición / Dureza	ϕ3.0−ϕ6.0		ϕ6.0−ϕ10.0		ϕ10.0−ϕ14.0	
			Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)
P	Acero dulce	≤180HB	85 (35−100)	0.20 (0.15−0.25)	85 (45−120)	0.25 (0.15−0.35)	90 (55−120)	0.30 (0.20−0.35)
P	Acero al carbono Acero aleado	180−280HB	80 (40−95)	0.20 (0.15−0.25)	90 (50−120)	0.25 (0.20−0.35)	90 (60−130)	0.30 (0.15−0.35)
P	Acero al carbono Acero aleado	280−350HB	75 (35−80)	0.15 (0.15−0.20)	80 (45−115)	0.20 (0.15−0.25)	85 (55−115)	0.25 (0.15−0.30)
M	Acero inoxidable	≤200HB	50 (20−80)	0.10 (0.05−0.15)	60 (20−90)	0.12 (0.05−0.15)	70 (20−90)	0.15 (0.10−0.20)
K	Fundición	Resistencia a la tracción ≤350MPa	70 (40−85)	0.25 (0.15−0.30)	75 (50−90)	0.30 (0.20−0.35)	80 (50−95)	0.35 (0.20−0.40)
K	Fundición dúctil	Resistencia a la tracción ≤450MPa	65 (35−80)	0.20 (0.15−0.25)	70 (45−85)	0.25 (0.15−0.30)	75 (45−90)	0.30 (0.20−0.35)
S	Aleaciones termo resistentes	–	20 (10−25)	0.10 (0.05−0.15)	25 (15−30)	0.12 (0.05−0.15)	25 (15−30)	0.15 (0.10−0.20)

● BROCA MPS (L/D=35−40)

Material		Diámetro Broca / Condición / Dureza	ϕ3.0−ϕ4.0		ϕ5.0−ϕ6.0		ϕ6.0−ϕ9.0	
			Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)
P	Acero dulce	≤180HB	60 (50−70)	0.18 (0.13−0.20)	70 (55−80)	0.20 (0.15−0.23)	75 (60−85)	0.25 (0.18−0.28)
P	Acero al carbono Acero aleado	180−280HB	55 (40−65)	0.15 (0.10−0.18)	65 (45−75)	0.18 (0.13−0.22)	70 (55−80)	0.23 (0.15−0.25)
P	Acero al carbono Acero aleado	280−350HB	50 (40−60)	0.12 (0.08−0.15)	55 (40−65)	0.17 (0.13−0.20)	60 (40−75)	0.20 (0.15−0.23)
M	Acero inoxidable	≤200HB	35 (30−45)	0.10 (0.07−0.15)	40 (30−50)	0.12 (0.08−0.15)	45 (30−60)	0.15 (0.13−0.20)
K	Fundición	Resistencia a la tracción ≤350MPa	55 (35−70)	0.15 (0.10−0.20)	60 (40−65)	0.20 (0.15−0.23)	60 (45−70)	0.23 (0.18−0.28)
K	Fundición dúctil	Resistencia a la tracción ≤450MPa	45 (30−60)	0.12 (0.08−0.15)	50 (40−60)	0.17 (0.13−0.20)	55 (40−65)	0.20 (0.15−0.23)
S	Aleaciones termo resistentes	–	15 (10−25)	0.07 (0.05−0.10)	20 (10−25)	0.07 (0.05−0.10)	20 (10−25)	0.10 (0.06−0.12)

Las condiciones de mecanizado pueden variar bastante, por favor ver la tabla de arriba como referencia de punto de partida y ajustar los valores según las condiciones.

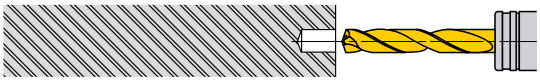
⚠ Las referencias marcadas en gris (MPS, MSL) van a ser descatalogadas y sustituidas por la gama MPS1, por ello le recomendamos cambiar todas las referencias gradualmente en los próximos pedidos.

MPS/MSL

CÓMO UTILIZAR BROCAS LARGA MPS/MSL

TALADRADO DE CARA PLANA ●Taladrado de agujero guía

■ 1. Taladrado de agujero guía.

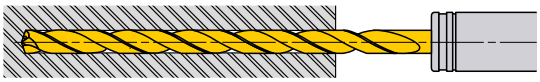


①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 2. Corte inicial con la broca larga

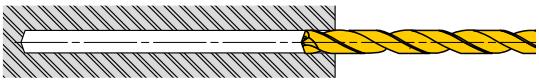
①1. Realice el agujero guía a bajas revoluciones.
(Revoluciones a 1000min^{-1}, vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 3. Taladrado del agujero profundo.



①Comience a cortar a la velocidad y avance recomendados con un ciclo ininterrumpido (avance continuo).

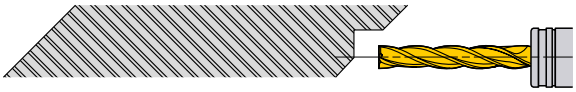
■ 4. Retracción de la broca



①Una vez taladrado, reduzca las revoluciones de corte aprox. a 0.5-1mm. del extremo del agujero. (Revoluciones en torno a 1000min^{-1})
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.
③Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.

TALADRADO INTERRUMPIDO ●Taladrado e inserción en caras o ángulos irregulares.

■ 1. Refrentado puntual

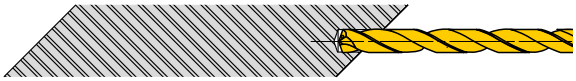


①Mecanice un plano en la cara irregular utilizando una broca o fresa para ranurado capaz de hacer refrentado puntual. El diámetro del punto debe tener el mismo tamaño del agujero profundo requerido.

■ 2. Taladrado de agujero guía

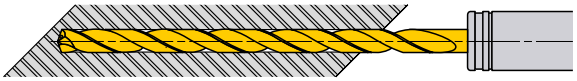
①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 3. Corte inicial con la broca larga



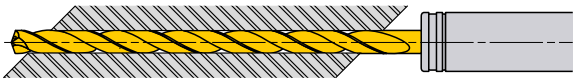
①Efectúe el agujero guía a bajas revoluciones. (Revoluciones a 1000min^{-1} vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 4. Taladre el agujero profundo



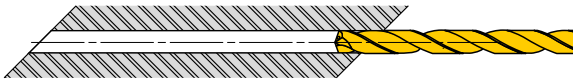
①Comience a cortar a la velocidad y avance recomendados con un ciclo sin perforación (avance continuo).

■ 5. Inserción



①Durante la inserción, el filo de corte puede resultar dañado
②Disminuya la velocidad de avance durante la inserción de la broca.

■ 6. Retracción de la broca



①Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.

⚠ Las referencias marcadas en gris (MPS, MSL) van a ser descatalogadas y sustituidas por la gama MPS1, por ello le recomendamos cambiar todas las referencias gradualmente en los próximos pedidos.

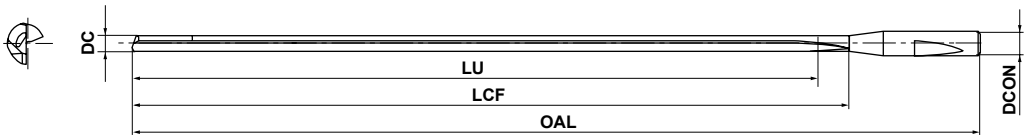
MICRO-MGS

- Permite taladrados de micro agujeros profundos.
- Una excelente precisión garantiza un taladrado muy preciso.

UWC

P | M | K | N | S | H

Refrigeración interna



DC≤3
0
−0.005

- Las brocas MGS pueden utilizarse con herramientas de amarre por calor.

DC (mm)	Profundidad agujero (L/D)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	DCON
0.7	50	★	MGS0070L040B	35.0	40	80	3
	80	★	MGS0070L060B	56.0	60	100	3
0.8	45	★	MGS0080L040B	36.0	40	80	3
	70	★	MGS0080L060B	56.0	60	100	3
0.9	40	★	MGS0090L040B	36.0	40	80	3
	60	★	MGS0090L060B	54.0	60	100	3
1.0	35	★	MGS0100L040B	35.0	40	80	3
	55	★	MGS0100L060B	55.0	60	100	3
	75	★	MGS0100L080B	75.0	80	120	3
1.1	30	★	MGS0110L040B	33.0	40	80	3
	50	★	MGS0110L060B	55.0	60	100	3
	65	★	MGS0110L080B	71.5	80	120	3
1.2	30	★	MGS0120L040B	36.0	40	80	3
	45	★	MGS0120L060B	54.0	60	100	3
	60	★	MGS0120L080B	72.0	80	120	3
1.3	40	★	MGS0130L060B	52.0	60	100	3
	55	★	MGS0130L080B	71.5	80	120	3
	70	★	MGS0130L100B	91.0	100	140	3
1.4	35	★	MGS0140L060B	49.0	60	100	3
	50	★	MGS0140L080B	70.0	80	120	3
	65	★	MGS0140L100B	91.0	100	140	3
1.5	35	★	MGS0150L060B	52.5	60	100	3
	50	★	MGS0150L080B	75.0	80	120	3
	60	★	MGS0150L100B	90.0	100	140	3
1.6	30	★	MGS0160L060B	48.0	60	100	3
	45	★	MGS0160L080B	72.0	80	120	3
	55	★	MGS0160L100B	88.0	100	140	3
1.7	30	★	MGS0170L060B	51.0	60	100	3
	40	★	MGS0170L080B	68.0	80	120	3
	55	★	MGS0170L100B	93.5	100	140	3

DC (mm)	Profundidad agujero (L/D)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	DCON
1.8	30	★	MGS0180L060B	54.0	60	100	3
	40	★	MGS0180L080B	72.0	80	120	3
	50	★	MGS0180L100B	90.0	100	140	3
1.9	25	★	MGS0190L060B	47.5	60	100	3
	35	★	MGS0190L080B	66.5	80	120	3
	45	★	MGS0190L100B	85.5	100	140	3
2.0	25	★	MGS0200L060B	50.0	60	100	3
	35	★	MGS0200L080B	70.0	80	120	3
	45	★	MGS0200L100B	90.0	100	140	3
2.1	35	★	MGS0210L080B	73.5	80	120	3
	40	★	MGS0210L100B	84.0	100	140	3
2.2	30	★	MGS0220L080B	66.0	80	120	3
	40	★	MGS0220L100B	88.0	100	140	3
2.3	30	★	MGS0230L080B	69.0	80	120	3
	40	★	MGS0230L100B	92.0	100	140	3
2.4	30	★	MGS0240L080B	72.0	80	120	3
	35	★	MGS0240L100B	84.0	100	140	3
2.5	25	★	MGS0250L080B	62.5	80	120	3
	35	★	MGS0250L100B	87.5	100	140	3
2.6	25	★	MGS0260L080B	65.0	80	120	3
	35	★	MGS0260L100B	91.0	100	140	3
2.7	25	★	MGS0270L080B	67.5	80	120	3
	30	★	MGS0270L100B	81.0	100	140	3
2.8	25	★	MGS0280L080B	70.0	80	120	3
	30	★	MGS0280L100B	84.0	100	140	3
2.9	20	★	MGS0290L080B	58.0	80	120	3
	30	★	MGS0290L100B	87.0	100	140	3
3.0	20	★	MGS0300L080B	60.0	80	120	3
	30	★	MGS0300L100B	90.0	100	140	3

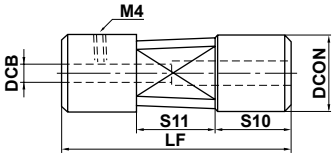
Nota 1) Por favor, contacte con nosotros sobre los productos con recubrimiento. (Metal duro recubierto **VP**, **GP** y **UP**).

★ : **Stock Japón.**

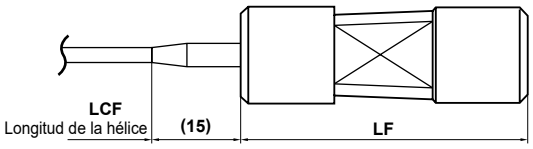
CONDICIONES DE CORTE ➤ L080
DATOS TÉCNICOS ➤ P001

MICRO-MGS

■ DESTORNILLADOR



■ CUANDO UTILIZA CON PUNZÓN



Referencia	Stock	Dimensiones (mm)						
		DCON	DCB	LF	S10	S11	Tornillo	Llave
MGD38	★	12.7	3.0	38.1	12.6	12.7	HSS04004	HKY20F
MGD70	★	12.7	3.0	70.0	25.0	20.0	HSS04004	HKY20F

CONDICIONES DE CORTE RECOMENDADAS

Material	P							
	Acero dulce (≤180HB) Ck10				Acero al carbono Acero aleado (180−280HB) Ck45, 42CrMo4			
Tipo de refrigerante	Aceite de corte insoluble en agua				Aceite de corte insoluble en agua			
Diámetro Broca DC (mm)	Velocidad de corte (m/min)	Revoluciones (min⁻¹)	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min⁻¹)	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)
0.8	50	19800	0.01 (0.005−0.016)	195	40	15900	0.01 (0.005−0.016)	155
1.0	50	15900	0.01 (0.007−0.020)	155	40	12700	0.01 (0.007−0.020)	125
1.2	60	15900	0.015 (0.008−0.024)	235	50	13200	0.015 (0.008−0.024)	195
1.6	60	11900	0.02 (0.011−0.032)	235	50	9900	0.02 (0.011−0.032)	195
2.0	60	9500	0.025 (0.013−0.040)	235	50	7900	0.025 (0.013−0.040)	195
2.5	70	8900	0.03 (0.017−0.050)	265	60	7600	0.03 (0.017−0.050)	225
3.0	70	7400	0.04 (0.020−0.060)	295	60	6300	0.04 (0.020−0.060)	250

Material	P				M			
	Acero al carbono Acero aleado (280−350HB) 36CrNiMo4				Acero Inoxidable Austenítico (≤200HB) X5CrNi1810, X5CrNiMo17-12-2			
Tipo de refrigerante	Aceite de corte insoluble en agua				Aceite de corte insoluble en agua			
Diámetro Broca DC (mm)	Velocidad de corte (m/min)	Revoluciones (min⁻¹)	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min⁻¹)	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)
0.8	30	11900	0.005 (0.004−0.005)	55	30	11900	0.01 (0.005−0.016)	115
1.0	30	9500	0.005 (0.005−0.007)	45	30	9500	0.01 (0.007−0.020)	95
1.2	40	10600	0.005 (0.006−0.008)	50	30	7900	0.015 (0.008−0.024)	115
1.6	40	7900	0.01 (0.008−0.011)	75	40	7900	0.02 (0.011−0.032)	155
2.0	40	6300	0.01 (0.010−0.013)	60	40	6300	0.025 (0.013−0.040)	155
2.5	50	6300	0.015 (0.013−0.017)	90	40	5000	0.03 (0.017−0.050)	150
3.0	50	5300	0.015 (0.015−0.020)	75	40	4200	0.04 (0.020−0.060)	165

Material	K							
	Fundición gris (≤350MPa) GG30				Fundición dúctil (≤450MPa) GGG45			
Tipo de refrigerante	Aceite de corte insoluble en agua • Aceite de corte soluble en agua				Aceite de corte insoluble en agua • Aceite de corte soluble en agua			
Diámetro Broca DC (mm)	Velocidad de corte (m/min)	Revoluciones (min⁻¹)	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min⁻¹)	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)
0.8	50	19800	0.01 (0.008−0.016)	195	40	15900	0.005 (0.005−0.008)	75
1.0	50	15900	0.015 (0.010−0.020)	235	40	12700	0.005 (0.007−0.010)	60
1.2	60	15900	0.015 (0.012−0.024)	235	50	13200	0.01 (0.008−0.012)	130
1.6	60	11900	0.02 (0.016−0.032)	235	50	9900	0.01 (0.011−0.016)	95
2.0	60	9500	0.03 (0.020−0.040)	285	50	7900	0.015 (0.013−0.020)	115
2.5	70	8900	0.035 (0.025−0.050)	310	60	7600	0.02 (0.017−0.025)	150
3.0	70	7400	0.045 (0.030−0.060)	330	60	6300	0.025 (0.020−0.030)	155

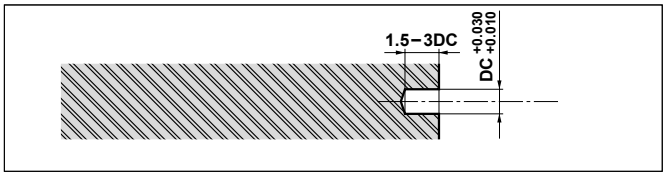
Nota 1) Para mayor seguridad y mejores resultados, utilice refrigerante a alta presión. (Presión mínima del refrigerante=1000 PSI)
Nota 2) El filtro del refrigerante debe ser de menos de 5 micras.
Es preciso hacer un filtrado fino para evitar que se obstruyan los agujeros del refrigerante.
Nota 3) Es preciso un agujero guía o cepillado guía.
★ : Stock Japón.

CONDICIONES DE CORTE RECOMENDADAS

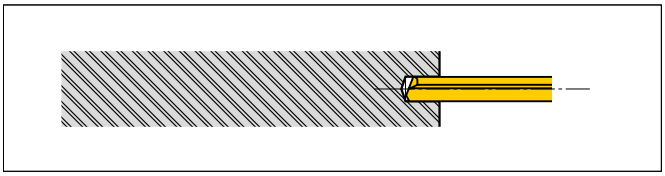
Material	N							
	Aleación de aluminio (Si<5%)				Cobre, Aleación de cobre			
Tipo de refrigerante	Aceite de corte insoluble en agua • Aceite de corte soluble en agua				Aceite de corte insoluble en agua • Aceite de corte soluble en agua			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Avance de mesa (mm/min)
0.8	50	19800	0.01 (0.008—0.016)	195	40	15900	0.01 (0.008—0.016)	155
1.0	60	19000	0.015 (0.010—0.020)	285	50	15900	0.015 (0.010—0.020)	235
1.2	70	18500	0.015 (0.012—0.024)	275	60	15900	0.015 (0.012—0.024)	235
1.6	80	15900	0.02 (0.016—0.032)	315	70	13900	0.02 (0.016—0.032)	275
2.0	90	14300	0.03 (0.020—0.040)	425	80	12700	0.03 (0.020—0.040)	380
2.5	100	12700	0.035 (0.025—0.050)	440	90	11400	0.035 (0.025—0.050)	395
3.0	100	10600	0.045 (0.030—0.060)	475	100	10600	0.045 (0.030—0.060)	475

Nota 1) Para mayor seguridad y mejores resultados, utilice refrigerante a alta presión. (Presión mínima del refrigerante=70 bar)
Nota 2) El filtro del refrigerante debe ser de menos de 5 micras.
Es preciso hacer un filtrado fino para evitar que se obstruyan los agujeros del refrigerante.
Nota 3) Es preciso un agujero guía o cepillado guía.

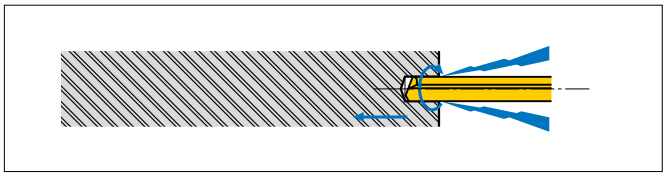
CÓMO SE UTILIZA



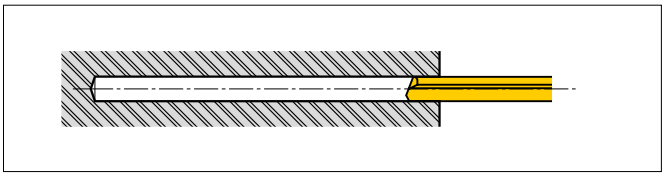
1. Taladrado de agujeros guía.
(Se recomiendan brocas MWE o MWS de Mitsubishi.)



2. Introduzca la broca en el agujero guía sin rotarla o con una rotación inversa por debajo de 300 rpm. Detenga la broca MGS 1-2 mm antes de alcanzar el final del agujero guía.



3. Se acciona el refrigerante, se eleva la velocidad de corte y avance hasta las condiciones de corte recomendadas. A continuación, comienza el taladrado.



4. Tras taladrar vuelve a "Pos 2", desactiva el refrigerante y se detiene la rotación de la broca.

MMS

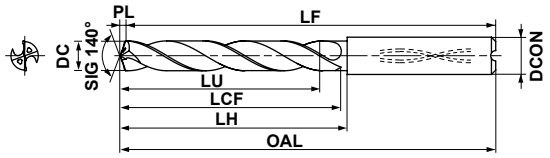
- Para un taladrado eficiente y de alta precisión de aceros inoxidables.
- Los agujeros de refrigeración Tri-Coolant empiezan desde diámetro 4.6mm.

P | **M** | K | N | S | H

Refrigeración interna

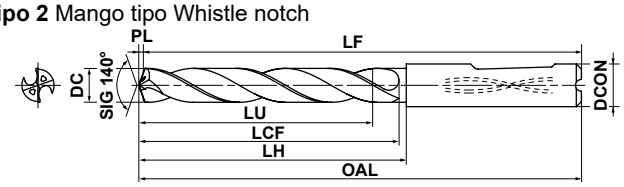
	DC=3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
Tipo DIN (m7)	+0.012 +0.002	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008
Otros (h8)	0 −0.014	0 −0.018	0 −0.022	0 −0.027	0 −0.033
		0 −0.008	0 −0.009	0 −0.011	0 −0.013

●Tipo 1 Tipo mango cilíndrico



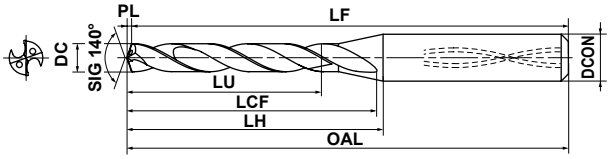
MMS----S/L-DIN-C (L/D 3−5)
MMS----X3/X5DB (L/D 3−5)

●Tipo 2 Mango tipo Whistle notch



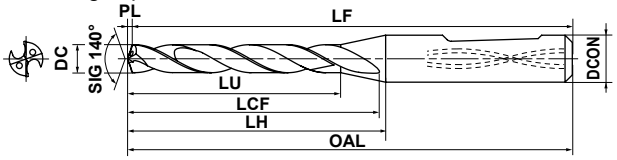
MMS----S/L-DIN (L/D 3−5)

●Tipo 3 Tipo mango cilíndrico con cuello cónico



MMS----S/L-DIN-C (L/D 3−5)
MMS----X3/X5DB (L/D 3−5)

●Tipo 4 Mango tipo Whistle notch con cuello cónico



MMS----S/L-DIN (L/D 3−5)

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.0	3	□	MMS0300S-DIN	15.0	19.5	24.5	61.5	61	0.5	6	4
	3	●	MMS0300S-DIN-C	15.0	19.5	24.5	61.5	61	0.5	6	3
	5	□	MMS0300L-DIN	23.0	27.5	28.5	65.5	65	0.5	6	4
	5	●	MMS0300L-DIN-C	23.0	27.5	28.5	65.5	65	0.5	6	3
	3	★	MMS0300X3DB	9.5	21.5	23.5	70.5	70	0.5	6	3
	5	★	MMS0300X5DB	15.5	28.5	31.5	78.5	78	0.5	6	3
3.05	3	□	MMS0305S-DIN	15.0	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0305S-DIN-C	15.0	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0305L-DIN	23.0	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0305L-DIN-C	23.0	27.6	28.6	65.6	65	0.6	6	3
3.1	3	□	MMS0310S-DIN	14.9	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0310S-DIN-C	14.9	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0310L-DIN	22.9	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0310L-DIN-C	22.9	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0310X3DB	9.9	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0310X5DB	16.1	28.6	31.6	78.6	78	0.6	6	3
3.2	3	□	MMS0320S-DIN	14.8	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0320S-DIN-C	14.8	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0320L-DIN	22.8	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0320L-DIN-C	22.8	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0320X3DB	10.2	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0320X5DB	16.6	28.6	31.6	78.6	78	0.6	6	3
3.3	3	□	MMS0330S-DIN	14.7	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0330S-DIN-C	14.7	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0330L-DIN	22.7	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0330L-DIN-C	22.7	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0330X3DB	10.5	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0330X5DB	17.1	28.6	31.6	78.6	78	0.6	6	3
3.4	3	□	MMS0340S-DIN	14.5	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0340S-DIN-C	14.5	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0340L-DIN	22.5	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0340L-DIN-C	22.5	27.6	28.6	65.6	65	0.6	6	3

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.4	3	★	MMS0340X3DB	10.8	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0340X5DB	17.6	28.6	31.6	78.6	78	0.6	6	3
3.5	3	□	MMS0350S-DIN	14.4	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0350S-DIN-C	14.4	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0350L-DIN	22.4	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0350L-DIN-C	22.4	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0350X3DB	11.1	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0350X5DB	18.1	28.6	31.6	78.6	78	0.6	6	3
3.6	3	□	MMS0360S-DIN	14.3	19.7	24.7	61.7	61	0.7	6	4
	3	●	MMS0360S-DIN-C	14.3	19.7	24.7	61.7	61	0.7	6	3
	5	□	MMS0360L-DIN	22.3	27.7	28.7	65.7	65	0.7	6	4
	5	●	MMS0360L-DIN-C	22.3	27.7	28.7	65.7	65	0.7	6	3
	3	★	MMS0360X3DB	11.5	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0360X5DB	18.7	30.7	31.7	78.7	78	0.7	6	3
3.7	3	□	MMS0370S-DIN	14.1	19.7	24.7	61.7	61	0.7	6	4
	3	●	MMS0370S-DIN-C	14.1	19.7	24.7	61.7	61	0.7	6	3
	5	□	MMS0370L-DIN	22.1	27.7	28.7	65.7	65	0.7	6	4
	5	●	MMS0370L-DIN-C	22.1	27.7	28.7	65.7	65	0.7	6	3
	3	★	MMS0370X3DB	11.8	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0370X5DB	19.2	30.7	31.7	78.7	78	0.7	6	3
3.8	3	□	MMS0380S-DIN	18.0	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0380S-DIN-C	18.0	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0380L-DIN	30.0	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0380L-DIN-C	30.0	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0380X3DB	12.1	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0380X5DB	19.7	30.7	31.7	78.7	78	0.7	6	3
3.9	3	□	MMS0390S-DIN	17.9	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0390S-DIN-C	17.9	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0390L-DIN	29.9	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0390L-DIN-C	29.9	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0390X3DB	12.4	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0390X5DB	20.2	30.7	31.7	78.7	78	0.7	6	3

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.0	3	□	MMS0400S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0400S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0400L-DIN	29.7	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0400L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0400X3DB	12.7	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0400X5DB	20.7	30.7	31.7	78.7	78	0.7	6	3
4.05	3	□	MMS0405S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0405S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0405L-DIN	29.7	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0405L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	3
4.1	3	□	MMS0410S-DIN	17.6	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0410S-DIN-C	17.6	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0410L-DIN	29.6	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0410L-DIN-C	29.6	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0410X3DB	13.0	24.7	26.7	73.7	73	0.7	6	3
	5	★	MMS0410X5DB	21.2	33.7	35.7	82.7	82	0.7	6	3
4.2	3	□	MMS0420S-DIN	17.5	23.8	28.8	65.8	65	0.8	6	4
	3	●	MMS0420S-DIN-C	17.5	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0420L-DIN	29.5	35.8	36.8	73.8	73	0.8	6	4
	5	●	MMS0420L-DIN-C	29.5	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0420X3DB	13.4	24.8	26.8	73.8	73	0.8	6	3
	5	★	MMS0420X5DB	21.8	33.8	35.8	82.8	82	0.8	6	3
4.3	3	□	MMS0430S-DIN	17.3	23.8	28.8	65.8	65	0.8	6	4
	3	●	MMS0430S-DIN-C	17.3	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0430L-DIN	29.3	35.8	36.8	73.8	73	0.8	6	4
	5	●	MMS0430L-DIN-C	29.3	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0430X3DB	13.7	24.8	26.8	73.8	73	0.8	6	3
	5	★	MMS0430X5DB	22.3	33.8	35.8	82.8	82	0.8	6	3
4.4	3	□	MMS0440S-DIN	17.2	23.8	28.8	65.8	65	0.8	6	4
	3	□	MMS0440S-DIN-C	17.2	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0440L-DIN	29.2	35.8	36.8	73.8	73	0.8	6	4
	5	□	MMS0440L-DIN-C	29.2	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0440X3DB	14.0	24.8	26.8	73.8	73	0.8	6	3
	5	★	MMS0440X5DB	22.8	33.8	35.8	82.8	82	0.8	6	3
4.5	3	□	MMS0450S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	4
	3	●	MMS0450S-DIN-C	17.1	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0450L-DIN	29.1	35.8	36.8	73.8	73	0.8	6	4
	5	●	MMS0450L-DIN-C	29.1	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0450X3DB	14.3	24.8	26.8	73.8	73	0.8	6	3
	5	★	MMS0450X5DB	23.3	33.8	35.8	82.8	82	0.8	6	3
4.6	3	□	MMS0460S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	2
	3	●	MMS0460S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	1
	5	□	MMS0460L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	2
	5	●	MMS0460L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	1
	3	★	MMS0460X3DB	14.6	25.8	28.8	75.8	75	0.8	6	1
	5	★	MMS0460X5DB	23.8	35.8	38.8	85.8	85	0.8	6	1
4.65	3	□	MMS0465S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	2
	3	●	MMS0465S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	1
	5	□	MMS0465L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	2
	5	●	MMS0465L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.7	3	□	MMS0470S-DIN	16.8	23.9	28.9	65.9	65	0.9	6	2
	3	□	MMS0470S-DIN-C	16.8	23.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0470L-DIN	28.8	35.9	36.9	73.9	73	0.9	6	2
	5	□	MMS0470L-DIN-C	28.8	35.9	36.9	73.9	73	0.9	6	1
	3	★	MMS0470X3DB	15.0	25.9	28.9	75.9	75	0.9	6	1
	5	★	MMS0470X5DB	24.4	35.9	38.9	85.9	85	0.9	6	1
4.8	3	□	MMS0480S-DIN	20.7	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0480S-DIN-C	20.7	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0480L-DIN	36.7	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0480L-DIN-C	36.7	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0480X3DB	15.3	25.9	28.9	75.9	75	0.9	6	1
	5	★	MMS0480X5DB	24.9	35.9	38.9	85.9	85	0.9	6	1
4.9	3	□	MMS0490S-DIN	20.5	27.9	28.9	65.9	65	0.9	6	2
	3	□	MMS0490S-DIN-C	20.5	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0490L-DIN	36.5	43.9	44.9	81.9	81	0.9	6	2
	5	□	MMS0490L-DIN-C	36.5	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0490X3DB	15.6	25.9	28.9	75.9	75	0.9	6	1
	5	★	MMS0490X5DB	25.4	35.9	38.9	85.9	85	0.9	6	1
5.0	3	□	MMS0500S-DIN	20.4	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0500S-DIN-C	20.4	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0500L-DIN	36.4	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0500L-DIN-C	36.4	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0500X3DB	15.9	25.9	28.9	75.9	75	0.9	6	1
	5	★	MMS0500X5DB	25.9	35.9	38.9	85.9	85	0.9	6	1
	3	□	MMS0505S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	2
5.05	3	●	MMS0505S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0505L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0505L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	1
5.1	3	□	MMS0510S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0510S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0510L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0510L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0510X3DB	16.2	28.9	30.9	81.9	81	0.9	6	1
	5	★	MMS0510X5DB	26.4	39.9	42.9	89.9	89	0.9	6	1
5.2	3	□	MMS0520S-DIN	20.1	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0520S-DIN-C	20.1	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0520L-DIN	36.1	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0520L-DIN-C	36.1	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0520X3DB	16.5	28.9	30.9	81.9	81	0.9	6	1
	5	★	MMS0520X5DB	26.9	39.9	42.9	89.9	89	0.9	6	1
5.3	3	□	MMS0530S-DIN	20.0	28.0	29.0	66.0	65	1.0	6	2
	3	□	MMS0530S-DIN-C	20.0	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0530L-DIN	36.0	44.0	45.0	82.0	81	1.0	6	2
	5	□	MMS0530L-DIN-C	36.0	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0530X3DB	16.9	29.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0530X5DB	27.5	40.0	43.0	90.0	89	1.0	6	1
5.4	3	□	MMS0540S-DIN	19.9	28.0	29.0	66.0	65	1.0	6	2
	3	□	MMS0540S-DIN-C	19.9	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0540L-DIN	35.9	44.0	45.0	82.0	81	1.0	6	2
	5	□	MMS0540L-DIN-C	35.9	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0540X3DB	17.2	29.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0540X5DB	28.0	40.0	43.0	90.0	89	1.0	6	1

CONDICIONES DE CORTE ➤ M094

GUIA OPERACIONAL ➤ M093

DATOS TÉCNICOS ➤ P001

MMS

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.5	3	□	MMS0550S-DIN	19.8	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0550S-DIN-C	19.8	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0550L-DIN	35.8	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0550L-DIN-C	35.8	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0550X3DB	17.5	29.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0550X5DB	28.5	40.0	43.0	90.0	89	1.0	6	1
5.55	3	□	MMS0555S-DIN	19.7	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0555S-DIN-C	19.7	28.0	29.0	66.0	65	1.0	6	1
	5	●	MMS0555L-DIN-C	35.7	44.0	45.0	82.0	81	1.0	6	1
5.6	3	□	MMS0560S-DIN	19.6	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0560S-DIN-C	19.6	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0560L-DIN	35.6	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0560L-DIN-C	35.6	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0560X3DB	17.8	31.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0560X5DB	29.0	43.0	43.0	90.0	89	1.0	6	1
5.7	3	□	MMS0570S-DIN	19.5	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0570S-DIN-C	19.5	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0570L-DIN	35.5	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0570L-DIN-C	35.5	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0570X3DB	18.1	31.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0570X5DB	29.5	43.0	43.0	90.0	89	1.0	6	1
5.8	3	□	MMS0580S-DIN	19.4	28.1	29.1	66.1	65	1.1	6	2
	3	●	MMS0580S-DIN-C	19.4	28.1	29.1	66.1	65	1.1	6	1
	5	□	MMS0580L-DIN	35.4	44.1	45.1	82.1	81	1.1	6	2
	5	●	MMS0580L-DIN-C	35.4	44.1	45.1	82.1	81	1.1	6	1
	3	★	MMS0580X3DB	18.5	31.1	31.1	82.1	81	1.1	6	1
	5	★	MMS0580X5DB	30.1	43.1	43.1	90.1	89	1.1	6	1
5.9	3	□	MMS0590S-DIN	19.2	28.1	29.1	66.1	65	1.1	6	2
	3	□	MMS0590S-DIN-C	19.2	28.1	29.1	66.1	65	1.1	6	1
	5	□	MMS0590L-DIN	35.2	44.1	45.1	82.1	81	1.1	6	2
	5	□	MMS0590L-DIN-C	35.2	44.1	45.1	82.1	81	1.1	6	1
	3	★	MMS0590X3DB	18.8	31.1	31.1	82.1	81	1.1	6	1
	5	★	MMS0590X5DB	30.6	43.1	43.1	90.1	89	1.1	6	1
6.0	3	□	MMS0600S-DIN	19.1	28.1	29.1	66.1	65	1.1	6	2
	3	●	MMS0600S-DIN-C	19.1	28.1	29.1	66.1	65	1.1	6	1
	5	□	MMS0600L-DIN	35.1	44.1	45.1	82.1	81	1.1	6	2
	5	●	MMS0600L-DIN-C	35.1	44.1	45.1	82.1	81	1.1	6	1
	3	★	MMS0600X3DB	19.1	31.1	31.1	82.1	81	1.1	6	1
	5	★	MMS0600X5DB	31.1	43.1	43.1	90.1	89	1.1	6	1
6.05	3	□	MMS0605S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	2
	3	●	MMS0605S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0605L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	2
	5	●	MMS0605L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	1
6.1	3	□	MMS0610S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	2
	3	●	MMS0610S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0610L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	2
	5	●	MMS0610L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	1
	3	★	MMS0610X3DB	19.4	34.1	36.1	87.1	86	1.1	8	1
	5	★	MMS0610X5DB	31.6	47.1	49.1	96.1	95	1.1	8	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.2	3	□	MMS0620S-DIN	24.8	34.1	42.1	79.1	78	1.1	8	2
	3	●	MMS0620S-DIN-C	24.8	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0620L-DIN	43.8	53.1	54.1	91.1	90	1.1	8	2
	5	●	MMS0620L-DIN-C	43.8	53.1	54.1	91.1	90	1.1	8	1
	3	★	MMS0620X3DB	19.7	34.1	36.1	87.1	86	1.1	8	1
	5	★	MMS0620X5DB	32.1	47.1	49.1	96.1	95	1.1	8	1
6.3	3	□	MMS0630S-DIN	24.7	34.1	42.1	79.1	78	1.1	8	2
	3	□	MMS0630S-DIN-C	24.7	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0630L-DIN	43.7	53.1	54.1	91.1	90	1.1	8	2
	5	□	MMS0630L-DIN-C	43.7	53.1	54.1	91.1	90	1.1	8	1
	3	★	MMS0630X3DB	20.0	34.1	36.1	87.1	86	1.1	8	1
	5	★	MMS0630X5DB	32.6	47.1	49.1	96.1	95	1.1	8	1
6.4	3	□	MMS0640S-DIN	24.6	34.2	42.2	79.2	78	1.2	8	2
	3	□	MMS0640S-DIN-C	24.6	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0640L-DIN	43.6	53.2	54.2	91.2	90	1.2	8	2
	5	□	MMS0640L-DIN-C	43.6	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0640X3DB	20.4	34.2	36.2	87.2	86	1.2	8	1
	5	★	MMS0640X5DB	33.2	47.2	49.2	96.2	95	1.2	8	1
6.5	3	□	MMS0650S-DIN	24.4	34.2	42.2	79.2	78	1.2	8	2
	3	●	MMS0650S-DIN-C	24.4	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0650L-DIN	43.4	53.2	54.2	91.2	90	1.2	8	2
	5	●	MMS0650L-DIN-C	43.4	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0650X3DB	20.7	34.2	36.2	87.2	86	1.2	8	1
	5	★	MMS0650X5DB	33.7	47.2	49.2	96.2	95	1.2	8	1
6.6	3	□	MMS0660S-DIN	24.3	34.2	42.2	79.2	78	1.2	8	2
	3	●	MMS0660S-DIN-C	24.3	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0660L-DIN	43.3	53.2	54.2	91.2	90	1.2	8	2
	5	●	MMS0660L-DIN-C	43.3	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0660X3DB	21.0	36.2	38.2	91.2	90	1.2	8	1
	5	★	MMS0660X5DB	34.2	50.2	52.2	99.2	98	1.2	8	1
6.7	3	□	MMS0670S-DIN	24.2	34.2	42.2	79.2	78	1.2	8	2
	3	□	MMS0670S-DIN-C	24.2	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0670L-DIN	43.2	53.2	54.2	91.2	90	1.2	8	2
	5	□	MMS0670L-DIN-C	43.2	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0670X3DB	21.3	36.2	38.2	91.2	90	1.2	8	1
	5	★	MMS0670X5DB	34.7	50.2	52.2	99.2	98	1.2	8	1
6.8	3	□	MMS0680S-DIN	24.0	34.2	42.2	79.2	78	1.2	8	2
	3	●	MMS0680S-DIN-C	24.0	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0680L-DIN	43.0	53.2	54.2	91.2	90	1.2	8	2
	5	●	MMS0680L-DIN-C	43.0	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0680X3DB	21.6	36.2	38.2	91.2	90	1.2	8	1
	5	★	MMS0680X5DB	35.2	50.2	52.2	99.2	98	1.2	8	1
6.9	3	□	MMS0690S-DIN	23.9	34.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0690S-DIN-C	23.9	34.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0690L-DIN	42.9	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0690L-DIN-C	42.9	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0690X3DB	22.0	36.3	38.3	91.3	90	1.3	8	1
	5	★	MMS0690X5DB	35.8	50.3	52.3	99.3	98	1.3	8	1

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.0	3	□	MMS0700S-DIN	23.8	34.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0700S-DIN-C	23.8	34.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0700L-DIN	42.8	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0700L-DIN-C	42.8	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0700X3DB	22.3	36.3	38.3	91.3	90	1.3	8	1
	5	★	MMS0700X5DB	36.3	50.3	52.3	99.3	98	1.3	8	1
7.1	3	□	MMS0710S-DIN	30.6	41.3	42.3	79.3	78	1.3	8	2
	3	□	MMS0710S-DIN-C	30.6	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0710L-DIN	42.6	53.3	54.3	91.3	90	1.3	8	2
	5	□	MMS0710L-DIN-C	42.6	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0710X3DB	22.6	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0710X5DB	36.8	54.3	57.3	104.3	103	1.3	8	1
7.2	3	□	MMS0720S-DIN	30.5	41.3	42.3	79.3	78	1.3	8	2
	3	□	MMS0720S-DIN-C	30.5	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0720L-DIN	42.5	53.3	54.3	91.3	90	1.3	8	2
	5	□	MMS0720L-DIN-C	42.5	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0720X3DB	22.9	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0720X5DB	37.3	54.3	57.3	104.3	103	1.3	8	1
7.3	3	□	MMS0730S-DIN	30.4	41.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0730S-DIN-C	30.4	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0730L-DIN	42.4	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0730L-DIN-C	42.4	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0730X3DB	23.2	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0730X5DB	37.8	54.3	57.3	104.3	103	1.3	8	1
7.4	3	□	MMS0740S-DIN	30.2	41.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0740S-DIN-C	30.2	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0740L-DIN	42.2	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0740L-DIN-C	42.2	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0740X3DB	23.5	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0740X5DB	38.3	54.3	57.3	104.3	103	1.3	8	1
7.5	3	□	MMS0750S-DIN	30.1	41.4	42.4	79.4	78	1.4	8	2
	3	●	MMS0750S-DIN-C	30.1	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0750L-DIN	42.1	53.4	54.4	91.4	90	1.4	8	2
	5	●	MMS0750L-DIN-C	42.1	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0750X3DB	23.9	39.4	40.4	91.4	90	1.4	8	1
	5	★	MMS0750X5DB	38.9	54.4	57.4	104.4	103	1.4	8	1
7.6	3	□	MMS0760S-DIN	30.0	41.4	42.4	79.4	78	1.4	8	2
	3	□	MMS0760S-DIN-C	30.0	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0760L-DIN	42.0	53.4	54.4	91.4	90	1.4	8	2
	5	□	MMS0760L-DIN-C	42.0	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0760X3DB	24.2	41.4	41.4	91.4	90	1.4	8	1
	5	★	MMS0760X5DB	39.4	57.4	57.4	104.4	103	1.4	8	1
7.7	3	□	MMS0770S-DIN	29.9	41.4	42.4	79.4	78	1.4	8	2
	3	□	MMS0770S-DIN-C	29.9	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0770L-DIN	41.9	53.4	54.4	91.4	90	1.4	8	2
	5	□	MMS0770L-DIN-C	41.9	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0770X3DB	24.5	41.4	41.4	91.4	90	1.4	8	1
	5	★	MMS0770X5DB	39.9	57.4	57.4	104.4	103	1.4	8	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.8	3	□	MMS0780S-DIN	29.7	41.4	42.4	79.4	78	1.4	8	2
	3	●	MMS0780S-DIN-C	29.7	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0780L-DIN	41.7	53.4	54.4	91.4	90	1.4	8	2
	5	●	MMS0780L-DIN-C	41.7	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0780X3DB	24.8	41.4	41.4	91.4	90	1.4	8	1
	5	★	MMS0780X5DB	40.4	57.4	57.4	104.4	103	1.4	8	1
7.9	3	□	MMS0790S-DIN	29.6	41.4	42.4	79.4	78	1.4	8	2
	3	□	MMS0790S-DIN-C	29.6	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0790L-DIN	41.6	53.4	54.4	91.4	90	1.4	8	2
	5	□	MMS0790L-DIN-C	41.6	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0790X3DB	25.1	41.4	41.4	91.4	90	1.4	8	1
	5	★	MMS0790X5DB	40.9	57.4	57.4	104.4	103	1.4	8	1
8.0	3	□	MMS0800S-DIN	29.5	41.5	42.5	79.5	78	1.5	8	2
	3	●	MMS0800S-DIN-C	29.5	41.5	42.5	79.5	78	1.5	8	1
	5	□	MMS0800L-DIN	41.5	53.5	54.5	91.5	90	1.5	8	2
	5	●	MMS0800L-DIN-C	41.5	53.5	54.5	91.5	90	1.5	8	1
	3	★	MMS0800X3DB	25.5	41.5	41.5	91.5	90	1.5	8	1
	5	★	MMS0800X5DB	41.5	57.5	57.5	104.5	103	1.5	8	1
8.05	3	□	MMS0805S-DIN	34.4	46.5	47.5	88.5	87	1.5	10	2
	3	●	MMS0805S-DIN-C	34.4	46.5	47.5	88.5	87	1.5	10	1
	5	□	MMS0805L-DIN	48.4	60.5	61.5	102.5	101	1.5	10	2
	5	●	MMS0805L-DIN-C	48.4	60.5	61.5	102.5	101	1.5	10	1
8.1	3	□	MMS0810S-DIN	34.3	46.5	47.5	88.5	87	1.5	10	2
	3	□	MMS0810S-DIN-C	34.3	46.5	47.5	88.5	87	1.5	10	1
	5	□	MMS0810L-DIN	48.3	60.5	61.5	102.5	101	1.5	10	2
	5	□	MMS0810L-DIN-C	48.3	60.5	61.5	102.5	101	1.5	10	1
	3	★	MMS0810X3DB	25.8	44.5	46.5	97.5	96	1.5	10	1
	5	★	MMS0810X5DB	42.0	61.5	63.5	114.5	113	1.5	10	1
8.2	3	□	MMS0820S-DIN	34.2	46.5	47.5	88.5	87	1.5	10	2
	3	□	MMS0820S-DIN-C	34.2	46.5	47.5	88.5	87	1.5	10	1
	5	□	MMS0820L-DIN	48.2	60.5	61.5	102.5	101	1.5	10	2
	5	□	MMS0820L-DIN-C	48.2	60.5	61.5	102.5	101	1.5	10	1
	3	★	MMS0820X3DB	26.1	44.5	46.5	97.5	96	1.5	10	1
	5	★	MMS0820X5DB	42.5	61.5	63.5	114.5	113	1.5	10	1
8.3	3	□	MMS0830S-DIN	34.1	46.5	47.5	88.5	87	1.5	10	2
	3	●	MMS0830S-DIN-C	34.1	46.5	47.5	88.5	87	1.5	10	1
	5	□	MMS0830L-DIN	48.1	60.5	61.5	102.5	101	1.5	10	2
	5	●	MMS0830L-DIN-C	48.1	60.5	61.5	102.5	101	1.5	10	1
	3	★	MMS0830X3DB	26.4	44.5	46.5	97.5	96	1.5	10	1
	5	★	MMS0830X5DB	43.0	61.5	63.5	114.5	113	1.5	10	1
8.4	3	□	MMS0840S-DIN	33.9	46.5	47.5	88.5	87	1.5	10	2
	3	□	MMS0840S-DIN-C	33.9	46.5	47.5	88.5	87	1.5	10	1
	5	□	MMS0840L-DIN	47.9	60.5	61.5	102.5	101	1.5	10	2
	5	□	MMS0840L-DIN-C	47.9	60.5	61.5	102.5	101	1.5	10	1
	3	★	MMS0840X3DB	26.7	44.5	46.5	97.5	96	1.5	10	1
	5	★	MMS0840X5DB	43.5	61.5	63.5	114.5	113	1.5	10	1
8.5	3	□	MMS0850S-DIN	33.8	46.5	47.5	88.5	87	1.5	10	2
	3	●	MMS0850S-DIN-C	33.8	46.5	47.5	88.5	87	1.5	10	1
	5	□	MMS0850L-DIN	47.8	60.5	61.5	102.5	101	1.5	10	2
	5	●	MMS0850L-DIN-C	47.8	60.5	61.5	102.5	101	1.5	10	1
	3	★	MMS0850X3DB	27.0	44.5	46.5	97.5	96	1.5	10	1
	5	★	MMS0850X5DB	44.0	61.5	63.5	114.5	113	1.5	10	1

CONDICIONES DE CORTE ➤ M094

GUIA OPERACIONAL ➤ M093

DATOS TÉCNICOS ➤ P001

MMS

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.6	3	□	MMS0860S-DIN	33.7	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0860S-DIN-C	33.7	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0860L-DIN	47.7	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0860L-DIN-C	47.7	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0860X3DB	27.4	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0860X5DB	44.6	64.6	66.6	117.6	116	1.6	10	1
8.7	3	□	MMS0870S-DIN	33.5	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0870S-DIN-C	33.5	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0870L-DIN	47.5	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0870L-DIN-C	47.5	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0870X3DB	27.7	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0870X5DB	45.1	64.6	66.6	117.6	116	1.6	10	1
8.8	3	□	MMS0880S-DIN	33.4	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0880S-DIN-C	33.4	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0880L-DIN	47.4	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0880L-DIN-C	47.4	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0880X3DB	28.0	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0880X5DB	45.6	64.6	66.6	117.6	116	1.6	10	1
8.9	3	□	MMS0890S-DIN	33.3	46.6	47.6	88.6	87	1.6	10	2
	3	□	MMS0890S-DIN-C	33.3	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0890L-DIN	47.3	60.6	61.6	102.6	101	1.6	10	2
	5	□	MMS0890L-DIN-C	47.3	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0890X3DB	28.3	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0890X5DB	46.1	64.6	66.6	117.6	116	1.6	10	1
9.0	3	□	MMS0900S-DIN	33.1	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0900S-DIN-C	33.1	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0900L-DIN	47.1	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0900L-DIN-C	47.1	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0900X3DB	28.6	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0900X5DB	46.6	64.6	66.6	117.6	116	1.6	10	1
9.1	3	□	MMS0910S-DIN	33.0	46.7	47.7	88.7	87	1.7	10	2
	3	□	MMS0910S-DIN-C	33.0	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0910L-DIN	47.0	60.7	61.7	102.7	101	1.7	10	2
	5	□	MMS0910L-DIN-C	47.0	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0910X3DB	29.0	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0910X5DB	47.2	68.7	71.7	122.7	121	1.7	10	1
9.2	3	□	MMS0920S-DIN	32.9	46.7	47.7	88.7	87	1.7	10	2
	3	□	MMS0920S-DIN-C	32.9	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0920L-DIN	46.9	60.7	61.7	102.7	101	1.7	10	2
	5	□	MMS0920L-DIN-C	46.9	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0920X3DB	29.3	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0920X5DB	47.7	68.7	71.7	122.7	121	1.7	10	1
9.3	3	□	MMS0930S-DIN	32.7	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0930S-DIN-C	32.7	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0930L-DIN	46.7	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0930L-DIN-C	46.7	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0930X3DB	29.6	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0930X5DB	48.2	68.7	71.7	122.7	121	1.7	10	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
9.4	3	□	MMS0940S-DIN	32.6	46.7	47.7	88.7	87	1.7	10	2
	3	□	MMS0940S-DIN-C	32.6	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0940L-DIN	46.6	60.7	61.7	102.7	101	1.7	10	2
	5	□	MMS0940L-DIN-C	46.6	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0940X3DB	29.9	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0940X5DB	48.7	68.7	71.7	122.7	121	1.7	10	1
9.5	3	□	MMS0950S-DIN	32.5	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0950S-DIN-C	32.5	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0950L-DIN	46.5	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0950L-DIN-C	46.5	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0950X3DB	30.2	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0950X5DB	49.2	68.7	71.7	122.7	121	1.7	10	1
9.6	3	□	MMS0960S-DIN	32.3	46.7	47.7	88.7	87	1.7	10	2
	3	□	MMS0960S-DIN-C	32.3	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0960L-DIN	46.3	60.7	61.7	102.7	101	1.7	10	2
	5	□	MMS0960L-DIN-C	46.3	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0960X3DB	30.5	51.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0960X5DB	49.7	71.7	71.7	122.7	121	1.7	10	1
9.7	3	□	MMS0970S-DIN	32.2	46.8	47.8	88.8	87	1.8	10	2
	3	□	MMS0970S-DIN-C	32.2	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS0970L-DIN	46.2	60.8	61.8	102.8	101	1.8	10	2
	5	□	MMS0970L-DIN-C	46.2	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS0970X3DB	30.9	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS0970X5DB	50.3	71.8	71.8	122.8	121	1.8	10	1
9.8	3	□	MMS0980S-DIN	32.1	46.8	47.8	88.8	87	1.8	10	2
	3	●	MMS0980S-DIN-C	32.1	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS0980L-DIN	46.1	60.8	61.8	102.8	101	1.8	10	2
	5	●	MMS0980L-DIN-C	46.1	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS0980X3DB	31.2	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS0980X5DB	50.8	71.8	71.8	122.8	121	1.8	10	1
9.9	3	□	MMS0990S-DIN	32.0	46.8	47.8	88.8	87	1.8	10	2
	3	□	MMS0990S-DIN-C	32.0	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS0990L-DIN	46.0	60.8	61.8	102.8	101	1.8	10	2
	5	□	MMS0990L-DIN-C	46.0	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS0990X3DB	31.5	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS0990X5DB	51.3	71.8	71.8	122.8	121	1.8	10	1
10.0	3	□	MMS1000S-DIN	31.8	46.8	47.8	88.8	87	1.8	10	2
	3	●	MMS1000S-DIN-C	31.8	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS1000L-DIN	45.8	60.8	61.8	102.8	101	1.8	10	2
	5	●	MMS1000L-DIN-C	45.8	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS1000X3DB	31.8	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS1000X5DB	51.8	71.8	71.8	122.8	121	1.8	10	1
10.05	3	□	MMS1005S-DIN	39.8	54.8	55.8	101.8	100	1.8	12	2
	3	●	MMS1005S-DIN-C	39.8	54.8	55.8	101.8	100	1.8	12	1
	5	□	MMS1005L-DIN	55.8	70.8	71.8	117.8	116	1.8	12	2
	5	●	MMS1005L-DIN-C	55.8	70.8	71.8	117.8	116	1.8	12	1

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.1	3	□	MMS1010S-DIN	39.7	54.8	55.8	101.8	100	1.8	12	2
	3	□	MMS1010S-DIN-C	39.7	54.8	55.8	101.8	100	1.8	12	1
	5	□	MMS1010L-DIN	55.7	70.8	71.8	117.8	116	1.8	12	2
	5	□	MMS1010L-DIN-C	55.7	70.8	71.8	117.8	116	1.8	12	1
	3	★	MMS1010X3DB	32.1	54.8	56.8	112.8	111	1.8	12	1
	5	★	MMS1010X5DB	52.3	75.8	79.8	135.8	134	1.8	12	1
10.2	3	□	MMS1020S-DIN	39.6	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1020S-DIN-C	39.6	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1020L-DIN	55.6	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1020L-DIN-C	55.6	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1020X3DB	32.5	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1020X5DB	52.9	75.9	79.9	135.9	134	1.9	12	1
10.3	3	□	MMS1030S-DIN	39.4	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1030S-DIN-C	39.4	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1030L-DIN	55.4	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1030L-DIN-C	55.4	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1030X3DB	32.8	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1030X5DB	53.4	75.9	79.9	135.9	134	1.9	12	1
10.4	3	□	MMS1040S-DIN	39.3	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1040S-DIN-C	39.3	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1040L-DIN	55.3	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1040L-DIN-C	55.3	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1040X3DB	33.1	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1040X5DB	53.9	75.9	79.9	135.9	134	1.9	12	1
10.5	3	□	MMS1050S-DIN	39.2	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1050S-DIN-C	39.2	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1050L-DIN	55.2	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1050L-DIN-C	55.2	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1050X3DB	33.4	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1050X5DB	54.4	75.9	79.9	135.9	134	1.9	12	1
10.6	3	□	MMS1060S-DIN	39.0	54.9	55.9	101.9	100	1.9	12	2
	3	□	MMS1060S-DIN-C	39.0	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1060L-DIN	55.0	70.9	71.9	117.9	116	1.9	12	2
	5	□	MMS1060L-DIN-C	55.0	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1060X3DB	33.7	56.9	57.9	117.9	116	1.9	12	1
	5	★	MMS1060X5DB	54.9	78.9	79.9	135.9	134	1.9	12	1
10.7	3	□	MMS1070S-DIN	38.9	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1070S-DIN-C	38.9	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1070L-DIN	54.9	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1070L-DIN-C	54.9	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1070X3DB	34.0	56.9	57.9	117.9	116	1.9	12	1
	5	★	MMS1070X5DB	55.4	78.9	79.9	135.9	134	1.9	12	1
10.8	3	□	MMS1080S-DIN	38.8	55.0	56.0	102.0	100	2.0	12	2
	3	●	MMS1080S-DIN-C	38.8	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1080L-DIN	54.8	71.0	72.0	118.0	116	2.0	12	2
	5	●	MMS1080L-DIN-C	54.8	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1080X3DB	34.4	57.0	58.0	118.0	116	2.0	12	1
	5	★	MMS1080X5DB	56.0	79.0	80.0	136.0	134	2.0	12	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.9	3	□	MMS1090S-DIN	38.6	55.0	56.0	102.0	100	2.0	12	2
	3	□	MMS1090S-DIN-C	38.6	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1090L-DIN	54.6	71.0	72.0	118.0	116	2.0	12	2
	5	□	MMS1090L-DIN-C	54.6	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1090X3DB	34.7	57.0	58.0	118.0	116	2.0	12	1
	5	★	MMS1090X5DB	56.5	79.0	80.0	136.0	134	2.0	12	1
11.0	3	□	MMS1100S-DIN	38.5	55.0	56.0	102.0	100	2.0	12	2
	3	●	MMS1100S-DIN-C	38.5	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1100L-DIN	54.5	71.0	72.0	118.0	116	2.0	12	2
	5	●	MMS1100L-DIN-C	54.5	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1100X3DB	35.0	57.0	58.0	118.0	116	2.0	12	1
	5	★	MMS1100X5DB	57.0	79.0	80.0	136.0	134	2.0	12	1
11.1	3	□	MMS1110S-DIN	38.4	55.0	56.0	102.0	100	2.0	12	2
	3	□	MMS1110S-DIN-C	38.4	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1110L-DIN	54.4	71.0	72.0	118.0	116	2.0	12	2
	5	□	MMS1110L-DIN-C	54.4	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1110X3DB	35.3	60.0	62.0	118.0	116	2.0	12	1
	5	★	MMS1110X5DB	57.5	83.0	86.0	142.0	140	2.0	12	1
11.2	3	□	MMS1120S-DIN	38.2	55.0	56.0	102.0	100	2.0	12	2
	3	●	MMS1120S-DIN-C	38.2	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1120L-DIN	54.2	71.0	72.0	118.0	116	2.0	12	2
	5	●	MMS1120L-DIN-C	54.2	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1120X3DB	35.6	60.0	62.0	118.0	116	2.0	12	1
	5	★	MMS1120X5DB	58.0	83.0	86.0	142.0	140	2.0	12	1
11.3	3	□	MMS1130S-DIN	38.1	55.1	56.1	102.1	100	2.1	12	2
	3	□	MMS1130S-DIN-C	38.1	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1130L-DIN	54.1	71.1	72.1	118.1	116	2.1	12	2
	5	□	MMS1130L-DIN-C	54.1	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1130X3DB	36.0	60.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1130X5DB	58.6	83.1	86.1	142.1	140	2.1	12	1
11.4	3	□	MMS1140S-DIN	38.0	55.1	56.1	102.1	100	2.1	12	2
	3	●	MMS1140S-DIN-C	38.0	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1140L-DIN	54.0	71.1	72.1	118.1	116	2.1	12	2
	5	●	MMS1140L-DIN-C	54.0	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1140X3DB	36.3	60.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1140X5DB	59.1	83.1	86.1	142.1	140	2.1	12	1
11.5	3	□	MMS1150S-DIN	37.8	55.1	56.1	102.1	100	2.1	12	2
	3	●	MMS1150S-DIN-C	37.8	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1150L-DIN	53.8	71.1	72.1	118.1	116	2.1	12	2
	5	●	MMS1150L-DIN-C	53.8	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1150X3DB	36.6	60.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1150X5DB	59.6	83.1	86.1	142.1	140	2.1	12	1
11.6	3	□	MMS1160S-DIN	37.7	55.1	56.1	102.1	100	2.1	12	2
	3	□	MMS1160S-DIN-C	37.7	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1160L-DIN	53.7	71.1	72.1	118.1	116	2.1	12	2
	5	□	MMS1160L-DIN-C	53.7	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1160X3DB	36.9	62.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1160X5DB	60.1	86.1	86.1	142.1	140	2.1	12	1

CONDICIONES DE CORTE ➤ M094
GUIA OPERACIONAL ➤ M093
DATOS TÉCNICOS ➤ P001

MMS

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
11.7	3	□	MMS1170S-DIN	37.6	55.1	56.1	102.1	100	2.1	12	2
	3	●	MMS1170S-DIN-C	37.6	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1170L-DIN	53.6	71.1	72.1	118.1	116	2.1	12	2
	5	●	MMS1170L-DIN-C	53.6	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1170X3DB	37.2	62.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1170X5DB	60.6	86.1	86.1	142.1	140	2.1	12	1
11.8	3	□	MMS1180S-DIN	37.4	55.1	56.1	102.1	100	2.1	12	2
	3	●	MMS1180S-DIN-C	37.4	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1180L-DIN	53.4	71.1	72.1	118.1	116	2.1	12	2
	5	●	MMS1180L-DIN-C	53.4	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1180X3DB	37.5	62.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1180X5DB	61.1	86.1	86.1	142.1	140	2.1	12	1
11.9	3	□	MMS1190S-DIN	37.3	55.2	56.2	102.2	100	2.2	12	2
	3	□	MMS1190S-DIN-C	37.3	55.2	56.2	102.2	100	2.2	12	1
	5	□	MMS1190L-DIN	53.3	71.2	72.2	118.2	116	2.2	12	2
	5	□	MMS1190L-DIN-C	53.3	71.2	72.2	118.2	116	2.2	12	1
	3	★	MMS1190X3DB	37.9	62.2	62.2	118.2	116	2.2	12	1
	5	★	MMS1190X5DB	61.7	86.2	86.2	142.2	140	2.2	12	1
12.0	3	□	MMS1200S-DIN	37.2	55.2	56.2	102.2	100	2.2	12	2
	3	●	MMS1200S-DIN-C	37.2	55.2	56.2	102.2	100	2.2	12	1
	5	□	MMS1200L-DIN	53.2	71.2	72.2	118.2	116	2.2	12	2
	5	●	MMS1200L-DIN-C	53.2	71.2	72.2	118.2	116	2.2	12	1
	3	★	MMS1200X3DB	38.2	62.2	62.2	118.2	116	2.2	12	1
	5	★	MMS1200X5DB	62.2	86.2	86.2	142.2	140	2.2	12	1
12.05	3	□	MMS1205S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	2
	3	●	MMS1205S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	1
	5	□	MMS1205L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	2
	5	●	MMS1205L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	1
12.1	3	□	MMS1210S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	2
	3	□	MMS1210S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	1
	5	□	MMS1210L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	2
	5	□	MMS1210L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	1
	3	★	MMS1210X3DB	38.5	65.2	68.2	124.2	122	2.2	14	1
	5	★	MMS1210X5DB	62.7	90.2	94.2	150.2	148	2.2	14	1
12.2	3	□	MMS1220S-DIN	41.9	60.2	61.2	107.2	105	2.2	14	2
	3	□	MMS1220S-DIN-C	41.9	60.2	61.2	107.2	105	2.2	14	1
	5	□	MMS1220L-DIN	58.9	77.2	78.2	124.2	122	2.2	14	2
	5	□	MMS1220L-DIN-C	58.9	77.2	78.2	124.2	122	2.2	14	1
	3	★	MMS1220X3DB	38.8	65.2	68.2	124.2	122	2.2	14	1
	5	★	MMS1220X5DB	63.2	90.2	94.2	150.2	148	2.2	14	1
12.3	3	□	MMS1230S-DIN	41.8	60.2	61.2	107.2	105	2.2	14	2
	3	□	MMS1230S-DIN-C	41.8	60.2	61.2	107.2	105	2.2	14	1
	5	□	MMS1230L-DIN	58.8	77.2	78.2	124.2	122	2.2	14	2
	5	□	MMS1230L-DIN-C	58.8	77.2	78.2	124.2	122	2.2	14	1
	3	★	MMS1230X3DB	39.1	65.2	68.2	124.2	122	2.2	14	1
	5	★	MMS1230X5DB	63.7	90.2	94.2	150.2	148	2.2	14	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
12.4	3	□	MMS1240S-DIN	41.7	60.3	61.3	107.3	105	2.3	14	2
	3	□	MMS1240S-DIN-C	41.7	60.3	61.3	107.3	105	2.3	14	1
	5	□	MMS1240L-DIN	58.7	77.3	78.3	124.3	122	2.3	14	2
	5	□	MMS1240L-DIN-C	58.7	77.3	78.3	124.3	122	2.3	14	1
	3	★	MMS1240X3DB	39.5	65.3	68.3	124.3	122	2.3	14	1
	5	★	MMS1240X5DB	64.3	90.3	94.3	150.3	148	2.3	14	1
12.5	3	□	MMS1250S-DIN	41.5	60.3	61.3	107.3	105	2.3	14	2
	3	●	MMS1250S-DIN-C	41.5	60.3	61.3	107.3	105	2.3	14	1
	5	□	MMS1250L-DIN	58.5	77.3	78.3	124.3	122	2.3	14	2
	5	●	MMS1250L-DIN-C	58.5	77.3	78.3	124.3	122	2.3	14	1
	3	★	MMS1250X3DB	39.8	65.3	68.3	124.3	122	2.3	14	1
	5	★	MMS1250X5DB	64.8	90.3	94.3	150.3	148	2.3	14	1
12.6	3	□	MMS1260S-DIN	41.4	60.3	61.3	107.3	105	2.3	14	2
	3	●	MMS1260S-DIN-C	41.4	60.3	61.3	107.3	105	2.3	14	1
	5	□	MMS1260L-DIN	58.4	77.3	78.3	124.3	122	2.3	14	2
	5	●	MMS1260L-DIN-C	58.4	77.3	78.3	124.3	122	2.3	14	1
	3	★	MMS1260X3DB	40.1	67.3	68.3	124.3	122	2.3	14	1
	5	★	MMS1260X5DB	65.3	93.3	94.3	150.3	148	2.3	14	1
12.7	3	□	MMS1270S-DIN	41.3	60.3	61.3	107.3	105	2.3	14	2
	3	●	MMS1270S-DIN-C	41.3	60.3	61.3	107.3	105	2.3	14	1
	5	□	MMS1270L-DIN	58.3	77.3	78.3	124.3	122	2.3	14	2
	5	●	MMS1270L-DIN-C	58.3	77.3	78.3	124.3	122	2.3	14	1
	3	★	MMS1270X3DB	40.4	67.3	68.3	124.3	122	2.3	14	1
	5	★	MMS1270X5DB	65.8	93.3	94.3	150.3	148	2.3	14	1
12.8	3	□	MMS1280S-DIN	41.1	60.3	61.3	107.3	105	2.3	14	2
	3	□	MMS1280S-DIN-C	41.1	60.3	61.3	107.3	105	2.3	14	1
	5	□	MMS1280L-DIN	58.1	77.3	78.3	124.3	122	2.3	14	2
	5	□	MMS1280L-DIN-C	58.1	77.3	78.3	124.3	122	2.3	14	1
	3	★	MMS1280X3DB	40.7	67.3	68.3	124.3	122	2.3	14	1
	5	★	MMS1280X5DB	66.3	93.3	94.3	150.3	148	2.3	14	1
12.9	3	□	MMS1290S-DIN	41.0	60.3	61.3	107.3	105	2.3	14	2
	3	□	MMS1290S-DIN-C	41.0	60.3	61.3	107.3	105	2.3	14	1
	5	□	MMS1290L-DIN	58.0	77.3	78.3	124.3	122	2.3	14	2
	5	□	MMS1290L-DIN-C	58.0	77.3	78.3	124.3	122	2.3	14	1
	3	★	MMS1290X3DB	41.0	67.3	68.3	124.3	122	2.3	14	1
	5	★	MMS1290X5DB	66.8	93.3	94.3	150.3	148	2.3	14	1
13.0	3	□	MMS1300S-DIN	40.9	60.4	61.4	107.4	105	2.4	14	2
	3	●	MMS1300S-DIN-C	40.9	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1300L-DIN	57.9	77.4	78.4	124.4	122	2.4	14	2
	5	●	MMS1300L-DIN-C	57.9	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1300X3DB	41.4	67.4	68.4	124.4	122	2.4	14	1
	5	★	MMS1300X5DB	67.4	93.4	94.4	150.4	148	2.4	14	1
13.1	3	□	MMS1310S-DIN	40.7	60.4	61.4	107.4	105	2.4	14	2
	3	□	MMS1310S-DIN-C	40.7	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1310L-DIN	57.7	77.4	78.4	124.4	122	2.4	14	2
	5	□	MMS1310L-DIN-C	57.7	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1310X3DB	41.7	70.4	72.4	128.4	126	2.4	14	1
	5	★	MMS1310X5DB	67.9	97.4	100.4	156.4	154	2.4	14	1

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
13.2	3	□	MMS1320S-DIN	40.6	60.4	61.4	107.4	105	2.4	14	2
	3	□	MMS1320S-DIN-C	40.6	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1320L-DIN	57.6	77.4	78.4	124.4	122	2.4	14	2
	5	□	MMS1320L-DIN-C	57.6	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1320X3DB	42.0	70.4	72.4	128.4	126	2.4	14	1
	5	★	MMS1320X5DB	68.4	97.4	100.4	156.4	154	2.4	14	1
13.3	3	□	MMS1330S-DIN	40.5	60.4	61.4	107.4	105	2.4	14	2
	3	□	MMS1330S-DIN-C	40.5	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1330L-DIN	57.5	77.4	78.4	124.4	122	2.4	14	2
	5	□	MMS1330L-DIN-C	57.5	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1330X3DB	42.3	70.4	72.4	128.4	126	2.4	14	1
	5	★	MMS1330X5DB	68.9	97.4	100.4	156.4	154	2.4	14	1
13.4	3	□	MMS1340S-DIN	40.3	60.4	61.4	107.4	105	2.4	14	2
	3	□	MMS1340S-DIN-C	40.3	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1340L-DIN	57.3	77.4	78.4	124.4	122	2.4	14	2
	5	□	MMS1340L-DIN-C	57.3	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1340X3DB	42.6	70.4	72.4	128.4	126	2.4	14	1
	5	★	MMS1340X5DB	69.4	97.4	100.4	156.4	154	2.4	14	1
13.5	3	□	MMS1350S-DIN	40.2	60.5	61.5	107.5	105	2.5	14	2
	3	●	MMS1350S-DIN-C	40.2	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1350L-DIN	57.2	77.5	78.5	124.5	122	2.5	14	2
	5	●	MMS1350L-DIN-C	57.2	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1350X3DB	43.0	70.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1350X5DB	70.0	97.5	100.5	156.5	154	2.5	14	1
13.6	3	□	MMS1360S-DIN	40.1	60.5	61.5	107.5	105	2.5	14	2
	3	□	MMS1360S-DIN-C	40.1	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1360L-DIN	57.1	77.5	78.5	124.5	122	2.5	14	2
	5	□	MMS1360L-DIN-C	57.1	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1360X3DB	43.3	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1360X5DB	70.5	100.5	100.5	156.5	154	2.5	14	1
13.7	3	□	MMS1370S-DIN	39.9	60.5	61.5	107.5	105	2.5	14	2
	3	●	MMS1370S-DIN-C	39.9	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1370L-DIN	56.9	77.5	78.5	124.5	122	2.5	14	2
	5	●	MMS1370L-DIN-C	56.9	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1370X3DB	43.6	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1370X5DB	71.0	100.5	100.5	156.5	154	2.5	14	1
13.8	3	□	MMS1380S-DIN	39.8	60.5	61.5	107.5	105	2.5	14	2
	3	□	MMS1380S-DIN-C	39.8	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1380L-DIN	56.8	77.5	78.5	124.5	122	2.5	14	2
	5	□	MMS1380L-DIN-C	56.8	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1380X3DB	43.9	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1380X5DB	71.5	100.5	100.5	156.5	154	2.5	14	1
13.9	3	□	MMS1390S-DIN	39.7	60.5	61.5	107.5	105	2.5	14	2
	3	□	MMS1390S-DIN-C	39.7	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1390L-DIN	56.7	77.5	78.5	124.5	122	2.5	14	2
	5	□	MMS1390L-DIN-C	56.7	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1390X3DB	44.2	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1390X5DB	72.0	100.5	100.5	156.5	154	2.5	14	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
14.0	3	□	MMS1400S-DIN	39.5	60.5	61.5	107.5	105	2.5	14	2
	3	●	MMS1400S-DIN-C	39.5	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1400L-DIN	56.5	77.5	78.5	124.5	122	2.5	14	2
	5	●	MMS1400L-DIN-C	56.5	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1400X3DB	44.5	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1400X5DB	72.5	100.5	100.5	156.5	154	2.5	14	1
14.05	3	□	MMS1405S-DIN	43.5	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1405S-DIN-C	43.5	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1405L-DIN	61.5	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1405L-DIN-C	61.5	82.6	83.6	132.6	130	2.6	16	1
14.1	3	□	MMS1410S-DIN	43.4	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1410S-DIN-C	43.4	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1410L-DIN	61.4	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1410L-DIN-C	61.4	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1410X3DB	44.9	75.6	78.6	137.6	135	2.6	16	1
	5	★	MMS1410X5DB	73.1	104.6	108.6	167.6	165	2.6	16	1
14.2	3	□	MMS1420S-DIN	43.3	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1420S-DIN-C	43.3	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1420L-DIN	61.3	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1420L-DIN-C	61.3	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1420X3DB	45.2	75.6	78.6	137.6	135	2.6	16	1
	5	★	MMS1420X5DB	73.6	104.6	108.6	167.6	165	2.6	16	1
14.3	3	□	MMS1430S-DIN	43.2	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1430S-DIN-C	43.2	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1430L-DIN	61.2	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1430L-DIN-C	61.2	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1430X3DB	45.5	75.6	78.6	137.6	135	2.6	16	1
	5	★	MMS1430X5DB	74.1	104.6	108.6	167.6	165	2.6	16	1
14.4	3	□	MMS1440S-DIN	43.0	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1440S-DIN-C	43.0	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1440L-DIN	61.0	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1440L-DIN-C	61.0	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1440X3DB	45.8	75.6	78.6	137.6	135	2.6	16	1
	5	★	MMS1440X5DB	74.6	104.6	108.6	167.6	165	2.6	16	1
14.5	3	□	MMS1450S-DIN	42.9	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1450S-DIN-C	42.9	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1450L-DIN	60.9	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1450L-DIN-C	60.9	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1450X3DB	46.1	75.6	78.6	137.6	135	2.6	16	1
	5	★	MMS1450X5DB	75.1	104.6	108.6	167.6	165	2.6	16	1
14.6	3	□	MMS1460S-DIN	42.8	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1460S-DIN-C	42.8	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1460L-DIN	60.8	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1460L-DIN-C	60.8	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1460X3DB	46.5	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1460X5DB	75.7	107.7	108.7	167.7	165	2.7	16	1
14.7	3	□	MMS1470S-DIN	42.6	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1470S-DIN-C	42.6	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1470L-DIN	60.6	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1470L-DIN-C	60.6	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1470X3DB	46.8	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1470X5DB	76.2	107.7	108.7	167.7	165	2.7	16	1

CONDICIONES DE CORTE ➢ M094

GUIA OPERACIONAL ➢ M093

DATOS TÉCNICOS ➢ P001

MMS

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
14.8	3	□	MMS1480S-DIN	42.5	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1480S-DIN-C	42.5	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1480L-DIN	60.5	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1480L-DIN-C	60.5	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1480X3DB	47.1	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1480X5DB	76.7	107.7	108.7	167.7	165	2.7	16	1
14.9	3	□	MMS1490S-DIN	42.4	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1490S-DIN-C	42.4	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1490L-DIN	60.4	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1490L-DIN-C	60.4	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1490X3DB	47.4	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1490X5DB	77.2	107.7	108.7	167.7	165	2.7	16	1
15.0	3	□	MMS1500S-DIN	42.2	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1500S-DIN-C	42.2	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1500L-DIN	60.2	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1500L-DIN-C	60.2	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1500X3DB	47.7	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1500X5DB	77.7	107.7	108.7	167.7	165	2.7	16	1
15.1	3	□	MMS1510S-DIN	42.1	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1510S-DIN-C	42.1	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1510L-DIN	60.1	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1510L-DIN-C	60.1	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1510X3DB	48.0	80.7	82.7	141.7	139	2.7	16	1
	5	★	MMS1510X5DB	78.2	111.7	114.7	173.7	171	2.7	16	1
15.2	3	□	MMS1520S-DIN	42.0	64.8	65.8	114.8	112	2.8	16	2
	3	□	MMS1520S-DIN-C	42.0	64.8	65.8	114.8	112	2.8	16	1
	5	□	MMS1520L-DIN	60.0	82.8	83.8	132.8	130	2.8	16	2
	5	□	MMS1520L-DIN-C	60.0	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1520X3DB	48.4	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1520X5DB	78.8	111.8	114.8	173.8	171	2.8	16	1
15.3	3	□	MMS1530S-DIN	41.8	64.8	65.8	114.8	112	2.8	16	2
	3	□	MMS1530S-DIN-C	41.8	64.8	65.8	114.8	112	2.8	16	1
	5	□	MMS1530L-DIN	59.8	82.8	83.8	132.8	130	2.8	16	2
	5	□	MMS1530L-DIN-C	59.8	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1530X3DB	48.7	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1530X5DB	79.3	111.8	114.8	173.8	171	2.8	16	1
15.4	3	□	MMS1540S-DIN	41.7	64.8	65.8	114.8	112	2.8	16	2
	3	□	MMS1540S-DIN-C	41.7	64.8	65.8	114.8	112	2.8	16	1
	5	□	MMS1540L-DIN	59.7	82.8	83.8	132.8	130	2.8	16	2
	5	□	MMS1540L-DIN-C	59.7	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1540X3DB	49.0	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1540X5DB	79.8	111.8	114.8	173.8	171	2.8	16	1
15.5	3	□	MMS1550S-DIN	41.6	64.8	65.8	114.8	112	2.8	16	2
	3	□	MMS1550S-DIN-C	41.6	64.8	65.8	114.8	112	2.8	16	1
	5	□	MMS1550L-DIN	59.6	82.8	83.8	132.8	130	2.8	16	2
	5	□	MMS1550L-DIN-C	59.6	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1550X3DB	49.3	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1550X5DB	80.3	111.8	114.8	173.8	171	2.8	16	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
15.6	3	□	MMS1560S-DIN	41.4	64.8	65.8	114.8	112	2.8	16	2
	3	□	MMS1560S-DIN-C	41.4	64.8	65.8	114.8	112	2.8	16	1
	5	□	MMS1560L-DIN	59.4	82.8	83.8	132.8	130	2.8	16	2
	5	□	MMS1560L-DIN-C	59.4	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1560X3DB	49.6	82.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1560X5DB	80.8	114.8	114.8	173.8	171	2.8	16	1
15.7	3	□	MMS1570S-DIN	41.3	64.9	65.9	114.9	112	2.9	16	2
	3	□	MMS1570S-DIN-C	41.3	64.9	65.9	114.9	112	2.9	16	1
	5	□	MMS1570L-DIN	59.3	82.9	83.9	132.9	130	2.9	16	2
	5	□	MMS1570L-DIN-C	59.3	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1570X3DB	50.0	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1570X5DB	81.4	114.9	114.9	173.9	171	2.9	16	1
15.8	3	□	MMS1580S-DIN	41.2	64.9	65.9	114.9	112	2.9	16	2
	3	□	MMS1580S-DIN-C	41.2	64.9	65.9	114.9	112	2.9	16	1
	5	□	MMS1580L-DIN	59.2	82.9	83.9	132.9	130	2.9	16	2
	5	□	MMS1580L-DIN-C	59.2	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1580X3DB	50.3	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1580X5DB	81.9	114.9	114.9	173.9	171	2.9	16	1
15.9	3	□	MMS1590S-DIN	41.0	64.9	65.9	114.9	112	2.9	16	2
	3	□	MMS1590S-DIN-C	41.0	64.9	65.9	114.9	112	2.9	16	1
	5	□	MMS1590L-DIN	59.0	82.9	83.9	132.9	130	2.9	16	2
	5	□	MMS1590L-DIN-C	59.0	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1590X3DB	50.6	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1590X5DB	82.4	114.9	114.9	173.9	171	2.9	16	1
16.0	3	□	MMS1600S-DIN	40.9	64.9	65.9	114.9	112	2.9	16	2
	3	□	MMS1600S-DIN-C	40.9	64.9	65.9	114.9	112	2.9	16	1
	5	□	MMS1600L-DIN	58.9	82.9	83.9	132.9	130	2.9	16	2
	5	□	MMS1600L-DIN-C	58.9	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1600X3DB	50.9	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1600X5DB	82.9	114.9	114.9	173.9	171	2.9	16	1
16.1	3	□	MMS1610S-DIN	48.8	72.9	73.9	122.9	120	2.9	18	2
	3	□	MMS1610S-DIN-C	48.8	72.9	73.9	122.9	120	2.9	18	1
	5	□	MMS1610L-DIN	68.8	92.9	93.9	142.9	140	2.9	18	2
	5	□	MMS1610L-DIN-C	68.8	92.9	93.9	142.9	140	2.9	18	1
	3	□	MMS1610X3DB	51.2	85.9	88.9	147.9	145	2.9	18	1
	5	□	MMS1610X5DB	83.4	118.9	122.9	181.9	179	2.9	18	1
16.2	3	□	MMS1620S-DIN	48.6	72.9	73.9	122.9	120	2.9	18	2
	3	□	MMS1620S-DIN-C	48.6	72.9	73.9	122.9	120	2.9	18	1
	5	□	MMS1620L-DIN	68.6	92.9	93.9	142.9	140	2.9	18	2
	5	□	MMS1620L-DIN-C	68.6	92.9	93.9	142.9	140	2.9	18	1
	3	□	MMS1620X3DB	51.5	85.9	88.9	147.9	145	2.9	18	1
	5	□	MMS1620X5DB	83.9	118.9	122.9	181.9	179	2.9	18	1
16.3	3	□	MMS1630S-DIN	48.5	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1630S-DIN-C	48.5	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1630L-DIN	68.5	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1630L-DIN-C	68.5	93.0	94.0	143.0	140	3.0	18	1
	3	□	MMS1630X3DB	51.9	86.0	89.0	148.0	145	3.0	18	1
	5	□	MMS1630X5DB	84.5	119.0	123.0	182.0	179	3.0	18	1

★ : Stock Japón. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
16.4	3	□	MMS1640S-DIN	48.4	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1640S-DIN-C	48.4	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1640L-DIN	68.4	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1640L-DIN-C	68.4	93.0	94.0	143.0	140	3.0	18	1
	3	□	MMS1640X3DB	52.2	86.0	89.0	148.0	145	3.0	18	1
	5	□	MMS1640X5DB	85.0	119.0	123.0	182.0	179	3.0	18	1
16.5	3	□	MMS1650S-DIN	48.3	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1650S-DIN-C	48.3	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1650L-DIN	68.3	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1650L-DIN-C	68.3	93.0	94.0	143.0	140	3.0	18	1
	3	★	MMS1650X3DB	52.5	86.0	89.0	148.0	145	3.0	18	1
	5	★	MMS1650X5DB	85.5	119.0	123.0	182.0	179	3.0	18	1
16.6	3	□	MMS1660S-DIN	48.1	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1660S-DIN-C	48.1	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1660L-DIN	68.1	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1660L-DIN-C	68.1	93.0	94.0	143.0	140	3.0	18	1
	3	□	MMS1660X3DB	52.8	88.0	89.0	148.0	145	3.0	18	1
	5	□	MMS1660X5DB	86.0	122.0	123.0	182.0	179	3.0	18	1
16.7	3	□	MMS1670S-DIN	48.0	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1670S-DIN-C	48.0	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1670L-DIN	68.0	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1670L-DIN-C	68.0	93.0	94.0	143.0	140	3.0	18	1
	3	□	MMS1670X3DB	53.1	88.0	89.0	148.0	145	3.0	18	1
	5	□	MMS1670X5DB	86.5	122.0	123.0	182.0	179	3.0	18	1
16.8	3	□	MMS1680S-DIN	47.9	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1680S-DIN-C	47.9	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1680L-DIN	67.9	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1680L-DIN-C	67.9	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1680X3DB	53.5	88.1	89.1	148.1	145	3.1	18	1
	5	□	MMS1680X5DB	87.1	122.1	123.1	182.1	179	3.1	18	1
16.9	3	□	MMS1690S-DIN	47.7	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1690S-DIN-C	47.7	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1690L-DIN	67.7	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1690L-DIN-C	67.7	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1690X3DB	53.8	88.1	89.1	148.1	145	3.1	18	1
	5	□	MMS1690X5DB	87.6	122.1	123.1	182.1	179	3.1	18	1
17.0	3	□	MMS1700S-DIN	47.6	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1700S-DIN-C	47.6	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1700L-DIN	67.6	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1700L-DIN-C	67.6	93.1	94.1	143.1	140	3.1	18	1
	3	★	MMS1700X3DB	54.1	88.1	89.1	148.1	145	3.1	18	1
	5	★	MMS1700X5DB	88.1	122.1	123.1	182.1	179	3.1	18	1
17.1	3	□	MMS1710S-DIN	47.5	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1710S-DIN-C	47.5	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1710L-DIN	67.5	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1710L-DIN-C	67.5	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1710X3DB	54.4	91.1	93.1	152.1	149	3.1	18	1
	5	□	MMS1710X5DB	88.6	126.1	129.1	188.1	185	3.1	18	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
17.2	3	□	MMS1720S-DIN	47.3	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1720S-DIN-C	47.3	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1720L-DIN	67.3	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1720L-DIN-C	67.3	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1720X3DB	54.7	91.1	93.1	152.1	149	3.1	18	1
	5	□	MMS1720X5DB	89.1	126.1	129.1	188.1	185	3.1	18	1
17.3	3	□	MMS1730S-DIN	47.2	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1730S-DIN-C	47.2	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1730L-DIN	67.2	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1730L-DIN-C	67.2	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1730X3DB	55.0	91.1	93.1	152.1	149	3.1	18	1
	5	□	MMS1730X5DB	89.6	126.1	129.1	188.1	185	3.1	18	1
17.4	3	□	MMS1740S-DIN	47.1	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1740S-DIN-C	47.1	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1740L-DIN	67.1	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1740L-DIN-C	67.1	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1740X3DB	55.4	91.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1740X5DB	90.2	126.2	129.2	188.2	185	3.2	18	1
17.5	3	□	MMS1750S-DIN	46.9	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1750S-DIN-C	46.9	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1750L-DIN	66.9	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1750L-DIN-C	66.9	93.2	94.2	143.2	140	3.2	18	1
	3	★	MMS1750X3DB	55.7	91.2	93.2	152.2	149	3.2	18	1
	5	★	MMS1750X5DB	90.7	126.2	129.2	188.2	185	3.2	18	1
17.6	3	□	MMS1760S-DIN	46.8	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1760S-DIN-C	46.8	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1760L-DIN	66.8	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1760L-DIN-C	66.8	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1760X3DB	56.0	93.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1760X5DB	91.2	129.2	129.2	188.2	185	3.2	18	1
17.7	3	□	MMS1770S-DIN	46.7	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1770S-DIN-C	46.7	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1770L-DIN	66.7	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1770L-DIN-C	66.7	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1770X3DB	56.3	93.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1770X5DB	91.7	129.2	129.2	188.2	185	3.2	18	1
17.8	3	□	MMS1780S-DIN	46.5	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1780S-DIN-C	46.5	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1780L-DIN	66.5	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1780L-DIN-C	66.5	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1780X3DB	56.6	93.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1780X5DB	92.2	129.2	129.2	188.2	185	3.2	18	1
17.9	3	□	MMS1790S-DIN	46.4	73.3	74.3	123.3	120	3.3	18	2
	3	□	MMS1790S-DIN-C	46.4	73.3	74.3	123.3	120	3.3	18	1
	5	□	MMS1790L-DIN	66.4	93.3	94.3	143.3	140	3.3	18	2
	5	□	MMS1790L-DIN-C	66.4	93.3	94.3	143.3	140	3.3	18	1
	3	□	MMS1790X3DB	57.0	93.3	93.3	152.3	149	3.3	18	1
	5	□	MMS1790X5DB	92.8	129.3	129.3	188.3	185	3.3	18	1

CONDICIONES DE CORTE ➤ M094
GUIA OPERACIONAL ➤ M093
DATOS TÉCNICOS ➤ P001

MMS

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
18.0	3	□	MMS1800S-DIN	46.3	73.3	74.3	123.3	120	3.3	18	2
	3	□	MMS1800S-DIN-C	46.3	73.3	74.3	123.3	120	3.3	18	1
	5	□	MMS1800L-DIN	66.3	93.3	94.3	143.3	140	3.3	18	2
	5	□	MMS1800L-DIN-C	66.3	93.3	94.3	143.3	140	3.3	18	1
	3	★	MMS1800X3DB	57.3	93.3	93.3	152.3	149	3.3	18	1
	5	★	MMS1800X5DB	93.3	129.3	129.3	188.3	185	3.3	18	1
18.1	3	□	MMS1810S-DIN	52.1	79.3	80.3	131.3	128	3.3	20	2
	3	□	MMS1810S-DIN-C	52.1	79.3	80.3	131.3	128	3.3	20	1
	5	□	MMS1810L-DIN	74.1	101.3	102.3	153.3	150	3.3	20	2
	5	□	MMS1810L-DIN-C	74.1	101.3	102.3	153.3	150	3.3	20	1
	3	□	MMS1810X3DB	57.6	96.3	99.3	160.3	157	3.3	20	1
	5	□	MMS1810X5DB	93.8	133.3	137.3	198.3	195	3.3	20	1
18.2	3	□	MMS1820S-DIN	52.0	79.3	80.3	131.3	128	3.3	20	2
	3	□	MMS1820S-DIN-C	52.0	79.3	80.3	131.3	128	3.3	20	1
	5	□	MMS1820L-DIN	74.0	101.3	102.3	153.3	150	3.3	20	2
	5	□	MMS1820L-DIN-C	74.0	101.3	102.3	153.3	150	3.3	20	1
	3	□	MMS1820X3DB	57.9	96.3	99.3	160.3	157	3.3	20	1
	5	□	MMS1820X5DB	94.3	133.3	137.3	198.3	195	3.3	20	1
18.3	3	□	MMS1830S-DIN	51.9	79.3	80.3	131.3	128	3.3	20	2
	3	□	MMS1830S-DIN-C	51.9	79.3	80.3	131.3	128	3.3	20	1
	5	□	MMS1830L-DIN	73.9	101.3	102.3	153.3	150	3.3	20	2
	5	□	MMS1830L-DIN-C	73.9	101.3	102.3	153.3	150	3.3	20	1
	3	□	MMS1830X3DB	58.2	96.3	99.3	160.3	157	3.3	20	1
	5	□	MMS1830X5DB	94.8	133.3	137.3	198.3	195	3.3	20	1
18.4	3	□	MMS1840S-DIN	51.7	79.3	80.3	131.3	128	3.3	20	2
	3	□	MMS1840S-DIN-C	51.7	79.3	80.3	131.3	128	3.3	20	1
	5	□	MMS1840L-DIN	73.7	101.3	102.3	153.3	150	3.3	20	2
	5	□	MMS1840L-DIN-C	73.7	101.3	102.3	153.3	150	3.3	20	1
	3	□	MMS1840X3DB	58.5	96.3	99.3	160.3	157	3.3	20	1
	5	□	MMS1840X5DB	95.3	133.3	137.3	198.3	195	3.3	20	1
18.5	3	□	MMS1850S-DIN	51.6	79.4	80.4	131.4	128	3.4	20	2
	3	□	MMS1850S-DIN-C	51.6	79.4	80.4	131.4	128	3.4	20	1
	5	□	MMS1850L-DIN	73.6	101.4	102.4	153.4	150	3.4	20	2
	5	□	MMS1850L-DIN-C	73.6	101.4	102.4	153.4	150	3.4	20	1
	3	★	MMS1850X3DB	58.9	96.4	99.4	160.4	157	3.4	20	1
	5	★	MMS1850X5DB	95.9	133.4	137.4	198.4	195	3.4	20	1
18.6	3	□	MMS1860S-DIN	51.5	79.4	80.4	131.4	128	3.4	20	2
	3	□	MMS1860S-DIN-C	51.5	79.4	80.4	131.4	128	3.4	20	1
	5	□	MMS1860L-DIN	73.5	101.4	102.4	153.4	150	3.4	20	2
	5	□	MMS1860L-DIN-C	73.5	101.4	102.4	153.4	150	3.4	20	1
	3	□	MMS1860X3DB	59.2	98.4	99.4	160.4	157	3.4	20	1
	5	□	MMS1860X5DB	96.4	136.4	137.4	198.4	195	3.4	20	1
18.7	3	□	MMS1870S-DIN	51.4	79.4	80.4	131.4	128	3.4	20	2
	3	□	MMS1870S-DIN-C	51.4	79.4	80.4	131.4	128	3.4	20	1
	5	□	MMS1870L-DIN	73.4	101.4	102.4	153.4	150	3.4	20	2
	5	□	MMS1870L-DIN-C	73.4	101.4	102.4	153.4	150	3.4	20	1
	3	□	MMS1870X3DB	59.5	98.4	99.4	160.4	157	3.4	20	1
	5	□	MMS1870X5DB	96.9	136.4	137.4	198.4	195	3.4	20	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
18.8	3	□	MMS1880S-DIN	51.2	79.4	80.4	131.4	128	3.4	20	2
	3	□	MMS1880S-DIN-C	51.2	79.4	80.4	131.4	128	3.4	20	1
	5	□	MMS1880L-DIN	73.2	101.4	102.4	153.4	150	3.4	20	2
	5	□	MMS1880L-DIN-C	73.2	101.4	102.4	153.4	150	3.4	20	1
	3	□	MMS1880X3DB	59.8	98.4	99.4	160.4	157	3.4	20	1
	5	□	MMS1880X5DB	97.4	136.4	137.4	198.4	195	3.4	20	1
18.9	3	□	MMS1890S-DIN	51.1	79.4	80.4	131.4	128	3.4	20	2
	3	□	MMS1890S-DIN-C	51.1	79.4	80.4	131.4	128	3.4	20	1
	5	□	MMS1890L-DIN	73.1	101.4	102.4	153.4	150	3.4	20	2
	5	□	MMS1890L-DIN-C	73.1	101.4	102.4	153.4	150	3.4	20	1
	3	□	MMS1890X3DB	60.1	98.4	99.4	160.4	157	3.4	20	1
	5	□	MMS1890X5DB	97.9	136.4	137.4	198.4	195	3.4	20	1
19.0	3	□	MMS1900S-DIN	51.0	79.5	80.5	131.5	128	3.5	20	2
	3	□	MMS1900S-DIN-C	51.0	79.5	80.5	131.5	128	3.5	20	1
	5	□	MMS1900L-DIN	73.0	101.5	102.5	153.5	150	3.5	20	2
	5	□	MMS1900L-DIN-C	73.0	101.5	102.5	153.5	150	3.5	20	1
	3	★	MMS1900X3DB	60.5	98.5	99.5	160.5	157	3.5	20	1
	5	★	MMS1900X5DB	98.5	136.5	137.5	198.5	195	3.5	20	1
19.1	3	□	MMS1910S-DIN	50.8	79.5	80.5	131.5	128	3.5	20	2
	3	□	MMS1910S-DIN-C	50.8	79.5	80.5	131.5	128	3.5	20	1
	5	□	MMS1910L-DIN	72.8	101.5	102.5	153.5	150	3.5	20	2
	5	□	MMS1910L-DIN-C	72.8	101.5	102.5	153.5	150	3.5	20	1
	3	□	MMS1910X3DB	60.8	101.5	103.5	164.5	161	3.5	20	1
	5	□	MMS1910X5DB	99.0	140.5	143.5	204.5	201	3.5	20	1
19.2	3	□	MMS1920S-DIN	50.7	79.5	80.5	131.5	128	3.5	20	2
	3	□	MMS1920S-DIN-C	50.7	79.5	80.5	131.5	128	3.5	20	1
	5	□	MMS1920L-DIN	72.7	101.5	102.5	153.5	150	3.5	20	2
	5	□	MMS1920L-DIN-C	72.7	101.5	102.5	153.5	150	3.5	20	1
	3	□	MMS1920X3DB	61.1	101.5	103.5	164.5	161	3.5	20	1
	5	□	MMS1920X5DB	99.5	140.5	143.5	204.5	201	3.5	20	1
19.3	3	□	MMS1930S-DIN	50.6	79.5	80.5	131.5	128	3.5	20	2
	3	□	MMS1930S-DIN-C	50.6	79.5	80.5	131.5	128	3.5	20	1
	5	□	MMS1930L-DIN	72.6	101.5	102.5	153.5	150	3.5	20	2
	5	□	MMS1930L-DIN-C	72.6	101.5	102.5	153.5	150	3.5	20	1
	3	□	MMS1930X3DB	61.4	101.5	103.5	164.5	161	3.5	20	1
	5	□	MMS1930X5DB	100.0	140.5	143.5	204.5	201	3.5	20	1
19.4	3	□	MMS1940S-DIN	50.4	79.5	80.5	131.5	128	3.5	20	2
	3	□	MMS1940S-DIN-C	50.4	79.5	80.5	131.5	128	3.5	20	1
	5	□	MMS1940L-DIN	72.4	101.5	102.5	153.5	150	3.5	20	2
	5	□	MMS1940L-DIN-C	72.4	101.5	102.5	153.5	150	3.5	20	1
	3	□	MMS1940X3DB	61.7	101.5	103.5	164.5	161	3.5	20	1
	5	□	MMS1940X5DB	100.5	140.5	143.5	204.5	201	3.5	20	1
19.5	3	□	MMS1950S-DIN	50.3	79.5	80.5	131.5	128	3.5	20	2
	3	□	MMS1950S-DIN-C	50.3	79.5	80.5	131.5	128	3.5	20	1
	5	□	MMS1950L-DIN	72.3	101.5	102.5	153.5	150	3.5	20	2
	5	□	MMS1950L-DIN-C	72.3	101.5	102.5	153.5	150	3.5	20	1
	3	★	MMS1950X3DB	62.0	101.5	103.5	164.5	161	3.5	20	1
	5	★	MMS1950X5DB	101.0	140.5	143.5	204.5	201	3.5	20	1

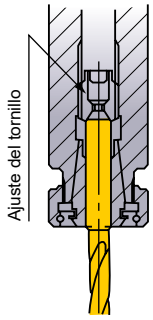
★ : Stock Japón. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
19.6	3	□	MMS1960S-DIN	50.2	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1960S-DIN-C	50.2	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1960L-DIN	72.2	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1960L-DIN-C	72.2	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1960X3DB	62.4	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1960X5DB	101.6	143.6	143.6	204.6	201	3.6	20	1
19.7	3	□	MMS1970S-DIN	50.0	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1970S-DIN-C	50.0	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1970L-DIN	72.0	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1970L-DIN-C	72.0	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1970X3DB	62.7	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1970X5DB	102.1	143.6	143.6	204.6	201	3.6	20	1
19.8	3	□	MMS1980S-DIN	49.9	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1980S-DIN-C	49.9	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1980L-DIN	71.9	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1980L-DIN-C	71.9	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1980X3DB	63.0	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1980X5DB	102.6	143.6	143.6	204.6	201	3.6	20	1

DC (mm)	Profundidad agujero (L/D)	DP7020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
19.9	3	□	MMS1990S-DIN	49.8	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1990S-DIN-C	49.8	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1990L-DIN	71.8	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1990L-DIN-C	71.8	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1990X3DB	63.3	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1990X5DB	103.1	143.6	143.6	204.6	201	3.6	20	1
20.0	3	□	MMS2000S-DIN	49.6	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS2000S-DIN-C	49.6	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS2000L-DIN	71.6	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS2000L-DIN-C	71.6	101.6	102.6	153.6	150	3.6	20	1
	3	★	MMS2000X3DB	63.6	103.6	103.6	164.6	161	3.6	20	1
	5	★	MMS2000X5DB	103.6	143.6	143.6	204.6	201	3.6	20	1

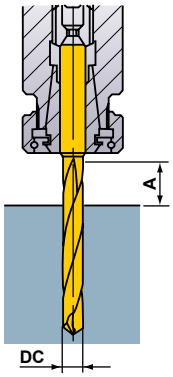
GUIA OPERACIONAL

Amarre de la broca



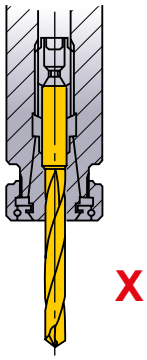
La presión del tipo de tornillo amarra la broca con seguridad.

Longitud de la broca



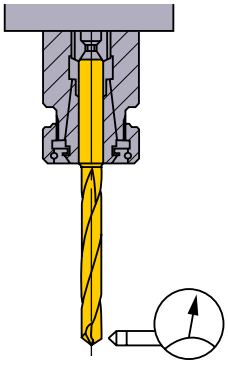
A ≥ DC x 1.5

Instalación de la broca



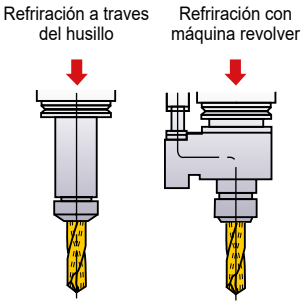
No sujetar en las hélices.

Tolerancia de instalación



Salto radial ≤ 0.03mm

Tipos de refrigeración



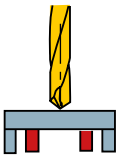
La presión del refrigerante es aproximadamente 5 bar—70 bar

Utilización del refrigerante

1) El polvo y las partículas de polvo que hay en el refrigerante viejo pueden obstruir el agujero para el aceite e impedir el flujo. Es recomendable cambiar regularmente el refrigerante.

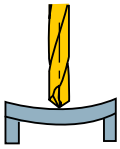
2) Las pequeñas partículas de viruta atascarán el agujero para el aceite. Utilice un filtro como medida preventiva. Si utiliza brocas de pequeño diámetro, utilice un filtro de retícula fina.

Pieza delgada



OK

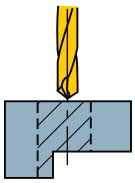
Sujetar la pieza



X

Si se produce un doblamiento

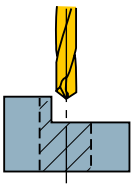
Corte interrumpido



Proceso

OK

①Bajar el avance cuando taladramos partes en corte interrumpido.



Se requiere mecanizar previamente

①Refrentar con fresa integral antes de taladrar.

CONDICIONES DE CORTE ➤ M094
DATOS TÉCNICOS ➤ P001

MMS

CONDICIONES DE CORTE RECOMENDADAS

Material	M									
	Acero Inoxidable Austenítico (≤180HB) X5CrNi1810, X5CrNiMo17-12-2					Acero Inoxidable Austenítico (180—280HB) X2CrNiN1810, X2CrNiMoN17-12-2				
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Avance de mesa (mm/min)
3.2	80	7900	0.13	(0.08—0.18)	1025	60	5900	0.10	(0.05—0.15)	590
4.0	80	6300	0.15	(0.10—0.20)	945	60	4700	0.12	(0.08—0.18)	560
5.0	80	5000	0.15	(0.10—0.20)	750	60	3800	0.12	(0.08—0.18)	455
6.3	80	4000	0.17	(0.12—0.22)	680	60	3000	0.15	(0.10—0.20)	450
8.0	80	3100	0.19	(0.14—0.24)	585	60	2300	0.17	(0.12—0.22)	390
10.0	60	1900	0.20	(0.15—0.25)	380	50	1500	0.18	(0.13—0.23)	270
12.0	60	1500	0.21	(0.16—0.26)	315	50	1300	0.19	(0.14—0.24)	245
16.0	60	1100	0.22	(0.17—0.27)	240	50	900	0.20	(0.15—0.25)	180
20.0	60	900	0.23	(0.18—0.28)	205	50	700	0.21	(0.16—0.26)	145

Material	M									
	Acero inoxidable dúplex (≤280HB) X3CrNiMoN27-5-2					Aceros inoxidables ferríticos y martensíticos (≤200HB) X10Cr13, X6Cr17				
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Avance de mesa (mm/min)
3.2	50	4900	0.10	(0.05—0.15)	490	80	7900	0.13	(0.08—0.18)	1025
4.0	50	3900	0.12	(0.08—0.18)	465	80	6300	0.15	(0.10—0.20)	945
5.0	50	3100	0.12	(0.08—0.18)	370	80	5000	0.15	(0.10—0.20)	750
6.3	50	2500	0.15	(0.10—0.20)	375	80	4000	0.17	(0.12—0.22)	680
8.0	50	1900	0.17	(0.12—0.22)	320	80	3100	0.19	(0.14—0.24)	585
10.0	40	1200	0.18	(0.13—0.23)	215	60	1900	0.20	(0.15—0.25)	380
12.0	40	1000	0.19	(0.14—0.24)	190	60	1500	0.21	(0.16—0.26)	315
16.0	40	700	0.20	(0.15—0.25)	140	60	1100	0.22	(0.17—0.27)	240
20.0	40	600	0.21	(0.16—0.26)	125	60	900	0.23	(0.18—0.28)	205

Material	M									
	Aceros inoxidables ferríticos y martensíticos (>200HB) X20CrNi17-2, X30Cr13					Aceros inoxidables endurecidos (<450HB) X5CrNiCuNb164, X7CrNiAl177, 17-4PH, 17-7PH				
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Avance de mesa (mm/min)
3.2	60	5900	0.10	(0.05—0.15)	590	50	4900	0.10	(0.05—0.15)	490
4.0	60	4700	0.12	(0.08—0.18)	560	50	3900	0.12	(0.08—0.18)	465
5.0	60	3800	0.12	(0.08—0.18)	455	50	3100	0.12	(0.08—0.18)	370
6.3	60	3000	0.15	(0.10—0.20)	450	50	2500	0.15	(0.10—0.20)	375
8.0	60	2300	0.17	(0.12—0.22)	390	50	1900	0.17	(0.12—0.22)	320
10.0	50	1500	0.18	(0.13—0.23)	270	40	1200	0.18	(0.13—0.23)	215
12.0	50	1300	0.19	(0.14—0.24)	245	40	1000	0.19	(0.14—0.24)	190
16.0	50	900	0.20	(0.15—0.25)	180	40	700	0.20	(0.15—0.25)	140
20.0	50	700	0.21	(0.16—0.26)	145	40	600	0.21	(0.16—0.26)	125

Nota 1) Para practicar agujeros con estabilidad, es recomendable un sistema de refrigeración por el eje.
Nota 2) Es recomendable utilizar un refrigerante al agua tipo emulsión.
Nota 3) En fluidos de corte que no sean al agua, reduzca la rotación en un 10%—20%.

■ LISTA DE REFERENCIAS CRUZADAS DEL ACERO INOXIDABLE

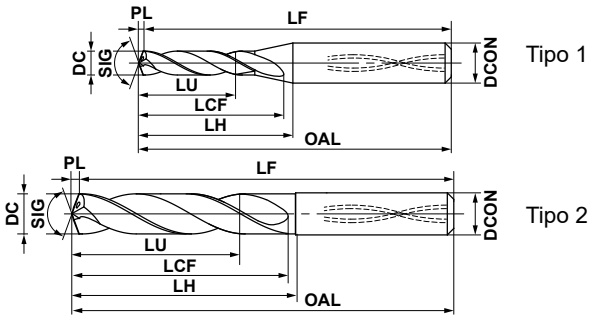
Material		Alemania		E.E.U.U.	Japón
		W-no.	**DIN**	AISI/SAE	JIS
Acero inoxidable ferrítico y martensítico	≤200HB	1.4005	X12CrS3	416	SUS416
		1.4006	X10Cr13	410	SUS410
		1.4016	X6Cr17	430	SUS430
		1.4113	X6CrMo17	434	SUS434
		1.4510	X6CrTi17	430Ti	SUS430LX
		1.4512	X6CrTi12	409	—
	>200HB	1.4021	X20Cr13	420	SUS420J1
		1.4057	X20CrNi17-2	431	SUS431
		1.4028	X30Cr13	420	SUS420J2
		1.4125	X10CrMo17	440C	SUS440C
Acero inoxidable PH	<450HB	1.4542	X5CrNiCuNb16 4	630 (17-4PH)	SUS630
		1.4545	—	S15500 (15-5PH)	—
		1.4568	X7CrNiAl17 7	631 (17-7PH)	SUS631
Acero Inoxidable Austenítico	≤200HB	1.4301	X5CrNi18 10	304	SUS304
		1.4303	X5CrNi8-12	305	SUS305
		1.4305	X12CrNiS18-9	303	SUS303
		1.4307	X2CrNi19-11	304L	SUS304L
		1.4401	X5CrNiMo17 12 2	316	SUS316
	>200HB	1.4311	X2CrNiN18 10	304LN	SUS304LN
		1.4404	X2CrNiMo17 12 2	316L	SUS316L
		1.4406	X2CrNiMoN17 12 2	316LN	SUS316LN
		1.4435	X2CrNiMo18 14 3	—	SUS316L
		1.4438	X2CrNiMo18 15 4	317L	SUS317L
		1.4529	X1NiCrMoCuN25 20 7	N08926	—
		1.4541	X6CrNiTi18-10	321	SUS321
		1.4550	X6CrNiNb18-10	347	SUS347
		1.4571	X6CrNiMoTi17 12 2	316Ti	SUS316Ti
Acero dúplex	≤280HB	1.4362	X2CrNiN23 4	—	—
		1.4410	X2CrNiMoN25 7 4	S32750	SCS14A
		1.4460	X3CrNiMoN27 5 2	329	SUS329J1
		1.4462	X2CrNiMoN22 5 3	S31803	SUS329J3L

DSAS NEW

P | M | K | N | **S** | H

Refrigeración interna

Al observar el recubrimiento, el color puede variar en función de la dirección de visualización. Esto no tendrá ningún efecto en el rendimiento de la broca.



DC=3	3<DC≤6	6<DC≤10	10<DC≤12	
0 −0.018	0 −0.018	0 −0.022	0 −0.027	
DCON=6	6<DCON≤10	DCON=12		
0 −0.018	0 −0.009	0 −0.011		

DC (mm)	Profundidad agujero (L/D)	DP9020	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.00	3	●	**DSAS0300X03S060**	9.5	21.5	23.5	70.5	70	0.5	6	1
3.10	3	●	**DSAS0310X03S060**	9.9	21.6	23.6	70.6	70	0.6	6	1
3.18	3	●	**DSAS0318X03S060**	10.1	21.6	23.6	70.6	70	0.6	6	1
3.20	3	●	**DSAS0320X03S060**	10.2	21.6	23.6	70.6	70	0.6	6	1
3.26	3	●	**DSAS0326X03S060**	10.4	21.6	23.6	70.6	70	0.6	6	1
3.30	3	●	**DSAS0330X03S060**	10.5	21.6	23.6	70.6	70	0.6	6	1
3.40	3	●	**DSAS0340X03S060**	10.8	21.6	23.6	70.6	70	0.6	6	1
3.50	3	●	**DSAS0350X03S060**	11.1	21.6	23.6	70.6	70	0.6	6	1
3.57	3	●	**DSAS0357X03S060**	11.4	22.7	23.7	70.7	70	0.7	6	1
3.60	3	●	**DSAS0360X03S060**	11.5	22.7	23.7	70.7	70	0.7	6	1
3.70	3	●	**DSAS0370X03S060**	11.8	22.7	23.7	70.7	70	0.7	6	1
3.80	3	●	**DSAS0380X03S060**	12.1	22.7	23.7	70.7	70	0.7	6	1
3.90	3	●	**DSAS0390X03S060**	12.4	22.7	23.7	70.7	70	0.7	6	1
3.97	3	●	**DSAS0397X03S060**	12.6	22.7	23.7	70.7	70	0.7	6	1
4.00	3	●	**DSAS0400X03S060**	12.7	22.7	23.7	70.7	70	0.7	6	1
4.10	3	●	**DSAS0410X03S060**	13.0	24.7	26.7	73.7	73	0.7	6	1
4.20	3	●	**DSAS0420X03S060**	13.4	24.8	26.8	73.8	73	0.8	6	1
4.30	3	●	**DSAS0430X03S060**	13.7	24.8	26.8	73.8	73	0.8	6	1
4.37	3	●	**DSAS0437X03S060**	13.9	24.8	26.8	73.8	73	0.8	6	1
4.40	3	●	**DSAS0440X03S060**	14.0	24.8	26.8	73.8	73	0.8	6	1
4.50	3	●	**DSAS0450X03S060**	14.3	24.8	26.8	73.8	73	0.8	6	1
4.60	3	●	**DSAS0460X03S060**	14.6	25.8	28.8	75.8	75	0.8	6	1
4.70	3	●	**DSAS0470X03S060**	15.0	25.9	28.9	75.9	75	0.9	6	1
4.76	3	●	**DSAS0476X03S060**	15.2	25.9	28.9	75.9	75	0.9	6	1
4.80	3	●	**DSAS0480X03S060**	15.3	25.9	28.9	75.9	75	0.9	6	1
4.86	3	●	**DSAS0486X03S060**	15.5	25.9	28.9	75.9	75	0.9	6	1
4.90	3	●	**DSAS0490X03S060**	15.6	25.9	28.9	75.9	75	0.9	6	1
5.00	3	●	**DSAS0500X03S060**	15.9	28.9	29.9	81.9	81	0.9	6	2
5.10	3	●	**DSAS0510X03S060**	16.2	28.9	29.9	81.9	81	0.9	6	2
5.16	3	●	**DSAS0516X03S060**	16.5	29.0	30.0	82.0	81	1.0	6	2
5.20	3	●	**DSAS0520X03S060**	16.6	29.0	30.0	82.0	81	1.0	6	2
5.30	3	●	**DSAS0530X03S060**	16.9	29.0	30.0	82.0	81	1.0	6	2

Nota 1) Los agujeros refrigerantes pasantes de las brocas de 5 mm o menos de diámetro son redondos.

● : **Stock Europa.**

DC (mm)	Profundidad agujero (L/D)	DP9020	Referencia	Dimensiones (mm)							Tipo
				LU	LCF	LH	OAL	LF	PL	DCON	
5.40	3	●	**DSAS0540X03S060**	17.2	29.0	30.0	82.0	81	1.0	6	2
5.50	3	●	**DSAS0550X03S060**	17.5	29.0	30.0	82.0	81	1.0	6	2
5.56	3	●	**DSAS0556X03S060**	17.8	31.1	31.1	82.1	81	1.1	6	2
5.60	3	●	**DSAS0560X03S060**	17.9	31.1	31.1	82.1	81	1.1	6	2
5.70	3	●	**DSAS0570X03S060**	18.2	31.1	31.1	82.1	81	1.1	6	2
5.80	3	●	**DSAS0580X03S060**	18.5	31.1	31.1	82.1	81	1.1	6	2
5.90	3	●	**DSAS0590X03S060**	18.8	31.1	31.1	82.1	81	1.1	6	2
5.95	3	●	**DSAS0595X03S060**	19.0	31.1	31.1	82.1	81	1.1	6	2
6.00	3	●	**DSAS0600X03S060**	19.1	31.1	31.1	82.1	81	1.1	6	2
6.10	3	●	**DSAS0610X03S080**	19.5	34.2	37.2	87.2	86	1.2	8	2
6.20	3	●	**DSAS0620X03S080**	19.8	34.2	37.2	87.2	86	1.2	8	2
6.30	3	●	**DSAS0630X03S080**	20.1	34.2	37.2	87.2	86	1.2	8	2
6.35	3	●	**DSAS0635X03S080**	20.3	34.2	37.2	87.2	86	1.2	8	2
6.40	3	●	**DSAS0640X03S080**	20.4	34.2	37.2	87.2	86	1.2	8	2
6.50	3	●	**DSAS0650X03S080**	20.7	34.2	37.2	87.2	86	1.2	8	2
6.60	3	●	**DSAS0660X03S080**	21.1	36.3	38.3	91.3	90	1.3	8	2
6.70	3	●	**DSAS0670X03S080**	21.4	36.3	38.3	91.3	90	1.3	8	2
6.75	3	●	**DSAS0675X03S080**	21.6	36.3	38.3	91.3	90	1.3	8	2
6.80	3	●	**DSAS0680X03S080**	21.7	36.3	38.3	91.3	90	1.3	8	2
6.90	3	●	**DSAS0690X03S080**	22.0	36.3	38.3	91.3	90	1.3	8	2
6.95	3	●	**DSAS0695X03S080**	22.2	36.3	38.3	91.3	90	1.3	8	2
7.00	3	●	**DSAS0700X03S080**	22.3	36.3	38.3	91.3	90	1.3	8	2
7.10	3	●	**DSAS0710X03S080**	22.7	39.4	40.4	91.4	90	1.4	8	2
7.14	3	●	**DSAS0714X03S080**	22.8	39.4	40.4	91.4	90	1.4	8	2
7.20	3	●	**DSAS0720X03S080**	23.0	39.4	40.4	91.4	90	1.4	8	2
7.30	3	●	**DSAS0730X03S080**	23.3	39.4	40.4	91.4	90	1.4	8	2
7.40	3	●	**DSAS0740X03S080**	23.6	39.4	40.4	91.4	90	1.4	8	2
7.50	3	●	**DSAS0750X03S080**	23.9	39.4	40.4	91.4	90	1.4	8	2
7.54	3	●	**DSAS0754X03S080**	24.0	41.5	41.5	91.5	90	1.5	8	2
7.60	3	●	**DSAS0760X03S080**	24.3	41.5	41.5	91.5	90	1.5	8	2
7.70	3	●	**DSAS0770X03S080**	24.6	41.5	41.5	91.5	90	1.5	8	2
7.80	3	●	**DSAS0780X03S080**	24.9	41.5	41.5	91.5	90	1.5	8	2
7.90	3	●	**DSAS0790X03S080**	25.2	41.5	41.5	91.5	90	1.5	8	2
7.94	3	●	**DSAS0794X03S080**	25.3	41.5	41.5	91.5	90	1.5	8	2
8.00	3	●	**DSAS0800X03S080**	25.5	41.5	41.5	91.5	90	1.5	8	2
8.10	3	●	**DSAS0810X03S100**	25.8	44.5	47.5	97.5	96	1.5	10	2
8.20	3	●	**DSAS0820X03S100**	26.1	44.5	47.5	97.5	96	1.5	10	2
8.30	3	●	**DSAS0830X03S100**	26.4	44.5	47.5	97.5	96	1.5	10	2
8.33	3	●	**DSAS0833X03S100**	26.5	44.5	47.5	97.5	96	1.5	10	2
8.40	3	●	**DSAS0840X03S100**	26.7	44.5	47.5	97.5	96	1.5	10	2
8.50	3	●	**DSAS0850X03S100**	27.0	44.5	47.5	97.5	96	1.5	10	2
8.60	3	●	**DSAS0860X03S100**	27.4	46.6	48.6	102.6	101	1.6	10	2
8.70	3	●	**DSAS0870X03S100**	27.7	46.6	48.6	102.6	101	1.6	10	2
8.73	3	●	**DSAS0873X03S100**	27.8	46.6	48.6	102.6	101	1.6	10	2
8.80	3	●	**DSAS0880X03S100**	28.0	46.6	48.6	102.6	101	1.6	10	2
8.90	3	●	**DSAS0890X03S100**	28.3	46.6	48.6	102.6	101	1.6	10	2
9.00	3	●	**DSAS0900X03S100**	28.6	46.6	48.6	102.6	101	1.6	10	2
9.10	3	●	**DSAS0910X03S100**	29.1	49.8	50.8	102.8	101	1.8	10	2
9.20	3	●	**DSAS0920X03S100**	29.4	49.8	50.8	102.8	101	1.8	10	2
9.30	3	●	**DSAS0930X03S100**	29.7	49.8	50.8	102.8	101	1.8	10	2
9.40	3	●	**DSAS0940X03S100**	30.0	49.8	50.8	102.8	101	1.8	10	2
9.50	3	●	**DSAS0950X03S100**	30.3	49.8	50.8	102.8	101	1.8	10	2
9.53	3	●	**DSAS0953X03S100**	30.4	49.8	50.8	102.8	101	1.8	10	2
9.60	3	●	**DSAS0960X03S100**	30.6	49.8	50.8	102.8	101	1.8	10	2
9.70	3	●	**DSAS0970X03S100**	30.9	49.8	50.8	102.8	101	1.8	10	2
9.80	3	●	**DSAS0980X03S100**	31.2	51.8	51.8	102.8	101	1.8	10	2
9.90	3	●	**DSAS0990X03S100**	31.5	51.8	51.8	102.8	101	1.8	10	2
9.92	3	●	**DSAS0992X03S100**	31.6	51.8	51.8	102.8	101	1.8	10	2

CONDICIONES DE CORTE ➢ M099
DATOS TÉCNICOS ➢ P001

DSAS NEW

DC (mm)	Profundidad agujero (L/D)	DP9020	Referencia	Dimensiones (mm)							Tipo
				LU	LCF	LH	OAL	LF	PL	DCON	
10.00	3	●	**DSAS1000X03S100**	31.8	51.8	51.8	102.8	101	1.8	10	2
10.10	3	●	**DSAS1010X03S120**	32.2	54.9	57.9	112.9	111	1.9	12	2
10.20	3	●	**DSAS1020X03S120**	32.5	54.9	57.9	112.9	111	1.9	12	2
10.30	3	●	**DSAS1030X03S120**	32.8	54.9	57.9	112.9	111	1.9	12	2
10.32	3	●	**DSAS1032X03S120**	32.9	54.9	57.9	112.9	111	1.9	12	2
10.40	3	●	**DSAS1040X03S120**	33.1	54.9	57.9	112.9	111	1.9	12	2
10.50	3	●	**DSAS1050X03S120**	33.4	54.9	57.9	112.9	111	1.9	12	2
10.60	3	●	**DSAS1060X03S120**	33.7	54.9	57.9	112.9	111	1.9	12	2
10.70	3	●	**DSAS1070X03S120**	34.0	54.9	57.9	112.9	111	1.9	12	2
10.72	3	●	**DSAS1072X03S120**	34.2	57.0	59.0	118.0	116	2.0	12	2
10.80	3	●	**DSAS1080X03S120**	34.4	57.0	59.0	118.0	116	2.0	12	2
10.90	3	●	**DSAS1090X03S120**	34.7	57.0	59.0	118.0	116	2.0	12	2
11.00	3	●	**DSAS1100X03S120**	35.0	57.0	59.0	118.0	116	2.0	12	2
11.10	3	●	**DSAS1110X03S120**	35.4	60.1	61.1	118.1	116	2.1	12	2
11.11	3	●	**DSAS1111X03S120**	35.4	60.1	61.1	118.1	116	2.1	12	2
11.20	3	●	**DSAS1120X03S120**	35.7	60.1	61.1	118.1	116	2.1	12	2
11.30	3	●	**DSAS1130X03S120**	36.0	60.1	61.1	118.1	116	2.1	12	2
11.40	3	●	**DSAS1140X03S120**	36.3	60.1	61.1	118.1	116	2.1	12	2
11.50	3	●	**DSAS1150X03S120**	36.6	60.1	61.1	118.1	116	2.1	12	2
11.51	3	●	**DSAS1151X03S120**	36.7	62.2	62.2	118.2	116	2.2	12	2
11.60	3	●	**DSAS1160X03S120**	37.0	62.2	62.2	118.2	116	2.2	12	2
11.70	3	●	**DSAS1170X03S120**	37.3	62.2	62.2	118.2	116	2.2	12	2
11.80	3	●	**DSAS1180X03S120**	37.6	62.2	62.2	118.2	116	2.2	12	2
11.90	3	●	**DSAS1190X03S120**	37.9	62.2	62.2	118.2	116	2.2	12	2
12.00	3	●	**DSAS1200X03S120**	38.2	62.2	62.2	118.2	116	2.2	12	2

● : Stock Europa.

CONDICIONES DE CORTE RECOMENDADAS

Material		S			
		Aleación termorresistente Inconel718, etc.		Aleación de titanio Ti-6Al-4V, etc.	
Diámetro Broca **DC** (mm)	**L/D**	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)
3	**≤ 3**	1000	0.06 (0.04—0.10)	4200	0.08 (0.06—0.12)
4	**≤ 3**	790	0.06 (0.04—0.10)	3100	0.10 (0.08—0.16)
5	**≤ 3**	760	0.08 (0.06—0.12)	2500	0.12 (0.08—0.20)
6	**≤ 3**	790	0.10 (0.08—0.15)	2100	0.14 (0.10—0.20)
8	**≤ 3**	590	0.10 (0.08—0.15)	1600	0.18 (0.15—0.25)
10	**≤ 3**	570	0.10 (0.08—0.15)	1300	0.22 (0.18—0.28)
12	**≤ 3**	530	0.12 (0.08—0.15)	1100	0.24 (0.20—0.30)

Nota 1) Para que el taladrado sea estable se recomienda una alta presión de refrigerante a través del husillo.
Nota 2) Se recomienda la refrigeración por emulsión del tipo hidrosoluble.
Nota 3) Al usar refrigerante del tipo no hidrosoluble reduzca la velocidad de corte en un 10-20 %.
Nota 4) Cuando se taladra con un sistema de refrigeración externo, se recomienda el taladrado de avance por pasos en cada profundidad DC x 0,5 para permitir la rotura de las virutas.

MNS

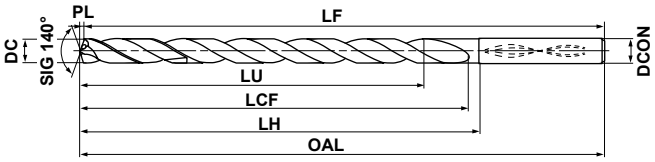
P | M | K | **N** | S | H

Refrigeración interna

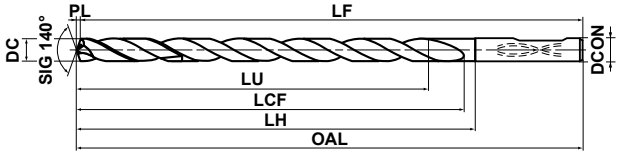
	DC=3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
Tipo DIN	+0.016 +0.004	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008
Otros	0 −0.014	0 −0.018	0 −0.022	0 −0.027	
	0 −0.006	0 −0.008	0 −0.009	0 −0.011	0 −0.013

- Las brocas de diámetro 4.5 e inferiores se diseñan con 2 agujeros para el refrigerante.
- Las brocas con un diámetro de 4.6 mm o superior se diseñan con 4 agujeros refrigerantes.

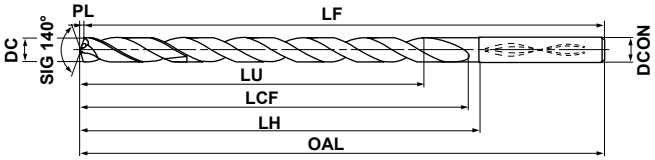
●Tipo 1 **MNS----DIN-C, MNS-C, MNS----LB, MNS----DB** (Tipo mango cilíndrico)



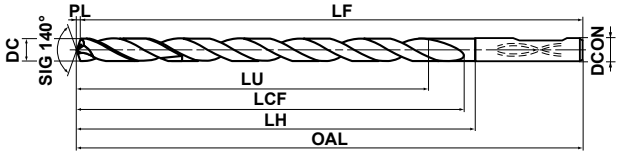
●Tipo 2 **MNS----S/L-DIN** (Mango tipo Whistle notch)



●Tipo 3 **MNS----DIN-C, MNS-C, MNS----LB, MNS----DB** (Tipo mango cilíndrico)



●Tipo 4 **MNS----S/L-DIN** (Mango tipo Whistle notch)



● Las brocas MNS pueden utilizarse con herramientas de amarre por calor.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.0	3	□	MNS0300S-DIN	15.0	19.5	24.5	61.5	61	0.5	6	2
	3	□	MNS0300S-DIN-C	15.0	19.5	24.5	61.5	61	0.5	6	1
	5	□	MNS0300L-DIN	23.0	27.5	28.5	65.5	65	0.5	6	2
	5	●	MNS0300L-DIN-C	23.0	27.5	28.5	65.5	65	0.5	6	1
	8	□	MNS0300-L8C	24.5	33.5	36.5	73.5	73	0.5	6	1
	10	□	MNS0300-L10C	30.5	39.5	42.5	79.5	79	0.5	6	1
	12	●	MNS0300-L12C	36.5	45.5	48.5	85.5	85	0.5	6	1
	15	□	MNS0300-L15C	45.5	54.5	57.5	94.5	94	0.5	6	1
	20	●	MNS0300-L20C	60.5	69.5	72.5	109.5	109	0.5	6	1
	25	□	MNS0300-L25C	75.5	84.5	87.5	124.5	124	0.5	6	1
	30	●	MNS0300-L30C	90.5	99.5	102.5	139.5	139	0.5	6	1
	5	★	MNS0300LB	15.5	33.5	33.5	81.5	81	0.5	3	1
	10	★	MNS0300X10DB	30.5	39.5	42.5	90.5	90	0.5	3	1
	20	★	MNS0300X20DB	60.5	69.5	72.5	120.5	120	0.5	3	1
	30	★	MNS0300X30DB	90.5	99.5	102.5	150.5	150	0.5	3	1
3.1	3	□	MNS0310S-DIN	14.9	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0310S-DIN-C	14.9	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0310L-DIN	22.9	27.6	28.6	65.6	65	0.6	6	2
	5	□	MNS0310L-DIN-C	22.9	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0310-L8C	25.4	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0310-L10C	31.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MNS0310-L12C	37.8	53.6	56.6	93.6	93	0.6	6	1
	15	□	MNS0310-L15C	47.1	63.6	66.6	103.6	103	0.6	6	1
	20	□	MNS0310-L20C	62.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0310-L25C	78.1	98.6	101.6	138.6	138	0.6	6	1
	30	□	MNS0310-L30C	93.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0310LB	16.1	39.6	39.6	87.6	87	0.6	4	1
	10	□	MNS0310X10DB	31.6	46.6	49.6	97.6	97	0.6	4	1
	20	□	MNS0310X20DB	62.6	81.6	84.6	132.6	132	0.6	4	1
	30	□	MNS0310X30DB	93.6	116.6	119.6	167.6	167	0.6	4	1

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.2	3	□	MNS0320S-DIN	14.8	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0320S-DIN-C	14.8	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0320L-DIN	22.8	27.6	28.6	65.6	65	0.6	6	2
	5	●	MNS0320L-DIN-C	22.8	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0320-L8C	26.2	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0320-L10C	32.6	46.6	49.6	86.6	86	0.6	6	1
	12	●	MNS0320-L12C	39.0	53.6	56.6	93.6	93	0.6	6	1
	15	□	MNS0320-L15C	48.6	63.6	66.6	103.6	103	0.6	6	1
	20	●	MNS0320-L20C	64.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0320-L25C	80.6	98.6	101.6	138.6	138	0.6	6	1
	30	●	MNS0320-L30C	96.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0320LB	16.6	39.6	39.6	87.6	87	0.6	4	1
	10	★	MNS0320X10DB	32.6	46.6	49.6	97.6	97	0.6	4	1
	20	★	MNS0320X20DB	64.6	81.6	84.6	132.6	132	0.6	4	1
	30	★	MNS0320X30DB	96.6	116.6	119.6	167.6	167	0.6	4	1
3.3	3	□	MNS0330S-DIN	14.7	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0330S-DIN-C	14.7	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0330L-DIN	22.7	27.6	28.6	65.6	65	0.6	6	2
	5	●	MNS0330L-DIN-C	22.7	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0330-L8C	27.0	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0330-L10C	33.6	46.6	49.6	86.6	86	0.6	6	1
	12	●	MNS0330-L12C	40.2	53.6	56.6	93.6	93	0.6	6	1
	15	□	MNS0330-L15C	50.1	63.6	66.6	103.6	103	0.6	6	1
	20	●	MNS0330-L20C	66.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0330-L25C	83.1	98.6	101.6	138.6	138	0.6	6	1
	30	●	MNS0330-L30C	99.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0330LB	17.1	39.6	39.6	87.6	87	0.6	4	1
	10	□	MNS0330X10DB	33.6	46.6	49.6	97.6	97	0.6	4	1
	20	□	MNS0330X20DB	66.6	81.6	84.6	132.6	132	0.6	4	1
	30	□	MNS0330X30DB	99.6	116.6	119.6	167.6	167	0.6	4	1

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MNS0340S-DIN	14.5	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0340S-DIN-C	14.5	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0340L-DIN	22.5	27.6	28.6	65.6	65	0.6	6	2
	5	□	MNS0340L-DIN-C	22.5	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0340-L8C	27.8	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0340-L10C	34.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MNS0340-L12C	41.4	53.6	56.6	93.6	93	0.6	6	1
3.4	15	□	MNS0340-L15C	51.6	63.6	66.6	103.6	103	0.6	6	1
	20	□	MNS0340-L20C	68.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0340-L25C	85.6	98.6	101.6	138.6	138	0.6	6	1
	30	□	MNS0340-L30C	102.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0340LB	17.6	39.6	39.6	87.6	87	0.6	4	1
	10	★	MNS0340X10DB	34.6	46.6	49.6	97.6	97	0.6	4	1
	20	★	MNS0340X20DB	68.6	81.6	84.6	132.6	132	0.6	4	1
	30	★	MNS0340X30DB	102.6	116.6	119.6	167.6	167	0.6	4	1
	3	□	MNS0350S-DIN	14.4	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0350S-DIN-C	14.4	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0350L-DIN	22.4	27.6	28.6	65.6	65	0.6	6	2
	5	●	MNS0350L-DIN-C	22.4	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0350-L8C	28.6	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0350-L10C	35.6	46.6	49.6	86.6	86	0.6	6	1
	12	●	MNS0350-L12C	42.6	53.6	56.6	93.6	93	0.6	6	1
3.5	15	□	MNS0350-L15C	53.1	63.6	66.6	103.6	103	0.6	6	1
	20	●	MNS0350-L20C	70.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0350-L25C	88.1	98.6	101.6	138.6	138	0.6	6	1
	30	●	MNS0350-L30C	105.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0350LB	18.1	39.6	39.6	87.6	87	0.6	4	1
	10	□	MNS0350X10DB	35.6	46.6	49.6	97.6	97	0.6	4	1
	20	□	MNS0350X20DB	70.6	81.6	84.6	132.6	132	0.6	4	1
	30	□	MNS0350X30DB	105.6	116.6	119.6	167.6	167	0.6	4	1
	3	□	MNS0360S-DIN	14.3	19.7	24.7	61.7	61	0.7	6	2
	3	□	MNS0360S-DIN-C	14.3	19.7	24.7	61.7	61	0.7	6	1
	5	□	MNS0360L-DIN	22.3	27.7	28.7	65.7	65	0.7	6	2
	5	□	MNS0360L-DIN-C	22.3	27.7	28.7	65.7	65	0.7	6	1
	8	□	MNS0360-L8C	29.5	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0360-L10C	36.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0360-L12C	43.9	60.7	63.7	100.7	100	0.7	6	1
3.6	15	□	MNS0360-L15C	54.7	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0360-L20C	72.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0360-L25C	90.7	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0360-L30C	108.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0360LB	18.7	44.7	44.7	92.7	92	0.7	4	1
	10	★	MNS0360X10DB	36.7	52.7	55.7	103.7	103	0.7	4	1
	20	★	MNS0360X20DB	72.7	92.7	95.7	143.7	143	0.7	4	1
	30	★	MNS0360X30DB	108.7	132.7	135.7	183.7	183	0.7	4	1

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MNS0370S-DIN	14.1	19.7	24.7	61.7	61	0.7	6	2
	3	□	MNS0370S-DIN-C	14.1	19.7	24.7	61.7	61	0.7	6	1
	5	□	MNS0370L-DIN	22.1	27.7	28.7	65.7	65	0.7	6	2
	5	□	MNS0370L-DIN-C	22.1	27.7	28.7	65.7	65	0.7	6	1
	8	□	MNS0370-L8C	30.3	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0370-L10C	37.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0370-L12C	45.1	60.7	63.7	100.7	100	0.7	6	1
3.7	15	□	MNS0370-L15C	56.2	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0370-L20C	74.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0370-L25C	93.2	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0370-L30C	111.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0370LB	19.2	44.7	44.7	92.7	92	0.7	4	1
	10	□	MNS0370X10DB	37.7	52.7	55.7	103.7	103	0.7	4	1
	20	□	MNS0370X20DB	74.7	92.7	95.7	143.7	143	0.7	4	1
	30	□	MNS0370X30DB	111.7	132.7	135.7	183.7	183	0.7	4	1
	3	□	MNS0380S-DIN	18.0	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0380S-DIN-C	18.0	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0380L-DIN	30.0	35.7	36.7	73.7	73	0.7	6	2
	5	□	MNS0380L-DIN-C	30.0	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0380-L8C	31.1	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0380-L10C	38.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0380-L12C	46.3	60.7	63.7	100.7	100	0.7	6	1
3.8	15	□	MNS0380-L15C	57.7	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0380-L20C	76.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0380-L25C	95.7	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0380-L30C	114.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0380LB	19.7	44.7	44.7	92.7	92	0.7	4	1
	10	□	MNS0380X10DB	38.7	52.7	55.7	103.7	103	0.7	4	1
	20	□	MNS0380X20DB	76.7	92.7	95.7	143.7	143	0.7	4	1
	30	□	MNS0380X30DB	114.7	132.7	135.7	183.7	183	0.7	4	1
	3	□	MNS0390S-DIN	17.9	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0390S-DIN-C	17.9	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0390L-DIN	29.9	35.7	36.7	73.7	73	0.7	6	2
	5	□	MNS0390L-DIN-C	29.9	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0390-L8C	31.9	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0390-L10C	39.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0390-L12C	47.5	60.7	63.7	100.7	100	0.7	6	1
3.9	15	□	MNS0390-L15C	59.2	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0390-L20C	78.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0390-L25C	98.2	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0390-L30C	117.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0390LB	20.2	44.7	44.7	92.7	92	0.7	4	1
	10	★	MNS0390X10DB	39.7	52.7	55.7	103.7	103	0.7	4	1
	20	★	MNS0390X20DB	78.7	92.7	95.7	143.7	143	0.7	4	1
	30	★	MNS0390X30DB	117.7	132.7	135.7	183.7	183	0.7	4	1

CONDICIONES DE CORTE ➢ M120
GUIA OPERACIONAL ➢ M121
DATOS TÉCNICOS ➢ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.0	3	□	MNS0400S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0400S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0400L-DIN	29.7	35.7	36.7	73.7	73	0.7	6	2
	5	●	MNS0400L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0400-L8C	32.7	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0400-L10C	40.7	52.7	55.7	92.7	92	0.7	6	1
	12	●	MNS0400-L12C	48.7	60.7	63.7	100.7	100	0.7	6	1
	15	□	MNS0400-L15C	60.7	72.7	75.7	112.7	112	0.7	6	1
	20	●	MNS0400-L20C	80.7	92.7	95.7	132.7	132	0.7	6	1
	25	●	MNS0400-L25C	100.7	112.7	115.7	152.7	152	0.7	6	1
	30	●	MNS0400-L30C	120.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0400LB	20.7	44.7	44.7	92.7	92	0.7	4	1
	10	★	MNS0400X10DB	40.7	52.7	55.7	103.7	103	0.7	4	1
	20	★	MNS0400X20DB	80.7	92.7	95.7	143.7	143	0.7	4	1
	30	★	MNS0400X30DB	120.7	132.7	135.7	183.7	183	0.7	4	1
4.1	3	□	MNS0410S-DIN	17.6	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0410S-DIN-C	17.6	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0410L-DIN	29.6	35.7	36.7	73.7	73	0.7	6	2
	5	□	MNS0410L-DIN-C	29.6	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0410-L8C	33.5	50.7	53.7	90.7	90	0.7	6	1
	10	□	MNS0410-L10C	41.7	59.7	62.7	99.7	99	0.7	6	1
	12	□	MNS0410-L12C	49.9	68.7	71.7	108.7	108	0.7	6	1
	15	□	MNS0410-L15C	62.2	81.7	84.7	121.7	121	0.7	6	1
	20	□	MNS0410-L20C	82.7	104.7	107.7	144.7	144	0.7	6	1
	25	□	MNS0410-L25C	103.2	126.7	129.7	166.7	166	0.7	6	1
	30	□	MNS0410-L30C	123.7	149.7	152.7	189.7	189	0.7	6	1
	5	★	MNS0410LB	21.2	50.7	50.7	100.7	100	0.7	5	1
	10	□	MNS0410X10DB	41.7	59.7	62.7	112.7	112	0.7	5	1
	20	□	MNS0410X20DB	82.7	104.7	107.7	157.7	157	0.7	5	1
	30	□	MNS0410X30DB	123.7	149.7	152.7	202.7	202	0.7	5	1
4.2	3	□	MNS0420S-DIN	17.5	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0420S-DIN-C	17.5	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0420L-DIN	29.5	35.8	36.8	73.8	73	0.8	6	2
	5	●	MNS0420L-DIN-C	29.5	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0420-L8C	34.4	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0420-L10C	42.8	59.8	62.8	99.8	99	0.8	6	1
	12	●	MNS0420-L12C	51.2	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0420-L15C	63.8	81.8	84.8	121.8	121	0.8	6	1
	20	●	MNS0420-L20C	84.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0420-L25C	105.8	126.8	129.8	166.8	166	0.8	6	1
	30	●	MNS0420-L30C	126.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0420LB	21.8	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0420X10DB	42.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0420X20DB	84.8	104.8	107.8	157.8	157	0.8	5	1
	30	□	MNS0420X30DB	126.8	149.8	152.8	202.8	202	0.8	5	1

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.3	3	□	MNS0430S-DIN	17.3	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0430S-DIN-C	17.3	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0430L-DIN	29.3	35.8	36.8	73.8	73	0.8	6	2
	5	□	MNS0430L-DIN-C	29.3	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0430-L8C	35.2	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0430-L10C	43.8	59.8	62.8	99.8	99	0.8	6	1
	12	□	MNS0430-L12C	52.4	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0430-L15C	65.3	81.8	84.8	121.8	121	0.8	6	1
	20	□	MNS0430-L20C	86.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0430-L25C	108.3	126.8	129.8	166.8	166	0.8	6	1
	30	□	MNS0430-L30C	129.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0430LB	22.3	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0430X10DB	43.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0430X20DB	86.8	104.8	107.8	157.8	157	0.8	5	1
	30	□	MNS0430X30DB	129.8	149.8	152.8	202.8	202	0.8	5	1
4.4	3	□	MNS0440S-DIN	17.2	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0440S-DIN-C	17.2	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0440L-DIN	29.2	35.8	36.8	73.8	73	0.8	6	2
	5	□	MNS0440L-DIN-C	29.2	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0440-L8C	36.0	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0440-L10C	44.8	59.8	62.8	99.8	99	0.8	6	1
	12	□	MNS0440-L12C	53.6	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0440-L15C	66.8	81.8	84.8	121.8	121	0.8	6	1
	20	□	MNS0440-L20C	88.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0440-L25C	110.8	126.8	129.8	166.8	166	0.8	6	1
	30	□	MNS0440-L30C	132.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0440LB	22.8	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0440X10DB	44.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0440X20DB	88.8	104.8	107.8	157.8	157	0.8	5	1
	30	□	MNS0440X30DB	132.8	149.8	152.8	202.8	202	0.8	5	1
4.5	3	□	MNS0450S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0450S-DIN-C	17.1	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0450L-DIN	29.1	35.8	36.8	73.8	73	0.8	6	2
	5	●	MNS0450L-DIN-C	29.1	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0450-L8C	36.8	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0450-L10C	45.8	59.8	62.8	99.8	99	0.8	6	1
	12	●	MNS0450-L12C	54.8	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0450-L15C	68.3	81.8	84.8	121.8	121	0.8	6	1
	20	●	MNS0450-L20C	90.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0450-L25C	113.3	126.8	129.8	166.8	166	0.8	6	1
	30	●	MNS0450-L30C	135.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0450LB	23.3	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0450X10DB	45.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0450X20DB	90.8	104.8	107.8	157.8	157	0.8	5	1
	30	□	MNS0450X30DB	135.8	149.8	152.8	202.8	202	0.8	5	1

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.6	3	□	MNS0460S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	4
	3	□	MNS0460S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	3
	5	□	MNS0460L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4
	5	□	MNS0460L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	3
	8	□	MNS0460-L8C	37.6	55.8	58.8	95.8	95	0.8	6	3
	10	□	MNS0460-L10C	46.8	65.8	68.8	105.8	105	0.8	6	3
	12	□	MNS0460-L12C	56.0	75.8	78.8	115.8	115	0.8	6	3
	15	□	MNS0460-L15C	69.8	90.8	93.8	130.8	130	0.8	6	3
	20	□	MNS0460-L20C	92.8	115.8	118.8	155.8	155	0.8	6	3
	25	□	MNS0460-L25C	115.8	140.8	143.8	180.8	180	0.8	6	3
	30	□	MNS0460-L30C	138.8	165.8	168.8	205.8	205	0.8	6	3
	5	★	MNS0460LB	23.8	55.8	55.8	105.8	105	0.8	5	3
	10	□	MNS0460X10DB	46.8	65.8	68.8	118.8	118	0.8	5	3
	20	□	MNS0460X20DB	92.8	115.8	118.8	168.8	168	0.8	5	3
	30	□	MNS0460X30DB	138.8	165.8	168.8	218.8	218	0.8	5	3
4.65	3	□	MNS0465S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	4
	3	□	MNS0465S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	3
	5	□	MNS0465L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4
	5	●	MNS0465L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	3
4.7	3	□	MNS0470S-DIN	16.8	23.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0470S-DIN-C	16.8	23.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0470L-DIN	28.8	35.9	36.9	73.9	73	0.9	6	4
	5	□	MNS0470L-DIN-C	28.8	35.9	36.9	73.9	73	0.9	6	3
	8	□	MNS0470-L8C	38.5	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0470-L10C	47.9	65.9	68.9	105.9	105	0.9	6	3
	12	□	MNS0470-L12C	57.3	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0470-L15C	71.4	90.9	93.9	130.9	130	0.9	6	3
	20	□	MNS0470-L20C	94.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0470-L25C	118.4	140.9	143.9	180.9	180	0.9	6	3
	30	□	MNS0470-L30C	141.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0470LB	24.4	55.9	55.9	105.9	105	0.9	5	3
	10	□	MNS0470X10DB	47.9	65.9	68.9	118.9	118	0.9	5	3
	20	□	MNS0470X20DB	94.9	115.9	118.9	168.9	168	0.9	5	3
	30	□	MNS0470X30DB	141.9	165.9	168.9	218.9	218	0.9	5	3
4.8	3	□	MNS0480S-DIN	20.7	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0480S-DIN-C	20.7	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0480L-DIN	36.7	43.9	44.9	81.9	81	0.9	6	4
	5	□	MNS0480L-DIN-C	36.7	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0480-L8C	39.3	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0480-L10C	48.9	65.9	68.9	105.9	105	0.9	6	3
	12	□	MNS0480-L12C	58.5	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0480-L15C	72.9	90.9	93.9	130.9	130	0.9	6	3
	20	□	MNS0480-L20C	96.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0480-L25C	120.9	140.9	143.9	180.9	180	0.9	6	3
	30	□	MNS0480-L30C	144.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0480LB	24.9	55.9	55.9	105.9	105	0.9	5	3
	10	□	MNS0480X10DB	48.9	65.9	68.9	118.9	118	0.9	5	3
	20	□	MNS0480X20DB	96.9	115.9	118.9	168.9	168	0.9	5	3
	30	□	MNS0480X30DB	144.9	165.9	168.9	218.9	218	0.9	5	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.9	3	□	MNS0490S-DIN	20.5	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0490S-DIN-C	20.5	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0490L-DIN	36.5	43.9	44.9	81.9	81	0.9	6	4
	5	□	MNS0490L-DIN-C	36.5	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0490-L8C	40.1	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0490-L10C	49.9	65.9	68.9	105.9	105	0.9	6	3
	12	□	MNS0490-L12C	59.7	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0490-L15C	74.4	90.9	93.9	130.9	130	0.9	6	3
	20	□	MNS0490-L20C	98.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0490-L25C	123.4	140.9	143.9	180.9	180	0.9	6	3
	30	□	MNS0490-L30C	147.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0490LB	25.4	55.9	55.9	105.9	105	0.9	5	3
	10	★	MNS0490X10DB	49.9	65.9	68.9	118.9	118	0.9	5	3
	20	★	MNS0490X20DB	98.9	115.9	118.9	168.9	168	0.9	5	3
	30	★	MNS0490X30DB	147.9	165.9	168.9	218.9	218	0.9	5	3
5.0	3	□	MNS0500S-DIN	20.4	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0500S-DIN-C	20.4	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0500L-DIN	36.4	43.9	44.9	81.9	81	0.9	6	4
	5	●	MNS0500L-DIN-C	36.4	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0500-L8C	40.9	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0500-L10C	50.9	65.9	68.9	105.9	105	0.9	6	3
	12	●	MNS0500-L12C	60.9	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0500-L15C	75.9	90.9	93.9	130.9	130	0.9	6	3
	20	●	MNS0500-L20C	100.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0500-L25C	125.9	140.9	143.9	180.9	180	0.9	6	3
	30	●	MNS0500-L30C	150.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0500LB	25.9	44.9	44.9	100.9	100	0.9	6	3
	10	★	MNS0500X10DB	50.9	65.9	68.9	118.9	118	0.9	5	3
	20	★	MNS0500X20DB	100.9	115.9	118.9	168.9	168	0.9	5	3
	30	★	MNS0500X30DB	150.9	165.9	168.9	218.9	218	0.9	5	3
5.1	3	□	MNS0510S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0510S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0510L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	4
	5	●	MNS0510L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0510-L8C	41.7	61.9	64.9	101.9	101	0.9	6	3
	10	□	MNS0510-L10C	51.9	72.9	75.9	112.9	112	0.9	6	3
	12	□	MNS0510-L12C	62.1	83.9	86.9	123.9	123	0.9	6	3
	15	□	MNS0510-L15C	77.4	99.9	102.9	139.9	139	0.9	6	3
	20	□	MNS0510-L20C	102.9	127.9	130.9	167.9	167	0.9	6	3
	25	□	MNS0510-L25C	128.4	154.9	157.9	194.9	194	0.9	6	3
	30	□	MNS0510-L30C	153.9	182.9	185.9	222.9	222	0.9	6	3
	5	★	MNS0510LB	26.4	44.9	44.9	100.9	100	0.9	6	3
	10	★	MNS0510X10DB	51.9	72.9	75.9	127.9	127	0.9	6	3
	20	★	MNS0510X20DB	102.9	127.9	130.9	182.9	182	0.9	6	3
	30	★	MNS0510X30DB	153.9	182.9	185.9	237.9	237	0.9	6	3

CONDICIONES DE CORTE ➤ M120
GUIA OPERACIONAL ➤ M121
DATOS TÉCNICOS ➤ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.2	3	□	MNS0520S-DIN	20.1	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0520S-DIN-C	20.1	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0520L-DIN	36.1	43.9	44.9	81.9	81	0.9	6	4
	5	□	MNS0520L-DIN-C	36.1	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0520-L8C	42.5	61.9	64.9	101.9	101	0.9	6	3
	10	□	MNS0520-L10C	52.9	72.9	75.9	112.9	112	0.9	6	3
	12	□	MNS0520-L12C	63.3	83.9	86.9	123.9	123	0.9	6	3
	15	□	MNS0520-L15C	78.9	99.9	102.9	139.9	139	0.9	6	3
	20	□	MNS0520-L20C	104.9	127.9	130.9	167.9	167	0.9	6	3
	25	□	MNS0520-L25C	130.9	154.9	157.9	194.9	194	0.9	6	3
	30	□	MNS0520-L30C	156.9	182.9	185.9	222.9	222	0.9	6	3
	5	★	MNS0520LB	26.9	44.9	44.9	100.9	100	0.9	6	3
	10	□	MNS0520X10DB	52.9	72.9	75.9	127.9	127	0.9	6	3
	20	□	MNS0520X20DB	104.9	127.9	130.9	182.9	182	0.9	6	3
	30	□	MNS0520X30DB	156.9	182.9	185.9	237.9	237	0.9	6	3
5.3	3	□	MNS0530S-DIN	20.0	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0530S-DIN-C	20.0	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0530L-DIN	36.0	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0530L-DIN-C	36.0	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0530-L8C	43.4	62.0	65.0	102.0	101	1.0	6	3
	10	□	MNS0530-L10C	54.0	73.0	76.0	113.0	112	1.0	6	3
	12	□	MNS0530-L12C	64.6	84.0	87.0	124.0	123	1.0	6	3
	15	□	MNS0530-L15C	80.5	100.0	103.0	140.0	139	1.0	6	3
	20	□	MNS0530-L20C	107.0	128.0	131.0	168.0	167	1.0	6	3
	25	□	MNS0530-L25C	133.5	155.0	158.0	195.0	194	1.0	6	3
	30	□	MNS0530-L30C	160.0	183.0	186.0	223.0	222	1.0	6	3
	5	★	MNS0530LB	27.5	45.0	45.0	101.0	100	1.0	6	3
	10	□	MNS0530X10DB	54.0	73.0	76.0	128.0	127	1.0	6	3
	20	□	MNS0530X20DB	107.0	128.0	131.0	183.0	182	1.0	6	3
	30	□	MNS0530X30DB	160.0	183.0	186.0	238.0	237	1.0	6	3
5.4	3	□	MNS0540S-DIN	19.9	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0540S-DIN-C	19.9	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0540L-DIN	35.9	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0540L-DIN-C	35.9	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0540-L8C	44.2	62.0	65.0	102.0	101	1.0	6	3
	10	□	MNS0540-L10C	55.0	73.0	76.0	113.0	112	1.0	6	3
	12	□	MNS0540-L12C	65.8	84.0	87.0	124.0	123	1.0	6	3
	15	□	MNS0540-L15C	82.0	100.0	103.0	140.0	139	1.0	6	3
	20	□	MNS0540-L20C	109.0	128.0	131.0	168.0	167	1.0	6	3
	25	□	MNS0540-L25C	136.0	155.0	158.0	195.0	194	1.0	6	3
	30	□	MNS0540-L30C	163.0	183.0	186.0	223.0	222	1.0	6	3
	5	★	MNS0540LB	28.0	45.0	45.0	101.0	100	1.0	6	3
	10	□	MNS0540X10DB	55.0	73.0	76.0	128.0	127	1.0	6	3
	20	□	MNS0540X20DB	109.0	128.0	131.0	183.0	182	1.0	6	3
	30	□	MNS0540X30DB	163.0	183.0	186.0	238.0	237	1.0	6	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.5	3	□	MNS0550S-DIN	19.8	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0550S-DIN-C	19.8	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0550L-DIN	35.8	44.0	45.0	82.0	81	1.0	6	4
	5	●	MNS0550L-DIN-C	35.8	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0550-L8C	45.0	62.0	65.0	102.0	101	1.0	6	3
	10	□	MNS0550-L10C	56.0	73.0	76.0	113.0	112	1.0	6	3
	12	●	MNS0550-L12C	67.0	84.0	87.0	124.0	123	1.0	6	3
	15	□	MNS0550-L15C	83.5	100.0	103.0	140.0	139	1.0	6	3
	20	●	MNS0550-L20C	111.0	128.0	131.0	168.0	167	1.0	6	3
	25	□	MNS0550-L25C	138.5	155.0	158.0	195.0	194	1.0	6	3
	30	●	MNS0550-L30C	166.0	183.0	186.0	223.0	222	1.0	6	3
	5	★	MNS0550LB	28.5	45.0	45.0	101.0	100	1.0	6	3
	10	★	MNS0550X10DB	56.0	73.0	76.0	128.0	127	1.0	6	3
	20	★	MNS0550X20DB	111.0	128.0	131.0	183.0	182	1.0	6	3
	30	★	MNS0550X30DB	166.0	183.0	186.0	238.0	237	1.0	6	3
5.55	3	□	MNS0555S-DIN	19.7	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0555S-DIN-C	19.7	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0555L-DIN	35.7	44.0	45.0	82.0	81	1.0	6	4
	5	●	MNS0555L-DIN-C	35.7	44.0	45.0	82.0	81	1.0	6	3
5.6	3	□	MNS0560S-DIN	19.6	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0560S-DIN-C	19.6	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0560L-DIN	35.6	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0560L-DIN-C	35.6	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0560-L8C	45.8	67.0	70.0	107.0	106	1.0	6	3
	10	□	MNS0560-L10C	57.0	79.0	82.0	119.0	118	1.0	6	3
	12	□	MNS0560-L12C	68.2	91.0	94.0	131.0	130	1.0	6	3
	15	□	MNS0560-L15C	85.0	109.0	112.0	149.0	148	1.0	6	3
	20	□	MNS0560-L20C	113.0	139.0	142.0	179.0	178	1.0	6	3
	25	□	MNS0560-L25C	141.0	169.0	172.0	209.0	208	1.0	6	3
	30	□	MNS0560-L30C	169.0	199.0	202.0	239.0	238	1.0	6	3
	5	★	MNS0560LB	29.0	49.0	49.0	101.0	100	1.0	6	3
	10	□	MNS0560X10DB	57.0	79.0	82.0	134.0	133	1.0	6	3
	20	□	MNS0560X20DB	113.0	139.0	142.0	194.0	193	1.0	6	3
	30	□	MNS0560X30DB	169.0	199.0	202.0	254.0	253	1.0	6	3
5.7	3	□	MNS0570S-DIN	19.5	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0570S-DIN-C	19.5	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0570L-DIN	35.5	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0570L-DIN-C	35.5	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0570-L8C	46.6	67.0	70.0	107.0	106	1.0	6	3
	10	□	MNS0570-L10C	58.0	79.0	82.0	119.0	118	1.0	6	3
	12	□	MNS0570-L12C	69.4	91.0	94.0	131.0	130	1.0	6	3
	15	□	MNS0570-L15C	86.5	109.0	112.0	149.0	148	1.0	6	3
	20	□	MNS0570-L20C	115.0	139.0	142.0	179.0	178	1.0	6	3
	25	□	MNS0570-L25C	143.5	169.0	172.0	209.0	208	1.0	6	3
	30	□	MNS0570-L30C	172.0	199.0	202.0	239.0	238	1.0	6	3
	5	★	MNS0570LB	29.5	49.0	49.0	101.0	100	1.0	6	3
	10	□	MNS0570X10DB	58.0	79.0	82.0	134.0	133	1.0	6	3
	20	□	MNS0570X20DB	115.0	139.0	142.0	194.0	193	1.0	6	3
	30	□	MNS0570X30DB	172.0	199.0	202.0	254.0	253	1.0	6	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.8	3	□	MNS0580S-DIN	19.4	28.1	29.1	66.1	65	1.1	6	4
	3	□	MNS0580S-DIN-C	19.4	28.1	29.1	66.1	65	1.1	6	3
	5	□	MNS0580L-DIN	35.4	44.1	45.1	82.1	81	1.1	6	4
	5	□	MNS0580L-DIN-C	35.4	44.1	45.1	82.1	81	1.1	6	3
	8	□	MNS0580-L8C	47.5	67.1	70.1	107.1	106	1.1	6	3
	10	□	MNS0580-L10C	59.1	79.1	82.1	119.1	118	1.1	6	3
	12	□	MNS0580-L12C	70.7	91.1	94.1	131.1	130	1.1	6	3
	15	□	MNS0580-L15C	88.1	109.1	112.1	149.1	148	1.1	6	3
	20	□	MNS0580-L20C	117.1	139.1	142.1	179.1	178	1.1	6	3
	25	□	MNS0580-L25C	146.1	169.1	172.1	209.1	208	1.1	6	3
	30	□	MNS0580-L30C	175.1	199.1	202.1	239.1	238	1.1	6	3
	5	★	MNS0580LB	30.1	49.1	49.1	101.1	100	1.1	6	3
	10	□	MNS0580X10DB	59.1	79.1	82.1	134.1	133	1.1	6	3
	20	□	MNS0580X20DB	117.1	139.1	142.1	194.1	193	1.1	6	3
	30	□	MNS0580X30DB	175.1	199.1	202.1	254.1	253	1.1	6	3
5.9	3	□	MNS0590S-DIN	19.2	28.1	29.1	66.1	65	1.1	6	4
	3	□	MNS0590S-DIN-C	19.2	28.1	29.1	66.1	65	1.1	6	3
	5	□	MNS0590L-DIN	35.2	44.1	45.1	82.1	81	1.1	6	4
	5	□	MNS0590L-DIN-C	35.2	44.1	45.1	82.1	81	1.1	6	3
	8	□	MNS0590-L8C	48.3	67.1	70.1	107.1	106	1.1	6	3
	10	□	MNS0590-L10C	60.1	79.1	82.1	119.1	118	1.1	6	3
	12	□	MNS0590-L12C	71.9	91.1	94.1	131.1	130	1.1	6	3
	15	□	MNS0590-L15C	89.6	109.1	112.1	149.1	148	1.1	6	3
	20	□	MNS0590-L20C	119.1	139.1	142.1	179.1	178	1.1	6	3
	25	□	MNS0590-L25C	148.6	169.1	172.1	209.1	208	1.1	6	3
	30	□	MNS0590-L30C	178.1	199.1	202.1	239.1	238	1.1	6	3
	5	★	MNS0590LB	30.6	49.1	49.1	101.1	100	1.1	6	3
	10	□	MNS0590X10DB	60.1	79.1	82.1	134.1	133	1.1	6	3
	20	□	MNS0590X20DB	119.1	139.1	142.1	194.1	193	1.1	6	3
	30	□	MNS0590X30DB	178.1	199.1	202.1	254.1	253	1.1	6	3
6.0	3	□	MNS0600S-DIN	19.1	28.1	29.1	66.1	65	1.1	6	4
	3	□	MNS0600S-DIN-C	19.1	28.1	29.1	66.1	65	1.1	6	3
	5	●	MNS0600L-DIN-C	35.1	44.1	45.1	82.1	81	1.1	6	3
	8	□	MNS0600-L8C	49.1	67.1	70.1	107.1	106	1.1	6	3
	10	□	MNS0600-L10C	61.1	79.1	82.1	119.1	118	1.1	6	3
	12	●	MNS0600-L12C	73.1	91.1	94.1	131.1	130	1.1	6	3
	15	□	MNS0600-L15C	91.1	109.1	112.1	149.1	148	1.1	6	3
	20	●	MNS0600-L20C	121.1	139.1	142.1	179.1	178	1.1	6	3
	25	□	MNS0600-L25C	151.1	169.1	172.1	209.1	208	1.1	6	3
	30	●	MNS0600-L30C	181.1	199.1	202.1	239.1	238	1.1	6	3
	5	★	MNS0600LB	31.1	49.1	49.1	101.1	100	1.1	6	3
	10	★	MNS0600X10DB	61.1	79.1	82.1	134.1	133	1.1	6	3
	20	★	MNS0600X20DB	121.1	139.1	142.1	194.1	193	1.1	6	3
	30	★	MNS0600X30DB	181.1	199.1	202.1	254.1	253	1.1	6	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.1	3	□	MNS0610S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	4
	3	□	MNS0610S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	3
	5	□	MNS0610L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	4
	5	□	MNS0610L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	3
	8	□	MNS0610-L8C	49.9	73.1	76.1	113.1	112	1.1	8	3
	10	□	MNS0610-L10C	62.1	86.1	89.1	126.1	125	1.1	8	3
	12	□	MNS0610-L12C	74.3	99.1	102.1	139.1	138	1.1	8	3
	15	□	MNS0610-L15C	92.6	118.1	121.1	158.1	157	1.1	8	3
	20	□	MNS0610-L20C	123.1	151.1	154.1	191.1	190	1.1	8	3
	25	□	MNS0610-L25C	153.6	183.1	186.1	223.1	222	1.1	8	3
	30	□	MNS0610-L30C	184.1	216.1	219.1	256.1	255	1.1	8	3
	5	★	MNS0610LB	31.6	53.1	53.1	110.1	109	1.1	7	3
	10	★	MNS0610X10DB	62.1	86.1	89.1	142.1	141	1.1	7	3
	20	★	MNS0610X20DB	123.1	151.1	154.1	207.1	206	1.1	7	3
	30	★	MNS0610X30DB	184.1	216.1	219.1	272.1	271	1.1	7	3
6.2	3	□	MNS0620S-DIN	24.8	34.1	42.1	79.1	78	1.1	8	4
	3	□	MNS0620S-DIN-C	24.8	34.1	42.1	79.1	78	1.1	8	3
	5	□	MNS0620L-DIN	43.8	53.1	54.1	91.1	90	1.1	8	4
	5	□	MNS0620L-DIN-C	43.8	53.1	54.1	91.1	90	1.1	8	3
	8	□	MNS0620-L8C	50.7	73.1	76.1	113.1	112	1.1	8	3
	10	□	MNS0620-L10C	63.1	86.1	89.1	126.1	125	1.1	8	3
	12	□	MNS0620-L12C	75.5	99.1	102.1	139.1	138	1.1	8	3
	15	□	MNS0620-L15C	94.1	118.1	121.1	158.1	157	1.1	8	3
	20	□	MNS0620-L20C	125.1	151.1	154.1	191.1	190	1.1	8	3
	25	□	MNS0620-L25C	156.1	183.1	186.1	223.1	222	1.1	8	3
	30	□	MNS0620-L30C	187.1	216.1	219.1	256.1	255	1.1	8	3
	5	★	MNS0620LB	32.1	53.1	53.1	110.1	109	1.1	7	3
	10	□	MNS0620X10DB	63.1	86.1	89.1	142.1	141	1.1	7	3
	20	□	MNS0620X20DB	125.1	151.1	154.1	207.1	206	1.1	7	3
	30	□	MNS0620X30DB	187.1	216.1	219.1	272.1	271	1.1	7	3
6.3	3	□	MNS0630S-DIN	24.7	34.1	42.1	79.1	78	1.1	8	4
	3	□	MNS0630S-DIN-C	24.7	34.1	42.1	79.1	78	1.1	8	3
	5	□	MNS0630L-DIN	43.7	53.1	54.1	91.1	90	1.1	8	4
	5	□	MNS0630L-DIN-C	43.7	53.1	54.1	91.1	90	1.1	8	3
	8	□	MNS0630-L8C	51.5	73.1	76.1	113.1	112	1.1	8	3
	10	□	MNS0630-L10C	64.1	86.1	89.1	126.1	125	1.1	8	3
	12	□	MNS0630-L12C	76.7	99.1	102.1	139.1	138	1.1	8	3
	15	□	MNS0630-L15C	95.6	118.1	121.1	158.1	157	1.1	8	3
	20	□	MNS0630-L20C	127.1	151.1	154.1	191.1	190	1.1	8	3
	25	□	MNS0630-L25C	158.6	183.1	186.1	223.1	222	1.1	8	3
	30	□	MNS0630-L30C	190.1	216.1	219.1	256.1	255	1.1	8	3
	5	★	MNS0630LB	32.6	53.1	53.1	110.1	109	1.1	7	3
	10	□	MNS0630X10DB	64.1	86.1	89.1	142.1	141	1.1	7	3
	20	□	MNS0630X20DB	127.1	151.1	154.1	207.1	206	1.1	7	3
	30	□	MNS0630X30DB	190.1	216.1	219.1	272.1	271	1.1	7	3

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MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.4	3	□	MNS0640S-DIN	24.6	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0640S-DIN-C	24.6	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0640L-DIN	43.6	53.2	54.2	91.2	90	1.2	8	4
	5	□	MNS0640L-DIN-C	43.6	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0640-L8C	52.4	73.2	76.2	113.2	112	1.2	8	3
	10	□	MNS0640-L10C	65.2	86.2	89.2	126.2	125	1.2	8	3
	12	□	MNS0640-L12C	78.0	99.2	102.2	139.2	138	1.2	8	3
	15	□	MNS0640-L15C	97.2	118.2	121.2	158.2	157	1.2	8	3
	20	□	MNS0640-L20C	129.2	151.2	154.2	191.2	190	1.2	8	3
	25	□	MNS0640-L25C	161.2	183.2	186.2	223.2	222	1.2	8	3
	30	□	MNS0640-L30C	193.2	216.2	219.2	256.2	255	1.2	8	3
	5	★	MNS0640LB	33.2	53.2	53.2	110.2	109	1.2	7	3
	10	□	MNS0640X10DB	65.2	86.2	89.2	142.2	141	1.2	7	3
	20	□	MNS0640X20DB	129.2	151.2	154.2	207.2	206	1.2	7	3
	30	□	MNS0640X30DB	193.2	216.2	219.2	272.2	271	1.2	7	3
6.5	3	□	MNS0650S-DIN	24.4	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0650S-DIN-C	24.4	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0650L-DIN	43.4	53.2	54.2	91.2	90	1.2	8	4
	5	●	MNS0650L-DIN-C	43.4	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0650-L8C	53.2	73.2	76.2	113.2	112	1.2	8	3
	10	□	MNS0650-L10C	66.2	86.2	89.2	126.2	125	1.2	8	3
	12	●	MNS0650-L12C	79.2	99.2	102.2	139.2	138	1.2	8	3
	15	□	MNS0650-L15C	98.7	118.2	121.2	158.2	157	1.2	8	3
	20	●	MNS0650-L20C	131.2	151.2	154.2	191.2	190	1.2	8	3
	25	□	MNS0650-L25C	163.7	183.2	186.2	223.2	222	1.2	8	3
	30	●	MNS0650-L30C	196.2	216.2	219.2	256.2	255	1.2	8	3
	5	★	MNS0650LB	33.7	53.2	53.2	110.2	109	1.2	7	3
	10	★	MNS0650X10DB	66.2	86.2	89.2	142.2	141	1.2	7	3
	20	★	MNS0650X20DB	131.2	151.2	154.2	207.2	206	1.2	7	3
	30	★	MNS0650X30DB	196.2	216.2	219.2	272.2	271	1.2	7	3
6.6	3	□	MNS0660S-DIN	24.3	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0660S-DIN-C	24.3	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0660L-DIN	43.3	53.2	54.2	91.2	90	1.2	8	4
	5	□	MNS0660L-DIN-C	43.3	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0660-L8C	54.0	78.2	81.2	118.2	117	1.2	8	3
	10	□	MNS0660-L10C	67.2	92.2	95.2	132.2	131	1.2	8	3
	12	□	MNS0660-L12C	80.4	106.2	109.2	146.2	145	1.2	8	3
	15	□	MNS0660-L15C	100.2	127.2	130.2	167.2	166	1.2	8	3
	20	□	MNS0660-L20C	133.2	162.2	165.2	202.2	201	1.2	8	3
	25	□	MNS0660-L25C	166.2	197.2	200.2	237.2	236	1.2	8	3
	30	□	MNS0660-L30C	199.2	232.2	235.2	272.2	271	1.2	8	3
	5	★	MNS0660LB	34.2	57.2	57.2	110.2	109	1.2	7	3
	10	□	MNS0660X10DB	67.2	92.2	95.2	148.2	147	1.2	7	3
	20	□	MNS0660X20DB	133.2	162.2	165.2	218.2	217	1.2	7	3
	30	□	MNS0660X30DB	199.2	232.2	235.2	288.2	287	1.2	7	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.7	3	□	MNS0670S-DIN	24.2	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0670S-DIN-C	24.2	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0670L-DIN	43.2	53.2	54.2	91.2	90	1.2	8	4
	5	□	MNS0670L-DIN-C	43.2	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0670-L8C	54.8	78.2	81.2	118.2	117	1.2	8	3
	10	□	MNS0670-L10C	68.2	92.2	95.2	132.2	131	1.2	8	3
	12	□	MNS0670-L12C	81.6	106.2	109.2	146.2	145	1.2	8	3
	15	□	MNS0670-L15C	101.7	127.2	130.2	167.2	166	1.2	8	3
	20	□	MNS0670-L20C	135.2	162.2	165.2	202.2	201	1.2	8	3
	25	□	MNS0670-L25C	168.7	197.2	200.2	237.2	236	1.2	8	3
	30	□	MNS0670-L30C	202.2	232.2	235.2	272.2	271	1.2	8	3
	5	★	MNS0670LB	34.7	57.2	57.2	110.2	109	1.2	7	3
	10	★	MNS0670X10DB	68.2	92.2	95.2	148.2	147	1.2	7	3
	20	★	MNS0670X20DB	135.2	162.2	165.2	218.2	217	1.2	7	3
	30	★	MNS0670X30DB	202.2	232.2	235.2	288.2	287	1.2	7	3
6.8	3	□	MNS0680S-DIN	24.0	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0680S-DIN-C	24.0	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0680L-DIN	43.0	53.2	54.2	91.2	90	1.2	8	4
	5	●	MNS0680L-DIN-C	43.0	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0680-L8C	55.6	78.2	81.2	118.2	117	1.2	8	3
	10	□	MNS0680-L10C	69.2	92.2	95.2	132.2	131	1.2	8	3
	12	●	MNS0680-L12C	82.8	106.2	109.2	146.2	145	1.2	8	3
	15	□	MNS0680-L15C	103.2	127.2	130.2	167.2	166	1.2	8	3
	20	●	MNS0680-L20C	137.2	162.2	165.2	202.2	201	1.2	8	3
	25	□	MNS0680-L25C	171.2	197.2	200.2	237.2	236	1.2	8	3
	30	●	MNS0680-L30C	205.2	232.2	235.2	272.2	271	1.2	8	3
	5	★	MNS0680LB	35.2	57.2	57.2	110.2	109	1.2	7	3
	10	□	MNS0680X10DB	69.2	92.2	95.2	148.2	147	1.2	7	3
	20	□	MNS0680X20DB	137.2	162.2	165.2	218.2	217	1.2	7	3
	30	□	MNS0680X30DB	205.2	232.2	235.2	288.2	287	1.2	7	3
6.9	3	□	MNS0690S-DIN	23.9	34.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0690S-DIN-C	23.9	34.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0690L-DIN	42.9	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0690L-DIN-C	42.9	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0690-L8C	56.5	78.3	81.3	118.3	117	1.3	8	3
	10	□	MNS0690-L10C	70.3	92.3	95.3	132.3	131	1.3	8	3
	12	□	MNS0690-L12C	84.1	106.3	109.3	146.3	145	1.3	8	3
	15	□	MNS0690-L15C	104.8	127.3	130.3	167.3	166	1.3	8	3
	20	□	MNS0690-L20C	139.3	162.3	165.3	202.3	201	1.3	8	3
	25	□	MNS0690-L25C	173.8	197.3	200.3	237.3	236	1.3	8	3
	30	□	MNS0690-L30C	208.3	232.3	235.3	272.3	271	1.3	8	3
	5	★	MNS0690LB	35.8	57.3	57.3	110.3	109	1.3	7	3
	10	□	MNS0690X10DB	70.3	92.3	95.3	148.3	147	1.3	7	3
	20	□	MNS0690X20DB	139.3	162.3	165.3	218.3	217	1.3	7	3
	30	□	MNS0690X30DB	208.3	232.3	235.3	288.3	287	1.3	7	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MNS0700S-DIN	23.8	34.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0700S-DIN-C	23.8	34.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0700L-DIN	42.8	53.3	54.3	91.3	90	1.3	8	4
	5	●	MNS0700L-DIN-C	42.8	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0700-L8C	57.3	78.3	81.3	118.3	117	1.3	8	3
	10	□	MNS0700-L10C	71.3	92.3	95.3	132.3	131	1.3	8	3
	12	●	MNS0700-L12C	85.3	106.3	109.3	146.3	145	1.3	8	3
7.0	15	□	MNS0700-L15C	106.3	127.3	130.3	167.3	166	1.3	8	3
	20	●	MNS0700-L20C	141.3	162.3	165.3	202.3	201	1.3	8	3
	25	□	MNS0700-L25C	176.3	197.3	200.3	237.3	236	1.3	8	3
	30	●	MNS0700-L30C	211.3	232.3	235.3	272.3	271	1.3	8	3
	5	★	MNS0700LB	36.3	57.3	57.3	110.3	109	1.3	7	3
	10	★	MNS0700X10DB	71.3	92.3	95.3	148.3	147	1.3	7	3
	20	★	MNS0700X20DB	141.3	162.3	165.3	218.3	217	1.3	7	3
	30	★	MNS0700X30DB	211.3	232.3	235.3	288.3	287	1.3	7	3
	3	□	MNS0710S-DIN	30.6	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0710S-DIN-C	30.6	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0710L-DIN	42.6	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0710L-DIN-C	42.6	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0710-L8C	58.1	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0710-L10C	72.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0710-L12C	86.5	114.3	117.3	154.3	153	1.3	8	3
7.1	15	□	MNS0710-L15C	107.8	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0710-L20C	143.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0710-L25C	178.8	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0710-L30C	214.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0710LB	36.8	61.3	65.3	119.3	118	1.3	8	3
	10	□	MNS0710X10DB	72.3	99.3	102.3	156.3	155	1.3	8	3
	20	□	MNS0710X20DB	143.3	174.3	177.3	231.3	230	1.3	8	3
	30	□	MNS0710X30DB	214.3	249.3	252.3	306.3	305	1.3	8	3
	3	□	MNS0720S-DIN	30.5	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0720S-DIN-C	30.5	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0720L-DIN	42.5	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0720L-DIN-C	42.5	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0720-L8C	58.9	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0720-L10C	73.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0720-L12C	87.7	114.3	117.3	154.3	153	1.3	8	3
7.2	15	□	MNS0720-L15C	109.3	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0720-L20C	145.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0720-L25C	181.3	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0720-L30C	217.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0720LB	37.3	61.3	65.3	119.3	118	1.3	8	3
	10	★	MNS0720X10DB	73.3	99.3	102.3	156.3	155	1.3	8	3
	20	★	MNS0720X20DB	145.3	174.3	177.3	231.3	230	1.3	8	3
	30	★	MNS0720X30DB	217.3	249.3	252.3	306.3	305	1.3	8	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MNS0730S-DIN	30.4	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0730S-DIN-C	30.4	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0730L-DIN	42.4	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0730L-DIN-C	42.4	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0730-L8C	59.7	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0730-L10C	74.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0730-L12C	88.9	114.3	117.3	154.3	153	1.3	8	3
7.3	15	□	MNS0730-L15C	110.8	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0730-L20C	147.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0730-L25C	183.8	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0730-L30C	220.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0730LB	37.8	61.3	65.3	119.3	118	1.3	8	3
	10	□	MNS0730X10DB	74.3	99.3	102.3	156.3	155	1.3	8	3
	20	□	MNS0730X20DB	147.3	174.3	177.3	231.3	230	1.3	8	3
	30	□	MNS0730X30DB	220.3	249.3	252.3	306.3	305	1.3	8	3
	3	□	MNS0740S-DIN	30.2	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0740S-DIN-C	30.2	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0740L-DIN	42.2	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0740L-DIN-C	42.2	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0740-L8C	60.5	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0740-L10C	75.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0740-L12C	90.1	114.3	117.3	154.3	153	1.3	8	3
7.4	15	□	MNS0740-L15C	112.3	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0740-L20C	149.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0740-L25C	186.3	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0740-L30C	223.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0740LB	38.3	61.3	65.3	119.3	118	1.3	8	3
	10	□	MNS0740X10DB	75.3	99.3	102.3	156.3	155	1.3	8	3
	20	□	MNS0740X20DB	149.3	174.3	177.3	231.3	230	1.3	8	3
	30	□	MNS0740X30DB	223.3	249.3	252.3	306.3	305	1.3	8	3
	3	□	MNS0750S-DIN	30.1	41.4	42.4	79.4	78	1.4	8	4
	3	□	MNS0750S-DIN-C	30.1	41.4	42.4	79.4	78	1.4	8	3
	5	□	MNS0750L-DIN	42.1	53.4	54.4	91.4	90	1.4	8	4
	5	●	MNS0750L-DIN-C	42.1	53.4	54.4	91.4	90	1.4	8	3
	8	□	MNS0750-L8C	61.4	84.4	87.4	124.4	123	1.4	8	3
	10	□	MNS0750-L10C	76.4	99.4	102.4	139.4	138	1.4	8	3
	12	●	MNS0750-L12C	91.4	114.4	117.4	154.4	153	1.4	8	3
7.5	15	□	MNS0750-L15C	113.9	136.4	139.4	176.4	175	1.4	8	3
	20	●	MNS0750-L20C	151.4	174.4	177.4	214.4	213	1.4	8	3
	25	□	MNS0750-L25C	188.9	211.4	214.4	251.4	250	1.4	8	3
	30	●	MNS0750-L30C	226.4	249.4	252.4	289.4	288	1.4	8	3
	5	★	MNS0750LB	38.9	61.4	65.4	119.4	118	1.4	8	3
	10	□	MNS0750X10DB	76.4	99.4	102.4	156.4	155	1.4	8	3
	20	□	MNS0750X20DB	151.4	174.4	177.4	231.4	230	1.4	8	3
	30	□	MNS0750X30DB	226.4	249.4	252.4	306.4	305	1.4	8	3

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DATOS TÉCNICOS ➢ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.6	3	□	MNS0760S-DIN	30.0	41.4	42.4	79.4	78	1.4	8	4
	3	□	MNS0760S-DIN-C	30.0	41.4	42.4	79.4	78	1.4	8	3
	5	□	MNS0760L-DIN	42.0	53.4	54.4	91.4	90	1.4	8	4
	5	□	MNS0760L-DIN-C	42.0	53.4	54.4	91.4	90	1.4	8	3
	8	□	MNS0760-L8C	62.2	89.4	92.4	129.4	128	1.4	8	3
	10	□	MNS0760-L10C	77.4	105.4	108.4	145.4	144	1.4	8	3
	12	□	MNS0760-L12C	92.6	121.4	124.4	161.4	160	1.4	8	3
	15	□	MNS0760-L15C	115.4	145.4	148.4	185.4	184	1.4	8	3
	20	□	MNS0760-L20C	153.4	185.4	188.4	225.4	224	1.4	8	3
	25	□	MNS0760-L25C	191.4	225.4	228.4	265.4	264	1.4	8	3
	30	□	MNS0760-L30C	229.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0760LB	39.4	65.4	65.4	119.4	118	1.4	8	3
	10	□	MNS0760X10DB	77.4	105.4	108.4	162.4	161	1.4	8	3
	20	□	MNS0760X20DB	153.4	185.4	188.4	242.4	241	1.4	8	3
	30	□	MNS0760X30DB	229.4	265.4	268.4	322.4	321	1.4	8	3
7.7	3	□	MNS0770S-DIN	29.9	41.4	42.4	79.4	78	1.4	8	4
	3	□	MNS0770S-DIN-C	29.9	41.4	42.4	79.4	78	1.4	8	3
	5	□	MNS0770L-DIN	41.9	53.4	54.4	91.4	90	1.4	8	4
	5	□	MNS0770L-DIN-C	41.9	53.4	54.4	91.4	90	1.4	8	3
	8	□	MNS0770-L8C	63.0	89.4	92.4	129.4	128	1.4	8	3
	10	□	MNS0770-L10C	78.4	105.4	108.4	145.4	144	1.4	8	3
	12	□	MNS0770-L12C	93.8	121.4	124.4	161.4	160	1.4	8	3
	15	□	MNS0770-L15C	116.9	145.4	148.4	185.4	184	1.4	8	3
	20	□	MNS0770-L20C	155.4	185.4	188.4	225.4	224	1.4	8	3
	25	□	MNS0770-L25C	193.9	225.4	228.4	265.4	264	1.4	8	3
	30	□	MNS0770-L30C	232.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0770LB	39.9	65.4	65.4	119.4	118	1.4	8	3
	10	□	MNS0770X10DB	78.4	105.4	108.4	162.4	161	1.4	8	3
	20	□	MNS0770X20DB	155.4	185.4	188.4	242.4	241	1.4	8	3
	30	□	MNS0770X30DB	232.4	265.4	268.4	322.4	321	1.4	8	3
7.8	3	□	MNS0780S-DIN	29.7	41.4	42.4	79.4	78	1.4	8	4
	3	□	MNS0780S-DIN-C	29.7	41.4	42.4	79.4	78	1.4	8	3
	5	□	MNS0780L-DIN	41.7	53.4	54.4	91.4	90	1.4	8	4
	5	□	MNS0780L-DIN-C	41.7	53.4	54.4	91.4	90	1.4	8	3
	8	□	MNS0780-L8C	63.8	89.4	92.4	129.4	128	1.4	8	3
	10	□	MNS0780-L10C	79.4	105.4	108.4	145.4	144	1.4	8	3
	12	□	MNS0780-L12C	95.0	121.4	124.4	161.4	160	1.4	8	3
	15	□	MNS0780-L15C	118.4	145.4	148.4	185.4	184	1.4	8	3
	20	□	MNS0780-L20C	157.4	185.4	188.4	225.4	224	1.4	8	3
	25	□	MNS0780-L25C	196.4	225.4	228.4	265.4	264	1.4	8	3
	30	□	MNS0780-L30C	235.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0780LB	40.4	65.4	65.4	119.4	118	1.4	8	3
	10	★	MNS0780X10DB	79.4	105.4	108.4	162.4	161	1.4	8	3
	20	★	MNS0780X20DB	157.4	185.4	188.4	242.4	241	1.4	8	3
	30	★	MNS0780X30DB	235.4	265.4	268.4	322.4	321	1.4	8	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.9	3	□	MNS0790S-DIN	29.6	41.4	42.4	79.4	78	1.4	8	4
	3	□	MNS0790S-DIN-C	29.6	41.4	42.4	79.4	78	1.4	8	3
	5	□	MNS0790L-DIN	41.6	53.4	54.4	91.4	90	1.4	8	4
	5	□	MNS0790L-DIN-C	41.6	53.4	54.4	91.4	90	1.4	8	3
	8	□	MNS0790-L8C	64.6	89.4	92.4	129.4	128	1.4	8	3
	10	□	MNS0790-L10C	80.4	105.4	108.4	145.4	144	1.4	8	3
	12	□	MNS0790-L12C	96.2	121.4	124.4	161.4	160	1.4	8	3
	15	□	MNS0790-L15C	119.9	145.4	148.4	185.4	184	1.4	8	3
	20	□	MNS0790-L20C	159.4	185.4	188.4	225.4	224	1.4	8	3
	25	□	MNS0790-L25C	198.9	225.4	228.4	265.4	264	1.4	8	3
	30	□	MNS0790-L30C	238.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0790LB	40.9	65.4	65.4	119.4	118	1.4	8	3
	10	□	MNS0790X10DB	80.4	105.4	108.4	162.4	161	1.4	8	3
	20	□	MNS0790X20DB	159.4	185.4	188.4	242.4	241	1.4	8	3
	30	□	MNS0790X30DB	238.4	265.4	268.4	322.4	321	1.4	8	3
8.0	3	□	MNS0800S-DIN	29.5	41.5	42.5	79.5	78	1.5	8	4
	3	□	MNS0800S-DIN-C	29.5	41.5	42.5	79.5	78	1.5	8	3
	5	□	MNS0800L-DIN	41.5	53.5	54.5	91.5	90	1.5	8	4
	5	●	MNS0800L-DIN-C	41.5	53.5	54.5	91.5	90	1.5	8	3
	8	□	MNS0800-L8C	65.5	89.5	92.5	129.5	128	1.5	8	3
	10	□	MNS0800-L10C	81.5	105.5	108.5	145.5	144	1.5	8	3
	12	●	MNS0800-L12C	97.5	121.5	124.5	161.5	160	1.5	8	3
	15	□	MNS0800-L15C	121.5	145.5	148.5	185.5	184	1.5	8	3
	20	●	MNS0800-L20C	161.5	185.5	188.5	225.5	224	1.5	8	3
	25	□	MNS0800-L25C	201.5	225.5	228.5	265.5	264	1.5	8	3
	30	●	MNS0800-L30C	241.5	265.5	268.5	305.5	304	1.5	8	3
	5	★	MNS0800LB	41.5	65.5	65.5	119.5	118	1.5	8	3
	10	★	MNS0800X10DB	81.5	105.5	108.5	162.5	161	1.5	8	3
	20	★	MNS0800X20DB	161.5	185.5	188.5	242.5	241	1.5	8	3
	30	★	MNS0800X30DB	241.5	265.5	268.5	322.5	321	1.5	8	3
8.1	3	□	MNS0810S-DIN	34.3	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0810S-DIN-C	34.3	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0810L-DIN	48.3	60.5	61.5	102.5	101	1.5	10	4
	5	□	MNS0810L-DIN-C	48.3	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0810-L8C	66.3	95.5	98.5	139.5	138	1.5	10	3
	10	□	MNS0810-L10C	82.5	112.5	115.5	156.5	155	1.5	10	3
	12	□	MNS0810-L12C	98.7	129.5	132.5	173.5	172	1.5	10	3
	15	□	MNS0810-L15C	123.0	154.5	157.5	198.5	197	1.5	10	3
	20	□	MNS0810-L20C	163.5	197.5	200.5	241.5	240	1.5	10	3
	25	□	MNS0810-L25C	204.0	239.5	242.5	283.5	282	1.5	10	3
	30	□	MNS0810-L30C	244.5	281.5	284.5	325.5	324	1.5	10	3
	5	★	MNS0810LB	42.0	69.5	73.5	128.5	127	1.5	9	3
	10	□	MNS0810X10DB	82.5	112.5	115.5	170.5	169	1.5	9	3
	20	□	MNS0810X20DB	163.5	197.5	200.5	255.5	254	1.5	9	3
	30	□	MNS0810X30DB	244.5	282.5	285.5	340.5	339	1.5	9	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.2	3	□	MNS0820S-DIN	34.2	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0820S-DIN-C	34.2	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0820L-DIN	48.2	60.5	61.5	102.5	101	1.5	10	4
	5	□	MNS0820L-DIN-C	48.2	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0820-L8C	67.1	95.5	98.5	139.5	138	1.5	10	3
	5	★	MNS0820LB	42.5	69.5	73.5	128.5	127	1.5	9	3
	10	□	MNS0820X10DB	83.5	112.5	115.5	170.5	169	1.5	9	3
	20	□	MNS0820X20DB	165.5	197.5	200.5	255.5	254	1.5	9	3
	30	□	MNS0820X30DB	247.5	282.5	285.5	340.5	339	1.5	9	3
8.3	3	□	MNS0830S-DIN	34.1	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0830S-DIN-C	34.1	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0830L-DIN-C	48.1	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0830-L8C	67.9	95.5	98.5	139.5	138	1.5	10	3
	10	□	MNS0830-L10C	84.5	112.5	115.5	156.5	155	1.5	10	3
	12	□	MNS0830-L12C	101.1	129.5	132.5	173.5	172	1.5	10	3
	15	□	MNS0830-L15C	126.0	154.5	157.5	198.5	197	1.5	10	3
	20	□	MNS0830-L20C	167.5	197.5	200.5	241.5	240	1.5	10	3
	25	□	MNS0830-L25C	209.0	239.5	242.5	283.5	282	1.5	10	3
	30	□	MNS0830-L30C	250.5	281.5	284.5	325.5	324	1.5	10	3
	5	★	MNS0830LB	43.0	69.5	73.5	128.5	127	1.5	9	3
	10	□	MNS0830X10DB	84.5	112.5	115.5	170.5	169	1.5	9	3
	20	□	MNS0830X20DB	167.5	197.5	200.5	255.5	254	1.5	9	3
	30	□	MNS0830X30DB	250.5	282.5	285.5	340.5	339	1.5	9	3
8.4	3	□	MNS0840S-DIN	33.9	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0840S-DIN-C	33.9	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0840L-DIN	47.9	60.5	61.5	102.5	101	1.5	10	4
	5	□	MNS0840L-DIN-C	47.9	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0840-L8C	68.7	95.5	98.5	139.5	138	1.5	10	3
	10	□	MNS0840-L10C	85.5	112.5	115.5	156.5	155	1.5	10	3
	12	□	MNS0840-L12C	102.3	129.5	132.5	173.5	172	1.5	10	3
	15	□	MNS0840-L15C	127.5	154.5	157.5	198.5	197	1.5	10	3
	20	□	MNS0840-L20C	169.5	197.5	200.5	241.5	240	1.5	10	3
	25	□	MNS0840-L25C	211.5	239.5	242.5	283.5	282	1.5	10	3
	30	□	MNS0840-L30C	253.5	281.5	284.5	325.5	324	1.5	10	3
	5	★	MNS0840LB	43.5	69.5	73.5	128.5	127	1.5	9	3
	10	□	MNS0840X10DB	85.5	112.5	115.5	170.5	169	1.5	9	3
	20	□	MNS0840X20DB	169.5	197.5	200.5	255.5	254	1.5	9	3
	30	□	MNS0840X30DB	253.5	282.5	285.5	340.5	339	1.5	9	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.5	3	□	MNS0850S-DIN	33.8	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0850S-DIN-C	33.8	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0850L-DIN	47.8	60.5	61.5	102.5	101	1.5	10	4
	5	●	MNS0850L-DIN-C	47.8	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0850-L8C	69.5	95.5	98.5	139.5	138	1.5	10	3
	10	□	MNS0850-L10C	86.5	112.5	115.5	156.5	155	1.5	10	3
	12	●	MNS0850-L12C	103.5	129.5	132.5	173.5	172	1.5	10	3
	15	□	MNS0850-L15C	129.0	154.5	157.5	198.5	197	1.5	10	3
	20	●	MNS0850-L20C	171.5	197.5	200.5	241.5	240	1.5	10	3
	25	□	MNS0850-L25C	214.0	239.5	242.5	283.5	282	1.5	10	3
	30	●	MNS0850-L30C	256.5	281.5	284.5	325.5	324	1.5	10	3
	5	★	MNS0850LB	44.0	69.5	73.5	128.5	127	1.5	9	3
	10	□	MNS0850X10DB	86.5	112.5	115.5	170.5	169	1.5	9	3
	20	□	MNS0850X20DB	171.5	197.5	200.5	255.5	254	1.5	9	3
	30	□	MNS0850X30DB	256.5	282.5	285.5	340.5	339	1.5	9	3
8.6	3	□	MNS0860S-DIN	33.7	46.6	47.6	88.6	87	1.6	10	4
	3	□	MNS0860S-DIN-C	33.7	46.6	47.6	88.6	87	1.6	10	3
	5	□	MNS0860L-DIN-C	47.7	60.6	61.6	102.6	101	1.6	10	3
	8	□	MNS0860-L8C	70.4	100.6	103.6	144.6	143	1.6	10	3
	10	□	MNS0860-L10C	87.6	118.6	121.6	162.6	161	1.6	10	3
	12	□	MNS0860-L12C	104.8	136.6	139.6	180.6	179	1.6	10	3
	15	□	MNS0860-L15C	130.6	163.6	166.6	207.6	206	1.6	10	3
	20	□	MNS0860-L20C	173.6	208.6	211.6	252.6	251	1.6	10	3
	25	□	MNS0860-L25C	216.6	253.6	256.6	297.6	296	1.6	10	3
	30	□	MNS0860-L30C	259.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0860LB	44.6	73.6	73.6	128.6	127	1.6	9	3
	10	□	MNS0860X10DB	87.6	118.6	121.6	176.6	175	1.6	9	3
	20	□	MNS0860X20DB	173.6	208.6	211.6	266.6	265	1.6	9	3
	30	□	MNS0860X30DB	259.6	298.6	301.6	356.6	355	1.6	9	3
8.7	3	□	MNS0870S-DIN	33.5	46.6	47.6	88.6	87	1.6	10	4
	3	□	MNS0870S-DIN-C	33.5	46.6	47.6	88.6	87	1.6	10	3
	5	□	MNS0870L-DIN	47.5	60.6	61.6	102.6	101	1.6	10	4
	5	□	MNS0870L-DIN-C	47.5	60.6	61.6	102.6	101	1.6	10	3
	8	□	MNS0870-L8C	71.2	100.6	103.6	144.6	143	1.6	10	3
	10	□	MNS0870-L10C	88.6	118.6	121.6	162.6	161	1.6	10	3
	12	□	MNS0870-L12C	106.0	136.6	139.6	180.6	179	1.6	10	3
	15	□	MNS0870-L15C	132.1	163.6	166.6	207.6	206	1.6	10	3
	20	□	MNS0870-L20C	175.6	208.6	211.6	252.6	251	1.6	10	3
	25	□	MNS0870-L25C	219.1	253.6	256.6	297.6	296	1.6	10	3
	30	□	MNS0870-L30C	262.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0870LB	45.1	73.6	73.6	128.6	127	1.6	9	3
	10	□	MNS0870X10DB	88.6	118.6	121.6	176.6	175	1.6	9	3
	20	□	MNS0870X20DB	175.6	208.6	211.6	266.6	265	1.6	9	3
	30	□	MNS0870X30DB	262.6	298.6	301.6	356.6	355	1.6	9	3

CONDICIONES DE CORTE ➢ M120
GUIA OPERACIONAL ➢ M121
DATOS TÉCNICOS ➢ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.8	3	□	MNS0880S-DIN	33.4	46.6	47.6	88.6	87	1.6	10	4
	3	□	MNS0880S-DIN-C	33.4	46.6	47.6	88.6	87	1.6	10	3
	5	□	MNS0880L-DIN	47.4	60.6	61.6	102.6	101	1.6	10	4
	5	□	MNS0880L-DIN-C	47.4	60.6	61.6	102.6	101	1.6	10	3
	8	□	MNS0880-L8C	72.0	100.6	103.6	144.6	143	1.6	10	3
	10	□	MNS0880-L10C	89.6	118.6	121.6	162.6	161	1.6	10	3
	12	□	MNS0880-L12C	107.2	136.6	139.6	180.6	179	1.6	10	3
	15	□	MNS0880-L15C	133.6	163.6	166.6	207.6	206	1.6	10	3
	20	□	MNS0880-L20C	177.6	208.6	211.6	252.6	251	1.6	10	3
	25	□	MNS0880-L25C	221.6	253.6	256.6	297.6	296	1.6	10	3
	30	□	MNS0880-L30C	265.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0880LB	45.6	73.6	73.6	128.6	127	1.6	9	3
	10	□	MNS0880X10DB	89.6	118.6	121.6	176.6	175	1.6	9	3
	20	□	MNS0880X20DB	177.6	208.6	211.6	266.6	265	1.6	9	3
	30	□	MNS0880X30DB	265.6	298.6	301.6	356.6	355	1.6	9	3
8.9	3	□	MNS0890S-DIN	33.3	46.6	47.6	88.6	87	1.6	10	4
	3	□	MNS0890S-DIN-C	33.3	46.6	47.6	88.6	87	1.6	10	3
	5	□	MNS0890L-DIN	47.3	60.6	61.6	102.6	101	1.6	10	4
	5	□	MNS0890L-DIN-C	47.3	60.6	61.6	102.6	101	1.6	10	3
	8	□	MNS0890-L8C	72.8	100.6	103.6	144.6	143	1.6	10	3
	10	□	MNS0890-L10C	90.6	118.6	121.6	162.6	161	1.6	10	3
	12	□	MNS0890-L12C	108.4	136.6	139.6	180.6	179	1.6	10	3
	15	□	MNS0890-L15C	135.1	163.6	166.6	207.6	206	1.6	10	3
	20	□	MNS0890-L20C	179.6	208.6	211.6	252.6	251	1.6	10	3
	25	□	MNS0890-L25C	224.1	253.6	256.6	297.6	296	1.6	10	3
	30	□	MNS0890-L30C	268.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0890LB	46.1	73.6	73.6	128.6	127	1.6	9	3
	10	□	MNS0890X10DB	90.6	118.6	121.6	176.6	175	1.6	9	3
	20	□	MNS0890X20DB	179.6	208.6	211.6	266.6	265	1.6	9	3
	30	□	MNS0890X30DB	268.6	298.6	301.6	356.6	355	1.6	9	3
9.0	3	□	MNS0900S-DIN	33.1	46.6	47.6	88.6	87	1.6	10	4
	3	□	MNS0900S-DIN-C	33.1	46.6	47.6	88.6	87	1.6	10	3
	5	□	MNS0900L-DIN	47.1	60.6	61.6	102.6	101	1.6	10	4
	5	●	MNS0900L-DIN-C	47.1	60.6	61.6	102.6	101	1.6	10	3
	8	□	MNS0900-L8C	73.6	100.6	103.6	144.6	143	1.6	10	3
	10	□	MNS0900-L10C	91.6	118.6	121.6	162.6	161	1.6	10	3
	12	●	MNS0900-L12C	109.6	136.6	139.6	180.6	179	1.6	10	3
	15	□	MNS0900-L15C	136.6	163.6	166.6	207.6	206	1.6	10	3
	20	●	MNS0900-L20C	181.6	208.6	211.6	252.6	251	1.6	10	3
	25	□	MNS0900-L25C	226.6	253.6	256.6	297.6	296	1.6	10	3
	30	●	MNS0900-L30C	271.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0900LB	46.6	73.6	73.6	128.6	127	1.6	9	3
	10	★	MNS0900X10DB	91.6	118.6	121.6	176.6	175	1.6	9	3
	20	★	MNS0900X20DB	181.6	208.6	211.6	266.6	265	1.6	9	3
	30	★	MNS0900X30DB	271.6	298.6	301.6	356.6	355	1.6	9	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
9.1	3	□	MNS0910S-DIN	33.0	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0910S-DIN-C	33.0	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0910L-DIN	47.0	60.7	61.7	102.7	101	1.7	10	4
	5	□	MNS0910L-DIN-C	47.0	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0910-L8C	74.5	106.7	109.7	150.7	149	1.7	10	3
	10	□	MNS0910-L10C	92.7	125.7	128.7	169.7	168	1.7	10	3
	12	□	MNS0910-L12C	110.9	144.7	147.7	188.7	187	1.7	10	3
	15	□	MNS0910-L15C	138.2	172.7	175.7	216.7	215	1.7	10	3
	20	□	MNS0910-L20C	183.7	220.7	223.7	264.7	263	1.7	10	3
	25	□	MNS0910-L25C	229.2	267.7	270.7	311.7	310	1.7	10	3
	30	□	MNS0910-L30C	274.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0910LB	47.2	77.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0910X10DB	92.7	125.7	128.7	183.7	182	1.7	10	3
	20	□	MNS0910X20DB	183.7	220.7	223.7	278.7	277	1.7	10	3
	30	□	MNS0910X30DB	274.7	315.7	318.7	373.7	372	1.7	10	3
9.2	3	□	MNS0920S-DIN	32.9	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0920S-DIN-C	32.9	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0920L-DIN	46.9	60.7	61.7	102.7	101	1.7	10	4
	5	□	MNS0920L-DIN-C	46.9	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0920-L8C	75.3	106.7	109.7	150.7	149	1.7	10	3
	10	□	MNS0920-L10C	93.7	125.7	128.7	169.7	168	1.7	10	3
	12	□	MNS0920-L12C	112.1	144.7	147.7	188.7	187	1.7	10	3
	15	□	MNS0920-L15C	139.7	172.7	175.7	216.7	215	1.7	10	3
	20	□	MNS0920-L20C	185.7	220.7	223.7	264.7	263	1.7	10	3
	25	□	MNS0920-L25C	231.7	267.7	270.7	311.7	310	1.7	10	3
	30	□	MNS0920-L30C	277.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0920LB	47.7	77.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0920X10DB	93.7	125.7	128.7	183.7	182	1.7	10	3
	20	□	MNS0920X20DB	185.7	220.7	223.7	278.7	277	1.7	10	3
	30	□	MNS0920X30DB	277.7	315.7	318.7	373.7	372	1.7	10	3
9.3	3	□	MNS0930S-DIN	32.7	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0930S-DIN-C	32.7	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0930L-DIN	46.7	60.7	61.7	102.7	101	1.7	10	4
	5	□	MNS0930L-DIN-C	46.7	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0930-L8C	76.1	106.7	109.7	150.7	149	1.7	10	3
	10	□	MNS0930-L10C	94.7	125.7	128.7	169.7	168	1.7	10	3
	12	□	MNS0930-L12C	113.3	144.7	147.7	188.7	187	1.7	10	3
	15	□	MNS0930-L15C	141.2	172.7	175.7	216.7	215	1.7	10	3
	20	□	MNS0930-L20C	187.7	220.7	223.7	264.7	263	1.7	10	3
	25	□	MNS0930-L25C	234.2	267.7	270.7	311.7	310	1.7	10	3
	30	□	MNS0930-L30C	280.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0930LB	48.2	77.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0930X10DB	94.7	125.7	128.7	183.7	182	1.7	10	3
	20	□	MNS0930X20DB	187.7	220.7	223.7	278.7	277	1.7	10	3
	30	□	MNS0930X30DB	280.7	315.7	318.7	373.7	372	1.7	10	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MNS0940S-DIN	32.6	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0940S-DIN-C	32.6	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0940L-DIN	46.6	60.7	61.7	102.7	101	1.7	10	4
	5	□	MNS0940L-DIN-C	46.6	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0940-L8C	76.9	106.7	109.7	150.7	149	1.7	10	3
	10	□	MNS0940-L10C	95.7	125.7	128.7	169.7	168	1.7	10	3
	12	□	MNS0940-L12C	114.5	144.7	147.7	188.7	187	1.7	10	3
9.4	15	□	MNS0940-L15C	142.7	172.7	175.7	216.7	215	1.7	10	3
	20	□	MNS0940-L20C	189.7	220.7	223.7	264.7	263	1.7	10	3
	25	□	MNS0940-L25C	236.7	267.7	270.7	311.7	310	1.7	10	3
	30	□	MNS0940-L30C	283.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0940LB	48.7	77.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0940X10DB	95.7	125.7	128.7	183.7	182	1.7	10	3
	20	□	MNS0940X20DB	189.7	220.7	223.7	278.7	277	1.7	10	3
	30	□	MNS0940X30DB	283.7	315.7	318.7	373.7	372	1.7	10	3
	3	□	MNS0950S-DIN	32.5	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0950S-DIN-C	32.5	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0950L-DIN	46.5	60.7	61.7	102.7	101	1.7	10	4
	5	●	MNS0950L-DIN-C	46.5	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0950-L8C	77.7	106.7	109.7	150.7	149	1.7	10	3
	10	□	MNS0950-L10C	96.7	125.7	128.7	169.7	168	1.7	10	3
	12	●	MNS0950-L12C	115.7	144.7	147.7	188.7	187	1.7	10	3
9.5	15	□	MNS0950-L15C	144.2	172.7	175.7	216.7	215	1.7	10	3
	20	●	MNS0950-L20C	191.7	220.7	223.7	264.7	263	1.7	10	3
	25	□	MNS0950-L25C	239.2	267.7	270.7	311.7	310	1.7	10	3
	30	●	MNS0950-L30C	286.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0950LB	49.2	77.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0950X10DB	96.7	125.7	128.7	183.7	182	1.7	10	3
	20	□	MNS0950X20DB	191.7	220.7	223.7	278.7	277	1.7	10	3
	30	□	MNS0950X30DB	286.7	315.7	318.7	373.7	372	1.7	10	3
	3	□	MNS0960S-DIN	32.3	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0960S-DIN-C	32.3	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0960L-DIN	46.3	60.7	61.7	102.7	101	1.7	10	4
	5	□	MNS0960L-DIN-C	46.3	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0960-L8C	78.5	111.7	114.7	155.7	154	1.7	10	3
	10	□	MNS0960-L10C	97.7	131.7	134.7	175.7	174	1.7	10	3
	12	□	MNS0960-L12C	116.9	151.7	154.7	195.7	194	1.7	10	3
9.6	15	□	MNS0960-L15C	145.7	181.7	184.7	225.7	224	1.7	10	3
	20	□	MNS0960-L20C	193.7	231.7	234.7	275.7	274	1.7	10	3
	25	□	MNS0960-L25C	241.7	281.7	284.7	325.7	324	1.7	10	3
	30	□	MNS0960-L30C	289.7	331.7	334.7	375.7	374	1.7	10	3
	5	★	MNS0960LB	49.7	81.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0960X10DB	97.7	131.7	134.7	189.7	188	1.7	10	3
	20	□	MNS0960X20DB	193.7	231.7	234.7	289.7	288	1.7	10	3
	30	□	MNS0960X30DB	289.7	331.7	334.7	389.7	388	1.7	10	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
	3	□	MNS0970S-DIN	32.2	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS0970S-DIN-C	32.2	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS0970L-DIN	46.2	60.8	61.8	102.8	101	1.8	10	4
	5	□	MNS0970L-DIN-C	46.2	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS0970-L8C	79.4	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS0970-L10C	98.8	131.8	134.8	175.8	174	1.8	10	3
	12	□	MNS0970-L12C	118.2	151.8	154.8	195.8	194	1.8	10	3
9.7	15	□	MNS0970-L15C	147.3	181.8	184.8	225.8	224	1.8	10	3
	20	□	MNS0970-L20C	195.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS0970-L25C	244.3	281.8	284.8	325.8	324	1.8	10	3
	30	□	MNS0970-L30C	292.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS0970LB	50.3	81.8	81.8	137.8	136	1.8	10	3
	10	□	MNS0970X10DB	98.8	131.8	134.8	189.8	188	1.8	10	3
	20	□	MNS0970X20DB	195.8	231.8	234.8	289.8	288	1.8	10	3
	30	□	MNS0970X30DB	292.8	331.8	334.8	389.8	388	1.8	10	3
	3	□	MNS0980S-DIN	32.1	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS0980S-DIN-C	32.1	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS0980L-DIN	46.1	60.8	61.8	102.8	101	1.8	10	4
	5	□	MNS0980L-DIN-C	46.1	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS0980-L8C	80.2	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS0980-L10C	99.8	131.8	134.8	175.8	174	1.8	10	3
	12	□	MNS0980-L12C	119.4	151.8	154.8	195.8	194	1.8	10	3
9.8	15	□	MNS0980-L15C	148.8	181.8	184.8	225.8	224	1.8	10	3
	20	□	MNS0980-L20C	197.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS0980-L25C	246.8	281.8	284.8	325.8	324	1.8	10	3
	30	□	MNS0980-L30C	295.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS0980LB	50.8	81.8	81.8	137.8	136	1.8	10	3
	10	★	MNS0980X10DB	99.8	131.8	134.8	189.8	188	1.8	10	3
	20	★	MNS0980X20DB	197.8	231.8	234.8	289.8	288	1.8	10	3
	30	★	MNS0980X30DB	295.8	331.8	334.8	389.8	388	1.8	10	3
	3	□	MNS0990S-DIN	32.0	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS0990S-DIN-C	32.0	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS0990L-DIN	46.0	60.8	61.8	102.8	101	1.8	10	4
	5	□	MNS0990L-DIN-C	46.0	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS0990-L8C	81.0	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS0990-L10C	100.8	131.8	134.8	175.8	174	1.8	10	3
	12	□	MNS0990-L12C	120.6	151.8	154.8	195.8	194	1.8	10	3
9.9	15	□	MNS0990-L15C	150.3	181.8	184.8	225.8	224	1.8	10	3
	20	□	MNS0990-L20C	199.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS0990-L25C	249.3	281.8	284.8	325.8	324	1.8	10	3
	30	□	MNS0990-L30C	298.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS0990LB	51.3	81.8	81.8	137.8	136	1.8	10	3
	10	□	MNS0990X10DB	100.8	131.8	134.8	189.8	188	1.8	10	3
	20	□	MNS0990X20DB	199.8	231.8	234.8	289.8	288	1.8	10	3
	30	□	MNS0990X30DB	298.8	331.8	334.8	389.8	388	1.8	10	3

CONDICIONES DE CORTE ➤ M120
GUIA OPERACIONAL ➤ M121
DATOS TÉCNICOS ➤ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.0	3	□	MNS1000S-DIN	31.8	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS1000S-DIN-C	31.8	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS1000L-DIN	45.8	60.8	61.8	102.8	101	1.8	10	4
	5	●	MNS1000L-DIN-C	45.8	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS1000-L8C	81.8	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS1000-L10C	101.8	131.8	134.8	175.8	174	1.8	10	3
	12	●	MNS1000-L12C	121.8	151.8	154.8	195.8	194	1.8	10	3
	15	□	MNS1000-L15C	151.8	181.8	184.8	225.8	224	1.8	10	3
	20	●	MNS1000-L20C	201.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS1000-L25C	251.8	281.8	284.8	325.8	324	1.8	10	3
	30	●	MNS1000-L30C	301.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS1000LB	51.8	81.8	81.8	137.8	136	1.8	10	3
	10	★	MNS1000X10DB	101.8	131.8	134.8	189.8	188	1.8	10	3
	20	★	MNS1000X20DB	201.8	231.8	234.8	289.8	288	1.8	10	3
	30	★	MNS1000X30DB	301.8	331.8	334.8	389.8	388	1.8	10	3
10.1	3	□	MNS1010S-DIN	39.7	54.8	55.8	101.8	100	1.8	12	4
	3	□	MNS1010S-DIN-C	39.7	54.8	55.8	101.8	100	1.8	12	3
	5	□	MNS1010L-DIN	55.7	70.8	71.8	117.8	116	1.8	12	4
	5	□	MNS1010L-DIN-C	55.7	70.8	71.8	117.8	116	1.8	12	3
	8	□	MNS1010-L8C	82.6	117.8	120.8	166.8	165	1.8	12	3
	10	□	MNS1010-L10C	102.8	138.8	141.8	187.8	186	1.8	12	3
	12	□	MNS1010-L12C	123.0	159.8	162.8	208.8	207	1.8	12	3
	15	□	MNS1010-L15C	153.3	190.8	193.8	239.8	238	1.8	12	3
	20	□	MNS1010-L20C	203.8	243.8	246.8	292.8	291	1.8	12	3
	25	□	MNS1010-L25C	254.3	295.8	298.8	344.8	343	1.8	12	3
	5	★	MNS1010LB	52.3	85.8	89.8	150.8	149	1.8	11	3
	10	□	MNS1010X10DB	102.8	138.8	141.8	202.8	201	1.8	11	3
	20	□	MNS1010X20DB	203.8	243.8	246.8	307.8	306	1.8	11	3
10.2	3	□	MNS1020S-DIN	39.6	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1020S-DIN-C	39.6	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1020L-DIN	55.6	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1020L-DIN-C	55.6	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1020-L8C	83.5	117.9	120.9	166.9	165	1.9	12	3
	10	□	MNS1020-L10C	103.9	138.9	141.9	187.9	186	1.9	12	3
	12	□	MNS1020-L12C	124.3	159.9	162.9	208.9	207	1.9	12	3
	15	□	MNS1020-L15C	154.9	190.9	193.9	239.9	238	1.9	12	3
	20	□	MNS1020-L20C	205.9	243.9	246.9	292.9	291	1.9	12	3
	25	□	MNS1020-L25C	256.9	295.9	298.9	344.9	343	1.9	12	3
	5	★	MNS1020LB	52.9	85.9	89.9	150.9	149	1.9	11	3
	10	□	MNS1020X10DB	103.9	138.9	141.9	202.9	201	1.9	11	3
	20	□	MNS1020X20DB	205.9	243.9	246.9	307.9	306	1.9	11	3
10.3	3	□	MNS1030S-DIN	39.4	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1030S-DIN-C	39.4	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1030L-DIN	55.4	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1030L-DIN-C	55.4	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1030-L8C	84.3	117.9	120.9	166.9	165	1.9	12	3
	10	□	MNS1030-L10C	104.9	138.9	141.9	187.9	186	1.9	12	3
	12	□	MNS1030-L12C	125.5	159.9	162.9	208.9	207	1.9	12	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.3	15	□	MNS1030-L15C	156.4	190.9	193.9	239.9	238	1.9	12	3
	20	□	MNS1030-L20C	207.9	243.9	246.9	292.9	291	1.9	12	3
	25	□	MNS1030-L25C	259.4	295.9	298.9	344.9	343	1.9	12	3
	5	★	MNS1030LB	53.4	85.9	89.9	150.9	149	1.9	11	3
	10	□	MNS1030X10DB	104.9	138.9	141.9	202.9	201	1.9	11	3
	20	□	MNS1030X20DB	207.9	243.9	246.9	307.9	306	1.9	11	3
10.4	3	□	MNS1040S-DIN	39.3	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1040S-DIN-C	39.3	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1040L-DIN	55.3	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1040L-DIN-C	55.3	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1040-L8C	85.1	117.9	120.9	166.9	165	1.9	12	3
	10	□	MNS1040-L10C	105.9	138.9	141.9	187.9	186	1.9	12	3
	12	□	MNS1040-L12C	126.7	159.9	162.9	208.9	207	1.9	12	3
	15	□	MNS1040-L15C	157.9	190.9	193.9	239.9	238	1.9	12	3
	20	□	MNS1040-L20C	209.9	243.9	246.9	292.9	291	1.9	12	3
	25	□	MNS1040-L25C	261.9	295.9	298.9	344.9	343	1.9	12	3
	5	★	MNS1040LB	53.9	85.9	89.9	150.9	149	1.9	11	3
	10	□	MNS1040X10DB	105.9	138.9	141.9	202.9	201	1.9	11	3
	20	□	MNS1040X20DB	209.9	243.9	246.9	307.9	306	1.9	11	3
10.5	3	□	MNS1050S-DIN	39.2	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1050S-DIN-C	39.2	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1050L-DIN	55.2	70.9	71.9	117.9	116	1.9	12	4
	5	●	MNS1050L-DIN-C	55.2	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1050-L8C	85.9	117.9	120.9	166.9	165	1.9	12	3
	10	□	MNS1050-L10C	106.9	138.9	141.9	187.9	186	1.9	12	3
	12	●	MNS1050-L12C	127.9	159.9	162.9	208.9	207	1.9	12	3
	15	□	MNS1050-L15C	159.4	190.9	193.9	239.9	238	1.9	12	3
	20	●	MNS1050-L20C	211.9	243.9	246.9	292.9	291	1.9	12	3
	25	□	MNS1050-L25C	264.4	295.9	298.9	344.9	343	1.9	12	3
	5	★	MNS1050LB	54.4	85.9	89.9	150.9	149	1.9	11	3
	10	★	MNS1050X10DB	106.9	138.9	141.9	202.9	201	1.9	11	3
	20	★	MNS1050X20DB	211.9	243.9	246.9	307.9	306	1.9	11	3
10.6	3	□	MNS1060S-DIN	39.0	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1060S-DIN-C	39.0	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1060L-DIN	55.0	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1060L-DIN-C	55.0	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1060-L8C	86.7	122.9	125.9	171.9	170	1.9	12	3
	10	□	MNS1060-L10C	107.9	144.9	147.9	193.9	192	1.9	12	3
	12	□	MNS1060-L12C	129.1	166.9	169.9	215.9	214	1.9	12	3
	15	□	MNS1060-L15C	160.9	199.9	202.9	248.9	247	1.9	12	3
	20	□	MNS1060-L20C	213.9	254.9	257.9	303.9	302	1.9	12	3
	25	□	MNS1060-L25C	266.9	309.9	312.9	358.9	357	1.9	12	3
	5	★	MNS1060LB	54.9	89.9	89.9	150.9	149	1.9	11	3
	10	□	MNS1060X10DB	107.9	144.9	147.9	208.9	207	1.9	11	3
	20	□	MNS1060X20DB	213.9	254.9	257.9	318.9	317	1.9	11	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.7	3	□	MNS1070S-DIN	38.9	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1070S-DIN-C	38.9	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1070L-DIN	54.9	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1070L-DIN-C	54.9	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1070-L8C	87.5	122.9	125.9	171.9	170	1.9	12	3
	10	□	MNS1070-L10C	108.9	144.9	147.9	193.9	192	1.9	12	3
	12	□	MNS1070-L12C	130.3	166.9	169.9	215.9	214	1.9	12	3
	15	□	MNS1070-L15C	162.4	199.9	202.9	248.9	247	1.9	12	3
	20	□	MNS1070-L20C	215.9	254.9	257.9	303.9	302	1.9	12	3
	25	□	MNS1070-L25C	269.4	309.9	312.9	358.9	357	1.9	12	3
	5	★	MNS1070LB	55.4	89.9	89.9	150.9	149	1.9	11	3
	10	□	MNS1070X10DB	108.9	144.9	147.9	208.9	207	1.9	11	3
	20	□	MNS1070X20DB	215.9	254.9	257.9	318.9	317	1.9	11	3
10.8	3	□	MNS1080S-DIN	38.8	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1080S-DIN-C	38.8	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1080L-DIN	54.8	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1080L-DIN-C	54.8	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1080-L8C	88.4	123.0	126.0	172.0	170	2.0	12	3
	10	□	MNS1080-L10C	110.0	145.0	148.0	194.0	192	2.0	12	3
	12	□	MNS1080-L12C	131.6	167.0	170.0	216.0	214	2.0	12	3
	15	□	MNS1080-L15C	164.0	200.0	203.0	249.0	247	2.0	12	3
	20	□	MNS1080-L20C	218.0	255.0	258.0	304.0	302	2.0	12	3
	25	□	MNS1080-L25C	272.0	310.0	313.0	359.0	357	2.0	12	3
	5	★	MNS1080LB	56.0	90.0	90.0	151.0	149	2.0	11	3
	10	□	MNS1080X10DB	110.0	145.0	148.0	209.0	207	2.0	11	3
	20	□	MNS1080X20DB	218.0	255.0	258.0	319.0	317	2.0	11	3
10.9	3	□	MNS1090S-DIN	38.6	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1090S-DIN-C	38.6	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1090L-DIN	54.6	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1090L-DIN-C	54.6	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1090-L8C	89.2	123.0	126.0	172.0	170	2.0	12	3
	10	□	MNS1090-L10C	111.0	145.0	148.0	194.0	192	2.0	12	3
	12	□	MNS1090-L12C	132.8	167.0	170.0	216.0	214	2.0	12	3
	15	□	MNS1090-L15C	165.5	200.0	203.0	249.0	247	2.0	12	3
	20	□	MNS1090-L20C	220.0	255.0	258.0	304.0	302	2.0	12	3
	25	□	MNS1090-L25C	274.5	310.0	313.0	359.0	357	2.0	12	3
	5	★	MNS1090LB	56.5	90.0	90.0	151.0	149	2.0	11	3
	10	□	MNS1090X10DB	111.0	145.0	148.0	209.0	207	2.0	11	3
	20	□	MNS1090X20DB	220.0	255.0	258.0	319.0	317	2.0	11	3
11.0	3	□	MNS1100S-DIN	38.5	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1100S-DIN-C	38.5	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1100L-DIN	54.5	71.0	72.0	118.0	116	2.0	12	4
	5	●	MNS1100L-DIN-C	54.5	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1100-L8C	90.0	123.0	126.0	172.0	170	2.0	12	3
	10	□	MNS1100-L10C	112.0	145.0	148.0	194.0	192	2.0	12	3
	12	●	MNS1100-L12C	134.0	167.0	170.0	216.0	214	2.0	12	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
11.0	15	□	MNS1100-L15C	167.0	200.0	203.0	249.0	247	2.0	12	3
	20	●	MNS1100-L20C	222.0	255.0	258.0	304.0	302	2.0	12	3
	25	□	MNS1100-L25C	277.0	310.0	313.0	359.0	357	2.0	12	3
	5	★	MNS1100LB	57.0	90.0	90.0	151.0	149	2.0	11	3
	10	★	MNS1100X10DB	112.0	145.0	148.0	209.0	207	2.0	11	3
	20	★	MNS1100X20DB	222.0	255.0	258.0	319.0	317	2.0	11	3
11.1	3	□	MNS1110S-DIN	38.4	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1110S-DIN-C	38.4	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1110L-DIN	54.4	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1110L-DIN-C	54.4	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1110-L8C	90.8	129.0	132.0	178.0	176	2.0	12	3
	10	□	MNS1110-L10C	113.0	152.0	155.0	201.0	199	2.0	12	3
	12	□	MNS1110-L12C	135.2	175.0	178.0	224.0	222	2.0	12	3
	15	□	MNS1110-L15C	168.5	209.0	212.0	258.0	256	2.0	12	3
	20	□	MNS1110-L20C	224.0	267.0	270.0	316.0	314	2.0	12	3
	25	□	MNS1110-L25C	279.5	324.0	327.0	373.0	371	2.0	12	3
	5	★	MNS1110LB	57.5	94.0	98.0	160.0	158	2.0	12	3
	10	□	MNS1110X10DB	113.0	152.0	155.0	217.0	215	2.0	12	3
	20	□	MNS1110X20DB	224.0	267.0	270.0	332.0	330	2.0	12	3
11.2	3	□	MNS1120S-DIN	38.2	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1120S-DIN-C	38.2	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1120L-DIN	54.2	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1120L-DIN-C	54.2	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1120-L8C	91.6	129.0	132.0	178.0	176	2.0	12	3
	10	□	MNS1120-L10C	114.0	152.0	155.0	201.0	199	2.0	12	3
	12	□	MNS1120-L12C	136.4	175.0	178.0	224.0	222	2.0	12	3
	15	□	MNS1120-L15C	170.0	209.0	212.0	258.0	256	2.0	12	3
	20	□	MNS1120-L20C	226.0	267.0	270.0	316.0	314	2.0	12	3
	25	□	MNS1120-L25C	282.0	324.0	327.0	373.0	371	2.0	12	3
	5	★	MNS1120LB	58.0	94.0	98.0	160.0	158	2.0	12	3
	10	□	MNS1120X10DB	114.0	152.0	155.0	217.0	215	2.0	12	3
	20	□	MNS1120X20DB	226.0	267.0	270.0	332.0	330	2.0	12	3
11.3	3	□	MNS1130S-DIN	38.1	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1130S-DIN-C	38.1	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1130L-DIN	54.1	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1130L-DIN-C	54.1	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1130-L8C	92.5	129.1	132.1	178.1	176	2.1	12	3
	10	□	MNS1130-L10C	115.1	152.1	155.1	201.1	199	2.1	12	3
	12	□	MNS1130-L12C	137.7	175.1	178.1	224.1	222	2.1	12	3
	15	□	MNS1130-L15C	171.6	209.1	212.1	258.1	256	2.1	12	3
	20	□	MNS1130-L20C	228.1	267.1	270.1	316.1	314	2.1	12	3
	25	□	MNS1130-L25C	284.6	324.1	327.1	373.1	371	2.1	12	3
	5	★	MNS1130LB	58.6	94.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1130X10DB	115.1	152.1	155.1	217.1	215	2.1	12	3
	20	□	MNS1130X20DB	228.1	267.1	270.1	332.1	330	2.1	12	3

CONDICIONES DE CORTE ➢ M120
GUIA OPERACIONAL ➢ M121
DATOS TÉCNICOS ➢ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
11.4	3	□	MNS1140S-DIN	38.0	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1140S-DIN-C	38.0	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1140L-DIN	54.0	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1140L-DIN-C	54.0	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1140-L8C	93.3	129.1	132.1	178.1	176	2.1	12	3
	10	□	MNS1140-L10C	116.1	152.1	155.1	201.1	199	2.1	12	3
	12	□	MNS1140-L12C	138.9	175.1	178.1	224.1	222	2.1	12	3
	15	□	MNS1140-L15C	173.1	209.1	212.1	258.1	256	2.1	12	3
	20	□	MNS1140-L20C	230.1	267.1	270.1	316.1	314	2.1	12	3
	25	□	MNS1140-L25C	287.1	324.1	327.1	373.1	371	2.1	12	3
	5	★	MNS1140LB	59.1	94.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1140X10DB	116.1	152.1	155.1	217.1	215	2.1	12	3
	20	□	MNS1140X20DB	230.1	267.1	270.1	332.1	330	2.1	12	3
11.5	3	□	MNS1150S-DIN	37.8	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1150S-DIN-C	37.8	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1150L-DIN	53.8	71.1	72.1	118.1	116	2.1	12	4
	5	●	MNS1150L-DIN-C	53.8	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1150-L8C	94.1	129.1	132.1	178.1	176	2.1	12	3
	10	□	MNS1150-L10C	117.1	152.1	155.1	201.1	199	2.1	12	3
	12	●	MNS1150-L12C	140.1	175.1	178.1	224.1	222	2.1	12	3
	15	□	MNS1150-L15C	174.6	209.1	212.1	258.1	256	2.1	12	3
	20	●	MNS1150-L20C	232.1	267.1	270.1	316.1	314	2.1	12	3
	25	□	MNS1150-L25C	289.6	324.1	327.1	373.1	371	2.1	12	3
	5	★	MNS1150LB	59.6	94.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1150X10DB	117.1	152.1	155.1	217.1	215	2.1	12	3
	20	□	MNS1150X20DB	232.1	267.1	270.1	332.1	330	2.1	12	3
11.6	3	□	MNS1160S-DIN	37.7	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1160S-DIN-C	37.7	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1160L-DIN	53.7	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1160L-DIN-C	53.7	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1160-L8C	94.9	134.1	137.1	183.1	181	2.1	12	3
	10	□	MNS1160-L10C	118.1	158.1	161.1	207.1	205	2.1	12	3
	12	□	MNS1160-L12C	141.3	182.1	185.1	231.1	229	2.1	12	3
	15	□	MNS1160-L15C	176.1	218.1	221.1	267.1	265	2.1	12	3
	20	□	MNS1160-L20C	234.1	278.1	281.1	327.1	325	2.1	12	3
	25	□	MNS1160-L25C	292.1	338.1	341.1	387.1	385	2.1	12	3
	5	★	MNS1160LB	60.1	98.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1160X10DB	118.1	158.1	161.1	223.1	221	2.1	12	3
	20	□	MNS1160X20DB	234.1	278.1	281.1	343.1	341	2.1	12	3
11.7	3	□	MNS1170S-DIN	37.6	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1170S-DIN-C	37.6	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1170L-DIN	53.6	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1170L-DIN-C	53.6	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1170-L8C	95.7	134.1	137.1	183.1	181	2.1	12	3
	10	□	MNS1170-L10C	119.1	158.1	161.1	207.1	205	2.1	12	3
	12	□	MNS1170-L12C	142.5	182.1	185.1	231.1	229	2.1	12	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
11.7	15	□	MNS1170-L15C	177.6	218.1	221.1	267.1	265	2.1	12	3
	20	□	MNS1170-L20C	236.1	278.1	281.1	327.1	325	2.1	12	3
	25	□	MNS1170-L25C	294.6	338.1	341.1	387.1	385	2.1	12	3
	5	★	MNS1170LB	60.6	98.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1170X10DB	119.1	158.1	161.1	223.1	221	2.1	12	3
	20	□	MNS1170X20DB	236.1	278.1	281.1	343.1	341	2.1	12	3
11.8	3	□	MNS1180S-DIN	37.4	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1180S-DIN-C	37.4	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1180L-DIN	53.4	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1180L-DIN-C	53.4	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1180-L8C	96.5	134.1	137.1	183.1	181	2.1	12	3
	10	□	MNS1180-L10C	120.1	158.1	161.1	207.1	205	2.1	12	3
	12	□	MNS1180-L12C	143.7	182.1	185.1	231.1	229	2.1	12	3
	15	□	MNS1180-L15C	179.1	218.1	221.1	267.1	265	2.1	12	3
	20	□	MNS1180-L20C	238.1	278.1	281.1	327.1	325	2.1	12	3
	25	□	MNS1180-L25C	297.1	338.1	341.1	387.1	385	2.1	12	3
	5	★	MNS1180LB	61.1	98.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1180X10DB	120.1	158.1	161.1	223.1	221	2.1	12	3
	20	□	MNS1180X20DB	238.1	278.1	281.1	343.1	341	2.1	12	3
11.9	3	□	MNS1190S-DIN	37.3	55.2	56.2	102.2	100	2.2	12	4
	3	□	MNS1190S-DIN-C	37.3	55.2	56.2	102.2	100	2.2	12	3
	5	□	MNS1190L-DIN	53.3	71.2	72.2	118.2	116	2.2	12	4
	5	□	MNS1190L-DIN-C	53.3	71.2	72.2	118.2	116	2.2	12	3
	8	□	MNS1190-L8C	97.4	134.2	137.2	183.2	181	2.2	12	3
	10	□	MNS1190-L10C	121.2	158.2	161.2	207.2	205	2.2	12	3
	12	□	MNS1190-L12C	145.0	182.2	185.2	231.2	229	2.2	12	3
	15	□	MNS1190-L15C	180.7	218.2	221.2	267.2	265	2.2	12	3
	20	□	MNS1190-L20C	240.2	278.2	281.2	327.2	325	2.2	12	3
	25	□	MNS1190-L25C	299.7	338.2	341.2	387.2	385	2.2	12	3
	5	★	MNS1190LB	61.7	98.2	98.2	160.2	158	2.2	12	3
	10	□	MNS1190X10DB	121.2	158.2	161.2	223.2	221	2.2	12	3
	20	□	MNS1190X20DB	240.2	278.2	281.2	343.2	341	2.2	12	3
12.0	3	□	MNS1200S-DIN	37.2	55.2	56.2	102.2	100	2.2	12	4
	3	□	MNS1200S-DIN-C	37.2	55.2	56.2	102.2	100	2.2	12	3
	5	□	MNS1200L-DIN	53.2	71.2	72.2	118.2	116	2.2	12	4
	5	●	MNS1200L-DIN-C	53.2	71.2	72.2	118.2	116	2.2	12	3
	8	□	MNS1200-L8C	98.2	134.2	137.2	183.2	181	2.2	12	3
	10	□	MNS1200-L10C	122.2	158.2	161.2	207.2	205	2.2	12	3
	12	●	MNS1200-L12C	146.2	182.2	185.2	231.2	229	2.2	12	3
	15	□	MNS1200-L15C	182.2	218.2	221.2	267.2	265	2.2	12	3
	20	●	MNS1200-L20C	242.2	278.2	281.2	327.2	325	2.2	12	3
	25	□	MNS1200-L25C	302.2	338.2	341.2	387.2	385	2.2	12	3
	5	★	MNS1200LB	62.2	98.2	98.2	160.2	158	2.2	12	3
	10	★	MNS1200X10DB	122.2	158.2	161.2	223.2	221	2.2	12	3
	20	★	MNS1200X20DB	242.2	278.2	281.2	343.2	341	2.2	12	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
12.1	3	□	MNS1210S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	4
	3	□	MNS1210S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	3
	5	□	MNS1210L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	4
	5	□	MNS1210L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	3
	8	□	MNS1210-L8C	99.0	140.2	143.2	189.2	187	2.2	14	3
	10	□	MNS1210-L10C	123.2	165.2	168.2	214.2	212	2.2	14	3
	12	□	MNS1210-L12C	147.4	190.2	193.2	239.2	237	2.2	14	3
	15	□	MNS1210-L15C	183.7	227.2	230.2	276.2	274	2.2	14	3
	20	□	MNS1210-L20C	244.2	290.2	293.2	339.2	337	2.2	14	3
	5	★	MNS1210LB	62.7	102.2	106.2	169.2	167	2.2	13	3
	10	□	MNS1210X10DB	123.2	165.2	168.2	231.2	229	2.2	13	3
	20	□	MNS1210X20DB	244.2	290.2	293.2	356.2	354	2.2	13	3
12.2	3	□	MNS1220S-DIN	41.9	60.2	61.2	107.2	105	2.2	14	4
	3	□	MNS1220S-DIN-C	41.9	60.2	61.2	107.2	105	2.2	14	3
	5	□	MNS1220L-DIN	58.9	77.2	78.2	124.2	122	2.2	14	4
	5	□	MNS1220L-DIN-C	58.9	77.2	78.2	124.2	122	2.2	14	3
	8	□	MNS1220-L8C	99.8	140.2	143.2	189.2	187	2.2	14	3
	10	□	MNS1220-L10C	124.2	165.2	168.2	214.2	212	2.2	14	3
	12	□	MNS1220-L12C	148.6	190.2	193.2	239.2	237	2.2	14	3
	15	□	MNS1220-L15C	185.2	227.2	230.2	276.2	274	2.2	14	3
	20	□	MNS1220-L20C	246.2	290.2	293.2	339.2	337	2.2	14	3
	5	★	MNS1220LB	63.2	102.2	106.2	169.2	167	2.2	13	3
	10	□	MNS1220X10DB	124.2	165.2	168.2	231.2	229	2.2	13	3
	20	□	MNS1220X20DB	246.2	290.2	293.2	356.2	354	2.2	13	3
12.3	3	□	MNS1230S-DIN	41.8	60.2	61.2	107.2	105	2.2	14	4
	3	□	MNS1230S-DIN-C	41.8	60.2	61.2	107.2	105	2.2	14	3
	5	□	MNS1230L-DIN	58.8	77.2	78.2	124.2	122	2.2	14	4
	5	□	MNS1230L-DIN-C	58.8	77.2	78.2	124.2	122	2.2	14	3
	8	□	MNS1230-L8C	100.6	140.2	143.2	189.2	187	2.2	14	3
	10	□	MNS1230-L10C	125.2	165.2	168.2	214.2	212	2.2	14	3
	12	□	MNS1230-L12C	149.8	190.2	193.2	239.2	237	2.2	14	3
	15	□	MNS1230-L15C	186.7	227.2	230.2	276.2	274	2.2	14	3
	20	□	MNS1230-L20C	248.2	290.2	293.2	339.2	337	2.2	14	3
	5	★	MNS1230LB	63.7	102.2	106.2	169.2	167	2.2	13	3
	10	□	MNS1230X10DB	125.2	165.2	168.2	231.2	229	2.2	13	3
	20	□	MNS1230X20DB	248.2	290.2	293.2	356.2	354	2.2	13	3
12.4	3	□	MNS1240S-DIN	41.7	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1240S-DIN-C	41.7	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1240L-DIN	58.7	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1240L-DIN-C	58.7	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1240-L8C	101.5	140.3	143.3	189.3	187	2.3	14	3
	10	□	MNS1240-L10C	126.3	165.3	168.3	214.3	212	2.3	14	3
	12	□	MNS1240-L12C	151.1	190.3	193.3	239.3	237	2.3	14	3
	15	□	MNS1240-L15C	188.3	227.3	230.3	276.3	274	2.3	14	3
	20	□	MNS1240-L20C	250.3	290.3	293.3	339.3	337	2.3	14	3
	5	★	MNS1240LB	64.3	102.3	106.3	169.3	167	2.3	13	3
	10	□	MNS1240X10DB	126.3	165.3	168.3	231.3	229	2.3	13	3
	20	□	MNS1240X20DB	250.3	290.3	293.3	356.3	354	2.3	13	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
12.5	3	□	MNS1250S-DIN	41.5	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1250S-DIN-C	41.5	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1250L-DIN	58.5	77.3	78.3	124.3	122	2.3	14	4
	5	●	MNS1250L-DIN-C	58.5	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1250-L8C	102.3	140.3	143.3	189.3	187	2.3	14	3
	10	□	MNS1250-L10C	127.3	165.3	168.3	214.3	212	2.3	14	3
	12	●	MNS1250-L12C	152.3	190.3	193.3	239.3	237	2.3	14	3
	15	□	MNS1250-L15C	189.8	227.3	230.3	276.3	274	2.3	14	3
	20	●	MNS1250-L20C	252.3	290.3	293.3	339.3	337	2.3	14	3
	5	★	MNS1250LB	64.8	102.3	106.3	169.3	167	2.3	13	3
	10	□	MNS1250X10DB	127.3	165.3	168.3	231.3	229	2.3	13	3
	20	□	MNS1250X20DB	252.3	290.3	293.3	356.3	354	2.3	13	3
12.6	3	□	MNS1260S-DIN	41.4	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1260S-DIN-C	41.4	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1260L-DIN	58.4	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1260L-DIN-C	58.4	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1260-L8C	103.1	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1260-L10C	128.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1260-L12C	153.5	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1260-L15C	191.3	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1260-L20C	254.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1260LB	65.3	106.3	106.3	169.3	167	2.3	13	3
	10	□	MNS1260X10DB	128.3	171.3	174.3	237.3	235	2.3	13	3
	20	□	MNS1260X20DB	254.3	301.3	304.3	367.3	365	2.3	13	3
12.7	3	□	MNS1270S-DIN	41.3	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1270S-DIN-C	41.3	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1270L-DIN	58.3	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1270L-DIN-C	58.3	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1270-L8C	103.9	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1270-L10C	129.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1270-L12C	154.7	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1270-L15C	192.8	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1270-L20C	256.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1270LB	65.8	106.3	106.3	169.3	167	2.3	13	3
	10	□	MNS1270X10DB	129.3	171.3	174.3	237.3	235	2.3	13	3
	20	□	MNS1270X20DB	256.3	301.3	304.3	367.3	365	2.3	13	3
12.8	3	□	MNS1280S-DIN	41.1	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1280S-DIN-C	41.1	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1280L-DIN	58.1	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1280L-DIN-C	58.1	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1280-L8C	104.7	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1280-L10C	130.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1280-L12C	155.9	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1280-L15C	194.3	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1280-L20C	258.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1280LB	66.3	106.3	106.3	169.3	167	2.3	13	3
	10	□	MNS1280X10DB	130.3	171.3	174.3	237.3	235	2.3	13	3
	20	□	MNS1280X20DB	258.3	301.3	304.3	367.3	365	2.3	13	3

CONDICIONES DE CORTE ➢ M120
GUIA OPERACIONAL ➢ M121
DATOS TÉCNICOS ➢ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
12.9	3	□	MNS1290S-DIN	41.0	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1290S-DIN-C	41.0	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1290L-DIN	58.0	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1290L-DIN-C	58.0	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1290-L8C	105.5	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1290-L10C	131.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1290-L12C	157.1	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1290-L15C	195.8	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1290-L20C	260.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1290LB	66.8	106.3	106.3	169.3	167	2.3	13	3
	10	□	MNS1290X10DB	131.3	171.3	174.3	237.3	235	2.3	13	3
	20	□	MNS1290X20DB	260.3	301.3	304.3	367.3	365	2.3	13	3
13.0	3	□	MNS1300S-DIN	40.9	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1300S-DIN-C	40.9	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1300L-DIN	57.9	77.4	78.4	124.4	122	2.4	14	4
	5	●	MNS1300L-DIN-C	57.9	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1300-L8C	106.4	145.4	148.4	194.4	192	2.4	14	3
	10	□	MNS1300-L10C	132.4	171.4	174.4	220.4	218	2.4	14	3
	12	●	MNS1300-L12C	158.4	197.4	200.4	246.4	244	2.4	14	3
	15	□	MNS1300-L15C	197.4	236.4	239.4	285.4	283	2.4	14	3
	20	●	MNS1300-L20C	262.4	301.4	304.4	350.4	348	2.4	14	3
	5	★	MNS1300LB	67.4	106.4	106.4	169.4	167	2.4	13	3
	10	★	MNS1300X10DB	132.4	171.4	174.4	237.4	235	2.4	13	3
	20	★	MNS1300X20DB	262.4	301.4	304.4	367.4	365	2.4	13	3
13.1	3	□	MNS1310S-DIN	40.7	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1310S-DIN-C	40.7	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1310L-DIN	57.7	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1310L-DIN-C	57.7	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1310-L8C	107.2	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1310-L10C	133.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1310-L12C	159.6	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1310-L15C	198.9	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1310-L20C	264.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1310LB	67.9	110.4	114.4	178.4	176	2.4	14	3
	10	□	MNS1310X10DB	133.4	178.4	181.4	245.4	243	2.4	14	3
	20	□	MNS1310X20DB	264.4	313.4	316.4	380.4	378	2.4	14	3
13.2	3	□	MNS1320S-DIN	40.6	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1320S-DIN-C	40.6	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1320L-DIN	57.6	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1320L-DIN-C	57.6	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1320-L8C	108.0	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1320-L10C	134.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1320-L12C	160.8	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1320-L15C	200.4	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1320-L20C	266.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1320LB	68.4	110.4	114.4	178.4	176	2.4	14	3
	10	□	MNS1320X10DB	134.4	178.4	181.4	245.4	243	2.4	14	3
	20	□	MNS1320X20DB	266.4	313.4	316.4	380.4	378	2.4	14	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
13.3	3	□	MNS1330S-DIN	40.5	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1330S-DIN-C	40.5	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1330L-DIN	57.5	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1330L-DIN-C	57.5	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1330-L8C	108.8	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1330-L10C	135.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1330-L12C	162.0	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1330-L15C	201.9	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1330-L20C	268.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1330LB	68.9	110.4	114.4	178.4	176	2.4	14	3
	10	□	MNS1330X10DB	135.4	178.4	181.4	245.4	243	2.4	14	3
	20	□	MNS1330X20DB	268.4	313.4	316.4	380.4	378	2.4	14	3
13.4	3	□	MNS1340S-DIN	40.3	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1340S-DIN-C	40.3	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1340L-DIN	57.3	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1340L-DIN-C	57.3	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1340-L8C	109.6	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1340-L10C	136.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1340-L12C	163.2	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1340-L15C	203.4	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1340-L20C	270.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1340LB	69.4	110.4	114.4	178.4	176	2.4	14	3
	10	□	MNS1340X10DB	136.4	178.4	181.4	245.4	243	2.4	14	3
	20	□	MNS1340X20DB	270.4	313.4	316.4	380.4	378	2.4	14	3
13.5	3	□	MNS1350S-DIN	40.2	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1350S-DIN-C	40.2	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1350L-DIN	57.2	77.5	78.5	124.5	122	2.5	14	4
	5	●	MNS1350L-DIN-C	57.2	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1350-L8C	110.5	151.5	154.5	200.5	198	2.5	14	3
	10	□	MNS1350-L10C	137.5	178.5	181.5	227.5	225	2.5	14	3
	12	●	MNS1350-L12C	164.5	205.5	208.5	254.5	252	2.5	14	3
	15	□	MNS1350-L15C	205.0	245.5	248.5	294.5	292	2.5	14	3
	20	●	MNS1350-L20C	272.5	313.5	316.5	362.5	360	2.5	14	3
	5	★	MNS1350LB	70.0	110.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1350X10DB	137.5	178.5	181.5	245.5	243	2.5	14	3
	20	□	MNS1350X20DB	272.5	313.5	316.5	380.5	378	2.5	14	3
13.6	3	□	MNS1360S-DIN	40.1	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1360S-DIN-C	40.1	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1360L-DIN	57.1	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1360L-DIN-C	57.1	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1360-L8C	111.3	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1360-L10C	138.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1360-L12C	165.7	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1360-L15C	206.5	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1360-L20C	274.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1360LB	70.5	114.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1360X10DB	138.5	184.5	187.5	251.5	249	2.5	14	3
	20	□	MNS1360X20DB	274.5	324.5	327.5	391.5	389	2.5	14	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
13.7	3	□	MNS1370S-DIN	39.9	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1370S-DIN-C	39.9	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1370L-DIN	56.9	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1370L-DIN-C	56.9	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1370-L8C	112.1	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1370-L10C	139.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1370-L12C	166.9	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1370-L15C	208.0	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1370-L20C	276.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1370LB	71.0	114.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1370X10DB	139.5	184.5	187.5	251.5	249	2.5	14	3
	20	□	MNS1370X20DB	276.5	324.5	327.5	391.5	389	2.5	14	3
13.8	3	□	MNS1380S-DIN	39.8	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1380S-DIN-C	39.8	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1380L-DIN	56.8	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1380L-DIN-C	56.8	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1380-L8C	112.9	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1380-L10C	140.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1380-L12C	168.1	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1380-L15C	209.5	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1380-L20C	278.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1380LB	71.5	114.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1380X10DB	140.5	184.5	187.5	251.5	249	2.5	14	3
	20	□	MNS1380X20DB	278.5	324.5	327.5	391.5	389	2.5	14	3
13.9	3	□	MNS1390S-DIN	39.7	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1390S-DIN-C	39.7	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1390L-DIN	56.7	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1390L-DIN-C	56.7	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1390-L8C	113.7	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1390-L10C	141.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1390-L12C	169.3	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1390-L15C	211.0	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1390-L20C	280.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1390LB	72.0	114.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1390X10DB	141.5	184.5	187.5	251.5	249	2.5	14	3
	20	□	MNS1390X20DB	280.5	324.5	327.5	391.5	389	2.5	14	3
14.0	3	□	MNS1400S-DIN	39.5	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1400S-DIN-C	39.5	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1400L-DIN	56.5	77.5	78.5	124.5	122	2.5	14	4
	5	●	MNS1400L-DIN-C	56.5	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1400-L8C	114.5	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1400-L10C	142.5	184.5	187.5	233.5	231	2.5	14	3
	12	●	MNS1400-L12C	170.5	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1400-L15C	212.5	254.5	257.5	303.5	301	2.5	14	3
	20	●	MNS1400-L20C	282.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1400LB	72.5	114.5	114.5	178.5	176	2.5	14	3
	10	★	MNS1400X10DB	142.5	184.5	187.5	251.5	249	2.5	14	3
	20	★	MNS1400X20DB	282.5	324.5	327.5	391.5	389	2.5	14	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
14.1	3	□	MNS1410S-DIN	43.4	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1410S-DIN-C	43.4	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1410L-DIN	61.4	82.6	83.6	132.6	130	2.6	16	4
	5	□	MNS1410L-DIN-C	61.4	82.6	83.6	132.6	130	2.6	16	3
14.2	3	□	MNS1420S-DIN	43.3	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1420S-DIN-C	43.3	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1420L-DIN	61.3	82.6	83.6	132.6	130	2.6	16	4
	5	●	MNS1420L-DIN-C	61.3	82.6	83.6	132.6	130	2.6	16	3
14.3	3	□	MNS1430S-DIN	43.2	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1430S-DIN-C	43.2	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1430L-DIN	61.2	82.6	83.6	132.6	130	2.6	16	4
	5	□	MNS1430L-DIN-C	61.2	82.6	83.6	132.6	130	2.6	16	3
14.4	3	□	MNS1440S-DIN	43.0	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1440S-DIN-C	43.0	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1440L-DIN	61.0	82.6	83.6	132.6	130	2.6	16	4
	5	□	MNS1440L-DIN-C	61.0	82.6	83.6	132.6	130	2.6	16	3
14.5	3	□	MNS1450S-DIN	42.9	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1450S-DIN-C	42.9	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1450L-DIN	60.9	82.6	83.6	132.6	130	2.6	16	4
	5	●	MNS1450L-DIN-C	60.9	82.6	83.6	132.6	130	2.6	16	3
14.6	3	□	MNS1460S-DIN	42.8	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1460S-DIN-C	42.8	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1460L-DIN	60.8	82.7	83.7	132.7	130	2.7	16	4
	5	□	MNS1460L-DIN-C	60.8	82.7	83.7	132.7	130	2.7	16	3
14.7	3	□	MNS1470S-DIN	42.6	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1470S-DIN-C	42.6	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1470L-DIN	60.6	82.7	83.7	132.7	130	2.7	16	4
	5	□	MNS1470L-DIN-C	60.6	82.7	83.7	132.7	130	2.7	16	3
14.8	3	□	MNS1480S-DIN	42.5	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1480S-DIN-C	42.5	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1480L-DIN	60.5	82.7	83.7	132.7	130	2.7	16	4
	5	□	MNS1480L-DIN-C	60.5	82.7	83.7	132.7	130	2.7	16	3
14.9	3	□	MNS1490S-DIN	42.4	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1490S-DIN-C	42.4	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1490L-DIN	60.4	82.7	83.7	132.7	130	2.7	16	4
	5	□	MNS1490L-DIN-C	60.4	82.7	83.7	132.7	130	2.7	16	3
15.0	3	□	MNS1500S-DIN	42.2	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1500S-DIN-C	42.2	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1500L-DIN	60.2	82.7	83.7	132.7	130	2.7	16	4
	5	●	MNS1500L-DIN-C	60.2	82.7	83.7	132.7	130	2.7	16	3
15.1	3	□	MNS1510S-DIN	42.1	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1510S-DIN-C	42.1	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1510L-DIN	60.1	82.7	83.7	132.7	130	2.7	16	4
	5	□	MNS1510L-DIN-C	60.1	82.7	83.7	132.7	130	2.7	16	3
15.2	3	□	MNS1520S-DIN	42.0	64.8	65.8	114.8	112	2.8	16	4
	3	□	MNS1520S-DIN-C	42.0	64.8	65.8	114.8	112	2.8	16	3
	5	□	MNS1520L-DIN	60.0	82.8	83.8	132.8	130	2.8	16	4
	5	□	MNS1520L-DIN-C	60.0	82.8	83.8	132.8	130	2.8	16	3

CONDICIONES DE CORTE ➤ M120
GUIA OPERACIONAL ➤ M121
DATOS TÉCNICOS ➤ P001

MNS

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
15.3	3	□	MNS1530S-DIN	41.8	64.8	65.8	114.8	112	2.8	16	4
	3	□	MNS1530S-DIN-C	41.8	64.8	65.8	114.8	112	2.8	16	3
	5	□	MNS1530L-DIN	59.8	82.8	83.8	132.8	130	2.8	16	4
	5	□	MNS1530L-DIN-C	59.8	82.8	83.8	132.8	130	2.8	16	3
15.4	3	□	MNS1540S-DIN	41.7	64.8	65.8	114.8	112	2.8	16	4
	3	□	MNS1540S-DIN-C	41.7	64.8	65.8	114.8	112	2.8	16	3
	5	□	MNS1540L-DIN	59.7	82.8	83.8	132.8	130	2.8	16	4
	5	□	MNS1540L-DIN-C	59.7	82.8	83.8	132.8	130	2.8	16	3
15.5	3	□	MNS1550S-DIN	41.6	64.8	65.8	114.8	112	2.8	16	4
	3	□	MNS1550S-DIN-C	41.6	64.8	65.8	114.8	112	2.8	16	3
	5	□	MNS1550L-DIN	59.6	82.8	83.8	132.8	130	2.8	16	4
	5	●	MNS1550L-DIN-C	59.6	82.8	83.8	132.8	130	2.8	16	3
15.6	3	□	MNS1560S-DIN	41.4	64.8	65.8	114.8	112	2.8	16	4
	3	□	MNS1560S-DIN-C	41.4	64.8	65.8	114.8	112	2.8	16	3
	5	□	MNS1560L-DIN	59.4	82.8	83.8	132.8	130	2.8	16	4
	5	□	MNS1560L-DIN-C	59.4	82.8	83.8	132.8	130	2.8	16	3
15.7	3	□	MNS1570S-DIN	41.3	64.9	65.9	114.9	112	2.9	16	4
	3	□	MNS1570S-DIN-C	41.3	64.9	65.9	114.9	112	2.9	16	3
	5	□	MNS1570L-DIN	59.3	82.9	83.9	132.9	130	2.9	16	4
	5	□	MNS1570L-DIN-C	59.3	82.9	83.9	132.9	130	2.9	16	3
15.8	3	□	MNS1580S-DIN	41.2	64.9	65.9	114.9	112	2.9	16	4
	3	□	MNS1580S-DIN-C	41.2	64.9	65.9	114.9	112	2.9	16	3
	5	□	MNS1580L-DIN	59.2	82.9	83.9	132.9	130	2.9	16	4
	5	□	MNS1580L-DIN-C	59.2	82.9	83.9	132.9	130	2.9	16	3
15.9	3	□	MNS1590S-DIN	41.0	64.9	65.9	114.9	112	2.9	16	4
	3	□	MNS1590S-DIN-C	41.0	64.9	65.9	114.9	112	2.9	16	3
	5	□	MNS1590L-DIN	59.0	82.9	83.9	132.9	130	2.9	16	4
	5	□	MNS1590L-DIN-C	59.0	82.9	83.9	132.9	130	2.9	16	3
16.0	3	□	MNS1600S-DIN	40.9	64.9	65.9	114.9	112	2.9	16	4
	3	□	MNS1600S-DIN-C	40.9	64.9	65.9	114.9	112	2.9	16	3
	5	□	MNS1600L-DIN	58.9	82.9	83.9	132.9	130	2.9	16	4
	5	●	MNS1600L-DIN-C	58.9	82.9	83.9	132.9	130	2.9	16	3
16.1	3	□	MNS1610S-DIN	48.8	72.9	73.9	122.9	120	2.9	18	4
	3	□	MNS1610S-DIN-C	48.8	72.9	73.9	122.9	120	2.9	18	3
	5	□	MNS1610L-DIN	68.8	92.9	93.9	142.9	140	2.9	18	4
	5	□	MNS1610L-DIN-C	68.8	92.9	93.9	142.9	140	2.9	18	3
16.2	3	□	MNS1620S-DIN	48.6	72.9	73.9	122.9	120	2.9	18	4
	3	□	MNS1620S-DIN-C	48.6	72.9	73.9	122.9	120	2.9	18	3
	5	□	MNS1620L-DIN	68.6	92.9	93.9	142.9	140	2.9	18	4
	5	□	MNS1620L-DIN-C	68.6	92.9	93.9	142.9	140	2.9	18	3
16.3	3	□	MNS1630S-DIN	48.5	73.0	74.0	123.0	120	3.0	18	4
	3	□	MNS1630S-DIN-C	48.5	73.0	74.0	123.0	120	3.0	18	3
	5	□	MNS1630L-DIN	68.5	93.0	94.0	143.0	140	3.0	18	4
	5	□	MNS1630L-DIN-C	68.5	93.0	94.0	143.0	140	3.0	18	3
16.4	3	□	MNS1640S-DIN	48.4	73.0	74.0	123.0	120	3.0	18	4
	3	□	MNS1640S-DIN-C	48.4	73.0	74.0	123.0	120	3.0	18	3
	5	□	MNS1640L-DIN	68.4	93.0	94.0	143.0	140	3.0	18	4
	5	□	MNS1640L-DIN-C	68.4	93.0	94.0	143.0	140	3.0	18	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
16.5	3	□	MNS1650S-DIN	48.3	73.0	74.0	123.0	120	3.0	18	4
	3	□	MNS1650S-DIN-C	48.3	73.0	74.0	123.0	120	3.0	18	3
	5	□	MNS1650L-DIN	68.3	93.0	94.0	143.0	140	3.0	18	4
	5	●	MNS1650L-DIN-C	68.3	93.0	94.0	143.0	140	3.0	18	3
16.6	3	□	MNS1660S-DIN	48.1	73.0	74.0	123.0	120	3.0	18	4
	3	□	MNS1660S-DIN-C	48.1	73.0	74.0	123.0	120	3.0	18	3
	5	□	MNS1660L-DIN	68.1	93.0	94.0	143.0	140	3.0	18	4
	5	□	MNS1660L-DIN-C	68.1	93.0	94.0	143.0	140	3.0	18	3
16.7	3	□	MNS1670S-DIN	48.0	73.0	74.0	123.0	120	3.0	18	4
	3	□	MNS1670S-DIN-C	48.0	73.0	74.0	123.0	120	3.0	18	3
	5	□	MNS1670L-DIN	68.0	93.0	94.0	143.0	140	3.0	18	4
	5	□	MNS1670L-DIN-C	68.0	93.0	94.0	143.0	140	3.0	18	3
16.8	3	□	MNS1680S-DIN	47.9	73.1	74.1	123.1	120	3.1	18	4
	3	□	MNS1680S-DIN-C	47.9	73.1	74.1	123.1	120	3.1	18	3
	5	□	MNS1680L-DIN	67.9	93.1	94.1	143.1	140	3.1	18	4
	5	□	MNS1680L-DIN-C	67.9	93.1	94.1	143.1	140	3.1	18	3
16.9	3	□	MNS1690S-DIN	47.7	73.1	74.1	123.1	120	3.1	18	4
	3	□	MNS1690S-DIN-C	47.7	73.1	74.1	123.1	120	3.1	18	3
	5	□	MNS1690L-DIN	67.7	93.1	94.1	143.1	140	3.1	18	4
	5	□	MNS1690L-DIN-C	67.7	93.1	94.1	143.1	140	3.1	18	3
17.0	3	□	MNS1700S-DIN	47.6	73.1	74.1	123.1	120	3.1	18	4
	3	□	MNS1700S-DIN-C	47.6	73.1	74.1	123.1	120	3.1	18	3
	5	□	MNS1700L-DIN	67.6	93.1	94.1	143.1	140	3.1	18	4
	5	●	MNS1700L-DIN-C	67.6	93.1	94.1	143.1	140	3.1	18	3
17.1	3	□	MNS1710S-DIN	47.5	73.1	74.1	123.1	120	3.1	18	4
	3	□	MNS1710S-DIN-C	47.5	73.1	74.1	123.1	120	3.1	18	3
	5	□	MNS1710L-DIN	67.5	93.1	94.1	143.1	140	3.1	18	4
	5	□	MNS1710L-DIN-C	67.5	93.1	94.1	143.1	140	3.1	18	3
17.2	3	□	MNS1720S-DIN	47.3	73.1	74.1	123.1	120	3.1	18	4
	3	□	MNS1720S-DIN-C	47.3	73.1	74.1	123.1	120	3.1	18	3
	5	□	MNS1720L-DIN	67.3	93.1	94.1	143.1	140	3.1	18	4
	5	□	MNS1720L-DIN-C	67.3	93.1	94.1	143.1	140	3.1	18	3
17.3	3	□	MNS1730S-DIN	47.2	73.1	74.1	123.1	120	3.1	18	4
	3	□	MNS1730S-DIN-C	47.2	73.1	74.1	123.1	120	3.1	18	3
	5	□	MNS1730L-DIN	67.2	93.1	94.1	143.1	140	3.1	18	4
	5	□	MNS1730L-DIN-C	67.2	93.1	94.1	143.1	140	3.1	18	3
17.4	3	□	MNS1740S-DIN	47.1	73.2	74.2	123.2	120	3.2	18	4
	3	□	MNS1740S-DIN-C	47.1	73.2	74.2	123.2	120	3.2	18	3
	5	□	MNS1740L-DIN	67.1	93.2	94.2	143.2	140	3.2	18	4
	5	□	MNS1740L-DIN-C	67.1	93.2	94.2	143.2	140	3.2	18	3
17.5	3	□	MNS1750S-DIN	46.9	73.2	74.2	123.2	120	3.2	18	4
	3	□	MNS1750S-DIN-C	46.9	73.2	74.2	123.2	120	3.2	18	3
	5	□	MNS1750L-DIN	66.9	93.2	94.2	143.2	140	3.2	18	4
	5	●	MNS1750L-DIN-C	66.9	93.2	94.2	143.2	140	3.2	18	3
17.6	3	□	MNS1760S-DIN	46.8	73.2	74.2	123.2	120	3.2	18	4
	3	□	MNS1760S-DIN-C	46.8	73.2	74.2	123.2	120	3.2	18	3
	5	□	MNS1760L-DIN	66.8	93.2	94.2	143.2	140	3.2	18	4
	5	□	MNS1760L-DIN-C	66.8	93.2	94.2	143.2	140	3.2	18	3

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. □ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
17.7	3	□	MNS1770S-DIN	46.7	73.2	74.2	123.2	120	3.2	18	4
	3	□	MNS1770S-DIN-C	46.7	73.2	74.2	123.2	120	3.2	18	3
	5	□	MNS1770L-DIN	66.7	93.2	94.2	143.2	140	3.2	18	4
	5	□	MNS1770L-DIN-C	66.7	93.2	94.2	143.2	140	3.2	18	3
17.8	3	□	MNS1780S-DIN	46.5	73.2	74.2	123.2	120	3.2	18	4
	3	□	MNS1780S-DIN-C	46.5	73.2	74.2	123.2	120	3.2	18	3
	5	□	MNS1780L-DIN	66.5	93.2	94.2	143.2	140	3.2	18	4
	5	□	MNS1780L-DIN-C	66.5	93.2	94.2	143.2	140	3.2	18	3
17.9	3	□	MNS1790S-DIN	46.4	73.3	74.3	123.3	120	3.3	18	4
	3	□	MNS1790S-DIN-C	46.4	73.3	74.3	123.3	120	3.3	18	3
	5	□	MNS1790L-DIN	66.4	93.3	94.3	143.3	140	3.3	18	4
	5	□	MNS1790L-DIN-C	66.4	93.3	94.3	143.3	140	3.3	18	3
18.0	3	□	MNS1800S-DIN	46.3	73.3	74.3	123.3	120	3.3	18	4
	3	□	MNS1800S-DIN-C	46.3	73.3	74.3	123.3	120	3.3	18	3
	5	□	MNS1800L-DIN	66.3	93.3	94.3	143.3	140	3.3	18	4
	5	●	MNS1800L-DIN-C	66.3	93.3	94.3	143.3	140	3.3	18	3
18.1	3	□	MNS1810S-DIN	52.1	79.3	80.3	131.3	128	3.3	20	4
	3	□	MNS1810S-DIN-C	52.1	79.3	80.3	131.3	128	3.3	20	3
	5	□	MNS1810L-DIN	74.1	101.3	102.3	153.3	150	3.3	20	4
	5	□	MNS1810L-DIN-C	74.1	101.3	102.3	153.3	150	3.3	20	3
18.2	3	□	MNS1820S-DIN	52.0	79.3	80.3	131.3	128	3.3	20	4
	3	□	MNS1820S-DIN-C	52.0	79.3	80.3	131.3	128	3.3	20	3
	5	□	MNS1820L-DIN	74.0	101.3	102.3	153.3	150	3.3	20	4
	5	□	MNS1820L-DIN-C	74.0	101.3	102.3	153.3	150	3.3	20	3
18.3	3	□	MNS1830S-DIN	51.9	79.3	80.3	131.3	128	3.3	20	4
	3	□	MNS1830S-DIN-C	51.9	79.3	80.3	131.3	128	3.3	20	3
	5	□	MNS1830L-DIN	73.9	101.3	102.3	153.3	150	3.3	20	4
	5	□	MNS1830L-DIN-C	73.9	101.3	102.3	153.3	150	3.3	20	3
18.4	3	□	MNS1840S-DIN	51.7	79.3	80.3	131.3	128	3.3	20	4
	3	□	MNS1840S-DIN-C	51.7	79.3	80.3	131.3	128	3.3	20	3
	5	□	MNS1840L-DIN	73.7	101.3	102.3	153.3	150	3.3	20	4
	5	□	MNS1840L-DIN-C	73.7	101.3	102.3	153.3	150	3.3	20	3
18.5	3	□	MNS1850S-DIN	51.6	79.4	80.4	131.4	128	3.4	20	4
	3	□	MNS1850S-DIN-C	51.6	79.4	80.4	131.4	128	3.4	20	3
	5	□	MNS1850L-DIN	73.6	101.4	102.4	153.4	150	3.4	20	4
	5	●	MNS1850L-DIN-C	73.6	101.4	102.4	153.4	150	3.4	20	3
18.6	3	□	MNS1860S-DIN	51.5	79.4	80.4	131.4	128	3.4	20	4
	3	□	MNS1860S-DIN-C	51.5	79.4	80.4	131.4	128	3.4	20	3
	5	□	MNS1860L-DIN	73.5	101.4	102.4	153.4	150	3.4	20	4
	5	□	MNS1860L-DIN-C	73.5	101.4	102.4	153.4	150	3.4	20	3
18.7	3	□	MNS1870S-DIN	51.4	79.4	80.4	131.4	128	3.4	20	4
	3	□	MNS1870S-DIN-C	51.4	79.4	80.4	131.4	128	3.4	20	3
	5	□	MNS1870L-DIN	73.4	101.4	102.4	153.4	150	3.4	20	4
	5	□	MNS1870L-DIN-C	73.4	101.4	102.4	153.4	150	3.4	20	3
18.8	3	□	MNS1880S-DIN	51.2	79.4	80.4	131.4	128	3.4	20	4
	3	□	MNS1880S-DIN-C	51.2	79.4	80.4	131.4	128	3.4	20	3
	5	□	MNS1880L-DIN	73.2	101.4	102.4	153.4	150	3.4	20	4
	5	□	MNS1880L-DIN-C	73.2	101.4	102.4	153.4	150	3.4	20	3

DC (mm)	Profundidad agujero (L/D)	TF15	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
18.9	3	□	MNS1890S-DIN	51.1	79.4	80.4	131.4	128	3.4	20	4
	3	□	MNS1890S-DIN-C	51.1	79.4	80.4	131.4	128	3.4	20	3
	5	□	MNS1890L-DIN	73.1	101.4	102.4	153.4	150	3.4	20	4
	5	□	MNS1890L-DIN-C	73.1	101.4	102.4	153.4	150	3.4	20	3
19.0	3	□	MNS1900S-DIN	51.0	79.5	80.5	131.5	128	3.5	20	4
	3	□	MNS1900S-DIN-C	51.0	79.5	80.5	131.5	128	3.5	20	3
	5	□	MNS1900L-DIN	73.0	101.5	102.5	153.5	150	3.5	20	4
	5	□	MNS1900L-DIN-C	73.0	101.5	102.5	153.5	150	3.5	20	3
19.1	3	□	MNS1910S-DIN	50.8	79.5	80.5	131.5	128	3.5	20	4
	3	□	MNS1910S-DIN-C	50.8	79.5	80.5	131.5	128	3.5	20	3
	5	□	MNS1910L-DIN	72.8	101.5	102.5	153.5	150	3.5	20	4
	5	□	MNS1910L-DIN-C	72.8	101.5	102.5	153.5	150	3.5	20	3
19.2	3	□	MNS1920S-DIN	50.7	79.5	80.5	131.5	128	3.5	20	4
	3	□	MNS1920S-DIN-C	50.7	79.5	80.5	131.5	128	3.5	20	3
	5	□	MNS1920L-DIN	72.7	101.5	102.5	153.5	150	3.5	20	4
	5	□	MNS1920L-DIN-C	72.7	101.5	102.5	153.5	150	3.5	20	3
19.3	3	□	MNS1930S-DIN	50.6	79.5	80.5	131.5	128	3.5	20	4
	5	□	MNS1930L-DIN	72.6	101.5	102.5	153.5	150	3.5	20	4
	5	□	MNS1930L-DIN-C	72.6	101.5	102.5	153.5	150	3.5	20	3
19.4	3	□	MNS1940S-DIN	50.4	79.5	80.5	131.5	128	3.5	20	4
	3	□	MNS1940S-DIN-C	50.4	79.5	80.5	131.5	128	3.5	20	3
	5	□	MNS1940L-DIN	72.4	101.5	102.5	153.5	150	3.5	20	4
	5	□	MNS1940L-DIN-C	72.4	101.5	102.5	153.5	150	3.5	20	3
19.5	3	□	MNS1950S-DIN	50.3	79.5	80.5	131.5	128	3.5	20	4
	3	□	MNS1950S-DIN-C	50.3	79.5	80.5	131.5	128	3.5	20	3
	5	□	MNS1950L-DIN	72.3	101.5	102.5	153.5	150	3.5	20	4
	5	●	MNS1950L-DIN-C	72.3	101.5	102.5	153.5	150	3.5	20	3
19.6	3	□	MNS1960S-DIN	50.2	79.6	80.6	131.6	128	3.6	20	4
	3	□	MNS1960S-DIN-C	50.2	79.6	80.6	131.6	128	3.6	20	3
	5	□	MNS1960L-DIN	72.2	101.6	102.6	153.6	150	3.6	20	4
	5	□	MNS1960L-DIN-C	72.2	101.6	102.6	153.6	150	3.6	20	3
19.7	3	□	MNS1970S-DIN	50.0	79.6	80.6	131.6	128	3.6	20	4
	3	□	MNS1970S-DIN-C	50.0	79.6	80.6	131.6	128	3.6	20	3
	5	□	MNS1970L-DIN	72.0	101.6	102.6	153.6	150	3.6	20	4
	5	□	MNS1970L-DIN-C	72.0	101.6	102.6	153.6	150	3.6	20	3
19.8	3	□	MNS1980S-DIN	49.9	79.6	80.6	131.6	128	3.6	20	4
	3	□	MNS1980S-DIN-C	49.9	79.6	80.6	131.6	128	3.6	20	3
	5	□	MNS1980L-DIN	71.9	101.6	102.6	153.6	150	3.6	20	4
	5	□	MNS1980L-DIN-C	71.9	101.6	102.6	153.6	150	3.6	20	3
19.9	3	□	MNS1990S-DIN	49.8	79.6	80.6	131.6	128	3.6	20	4
	3	□	MNS1990S-DIN-C	49.8	79.6	80.6	131.6	128	3.6	20	3
	5	□	MNS1990L-DIN	71.8	101.6	102.6	153.6	150	3.6	20	4
	5	□	MNS1990L-DIN-C	71.8	101.6	102.6	153.6	150	3.6	20	3
20.0	3	□	MNS2000S-DIN	49.6	79.6	80.6	131.6	128	3.6	20	4
	3	□	MNS2000S-DIN-C	49.6	79.6	80.6	131.6	128	3.6	20	3
	5	□	MNS2000L-DIN	71.6	101.6	102.6	153.6	150	3.6	20	4
	5	●	MNS2000L-DIN-C	71.6	101.6	102.6	153.6	150	3.6	20	3

CONDICIONES DE CORTE ➤ M120
GUIA OPERACIONAL ➤ M121
DATOS TÉCNICOS ➤ P001

MNS

CONDICIONES DE CORTE RECOMENDADAS

■ Profundidad agujero : L/D = 3, 5, 8 (Broca tipo LB, S-DIN, S-DIN-C, L-DIN, L-DIN-C, L8C)

Material	N								
	Aleación de aluminio (Si<5%)			Aleación de aluminio (5%≤Si≤10%)			Aleación de aluminio (Si>10%)		
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	
3.2	11900	0.1	(0.11—0.16)	11900	0.15	(0.16—0.21)	11900	0.15	(0.16—0.21)
4.0	9500	0.15	(0.13—0.20)	9500	0.2	(0.20—0.27)	9500	0.2	(0.20—0.27)
5.0	7600	0.2	(0.17—0.25)	7600	0.25	(0.25—0.33)	7600	0.25	(0.25—0.33)
6.3	7500	0.25	(0.21—0.32)	7500	0.35	(0.32—0.42)	7500	0.35	(0.32—0.42)
8.0	5900	0.3	(0.27—0.40)	5900	0.45	(0.40—0.53)	5900	0.45	(0.40—0.53)
10.0	4700	0.4	(0.33—0.50)	4700	0.55	(0.50—0.67)	4700	0.55	(0.50—0.67)
12.0	5300	0.5	(0.40—0.60)	5300	0.7	(0.60—0.80)	5300	0.7	(0.60—0.80)
14.0	4500	0.5	(0.40—0.60)	4500	0.7	(0.60—0.80)	4500	0.7	(0.60—0.80)
16.0	4000	0.5	(0.40—0.60)	4000	0.7	(0.60—0.80)	4000	0.7	(0.60—0.80)
18.0	3500	0.5	(0.40—0.60)	3500	0.7	(0.60—0.80)	3500	0.7	(0.60—0.80)
20.0	3200	0.5	(0.40—0.60)	3200	0.7	(0.60—0.80)	3200	0.7	(0.60—0.80)

Nota 1) Si se utiliza la broca con una longitud superior a L/D 10, es necesario utilizar "agujeros previos" como guía.
(Si no se utiliza un agujero-previo, puede romperse la broca.)
Nota 2) Para taladrar el agujero previo, se recomienda MNS, MAE-MB o MAS-MB.

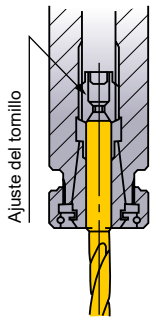
■ Profundidad agujero : L/D = 10, 12, 15, 20, 25, 30 (Broca tipo X10DB, X20DB, X30DB, L10C, L12C, L15C, L20C, L25C, L30C)

Material	N								
	Aleación de aluminio (Si<5%)			Aleación de aluminio (5%≤Si≤10%)			Aleación de aluminio (Si>10%)		
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)		Revoluciones (min^{-1})	Avance (min.—max.) (mm/rev)	
3.2	8900	0.1	(0.11—0.16)	8900	0.15	(0.16—0.21)	8900	0.15	(0.16—0.21)
4.0	7100	0.15	(0.13—0.20)	7100	0.2	(0.20—0.27)	7100	0.2	(0.20—0.27)
5.0	5700	0.2	(0.17—0.25)	5700	0.25	(0.25—0.33)	5700	0.25	(0.25—0.33)
6.3	6000	0.25	(0.21—0.32)	6000	0.35	(0.32—0.42)	6000	0.35	(0.32—0.42)
8.0	4700	0.3	(0.27—0.40)	4700	0.45	(0.40—0.53)	4700	0.45	(0.40—0.53)
10.0	3800	0.4	(0.33—0.50)	3800	0.55	(0.50—0.67)	3800	0.55	(0.50—0.67)
12.0	4200	0.5	(0.40—0.60)	4200	0.7	(0.60—0.80)	4200	0.7	(0.60—0.80)
14.0	3600	0.5	(0.40—0.60)	3600	0.7	(0.60—0.80)	3600	0.7	(0.60—0.80)
16.0	3200	0.5	(0.40—0.60)	3200	0.7	(0.60—0.80)	3200	0.7	(0.60—0.80)
18.0	2800	0.5	(0.40—0.60)	2800	0.7	(0.60—0.80)	2800	0.7	(0.60—0.80)
20.0	2500	0.5	(0.40—0.60)	2500	0.7	(0.60—0.80)	2500	0.7	(0.60—0.80)

Nota 1) Si se utiliza la broca con una longitud superior a L/D 10, es necesario utilizar "agujeros previos" como guía.
(Si no se utiliza un agujero-previo, puede romperse la broca.)
Nota 2) Para taladrar el agujero previo, se recomienda MNS, MAE-MB o MAS-MB.

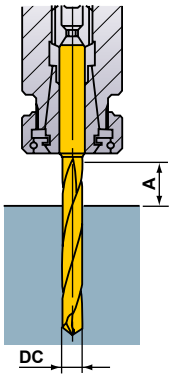
■ GUIA OPERACIONAL DE LA BROCA MNS (L/D 3, 5, 8)

Amarre de la broca



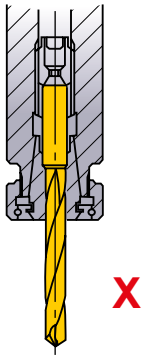
La presión del tipo de tornillo amarra la broca con seguridad.

Longitud de la broca



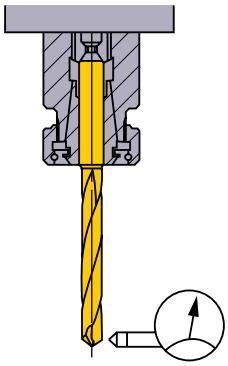
A : ≥ DC x 1.5

Instalación de la broca



No sujetar en las hélices.

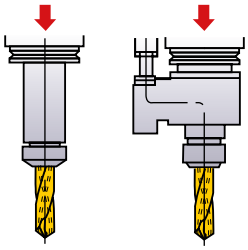
Tolerancia de instalación



Salto radial ≤ 0.03mm

Método de refrigeración (MNS)

Refriración a traves del husillo | Refriración con máquina revolver



La presión del refrigerante es aproximadamente.
5 bar—70 bar

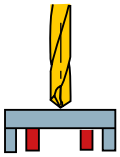
Utilización del refrigerante

<Tipo **MNS**>

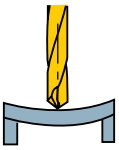
1) El polvo y las particulas de polvo que hay en el refrigerante viejo pueden obstruir el agujero para el aceite e impedir el flujo. Es recomendable cambiar regularmente el refrigerante.

2) Las pequeñas partículas de viruta atascarán el agujero para el aceite. Utilice un filtro como medida preventiva. Si utiliza brocas de pequeño diámetro, utilice un filtro de retícula fina.

Pieza delgada

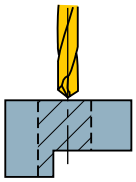


OK
Sujetar la pieza



X
Si se produce un doblamiento

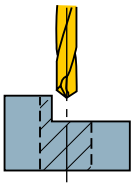
Corte interrumpido



Proceso

OK

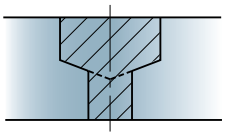
①Bajar el avance cuando taladramos partes en corte interrumpido.



Se requiere mecanizar previamente

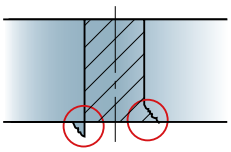
①Refrentar con fresa integral antes de taladrar.

Agujero previo



①Divida el mecanizado en dos procesos.
②Primero taladrar el agujero grande.
*Las herramientas para chaflanado y refrentado especiales se fabrican bajo pedido.

Ruidos y roturas en el material



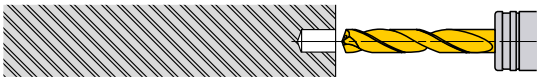
①Reduzca la velocidad de avance al calar.
②Añadir 45º de chaflán.
③Cambiar el punto del ángulo.

MNS

■ GUIA OPERACIONAL DE LA BROCA LARGA DE TIPO MNS (L/D 10, 12, 15, 20, 25, 30)

TALADRADO DE CARA PLANA ● Taladrado de un agujero ciego

■ 1. Taladrado de un agujero previo.

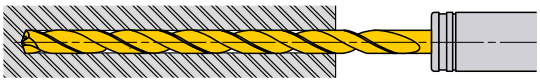


①Para los agujeros guía, recomendamos utilizar brocas Mitsubishi tipo MNS, MAE-MB o MAS-MB.
②Utilizar una broca con el mismo diámetro que la de taladrado profundo.
③Profundidad del agujero guía: mín. 1DC o más profundo.
(Ajuste la profundidad del agujero guía en función de la longitud del tipo largo.)

■ 2. El corte inicial con la broca de tipo largo

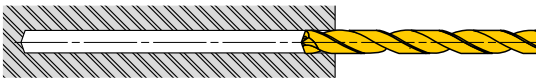
①Entrada en el agujero guía a bajas revoluciones.
(Velocidad de corte 20—30m/min, avance 0.2—0.3mm/rev).
②Detener la broca para agujeros profundos 1—3mm desde la parte de abajo del agujero guía.

■ 3. Taladrado del agujero profundo



①Aumente la velocidad de giro y el avance a un ciclo y taladre hasta la profundidad de taladrado deseada.

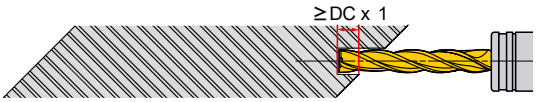
■ 4. Retracción de la broca



①Después del taladrado, reduzca las revoluciones de corte cuando se encuentre aproximadamente a 1—2mm del final del agujero. (Velocidad de corte de aproximadamente 20—30m/min)
②Retire la broca hasta el punto inicial de la profundidad del agujero guía con un avance de 3000 mm/min.
③Por último, retírese del agujero con una velocidad de corte de 20—30m/min y un avance de 0.2—0.3mm/rev.

TALADRADO INTERRUMPIDO ● Taladrado e inserción en caras o ángulos irregulares

■ 1. Refrentado

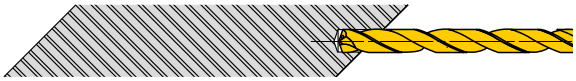


①Al mecanizar un agujero profundo sobre una superficie inclinada, utilice la broca MFE para un agujero guía.
②Asegurarse de que se realiza un agujero de alta precisión para la guía.
③Profundidad de taladrado: Aprox. DC×1.

■ 2. Taladrado de un agujero previo.

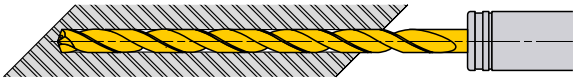
①Para los agujeros guía, recomendamos utilizar brocas Mitsubishi tipo MNS, MAE-MB o MAS-MB.
②Utilizar una broca con el mismo diámetro que la de taladrado profundo.
③Profundidad del agujero guía: mín. 1DC o más profundo.
(Ajuste la profundidad del agujero guía en función de la longitud del tipo largo.)

■ 3. El corte inicial con la broca de tipo largo



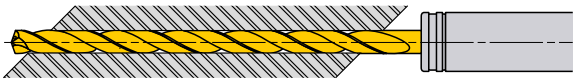
①Entrada en el agujero guía a bajas revoluciones. (Velocidad de corte 20—30 m/min, avance 0.2—0.3mm/rev).
②Detener la broca para agujeros profundos 1—3 mm desde la parte de abajo del agujero guía.

■ 4. Taladrado del agujero profundo



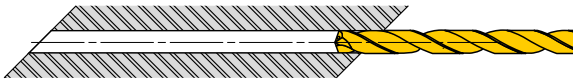
①Aumente la velocidad de giro y el avance a un ciclo y taladre hasta la profundidad de taladrado deseada.

■ 5. Inserción



①Durante la inserción, el filo de corte puede resultar dañado.
②Se recomienda un avance de 0.05mm—0.1mm/rev.

■ 6. Retracción de la broca



①Retire la broca hasta el punto inicial de la profundidad del agujero guía con un avance de 3000mm/min.
②Por último, despeje el agujero con una velocidad de corte de 20—30m/min y un avance de 0.2—0.3mm/rev.

DATOS TÉCNICOS ➤ P001

Notas

MAE,MAS

- Especializado en taladrado del aluminio y la fundición.
- Gran precisión del agujero.
- Pre-agujero para roscado con macho.
- Refrigeración con agujero helicoidal que permite alta velocidad de mecanizado tipo MAS.

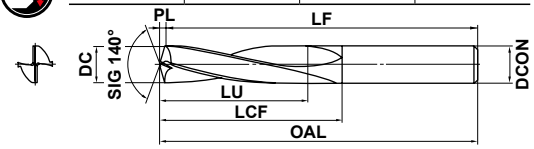
UWC | Solo MAS | 140° | N

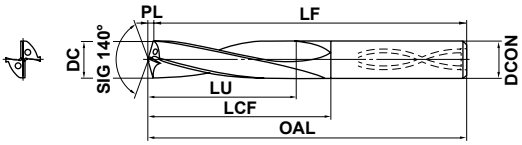
P | M | **K** | **N** | S | H

DC=3	3<DC≤6	6<DC≤10	10<DC≤16
+0.005 0	+0.005 0	+0.005 0	+0.005 0
0 −0.006	0 −0.008	0 −0.009	0 −0.011

MAE (Refrigeración externa)

MAS (Refrigeración interna)





Nota 1) El tipo MAS tiene mayor diámetro que 5.0 tiene rebajes en la cara final.
Nota 2) Las brocas MAE/MAS pueden utilizarse con herramientas de amarre por calor.

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
3.0	3	Ext.	★	MAE0300MB	9.5	21.5	61.5	61	0.5	3
	3	Int.	□	MAS0300MB	9.5	21.5	61.5	61	0.5	3
	6	Int.	●	MAS0300LB	18.5	30.5	70.5	70	0.5	3
3.1	3	Ext.	★	MAE0310MB	9.9	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0310MB	9.9	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0310LB	19.2	34.6	74.6	74	0.6	4
3.2	3	Ext.	★	MAE0320MB	10.2	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0320MB	10.2	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0320LB	19.8	34.6	74.6	74	0.6	4
3.3	3	Ext.	★	MAE0330MB	10.5	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0330MB	10.5	24.6	64.6	64	0.6	4
	6	Int.	●	MAS0330LB	20.4	34.6	74.6	74	0.6	4
3.4	3	Ext.	★	MAE0340MB	10.8	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0340MB	10.8	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0340LB	21.0	34.6	74.6	74	0.6	4
3.5	3	Ext.	★	MAE0350MB	11.1	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0350MB	11.1	24.6	64.6	64	0.6	4
	6	Int.	●	MAS0350LB	21.6	34.6	74.6	74	0.6	4
3.6	3	Ext.	★	MAE0360MB	11.5	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0360MB	11.5	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0360LB	22.3	40.7	80.7	80	0.7	4
3.65	3	Ext.	★	* MAE0365MB	11.7	28.7	68.7	68	0.7	4
	3	Int.	□	* MAS0365MB	11.7	28.7	68.7	68	0.7	4
	6	Int.	●	* MAS0365LB	22.6	40.7	80.7	80	0.7	4
3.7	3	Ext.	★	MAE0370MB	11.8	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0370MB	11.8	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0370LB	22.9	40.7	80.7	80	0.7	4
3.8	3	Ext.	★	MAE0380MB	12.1	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0380MB	12.1	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0380LB	23.5	40.7	80.7	80	0.7	4
3.9	3	Ext.	★	MAE0390MB	12.4	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0390MB	12.4	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0390LB	24.1	40.7	80.7	80	0.7	4
4.0	3	Ext.	★	MAE0400MB	12.7	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0400MB	12.7	28.7	68.7	68	0.7	4
	6	Int.	●	MAS0400LB	24.7	40.7	80.7	80	0.7	4
4.1	3	Ext.	★	MAE0410MB	13.0	31.7	71.7	71	0.7	5
	3	Int.	□	MAS0410MB	13.0	31.7	71.7	71	0.7	5
	6	Int.	★	MAS0410LB	25.3	44.7	84.7	84	0.7	5

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
4.2	3	Ext.	★	MAE0420MB	13.4	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0420MB	13.4	31.8	71.8	71	0.8	5
	6	Int.	●	MAS0420LB	26.0	44.8	84.8	84	0.8	5
4.3	3	Ext.	★	MAE0430MB	13.7	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0430MB	13.7	31.8	71.8	71	0.8	5
	6	Int.	★	MAS0430LB	26.6	44.8	84.8	84	0.8	5
4.4	3	Ext.	★	MAE0440MB	14.0	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0440MB	14.0	31.8	71.8	71	0.8	5
	6	Int.	★	MAS0440LB	27.2	44.8	84.8	84	0.8	5
4.5	3	Ext.	★	MAE0450MB	14.3	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0450MB	14.3	31.8	71.8	71	0.8	5
	6	Int.	★	MAS0450LB	27.8	44.8	84.8	84	0.8	5
4.6	3	Ext.	★	* MAE0460MB	14.6	33.8	73.8	73	0.8	5
	3	Int.	□	* MAS0460MB	14.6	33.8	73.8	73	0.8	5
	6	Int.	●	* MAS0460LB	28.4	48.8	88.8	88	0.8	5
4.7	3	Ext.	★	MAE0470MB	15.0	33.9	73.9	73	0.9	5
	3	Int.	□	MAS0470MB	15.0	33.9	73.9	73	0.9	5
	6	Int.	★	MAS0470LB	29.1	48.9	88.9	88	0.9	5
4.8	3	Ext.	★	MAE0480MB	15.3	33.9	73.9	73	0.9	5
	3	Int.	□	MAS0480MB	15.3	33.9	73.9	73	0.9	5
	6	Int.	★	MAS0480LB	29.7	48.9	88.9	88	0.9	5
4.9	3	Ext.	★	MAE0490MB	15.6	33.9	73.9	73	0.9	5
	3	Int.	□	MAS0490MB	15.6	33.9	73.9	73	0.9	5
	6	Int.	★	MAS0490LB	30.3	48.9	88.9	88	0.9	5
5.0	3	Ext.	★	MAE0500MB	15.9	33.9	73.9	73	0.9	5
	3	Int.	●	MAS0500MB	15.9	33.9	73.9	73	0.9	5
	6	Int.	●	MAS0500LB	30.9	48.9	88.9	88	0.9	5
5.1	3	Ext.	★	MAE0510MB	16.2	36.9	76.9	76	0.9	6
	3	Int.	□	MAS0510MB	16.2	36.9	76.9	76	0.9	6
	6	Int.	★	MAS0510LB	31.5	52.9	92.9	92	0.9	6
5.2	3	Ext.	★	MAE0520MB	16.5	36.9	76.9	76	0.9	6
	3	Int.	□	MAS0520MB	16.5	36.9	76.9	76	0.9	6
	6	Int.	●	MAS0520LB	32.1	52.9	92.9	92	0.9	6
5.3	3	Ext.	★	MAE0530MB	16.9	37.0	77.0	76	1.0	6
	3	Int.	□	MAS0530MB	16.9	37.0	77.0	76	1.0	6
	6	Int.	★	MAS0530LB	32.8	53.0	93.0	92	1.0	6
5.4	3	Ext.	★	MAE0540MB	17.2	37.0	77.0	76	1.0	6
	3	Int.	□	MAS0540MB	17.2	37.0	77.0	76	1.0	6
	6	Int.	★	MAS0540LB	33.4	53.0	93.0	92	1.0	6

★ : Agujero de métrica estándar para roscado.

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
5.5	3	Ext.	★	* MAE0550MB	17.5	37.0	77.0	76	1.0	6
	3	Int.	★	* MAS0550MB	17.5	37.0	77.0	76	1.0	6
	6	Int.	●	* MAS0550LB	34.0	53.0	93.0	92	1.0	6
5.6	3	Ext.	★	MAE0560MB	17.8	40.0	80.0	79	1.0	6
	3	Int.	□	MAS0560MB	17.8	40.0	80.0	79	1.0	6
	6	Int.	★	MAS0560LB	34.6	58.0	98.0	97	1.0	6
5.7	3	Ext.	★	MAE0570MB	18.1	40.0	80.0	79	1.0	6
	3	Int.	□	MAS0570MB	18.1	40.0	80.0	79	1.0	6
	6	Int.	★	MAS0570LB	35.2	58.0	98.0	97	1.0	6
5.8	3	Ext.	★	MAE0580MB	18.5	40.1	80.1	79	1.1	6
	3	Int.	□	MAS0580MB	18.5	40.1	80.1	79	1.1	6
	6	Int.	★	MAS0580LB	35.9	58.1	98.1	97	1.1	6
5.9	3	Ext.	★	MAE0590MB	18.8	40.1	80.1	79	1.1	6
	3	Int.	□	MAS0590MB	18.8	40.1	80.1	79	1.1	6
	6	Int.	★	MAS0590LB	36.5	58.1	98.1	97	1.1	6
6.0	3	Ext.	★	MAE0600MB	19.1	40.1	80.1	79	1.1	6
	3	Int.	●	MAS0600MB	19.1	40.1	80.1	79	1.1	6
	6	Int.	●	MAS0600LB	37.1	58.1	98.1	97	1.1	6
6.1	3	Ext.	★	MAE0610MB	19.4	43.1	85.1	84	1.1	7
	3	Int.	□	MAS0610MB	19.4	43.1	85.1	84	1.1	7
	6	Int.	★	MAS0610LB	37.7	63.1	105.1	104	1.1	7
6.2	3	Ext.	★	MAE0620MB	19.7	43.1	85.1	84	1.1	7
	3	Int.	□	MAS0620MB	19.7	43.1	85.1	84	1.1	7
	6	Int.	★	MAS0620LB	38.3	63.1	105.1	104	1.1	7
6.3	3	Ext.	★	MAE0630MB	20.0	43.1	85.1	84	1.1	7
	3	Int.	□	MAS0630MB	20.0	43.1	85.1	84	1.1	7
	6	Int.	★	MAS0630LB	38.9	63.1	105.1	104	1.1	7
6.4	3	Ext.	★	MAE0640MB	20.4	43.2	85.2	84	1.2	7
	3	Int.	□	MAS0640MB	20.4	43.2	85.2	84	1.2	7
	6	Int.	★	MAS0640LB	39.6	63.2	105.2	104	1.2	7
6.5	3	Ext.	★	MAE0650MB	20.7	43.2	85.2	84	1.2	7
	3	Int.	★	MAS0650MB	20.7	43.2	85.2	84	1.2	7
	6	Int.	●	MAS0650LB	40.2	63.2	105.2	104	1.2	7
6.6	3	Ext.	★	MAE0660MB	21.0	43.2	85.2	84	1.2	7
	3	Int.	□	MAS0660MB	21.0	43.2	85.2	84	1.2	7
	6	Int.	★	MAS0660LB	40.8	66.2	108.2	107	1.2	7
6.7	3	Ext.	★	MAE0670MB	21.3	43.2	85.2	84	1.2	7
	3	Int.	□	MAS0670MB	21.3	43.2	85.2	84	1.2	7
	6	Int.	●	MAS0670LB	41.4	66.2	108.2	107	1.2	7
6.8	3	Ext.	★	MAE0680MB	21.6	43.2	85.2	84	1.2	7
	3	Int.	★	MAS0680MB	21.6	43.2	85.2	84	1.2	7
	6	Int.	●	MAS0680LB	42.0	66.2	108.2	107	1.2	7
6.9	3	Ext.	★	MAE0690MB	22.0	43.3	85.3	84	1.3	7
	3	Int.	□	MAS0690MB	22.0	43.3	85.3	84	1.3	7
	6	Int.	★	MAS0690LB	42.7	66.3	108.3	107	1.3	7
7.0	3	Ext.	★	MAE0700MB	22.3	43.3	85.3	84	1.3	7
	3	Int.	★	MAS0700MB	22.3	43.3	85.3	84	1.3	7
	6	Int.	●	MAS0700LB	43.3	66.3	108.3	107	1.3	7

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
7.1	3	Ext.	★	MAE0710MB	22.6	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0710MB	22.6	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0710LB	43.9	69.3	111.3	110	1.3	8
7.2	3	Ext.	★	MAE0720MB	22.9	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0720MB	22.9	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0720LB	44.5	69.3	111.3	110	1.3	8
7.3	3	Ext.	★	MAE0730MB	23.2	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0730MB	23.2	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0730LB	45.1	69.3	111.3	110	1.3	8
7.35	3	Ext.	★	* MAE0735MB	23.4	49.3	91.3	90	1.3	8
	3	Int.	★	* MAS0735MB	23.4	49.3	91.3	90	1.3	8
	6	Int.	●	* MAS0735LB	45.4	69.3	111.3	110	1.3	8
7.4	3	Ext.	★	MAE0740MB	23.5	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0740MB	23.5	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0740LB	45.7	69.3	111.3	110	1.3	8
7.5	3	Ext.	★	MAE0750MB	23.9	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0750MB	23.9	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0750LB	46.4	69.4	111.4	110	1.4	8
7.6	3	Ext.	★	MAE0760MB	24.2	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0760MB	24.2	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0760LB	47.0	73.4	115.4	114	1.4	8
7.7	3	Ext.	★	MAE0770MB	24.5	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0770MB	24.5	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0770LB	47.6	73.4	115.4	114	1.4	8
7.8	3	Ext.	★	MAE0780MB	24.8	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0780MB	24.8	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0780LB	48.2	73.4	115.4	114	1.4	8
7.9	3	Ext.	★	MAE0790MB	25.1	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0790MB	25.1	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0790LB	48.8	73.4	115.4	114	1.4	8
8.0	3	Ext.	★	MAE0800MB	25.5	49.5	91.5	90	1.5	8
	3	Int.	●	MAS0800MB	25.5	49.5	91.5	90	1.5	8
	6	Int.	●	MAS0800LB	49.5	73.5	115.5	114	1.5	8
8.1	3	Ext.	★	MAE0810MB	25.8	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0810MB	25.8	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0810LB	50.1	76.5	120.5	119	1.5	9
8.2	3	Ext.	★	MAE0820MB	26.1	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0820MB	26.1	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0820LB	50.7	76.5	120.5	119	1.5	9
8.3	3	Ext.	★	MAE0830MB	26.4	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0830MB	26.4	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0830LB	51.3	76.5	120.5	119	1.5	9
8.4	3	Ext.	★	MAE0840MB	26.7	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0840MB	26.7	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0840LB	51.9	76.5	120.5	119	1.5	9
8.5	3	Ext.	★	MAE0850MB	27.0	51.5	95.5	94	1.5	9
	3	Int.	●	MAS0850MB	27.0	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0850LB	52.5	76.5	120.5	119	1.5	9

* : Agujero de métrica estándar para roscado.

CONDICIONES DE CORTE ➤ M129
DATOS TÉCNICOS ➤ P001

MAE,MAS

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
8.6	3	Ext.	★	MAE0860MB	27.4	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0860MB	27.4	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0860LB	53.2	78.6	122.6	121	1.6	9
8.7	3	Ext.	★	MAE0870MB	27.7	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0870MB	27.7	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0870LB	53.8	78.6	122.6	121	1.6	9
8.8	3	Ext.	★	MAE0880MB	28.0	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0880MB	28.0	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0880LB	54.4	78.6	122.6	121	1.6	9
8.9	3	Ext.	★	MAE0890MB	28.3	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0890MB	28.3	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0890LB	55.0	78.6	122.6	121	1.6	9
9.0	3	Ext.	★	MAE0900MB	28.6	51.6	95.6	94	1.6	9
	3	Int.	★	MAS0900MB	28.6	51.6	95.6	94	1.6	9
	6	Int.	●	MAS0900LB	55.6	78.6	122.6	121	1.6	9
9.1	3	Ext.	★	MAE0910MB	29.0	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0910MB	29.0	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0910LB	56.3	82.7	126.7	125	1.7	10
9.2	3	Ext.	★	MAE0920MB	29.3	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0920MB	29.3	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0920LB	56.9	82.7	126.7	125	1.7	10
9.21	3	Ext.	★	* MAE0921MB	29.3	54.7	98.7	97	1.7	10
	3	Int.	★	* MAS0921MB	29.3	54.7	98.7	97	1.7	10
	6	Int.	★	* MAS0921LB	57.0	82.7	126.7	125	1.7	10
9.3	3	Ext.	★	MAE0930MB	29.6	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0930MB	29.6	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0930LB	57.5	82.7	126.7	125	1.7	10
9.4	3	Ext.	★	MAE0940MB	29.9	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0940MB	29.9	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0940LB	58.1	82.7	126.7	125	1.7	10
9.5	3	Ext.	★	MAE0950MB	30.2	54.7	98.7	97	1.7	10
	3	Int.	★	MAS0950MB	30.2	54.7	98.7	97	1.7	10
	6	Int.	●	MAS0950LB	58.7	82.7	126.7	125	1.7	10
9.6	3	Ext.	★	MAE0960MB	30.5	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0960MB	30.5	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0960LB	59.3	82.7	126.7	125	1.7	10
9.7	3	Ext.	★	MAE0970MB	30.9	54.8	98.8	97	1.8	10
	3	Int.	□	MAS0970MB	30.9	54.8	98.8	97	1.8	10
	6	Int.	★	MAS0970LB	60.0	82.8	126.8	125	1.8	10
9.8	3	Ext.	★	MAE0980MB	31.2	54.8	98.8	97	1.8	10
	3	Int.	□	MAS0980MB	31.2	54.8	98.8	97	1.8	10
	6	Int.	★	MAS0980LB	60.6	82.8	126.8	125	1.8	10
9.9	3	Ext.	★	MAE0990MB	31.5	54.8	98.8	97	1.8	10
	3	Int.	□	MAS0990MB	31.5	54.8	98.8	97	1.8	10
	6	Int.	★	MAS0990LB	61.2	82.8	126.8	125	1.8	10
10.0	3	Ext.	★	MAE1000MB	31.8	54.8	98.8	97	1.8	10
	3	Int.	●	MAS1000MB	31.8	54.8	98.8	97	1.8	10
	6	Int.	●	MAS1000LB	61.8	82.8	126.8	125	1.8	10

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
10.1	3	Ext.	□	MAE1010MB	32.1	56.8	102.8	101	1.8	11
	3	Int.	□	MAS1010MB	32.1	56.8	102.8	101	1.8	11
	6	Int.	□	MAS1010LB	62.4	90.8	136.8	135	1.8	11
10.2	3	Ext.	□	MAE1020MB	32.5	56.9	102.9	101	1.9	11
	3	Int.	□	MAS1020MB	32.5	56.9	102.9	101	1.9	11
	6	Int.	□	MAS1020LB	63.1	90.9	136.9	135	1.9	11
10.3	3	Ext.	★	MAE1030MB	32.8	56.9	102.9	101	1.9	11
	3	Int.	★	MAS1030MB	32.8	56.9	102.9	101	1.9	11
	6	Int.	●	MAS1030LB	63.7	90.9	136.9	135	1.9	11
10.4	3	Ext.	□	MAE1040MB	33.1	56.9	102.9	101	1.9	11
	3	Int.	□	MAS1040MB	33.1	56.9	102.9	101	1.9	11
	6	Int.	□	MAS1040LB	64.3	90.9	136.9	135	1.9	11
10.5	3	Ext.	★	MAE1050MB	33.4	56.9	102.9	101	1.9	11
	3	Int.	★	MAS1050MB	33.4	56.9	102.9	101	1.9	11
	6	Int.	●	MAS1050LB	64.9	90.9	136.9	135	1.9	11
10.6	3	Ext.	□	MAE1060MB	33.7	56.9	102.9	101	1.9	11
	3	Int.	□	MAS1060MB	33.7	56.9	102.9	101	1.9	11
	6	Int.	□	MAS1060LB	65.5	90.9	136.9	135	1.9	11
10.7	3	Ext.	□	MAE1070MB	34.0	56.9	102.9	101	1.9	11
	3	Int.	□	MAS1070MB	34.0	56.9	102.9	101	1.9	11
	6	Int.	□	MAS1070LB	66.1	90.9	136.9	135	1.9	11
10.8	3	Ext.	□	MAE1080MB	34.4	57.0	103.0	101	2.0	11
	3	Int.	□	MAS1080MB	34.4	57.0	103.0	101	2.0	11
	6	Int.	□	MAS1080LB	66.8	91.0	137.0	135	2.0	11
10.9	3	Ext.	□	MAE1090MB	34.7	57.0	103.0	101	2.0	11
	3	Int.	□	MAS1090MB	34.7	57.0	103.0	101	2.0	11
	6	Int.	□	MAS1090LB	67.4	91.0	137.0	135	2.0	11
11.0	3	Ext.	★	MAE1100MB	35.0	57.0	103.0	101	2.0	11
	3	Int.	★	MAS1100MB	35.0	57.0	103.0	101	2.0	11
	6	Int.	●	MAS1100LB	68.0	91.0	137.0	135	2.0	11
11.08	3	Ext.	★	* MAE1108MB	35.2	62.0	108.0	106	2.0	12
	3	Int.	★	* MAS1108MB	35.2	62.0	108.0	106	2.0	12
	6	Int.	●	* MAS1108LB	68.5	96.0	142.0	140	2.0	12
11.1	3	Ext.	□	MAE1110MB	35.3	62.0	108.0	106	2.0	12
	3	Int.	□	MAS1110MB	35.3	62.0	108.0	106	2.0	12
	6	Int.	□	MAS1110LB	68.6	96.0	142.0	140	2.0	12
11.2	3	Ext.	□	MAE1120MB	35.6	62.0	108.0	106	2.0	12
	3	Int.	□	MAS1120MB	35.6	62.0	108.0	106	2.0	12
	6	Int.	□	MAS1120LB	69.2	96.0	142.0	140	2.0	12
11.3	3	Ext.	□	MAE1130MB	36.0	62.1	108.1	106	2.1	12
	3	Int.	□	MAS1130MB	36.0	62.1	108.1	106	2.1	12
	6	Int.	□	MAS1130LB	69.9	96.1	142.1	140	2.1	12
11.4	3	Ext.	□	MAE1140MB	36.3	62.1	108.1	106	2.1	12
	3	Int.	□	MAS1140MB	36.3	62.1	108.1	106	2.1	12
	6	Int.	□	MAS1140LB	70.5	96.1	142.1	140	2.1	12
11.5	3	Ext.	□	MAE1150MB	36.6	62.1	108.1	106	2.1	12
	3	Int.	□	MAS1150MB	36.6	62.1	108.1	106	2.1	12
	6	Int.	□	MAS1150LB	71.1	96.1	142.1	140	2.1	12

★ : Agujero de métrica estándar para roscado.

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
11.6	3	Ext.	□	MAE1160MB	36.9	62.1	108.1	106	2.1	12
	3	Int.	□	MAS1160MB	36.9	62.1	108.1	106	2.1	12
	6	Int.	□	MAS1160LB	71.7	96.1	142.1	140	2.1	12
11.7	3	Ext.	□	MAE1170MB	37.2	62.1	108.1	106	2.1	12
	3	Int.	□	MAS1170MB	37.2	62.1	108.1	106	2.1	12
	6	Int.	□	MAS1170LB	72.3	96.1	142.1	140	2.1	12
11.8	3	Ext.	□	MAE1180MB	37.5	62.1	108.1	106	2.1	12
	3	Int.	□	MAS1180MB	37.5	62.1	108.1	106	2.1	12
	6	Int.	□	MAS1180LB	72.9	96.1	142.1	140	2.1	12
11.9	3	Ext.	□	MAE1190MB	37.9	62.2	108.2	106	2.2	12
	3	Int.	□	MAS1190MB	37.9	62.2	108.2	106	2.2	12
	6	Int.	□	MAS1190LB	73.6	96.2	142.2	140	2.2	12
12.0	3	Ext.	★	MAE1200MB	38.2	62.2	108.2	106	2.2	12
	3	Int.	●	MAS1200MB	38.2	62.2	108.2	106	2.2	12
	6	Int.	●	MAS1200LB	74.2	96.2	142.2	140	2.2	12
12.1	3	Ext.	□	MAE1210MB	38.5	67.2	117.2	115	2.2	13
	3	Int.	□	MAS1210MB	38.5	67.2	117.2	115	2.2	13
	6	Int.	□	MAS1210LB	74.8	102.2	152.2	150	2.2	13
12.2	3	Ext.	□	MAE1220MB	38.8	67.2	117.2	115	2.2	13
	3	Int.	□	MAS1220MB	38.8	67.2	117.2	115	2.2	13
	6	Int.	□	MAS1220LB	75.4	102.2	152.2	150	2.2	13
12.3	3	Ext.	□	MAE1230MB	39.1	67.2	117.2	115	2.2	13
	3	Int.	□	MAS1230MB	39.1	67.2	117.2	115	2.2	13
	6	Int.	□	MAS1230LB	76.0	102.2	152.2	150	2.2	13
12.4	3	Ext.	□	MAE1240MB	39.5	67.3	117.3	115	2.3	13
	3	Int.	□	MAS1240MB	39.5	67.3	117.3	115	2.3	13
	6	Int.	□	MAS1240LB	76.7	102.3	152.3	150	2.3	13
12.5	3	Ext.	★	MAE1250MB	39.8	67.3	117.3	115	2.3	13
	3	Int.	●	MAS1250MB	39.8	67.3	117.3	115	2.3	13
	6	Int.	●	MAS1250LB	77.3	102.3	152.3	150	2.3	13
12.6	3	Ext.	□	MAE1260MB	40.1	67.3	117.3	115	2.3	13
	3	Int.	□	MAS1260MB	40.1	67.3	117.3	115	2.3	13
	6	Int.	□	MAS1260LB	77.9	102.3	152.3	150	2.3	13
12.7	3	Ext.	□	MAE1270MB	40.4	67.3	117.3	115	2.3	13
	3	Int.	□	MAS1270MB	40.4	67.3	117.3	115	2.3	13
	6	Int.	□	MAS1270LB	78.5	102.3	152.3	150	2.3	13
12.8	3	Ext.	□	MAE1280MB	40.7	67.3	117.3	115	2.3	13
	3	Int.	□	MAS1280MB	40.7	67.3	117.3	115	2.3	13
	6	Int.	□	MAS1280LB	79.1	102.3	152.3	150	2.3	13
12.9	3	Ext.	□	MAE1290MB	41.0	67.3	117.3	115	2.3	13
	3	Int.	□	MAS1290MB	41.0	67.3	117.3	115	2.3	13
	6	Int.	□	MAS1290LB	79.7	102.3	152.3	150	2.3	13
12.96	3	Ext.	★	* MAE1296MB	41.3	67.4	117.4	115	2.4	13
	3	Int.	★	* MAS1296MB	41.3	67.4	117.4	115	2.4	13
	6	Int.	★	* MAS1296LB	80.2	102.4	152.4	150	2.4	13
13.0	3	Ext.	★	MAE1300MB	41.4	67.4	117.4	115	2.4	13
	3	Int.	★	MAS1300MB	41.4	67.4	117.4	115	2.4	13
	6	Int.	●	MAS1300LB	80.4	102.4	152.4	150	2.4	13

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
13.1	3	Ext.	□	MAE1310MB	41.7	72.4	122.4	120	2.4	14
	3	Int.	□	MAS1310MB	41.7	72.4	122.4	120	2.4	14
	6	Int.	□	MAS1310LB	81.0	112.4	162.4	160	2.4	14
13.2	3	Ext.	□	MAE1320MB	42.0	72.4	122.4	120	2.4	14
	3	Int.	□	MAS1320MB	42.0	72.4	122.4	120	2.4	14
	6	Int.	□	MAS1320LB	81.6	112.4	162.4	160	2.4	14
13.3	3	Ext.	□	MAE1330MB	42.3	72.4	122.4	120	2.4	14
	3	Int.	□	MAS1330MB	42.3	72.4	122.4	120	2.4	14
	6	Int.	□	MAS1330LB	82.2	112.4	162.4	160	2.4	14
13.4	3	Ext.	□	MAE1340MB	42.6	72.4	122.4	120	2.4	14
	3	Int.	□	MAS1340MB	42.6	72.4	122.4	120	2.4	14
	6	Int.	□	MAS1340LB	82.8	112.4	162.4	160	2.4	14
13.5	3	Ext.	★	MAE1350MB	43.0	72.5	122.5	120	2.5	14
	3	Int.	★	MAS1350MB	43.0	72.5	122.5	120	2.5	14
	6	Int.	★	MAS1350LB	83.5	112.5	162.5	160	2.5	14
13.6	3	Ext.	□	MAE1360MB	43.3	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1360MB	43.3	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1360LB	84.1	112.5	162.5	160	2.5	14
13.7	3	Ext.	□	MAE1370MB	43.6	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1370MB	43.6	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1370LB	84.7	112.5	162.5	160	2.5	14
13.8	3	Ext.	□	MAE1380MB	43.9	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1380MB	43.9	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1380LB	85.3	112.5	162.5	160	2.5	14
13.9	3	Ext.	□	MAE1390MB	44.2	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1390MB	44.2	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1390LB	85.9	112.5	162.5	160	2.5	14
14.0	3	Ext.	★	MAE1400MB	44.5	72.5	122.5	120	2.5	14
	3	Int.	●	MAS1400MB	44.5	72.5	122.5	120	2.5	14
	6	Int.	●	MAS1400LB	86.5	112.5	162.5	160	2.5	14
14.1	3	Ext.	□	MAE1410MB	44.9	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1410MB	44.9	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1410LB	87.2	117.6	175.6	173	2.6	15
14.2	3	Ext.	□	MAE1420MB	45.2	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1420MB	45.2	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1420LB	87.8	117.6	175.6	173	2.6	15
14.3	3	Ext.	□	MAE1430MB	45.5	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1430MB	45.5	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1430LB	88.4	117.6	175.6	173	2.6	15
14.4	3	Ext.	□	MAE1440MB	45.8	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1440MB	45.8	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1440LB	89.0	117.6	175.6	173	2.6	15
14.5	3	Ext.	□	MAE1450MB	46.1	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1450MB	46.1	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1450LB	89.6	117.6	175.6	173	2.6	15
14.6	3	Ext.	□	MAE1460MB	46.5	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1460MB	46.5	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1460LB	90.3	117.7	175.7	173	2.7	15

* : Agujero de métrica estándar para roscado.

CONDICIONES DE CORTE ➤ M129
DATOS TÉCNICOS ➤ P001

MAE,MAS

DC (mm)	Profundidad agujero (L/D)	Refrigeración (Int./Ext.)	HTi10	Referencia	Dimensiones (mm) LU	LCF	OAL	LF	PL	DCON
14.7	3	Ext.	□	MAE1470MB	46.8	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1470MB	46.8	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1470LB	90.9	117.7	175.7	173	2.7	15
14.8	3	Ext.	□	MAE1480MB	47.1	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1480MB	47.1	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1480LB	91.5	117.7	175.7	173	2.7	15
14.9	3	Ext.	□	MAE1490MB	47.4	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1490MB	47.4	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1490LB	92.1	117.7	175.7	173	2.7	15
14.96	3	Ext.	★	* MAE1496MB	47.6	74.7	132.7	130	2.7	15
	3	Int.	★	* MAS1496MB	47.6	74.7	132.7	130	2.7	15
	6	Int.	★	* MAS1496LB	92.5	117.7	175.7	173	2.7	15
15.0	3	Ext.	★	MAE1500MB	47.7	74.7	132.7	130	2.7	15
	3	Int.	★	MAS1500MB	47.7	74.7	132.7	130	2.7	15
	6	Int.	●	MAS1500LB	92.7	117.7	175.7	173	2.7	15
15.1	3	Ext.	□	MAE1510MB	48.0	78.7	136.7	134	2.7	16
	3	Int.	□	MAS1510MB	48.0	78.7	136.7	134	2.7	16
	6	Int.	□	MAS1510LB	93.3	122.7	180.7	178	2.7	16
15.2	3	Ext.	□	MAE1520MB	48.4	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1520MB	48.4	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1520LB	94.0	122.8	180.8	178	2.8	16
15.3	3	Ext.	□	MAE1530MB	48.7	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1530MB	48.7	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1530LB	94.6	122.8	180.8	178	2.8	16
15.4	3	Ext.	□	MAE1540MB	49.0	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1540MB	49.0	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1540LB	95.2	122.8	180.8	178	2.8	16
15.5	3	Ext.	□	MAE1550MB	49.3	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1550MB	49.3	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1550LB	95.8	122.8	180.8	178	2.8	16
15.6	3	Ext.	□	MAE1560MB	49.6	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1560MB	49.6	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1560LB	96.4	122.8	180.8	178	2.8	16
15.7	3	Ext.	□	MAE1570MB	50.0	78.9	136.9	134	2.9	16
	3	Int.	□	MAS1570MB	50.0	78.9	136.9	134	2.9	16
	6	Int.	□	MAS1570LB	97.1	122.9	180.9	178	2.9	16
15.8	3	Ext.	□	MAE1580MB	50.3	78.9	136.9	134	2.9	16
	3	Int.	□	MAS1580MB	50.3	78.9	136.9	134	2.9	16
	6	Int.	□	MAS1580LB	97.7	122.9	180.9	178	2.9	16
15.9	3	Ext.	□	MAE1590MB	50.6	78.9	136.9	134	2.9	16
	3	Int.	□	MAS1590MB	50.6	78.9	136.9	134	2.9	16
	6	Int.	□	MAS1590LB	98.3	122.9	180.9	178	2.9	16
16.0	3	Ext.	★	MAE1600MB	50.9	78.9	136.9	134	2.9	16
	3	Int.	★	MAS1600MB	50.9	78.9	136.9	134	2.9	16
	6	Int.	●	MAS1600LB	98.9	122.9	180.9	178	2.9	16

* : Agujero de métrica estándar para roscado.

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

CONDICIONES DE CORTE RECOMENDADAS

Tipo		Material	Diámetro Broca ϕ3.0—ϕ6.0		Diámetro Broca ϕ6.1—ϕ10.0		Diámetro Broca ϕ10.1—ϕ16.0	
			Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)
MAE	N	Aleación de aluminio	90 (40—140)	0.15 (0.05—0.3)	100 (50—150)	0.2 (0.1—0.3)	120 (60—170)	0.25 (0.1—0.4)
		Fundición de aleación de aluminio	100 (60—150)	0.12 (0.05—0.25)	110 (70—160)	0.15 (0.05—0.25)	130 (80—180)	0.2 (0.1—0.3)
	K	Fundición gris	40 (20—60)	0.15 (0.1—0.2)	60 (40—80)	0.2 (0.1—0.3)	80 (60—100)	0.3 (0.2—0.4)
		Fundición dúctil	30 (20—40)	0.1 (0.05—0.15)	40 (20—60)	0.12 (0.05—0.2)	60 (40—80)	0.2 (0.1—0.3)
MAS	N	Aleación de aluminio	100 (60—150)	0.15 (0.05—0.3)	120 (80—170)	0.2 (0.1—0.3)	150 (100—200)	0.25 (0.1—0.4)
		Fundición de aleación de aluminio	120 (80—170)	0.12 (0.05—0.25)	150 (100—180)	0.15 (0.05—0.25)	160 (120—200)	0.2 (0.1—0.3)
	K	Fundición gris	60 (40—80)	0.15 (0.1—0.2)	80 (60—110)	0.2 (0.1—0.3)	100 (70—130)	0.3 (0.2—0.4)
		Fundición dúctil	45 (30—60)	0.1 (0.05—0.15)	60 (40—80)	0.12 (0.05—0.2)	80 (60—100)	0.2 (0.1—0.3)

■ DIÁMETROS DEL AGUJERO Y LA BROCA PARA ROSCADO

Tamaño de rosca	Pre-taladrado para roscado			Pre-taladrado para roscado helicoidal		
	Diámetro Broca (DC)	Tolerancia del diámetro del agujero		Diámetro Broca (DC)	Tolerancia del diámetro del agujero	
		min	max		min	max
M4x0.7	**3.3**	3.242	3.422	**3.65**	3.65	3.70
M5x0.8	**4.2**	4.134	4.334	**4.60**	4.59	4.66
M6x1.0	**5.0**	4.917	5.153	**5.50**	5.48	5.57
M8x1.25	**6.8**	6.647	6.912	**7.35**	7.34	7.41
M10x1.5	**8.5**	8.376	8.676	**9.21**	9.18	9.28
M12x1.75	**10.3**	10.106	10.441	**11.08**	11.05	11.15
M14x2	**12.0**	11.835	12.210	**12.96**	12.92	13.04
M16x2	**14.0**	13.835	14.210	**14.96**	14.92	15.04

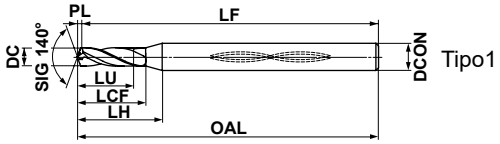
TALADRADO (METAL DURO INTEGRAL)

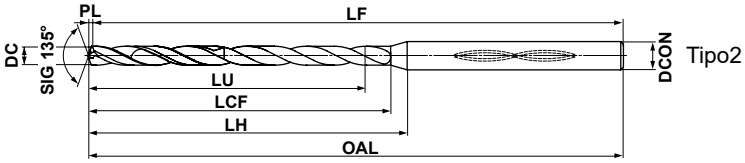
MHS

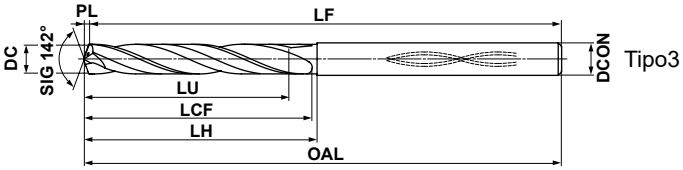
- Alta resistencia de retroceso y doble margen exclusivo.
- Perforación ininterrumpida con una larga vida útil de la herramienta para acero de gran dureza, 35-55 HRC.

P | M | K | N | S | H

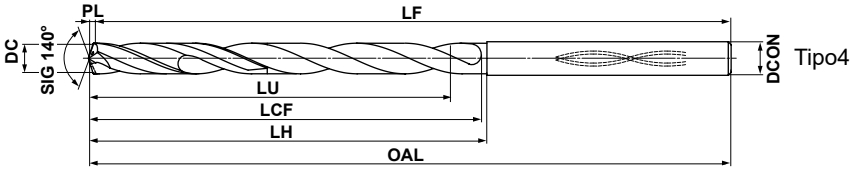
Refrigeración interna







DC≤3	3<DC≤6	6<DC≤10	10<DC≤12
+0.010 −0.002	+0.010 −0.002	+0.010 −0.005	+0.010 −0.008
DCON=3	**3<DCON≤6**	**6<DCON≤10**	**10<DCON≤12**
0 −0.006	0 −0.008	0 −0.009	0 −0.011



- Las brocas MHS pueden utilizarse con herramientas de amarre por calor.
- Utilizar los tipos cortos con sus respectivos diámetros como broca punteadora.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
0.95	3	★	MHS0095L006B	3.0	6.2	10.0	60.2	60	0.17	3	1
	6	★	MHS0095L009B	5.9	9.2	13.0	60.2	60	0.17	3	2
	13	★	MHS0095L015B	12.5	15.2	19.0	60.2	60	0.17	3	2
	23	★	MHS0095L025B	22.0	25.2	29.0	60.2	60	0.17	3	2
	30	★	MHS0095L035B	28.7	35.2	39.0	80.2	80	0.17	3	2
1.00	3	●	MHS0100L006B	3.2	6.2	9.9	60.2	60	0.2	3	1
	6	●	MHS0100L009B	6.2	9.2	12.9	60.2	60	0.2	3	2
	12	★	MHS0100L015B	12.2	15.2	18.9	60.2	60	0.2	3	2
	22	●	MHS0100L025B	22.2	25.2	28.9	60.2	60	0.2	3	2
	30	●	MHS0100L035B	30.2	35.2	38.9	80.2	80	0.2	3	2
1.10	2	●	MHS0110L006B	2.4	6.2	9.7	60.2	60	0.2	3	1
	5	★	MHS0110L009B	5.7	9.2	12.7	60.2	60	0.2	3	2
	11	●	MHS0110L015B	12.3	15.2	18.7	60.2	60	0.2	3	2
	20	●	MHS0110L025B	22.2	25.2	28.7	60.2	60	0.2	3	2
	29	●	MHS0110L035B	32.1	35.2	38.7	80.2	80	0.2	3	2
1.20	2	●	MHS0120L006B	2.6	6.2	9.6	60.2	60	0.2	3	1
	5	★	MHS0120L009B	6.2	9.2	12.6	60.2	60	0.2	3	2
	10	●	MHS0120L015B	12.2	15.2	18.6	60.2	60	0.2	3	2
	18	●	MHS0120L025B	21.8	25.2	28.6	60.2	60	0.2	3	2
	26	●	MHS0120L035B	31.4	35.2	38.6	80.2	80	0.2	3	2
1.30	2	●	MHS0130L007B	2.8	7.2	10.4	60.2	60	0.2	3	1
	5	★	MHS0130L011B	6.8	11.3	14.5	60.3	60	0.3	3	2
	12	●	MHS0130L020B	15.9	20.3	23.5	60.3	60	0.3	3	2
	20	●	MHS0130L030B	26.3	30.3	33.5	80.3	80	0.3	3	2
	30	●	MHS0130L045B	39.3	45.3	48.5	80.3	80	0.3	3	2

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
1.40	2	●	MHS0140L007B	3.1	7.3	10.3	60.3	60	0.3	3	1
	5	★	MHS0140L011B	7.3	11.3	14.3	60.3	60	0.3	3	2
	11	●	MHS0140L020B	15.7	20.3	23.3	60.3	60	0.3	3	2
	18	★	MHS0140L030B	25.5	30.3	33.3	80.3	80	0.3	3	2
	29	★	MHS0140L045B	40.9	45.3	48.3	80.3	80	0.3	3	2
1.45	3	●	MHS0145L008B	4.7	8.3	11.2	60.3	60	0.3	3	1
	6	★	MHS0145L013B	9.0	13.3	16.2	60.3	60	0.3	3	2
	11	★	MHS0145L020B	16.3	20.3	23.2	60.3	60	0.3	3	2
	21	●	MHS0145L035B	30.8	35.3	38.2	80.3	80	0.3	3	2
	30	★	MHS0145L055B	43.8	55.3	58.2	100.3	100	0.3	3	2
1.50	2	●	MHS0150L008B	3.3	8.3	11.1	60.3	60	0.3	3	1
	6	★	MHS0150L013B	9.3	13.3	16.1	60.3	60	0.3	3	2
	10	●	MHS0150L020B	15.3	20.3	23.1	60.3	60	0.3	3	2
	20	●	MHS0150L035B	30.3	35.3	38.1	80.3	80	0.3	3	2
	30	●	MHS0150L055B	45.3	55.3	58.1	100.3	100	0.3	3	2
1.60	2	●	MHS0160L008B	3.5	8.3	10.9	60.3	60	0.3	3	1
	5	★	MHS0160L013B	8.3	13.3	15.9	60.3	60	0.3	3	2
	10	●	MHS0160L020B	16.3	20.3	22.9	60.3	60	0.3	3	2
	19	●	MHS0160L035B	30.7	35.3	37.9	80.3	80	0.3	3	2
	30	●	MHS0160L055B	48.3	55.3	57.9	100.3	100	0.3	3	2
1.70	2	●	MHS0170L008B	3.7	8.3	10.7	60.3	60	0.3	3	1
	5	★	MHS0170L013B	8.9	13.4	15.8	60.4	60	0.4	3	2
	9	●	MHS0170L020B	15.7	20.4	22.8	60.4	60	0.4	3	2
	18	●	MHS0170L035B	31.0	35.4	37.8	80.4	80	0.4	3	2
	29	●	MHS0170L055B	49.7	55.4	57.8	100.4	100	0.4	3	2

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
1.80	3	●	MHS0180L010B	5.7	10.3	12.5	60.3	60	0.3	3	1
	5	★	MHS0180L015B	9.4	15.4	17.6	60.4	60	0.4	3	2
	11	●	MHS0180L025B	20.2	25.4	27.6	60.4	60	0.4	3	2
	22	●	MHS0180L045B	40.0	45.4	47.6	80.4	80	0.4	3	2
	30	●	MHS0180L065B	54.4	65.4	67.6	100.4	100	0.4	3	2
1.90	2	●	MHS0190L010B	4.1	10.3	12.4	60.3	60	0.3	3	1
	5	★	MHS0190L015B	9.9	15.4	17.5	60.4	60	0.4	3	2
	10	●	MHS0190L025B	19.4	25.4	27.5	60.4	60	0.4	3	2
	21	●	MHS0190L045B	40.3	45.4	47.5	80.4	80	0.4	3	2
	30	●	MHS0190L065B	57.4	65.4	67.5	100.4	100	0.4	3	2
1.95	2	●	MHS0195L010B	4.3	10.4	12.4	60.4	60	0.4	3	1
	5	★	MHS0195L015B	10.2	15.4	17.4	60.4	60	0.4	3	2
	10	★	MHS0195L025B	19.9	25.4	27.4	60.4	60	0.4	3	2
	20	●	MHS0195L045B	39.4	45.4	47.4	80.4	80	0.4	3	2
	30	★	MHS0195L065B	58.9	65.4	67.4	100.4	100	0.4	3	2
2.00	2	●	MHS0200L010B	4.4	10.4	12.3	60.4	60	0.4	3	1
	5	★	MHS0200L015B	10.4	15.4	17.3	60.4	60	0.4	3	2
	9	●	MHS0200L025B	18.4	25.4	27.3	60.4	60	0.4	3	2
	20	●	MHS0200L045B	40.4	45.4	47.3	80.4	80	0.4	3	2
	30	●	MHS0200L065B	60.4	65.4	67.3	100.4	100	0.4	3	2
2.10	3	●	MHS0210L012B	6.7	12.4	14.1	60.4	60	0.4	3	1
	7	★	MHS0210L020B	15.1	20.4	22.1	60.4	60	0.4	3	2
	11	●	MHS0210L030B	23.5	30.4	32.1	80.4	80	0.4	3	2
	23	●	MHS0210L055B	48.7	55.4	57.1	100.4	100	0.4	3	2
	30	●	MHS0210L075B	63.4	75.4	77.1	120.4	120	0.4	3	2
2.20	2	●	MHS0220L012B	4.8	12.4	13.9	60.4	60	0.4	3	1
	6	★	MHS0220L020B	13.7	20.5	22.0	60.5	60	0.5	3	2
	11	●	MHS0220L030B	24.7	30.5	32.0	80.5	80	0.5	3	2
	22	●	MHS0220L055B	48.9	55.5	57.0	100.5	100	0.5	3	2
	30	●	MHS0220L075B	66.5	75.5	77.0	120.5	120	0.5	3	2
2.30	2	●	MHS0230L012B	5.0	12.4	13.7	60.4	60	0.4	3	1
	6	★	MHS0230L020B	14.3	20.5	21.8	60.5	60	0.5	3	2
	10	●	MHS0230L030B	23.5	30.5	31.8	80.5	80	0.5	3	2
	21	●	MHS0230L055B	48.8	55.5	56.8	100.5	100	0.5	3	2
	30	●	MHS0230L075B	69.5	75.5	76.8	120.5	120	0.5	3	2
2.40	2	●	MHS0240L012B	5.2	12.4	13.5	60.4	60	0.4	3	1
	5	★	MHS0240L020B	12.5	20.5	21.6	60.5	60	0.5	3	2
	9	●	MHS0240L030B	22.1	30.5	31.6	80.5	80	0.5	3	2
	20	●	MHS0240L055B	48.5	55.5	56.6	100.5	100	0.5	3	2
	28	●	MHS0240L075B	67.7	75.5	76.6	120.5	120	0.5	3	2
2.45	2	★	MHS0245L013B	5.3	13.4	14.4	70.4	70	0.4	4	1
	5	★	MHS0245L020B	12.8	20.5	21.5	70.5	70	0.5	4	2
	11	★	MHS0245L035B	27.5	35.5	36.5	90.5	90	0.5	4	2
	24	★	MHS0245L065B	59.3	65.5	66.5	110.5	110	0.5	4	2
	30	★	MHS0245L090B	74.0	90.5	91.5	140.5	140	0.5	4	2
2.50	2	●	MHS0250L013B	5.5	13.5	16.3	70.5	70	0.5	4	1
	5	★	MHS0250L020B	13.0	20.5	23.3	70.5	70	0.5	4	2
	11	●	MHS0250L035B	28.0	35.5	38.3	90.5	90	0.5	4	2
	23	●	MHS0250L065B	58.0	65.5	68.3	110.5	110	0.5	4	2
	30	●	MHS0250L090B	75.5	90.5	93.3	140.5	140	0.5	4	2

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
2.60	2	●	MHS0260L013B	5.7	13.5	16.1	70.5	70	0.5	4	1
	5	★	MHS0260L020B	13.5	20.5	23.1	70.5	70	0.5	4	2
	10	●	MHS0260L035B	26.5	35.5	38.1	90.5	90	0.5	4	2
	22	●	MHS0260L065B	57.7	65.5	68.1	110.5	110	0.5	4	2
	30	●	MHS0260L090B	78.5	90.5	93.1	140.5	140	0.5	4	2
2.70	2	●	MHS0270L013B	5.9	13.5	15.9	70.5	70	0.5	4	1
	4	★	MHS0270L020B	11.4	20.6	23.0	70.6	70	0.6	4	2
	10	●	MHS0270L035B	27.6	35.6	38.0	90.6	90	0.6	4	2
	21	●	MHS0270L065B	57.3	65.6	68.0	110.6	110	0.6	4	2
	30	●	MHS0270L090B	81.6	90.6	93.0	140.6	140	0.6	4	2
2.80	2	●	MHS0280L014B	6.1	14.5	16.7	70.5	70	0.5	4	1
	4	★	MHS0280L020B	11.8	20.6	22.8	70.6	70	0.6	4	2
	9	●	MHS0280L035B	25.8	35.6	37.8	90.6	90	0.6	4	2
	20	●	MHS0280L065B	56.6	65.6	67.8	110.6	110	0.6	4	2
	29	●	MHS0280L090B	81.8	90.6	92.8	140.6	140	0.6	4	2
2.90	2	●	MHS0290L014B	6.3	14.5	16.6	70.5	70	0.5	4	1
	4	★	MHS0290L020B	12.2	20.6	22.7	70.6	70	0.6	4	2
	9	●	MHS0290L035B	26.7	35.6	37.7	90.6	90	0.6	4	2
	19	●	MHS0290L065B	55.7	65.6	67.7	110.6	110	0.6	4	2
	28	●	MHS0290L090B	81.8	90.6	92.7	140.6	140	0.6	4	2
2.95	2	★	MHS0295L014B	6.4	14.5	16.5	70.5	70	0.5	4	1
	4	★	MHS0295L020B	12.4	20.6	22.6	70.6	70	0.6	4	2
	9	★	MHS0295L035B	27.2	35.6	37.6	90.6	90	0.6	4	2
	19	●	MHS0295L065B	56.7	65.6	67.6	110.6	110	0.6	4	2
	28	★	MHS0295L090B	83.2	90.6	92.6	140.6	140	0.6	4	2
3.0	4	●	MHS0300L020B	12.5	19.5	20.5	70.5	70	0.5	4	3
	10	●	MHS0300L040B	30.5	39.5	40.5	90.5	90	0.5	4	4
	17	●	MHS0300L060B	51.5	59.5	60.5	110.5	110	0.5	4	4
	27	●	MHS0300L090B	81.5	89.5	90.5	140.5	140	0.5	4	4
3.1	4	□	MHS0310L020B	12.9	20.0	20.5	70.5	70	0.5	4	3
	10	□	MHS0310L040B	31.6	40.1	40.6	90.6	90	0.6	4	4
	17	□	MHS0310L060B	53.3	60.1	60.6	110.6	110	0.6	4	4
	26	□	MHS0310L090B	81.2	90.1	90.6	140.6	140	0.6	4	4
3.2	4	□	MHS0320L020B	13.4	20.1	20.6	70.6	70	0.6	4	3
	10	□	MHS0320L040B	32.6	40.1	40.6	90.6	90	0.6	4	4
	16	□	MHS0320L060B	51.8	60.1	60.6	110.6	110	0.6	4	4
	25	□	MHS0320L090B	80.6	90.1	90.6	140.6	140	0.6	4	4
3.3	3	□	MHS0330L020B	10.5	20.1	20.6	70.6	70	0.6	4	3
	9	□	MHS0330L040B	30.3	40.1	40.6	90.6	90	0.6	4	4
	16	□	MHS0330L060B	53.4	60.1	60.6	110.6	110	0.6	4	4
	25	□	MHS0330L090B	83.1	90.1	90.6	140.6	140	0.6	4	4
3.4	3	□	MHS0340L020B	10.8	20.1	20.6	70.6	70	0.6	4	3
	9	□	MHS0340L040B	31.2	40.1	40.6	90.6	90	0.6	4	4
	15	□	MHS0340L060B	51.6	60.1	60.6	110.6	110	0.6	4	4
	24	□	MHS0340L090B	82.2	90.1	90.6	140.6	140	0.6	4	4
3.5	3	●	MHS0350L020B	11.1	20.1	20.6	70.6	70	0.6	4	3
	9	●	MHS0350L040B	32.1	40.1	40.6	90.6	90	0.6	4	4
	14	●	MHS0350L060B	49.6	60.1	60.6	110.6	110	0.6	4	4
	23	●	MHS0350L090B	81.1	90.1	90.6	140.6	140	0.6	4	4

CONDICIONES DE CORTE ➤ M138
GUIA OPERACIONAL ➤ M139
DATOS TÉCNICOS ➤ P001

MHS

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
3.6	3	□	MHS0360L020B	11.4	20.6	20.6	70.6	70	0.6	4	3
	9	□	MHS0360L040B	33.1	40.7	40.7	90.7	90	0.7	4	4
	14	□	MHS0360L060B	51.1	60.7	60.7	110.7	110	0.7	4	4
	22	□	MHS0360L090B	79.9	90.7	90.7	140.7	140	0.7	4	4
	30	□	MHS0360L120B	108.7	120.7	120.7	170.7	170	0.7	4	4
3.7	3	□	MHS0370L020B	11.7	20.6	20.6	70.6	70	0.6	4	3
	8	□	MHS0370L040B	30.3	40.7	40.7	90.7	90	0.7	4	4
	14	□	MHS0370L060B	52.5	60.7	60.7	110.7	110	0.7	4	4
	22	□	MHS0370L090B	82.1	90.7	90.7	140.7	140	0.7	4	4
	30	□	MHS0370L120B	111.7	120.7	120.7	170.7	170	0.7	4	4
3.8	3	★	MHS0380L020B	12.1	20.7	20.7	70.7	70	0.7	4	3
	8	★	MHS0380L040B	31.1	40.7	40.7	90.7	90	0.7	4	4
	13	★	MHS0380L060B	50.1	60.7	60.7	110.7	110	0.7	4	4
	21	★	MHS0380L090B	80.5	90.7	90.7	140.7	140	0.7	4	4
	29	★	MHS0380L120B	110.9	120.7	120.7	170.7	170	0.7	4	4
3.9	3	★	MHS0390L020B	12.4	20.7	20.7	70.7	70	0.7	4	3
	8	★	MHS0390L040B	31.9	40.7	40.7	90.7	90	0.7	4	4
	13	★	MHS0390L060B	51.4	60.7	60.7	110.7	110	0.7	4	4
	21	□	MHS0390L090B	82.6	90.7	90.7	140.7	140	0.7	4	4
	28	□	MHS0390L120B	109.9	120.7	120.7	170.7	170	0.7	4	4
4.0	2	●	MHS0400L020B	8.7	20.7	20.7	70.7	70	0.7	4	3
	7	●	MHS0400L040B	28.7	40.7	40.7	90.7	90	0.7	4	4
	12	●	MHS0400L060B	48.7	60.7	60.7	110.7	110	0.7	4	4
	20	●	MHS0400L090B	80.7	90.7	90.7	140.7	140	0.7	4	4
	27	●	MHS0400L120B	108.7	120.7	120.7	170.7	170	0.7	4	4
4.1	2	□	MHS0410L020B	8.9	19.2	20.7	70.7	70	0.7	6	3
	7	□	MHS0410L040B	29.4	39.2	40.7	90.7	90	0.7	6	4
	12	□	MHS0410L060B	49.9	59.2	60.7	110.7	110	0.7	6	4
	19	□	MHS0410L090B	78.6	89.2	90.7	140.7	140	0.7	6	4
	26	□	MHS0410L120B	107.3	119.2	120.7	170.7	170	0.7	6	4
4.2	2	□	MHS0420L020B	9.1	19.2	20.7	70.7	70	0.7	6	3
	7	□	MHS0420L040B	30.2	39.3	40.8	90.8	90	0.8	6	4
	11	□	MHS0420L060B	47.0	59.3	60.8	110.8	110	0.8	6	4
	19	□	MHS0420L090B	80.6	89.3	90.8	140.8	140	0.8	6	4
	26	□	MHS0420L120B	110.0	119.3	120.8	170.8	170	0.8	6	4
4.3	2	□	MHS0430L020B	9.3	19.2	20.7	70.7	70	0.7	6	3
	6	□	MHS0430L040B	26.6	39.3	40.8	90.8	90	0.8	6	4
	11	□	MHS0430L060B	48.1	59.3	60.8	110.8	110	0.8	6	4
	18	□	MHS0430L090B	78.2	89.3	90.8	140.8	140	0.8	6	4
	25	□	MHS0430L120B	108.3	119.3	120.8	170.8	170	0.8	6	4
4.4	2	★	MHS0440L020B	9.6	19.3	20.8	70.8	70	0.8	6	3
	6	□	MHS0440L040B	27.2	39.3	40.8	90.8	90	0.8	6	4
	11	□	MHS0440L060B	49.2	59.3	60.8	110.8	110	0.8	6	4
	18	□	MHS0440L090B	80.0	89.3	90.8	140.8	140	0.8	6	4
	24	□	MHS0440L120B	106.4	119.3	120.8	170.8	170	0.8	6	4
4.5	2	●	MHS0450L020B	9.8	19.3	20.8	70.8	70	0.8	6	3
	6	●	MHS0450L040B	27.8	39.3	40.8	90.8	90	0.8	6	4
	10	●	MHS0450L060B	45.8	59.3	60.8	110.8	110	0.8	6	4
	17	●	MHS0450L090B	77.3	89.3	90.8	140.8	140	0.8	6	4
	24	●	MHS0450L120B	108.8	119.3	120.8	170.8	170	0.8	6	4

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
4.6	2	□	MHS0460L020B	10.0	19.8	20.8	70.8	70	0.8	6	3
	6	□	MHS0460L040B	28.4	39.8	40.8	90.8	90	0.8	6	4
	10	□	MHS0460L060B	46.8	59.8	60.8	110.8	110	0.8	6	4
	17	□	MHS0460L090B	79.0	89.8	90.8	140.8	140	0.8	6	4
	23	□	MHS0460L120B	106.6	119.8	120.8	170.8	170	0.8	6	4
	30	□	MHS0460L150B	138.8	149.8	150.8	200.8	200	0.8	6	4
4.7	2	□	MHS0470L020B	10.2	19.8	20.8	70.8	70	0.8	6	3
	6	□	MHS0470L040B	29.1	39.9	40.9	90.9	90	0.9	6	4
	10	□	MHS0470L060B	47.9	59.9	60.9	110.9	110	0.9	6	4
	16	□	MHS0470L090B	76.1	89.9	90.9	140.9	140	0.9	6	4
	23	□	MHS0470L120B	109.0	119.9	120.9	170.9	170	0.9	6	4
	29	□	MHS0470L150B	137.2	149.9	150.9	200.9	200	0.9	6	4
4.8	1	★	MHS0480L020B	5.6	19.8	20.8	70.8	70	0.8	6	3
	6	★	MHS0480L040B	29.7	39.9	40.9	90.9	90	0.9	6	4
	10	★	MHS0480L060B	48.9	59.9	60.9	110.9	110	0.9	6	4
	16	★	MHS0480L090B	77.7	89.9	90.9	140.9	140	0.9	6	4
	22	★	MHS0480L120B	106.5	119.9	120.9	170.9	170	0.9	6	4
	29	★	MHS0480L150B	140.1	149.9	150.9	200.9	200	0.9	6	4
4.9	1	□	MHS0490L020B	5.7	19.8	20.8	70.8	70	0.8	6	3
	5	□	MHS0490L040B	25.4	39.9	40.9	90.9	90	0.9	6	4
	10	□	MHS0490L060B	49.9	59.9	60.9	110.9	110	0.9	6	4
	16	□	MHS0490L090B	79.3	89.9	90.9	140.9	140	0.9	6	4
	22	□	MHS0490L120B	108.7	119.9	120.9	170.9	170	0.9	6	4
	28	□	MHS0490L150B	138.1	149.9	150.9	200.9	200	0.9	6	4
5.0	1	●	MHS0500L020B	5.9	19.9	20.9	70.9	70	0.9	6	3
	5	●	MHS0500L040B	25.9	39.9	40.9	90.9	90	0.9	6	4
	9	●	MHS0500L060B	45.9	59.9	60.9	110.9	110	0.9	6	4
	15	●	MHS0500L090B	75.9	89.9	90.9	140.9	140	0.9	6	4
	21	●	MHS0500L120B	105.9	119.9	120.9	170.9	170	0.9	6	4
	27	●	MHS0500L150B	135.9	149.9	150.9	200.9	200	0.9	6	4
5.1	3	□	MHS0510L030B	16.2	30.4	30.9	80.9	80	0.9	6	3
	9	□	MHS0510L060B	46.8	60.4	60.9	110.9	110	0.9	6	4
	15	□	MHS0510L090B	77.4	90.4	90.9	140.9	140	0.9	6	4
	21	□	MHS0510L120B	108.0	120.4	120.9	170.9	170	0.9	6	4
	27	□	MHS0510L150B	138.6	150.4	150.9	200.9	200	0.9	6	4
5.2	3	□	MHS0520L030B	16.5	30.4	30.9	80.9	80	0.9	6	3
	9	□	MHS0520L060B	47.7	60.4	60.9	110.9	110	0.9	6	4
	15	□	MHS0520L090B	78.9	90.4	90.9	140.9	140	0.9	6	4
	20	□	MHS0520L120B	104.9	120.4	120.9	170.9	170	0.9	6	4
	26	□	MHS0520L150B	136.1	150.4	150.9	200.9	200	0.9	6	4
5.3	3	□	MHS0530L030B	16.8	30.4	30.9	80.9	80	0.9	6	3
	9	□	MHS0530L060B	48.7	60.5	61.0	111.0	110	1.0	6	4
	14	★	MHS0530L090B	75.2	90.5	91.0	141.0	140	1.0	6	4
	20	□	MHS0530L120B	107.0	120.5	121.0	171.0	170	1.0	6	4
	26	□	MHS0530L150B	138.8	150.5	151.0	201.0	200	1.0	6	4
5.4	3	□	MHS0540L030B	17.1	30.4	30.9	80.9	80	0.9	6	3
	9	□	MHS0540L060B	49.6	60.5	61.0	111.0	110	1.0	6	4
	14	□	MHS0540L090B	76.6	90.5	91.0	141.0	140	1.0	6	4
	20	□	MHS0540L120B	109.0	120.5	121.0	171.0	170	1.0	6	4
	25	□	MHS0540L150B	136.0	150.5	151.0	201.0	200	1.0	6	4

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
5.5	3	●	MHS0550L030B	17.4	30.4	30.9	80.9	80	0.9	6	3
	8	●	MHS0550L060B	45.0	60.5	61.0	111.0	110	1.0	6	4
	14	●	MHS0550L090B	78.0	90.5	91.0	141.0	140	1.0	6	4
	19	●	MHS0550L120B	105.5	120.5	121.0	171.0	170	1.0	6	4
	25	●	MHS0550L150B	138.5	150.5	151.0	201.0	200	1.0	6	4
5.6	3	□	MHS0560L030B	17.8	31.0	31.0	81.0	80	1.0	6	3
	8	□	MHS0560L060B	45.8	61.0	61.0	111.0	110	1.0	6	4
	14	□	MHS0560L090B	79.4	91.0	91.0	141.0	140	1.0	6	4
	19	□	MHS0560L120B	107.4	121.0	121.0	171.0	170	1.0	6	4
	24	□	MHS0560L150B	135.4	151.0	151.0	201.0	200	1.0	6	4
5.7	3	□	MHS0570L030B	18.1	31.0	31.0	81.0	80	1.0	6	3
	8	□	MHS0570L060B	46.6	61.0	61.0	111.0	110	1.0	6	4
	13	□	MHS0570L090B	75.1	91.0	91.0	141.0	140	1.0	6	4
	19	□	MHS0570L120B	109.3	121.0	121.0	171.0	170	1.0	6	4
	24	□	MHS0570L150B	137.8	151.0	151.0	201.0	200	1.0	6	4
5.8	3	★	MHS0580L030B	18.4	31.0	31.0	81.0	80	1.0	6	3
	8	★	MHS0580L060B	47.5	61.1	61.1	111.1	110	1.1	6	4
	13	★	MHS0580L090B	76.5	91.1	91.1	141.1	140	1.1	6	4
	18	★	MHS0580L120B	105.5	121.1	121.1	171.1	170	1.1	6	4
	23	★	MHS0580L150B	134.5	151.1	151.1	201.1	200	1.1	6	4
5.9	3	□	MHS0590L030B	18.7	31.0	31.0	81.0	80	1.0	6	3
	8	□	MHS0590L060B	48.3	61.1	61.1	111.1	110	1.1	6	4
	13	□	MHS0590L090B	77.8	91.1	91.1	141.1	140	1.1	6	4
	18	□	MHS0590L120B	107.3	121.1	121.1	171.1	170	1.1	6	4
	23	□	MHS0590L150B	136.8	151.1	151.1	201.1	200	1.1	6	4
6.0	2	●	MHS0600L030B	13.0	31.0	31.0	81.0	80	1.0	6	3
	7	●	MHS0600L060B	43.1	61.1	61.1	111.1	110	1.1	6	4
	12	●	MHS0600L090B	73.1	91.1	91.1	141.1	140	1.1	6	4
	17	●	MHS0600L120B	103.1	121.1	121.1	171.1	170	1.1	6	4
	22	●	MHS0600L150B	133.1	151.1	151.1	201.1	200	1.1	6	4
6.1	2	□	MHS0610L030B	13.3	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0610L060B	43.8	59.6	61.1	111.1	110	1.1	8	4
	12	□	MHS0610L090B	74.3	89.6	91.1	141.1	140	1.1	8	4
	17	□	MHS0610L120B	104.8	119.6	121.1	171.1	170	1.1	8	4
	22	□	MHS0610L150B	135.3	149.6	151.1	201.1	200	1.1	8	4
6.2	2	□	MHS0620L030B	13.5	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0620L060B	44.5	59.6	61.1	111.1	110	1.1	8	4
	12	□	MHS0620L090B	75.5	89.6	91.1	141.1	140	1.1	8	4
	17	□	MHS0620L120B	106.5	119.6	121.1	171.1	170	1.1	8	4
	21	□	MHS0620L150B	131.3	149.6	151.1	201.1	200	1.1	8	4
6.3	2	□	MHS0630L030B	13.7	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0630L060B	45.2	59.6	61.1	111.1	110	1.1	8	4
	12	□	MHS0630L090B	76.7	89.6	91.1	141.1	140	1.1	8	4
	16	□	MHS0630L120B	101.9	119.6	121.1	171.1	170	1.1	8	4
	21	□	MHS0630L150B	133.4	149.6	151.1	201.1	200	1.1	8	4
6.4	2	□	MHS0640L030B	13.9	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0640L060B	46.0	59.7	61.2	111.2	110	1.2	8	4
	11	□	MHS0640L090B	71.6	89.7	91.2	141.2	140	1.2	8	4
	16	□	MHS0640L120B	103.6	119.7	121.2	171.2	170	1.2	8	4
	21	□	MHS0640L150B	135.6	149.7	151.2	201.2	200	1.2	8	4

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
6.5	2	●	MHS0650L030B	14.1	29.6	31.1	81.1	80	1.1	8	3
	6	●	MHS0650L060B	40.2	59.7	61.2	111.2	110	1.2	8	4
	11	●	MHS0650L090B	72.7	89.7	91.2	141.2	140	1.2	8	4
	16	●	MHS0650L120B	105.2	119.7	121.2	171.2	170	1.2	8	4
	20	●	MHS0650L150B	131.2	149.7	151.2	201.2	200	1.2	8	4
6.6	2	□	MHS0660L030B	14.3	30.1	31.1	81.1	80	1.1	8	3
	6	□	MHS0660L060B	40.8	60.2	61.2	111.2	110	1.2	8	4
	11	□	MHS0660L090B	73.8	90.2	91.2	141.2	140	1.2	8	4
	16	□	MHS0660L120B	106.8	120.2	121.2	171.2	170	1.2	8	4
	20	□	MHS0660L150B	133.2	150.2	151.2	201.2	200	1.2	8	4
	28	□	MHS0660L200B	186.0	200.2	201.2	251.2	250	1.2	8	4
6.7	2	□	MHS0670L030B	14.6	30.2	31.2	81.2	80	1.2	8	3
	6	□	MHS0670L060B	41.4	60.2	61.2	111.2	110	1.2	8	4
	11	□	MHS0670L090B	74.9	90.2	91.2	141.2	140	1.2	8	4
	15	□	MHS0670L120B	101.7	120.2	121.2	171.2	170	1.2	8	4
	20	□	MHS0670L150B	135.2	150.2	151.2	201.2	200	1.2	8	4
	27	□	MHS0670L200B	182.1	200.2	201.2	251.2	250	1.2	8	4
6.8	2	★	MHS0680L030B	14.8	30.2	31.2	81.2	80	1.2	8	3
	6	★	MHS0680L060B	42.0	60.2	61.2	111.2	110	1.2	8	4
	11	★	MHS0680L090B	76.0	90.2	91.2	141.2	140	1.2	8	4
	15	★	MHS0680L120B	103.2	120.2	121.2	171.2	170	1.2	8	4
	19	★	MHS0680L150B	130.4	150.2	151.2	201.2	200	1.2	8	4
	27	★	MHS0680L200B	184.8	200.2	201.2	251.2	250	1.2	8	4
6.9	2	□	MHS0690L030B	15.0	30.2	31.2	81.2	80	1.2	8	3
	6	□	MHS0690L060B	42.7	60.3	61.3	111.3	110	1.3	8	4
	10	□	MHS0690L090B	70.3	90.3	91.3	141.3	140	1.3	8	4
	15	□	MHS0690L120B	104.8	120.3	121.3	171.3	170	1.3	8	4
	19	□	MHS0690L150B	132.4	150.3	151.3	201.3	200	1.3	8	4
	26	□	MHS0690L200B	180.7	200.3	201.3	251.3	250	1.3	8	4
7.0	2	●	MHS0700L030B	15.2	30.2	31.2	81.2	80	1.2	8	3
	6	●	MHS0700L060B	43.3	60.3	61.3	111.3	110	1.3	8	4
	10	●	MHS0700L090B	71.3	90.3	91.3	141.3	140	1.3	8	4
	14	●	MHS0700L120B	99.3	120.3	121.3	171.3	170	1.3	8	4
	19	●	MHS0700L150B	134.3	150.3	151.3	201.3	200	1.3	8	4
	26	●	MHS0700L200B	183.3	200.3	201.3	251.3	250	1.3	8	4
7.1	2	□	MHS0710L030B	15.4	30.7	31.2	81.2	80	1.2	8	3
	6	□	MHS0710L060B	43.9	60.8	61.3	111.3	110	1.3	8	4
	10	□	MHS0710L090B	72.3	90.8	91.3	141.3	140	1.3	8	4
	14	□	MHS0710L120B	100.7	120.8	121.3	171.3	170	1.3	8	4
	19	□	MHS0710L150B	136.2	150.8	151.3	201.3	200	1.3	8	4
	26	□	MHS0710L200B	185.9	200.8	201.3	251.3	250	1.3	8	4
7.2	2	□	MHS0720L030B	15.6	30.7	31.2	81.2	80	1.2	8	3
	6	□	MHS0720L060B	44.5	60.8	61.3	111.3	110	1.3	8	4
	10	□	MHS0720L090B	73.3	90.8	91.3	141.3	140	1.3	8	4
	14	□	MHS0720L120B	102.1	120.8	121.3	171.3	170	1.3	8	4
	18	□	MHS0720L150B	130.9	150.8	151.3	201.3	200	1.3	8	4
	25	□	MHS0720L200B	181.3	200.8	201.3	251.3	250	1.3	8	4

CONDICIONES DE CORTE ➤ M138
GUIA OPERACIONAL ➤ M139
DATOS TÉCNICOS ➤ P001

MHS

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
7.3	2	□	MHS0730L030B	15.9	30.8	31.3	81.3	80	1.3	8	3
	6	□	MHS0730L060B	45.1	60.8	61.3	111.3	110	1.3	8	4
	10	□	MHS0730L090B	74.3	90.8	91.3	141.3	140	1.3	8	4
	14	□	MHS0730L120B	103.5	120.8	121.3	171.3	170	1.3	8	4
	18	□	MHS0730L150B	132.7	150.8	151.3	201.3	200	1.3	8	4
	25	□	MHS0730L200B	183.8	200.8	201.3	251.3	250	1.3	8	4
7.4	1	□	MHS0740L030B	8.7	30.8	31.3	81.3	80	1.3	8	3
	6	□	MHS0740L060B	45.7	60.8	61.3	111.3	110	1.3	8	4
	10	□	MHS0740L090B	75.3	90.8	91.3	141.3	140	1.3	8	4
	14	□	MHS0740L120B	104.9	120.8	121.3	171.3	170	1.3	8	4
	18	□	MHS0740L150B	134.5	150.8	151.3	201.3	200	1.3	8	4
	24	□	MHS0740L200B	178.9	200.8	201.3	251.3	250	1.3	8	4
7.5	1	●	MHS0750L030B	8.8	30.8	31.3	81.3	80	1.3	8	3
	5	●	MHS0750L060B	38.9	60.9	61.4	111.4	110	1.4	8	4
	9	●	MHS0750L090B	68.9	90.9	91.4	141.4	140	1.4	8	4
	13	●	MHS0750L120B	98.9	120.9	121.4	171.4	170	1.4	8	4
	17	●	MHS0750L150B	128.9	150.9	151.4	201.4	200	1.4	8	4
	24	●	MHS0750L200B	181.4	200.9	201.4	251.4	250	1.4	8	4
7.6	1	□	MHS0760L030B	8.9	31.3	31.3	81.3	80	1.3	8	3
	5	□	MHS0760L060B	39.4	61.4	61.4	111.4	110	1.4	8	4
	9	□	MHS0760L090B	69.8	91.4	91.4	141.4	140	1.4	8	4
	13	□	MHS0760L120B	100.2	121.4	121.4	171.4	170	1.4	8	4
	17	□	MHS0760L150B	130.6	151.4	151.4	201.4	200	1.4	8	4
	24	□	MHS0760L200B	183.8	201.4	201.4	251.4	250	1.4	8	4
	30	□	MHS0760L250B	229.4	251.4	251.4	301.4	300	1.4	8	4
7.7	1	□	MHS0770L030B	9.0	31.3	31.3	81.3	80	1.3	8	3
	5	□	MHS0770L060B	39.9	61.4	61.4	111.4	110	1.4	8	4
	9	□	MHS0770L090B	70.7	91.4	91.4	141.4	140	1.4	8	4
	13	□	MHS0770L120B	101.5	121.4	121.4	171.4	170	1.4	8	4
	17	□	MHS0770L150B	132.3	151.4	151.4	201.4	200	1.4	8	4
	23	□	MHS0770L200B	178.5	201.4	201.4	251.4	250	1.4	8	4
	30	□	MHS0770L250B	232.4	251.4	251.4	301.4	300	1.4	8	4
7.8	1	★	MHS0780L030B	9.1	31.3	31.3	81.3	80	1.3	8	3
	5	★	MHS0780L060B	40.4	61.4	61.4	111.4	110	1.4	8	4
	9	★	MHS0780L090B	71.6	91.4	91.4	141.4	140	1.4	8	4
	13	★	MHS0780L120B	102.8	121.4	121.4	171.4	170	1.4	8	4
	17	★	MHS0780L150B	134.0	151.4	151.4	201.4	200	1.4	8	4
	23	★	MHS0780L200B	180.8	201.4	201.4	251.4	250	1.4	8	4
	30	★	MHS0780L250B	235.4	251.4	251.4	301.4	300	1.4	8	4
7.9	1	□	MHS0790L030B	9.3	31.4	31.4	81.4	80	1.4	8	3
	5	□	MHS0790L060B	40.9	61.4	61.4	111.4	110	1.4	8	4
	9	□	MHS0790L090B	72.5	91.4	91.4	141.4	140	1.4	8	4
	13	□	MHS0790L120B	104.1	121.4	121.4	171.4	170	1.4	8	4
	16	□	MHS0790L150B	127.8	151.4	151.4	201.4	200	1.4	8	4
	23	□	MHS0790L200B	183.1	201.4	201.4	251.4	250	1.4	8	4
	29	□	MHS0790L250B	230.5	251.4	251.4	301.4	300	1.4	8	4

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.0	1	●	MHS0800L030B	9.4	31.4	31.4	81.4	80	1.4	8	3
	5	●	MHS0800L060B	41.5	61.5	61.5	111.5	110	1.5	8	4
	9	●	MHS0800L090B	73.5	91.5	91.5	141.5	140	1.5	8	4
	12	●	MHS0800L120B	97.5	121.5	121.5	171.5	170	1.5	8	4
	16	●	MHS0800L150B	129.5	151.5	151.5	201.5	200	1.5	8	4
	22	●	MHS0800L200B	177.5	201.5	201.5	251.5	250	1.5	8	4
	29	●	MHS0800L250B	233.5	251.5	251.5	301.5	300	1.5	8	4
8.1	2	□	MHS0810L040B	17.6	39.9	41.4	101.4	100	1.4	10	3
	8	□	MHS0810L090B	66.3	90.0	91.5	151.5	150	1.5	10	4
	12	□	MHS0810L120B	98.7	120.0	121.5	181.5	180	1.5	10	4
	16	□	MHS0810L150B	131.1	150.0	151.5	211.5	210	1.5	10	4
	22	□	MHS0810L200B	179.7	200.0	201.5	261.5	260	1.5	10	4
	28	□	MHS0810L250B	228.3	250.0	251.5	311.5	310	1.5	10	4
8.2	2	□	MHS0820L040B	17.8	39.9	41.4	101.4	100	1.4	10	3
	8	□	MHS0820L090B	67.1	90.0	91.5	151.5	150	1.5	10	4
	12	□	MHS0820L120B	99.9	120.0	121.5	181.5	180	1.5	10	4
	16	□	MHS0820L150B	132.7	150.0	151.5	211.5	210	1.5	10	4
	22	□	MHS0820L200B	181.9	200.0	201.5	261.5	260	1.5	10	4
	28	□	MHS0820L250B	231.1	250.0	251.5	311.5	310	1.5	10	4
8.3	2	□	MHS0830L040B	18.0	39.9	41.4	101.4	100	1.4	10	3
	8	□	MHS0830L090B	67.9	90.0	91.5	151.5	150	1.5	10	4
	12	□	MHS0830L120B	101.1	120.0	121.5	181.5	180	1.5	10	4
	15	□	MHS0830L150B	126.0	150.0	151.5	211.5	210	1.5	10	4
	21	□	MHS0830L200B	175.8	200.0	201.5	261.5	260	1.5	10	4
	27	□	MHS0830L250B	225.6	250.0	251.5	311.5	310	1.5	10	4
8.4	2	□	MHS0840L040B	18.2	39.9	41.4	101.4	100	1.4	10	3
	8	□	MHS0840L090B	68.7	90.0	91.5	151.5	150	1.5	10	4
	12	□	MHS0840L120B	102.3	120.0	121.5	181.5	180	1.5	10	4
	15	□	MHS0840L150B	127.5	150.0	151.5	211.5	210	1.5	10	4
	21	□	MHS0840L200B	177.9	200.0	201.5	261.5	260	1.5	10	4
	27	□	MHS0840L250B	228.3	250.0	251.5	311.5	310	1.5	10	4
8.5	2	●	MHS0850L040B	18.5	40.0	41.5	101.5	100	1.5	10	3
	8	●	MHS0850L090B	69.5	90.0	91.5	151.5	150	1.5	10	4
	11	●	MHS0850L120B	95.0	120.0	121.5	181.5	180	1.5	10	4
	15	●	MHS0850L150B	129.0	150.0	151.5	211.5	210	1.5	10	4
	21	●	MHS0850L200B	180.0	200.0	201.5	261.5	260	1.5	10	4
	27	●	MHS0850L250B	231.0	250.0	251.5	311.5	310	1.5	10	4
8.6	2	□	MHS0860L040B	18.7	40.5	41.5	101.5	100	1.5	10	3
	8	□	MHS0860L090B	70.4	90.6	91.6	151.6	150	1.6	10	4
	11	□	MHS0860L120B	96.2	120.6	121.6	181.6	180	1.6	10	4
	15	□	MHS0860L150B	130.6	150.6	151.6	211.6	210	1.6	10	4
	21	□	MHS0860L200B	182.2	200.6	201.6	261.6	260	1.6	10	4
	26	□	MHS0860L250B	225.2	250.6	251.6	311.6	310	1.6	10	4
8.7	2	□	MHS0870L040B	18.9	40.5	41.5	101.5	100	1.5	10	3
	8	□	MHS0870L090B	71.2	90.6	91.6	151.6	150	1.6	10	4
	11	□	MHS0870L120B	97.3	120.6	121.6	181.6	180	1.6	10	4
	15	□	MHS0870L150B	132.1	150.6	151.6	211.6	210	1.6	10	4
	20	□	MHS0870L200B	175.6	200.6	201.6	261.6	260	1.6	10	4
	26	□	MHS0870L250B	227.8	250.6	251.6	311.6	310	1.6	10	4

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
8.8	2	★	MHS0880L040B	19.1	40.5	41.5	101.5	100	1.5	10	3
	8	★	MHS0880L090B	72.0	90.6	91.6	151.6	150	1.6	10	4
	11	★	MHS0880L120B	98.4	120.6	121.6	181.6	180	1.6	10	4
	14	★	MHS0880L150B	124.8	150.6	151.6	211.6	210	1.6	10	4
	20	★	MHS0880L200B	177.6	200.6	201.6	261.6	260	1.6	10	4
	26	★	MHS0880L250B	230.4	250.6	251.6	311.6	310	1.6	10	4
8.9	2	□	MHS0890L040B	19.3	40.5	41.5	101.5	100	1.5	10	3
	7	□	MHS0890L090B	63.9	90.6	91.6	151.6	150	1.6	10	4
	11	□	MHS0890L120B	99.5	120.6	121.6	181.6	180	1.6	10	4
	14	□	MHS0890L150B	126.2	150.6	151.6	211.6	210	1.6	10	4
	20	□	MHS0890L200B	179.6	200.6	201.6	261.6	260	1.6	10	4
	25	□	MHS0890L250B	224.1	250.6	251.6	311.6	310	1.6	10	4
9.0	2	●	MHS0900L040B	19.5	40.5	41.5	101.5	100	1.5	10	3
	7	●	MHS0900L090B	64.6	90.6	91.6	151.6	150	1.6	10	4
	11	●	MHS0900L120B	100.6	120.6	121.6	181.6	180	1.6	10	4
	14	●	MHS0900L150B	127.6	150.6	151.6	211.6	210	1.6	10	4
	20	●	MHS0900L200B	181.6	200.6	201.6	261.6	260	1.6	10	4
	25	●	MHS0900L250B	226.6	250.6	251.6	311.6	310	1.6	10	4
9.1	2	□	MHS0910L040B	19.8	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0910L090B	65.4	91.2	91.7	151.7	150	1.7	10	4
	11	□	MHS0910L120B	101.8	121.2	121.7	181.7	180	1.7	10	4
	14	□	MHS0910L150B	129.1	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0910L200B	174.6	201.2	201.7	261.7	260	1.7	10	4
	25	□	MHS0910L250B	229.2	251.2	251.7	311.7	310	1.7	10	4
	30	□	MHS0910L300B	274.7	301.2	301.7	361.7	360	1.7	10	4
9.2	2	□	MHS0920L040B	20.0	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0920L090B	66.1	91.2	91.7	151.7	150	1.7	10	4
	10	□	MHS0920L120B	93.7	121.2	121.7	181.7	180	1.7	10	4
	14	□	MHS0920L150B	130.5	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0920L200B	176.5	201.2	201.7	261.7	260	1.7	10	4
	25	□	MHS0920L250B	231.7	251.2	251.7	311.7	310	1.7	10	4
	30	□	MHS0920L300B	277.7	301.2	301.7	361.7	360	1.7	10	4
9.3	2	□	MHS0930L040B	20.2	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0930L090B	66.8	91.2	91.7	151.7	150	1.7	10	4
	10	□	MHS0930L120B	94.7	121.2	121.7	181.7	180	1.7	10	4
	14	□	MHS0930L150B	131.9	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0930L200B	178.4	201.2	201.7	261.7	260	1.7	10	4
	24	□	MHS0930L250B	224.9	251.2	251.7	311.7	310	1.7	10	4
	30	□	MHS0930L300B	280.7	301.2	301.7	361.7	360	1.7	10	4
9.4	2	□	MHS0940L040B	20.4	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0940L090B	67.5	91.2	91.7	151.7	150	1.7	10	4
	10	□	MHS0940L120B	95.7	121.2	121.7	181.7	180	1.7	10	4
	13	□	MHS0940L150B	123.9	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0940L200B	180.3	201.2	201.7	261.7	260	1.7	10	4
	24	□	MHS0940L250B	227.3	251.2	251.7	311.7	310	1.7	10	4
	29	□	MHS0940L300B	274.3	301.2	301.7	361.7	360	1.7	10	4

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
9.5	2	★	MHS0950L040B	20.6	41.1	41.6	101.6	100	1.6	10	3
	7	★	MHS0950L090B	68.2	91.2	91.7	151.7	150	1.7	10	4
	10	★	MHS0950L120B	96.7	121.2	121.7	181.7	180	1.7	10	4
	13	★	MHS0950L150B	125.2	151.2	151.7	211.7	210	1.7	10	4
	18	★	MHS0950L200B	172.7	201.2	201.7	261.7	260	1.7	10	4
	24	★	MHS0950L250B	229.7	251.2	251.7	311.7	310	1.7	10	4
	29	★	MHS0950L300B	277.2	301.2	301.7	361.7	360	1.7	10	4
9.6	2	□	MHS0960L040B	20.9	41.7	41.7	101.7	100	1.7	10	3
	7	□	MHS0960L090B	68.9	91.7	91.7	151.7	150	1.7	10	4
	10	□	MHS0960L120B	97.7	121.7	121.7	181.7	180	1.7	10	4
	13	□	MHS0960L150B	126.5	151.7	151.7	211.7	210	1.7	10	4
	18	□	MHS0960L200B	174.5	201.7	201.7	261.7	260	1.7	10	4
	24	□	MHS0960L250B	232.1	251.7	251.7	311.7	310	1.7	10	4
	29	□	MHS0960L300B	280.1	301.7	301.7	361.7	360	1.7	10	4
9.7	2	□	MHS0970L040B	21.1	41.7	41.7	101.7	100	1.7	10	3
	7	□	MHS0970L090B	69.7	91.8	91.8	151.8	150	1.8	10	4
	10	□	MHS0970L120B	98.8	121.8	121.8	181.8	180	1.8	10	4
	13	□	MHS0970L150B	127.9	151.8	151.8	211.8	210	1.8	10	4
	18	□	MHS0970L200B	176.4	201.8	201.8	261.8	260	1.8	10	4
	23	□	MHS0970L250B	224.9	251.8	251.8	311.8	310	1.8	10	4
	28	□	MHS0970L300B	273.4	301.8	301.8	361.8	360	1.8	10	4
9.8	2	★	MHS0980L040B	21.3	41.7	41.7	101.7	100	1.7	10	3
	7	★	MHS0980L090B	70.4	91.8	91.8	151.8	150	1.8	10	4
	10	★	MHS0980L120B	99.8	121.8	121.8	181.8	180	1.8	10	4
	13	★	MHS0980L150B	129.2	151.8	151.8	211.8	210	1.8	10	4
	18	★	MHS0980L200B	178.2	201.8	201.8	261.8	260	1.8	10	4
	23	★	MHS0980L250B	227.2	251.8	251.8	311.8	310	1.8	10	4
	28	★	MHS0980L300B	276.2	301.8	301.8	361.8	360	1.8	10	4
9.9	2	□	MHS0990L040B	21.5	41.7	41.7	101.7	100	1.7	10	3
	7	□	MHS0990L090B	71.1	91.8	91.8	151.8	150	1.8	10	4
	10	□	MHS0990L120B	100.8	121.8	121.8	181.8	180	1.8	10	4
	13	□	MHS0990L150B	130.5	151.8	151.8	211.8	210	1.8	10	4
	18	□	MHS0990L200B	180.0	201.8	201.8	261.8	260	1.8	10	4
	23	□	MHS0990L250B	229.5	251.8	251.8	311.8	310	1.8	10	4
	28	□	MHS0990L300B	279.0	301.8	301.8	361.8	360	1.8	10	4
10.0	1	●	MHS1000L040B	11.7	41.7	41.7	101.7	100	1.7	10	3
	6	●	MHS1000L090B	61.8	91.8	91.8	151.8	150	1.8	10	4
	9	●	MHS1000L120B	91.8	121.8	121.8	181.8	180	1.8	10	4
	12	●	MHS1000L150B	121.8	151.8	151.8	211.8	210	1.8	10	4
	17	●	MHS1000L200B	171.8	201.8	201.8	261.8	260	1.8	10	4
	22	●	MHS1000L250B	221.8	251.8	251.8	311.8	310	1.8	10	4
	27	●	MHS1000L300B	271.8	301.8	301.8	361.8	360	1.8	10	4
10.1	1	□	MHS1010L040B	11.8	40.2	41.7	101.7	100	1.7	12	3
	6	□	MHS1010L090B	62.4	90.3	91.8	151.8	150	1.8	12	4
	9	□	MHS1010L120B	92.7	120.3	121.8	181.8	180	1.8	12	4
	12	□	MHS1010L150B	123.0	150.3	151.8	211.8	210	1.8	12	4
	17	□	MHS1010L200B	173.5	200.3	201.8	261.8	260	1.8	12	4
	22	□	MHS1010L250B	224.0	250.3	251.8	311.8	310	1.8	12	4
	27	□	MHS1010L300B	274.5	300.3	301.8	361.8	360	1.8	12	4

CONDICIONES DE CORTE ➤ M138
GUIA OPERACIONAL ➤ M139
DATOS TÉCNICOS ➤ P001

MHS

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.2	1	□	MHS1020L040B	12.0	40.3	41.8	101.8	100	1.8	12	3
	6	□	MHS1020L090B	63.1	90.4	91.9	151.9	150	1.9	12	4
	9	□	MHS1020L120B	93.7	120.4	121.9	181.9	180	1.9	12	4
	12	□	MHS1020L150B	124.3	150.4	151.9	211.9	210	1.9	12	4
	17	□	MHS1020L200B	175.3	200.4	201.9	261.9	260	1.9	12	4
	22	□	MHS1020L250B	226.3	250.4	251.9	311.9	310	1.9	12	4
	27	□	MHS1020L300B	277.3	300.4	301.9	361.9	360	1.9	12	4
10.3	1	□	MHS1030L040B	12.1	40.3	41.8	101.8	100	1.8	12	3
	6	□	MHS1030L090B	63.7	90.4	91.9	151.9	150	1.9	12	4
	9	□	MHS1030L120B	94.6	120.4	121.9	181.9	180	1.9	12	4
	12	□	MHS1030L150B	125.5	150.4	151.9	211.9	210	1.9	12	4
	17	□	MHS1030L200B	177.0	200.4	201.9	261.9	260	1.9	12	4
	22	□	MHS1030L250B	228.5	250.4	251.9	311.9	310	1.9	12	4
	26	□	MHS1030L300B	269.7	300.4	301.9	361.9	360	1.9	12	4
10.4	1	□	MHS1040L040B	12.2	40.3	41.8	101.8	100	1.8	12	3
	6	□	MHS1040L090B	64.3	90.4	91.9	151.9	150	1.9	12	4
	9	□	MHS1040L120B	95.5	120.4	121.9	181.9	180	1.9	12	4
	12	□	MHS1040L150B	126.7	150.4	151.9	211.9	210	1.9	12	4
	17	□	MHS1040L200B	178.7	200.4	201.9	261.9	260	1.9	12	4
	21	□	MHS1040L250B	220.3	250.4	251.9	311.9	310	1.9	12	4
	26	□	MHS1040L300B	272.3	300.4	301.9	361.9	360	1.9	12	4
10.5	1	★	MHS1050L040B	12.3	40.3	41.8	101.8	100	1.8	12	3
	6	★	MHS1050L090B	64.9	90.4	91.9	151.9	150	1.9	12	4
	9	★	MHS1050L120B	96.4	120.4	121.9	181.9	180	1.9	12	4
	12	★	MHS1050L150B	127.9	150.4	151.9	211.9	210	1.9	12	4
	16	★	MHS1050L200B	169.9	200.4	201.9	261.9	260	1.9	12	4
	21	★	MHS1050L250B	222.4	250.4	251.9	311.9	310	1.9	12	4
	26	★	MHS1050L300B	274.9	300.4	301.9	361.9	360	1.9	12	4
10.6	1	□	MHS1060L040B	12.4	40.8	41.8	101.8	100	1.8	12	3
	6	□	MHS1060L090B	65.5	90.9	91.9	151.9	150	1.9	12	4
	9	□	MHS1060L120B	97.3	120.9	121.9	181.9	180	1.9	12	4
	12	□	MHS1060L150B	129.1	150.9	151.9	211.9	210	1.9	12	4
	16	□	MHS1060L200B	171.5	200.9	201.9	261.9	260	1.9	12	4
	21	□	MHS1060L250B	224.5	250.9	251.9	311.9	310	1.9	12	4
	26	□	MHS1060L300B	277.5	300.9	301.9	361.9	360	1.9	12	4
10.7	1	□	MHS1070L040B	12.5	40.8	41.8	101.8	100	1.8	12	3
	6	□	MHS1070L090B	66.1	90.9	91.9	151.9	150	1.9	12	4
	9	□	MHS1070L120B	98.2	120.9	121.9	181.9	180	1.9	12	4
	11	□	MHS1070L150B	119.6	150.9	151.9	211.9	210	1.9	12	4
	16	□	MHS1070L200B	173.1	200.9	201.9	261.9	260	1.9	12	4
	21	□	MHS1070L250B	226.6	250.9	251.9	311.9	310	1.9	12	4
	25	□	MHS1070L300B	269.4	300.9	301.9	361.9	360	1.9	12	4
10.8	1	★	MHS1080L040B	12.7	40.9	41.9	101.9	100	1.9	12	3
	6	★	MHS1080L090B	66.8	91.0	92.0	152.0	150	2.0	12	4
	9	★	MHS1080L120B	99.2	121.0	122.0	182.0	180	2.0	12	4
	11	★	MHS1080L150B	120.8	151.0	152.0	212.0	210	2.0	12	4
	16	★	MHS1080L200B	174.8	201.0	202.0	262.0	260	2.0	12	4
	21	★	MHS1080L250B	228.8	251.0	252.0	312.0	310	2.0	12	4
	25	★	MHS1080L300B	272.0	301.0	302.0	362.0	360	2.0	12	4

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
10.9	1	□	MHS1090L040B	12.8	40.9	41.9	101.9	100	1.9	12	3
	6	□	MHS1090L090B	67.4	91.0	92.0	152.0	150	2.0	12	4
	8	□	MHS1090L120B	89.2	121.0	122.0	182.0	180	2.0	12	4
	11	□	MHS1090L150B	121.9	151.0	152.0	212.0	210	2.0	12	4
	16	□	MHS1090L200B	176.4	201.0	202.0	262.0	260	2.0	12	4
	20	□	MHS1090L250B	220.0	251.0	252.0	312.0	310	2.0	12	4
	25	□	MHS1090L300B	274.5	301.0	302.0	362.0	360	2.0	12	4
11.0	1	●	MHS1100L040B	12.9	40.9	41.9	101.9	100	1.9	12	3
	6	●	MHS1100L090B	68.0	91.0	92.0	152.0	150	2.0	12	4
	8	●	MHS1100L120B	90.0	121.0	122.0	182.0	180	2.0	12	4
	11	●	MHS1100L150B	123.0	151.0	152.0	212.0	210	2.0	12	4
	16	●	MHS1100L200B	178.0	201.0	202.0	262.0	260	2.0	12	4
	20	●	MHS1100L250B	222.0	251.0	252.0	312.0	310	2.0	12	4
	25	●	MHS1100L300B	277.0	301.0	302.0	362.0	360	2.0	12	4
11.1	1	□	MHS1110L040B	13.0	41.4	41.9	101.9	100	1.9	12	3
	6	□	MHS1110L090B	68.6	91.5	92.0	152.0	150	2.0	12	4
	8	□	MHS1110L120B	90.8	121.5	122.0	182.0	180	2.0	12	4
	11	□	MHS1110L150B	124.1	151.5	152.0	212.0	210	2.0	12	4
	15	□	MHS1110L200B	168.5	201.5	202.0	262.0	260	2.0	12	4
	20	□	MHS1110L250B	224.0	251.5	252.0	312.0	310	2.0	12	4
	24	□	MHS1110L300B	268.4	301.5	302.0	362.0	360	2.0	12	4
11.2	1	□	MHS1120L040B	13.1	41.4	41.9	101.9	100	1.9	12	3
	5	□	MHS1120L090B	58.0	91.5	92.0	152.0	150	2.0	12	4
	8	□	MHS1120L120B	91.6	121.5	122.0	182.0	180	2.0	12	4
	11	□	MHS1120L150B	125.2	151.5	152.0	212.0	210	2.0	12	4
	15	□	MHS1120L200B	170.0	201.5	202.0	262.0	260	2.0	12	4
	20	□	MHS1120L250B	226.0	251.5	252.0	312.0	310	2.0	12	4
	24	□	MHS1120L300B	270.8	301.5	302.0	362.0	360	2.0	12	4
11.3	1	□	MHS1130L040B	13.2	41.4	41.9	101.9	100	1.9	12	3
	5	□	MHS1130L090B	58.6	91.6	92.1	152.1	150	2.1	12	4
	8	□	MHS1130L120B	92.5	121.6	122.1	182.1	180	2.1	12	4
	11	□	MHS1130L150B	126.4	151.6	152.1	212.1	210	2.1	12	4
	15	□	MHS1130L200B	171.6	201.6	202.1	262.1	260	2.1	12	4
	20	□	MHS1130L250B	228.1	251.6	252.1	312.1	310	2.1	12	4
	24	□	MHS1130L300B	273.3	301.6	302.1	362.1	360	2.1	12	4
11.4	1	□	MHS1140L040B	13.4	41.5	42.0	102.0	100	2.0	12	3
	5	□	MHS1140L090B	59.1	91.6	92.1	152.1	150	2.1	12	4
	8	□	MHS1140L120B	93.3	121.6	122.1	182.1	180	2.1	12	4
	11	□	MHS1140L150B	127.5	151.6	152.1	212.1	210	2.1	12	4
	15	□	MHS1140L200B	173.1	201.6	202.1	262.1	260	2.1	12	4
	19	□	MHS1140L250B	218.7	251.6	252.1	312.1	310	2.1	12	4
	24	□	MHS1140L300B	275.7	301.6	302.1	362.1	360	2.1	12	4
11.5	1	★	MHS1150L040B	13.5	41.5	42.0	102.0	100	2.0	12	3
	5	★	MHS1150L090B	59.6	91.6	92.1	152.1	150	2.1	12	4
	8	★	MHS1150L120B	94.1	121.6	122.1	182.1	180	2.1	12	4
	10	★	MHS1150L150B	117.1	151.6	152.1	212.1	210	2.1	12	4
	15	★	MHS1150L200B	174.6	201.6	202.1	262.1	260	2.1	12	4
	19	★	MHS1150L250B	220.6	251.6	252.1	312.1	310	2.1	12	4
	24	★	MHS1150L300B	278.1	301.6	302.1	362.1	360	2.1	12	4

Nota 1) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. ★ : Stock Japón.
□ : A fabricar según demanda.

DC (mm)	Profundidad agujero (L/D)	VP15TF	Referencia	Dimensiones (mm) LU	LCF	LH	OAL	LF	PL	DCON	Tipo
11.6	1	□	**MHS1160L040B**	13.6	42.0	42.0	102.0	100	2.0	12	3
	5	□	**MHS1160L090B**	60.1	92.1	92.1	152.1	150	2.1	12	4
	8	□	**MHS1160L120B**	94.9	122.1	122.1	182.1	180	2.1	12	4
	10	□	**MHS1160L150B**	118.1	152.1	152.1	212.1	210	2.1	12	4
	15	□	**MHS1160L200B**	176.1	202.1	202.1	262.1	260	2.1	12	4
	19	□	**MHS1160L250B**	222.5	252.1	252.1	312.1	310	2.1	12	4
	23	□	**MHS1160L300B**	268.9	302.1	302.1	362.1	360	2.1	12	4
11.7	1	□	**MHS1170L040B**	13.7	42.0	42.0	102.0	100	2.0	12	3
	5	□	**MHS1170L090B**	60.6	92.1	92.1	152.1	150	2.1	12	4
	8	□	**MHS1170L120B**	95.7	122.1	122.1	182.1	180	2.1	12	4
	10	□	**MHS1170L150B**	119.1	152.1	152.1	212.1	210	2.1	12	4
	15	□	**MHS1170L200B**	177.6	202.1	202.1	262.1	260	2.1	12	4
	19	□	**MHS1170L250B**	224.4	252.1	252.1	312.1	310	2.1	12	4
	23	□	**MHS1170L300B**	271.2	302.1	302.1	362.1	360	2.1	12	4
11.8	1	★	**MHS1180L040B**	13.8	42.0	42.0	102.0	100	2.0	12	3
	5	★	**MHS1180L090B**	61.1	92.1	92.1	152.1	150	2.1	12	4
	8	★	**MHS1180L120B**	96.5	122.1	122.1	182.1	180	2.1	12	4
	10	★	**MHS1180L150B**	120.1	152.1	152.1	212.1	210	2.1	12	4
	14	★	**MHS1180L200B**	167.3	202.1	202.1	262.1	260	2.1	12	4
	19	★	**MHS1180L250B**	226.3	252.1	252.1	312.1	310	2.1	12	4
	23	★	**MHS1180L300B**	273.5	302.1	302.1	362.1	360	2.1	12	4
11.9	1	□	**MHS1190L040B**	13.9	42.0	42.0	102.0	100	2.0	12	3
	5	□	**MHS1190L090B**	61.7	92.2	92.2	152.2	150	2.2	12	4
	8	□	**MHS1190L120B**	97.4	122.2	122.2	182.2	180	2.2	12	4
	10	□	**MHS1190L150B**	121.2	152.2	152.2	212.2	210	2.2	12	4
	14	□	**MHS1190L200B**	168.8	202.2	202.2	262.2	260	2.2	12	4
	19	□	**MHS1190L250B**	228.3	252.2	252.2	312.2	310	2.2	12	4
	23	□	**MHS1190L300B**	275.9	302.2	302.2	362.2	360	2.2	12	4
12.0	1	●	**MHS1200L040B**	14.1	42.1	42.1	102.1	100	2.1	12	3
	5	●	**MHS1200L090B**	62.2	92.2	92.2	152.2	150	2.2	12	4
	7	●	**MHS1200L120B**	86.2	122.2	122.2	182.2	180	2.2	12	4
	10	●	**MHS1200L150B**	122.2	152.2	152.2	212.2	210	2.2	12	4
	14	●	**MHS1200L200B**	170.2	202.2	202.2	262.2	260	2.2	12	4
	18	●	**MHS1200L250B**	218.2	252.2	252.2	312.2	310	2.2	12	4
	22	●	**MHS1200L300B**	266.2	302.2	302.2	362.2	360	2.2	12	4

CONDICIONES DE CORTE ➢ M138
GUIA OPERACIONAL ➢ M139
DATOS TÉCNICOS ➢ P001

MHS

CONDICIONES DE CORTE RECOMENDADAS

Material	P				M			
	Acero Dulce (≤180HB), Acero al carbono Acero aleado (180−280HB) Ck10, Ck45, 42CrMo4				Acero inoxidable ferrítico y martensítico (>200HB) X20CrNi17-2, X30Cr13			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)
1.0	40	12700	0.030 (0.020−0.040)	380	20	6400	0.030 (0.020−0.040)	190
1.2	50	13300	0.035 (0.025−0.050)	465	30	8000	0.035 (0.025−0.050)	280
1.6	60	11900	0.050 (0.030−0.065)	595	40	8000	0.050 (0.030−0.065)	400
2.0	70	11100	0.060 (0.040−0.080)	665	50	8000	0.060 (0.040−0.080)	480
2.5	80	10200	0.075 (0.050−0.100)	765	60	7600	0.075 (0.050−0.100)	570
3.2	80	8000	0.100 (0.070−0.130)	800	60	6000	0.100 (0.070−0.130)	600
4.0	80	6400	0.100 (0.090−0.110)	640	60	4800	0.090 (0.080−0.090)	430
5.0	80	5100	0.130 (0.110−0.140)	665	60	3800	0.110 (0.100−0.120)	420
6.3	80	4000	0.160 (0.140−0.180)	640	60	3000	0.140 (0.130−0.150)	420
8.0	80	3200	0.200 (0.180−0.230)	640	60	2400	0.170 (0.160−0.190)	410
10.0	80	2600	0.250 (0.220−0.280)	650	60	1900	0.220 (0.200−0.230)	420
12.0	80	2100	0.300 (0.270−0.340)	630	60	1600	0.260 (0.240−0.280)	415

Material	P				H		M	
	Acero Pre-endurecido (35−45HRC), Acero aleado para herramientas (≤350HB) NAK, X36CrMo17, X210Cr12, 55NiCrMoV6				Acero Enduracido (40−55HRC), Acero inoxidable PH (<450HB) X20CrNi17-2, X30Cr13 X5CrNiCuNb164, X7CrNiAl17-7			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)
1.0	20	6400	0.025 (0.020−0.030)	160	40	12700	0.020 (0.015−0.025)	255
1.2	30	8000	0.030 (0.020−0.035)	240	40	10600	0.025 (0.020−0.030)	265
1.6	40	8000	0.040 (0.030−0.045)	320	50	10000	0.035 (0.025−0.040)	350
2.0	50	8000	0.045 (0.035−0.060)	360	50	8000	0.040 (0.030−0.050)	320
2.5	60	7600	0.060 (0.045−0.075)	455	60	7600	0.050 (0.040−0.065)	380
3.2	60	6000	0.080 (0.060−0.090)	480	60	6000	0.060 (0.050−0.080)	360
4.0	60	4800	0.080 (0.070−0.100)	385	60	4800	0.080 (0.060−0.100)	385
5.0	60	3800	0.110 (0.090−0.130)	420	60	3800	0.100 (0.080−0.130)	380
6.3	60	3000	0.130 (0.110−0.160)	390	60	3000	0.110 (0.090−0.130)	330
8.0	60	2400	0.170 (0.140−0.200)	410	60	2400	0.140 (0.120−0.160)	335
10.0	60	1900	0.210 (0.170−0.250)	400	60	1900	0.170 (0.140−0.200)	325
12.0	60	1600	0.250 (0.210−0.300)	400	60	1600	0.210 (0.170−0.240)	335

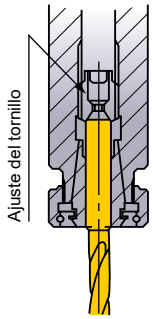
Material	H		S	
	Acero Enduracido (40−55HRC), Aleación termo-resistente X40CrMoV51, 55NiCrMoV7, Inconel718			
Diámetro Broca **DC** (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (min.−max.) (mm/rev)	Avance de mesa (mm/min)
1.0	10	3200	0.015 (0.015−0.020)	50
1.2	10	2700	0.020 (0.015−0.025)	55
1.6	10	2000	0.025 (0.020−0.030)	50
2.0	20	3200	0.035 (0.025−0.040)	110
2.5	20	2600	0.040 (0.030−0.050)	105
3.2	20	2000	0.050 (0.040−0.070)	100
4.0	30	2400	0.070 (0.050−0.080)	170
5.0	30	1900	0.080 (0.060−0.100)	150
6.3	30	1500	0.090 (0.080−0.110)	135
8.0	40	1600	0.120 (0.100−0.130)	190
10.0	40	1300	0.150 (0.130−0.170)	195
12.0	40	1100	0.180 (0.150−0.200)	200

Nota 1) Si se utiliza la broca con una longitud superior a L/D 10, es necesario utilizar "agujeros previos" como guía. (Si no se utiliza un agujero-previo, puede romperse la broca.)

Nota 2) Utilizar la broca con la hélice más corta en los respectivos diámetros para realizar el agujero guía.

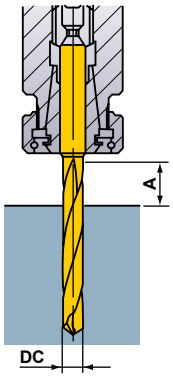
GUIA OPERACIONAL

Amarre de la broca



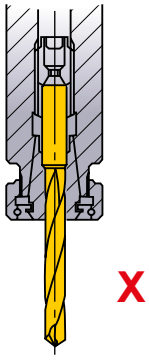
La presión del tipo de tornillo amarra la broca con seguridad.

Longitud de la broca



A ≥ DC x 2

Instalación de la broca

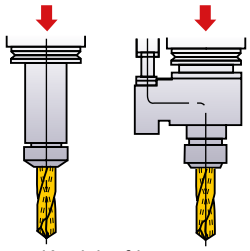


No sujetar en las hélices.

Tipos de refrigeración

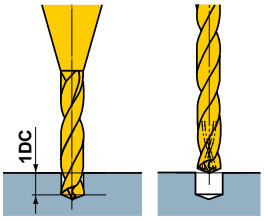
Refriración a traves del husillo

Refriración con máquina revolver



La presión del refrigerante es aproximadamente 15 bar—70 bar.
Presión de refrigeración recomendada: ≥30 bar

Instalación de la broca



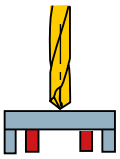
1) Realice un agujero guía de, aproximadamente, 1DC(DC: diámetro de la broca) utilizando la MHS con las hélices más cortas.
2) Utilice el agujero guía a modo de referencia para mecanizar la broca con el agujero de refrigeración. En función de la aplicación, lleve a cabo la perforación oportuna.

Utilización del refrigerante

1) El polvo y las partículas de aceite que hay en el refrigerante viejo pueden obstruir el agujero e impedir el flujo. Es recomendable cambiar regularmente el refrigerante.

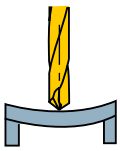
2) Las pequeñas partículas de viruta metálica atascarán el agujero para el aceite. Utilice un filtro como medida preventiva. Si utiliza brocas de pequeño diámetro, utilice un filtro de retícula fina.

Pieza delgada



OK

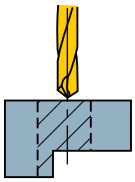
Sujetar la pieza



X

Si se produce un doblamiento

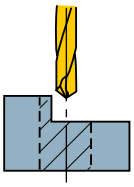
Corte interrumpido



Proceso

OK

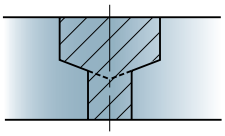
①Bajar el avance cuando taladramos partes en corte interrumpido.



Se requiere mecanizar previamente

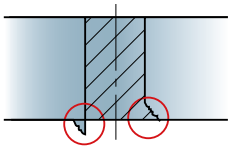
①Refrentar con fresa integral antes de taladrar.

Agujero previo



①Divida el mecanizado en dos procesos.
②Perfore primero el agujero mayor.
*Las herramientas para biselado y refrentado puntual se fabrican por encargo.

Ruidos y roturas en el material



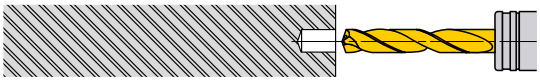
①Reduzca la velocidad de avance al calar.
②Cambiar el punto del ángulo.

MHS

■ INSTRUCCIONES OPERATIVAS PARA LA BROCA LARGA MHS (L/D ≥ 10)

TALADRADO DE CARA PLANA ● Taladrado de agujero guía

■ 1. Taladrado de agujero guía.

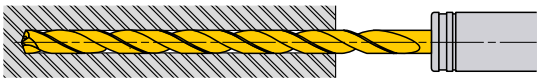


①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 2. Corte inicial con la broca larga

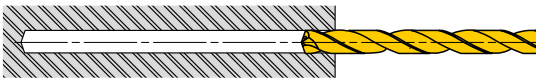
①1. Realice el agujero guía a bajas revoluciones.
(Revoluciones a 1000min^{-1}, vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 3. Taladrado del agujero profundo.



①Comience a cortar a la velocidad y avance recomendados con un ciclo ininterrumpido (avance continuo).

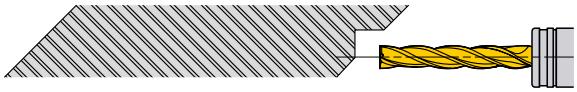
■ 4. Retracción de la broca



①Una vez taladrado, reduzca las revoluciones de corte aprox. a 0.5-1mm. del extremo del agujero. (Revoluciones en torno a 1000min^{-1})
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.
③Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.

TALADRADO INTERRUMPIDO ● Taladrado e inserción en caras o ángulos irregulares.

■ 1. Refrentado puntual

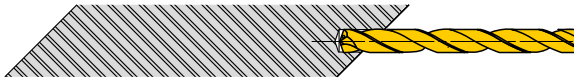


①Mecanice un plano en la cara irregular utilizando una broca o fresa para ranurado capaz de hacer refrentado puntual. El diámetro del punto debe tener el mismo tamaño del agujero profundo requerido.

■ 2. Taladrado de agujero guía

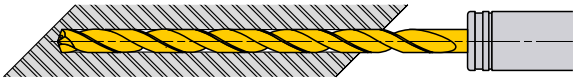
①Utilice una broca con un ángulo de punta mayor (más plano) que el súper-largo. Utiliza si es posible la hélice más corta.
②Asegúrese de taladrar un agujero de alta precisión como guía.
③Profundidad del taladrado: Aprox. 1DC o mayor.
(Ajuste la profundidad del agujero guía según la longitud del modelo súper-largo).

■ 3. Corte inicial con la broca larga



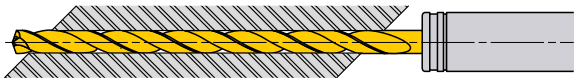
①Efectúe el agujero guía a bajas revoluciones.
(Revoluciones a 1000min^{-1} vel. avance: 0.2mm－0.3mm/rev)
②Detenga la broca larga a 0.5－1mm del extremo inferior del agujero guía.

■ 4. Taladre el agujero profundo



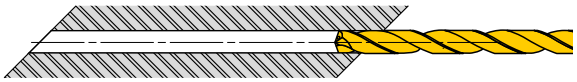
①Comience a cortar a la velocidad y avance recomendados con un ciclo sin perforación (avance continuo).

■ 5. Inserción



①Durante la inserción, el filo de corte puede resultar dañado
②Disminuya la velocidad de avance durante la inserción de la broca.

■ 6. Retracción de la broca

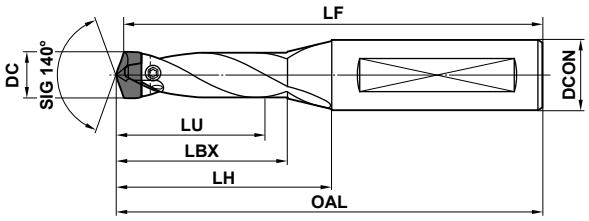


①Finalmente limpie el agujero con una velocidad de corte de 20-30m/min. y una velocidad de avance de 0.2-0.3mm/rev.
②Retraiga la broca hasta el punto de salida, a la profundidad del agujero guía, con una velocidad de avance de 3,000mm/min.

STAW

- Diseño del filo de corte ondulado para un mejor control de las virutas.
- Un sistema de sujeción extremadamente rígido, ofrece estabilidad y fiabilidad en el taladrado de agujeros pequeños.

P | M | K | N | S | H



HERRAMIENTAS

DC (mm)	Profundidad agujero (L/D)	Herramienta: Referencia	Stock	Dimensiones (mm): LU	LBX	LH	OAL	LF	DCON	F Llave	Placa: DC (mm)	Referencia	Stock VP15TF
10.0 – 10.4	1.5	STAWSS1000S16	●	16.8	23.8	33.8	81.8	80	16	TIP06F	10.0	* STAWN1000TH	●
												STAWK1000TG	
	3	STAWSN1000S16	●	31.8	38.8	48.8	96.8	95	16	TIP06F	10.1	STAWN1010TH	●
												STAWK1010TG	
											10.2	STAWN1020TH	●
												STAWK1020TG	
	5	STAWMN1000S16	●	51.8	58.8	68.8	116.8	115	16	TIP06F	10.3	STAWN1030TH	●
												STAWK1030TG	
	8	STAWLN1000S16	●	81.8	88.8	98.8	146.8	145	16	TIP06F	10.4	STAWN1040TH	●
												STAWK1040TG	
10.5 – 10.9	1.5	STAWSS1050S16	●	17.7	23.9	33.9	81.9	80	16	TIP06F	10.5	* STAWN1050TH	●
												STAWK1050TG	
	3	STAWSN1050S16	●	33.4	38.9	48.9	96.9	95	16	TIP06F	10.6	STAWN1060TH	●
												STAWK1060TG	
											10.7	STAWN1070TH	●
												STAWK1070TG	
	5	STAWMN1050S16	●	54.4	58.9	68.9	116.9	115	16	TIP06F	10.8	STAWN1080TH	●
												STAWK1080TG	
	8	STAWLN1050S16	●	85.9	88.9	98.9	146.9	145	16	TIP06F	10.9	STAWN1090TH	●
												STAWK1090TG	
11.0 – 11.4	1.5	STAWSS1100S16	●	18.5	27.0	38.0	86.0	84	16	TIP06F	11.0	* STAWN1100TH	●
												STAWK1100TG	
	3	STAWSN1100S16	●	35.0	43.0	54.0	102.0	100	16	TIP06F	11.1	STAWN1110TH	●
												STAWK1110TG	
											11.2	STAWN1120TH	●
												STAWK1120TG	
	5	STAWMN1100S16	●	57.0	68.0	79.0	127.0	125	16	TIP06F	11.3	STAWN1130TH	●
												STAWK1130TG	
	8	STAWLN1100S16	●	90.0	98.0	109.0	157.0	155	16	TIP06F	11.4	STAWN1140TH	●
												STAWK1140TG	
11.5 – 11.9	1.5	STAWSS1150S16	●	19.4	27.1	38.1	86.1	84	16	TIP06F	11.5	* STAWN1150TH	●
												STAWK1150TG	
	3	STAWSN1150S16	●	36.6	43.1	54.1	102.1	100	16	TIP06F	11.6	STAWN1160TH	●
												STAWK1160TG	
											11.7	STAWN1170TH	●
												STAWK1170TG	
	5	STAWMN1150S16	●	59.6	68.1	79.1	127.1	125	16	TIP06F	11.8	STAWN1180TH	●
												STAWK1180TG	
	8	STAWLN1150S16	●	94.1	98.1	109.1	157.1	155	16	TIP06F	11.9	STAWN1190TH	●
												STAWK1190TG	
12.0 – 12.4	1.5	STAWSS1200S16	●	20.2	29.2	41.2	89.2	87	16	TIP06F	12.0	* STAWN1200TH	●
												STAWK1200TG	
	3	STAWSN1200S16	●	38.2	47.2	59.2	107.2	105	16	TIP06F	12.1	STAWN1210TH	●
												STAWK1210TG	
											12.2	STAWN1220TH	●
												STAWK1220TG	
	5	STAWMN1200S16	●	62.2	72.2	84.2	132.2	130	16	TIP06F	12.3	STAWN1230TH	●
												STAWK1230TG	
	8	STAWLN1200S16	●	98.2	107.2	119.2	167.2	165	16	TIP06F	12.4	STAWN1240TH	●
												STAWK1240TG	

Nota 1) Las dimensiones superiores (*) sirven para la instalación de las placas.
Nota 2) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. (Nota: 1 placa en cada caja)

DESCRIPCIÓN PLACA ➤ M144
CONDICIONES DE CORTE ➤ M146
VER NOTA ➤ M147
REPUESTOS ➤ N001
DATOS TÉCNICOS ➤ P001

STAW

DC (mm)	Profundidad agujero (L/D)	Herramienta Referencia	Stock	Dimensiones (mm) LU	LBX	LH	OAL	LF	DCON	F W Llave	Placa DC (mm)	Referencia	Stock VP15TF
12.5 – 12.9	1.5	STAWSS1250S16	●	21.1	29.3	41.3	89.3	87	16	TIP06F	12.5	* STAWN1250TH	●
												STAWK1250TG	
	3	STAWSN1250S16	●	39.8	47.3	59.3	107.3	105	16	TIP06F	12.6	STAWN1260TH	●
												STAWK1260TG	
	5	STAWMN1250S16	●	64.8	72.3	84.3	132.3	130	16	TIP06F	12.7	STAWN1270TH	●
												STAWK1270TG	
											12.8	STAWN1280TH	●
												STAWK1280TG	
	8	STAWLN1250S16	●	102.3	107.3	119.3	167.3	165	16	TIP06F	12.9	STAWN1290TH	●
												STAWK1290TG	
13.0 – 13.4	1.5	STAWSS1300S16	●	21.9	32.4	45.4	93.4	91	16	TIP08W	13.0	* STAWN1300TH	●
												STAWK1300TG	
	3	STAWSN1300S16	●	41.4	51.4	64.4	112.4	110	16	TIP08W	13.1	STAWN1310TH	●
												STAWK1310TG	
											13.2	STAWN1320TH	●
												STAWK1320TG	
	5	STAWMN1300S16	●	67.4	76.4	89.4	137.4	135	16	TIP08W	13.3	STAWN1330TH	●
												STAWK1330TG	
	8	STAWLN1300S16	●	106.4	116.4	129.4	177.4	175	16	TIP08W	13.4	STAWN1340TH	●
												STAWK1340TG	
13.5 – 13.9	1.5	STAWSS1350S16	●	22.8	32.5	45.5	93.5	91	16	TIP08W	13.5	* STAWN1350TH	●
												STAWK1350TG	
	3	STAWSN1350S16	●	43.0	51.5	64.5	112.5	110	16	TIP08W	13.6	STAWN1360TH	●
												STAWK1360TG	
											13.7	STAWN1370TH	●
												STAWK1370TG	
	5	STAWMN1350S16	●	70.0	76.5	89.5	137.5	135	16	TIP08W	13.8	STAWN1380TH	●
												STAWK1380TG	
	8	STAWLN1350S16	●	110.5	116.5	129.5	177.5	175	16	TIP08W	13.9	STAWN1390TH	●
												STAWK1390TG	
14.0 – 14.4	1.5	STAWSS1400S16	●	23.5	33.5	47.5	95.5	93	16	TIP08W	14.0	* STAWN1400TH	●
												STAWK1400TG	
	3	STAWSN1400S16	●	44.5	55.5	69.5	117.5	115	16	TIP08W	14.1	STAWN1410TH	●
												STAWK1410TG	
											14.2	STAWN1420TH	●
												STAWK1420TG	
	5	STAWMN1400S16	●	72.5	85.5	99.5	147.5	145	16	TIP08W	14.3	STAWN1430TH	●
												STAWK1430TG	
	8	STAWLN1400S16	●	114.5	124.5	139.5	187.5	185	16	TIP08W	14.4	STAWN1440TH	●
												STAWK1440TG	
14.5 – 14.9	1.5	STAWSS1450S16	●	24.4	33.6	47.6	95.6	93	16	TIP08W	14.5	* STAWN1450TH	●
												STAWK1450TG	
	3	STAWSN1450S16	●	46.1	55.6	69.6	117.6	115	16	TIP08W	14.6	STAWN1460TH	●
												STAWK1460TG	
											14.7	STAWN1470TH	●
												STAWK1470TG	
	5	STAWMN1450S16	●	75.1	85.6	99.6	147.6	145	16	TIP08W	14.8	STAWN1480TH	●
												STAWK1480TG	
	8	STAWLN1450S16	●	118.6	124.6	139.6	187.6	185	16	TIP08W	14.9	STAWN1490TH	●
												STAWK1490TG	
15.0 – 15.4	1.5	STAWSS1500S20	●	25.2	35.7	50.7	100.7	98	20	TIP08W	15.0	* STAWN1500TH	●
												STAWK1500TG	
	3	STAWSN1500S20	●	47.7	62.7	77.7	127.7	125	20	TIP08W	15.1	STAWN1510TH	●
												STAWK1510TG	
											15.2	STAWN1520TH	●
												STAWK1520TG	
	5	STAWMN1500S20	●	77.7	92.7	107.7	157.7	155	20	TIP08W	15.3	STAWN1530TH	●
												STAWK1530TG	
	8	STAWLN1500S20	●	122.7	132.7	150.7	200.7	198	20	TIP08W	15.4	STAWN1540TH	●
												STAWK1540TG	

Nota 1) Las dimensiones superiores (*) sirven para la instalación de las placas
Nota 2) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

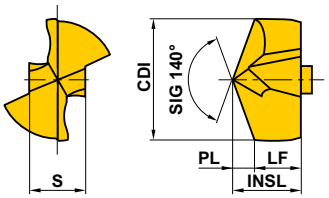
● : Stock Europa. (Nota: 1 placa en cada caja)

DC (mm)	Profundidad agujero (L/D)	Herramienta		Dimensiones (mm)						W	Placa		
		Referencia	Stock	LU	LBX	LH	OAL	LF	DCON	Llave	DC (mm)	Referencia	Stock VP15TF
15.5 – 16.4	1.5	**STAWSS1600S20**	●	26.1	36.8	52.8	102.8	100	20	TIP10W	15.5	* STAWN1550T	●
												STAWK1550TG	
											15.6	STAWN1560T	●
												STAWK1560TG	
											15.7	STAWN1570T	●
												STAWK1570TG	
	3	**STAWSN1600S20**	●	49.3	62.8	82.8	132.8	130	20	TIP10W	15.8	STAWN1580T	●
												STAWK1580TG	
											15.9	STAWN1590T	●
												STAWK1590TG	
	5	**STAWMN1600S20**	●	80.3	92.8	117.8	167.8	165	20	TIP10W	16.0	STAWN1600T	●
												STAWK1600TG	
											16.1	STAWN1610T	●
												STAWK1610TG	
											16.2	STAWN1620T	●
												STAWK1620TG	
	8	**STAWLN1600S20**	●	126.8	140.8	160.8	210.8	208	20	TIP10W	16.3	STAWN1630T	●
												STAWK1630TG	
											16.4	STAWN1640T	●
												STAWK1640TG	
16.5 – 17.4	1.5	**STAWSS1700S20**	●	27.8	39.0	56.0	106.0	103	20	TIP10W	16.5	* STAWN1650T	●
												STAWK1650TG	
											16.6	STAWN1660T	●
												STAWK1660TG	
											16.7	STAWN1670T	●
												STAWK1670TG	
	3	**STAWSN1700S20**	●	52.5	64.0	88.0	138.0	135	20	TIP10W	16.8	STAWN1680T	●
												STAWK1680TG	
											16.9	STAWN1690T	●
												STAWK1690TG	
	5	**STAWMN1700S20**	●	85.5	98.0	123.0	173.0	170	20	TIP10W	17.0	STAWN1700T	●
												STAWK1700TG	
											17.1	STAWN1710T	●
												STAWK1710TG	
											17.2	STAWN1720T	●
												STAWK1720TG	
	8	**STAWLN1700S20**	●	135.0	149.0	169.0	219.0	216	20	TIP10W	17.3	STAWN1730T	●
												STAWK1730TG	
											17.4	STAWN1740T	●
												STAWK1740TG	
17.5 – 18.4	1.5	**STAWSS1800S20**	●	29.5	40.2	58.2	108.2	105	20	TIP10W	17.5	* STAWN1750T	●
												STAWK1750TG	
											17.6	STAWN1760T	●
												STAWK1760TG	
											17.7	STAWN1770T	●
												STAWK1770TG	
	3	**STAWSN1800S20**	●	55.7	67.2	93.2	143.2	140	20	TIP10W	17.8	STAWN1780T	●
												STAWK1780TG	
											17.9	STAWN1790T	●
												STAWK1790TG	
	5	**STAWMN1800S20**	●	90.7	103.2	128.2	178.2	175	20	TIP10W	18.0	STAWN1800T	●
												STAWK1800TG	
											18.1	STAWN1810T	●
												STAWK1810TG	
											18.2	STAWN1820T	●
												STAWK1820TG	
	8	**STAWLN1800S20**	●	143.2	157.2	177.2	227.2	224	20	TIP10W	18.3	STAWN1830T	●
												STAWK1830TG	
											18.4	STAWN1840T	●
												STAWK1840TG	

DESCRIPCIÓN PLACA ➢ M144
CONDICIONES DE CORTE ➢ M146
VER NOTA ➢ M147
REPUESTOS ➢ N001
DATOS TÉCNICOS ➢ P001

STAW

PLACAS



Referencia	Recubrimiento VP15TF		Dimensiones (mm) CDI	INSL	LF	PL	S	Broca aplicable
STAWN1000TH	●		10.0	5.6	3.8	1.8	4.6	STAWSS1000S16 STAWSN1000S16 STAWMN1000S16 STAWLN1000S16
STAWN1010TH	●		10.1	5.6	3.8	1.8	4.6	
STAWN1020TH	●		10.2	5.7	3.8	1.9	4.6	
STAWN1030TH	●		10.3	5.7	3.8	1.9	4.6	
STAWN1040TH	●		10.4	5.7	3.8	1.9	4.6	
STAWN1050TH	●		10.5	5.9	4.0	1.9	4.8	STAWSS1050S16 STAWSN1050S16 STAWMN1050S16 STAWLN1050S16
STAWN1060TH	●		10.6	5.9	4.0	1.9	4.8	
STAWN1070TH	●		10.7	5.9	4.0	1.9	4.8	
STAWN1080TH	●		10.8	6.0	4.0	2.0	4.8	
STAWN1090TH	●		10.9	6.0	4.0	2.0	4.8	
STAWN1100TH	●		11.0	6.2	4.2	2.0	5.1	STAWSS1100S16 STAWSN1100S16 STAWMN1100S16 STAWLN1100S16
STAWN1110TH	●		11.1	6.2	4.2	2.0	5.1	
STAWN1120TH	●		11.2	6.2	4.2	2.0	5.1	
STAWN1130TH	●		11.3	6.3	4.2	2.1	5.1	
STAWN1140TH	●		11.4	6.3	4.2	2.1	5.1	
STAWN1150TH	●		11.5	6.5	4.4	2.1	5.3	STAWSS1150S16 STAWSN1150S16 STAWMN1150S16 STAWLN1150S16
STAWN1160TH	●		11.6	6.5	4.4	2.1	5.3	
STAWN1170TH	●		11.7	6.5	4.4	2.1	5.3	
STAWN1180TH	●		11.8	6.5	4.4	2.1	5.3	
STAWN1190TH	●		11.9	6.6	4.4	2.2	5.3	
STAWN1200TH	●		12.0	6.8	4.6	2.2	5.5	STAWSS1200S16 STAWSN1200S16 STAWMN1200S16 STAWLN1200S16
STAWN1210TH	●		12.1	6.8	4.6	2.2	5.5	
STAWN1220TH	●		12.2	6.8	4.6	2.2	5.5	
STAWN1230TH	●		12.3	6.8	4.6	2.2	5.5	
STAWN1240TH	●		12.4	6.9	4.6	2.3	5.5	
STAWN1250TH	●		12.5	7.1	4.8	2.3	5.8	STAWSS1250S16 STAWSN1250S16 STAWMN1250S16 STAWLN1250S16
STAWN1260TH	●		12.6	7.1	4.8	2.3	5.8	
STAWN1270TH	●		12.7	7.1	4.8	2.3	5.8	
STAWN1280TH	●		12.8	7.1	4.8	2.3	5.8	
STAWN1290TH	●		12.9	7.1	4.8	2.3	5.8	
STAWN1300TH	●		13.0	7.3	4.9	2.4	6.0	STAWSS1300S16 STAWSN1300S16 STAWMN1300S16 STAWLN1300S16
STAWN1310TH	●		13.1	7.3	4.9	2.4	6.0	
STAWN1320TH	●		13.2	7.3	4.9	2.4	6.0	
STAWN1330TH	●		13.3	7.3	4.9	2.4	6.0	
STAWN1340TH	●		13.4	7.3	4.9	2.4	6.0	
STAWN1350TH	●		13.5	7.6	5.1	2.5	6.2	STAWSS1350S16 STAWSN1350S16 STAWMN1350S16 STAWLN1350S16
STAWN1360TH	●		13.6	7.6	5.1	2.5	6.2	
STAWN1370TH	●		13.7	7.6	5.1	2.5	6.2	
STAWN1380TH	●		13.8	7.6	5.1	2.5	6.2	
STAWN1390TH	●		13.9	7.6	5.1	2.5	6.2	

● : Stock Europa. (Nota: 1 placa en cada caja)

Referencia	Recubrimiento VP15TF		Dimensiones (mm) CDI	INSL	LF	PL	S	Broca aplicable
STAWN1400TH	●		14.0	7.8	5.3	2.5	6.4	STAWSS1400S16 STAWSN1400S16 STAWMN1400S16 STAWLN1400S16
STAWN1410TH	●		14.1	7.9	5.3	2.6	6.4	
STAWN1420TH	●		14.2	7.9	5.3	2.6	6.4	
STAWN1430TH	●		14.3	7.9	5.3	2.6	6.4	
STAWN1440TH	●		14.4	7.9	5.3	2.6	6.4	
STAWN1450TH	●		14.5	8.1	5.5	2.6	6.7	STAWSS1450S16 STAWSN1450S16 STAWMN1450S16 STAWLN1450S16
STAWN1460TH	●		14.6	8.2	5.5	2.7	6.7	
STAWN1470TH	●		14.7	8.2	5.5	2.7	6.7	
STAWN1480TH	●		14.8	8.2	5.5	2.7	6.7	
STAWN1490TH	●		14.9	8.2	5.5	2.7	6.7	
STAWN1500TH	●		15.0	8.4	5.7	2.7	6.9	STAWSS1500S20 STAWSN1500S20 STAWMN1500S20 STAWLN1500S20
STAWN1510TH	●		15.1	8.4	5.7	2.7	6.9	
STAWN1520TH	●		15.2	8.5	5.7	2.8	6.9	
STAWN1530TH	●		15.3	8.5	5.7	2.8	6.9	
STAWN1540TH	●		15.4	8.5	5.7	2.8	6.9	
STAWN1550T	●		15.5	8.7	5.9	2.8	7.1	STAWSS1600S20 STAWSN1600S20 STAWMN1600S20 STAWLN1600S20
STAWN1560T	●		15.6	8.7	5.9	2.8	7.1	
STAWN1570T	●		15.7	8.8	5.9	2.9	7.1	
STAWN1580T	●		15.8	8.8	5.9	2.9	7.1	
STAWN1590T	●		15.9	8.8	5.9	2.9	7.1	
STAWN1600T	●		16.0	8.8	5.9	2.9	7.1	
STAWN1610T	●		16.1	8.8	5.9	2.9	7.1	
STAWN1620T	●		16.2	8.8	5.9	2.9	7.1	
STAWN1630T	●		16.3	8.9	5.9	3.0	7.1	
STAWN1640T	●		16.4	8.9	5.9	3.0	7.1	
STAWN1650T	●		16.5	9.3	6.3	3.0	7.6	STAWSS1700S20 STAWSN1700S20 STAWMN1700S20 STAWLN1700S20
STAWN1660T	●		16.6	9.3	6.3	3.0	7.6	
STAWN1670T	●		16.7	9.3	6.3	3.0	7.6	
STAWN1680T	●		16.8	9.4	6.3	3.1	7.6	
STAWN1690T	●		16.9	9.4	6.3	3.1	7.6	
STAWN1700T	●		17.0	9.4	6.3	3.1	7.6	
STAWN1710T	●		17.1	9.4	6.3	3.1	7.6	
STAWN1720T	●		17.2	9.4	6.3	3.1	7.6	
STAWN1730T	●		17.3	9.4	6.3	3.1	7.6	
STAWN1740T	●		17.4	9.5	6.3	3.2	7.6	
STAWN1750T	●		17.5	9.9	6.7	3.2	8.1	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
STAWN1760T	●		17.6	9.9	6.7	3.2	8.1	
STAWN1770T	●		17.7	9.9	6.7	3.2	8.1	
STAWN1780T	●		17.8	9.9	6.7	3.2	8.1	
STAWN1790T	●		17.9	10.0	6.7	3.3	8.1	
STAWN1800T	●		18.0	10.0	6.7	3.3	8.1	
STAWN1810T	●		18.1	10.0	6.7	3.3	8.1	
STAWN1820T	●		18.2	10.0	6.7	3.3	8.1	
STAWN1830T	●		18.3	10.0	6.7	3.3	8.1	
STAWN1840T	●		18.4	10.0	6.7	3.3	8.1	

CONDICIONES DE CORTE ➢ **M146**
VER NOTA ➢ **M147**
REPUESTOS ➢ **N001**
DATOS TÉCNICOS ➢ **P001**

STAW

■ANCHO DE HONING

Si se necesita una placa con honing diferente al estandar,
por favor vea los símbolos de abajo.

(Referencia placa)

S T A W N 1 0 0 0 T ◌

- S T A W: Nombre prducto STAW
- N: **N** : Uso general / **K** : Para Fundición
- 1 0 0 0: Diámetro de placa
- T: Símbolo del honing
- ◌: Tipo Honing

(Honing estándar)

Tipo Honing	Ancho de corte (mm)
F	0
G	0.02—0.05
H	0.05—0.10
- (Estándar)	0.10—0.15
K	0.15—0.20
S	0.20—0.25
M	0.25—0.30

CONDICIONES DE CORTE RECOMENDADAS

Material		Diámetro Broca / Condición / Dureza	ϕ10.0—ϕ12.9		ϕ13.0—ϕ13.9		ϕ14.0—ϕ15.4		ϕ15.5—ϕ18.4	
			Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)
P	Acero dulce	≤180HB	80 (60—100)	0.20 (0.15—0.25)	90 (70—110)	0.25 (0.20—0.30)	100 (80—120)	0.30 (0.25—0.35)	100 (80—120)	0.35 (0.25—0.40)
	Acero al carbono Acero aleado	180—280HB	80 (60—100)	0.20 (0.15—0.25)	90 (70—110)	0.25 (0.20—0.30)	100 (80—120)	0.30 (0.25—0.35)	100 (80—120)	0.35 (0.25—0.40)
		280—350HB	70 (60—90)	0.20 (0.15—0.25)	80 (60—100)	0.25 (0.20—0.30)	90 (70—110)	0.25 (0.20—0.30)	90 (70—110)	0.30 (0.20—0.35)
M	Acero inoxidable	≤200HB	40 (30—50)	0.13 (0.10—0.16)	50 (40—60)	0.15 (0.12—0.18)	60 (50—70)	0.17 (0.14—0.20)	60 (50—70)	0.17 (0.14—0.20)
K	Fundición	Resistencia a la tracción ≤350MPa	80 (60—100)	0.20 (0.15—0.25)	90 (70—110)	0.25 (0.20—0.30)	100 (80—120)	0.30 (0.25—0.35)	120 (80—140)	0.45 (0.35—0.55)
	Fundición dúctil	Resistencia a la tracción ≤450MPa	70 (60—90)	0.20 (0.15—0.25)	80 (60—100)	0.25 (0.20—0.30)	90 (70—110)	0.30 (0.25—0.35)	100 (80—120)	0.35 (0.25—0.40)

Nota 1) Al usar una broca para una profundidad de agujero de Dcx1.5, es posible aumentar la tasa de avance en aprox. un 20 %.
Nota 2) Al usar el portaherramientas de tipo DCx8, reduce la velocidad de corte en un 20 %.
Nota 3) Cuando se utiliza el portaherramientas de tipo DCx8, se recomienda realizar un agujero guía piloto.
Nota 4) Para el acero inoxidable, utilice un refrigerante interno. (No se recomienda la lubricación por pulverización ni MQL).

NOTAS DE UTILIZACIÓN

■INSTALACIÓN DE LA PLACA

1. Antes de introducir la placa compruebe que no hay ningún objeto extraño ni restos de suciedad en la ranura o hendidura del mango. Si es necesario, límpielo con aire comprimido.

2. Para aflojar el tornillo interno y abrir la boquilla del mango, utilice la llave que se incluye. A continuación coloque la placa en la ranura como indica la figura 1.
   *Cuando apriete, compruebe que la llave mantiene firmemente el contacto con la base de la cabeza del tornillo interno.

3. Una vez fijada la placa dentro de la ranura del mango, apriete el tornillo interno empujando al mismo tiempo con suavidad la placa hacia dentro de la cavidad, tal como indica la figura 2, para que quede bien sujeta y centrada.
   *Cuando apriete, compruebe que la llave mantiene firmemente el contacto con la base de la cabeza del tornillo interno.

Apriete el tornillo de fijación según el par que se indica a continuación.

Diám. Broca (mm)	Torsión N•m
10 －12.9	1
13 －15.4	2
15.5－18.4	2.5

4. Asegúrese de que no queda ningún espacio hueco entre la base de la placa y la ranura del mango.

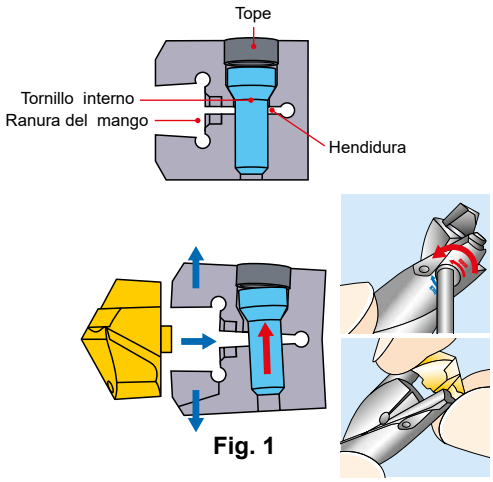


Fig. 1

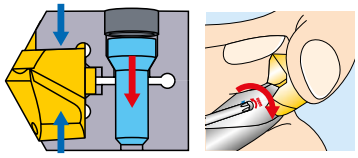
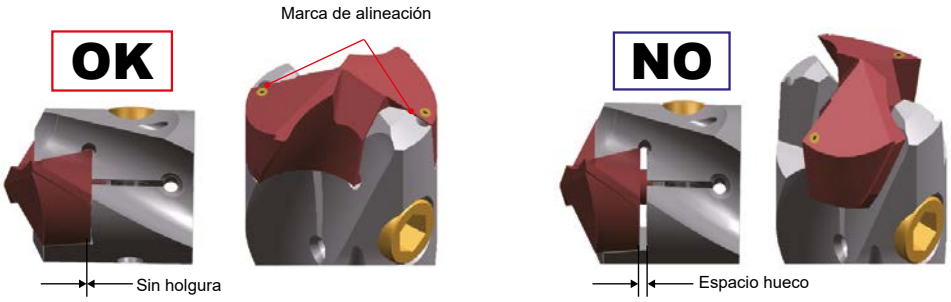


Fig. 2



Nota 1) Si las placas están mal o incorrectamente sujetas, puede resentirse su rendimiento en el taladrado e incluso llegar a romperse la broca. Asegurese, por tanto, de que coincidan las marcas de alineación que hay tanto en el cuerpo como en la placa.
A la hora de mecanizar, utilice siempre prendas y gafas de seguridad.

STAW

REPUESTOS

Broca aplicable	Referencia Pack (Tornillo interno y tope)	Tornillo interno	Tope
STAWSS/SN/MN/LN1000S16	WS203107TPS-35LH	WS203107TPS	WS35LH
STAWSS/SN/MN/LN1050S16	WS203107TPS-35LH	WS203107TPS	WS35LH
STAWSS/SN/MN/LN1100S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1150S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1200S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1250S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1300S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1350S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1400S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1450S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1500S20	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1600S20	WS304912TPS-55LH	WS304912TPS	WS55LH
STAWSS/SN/MN/LN1700S20	WS304912TPS-55LH	WS304912TPS	WS55LH
STAWSS/SN/MN/LN1800S20	WS304912TPS-55LH	WS304912TPS	WS55LH

Nota 1) Los respuestos van empaquetados con tornillo, la tuerca interna y el manual. Por favor, reemplazar las piezas, según el manual de instrucciones.

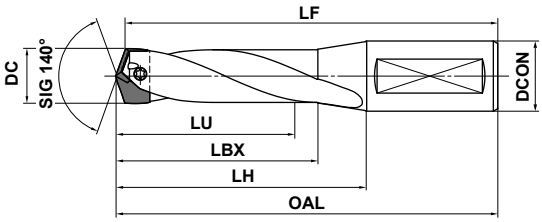
Notas

TAW

- Diseño del filo de corte ondulado para un mejor control de las virutas.
- Geometría dentada para mayor precisión de la placa.
- Cambio de placa muy fácil.

P | M | K | N | S | H

(Uso general)



HERRAMIENTAS

DC (mm)	Profundidad agujero (L/D)	Herramienta: Referencia	Herramienta: Stock	Dimensiones (mm): LU	LBX	LH	OAL	LF	DCON	Tornillo roscado	Llave	Plato	Lubricante anti-desplazamiento
18.5 – 19.4	3	TAWSN1900S25	●	58.9	71.4	102.4	158.4	155.0	25	WS304517T	TKY10T	WPT4405	MK1KS
	5	TAWMN1900S25	●	95.9	110.4	137.4	193.4	190.0	25	WS304517T	TKY10T	WPT4405	MK1KS
	8	TAWLN1900S25	●	151.4	165.4	188.4	244.4	241.0	25	WS304517T	TKY10T	WPT4405	MK1KS
19.5 – 20.4	3	TAWSN2000S25	●	62.0	75.5	102.5	158.5	155.0	25	WS304518T	TKY10T	WPT4405	MK1KS
	5	TAWMN2000S25	●	101.0	116.5	142.5	198.5	195.0	25	WS304518T	TKY10T	WPT4405	MK1KS
	8	TAWLN2000S25	●	159.5	173.5	196.5	252.5	249.0	25	WS304518T	TKY10T	WPT4405	MK1KS

Placa: DC (mm)	Referencia	Stock VP15TF	Stock VP10H
18.5	*TAWNH1850T	●	□
	TAWKH1850TG		
18.6	TAWNH1860T	●	□
	TAWKH1860TG		
18.7	TAWNH1870T	●	□
	TAWKH1870TG		
18.8	TAWNH1880T	●	□
	TAWKH1880TG		
18.9	TAWNH1890T	●	□
	TAWKH1890TG		
19.0	TAWNH1900T	●	□
	TAWKH1900TG		
19.1	TAWNH1910T	●	□
	TAWKH1910TG		
19.2	TAWNH1920T	●	□
	TAWKH1920TG		
19.3	TAWNH1930T	●	□
	TAWKH1930TG		
19.4	TAWNH1940T	●	□
	TAWKH1940TG		
19.5	*TAWNH1950T	●	□
	TAWKH1950TG		
19.6	TAWNH1960T	●	□
	TAWKH1960TG		
19.7	TAWNH1970T	●	□
	TAWKH1970TG		
19.8	TAWNH1980T	●	□
	TAWKH1980TG		
19.9	TAWNH1990T	●	□
	TAWKH1990TG		
20.0	TAWNH2000T	●	□
	TAWKH2000TG		
20.1	TAWNH2010T	□	□
	TAWKH2010TG		
20.2	TAWNH2020T	□	□
	TAWKH2020TG		
20.3	TAWNH2030T	□	□
	TAWKH2030TG		
20.4	TAWNH2040T	□	□
	TAWKH2040TG		

Nota 1) Las dimensiones superiores (*) sirven para la instalación de las placas
Nota 2) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. □ : A fabricar según demanda.
(Nota: 1 placa en cada caja)

DC (mm)	Profundidad agujero (L/D)	Herramienta: Referencia	Herramienta: Stock	Dimensiones (mm): LU	LBX	LH	OAL	LF	DCON	Tornillo roscado	Llave	Plato	Lubricante anti-desplazamiento
20.5 – 21.4	3	TAWSN2100S25	●	65.2	78.7	102.7	158.7	155.0	25	WS304518T	TKY10T	WPT4405	MK1KS
	5	TAWMN2100S25	●	106.2	121.7	142.7	198.7	195.0	25	WS304518T	TKY10T	WPT4405	MK1KS
	8	TAWLN2100S25	●	167.7	181.7	205.7	261.7	258.0	25	WS304518T	TKY10T	WPT4405	MK1KS
21.5 – 22.4	3	TAWSN2200S25	●	68.4	83.2	108.2	164.2	160.3	25	WS355520T	TKY15T	WPT4405	MK1KS
	5	TAWMN2200S25	●	111.4	128.2	148.2	204.2	200.3	25	WS355520T	TKY15T	WPT4405	MK1KS
	8	TAWLN2200S25	●	175.9	189.9	213.9	269.9	266.0	25	WS355520T	TKY15T	WPT4405	MK1KS
22.5 – 23.4	3	TAWSN2300S25	●	71.6	86.4	108.4	164.4	160.3	25	WS355521T	TKY15T	WPT4405	MK1KS
	5	TAWMN2300S25	●	116.6	133.4	158.4	214.4	210.3	25	WS355521T	TKY15T	WPT4405	MK1KS
	8	TAWLN2300S25	●	184.1	198.1	227.1	283.1	279.0	25	WS355521T	TKY15T	WPT4405	MK1KS

Placa: DC (mm)	Referencia	Stock VP15TF	Stock VP10H
20.5	*TAWNH2050T	●	□
	TAWKH2050TG		
20.6	TAWNH2060T	□	□
	TAWKH2060TG		
20.7	TAWNH2070T	□	□
	TAWKH2070TG		
20.8	TAWNH2080T	□	□
	TAWKH2080TG		
20.9	TAWNH2090T	□	□
	TAWKH2090TG		
21.0	TAWNH2100T	●	□
	TAWKH2100TG		
21.1	TAWNH2110T	□	□
	TAWKH2110TG		
21.2	TAWNH2120T	□	□
	TAWKH2120TG		
21.3	TAWNH2130T	□	□
	TAWKH2130TG		
21.4	TAWNH2140T	□	□
	TAWKH2140TG		
21.5	*TAWNH2150T	●	□
	TAWKH2150TG		
21.6	TAWNH2160T	□	□
	TAWKH2160TG		
21.7	TAWNH2170T	□	□
	TAWKH2170TG		
21.8	TAWNH2180T	□	□
	TAWKH2180TG		
21.9	TAWNH2190T	□	□
	TAWKH2190TG		
22.0	TAWNH2200T	●	□
	TAWKH2200TG		
22.1	TAWNH2210T	□	□
	TAWKH2210TG		
22.2	TAWNH2220T	□	□
	TAWKH2220TG		
22.3	TAWNH2230T	□	□
	TAWKH2230TG		
22.4	TAWNH2240T	□	□
	TAWKH2240TG		
22.5	*TAWNH2250T	●	□
	TAWKH2250TG		
22.6	TAWNH2260T	□	□
	TAWKH2260TG		
22.7	TAWNH2270T	□	□
	TAWKH2270TG		
22.8	TAWNH2280T	□	□
	TAWKH2280TG		
22.9	TAWNH2290T	□	□
	TAWKH2290TG		
23.0	TAWNH2300T	●	□
	TAWKH2300TG		
23.1	TAWNH2310T	□	□
	TAWKH2310TG		
23.2	TAWNH2320T	□	□
	TAWKH2320TG		
23.3	TAWNH2330T	□	□
	TAWKH2330TG		
23.4	TAWNH2340T	□	□
	TAWKH2340TG		

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TAW

DC (mm)	Profundidad agujero (L/D)	Herramienta: Referencia	Herramienta: Stock	Dimensiones (mm): LU	LBX	LH	OAL	LF	DCON	Tornillo roscado	Llave	Plato	Lubricante anti-desplazamiento	Placa: DC (mm)	Placa: Referencia	Stock: VP15TF	Stock: VP10H
23.5 – 24.4	3	TAWSN2400S32	●	74.8	90.6	114.6	174.6	170.3	32	WS355521T	TKY15T	WPT4405	MK1KS	23.5	*TAWNH2350T	●	□
															TAWKH2350TG		
														23.6	TAWNH2360T	□	□
															TAWKH2360TG		
														23.7	TAWNH2370T	□	□
															TAWKH2370TG		
														23.8	TAWNH2380T	□	□
															TAWKH2380TG		
														23.9	TAWNH2390T	□	□
															TAWKH2390TG		
	5	TAWMN2400S32	●	121.8	139.6	164.6	224.6	220.3	32	WS355521T	TKY15T	WPT4405	MK1KS	24.0	TAWNH2400T	●	□
															TAWKH2400TG		
														24.1	TAWNH2410T	□	□
															TAWKH2410TG		
														24.2	TAWNH2420T	□	□
															TAWKH2420TG		
	8	TAWLN2400S32	●	192.3	206.6	236.6	296.6	292.3	32	WS355521T	TKY15T	WPT4405	MK1KS	24.3	TAWNH2430T	□	□
															TAWKH2430TG		
														24.4	TAWNH2440T	□	□
															TAWKH2440TG		
24.5 – 25.4	3	TAWSN2500S32	●	78.0	93.1	115.1	175.1	170.6	32	WS406023T	TKY25T	WPT4405	MK1KS	24.5	*TAWNH2450T	●	□
															TAWKH2450TG		
														24.6	TAWNH2460T	□	□
															TAWKH2460TG		
														24.7	TAWNH2470T	□	□
															TAWKH2470TG		
														24.8	TAWNH2480T	□	□
															TAWKH2480TG		
														24.9	TAWNH2490T	□	□
															TAWKH2490TG		
	5	TAWMN2500S32	●	127.0	145.1	170.1	230.1	225.6	32	WS406023T	TKY25T	WPT4405	MK1KS	25.0	TAWNH2500T	●	□
															TAWKH2500TG		
														25.1	TAWNH2510T	□	□
															TAWKH2510TG		
														25.2	TAWNH2520T	□	□
															TAWKH2520TG		
	8	TAWLN2500S32	●	200.5	215.1	245.1	305.1	300.6	32	WS406023T	TKY25T	WPT4405	MK1KS	25.3	TAWNH2530T	□	□
															TAWKH2530TG		
														25.4	TAWNH2540T	□	□
															TAWKH2540TG		
25.5 – 26.4	3	TAWSN2600S32	●	81.1	97.2	120.2	180.2	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS	25.5	*TAWNH2550T	●	□
															TAWKH2550TG		
														25.6	TAWNH2560T	□	□
															TAWKH2560TG		
														25.7	TAWNH2570T	□	□
															TAWKH2570TG		
														25.8	TAWNH2580T	□	□
															TAWKH2580TG		
														25.9	TAWNH2590T	□	□
															TAWKH2590TG		
	5	TAWMN2600S32	●	132.1	151.2	175.2	235.2	230.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.0	TAWNH2600T	●	□
															TAWKH2600TG		
														26.1	TAWNH2610T	□	□
															TAWKH2610TG		
														26.2	TAWNH2620T	□	□
															TAWKH2620TG		
	8	TAWLN2600S32	●	208.6	223.2	253.2	313.2	308.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.3	TAWNH2630T	□	□
															TAWKH2630TG		
														26.4	TAWNH2640T	□	□
															TAWKH2640TG		

Nota 1) Las dimensiones superiores (*) sirven para la instalación de las placas
Nota 2) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. □ : A fabricar según demanda.
(Nota: 1 placa en cada caja)

DC (mm)	Profundidad agujero (L/D)	Herramienta: Referencia	Herramienta: Stock	Dimensiones (mm): LU	LBX	LH	OAL	LF	DCON	Tornillo roscado	Llave	Plato	Lubricante anti-desplazamiento
26.5 – 27.4	3	TAWSN2700S32	●	84.3	99.4	120.4	180.4	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS
	5	TAWMN2700S32	●	137.3	156.4	180.4	240.4	235.6	32	WS406024T	TKY25T	WPT4405	MK1KS
	8	TAWLN2700S32	●	216.8	231.4	261.4	321.4	316.6	32	WS406024T	TKY25T	WPT4405	MK1KS
27.5 – 28.4	3	TAWSN2800S32	●	87.5	102.2	125.2	185.2	180.2	32	WS508026T	TKY27T	WPT4405	MK1KS
	5	TAWMN2800S32	●	142.5	162.2	185.2	245.2	240.2	32	WS508026T	TKY27T	WPT4405	MK1KS
	8	TAWLN2800S32	●	225.0	239.2	269.2	329.2	324.2	32	WS508026T	TKY27T	WPT4405	MK1KS
28.5 – 29.4	3	TAWSN2900S32	●	90.7	105.4	130.4	190.4	185.2	32	WS508027T	TKY27T	WPT4405	MK1KS
	5	TAWMN2900S32	●	147.7	167.4	190.4	250.4	245.2	32	WS508027T	TKY27T	WPT4405	MK1KS
	8	TAWLN2900S32	●	233.2	247.4	277.4	337.4	332.2	32	WS508027T	TKY27T	WPT4405	MK1KS

Placa: DC (mm)	Referencia	Stock VP15TF	Stock VP10H
26.5	*TAWNH2650T	●	□
	TAWKH2650TG		
26.6	TAWNH2660T	□	□
	TAWKH2660TG		
26.7	TAWNH2670T	□	□
	TAWKH2670TG		
26.8	TAWNH2680T	□	□
	TAWKH2680TG		
26.9	TAWNH2690T	□	□
	TAWKH2690TG		
27.0	TAWNH2700T	●	□
	TAWKH2700TG		
27.1	TAWNH2710T	□	□
	TAWKH2710TG		
27.2	TAWNH2720T	□	□
	TAWKH2720TG		
27.3	TAWNH2730T	□	□
	TAWKH2730TG		
27.4	TAWNH2740T	□	□
	TAWKH2740TG		
27.5	*TAWNH2750T	●	□
	TAWKH2750TG		
27.6	TAWNH2760T	□	□
	TAWKH2760TG		
27.7	TAWNH2770T	□	□
	TAWKH2770TG		
27.8	TAWNH2780T	□	□
	TAWKH2780TG		
27.9	TAWNH2790T	□	□
	TAWKH2790TG		
28.0	TAWNH2800T	●	□
	TAWKH2800TG		
28.1	TAWNH2810T	□	□
	TAWKH2810TG		
28.2	TAWNH2820T	□	□
	TAWKH2820TG		
28.3	TAWNH2830T	□	□
	TAWKH2830TG		
28.4	TAWNH2840T	□	□
	TAWKH2840TG		
28.5	*TAWNH2850T	●	□
	TAWKH2850TG		
28.6	TAWNH2860T	□	□
	TAWKH2860TG		
28.7	TAWNH2870T	□	□
	TAWKH2870TG		
28.8	TAWNH2880T	□	□
	TAWKH2880TG		
28.9	TAWNH2890T	□	□
	TAWKH2890TG		
29.0	TAWNH2900T	●	□
	TAWKH2900TG		
29.1	TAWNH2910T	□	□
	TAWKH2910TG		
29.2	TAWNH2920T	□	□
	TAWKH2920TG		
29.3	TAWNH2930T	□	□
	TAWKH2930TG		
29.4	TAWNH2940T	□	□
	TAWKH2940TG		

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TAW

DC (mm)	Profundidad agujero (L/D)	Herramienta: Referencia	Herramienta: Stock	Dimensiones (mm): LU	LBX	LH	OAL	LF	DCON	Tornillo roscado	Llave	Plato	Lubricante anti-desplazamiento
29.5 – 30.4	3	TAWSN3000S32	●	93.9	109.6	130.6	190.6	185.2	32	WS508027T	TKY27T	WPT4405	MK1KS
29.5 – 30.4	5	TAWMN3000S32	●	152.9	172.6	200.6	260.6	255.2	32	WS508027T	TKY27T	WPT4405	MK1KS
29.5 – 30.4	8	TAWLN3000S32	●	241.4	255.6	290.6	350.6	345.2	32	WS508027T	TKY27T	WPT4405	MK1KS

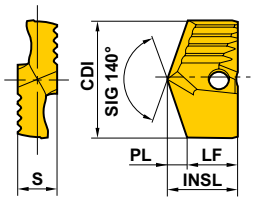
Placa: DC (mm)	Referencia	Stock VP15TF	Stock VP10H
29.5	*TAWNH2950T	●	□
	TAWKH2950TG		
29.6	TAWNH2960T	□	□
	TAWKH2960TG		
29.7	TAWNH2970T	□	□
	TAWKH2970TG		
29.8	TAWNH2980T	□	□
	TAWKH2980TG		
29.9	TAWNH2990T	□	□
	TAWKH2990TG		
30.0	TAWNH3000T	●	□
	TAWKH3000TG		
30.1	TAWNH3010T	□	□
	TAWKH3010TG		
30.2	TAWNH3020T	□	□
	TAWKH3020TG		
30.3	TAWNH3030T	□	□
	TAWKH3030TG		
30.4	TAWNH3040T	□	□
	TAWKH3040TG		

Nota 1) Las dimensiones superiores (*) sirven para la instalación de las placas
Nota 2) Póngase en contacto con nosotros para cualquier geometría que no esté en este catálogo (p.ej. se pueden fabricar bajo pedido diferentes diámetros y longitudes).

● : Stock Europa. □ : A fabricar según demanda.
(Nota: 1 placa en cada caja)

PLACAS

Tipo H



Referencia	Stock VP15TF	Stock VP10H	Dimensiones (mm) CDI	INSL	LF	PL	S	Broca aplicable
TAWNH1850T	●	□	18.5	12.7	9.3	3.4	7.0	TAWSN 1900S25 / TAWMN 1900S25 / TAWLN 1900S25
TAWNH1860T	●	□	18.6	12.7	9.3	3.4	7.0	
TAWNH1870T	●	□	18.7	12.7	9.3	3.4	7.0	
TAWNH1880T	●	□	18.8	12.7	9.3	3.4	7.0	
TAWNH1890T	●	□	18.9	12.7	9.3	3.4	7.0	
TAWNH1900T	●	□	19.0	12.7	9.2	3.5	7.0	
TAWNH1910T	●	□	19.1	12.7	9.2	3.5	7.0	
TAWNH1920T	●	□	19.2	12.7	9.2	3.5	7.0	
TAWNH1930T	●	□	19.3	12.7	9.2	3.5	7.0	
TAWNH1940T	●	□	19.4	12.7	9.2	3.5	7.0	
TAWNH1950T	●	□	19.5	12.6	9.1	3.5	7.0	TAWSN 2000S25 / TAWMN 2000S25 / TAWLN 2000S25
TAWNH1960T	●	□	19.6	12.7	9.1	3.6	7.0	
TAWNH1970T	●	□	19.7	12.7	9.1	3.6	7.0	
TAWNH1980T	●	□	19.8	12.7	9.1	3.6	7.0	
TAWNH1990T	●	□	19.9	12.7	9.1	3.6	7.0	
TAWNH2000T	●	□	20.0	12.6	9.0	3.6	7.0	
TAWNH2010T	□	□	20.1	12.7	9.0	3.7	7.0	
TAWNH2020T	□	□	20.2	12.7	9.0	3.7	7.0	
TAWNH2030T	□	□	20.3	12.7	9.0	3.7	7.0	
TAWNH2040T	□	□	20.4	12.7	9.0	3.7	7.0	
TAWNH2050T	●	□	20.5	12.6	8.9	3.7	7.0	TAWSN 2100S25 / TAWMN 2100S25 / TAWLN 2100S25
TAWNH2060T	□	□	20.6	12.6	8.9	3.7	7.0	
TAWNH2070T	□	□	20.7	12.7	8.9	3.8	7.0	
TAWNH2080T	□	□	20.8	12.7	8.9	3.8	7.0	
TAWNH2090T	□	□	20.9	12.7	8.9	3.8	7.0	
TAWNH2100T	●	□	21.0	12.6	8.8	3.8	7.0	
TAWNH2110T	□	□	21.1	12.6	8.8	3.8	7.0	
TAWNH2120T	□	□	21.2	12.7	8.8	3.9	7.0	
TAWNH2130T	□	□	21.3	12.7	8.8	3.9	7.0	
TAWNH2140T	□	□	21.4	12.7	8.8	3.9	7.0	
TAWNH2150T	●	□	21.5	14.5	10.6	3.9	8.0	TAWSN 2200S25 / TAWMN 2200S25 / TAWLN 2200S25
TAWNH2160T	□	□	21.6	14.5	10.6	3.9	8.0	
TAWNH2170T	□	□	21.7	14.5	10.6	3.9	8.0	
TAWNH2180T	□	□	21.8	14.6	10.6	4.0	8.0	
TAWNH2190T	□	□	21.9	14.6	10.6	4.0	8.0	
TAWNH2200T	●	□	22.0	14.5	10.5	4.0	8.0	
TAWNH2210T	□	□	22.1	14.5	10.5	4.0	8.0	
TAWNH2220T	□	□	22.2	14.5	10.5	4.0	8.0	
TAWNH2230T	□	□	22.3	14.6	10.5	4.1	8.0	
TAWNH2240T	□	□	22.4	14.6	10.5	4.1	8.0	

Referencia	Stock VP15TF	Stock VP10H	Dimensiones (mm) CDI	INSL	LF	PL	S	Broca aplicable
TAWNH2250T	●	□	22.5	14.5	10.4	4.1	8.0	TAWSN 2300S25 / TAWMN 2300S25 / TAWLN 2300S25
TAWNH2260T	□	□	22.6	14.5	10.4	4.1	8.0	
TAWNH2270T	□	□	22.7	14.5	10.4	4.1	8.0	
TAWNH2280T	□	□	22.8	14.5	10.4	4.1	8.0	
TAWNH2290T	□	□	22.9	14.6	10.4	4.2	8.0	
TAWNH2300T	●	□	23.0	14.5	10.3	4.2	8.0	
TAWNH2310T	□	□	23.1	14.5	10.3	4.2	8.0	
TAWNH2320T	□	□	23.2	14.5	10.3	4.2	8.0	
TAWNH2330T	□	□	23.3	14.5	10.3	4.2	8.0	
TAWNH2340T	□	□	23.4	14.6	10.3	4.3	8.0	
TAWNH2350T	●	□	23.5	14.5	10.2	4.3	8.0	TAWSN 2400S32 / TAWMN 2400S32 / TAWLN 2400S32
TAWNH2360T	□	□	23.6	14.5	10.2	4.3	8.0	
TAWNH2370T	□	□	23.7	14.5	10.2	4.3	8.0	
TAWNH2380T	□	□	23.8	14.5	10.2	4.3	8.0	
TAWNH2390T	□	□	23.9	14.5	10.2	4.3	8.0	
TAWNH2400T	●	□	24.0	14.5	10.1	4.4	8.0	
TAWNH2410T	□	□	24.1	14.5	10.1	4.4	8.0	
TAWNH2420T	□	□	24.2	14.5	10.1	4.4	8.0	
TAWNH2430T	□	□	24.3	14.5	10.1	4.4	8.0	
TAWNH2440T	□	□	24.4	14.5	10.1	4.4	8.0	
TAWNH2450T	●	□	24.5	16.2	11.7	4.5	9.0	TAWSN 2500S32 / TAWMN 2500S32 / TAWLN 2500S32
TAWNH2460T	□	□	24.6	16.2	11.7	4.5	9.0	
TAWNH2470T	□	□	24.7	16.2	11.7	4.5	9.0	
TAWNH2480T	□	□	24.8	16.2	11.7	4.5	9.0	
TAWNH2490T	□	□	24.9	16.2	11.7	4.5	9.0	
TAWNH2500T	●	□	25.0	16.1	11.6	4.5	9.0	
TAWNH2510T	□	□	25.1	16.2	11.6	4.6	9.0	
TAWNH2520T	□	□	25.2	16.2	11.6	4.6	9.0	
TAWNH2530T	□	□	25.3	16.2	11.6	4.6	9.0	
TAWNH2540T	□	□	25.4	16.2	11.6	4.6	9.0	
TAWNH2550T	●	□	25.5	16.1	11.5	4.6	9.0	TAWSN 2600S32 / TAWMN 2600S32 / TAWLN 2600S32
TAWNH2560T	□	□	25.6	16.2	11.5	4.7	9.0	
TAWNH2570T	□	□	25.7	16.2	11.5	4.7	9.0	
TAWNH2580T	□	□	25.8	16.2	11.5	4.7	9.0	
TAWNH2590T	□	□	25.9	16.2	11.5	4.7	9.0	
TAWNH2600T	●	□	26.0	16.1	11.4	4.7	9.0	
TAWNH2610T	□	□	26.1	16.1	11.4	4.7	9.0	
TAWNH2620T	□	□	26.2	16.2	11.4	4.8	9.0	
TAWNH2630T	□	□	26.3	16.2	11.4	4.8	9.0	
TAWNH2640T	□	□	26.4	16.2	11.4	4.8	9.0	

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DATOS TÉCNICOS ➤ P001

TAW

Referencia	Stock VP15TF	Stock VP10H	Dimensiones (mm) CDI	INSL	LF	PL	S	Broca aplicable
TAWNH2650T	●	□	26.5	16.1	11.3	4.8	9.0	TAWSN 2700S32 / TAWMN 2700S32 / TAWLN 2700S32
TAWNH2660T	□	□	26.6	16.1	11.3	4.8	9.0	
TAWNH2670T	□	□	26.7	16.2	11.3	4.9	9.0	
TAWNH2680T	□	□	26.8	16.2	11.3	4.9	9.0	
TAWNH2690T	□	□	26.9	16.2	11.3	4.9	9.0	
TAWNH2700T	●	□	27.0	16.1	11.2	4.9	9.0	
TAWNH2710T	□	□	27.1	16.1	11.2	4.9	9.0	
TAWNH2720T	□	□	27.2	16.1	11.2	4.9	9.0	
TAWNH2730T	□	□	27.3	16.2	11.2	5.0	9.0	
TAWNH2740T	□	□	27.4	16.2	11.2	5.0	9.0	
TAWNH2750T	●	□	27.5	17.3	12.3	5.0	10.0	TAWSN 2800S32 / TAWMN 2800S32 / TAWLN 2800S32
TAWNH2760T	□	□	27.6	17.3	12.3	5.0	10.0	
TAWNH2770T	□	□	27.7	17.3	12.3	5.0	10.0	
TAWNH2780T	□	□	27.8	17.4	12.3	5.1	10.0	
TAWNH2790T	□	□	27.9	17.4	12.3	5.1	10.0	
TAWNH2800T	●	□	28.0	17.3	12.2	5.1	10.0	
TAWNH2810T	□	□	28.1	17.3	12.2	5.1	10.0	
TAWNH2820T	□	□	28.2	17.3	12.2	5.1	10.0	
TAWNH2830T	□	□	28.3	17.4	12.2	5.2	10.0	
TAWNH2840T	□	□	28.4	17.4	12.2	5.2	10.0	

Referencia	Stock VP15TF	Stock VP10H	Dimensiones (mm) CDI	INSL	LF	PL	S	Broca aplicable
TAWNH2850T	●	□	28.5	17.3	12.1	5.2	10.0	TAWSN 2900S32 / TAWMN 2900S32 / TAWLN 2900S32
TAWNH2860T	□	□	28.6	17.3	12.1	5.2	10.0	
TAWNH2870T	□	□	28.7	17.3	12.1	5.2	10.0	
TAWNH2880T	□	□	28.8	17.3	12.1	5.2	10.0	
TAWNH2890T	□	□	28.9	17.4	12.1	5.3	10.0	
TAWNH2900T	●	□	29.0	17.3	12.0	5.3	10.0	
TAWNH2910T	□	□	29.1	17.3	12.0	5.3	10.0	
TAWNH2920T	□	□	29.2	17.3	12.0	5.3	10.0	
TAWNH2930T	□	□	29.3	17.3	12.0	5.3	10.0	
TAWNH2940T	□	□	29.4	17.4	12.0	5.4	10.0	
TAWNH2950T	●	□	29.5	17.3	11.9	5.4	10.0	TAWSN 3000S32 / TAWMN 3000S32 / TAWLN 3000S32
TAWNH2960T	□	□	29.6	17.3	11.9	5.4	10.0	
TAWNH2970T	□	□	29.7	17.3	11.9	5.4	10.0	
TAWNH2980T	□	□	29.8	17.3	11.9	5.4	10.0	
TAWNH2990T	□	□	29.9	17.3	11.9	5.4	10.0	
TAWNH3000T	●	□	30.0	17.3	11.8	5.5	10.0	
TAWNH3010T	□	□	30.1	17.3	11.8	5.5	10.0	
TAWNH3020T	□	□	30.2	17.3	11.8	5.5	10.0	
TAWNH3030T	□	□	30.3	17.3	11.8	5.5	10.0	
TAWNH3040T	□	□	30.4	17.3	11.8	5.5	10.0	

● : Stock Europa. □ : A fabricar según demanda.
(Nota: 1 placa en cada caja)

CONDICIONES DE CORTE ➢ M157
VER NOTA ➢ M158
REPUESTOS ➢ N001
DATOS TÉCNICOS ➢ P001

CONDICIONES DE CORTE RECOMENDADAS

Material		Diámetro Broca	ϕ18.5−ϕ21.4		ϕ21.5−ϕ24.4	
		Condición / Dureza	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)
P	Acero dulce	≤180HB	90 (70−110)	0.25 (0.20−0.30)	100 (80−120)	0.30 (0.25−0.35)
	Acero al carbono Acero aleado	180−280HB	80 (60−100)	0.25 (0.20−0.30)	90 (70−110)	0.30 (0.25−0.35)
		280−350HB	70 (50−90)	0.20 (0.15−0.25)	80 (60−100)	0.25 (0.20−0.30)
M	Acero inoxidable	≤200HB	60 (50−70)	0.20 (0.15−0.22)	60 (50−70)	0.20 (0.15−0.22)
K	Fundición	Resistencia a la tracción ≤350MPa	120 (60−140)	0.25 (0.20−0.30)	130 (80−150)	0.35 (0.25−0.40)
	Fundición dúctil	Resistencia a la tracción ≤450MPa	80 (60−90)	0.25 (0.20−0.30)	90 (60−100)	0.30 (0.25−0.35)

Material		Diámetro Broca	ϕ24.5−ϕ27.4		ϕ27.5−ϕ30.4	
		Condición / Dureza	Velocidad de corte (m/min)	Avance (mm/rev.)	Velocidad de corte (m/min)	Avance (mm/rev.)
P	Acero dulce	≤180HB	110 (80−120)	0.30 (0.25−0.35)	110 (80−120)	0.30 (0.25−0.35)
	Acero al carbono Acero aleado	180−280HB	100 (80−120)	0.30 (0.25−0.35)	100 (80−120)	0.30 (0.25−0.35)
		280−350HB	90 (70−110)	0.25 (0.20−0.30)	90 (70−110)	0.25 (0.20−0.30)
M	Acero inoxidable	≤200HB	70 (60−80)	0.25 (0.20−0.28)	70 (60−80)	0.25 (0.20−0.28)
K	Fundición	Resistencia a la tracción ≤350MPa	140 (90−160)	0.35 (0.25−0.40)	140 (90−160)	0.40 (0.30−0.45)
	Fundición dúctil	Resistencia a la tracción ≤450MPa	100 (80−110)	0.30 (0.25−0.35)	100 (80−110)	0.30 (0.25−0.35)

Nota 1) Se recomienda el bruñido tipo H a la hora de mecanizar aceros dulces e inoxidables.
Nota 2) Solo recomendado para el uso de una máquina de gran rigidez. Utilizar el sistema de refrigeración interna cuando mecanizamos el acero inoxidable. (MQL y mist no se debe utilizar)

REPUESTOS ➢ N001
DATOS TÉCNICOS ➢ P001

TAW

■ANCHO DE HONING

Si se necesita una placa con honing diferente al estandar, por favor ver simbolos de abajo.

(Referencia placa)

T A W N H 1 8 5 0 T ○

- **T A W**: Nombre prducto TAW
- **N**: **N** : Uso general
- **H**: **H** : Tipo H
- **1 8 5 0**: Diámetro de placa
- **T**: Símbolo del honing
- **○**: Tipo Honing

(Honing estándar)

Tipo Honing	Ancho de corte (mm)
F	0
G	0.02—0.05
H	0.05—0.10
- (Estándar)	0.10—0.15
S	0.20—0.25
M	0.25—0.30

NOTAS DE UTILIZACIÓN

■INSTALACIÓN DE LA PLACA

- Quite el tornillo para instalar la placa. (Placa tipo H)
- Coger la placa con la parte dentada hacia abajo y deslizarla en la ranura del cuerpo de la broca.
- Amarrar la placa roscando el tornillo con la llave especial suavemente como se muestra. (Figura 1)
- Comprobar que entre a la placa y el cuerpo de la fresa no hay ningún hueco. (Figure 2)

Apriete el tornillo de fijación según la torsión que se indica a continuación.

Diám. Broca	Torsión
ø14—ø15	2.0N•m
ø16—ø18	2.0N•m
ø19—ø21	3.5N•m
ø22—ø24	5.5N•m
ø25—ø27	8.5N•m
ø28—ø30	12.0N•m

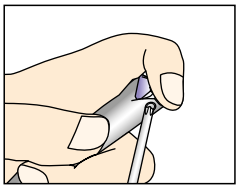
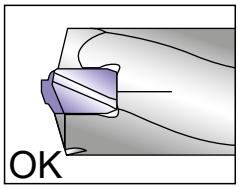


Fig. 1



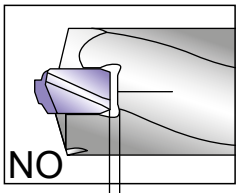
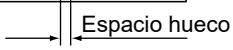


Fig. 2



CAMBIO DE LA PLACA

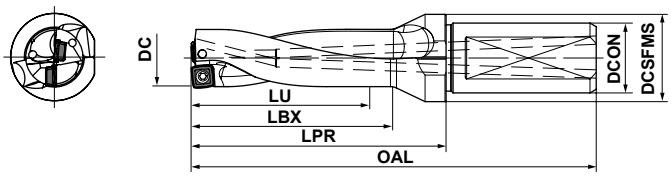
- Las dientes de la broca deben de estar completamente limpios y tambien el asiento para instalar la nueva broca.

Notas

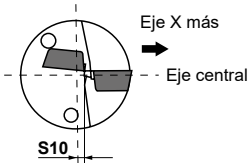
MVX

- Combinación ideal de placa exterior de CVD y placa interior de PVD.
- Cuerpo de gran rigidez que permite el mecanizado de agujeros con una profundidad L/D=6.

P | M | K | N | S | H



Desviación máxima durante el torneado



L/D	Tolerancia al mecanizado (guía) (mm) ø14.0−ø33.0	ø33.5−ø47.0	ø48.0−ø63.0
2D, 3D	0 / + 0.25	0 / + 0.3	0 / + 0.3
4D, 5D	0 / + 0.35	0 / + 0.4	0 / + 0.45
6D	0 / + 0.45	0 / + 0.6	

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	F Llave
NEW 14.0	2	MVX1400X2F20	●	2	28	35	50	93	20	25	0.6	SO◌X05	TPS20-1	TIP06F
	3	MVX1400X3F20	●	2	42	49	64	107	20	25	0.6	SO◌X05	TPS20-1	TIP06F
	4	MVX1400X4F20	●	2	56	63	78	121	20	25	0.6	SO◌X05	TPS20-1	TIP06F
	5	MVX1400X5F20	●	2	70	77	92	135	20	25	0.6	SO◌X05	TPS20-1	TIP06F
NEW 14.5	2	MVX1450X2F20	●	2	29	36	51	94	20	25	0.5	SO◌X05	TPS20-1	TIP06F
	3	MVX1450X3F20	●	2	43.5	50.5	65.5	108.5	20	25	0.5	SO◌X05	TPS20-1	TIP06F
	4	MVX1450X4F20	●	2	58	65	80	123	20	25	0.5	SO◌X05	TPS20-1	TIP06F
	5	MVX1450X5F20	●	2	72.5	79.5	94.5	137.5	20	25	0.5	SO◌X05	TPS20-1	TIP06F
NEW 15.0	2	MVX1500X2F20	●	2	30	37	52	95	20	25	0.35	SO◌X05	TPS20-1	TIP06F
	3	MVX1500X3F20	●	2	45	52	67	110	20	25	0.35	SO◌X05	TPS20-1	TIP06F
	4	MVX1500X4F20	●	2	60	67	82	125	20	25	0.35	SO◌X05	TPS20-1	TIP06F
	5	MVX1500X5F20	●	2	75	82	97	140	20	25	0.35	SO◌X05	TPS20-1	TIP06F
NEW 15.5	2	MVX1550X2F20	●	2	31	38	53	96	20	25	0.3	SO◌X05	TPS20-1	TIP06F
	3	MVX1550X3F20	●	2	46.5	53.5	68.5	111.5	20	25	0.3	SO◌X05	TPS20-1	TIP06F
	4	MVX1550X4F20	●	2	62	69	84	127	20	25	0.3	SO◌X05	TPS20-1	TIP06F
	5	MVX1550X5F20	●	2	77.5	84.5	99.5	142.5	20	25	0.3	SO◌X05	TPS20-1	TIP06F
NEW 16.0	2	MVX1600X2F20	●	2	32	39	54	97	20	25	0.25	SO◌X05	TPS20-1	TIP06F
	3	MVX1600X3F20	●	2	48	55	70	113	20	25	0.25	SO◌X05	TPS20-1	TIP06F
	4	MVX1600X4F20	●	2	64	71	86	129	20	25	0.25	SO◌X05	TPS20-1	TIP06F
	5	MVX1600X5F20	●	2	80	87	102	145	20	25	0.25	SO◌X05	TPS20-1	TIP06F
NEW 16.5	2	MVX1650X2F20	●	2	33	40	55	98	20	25	0.25	SO◌X05	TPS20-1	TIP06F
	3	MVX1650X3F20	●	2	49.5	56.5	71.5	114.5	20	25	0.25	SO◌X05	TPS20-1	TIP06F
	4	MVX1650X4F20	●	2	66	73	88	131	20	25	0.25	SO◌X05	TPS20-1	TIP06F
	5	MVX1650X5F20	●	2	82.5	89.5	104.5	147.5	20	25	0.25	SO◌X05	TPS20-1	TIP06F
17.0	2	MVX1700X2F20	●	2	34	41	56	99	20	25	0.5	SO◌X06	TPS25	TIP07F
	3	MVX1700X3F20	●	2	51	58	73	116	20	25	0.5	SO◌X06	TPS25	TIP07F
	4	MVX1700X4F20	●	2	68	75	90	133	20	25	0.5	SO◌X06	TPS25	TIP07F
	5	MVX1700X5F20	●	2	85	92	107	150	20	25	0.5	SO◌X06	TPS25	TIP07F
	6	MVX1700X6F20	●	2	102	109	124	167	20	25	0.5	SO◌X06	TPS25	TIP07F

* Par de fijación (N • m) : TPS20-1=0.6, TPS25=1.0

● : Stock Europa.

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	F W Llave
17.5	2	**MVX1750X2F25**	●	2	35	42	62	112	25	32	0.45	**SO◌X06**	TPS25	TIP07F
	3	**MVX1750X3F25**	●	2	52.5	59.5	79.5	129.5	25	32	0.45	**SO◌X06**	TPS25	TIP07F
	4	**MVX1750X4F25**	●	2	70	77	97	147	25	32	0.45	**SO◌X06**	TPS25	TIP07F
	5	**MVX1750X5F25**	●	2	87.5	94.5	114.5	164.5	25	32	0.45	**SO◌X06**	TPS25	TIP07F
	6	**MVX1750X6F25**	●	2	105	112	132	182	25	32	0.45	**SO◌X06**	TPS25	TIP07F
18.0	2	**MVX1800X2F25**	●	2	36	43	63	113	25	32	0.4	**SO◌X06**	TPS25	TIP07F
	3	**MVX1800X3F25**	●	2	54	61	81	131	25	32	0.4	**SO◌X06**	TPS25	TIP07F
	4	**MVX1800X4F25**	●	2	72	79	99	149	25	32	0.4	**SO◌X06**	TPS25	TIP07F
	5	**MVX1800X5F25**	●	2	90	97	117	167	25	32	0.4	**SO◌X06**	TPS25	TIP07F
	6	**MVX1800X6F25**	●	2	108	115	135	185	25	32	0.4	**SO◌X06**	TPS25	TIP07F
18.5	2	**MVX1850X2F25**	●	2	37	44	64	114	25	32	0.35	**SO◌X06**	TPS25	TIP07F
	3	**MVX1850X3F25**	●	2	55.5	62.5	82.5	132.5	25	32	0.35	**SO◌X06**	TPS25	TIP07F
	4	**MVX1850X4F25**	●	2	74	81	101	151	25	32	0.35	**SO◌X06**	TPS25	TIP07F
	5	**MVX1850X5F25**	●	2	92.5	99.5	119.5	169.5	25	32	0.35	**SO◌X06**	TPS25	TIP07F
	6	**MVX1850X6F25**	●	2	111	118	138	188	25	32	0.35	**SO◌X06**	TPS25	TIP07F
19.0	2	**MVX1900X2F25**	●	2	38	45	65	115	25	32	0.3	**SO◌X06**	TPS25	TIP07F
	3	**MVX1900X3F25**	●	2	57	64	84	134	25	32	0.3	**SO◌X06**	TPS25	TIP07F
	4	**MVX1900X4F25**	●	2	76	83	103	153	25	32	0.3	**SO◌X06**	TPS25	TIP07F
	5	**MVX1900X5F25**	●	2	95	102	122	172	25	32	0.3	**SO◌X06**	TPS25	TIP07F
	6	**MVX1900X6F25**	●	2	114	121	141	191	25	32	0.3	**SO◌X06**	TPS25	TIP07F
19.5	2	**MVX1950X2F25**	●	2	39	46	66	116	25	32	0.25	**SO◌X06**	TPS25	TIP07F
	3	**MVX1950X3F25**	●	2	58.5	65.5	85.5	135.5	25	32	0.25	**SO◌X06**	TPS25	TIP07F
	4	**MVX1950X4F25**	●	2	78	85	105	155	25	32	0.25	**SO◌X06**	TPS25	TIP07F
	5	**MVX1950X5F25**	●	2	97.5	104.5	124.5	174.5	25	32	0.25	**SO◌X06**	TPS25	TIP07F
	6	**MVX1950X6F25**	●	2	117	124	144	194	25	32	0.25	**SO◌X06**	TPS25	TIP07F
20.0	2	**MVX2000X2F25**	●	2	40	47	67	117	25	32	0.6	**SO◌X07**	TPS3	TIP10W
	3	**MVX2000X3F25**	●	2	60	67	87	137	25	32	0.6	**SO◌X07**	TPS3	TIP10W
	4	**MVX2000X4F25**	●	2	80	87	107	157	25	32	0.6	**SO◌X07**	TPS3	TIP10W
	5	**MVX2000X5F25**	●	2	100	107	127	177	25	32	0.6	**SO◌X07**	TPS3	TIP10W
	6	**MVX2000X6F25**	●	2	120	127	147	197	25	32	0.6	**SO◌X07**	TPS3	TIP10W
20.5	2	**MVX2050X2F25**	●	2	41	48	68	118	25	32	0.55	**SO◌X07**	TPS3	TIP10W
	3	**MVX2050X3F25**	●	2	61.5	68.5	88.5	138.5	25	32	0.55	**SO◌X07**	TPS3	TIP10W
21.0	2	**MVX2100X2F25**	●	2	42	49	69	119	25	32	0.5	**SO◌X07**	TPS3	TIP10W
	3	**MVX2100X3F25**	●	2	63	70	90	140	25	32	0.5	**SO◌X07**	TPS3	TIP10W
	4	**MVX2100X4F25**	●	2	84	91	111	161	25	32	0.5	**SO◌X07**	TPS3	TIP10W
	5	**MVX2100X5F25**	●	2	105	112	132	182	25	32	0.5	**SO◌X07**	TPS3	TIP10W
	6	**MVX2100X6F25**	●	2	126	133	153	203	25	32	0.5	**SO◌X07**	TPS3	TIP10W
21.5	2	**MVX2150X2F25**	●	2	43	50	70	120	25	32	0.45	**SO◌X07**	TPS3	TIP10W
	3	**MVX2150X3F25**	●	2	64.5	71.5	91.5	141.5	25	32	0.45	**SO◌X07**	TPS3	TIP10W
22.0	2	**MVX2200X2F25**	●	2	44	51	71	121	25	32	0.4	**SO◌X07**	TPS3	TIP10W
	3	**MVX2200X3F25**	●	2	66	73	93	143	25	32	0.4	**SO◌X07**	TPS3	TIP10W
	4	**MVX2200X4F25**	●	2	88	95	115	165	25	32	0.4	**SO◌X07**	TPS3	TIP10W
	5	**MVX2200X5F25**	●	2	110	117	137	187	25	32	0.4	**SO◌X07**	TPS3	TIP10W
	6	**MVX2200X6F25**	●	2	132	139	159	209	25	32	0.4	**SO◌X07**	TPS3	TIP10W
22.5	2	**MVX2250X2F25**	●	2	45	52	72	122	25	32	0.35	**SO◌X07**	TPS3	TIP10W
	3	**MVX2250X3F25**	●	2	67.5	74.5	94.5	144.5	25	32	0.35	**SO◌X07**	TPS3	TIP10W

* Par de fijación (N • m) : TPS25=1.0, TPS3=2.0

DESCRIPCIÓN PLACA	➤ M168	VER NOTA	➤ M173
CONDICIONES DE CORTE	➤ M169	REPUESTOS	➤ N001
JUST FIT SLEEVE	➤ M172	DATOS TÉCNICOS	➤ P001

MVX

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	W Llave
23.0	2	**MVX2300X2F25**	●	2	46	53	73	123	25	32	0.8	**SO◌X08**	TPS351	TIP10W
	3	**MVX2300X3F25**	●	2	69	76	96	146	25	32	0.8	**SO◌X08**	TPS351	TIP10W
	4	**MVX2300X4F25**	●	2	92	99	119	169	25	32	0.8	**SO◌X08**	TPS351	TIP10W
	5	**MVX2300X5F25**	●	2	115	122	142	192	25	32	0.8	**SO◌X08**	TPS351	TIP10W
	6	**MVX2300X6F25**	●	2	138	145	165	215	25	32	0.8	**SO◌X08**	TPS351	TIP10W
23.5	2	**MVX2350X2F25**	●	2	47	54	74	124	25	32	0.75	**SO◌X08**	TPS351	TIP10W
	3	**MVX2350X3F25**	●	2	70.5	77.5	97.5	147.5	25	32	0.75	**SO◌X08**	TPS351	TIP10W
24.0	2	**MVX2400X2F25**	●	2	48	55	75	125	25	32	0.7	**SO◌X08**	TPS351	TIP10W
	3	**MVX2400X3F25**	●	2	72	79	99	149	25	32	0.7	**SO◌X08**	TPS351	TIP10W
	4	**MVX2400X4F25**	●	2	96	103	123	173	25	32	0.7	**SO◌X08**	TPS351	TIP10W
	5	**MVX2400X5F25**	●	2	120	127	147	197	25	32	0.7	**SO◌X08**	TPS351	TIP10W
	6	**MVX2400X6F25**	●	2	144	151	171	221	25	32	0.7	**SO◌X08**	TPS351	TIP10W
24.5	2	**MVX2450X2F25**	●	2	49	56	76	126	25	32	0.65	**SO◌X08**	TPS351	TIP10W
	3	**MVX2450X3F25**	●	2	73.5	80.5	100.5	150.5	25	32	0.65	**SO◌X08**	TPS351	TIP10W
25.0	2	**MVX2500X2F25**	●	2	50	57	77	127	25	32	0.6	**SO◌X08**	TPS351	TIP10W
	3	**MVX2500X3F25**	●	2	75	82	102	152	25	32	0.6	**SO◌X08**	TPS351	TIP10W
	4	**MVX2500X4F25**	●	2	100	107	127	177	25	32	0.6	**SO◌X08**	TPS351	TIP10W
	5	**MVX2500X5F25**	●	2	125	132	152	202	25	32	0.6	**SO◌X08**	TPS351	TIP10W
	6	**MVX2500X6F25**	●	2	150	157	177	227	25	32	0.6	**SO◌X08**	TPS351	TIP10W
25.5	2	**MVX2550X2F25**	●	2	51	58	78	128	25	32	0.6	**SO◌X08**	TPS351	TIP10W
	3	**MVX2550X3F25**	●	2	76.5	83.5	103.5	153.5	25	32	0.6	**SO◌X08**	TPS351	TIP10W
26.0	2	**MVX2600X2F32**	●	2	52	59	79	134	32	42	0.5	**SO◌X08**	TPS351	TIP10W
	3	**MVX2600X3F32**	●	2	78	85	105	160	32	42	0.5	**SO◌X08**	TPS351	TIP10W
	4	**MVX2600X4F32**	●	2	104	111	131	186	32	42	0.5	**SO◌X08**	TPS351	TIP10W
	5	**MVX2600X5F32**	●	2	130	137	157	212	32	42	0.5	**SO◌X08**	TPS351	TIP10W
	6	**MVX2600X6F32**	●	2	156	163	183	238	32	42	0.5	**SO◌X08**	TPS351	TIP10W
26.5	2	**MVX2650X2F32**	●	2	53	60	80	135	32	42	0.5	**SO◌X08**	TPS351	TIP10W
	3	**MVX2650X3F32**	●	2	79.5	86.5	106.5	161.5	32	42	0.5	**SO◌X08**	TPS351	TIP10W
27.0	2	**MVX2700X2F32**	●	2	54	61	81	136	32	42	0.45	**SO◌X08**	TPS351	TIP10W
	3	**MVX2700X3F32**	●	2	81	88	108	163	32	42	0.45	**SO◌X08**	TPS351	TIP10W
	4	**MVX2700X4F32**	●	2	108	115	135	190	32	42	0.45	**SO◌X08**	TPS351	TIP10W
	5	**MVX2700X5F32**	●	2	135	142	162	217	32	42	0.45	**SO◌X08**	TPS351	TIP10W
	6	**MVX2700X6F32**	●	2	162	169	189	244	32	42	0.45	**SO◌X08**	TPS351	TIP10W
27.5	2	**MVX2750X2F32**	●	2	55	62	82	137	32	42	0.4	**SO◌X08**	TPS351	TIP10W
	3	**MVX2750X3F32**	●	2	82.5	89.5	109.5	164.5	32	42	0.4	**SO◌X08**	TPS351	TIP10W
28.0	2	**MVX2800X2F32**	●	2	56	63	83	138	32	42	0.85	**SO◌X09**	TPS4	TIP15W
	3	**MVX2800X3F32**	●	2	84	91	111	166	32	42	0.85	**SO◌X09**	TPS4	TIP15W
	4	**MVX2800X4F32**	●	2	112	119	139	194	32	42	0.85	**SO◌X09**	TPS4	TIP15W
	5	**MVX2800X5F32**	●	2	140	147	167	222	32	42	0.85	**SO◌X09**	TPS4	TIP15W
	6	**MVX2800X6F32**	●	2	168	175	195	250	32	42	0.85	**SO◌X09**	TPS4	TIP15W
28.5	2	**MVX2850X2F32**	●	2	57	64	84	139	32	42	0.8	**SO◌X09**	TPS4	TIP15W
	3	**MVX2850X3F32**	●	2	85.5	92.5	112.5	167.5	32	42	0.8	**SO◌X09**	TPS4	TIP15W
29.0	2	**MVX2900X2F32**	●	2	58	65	85	140	32	42	0.75	**SO◌X09**	TPS4	TIP15W
	3	**MVX2900X3F32**	●	2	87	94	114	169	32	42	0.75	**SO◌X09**	TPS4	TIP15W
	4	**MVX2900X4F32**	●	2	116	123	143	198	32	42	0.75	**SO◌X09**	TPS4	TIP15W
	5	**MVX2900X5F32**	●	2	145	152	172	227	32	42	0.75	**SO◌X09**	TPS4	TIP15W
	6	**MVX2900X6F32**	●	2	174	181	201	256	32	42	0.75	**SO◌X09**	TPS4	TIP15W
29.5	2	**MVX2950X2F32**	●	2	59	66	86	141	32	42	0.7	**SO◌X09**	TPS4	TIP15W
	3	**MVX2950X3F32**	●	2	88.5	95.5	115.5	170.5	32	42	0.7	**SO◌X09**	TPS4	TIP15W

∗ Par de fijación (N • m) : TPS351=2.5, TPS4=3.5

● : Stock Europa.

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	W Llave
30.0	2	**MVX3000X2F32**	●	2	60	67	87	142	32	42	0.65	**SO○X09**	TPS4	TIP15W
	3	**MVX3000X3F32**	●	2	90	97	117	172	32	42	0.65	**SO○X09**	TPS4	TIP15W
	4	**MVX3000X4F32**	●	2	120	127	147	202	32	42	0.65	**SO○X09**	TPS4	TIP15W
	5	**MVX3000X5F32**	●	2	150	157	177	232	32	42	0.65	**SO○X09**	TPS4	TIP15W
	6	**MVX3000X6F32**	●	2	180	187	207	262	32	42	0.65	**SO○X09**	TPS4	TIP15W
30.5	3	**MVX3050X3F32**	●	2	91.5	98.5	118.5	173.5	32	42	0.6	**SO○X09**	TPS4	TIP15W
31.0	2	**MVX3100X2F32**	●	2	62	69	89	144	32	42	0.55	**SO○X09**	TPS4	TIP15W
	3	**MVX3100X3F32**	●	2	93	100	120	175	32	42	0.55	**SO○X09**	TPS4	TIP15W
	4	**MVX3100X4F32**	●	2	124	131	151	206	32	42	0.55	**SO○X09**	TPS4	TIP15W
	2	**MVX3100X2F40**	●	2	62	69	89	154	40	50	0.55	**SO○X09**	TPS4	TIP15W
	3	**MVX3100X3F40**	●	2	93	100	120	185	40	50	0.55	**SO○X09**	TPS4	TIP15W
	4	**MVX3100X4F40**	●	2	124	131	151	216	40	50	0.55	**SO○X09**	TPS4	TIP15W
	5	**MVX3100X5F40**	●	2	155	162	182	247	40	50	0.55	**SO○X09**	TPS4	TIP15W
	6	**MVX3100X6F40**	●	2	186	193	213	278	40	50	0.55	**SO○X09**	TPS4	TIP15W
31.5	3	**MVX3150X3F40**	●	2	94.5	101.5	121.5	186.5	40	50	0.55	**SO○X09**	TPS4	TIP15W
32.0	2	**MVX3200X2F32**	●	2	64	71	91	146	32	42	0.45	**SO○X09**	TPS4	TIP15W
	3	**MVX3200X3F32**	●	2	96	103	123	178	32	42	0.45	**SO○X09**	TPS4	TIP15W
	4	**MVX3200X4F32**	●	2	128	135	155	210	32	42	0.45	**SO○X09**	TPS4	TIP15W
	2	**MVX3200X2F40**	●	2	64	71	91	156	40	50	0.45	**SO○X09**	TPS4	TIP15W
	3	**MVX3200X3F40**	●	2	96	103	123	188	40	50	0.45	**SO○X09**	TPS4	TIP15W
	4	**MVX3200X4F40**	●	2	128	135	155	220	40	50	0.45	**SO○X09**	TPS4	TIP15W
	5	**MVX3200X5F40**	●	2	160	167	187	252	40	50	0.45	**SO○X09**	TPS4	TIP15W
	6	**MVX3200X6F40**	●	2	192	199	219	284	40	50	0.45	**SO○X09**	TPS4	TIP15W
32.5	3	**MVX3250X3F40**	●	2	97.5	104.5	124.5	189.5	40	50	0.45	**SO○X09**	TPS4	TIP15W
33.0	2	**MVX3300X2F32**	●	2	66	73	93	148	32	42	0.4	**SO○X09**	TPS4	TIP15W
	3	**MVX3300X3F32**	●	2	99	106	126	181	32	42	0.4	**SO○X09**	TPS4	TIP15W
	4	**MVX3300X4F32**	●	2	132	139	159	214	32	42	0.4	**SO○X09**	TPS4	TIP15W
	2	**MVX3300X2F40**	●	2	66	73	93	158	40	50	0.4	**SO○X09**	TPS4	TIP15W
	3	**MVX3300X3F40**	●	2	99	106	126	191	40	50	0.4	**SO○X09**	TPS4	TIP15W
	4	**MVX3300X4F40**	●	2	132	139	159	224	40	50	0.4	**SO○X09**	TPS4	TIP15W
	5	**MVX3300X5F40**	●	2	165	172	192	257	40	50	0.4	**SO○X09**	TPS4	TIP15W
	6	**MVX3300X6F40**	●	2	198	205	225	290	40	50	0.4	**SO○X09**	TPS4	TIP15W
33.5	3	**MVX3350X3F40**	●	2	100.5	107.5	127.5	192.5	40	50	1.15	**SO○X11**	TPS43	TIP15W
34.0	2	**MVX3400X2F40**	●	2	68	75	105	170	40	50	1.11	**SO○X11**	TPS43	TIP15W
	3	**MVX3400X3F40**	●	2	102	109	139	204	40	50	1.11	**SO○X11**	TPS43	TIP15W
	4	**MVX3400X4F40**	●	2	136	143	173	238	40	50	1.11	**SO○X11**	TPS43	TIP15W
	5	**MVX3400X5F40**	●	2	170	177	207	272	40	50	1.11	**SO○X11**	TPS43	TIP15W
	6	**MVX3400X6F40**	●	2	204	211	241	306	40	50	1.1	**SO○X11**	TPS43	TIP15W
34.5	3	**MVX3450X3F40**	●	2	103.5	110.5	140.5	205.5	40	50	1.08	**SO○X11**	TPS43	TIP15W
35.0	2	**MVX3500X2F40**	●	2	70	77	107	172	40	50	1.03	**SO○X11**	TPS43	TIP15W
	3	**MVX3500X3F40**	●	2	105	112	142	207	40	50	1.03	**SO○X11**	TPS43	TIP15W
	4	**MVX3500X4F40**	●	2	140	147	177	242	40	50	1.03	**SO○X11**	TPS43	TIP15W
	5	**MVX3500X5F40**	●	2	175	182	212	277	40	50	1.03	**SO○X11**	TPS43	TIP15W
	6	**MVX3500X6F40**	●	2	210	217	247	312	40	50	1.02	**SO○X11**	TPS43	TIP15W
35.5	3	**MVX3550X3F40**	●	2	106.5	113.5	143.5	208.5	40	50	0.99	**SO○X11**	TPS43	TIP15W
36.0	2	**MVX3600X2F40**	●	2	72	79	109	174	40	50	0.95	**SO○X11**	TPS43	TIP15W
	3	**MVX3600X3F40**	●	2	108	115	145	210	40	50	0.95	**SO○X11**	TPS43	TIP15W
	4	**MVX3600X4F40**	●	2	144	151	181	246	40	50	0.95	**SO○X11**	TPS43	TIP15W
	5	**MVX3600X5F40**	●	2	180	187	217	282	40	50	0.95	**SO○X11**	TPS43	TIP15W
	6	**MVX3600X6F40**	●	2	216	223	253	318	40	50	0.94	**SO○X11**	TPS43	TIP15W

∗ Par de fijación (N • m) : TPS4=3.5, TPS43=3.5

DESCRIPCIÓN PLACA	➢ M168	VER NOTA	➢ M173
CONDICIONES DE CORTE	➢ M169	REPUESTOS	➢ N001
JUST FIT SLEEVE	➢ M172	DATOS TÉCNICOS	➢ P001

MVX

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	Llave
37.0	2	**MVX3700X2F40**	●	2	74	81	111	176	40	50	0.87	**SO◌X11**	TPS43	TIP15W
	3	**MVX3700X3F40**	●	2	111	118	148	213	40	50	0.87	**SO◌X11**	TPS43	TIP15W
	4	**MVX3700X4F40**	●	2	148	155	185	250	40	50	0.87	**SO◌X11**	TPS43	TIP15W
	5	**MVX3700X5F40**	●	2	185	192	222	287	40	50	0.87	**SO◌X11**	TPS43	TIP15W
	6	**MVX3700X6F40**	●	2	222	229	259	324	40	50	0.86	**SO◌X11**	TPS43	TIP15W
38.0	2	**MVX3800X2F40**	●	2	76	83	113	178	40	50	0.79	**SO◌X11**	TPS43	TIP15W
	3	**MVX3800X3F40**	●	2	114	121	151	216	40	50	0.79	**SO◌X11**	TPS43	TIP15W
	4	**MVX3800X4F40**	●	2	152	159	189	254	40	50	0.79	**SO◌X11**	TPS43	TIP15W
	5	**MVX3800X5F40**	●	2	190	197	227	292	40	50	0.79	**SO◌X11**	TPS43	TIP15W
	6	**MVX3800X6F40**	●	2	228	235	265	330	40	50	0.78	**SO◌X11**	TPS43	TIP15W
39.0	2	**MVX3900X2F40**	●	2	78	85	115	180	40	50	0.71	**SO◌X11**	TPS43	TIP15W
	3	**MVX3900X3F40**	●	2	117	124	154	219	40	50	0.71	**SO◌X11**	TPS43	TIP15W
	4	**MVX3900X4F40**	●	2	156	163	193	258	40	50	0.71	**SO◌X11**	TPS43	TIP15W
	5	**MVX3900X5F40**	●	2	195	202	232	297	40	50	0.71	**SO◌X11**	TPS43	TIP15W
	6	**MVX3900X6F40**	●	2	234	241	271	336	40	50	0.7	**SO◌X11**	TPS43	TIP15W
40.0	2	**MVX4000X2F40**	●	2	80	87	117	182	40	50	1.46	**SO◌X13**	TPS43	TIP15W
	3	**MVX4000X3F40**	●	2	120	127	157	222	40	50	1.46	**SO◌X13**	TPS43	TIP15W
	4	**MVX4000X4F40**	●	2	160	167	197	262	40	50	1.46	**SO◌X13**	TPS43	TIP15W
	5	**MVX4000X5F40**	●	2	200	207	237	302	40	50	1.46	**SO◌X13**	TPS43	TIP15W
	6	**MVX4000X6F40**	●	2	240	247	277	342	40	50	1.45	**SO◌X13**	TPS43	TIP15W
41.0	2	**MVX4100X2F40**	●	2	82	89	119	184	40	50	1.36	**SO◌X13**	TPS43	TIP15W
	3	**MVX4100X3F40**	●	2	123	130	160	225	40	50	1.36	**SO◌X13**	TPS43	TIP15W
	4	**MVX4100X4F40**	●	2	164	171	201	266	40	50	1.36	**SO◌X13**	TPS43	TIP15W
	5	**MVX4100X5F40**	●	2	205	212	242	307	40	50	1.36	**SO◌X13**	TPS43	TIP15W
	6	**MVX4100X6F40**	●	2	246	253	283	348	40	50	1.35	**SO◌X13**	TPS43	TIP15W
42.0	2	**MVX4200X2F40**	●	2	84	91	121	186	40	50	1.27	**SO◌X13**	TPS43	TIP15W
	3	**MVX4200X3F40**	●	2	126	133	163	228	40	50	1.27	**SO◌X13**	TPS43	TIP15W
	4	**MVX4200X4F40**	●	2	168	175	205	270	40	63	1.27	**SO◌X13**	TPS43	TIP15W
	5	**MVX4200X5F40**	●	2	210	217	247	312	40	63	1.27	**SO◌X13**	TPS43	TIP15W
	6	**MVX4200X6F40**	●	2	252	259	289	354	40	63	1.27	**SO◌X13**	TPS43	TIP15W
	4	**MVX4200X4F50**	★	2	168	175	205	280	50	63	1.27	**SO◌X13**	TPS43	TIP15W
	5	**MVX4200X5F50**	★	2	210	217	247	322	50	63	1.27	**SO◌X13**	TPS43	TIP15W
	6	**MVX4200X6F50**	★	2	252	259	289	364	50	63	1.26	**SO◌X13**	TPS43	TIP15W
43.0	2	**MVX4300X2F40**	●	2	86	93	123	188	40	50	1.18	**SO◌X13**	TPS43	TIP15W
	3	**MVX4300X3F40**	●	2	129	136	166	231	40	50	1.18	**SO◌X13**	TPS43	TIP15W
	4	**MVX4300X4F40**	●	2	172	179	209	274	40	63	1.18	**SO◌X13**	TPS43	TIP15W
	5	**MVX4300X5F40**	●	2	215	222	252	317	40	63	1.18	**SO◌X13**	TPS43	TIP15W
	6	**MVX4300X6F40**	●	2	258	265	295	360	40	63	1.17	**SO◌X13**	TPS43	TIP15W
	4	**MVX4300X4F50**	★	2	172	179	209	284	50	63	1.18	**SO◌X13**	TPS43	TIP15W
	5	**MVX4300X5F50**	★	2	215	222	252	327	50	63	1.18	**SO◌X13**	TPS43	TIP15W
	6	**MVX4300X6F50**	★	2	258	265	295	370	50	63	1.17	**SO◌X13**	TPS43	TIP15W
44.0	2	**MVX4400X2F40**	●	2	88	95	125	190	40	50	1.08	**SO◌X13**	TPS43	TIP15W
	3	**MVX4400X3F40**	●	2	132	139	169	234	40	50	1.08	**SO◌X13**	TPS43	TIP15W
	4	**MVX4400X4F40**	●	2	176	183	213	278	40	63	1.08	**SO◌X13**	TPS43	TIP15W
	5	**MVX4400X5F40**	●	2	220	227	257	322	40	63	1.08	**SO◌X13**	TPS43	TIP15W
	4	**MVX4400X4F50**	★	2	176	183	213	288	50	63	1.08	**SO◌X13**	TPS43	TIP15W
	5	**MVX4400X5F50**	★	2	220	227	257	332	50	63	1.08	**SO◌X13**	TPS43	TIP15W

★ Par de fijación (N • m) : TPS43=3.5

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	Llave (W / D)
45.0	2	**MVX4500X2F40**	●	2	90	97	127	192	40	50	0.99	**SO◌X13**	TPS43	TIP15W
	3	**MVX4500X3F40**	●	2	135	142	172	237	40	50	0.99	**SO◌X13**	TPS43	TIP15W
	4	**MVX4500X4F40**	●	2	180	187	217	282	40	63	0.99	**SO◌X13**	TPS43	TIP15W
	5	**MVX4500X5F40**	●	2	225	232	262	327	40	63	0.99	**SO◌X13**	TPS43	TIP15W
	4	**MVX4500X4F50**	★	2	180	187	217	292	50	63	0.99	**SO◌X13**	TPS43	TIP15W
	5	**MVX4500X5F50**	★	2	225	232	262	337	50	63	0.99	**SO◌X13**	TPS43	TIP15W
46.0	2	**MVX4600X2F40**	●	2	92	99	129	194	40	50	0.89	**SO◌X13**	TPS43	TIP15W
	3	**MVX4600X3F40**	●	2	138	145	175	240	40	50	0.89	**SO◌X13**	TPS43	TIP15W
	4	**MVX4600X4F40**	●	2	184	191	221	286	40	63	0.89	**SO◌X13**	TPS43	TIP15W
	5	**MVX4600X5F40**	●	2	230	237	267	332	40	63	0.89	**SO◌X13**	TPS43	TIP15W
	4	**MVX4600X4F50**	★	2	184	191	221	296	50	63	0.89	**SO◌X13**	TPS43	TIP15W
	5	**MVX4600X5F50**	★	2	230	237	267	342	50	63	0.89	**SO◌X13**	TPS43	TIP15W
47.0	2	**MVX4700X2F40**	●	2	94	101	141	206	40	63	1.9	**SO◌X16**	TPS54	TIP25D
	3	**MVX4700X3F40**	●	2	141	148	188	253	40	63	1.9	**SO◌X16**	TPS54	TIP25D
	4	**MVX4700X4F40**	●	2	188	195	235	300	40	63	1.9	**SO◌X16**	TPS54	TIP25D
	5	**MVX4700X5F40**	●	2	235	242	282	347	40	63	1.9	**SO◌X16**	TPS54	TIP25D
	4	**MVX4700X4F50**	★	2	188	195	235	310	50	63	1.9	**SO◌X16**	TPS54	TIP25D
	5	**MVX4700X5F50**	★	2	235	242	282	357	50	63	1.9	**SO◌X16**	TPS54	TIP25D
48.0	2	**MVX4800X2F40**	●	2	96	103	143	208	40	63	1.8	**SO◌X16**	TPS54	TIP25D
	3	**MVX4800X3F40**	●	2	144	151	191	256	40	63	1.8	**SO◌X16**	TPS54	TIP25D
	4	**MVX4800X4F40**	●	2	192	199	239	304	40	63	1.8	**SO◌X16**	TPS54	TIP25D
	5	**MVX4800X5F40**	●	2	240	247	287	352	40	63	1.8	**SO◌X16**	TPS54	TIP25D
	4	**MVX4800X4F50**	★	2	192	199	239	314	50	63	1.8	**SO◌X16**	TPS54	TIP25D
	5	**MVX4800X5F50**	★	2	240	247	287	362	50	63	1.8	**SO◌X16**	TPS54	TIP25D
49.0	2	**MVX4900X2F40**	●	2	98	105	145	210	40	63	1.7	**SO◌X16**	TPS54	TIP25D
	3	**MVX4900X3F40**	●	2	147	154	194	259	40	63	1.7	**SO◌X16**	TPS54	TIP25D
	4	**MVX4900X4F40**	●	2	196	203	243	308	40	63	1.7	**SO◌X16**	TPS54	TIP25D
	5	**MVX4900X5F40**	●	2	245	252	292	357	40	63	1.7	**SO◌X16**	TPS54	TIP25D
	4	**MVX4900X4F50**	★	2	196	203	243	318	50	63	1.7	**SO◌X16**	TPS54	TIP25D
	5	**MVX4900X5F50**	★	2	245	252	292	367	50	63	1.7	**SO◌X16**	TPS54	TIP25D
50.0	2	**MVX5000X2F40**	●	2	100	107	147	212	40	63	1.6	**SO◌X16**	TPS54	TIP25D
	3	**MVX5000X3F40**	●	2	150	157	197	262	40	63	1.6	**SO◌X16**	TPS54	TIP25D
	4	**MVX5000X4F40**	●	2	200	207	247	312	40	63	1.6	**SO◌X16**	TPS54	TIP25D
	5	**MVX5000X5F40**	●	2	250	257	297	362	40	63	1.6	**SO◌X16**	TPS54	TIP25D
	4	**MVX5000X4F50**	★	2	200	207	247	322	50	63	1.6	**SO◌X16**	TPS54	TIP25D
	5	**MVX5000X5F50**	★	2	250	257	297	372	50	63	1.6	**SO◌X16**	TPS54	TIP25D
51.0	2	**MVX5100X2F40**	●	2	102	109	149	214	40	63	1.5	**SO◌X16**	TPS54	TIP25D
	3	**MVX5100X3F40**	●	2	153	160	200	265	40	63	1.5	**SO◌X16**	TPS54	TIP25D
	4	**MVX5100X4F40**	●	2	204	211	251	316	40	63	1.5	**SO◌X16**	TPS54	TIP25D
	5	**MVX5100X5F40**	●	2	255	262	302	367	40	63	1.5	**SO◌X16**	TPS54	TIP25D
	4	**MVX5100X4F50**	★	2	204	211	251	326	50	63	1.5	**SO◌X16**	TPS54	TIP25D
	5	**MVX5100X5F50**	★	2	255	262	302	377	50	63	1.5	**SO◌X16**	TPS54	TIP25D
52.0	2	**MVX5200X2F40**	●	2	104	111	151	216	40	63	1.39	**SO◌X16**	TPS54	TIP25D
	3	**MVX5200X3F40**	●	2	156	163	203	268	40	63	1.39	**SO◌X16**	TPS54	TIP25D
	4	**MVX5200X4F40**	●	2	208	215	255	320	40	63	1.39	**SO◌X16**	TPS54	TIP25D
	5	**MVX5200X5F40**	●	2	260	267	307	372	40	63	1.39	**SO◌X16**	TPS54	TIP25D
	4	**MVX5200X4F50**	★	2	208	215	255	330	50	63	1.39	**SO◌X16**	TPS54	TIP25D
	5	**MVX5200X5F50**	★	2	260	267	307	382	50	63	1.39	**SO◌X16**	TPS54	TIP25D

★ Par de fijación (N • m) : TPS43=3.5, TPS54=7.5

DESCRIPCIÓN PLACA	➢ M168	VER NOTA	➢ M173
CONDICIONES DE CORTE	➢ M169	REPUESTOS	➢ N001
JUST FIT SLEEVE	➢ M172	DATOS TÉCNICOS	➢ P001

MVX

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	D Llave
53.0	2	**MVX5300X2F40**	●	2	106	113	153	218	40	63	1.29	**SO◌X16**	TPS54	TIP25D
	3	**MVX5300X3F40**	●	2	159	166	206	271	40	63	1.29	**SO◌X16**	TPS54	TIP25D
	4	**MVX5300X4F40**	●	2	212	219	259	324	40	63	1.29	**SO◌X16**	TPS54	TIP25D
	5	**MVX5300X5F40**	●	2	265	272	312	377	40	63	1.29	**SO◌X16**	TPS54	TIP25D
	4	**MVX5300X4F50**	★	2	212	219	259	334	50	63	1.29	**SO◌X16**	TPS54	TIP25D
	5	**MVX5300X5F50**	★	2	265	272	312	387	50	63	1.29	**SO◌X16**	TPS54	TIP25D
54.0	2	**MVX5400X2F40**	●	2	108	115	155	220	40	63	1.19	**SO◌X16**	TPS54	TIP25D
	3	**MVX5400X3F40**	●	2	162	169	209	274	40	63	1.19	**SO◌X16**	TPS54	TIP25D
	4	**MVX5400X4F40**	●	2	216	223	263	328	40	63	1.19	**SO◌X16**	TPS54	TIP25D
	5	**MVX5400X5F40**	●	2	270	277	317	382	40	63	1.19	**SO◌X16**	TPS54	TIP25D
	4	**MVX5400X4F50**	★	2	216	223	263	338	50	63	1.19	**SO◌X16**	TPS54	TIP25D
	5	**MVX5400X5F50**	★	2	270	277	317	392	50	63	1.19	**SO◌X16**	TPS54	TIP25D
55.0	2	**MVX5500X2F40**	●	2	110	117	157	222	40	63	1.08	**SO◌X16**	TPS54	TIP25D
	3	**MVX5500X3F40**	●	2	165	172	212	277	40	63	1.08	**SO◌X16**	TPS54	TIP25D
	4	**MVX5500X4F40**	●	2	220	227	267	332	40	63	1.08	**SO◌X16**	TPS54	TIP25D
	5	**MVX5500X5F40**	●	2	275	282	322	387	40	63	1.08	**SO◌X16**	TPS54	TIP25D
	4	**MVX5500X4F50**	★	2	220	227	267	342	50	63	1.08	**SO◌X16**	TPS54	TIP25D
	5	**MVX5500X5F50**	●	2	275	282	322	397	50	63	1.08	**SO◌X16**	TPS54	TIP25D
56.0	2	**MVX5600X2F40**	●	2	112	119	159	224	40	63	0.98	**SO◌X16**	TPS54	TIP25D
	3	**MVX5600X3F40**	●	2	168	175	215	280	40	63	0.98	**SO◌X16**	TPS54	TIP25D
	4	**MVX5600X4F40**	●	2	224	231	271	336	40	63	0.98	**SO◌X16**	TPS54	TIP25D
	5	**MVX5600X5F40**	●	2	280	287	327	392	40	63	0.98	**SO◌X16**	TPS54	TIP25D
	4	**MVX5600X4F50**	★	2	224	231	271	346	50	63	0.98	**SO◌X16**	TPS54	TIP25D
	5	**MVX5600X5F50**	★	2	280	287	327	402	50	63	0.98	**SO◌X16**	TPS54	TIP25D
57.0	2	**MVX5700X2F40**	●	2	114	121	161	226	40	68	1.47	**SO◌X18**	TPS54	TIP25D
	3	**MVX5700X3F40**	●	2	171	178	218	283	40	68	1.47	**SO◌X18**	TPS54	TIP25D
	4	**MVX5700X4F40**	●	2	228	235	275	340	40	68	1.47	**SO◌X18**	TPS54	TIP25D
	5	**MVX5700X5F40**	●	2	285	292	332	397	40	68	1.47	**SO◌X18**	TPS54	TIP25D
	4	**MVX5700X4F50**	★	2	228	235	275	350	50	68	1.47	**SO◌X18**	TPS54	TIP25D
	5	**MVX5700X5F50**	★	2	285	292	332	407	50	68	1.47	**SO◌X18**	TPS54	TIP25D
58.0	2	**MVX5800X2F40**	●	2	116	123	163	228	40	68	1.37	**SO◌X18**	TPS54	TIP25D
	3	**MVX5800X3F40**	●	2	174	181	221	286	40	68	1.37	**SO◌X18**	TPS54	TIP25D
	4	**MVX5800X4F40**	●	2	232	239	279	344	40	68	1.37	**SO◌X18**	TPS54	TIP25D
	5	**MVX5800X5F40**	●	2	290	297	337	402	40	68	1.37	**SO◌X18**	TPS54	TIP25D
	4	**MVX5800X4F50**	★	2	232	239	279	354	50	68	1.37	**SO◌X18**	TPS54	TIP25D
	5	**MVX5800X5F50**	★	2	290	297	337	412	50	68	1.37	**SO◌X18**	TPS54	TIP25D
59.0	2	**MVX5900X2F40**	●	2	118	125	165	230	40	68	1.26	**SO◌X18**	TPS54	TIP25D
	3	**MVX5900X3F40**	●	2	177	184	224	289	40	68	1.26	**SO◌X18**	TPS54	TIP25D
	4	**MVX5900X4F40**	●	2	236	243	283	348	40	68	1.26	**SO◌X18**	TPS54	TIP25D
	5	**MVX5900X5F40**	●	2	295	302	342	407	40	68	1.26	**SO◌X18**	TPS54	TIP25D
	4	**MVX5900X4F50**	★	2	236	243	283	358	50	68	1.26	**SO◌X18**	TPS54	TIP25D
	5	**MVX5900X5F50**	★	2	295	302	342	417	50	68	1.26	**SO◌X18**	TPS54	TIP25D
60.0	2	**MVX6000X2F40**	●	2	120	127	167	232	40	68	1.16	**SO◌X18**	TPS54	TIP25D
	3	**MVX6000X3F40**	●	2	180	187	227	292	40	68	1.16	**SO◌X18**	TPS54	TIP25D
	4	**MVX6000X4F40**	●	2	240	247	287	352	40	68	1.16	**SO◌X18**	TPS54	TIP25D
	5	**MVX6000X5F40**	●	2	300	307	347	412	40	68	1.16	**SO◌X18**	TPS54	TIP25D
	4	**MVX6000X4F50**	★	2	240	247	287	362	50	68	1.16	**SO◌X18**	TPS54	TIP25D
	5	**MVX6000X5F50**	★	2	300	307	347	422	50	68	1.16	**SO◌X18**	TPS54	TIP25D

⋆ Par de fijación (N • m) : TPS54=7.5

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Profundidad agujero (L/D)	Referencia	Stock	Dientes	Dimensiones (mm) LU	LBX	LPR	OAL	DCON	DCSFMS	S10 (mm)	Placa	Tornillo roscado	D Llave
61.0	2	**MVX6100X2F40**	●	2	122	129	169	234	40	68	1.05	**SO◌X18**	TPS54	TIP25D
	3	**MVX6100X3F40**	●	2	183	190	230	295	40	68	1.05	**SO◌X18**	TPS54	TIP25D
	4	**MVX6100X4F40**	●	2	244	251	291	356	40	68	1.05	**SO◌X18**	TPS54	TIP25D
	5	**MVX6100X5F40**	●	2	305	312	352	417	40	68	1.05	**SO◌X18**	TPS54	TIP25D
	4	**MVX6100X4F50**	★	2	244	251	291	366	50	68	1.05	**SO◌X18**	TPS54	TIP25D
	5	**MVX6100X5F50**	★	2	305	312	352	427	50	68	1.05	**SO◌X18**	TPS54	TIP25D
62.0	2	**MVX6200X2F40**	●	2	124	131	171	236	40	68	0.95	**SO◌X18**	TPS54	TIP25D
	3	**MVX6200X3F40**	●	2	186	193	233	298	40	68	0.95	**SO◌X18**	TPS54	TIP25D
	4	**MVX6200X4F40**	●	2	248	255	295	360	40	68	0.95	**SO◌X18**	TPS54	TIP25D
	5	**MVX6200X5F40**	●	2	310	317	357	422	40	68	0.95	**SO◌X18**	TPS54	TIP25D
	4	**MVX6200X4F50**	★	2	248	255	295	370	50	68	0.95	**SO◌X18**	TPS54	TIP25D
	5	**MVX6200X5F50**	★	2	310	317	357	432	50	68	0.95	**SO◌X18**	TPS54	TIP25D
63.0	2	**MVX6300X2F40**	●	2	126	133	173	238	40	68	0.85	**SO◌X18**	TPS54	TIP25D
	3	**MVX6300X3F40**	●	2	189	196	236	301	40	68	0.85	**SO◌X18**	TPS54	TIP25D
	4	**MVX6300X4F40**	●	2	252	259	299	364	40	68	0.85	**SO◌X18**	TPS54	TIP25D
	5	**MVX6300X5F40**	●	2	315	322	362	427	40	68	0.85	**SO◌X18**	TPS54	TIP25D
	4	**MVX6300X4F50**	★	2	252	259	299	374	50	68	0.85	**SO◌X18**	TPS54	TIP25D
	5	**MVX6300X5F50**	★	2	315	322	362	437	50	68	0.85	**SO◌X18**	TPS54	TIP25D

★ Par de fijación (N • m) : TPS54=7.5

DESCRIPCIÓN PLACA	➤ M168	VER NOTA	➤ M173
CONDICIONES DE CORTE	➤ M169	REPUESTOS	➤ N001
JUST FIT SLEEVE	➤ M172	DATOS TÉCNICOS	➤ P001

MVX

PLACAS

Forma	Diámetro broca	Referencia	Dimensiones (mm) IC	S	RE	Recubrimiento VP15TF	MC1020	MC5020	DP8020	Convencional TF15		Geometría
UM	ø14.0—ø16.5	NEW **SOMX052704-UM**	5.0	2.7	0.4	●	●	●				ø14.0—ø16.5 RE AN 11° IC S
	ø17.0—ø19.5	**SOMX063005-UM**	6.0	3.0	0.5	●	●	●				
	ø20.0—ø22.5	**SOMX073505-UM**	7.0	3.5	0.5	●	●	●				
	ø23.0—ø27.5	**SOMX084005-UM**	8.3	4.0	0.5	●	●	●				
	ø28.0—ø33.0	**SOMX094506-UM**	9.7	4.5	0.6	●	●	●				ø17.0—ø63.0 RE AN 11° IC S
	ø33.5—ø39.0	**SOMX115506-UM**	11.6	5.5	0.6	●	●	●				
	ø40.0—ø46.0	**SOMX136008-UM**	13.8	6.0	0.8	●	●	●				
	ø47.0—ø56.0	**SOMX166508-UM**	16.5	6.5	0.8	●	●	●				
Uso general y filo interior o exterior	ø57.0—ø63.0	**SOMX187008-UM**	18.2	7.0	0.8	●	●	●				
US	ø17.0—ø19.5	**SOMX063005-US**	6.0	3.0	0.5	●						RE AN 11° IC S
	ø20.0—ø22.5	**SOMX073505-US**	7.0	3.5	0.5	●						
	ø23.0—ø27.5	**SOMX084005-US**	8.0	4.0	0.5	●						
	ø28.0—ø33.0	**SOMX094506-US**	9.0	4.5	0.6	●						
	ø33.5—ø39.0	**SOMX115506-US**	11.6	5.5	0.6	●						
	ø40.0—ø46.0	**SOMX136008-US**	13.8	6.0	0.8	●						
	ø47.0—ø56.0	**SOMX166508-US**	16.5	6.5	0.8	●						
Para acero inoxidable y filo interior	ø57.0—ø63.0	**SOMX187008-US**	18.2	7.0	0.8	●						
UH	ø17.0—ø19.5	**SOMX062905-UH**	6.0	2.9	0.5				●			RE AN 11° IC S
	ø20.0—ø22.5	**SOMX073405-UH**	7.0	3.4	0.5				●			
	ø23.0—ø27.5	**SOMX083905-UH**	8.3	3.9	0.5				●			
	ø28.0—ø33.0	**SOMX094406-UH**	9.7	4.4	0.6				●			
	ø33.5—ø39.0	**SOMX115406-UH**	11.6	5.4	0.6				●			
	ø40.0—ø46.0	**SOMX135908-UH**	13.8	5.9	0.8				●			
	ø47.0—ø56.0	**SOMX166408-UH**	16.5	6.4	0.8				●			
Filo de corte fuerte y filo interior	ø57.0—ø63.0	**SOMX186908-UH**	18.2	6.9	0.8				●			
UN	ø17.0—ø19.5	**SOGX063005-UN**	6.0	3.0	0.5					●		RE AN 11° IC S
	ø20.0—ø22.5	**SOGX073505-UN**	7.0	3.5	0.5					●		
	ø23.0—ø27.5	**SOGX084005-UN**	8.3	4.0	0.5					●		
	ø28.0—ø33.0	**SOGX094506-UN**	9.7	4.5	0.6					●		
	ø33.5—ø39.0	**SOGX115506-UN**	11.6	5.5	0.6					●		
	ø40.0—ø46.0	**SOGX136008-UN**	13.8	6.0	0.8					●		
	ø47.0—ø56.0	**SOGX166508-UN**	16.5	6.5	0.8					●		
Aleación de aluminio y filo interior o exterior	ø57.0—ø63.0	**SOGX187008-UN**	18.2	7.0	0.8					●		

Nota 1) MC1020 y MC5020 se han diseñado exclusivamente para uso como placa exterior. DP8020 se ha diseñado exclusivamente para uso como placa interior.

RECOMENDACIÓN DE PLACA

		1.ª recomendación		Cuando la placa exterior se rompe	
		Placa exterior	Placa interior	Placa exterior	Placa interior
P	Acero dulce, acero aleado	MC1020	VP15TF	VP15TF	VP15TF
		Rompevirutas UM	Rompevirutas UM	Rompevirutas UM	Rompevirutas UM
M	Acero inoxidable	MC1020	VP15TF	VP15TF	VP15TF
		Rompevirutas UM	Rompevirutas US	Rompevirutas UM	Rompevirutas US
K	Fundición	MC5020	VP15TF	VP15TF	VP15TF
		Rompevirutas UM	Rompevirutas UM	Rompevirutas UM	Rompevirutas UM

		1.ª recomendación		Cuando la placa exterior se rompe	
		Placa exterior	Placa interior	Placa exterior	Placa interior
H	Acero endurecido	MC1020	DP8020	VP15TF	DP8020
		Rompevirutas UM	Rompevirutas UH	Rompevirutas UM	Rompevirutas UH
N	Aleación de aluminio	TF15	TF15		
		Rompevirutas UN	Rompevirutas UN		

CONDICIONES DE CORTE RECOMENDADAS

	Material	Dureza	Vc (m/min)	Rompevirutas interior	ϕ14—ϕ16.5 fr (mm/rev.) L/D=2, 3	4	5
P	Acero dulce (C15, Ck15)	≤180HB	200 (180—235)	UM	0.05 (0.04—0.06)	0.05 (0.04—0.06)	0.05 (0.04—0.06)
				UH	—	—	—
	Acero al carbono, Acero aleado (Ck45, 41CrMo4)	180—280HB	140 (115—180)	UM	0.08 (0.06—0.14)	0.08 (0.06—0.09)	0.08 (0.06—0.09)
				UH	—	—	—
	Acero al carbono, Acero aleado (100Cr6)	280—350HB	100 (75—140)	UM	0.08 (0.06—0.14)	0.08 (0.06—0.09)	0.08 (0.06—0.09)
				UH	—	—	—
	Acero para herramientas de aleación (X210Cr12)	≤350HB	135 (100—170)	UM	0.08 (0.06—0.14)	0.08 (0.06—0.09)	0.08 (0.06—0.09)
				UH	—	—	—
M	Acero inoxidable austenítico (X5CrNi18-10, X5CrNiMo17-12-2)	≤200HB	130 (80—180)	US	—	—	—
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)
	Acero inoxidable austenítico (X2CrNiN18-9, X5CrNiMoN17-11-2)	>200HB	130 (80—180)	US	—	—	—
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)
	Acero inoxidable ferrítico y mantensítico (X12Cr13, X6Cr17)	≤200HB	120 (80—165)	US	—	—	—
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)
	Acero inoxidable ferrítico y mantensítico (X17CrNi16-2, X30Cr13)	>200HB	120 (80—165)	US	—	—	—
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)
K	Fundición (GG25, GG30)	≤350MPa	160 (130—195)	UM	0.10 (0.06—0.14)	0.08 (0.06—0.10)	0.08 (0.06—0.10)
	Fundición dúctil (GG40)	≤450MPa	100 (80—135)	UM	0.10 (0.06—0.14)	0.08 (0.06—0.10)	0.08 (0.06—0.10)
	Fundición dúctil (GGG70)	≤800HB	100 (70—125)	UM	0.08 (0.06—0.12)	0.07 (0.06—0.08)	0.07 (0.06—0.08)
N	Aleación de aluminio (A6061, A7075)	Si<5%	200 (100-350)	UN	—	—	—
	Aleación de aluminio (AC4B)	5%≤Si≤10%	150 (100-200)	UN	—	—	—
	Aleación de aluminio (ADC12, A390)	Si>10%	150 (100-200)	UN	—	—	—
H	Acero endurecido (X40CrMoV51, 55NiCrMoV6)	38 - 45HRC	50 (30-80)	UH	—	—	—

Nota 1) Reduce un 30 % la velocidad de corte al usar VP15TF como placa exterior.
Nota 2) L/D=3 es la profundidad máxima recomendada si se utiliza refrigerante externo.
Nota 3) La refrigeración interna es necesaria para el taladrado de acero inoxidable.

VER NOTA ➤ M173
REPUESTOS ➤ N001
DATOS TÉCNICOS ➤ P001

MVX

CONDICIONES DE CORTE RECOMENDADAS

	Material	Dureza	Vc (m/min)	Rompevirutas interior	ϕ17—ϕ19.5 fr (mm/rev.) L/D=2, 3	4	5	6
P	Acero dulce (C15, Ck15)	≤180HB	200 (180—235)	UM	0.05 (0.04—0.06)	0.05 (0.04—0.06)	0.05 (0.04—0.06)	0.04 (0.04—0.05)
				UH				
	Acero al carbono, Acero aleado (Ck45, 41CrMo4)	180—280HB	140 (115—180)	UM	0.08 (0.06—0.14)	0.08 (0.06—0.09)	0.08 (0.06—0.09)	0.05 (0.04—0.06)
				UH				
	Acero al carbono, Acero aleado (100Cr6)	280—350HB	100 (75—140)	UM	0.08 (0.06—0.14)	0.08 (0.06—0.09)	0.08 (0.06—0.09)	0.05 (0.04—0.06)
				UH				
	Acero para herramientas de aleación (X210Cr12)	≤350HB	135 (100—170)	UM	0.08 (0.06—0.14)	0.08 (0.06—0.09)	0.08 (0.06—0.09)	0.05 (0.04—0.06)
				UH				
M	Acero inoxidable austenítico (X5CrNi18-10, X5CrNiMo17-12-2)	≤200HB	130 (80—180)	US	0.08 (0.06—0.12)	0.06 (0.04—0.08)	0.06 (0.04—0.08)	0.05 (0.04—0.06)
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)	0.04 (0.04—0.05)
	Acero inoxidable austenítico (X2CrNiN18-9, X5CrNiMoN17-11-2)	>200HB	130 (80—180)	US	0.08 (0.06—0.12)	0.06 (0.04—0.08)	0.06 (0.04—0.08)	0.05 (0.04—0.06)
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)	0.04 (0.04—0.05)
	Acero inoxidable ferrítico y mantensítico (X12Cr13, X6Cr17)	≤200HB	120 (80—165)	US	0.08 (0.06—0.12)	0.06 (0.04—0.08)	0.06 (0.04—0.08)	0.05 (0.04—0.06)
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)	0.04 (0.04—0.05)
	Acero inoxidable ferrítico y mantensítico (X17CrNi16-2, X30Cr13)	>200HB	120 (80—165)	US	0.08 (0.06—0.12)	0.06 (0.04—0.08)	0.06 (0.04—0.08)	0.05 (0.04—0.06)
				UM	0.06 (0.04—0.08)	0.05 (0.04—0.06)	0.05 (0.04—0.06)	0.04 (0.04—0.05)
K	Fundición (GG25, GG30)	≤350MPa	160 (130—195)	UM	0.11 (0.08—0.14)	0.09 (0.08—0.10)	0.09 (0.08—0.10)	0.05 (0.04—0.06)
	Fundición dúctil (GG40)	≤450MPa	100 (80—135)	UM	0.11 (0.08—0.14)	0.09 (0.08—0.10)	0.09 (0.08—0.10)	0.05 (0.04—0.06)
	Fundición dúctil (GGG70)	≤800HB	100 (70—125)	UM	0.11 (0.08—0.14)	0.09 (0.08—0.10)	0.09 (0.08—0.10)	0.05 (0.04—0.06)
N	Aleación de aluminio (A6061, A7075)	Si<5%	200 (100-350)	UN	0.12 (0.05—0.18)	0.12 (0.05—0.18)	0.12 (0.05—0.18)	0.08 (0.05—0.12)
	Aleación de aluminio (AC4B)	5%≤Si≤10%	150 (100-200)	UN	0.12 (0.05—0.18)	0.12 (0.05—0.18)	0.12 (0.05—0.18)	0.08 (0.05—0.12)
	Aleación de aluminio (ADC12, A390)	Si>10%	150 (100-200)	UN	0.12 (0.05—0.18)	0.12 (0.05—0.18)	0.12 (0.05—0.18)	0.08 (0.05—0.12)
H	Acero endurecido (X40CrMoV51, 55NiCrMoV6)	38 - 45HRC	50 (30-80)	UH	0.08 (0.04—0.12)	0.06 (0.04—0.09)	—	—

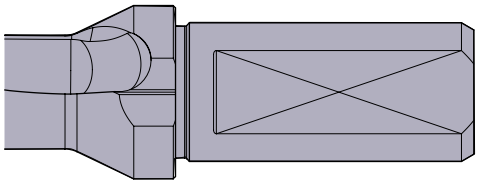
Nota 1) Reduce un 30 % la velocidad de corte al usar VP15TF como placa exterior.
Nota 2) L/D=3 es la profundidad máxima recomendada si se utiliza refrigerante externo.
Nota 3) La refrigeración interna es necesaria para el taladrado de acero inoxidable.

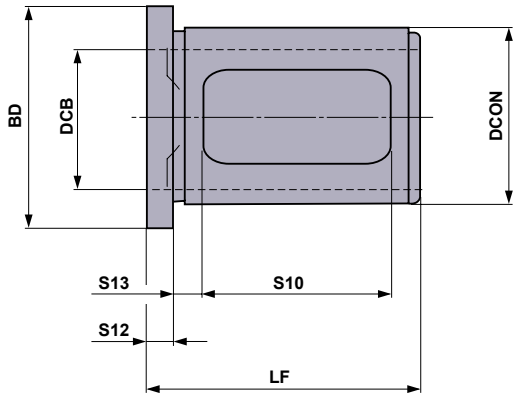
	ϕ20－ϕ23.5				ϕ24－ϕ29.5				ϕ30－ϕ63			
	fr (mm/rev.)				fr (mm/rev.)				fr (mm/rev.)			
	L/D=2, 3	4	5	6	L/D=2, 3	4	5	6	L/D=2, 3	4	5	6
	0.06 (0.04－0.08)	0.06 (0.04－0.07)	0.06 (0.04－0.07)	0.04 (0.04－0.05)	0.07 (0.04－0.08)	0.06 (0.04－0.07)	0.06 (0.04－0.07)	0.05 (0.04－0.06)	0.08 (0.06－0.10)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)
	0.10 (0.06－0.18)	0.09 (0.06－0.12)	0.09 (0.06－0.12)	0.07 (0.06－0.08)	0.12 (0.08－0.18)	0.10 (0.08－0.12)	0.10 (0.08－0.12)	0.09 (0.08－0.10)	0.14 (0.08－0.20)	0.12 (0.08－0.16)	0.12 (0.08－0.16)	0.11 (0.10－0.12)
	0.10 (0.06－0.18)	0.09 (0.06－0.12)	0.09 (0.06－0.12)	0.07 (0.06－0.08)	0.12 (0.08－0.18)	0.10 (0.08－0.12)	0.10 (0.08－0.12)	0.09 (0.08－0.10)	0.14 (0.08－0.20)	0.12 (0.08－0.16)	0.12 (0.08－0.16)	0.11 (0.10－0.12)
	0.10 (0.06－0.18)	0.09 (0.06－0.12)	0.09 (0.06－0.12)	0.07 (0.06－0.08)	0.12 (0.08－0.18)	0.10 (0.08－0.12)	0.10 (0.08－0.12)	0.09 (0.08－0.10)	0.14 (0.08－0.20)	0.12 (0.08－0.16)	0.12 (0.08－0.16)	0.10 (0.08－0.12)
	0.10 (0.06－0.14)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.10 (0.06－0.14)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)	0.10 (0.06－0.14)	0.09 (0.06－0.12)	0.09 (0.06－0.12)	0.07 (0.06－0.10)
	0.08 (0.06－0.12)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.09 (0.06－0.12)	0.07 (0.06－0.09)	0.07 (0.06－0.09)	0.06 (0.06－0.08)	0.09 (0.06－0.12)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)
	0.10 (0.06－0.14)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.10 (0.06－0.14)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)	0.10 (0.06－0.14)	0.09 (0.06－0.12)	0.09 (0.06－0.12)	0.07 (0.06－0.10)
	0.08 (0.06－0.12)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.09 (0.06－0.12)	0.07 (0.06－0.09)	0.07 (0.06－0.09)	0.06 (0.06－0.08)	0.09 (0.06－0.12)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)
	0.10 (0.06－0.14)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.10 (0.06－0.14)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)	0.10 (0.06－0.14)	0.09 (0.06－0.12)	0.09 (0.06－0.12)	0.07 (0.06－0.10)
	0.08 (0.06－0.12)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.09 (0.06－0.12)	0.07 (0.06－0.09)	0.07 (0.06－0.09)	0.06 (0.06－0.08)	0.09 (0.06－0.12)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)
	0.10 (0.06－0.14)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.10 (0.06－0.14)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)	0.10 (0.06－0.14)	0.09 (0.06－0.12)	0.09 (0.06－0.12)	0.07 (0.06－0.10)
	0.08 (0.06－0.12)	0.07 (0.06－0.08)	0.07 (0.06－0.08)	0.06 (0.06－0.07)	0.09 (0.06－0.12)	0.07 (0.06－0.09)	0.07 (0.06－0.09)	0.06 (0.06－0.08)	0.09 (0.06－0.12)	0.08 (0.06－0.10)	0.08 (0.06－0.10)	0.07 (0.06－0.08)
	0.14 (0.10－0.18)	0.10 (0.10－0.12)	0.10 (0.10－0.12)	0.07 (0.06－0.08)	0.15 (0.10－0.20)	0.11 (0.10－0.13)	0.11 (0.10－0.13)	0.09 (0.08－0.10)	0.15 (0.10－0.20)	0.12 (0.10－0.13)	0.12 (0.10－0.13)	0.11 (0.10－0.12)
	0.13 (0.10－0.16)	0.10 (0.10－0.11)	0.10 (0.10－0.11)	0.07 (0.06－0.08)	0.14 (0.10－0.18)	0.11 (0.10－0.12)	0.11 (0.10－0.12)	0.09 (0.08－0.10)	0.15 (0.10－0.20)	0.12 (0.10－0.13)	0.12 (0.10－0.13)	0.11 (0.10－0.12)
	0.13 (0.10－0.16)	0.10 (0.10－0.11)	0.10 (0.10－0.11)	0.07 (0.06－0.08)	0.14 (0.10－0.18)	0.11 (0.10－0.12)	0.11 (0.10－0.12)	0.09 (0.08－0.10)	0.15 (0.10－0.20)	0.12 (0.10－0.13)	0.12 (0.10－0.13)	0.11 (0.10－0.12)
	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)	0.12 (0.05－0.20)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)
	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)	0.12 (0.05－0.20)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)
	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)	0.12 (0.05－0.20)	0.12 (0.05－0.18)	0.12 (0.05－0.18)	0.08 (0.05－0.12)
	0.09 (0.06－0.14)	0.07 (0.06－0.09)	–	–	0.09 (0.06－0.14)	0.07 (0.06－0.09)	–	–	0.11 (0.06－0.16)	0.09 (0.06－0.012)	–	–

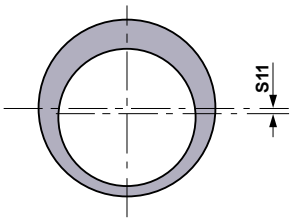
VER NOTA ➤ M173
REPUESTOS ➤ N001
DATOS TÉCNICOS ➤ P001

JUST FIT SLEEVE [JFS]

● Casquillo diseñado para conseguir mejores resultados con la broca MVX, permite incrementar el diámetro de la broca en intervalos 0.1mm.







Referencia conjunto	Referencia individual	Stock	Dimensiones (mm)							*Aumento (S11×2)	Broca MVX adecuada
			BD	DCON	DCB	LF	S10	S12	S13		
JFS-1	JFS2520-10	●	33	25	20	43	30	5	5	0.1	MVX1700 X ◌F20
	JFS2520-20	●	33	25	20	43	30	5	5	0.2	
	JFS2520-30	●	33	25	20	43	30	5	5	0.3	
	JFS2520-40	●	33	25	20	43	30	5	5	0.4	
	JFS2520-50	●	33	25	20	43	30	5	5	0.5	
JFS-2	JFS3225-10	●	40	32	25	50	34	5	5	0.1	MVX1750 X ◌F25 – MVX2550 X ◌F25
	JFS3225-20	●	40	32	25	50	34	5	5	0.2	
	JFS3225-30	●	40	32	25	50	34	5	5	0.3	
	JFS3225-40	●	40	32	25	50	34	5	5	0.4	
	JFS3225-50	●	40	32	25	50	34	5	5	0.5	
JFS-3	JFS4032-10	●	48	40	32	55	40	5	5	0.1	MVX2600 X ◌F32 – MVX3000 X ◌F32
	JFS4032-20	●	48	40	32	55	40	5	5	0.2	
	JFS4032-30	●	48	40	32	55	40	5	5	0.3	
	JFS4032-40	●	48	40	32	55	40	5	5	0.4	
	JFS4032-50	●	48	40	32	55	40	5	5	0.5	
JFS-4	JFS5040-10	★	68	50	40	65	50	5	5	0.1	MVX3100 X ◌F40 – MVX6300 X ◌F40
	JFS5040-20	★	68	50	40	65	50	5	5	0.2	
	JFS5040-30	★	68	50	40	65	50	5	5	0.3	
	JFS5040-40	★	68	50	40	65	50	5	5	0.4	
	JFS5040-50	★	68	50	40	65	50	5	5	0.5	

No se corresponde con el diámetro del mango de 50 mm.

*Aumento: Tamaño de aumento en el diámetro de corte.

■ GUIA PARA ELEGIR JUST FIT SLEEVE

Diámt. Deseado = Broca ϕ + Incremento de JFS + 0.1mm

(Ej.) El diámetro deseado es 20.3mm la tolerancia que tomamos es de 0.1mm.

ø20.3=(MVX2000 X ◌F25+JFS3225-20)+0.1

- MVX2000 X ◌F25 → Broca de 20mm
- JFS3225-20 → Utilizando JFS un incremento de 0.2mm.
- 0.1 → Voladizo

<Herramienta seleccionada>
Broca : **MVX2000 X ◌F25**
Just fit sleeve (JFS)
: **JFS3225-20**

Nota 1) La tolerancia puede variar debido a las condiciones de corte utilizadas, por favor siga la tabla de arriba.

■ PEDIDOS DE JUST FIT SLEEVE

●Método de compra 1

La tolerancia puede variar en función de las condiciones de corte utilizadas. Por lo tanto, se recomienda comprar como un lote. Cuando haga un pedido, utilice las referencias indicadas. (5 fundas/lote)

●Método de compra 2

Es posible hacer pedidos individualmente. Cuando haga un pedido, utilice las referencias individuales.

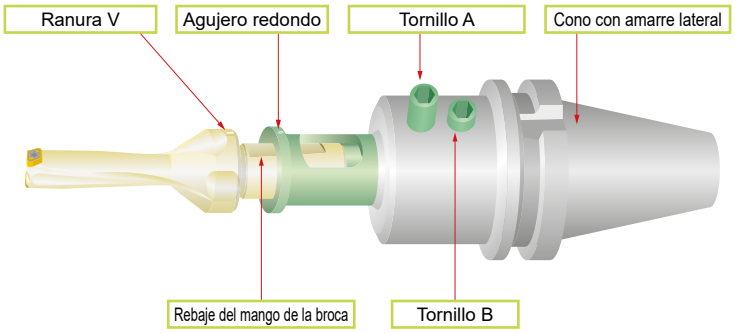
● : Stock Europa. ★ : Stock Japón.

■ APLICACIÓN DE JUST FIT SLEEVE

1. Cuando coloque la herramienta en el cono de amarre, alinee la ranura V con el filo periférico exterior de la broca, así como los agujeros redondos del eje periférico exterior de la brida del casquillo y los tornillos de amarre para fijar la broca. (Si la broca no tiene ranura V, alinear el rebaje del mango de la broca con los agujeros redondos del casquillo.)

2. Tornillos. A como brida lateral directamente para sujetar amarre de la broca. El tornillo B, solo aprieta a un grado para no dañar el cono.

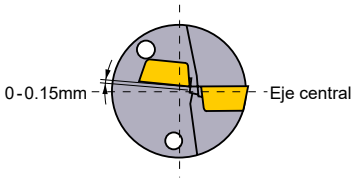
(Nota)
- No se pueden realizar ajustes finos para el diámetro del casquillo.
- No puede utilizarse con herramientas con pinza de sujección.



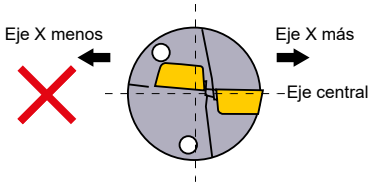
■ APLICACIÓN DE LA BROCA MVX

●Utilización en un torno

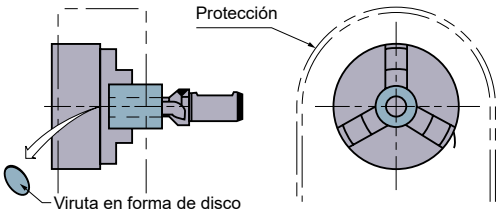
(1) La placa exterior y el eje X de la máquina deben situarse en paralelo. La broca está diseñada de modo que el centro de la placa interior quede 0-0,15 mm más baja al alinear el centro de la broca con el centro del eje de la máquina.
*La placa interior puede romperse si la altura del centro de la placa interior es mayor al eje X de la máquina.



(2) Para ajustar el diámetro del agujero con el desplazamiento de la broca, el filo de corte y el eje de la máquin deben estar en paralelo. Consulte la lista de dimensiones del portaherramientas para conocer la tasa de ajuste máxima de cada portaherramientas.
*No se recomienda ajustar a la dirección menos de eje X (dirección de reducción del diámetro del agujero), ya que el portaherramientas podría interferir con el agujero.



(3) Al taladrar agujeros pasantes en un torno, el disco producido por la broca al salir de la pieza de trabajo puede salir despedida a alta velocidad. Para reducir el peligro de lesiones o daños, se recomienda utilizar una protección.

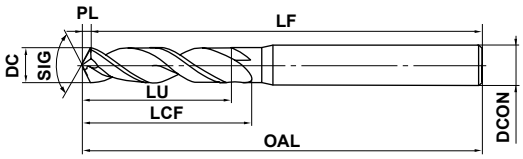


VAPDS

Longitud corta, Alta precisión

DC<2 DC≥2

P M K N S H



*LU = LCF-2DC (máx. 3×DC)

0.5≤DC≤3	3<DC≤6	6<DC≤10	10<DC≤13
0 −0.014	0 −0.018	0 −0.022	0 −0.027

* Todas las brocas excepto con intervalos de 0.1mm y por debajo de diam. 2.0mm tienen tolerancia de 0−0.009mm.

● El taladrado de alta eficiencia y la larga vida de la herramienta ha sido mejorarada gracias a la nueva calidad desarrollada Violet.

DC (mm)	Referencia	Dimensiones (mm) LCF	OAL	LF	PL	DCON	Stock
0.50	VAPDSD0050	3.2	50.2	50	0.15	3	●
0.51	VAPDSD0051	3.2	50.2	50	0.15	3	★
0.52	VAPDSD0052	3.2	50.2	50	0.16	3	★
0.53	VAPDSD0053	3.2	50.2	50	0.16	3	★
0.54	VAPDSD0054	3.2	50.2	50	0.16	3	★
0.55	VAPDSD0055	3.2	50.2	50	0.17	3	★
0.56	VAPDSD0056	4.2	50.2	50	0.17	3	★
0.57	VAPDSD0057	4.2	50.2	50	0.17	3	★
0.58	VAPDSD0058	4.2	50.2	50	0.17	3	★
0.59	VAPDSD0059	4.2	50.2	50	0.18	3	★
0.60	VAPDSD0060	5.2	50.2	50	0.18	3	★
0.61	VAPDSD0061	5.2	50.2	50	0.18	3	★
0.62	VAPDSD0062	5.2	50.2	50	0.19	3	★
0.63	VAPDSD0063	5.2	50.2	50	0.19	3	★
0.64	VAPDSD0064	5.2	50.2	50	0.19	3	★
0.65	VAPDSD0065	5.2	50.2	50	0.20	3	★
0.66	VAPDSD0066	5.2	50.2	50	0.20	3	★
0.67	VAPDSD0067	5.2	50.2	50	0.20	3	★
0.68	VAPDSD0068	5.2	50.2	50	0.20	3	★
0.69	VAPDSD0069	5.2	50.2	50	0.21	3	★
0.70	VAPDSD0070	5.2	50.2	50	0.21	3	★
0.71	VAPDSD0071	5.2	50.2	50	0.21	3	★
0.72	VAPDSD0072	5.2	50.2	50	0.22	3	★
0.73	VAPDSD0073	5.2	50.2	50	0.22	3	★
0.74	VAPDSD0074	5.2	50.2	50	0.22	3	★
0.75	VAPDSD0075	5.2	50.2	50	0.23	3	★
0.76	VAPDSD0076	5.2	50.2	50	0.23	3	★
0.77	VAPDSD0077	5.2	50.2	50	0.23	3	★
0.78	VAPDSD0078	5.2	50.2	50	0.23	3	★
0.79	VAPDSD0079	5.2	50.2	50	0.24	3	★
0.80	VAPDSD0080	5.2	50.2	50	0.24	3	★
0.81	VAPDSD0081	5.2	50.2	50	0.24	3	★
0.82	VAPDSD0082	5.3	50.3	50	0.25	3	★

DC (mm)	Referencia	Dimensiones (mm) LCF	OAL	LF	PL	DCON	Stock
0.83	VAPDSD0083	5.3	50.3	50	0.25	3	★
0.84	VAPDSD0084	5.3	50.3	50	0.25	3	★
0.85	VAPDSD0085	5.3	50.3	50	0.26	3	★
0.86	VAPDSD0086	6.3	50.3	50	0.26	3	★
0.87	VAPDSD0087	6.3	50.3	50	0.26	3	★
0.88	VAPDSD0088	6.3	50.3	50	0.26	3	★
0.89	VAPDSD0089	6.3	50.3	50	0.27	3	★
0.90	VAPDSD0090	6.3	50.3	50	0.27	3	★
0.91	VAPDSD0091	6.3	50.3	50	0.27	3	★
0.92	VAPDSD0092	6.3	50.3	50	0.28	3	★
0.93	VAPDSD0093	6.3	50.3	50	0.28	3	★
0.94	VAPDSD0094	6.3	50.3	50	0.28	3	★
0.95	VAPDSD0095	6.3	50.3	50	0.29	3	★
0.96	VAPDSD0096	6.3	50.3	50	0.29	3	★
0.97	VAPDSD0097	6.3	50.3	50	0.29	3	★
0.98	VAPDSD0098	6.3	50.3	50	0.29	3	★
0.99	VAPDSD0099	6.3	50.3	50	0.30	3	★
1.00	VAPDSD0100	6.3	50.3	50	0.3	3	●
1.01	VAPDSD0101	6.3	50.3	50	0.3	3	★
1.02	VAPDSD0102	6.3	50.3	50	0.3	3	★
1.03	VAPDSD0103	6.3	50.3	50	0.3	3	★
1.04	VAPDSD0104	6.3	50.3	50	0.3	3	★
1.05	VAPDSD0105	6.3	50.3	50	0.3	3	★
1.06	VAPDSD0106	6.3	50.3	50	0.3	3	★
1.07	VAPDSD0107	8.3	55.3	55	0.3	3	★
1.08	VAPDSD0108	8.3	55.3	55	0.3	3	★
1.09	VAPDSD0109	8.3	55.3	55	0.3	3	★
1.10	VAPDSD0110	8.3	55.3	55	0.3	3	★
1.11	VAPDSD0111	8.3	55.3	55	0.3	3	★
1.12	VAPDSD0112	8.3	55.3	55	0.3	3	★
1.13	VAPDSD0113	8.3	55.3	55	0.3	3	★
1.14	VAPDSD0114	8.3	55.3	55	0.3	3	★
1.15	VAPDSD0115	8.4	55.4	55	0.4	3	★

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
1.16	VAPDSD0116	8.4	55.4	55	0.4	3	★
1.17	VAPDSD0117	8.4	55.4	55	0.4	3	★
1.18	VAPDSD0118	8.4	55.4	55	0.4	3	★
1.19	VAPDSD0119	8.4	55.4	55	0.4	3	★
1.20	VAPDSD0120	8.4	55.4	55	0.4	3	★
1.21	VAPDSD0121	8.4	55.4	55	0.4	3	★
1.22	VAPDSD0122	8.4	55.4	55	0.4	3	★
1.23	VAPDSD0123	8.4	55.4	55	0.4	3	★
1.24	VAPDSD0124	8.4	55.4	55	0.4	3	★
1.25	VAPDSD0125	8.4	55.4	55	0.4	3	★
1.26	VAPDSD0126	8.4	55.4	55	0.4	3	★
1.27	VAPDSD0127	8.4	55.4	55	0.4	3	★
1.28	VAPDSD0128	8.4	55.4	55	0.4	3	★
1.29	VAPDSD0129	8.4	55.4	55	0.4	3	★
1.30	VAPDSD0130	9.4	55.4	55	0.4	3	★
1.31	VAPDSD0131	9.4	55.4	55	0.4	3	★
1.32	VAPDSD0132	9.4	55.4	55	0.4	3	★
1.33	VAPDSD0133	9.4	55.4	55	0.4	3	★
1.34	VAPDSD0134	9.4	55.4	55	0.4	3	★
1.35	VAPDSD0135	9.4	55.4	55	0.4	3	★
1.36	VAPDSD0136	9.4	55.4	55	0.4	3	★
1.37	VAPDSD0137	9.4	55.4	55	0.4	3	★
1.38	VAPDSD0138	9.4	55.4	55	0.4	3	★
1.39	VAPDSD0139	9.4	55.4	55	0.4	3	★
1.40	VAPDSD0140	9.4	55.4	55	0.4	3	★
1.41	VAPDSD0141	9.4	55.4	55	0.4	3	★
1.42	VAPDSD0142	9.4	55.4	55	0.4	3	★
1.43	VAPDSD0143	9.4	55.4	55	0.4	3	★
1.44	VAPDSD0144	9.4	55.4	55	0.4	3	★
1.45	VAPDSD0145	9.4	55.4	55	0.4	3	★
1.46	VAPDSD0146	9.4	55.4	55	0.4	3	★
1.47	VAPDSD0147	9.4	55.4	55	0.4	3	★
1.48	VAPDSD0148	9.4	55.4	55	0.4	3	★
1.49	VAPDSD0149	9.5	55.5	55	0.5	3	★
1.50	VAPDSD0150	9.5	55.5	55	0.5	3	●
1.51	VAPDSD0151	11.5	55.5	55	0.5	3	★
1.52	VAPDSD0152	11.5	55.5	55	0.5	3	★
1.53	VAPDSD0153	11.5	55.5	55	0.5	3	★
1.54	VAPDSD0154	11.5	55.5	55	0.5	3	★
1.55	VAPDSD0155	11.5	55.5	55	0.5	3	★
1.56	VAPDSD0156	11.5	55.5	55	0.5	3	★
1.57	VAPDSD0157	11.5	55.5	55	0.5	3	★
1.58	VAPDSD0158	11.5	55.5	55	0.5	3	★
1.59	VAPDSD0159	11.5	55.5	55	0.5	3	★
1.60	VAPDSD0160	11.5	55.5	55	0.5	3	★
1.61	VAPDSD0161	11.5	55.5	55	0.5	3	★
1.62	VAPDSD0162	11.5	55.5	55	0.5	3	★
1.63	VAPDSD0163	11.5	55.5	55	0.5	3	★
1.64	VAPDSD0164	11.5	55.5	55	0.5	3	★
1.65	VAPDSD0165	11.5	55.5	55	0.5	3	★

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
1.66	VAPDSD0166	11.5	55.5	55	0.5	3	★
1.67	VAPDSD0167	11.5	55.5	55	0.5	3	★
1.68	VAPDSD0168	11.5	55.5	55	0.5	3	★
1.69	VAPDSD0169	11.5	55.5	55	0.5	3	★
1.70	VAPDSD0170	11.5	55.5	55	0.5	3	★
1.71	VAPDSD0171	11.5	55.5	55	0.5	3	★
1.72	VAPDSD0172	11.5	55.5	55	0.5	3	★
1.73	VAPDSD0173	11.5	55.5	55	0.5	3	★
1.74	VAPDSD0174	11.5	55.5	55	0.5	3	★
1.75	VAPDSD0175	11.5	55.5	55	0.5	3	★
1.76	VAPDSD0176	11.5	55.5	55	0.5	3	★
1.77	VAPDSD0177	11.5	55.5	55	0.5	3	★
1.78	VAPDSD0178	11.5	55.5	55	0.5	3	★
1.79	VAPDSD0179	11.5	55.5	55	0.5	3	★
1.80	VAPDSD0180	11.5	55.5	55	0.5	3	★
1.81	VAPDSD0181	11.5	55.5	55	0.5	3	★
1.82	VAPDSD0182	11.6	55.6	55	0.6	3	★
1.83	VAPDSD0183	11.6	55.6	55	0.6	3	★
1.84	VAPDSD0184	11.6	55.6	55	0.6	3	★
1.85	VAPDSD0185	11.6	55.6	55	0.6	3	★
1.86	VAPDSD0186	11.6	55.6	55	0.6	3	★
1.87	VAPDSD0187	11.6	55.6	55	0.6	3	★
1.88	VAPDSD0188	11.6	55.6	55	0.6	3	★
1.89	VAPDSD0189	11.6	55.6	55	0.6	3	★
1.90	VAPDSD0190	12.6	55.6	55	0.6	3	★
1.91	VAPDSD0191	12.6	60.6	60	0.6	3	★
1.92	VAPDSD0192	12.6	60.6	60	0.6	3	★
1.93	VAPDSD0193	12.6	60.6	60	0.6	3	★
1.94	VAPDSD0194	12.6	60.6	60	0.6	3	★
1.95	VAPDSD0195	12.6	60.6	60	0.6	3	★
1.96	VAPDSD0196	12.6	60.6	60	0.6	3	★
1.97	VAPDSD0197	12.6	60.6	60	0.6	3	★
1.98	VAPDSD0198	12.6	60.6	60	0.6	3	★
1.99	VAPDSD0199	12.6	60.6	60	0.6	3	★
2.00	VAPDSD0200	12.4	60.4	60	0.4	3	●
2.05	VAPDSD0205	12.4	60.4	60	0.4	3	★
2.10	VAPDSD0210	12.4	60.4	60	0.4	3	★
2.15	VAPDSD0215	12.5	60.5	60	0.5	3	★
2.20	VAPDSD0220	12.5	60.5	60	0.5	3	★
2.25	VAPDSD0225	12.5	60.5	60	0.5	3	★
2.30	VAPDSD0230	13.5	60.5	60	0.5	3	★
2.35	VAPDSD0235	13.5	60.5	60	0.5	3	★
2.40	VAPDSD0240	13.5	60.5	60	0.5	3	★
2.45	VAPDSD0245	13.5	60.5	60	0.5	3	★
2.50	VAPDSD0250	13.5	60.5	60	0.5	3	●
2.55	VAPDSD0255	13.5	60.5	60	0.5	3	★
2.60	VAPDSD0260	15.5	60.5	60	0.5	3	★
2.65	VAPDSD0265	15.6	60.6	60	0.6	3	★
2.70	VAPDSD0270	15.6	60.6	60	0.6	3	★
2.75	VAPDSD0275	15.6	60.6	60	0.6	3	★

CONDICIONES DE CORTE ➢ M178
DATOS TÉCNICOS ➢ P001

VAPDS

Longitud corta, Alta precisión

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
2.80	VAPDSD0280	15.6	60.6	60	0.6	3	★
2.85	VAPDSD0285	15.6	60.6	60	0.6	3	★
2.90	VAPDSD0290	15.6	60.6	60	0.6	3	★
2.95	VAPDSD0295	15.6	60.6	60	0.6	3	★
3.00	VAPDSD0300	15.6	60.6	60	0.6	3	●
3.05	VAPDSD0305	17.6	70.6	70	0.6	4	★
3.10	VAPDSD0310	17.6	70.6	70	0.6	4	★
3.15	VAPDSD0315	17.7	70.7	70	0.7	4	★
3.20	VAPDSD0320	17.7	70.7	70	0.7	4	★
3.25	VAPDSD0325	17.7	70.7	70	0.7	4	★
3.30	VAPDSD0330	19.7	70.7	70	0.7	4	★
3.35	VAPDSD0335	19.7	70.7	70	0.7	4	★
3.40	VAPDSD0340	19.7	70.7	70	0.7	4	★
3.45	VAPDSD0345	19.7	70.7	70	0.7	4	★
3.50	VAPDSD0350	19.7	70.7	70	0.7	4	●
3.55	VAPDSD0355	19.7	70.7	70	0.7	4	★
3.60	VAPDSD0360	21.8	70.8	70	0.8	4	★
3.65	VAPDSD0365	21.8	70.8	70	0.8	4	★
3.70	VAPDSD0370	21.8	70.8	70	0.8	4	★
3.75	VAPDSD0375	21.8	70.8	70	0.8	4	★
3.80	VAPDSD0380	21.8	70.8	70	0.8	4	★
3.85	VAPDSD0385	21.8	70.8	70	0.8	4	★
3.90	VAPDSD0390	21.8	70.8	70	0.8	4	★
3.95	VAPDSD0395	21.8	70.8	70	0.8	4	★
4.00	VAPDSD0400	21.8	70.8	70	0.8	4	●
4.05	VAPDSD0405	21.8	80.8	80	0.8	6	★
4.10	VAPDSD0410	21.9	80.9	80	0.9	6	★
4.15	VAPDSD0415	21.9	80.9	80	0.9	6	★
4.20	VAPDSD0420	21.9	80.9	80	0.9	6	★
4.25	VAPDSD0425	21.9	80.9	80	0.9	6	★
4.30	VAPDSD0430	23.9	80.9	80	0.9	6	★
4.35	VAPDSD0435	23.9	80.9	80	0.9	6	★
4.40	VAPDSD0440	23.9	80.9	80	0.9	6	★
4.45	VAPDSD0445	23.9	80.9	80	0.9	6	★
4.50	VAPDSD0450	23.9	80.9	80	0.9	6	●
4.55	VAPDSD0455	23.9	80.9	80	0.9	6	★
4.60	VAPDSD0460	26.0	81.0	80	1.0	6	★
4.65	VAPDSD0465	26.0	81.0	80	1.0	6	★
4.70	VAPDSD0470	26.0	81.0	80	1.0	6	★
4.75	VAPDSD0475	26.0	81.0	80	1.0	6	★
4.80	VAPDSD0480	26.0	81.0	80	1.0	6	★
4.85	VAPDSD0485	26.0	81.0	80	1.0	6	★
4.90	VAPDSD0490	26.0	81.0	80	1.0	6	★
4.95	VAPDSD0495	26.0	81.0	80	1.0	6	★
5.00	VAPDSD0500	26.0	81.0	80	1.0	6	●
5.05	VAPDSD0505	26.1	81.1	80	1.1	6	★
5.10	VAPDSD0510	26.1	81.1	80	1.1	6	★
5.15	VAPDSD0515	26.1	81.1	80	1.1	6	★
5.20	VAPDSD0520	26.1	81.1	80	1.1	6	★
5.25	VAPDSD0525	26.1	81.1	80	1.1	6	★

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
5.30	VAPDSD0530	26.1	81.1	80	1.1	6	★
5.35	VAPDSD0535	28.1	81.1	80	1.1	6	★
5.40	VAPDSD0540	28.1	81.1	80	1.1	6	★
5.45	VAPDSD0545	28.1	81.1	80	1.1	6	★
5.50	VAPDSD0550	28.1	81.1	80	1.1	6	●
5.55	VAPDSD0555	28.2	81.2	80	1.2	6	★
5.60	VAPDSD0560	28.2	81.2	80	1.2	6	★
5.65	VAPDSD0565	28.2	81.2	80	1.2	6	★
5.70	VAPDSD0570	28.2	81.2	80	1.2	6	★
5.75	VAPDSD0575	28.2	81.2	80	1.2	6	★
5.80	VAPDSD0580	28.2	81.2	80	1.2	6	★
5.85	VAPDSD0585	28.2	81.2	80	1.2	6	★
5.90	VAPDSD0590	28.2	81.2	80	1.2	6	★
5.95	VAPDSD0595	28.2	81.2	80	1.2	6	★
6.00	VAPDSD0600	28.2	81.2	80	1.2	6	●
6.05	VAPDSD0605	31.3	81.3	80	1.3	8	★
6.10	VAPDSD0610	31.3	81.3	80	1.3	8	★
6.15	VAPDSD0615	31.3	81.3	80	1.3	8	★
6.20	VAPDSD0620	31.3	81.3	80	1.3	8	★
6.25	VAPDSD0625	31.3	81.3	80	1.3	8	★
6.30	VAPDSD0630	31.3	81.3	80	1.3	8	★
6.35	VAPDSD0635	31.3	81.3	80	1.3	8	★
6.40	VAPDSD0640	31.3	81.3	80	1.3	8	★
6.45	VAPDSD0645	31.3	81.3	80	1.3	8	★
6.50	VAPDSD0650	31.4	81.4	80	1.4	8	●
6.55	VAPDSD0655	31.4	81.4	80	1.4	8	★
6.60	VAPDSD0660	31.4	81.4	80	1.4	8	★
6.65	VAPDSD0665	31.4	81.4	80	1.4	8	★
6.70	VAPDSD0670	31.4	81.4	80	1.4	8	★
6.75	VAPDSD0675	33.4	81.4	80	1.4	8	★
6.80	VAPDSD0680	33.4	81.4	80	1.4	8	★
6.85	VAPDSD0685	33.4	81.4	80	1.4	8	★
6.90	VAPDSD0690	33.4	81.4	80	1.4	8	★
6.95	VAPDSD0695	33.4	81.4	80	1.4	8	★
7.00	VAPDSD0700	33.5	81.5	80	1.5	8	●
7.05	VAPDSD0705	33.5	81.5	80	1.5	8	★
7.10	VAPDSD0710	33.5	81.5	80	1.5	8	★
7.15	VAPDSD0715	33.5	81.5	80	1.5	8	★
7.20	VAPDSD0720	33.5	81.5	80	1.5	8	★
7.25	VAPDSD0725	33.5	81.5	80	1.5	8	★
7.30	VAPDSD0730	33.5	81.5	80	1.5	8	★
7.35	VAPDSD0735	33.5	81.5	80	1.5	8	★
7.40	VAPDSD0740	33.5	81.5	80	1.5	8	★
7.45	VAPDSD0745	33.5	81.5	80	1.5	8	★
7.50	VAPDSD0750	33.6	81.6	80	1.6	8	●
7.55	VAPDSD0755	36.6	86.6	85	1.6	8	★
7.60	VAPDSD0760	36.6	86.6	85	1.6	8	★
7.65	VAPDSD0765	36.6	86.6	85	1.6	8	★
7.70	VAPDSD0770	36.6	86.6	85	1.6	8	★
7.75	VAPDSD0775	36.6	86.6	85	1.6	8	★

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
7.80	VAPDSD0780	36.6	86.6	85	1.6	8	★
7.85	VAPDSD0785	36.6	86.6	85	1.6	8	★
7.90	VAPDSD0790	36.6	86.6	85	1.6	8	★
7.95	VAPDSD0795	36.7	86.7	85	1.7	8	★
8.00	VAPDSD0800	36.7	86.7	85	1.7	8	●
8.05	VAPDSD0805	36.7	91.7	90	1.7	10	★
8.10	VAPDSD0810	36.7	91.7	90	1.7	10	★
8.15	VAPDSD0815	36.7	91.7	90	1.7	10	★
8.20	VAPDSD0820	36.7	91.7	90	1.7	10	★
8.25	VAPDSD0825	36.7	91.7	90	1.7	10	★
8.30	VAPDSD0830	36.7	91.7	90	1.7	10	★
8.35	VAPDSD0835	36.7	91.7	90	1.7	10	★
8.40	VAPDSD0840	36.7	91.7	90	1.7	10	★
8.45	VAPDSD0845	36.8	91.8	90	1.8	10	★
8.50	VAPDSD0850	36.8	91.8	90	1.8	10	●
8.55	VAPDSD0855	39.8	94.8	93	1.8	10	★
8.60	VAPDSD0860	39.8	94.8	93	1.8	10	★
8.65	VAPDSD0865	39.8	94.8	93	1.8	10	★
8.70	VAPDSD0870	39.8	94.8	93	1.8	10	★
8.75	VAPDSD0875	39.8	94.8	93	1.8	10	★
8.80	VAPDSD0880	39.8	94.8	93	1.8	10	★
8.85	VAPDSD0885	39.8	94.8	93	1.8	10	★
8.90	VAPDSD0890	39.8	94.8	93	1.8	10	★
8.95	VAPDSD0895	39.9	94.9	93	1.9	10	★
9.00	VAPDSD0900	39.9	94.9	93	1.9	10	●
9.10	VAPDSD0910	39.9	94.9	93	1.9	10	★
9.20	VAPDSD0920	39.9	94.9	93	1.9	10	★
9.30	VAPDSD0930	39.9	94.9	93	1.9	10	★
9.40	VAPDSD0940	40.0	95.0	93	2.0	10	★
9.50	VAPDSD0950	40.0	95.0	93	2.0	10	●
9.60	VAPDSD0960	43.0	98.0	96	2.0	10	★
9.70	VAPDSD0970	43.0	98.0	96	2.0	10	★
9.80	VAPDSD0980	43.0	98.0	96	2.0	10	★
9.90	VAPDSD0990	43.1	98.1	96	2.1	10	★
10.00	VAPDSD1000	43.1	98.1	96	2.1	10	●
10.10	VAPDSD1010	43.1	103.1	101	2.1	12	★
10.20	VAPDSD1020	43.1	103.1	101	2.1	12	★
10.30	VAPDSD1030	43.1	103.1	101	2.1	12	★
10.40	VAPDSD1040	43.2	103.2	101	2.2	12	★
10.50	VAPDSD1050	43.2	103.2	101	2.2	12	●
10.60	VAPDSD1060	43.2	103.2	101	2.2	12	★
10.70	VAPDSD1070	47.2	107.2	105	2.2	12	★
10.80	VAPDSD1080	47.2	107.2	105	2.2	12	★
10.90	VAPDSD1090	47.3	107.3	105	2.3	12	★
11.00	VAPDSD1100	47.3	107.3	105	2.3	12	●
11.10	VAPDSD1110	47.3	107.3	105	2.3	12	★
11.20	VAPDSD1120	47.3	107.3	105	2.3	12	★
11.30	VAPDSD1130	47.3	107.3	105	2.3	12	★
11.40	VAPDSD1140	47.4	107.4	105	2.4	12	★
11.50	VAPDSD1150	47.4	107.4	105	2.4	12	★

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
11.60	VAPDSD1160	47.4	107.4	105	2.4	12	★
11.70	VAPDSD1170	47.4	107.4	105	2.4	12	★
11.80	VAPDSD1180	47.4	107.4	105	2.4	12	★
11.90	VAPDSD1190	51.5	111.5	109	2.5	12	★
12.00	VAPDSD1200	51.5	111.5	109	2.5	12	●
12.10	VAPDSD1210	51.5	111.5	109	2.5	12	★
12.20	VAPDSD1220	51.5	111.5	109	2.5	12	★
12.30	VAPDSD1230	51.6	111.6	109	2.6	12	★
12.40	VAPDSD1240	51.6	111.6	109	2.6	12	★
12.50	VAPDSD1250	51.6	111.6	109	2.6	12	●
12.60	VAPDSD1260	51.6	111.6	109	2.6	12	★
12.70	VAPDSD1270	51.6	111.6	109	2.6	12	★
12.80	VAPDSD1280	51.7	111.7	109	2.7	12	★
12.90	VAPDSD1290	51.7	111.7	109	2.7	12	★
13.00	VAPDSD1300	51.7	111.7	109	2.7	12	★

CONDICIONES DE CORTE ➢ M178
DATOS TÉCNICOS ➢ P001

VAPDS

Longitud corta, Alta precisión

CONDICIONES DE CORTE RECOMENDADAS

Material	P		P	K	P	M	P	M
	Acero Estructural		Acero al carbono Ck55 Acero aleado 070M55 Fundición		Acero aleado para herramientas X210Cr12 (Materiales de baja dureza) Acero inoxidable ferrítico X10CrAl18, X10CrAl13 Acero inoxidable X20Cr13, X10CrAl13		Acero aleado para herramientas X40CrMoV51 (−40HRC) Acero inoxidable de endurecimiento por precipitación X7CrNiAl177	
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)
0.5	18000	0.02	16000	0.02	9000	0.02	8200	0.02
1.0	12000	0.05	10000	0.05	6300	0.05	5500	0.04
2.0	6400	0.09	5500	0.09	3200	0.09	2900	0.05
3.0	4300	0.13	3700	0.13	2100	0.13	1900	0.06
4.0	3200	0.15	2800	0.15	1600	0.15	1400	0.08
5.0	2600	0.18	2200	0.18	1300	0.18	1100	0.10
6.0	2100	0.19	1800	0.19	1100	0.20	950	0.11
8.0	1600	0.24	1400	0.24	800	0.22	720	0.13
10.0	1300	0.28	1100	0.28	640	0.25	570	0.15
12.0	1100	0.34	930	0.34	530	0.30	480	0.17
13.0	980	0.36	860	0.36	490	0.32	440	0.19

Nota 1) Reduzca las revoluciones y el avance en función del taladrado cuando la sujeción del material no tenga la rigidez suficiente o su máquina tenga limitaciones.
Nota 2) Utilice un anillo y un plato de sujeción.
Nota 3) Utilice suficiente fluido de corte.
Nota 4) Cuando taladramos agujeros mayores que 4 x diámetro de la broca, por favor utilizar el avance.
Nota 5) Las condiciones de corte mencionadas más arriba son el estándar cuando se corta en fluido soluble en agua.
Reduzca las revoluciones cuando corte en fluido no soluble en agua.

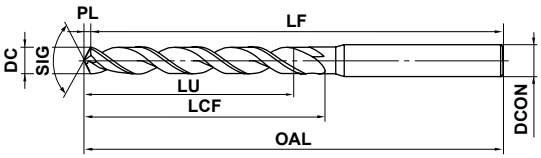
VAPDM

Longitud media, Alta precisión

HG HSS | V | 118° DC<2 | 135° DC≥2 | X

Acero rápido (HSS)

P | M | K | N | S | H



*LU = LCF-2DC (máx. 5×DC)

0.5≤DC≤3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤30	30<DC≤32
0 −0.014	0 −0.018	0 −0.022	0 −0.027	0 −0.033	0 −0.039

● El taladrado de alta eficiencia y la larga vida de la herramienta ha sido mejorarada gracias a la nueva calidad desarrollada Violet.

DC (mm)	Referencia	Dimensiones (mm) LCF	OAL	LF	PL	DCON	Stock
0.50	VAPDMD0050	6.2	50.2	50	0.15	3	●
0.55	VAPDMD0055	6.2	50.2	50	0.17	3	★
0.60	VAPDMD0060	8.2	50.2	50	0.18	3	★
0.65	VAPDMD0065	8.2	50.2	50	0.20	3	★
0.70	VAPDMD0070	10.2	50.2	50	0.21	3	★
0.75	VAPDMD0075	10.2	50.2	50	0.23	3	★
0.80	VAPDMD0080	10.2	50.2	50	0.24	3	★
0.85	VAPDMD0085	10.3	50.3	50	0.26	3	★
0.90	VAPDMD0090	12.3	50.3	50	0.27	3	★
0.95	VAPDMD0095	12.3	50.3	50	0.29	3	★
1.00	VAPDMD0100	12.3	60.3	60	0.3	3	●
1.05	VAPDMD0105	12.3	60.3	60	0.3	3	★
1.10	VAPDMD0110	16.3	60.3	60	0.3	3	★
1.15	VAPDMD0115	16.4	60.4	60	0.4	3	★
1.20	VAPDMD0120	16.4	60.4	60	0.4	3	★
1.25	VAPDMD0125	16.4	60.4	60	0.4	3	★
1.30	VAPDMD0130	16.4	60.4	60	0.4	3	★
1.35	VAPDMD0135	18.4	60.4	60	0.4	3	★
1.40	VAPDMD0140	18.4	60.4	60	0.4	3	★
1.45	VAPDMD0145	18.4	60.4	60	0.4	3	★
1.50	VAPDMD0150	18.5	60.5	60	0.5	3	●
1.55	VAPDMD0155	20.5	60.5	60	0.5	3	★
1.60	VAPDMD0160	20.5	60.5	60	0.5	3	★
1.65	VAPDMD0165	20.5	60.5	60	0.5	3	★
1.70	VAPDMD0170	20.5	60.5	60	0.5	3	★
1.75	VAPDMD0175	20.5	60.5	60	0.5	3	★
1.80	VAPDMD0180	22.5	60.5	60	0.5	3	★
1.85	VAPDMD0185	22.6	60.6	60	0.6	3	★
1.90	VAPDMD0190	22.6	60.6	60	0.6	3	★
1.95	VAPDMD0195	23.6	60.6	60	0.6	3	★
2.00	VAPDMD0200	23.4	70.4	70	0.4	3	●
2.05	VAPDMD0205	23.4	70.4	70	0.4	3	★
2.10	VAPDMD0210	23.4	70.4	70	0.4	3	★

DC (mm)	Referencia	Dimensiones (mm) LCF	OAL	LF	PL	DCON	Stock
2.15	VAPDMD0215	23.5	70.5	70	0.5	3	★
2.20	VAPDMD0220	26.5	70.5	70	0.5	3	★
2.25	VAPDMD0225	26.5	70.5	70	0.5	3	★
2.30	VAPDMD0230	26.5	70.5	70	0.5	3	★
2.35	VAPDMD0235	26.5	70.5	70	0.5	3	★
2.40	VAPDMD0240	29.5	70.5	70	0.5	3	★
2.45	VAPDMD0245	29.5	70.5	70	0.5	3	★
2.50	VAPDMD0250	29.5	70.5	70	0.5	3	●
2.55	VAPDMD0255	29.5	70.5	70	0.5	3	★
2.60	VAPDMD0260	29.5	70.5	70	0.5	3	★
2.65	VAPDMD0265	29.6	70.6	70	0.6	3	★
2.70	VAPDMD0270	32.6	70.6	70	0.6	3	★
2.75	VAPDMD0275	32.6	70.6	70	0.6	3	★
2.80	VAPDMD0280	32.6	70.6	70	0.6	3	★
2.85	VAPDMD0285	32.6	70.6	70	0.6	3	★
2.90	VAPDMD0290	32.6	70.6	70	0.6	3	★
2.95	VAPDMD0295	32.6	70.6	70	0.6	3	★
3.00	VAPDMD0300	32.6	70.6	70	0.6	3	●
3.05	VAPDMD0305	35.6	85.6	85	0.6	4	★
3.10	VAPDMD0310	35.6	85.6	85	0.6	4	★
3.15	VAPDMD0315	35.7	85.7	85	0.7	4	★
3.20	VAPDMD0320	35.7	85.7	85	0.7	4	★
3.25	VAPDMD0325	35.7	85.7	85	0.7	4	★
3.30	VAPDMD0330	35.7	85.7	85	0.7	4	★
3.35	VAPDMD0335	35.7	85.7	85	0.7	4	★
3.40	VAPDMD0340	38.7	85.7	85	0.7	4	★
3.45	VAPDMD0345	38.7	85.7	85	0.7	4	★
3.50	VAPDMD0350	38.7	85.7	85	0.7	4	●
3.55	VAPDMD0355	38.7	85.7	85	0.7	4	★
3.60	VAPDMD0360	38.8	85.8	85	0.8	4	★
3.65	VAPDMD0365	38.8	85.8	85	0.8	4	★
3.70	VAPDMD0370	38.8	85.8	85	0.8	4	★
3.75	VAPDMD0375	42.8	85.8	85	0.8	4	★

● : Stock Europa. ★ : Stock Japón.

CONDICIONES DE CORTE ➤ M182
DATOS TÉCNICOS ➤ P001

VAPDM

Longitud media, Alta precisión

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
3.80	VAPDMD0380	42.8	85.8	85	0.8	4	★
3.85	VAPDMD0385	42.8	85.8	85	0.8	4	★
3.90	VAPDMD0390	42.8	85.8	85	0.8	4	★
3.95	VAPDMD0395	42.8	85.8	85	0.8	4	★
4.00	VAPDMD0400	42.8	85.8	85	0.8	4	●
4.05	VAPDMD0405	42.8	100.8	100	0.8	6	★
4.10	VAPDMD0410	42.9	100.9	100	0.9	6	★
4.15	VAPDMD0415	42.9	100.9	100	0.9	6	★
4.20	VAPDMD0420	42.9	100.9	100	0.9	6	★
4.25	VAPDMD0425	46.9	100.9	100	0.9	6	★
4.30	VAPDMD0430	46.9	100.9	100	0.9	6	★
4.35	VAPDMD0435	46.9	100.9	100	0.9	6	★
4.40	VAPDMD0440	46.9	100.9	100	0.9	6	★
4.45	VAPDMD0445	46.9	100.9	100	0.9	6	★
4.50	VAPDMD0450	46.9	100.9	100	0.9	6	●
4.55	VAPDMD0455	46.9	100.9	100	0.9	6	★
4.60	VAPDMD0460	47.0	101.0	100	1.0	6	★
4.65	VAPDMD0465	47.0	101.0	100	1.0	6	★
4.70	VAPDMD0470	47.0	101.0	100	1.0	6	★
4.75	VAPDMD0475	47.0	101.0	100	1.0	6	★
4.80	VAPDMD0480	52.0	101.0	100	1.0	6	★
4.85	VAPDMD0485	52.0	101.0	100	1.0	6	★
4.90	VAPDMD0490	52.0	101.0	100	1.0	6	★
4.95	VAPDMD0495	52.0	101.0	100	1.0	6	★
5.00	VAPDMD0500	52.0	101.0	100	1.0	6	●
5.05	VAPDMD0505	52.1	101.1	100	1.1	6	★
5.10	VAPDMD0510	52.1	101.1	100	1.1	6	★
5.15	VAPDMD0515	52.1	101.1	100	1.1	6	★
5.20	VAPDMD0520	52.1	101.1	100	1.1	6	★
5.25	VAPDMD0525	52.1	101.1	100	1.1	6	★
5.30	VAPDMD0530	52.1	101.1	100	1.1	6	★
5.35	VAPDMD0535	57.1	107.1	106	1.1	6	★
5.40	VAPDMD0540	57.1	107.1	106	1.1	6	★
5.45	VAPDMD0545	57.1	107.1	106	1.1	6	★
5.50	VAPDMD0550	57.1	107.1	106	1.1	6	●
5.55	VAPDMD0555	57.2	107.2	106	1.2	6	★
5.60	VAPDMD0560	57.2	107.2	106	1.2	6	★
5.65	VAPDMD0565	57.2	107.2	106	1.2	6	★
5.70	VAPDMD0570	57.2	107.2	106	1.2	6	★
5.75	VAPDMD0575	57.2	107.2	106	1.2	6	★
5.80	VAPDMD0580	57.2	107.2	106	1.2	6	★
5.85	VAPDMD0585	57.2	107.2	106	1.2	6	★
5.90	VAPDMD0590	57.2	107.2	106	1.2	6	★
5.95	VAPDMD0595	57.2	107.2	106	1.2	6	★
6.00	VAPDMD0600	57.2	107.2	106	1.2	6	●
6.05	VAPDMD0605	63.3	113.3	112	1.3	8	★
6.10	VAPDMD0610	63.3	113.3	112	1.3	8	★
6.15	VAPDMD0615	63.3	113.3	112	1.3	8	★
6.20	VAPDMD0620	63.3	113.3	112	1.3	8	★
6.25	VAPDMD0625	63.3	113.3	112	1.3	8	★

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
6.30	VAPDMD0630	63.3	113.3	112	1.3	8	★
6.35	VAPDMD0635	63.3	113.3	112	1.3	8	★
6.40	VAPDMD0640	63.3	113.3	112	1.3	8	★
6.45	VAPDMD0645	63.3	113.3	112	1.3	8	★
6.50	VAPDMD0650	63.4	113.4	112	1.4	8	●
6.55	VAPDMD0655	63.4	113.4	112	1.4	8	★
6.60	VAPDMD0660	63.4	113.4	112	1.4	8	★
6.65	VAPDMD0665	63.4	113.4	112	1.4	8	★
6.70	VAPDMD0670	63.4	113.4	112	1.4	8	★
6.75	VAPDMD0675	68.4	118.4	117	1.4	8	★
6.80	VAPDMD0680	68.4	118.4	117	1.4	8	★
6.85	VAPDMD0685	68.4	118.4	117	1.4	8	★
6.90	VAPDMD0690	68.4	118.4	117	1.4	8	★
6.95	VAPDMD0695	68.4	118.4	117	1.4	8	★
7.00	VAPDMD0700	68.5	118.5	117	1.5	8	●
7.05	VAPDMD0705	68.5	118.5	117	1.5	8	★
7.10	VAPDMD0710	68.5	118.5	117	1.5	8	★
7.15	VAPDMD0715	68.5	118.5	117	1.5	8	★
7.20	VAPDMD0720	68.5	118.5	117	1.5	8	★
7.25	VAPDMD0725	68.5	118.5	117	1.5	8	★
7.30	VAPDMD0730	68.5	118.5	117	1.5	8	★
7.35	VAPDMD0735	68.5	118.5	117	1.5	8	★
7.40	VAPDMD0740	68.5	118.5	117	1.5	8	★
7.45	VAPDMD0745	68.5	118.5	117	1.5	8	★
7.50	VAPDMD0750	68.6	118.6	117	1.6	8	●
7.55	VAPDMD0755	74.6	124.6	123	1.6	8	★
7.60	VAPDMD0760	74.6	124.6	123	1.6	8	★
7.65	VAPDMD0765	74.6	124.6	123	1.6	8	★
7.70	VAPDMD0770	74.6	124.6	123	1.6	8	★
7.75	VAPDMD0775	74.6	124.6	123	1.6	8	★
7.80	VAPDMD0780	74.6	124.6	123	1.6	8	★
7.85	VAPDMD0785	74.6	124.6	123	1.6	8	★
7.90	VAPDMD0790	74.6	124.6	123	1.6	8	★
7.95	VAPDMD0795	74.7	124.7	123	1.7	8	★
8.00	VAPDMD0800	74.7	124.7	123	1.7	8	●
8.05	VAPDMD0805	74.7	129.7	128	1.7	10	★
8.10	VAPDMD0810	74.7	129.7	128	1.7	10	★
8.15	VAPDMD0815	74.7	129.7	128	1.7	10	★
8.20	VAPDMD0820	74.7	129.7	128	1.7	10	★
8.25	VAPDMD0825	74.7	129.7	128	1.7	10	★
8.30	VAPDMD0830	74.7	129.7	128	1.7	10	★
8.35	VAPDMD0835	74.7	129.7	128	1.7	10	★
8.40	VAPDMD0840	74.7	129.7	128	1.7	10	★
8.45	VAPDMD0845	74.8	129.8	128	1.8	10	★
8.50	VAPDMD0850	74.8	129.8	128	1.8	10	●
8.55	VAPDMD0855	80.8	135.8	134	1.8	10	★
8.60	VAPDMD0860	80.8	135.8	134	1.8	10	★
8.65	VAPDMD0865	80.8	135.8	134	1.8	10	★
8.70	VAPDMD0870	80.8	135.8	134	1.8	10	★
8.75	VAPDMD0875	80.8	135.8	134	1.8	10	★

● : Stock Europa. ★ : Stock Japón.

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
8.80	VAPDMD0880	80.8	135.8	134	1.8	10	★
8.85	VAPDMD0885	80.8	135.8	134	1.8	10	★
8.90	VAPDMD0890	80.8	135.8	134	1.8	10	★
8.95	VAPDMD0895	80.9	135.9	134	1.9	10	★
9.00	VAPDMD0900	80.9	135.9	134	1.9	10	●
9.10	VAPDMD0910	80.9	135.9	134	1.9	10	★
9.20	VAPDMD0920	80.9	135.9	134	1.9	10	★
9.30	VAPDMD0930	80.9	135.9	134	1.9	10	★
9.40	VAPDMD0940	81.0	136.0	134	2.0	10	★
9.50	VAPDMD0950	81.0	136.0	134	2.0	10	●
9.60	VAPDMD0960	87.0	142.0	140	2.0	10	★
9.70	VAPDMD0970	87.0	142.0	140	2.0	10	★
9.80	VAPDMD0980	87.0	142.0	140	2.0	10	★
9.90	VAPDMD0990	87.1	142.1	140	2.1	10	★
10.00	VAPDMD1000	87.1	142.1	140	2.1	10	●
10.10	VAPDMD1010	87.1	147.1	145	2.1	12	★
10.20	VAPDMD1020	87.1	147.1	145	2.1	12	★
10.30	VAPDMD1030	87.1	147.1	145	2.1	12	★
10.40	VAPDMD1040	87.2	147.2	145	2.2	12	★
10.50	VAPDMD1050	87.2	147.2	145	2.2	12	●
10.60	VAPDMD1060	87.2	147.2	145	2.2	12	★
10.70	VAPDMD1070	94.2	154.2	152	2.2	12	★
10.80	VAPDMD1080	94.2	154.2	152	2.2	12	★
10.90	VAPDMD1090	94.3	154.3	152	2.3	12	★
11.00	VAPDMD1100	94.3	154.3	152	2.3	12	●
11.10	VAPDMD1110	94.3	154.3	152	2.3	12	★
11.20	VAPDMD1120	94.3	154.3	152	2.3	12	★
11.30	VAPDMD1130	94.3	154.3	152	2.3	12	★
11.40	VAPDMD1140	94.4	154.4	152	2.4	12	★
11.50	VAPDMD1150	94.4	154.4	152	2.4	12	●
11.60	VAPDMD1160	94.4	154.4	152	2.4	12	★
11.70	VAPDMD1170	94.4	154.4	152	2.4	12	★
11.80	VAPDMD1180	94.4	154.4	152	2.4	12	★
11.90	VAPDMD1190	101.5	161.5	159	2.5	12	★
12.00	VAPDMD1200	101.5	161.5	159	2.5	12	●
12.10	VAPDMD1210	101.5	161.5	159	2.5	12	★
12.20	VAPDMD1220	101.5	161.5	159	2.5	12	★
12.30	VAPDMD1230	101.6	161.6	159	2.6	12	★
12.40	VAPDMD1240	101.6	161.6	159	2.6	12	★
12.50	VAPDMD1250	101.6	161.6	159	2.6	12	●
12.60	VAPDMD1260	101.6	161.6	159	2.6	12	★
12.70	VAPDMD1270	101.6	161.6	159	2.6	12	★
12.80	VAPDMD1280	101.7	161.7	159	2.7	12	★
12.90	VAPDMD1290	101.7	161.7	159	2.7	12	★
13.00	VAPDMD1300	101.7	161.7	159	2.7	12	●
13.50	VAPDMD1350	102.8	162.8	160	2.8	16	●
14.00	VAPDMD1400	102.9	162.9	160	2.9	16	●
14.10	VAPDMD1410	107.9	167.9	165	2.9	16	★
14.20	VAPDMD1420	107.9	167.9	165	2.9	16	★
14.50	VAPDMD1450	108.0	168.0	165	3.0	16	●
15.00	VAPDMD1500	108.1	168.1	165	3.1	16	●

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
15.50	VAPDMD1550	113.2	173.2	170	3.2	16	★
15.60	VAPDMD1560	113.2	173.2	170	3.2	16	★
15.70	VAPDMD1570	113.3	173.3	170	3.3	16	★
16.00	VAPDMD1600	113.3	173.3	170	3.3	16	●
16.50	VAPDMD1650	113.4	178.4	175	3.4	20	●
17.00	VAPDMD1700	113.5	178.5	175	3.5	20	●
17.50	VAPDMD1750	118.6	183.6	180	3.6	20	●
17.60	VAPDMD1760	118.7	183.7	180	3.7	20	★
17.70	VAPDMD1770	118.7	183.7	180	3.7	20	★
18.00	VAPDMD1800	118.7	183.7	180	3.7	20	●
18.50	VAPDMD1850	123.8	188.8	185	3.8	20	★
19.00	VAPDMD1900	123.9	188.9	185	3.9	20	★
19.50	VAPDMD1950	124.0	189.0	185	4.0	20	★
19.60	VAPDMD1960	124.1	189.1	185	4.1	20	★
19.70	VAPDMD1970	124.1	189.1	185	4.1	20	★
20.00	VAPDMD2000	124.1	189.1	185	4.1	20	★
20.50	VAPDMD2050	129.3	204.3	200	4.3	25	●
21.00	VAPDMD2100	129.4	204.4	200	4.4	25	●
21.10	VAPDMD2110	129.4	204.4	200	4.4	25	★
21.20	VAPDMD2120	129.4	204.4	200	4.4	25	★
21.50	VAPDMD2150	129.5	204.5	200	4.5	25	★
22.00	VAPDMD2200	129.6	204.6	200	4.6	25	●
22.50	VAPDMD2250	134.7	209.7	205	4.7	25	★
23.00	VAPDMD2300	134.8	209.8	205	4.8	25	●
23.50	VAPDMD2350	134.9	209.9	205	4.9	25	★
24.00	VAPDMD2400	140.0	215.0	210	5.0	25	★
24.50	VAPDMD2450	140.1	215.1	210	5.1	25	★
25.00	VAPDMD2500	140.2	215.2	210	5.2	25	★
25.50	VAPDMD2550	145.3	225.3	220	5.3	32	●
26.00	VAPDMD2600	145.4	225.4	220	5.4	32	★
26.50	VAPDMD2650	145.5	225.5	220	5.5	32	★
27.00	VAPDMD2700	145.6	225.6	220	5.6	32	★
28.00	VAPDMD2800	145.8	225.8	220	5.8	32	★
29.00	VAPDMD2900	151.0	231.0	225	6.0	32	★
30.00	VAPDMD3000	151.2	231.2	225	6.2	32	★
31.00	VAPDMD3100	156.4	236.4	230	6.4	32	★
32.00	VAPDMD3200	161.6	241.6	235	6.6	32	★

CONDICIONES DE CORTE ➢ M182
DATOS TÉCNICOS ➢ P001

VAPDM

Longitud media, Alta precisión

CONDICIONES DE CORTE RECOMENDADAS (Profundidad de taladrado estándar : 5 veces o menos el diámetro de la broca)

Material	P		P	K	P	M	P	M
	Acero Estructural		Acero al carbono Ck55 Acero aleado 070M55 Fundición		Acero aleado para herramientas X210Cr12 (Materiales de baja dureza) Acero inoxidable ferrítico X10CrAl18, X10CrAl13 Acero inoxidable X20Cr13, X10CrAl13		Acero aleado para herramientas X40CrMoV51 (−40HRC) Acero inoxidable de endurecimiento por precipitación X7CrNiAl177	
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)
0.5	17000	0.01	12800	0.01	8000	0.01	6600	0.01
1.0	11000	0.05	8300	0.05	5000	0.05	4100	0.04
2.0	6400	0.09	4800	0.09	2900	0.06	2400	0.05
3.0	4300	0.13	3200	0.13	1900	0.10	1600	0.06
4.0	3200	0.15	2400	0.15	1400	0.10	1200	0.08
5.0	2600	0.18	1900	0.18	1100	0.13	950	0.10
6.0	2100	0.19	1600	0.20	950	0.15	800	0.11
8.0	1600	0.24	1200	0.22	720	0.18	600	0.13
10.0	1300	0.28	950	0.25	570	0.21	480	0.15
12.0	1100	0.34	800	0.30	480	0.25	400	0.17
14.0	910	0.39	680	0.35	410	0.30	340	0.21
15.0	850	0.40	640	0.36	380	0.31	320	0.22
16.0	800	0.42	600	0.38	360	0.32	300	0.23
18.0	710	0.44	530	0.40	320	0.34	270	0.24
20.0	570	0.44	450	0.40	250	0.34	220	0.24
22.0	520	0.46	410	0.42	230	0.36	200	0.25
24.0	480	0.48	370	0.44	210	0.37	190	0.26
26.0	440	0.51	340	0.46	200	0.39	170	0.28
28.0	410	0.53	320	0.48	180	0.41	160	0.29
30.0	380	0.55	300	0.50	170	0.43	150	0.30
32.0	360	0.55	280	0.50	160	0.43	140	0.30

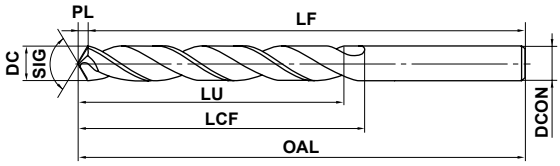
Nota 1) Reduzca las revoluciones y el avance en función del taladrado cuando la sujeción del material no tenga la rigidez suficiente o su máquina tenga limitaciones.
Nota 2) Utilice un anillo y un plato de sujeción.
Nota 3) Utilice suficiente fluido de corte.
Nota 4) Cuando taladramos agujeros mayores que 4 x diámetro de la broca, por favor utilizar el avance.
Nota 5) Las condiciones de corte mencionadas más arriba son el estándar cuando se corta en fluido soluble en agua.
Reduzca las revoluciones cuando corte en fluido no soluble en agua.

VSD
Mango recto

HSS | V | 110° DC<0.7 | 118° DC≥0.7 | X DC<2 | XR DC≥2

Acero rápido (HSS)

P | M | K | N | S | H



*LU = LCF-2DC

0.5≤DC≤1	1≤DC≤3	3<DC≤6	6<DC≤10	10<DC≤13
0 −0.010	0 −0.014	0 −0.018	0 −0.022	0 −0.027

DC (mm)	Referencia	Dimensiones (mm) LCF	OAL	LF	PL	DCON	Stock
0.5	VSDD0050	6.2	27.2	27	0.18	0.5	★
0.6	VSDD0060	7.2	30.2	30	0.21	0.6	●
0.7	VSDD0070	9.2	32.2	32	0.21	0.7	●
0.8	VSDD0080	10.2	34.2	34	0.24	0.8	●
0.9	VSDD0090	11.3	36.3	36	0.27	0.9	●
1.0	VSDD0100	12.3	40.3	40	0.3	1.0	●
1.1	VSDD0110	14.3	42.3	42	0.3	1.1	●
1.2	VSDD0120	16.4	42.4	42	0.4	1.2	●
1.3	VSDD0130	16.4	45.4	45	0.4	1.3	●
1.4	VSDD0140	18.4	48.4	48	0.4	1.4	●
1.5	VSDD0150	18.5	48.5	48	0.5	1.5	●
1.6	VSDD0160	20.5	50.5	50	0.5	1.6	●
1.7	VSDD0170	20.5	50.5	50	0.5	1.7	★
1.8	VSDD0180	22.5	52.5	52	0.5	1.8	●
1.9	VSDD0190	22.6	52.6	52	0.6	1.9	●
2.0	VSDD0200	23.6	55.6	55	0.6	2.0	●
2.1	VSDD0210	23.6	55.6	55	0.6	2.1	●
2.2	VSDD0220	26.7	58.7	58	0.7	2.2	●
2.3	VSDD0230	26.7	58.7	58	0.7	2.3	★
2.4	VSDD0240	29.7	61.7	61	0.7	2.4	★
2.5	VSDD0250	29.8	61.8	61	0.8	2.5	●
2.6	VSDD0260	29.8	64.8	64	0.8	2.6	★
2.7	VSDD0270	32.8	64.8	64	0.8	2.7	★
2.8	VSDD0280	32.8	67.8	67	0.8	2.8	●
2.9	VSDD0290	32.9	71.9	71	0.9	2.9	★
3.0	VSDD0300	32.9	71.9	71	0.9	3.0	●
3.1	VSDD0310	35.9	71.9	71	0.9	3.1	●
3.2	VSDD0320	36.0	72.0	71	1.0	3.2	●
3.3	VSDD0330	36.0	74.0	73	1.0	3.3	●
3.4	VSDD0340	39.0	74.0	73	1.0	3.4	●
3.5	VSDD0350	39.1	74.1	73	1.1	3.5	●
3.6	VSDD0360	39.1	77.1	76	1.1	3.6	★
3.7	VSDD0370	39.1	77.1	76	1.1	3.7	★
3.8	VSDD0380	43.1	77.1	76	1.1	3.8	★
3.9	VSDD0390	43.2	80.2	79	1.2	3.9	★
4.0	VSDD0400	43.2	84.2	83	1.2	4.0	●
4.1	VSDD0410	43.2	84.2	83	1.2	4.1	●
4.2	VSDD0420	43.3	84.3	83	1.3	4.2	●
4.3	VSDD0430	47.3	84.3	83	1.3	4.3	●
4.4	VSDD0440	47.3	87.3	86	1.3	4.4	★

DC (mm)	Referencia	Dimensiones (mm) LCF	OAL	LF	PL	DCON	Stock
4.5	VSDD0450	47.4	87.4	86	1.4	4.5	●
4.6	VSDD0460	47.4	87.4	86	1.4	4.6	★
4.7	VSDD0470	47.4	90.4	89	1.4	4.7	★
4.8	VSDD0480	52.4	90.4	89	1.4	4.8	●
4.9	VSDD0490	52.5	93.5	92	1.5	4.9	★
5.0	VSDD0500	52.5	93.5	92	1.5	5.0	●
5.1	VSDD0510	52.5	93.5	92	1.5	5.1	●
5.2	VSDD0520	52.6	96.6	95	1.6	5.2	●
5.3	VSDD0530	52.6	96.6	95	1.6	5.3	★
5.4	VSDD0540	57.6	96.6	95	1.6	5.4	★
5.5	VSDD0550	57.7	96.7	95	1.7	5.5	●
5.6	VSDD0560	57.7	99.7	98	1.7	5.6	★
5.7	VSDD0570	57.7	99.7	98	1.7	5.7	★
5.8	VSDD0580	57.7	99.7	98	1.7	5.8	★
5.9	VSDD0590	57.8	99.8	98	1.8	5.9	●
6.0	VSDD0600	57.8	103.8	102	1.8	6.0	●
6.1	VSDD0610	63.8	103.8	102	1.8	6.1	★
6.2	VSDD0620	63.9	103.9	102	1.9	6.2	●
6.3	VSDD0630	63.9	103.9	102	1.9	6.3	●
6.4	VSDD0640	63.9	106.9	105	1.9	6.4	★
6.5	VSDD0650	64.0	107.0	105	2.0	6.5	●
6.6	VSDD0660	64.0	107.0	105	2.0	6.6	★
6.7	VSDD0670	64.0	107.0	105	2.0	6.7	★
6.8	VSDD0680	69.0	107.0	105	2.0	6.8	●
6.9	VSDD0690	69.1	107.1	105	2.1	6.9	★
7.0	VSDD0700	69.1	107.1	105	2.1	7.0	●
7.1	VSDD0710	69.1	110.1	108	2.1	7.1	★
7.2	VSDD0720	69.2	110.2	108	2.2	7.2	★
7.3	VSDD0730	69.2	110.2	108	2.2	7.3	●
7.4	VSDD0740	69.2	113.2	111	2.2	7.4	★
7.5	VSDD0750	69.3	113.3	111	2.3	7.5	★
7.6	VSDD0760	75.3	113.3	111	2.3	7.6	★
7.7	VSDD0770	75.3	116.3	114	2.3	7.7	★
7.8	VSDD0780	75.3	116.3	114	2.3	7.8	★
7.9	VSDD0790	75.4	116.4	114	2.4	7.9	●
8.0	VSDD0800	75.4	116.4	114	2.4	8.0	●
8.1	VSDD0810	75.4	119.4	117	2.4	8.1	★
8.2	VSDD0820	75.5	119.5	117	2.5	8.2	★
8.3	VSDD0830	75.5	119.5	117	2.5	8.3	★
8.4	VSDD0840	75.5	123.5	121	2.5	8.4	★

Nota 1) Menos de 5-1.9 mm de diámetro: 5 unidad/caja, más de 2 mm de diámetro: 1 unidad/caja.

● : Stock Europa. ★ : Stock Japón.

CONDICIONES DE CORTE ➤ M184
DATOS TÉCNICOS ➤ P001

VSD

Mango recto

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
8.5	**VSDD0850**	75.6	123.6	121	2.6	8.5	●
8.6	**VSDD0860**	81.6	123.6	121	2.6	8.6	●
8.7	**VSDD0870**	81.6	123.6	121	2.6	8.7	●
8.8	**VSDD0880**	81.6	126.6	124	2.6	8.8	★
8.9	**VSDD0890**	81.7	126.7	124	2.7	8.9	★
9.0	**VSDD0900**	81.7	126.7	124	2.7	9.0	●
9.1	**VSDD0910**	81.7	126.7	124	2.7	9.1	★
9.2	**VSDD0920**	81.8	129.8	127	2.8	9.2	★
9.3	**VSDD0930**	81.8	129.8	127	2.8	9.3	★
9.4	**VSDD0940**	81.8	129.8	127	2.8	9.4	★
9.5	**VSDD0950**	81.9	129.9	127	2.9	9.5	●
9.6	**VSDD0960**	87.9	132.9	130	2.9	9.6	★
9.7	**VSDD0970**	87.9	132.9	130	2.9	9.7	★
9.8	**VSDD0980**	87.9	132.9	130	2.9	9.8	★
9.9	**VSDD0990**	88.0	133.0	130	3.0	9.9	★
10.0	**VSDD1000**	88.0	133.0	130	3.0	10.0	●
10.1	**VSDD1010**	88.0	136.0	133	3.0	10.1	★
10.2	**VSDD1020**	88.1	136.1	133	3.1	10.2	●
10.3	**VSDD1030**	88.1	136.1	133	3.1	10.3	●
10.4	**VSDD1040**	88.1	136.1	133	3.1	10.4	★
10.5	**VSDD1050**	88.2	140.2	137	3.2	10.5	●
10.6	**VSDD1060**	88.2	140.2	137	3.2	10.6	★
10.7	**VSDD1070**	95.2	140.2	137	3.2	10.7	★

DC (mm)	Referencia	Dimensiones (mm)					Stock
		LCF	OAL	LF	PL	DCON	
10.8	**VSDD1080**	95.2	143.2	140	3.2	10.8	★
10.9	**VSDD1090**	95.3	143.3	140	3.3	10.9	★
11.0	**VSDD1100**	95.3	143.3	140	3.3	11.0	●
11.1	**VSDD1110**	95.3	143.3	140	3.3	11.1	★
11.2	**VSDD1120**	95.4	146.4	143	3.4	11.2	★
11.3	**VSDD1130**	95.4	146.4	143	3.4	11.3	★
11.4	**VSDD1140**	95.4	146.4	143	3.4	11.4	★
11.5	**VSDD1150**	95.5	146.5	143	3.5	11.5	★
11.6	**VSDD1160**	95.5	149.5	146	3.5	11.6	★
11.7	**VSDD1170**	95.5	149.5	146	3.5	11.7	★
11.8	**VSDD1180**	95.5	149.5	146	3.5	11.8	★
11.9	**VSDD1190**	102.6	149.6	146	3.6	11.9	★
12.0	**VSDD1200**	102.6	152.6	149	3.6	12.0	●
12.1	**VSDD1210**	102.6	152.6	149	3.6	12.1	★
12.2	**VSDD1220**	102.7	152.7	149	3.7	12.2	★
12.3	**VSDD1230**	102.7	152.7	149	3.7	12.3	★
12.4	**VSDD1240**	102.7	155.7	152	3.7	12.4	★
12.5	**VSDD1250**	102.8	155.8	152	3.8	12.5	★
12.6	**VSDD1260**	102.8	155.8	152	3.8	12.6	★
12.7	**VSDD1270**	102.8	155.8	152	3.8	12.7	★
12.8	**VSDD1280**	102.8	155.8	152	3.8	12.8	★
12.9	**VSDD1290**	102.9	155.9	152	3.9	12.9	★
13.0	**VSDD1300**	102.9	155.9	152	3.9	13.0	●

CONDICIONES DE CORTE RECOMENDADAS

Material	P				M		P	M
	Acero Estructural		Acero al carbono Ck55		Acero Inoxidable X20Cr13		Acero Inoxidable X5CrNi1810 Acero de herramientas X210Cr12 (Materiales de baja dureza) Acero tratado X40CrMoV51 (−40HRC)	
Velocidad de corte	40m/min		30m/min		20m/min		10−14m/min	
Diámetro Broca DC (mm)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)	Revoluciones (min^{-1})	Avance (mm/rev)
0.5	15000	0.01	11250	0.01	7500	0.01	5620	0.01
1.0	10000	0.02	7500	0.02	5000	0.02	3750	0.02
1.5	8200	0.03	6150	0.03	4100	0.03	2800	0.03
2.0	6370	0.05	4780	0.05	3180	0.05	2200	0.04
3.0	4250	0.10	3180	0.10	2120	0.07	1400	0.06
4.0	3180	0.13	2390	0.13	1590	0.09	1100	0.08
5.0	2550	0.15	1910	0.15	1270	0.11	860	0.10
6.0	2120	0.18	1590	0.18	1060	0.13	720	0.11
7.0	1820	0.20	1360	0.20	910	0.14	610	0.12
8.0	1590	0.22	1190	0.21	800	0.15	540	0.13
9.0	1420	0.24	1060	0.22	710	0.17	480	0.14
10.0	1270	0.26	960	0.23	640	0.18	430	0.15
11.0	1160	0.28	870	0.24	580	0.19	390	0.16
12.0	1060	0.30	800	0.25	530	0.20	360	0.17
13.0	980	0.30	730	0.26	490	0.20	330	0.17

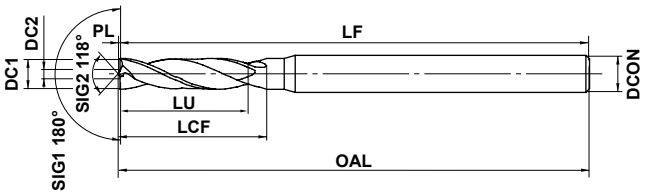
Nota 1) Reduzca las revoluciones y el avance en función del taladrado cuando la sujeción del material no tenga la rigidez suficiente.
Nota 2) Las condiciones de corte mencionadas más arriba son el estándar cuando se corta en fluido soluble en agua.
Reduzca las revoluciones cuando corte en fluido no soluble en agua.

VAPDSCB

Hélice corta de alta precisión para mandrinado

P | M | K | N | S | H

DC≤3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤30	30<DC≤32
0 −0.014	0 −0.018	0 −0.022	0 −0.027	0 −0.033	0 −0.039



*LU = LCF-2DC (máx. 3×DC)

● Su exclusiva geometría garantiza alta eficiencia en el mandrinado.
Excelente rompevirutas y superficie avellanada plana.

DC1 (mm)	Referencia	Dimensiones (mm) DC2	LCF	OAL	LF	PL	DCON	Stock
2.0	VAPDSCBD0200	0.7	12	60.2	60	0.2	3	★
2.1	VAPDSCBD0210	0.7	12	60.2	60	0.2	3	★
2.2	VAPDSCBD0220	0.7	12	60.2	60	0.2	3	★
2.3	VAPDSCBD0230	0.7	13	60.2	60	0.2	3	★
2.4	VAPDSCBD0240	0.7	13	60.2	60	0.2	3	★
2.5	VAPDSCBD0250	0.7	13	60.2	60	0.2	3	★
2.6	VAPDSCBD0260	0.8	15	60.2	60	0.2	3	★
2.7	VAPDSCBD0270	0.8	15	60.2	60	0.2	3	★
2.8	VAPDSCBD0280	0.8	15	60.2	60	0.2	3	★
2.9	VAPDSCBD0290	0.8	15	60.2	60	0.2	3	★
3.0	VAPDSCBD0300	0.8	15	60.2	60	0.2	3	★
3.1	VAPDSCBD0310	0.8	17	70.2	70	0.2	4	★
3.2	VAPDSCBD0320	0.8	17	70.2	70	0.2	4	★
3.3	VAPDSCBD0330	0.8	19	70.2	70	0.2	4	★
3.4	VAPDSCBD0340	0.8	19	70.2	70	0.2	4	★
3.5	VAPDSCBD0350	0.8	19	70.2	70	0.2	4	★
3.6	VAPDSCBD0360	1.0	21	70.2	70	0.2	4	★
3.7	VAPDSCBD0370	1.0	21	70.2	70	0.2	4	★
3.8	VAPDSCBD0380	1.0	21	70.2	70	0.2	4	★
3.9	VAPDSCBD0390	1.0	21	70.2	70	0.2	4	★
4.0	VAPDSCBD0400	1.0	21	70.3	70	0.3	4	★
4.1	VAPDSCBD0410	1.0	21	80.3	80	0.3	6	★
4.2	VAPDSCBD0420	1.0	21	80.3	80	0.3	6	★
4.3	VAPDSCBD0430	1.0	23	80.3	80	0.3	6	★
4.4	VAPDSCBD0440	1.0	23	80.3	80	0.3	6	★
4.5	VAPDSCBD0450	1.0	23	80.3	80	0.3	6	★
4.6	VAPDSCBD0460	1.4	25	80.3	80	0.3	6	★
4.7	VAPDSCBD0470	1.4	25	80.3	80	0.3	6	★
4.8	VAPDSCBD0480	1.4	25	80.3	80	0.3	6	★
4.9	VAPDSCBD0490	1.4	25	80.3	80	0.3	6	★
5.0	VAPDSCBD0500	1.4	25	80.4	80	0.4	6	★
5.1	VAPDSCBD0510	1.4	25	80.4	80	0.4	6	★
5.2	VAPDSCBD0520	1.4	25	80.4	80	0.4	6	★
5.3	VAPDSCBD0530	1.4	25	80.4	80	0.4	6	★
5.4	VAPDSCBD0540	1.4	27	80.4	80	0.4	6	★
5.5	VAPDSCBD0550	1.4	27	80.4	80	0.4	6	★
5.6	VAPDSCBD0560	1.4	27	80.4	80	0.4	6	★
5.7	VAPDSCBD0570	1.4	27	80.4	80	0.4	6	★
5.8	VAPDSCBD0580	1.4	27	80.4	80	0.4	6	★
5.9	VAPDSCBD0590	1.4	27	80.4	80	0.4	6	★

DC1 (mm)	Referencia	Dimensiones (mm) DC2	LCF	OAL	LF	PL	DCON	Stock
6.0	VAPDSCBD0600	1.4	27	80.4	80	0.4	6	★
6.1	VAPDSCBD0610	1.4	30	80.4	80	0.4	8	★
6.2	VAPDSCBD0620	1.4	30	80.4	80	0.4	8	★
6.3	VAPDSCBD0630	1.4	30	80.4	80	0.4	8	★
6.4	VAPDSCBD0640	1.4	30	80.4	80	0.4	8	★
6.5	VAPDSCBD0650	1.4	30	80.4	80	0.4	8	★
6.6	VAPDSCBD0660	1.8	30	80.4	80	0.4	8	★
6.7	VAPDSCBD0670	1.8	30	80.4	80	0.4	8	★
6.8	VAPDSCBD0680	1.8	32	80.4	80	0.4	8	★
6.9	VAPDSCBD0690	1.8	32	80.4	80	0.4	8	★
7.0	VAPDSCBD0700	1.8	32	80.6	80	0.6	8	★
7.1	VAPDSCBD0710	1.8	32	80.6	80	0.6	8	★
7.2	VAPDSCBD0720	1.8	32	80.6	80	0.6	8	★
7.3	VAPDSCBD0730	1.8	32	80.6	80	0.6	8	★
7.4	VAPDSCBD0740	1.8	32	80.6	80	0.6	8	★
7.5	VAPDSCBD0750	1.8	32	80.6	80	0.6	8	★
7.6	VAPDSCBD0760	2.0	35	85.6	85	0.6	8	★
7.7	VAPDSCBD0770	2.0	35	85.6	85	0.6	8	★
7.8	VAPDSCBD0780	2.0	35	85.6	85	0.6	8	★
7.9	VAPDSCBD0790	2.0	35	85.6	85	0.6	8	★
8.0	VAPDSCBD0800	2.0	35	85.6	85	0.6	8	★
8.1	VAPDSCBD0810	2.0	35	90.6	90	0.6	10	★
8.5	VAPDSCBD0850	2.0	35	90.6	90	0.6	10	★
8.6	VAPDSCBD0860	2.8	38	93.6	93	0.6	10	★
8.8	VAPDSCBD0880	2.8	38	93.6	93	0.6	10	★
9.0	VAPDSCBD0900	2.8	38	93.8	93	0.8	10	★
9.1	VAPDSCBD0910	2.8	38	93.8	93	0.8	10	★
9.5	VAPDSCBD0950	2.8	38	93.8	93	0.8	10	★
9.6	VAPDSCBD0960	3.2	41	96.8	96	0.8	10	★
9.8	VAPDSCBD0980	3.2	41	96.8	96	0.8	10	★
10.0	VAPDSCBD1000	3.2	41	96.9	96	0.9	10	★
10.1	VAPDSCBD1010	3.2	41	101.9	101	0.9	12	★
10.3	VAPDSCBD1030	3.2	41	101.9	101	0.9	12	★
10.5	VAPDSCBD1050	3.2	41	101.9	101	0.9	12	★
10.8	VAPDSCBD1080	3.7	45	105.9	105	0.9	12	★
11.0	VAPDSCBD1100	3.7	45	105.9	105	0.9	12	★
11.1	VAPDSCBD1110	3.7	45	105.9	105	0.9	12	★
11.5	VAPDSCBD1150	3.7	45	105.9	105	0.9	12	★
11.8	VAPDSCBD1180	3.7	45	105.9	105	0.9	12	★
12.0	VAPDSCBD1200	3.7	49	109.9	109	0.9	12	★

★ : Stock Japón.

CONDICIONES DE CORTE ➤ M187
DATOS TÉCNICOS ➤ P001

VAPDSCB

Hélice corta de alta precisión para mandrinado

DC1 (mm)	Referencia	Dimensiones (mm)						Stock
		DC2	LCF	OAL	LF	PL	DCON	
12.5	**VAPDSCBD1250**	3.7	49	109.9	109	0.9	12	★
13.0	**VAPDSCBD1300**	4.2	49	110.1	109	1.1	12	★
13.5	**VAPDSCBD1350**	4.2	51	122.1	121	1.1	16	★
13.8	**VAPDSCBD1380**	4.2	51	122.1	121	1.1	16	★
14.0	**VAPDSCBD1400**	4.2	51	122.1	121	1.1	16	★
14.1	**VAPDSCBD1410**	5.5	58	124.1	123	1.1	16	★
14.2	**VAPDSCBD1420**	5.5	58	124.1	123	1.1	16	★
14.5	**VAPDSCBD1450**	5.5	58	124.1	123	1.1	16	★
14.8	**VAPDSCBD1480**	5.5	58	124.1	123	1.1	16	★
15.0	**VAPDSCBD1500**	5.5	58	124.3	123	1.3	16	★
15.5	**VAPDSCBD1550**	5.5	60	126.3	125	1.3	16	★
15.7	**VAPDSCBD1570**	5.5	60	126.3	125	1.3	16	★
15.8	**VAPDSCBD1580**	5.5	60	126.3	125	1.3	16	★
16.0	**VAPDSCBD1600**	5.5	60	126.3	125	1.3	16	★
17.0	**VAPDSCBD1700**	5.5	62	133.3	132	1.3	20	★
17.5	**VAPDSCBD1750**	5.5	63	134.6	133	1.6	20	★
17.6	**VAPDSCBD1760**	6.5	63	134.6	133	1.6	20	★
17.7	**VAPDSCBD1770**	6.5	63	134.6	133	1.6	20	★
17.8	**VAPDSCBD1780**	6.5	63	134.6	133	1.6	20	★
18.0	**VAPDSCBD1800**	6.5	63	134.6	133	1.6	20	★
18.1	**VAPDSCBD1810**	6.5	65	136.6	135	1.6	20	★
19.0	**VAPDSCBD1900**	6.5	65	136.6	135	1.6	20	★
19.8	**VAPDSCBD1980**	7.5	67	138.6	137	1.6	20	★
20.0	**VAPDSCBD2000**	7.5	67	138.8	137	1.8	20	★
20.1	**VAPDSCBD2010**	7.5	67	138.8	137	1.8	20	★
21.0	**VAPDSCBD2100**	7.5	75	166.8	165	1.8	25	★
22.0	**VAPDSCBD2200**	7.5	75	166.8	165	1.8	25	★
23.0	**VAPDSCBD2300**	7.5	80	171.8	170	1.8	25	★
24.0	**VAPDSCBD2400**	8.5	80	172.2	170	2.2	25	★
25.0	**VAPDSCBD2500**	8.5	85	182.2	180	2.2	25	★
26.0	**VAPDSCBD2600**	9.0	85	182.2	180	2.2	32	★
27.0	**VAPDSCBD2700**	9.0	95	192.2	190	2.2	32	★
28.0	**VAPDSCBD2800**	10.0	95	192.6	190	2.6	32	★
29.0	**VAPDSCBD2900**	10.0	100	197.6	195	2.6	32	★
30.0	**VAPDSCBD3000**	11.0	100	197.6	195	2.6	32	★
31.0	**VAPDSCBD3100**	11.0	105	202.6	200	2.6	32	★
32.0	**VAPDSCBD3200**	13.0	105	202.6	200	2.6	32	★

★ : Existencia en Japón.

CONDICIONES DE CORTE RECOMENDADAS

Material	P	N	P	K	P	M	P	M
	Acero Estructural, Aleación de aluminio		Acero al carbono Ck55, Aleación de acero 070M55, Fundición dúctil		Acero aleado para herramientas X210Cr12 (Materiales de baja dureza) Acero inoxidable ferrítico X10CrAl18, X10CrAl13 Acero inoxidable X20Cr13, X10CrAl13		Acero de aleación para herramientas, X40CrMoV51 (−40HRC) Acero inoxidable de temple, X7CrNiAl177	
Diámetro Broca **DC** (mm)	Revoluciones (min^{-1})	Vel. de avance (mm/rev)	Revoluciones (min^{-1})	Vel. de avance (mm/rev)	Revoluciones (min^{-1})	Vel. de avance (mm/rev)	Revoluciones (min^{-1})	Vel. de avance (mm/rev)
2.0	5600	0.07	4800	0.07	3200	0.07	2800	0.04
3.0	3700	0.10	3200	0.10	2100	0.10	1900	0.05
4.0	2800	0.12	2400	0.12	1600	0.12	1400	0.06
5.0	2200	0.14	1900	0.14	1300	0.14	1150	0.07
6.0	1850	0.15	1600	0.15	1050	0.15	950	0.08
8.0	1400	0.20	1200	0.20	800	0.20	720	0.10
10.0	1100	0.23	960	0.23	640	0.21	570	0.11
12.0	950	0.26	800	0.26	530	0.24	470	0.12
14.0	800	0.27	680	0.27	450	0.25	410	0.13
16.0	700	0.28	500	0.28	360	0.26	300	0.14
18.0	620	0.29	450	0.29	320	0.27	260	0.15
20.0	560	0.30	400	0.30	290	0.27	240	0.15
22.0	510	0.32	360	0.32	260	0.29	220	0.16
24.0	460	0.33	330	0.33	240	0.30	200	0.16
26.0	430	0.35	310	0.35	220	0.31	180	0.17
28.0	400	0.36	290	0.36	210	0.33	170	0.18
30.0	370	0.37	270	0.37	190	0.34	160	0.18
32.0	350	0.38	250	0.38	180	0.35	150	0.19

Nota 1) Las anteriores condiciones de corte son para perforar a profundidades DCx3, sin agujero previo.
Si hay que perforar agujeros de más de DCx1, se pueden incrementar las RPM en un 20%.
Nota 2) Se recomienda taladrar sin agujero guía.
De lo contrario puede que la viruta no se quiebre. Si necesita romper la viruta, utilice un sistema de avance con pinza.
Nota 3) Para mandrinado de superficies inclinadas es recomendable utilizar brocas de metal duro.
Nota 4) Para mecanizar aceros inoxidables austeníticos (X5CrNi1810), reduzca las revoluciones en un 30 - 60% y reduzca la velocidad de avance en un 40 - 60%.
Nota 5) Utilice un mandril portabroca de pinza.
Nota 6) Reduzca las revoluciones y la velocidad de avance según la situación del fresado, si la instalación de la pieza o la máquina carecen de la suficiente rigidez.
Nota 7) Utilice una cantidad suficiente de fluido de corte.
Nota 8) Las anteriores condiciones le servirán de guía a la hora de utilizar fluido de corte hidrosoluble.
Si emplea fluido no soluble en agua, reduzca las revoluciones.

MÉTODO DE CORTE RECOMENDADO

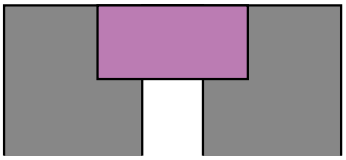
■ La VAPDSCB consigue un mecanizado altamente eficiente sin que se atasque la viruta.

Método general de corte

①Taladrado de agujeros de perno

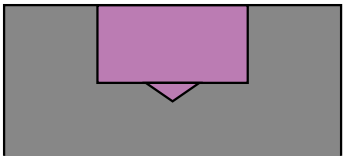
Geometría viruta

②Mandrinado



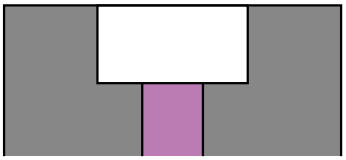
Método de corte de la VAPDSCB

①Mandrinado



Geometría viruta

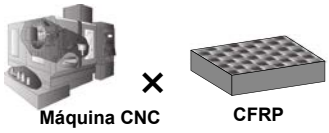
②Taladrado de agujeros de perno



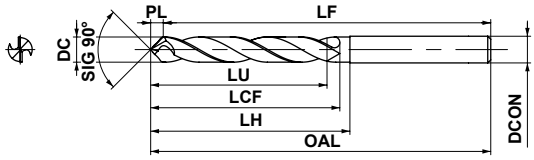
Nota 1) Si mandrina con la VAPDSCB, es posible que, al realizar un agujero previo se genere viruta continua que puede llegar a enrollarse alrededor de la herramienta.

MCC

P | M | K | N | S | H | **CFRP**



Refrigeración externa



3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
0 / – 0.018	0 / – 0.022	0 / – 0.027	0 / – 0.033
DCON=6	**6<DCON≤10**	**10<DCON≤12**	
0 / – 0.008	0 / – 0.009	0 / – 0.011	

Diám. Agujero		Diám. Broca		Profundidad Agujero	Referencia	Calidad	Dimensiones (mm)						
* AWG	rosca	DC (mm)	rosca	(L/D)		DD2105	LU	LCF	LH	OAL	LF	PL	DCON
—	3/16	4.76	.1875	3	**MCC0476X03S060**	★	16.7	40	40	80	77.6	2.4	6
—	1/4	6.38	.251	3	**MCC0638X03S080**	★	22.3	50	50	90	86.8	3.2	8
—	5/16	7.96	.3125	3	**MCC0796X03S080**	★	27.9	50	50	90	86.0	4.0	8
—	3/8	9.55	.375	3	**MCC0955X03S100**	★	33.5	50	50	100	95.2	4.8	10
—	7/16	11.14	.4375	3	**MCC1114X03S120**	★	39.0	60	60	110	104.4	5.6	12

***AWG** : Calibre de alambre estadounidense

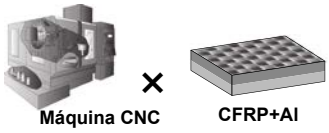
CONDICIONES DE CORTE RECOMENDADAS

Material		X			
		CFRP			
Diámetro Broca **DC** (mm)	Diámetro Broca **DC** (rosca)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)
4.76	**.1875**	100	6700	0.08 (0.05—0.12)	540
6.38	**.251**	100	5000	0.1 (0.05—0.12)	500
7.96	**.3125**	100	4000	0.1 (0.05—0.12)	400
9.55	**.375**	100	3400	0.1 (0.05—0.12)	340
11.14	**.4375**	100	2900	0.1 (0.05—0.12)	290

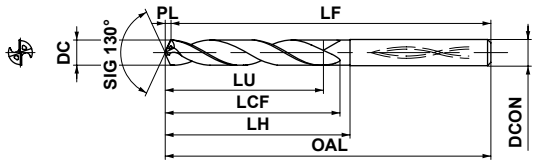
★ : Stock Japón. □ : A fabricar según demanda.

MCA

P | M | K | **N** | S | H | **CFRP+Al**



Refrigeración interna



6<DC≤10	0 / −0.022
6<DCON≤10	0 / −0.009

Diám. Agujero		Diám. Broca		Profundidad Agujero	Referencia	Calidad	Dimensiones (mm)						
AWG *	rosca	DC (mm)	rosca	(L/D)		DD2110	LU	LCF	LH	OAL	LF	PL	DCON
—	1/4	6.38	.251	5	**MCA0638X05S070**	□	33.4	51	51	91	89.5	1.5	7
—	3/8	9.55	.375	5	**MCA0955X05S100**	□	50.0	77	77	118	115.8	2.2	10

∗**AWG** : Calibre de alambre estadounidens

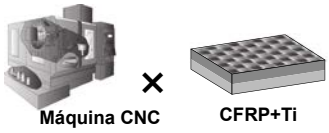
CONDICIONES DE CORTE RECOMENDADAS

Material		X				N			
		CFRP				Aleación de aluminio (Si<5%) ASTM A6061, ASTM A7075 etc			
Diámetro Broca DC (mm)	Diámetro Broca DC (rosca)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)
6.38	**.251**	100	5000	0.15 (0.10—0.20)	750	100	5000	0.03 (0.02—0.04)	150
9.55	**.375**	100	3400	0.15 (0.10—0.20)	680	100	3400	0.03 (0.02—0.04)	100

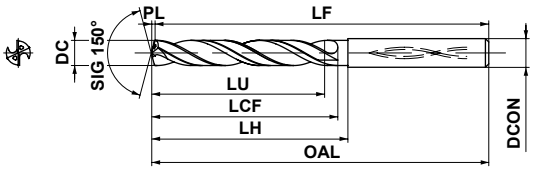
Nota 1) Nosotros recomendamos dividir las condiciones de corte en cada material de trabajo.

MCT

P | M | K | N | **S** | H | **CFRP+Ti**



Refrigeración interna



6<DC≤10	0 / −0.022
6<DCON≤10	0 / −0.009

Diám. Agujero		Diám. Broca		Profundidad Agujero	Referencia	Calidad	Dimensiones (mm)						
AWG *	rosca	DC (mm)	rosca	(L/D)		TF15	LU	LCF	LH	OAL	LF	PL	DCON
—	1/4	6.38	.251	5	**MCT0638X05S070**	□	32.8	47	47	96	95.1	0.9	7
—	3/8	9.55	.375	5	**MCT0955X05S100**	□	49.1	71	71	122	120.7	1.3	10

***AWG** : Calibre de alambre estadounidense

CONDICIONES DE CORTE RECOMENDADAS

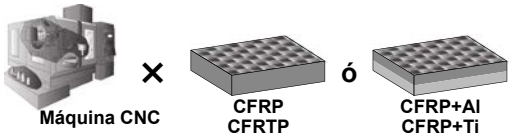
Material		X				S				
		CFRP				Aleación de titanio Ti-6Al-4V etc.				
Diámetro Broca DC (mm)	Diámetro Broca DC (rosca)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)	Mecanizado interrumpido (mm)
6.38	**.251**	100	5000	0.15 (0.10—0.20)	750	15	750	0.02 (0.01—0.03)	15	1
9.55	**.375**	100	3400	0.15 (0.10—0.20)	680	15	500	0.02 (0.01—0.03)	10	1

Nota 1) Esta condición es para cuando se utiliza aire interno o neblina.
Nota 2) Nosotros recomendamos dividir las condiciones de corte en cada material de trabajo

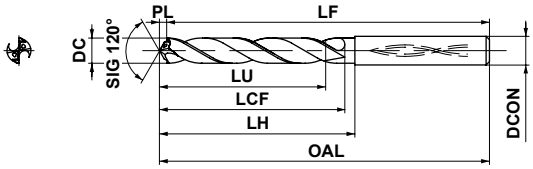
□ : **A fabricar según demanda.**

MCW

P | M | K | **N** | **S** | H | CFRP CFRTP | CFRP+Al CFRP+Ti



Refrigeración interna



6<DC≤10	0 / −0.022
6<DCON≤10	0 / −0.009

Diám. Agujero		Diám. Broca		Profundidad Agujero	Referencia	Calidad		Dimensiones (mm)						
AWG*	rosca	DC (mm)	rosca	(L/D)		HTi10	DD'110	LU	LCF	LH	OAL	LF	PL	DCON
—	1/4	6.38	.251	5	**MCW0638X05S070**	□	□	33.7	52	52	92	90.2	1.8	7
—	3/8	9.55	.375	5	**MCW0955X05S100**	□	□	50.6	73	73	119	116.2	2.8	10

***AWG** : Calibre de alambre estadounidense

CONDICIONES DE CORTE RECOMENDADAS

Material		X			
		CFRP			
Diámetro Broca DC (mm)	Diámetro Broca DC (rosca)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)
6.38	**.251**	100	5000	0.15 (0.10—0.20)	750
9.55	**.375**	100	3400	0.15 (0.10—0.20)	680

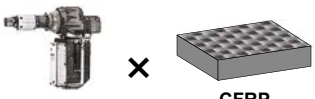
Material		N					S				
		Aleación de aluminio (Si<5%) A6061, A7075 etc.					Aleación de titanio Ti-6Al-4V etc.				
Diámetro Broca DC (mm)	Diámetro Broca DC (rosca)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)	Mecanizado interrumpido (mm)	Velocidad de corte (m/min)	Revoluciones (min^{-1})	Avance (Min.—Max.) (mm/rev)	Avance de mesa (mm/min)	Mecanizado interrumpido (mm)
6.38	**.251**	100	5000	0.15 (0.10—0.20)	750	3	15	750	0.02 (0.01—0.03)	15	1
9.55	**.375**	100	3400	0.15 (0.10—0.20)	500	3	15	500	0.02 (0.01—0.03)	10	1

Nota 1) Esta condición es para cuando se utiliza aire interno o neblina.
Nota 2) Nosotros recomendamos dividir las condiciones de corte en cada material de trabajo.

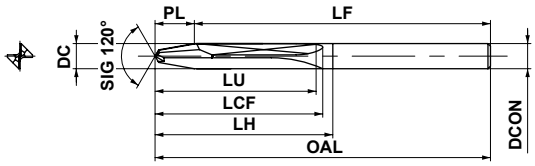
MCCH

UWC 120° X

P | M | K | **N** | S | H | CFRP



Herramienta de mano × CFRP



1≤DC≤3	3<DC≤6	6<DC≤10
0 – 0.014	0 – 0.018	0 – 0.022
DCON=3	**3<DCON≤6**	**6<DCON≤10**
0 – 0.006	0 – 0.008	0 – 0.009

Diám. Agujero		Diám. Broca		Profundidad Agujero	Referencia	Calidad	Dimensiones (mm)						
AWG *	rosca	DC (mm)	rosca	(L/D)		DT2030	LU	LCF	LH	OAL	LF	PL	DCON
#40	—	2.5	.0985	15	**MCCH0250X15S030**	★	42.1	48	50	100	95.4	4.6	3
#30	—	3.26	.1285	10	**MCCH0326X10S040**	★	38.6	48	50	100	94.0	6.0	4
#20	—	4.1	.1615	8	**MCCH0410X08S050**	★	40.3	48	50	100	92.5	7.5	5
#11	—	4.86	.1915	5	**MCCH0486X05S050**	★	33.2	48	50	100	91.1	8.9	5
—	1/4	6.38	.251	3	**MCCH0638X03S070**	★	30.8	48	50	100	88.3	11.7	7
—	3/8	9.55	.375	2	**MCCH0955X02S100**	★	36.6	48	50	100	82.5	17.5	10

★**AWG** :Calibre de alambre estadounidense

Nota 1) Por favor, consulte el manual de su herramienta de mano para las condiciones de corte.

★ : **Stock Japón.**

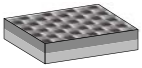
MCAH

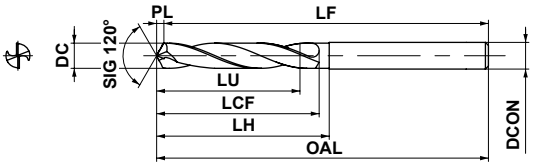
UWC 120° X

P | M | K | **N** | S | H | CFRP+Al

Herramienta de mano

×


CFRP+Al



1≤DC≤3	3<DC≤6	6<DC≤10
0 – 0.014	0 – 0.018	0 – 0.022
DCON=3	**3<DCON≤6**	**6<DCON≤10**
0 – 0.006	0 – 0.008	0 – 0.009

Diám. Agujero		Diám. Broca		Profundidad Agujero	Referencia	Calidad	Dimensiones (mm)						
AWG *	rosca	DC (mm)	rosca	(L/D)		DT2030	LU	LCF	LH	OAL	LF	PL	DCON
#40	—	2.5	.0985	15	**MCAH0250X15S030**	★	38.2	50	50	100	99.3	0.7	3
#30	—	3.26	.1285	15	**MCAH0326X15S040**	★	49.8	50	50	100	99.1	0.9	4
#20	—	4.1	.1615	10	**MCAH0410X10S050**	★	42.2	50	50	100	98.8	1.2	5
#11	—	4.86	.1915	8	**MCAH0486X08S050**	★	40.3	50	50	100	98.6	1.4	5
—	1/4	6.38	.251	5	**MCAH0638X05S070**	★	33.7	50	50	100	98.2	1.8	7
—	3/8	9.55	.375	3	**MCAH0955X03S100**	★	31.5	50	50	100	97.2	2.8	10

★**AWG** : Calibre de alambre estadounidense
Nota 1) Por favor, consulte el manual de su herramienta de mano para las condiciones de corte.

Notas

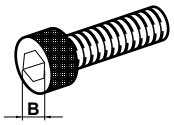
REPUESTOS

IDENTIFICACIÓN N002
REPUESTOS
TORNILLO N003
TORNILLO FIJACIÓN N009
TORNILLO/TUERCA DE AJUSTE N010
ASIENTO N011
PASADOR DE ASIENTO Y PALANCA N014
PASADOR N015
BRIDA N015
PLACA ROMPEVIRUTAS N017
LUBRICANTE ANTI DILATACIÓN N018

IDENTIFICACIÓN

■ IDENTIFICACIÓN DE LOS TORNILLOS (Rosca métrica a derechas)

H SC 060 05



Longitud

Ejemplo	
Símbolo	L
05	5
10	10
20	20
30	30

Diámetro del tornillo

Ejemplo	
Símbolo	d
050	M5
060	M6

● **Dimensiones del agujero del hexágono**

Diámetro	Paso	Dimensiones B			
		HBH	HFC	HSC	HS◌
M2	0.4	—	—	1.5	0.9
M2.5	0.45	—	—	2	1.3
M3	0.5	2	2	2.5	1.5
M4	0.7	2.5	2.5	3	2
M5	0.8	3	3	4	2.5
M6	1	4	4	5	3
M8	1.25	5	5	6	4
M10	1.5	6	6	8	5

Cabeza del tornillo

Símbolo	Geometría
H	

Símbolo	Geometría
S	

Símbolo	Geometría
C	

Dimensiones del agujero del hexágono — **Con ranura** — **Con agujero en cruz**

BH / BHA	CHUUBURASHI CO. / UNBRAKO CO.	Botón	
FC	CHUUBURASHI CO.	Cabeza plana	
SC	Estandar JIS	Encajable	
PM	Estandar JIS	Cabeza redondeada	
FM	Estandar JIS	Cabeza plana	
SD	Estandar JIS	Tornillo (Punta cortada)	
SP	Estandar JIS	Tornillo (Punta tipo cono)	
SR	Estandar JIS	Tornillo (Punta cilíndrica)	
SS	Estandar JIS	Tornillo (Punta plana)	

■ IDENTIFICACIÓN DE LAS LLAVES

HKY 15 R

Símbolo	Llave
HKY	Llave hexagonal
TKY	Llave Torx
RKY	Llave R
TIP	Llave Torx plus

Llave hexagonal

Símbolo	B
15	1.5
20	2
25	2.5
30	3
35	3.5
40	4
50	5
60	6

Llave Torx

Símbolo	B	Tamaño
06	1.7	T6
08	2.3	T8
10	2.7	T10
15	3.3	T15
20	3.8	T20
25	4.4	T25
27	5.0	T27
30	5.5	T30

Llave Torx plus

Símbolo	B	Tamaño
06	1.8	6IP
07	2.1	7IP
08	2.4	8IP
10	2.8	10IP
15	3.4	15IP

R	Llave L estándar	
L	Llave L larga	
T	Llave T	
F FS	Llave de banderola	
W	Llave de banderola	
D DS	Destornillador	
S	Llave	

IMX 10 - WR

Símbolo	Llave
iMX	Llave para la gama iMX

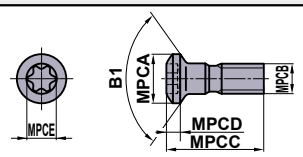
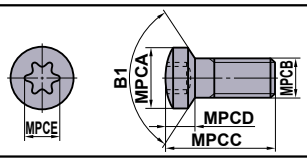
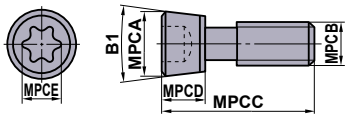
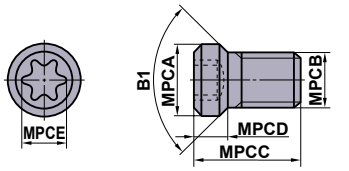
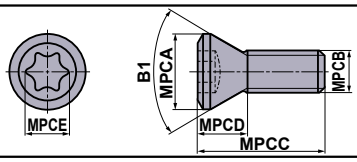
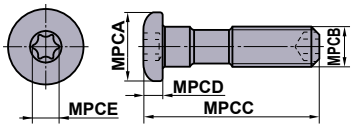
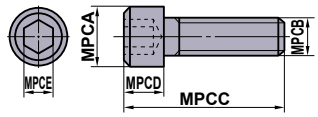
Llave hexagonal

Símbolo	B
10	8
12	10
16	13
20	16
25	20

WR

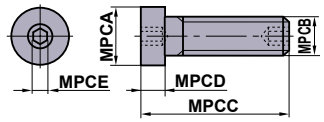
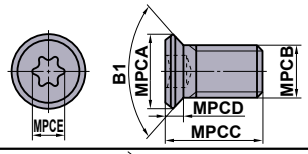
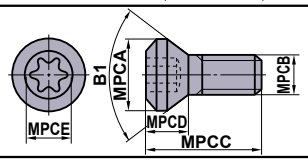
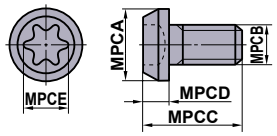
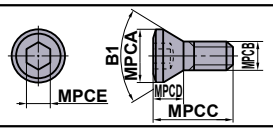
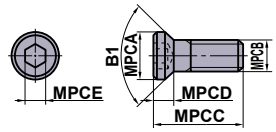
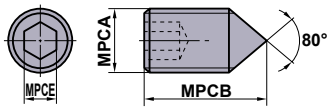
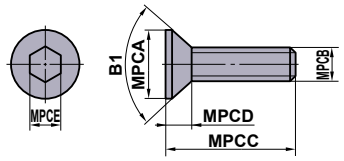
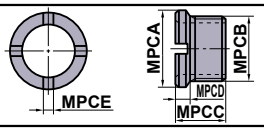
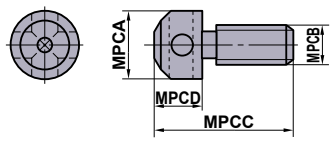
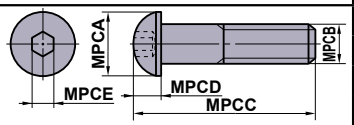
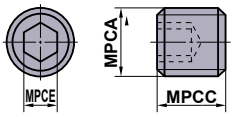
REPUESTOS

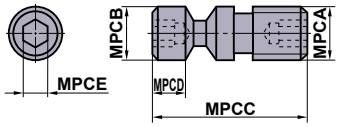
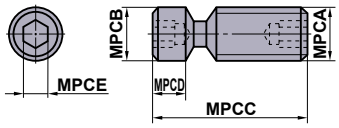
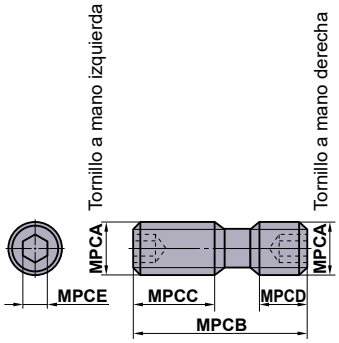
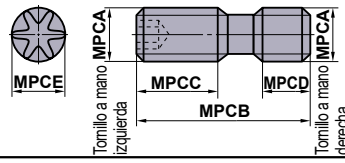
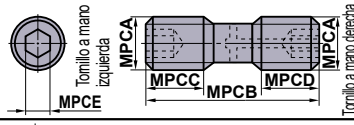
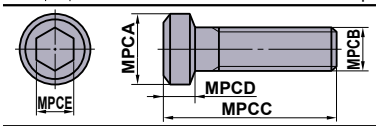
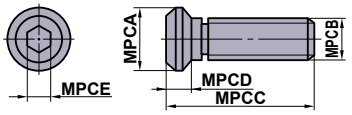
TORNILLO

Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	Angulo B1	MPCDS	TQ (N•m)	Herramienta
	**AJS3010T10**	5	M3×0.5	10	1.5	2.8	120°	T10	2.5	Herramienta **Perfil** (➲C032) **AJX** (➲K180)
	AJS4012T15	7	M4×0.7	12	2.2	3.4	120°	T15	3.5	**AJX** (➲K180)
	AJS5014T25	8	M5×0.8	14	2.7	4.5	120°	T25	7.5	
	**BRS103**	5	M3×0.5	9.9	2.9	3.4	120°	T15	3.5	
	BRS105	8	M5×0.8	13.8	3.8	4.5	120°	T25	7.5	
	**CAS51T**	7.9	M5×0.8	19	5	4.5	10°	T25	8.5	
	**CS200T**	3.2	M2×0.4	5	1.6	1.8	90°	T6	0.6	Barra de Mandrinar Tipo **F** (➲E027)
	CS250T	3.7	M2.5×0.45	6	1.8	2.4	90°	T8	1.0	**Herramientas de fresado** (➲K001)
	* **CS250560T**	3.9	M2.5×0.45	5.2	2.5	2.4	60°	T8	1.0	**BRP** (➲K190)
	CS300590T	4.1	M3×0.5	5.5	2.1	2.4	90°	T8	1.0	
	CS300790TS	4.7	M3×0.5	7	2.3	2.8	90°	T10	2.0	
	CS300890T	4.1	M3×0.5	8	2.1	2.4	90°	T8	1.0	**DCCC** (➲K200)
	CS350690T	4.8	M3.5×0.6	6.5	2.4	2.8	90°	T10	2.5	
	* **CS350760T**	5.5	M3.5×0.6	7	4.0	3.4	60°	T15	3.5	
	CS350790T	4.8	M3.5×0.6	7	2.4	2.8	90°	T10	3.5	
	* **CS350860T**	5.5	M3.5×0.6	8.4	4.0	3.4	60°	T15	3.5	Barra de Mandrinar Tipo **MMTI** (➲G026) **BRP** (➲K190)
	CS350990T	4.8	M3.5×0.6	9	2.4	2.8	90°	T10	2.5	**DCCC** (➲K200)
	CS400990T	6.0	M4×0.7	9	2.8	3.4	90°	T15	3.5	
	CS401160T	5.7	M4×0.7	11	4.5	3.4	60°	T15	3.5	
	CS401990T	6.0	M4×0.7	19	3.0	3.9	90°	T20	3.5	
	CS451190T	6.3	M4.5×0.75	11	2.9	3.9	90°	T20	5.0	Herramienta Tipo **AL** (➲C034)
	* **CS501160T**	7.0	M5×0.8	11	3.6	3.9	60°	T20	5.0	
	CS501290T	7.0	M5×0.8	11	3.5	4.5	90°	T25	7.5	
	* **CS5015060T**	7.2	M5×0.8	15	2.4	3.9	60°	T20	5.0	**AHX640S** (➲K041)
	CS502190T	8.5	M5×0.8	21	4.0	5.1	90°	T27	7.5	
	CS6016060T	8.5	M6×1.0	16	4.5	4.5	60°	T25	7.5	
	**CSF401260T**	7.2	M4×0.5	12	5.2	3.9	60°	T20	5.0	**PMR** (➲K236)
	**DC0520T**	8.5	M5×0.8	22.5	2.5	3.4	—	T15	3.5	**DOBLE FIJACION** (➲C008)
	DC0621T	10.5	M6×1.0	25	4	3.9	—	T20	5.0	**Doble sujeción "Dimple bar"** (➲E015)
										Sistema **HSK** (➲H001)
	**DKS4**	5.6	M4×0.7	18	3.5	3	—	—	3.3	
	DKS5	7.6	M5×0.8	19	4.5	4	—	—	7.0	

REPUESTOS

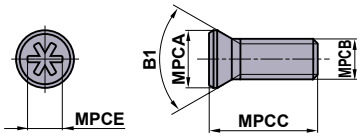
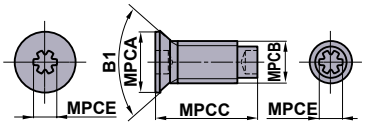
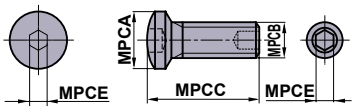
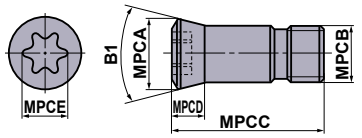
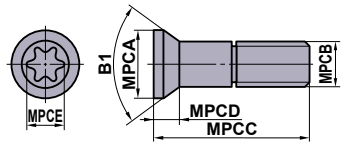
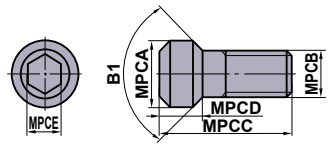
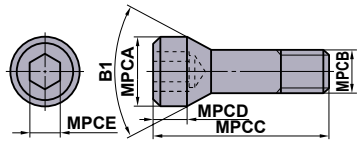
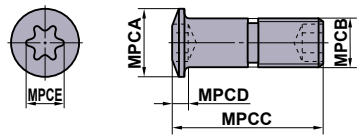
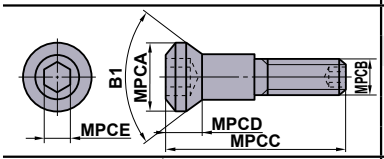
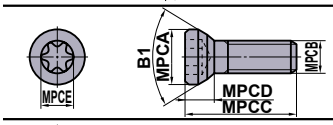
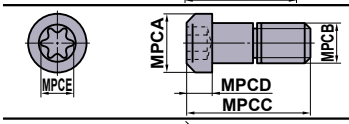
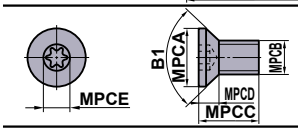
TORNILLO

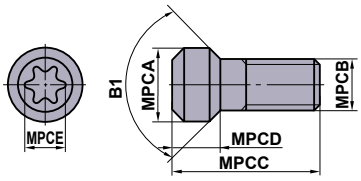
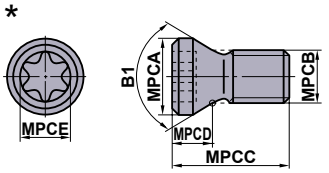
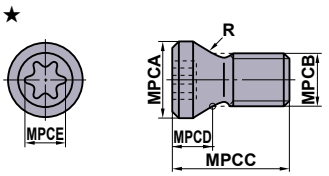
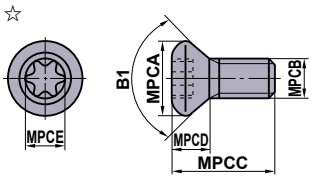
Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	Angulo B1	MPCDS	TQ (N•m)	Herramienta
	**EGS06019**	9	M6×1	22.5	3.5	3	—	—	3.3	
	EGS08024	11	M8×1.25	28.5	4.5	4	—	—	7.0	
	**FC400890T**	5.6	M4×0.7	7.5	1.3	2.8	90°	T10	2.5	Herramienta Tipo **AL** (➲C035) Barra de Mandrinar Tipo **AL** (➲E041)
	**GY05016S**	8.7	M5×0.8	16	3.5	3.9	90°	T20	5.0	Serie **GY** (➲F004)
	**GY06013M**	12	M6×1	18	5	5.6	—	T30	6.0	Serie **GY** (➲F004)
	**HFF06015**	10	M6×1	15	6	5	80°	—	8.2	
	**HS4L**	5.4	M4×0.7	14	2.3	2.5	80°	—	3.8	
	HS5S	6.8	M5×0.8	9	2.8	3	80°	—	3.3	
	HS5L	6.8	M5×0.8	15	2.8	3	80°	—	6.6	
	**HSP05008C**	M5×0.8	8	—	—	2.5	—	—	2.5	Herramienta Tipo **MP** (➲C019)
	**HY-A1**	4.4	M3×0.5	7	2.1	2	82°	—	1.5	
	HY-V1	5.5	M3×0.5	7	2.5	2	82°	—	1.5	
	HY2	5.5	M3×0.5	10	2.5	2	82°	—	1.5	
	HY3	7	M3.5×0.6	12	2.9	2	82°	—	1.5	
	HY4	9.3	M5×0.8	16	3.6	3	82°	—	3.3	
	**JSS6**	6.9	M6×0.75	4.5	1.5	0.8	—	—	—	
	JSS7	8	M7×0.75	4.4	1.5	1	—	—	—	
	**KS1**	7	M4×0.7	14	5	—	—	—	—	
	KS2	10	M6×1	18	7	—	—	—	—	
	KS2S	10	M6×1	18	7	—	—	—	—	
	**KS12**	10	M6×1	26	4	4	—	—	7.0	
	**LLR1**	M5×0.8	—	3.5	—	2.5	—	—	—	
	LLR2	M6×1	—	5	—	3	—	—	—	

Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	Angulo B1	MPCDS	TQ (N•m)	Herramienta
	☆ **LLCS103**	M3×0.5	4	11	4.6	2	—	—	1.5	
	* **LLCS105**	M5×0.8	M5×0.8	10	1.5	2	—	—	1.5	Barra de Mandrinar Tipo **P** (➲E037)
	LLCS106	M6×1	6	16.5	3.5	2.5	—	—	2.2	Sistema **HSK** (➲H001)
	* **LLCS106S**	M6×1	6	13.4	0.7	2.5	—	—	2.2	
	LLCS108	M8×1.25	8	21	6.5	3	—	—	3.3	
	* **LLCS108S**	M8×1.25	8	16.5	2	3	—	—	3.3	
	LLCS110	M10×1.5	10	29	8	4	—	—	7.0	
	**LLCS112**	M12×1	11.9	36.2	9	5	—	—	8.0	
	LLCS125	M5×0.8	M5×0.8	12	2	2	—	—	1.5	
	LLCS205	M5×0.8	M5×0.8	16	4	2	—	—	1.5	
	LLCS206	M6×1	6	26	13	2.5	—	—	2.2	
LLCS103, LLCS105 **LLCS112, LLCS125** **LLCS205**	**LLCS208**	M8×1.25	8	24	6.5	3	—	—	3.3	
	LLCS306	M6×1	6	21	4	2.5	—	—	2.2	
	LLCS308	M8×1.25	8	42	27.5	3	—	—	3.3	
Los productos identificados con "*" no disponen de un agujero hexagonal en el extremo identificado con **MPCB**.	**LLCS310**	M10×1	10	29	8	4	—	—	7.0	
	LLCS410	M10×1	10	30	6.6	4	—	—	7.0	
Los productos identificados con "☆" no disponen de un agujero hexagonal en el extremo identificado con **MPCA**.	**LLCS508**	M8×1	8	24	6.5	3	—	—	3.3	
	* **LLCS508S**	M8×1	8	20.5	3	3	—	—	3.3	
	**LS1**	M6×1	22	8	8	3	—	—	5.0	
	LS2	M8×1	29	13	10	4	—	—	8.2	
	LS3	M8×1	32	13	13	4	—	—	8.2	
	* **LS4**	M6×1	15	8	4	3	—	—	5.0	**Herramientas de fresado** (➲K001)
	* **LS5**	M6×1	18	8	5	3	—	—	5.0	
	* **LS6**	M8×1	24	13	5	4	—	—	8.2	
	* **LS7**	M8×1	27	13	8	4	—	—	8.2	
	* **LS8**	M6×0.75	18	7	7	3	—	—	5.0	
	* **LS9**	M6×0.75	22	8	8	3	—	—	5.0	
	* **LS10**	M7×0.75	16	6	6	4	—	—	8.2	
	* **LS11**	M8×1	16	6	6	4	—	—	7.8	
	* **LS12**	M8×1	24	7	7	4	—	—	7.8	
	* **LS13**	M8×1	34	12	12	4	—	—	7.8	
* Sin agujero exagonal en el tornillo a mano derecha	* **LS14**	M7×0.75	24	10	10	4	—	—	7.8	
	* **LS16**	M7×0.75	23	11	8	4	—	—	7.8	
	* **LS18**	M7×0.75	14	6	4	4	—	—	7.8	
	* **LS20**	M10×1.5	26	9	9	5	—	—	9.0	
	* **LS21**	M10×1.5	32	12	12	5	—	—	9.0	
	LS24	M8×1.25	24	8.5	8.5	4	—	—	7.8	
	LS25	M8×1	28.5	12.0	10.5	4	—	—	8.2	**DOBLE FIJACION** (➲C009)
	**LS10T**	M7×0.75	14	6	5	4.5	—	T25	8.0	
	LS14T	M7×0.75	24	10	10	4.5	—	T25	8.0	
	LS15T	M7×0.75	18	7	7	4.5	—	T25	8.0	
	LS19T	M6×0.75	11	4	4	3.4	—	T15	5.0	
	LS10TS	M7×0.75	13	6	4	4.5	—	T25	8.5	
	LS0622T	M6×0.75	22	8	8	3.4	—	T15	6.0	**AHX640W** (➲K048)
	**LS24H**	M8×1.25	24	8.5	8.5	4	—	—	8.2	
	**MGS6**	10	M6×1	26	4	5	—	—	9.0	**APX3000** (➲K133)
	**MHT1**	11	M8×1	18.5	3.5	4	—	—	8.7	

REPUESTOS

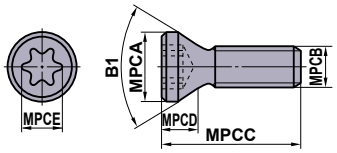
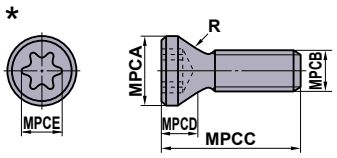
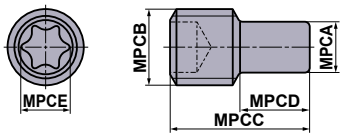
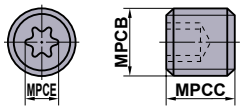
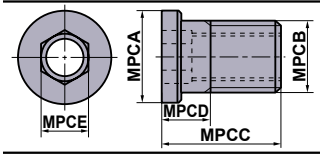
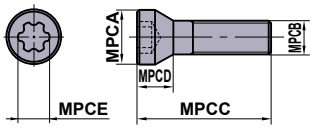
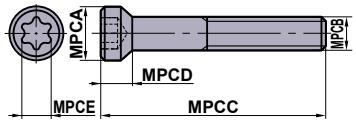
TORNILLO

Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	Angulo B1	MPCDS	TQ (N•m)	Herramienta
	**NS251**	3.6	M2.5×0.45	7	—	2.2	60°	—	0.7	**BTVH** (➲D016) **CSVH** (➲D027)
	NS401	5.8	M4×0.7	6	—	3.6	60°	—	3.5	**CTAH-S** (➲D020)
	**NS402W**	5.85	M4×0.7	10	—	2.2	60°	—	0.7	**CTAH** (➲D020) **CTBH** (➲D022)
	NS403W	5.85	M4×0.7	12	—	2.2	60°	—	0.7	
	NS404W	5.8	M4×0.7	10	—	2.2	90°	—	0.7	
	**NS501W**	8	M5×0.8	16	—	2.5	120°	—	2.2	**SMALL TOOLS** (➲D001)
	NS502W	8	M5×0.8	20	—	2.5	120°	—	2.2	
	**RN-S6**	9.5	M6×0.75	20.3	4.6	3.9	61°	T20	5.0	
	RN-S7	11	M7×0.75	24.7	5.2	4.5	61°	T25	7.5	
	**RS3008T**	4.3	M3×0.35	8.6	2	2.4	61°	T8	1.5	**SRF** (➲K212) **SUF** (➲K216)
	RS3510T	5	M3.5×0.35	10	2.3	2.8	61°	T10	2.5	
	RS4015T	6	M4×0.5	14	2.7	3.4	61°	T15	3.3	
	RS5020T	8.1	M5×0.5	16.4	3.6	3.9	61°	T20	5.0	
	RS6025T	9.5	M6×0.75	21.5	4.2	4.5	61°	T25	7.5	
	RS8030T	12	M8×0.75	25	5	5.6	61°	T30	10.0	
	**S1**	3.5	M2×0.4	5.5	2.2	1.5	92°	—	0.6	
	S3	4.5	M3×0.5	7.7	2.4	2	92°	—	1.5	
	S4	5.3	M4×0.7	8	1.8	2.5	62°	—	2.2	
	S5	6.8	M5×0.8	9	2.4	3	62°	—	3.3	
	**SD32**	12	M8×1.25	28	7.2	6	50°	—	9.5	
	SD40	12	M8×1.25	36	7.2	6	50°	—	9.5	
	SD50	16	M10×1.5	46	8.2	8	50°	—	1.0	
	SD63	16	M10×1.5	61	8.2	8	50°	—	1.0	
	**SETS51**	6.8	M5×0.8	14.8	1.5	3.4	—	T15	3.5	Herramienta Tipo **MMTE** (➲G019)
	SETS61	8	M6×1	20	1.8	3.9	—	T20	5.0	Barra de Mandrinar Tipo **MMTI** (➲G026)
										Sistema **HSK** (➲H001)
	**SLCS105**	10	M5×0.8	25	6.3	4	90°	—	7.0	Herramienta Tipo **WP** (➲C017)
	SLCS106	12	M6×1	32	6.2	4	90°	—	7.0	
	**SPS1**	8.5	M5×0.8	16	4	4.5	70°	T25	5.0	
	**SRS5**	6.7	M5×0.8	16	3.5	3.9	—	T20	5.0	
	**STS1**	6.8	M3×0.5	7	2.2	2.8	90°	T10	2.5	

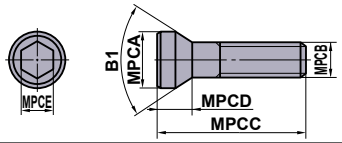
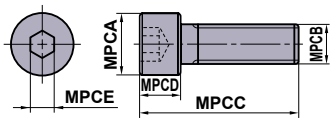
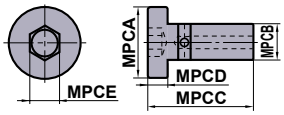
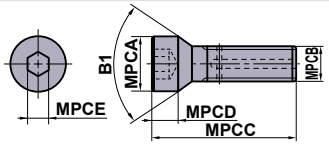
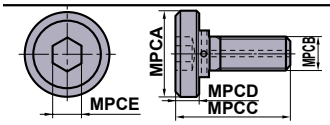
Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	Angulo B1	MPCDS	TQ (N•m)	Herramienta
	* **TS16**	2.5	M1.6×0.35	3.2	1.6	1.8	60°	T6	0.6	**MICRO-DEX** (➲E018)
	TS2	2.7	M2×0.4	4.6	1.4	1.8	60°	T6	0.6	
	* **TS2A**	2.7	M2×0.4	4.5	1.2	1.8	60°	T6	0.6	**AQX** (➲K172)
	TS2C	2.7	M2×0.4	3.8	1.4	1.8	60°	T6	0.6	
	☆ **TS2D**	3.8	M2×0.4	5.3	1.9	1.8	82°	T6	0.6	**DIMPLE BAR** (➲E007)
	TS21	2.7	M2×0.4	3.4	1.4	1.8	60°	T6	0.6	Barra de Mandrinar Tipo **F** (➲E029)
	* **TS22**	3.0	M2.2×0.45	5	1.2	1.8	60°	T6	0.6	Barra de Mandrinar Tipo **S** (➲E030)
	* **TS25**	3.3	M2.5×0.45	5.5	1.7	2.4	60°	T8	1.0	**AQX** (➲K172) **AJX** (➲K180)
	☆ **TS25D**	4.4	M2.5×0.45	6.2	2.2	2.4	82°	T8	1.0	Barra de Mandrinar Tipo **MMTI** (➲G026)
	* **TS25H**	3.6	M2.5×0.45	5.5	2	2.4	60°	T8	1.0	**SRM2** (➲K220)
	TS202	2.7	M2×0.4	5.5	1.8	1.8	60°	T6	0.6	
	TS253	3.3	M2.5×0.45	4.5	1.7	2.4	60°	T8	1.0	**Herramientas de fresado** (➲K001)
	TS254	3.3	M2.5×0.45	7	1.7	2.4	60°	T8	1.0	**SMALL TOOLS** (➲D001) **PMF** (➲K234)
	* **TS255**	3.5	M2.5×0.45	7.5	1.6	2.4	60°	T8	1.0	Herramienta **Perfil** (➲C032)
	TS3	3.9	M3×0.5	6	2	2.4	60°	T8	1.0	**TSMP** (➲K232)
	TS304	3.9	M3×0.5	10.5	2.0	2.4	60°	T8	1.5	
	TS3D	5.0	M3×0.5	6	2.3	2.8	82°	T10	2.5	**DIMPLE BAR** (➲E007)
* 	* **TS3SB**	4.4	M3×0.5	8	2	2.4	80°	T8	1.5	**AXD4000** (➲K155)
	TS3SBS	4.4	M3×0.5	6.5	2	2.4	80°	T8	1.5	**AXD4000** (➲K155)
	☆ **TS31D**	4.8	M3×0.5	7.2	2.2	2.8	82°	T10	2.5	**DIMPLE BAR** (➲E007)
	* **TS32**	3.9	M3×0.5	7.5	2	2.4	60°	T8	2.0	**SRM2** (➲K220)
	* **TS33**	3.9	M3×0.5	6.7	2	2.4	60°	T8	1.5	**AQX** (➲K172) **AJX** (➲K180)
	TS35	4.8	M3.5×0.6	6.5	2.4	2.8	60°	T10	2.5	
	* **TS35D**	5.3	M3.5×0.6	12	2.8	3.4	60°	T15	3.5	Sistema **HSK** (➲H001)
	★ **TS35R**	5.7	M3.5×0.6	10	2.1	3.4	—	T15	3.5	**AHX440S** (➲K034) **AHX475S** (➲K038)
	TS351	4.8	M3.5×0.6	7.2	2.4	2.8	60°	T10	2.5	**AJX** (➲K180) **SRM2** (➲K220)
	TS352	4.8	M3.5×0.6	10	3	2.8	60°	T10	2.5	**VFX5** (➲K192)
★ 	**TS4S**	5.4	M4×0.7	7	2.4	3.4	80°	T15	3.5	
	* **TS4SL**	5.4	M4×0.7	8	2.4	3.4	80°	T15	4.0	
	* **TS4SB**	5.8	M4×0.7	9	2.7	3.4	80°	T15	3.5	**AXD7000** (➲K166)
	* **TS4SBL**	5.8	M4×0.7	10.5	2.7	3.4	80°	T15	3.5	Serie **GY** (➲F004) **AXD7000** (➲K166)
	TS4	5.4	M4×0.7	8	2.6	3.4	60°	T15	3.5	**CE/CF/CGSP** (➲K230) **TSMP** (➲K232)
	TS4D	5.6	M4×0.7	7.7	2.5	3.4	82°	T15	3.5	**DIMPLE BAR** (➲E007)
	TS42	5.4	M4×0.7	6	2.6	3.4	60°	T15	3.5	
	TS43	5.4	M4×0.7	10	2.6	3.4	60°	T15	3.5	**AJX** (➲K180) **BRP** (➲K190) **SRM2** (➲K220)
	TS44	5.4	M4×0.7	12	2.6	3.4	60°	T15	3.5	
	TS406	5.4	M4×0.7	15.5	2.6	3.4	60°	T15	3.5	
☆ 	**TS407**	5.4	M4×0.7	9	2.6	3.4	60°	T15	3.5	**AQX** (➲K172) **AJX** (➲K180)
	TS450	5.9	M4.5×0.75	13	3.6	3.9	60°	T20	5.0	**VFX6** (➲K196)
	TS5S	6.8	M5×0.8	9	2.9	4.5	80°	T25	7.5	
	* **TS5SL**	6.8	M5×0.8	12	2.9	4.5	80°	T25	7.5	
	TS5	6.8	M5×0.8	9	3.2	4.5	60°	T25	7.5	Herramienta **SP** (➲C024) **CE/CF/CGSP** (➲K230) **TSMP** (➲K232)
	TS5L	6.8	M5×0.8	15	2.9	4.5	80°	T25	7.5	
	★ **TS5R**	6.9	M5×0.8	12	3.5	3.9	—	T20	5.0	**WWX400** (➲K056) **WJX** (➲K072)
	TS52	6.8	M5×0.8	8	3.2	4.5	60°	T25	7.5	**CE/CF/CGSP** (➲K230)
	TS53	6.8	M5×0.8	16	3.2	4.5	60°	T25	7.5	
	TS54	6.8	M5×0.8	12	3.2	4.5	60°	T25	7.5	**AJX** (➲K180)
	TS55	6.8	M5×0.8	10.5	3.2	4.5	60°	T25	7.5	Serie **GY** (➲F004) **AQX** (➲K172) **SPX** (➲K203) **SRM2** (➲K220)
	* **TS6S**	8.5	M6×1.0	13	4.4	5.6	60°	T30	10.0	**AQX** (➲K172) **SRM2** (➲K220)
	* **TS6**	8.5	M6×1.0	16	4.4	5.6	60°	T30	10.0	**SRM2** (➲K220)

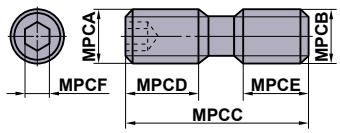
REPUESTOS

TORNILLO

Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	Angulo B1	MPCDS	TQ (N•m)	Herramienta
	TPS20	2.7	M2×0.4	3.5	1.3	1.8	60°	6IP	0.5	
	TPS20-1	2.65	M2×0.4	4.7	2.4	1.8	60°	6IP	0.6	**MVX** (➲M160)
	TPS22	3.0	M2.2×0.45	4.7	1.6	2.1	60°	7IP	0.5	
	TPS22S	3.0	M2.2×0.45	4.2	1.6	2.1	60°	7IP	0.5	
	TPS25	3.3	M2.5×0.45	5.5	1.7	2.1	60°	7IP	1.0	**APX3000** (➲K133) **MVX** (➲M160)
	TPS25-1	3.3	M2.5×0.45	6.5	1.7	2.1	60°	7IP	1.0	**APX3000** (➲K133)
	TPS27F1	3.7	M2.7×0.35	6.5	1.8	2.1	60°	7IP	1.0	**VPX200** (➲K086)
	TPS27F2	3.7	M2.7×0.35	8.0	1.8	2.1	60°	7IP	1.0	**VPX300** (➲K100)
	TPS3	3.9	M3×0.5	6.7	1.4	2.82	60°	10IP	1.0	**MVX** (➲M160)
	* TPS3R	4.6	M3×0.5	8.5	1.4	2.82	—	10IP	2.0	**WJX09** (➲K072)
	TPS3SB	4.4	M3×0.5	8	2.0	2.82	80°	10IP	3.0	**AXD4000A** (➲K162)
* 	TPS35	5.3	M3.5×0.6	11.5	2.8	3.4	60°	15IP	3.5	**ASX445** (➲K026) **ASX400** (➲K068) **PMR** (➲K236)
	TPS351	4.8	M3.5×0.6	7.2	1.4	2.82	60°	10IP	2.5	**MVX** (➲M160)
	TPS351B	5.1	M3.5×0.6	7.2	1.4	2.82	60°	10IP	2.5	**ARP** (➲K238)
	TPS4	5.3	M4×0.7	8	2.6	3.4	60°	15IP	3.5	**APX4000** (➲K140) **ARP** (➲K238) **MVX** (➲M160)
	TPS40F1	5.3	M4×0.5	10.5	2.8	3.4	60°	15IP	3.0	**VPX300** (➲K100)
	TPS43	5.3	M4×0.7	10	2.6	3.4	60°	15IP	4.0	**APX4000** (➲K140) **MVX** (➲M160)
	* TPS4R	6.4	M4×0.7	10.6	2.9	3.4	—	15IP	3.5	**WSX445** (➲K016)
	TPS54	6.8	M5×0.8	12	3.2	4.5	60°	25IP	7.5	**MVX** (➲M160)
	TSR05008S	3.5	M5×0.8	8	—	2.8	—	T10	—	
	TSR06011S	4	M6×1.0	11	—	3.9	—	T20	—	
	TSS04005	—	M4×0.7	5	—	2.4	—	T8	—	**PMF** (➲K234)
	TSS04505S	—	M4.5×0.7	5	—	3.5	—	T10	3.5	**FMAX** (➲K051)
	TSS05006	—	M5×0.8	6	—	2.8	—	T10	—	
	TSS06010	—	M6×1	10	—	3.9	—	T20	—	
	WCS503507H	6.3	M5×0.5	7	3.3	3.5	—	—	5.0	**ASX445** (➲K026) **ASX400** (➲K068) **PMR** (➲K236)
	WCS604010H	7.8	M6×0.75	10	4.1	4.0	—	—	7.0	**PMR** (➲K236)
	WS203107TPS	3.1	M2×0.25	7.3	1.7	1.8	60°	6IP	1.0	**STAW** (➲M141)
	WS203108TPS	3.1	M2×0.25	8.3	1.9	1.8	60°	6IP	1.0	
	WS253909TPS	3.9	M2.5×0.35	9.5	2.4	2.4	60°	8IP	2.0	
	WS304912TPS	4.9	M3×0.35	12	3.25	2.82	60°	10IP	2.5	
	WS254012T	4	M2.5×0.45	11.5	2.2	2.4	80°	T8	2.0	**TAW** (➲M150)
	WS254013T	4	M2.5×0.45	12.5	2.2	2.4	80°	T8	2.0	
	WS254014T	4	M2.5×0.45	13.5	2.2	2.4	80°	T8	2.0	
	WS254015T	4	M2.5×0.45	14.5	2.2	2.4	80°	T8	2.0	
	WS254016T	4	M2.5×0.45	15.5	2.2	2.4	80°	T8	2.0	
	WS304517T	4.5	M3×0.5	16.5	3.4	2.8	60°	T10	3.5	
	WS304518T	4.5	M3×0.5	17.5	3.4	2.8	60°	T10	3.5	
	WS355520T	5.5	M3.5×0.6	19.5	3.9	3.4	60°	T15	5.5	
	WS355521T	5.5	M3.5×0.6	20.5	3.9	3.4	60°	T15	5.5	
	WS406023T	6	M4×0.7	22.0	4.4	4.5	60°	T25	8.5	
	WS406024T	6	M4×0.7	23.0	4.4	4.5	60°	T25	8.5	
	WS508026T	8	M5×0.8	25.0	5.2	5.1	60°	T27	12.0	
	WS508027T	8	M5×0.8	26.0	5.2	5.1	60°	T27	12.0	

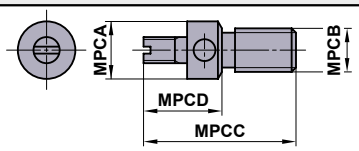
TORNILLO DE FIJACIÓN DE CUERPO

Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	Angulo B1	MPCDS	TQ (N•m)	Herramienta
	**BOES101**	15	M10×1.5	45	10	8	60°	—	10.0	
	∗ **HSC08025H**	13	M8×1.25	33	8	5	—	—	24	**VPX200/300** (➲K086,K100) **ARP** (➲K238)
	HSC05030	8.5	M5×0.8	35	5	4	—	—	10	**APX3000/4000** (➲K133,K140)
	∗ **HSC08030H**	13	M8×1.25	38	8	5	—	—	24	**WSX445** (➲K016)
	HSC08045	13	M8×1.25	53	8	5	—	—	24	**VPX200/300** (➲K086,K100)
	HSC08040	13	M8×1.25	48	8	5	—	—	24	**WSX445** (➲K016)
	HSC08050	13	M8×1.25	58	8	5	—	—	24	**VPX200/300** (➲K086,K100)
	∗ **HSC10030H**	16	M10×1.5	40	10	6	—	—	40	**APX3000/4000** (➲K133,K140) **AJX** (➲K180) **WSX445** (➲K016)
	HSC10035	16	M10×1.5	45	10	6	—	—	44	**VFX5** (➲K192) **VFX6** (➲K196)
	HSC10050	16	M10×1.5	60	10	8	—	—	44	**APX3000/4000** (➲K133,K140) **VPX200/300** (➲K086,K100)
	HSC10055	16	M10×1.5	65	10	8	—	—	44	**VFX5** (➲K192)
	HSC10060	16	M10×1.5	70	10	8	—	—	44	**VPX200/300** (➲K086,K100)
	HSC10070	16	M10×1.5	80	10	8	—	—	44	**VPX200/300** (➲K086,K100) **ASPX** (➲K028)
	HSC12035	18	M12×1.75	47	12	10	—	—	80	**WSX445** (➲K016)
	∗ **HSC12035H**	18	M12×1.75	47	12	10	—	—	80	**APX3000/4000** (➲K133,K140) **AJX** (➲K180)
	HSC12040	18	M12×1.75	52	12	10	—	—	80	
	HSC12045	18	M12×1.75	57	12	10	—	—	80	**WSX445** (➲K016)
	HSC12060	18	M12×1.75	72	12	10	—	—	80	**VPX200/300** (➲K086,K100)
	HSC12070	18	M12×1.75	82	12	10	—	—	80	**APX3000/4000** (➲K133,K140) **AJX** (➲K180) **WSX445** (➲K016)
	HSC16040	24	M16×2	56	16	14	—	—	150	**WSX445** (➲K016)
	∗ **HSC16040H**	24	M16×2	56	16	14	—	—	150	**APX3000/4000** (➲K133,K140) **AJX** (➲K180)
	HSC16055	24	M16×2	71	16	14	—	—	150	**VPX200/300** (➲K086,K100)
	HSC16065	24	M16×2	81	16	14	—	—	150	**VPX200/300** (➲K086,K100)
	HSC16080	24	M16×2	96	16	14	—	—	150	
∗ Con agujeros para refrigerante.	**HSC20040**	30	M20×2.5	60	20	17	—	—	320	
	HSC20090	30	M20×2.5	110	20	17	—	—	320	
	**HSCX12030H**	24	M12×1.75	37	7	8	—	—	40	**FMAX** (➲K051)
	HSCX16035H	30	M16×2	44	9	12	—	—	100	
	HSCX20035H	36	M20×2.5	46	11	14	—	—	180	
	**HFF08033H**	11	M8×1.25	33	5	5	90°	—	8.2	**WJX09** (➲K072)
	HFF08043H	11	M8×1.25	43	5	5	90°	—	8.2	**AXD4000** (➲K155)
	**MBA16033H**	40	M16×2	43	10	14	—	—	150	**AHX640** (Para ϕ100) (➲K041) **WSX445** (➲K016)
	MBA20040H	50	M20×2.5	54	14	17	—	—	320	**APX4000** (➲K140) **AHX475S** (➲K038) **AHX640S** (➲K041) **AXD4000** (➲K155) **AXD7000** (➲K166) **AJX** (➲K180)

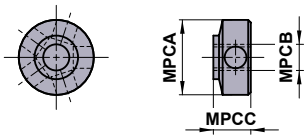
Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	TQ (N•m)	Herramienta
	**HDS08030**	M8×0.75	M8×1.25	30	13.5	11.5	4	8.2	**BRP** (➲K190)
	HDS10031	M10×1.0	M10×1.5	31	14	12	5	9.0	**PMF** (➲K234)

REPUESTOS

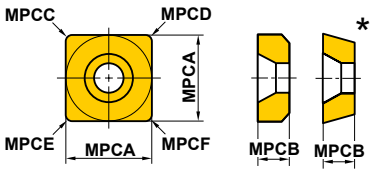
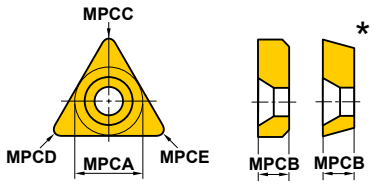
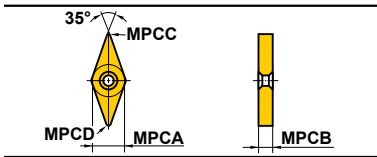
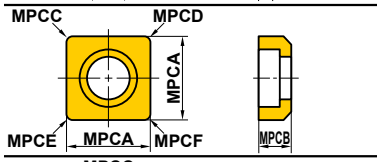
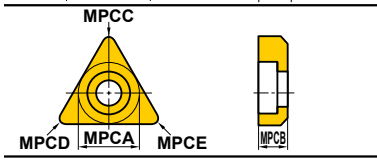
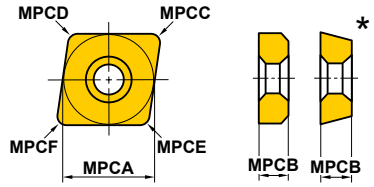
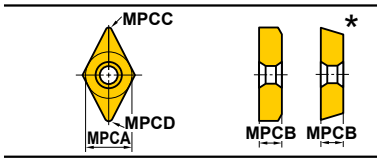
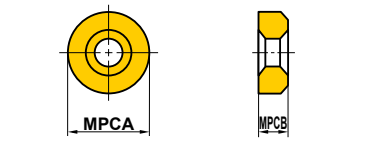
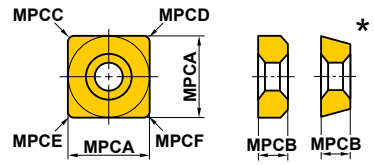
TORNILLO DE GRAN AJUSTE

Geometría	Referencia	Dimensiones (mm)					Angulo	MPCDS	TQ (N•m)	Herramienta
		MPCA	MPCB	MPCC	MPCD	MPCE	B1			
	**KSS2**	6.6	M5×0.8	17.5	9	—	—	—	—	**FMAX** (➲K051)

TUERCA DE AJUSTE “MICRO”

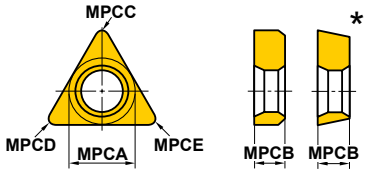
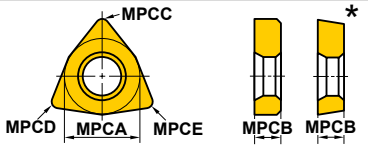
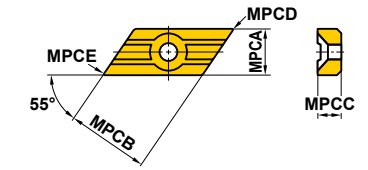
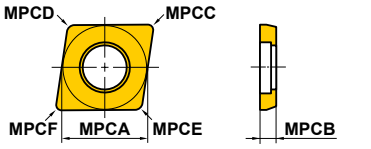
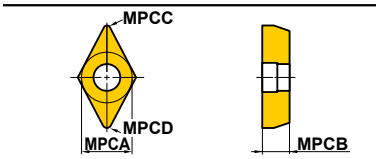
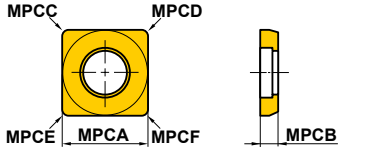
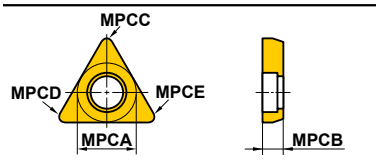
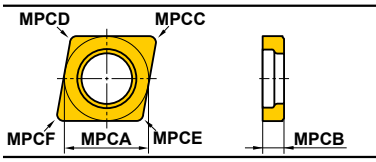
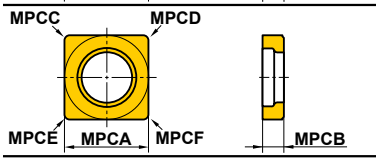
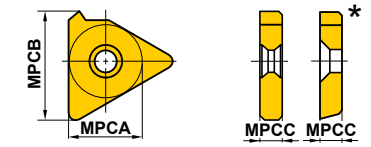
Geometría	Referencia	Dimensiones (mm)					Angulo	MPCDS	TQ (N•m)	Herramienta
		MPCA	MPCB	MPCC	MPCD	MPCE	B1			
	**KSN3**	8.6	M3×0.35	4.3	—	—	—	—	—	**FMAX** (➲K051)

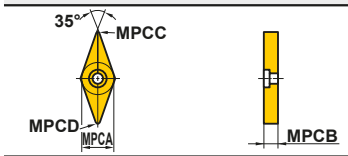
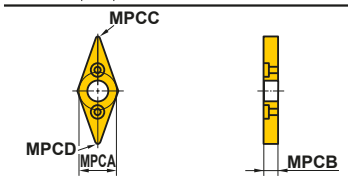
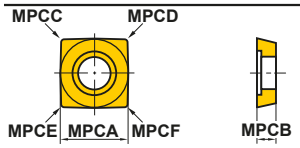
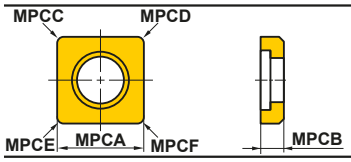
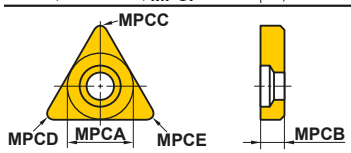
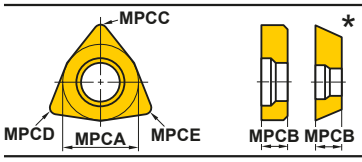
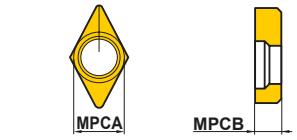
ASIENTO

Geometría	Referencia	Dimensiones (mm)						Herramienta
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	**CS32**	9.52	3.18	0.8	0.8	1.2	1.2	
	CS42	12.70	3.18	0.8	0.8	1.2	1.6	
	CS43	12.70	4.76	0.8	0.8	1.2	1.6	
	* **PS31**	8.28	2.38	0.2	0.2	0.6	0.6	
	* **PS42**	11.46	3.18	0.2	0.2	0.6	1.0	
	**CT22**	6.35	3.18	0.4	0.8	1.2	—	
	CT32	9.52	3.18	0.4	0.8	1.2	—	
	* **PT21**	5.11	2.38	0.2	0.2	0.6	—	Barra de Mandrinar Tipo **F** (➲E028)
	* **PT32**	8.28	3.18	0.2	0.2	0.6	—	
	* **PT42**	10.85	3.18	0.3	0.3	0.7	—	
	BPT322	7.8	3.18	—	—	—	—	
	**DCSVN32**	9.52	3.18	0.8	1.2	—	—	**DOBLE FIJACION** (➲C019) **Doble sujeción "Dimple bar"** (➲E017)
	**ESS42**	12.70	3.18	0.8	0.8	1.2	1.6	
	**EST32**	9.52	3.18	0.4	0.8	1.2	—	
	EST43	12.70	4.76	0.4	0.8	1.2	—	
	**LLSCN3T3**	9.52	3.97	0.4	0.4	0.8	0.8	Herramienta Tipo **LL** (➲C008)
	LLSCN33	9.52	4.76	0.4	0.4	0.8	0.8	Herramienta Tipo **LL** (➲C008)
	LLSCN42	12.70	3.18	0.8	0.8	1.2	1.2	**Doble sujeción "Dimple bar"** (➲E015)
	LLSCN53	15.87	4.76	1.2	1.2	1.6	1.6	Barra de Mandrinar Tipo **P** (➲E038)
	LLSCN63	19.05	4.76	1.2	1.2	1.6	1.6	Sistema **HSK** (➲H001)
	* **LLSCP42**	12.70	3.18	0.8	0.8	1.2	1.2	**Doble sujeción "Dimple bar"** (➲E015)
	* **LLSCP63**	19.05	4.76	1.2	1.2	1.6	1.6	Barra de Mandrinar Tipo **P** (➲E038)
								Sistema **HSK** (➲H001)
	**LLSDN32**	9.52	3.18	0.8	1.2	—	—	**DOBLE FIJACION** (➲C010)
	LLSDN42	12.70	3.18	0.8	1.2	—	—	Herramienta Tipo **LL** (➲C010) **Doble sujeción "Dimple bar"** (➲E015)
	LLSDN43	12.70	4.76	0.8	1.2	—	—	Barra de Mandrinar Tipo **P** (➲E038)
	LLSDN53	15.87	4.76	1.2	1.6	—	—	Sistema **HSK** (➲H001)
	* **LLSDP42**	12.70	3.18	0.8	1.2	—	—	**Doble sujeción "Dimple bar"** (➲E015)
	**LLSRN103**	8.3	3.18	—	—	—	—	Herramienta Tipo **LL** (➲C026)
	LLSRN123	9.8	3.18	—	—	—	—	Sistema **HSK** (➲H001)
	LLSRN164	13.6	4.76	—	—	—	—	
	LLSRN204	17.3	4.76	—	—	—	—	
	LLSRN256	22.0	6.35	—	—	—	—	
	LLSRN326	28.0	6.35	—	—	—	—	
	**LLSSN32**	9.52	3.18	0.8	0.8	1.2	1.2	
	LLSSN33	9.52	4.76	0.8	0.8	1.2	1.2	**Doble sujeción "Dimple bar"** (➲E016)
	LLSSN42	12.70	3.18	0.8	0.8	1.2	1.6	Barra de Mandrinar Tipo **P** (➲E037)
	LLSSN53	15.87	4.76	1.2	1.2	1.6	1.6	
	LLSSN63	19.05	4.76	1.2	1.2	1.6	2.0	
	LLSSN84	25.40	6.35	1.6	1.6	2.4	2.4	
	* **LLSSP42**	12.70	3.18	0.8	0.8	1.2	1.6	**Doble sujeción "Dimple bar"** (➲E016)

REPUESTOS

ASIENTO

Geometría	Referencia	Dimensiones (mm) MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	Herramienta
	**LLSTE32**	7.6	3.18	0.4	0.4	0.4	—	Herramienta Tipo **LL** (➲C016) **Doble sujeción "Dimple bar"** (➲E016) Barra de Mandrinar Tipo **P** (➲E037)
	LLSTN32	9.52	3.18	0.4	0.8	1.2	—	
	LLSTN33	9.52	4.76	0.4	0.8	1.2	—	
	LLSTN42	12.70	3.18	0.4	0.8	1.2	—	
	LLSTN53	15.87	4.76	0.8	1.2	1.6	—	
	* **LLSTP32**	9.52	3.18	0.4	0.8	1.2	—	
	* **LLSTP42**	12.70	3.18	0.4	0.8	1.2	—	
	**LLSWN32**	9.52	3.18	0.4	0.8	1.2	—	Herramienta Tipo **LL** (➲C022) **DOBLE FIJACION** (➲C022) **Doble sujeción "Dimple bar"** (➲E017)
	LLSWN3T3	9.52	3.97	0.4	0.8	1.2	—	
	LLSWN42	12.70	3.18	0.4	0.8	1.2	—	
	* **LLSWP32**	9.52	3.18	0.4	0.8	1.2	—	
	* **LLSWP42**	12.70	3.18	0.4	0.8	1.2	—	
	**MHS532R/L**	9.4	15.7	4.5	0.8	0.8	—	
	MHS533R/L	9.4	15.7	4.5	1.2	1.2	—	
	MHS534R/L	9.4	15.7	4.5	1.6	1.6	—	
	MHS543R/L	9.4	15.7	6.5	1.2	1.2	—	
 La posición del agujero de esta referencia está descentrada.	**MLCP42**	12.58	3.18	1.2	1.2	1.2	1.2	Barra de Mandrinar Tipo **P** (➲E038)
 La posición del agujero de esta referencia está descentrada	**MLDP42**	12.56	3.18	1.2	1.2	—	—	Barra de Mandrinar Tipo **P** (➲E038)
 La posición del agujero de esta referencia está descentrada	**MLSP42**	12.63	3.18	1.2	1.2	1.2	1.2	Barra de Mandrinar Tipo **P** (➲E037)
 La posición del agujero de esta referencia está descentrada.	**MLTP32**	9.50	3.18	1.2	1.2	1.2	—	Barra de Mandrinar Tipo **P** (➲E037)
	**MSCN63**	18.8	4.76	1.6	1.6	1.6	1.6	**DOBLE FIJACION** (➲C009) (Para corte pesado)
	**MSSN63**	18.8	4.76	1.6	1.6	1.6	1.6	**DOBLE FIJACION** (➲C012) (Para corte pesado)
	**CT32T1**	9.525	15.03	3.18	—	—	—	
	* **PT32T1R**	8.28	13.34	3.18	—	—	—	
	* **PT32T2R**	8.28	13.19	3.18	—	—	—	

Geometría	Referencia	Dimensiones (mm)						Herramienta
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	**PV321**	9.52	3.18	0.4	0.4	—	—	Herramienta Tipo **MP** (➲C019)
	PV322	9.52	3.18	0.8	0.8	—	—	
	PV323	9.52	3.18	1.2	1.2	—	—	
	**SPSVN32**	8.06	3.18	0.3	0.3	—	—	Herramienta Tipo **SP** (➲C030) Sistema **HSK** (➲H001)
	**STASX400N**	11.00	3.00	0.4	0.4	0.4	0.4	**ASX400** (➲K068)
	STASX445N	10.76	3.00	—	—	—	—	**ASX445** (➲K026)
	**STBS500N**	12.7	3.18	0.8	0.8	0.8	0.8	
	**WPSTN33**	9.3	4.76	0.8	0.4	1.2	—	Herramienta Tipo **WP** (➲C017)
	WPSTN43	12.50	4.76	0.8	0.4	1.2	—	
	* **WPSWC43**	12.50	4.76	0.4	0.8	1.2	—	
	WPSWN43	12.50	4.76	0.4	0.8	1.2	—	Herramienta Tipo **WP** (➲C023)
	**SPSDN32**	8.687	3.175	—	—	—	—	

REPUESTOS

PASADOR DE ASIENTO Y PALANCA

Geometría	Referencia	Dimensiones (mm)					Herramienta
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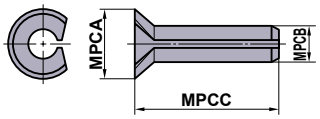
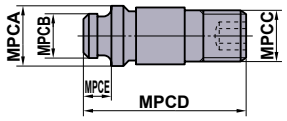
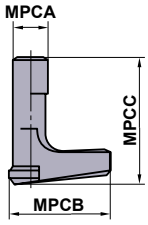
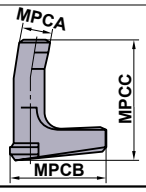
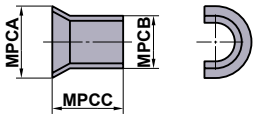
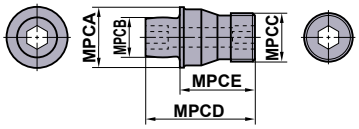
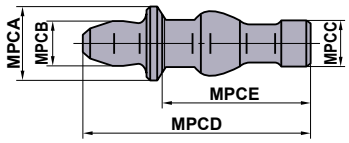
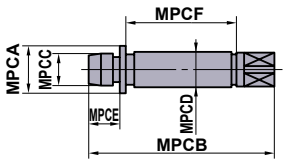
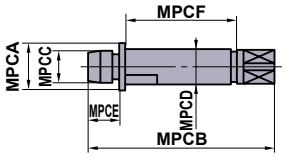
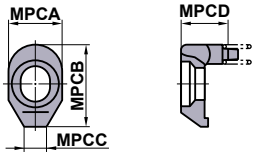
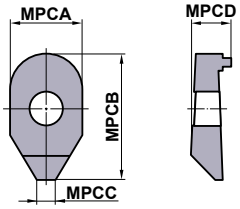
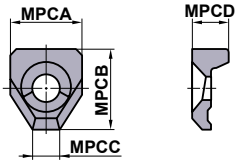
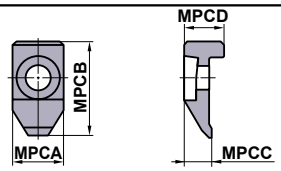
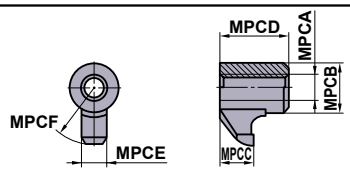
	**BCP141**	3.0	1.4	5.6	—	—	Herramienta Tipo **SP** (➲C030)
	BCP201	4.3	2	7.4	—	—	Barra de Mandrinar Tipo **F** (➲E028)
	BCP202	4.3	2	6.4	—	—	Sistema **HSK** (➲H013)
	BCP251	4.8	2.5	7.4	—	—	
	BCP252	4.8	2.5	6.4	—	—	
	BCP301	5.3	3	7.4	—	—	
	**CCP33**	6.5	3.66	M5×0.8	18.5	3	Herramienta **WP** (➲C017)
	CCP34	7.5	5.0	M6×1.0	18.5	3	
	CCP44	7.5	5.0	M5×0.8	14.2	3	
	**LLCL12S**	2.1	9.3	5.6	—	—	Herramienta Tipo **LL** (➲C016)
	LLCL13	3.6	10	12.5	—	—	Barra de Mandrinar Tipo **P** (➲E037)
	LLCL13S	3.6	10	7.8	—	—	Sistema **HSK** (➲H001)
	LLCL14	4.7	13.4	13.2	—	—	
	LLCL14S	4.7	13.6	12.2	—	—	
	LLCL15	6.0	19	17	—	—	
	LLCL16	7.5	20.8	21	—	—	
	LLCL18	8.6	25.4	25.2	—	—	
	LLCL23	3.6	12.0	11.5	—	—	
	LLCL23S	3.6	11.6	9.5	—	—	
	LLCL24	4.7	16.2	14.8	—	—	
	LLCL25	6.0	17.1	17	—	—	
	**LLCL110**	3.0	10.7	11.6	—	—	
	LLCL112	3.5	13	13.5	—	—	
	LLCL116	4.5	18.5	18	—	—	
	LLCL120	5.6	20.3	19	—	—	
	LLCL125	6	24	24	—	—	
	LLCL132	8	30	27	—	—	
	**LLP13**	5.55	4.85	5.3	—	—	Herramienta Tipo **LL** (➲C008)
	LLP14	7.25	6.55	5.8	—	—	**DOBLE FIJACION** (➲C008)
	LLP15	8.8	8.05	8.6	—	—	**Doble sujeción "Dimple bar"** (➲E015)
	LLP16	10.85	9.85	11.1	—	—	Barra de Mandrinar Tipo **P** (➲E037)
	LLP18	15.35	13.05	12.0	—	—	Sistema **HSK** (➲H001)
	LLP23	5.55	4.85	6.8	—	—	
	LLP24	7.25	6.55	9.1	—	—	
	**MP6**	11.9	7.8	M10×1	22.1	15	**DOBLE FIJACION** (➲C009) (Para corte pesado)

PASADOR

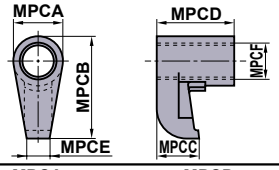
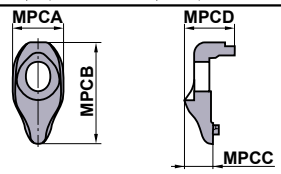
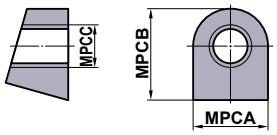
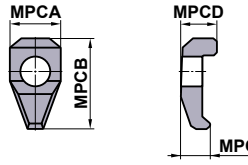
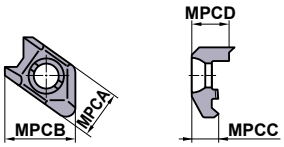
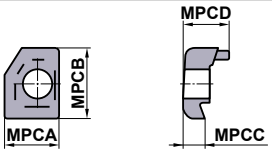
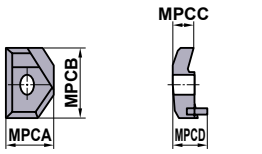
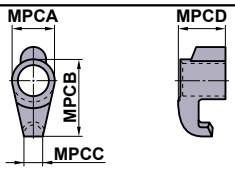
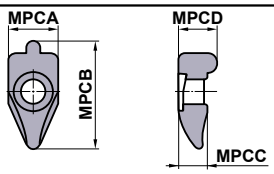
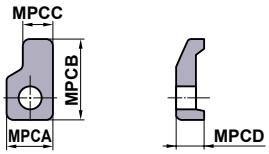
Geometría	Referencia	Dimensiones (mm)						Herramienta
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	**P11S**	6	3.7	4	17	11.1	—	Herramienta Tipo **MP** (➲C019)
	P21S	7.5	4.9	4.5	17.2	11.5	—	
	**P221US**	4	18	2.11	3.5	3.3	7.7	
	**P333WS**	5.75	24	3.64	5.0	4.9	11.3	
	P434W	7.75	30	5.03	7.0	4.9	16.8	

BRIDA

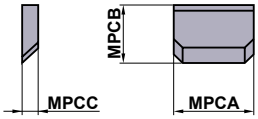
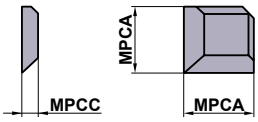
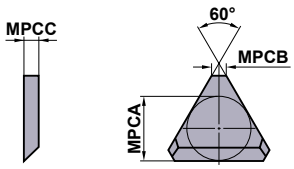
Geometría	Referencia	Dimensiones (mm)						Herramienta
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	**AMS3**	7	12	3	3.3	—	—	Herramienta **Perfil** (➲C032)
	AMS4	9	13.5	3	3.8	—	—	**AJX** (➲K180)
	AMS5	10	15	3.5	5	—	—	
	**CA142**	8	15	4	7	—	—	
	CA150	9	16	4.5	7	—	—	
	CA151	10	17	5	7	—	—	
	CA152	10	19	5	7	—	—	
	CA153	10	24	5	7	—	—	
	CA161	13	20	6	8	—	—	
	CA162	13	24	6	8	—	—	
	CA163	13	27	6	8	—	—	
	CA181	16	30	8	10	—	—	
	CA183	16	37	8	10	—	—	
	**CCK13**	15	18.5	6	9	—	—	Herramienta Tipo **WP** (➲C017)
	CCK14	19	22	8	9.5	—	—	
	**CCTC1**	13	25	7	10.2	—	—	
	**CK231**	M6×1	8	4	7.5	4.5	9.5	
	CK232	M6×1	8	4.5	8	4.5	11.5	
	CK341	M8×1	11	5.5	13.5	6	13.5	
	CK342	M8×1	11	6	14	6	16.5	

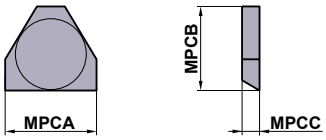
REPUESTOS

BRIDA

Geometría	Referencia	Dimensiones (mm)						Herramienta
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	**CKW6**	10.9	22.5	9.2	16.8	5	M8×1	**DOBLE FIJACION** (➲C009) (Para corte pesado)
	**DCK2211**	11	22	6.57	11.1	—	—	**DOBLE FIJACION** (➲C008)
	DCK2613	13	26.5	7.35	12.9	—	—	**Doble sujeción "Dimple bar"** (➲E015)
	DCK3113	13	31	9	14.5	—	—	Sistema **HSK** (➲H001)
	**KGC1**	12.0	15.0	M7×0.75	—	—	—	
	**LK1**	8	14.3	4.5	5.9	—	—	
	**MHK5NR/L**	15.5	23.5	8.1	12.1	—	—	
	**MTK1R/L**	13	17.5	5	12	—	—	Herramienta Tipo **MG** (➲F124) Herramienta Tipo **MT** (➲G024) Sistema **HSK** (➲H001)
	**MTK2R/L**	18	28	7	14	—	—	
	**SETK51**	6.8	14.5	2.9	8	—	—	Herramienta Tipo **MMTE** (➲G019) Herramienta Tipo **MMTI** (➲G026) Sistema **HSK** (➲H001)
	SETK61	8.9	18.1	4.1	8.6	—	—	
	**SRK1R**	9.4	21	5.5	7.5	—	—	
	**UCR**	12	24	8	7	—	—	

PLACA ROMPEVIRUTAS

Geometría	Referencia	Dimensiones (mm)					Herramienta
		MPCA	**MPCB**	**MPCC**	**IC**	**LBB**	
	**CBS3**	9.4	8.0	1.5	9.525	1.5	
	CBS4	12.6	9.2	2.5	12.70	3.5	
	CBS4N	12.6	10.2	2.5	12.70	2.5	
	CBS4F	12.6	11.2	2.5	12.70	1.5	
	CBS6	18.9	14.6	2.5	19.05	4.5	
	CBS6F	18.9	17.6	2.5	19.05	1.5	
	**CBS3D**	8.0	—	1.5	9.525	1.5	
	CBS4D	10.2	—	2.5	12.70	2.5	
	**CBT2N**	5.67	1.4	1.5	6.35	1.0	Barra de Mandrinar Tipo **F** (➲E028) *Para placas positivas, el ancho del rompevirutas es de 0.5mm el mayor de los que se muestran en la lista.
	CBT3	7.20	1.4	2.5	9.525	3.5	
	CBT3N	7.87	1.4	2.5	9.525	2.5	
	CBT3F	8.53	1.4	2.5	9.525	1.5	
	CBT4N	11.07	1.4	2.5	12.70	2.5	
	CBT4F	11.73	1.4	2.5	12.70	1.5	

Geometría	Referencia	Dimensiones (mm)			**MPCD** (mm)	Herramienta
		MPCA	**MPCB**	**MPCC**		
	**CBT3106**	11.5	10.6	2.0	2.5—3.0	
	CBT3113	11.5	11.3	2.0	1.5—2.0	
	CBT3120	11.5	12	2.0	0.75—1.25	

N

REPUESTOS

LUBRICANTE ANTI DILATACIÓN

LUBRICANTE ANTI DILATACIÓN

Figura	Referencia	Stock	Lubricante anti dilatación (g)
	MK1K	★	20
	MK1KS	★	3

★ : Stock Japón.

Notas

Notas

DATOS TÉCNICOS

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DESGASTE DEL TALADRO Y DAÑOS DEL FILO DE CORTE ····· P007
CARACTERÍSTICAS Y ESPECIFICACIONES DE LAS BROCAS ····· P008
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RUGOSIDAD ····· P016
TABLA DE COMPARACIÓN DE DUREZAS ····· P017
TABLA TOLERANCIA DE AGUJEROS ····· P018
TABLA DE TOLERANCIAS ····· P020
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CONFORMIDAD CON LA ISO13399

Lista de símbolos de propiedad conforme a la norma ISO13399

Orden alfabético

Fuente: Norma ISO13399
URL : https://www.iso.org/search/x/query/13399

ISO13399 Símbolos de propiedad	Significado
ADJLX	Límite de ajuste máximo
ADJRG	Rango de ajuste
ALF	Ángulo radial de ataque
ALP	Ángulo axial de ataque
AN	Ángulo mayor de ataque
ANN	Ángulo menor de ataque
APMX	Profundidad máxima de corte
AS	Ángulo de ataque del filo de la placa wiper
ASP	Ajuste de la protuberancia del tornillo
AZ	Profundidad máxima de pasada
B	Anchura del mango
BBD	Diseño equilibrado
BCH	Longitud del chaflán en ángulo
BD	Diámetro del cuerpo
BDX	Diámetro máxima del cuerpo
BHCC	Número de agujeros circulares del perno
BHTA	Ángulo de conicidad del cuerpo
BMC	Código del material del cuerpo
BS	Longitud del filo de la placa wiper
BSR	Radio de filo wiper
CASC	Código del tamaño del cartucho
CB	Número de rompevirutas frontal
CBDP	Profundidad del diámetro interior de conexión
CBMD	Denominación de los fabricantes de rompevirutas
CBP	Propiedades del rompevirutas
CCMS	Código de conexión lateral de la máquina
CCWS	Código de conexión lateral de la pieza de trabajo
CCP	Propiedades del chaflán en ángulo
CDI	Diámetro de corte de la placa
CDX	Profundidad máximo de corte
CEATC	Código del tipo de ángulo del filo de corte de la herramienta
CECC	Código de estado del filo de corte
CEDC	Número de filos de corte
CF	Biselado de punto
CHW	Anchura del biselado en ángulo
CICT	Número de elementos de corte
CNC	Número de puntas
CND	Diámetro de la entrada del refrigerante
CNSC	Código del tipo de entrada de refrigerante
CNT	Tamaño de rosca de la entrada del refrigerante
CP	Refrigeración a presión
CRE	Radio de punto
CRKS	Tamaño de rosca de la protuberancia de fijación de la conexión
CSP	Propiedades de suministro de refrigerante
CTP	Propiedades de recubrimiento
CTX	Traslación del punto de corte en dirección X
CTY	Traslación del punto de corte en dirección Y
CUTDIA	Diámetro máximo de corte de la pieza de trabajo
CUB	Base de la unidad de conexión
CW	Anchura de corte
CWX	Anchura máximo de corte
CXD	Diámetro de la salida del refrigerante

ISO13399 Símbolos de propiedad	Significado
CXSC	Código del tipo de salida del refrigerante
CZC	Código del tamaño de la conexión
D1	Diámetro del agujero de fijación
DAH	Diámetro del agujero de acceso
DAXN	Diámetro exterior mínimo de ranurado axial
DAXX	Diámetro exterior máximo de ranurado axial
DBC	Diámetro del círculo de los pernos
DC	Diámetro de corte
DCB	Diámetro del agujero de conexión
DCBN	Diámetro mínimo del agujero de conexión
DCBX	Diámetro máximo del agujero de conexión
DCC	Código del estilo de configuración de diseño
DCCB	Diámetro del avellanador, agujero de conexión
DCIN	Diámetro de corte interno
DCINN	Diámetro de corte interno mínimo
DCINX	Diámetro de corte interno máximo
DCN	Diámetro mínimo de corte
DCON	Diámetro de conexión
DCONMS	Diámetro de conexión, lado de la máquina
DCONWS	Diámetro de conexión, lado de la pieza de trabajo
DCSC	Código de tamaño del diámetro de corte
DCSFMS	Diámetro de la superficie de contacto, lado de la máquina
DCX	Diámetro máxima de corte
DF	Diámetro de la brida
DHUB	Diámetro del buje
DMIN	Diámetro mínimo del agujero
DMM	Diámetro del mango
DN	Diámetro del cuello
DRVA	Ángulo de conducción
EPSR	Ángulo incluido de la placa
FHA	Ángulo helicoidal de la hélice
FHCSA	Ángulo avellanado del agujero de fijación
FHCSD	Diámetro avellanado del agujero de fijación
FLGT	Grosor de la brida
FMT	Tipo de forma
FXHLP	Propiedad del agujero de fijación
GAMF	Ángulo de incidencia radial
GAMN	Ángulo de incidencia normal
GAMO	Ángulo de incidencia ortogonal
GAMP	Ángulo de incidencia axial
GAN	Ángulo de incidencia de la placa
H	Altura del mango
HA	Altura teórica de la rosca
HAND	Mano
HBH	Altura rebajada de la parte inferior de la cabeza
HBKL	Longitud rebajada de la parte posterior de la cabeza
HBKW	Anchura rebajada de la parte posterior de la cabeza
HBL	Longitud rebajada de la parte inferior de la cabeza
HC	Altura real de la rosca
HF	Altura funcional
HHUB	Altura del buje
HTB	Altura del cuerpo
IC	Diámetro de la circunferencia inscrita
IFS	Código del tipo de montaje de la placa
IIC	Código de interfaz de la placa
INSL	Longitud de la placa
KAPR	Ángulo del filo de corte de la herramienta
KCH	Ángulo del biselado del vértice

ISO13399 Símbolos de propiedad	Significado
KRINS	Ángulo mayor del filo de corte
KWW	Anchura de la ranura
KYP	Propiedades de la ranura
L	Longitud del filo de corte
LAMS	Ángulo de inclinación
LB	Longitud del cuerpo
LBB	Anchura del rompevirutas
LBX	Longitud máximo del cuerpo
LCCB	Profundidad del avellanador, agujero de conexión
LCF	Longitud de hélice de virutas
LDRED	Longitud del diámetro del cuerpo reducido
LE	Longitud efectiva del filo de corte
LF	Longitud funcional
LFA	Una dimensión en lf
LH	Longitud de la cabeza
LPR	Longitud del saliente
LS	Longitud del mango
LSC	Longitud de sujeción
LSCN	Longitud mínimo de sujeción
LSCX	Longitud máxima de sujeción
LTA	Longitud LTA (longitud de MCS a CRP)
LU	Longitud útil
LUX	Longitud máxima útil
M	Dimensión-m
M2	Distancia entre el círculo inscrito nominal y la punta de la placa que tiene un ángulo secundario incluido.
MHA	Ángulo del agujero de montaje
MHD	Distancia del agujero de montaje
MHH	Altura del agujero de montaje
MIID	Identificación de la placa maestra
MTP	Código del tipo de sujeción
NCE	Número de corte final
NOF	Número de hélices
NOI	Número de placas
NT	Número de dientes
OAH	Altura total
OAL	Longitud total
OAW	Anchura total
PDPT	Profundidad del perfil de la placa
PDX	Distancia del perfil ex
PDY	Distancia del perfil ey
PFS	Código de tipo de perfil
PL	Longitud de la punta
PNA	Ángulo incluido del perfil
PRFRAD	Radio del perfil
PSIR	Ángulo guía de la herramienta
PSIRL	Ángulo mayor del filo de corte a la izquierda
PSIRR	Ángulo mayor del filo de corte a la derecha
RAL	Ángulo de desprendimiento a la izquierda
RAR	Ángulo de desprendimiento a la derecha
RCP	Propiedades de esquina redondeada
RE	Radio angular
REL	Radio angular a la izquierda
RER	Radio angular a la derecha
RMPX	Ángulo máxima de rampa
RPMX	Velocidad máxima de rotación
S	Espesor placa
S1	Espesor de placa
SC	Grosor total de la placa
SDL	Longitud del diámetro del paso
SIG	Ángulo de la punta

ISO13399 Símbolos de propiedad	Significado
SSC	Código de tamaño del asiento de la placa
SX	Código de la forma de la sección transversal del mango
TC	Clase de tolerancia de la placa
TCE	Código del filo de corte inclinado
TCTR	Clase de tolerancia de la rosca
TD	Diámetro de la rosca
THFT	Tipo de forma de la rosca
THL	Longitud de roscado
THLGTH	Longitud de la rosca
THSC	Código de la forma del portaherramientas
THUB	Grosor del buje
TP	Paso de rosca
TPI	Roscas por pulgada
TPIN	Roscas por pulgada, mínimo
TPIX	Roscas por pulgada, máximo
TPN	Paso mínimo de rosca
TPT	Tipo de perfil de rosca
TPX	Paso máxima de rosca
TQ	Torsión
TSYC	Código del tipo de herramienta
TTP	Tipo Rosca
ULDR	Relación diámetro longitud útil
UST	Sistema de la unidad
W1	Anchura de la placa
WEP	Propiedades de filo wiper
WF	Anchura funcional
WF2	Distancia entre el punto de corte de referencia y la cara de asiento frontal de una herramienta. de torneado.
WFS	Anchura funcional secundaria
WT	Peso del artículo
ZEFF	Número de los filos efectivos frontales de corte
ZEFP	Filo de corte perférico efectivo
ZNC	Número de filos de corte centrales
ZNF	Número de placas montadas de manera frontal
ZNP	Número de placas periféricas montadas

Lista de símbolos de referencia conforme a la norma ISO13399

ISO13399 Símbolos de referencia	Significado
CIP	Sistema de coordenadas en proceso
CRP	Punto de referencia de corte
CSW	Sistema de coordenadas, lado de la pieza de trabajo
MCS	Sistema de coordenadas de montaje
PCS	Sistema de coordenadas primario

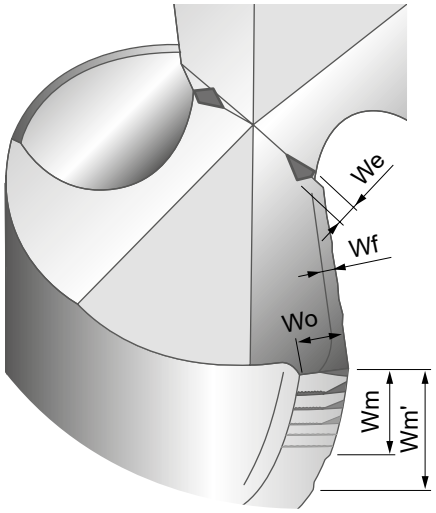
SOLUCION DE PROBLEMAS EN TALADRADO

Problema		Solución / Factores	Condiciones de corte: Velocidad de corte (Subir ↗ / Bajar ↘)	Condiciones de corte: Avance (Subir ↗ / Bajar ↘)	Condiciones de corte: Reducir avance al inicio del corte	Condiciones de corte: Reducir avance al atravesar la pieza	Condiciones de corte: Paso	Condiciones de corte: Aumentar precisión del agujero previo y la profundidad	Condiciones de corte: Refrigeración: Aumentar porcentaje de aceite de corte	Condiciones de corte: Refrigeración: Aumento del volumen	Condiciones de corte: Refrigeración: Aumento de la presión de refrigerante	Estilo y diseño de la herramienta: Ancho de bisel (Subir ↗ / Bajar ↘)	Estilo y diseño de la herramienta: Ancho de honing (Subir ↗ / Bajar ↘)	Estilo y diseño de la herramienta: Espesor del núcleo (Subir ↗ / Bajar ↘)	Estilo y diseño de la herramienta: Acortar la longitud de las hélices	Estilo y diseño de la herramienta: Disminuir la altura del labio	Estilo y diseño de la herramienta: Usar una broca con refrigeración interna	Estilo y diseño de la herramienta: Cambiar a una broca con mango delgado tipo X	Máquina, Instalación de la herramienta: Aumentar la precisión de instalación de la herramienta	Máquina, Instalación de la herramienta: Reducción del voladizo	Máquina, Instalación de la herramienta: Cara plana de la pieza	Máquina, Instalación de la herramienta: Aumentar la rigidez de sujeción	Máquina, Instalación de la herramienta: Reducir retroceso de mecanizado y aumentar rigidez
Deterioro de la vida útil de la herramienta	Rotura de la broca	Falta de rigidez de la broca												↗ ●	●								
		Condiciones de corte inapropiadas		● ↘																			
		Gran desviación del soporte de la herramienta																	●				●
		La cara de la pieza de trabajo está inclinada																			●		
	Gran desgaste del filo de corte periférico	Condiciones de corte inapropiadas	● ↘																				
		Aumento de la temperatura en el punto de corte							●	●							●						
		Mala precisión de desviación																	●				
	Microroturas del filo de corte periférico	Condiciones de corte inapropiadas		● ↘			●																
		Gran desviación del soporte de la herramienta																	●				●
		castañeo, vibración											● ↘							●		●	●
	Microroturas del filo de ataque	El filo de ataque es demasiado ancho										● ↘											
		Mala entrada			●																		
		castañeo, vibración											● ↘							●		●	●
Deterioro de la precisión del agujero	Aumenta el diámetro del agujero	Falta de rigidez de la broca												↗ ●	●								
		Geometría de la broca inapropiada														●							
	Disminuye el diámetro del agujero	Aumento de la temperatura en el punto de corte							●	●							●						
		Condiciones de corte inapropiadas	● ↘																				
		Geometría de la broca inapropiada														●							
	Mal enderezamiento	Falta de rigidez de la broca												↗ ●	●								
		Gran desviación del soporte de la herramienta																	●				●
		Malas propiedades de la guía						●															
	Mala precisión de posicionamiento del agujero, redondez y acabado de la superficie	Falta de rigidez de la broca												↗ ●	●								
		Mala entrada																●					
		Condiciones de corte inapropiadas			●																		
		Gran desviación del soporte de la herramienta																	●				●
Rebabas	Rebabas en la salida del agujero	Geometría de la broca inapropiada											● ↘										
		Condiciones de corte inapropiadas				●																	
Deficiente evacuación de virutas	Virutas Largas	Condiciones de corte inapropiadas		↗ ●				●															
		Deficiente Evacuación de Virutas								●	●			● ↘			●						
	Obstrucción de las virutas	Condiciones de corte inapropiadas	● ↘	● ↘				●															
		Deficiente Evacuación de Virutas								●	●			● ↘			●						

DESGASTE DE LA BROCA Y DAÑOS DEL FILO DE CORTE

■CONDICION DE DESGASTE DE LA BROCA

La tabla de abajo muestra un dibujo sencillo que describe el desgaste de un filo de corte de la broca. La generación y la cantidad de desgaste varían según los materiales de la pieza de trabajo y el estado de los cortes. Pero en general, el desgaste periférico es mayor y determina la vida de la herramienta. Al volver a rectificar, el flanco se desgasta en el punto que tiene que ser rectificado por completo. Por lo tanto, si hay un desgaste mayor hay que eliminar más material para renovar el filo de corte.



We : **Anchura de desgaste del filo de ataque**

Wf : **Desgaste de flanco (El centro del filo de corte)**

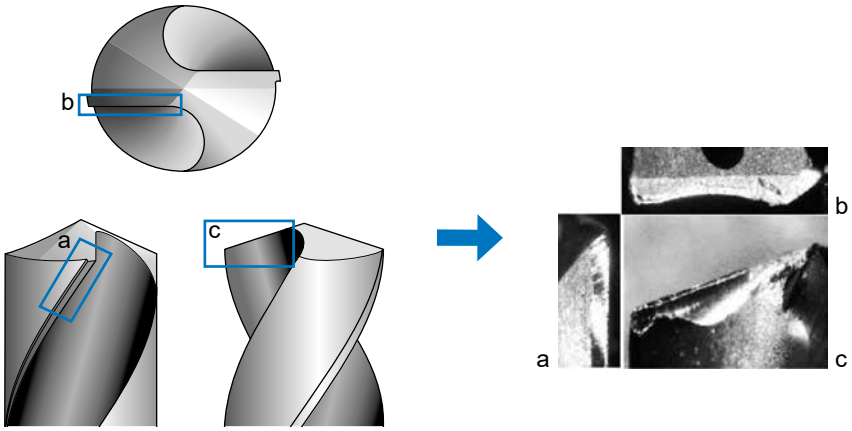
Wo : **Anchura de desgaste de la punta exterior**

Wm : **Anchura de desgaste del margen**

Wm' : **Anchura de desgaste del margen (Borde conductor)**

■DAÑO DEL FILO DE CORTE

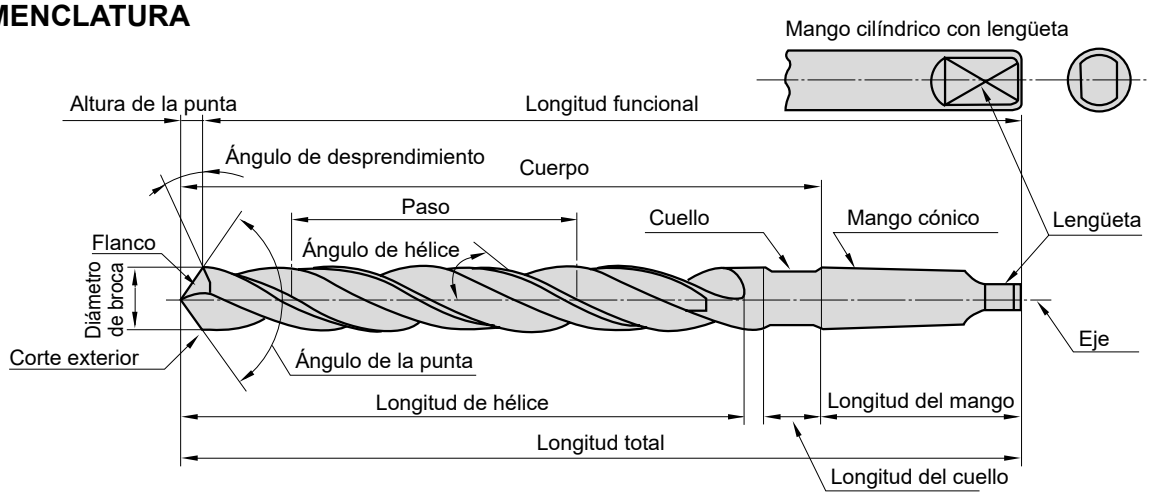
Al taladrar, el filo de corte de la broca puede sufrir astillamiento, roturas y daños anormales. En tales casos, es importante mirar con detalle los daños, investigar la causa y tomar contramedidas.

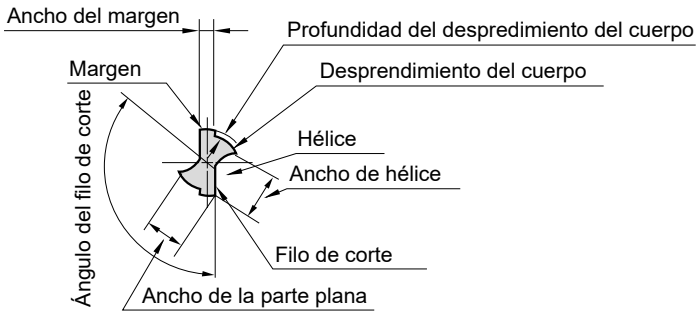


Daño del filo de corte

CARACTERÍSTICAS Y ESPECIFICACIONES DE LAS BROCAS

■NOMENCLATURA





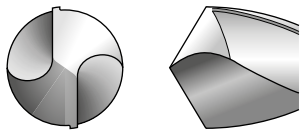
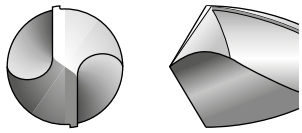
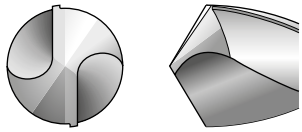
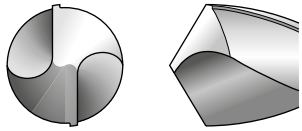
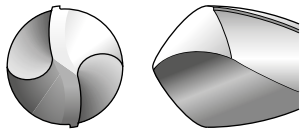
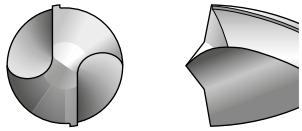
■ESPECIFICACIONES DE LA FIGURA Y CARACTERISTICAS DE CORTE

Ángulo de hélice	Es la inclinación de la hélice respecto a la dirección axial de una broca; lo que corresponde al ángulo de desprendimiento de una placa. El ángulo de desprendimento de una broca, varía de acuerdo con la posición del filo de corte, y disminuye en cuanto la circunsferencia se aproxima al centro. **Material de gran dureza** **Pequeña** ◀··**Ángulo de desprendimiento**··▶ **Grande** **Material blando** (Aluminio, etc.)
Longitud de hélice	Está determinada por la profundidad del agujero, longitud del casquillo y limite del reafilado. Ya que tiene una gran influencia en la vida de la broca; es necesario minimizarla tanto como sea posible.
Ángulo de la punta	Un ángulo estándar es 118º y se cambia para adaptarse a diferentes aplicaciones. **Material blando, con buena maquinabilidad.** **Pequeña** ◀··**Ángulo de la punta**··▶ **Grande** **Para material duro y mecanizado de alta eficiencia**
Espesor del Web	Es un elemento importante, que determina la rigidez y la formación de las virutas en la broca. El espesor del web se ajusta de acuerdo con la aplicación. Baja resistencia de corte Baja rigidez Buena formación de viruta Material con buena maquinabilidad **Delgado** ◀·· **Espesor del web** ··▶ **Grueso** Gran resistencia de corte Alta rigidez Mala formación de viruta Material de gran dureza, taladrado de agujeros cruzados, etc.
Margen	La punta determina el diámetro de la broca y tiene la función de guía durante el taladrado. El ancho del margen determina el rozamiento en el taladrado de un agujero. **Mala guía** **Pequeña** ◀··**Ancho de margen**··▶ **Grande** **Buena guía**
Conicidad del diámetro	Para reducir la fricción dentro del agujero taladrado, la hélice tiene una pequeña conicidad desde la punta hasta el mango. El grado de conicidad se representa normalmente por la reducción del diámetro con respecto de la longitud de la hélice; aproximadamente, 0.04−0.1mm. Se utiliza un valor alto para brocas de alta eficiencia, lo que permite el taladrado de agujeros próximos.

■GEOMETRÍA DEL FILO DE CORTE Y SU INFLUENCIA

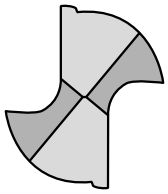
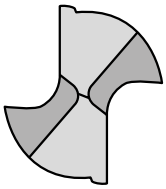
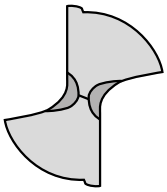
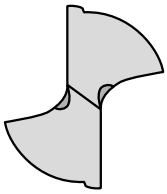
Tal como se muestra en la tabla de abajo, es posible seleccionar la geometría del filo de corte más adecuada para las diferentes aplicaciones. Si se selecciona la geometría de filo de corte más adecuada puede obtenerse la mayor eficacia de mecanizado y la mayor precisión del agujero.

●Formas de los filos de corte.

Nombre del afilado	Figura	Características y efecto	Aplicación
Cónica		• El flanco es cónico y el ángulo de desprendimento, aumenta hacia el centro de la broca.	• Uso general
Plana		• El flanco es liso. • Afilado rápido.	• Principalmente para taladros de diámetro pequeño
Tres ángulos de graduación		• Al no haber filo de corte, los resultados de la fuerza centrípeta es muy elevada y el agujero es más grande de lo normal • Requiere una afiladora especial. • Afilado superficial de tres lados.	• Para operaciones de taladrado que requieren alta precisión del agujero y precisión de posicionamiento.
Punto de la hélice		• Para aumentar el ángulo de ataque cerca del centro de la broca, se recomienda un afilado cónico combinado con una hélice irregular. • Borde de corte tipo S con gran fuerza centripeta y precisión de mecanizado.	• Para taladrado que requiere alta precisión.
Labio radial		• El borde de corte está afilado centrípetamente para dispersar la carga. • Gran precisión de mecanizado y rugosidad de superficie acabada. • Para agujeros pasantes, rebabas pequeñas en la base. • Requiere una afiladora especial.	• Fundición, Aleaciones de aluminio • Para placas de fundición. • Acero
Taladro de punto central		• Esta geometría tiene ángulo de punto de dos etapas para mejor concentricidad y una reducción del choque al sacar la pieza de trabajo.	• Para taladrado de chapa delgada.

■ESPESOR DEL NÚCLEO

El ángulo de desprendimiento del filo de corte, se va reduciendo a medida que nos acercamos al centro; y se transforma en un ángulo negativo en el filo del bisel. Durante el taladrado, el centro de la broca está empujando al material, generando entre el 50−70% del esfuerzo de corte. El espesor del núcleo, es muy importante para la reducción del esfuerzo de corte de una broca, rápida evacuación de las virutas del filo y suave taladrado.

Figura	 **TIPO X**	 **TIPO XR**	 **TIPO S**	 **TIPO N**
Características	Se reduce el empuje sustancialmente, y se mejora en el mecanizado. Esto es efectivo cuando el núcleo es mas bien ancho.	El mecanizado es un poco peor que con el tipo X, pero el filo de corte está más reforzado y se puede aplicar en un mayor tipo de operaciones.	Corte fácil. Forma de mayor utilización.	Es efectivo cuando el núcleo es comparativamente ancho.
Aplicaciones principales	Taladrado en general y de agujeros profundos.	Mayor vida. Taladrado en general y del acero inoxidable.	Taladrado en general del acero, fundición y metales no-férricos.	Taladrado profundo.

CARACTERÍSTICAS Y ESPECIFICACIONES DE LAS BROCAS

■VIRUTAS DE TALADRADO

Tipos de virutas	Figura	Características y fácil clasificación
Espiral cónica		Virutas con forma de abanico, cortadas por el filo y curvadas por las hélices. Se producen virutas de este tipo cuando se taladra material dúctil a baja velocidad. Si las virutas se rompen después de varias vueltas, el resultado es satisfactorio.
Paso largo		Virutas de paso largo, evacuadas sin enrollarse. Fácilmente enrollables en la broca.
Abanico		Esta es una viruta rota por la broca y por la pared del agujero. Se produce cuando el avance es alto.
Segmento		Viruta de forma cónica-espiral; rota justo antes de que se convierta en una de paso largo, por el roce con la pared del agujero. Excelente evacuación y disposición de las virutas.
Zig-zag		Viruta retorcida y plegada por la forma de la hélice y las características del material. Fácilmente produce aglomeración de virutas en la hélice.
Palpador		Virutas rotas por vibración o cuando el material taladrado es rizado por un pequeño radio. El resultado es comparativamente satisfactorio; pero estas virutas, se pueden apelotonar fácilmente.

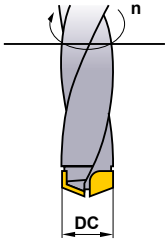
FÓRMULAS PARA TALADRADO

■VELOCIDAD DE CORTE (Vc)

$$Vc = \frac{\pi \cdot DC \cdot n}{1000} \text{ (m/min)}$$

Vc (m/min): Velocidad de corte
π (3.14) : Pi
DC (mm) : Diámetro de broca
n (min^{-1}) : Velocidad del eje principal

*Divida por 1,000 para cambiar de m a mm.



(Ejemplo) ¿Cuál es la velocidad de corte cuando la velocidad del eje principal es 1350min^{-1} y el diámetro de la broca es 12mm ?

(Contestación) Sustituir π=3.14, DC=12, n=1350 en la fórmula.

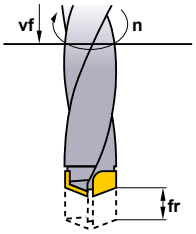
$$Vc = \frac{\pi \cdot DC \cdot n}{1000} = \frac{3.14 \times 12 \times 1350}{1000} = 50.9\text{m/min}$$

La velocidad es 50.9m/min.

■AVANCE DEL EJE PRINCIPAL (Vf)

$$Vf = fr \cdot n \text{(mm/min)}$$

Vf (mm/min) : Velocidad de avance del eje principal (eje Z)
fr (mm/rev.) : Avance por vuelta
n (min^{-1}) : Velocidad del eje principal



(Ejemplo) ¿Cuál es el avance del eje (Vf) cuando el avance por revolución es 0.2mm/rev. y la velocidad del eje principal es 1350min^{-1} ?

(Contestación) Sustituir fr=0.2, n=1350 en la fórmula.

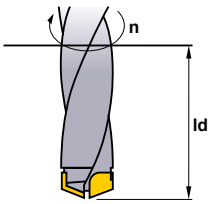
Vf = fr×n = 0.2×1350 = 270mm/min

La avance del eje es 270mm/min.

■TIEMPO DE TALADRADO (Tc)

$$Tc = \frac{ld \cdot i}{n \cdot fr}$$

Tc (min) : Tiempo de taladrado
n (min^{-1}) : Velocidad del husillo
ld (mm) : Profundidad del agujero
fr (mm/rev.) : Avance por vuelta
i : Número de agujeros



: Velocidad del eje principal

(Ejemplo) ¿Cuál es el tiempo necesario para taladrar un agujero de 30mm de longitud en acero aleado con una velocidad de corte de 50m/min y avance de 0.15mm/rev. ?

(Contestación) Velocidad del husillo $n = \frac{50 \times 1000}{15 \times 3.14} = 1061.57\text{min}^{-1}$

$$Tc = \frac{30 \times 1}{1061.57 \times 0.15} = 0.188$$

$$= 0.188 \times 60 \fallingdotseq 11.3 \text{ sec}$$

P

DATOS TÉCNICOS

LISTA DE REFERENCIA CRUZADA DE MATERIALES METÁLICOS

■ACERO AL CARBONO

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.0038	RSt.37-2	4360 40 C	–	E 24-2 Ne	–	–	1311	STKM 12A STKM 12C	A570.36	15
1.0401	C15	080M15	–	CC12	C15, C16	F.111	1350	–	1015	15
1.0402	C22	050A20	2C	CC20	C20, C21	F.112	1450	–	1020	20
1.0715	9SMn28	230M07	1A	S250	CF9SMn28	F.2111 11SMn28	1912	SUM22	1213	Y15
1.0718	9SMnPb28	–	–	S250Pb	CF9SMnPb28	11SMnPb28	1914	SUM22L	12L13	–
1.0722	10SPb20	–	–	10PbF2	CF10Pb20	10SPb20	–	–	–	–
1.0736	9SMn36	240M07	1B	S300	CF9SMn36	12SMn35	–	–	1215	Y13
1.0737	9SMnPb36	–	–	S300Pb	CF9SMnPb36	12SMnP35	1926	–	12L14	–
1.1141	Ck15	080M15	32C	XC12	C16	C15K	1370	S15C	1015	15
1.1158	Ck25	–	–	–	–	–	–	S25C	1025	25
1.8900	StE380	4360 55 E	–	–	FeE390KG	–	2145	–	A572-60	–
1.0501	C35	060A35	–	CC35	C35	F.113	1550	–	1035	35
1.0503	C45	080M46	–	CC45	C45	F.114	1650	–	1045	45
1.0726	35S20	212M36	8M	35MF4	–	F210G	1957	–	1140	–
1.1157	40Mn4	150M36	15	35M5	–	–	–	–	1039	40Mn
1.1167	36Mn5	–	–	40M5	–	36Mn5	2120	SMn438(H)	1335	35Mn2
1.1170	28Mn6	150M28	14A	20M5	C28Mn	–	–	SCMn1	1330	30Mn
1.1183	Cf35	060A35	–	XC38TS	C36	–	1572	S35C	1035	35Mn
1.1191	Ck45	080M46	–	XC42	C45	C45K	1672	S45C	1045	Ck45
1.1213	Cf53	060A52	–	XC48TS	C53	–	1674	S50C	1050	50
1.0535	C55	070M55	9	–	C55	–	1655	–	1055	55
1.0601	C60	080A62	43D	CC55	C60	–	–	–	1060	60
1.1203	Ck55	070M55	–	XC55	C50	C55K	–	S55C	1055	55
1.1221	Ck60	080A62	43D	XC60	C60	–	1678	S58C	1060	60Mn
1.1274	Ck101	060A96	–	XC100	–	F.5117	1870	–	1095	–
1.1545	C105W1	BW1A	–	Y105	C36KU	F.5118	1880	SK3	W1	–
1.1545	C105W1	BW2	–	Y120	C120KU	F.515	2900	SUP4	W210	–

■ACERO ALEADO

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.0144	St.44.2	4360 43 C	–	E28-3	–	–	1412	SM400A, SM400B SM400C	A573-81	–
1.0570	St52-3	4360 50 B	–	E36-3	Fe52BFN Fe52CFN	–	2132	SM490A, SM490B SM490C	–	–
1.0841	St52-3	150M19	–	20MC5	Fe52	F.431	2172	–	5120	–
1.0904	55Si7	250A53	45	55S7	55Si8	56Si7	2085	–	9255	55Si2Mn
1.0961	60SiCr7	–	–	60SC7	60SiCr8	60SiCr8	–	–	9262	–
1.3505	100Cr6	534A99	31	100C6	100Cr6	F.131	2258	SUJ2	ASTM 52100	Gr15, 45G
1.5415	15Mo3	1501-240	–	15D3	16Mo3KW	16Mo3	2912	–	ASTM A204Gr.A	–
1.5423	16Mo5	1503-245-420	–	–	16Mo5	16Mo5	–	–	4520	–
1.5622	14Ni6	–	–	16N6	14Ni6	15Ni6	–	–	ASTM A350LF5	–
1.5662	X8Ni9	1501-509-510	–	–	X10Ni9	XBNi09	–	–	ASTM A353	–
1.5710	36NiCr6	640A35	111A	35NC6	–	–	–	SNC236	3135	–
1.5732	14NiCr10	–	–	14NC11	16NiCr11	15NiCr11	–	SNC415(H)	3415	–
1.5752	14NiCr14	655M13	36A	12NC15	–	–	–	SNC815(H)	3415, 3310	–
1.6523	21NiCrMo2	805M20	362	20NCD2	20NiCrMo2	20NiCrMo2	2506	SNCM220(H)	8620	–
1.6546	40NiCrMo22	311-Type 7	–	–	40NiCrMo2(KB)	40NiCrMo2	–	SNCM240	8740	–
1.6587	17CrNiMo6	820A16	–	18NCD6	–	14NiCrMo13	–	–	–	–
1.7015	15Cr3	523M15	–	12C3	–	–	–	SCr415(H)	5015	15Cr

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.7045	42Cr4	–	–	–	–	42Cr4	2245	SCr440	5140	40Cr
1.7176	55Cr3	527A60	48	55C3	–	–	–	SUP9(A)	5155	20CrMn
1.7262	15CrMo5	–	–	12CD4	–	12CrMo4	2216	SCM415(H)	–	–
1.7335	13CrMo4 4	1501-620Gr27	–	15CD3.5 15CD4.5	14CrMo45	14CrMo45	–	–	ASTM A182 F11, F12	–
1.7380	10CrMo910	1501-622 Gr31, 45	–	12CD9 12CD10	12CrMo9 12CrMo10	TU.H	2218	–	ASTM A182 F.22	–
1.7715	14MoV63	1503-660-440	–	–	–	13MoCrV6	–	–	–	–
1.8523	39CrMoV13 9	897M39	40C	–	36CrMoV12	–	–	–	–	–
1.6511	36CrNiMo4	816M40	110	40NCD3	38NiCrMo4(KB)	35NiCrMo4	–	–	9840	–
1.6582	34CrNiMo6	817M40	24	35NCD6	35NiCrMo6(KB)	–	2541	–	4340	40CrNiMoA
1.7033	34Cr4	530A32	18B	32C4	34Cr4(KB)	35Cr4	–	SCr430(H)	5132	35Cr
1.7035	41Cr4	530M40	18	42C4	41Cr4	42Cr4	–	SCr440(H)	5140	40Cr
1.7131	16MnCr5	(527M20)	–	16MC5	16MnCr5	16MnCr5	2511	–	5115	18CrMn
1.7218	25CrMo4	1717CDS110 708M20	–	25CD4	25CrMo4(KB)	55Cr3	2225	SCM420 SCM430	4130	30CrMn
1.7220	34CrMo4	708A37	19B	35CD4	35CrMo4	34CrMo4	2234	SCM432 SCCRM3	4137 4135	35CrMo
1.7223	41CrMo4	708M40	19A	42CD4TS	41CrMo4	42CrMo4	2244	SCM 440	4140 4142	40CrMoA
1.7225	42CrMo4	708M40	19A	42CD4	42CrMo4	42CrMo4	2244	SCM440(H)	4140	42CrMo 42CrMnMo
1.7361	32CrMo12	722M24	40B	30CD12	32CrMo12	F.124.A	2240	–	–	–
1.8159	50CrV4	735A50	47	50CV4	50CrV4	51CrV4	2230	SUP10	6150	50CrVA
1.8509	41CrAlMo7	905M39	41B	40CAD6 40CAD2	41CrAlMo7	41CrAlMo7	2940	–	–	–
1.2067	100Cr6	BL3	–	Y100C6	–	100Cr6	–	–	L3	CrV, 9SiCr
1.2419	105WCr6	–	–	105WC13	100WCr6 107WCr5KU	105WCr5	2140	SKS31 SKS2, SKS3	–	CrWMo
1.2713	55NiCrMoV6	BH224/5	–	55NCDV7	–	F.520.S	–	SKT4	L6	5CrNiMo
1.5662	X8Ni9	1501-509	–	–	X10Ni9	XBNi09	–	–	ASTM A353	–
1.5680	12Ni19	–	–	Z18N5	–	–	–	–	2515	–
1.6657	14NiCrMo134	832M13	36C	–	15NiCrMo13	14NiCrMo131	–	–	–	–
1.2080	X210Cr12	BD3	–	Z200C12	X210Cr13KU X250Cr12KU	X210Cr12	–	SKD1	D3 ASTM D3	Cr12
1.2601	X153CrMoV12	BD2	–	–	X160CrMoV12	–	–	SKD11	D2	Cr12MoV
1.2363	X100CrMoV5	BA2	–	Z100CDV5	X100CrMoV5	F.5227	2260	SKD12	A2	Cr5Mo1V
1.2344	X40CrMoV51 X40CrMoV51	BH13	–	Z40CDV5	X35CrMoV05KU X40CrMoV51KU	X40CrMoV5	2242	SKD61	H13 ASTM H13	40CrMoV5
1.2436	X210CrW12	–	–	–	X215CrW121KU	X210CrW12	2312	SKD2	–	–
1.2542	45WCrV7	BS1	–	–	45WCrV8KU	45WCrSi8	2710	–	S1	–
1.2581	X30WCrV93	BH21	–	Z30WCV9	X28W09KU	X30WCrV9	–	SKD5	H21	30WCrV9
1.2601	X165CrMoV12	–	–	–	X165CrMoW12KU	X160CrMoV12	2310	–	–	–
1.2833	100V1	BW2	–	Y1105V	–	–	–	SKS43	W210	V
1.3255	S 18-1-2-5	BT4	–	Z80WKCV	X78WCo1805KU	HS18-1-1-5	–	SKH3	T4	W18Cr4VCo5
1.3355	S 18-0-1	BT1	–	Z80WCV	X75W18KU	HS18-0-1	–	SKH2	T1	–
1.3401	G-X120Mn12	Z120M12	–	Z120M12	XG120Mn12	X120MN12	–	SCMnH/1	–	–
1.4718	X45CrSi93	401S45	52	Z45CS9	X45CrSi8	F.322	–	SUH1	HW3	X45CrSi93
1.3343	S6-5-2	4959BA2	–	Z40CSD10	15NiCrMo13	–	2715	SUH3	D3	–
1.3343	S6/5/2	BM2	–	Z85WDCV	HS6-5-2-2	F.5603	2722	SKH9, SKH51	M2	–
1.3348	S 2-9-2	–	–	–	HS2-9-2	HS2-9-2	2782	–	M7	–
1.3243	S6/5/2/5	BM35	–	6-5-2-5	HS6-5-2-5	F.5613	2723	SKH55	M35	–

LISTA DE REFERENCIA CRUZADA DE MATERIALES METÁLICOS

■ACERO INOXIDABLE (FERRITICO, MARTENSÍTICO)

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4000	X7Cr13	403S17	–	Z6C13	X6Cr13	F.3110	2301	SUS403	403	OCr13 1Cr12
1.4001	X7Cr14	–	–	–	–	F.8401	–	–	–	–
1.4005	X12CrS13	416S21	–	Z11CF13	X12CrS13	F.3411	2380	SUS416	416	–
1.4006	X10Cr13	410S21	56A	Z10C14	X12Cr13	F.3401	2302	SUS410	410	1Cr13
1.4016	X8Cr17	430S15	60	Z8C17	X8Cr17	F.3113	2320	SUS430	430	1Cr17
1.4027	G-X20Cr14	420C29	56B	Z20C13M	–	–	–	SCS2	–	–
1.4034	X46Cr13	420S45	56D	Z40CM Z38C13M	X40Cr14	F.3405	2304	SUS420J2	–	4Cr13
1.4003	–	405S17	–	Z8CA12	X6CrAl13	–	–	–	405	–
1.4021	–	420S37	–	Z8CA12	X20Cr13	–	2303	–	420	–
1.4057	X22CrNi17	431S29	57	Z15CNi6.02	X16CrNi16	F.3427	2321	SUS431	431	1Cr17Ni2
1.4104	X12CrMoS17	–	–	Z10CF17	X10CrS17	F.3117	2383	SUS430F	430F	Y1Cr17
1.4113	X6CrMo17	434S17	–	Z8CD17.01	X8CrMo17	–	2325	SUS434	434	1Cr17Mo
1.4313	X5CrNi134	425C11	–	Z4CND13.4M	(G)X6CrNi304	–	2385	SCS5	CA6-NM	–
1.4724	X10CrA113	403S17	–	Z10C13	X10CrA112	F.311	–	SUS405	405	OCr13Al
1.4742	X10CrA118	430S15	60	Z10CAS18	X8Cr17	F.3113	–	SUS430	430	Cr17
1.4747	X80CrNiSi20	443S65	59	Z80CSN20.02	X80CrSiNi20	F.320B	–	SUH4	HNV6	–
1.4762	X10CrA124	–	–	Z10CAS24	X16Cr26	–	2322	SUH446	446	2Cr25N
1.4871	X53CrMnNiN219	349S54	–	Z52CMN21.09	X53CrMnNiN219	–	–	SUH35	EV8	5Cr2Mn9Ni4N
1.4521	X1CrMoTi182	–	–	–	–	–	2326	–	S44400	–
1.4922	X20CrMoV12-1	–	–	–	X20CrMoNi1201	–	2317	–	–	–
1.4542	–	–	–	Z7CNU17-04	–	–	–	–	630	–

■ACERO INOXIDABLE (AUSTENÍTICO)

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4306	X2CrNi1911	304S11	–	Z2CN18.10	X2CrNi18.11	–	2352	SUS304L	304L	OCr19Ni10
1.4350	X5CrNi189	304S11	58E	Z6CN18.09	X5CrNi1810	F.3551 F.3541 F.3504	2332	SUS304	304	OCr18Ni9
1.4305	X12CrNiS188	303S21	58M	Z10CNF18.09	X10CrNiS18.09	F.3508	2346	SUS303	303	1Cr18Ni9MoZr
–	–	304C12	–	Z3CN19.10	–	–	2333	SUS304L	–	–
1.4306	X2CrNi189	304S12	–	Z2CrNi1810	X2CrNi18.11	F.3503	2352	SCS19	304L	–
1.4310	X12CrNi177	–	–	Z12CN17.07	X12CrNi1707	F.3517	2331	SUS301	301	Cr17Ni7
1.4311	X2CrNiN1810	304S62	–	Z2CN18.10	–	–	2371	SUS304LN	304LN	–
1.4401	X5CrNiMo1810	316S16	58J	Z6CND17.11	X5CrNiMo1712	F.3543	2347	SUS316	316	0Cr17Ni11Mo2
1.4308	G-X6CrNi189	304C15	–	Z6CN18.10M	–	–	–	SCS13	–	–
1.4408	G-X6CrNiMo1810	316C16	–	–	–	F.8414	–	SCS14	–	–
1.4581	G-X5CrNiMoNb1810	318C17	–	Z4CNDNb1812M	XG8CrNiMo1811	–	–	SCS22	–	–
1.4429	X2CrNiMoN1813	–	–	Z2CND17.13	–	–	2375	SUS316LN	316LN	OCr17Ni13Mo
1.4404	–	316S13	–	Z2CND17.12	X2CrNiMo1712	–	2348	–	316L	–
1.4435	X2CrNiMo1812	316S13	–	Z2CND17.12	X2CrNiMo1712	–	2353	SCS16 SUS316L	316L	OCr27Ni12Mo3
1.4436	–	316S13	–	Z6CND18-12-03	X8CrNiMo1713	–	2343, 2347	–	316	–
1.4438	X2CrNiMo1816	317S12	–	Z2CND19.15	X2CrNiMo1816	–	2367	SUS317L	317L	OOCr19Ni13Mo
1.4539	X1NiCrMo	–	–	Z6CNT18.10	–	–	2562	–	UNS V 0890A	–
1.4541	X10CrNiTi189	321S12	58B	Z6CNT18.10	X6CrNiTi1811	F.3553 F.3523	2337	SUS321	321	1Cr18NI9Ti
1.4550	X10CrNiNb189	347S17	58F	Z6CNNb18.10	X6CrNiNb1811	F.3552 F.3524	2338	SUS347	347	1Cr18Ni11Nb
1.4571	X10CrNiMoTi1810	320S17	58J	Z6CNDT17.12	X6CrNiMoTi1712	F.3535	2350	–	316Ti	Cr18Ni12Mo2T
1.4583	X10CrNiMoNb1812	–	–	Z6CNDNb1713B	X6CrNiMoNb1713	–	–	–	318	Cr17Ni12Mo3Mb

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4828	X15CrNiSi2012	309S24	–	Z15CNS20.12	X6CrNi2520	–	–	SUH309	309	1Cr23Ni13
1.4845	X12CrNi2521	310S24	–	Z12CN2520	X6CrNi2520	F.331	2361	SUH310	310S	OCr25Ni20
1.4406	X10CrNi18.08	–	58C	Z1NCDU25.20	–	F.8414	2370	SCS17	308	–
1.4418	X4CrNiMo165	–	–	Z6CND16-04-01	–	–	–	–	–	–
1.4568 1.4504	–	316S111	–	Z8CNA17-07	X2CrNiMo1712	–	–	–	17-7PH	–
1.4563	–	–	–	Z1NCDU31-27-03 Z1CNDU20-18-06AZ	–	–	2584 2378	–	NO8028 S31254	–
1.4878	X12CrNiTi189	321S32	58B, 58C	Z6CNT18.12B	X6CrNiTi18 11	F.3523	–	SUS321	321	1Cr18Ni9Ti

■ACEROS RESISTENTES AL CALOR

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4864	X12NiCrSi3616	–	–	Z12NCS35.16	–	–	–	SUH330	330	–
1.4865	G-X40NiCrSi3818	330C11	–	–	XG50NiCr3919	–	–	SCH15	HT, HT 50	–

■FUNDICIÓN GRIS

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
–	–	–	–	–	–	–	0100	–	–	–
–	GG 10	–	–	Ft 10 D	–	–	0110	FC100	No 20 B	–
0.6015	GG 15	Grade 150	–	Ft 15 D	G15	FG15	0115	FC150	No 25 B	HT150
0.6020	GG 20	Grade 220	–	Ft 20 D	G20	–	0120	FC200	No 30 B	HT200
0.6025	GG 25	Grade 260	–	Ft 25 D	G25	FG25	0125	FC250	No 35 B	HT250
–	–	–	–	–	–	–	–	–	No 40 B	–
0.6030	GG 30	Grade 300	–	Ft 30 D	G30	FG30	0130	FC300	No 45 B	HT300
0.6035	GG 35	Grade 350	–	Ft 35 D	G35	FG35	0135	FC350	No 50 B	HT350
0.6040	GG 40	Grade 400	–	Ft 40 D	–	–	0140	–	No 55 B	HT400
0.6660	GGL NiCr202	L-NiCuCr202	–	L-NC 202	–	–	0523	–	A436 Type 2	–

■FUNDICIÓN DÚCTIL

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
0.7040	GGG 40	SNG 420/12	–	FCS 400-12	GS 370-17	FGE 38-17	07 17-02	FCD400	60-40-18	QT400-18
–	GGG 40.3	SNG 370/17	–	FGS 370-17	–	–	07 17-12	–	–	–
0.7033	GGG 35.3	–	–	–	–	–	07 17-15	–	–	–
0.7050	GGG 50	SNG 500/7	–	FGS 500-7	GS 500	FGE 50-7	07 27-02	FCD500	80-55-06	QT500-7
0.7660	GGG NiCr202	Grade S6	–	S-NC202	–	–	07 76	–	A43D2	–
–	GGG NiMn137	L-NiMn 137	–	L-MN 137	–	–	07 72	–	–	–
–	GGG 60	SNG 600/3	–	FGS 600-3	–	–	07 32-03	FCD600	–	QT600-3
0.7070	GGG 70	SNG 700/2	–	FGS 700-2	GS 700-2	FGS 70-2	07 37-01	FCD700	100-70-03	QT700-18

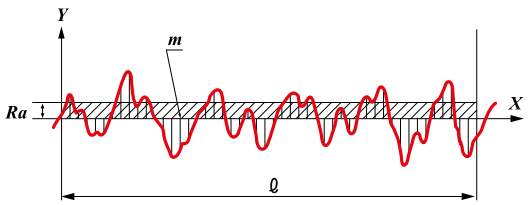
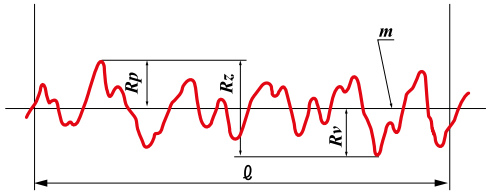
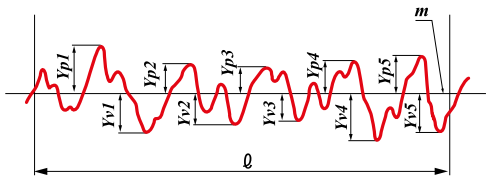
■FUNDICION MALEABLE

Alemania		U.K.		Francia	Italia	España	Suecia	Japón	E.E.U.U.	China
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
–	–	8 290/6	–	MN 32-8	–	–	08 14	FCMB310	–	–
–	GTS-35	B 340/12	–	MN 35-10	–	–	08 15	FCMW330	32510	–
0.8145	GTS-45	P 440/7	–	Mn 450	GMN45	–	08 52	FCMW370	40010	–
0.8155	GTS-55	P 510/4	–	MP 50-5	GMN55	–	08 54	FCMP490	50005	–
–	GTS-65	P 570/3	–	MP 60-3	–	–	08 58	FCMP540	70003	–
0.8165	GTS-65-02	P 570/3	–	Mn 650-3	GMN 65	–	08 56	FCMP590	A220-70003	–
–	GTS-70-02	P 690/2	–	Mn 700-2	GMN 70	–	08 62	FCMP690	A220-80002	–

RUGOSIDAD

RUGOSIDAD

(Del JIS B 601-1994)

Tipo	Código	Descripción	Exemple de mesure (Figura)
Rugosidad teórica	Ra	**Ra es el valor obtenido en la fórmula siguiente y expresado en micras. Medida aritmética de los valores absolutos de las desviaciones del perfil, en los límites de la longitud básica. Se expresa y=f (x):** $Ra=\frac{1}{l}\int_0^l \lvert f(x)\rvert dx$	
Altura máxima	Rz	**Rz es la distancia máxima entre la línea de cresta mayor y el valle más profundo, tomados en la dirección de la línea principal de la muestra, y expresada en micras (μm).** **Nota) Al calcular Rz, es posible encontrar una porción sin ningún valle o cresta excepcionalmente altos o profundos; lo cual puede ser tomado como un defecto.** $Rz=R_P+Rv$	
Valor de la rugosidad en los diez puntos	RZJIS	**RZJIS es la suma de los valores absolutos de las alturas de las cinco crestas (Yp) y de la profundidad de los cinco valles (Yv) más profundos; medidos en dirección vertical de la muestra y expresada en micras (μm).** $Rz_{JIS}=\frac{(Yp1+Yp2+Yp3+Yp4+Yp5)+(Yv1+Yv2+Yv3+Yv4+Yv5)}{5}$	 $Yp1, Yp2, Yp3, Yp4, Yp5$:altitudes de los cinco cresta más altas de la porción corespondiente a la longitud de referencia l. $Yv1, Yv2, Yv3, Yv4, Yv5$:altitudes de los cinco valles más profundos de la porción corespondiente a la longitud de referencia l.

■RELACIÓN ENTRE RUGOSIDAD TEÓRICA (Ra) Y DESIGNACIÓN CONVENCIONAL (DATO DE REFERENCIA)

Rugosidad teórica Ra		Altura máxima Rz	Valor de la rugosidad en los diez puntos RZJIS	Longitud de muestreopara Rz • RZJIS l (mm)	Marca de acabado convencional
Series estándar	Valor del corte λc (mm)	Series estándar			
0.012 a	0.08	0.05s	0.05z	0.08	▽▽▽▽
0.025 a	0.25	0.1 s	0.1 z		
0.05 a		0.2 s	0.2 z	0.25	
0.1 a	0.8	0.4 s	0.4 z		
0.2 a		0.8 s	0.8 z	0.8	
0.4 a		1.6 s	1.6 z		▽▽▽
0.8 a		3.2 s	3.2 z		
1.6 a		6.3 s	6.3 z		
3.2 a	2.5	12.5 s	12.5 z	2.5	▽▽
6.3 a		25 s	25 z		
12.5 a	8	50 s	50 z		▽
25 a		100 s	100 z	8	
50 a		200 s	200 z		–
100 a	–	400 s	400 z	–	

*La correlación entre los tres, es sólo por conveniencia y no es exacta.
*Ra: La longitud evaluada de Rz y RZJIS, es el valor límite y la longitud del muestreo multiplicadas por 5, respectivamente.

TABLA DE COMPARACION DE DUREZAS

VALORES DE LAS DUREZAS DEL ACERO

Dureté Brinell (HB) Bola de 10mm,Carga: 3000kgf		Dureza Vickers	Dureza Rockwell				Dureza Shore	Resisténcia a la tracción (Aprox.) MPa
Bola estándar	Bola de metal duro	(HV)	Escala A Carga: 60kgf, Diamante Punta (HRA)	Escala B, Carga: 100kgf, Bola de 1/16" (HRB)	Escala C, Carga: 150kgf, Diamante Punta (HRC)	Escala D, Carga: 100kgf, Diamante Punt (HRD)	(HS)	
—	—	940	85.6	—	68.0	76.9	97	—
—	—	920	85.3	—	67.5	76.5	96	—
—	—	900	85.0	—	67.0	76.1	95	—
—	(767)	880	84.7	—	66.4	75.7	93	—
—	(757)	860	84.4	—	65.9	75.3	92	—
—	(745)	840	84.1	—	65.3	74.8	91	—
—	(733)	820	83.8	—	64.7	74.3	90	—
—	(722)	800	83.4	—	64.0	73.8	88	—
—	(712)	—	—	—	—	—	—	—
—	(710)	780	83.0	—	63.3	73.3	87	—
—	(698)	760	82.6	—	62.5	72.6	86	—
—	(684)	740	82.2	—	61.8	72.1	—	—
—	(682)	737	82.2	—	61.7	72.0	84	—
—	(670)	720	81.8	—	61.0	71.5	83	—
—	(656)	700	81.3	—	60.1	70.8	—	—
—	(653)	697	81.2	—	60.0	70.7	81	—
—	(647)	690	81.1	—	59.7	70.5	—	—
—	(638)	680	80.8	—	59.2	70.1	80	—
—	630	670	80.6	—	58.8	69.8	—	—
—	627	667	80.5	—	58.7	69.7	79	—
—	—	677	80.7	—	59.1	70.0	—	—
—	601	640	79.8	—	57.3	68.7	77	—
—	—	640	79.8	—	57.3	68.7	—	—
—	578	615	79.1	—	56.0	67.7	75	—
—	—	607	78.8	—	55.6	67.4	—	—
—	555	591	78.4	—	54.7	66.7	73	2055
—	—	579	78.0	—	54.0	66.1	—	2015
—	534	569	77.8	—	53.5	65.8	71	1985
—	—	533	77.1	—	52.5	65.0	—	1915
—	514	547	76.9	—	52.1	64.7	70	1890
(495)	—	539	76.7	—	51.6	64.3	—	1855
—	—	530	76.4	—	51.1	63.9	—	1825
	495	528	76.3	—	51.0	63.8	68	1820
(477)	—	516	75.9	—	50.3	63.2	—	1780
—	—	508	75.6	—	49.6	62.7	—	1740
	477	508	75.6	—	49.6	62.7	66	1740
(461)	—	495	75.1	—	48.8	61.9	—	1680
—	—	491	74.9	—	48.5	61.7	—	1670
	461	491	74.9	—	48.5	61.7	65	1670
444	—	474	74.3	—	47.2	61.0	—	1595
—	—	472	74.2	—	47.1	60.8	—	1585
—	444	472	74.2	—	47.1	60.8	63	1585

Dureté Brinell (HB) Bola de 10mm,Carga: 3000kgf		Dureza Vickers	Dureza Rockwell				Dureza Shore	Resisténcia a la tracción (Aprox.) MPa
Bola estándar	Bola de metal duro	(HV)	Escala A Carga: 60kgf, Diamante Punta (HRA)	Escala B, Carga: 100kgf, Bola de 1/16" (HRB)	Escala C, Carga: 150kgf, Diamante Punta (HRC)	Escala D, Carga: 100kgf, Diamante Punt (HRD)	(HS)	
429	429	455	73.4	—	45.7	59.7	61	1510
415	415	440	72.8	—	44.5	58.8	59	1460
401	401	425	72.0	—	43.1	57.8	58	1390
388	388	410	71.4	—	41.8	56.8	56	1330
375	375	396	70.6	—	40.4	55.7	54	1270
363	363	383	70.0	—	39.1	54.6	52	1220
352	352	372	69.3	(110.0)	37.9	53.8	51	1180
341	341	360	68.7	(109.0)	36.6	52.8	50	1130
331	331	350	68.1	(108.5)	35.5	51.9	48	1095
321	321	339	67.5	(108.0)	34.3	51.0	47	1060
311	311	328	66.9	(107.5)	33.1	50.0	46	1025
302	302	319	66.3	(107.0)	32.1	49.3	45	1005
293	293	309	65.7	(106.0)	30.9	48.3	43	970
285	285	301	65.3	(105.5)	29.9	47.6	—	950
277	277	292	64.6	(104.5)	28.8	46.7	41	925
269	269	284	64.1	(104.0)	27.6	45.9	40	895
262	262	276	63.6	(103.0)	26.6	45.0	39	875
255	255	269	63.0	(102.0)	25.4	44.2	38	850
248	248	261	62.5	(101.0)	24.2	43.2	37	825
241	241	253	61.8	100	22.8	42.0	36	800
235	235	247	61.4	99.0	21.7	41.4	35	785
229	229	241	60.8	98.2	20.5	40.5	34	765
223	223	234	—	97.3	(18.8)	—	—	—
217	217	228	—	96.4	(17.5)	—	33	725
212	212	222	—	95.5	(16.0)	—	—	705
207	207	218	—	94.6	(15.2)	—	32	690
201	201	212	—	93.8	(13.8)	—	31	675
197	197	207	—	92.8	(12.7)	—	30	655
192	192	202	—	91.9	(11.5)	—	29	640
187	187	196	—	90.7	(10.0)	—	—	620
183	183	192	—	90.0	(9.0)	—	28	615
179	179	188	—	89.0	(8.0)	—	27	600
174	174	182	—	87.8	(6.4)	—	—	585
170	170	178	—	86.8	(5.4)	—	26	570
167	167	175	—	86.0	(4.4)	—	—	560
163	163	171	—	85.0	(3.3)	—	25	545
156	156	163	—	82.9	(0.9)	—	—	525
149	149	156	—	80.8	—	—	23	505
143	143	150	—	78.7	—	—	22	490
137	137	143	—	76.4	—	—	21	460
131	131	137	—	74.0	—	—	—	450
126	126	132	—	72.0	—	—	20	435
121	121	127	—	69.8	—	—	19	415
116	116	122	—	67.6	—	—	18	400
111	111	117	—	65.7	—	—	15	385

Nota 1) La lista de arriba es la editada en el Libro de los Metales AMS; con la resistencia a la tracción aproximada en valores métricos y la dureza Brinell por encima del valor recomendado.

Nota 2) 1MPa=1N/mm^2

Nota 3) Valores entre son raramente utilizados como referencia. Esta lista ha sido elaborada a partir de las normas JIS del Acero.

TABLA TOLERANCIA DE AGUJEROS

Clasificación de las Dimensiones Estándar (mm)		Tipos de Toleráncias Geométricas de Agujeros															
>	≤	B10	C9	C10	D8	D9	D10	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7
—	3	+180 +140	+85 +60	+100 +60	+34 +20	+45 +20	+60 +20	+24 +14	+28 +14	+39 +14	+12 +6	+16 +6	+20 +6	+8 +2	+12 +2	+6 0	+10 0
3	6	+188 +140	+100 +70	+118 +70	+48 +30	+60 +30	+78 +30	+32 +20	+38 +20	+50 +20	+18 +10	+22 +10	+28 +10	+12 +4	+16 +4	+8 0	+12 0
6	10	+208 +150	+116 +80	+138 +80	+62 +40	+76 +40	+98 +40	+40 +25	+47 +25	+61 +25	+22 +13	+28 +13	+35 +13	+14 +5	+20 +5	+9 0	+15 0
10	14	+220 +150	+138 +95	+165 +95	+77 +50	+93 +50	+120 +50	+50 +32	+59 +32	+75 +32	+27 +16	+34 +16	+43 +16	+17 +6	+24 +6	+11 0	+18 0
14	18																
18	24	+244 +160	+162 +110	+194 +110	+98 +65	+117 +65	+149 +65	+61 +40	+73 +40	+92 +40	+33 +20	+41 +20	+53 +20	+20 +7	+28 +7	+13 0	+21 0
24	30																
30	40	+270 +170	+182 +120	+220 +120	+119 +80	+142 +80	+180 +80	+75 +50	+89 +50	+112 +50	+41 +25	+50 +25	+64 +25	+25 +9	+34 +9	+16 0	+25 0
40	50	+280 +180	+192 +130	+230 +130													
50	65	+310 +190	+214 +140	+260 +140	+146 +100	+174 +100	+220 +100	+90 +60	+106 +60	+134 +60	+49 +30	+60 +30	+76 +30	+29 +10	+40 +10	+19 0	+30 0
65	80	+320 +200	+224 +150	+270 +150													
80	100	+360 +220	+257 +170	+310 +170	+174 +120	+207 +120	+260 +120	+107 +72	+126 +72	+159 +72	+58 +36	+71 +36	+90 +36	+34 +12	+47 +12	+22 0	+35 0
100	120	+380 +240	+267 +180	+320 +180													
120	140	+420 +260	+300 +200	+360 +200	+208 +145	+245 +145	+305 +145	+125 +85	+148 +85	+185 +85	+68 +43	+83 +43	+106 +43	+39 +14	+54 +14	+25 0	+40 0
140	160	+440 +280	+310 +210	+370 +210													
160	180	+470 +310	+330 +230	+390 +230													
180	200	+525 +340	+355 +240	+425 +240	+242 +170	+285 +170	+355 +170	+146 +100	+172 +100	+215 +100	+79 +50	+96 +50	+122 +50	+44 +15	+61 +15	+29 0	+46 0
200	225	+565 +380	+375 +260	+445 +260													
225	250	+605 +420	+395 +280	+465 +280													
250	280	+690 +480	+430 +300	+510 +300	+271 +190	+320 +190	+400 +190	+162 +110	+191 +110	+240 +110	+88 +56	+108 +56	+137 +56	+49 +17	+69 +17	+32 0	+52 0
280	315	+750 +540	+460 +330	+540 +330													
315	355	+830 +600	+500 +360	+590 +360	+299 +210	+350 +210	+440 +210	+182 +125	+214 +125	+265 +125	+98 +62	+119 +62	+151 +62	+54 +18	+75 +18	+36 0	+57 0
355	400	+910 +680	+540 +400	+630 +400													
400	450	+1010 +760	+595 +440	+690 +440	+327 +230	+385 +230	+480 +230	+198 +135	+232 +135	+290 +135	+108 +68	+131 +68	+165 +68	+60 +20	+83 +20	+40 0	+63 0
450	500	+1090 +840	+635 +480	+730 +480													

Nota 1) Los valores mostrados en la parte superior de las respectivas líneas, corresponden al valor máximo; mientras que los valores mostrados en la parte inferior de las respectivas líneas, corresponden al valor mínimo.

Unidades : μm

Tipos de Toleráncias Geométricas de Agujeros

H8	H9	H10	JS6	JS7	K6	K7	M6	M7	N6	N7	P6	P7	R7	S7	T7	U7	X7
+14 0	+25 0	+40 0	±3	±5	0 −6	0 −10	−2 −8	−2 −12	−4 −10	−4 −14	−6 −12	−6 −16	−10 −20	−14 −24	—	−18 −28	−20 −30
+18 0	+30 0	+48 0	±4	±6	+2 −6	+3 −9	−1 −9	0 −12	−5 −13	−4 −16	−9 −17	−8 −20	−11 −23	−15 −27	—	−19 −31	−24 −36
+22 0	+36 0	+58 0	±4.5	±7	+2 −7	+5 −10	−3 −12	0 −15	−7 −16	−4 −19	−12 −21	−9 −24	−13 −28	−17 −32	—	−22 −37	−28 −43
+27 0	+43 0	+70 0	±5.5	±9	+2 −9	+6 −12	−4 −15	0 −18	−9 −20	−5 −23	−15 −26	−11 −29	−16 −34	−21 −39	— —	−26 −44	−33 −51 −38 −56
+33 0	+52 0	+84 0	±6.5	±10	+2 −11	+6 −15	−4 −17	0 −21	−11 −24	−7 −28	−18 −31	−14 −35	−20 −41	−27 −48	— −33 −54	−33 −54 −40 −61	−46 −67 −56 −77
+39 0	+62 0	+100 0	±8	±12	+3 −13	+7 −18	−4 −20	0 −25	−12 −28	−8 −33	−21 −37	−17 −42	−25 −50	−34 −59	−39 −64 −45 −70	−51 −76 −61 −86	—
+46 0	+74 0	+120 0	±9.5	±15	+4 −15	+9 −21	−5 −24	0 −30	−14 −33	−9 −39	−26 −45	−21 −51	−30 −60 −32 −62	−42 −72 −48 −78	−55 −85 −64 −94	−76 −106 −91 −121	—
+54 0	+87 0	+140 0	±11	±17	+4 −18	+10 −25	−6 −28	0 −35	−16 −38	−10 −45	−30 −52	−24 −59	−38 −73 −41 −76	−58 −93 −66 −101	−78 −113 −91 −126	−111 −146 −131 −166	—
+63 0	+100 0	+160 0	±12.5	±20	+4 −21	+12 −28	−8 −33	0 −40	−20 −45	−12 −52	−36 −61	−28 −68	−48 −88 −50 −90 −53 −93	−77 −117 −85 −125 −93 −133	−107 −147 −119 −159 −131 −171	—	—
+72 0	+115 0	+185 0	±14.5	±23	+5 −24	+13 −33	−8 −37	0 −46	−22 −51	−14 −60	−41 −70	−33 −79	−60 −106 −63 −109 −67 −113	−105 −151 −113 −159 −123 −169	—	—	—
+81 0	+130 0	+210 0	±16	±26	+5 −27	+16 −36	−9 −41	0 −52	−25 −57	−14 −66	−47 −79	−36 −88	−74 −126 −78 −130	—	—	—	—
+89 0	+140 0	+230 0	±18	±28	+7 −29	+17 −40	−10 −46	0 −57	−26 −62	−16 −73	−51 −87	−41 −98	−87 −144 −93 −150	—	—	—	—
+97 0	+155 0	+250 0	±20	±31	+8 −32	+18 −45	−10 −50	0 −63	−27 −67	−17 −80	−55 −95	−45 −108	−103 −166 −109 −172	—	—	—	—

TABLA DE TOLERANCIAS

Clasificación de las Dimensiones Estándar (mm)		Tipos de Toleráncias Geométricas de Ejes														
>	≤	b9	c9	d8	d9	e7	e8	e9	f6	f7	f8	g5	g6	h5	h6	h7
—	3	−140 −165	−60 −85	−20 −34	−20 −45	−14 −24	−14 −28	−14 −39	−6 −12	−6 −16	−6 −20	−2 −6	−2 −8	0 −4	0 −6	0 −10
3	6	−140 −170	−70 −100	−30 −48	−30 −60	−20 −32	−20 −38	−20 −50	−10 −18	−10 −22	−10 −28	−4 −9	−4 −12	0 −5	0 −8	0 −12
6	10	−150 −186	−80 −116	−40 −62	−40 −76	−25 −40	−25 −47	−25 −61	−13 −22	−13 −28	−13 −35	−5 −11	−5 −14	0 −6	0 −9	0 −15
10	14	−150 −193	−95 −138	−50 −77	−50 −93	−32 −50	−32 −59	−32 −75	−16 −27	−16 −34	−16 −43	−6 −14	−6 −17	0 −8	0 −11	0 −18
14	18															
18	24	−160 −212	−110 −162	−65 −98	−65 −117	−40 −61	−40 −73	−40 −92	−20 −33	−20 −41	−20 −53	−7 −16	−7 −20	0 −9	0 −13	0 −21
24	30															
30	40	−170 −232	−120 −182	−80 −119	−80 −142	−50 −75	−50 −89	−50 −112	−25 −41	−25 −50	−25 −64	−9 −20	−9 −25	0 −11	0 −16	0 −25
40	50	−180 −242	−130 −192													
50	65	−190 −264	−140 −214	−100 −146	−100 −174	−60 −90	−60 −106	−60 −134	−30 −49	−30 −60	−30 −76	−10 −23	−10 −29	0 −13	0 −19	0 −30
65	80	−200 −274	−150 −224													
80	100	−220 −307	−170 −257	−120 −174	−120 −207	−72 −107	−72 −126	−72 −159	−36 −58	−36 −71	−36 −90	−12 −27	−12 −34	0 −15	0 −22	0 −35
100	120	−240 −327	−180 −267													
120	140	−260 −360	−200 −300	−145 −208	−145 −245	−85 −125	−85 −148	−85 −185	−43 −68	−43 −83	−43 −106	−14 −32	−14 −39	0 −18	0 −25	0 −40
140	160	−280 −380	−210 −310													
160	180	−310 −410	−230 −330													
180	200	−340 −455	−240 −355	−170 −242	−170 −285	−100 −146	−100 −172	−100 −215	−50 −79	−50 −96	−50 −122	−15 −35	−15 −44	0 −20	0 −29	0 −46
200	225	−380 −495	−260 −375													
225	250	−420 −535	−280 −395													
250	280	−480 −610	−300 −430	−190 −271	−190 −320	−110 −162	−110 −191	−110 −240	−56 −88	−56 −108	−56 −137	−17 −40	−17 −49	0 −23	0 −32	0 −52
280	315	−540 −670	−330 −460													
315	355	−600 −740	−360 −500	−210 −299	−210 −350	−125 −182	−125 −214	−125 −265	−62 −98	−62 −119	−62 −151	−18 −43	−18 −54	0 −25	0 −36	0 −57
355	400	−680 −820	−400 −540													
400	450	−760 −915	−440 −595	−230 −327	−230 −385	−135 −198	−135 −232	−135 −290	−68 −108	−68 −131	−68 −165	−20 −47	−20 −60	0 −27	0 −40	0 −63
450	500	−840 −995	−480 −635													

Nota 1) Los valores mostrados en la parte superior de las respectivas líneas, corresponden al valor máximo; mientras que los valores mostrados en la parte inferior de las respectivas líneas, corresponden al valor mínimo.

Unidades : μm

Tipos de Toleráncias Geométricas de Ejes

h8	h9	js5	js6	js7	k5	k6	m5	m6	n6	p6	r6	s6	t6	u6	x6
0 −14	0 −25	±2	±3	±5	+4 0	+6 0	+6 +2	+8 +2	+10 +4	+12 +6	+16 +10	+20 +14	—	+24 +18	+26 +20
0 −18	0 −30	±2.5	±4	±6	+6 +1	+9 +1	+9 +4	+12 +4	+16 +8	+20 +12	+23 +15	+27 +19	—	+31 +23	+36 +28
0 −22	0 −36	±3	±4.5	±7	+7 +1	+10 +1	+12 +6	+15 +6	+19 +10	+24 +15	+28 +19	+32 +23	—	+37 +28	+43 +34
0 −27	0 −43	±4	±5.5	±9	+9 +1	+12 +1	+15 +7	+18 +7	+23 +12	+29 +18	+34 +23	+39 +28	—	+44 +33	+51 +40 +56 +45
0 −33	0 −52	±4.5	±6.5	±10	+11 +2	+15 +2	+17 +8	+21 +8	+28 +15	+35 +22	+41 +28	+48 +35	— +54 +41	+54 +41 +61 +48	+67 +54 +77 +64
0 −39	0 −62	±5.5	±8	±12	+13 +2	+18 +2	+20 +9	+25 +9	+33 +17	+42 +26	+50 +34	+59 +43	+64 +48 +70 +54	+76 +60 +86 +70	—
0 −46	0 −74	±6.5	±9.5	±15	+15 +2	+21 +2	+24 +11	+30 +11	+39 +20	+51 +32	+60 +41 +62 +43	+72 +53 +78 +59	+85 +66 +94 +75	+106 +87 +121 +102	—
0 −54	0 −87	±7.5	±11	±17	+18 +3	+25 +3	+28 +13	+35 +13	+45 +23	+59 +37	+73 +51 +76 +54	+93 +71 +101 +79	+113 +91 +126 +104	+146 +124 +166 +144	—
0 −63	0 −100	±9	±12.5	±20	+21 +3	+28 +3	+33 +15	+40 +15	+52 +27	+68 +43	+88 +63 +90 +65 +93 +68	+117 +92 +125 +100 +133 +108	+147 +122 +159 +134 +171 +146	—	—
0 −72	0 −115	±10	±14.5	±23	+24 +4	+33 +4	+37 +17	+46 +17	+60 +31	+79 +50	+106 +77 +109 +80 +113 +84	+151 +122 +159 +130 +169 +140	—	—	—
0 −81	0 −130	±11.5	±16	±26	+27 +4	+36 +4	+43 +20	+52 +20	+66 +34	+88 +56	+126 +94 +130 +98	—	—	—	—
0 −89	0 −140	±12.5	±18	±28	+29 +4	+40 +4	+46 +21	+57 +21	+73 +37	+98 +62	+144 +108 +150 +114	—	—	—	—
0 −97	0 −155	±13.5	±20	±31	+32 +5	+45 +5	+50 +23	+63 +23	+80 +40	+108 +68	+166 +126 +172 +132	—	—	—	—

PREPARACIÓN DEL AGUJERO SEGÚN DIÁMETRO DE LA BROCA

●Métrica y paso de rosca

Nominal	Diámetro de broca	
	HSS	Carburo
M1 ×0.25	0.75	0.75
M1.1×0.25	0.85	0.85
M1.2×0.25	0.95	0.95
M1.4×0.3	1.10	1.10
M1.6×0.35	1.25	1.30
M1.7×0.35	1.35	1.40
M1.8×0.35	1.45	1.50
M2 ×0.4	1.60	1.65
M2.2×0.45	1.75	1.80
M2.3×0.4	1.90	1.95
M2.5×0.45	2.10	2.15
M2.6×0.45	2.15	2.20
M3 ×0.5	2.50	2.55
M3.5×0.6	2.90	2.95
M4 ×0.7	3.3	3.4
M4.5×0.75	3.8	3.9
M5 ×0.8	4.2	4.3
M6 ×1.0	5.0	5.1
M7 ×1.0	6.0	6.1
M8 ×1.25	6.8	6.9
M9 ×1.25	7.8	7.9
M10 ×1.5	8.5	8.7
M11 ×1.5	9.5	9.7
M12 ×1.75	10.3	10.5
M14 ×2.0	12.0	12.2
M16 ×2.0	14.0	14.2
M18 ×2.5	15.5	15.7
M20 ×2.5	17.5	17.7
M22 ×2.5	19.5	19.7
M24 ×3.0	21.0	—
M27 ×3.0	24.0	—
M30 ×3.5	26.5	—
M33 ×3.5	29.5	—
M36 ×4.0	32.0	—
M39 ×4.0	35.0	—
M42 ×4.5	37.5	—
M45 ×4.5	40.5	—
M48 ×5.0	43.0	—

●Rosca métrica Paso Fino

Nominal	Diámetro de broca	
	HSS	Carburo
M1 ×0.2	0.80	0.80
M1.1×0.2	0.90	0.90
M1.2×0.2	1.00	1.00
M1.4×0.2	1.20	1.20
M1.6×0.2	1.40	1.40
M1.8×0.2	1.60	1.60
M2 ×0.25	1.75	1.75
M2.2×0.25	1.95	2.00
M2.5×0.35	2.20	2.20
M3 ×0.35	2.70	2.70
M3.5×0.35	3.20	3.20
M4 ×0.5	3.50	3.55
M4.5×0.5	4.00	4.05
M5 ×0.5	4.50	4.55
M5.5×0.5	5.00	5.05
M6 ×0.75	5.30	5.35
M7 ×0.75	6.30	6.35
M8 ×1.0	7.00	7.10
M8 ×0.75	7.30	7.35
M9 ×1.0	8.00	8.10
M9 ×0.75	8.30	8.35
M10 ×1.25	8.80	8.90
M10 ×1.0	9.00	9.10
M10 ×0.75	9.30	9.35
M11 ×1.0	10.0	10.1
M11 ×0.75	10.3	10.3
M12 ×1.5	10.5	10.7
M12 ×1.25	10.8	10.9
M12 ×1.0	11.0	11.1
M14 ×1.5	12.5	12.7
M14 ×1.0	13.0	13.1
M15 ×1.5	13.5	13.7
M15 ×1.0	14.0	14.1
M16 ×1.5	14.5	14.7
M16 ×1.0	15.0	15.1
M17 ×1.5	15.5	15.7
M17 ×1.0	16.0	16.1
M18 ×2.0	16.0	16.3
M18 ×1.5	16.5	16.7
M18 ×1.0	17.0	17.1

Nominal	Diámetro de broca	
	HSS	Carburo
M20 ×2.0	18.0	18.3
M20 ×1.5	18.5	18.7
M20 ×1.0	19.0	19.1
M22 ×2.0	20.0	—
M22 ×1.5	20.5	—
M22 ×1.0	21.0	—
M24 ×2.0	22.0	—
M24 ×1.5	22.5	—
M24 ×1.0	23.0	—
M25 ×2.0	23.0	—
M25 ×1.5	23.5	—
M25 ×1.0	24.0	—
M26 ×1.5	24.5	—
M27 ×2.0	25.0	—
M27 ×1.5	25.5	—
M27 ×1.0	26.0	—
M28 ×2.0	26.0	—
M28 ×1.5	26.5	—
M28 ×1.0	27.0	—
M30 ×3.0	27.0	—
M30 ×2.0	28.0	—
M30 ×1.5	28.5	—
M30 ×1.0	29.0	—
M32 ×2.0	30.0	—
M32 ×1.5	30.5	—
M33 ×3.0	30.0	—
M33 ×2.0	31.0	—
M33 ×1.5	31.5	—
M35 ×1.5	33.5	—
M36 ×3.0	33.0	—
M36 ×2.0	34.0	—
M36 ×1.5	34.5	—
M38 ×1.5	36.5	—
M39 ×3.0	36.0	—
M39 ×2.0	37.0	—
M39 ×1.5	37.5	—
M40 ×3.0	37.0	—
M40 ×2.0	38.0	—
M40 ×1.5	38.5	—
M42 ×4.0	38.0	—

Nominal	Diámetro de broca	
	HSS	Carburo
M42 ×3.0	39.0	—
M42 ×2.0	40.0	—
M42 ×1.5	40.5	—
M45 ×4.0	41.0	—
M45 ×3.0	42.0	—
M45 ×2.0	43.0	—
M45 ×1.5	43.5	—
M48 ×4.0	44.0	—
M48 ×3.0	45.0	—
M48 ×2.0	46.0	—
M48 ×1.5	46.5	—
M50 ×3.0	47.0	—
M50 ×2.0	48.0	—
M50 ×1.5	48.5	—

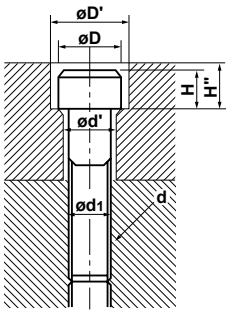
Nota 1) El tamaño del agujero debe de medirse con mucha precisión ya que el agujero puede cambiar según las condiciones de taladrado, y si se encuentra inapropiado el agujero previo, el diámetro de la broca debe de corregirse.

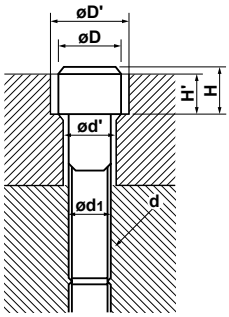
TAMAÑO DEL ORIFICIO DEL PERNO DE CABEZA HUECA HEXAGONAL

DIMENSIONES DEL ALOJAMIENTO PARA LAS CABEZAS HEXAGONALES DE LOS TORNILLOS

Unidad : mm

Dimensiones nominales de la rosca (d)	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
d_1	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30
d'	3.4	4.5	5.5	6.6	9	11	14	16	18	20	22	24	26	30	33
D	5.5	7	8.5	10	13	16	18	21	24	27	30	33	36	40	45
D'	6.5	8	9.5	11	14	17.5	20	23	26	29	32	35	39	43	48
H	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30
H'	2.7	3.6	4.6	5.5	7.4	9.2	11	12.8	14.5	16.5	18.5	20.5	22.5	25	28
H"	3.3	4.4	5.4	6.5	8.6	10.8	13	15.2	17.5	19.5	21.5	23.5	25.5	29	32





UNIDADES DEL SISTEMA INTERNACIONAL

■TABLA DE CONVERSION para CAMBIO FACIL entre UNIDADES DEL SI (El tipo negrita indica la unidad SI)

●Presión

Pa	**kPa**	**MPa**	bar	kgf/cm^2	atm	mmH$_2$O	mmHg o Torr
1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}	9.86923×10^{-6}	1.01972×10^{-1}	7.50062×10^{-3}
1×10^{3}	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}	9.86923×10^{-3}	1.01972×10^{2}	7.50062
1×10^{6}	1×10^{3}	1	1×10	1.01972×10	9.86923	1.01972×10^{5}	7.50062×10^{3}
1×10^{5}	1×10^{2}	1×10^{-1}	1	1.01972	9.86923×10^{-1}	1.01972×10^{4}	7.50062×10^{2}
9.80665×10^{4}	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1	9.67841×10^{-1}	1×10^{4}	7.35559×10^{2}
1.01325×10^{5}	1.01325×10^{2}	1.01325×10^{-1}	1.01325	1.03323	1	1.03323×10^{4}	7.60000×10^{2}
9.80665	9.80665×10^{-3}	9.80665×10^{-6}	9.80665×10^{-5}	1×10^{-4}	9.67841×10^{-5}	1	7.35559×10^{-2}
1.33322×10^{2}	1.33322×10^{-1}	1.33322×10^{-4}	1.33322×10^{-3}	1.35951×10^{-3}	1.31579×10^{-3}	1.35951×10	1

Nota 1) 1Pa=1N/m^2

●Fuerza

N	dyn	kgf
1	1×10^{5}	1.01972×10^{-1}
1×10^{-5}	1	1.01972×10^{-6}
9.80665	9.80665×10^{5}	1

●Tensión

Pa	**MPa** o **N/mm^2**	kgf/mm^2	kgf/cm^2
1	1×10^{-6}	1.01972×10^{-7}	1.01972×10^{-5}
1×10^{6}	1	1.01972×10^{-1}	1.01972×10
9.80665×10^{6}	9.80665	1	1×10^{2}
9.80665×10^{4}	9.80665×10^{-2}	1×10^{-2}	1

Nota 1) 1Pa=1N/m^2

●Trabajo / Energía / Cantidad de calor

J	kW•h	kgf•m	kcal
1	2.77778×10^{-7}	1.01972×10^{-1}	2.38889×10^{-4}
3.600×10^{6}	1	3.67098×10^{5}	8.6000×10^{2}
9.80665	2.72407×10^{-6}	1	2.34270×10^{-3}
4.18605×10^{3}	1.16279×10^{-3}	4.26858×10^{2}	1

Nota 1) 1J=1W•s, 1J=1N•m
1cal=4.18605J
(Del sistema de pesos y medidas)

●Potencia (Porcentaje de Producción / Potencia motriz) / Porcentaje de flujo de calor

W	kgf•m/s	PS	kcal/h
1	1.01972×10^{-1}	1.35962×10^{-3}	8.6000×10^{-1}
9.80665	1	1.33333×10^{-2}	8.43371
7.355×10^{2}	7.5×10	1	6.32529×10^{2}
1.16279	1.18572×10^{-1}	1.58095×10^{-3}	1

Nota 1) 1W=1J/s, PS:Caballos de potencia en Francia
1PS=0.7355kW
1cal=4.18605J
(Del sistema de pesos y medidas)

Notas

Notas

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B		
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BOES101	Tornillo de fijación	N009
BPT322	Placa de asiento	N011
BRS○○○	Tornillo de fijación	N003
C		
CA○○○	Brida	N015
CAS51T	Tornillo de fijación	N003
CBS○	Placa rompevirutas	N017
CBS○○	Placa rompevirutas	N017
CBT○	Placa rompevirutas	N017
CBT○○	Placa rompevirutas	N017
CBT○○○○	Placa rompevirutas	N017
CCK○○	Brida	N015
CCP○○	Pasador de placa de asiento	N014
CCTC1	Brida	N015
CK○○○	Brida	N015
CKW6	Brida	N016
CS○○	Placa de asiento	N011
CSF401260T	Tornillo de fijación	N003
CS○○○T	Tornillo de fijación	N003
CS○○○○○○T	Tornillo de fijación	N003
CS○○○○○○○T	Tornillo de fijación	N003
CS○○○○○○TS	Tornillo de fijación	N003
CT○○	Placa de asiento	N011
CT32T1	Placa de asiento	N012
D		
DCK○○○○	Brida	N016
DCSVN32	Placa de asiento	N011
DC○○○○T	Tornillo de fijación	N003
DKS○	Tornillo de fijación	N003
DLE○○○○S○○○P○○○	Broca de centrado DLE	M012, M013
DSAS○○○○X○○S○○○	Broca tipo DSAS	M096–M098
DWAE○○○○X○○S○○○	Brocas tipo DWAE	M020
DWAE○○○○X○○S○○○	Broca tipo DWAE	M021–M026
E		
EGS○○○○○	Tornillo de fijación	N004
ESS42	Placa de asiento	N011
EST○○	Placa de asiento	N011
F		
FC400890T	Tornillo de fijación	N004
G		
GY05016S	Tornillo de fijación	N004
GY06013M	Tornillo de fijación	N004
H		
HBH○○○○○	Tornillo de fijación	N002
HBHA○○○○○	Tornillo de fijación	N002
HDS○○○○○	Tornillo de fijación	N009
HFF06015	Tornillo de fijación	N004
HFF080○○H	Tornillo de fijación	N009
HKY○○D	Destornillador	N002
HKY○○F	Llave de banderola	N002
HKY○○L	L-Llave	N002
HKY○○R	L-Llave	N002
HKY○○T	T-Llave	N002
HKY○○W	Llave de banderola	N002
HS○○	Tornillo de fijación	N004
HSC○○○○○	Tornillo de fijación	N002, N009
HSC○○○○○H	Tornillo de fijación	N009
HSCX○○○○○H	Tornillo de fijación	N009
HSP05008C	Tornillo de fijación	N004
HSS○○○○○	Tornillo de fijación	N002
HY○	Tornillo casquillo	N004
HY-A1	Tornillo casquillo	N004
HY-V1	Tornillo casquillo	N004
J		
JFS-○	Casquillo descentrador	M172
JFS○○○○-○○	Casquillo descentrador (JFS)	M172
JSS○	Tornillo de fijación	N004
K		
KGC1	Brida	N016
KS○	Tornillo axial	N004
KS○○	Tornillo de fijación	N004
KSN○	Tornillo de fijación	N010
KSN3	Tornillo de ajuste "micro"	N010
KS○S	Tornillo de ajuste	N004
KSS○	Tornillo de fijación	N010
KSS2	Tornillo de ajuste largo	N010
L		
LK1	Brida	N016
LLCL○○○	Palanca	N014
LLCL○○S	Palanca	N014
LLCS○○○	Tornillo	N005
LLCS○○○S	Tornillo	N005
LLP○○	Pasador de placa de asiento	N014
LLR○	Tornillo radial	N004

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LLSCN○○	Placa de asiento	N011
LLSCN○T○	Placa de asiento	N011
LLSCP○○	Placa de asiento	N011
LLSDN○○	Placa de asiento	N011
LLSDP42	Placa de asiento	N011
LLSRN○○○	Placa de asiento	N011
LLSSN○○	Placa de asiento	N011
LLSSP42	Placa de asiento	N011
LLSTE32	Placa de asiento	N012
LLSTN○○	Placa de asiento	N012
LLSTP○○	Placa de asiento	N012
LLSWN○○○	Placa de asiento	N012
LLSWN○T○	Placa de asiento	N012
LLSWP○○	Placa de asiento	N012
LS○	Tornillo de fijación	N005
LS○○	Tornillo de fijación	N005
LS○○T	Tornillo de fijación	N005
LS○○○○T	Tornillo de fijación	N005
LS10TS	Tornillo de fijación	N005
LS24H	Tornillo de fijación	N005
M		
MAE○○○○MB	Broca tipo MAE (Refrigeración externa)	M124–M128
MAS○○○○LB/MB	Broca tipo MAS (Refrigeración Interna)	M124–M128
MBA○○○○○H	Tornillo de fijación	N009
MCA	Broca tipo MCA	M189
MCAH	Broca tipo MCAH	M193
MCC	Broca tipo MCC	M188
MCCH	Broca tipo MCCH	M192
MCT	Broca tipo MCT	M190
MCW	Broca tipo MCW	M191
MFE	Broca tipo MINI MFE	M018
MGS6	Tornillo	N005
MGS○○○○L○○○B	Broca tipo MICRO MGS	M079
MHK5NR/L	Brida	N016
MHS○○○○L○○○B	Broca tipo MHS	M130–M137
MHS○○○R/L	Pasador	N012
MHT1	Tornillo de fijación	N005
MK1K	Lubricante anti dilatación	N018
MK1KS	Lubricante anti dilatación	N018
MLCP42	Placa de asiento	N012
MLDP42	Placa de asiento	N012
MLSP42	Placa de asiento	N012
MLTP32	Placa de asiento	N012
MMS○○○○S/L-DIN	Broca tipo MMS	M082–M093
MMS○○○○S/L-DIN-C	Broca tipo MMS	M082–M093
MMS○○○○X○DB	Broca tipo MMS	M082–M093
MNS○○○○LB/X○○DB	Broca tipo MNS	M100–M117
MNS○○○○-L○C/L○○C	Broca tipo MNS	M100–M117
MNS○○○○S/L-DIN	MNS DIN6537 (Mango tipo whistle notch)	M100–M119
MNS○○○○S/L-DIN-C	MNS DIN6537 (Tipo mango cilindrico)	M100–M119
MP6	Pasador de placa de asiento	N014
MPS○○○○-L○C/L○○C	Broca tipo MPS	M062–M072
MPS○○○○-S/L-DIN-C	Broca tipo MPS	M062–M073
MPS1-○○○○-L○C/L○○C	Broca tipo MPS1	M044–M058
MPS1-○○○○-PC	Broca tipo MPS1	M044–M058
MPS1-○○○○S/L-DIN	MPS1 DIN6537 (Mango tipo whistle notch)	M044–M058
MPS1-○○○○S/L-DIN-C	MPS1 DIN6537 (Mango cilíndrico)	M044–M058
MSCN63	Placa de asiento	N012
MSE○○○○SB	Broca tipo MSE	M008, M009
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MSP0300SB	Broca tipo MSP	M011
MSSN63	Placa de asiento	N012
MTK○R/L	Brida	N016
MVS○○○○X○○S○○○	Broca gama MINI-MVS	M036, M037
MVX○○○○X○F○○	Broca tipo MVX	M160–M167
MWS○○○○SB/LB/XB	Broca tipo MINI-MWS	M040, M041
N		
NS○○○	Tornillo de fijación	N006
NS○○○W	Tornillo de fijación	N006
P		
P○○S	Pasador de bloqueo	N015
PS○○	Placa de asiento	N011
PT○○	Placa de asiento	N011
PT○○T○R	Placa de asiento	N012
P○○○US	Pasador de bloqueo	N015
PV○○○	Placa de asiento	N013
P○○○W	Pasador de bloqueo	N015
P○○○WS	Pasador de bloqueo	N015
R		
RKY○○S	Llave	N002
RN-S○	Tornillo de fijación	N006
RS○○○○T	Tornillo de fijación	N006
S		
S○	Tornillo de fijación	N006
SD○○	Tornillo de fijación	N006
SETK○○	Brida	N016
SETS○○	Tornillo de fijación	N006
SLCS○○○	Tornillo de fijación	N006
SOMX○○○○○○-○○	Placa (Para broca tipo MVX)	M168

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SRS5	Tornillo	N006
STASX○○○N	Placa de asiento	N013
STAW○N○○○○S○○	Broca tipo STAW	M141–M143
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STAW○S○○○○S○○	Broca tipo STAW	M141–M143
STBS500N	Placa de asiento	N013
STS1	Tornillo de placa de asiento	N006
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TIP○○○	Llave	N002
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TKY○○T	Llave T	N002
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TPS○	Tornillo de fijación	N008
TPS○○	Tornillo de fijación	N008
TPS○○○	Tornillo de fijación	N008
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TS○○○	Tornillo de fijación	N007
TS○○○○	Tornillo de fijación	N007
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U		
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WPSWN43	Placa de asiento	N013
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Notas

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C009S
Publicado: 2022.04 (2.0 DP). Impreso en Alemania