

FECHA 2024



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TOP-HIGH
Solutions

CATALOG SOLID END MILLS



Aerospace



Automotive



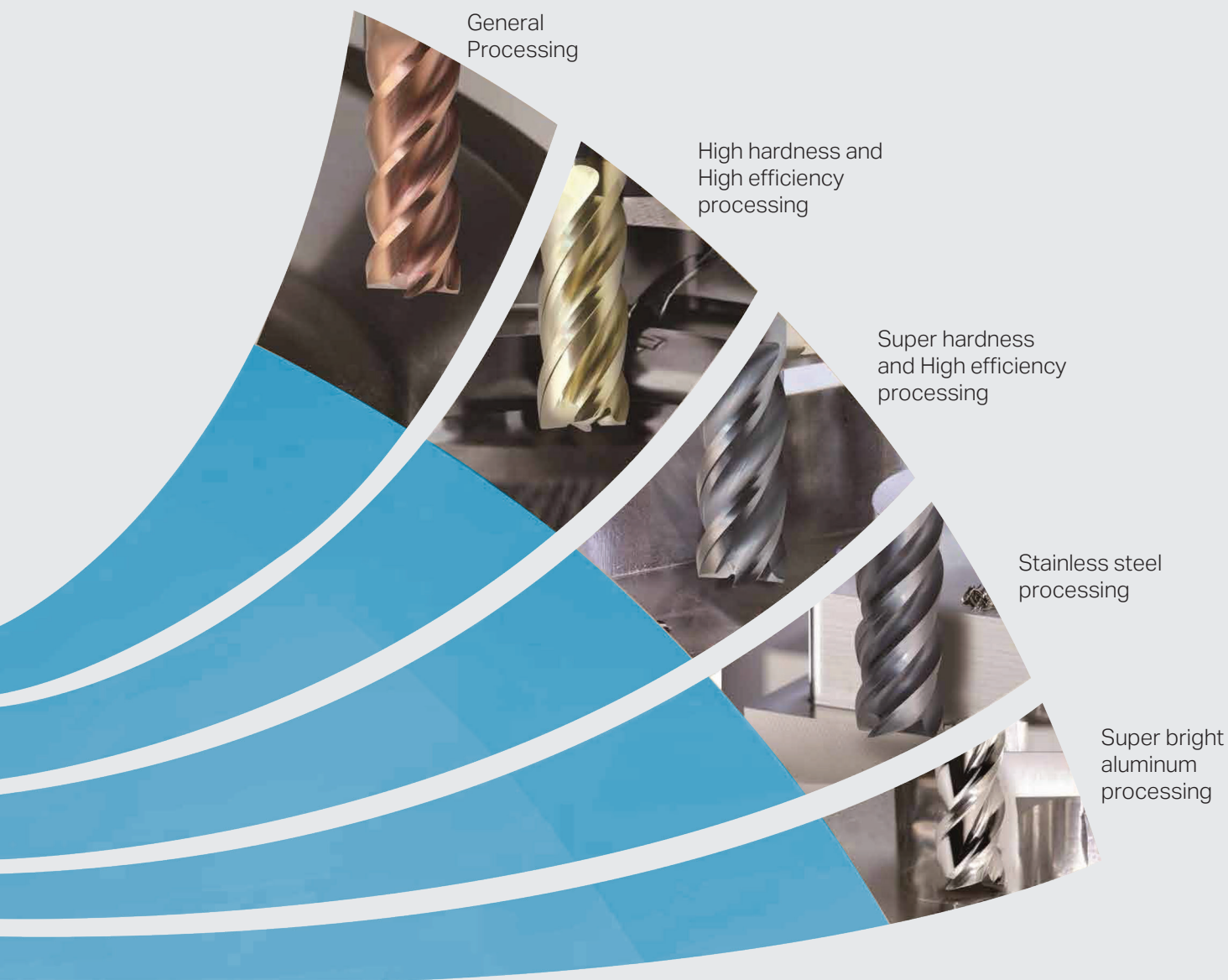
Dental



Medical



Agricultural



ALL KINDS OF SOLID CARBIDE END MILLS TODO TIPO DE FRESAS DE CARBURO SÓLIDO

General Series Serie General

High performance products with high flexibility, high economy and complete specifications.
Productos de alto rendimiento con alta flexibilidad, alta economía y especificaciones completas.

Special series Serie Especial

A unique quality tool that meets specific needs and has high efficiency, reliability, and durability.
Una herramienta de calidad única que satisface necesidades específicas y tiene alta eficiencia, confiabilidad y durabilidad.

Customized solutions Soluciones personalizadas

Specially designed to meet high performance requirements of custom products and advanced non-standard products.
Especialmente diseñado para cumplir con los requisitos de alto rendimiento de productos personalizados y productos avanzados no estándar.

COATING PROPERTY

PROPIEDAD DEL RECUBRIMIENTO

		Code of series Código de serie	Microhardness (HV0.05) Microdureza (HV0.05)
COATING: ALTiN RECUBRIMIENTO: ALTiN		TMR	3400HV
COATING: TiSiN RECUBRIMIENTO: TiSiN		TM550 TM MM EMR	4300HV
COATING: ALL RECUBRIMIENTO: TODOS		EM	4300HV
COATING: ACO RECUBRIMIENTO: ACO		XM	4400HV
COATING: XT RECUBRIMIENTO: XT		SM	4100HV

Coefficient of Friction Coeficiente de fricción	Max.service Temperature (C) Temperatura máxima de servicio (C)	Characteristic and Application Característica y aplicación
0.3	900C	Mainly used for milling of all kinds of medium and low hardness ordinary steel and die steel. Se utiliza principalmente para fresar todo tipo de acero ordinario y acero para troqueles de dureza media y baja.
0.4	1000C	Mainly used for milling of all kinds of ordinary steel, die steel and hard steel. Se utiliza principalmente para fresar todo tipo de acero ordinario, acero para troqueles y acero duro.
0.25	1200C	Specially for milling, high oxidation resistance, low friction coefficient, Achieve perfect wear resistance and Strong versatility, suitable for normal steel, die steel, stainless steel various machining. Especialmente para fresado, alta resistencia a la oxidación, bajo coeficiente de fricción, logra una perfecta resistencia al desgaste y Gran versatilidad, adecuado para acero normal, acero troquelado y mecanizado variado de acero inoxidable.
0.3	1100C	Super high hardness, high oxidation resistance and red hardness, especially suitable for milling of ultra-high hardness steel. Dureza súper alta, alta resistencia a la oxidación y dureza al rojo, especialmente adecuada para fresado de acero de dureza ultra alta.
0.25	1100C	High oxidation resistance and red hardness. Especially suitable for milling processing of high-temperature alloys and titanium alloys. Alta resistencia a la oxidación y dureza al rojo. Especialmente adecuado para el procesamiento de fresado de aleaciones de alta temperatura y aleaciones de titanio.

Icon type and identification

Tipo de icono e identificación

Processed material Material procesado

P	Steels
M	Stainless Steels
K	Cast Iron
N	Non-ferrous Materials
S	Heat-resistant Super Alloys, Titanium Alloys
H	High Hardened Materials

Icons Iconos

Cutting Method

Método de corte

						
Side Milling	Slot Milling	Profiling	Step Milling	Roughing	Helix	Drilling
Fresado lateral	Fresado de ranuras	Perfilado	Fresado paso a paso	Desbaste	Hélice	Perforación

Coating

Revestimiento

ALTiN	TiSiN	ALL	ACO	XT
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Series

Series

TM550	TM	EM	XM	SM	AL	MM	TMR	EMR
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Shank

Mango

	ISO Standard Shank ISO Mango estándar
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Blade Length

Longitud de la hoja

	Short Corto		Standard Estándar		Long Largo
---	-----------------------	---	-----------------------------	---	----------------------

No. of Flutes

Número de Flautas

	2 Flute 2 Flautas		3 Flute 3 Flautas		4 Flute 4 Flautas		5 Flute 5 Flautas		6 Flute 6 Flautas
---	-----------------------------	---	-----------------------------	---	-----------------------------	---	-----------------------------	---	-----------------------------

Type

Tipo

	2 Flute, Square 2 flautas, cuadradas		3 Flute, Square 3 flautas, cuadradas		4 Flute, Square 4 flautas, cuadradas		5 Flute, Square 5 flautas, cuadradas		6 Flute, Square 6 flautas, cuadradas		2 Flute, Ballnose 2 flautas, punta esférica		4 Flute, Ballnose 4 flautas, punta esférica
---	--	---	--	---	--	---	--	--	--	---	---	---	---

	2 Flute, Corner Radius 2 flauta, Radio de esquina		3 Flute, Corner Radius 3 flauta, Radio de esquina		4 Flute, Corner Radius 4 flauta, Radio de esquina		5 Flute, Corner Radius 5 flauta, Radio de esquina		6 Flute, Corner Radius 6 flauta, Radio de esquina
---	---	---	---	---	---	---	---	---	---

Helix

Hélice

						
---	---	---	---	---	---	---

End teeth Type

Tipo de dientes del extremo

			
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Selection method of solid carbide endmills

Método de selección de fresas de carburo sólido.

Machining application

Aplicación de mecanizado

Helix angle, coating, Etc

Ángulo de hélice, revestimiento, etc.

Product name

Nombre del producto

Product specification

Especificaciones del producto

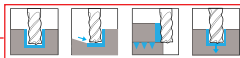
Tolerance of diameter

Tolerancia de diámetro

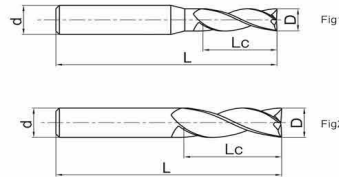
Product outline drawing

Dibujo del esquema del producto

3 Flutes, Square, Standard Length (TM550-S3) / 3 flautas, cuadradas, longitud estándar (TM550-S3)



Unit Unidad	(mm)	
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. N° de figura	Ordering Code Código de orden
1,00	3,00	4,00	50	3	1	TM550-S3-01030450
1,50	4,00	4,00	50	3	1	TM550-S3-015040450
2,00	6,00	4,00	50	3	1	TM550-S3-02060450
2,50	8,00	4,00	50	3	1	TM550-S3-025080450
3,00	8,00	4,00	50	3	1	TM550-S3-03080450
4,00	11,0	4,00	50	3	2	TM550-S3-04110450
5,00	13,0	5,00	50	3	2	TM550-S3-05130550
5,00	13,0	6,00	50	3	1	TM550-S3-05130650
6,00	16,0	6,00	50	3	2	TM550-S3-06160650
8,00	20,0	8,00	60	3	2	TM550-S3-08200860
10,0	25,0	10,0	75	3	2	TM550-S3-10251075
12,0	30,0	12,0	75	3	2	TM550-S3-12301275
14,0	30,0	14,0	75	3	2	TM550-S3-14301475
16,0	45,0	16,0	100	3	2	TM550-S3-164516100
18,0	45,0	18,0	100	3	2	TM550-S3-184518100
20,0	45,0	20,0	100	3	2	TM550-S3-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	aps1.5D aes0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	aps1D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	aps1.5D aes0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					910	870	830	930	850	760	620	560
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	aps1.5D aes0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35~45HRC) High alloy cast iron Fundición de alta aleación	aps1D aes0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1040	990	890	980	920	880	740	680
					16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

50%~70%, 40%~60%
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Range for suitable processed material

Gama de material procesado adecuado

Cutting parameters

Parámetros de corte

Product specification table

Tabla de especificaciones del producto

EM

-

S

N

4

1 Serie EM - S N 4 -10 25 10 75 - R0.5 C1.0

TM550: Suitable for Steels&Cast Iron
Apto para acero y hierro fundido

TM: General processing of various steels
Procesamiento general de varios aceros

EM: High hardness and high efficiency processing series
Serie de procesamiento de alta dureza y alta eficiencia

XM: Ultra high hardness and high efficiency processing series
Serie de procesamiento de dureza ultraalta y alta eficiencia

SM: Series for stainless steel general machining
Serie para mecanizado general de acero inoxidable

AL: Super bright aluminum processing series
Serie de procesamiento de aluminio superbrillante

MM: Suitable for Micro Diameter Pocket Milling
Adecuado para fresado de cavidades de microdiámetro

TMR: Rough Machining Series
Serie de mecanizado en desbaste

EMR: Rough Machining Series
Serie de mecanizado en desbaste

2 Type Tipo EM - S N 4 -10 25 10 75 - R0.5 C1.0



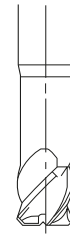
Square
Cuadrado

S



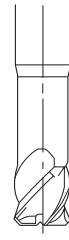
Ballnose
Punta esférica

B



Corner Radius
Radio de esquina

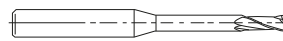
R



Chamfer
Biselado

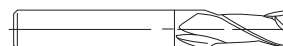
C

3 Cutter Blade Cuchilla de corte EM - S N 4 -10 25 10 75 - R0.5 C1.0



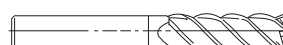
Long neck
Cuello largo

N



Standard
Estándar

Blank Blanco



Long flute
Flauta larga

L

4 No. of Flutes No. de Flautas EM - S N 4 -10 25 10 75 - R0.5 C1.0



2 Flutes



3 Flutes



4 Flutes



5 Flutes



6 Flutes

10 25 10 75 – R0.5 / C1.0

5

6

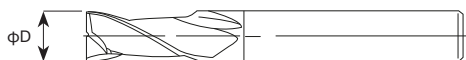
7

8

9

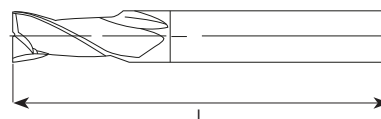
10

5 Cutting Dia Diámetro de corte EM - S N 4 - 10 25 10 75 - R0.5 C1.0



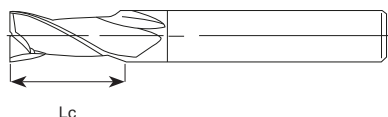
Notation Notación	φD (mm)
006	0.6
08	8
10	10

8 Total length Longitud total EM - S N 4 - 10 25 10 75 - R0.5 C1.0



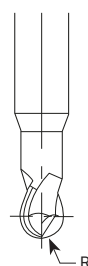
Notation Notación	L (mm)
006	0.6
08	8
10	10

6 Blade length Largo de la navaja EM - S N 4 - 10 25 10 75 - R0.5 C1.0

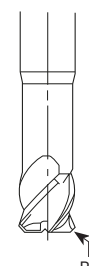


Notation Notación	Lc (mm)
006	0.6
08	8
10	10

9 Nose Radius - Corner Radius Radio de la Punta Radio de la Esquina EM - S N 4 - 10 25 10 75 - R0.5 C1.0

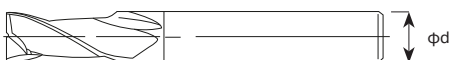


Nose Radius Radio de la Punta
R (mm)
R2.0
R4.0
R5.0



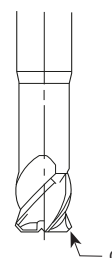
Corner Radius Radio de la Esquina
R (mm)
R2.0
R0.5
R1.0

7 Shank diameter Diámetro del mango EM - S N 4 - 10 25 10 75 - R0.5 C1.0



Notation Notación	φd (mm)
006	0.6
08	8
10	10

10 Square end with chamfer Extremo cuadrado con chaflán EM - S N 4 - 10 25 10 75 - R0.5 C1.0



Chamfer Chaflán
C (mm)
C0.5
C1.0
C1.5

PRODUCT APPLICATIONS

APLICACIONES DE PRODUCTOS

		Material Grouping Agrupación de Materiales	General Machining Mecanizado General
P	1 2 3 4	Carbon Steel, Alloy Steel (<45HRC) Acero al carbono, acero aleado (<45HRC)	TM TM550 EM XM SM
	5	Alloy Steel (HRC50) Acero aleado (HRC50)	
	6	PH, Ferritic, Martensitic Steel (<45HRC) PH, ferrítico, acero martensítico (<45HRC)	
M	1 2 3	Stainless Steel Acero inoxidable	SM EM
K	1 2	Grey Cast Iron, Nodular Cast Iron (<32HRC) Fundición Gris, Fundición Nodular (<32HRC)	TM TM550 EM XM SM
	3	High-Alloy Cast Iron (35-45HRC) Hierro fundido de alta aleación (35-45HRC)	
N	1 2	Wrought Aluminium Alloys/Cast Aluminium Alloys (Si < 12%) Aleaciones de aluminio forjado/fundido Aleaciones de aluminio (Si < 12%)	AL
	3	Cast Aluminium Alloys (Si > 12%) Aleaciones de aluminio fundido (Si > 12%)	AL
	4	Copper Alloys (<200HB) Aleaciones de Cobre (<200HB)	AL
S	1 2 3	Heat-Resistant Alloys (<450HB) Aleaciones resistentes al calor (<450HB)	EM SM
	4	Titanium Alloys (<400HB) Aleaciones de titanio (<400HB)	
H	1	Hardened Steel (63HRC) Acero endurecido (63HRC)	
	2	Super High Hardened Steel (65HRC) Acero súper endurecido (65HRC)	

Roughing Desbaste	Efficient Machining Mecanizado Eficiente	Micro Machining Micromecanizado
TMR EMR	EM XM	MM
EMR	EM XM	MM
TMR EMR	EM XM	
	AL	AL
	EM	
	XM	



TM550 General Machining End Mill

Fresa de extremo de mecanizado general

- Suitable for processing ordinary steel and cast iron materials.
- High performance TiSiN coating.
- High temperature resistance and high wear resistance.
- Ultra-fine grained carbide material.
- Adecuado para procesar materiales comunes de acero y hierro fundido.
- Revestimiento TiSiN de alto rendimiento.
- Resistencia a altas temperaturas y alta resistencia al desgaste.
- Material de carburo de grano ultrafino.

SIZE INFORMATION INFORMACIÓN DE TAMAÑO
TM550 (D1-D20)

Improve cutting edge wear resistance and tool rigidity
Mejora la resistencia al desgaste del filo y la rigidez de la herramienta

SOCIOS CONFIABLES EN TODO EL MUNDO

WORLDWIDE RELIABLE PARTNERS

Ultra-fine cemented carbide substrate
 Special cutting edge and high performance TiSiN coating to achieve high precision, long life processing
 Sustrato de carburo cementado ultrafino
 Borde de corte especial y recubrimiento TiSiN de alto rendimiento para lograr un procesamiento de alta precisión y larga duración

Special end shape achieves good cutting results
 La forma especial del extremo logra buenos resultados de corte

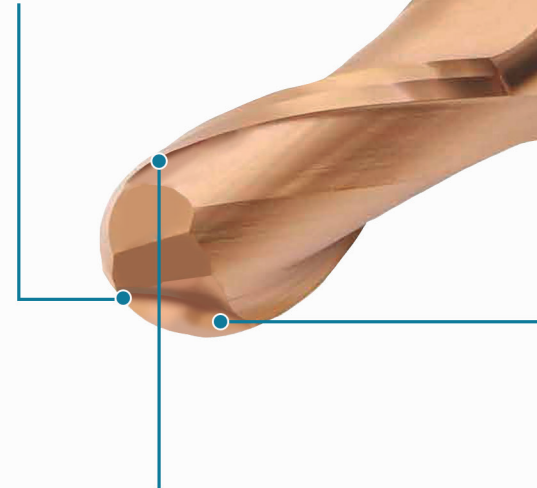
The arcuate R edge disperses the cutting resistance to reduce the wear of the cutting edge
 El borde arqueado R dispersa la resistencia al corte para reducir el desgaste del filo



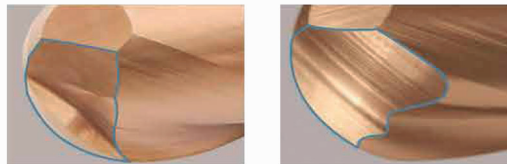
TM-B2

Past products
Productos pasados

Comparison of our company (Comparación de nuestra empresa)



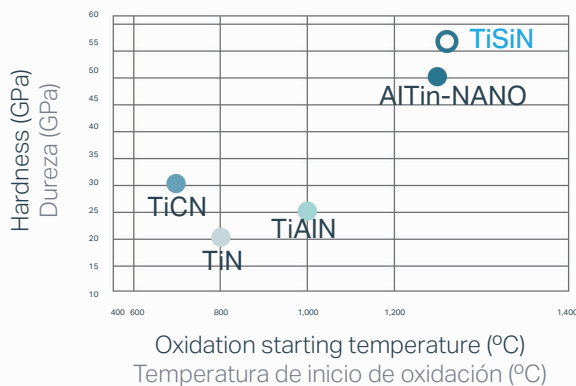
Large chip groove design
 Diseño de ranura de viruta grande
 Stable chip removal even in deep cutting
 Eliminación de viruta estable incluso en cortes profundos



TM-B2

Past products
Productos pasados

(Comparison of our company) (Comparación de nuestra empresa)



High quality blade surface
 Superficie de la hoja de alta calidad

Smooth and sharp cutting edge
 Excellent wear resistance and Fusion resistance
 Borde de corte liso y afilado
 Excelente resistencia al desgaste y resistencia a la fusión



TM-B2

Other companies product A
Producto A de otras compañías

(Comparison of our company) (Comparación de nuestra empresa)



TM

**General processing
of various steels**

**Procesamiento
general de varios
aceros**



Suitable for low alloy steel, hardened steel,
cast iron and other materials

High-performance TiSiN coating, high temperature
resistance, wear resistance.

Ultra-fine cemented carbide substrate.

Adecuado para aceros de baja aleación, aceros endurecidos,
hierro fundido y otros materiales

Recubrimiento TiSiN de alto rendimiento, resistencia a altas
temperaturas, resistencia al desgaste.

Sustrato de carburo cementado ultrafino.

Special angle design and high edge strength ensures stronger versatility
Diseño de ángulo especial y la alta resistencia de los bordes garantizan una mayor versatilidad

SOCIOS CONFIABLES EN TODO EL MUNDO

WORLDWIDE RELIABLE PARTNERS

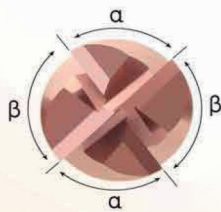
General processing of various steels
 Strong anti-sticking ability, improve tool life
 Unequal special edge design, reduce machining vibration
 Procesamiento general de varios aceros
 Fuerte capacidad antiadherente, mejora la vida útil de la herramienta
 Diseño de borde especial desigual, reduce la vibración del mecanizado

Features Características

Irregular indexing angle Ángulo de indexación irregular

Irregular flute spacing: Decreased vibration

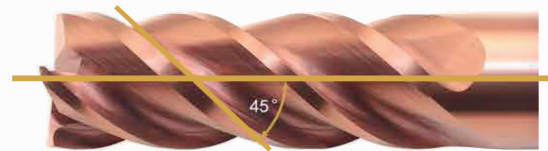
Espaciado irregular de flautas: disminución de la vibración



[Improved productivity with effective machining due to less vibration]

[Mayor productividad con un mecanizado eficaz debido a una menor vibración]

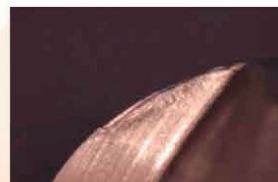
Irregular helix angle Ángulo de hélice irregular



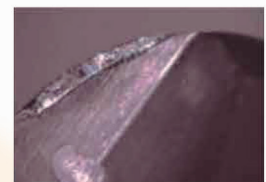
Wear condition after processing Estado de desgaste después del procesamiento

	Normal abrasion Abrasión normal	Severe collapse Colapso severo	Severe wear + Micro collapse Desgaste severo + Micro colapso
End teeth Extremo de los dientes			
Edge Borde			
Rake face Cara del rastrillo			
	TM	A company product Producto compañía A	B company product Producto compañía B

Wear comparison of the rear rake face Comparación del desgaste de la cara de inclinación trasera



TM



A company product
Producto compañía A

HIGH PERFORMANCE ALTO RENDIMIENTO



END

EM High hardness and high efficiency machining end milling cutter
Fresa de extremo de mecanizado EM de alta dureza y alta eficiencia

Variable Helix Hélice Variable

- ▶ Suitable for high-hardness steel high-efficiency processing
- ▶ Unequal spiral Angle, unequal pitch design, has excellent vibration resistance
- ▶ Suitable for high efficiency cutting with large cutting depth and width (good for rigidity of machine tool)
- ▶ Adecuado para procesamiento de alta eficiencia de acero de alta dureza.
- ▶ Ángulo espiral desigual, diseño de paso desigual, tiene excelente resistencia a las vibraciones.
- ▶ Adecuado para cortes de alta eficiencia con gran profundidad y ancho de corte (bueno para la rigidez de la máquina herramienta)



Unequal helical Angle, excellent vibration resistance
Ángulo helicoidal desigual, excelente resistencia a las vibraciones

SOCIOS CONFIABLES EN TODO EL MUNDO

WORLDWIDE RELIABLE PARTNERS

High speed and high efficiency machining of various soft steel, hard steel, stainless steel, titanium alloy

Unequal & special knife and spiral Angle design, reduce machining vibration

Mecanizado de alta velocidad y alta eficiencia de diversos aceros blandos, aceros duros, acero inoxidable y aleaciones de titanio

Diseño especial y desigual de cuchilla y ángulo en espiral, reduce la vibración del mecanizado

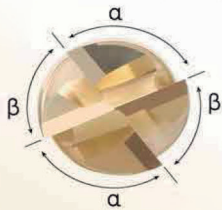
HIGH PERFORMANCE COMPOSITE COATING
RECUBRIMIENTO COMPUESTO DE ALTO RENDIMIENTO

Features Características

Irregular indexing angle Ángulo de indexación irregular

Irregular flute spacing: Decreased vibration

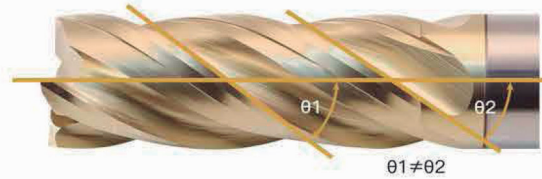
Espaciado irregular de flautas: disminución de la vibración



Irregular helix angle Ángulo de hélice irregular

Irregular spiral Angle: vibration suppression, good finish surface

Ángulo espiral irregular: supresión de vibraciones, buen acabado superficial

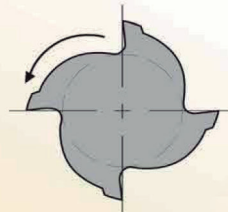


[Improved productivity with effective machining due to less vibration]

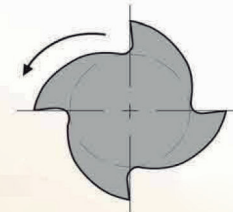
[Mayor productividad con un mecanizado eficaz debido a una menor vibración]

The groove is specially designed to better improve chip flow and curl, and reduce cutting force.

La ranura está especialmente diseñada para mejorar el flujo y la curvatura de la viruta y reducir la fuerza de corte.



EM Type
Tipo EM



Traditional Type
Tipo Tradicional

Machining Effect Efecto de mecanizado

Processing time Tiempo de proceso	50 min			
Tool wear Desgaste de la herramienta				
Tool type Tipo de herramienta	EM-S4-D6.0	Similar products of company A Productos similares de compañía A	Similar products of company B Productos similares de compañía B	EM-S4-D6.0

HIGH PERFORMANCE ALTO RENDIMIENTO

XM

**Ultra-high hardness and
high efficiency end mills**

Fresas de extremo de
dureza ultra alta y alta
eficiencia

- Variable bottom edges and helix angles to reduce vibration and improve the surface finish.
- The special tool design is suitable for high hardness steels processing.
- Bordes inferiores variables y ángulos de hélice para reducir la vibración y mejorar el acabado de la superficie.
- El diseño especial de la herramienta es adecuado para el procesamiento de aceros de alta dureza.



High hardness and toughness substrate
Sustrato de alta dureza y tenacidad

SOCIOS CONFIABLES EN TODO EL MUNDO

WORLDWIDE RELIABLE PARTNERS

Processing of high hard steel materials

Strong vibration resistance and stable machining can be achieved

Procesamiento de materiales de acero de alta dureza

Se puede lograr una fuerte resistencia a las vibraciones y un mecanizado estable

HIGH PERFORMANCE COMPOSITE COATING
RECUBRIMIENTO COMPUESTO DE ALTO RENDIMIENTO

1

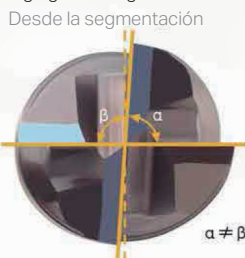
Unequal segmentation, unequal lead suppression vibration cutter

Segmentación desigual, cortador de vibración con supresión de plomo desigual

Vibration can be greatly suppressed and stable machining can be realized

La vibración se puede suprimir en gran medida y se puede realizar un mecanizado estable

Ranging from segmentation Desde la segmentación



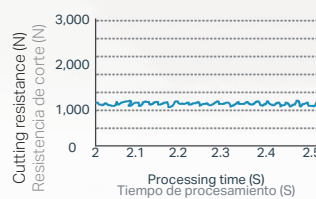
Suppress periodic vibration during cutting
Suprime la vibración periódica durante el corte

Cutting vibration comparison

Comparación de vibraciones de corte

(Comparison of our company) (Comparación de nuestra empresa)

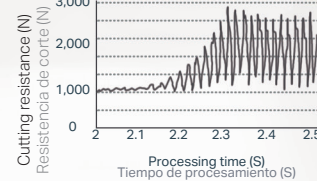
XM-S4



Cutting parameter: $n=2,650\text{min}^{-1}$,
By cutting material: 42CrMo
Parámetro de corte: $n=2,650\text{min}^{-1}$,
Por material de corte: 42CrMo

Products from other companies A (equal lead)

Productos de otras empresas A (misma ventaja)



VF = 300/min, $ap \times ae = 10 \times 8\text{mm}$
Processing diameter $\phi 8\text{mm}$
VF = 300/min, $ap \times ae = 10 \times 8\text{mm}$
Diámetro de procesamiento $\phi 8\text{mm}$

Step processing, corner part can also be processed smoothly

Procesamiento por pasos, la parte de la esquina también se puede procesar sin problemas

Ranging from lead Desde el plomo

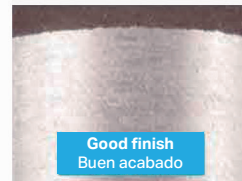


Play the effect of vibration control, suppress the vibration, the finished surface is good
Juega el efecto del control de vibración, suprime la vibración, la superficie terminada es buena

Processing surface comparison Comparación de superficies de procesamiento

(Comparison of our company) (Comparación de nuestra empresa)

XM-S4



Good finish
Buen acabado

Productos de otras empresas A (misma ventaja)



Vibration occurs knife
Se produce vibración cuchillo

Cutting parameter: $n=6,000\text{min}^{-1}$, $Vf=1,500\text{ mm/min}$, $ap \times ae = 8 \times 2\text{mm}$
By cutting material: 45
Processing diameter 8mm
Parámetro de corte: $n=6,000\text{min}^{-1}$, $Vf=1,500\text{ mm/min}$, $ap \times ae = 8 \times 2\text{mm}$
Por material de corte: 45
Diámetro de procesamiento 8mm

2

Stable chip discharge. Core thick, high rigidity

Descarga de viruta estable. Núcleo grueso, alta rigidez

Play power in cutting groove and high feed processing

Potencia en el corte de ranuras y en el procesamiento de alto avance

Large capacity tank
Tanque de gran capacidad

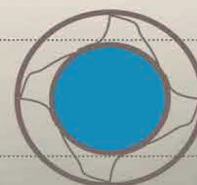


Strong resistance to vibration and bending

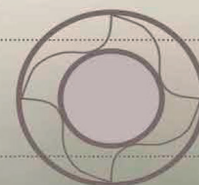
Gran resistencia a vibraciones y flexiones

The core thickness contrast
El contraste del espesor del núcleo

UP
30%



XM-S4



Other company products B
Productos B de otra compañía



SM

Stainless steel general processing end mill

Fresa de procesamiento general de acero inoxidable

- Suitable for general processing of stainless steel
- Special cutting edge design, effectively solve the problem of cutting edge chip sticking
- Stainless steel special coating, cutting smooth, anti-stick tool ability, improve tool life
- Adecuado para procesamiento general de acero inoxidable
- Diseño especial de vanguardia, resuelve eficazmente el problema de la adherencia de virutas de vanguardia
- Recubrimiento especial de acero inoxidable, corte suave, capacidad de herramienta antiadherente, mejora la vida útil de la herramienta



EDGES PASSIVATION
PASIVACIÓN DE BORDES

Improve tool life and workpiece surface finish
Mejorar la vida útil de la herramienta y el acabado de la superficie de la pieza de trabajo

Unequal special knife shape, reduce vibration, high surface finish
Forma especial desigual del cuchillo, reduce la vibración, acabado superficial alto

SOCIOS CONFIABLES EN TODO EL MUNDO

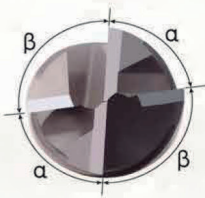
WORLDWIDE RELIABLE PARTNERS

General purpose processing of stainless steel
 Strong anti-stick tool ability, improve tool life
 Non-uniform special tool design, reduce machining vibration
 Procesamiento de uso general de acero inoxidable
 Fuerte capacidad de herramienta antiadherente, mejora la vida útil de la herramienta
 Diseño de herramienta especial no uniforme, reduce la vibración del mecanizado

Features Características

Irregular indexing angle Ángulo de indexación irregular

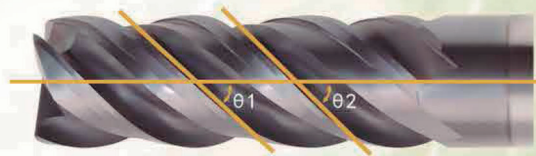
Irregular flute spacing: Decreased vibration
 Espaciado irregular de flautas: disminución de la vibración



[Improved productivity with effective machining due to less vibration]
 [Mayor productividad con un mecanizado eficaz debido a una menor vibración]

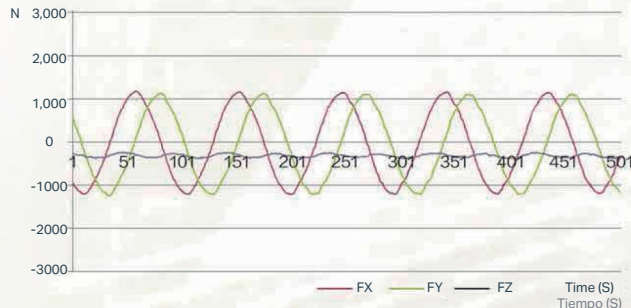
Irregular helix angle Ángulo de hélice irregular

Irregular spiral Angle: vibration suppression, good finish surface
 Ángulo espiral irregular: supresión de vibraciones, buen acabado superficial



Performance(Vibration test) Rendimiento (Prueba de vibración)

[SM - S4]



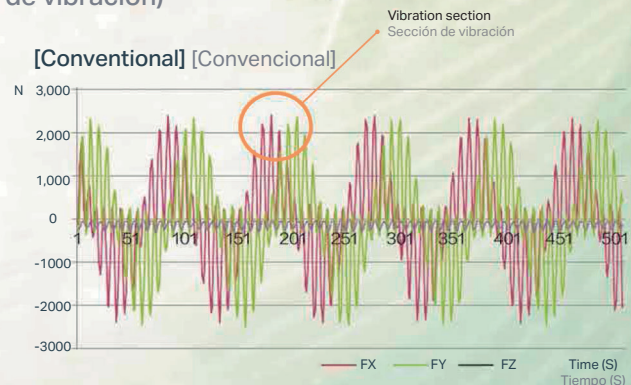
Workpiece Pieza de trabajo
 Cutting condition Condición de corte

Tools Herramientas

Alloy steel Aleación de acero
 $D=\varnothing 8.0$, $n(\text{min}^{-1})=3183.1$, $v_c(\text{m}/\text{min})=80$, $v_f(\text{mm}/\text{min})=713$, $f_z(\text{mm}/\text{t})=0.055$,
 $a_p(\text{mm})=8.0$, $a_e(\text{mm})=8$, Dry Seco
 SM-S4-08200860

Conventional endmill Fresa convencional

[Conventional] [Convencional]



SM Advantage of SM Endmill Ventaja SM de la fresa SM

	Cutting speed Velocidad de corte	Feed (vf) Alimentación (vf)	Vibration Vibración	Quality Calidad
SM Endmill Fresadora SM	30% up 30% más	30% up 30% más	Minimize Minimizar	Excellent Excelente

Higher cutting speed and feed rate increase productivity.
 Less vibration realizes excellent surface finish and higher quality machining.
 Una mayor velocidad de corte y avance aumentan la productividad.
 Menos vibración logra un excelente acabado superficial y un mecanizado de mayor calidad.

AL

Super bright aluminium processing series

Serie de procesamiento de aluminio
superbrillante



HIGHLIGHT-DESTACABLE

Suitable for high efficient and super bright processing of aluminium alloy materials

Variable helix angle and differential flute pitch, reduces and eliminates vibration
High precision of machined surface

Adecuado para procesamiento altamente eficiente y super-brillante de materiales de aleación de aluminio.

Ángulo de hélice variable y paso de flauta diferencial, reduce y elimina la vibración

Alta precisión de la superficie mecanizada.

Special edge design, effectively solve the problem of sticking
Diseño de borde especial, resuelve eficazmente el problema del pegado

SOCIOS CONFIABLES EN TODO EL MUNDO

WORLDWIDE RELIABLE PARTNERS

Achieve high-efficiency & high-precision machining for 3-flute end mill

Excellent cutting effect and high vibration resistance

High stability in a variety of processing

Logre un mecanizado de alta eficiencia y alta precisión para fresas de mango de 3 flautas

Excelente efecto de corte y alta resistencia a las vibraciones

Alta estabilidad en una variedad de procesamiento

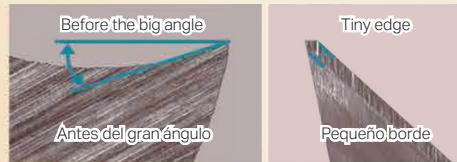
1 Inhibition of burr Inhibición de rebabas

Large front Angle and small edge achieve excellent cutting effect

El gran ángulo frontal y el borde pequeño logran un excelente efecto de corte

The front Angle is compared to the edge
El ángulo frontal se compara con el borde

AL-S3 (comparison of our company) (comparación de nuestra empresa)



Other company products C Otros productos de la empresa C



Comparison of burr state after processing Comparación del estado de las rebabas después del procesamiento
Parameter: $n = 11,700 \text{ min}^{-1}$, $V_f = 4,600 \text{ mm/min}$, $ap \times ae = 10 \times 1 \text{ mm}$
Processing diameter $\varnothing 10$, processing handles, undercut, wet, HSK A63. By cutting material: 7A09
Parámetro: $n = 11,700 \text{ min}^{-1}$, $V_f = 4,600 \text{ mm/min}$, $ap \times ae = 10 \times 1 \text{ mm}$
Diámetro de procesamiento $\varnothing 10$, asos de procesamiento, socavado, húmedo, HSK A63. Por material de corte: 7A09

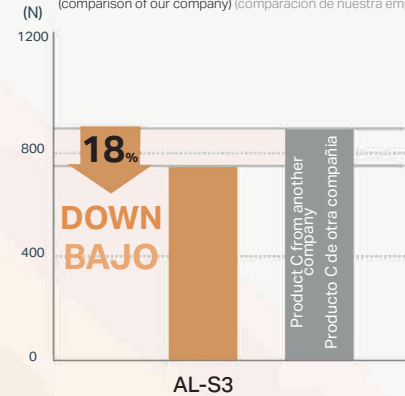
Comparison of burr state after processing Comparación del estado de las rebabas después del procesamiento
(comparison of our company) (comparación de nuestra empresa)



Other company products C Otros productos de la empresa C



Cutting resistance (net forces) contrast
Contraste de resistencia al corte (fuerzas netas)
(comparison of our company) (comparación de nuestra empresa)



Cutting parameter: $n = 11,700 \text{ min}^{-1}$, $V_f = 3,400 \text{ mm/min}$
 $ap \times ae = 10 \times 10 \text{ mm}$ Processing diameter $\varnothing 10$, cutting processing, wet, BT50. By cutting material: 5A02
Parámetro de corte: $n = 11,700 \text{ min}^{-1}$, $V_f = 3,400 \text{ mm/min}$
 $ap \times ae = 10 \times 10 \text{ mm}$ Diámetro de procesamiento $\varnothing 10$, procesamiento de corte, húmedo, BT50. Por material de corte: 5A02

2 Strong vibration resistance Fuerte resistencia a las vibraciones

Ensure the thickness of large core, to achieve high vibration tool performance

Asegure el espesor del núcleo grande para lograr un rendimiento de herramienta de alta vibración

The core thickness contrast
El contraste del espesor del núcleo

(comparison of our company) (comparación de nuestra empresa)

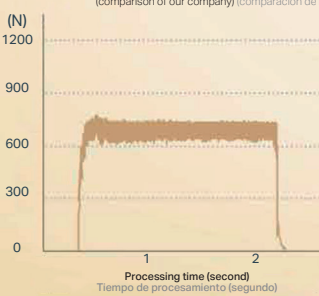
AL-S3



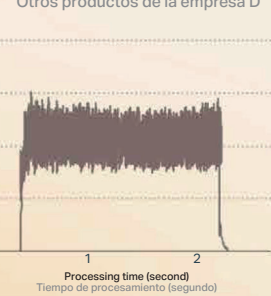
Other company products D Otros productos de la empresa D

Cutting resistance (net forces) contrast
Contraste de resistencia al corte (fuerzas netas)
(comparison of our company) (comparación de nuestra empresa)

AL-S3



Other company products D Otros productos de la empresa D



Cutting parameter: $n = 11,700 \text{ min}^{-1}$, $V_f = 3,400 \text{ mm/min}$, $ap \times ae = 10 \times 10 \text{ mm}$, Processing diameter $\varnothing 10$, Cutting processing, Wet, BT50. By cutting material: 5A02
Parámetro de corte: $n = 11,700 \text{ min}^{-1}$, $V_f = 3,400 \text{ mm/min}$, $ap \times ae = 10 \times 10 \text{ mm}$, Diámetro de procesamiento $\varnothing 10$, Procesamiento de corte, Húmedo, BT50. Por material de corte: 5A02

Groove processing bottom contrast Contraste inferior del procesamiento de ranuras
(comparison of our company) (comparación de nuestra empresa)

AL-S3



Other company products E Otros productos de la empresa E



Other company products F Otros productos de la empresa F



Cutting parameter: $n = 11,100 \text{ min}^{-1}$, $V_f = 2,600 \text{ mm/min}$, $ap = 10 \text{ mm}$, wet, cutting processing: 5A02
Parámetro de corte: $n = 11,100 \text{ min}^{-1}$, $V_f = 2,600 \text{ mm/min}$, $ap = 10 \text{ mm}$, húmedo, procesamiento de corte: 5A02



MM

MM SUITABLE FOR MICRO DIAMETER POCKET MILLING **MM APTO PARA FRESADO DE BOLSILLO MICRO DIÁMETRO**

Suitable for deep groove processing various steel and cast iron

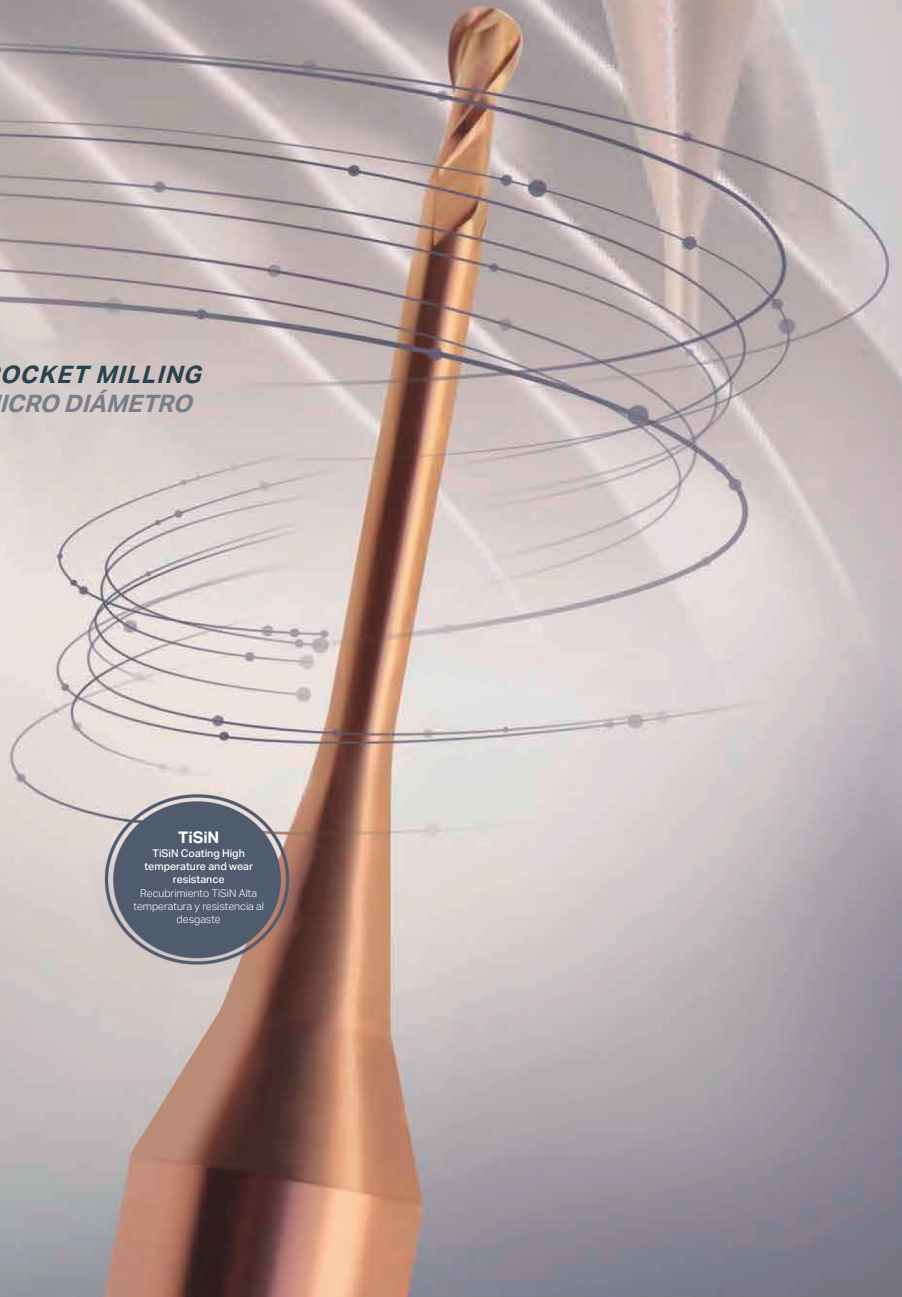
High-performance TiSiN coating for high temperature and wear resistance

Long neck design avoid collisions with workpiece, Suitable for deep pocket milling of mold rib

Adecuado para el procesamiento de ranuras profundas de diversos tipos de acero y hierro fundido.

Recubrimiento TiSiN de alto rendimiento para alta temperatura y resistencia al desgaste.

El diseño de cuello largo evita colisiones con la pieza de trabajo. Adecuado para fresado profundo de costillas de molde.



TiSiN

TiSiN Coating High temperature and wear resistance

Recubrimiento TiSiN Alta temperatura y resistencia al desgaste



Fine grinding, high precise sizes
Rectificado fino, tamaños de alta precisión

SOCIOS CONFIABLES EN TODO EL MUNDO

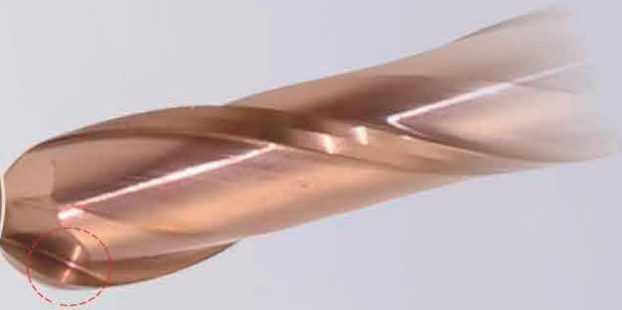
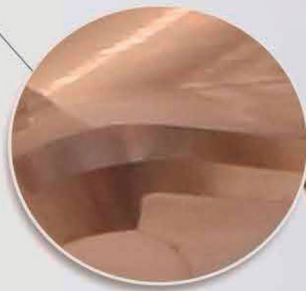
WORLDWIDE RELIABLE PARTNERS

www.tophighsolutions.com

Suitable for deep pocket milling of mold rib areas; Fine grinding, High precise sizes
Adecuado para fresado de cavidades profundas en áreas de nervaduras de moldes; Rectificado fino, tamaños de alta precisión

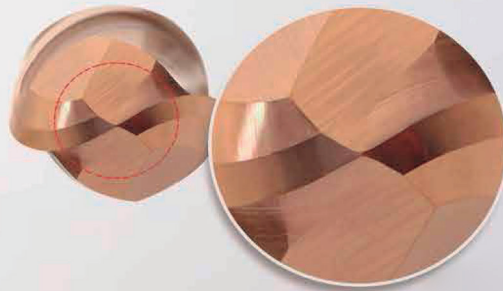
Cut edge shape Forma del borde cortado

- Accurate passivation of cutting edge, improve tool life
- Can suppress the unevenness of the surface and ensure perfect finish
- Pasivación precisa del filo, mejora la vida útil de la herramienta.
- Puede suprimir las irregularidades de la superficie y garantizar un acabado perfecto.



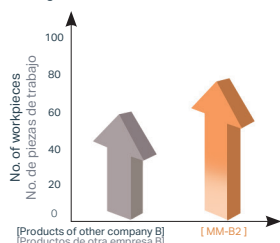
The ball head end teeth Los dientes del extremo de la cabeza esférica

- Knife edge optimization, fine grinding, precise size
- Cutting edges of the ball point shape provide excellent wear resistance and cutting performance
- Optimización del filo de la cuchilla, rectificado fino, tamaño preciso
- Los bordes cortantes con forma de punta de bola proporcionan una excelente resistencia al desgaste y rendimiento de corte.



Processing Case - Comparison Caso de procesamiento: comparación

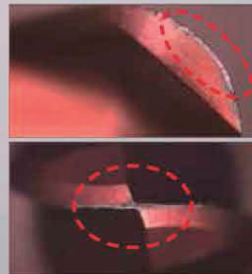
[Cutting Performance] [Rendimiento de corte]



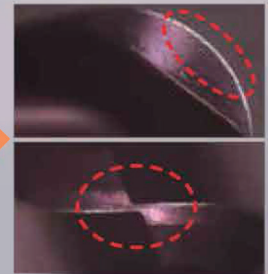
New TiSiN coating has excellent toughness and wear resistance
El nuevo revestimiento TiSiN tiene una excelente tenacidad y resistencia al desgaste

Picture of abrasion comparison Imagen de comparación de abrasión

- Workpiece Pieza de trabajo Co-Cr
- Cutting conditions Condiciones de corte
vc (m/mm) =150
fz (mm/t) =0.08
ap (mm) =0.13
ae (mm) =0.7
Wet Mojado
- Tool Herramienta MM-B2



[Products of other companies B]
[Productos de otras empresas B]



[MM-B2]

TMR

End mills for roughing applications

Fresas para aplicaciones de desbaste



Suitable for roughing normal steel & cast iron, special chip breaker cutting edge for groove and side machining, Altin coating.

Adecuado para desbaste de acero normal y hierro fundido, filo rompevirutas especial para mecanizado de ranuras y laterales, revestimiento Altin.



Improve cutting edge wear resistance and tool rigidity

Mejorar la resistencia al desgaste del filo y la rigidez de la herramienta

SOCIOS CONFIABLES EN TODO EL MUNDO

WORLDWIDE RELIABLE PARTNERS

End mill for roughing, Low cutting force Apply to cost - effective cutting edge design for rough machining

Fresa para desbaste, fuerza de corte baja. Aplicar a un diseño de filo rentable para mecanizado en desbaste

Soft cutting Corte suave

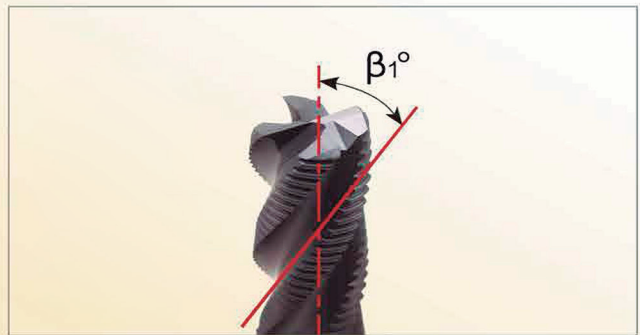
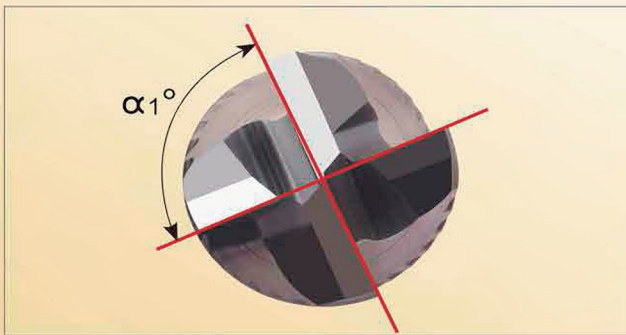
- Serrated cutting edges
- 3R combination
- Bordes dentados
- Combinación 3R

Lower Cutting Force Menor fuerza de corte

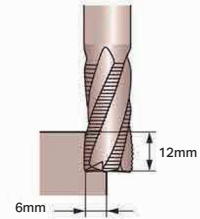
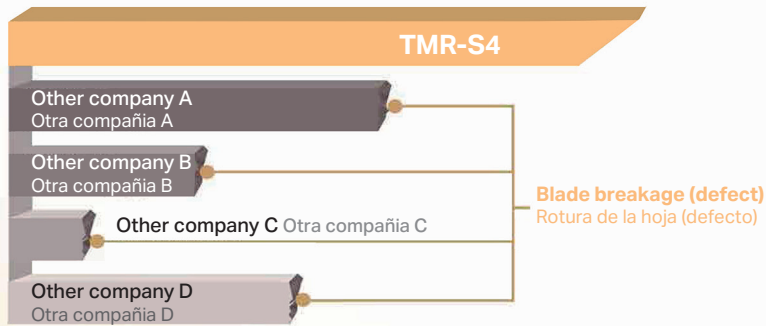
- Ideal for medium to rough cutting
- Special edge design
- Ideal para corte medio a áspero
- Diseño de borde especial



High quality results Resultados de alta calidad



Tool life comparison Comparación de vida útil



Cutting Condition Condición de corte

Endmill Fresa	TMR-S4-12301275
Workpiece material Material de la pieza	SUS304
Speed Velocidad	1,600min ⁻¹
Feeding speed Velocidad de alimentación	320mm/min
Cutting mode Modo de corte	Side milling, slot milling Fresado lateral, fresado de ranuras

Cutting instance Instancia de corte

Case 1 Caso 1

Cutting performance comparison Comparación de rendimiento de corte

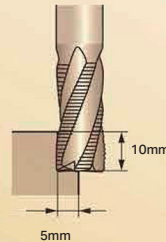


No Damage
Sin Daño

TMR-S4



Other company products
Productos de otra compañía



Cutting Condition Condición de corte

Endmill Fresa	TMR-S4-12301275
Workpiece material Material de la pieza	S55C(200HB)
Speed Velocidad	4,800min ⁻¹ (150m/min)
Cutting mode Modo de corte	Side milling, slot milling Fresado lateral, fresado de ranuras



EMR

End mills for roughing applications Fresas para aplicaciones de desbaste

Suitable for roughing of steels & cast iron
Special cutting edge chipbreaker treatment,
suitable for rough machining of groove and side
wall of workpiece

TiSiN Coating

Adecuado para desbaste de acero frente a hierro
fundido

Tratamiento especial rompevirutas de vanguardia,
adecuado para el mecanizado en desbaste de ranuras
y paredes laterales de la pieza de trabajo.

Recubrimiento TiSiN



Improve cutting edge wear resistance and tool rigidity
Mejorar la resistencia al desgaste del filo y la rigidez de la herramienta

SOCIOS CONFIABLES EN TODO EL MUNDO

WORLDWIDE RELIABLE PARTNERS

Multi-blade specifications to achieve high efficiency, stable processing, can be corresponding to steel, cast iron rough processing

Las especificaciones de múltiples hojas para lograr una alta eficiencia y un procesamiento estable pueden corresponder al procesamiento en bruto de acero y hierro fundido.

1

Multi - blade specification to achieve high efficiency processing

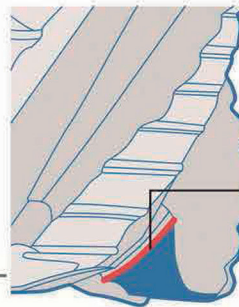
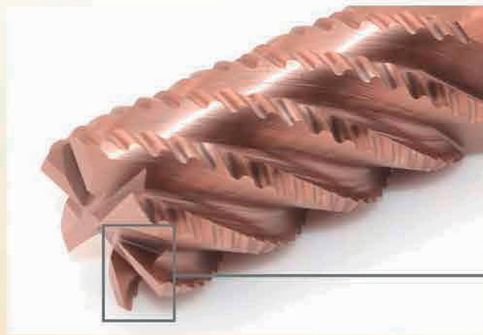
Especificación de múltiples cuchillas para lograr un procesamiento de alta eficiencia

Multi-blade specification. Unique blade shape improves chip removal performance

Especificación de múltiples cuchillas. La forma única de la hoja mejora el rendimiento de eliminación de virutas

Blade specifications (Ø16-6T) Especificaciones de la hoja (Ø16-6T)

Unique edge shape Forma de borde única



Helical blade structure can help groove do chip removal
La estructura de hoja helicoidal puede ayudar a que la ranura elimine las virutas

Chip discharge is improved
Se mejora la descarga de virutas

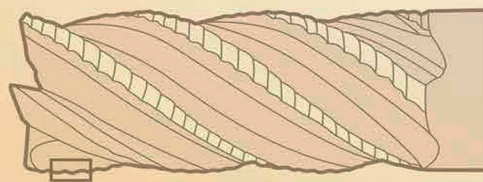
2

Resistance to collapse

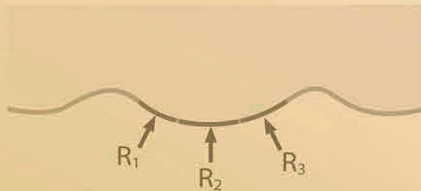
Resistencia al colapso

Special R-angle wave cutting edge, stress concentration, suppression of chipping and achieve stable processing

Borde de corte ondulado en ángulo R especial, concentración de tensión, supresión de astillas y lograr un procesamiento estable



Special R-angle wave cutting edge
Borde de corte ondulado en ángulo R especial



Different R angles combine to form a waveform cutting edge (composite R Angle shape) to ease the stress concentration and improve the collapse resistance

Diferentes ángulos R se combinan para formar un filo de forma de onda (forma de ángulo R compuesto) para facilitar la concentración de tensión y mejorar la resistencia al colapso

The tip state after processing 12m

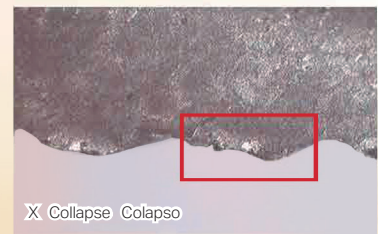
El estado de la punta después del procesamiento 12 m

(comparison of our company) (comparación de nuestra empresa)



○ Favorable Favorable

EMR-S6



× Collapse Colapso

Other company products B Otros productos de compañía B

Cutting condition: n = 2900 min⁻¹, Vf = 712 mm/min, ap x ae = 5x3 mm, processing diameter Ø10, wet, processing steps

By cutting material: Ti-6Al-4V

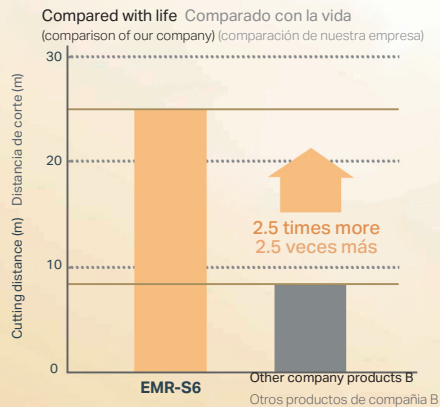
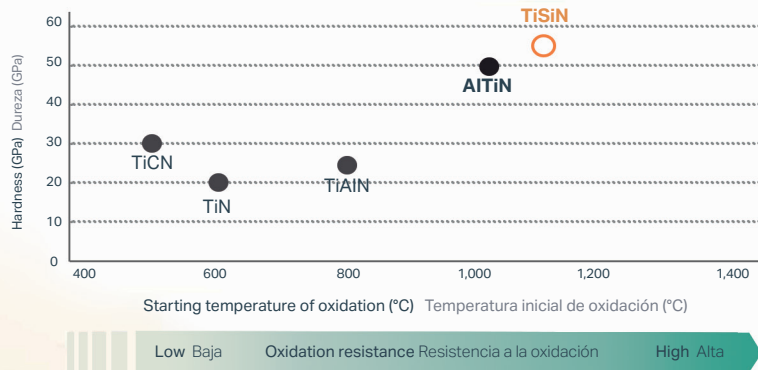
Condición de corte: n = 2900 min⁻¹, Vf = 712 mm/min, ap x ae = 5x3 mm, diámetro de procesamiento Ø10, húmedo, pasos de procesamiento

Por material de corte: Ti-6Al-4V

3 Achieve long life, stable processing Logre una larga vida útil y un procesamiento estable

(TiSiN) PVD coating with excellent wear resistance and oxidation resistance
(TiSiN) Revestimiento PVD con excelente resistencia al desgaste y a la oxidación

Coating Characteristics Características del recubrimiento



The tip state after 8.4m processing
El estado de la punta después de un procesamiento de 8,4 m

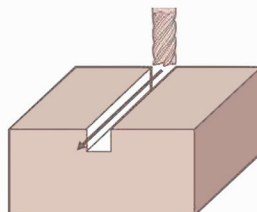


Cutting condition: $n = 3500 \text{ min}^{-1}$, $V_f = 840 \text{ mm/min}$, $a_p \times a_e = 5 \times 4.8 \text{ mm}$, Processing diameter $\varnothing 16$, processing steps, wet. By cutting material: SUS304
Condición de corte: $n = 3500 \text{ min}^{-1}$, $V_f = 840 \text{ mm/min}$, $a_p \times a_e = 5 \times 4.8 \text{ mm}$, Diámetro de procesamiento $\varnothing 16$, pasos de procesamiento, húmedo. Por material de corte: SUS304

Machining Example Ejemplo de mecanizado

Testware SUS304 Software de prueba SUS304

$n = 1.800 \text{ min}^{-1}$
 $V_c = 56 \text{ m/min}$
 $V_f = 250 \text{ mm/min}$
 $f_z = 0.027 \text{ mm/t}$
 $a_p \times a_e = 3 \times 10 \text{ mm}$ (Grooving processing) (Procesamiento de ranurado)
3 feed (alimentación)
Wet (internal to the oil)
Mojado (Interno al aceite)
EMR-S6-16



The spindle load
La carga del husillo

EMR
S6-16

20 %

Other company products C
Otros productos de compañía C

30 %

10 %

The spindle load
La carga del husillo

5RHF reduces spindle load by 10%. The cutting sound is quiet, the vibration of equipment is reduced, and the finished surface is good
5RHF reduce la carga del husillo en un 10%. El sonido de corte es silencioso, la vibración del equipo se reduce y la superficie terminada es buena

(From user reviews)
(De opiniones de usuarios)

P M K N S H	Tool-Shape Forma de Herramienta	T	Shank Mango	Blade Length Longitud de cuchilla	Coating Revestimiento	Series Serie	D/mm	Dimension Page Página de dimensiones	Cutting Parameters Page Página de parámetros de corte
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Square Cuadrada

•	•		2	h6 SHANK		TiSiN	TM550	D1-D20	01	01
•	•		2	h6 SHANK		TiSiN	TM550	D1-D20	02	02
•	•		3	h6 SHANK		TiSiN	TM550	D1-D20	03	03
•	•		3	h6 SHANK		TiSiN	TM550	D1-D20	04	04
•	•		4	h6 SHANK		TiSiN	TM550	D1-D20	05	05
•	•		4	h6 SHANK		TiSiN	TM550	D1-D20	06	06
•	•		6	h6 SHANK		TiSiN	TM550	D1-D20	07	07
•	•		6	h6 SHANK		TiSiN	TM550	D1-D20	08	08

Ballnose Esférica

•	•		2	h6 SHANK		TiSiN	TM550	D1-D20	09	09
•	•		2	h6 SHANK		TiSiN	TM550	D1-D20	10	10
•	•		4	h6 SHANK		TiSiN	TM550	D1-D20	11	11
•	•		4	h6 SHANK		TiSiN	TM550	D1-D20	12	12

Corner Radius Radio de esquina

•	•		2	h6 SHANK		TiSiN	TM550	D1-D20	13-14	14
•	•		2	h6 SHANK		TiSiN	TM550	D1-D20	15-16	16
•	•		3	h6 SHANK		TiSiN	TM550	D1-D20	17-18	18
•	•		3	h6 SHANK		TiSiN	TM550	D1-D20	19-20	20
•	•		4	h6 SHANK		TiSiN	TM550	D1-D20	21-22	22
•	•		4	h6 SHANK		TiSiN	TM550	D1-D20	23-24	24
•	•		6	h6 SHANK		TiSiN	TM550	D1-D20	25	25
•	•		6	h6 SHANK		TiSiN	TM550	D1-D20	26	26

P	M	K	N	S	H	Tool-Shape Forma de Herramienta	T	Shank Mango	Blade Length Longitud de cuchilla	Coating Revestimiento	Series Serie	D/mm	Dimension Page Página de dimensiones	Cutting Parameters Page Página de parámetros de corte
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Square Cuadrada

•	•	•					2	h6 SHANK		TiSiN	TM	D1-D20	27	27
•	•	•					2	h6 SHANK		TiSiN	TM	D1-D20	28	28
•	•	•					3	h6 SHANK		TiSiN	TM	D1-D20	29	29
•	•	•					3	h6 SHANK		TiSiN	TM	D1-D20	30	30
•	•	•					4	h6 SHANK		TiSiN	TM	D1-D20	31	31
•	•	•					4	h6 SHANK		TiSiN	TM	D1-D20	32	32
•	•	•					6	h6 SHANK		TiSiN	TM	D1-D20	33	33
•	•	•					6	h6 SHANK		TiSiN	TM	D1-D20	34	34

Ballnose Esférica

•	•	•					2	h6 SHANK		TiSiN	TM	D1-D20	35	35
•	•	•					2	h6 SHANK		TiSiN	TM	D1-D20	36	36
•	•	•					4	h6 SHANK		TiSiN	TM	D1-D20	37	37
•	•	•					4	h6 SHANK		TiSiN	TM	D1-D20	38	38

Corner Radius Radio de esquina

•	•	•					2	h6 SHANK		TiSiN	TM	D1-D20	39-40	40
•	•	•					2	h6 SHANK		TiSiN	TM	D1-D20	41-42	42
•	•	•					3	h6 SHANK		TiSiN	TM	D1-D20	43-44	44
•	•	•					3	h6 SHANK		TiSiN	TM	D1-D20	45-46	46
•	•	•					4	h6 SHANK		TiSiN	TM	D1-D20	47-48	48
•	•	•					4	h6 SHANK		TiSiN	TM	D1-D20	49-50	50
•	•	•					6	h6 SHANK		TiSiN	TM	D1-D20	51	51
•	•	•					6	h6 SHANK		TiSiN	TM	D1-D20	52	52

P	M	K	N	S	H	Tool-Shape Forma de Herramienta	T	Shank Mango	Blade Length Longitud de cuchilla	Coating Revestimiento	Series Serie	D/mm	Dimension Page Página de dimensiones	Cutting Parameters Page Página de parámetros de corte
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Square Cuadrada

•	•	•	•	•	•		2	h6 SHANK		ALL	EM	D1-D20	53	53
•	•	•	•	•	•		2	h6 SHANK		ALL	EM	D1-D20	54	54
•	•	•	•	•	•		3	h6 SHANK		ALL	EM	D1-D20	55	-
•	•	•	•	•	•		3	h6 SHANK		ALL	EM	D1-D20	56	-
•	•	•	•	•	•		4	h6 SHANK		ALL	EM	D1-D20	57	57
•	•	•	•	•	•		4	h6 SHANK		ALL	EM	D1-D20	58	58

Ballnose Esférica

•	•	•	•	•	•		2	h6 SHANK		ALL	EM	D1-D20	59	59
•	•	•	•	•	•		2	h6 SHANK		ALL	EM	D1-D20	60	60
•	•	•	•	•	•		4	h6 SHANK		ALL	EM	D1-D20	61	61
•	•	•	•	•	•		4	h6 SHANK		ALL	EM	D1-D20	62	62

Corner Radius Radio de esquina

•	•	•	•	•	•		2	h6 SHANK		ALL	EM	D1-D20	63-64	64
•	•	•	•	•	•		2	h6 SHANK		ALL	EM	D1-D20	65-66	66
•	•	•	•	•	•		3	h6 SHANK		ALL	EM	D1-D20	67-68	-
•	•	•	•	•	•		3	h6 SHANK		ALL	EM	D1-D20	69-70	-
•	•	•	•	•	•		4	h6 SHANK		ALL	EM	D1-D20	71-72	72
•	•	•	•	•	•		4	h6 SHANK		ALL	EM	D1-D20	73-74	74

P	M	K	N	S	H	Tool-Shape Forma de Herramienta	T	Shank Mango	Blade Length Longitud de cuchilla	Coating Revestimiento	Series Serie	D/mm	Dimension Page Página de dimensiones	Cutting Parameters Page Página de parámetros de corte
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Square Cuadrada

•	•	•	•	•	•		2	h6 SHANK		ACO	XM	D1-D20	75	75
•	•	•	•	•	•		2	h6 SHANK		ACO	XM	D1-D20	76	76
•	•	•	•	•	•		3	h6 SHANK		ACO	XM	D1-D20	77	-
•	•	•	•	•	•		3	h6 SHANK		ACO	XM	D1-D20	78	-
•	•	•	•	•	•		4	h6 SHANK		ACO	XM	D1-D20	79	79
•	•	•	•	•	•		4	h6 SHANK		ACO	XM	D1-D20	80	58

Ballnose Esférica

•	•	•	•	•	•		2	h6 SHANK		ACO	XM	D1-D20	81	-
•	•	•	•	•	•		2	h6 SHANK		ACO	XM	D1-D20	82	-
•	•	•	•	•	•		4	h6 SHANK		ACO	XM	D1-D20	83	-
•	•	•	•	•	•		4	h6 SHANK		ACO	XM	D1-D20	84	-

Corner Radius Radio de esquina

•	•	•	•	•	•		2	h6 SHANK		ACO	XM	D1-D20	85-86	86
•	•	•	•	•	•		2	h6 SHANK		ACO	XM	D1-D20	87-88	88
•	•	•	•	•	•		3	h6 SHANK		ACO	XM	D1-D20	89-90	-
•	•	•	•	•	•		3	h6 SHANK		ACO	XM	D1-D20	91-92	-
•	•	•	•	•	•		4	h6 SHANK		ACO	XM	D1-D20	93-94	94
•	•	•	•	•	•		4	h6 SHANK		ACO	XM	D1-D20	95-96	96

Tool series catalog

Catálogo de series de herramientas

P M K N S H	Tool-Shape Forma de Herramienta	T	Shank Mango	Blade Length Longitud de cuchilla	Coating Revestimiento	Series Serie	D/mm	Dimension Page Página de dimensiones	Cutting Parameters Page Página de parámetros de corte
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Square Cuadrada

• • • • •		2	h6 SHANK		XT	SM	D1-D20	97	97
• • • • •		2	h6 SHANK		XT	SM	D1-D20	98	98
• • • • •		3	h6 SHANK		XT	SM	D1-D20	99	-
• • • • •		3	h6 SHANK		XT	SM	D1-D20	100	-
• • • • •		4	h6 SHANK		XT	SM	D1-D20	101	101
• • • • •		4	h6 SHANK		XT	SM	D1-D20	102	102

Ballnose Esférica

• • • • •		2	h6 SHANK		XT	SM	D1-D20	103	103
• • • • •		2	h6 SHANK		XT	SM	D1-D20	104	104
• • • • •		4	h6 SHANK		XT	SM	D1-D20	105	105
• • • • •		4	h6 SHANK		XT	SM	D1-D20	106	106

Corner Radius Radio de esquina

• • • • •		2	h6 SHANK		XT	SM	D1-D20	107-108	108
• • • • •		2	h6 SHANK		XT	SM	D1-D20	109-110	110
• • • • •		3	h6 SHANK		XT	SM	D1-D20	111-112	-
• • • • •		3	h6 SHANK		XT	SM	D1-D20	113-114	-
• • • • •		4	h6 SHANK		XT	SM	D1-D20	115-116	116
• • • • •		4	h6 SHANK		XT	SM	D1-D20	117-118	118

P M K N S H	Tool-Shape Forma de Herramienta	T	Shank Mango	Blade Length Longitud de cuchilla	Coating Revestimiento	Series Serie	D/mm	Dimension Page Página de dimensiones	Cutting Parameters Page Página de parámetros de corte
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Square Cuadrada

•		2	h6 SHANK			AL	D1-D20	119	119
•		2	h6 SHANK			AL	D1-D20	120	120
•		3	h6 SHANK			AL	D1-D20	121	121
•		3	h6 SHANK			AL	D1-D20	122	122

Ballnose Esférica

•		2	h6 SHANK			AL	D1-D20	123	123
•		2	h6 SHANK			AL	D1-D20	124	124
•		4	h6 SHANK			AL	D1-D20	125	125
•		4	h6 SHANK			AL	D1-D20	126	126

Corner Radius Radio de esquina

• • •		2	h6 SHANK			AL	D1-D20	127-128	128
• • •		2	h6 SHANK			AL	D1-D20	129-130	130
• • •		3	h6 SHANK			AL	D1-D20	131-132	132
• • •		3	h6 SHANK			AL	D1-D20	133-134	134

Square Cuadrada

• • •		2	h6 SHANK		TiSiN	MM	D1-D20	135-136	135-136
• • •		2	h6 SHANK		TiSiN	MM	D1-D20	137-140	137-140

Ballnose Esférica

• • •		2	h6 SHANK		TiSiN	MM	D1-D20	141	141
• • •		2	h6 SHANK		TiSiN	MM	D1-D20	142-144	142-144

Square Cuadrada

• • •		4	h6 SHANK		ALTiN	TMR	D1-D20	145	145
• • • •		4	h6 SHANK		TiSiN	EMR	D1-D20	146	146



TM550

Suitable for ordinary steel, cast iron materials processing series

Adecuado para series de procesamiento de materiales de acero ordinario y hierro fundido

The special tool design is very suitable for ordinary steel, cast iron materials processing

El diseño especial de la herramienta es muy adecuado para el procesamiento de materiales de acero ordinario y hierro fundido

Cutting Parameters: P1 - 26
Parámetros de Corte: P1 - 26



P. 1 ~ 26



New
Nuevo



TM

Suitable for all kinds of steel general processing series

Adecuado para todo tipo de series de procesamiento general de acero

The design of large helix angle and special edge, very suitable for all kinds of steel general processing

El diseño de gran ángulo de hélice y borde especial, muy adecuado para todo tipo de procesamiento general de acero

Cutting Parameters: P27 - 52
Parámetros de Corte: P27 - 52



P. 27 ~ 52



New
Nuevo



EM

Hard steel, stainless steel high speed and efficient processing series

Serie de procesamiento eficiente y de alta velocidad de acero duro, acero inoxidable

Special cutter design, very suitable for hard steel, stainless steel high-speed and efficient processing

Diseño de cortador especial, muy adecuado para acero duro, acero inoxidable, procesamiento eficiente y de alta velocidad

Cutting Parameters: P53 - 74
Parámetros de Corte: P53 - 74



P. 53 ~ 74



New
Nuevo



XM

High-speed and efficient processing of high hard steel series

Procesamiento eficiente y de alta velocidad de series de acero de alta dureza

The special tool design is very suitable for processing hard steels

El diseño especial de la herramienta es muy adecuado para procesar aceros duros

Cutting Parameters: P75 - 96
Parámetros de Corte: P75 - 96



P. 75 ~ 96



New
Nuevo



SM

Stainless steel, titanium alloy machining series

Serie de mecanizado de acero inoxidable y aleación de titanio

Stainless steel, titanium alloy machining

Serie de mecanizado de acero inoxidable y aleación de titanio

Cutting Parameters: P97 - 118
Parámetros de Corte: P97 - 118



P. 97 ~ 118



LA Super bright aluminum processing series Serie de procesamiento de aluminio superbrillante

Applicable to aluminum alloy material efficient ultra-bright processing
Aplicable al procesamiento ultrabrillante eficiente de materiales de aleación de aluminio

Cutting Parameters: P119 - 134
Parámetros de Corte: P119 - 134



P. 119 ~ 134

MM Suitable for High-precision micro diameter pocket machining series Adecuado para series de mecanizado de bolsillo de micro diámetro de alta precisión

SN2
Micropath long neck flat head Micropath cuello largo cabeza plana
(D005) L1-08, 12, 16, 20, 24.....



BN2
Micropath long neck ball head Micropath cuello largo cabeza esférica
(D005) L1-08, 12, 16, 20, 24.....



Cutting Parameters: P135 - 144
Parámetros de Corte: P135 - 144



P. 135 ~ 144



TMR Rough processing for steel and cast iron material series Procesamiento desbaste para series de materiales de acero y hierro fundido

Suitable for roughing of Low-Carbon Steel & cast iron
Adecuado para desbaste de acero con bajo contenido de carbono y hierro fundido

Cutting Parameters: P145
Parámetros de Corte: 145



P. 145



EMR Rough processing for steel and cast iron material series Procesamiento desbaste para series de materiales de acero y hierro fundido

Suitable for roughing of Hard Steel & cast iron
Apto para desbaste de acero duro y hierro fundido

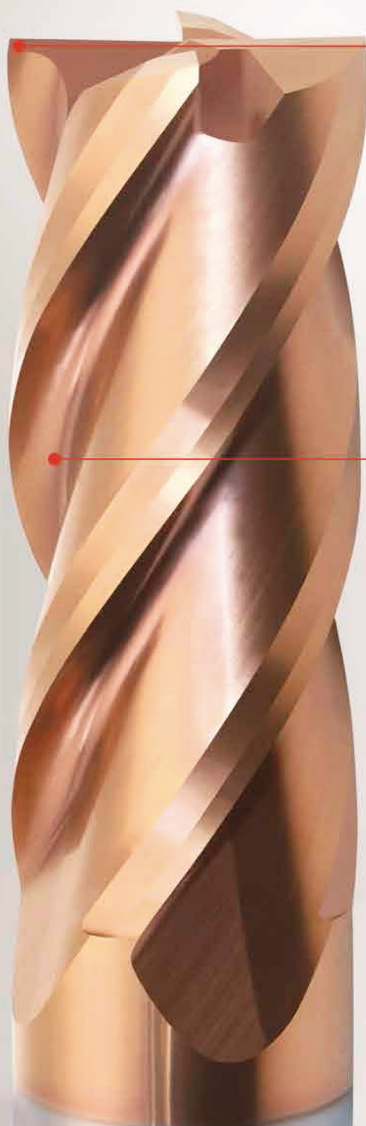
Cutting Parameters: P146
Parámetros de Corte: P146



P.146

TM550

Suitable for ordinary steel, cast iron materials processing
Adecuado para acero ordinario, procesamiento de acero de fundición



Edge Precision passivation.

Improve tool life and workpiece surface finish.
Special angle design and high edge strength ensures stronger versatility.

Pasivado de precisión de bordes.

Mejora la vida útil de la herramienta y el acabado superficial de la pieza.
El diseño especial del ángulo y la gran resistencia del filo garantizan una mayor versatilidad.

Large chip groove design.

The cutting and chip removal are more smooth and stable in the high feed processing.

Diseño de ranura de viruta grande.

El corte y la eliminación de virutas son más suaves y estables en el procesamiento de alto avance.

The special tool design is very suitable for ordinary steel, cast iron materials processing.

El diseño especial de la herramienta es muy adecuado para el procesamiento de acero ordinario y materiales de hierro fundido.



TM550-S4

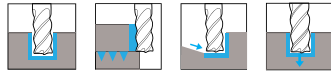


TM550-B2



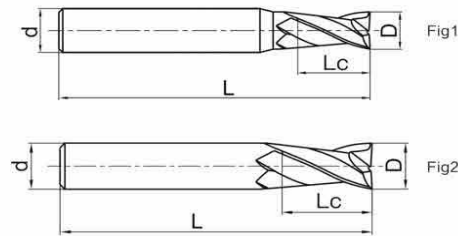
TM550-R4

2 Flutes, Square, Standard Length (TM550-S2) / 2 flautas, cuadradas, longitud estándar (TM550-S2)



P	•
M	
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. Nº de figura	Ordering Code Código de orden
mm	mm	mm	mm			
1,00	3,00	4,00	50	2	1	TM550-S2-01030450
1,50	4,00	4,00	50	2	1	TM550-S2-015040450
2,00	6,00	4,00	50	2	1	TM550-S2-02060450
2,50	8,00	4,00	50	2	1	TM550-S2-025080450
3,00	8,00	4,00	50	2	1	TM550-S2-03080450
4,00	11,0	4,00	50	2	2	TM550-S2-04110450
5,00	13,0	5,00	50	2	1	TM550-S2-05130550
5,00	13,0	6,00	50	2	2	TM550-S2-05130650
6,00	16,0	6,00	50	2	2	TM550-S2-06160650
8,00	20,0	8,00	60	2	2	TM550-S2-08200860
10,0	25,0	10,0	75	2	2	TM550-S2-10251075
12,0	30,0	12,0	75	2	2	TM550-S2-12301275
14,0	30,0	14,0	75	2	2	TM550-S2-14301475
16,0	45,0	16,0	100	2	2	TM550-S2-164516100
18,0	45,0	18,0	100	2	2	TM550-S2-184518100
20,0	45,0	20,0	100	2	2	TM550-S2-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1070	1305	920	930	920	860	860	860
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					610	580	550	620	560	500	410	370
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	690	660	590	650	610	590	490	460
					16990	12740	8490	6370	5100	4250	3190	2550
					850	820	820	750	700	680	610	560
					14860	11150	7430	5570	4460	3720	2790	2230
					650	670	670	620	580	560	500	460

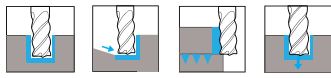
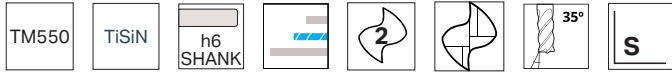
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

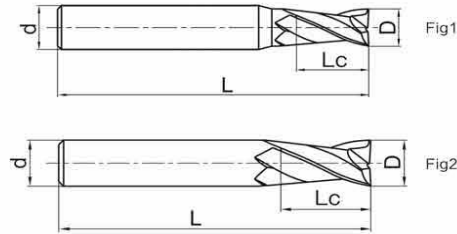
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

2 Flutes, Square, Standard Length (TM550-SL2) / 2 flautas, cuadradas, longitud estándar (TM550-SL2)



P	•
M	
K	•
N	
S	
H	



Unit	(mm)	
Unidad		
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No.	Ordering Code
mm	mm	mm	mm			Código de orden
4,00	15,0	4,00	75	2	2	TM550-SL2-04150475
4,00	20,0	4,00	100	2	2	TM550-SL2-042004100
5,00	20,0	5,00	75	2	2	TM550-SL2-05200575
5,00	25,0	5,00	100	2	2	TM550-SL2-052505100
6,00	20,0	6,00	75	2	2	TM550-SL2-06200675
6,00	25,0	6,00	100	2	2	TM550-SL2-062506100
8,00	25,0	8,00	75	2	2	TM550-SL2-08250875
8,00	30,0	8,00	100	2	2	TM550-SL2-083008100
10,0	35,0	10,0	100	2	2	TM550-SL2-103510100
10,0	45,0	10,0	150	2	2	TM550-SL2-104510150
12,0	40,0	12,0	100	2	2	TM550-SL2-124012100
12,0	50,0	12,0	150	2	2	TM550-SL2-125012150
14,0	40,0	14,0	100	2	2	TM550-SL2-144014100
14,0	50,0	14,0	150	2	2	TM550-SL2-145014150
16,0	55,0	16,0	150	2	2	TM550-SL2-165516150
18,0	55,0	18,0	150	2	2	TM550-SL2-185518150
20,0	55,0	20,0	150	2	2	TM550-SL2-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1070	1305	920	930	920	860	860	860
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	610	580	550	620	560	500	410	370
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					690	660	590	650	610	590	490	460
					16990	12740	8490	6370	5100	4250	3190	2550
					850	820	820	750	700	680	610	560
					14860	11150	7430	5570	4460	3720	2790	2230
					650	670	670	620	580	560	500	460

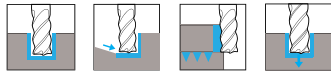
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

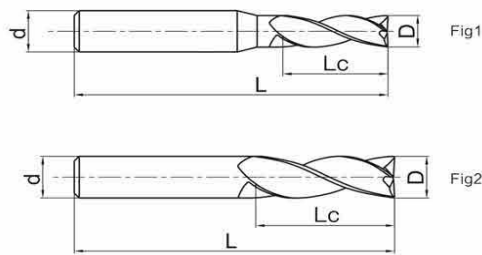
Acero Ordinario, Hierro Fundido

3 Flutes, Square, Standard Length (TM550-S3) / 3 flautas, cuadradas, longitud estándar (TM550-S3)



P	•
M	
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. Nº de figura
1,00	3,00	4,00	50	3	1
1,50	4,00	4,00	50	3	1
2,00	6,00	4,00	50	3	1
2,50	8,00	4,00	50	3	1
3,00	8,00	4,00	50	3	1
4,00	11,0	4,00	50	3	2
5,00	13,0	5,00	50	3	2
5,00	13,0	6,00	50	3	1
6,00	16,0	6,00	50	3	2
8,00	20,0	8,00	60	3	2
10,0	25,0	10,0	75	3	2
12,0	30,0	12,0	75	3	2
14,0	30,0	14,0	75	3	2
16,0	45,0	16,0	100	3	2
18,0	45,0	18,0	100	3	2
20,0	45,0	20,0	100	3	2

Ordering Code Código de orden
TM550-S3-01030450
TM550-S3-015040450
TM550-S3-02060450
TM550-S3-025080450
TM550-S3-03080450
TM550-S3-04110450
TM550-S3-05130550
TM550-S3-05130650
TM550-S3-06160650
TM550-S3-08200860
TM550-S3-10251075
TM550-S3-12301275
TM550-S3-14301475
TM550-S3-164516100
TM550-S3-184518100
TM550-S3-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1040	990	890	980	920	880	740	680
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

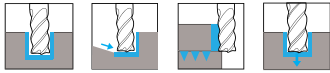
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

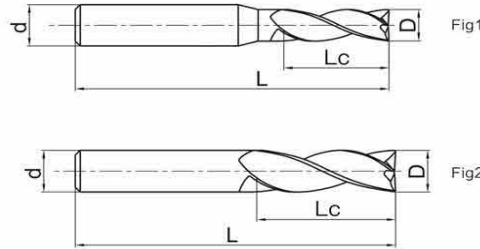
Acero Ordinario, Hierro Fundido

3 Flutes, Square, Standard Length (TM550-SL3) / 3 flautas, cuadradas, longitud estándar (TM550-SL3)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
4,00	15,0	4,00	75	3	2	TM550-SL3-04150475
4,00	20,0	4,00	100	3	2	TM550-SL3-042004100
5,00	20,0	5,00	75	3	2	TM550-SL3-05200575
5,00	25,0	5,00	100	3	2	TM550-SL3-052505100
6,00	20,0	6,00	75	3	2	TM550-SL3-06200675
6,00	25,0	6,00	100	3	2	TM550-SL3-062506100
8,00	25,0	8,00	75	3	2	TM550-SL3-08250875
8,00	30,0	8,00	100	3	2	TM550-SL3-083008100
10,0	35,0	10,0	100	3	2	TM550-SL3-103510100
10,0	45,0	10,0	150	3	2	TM550-SL3-104510150
12,0	40,0	12,0	100	3	2	TM550-SL3-124012100
12,0	50,0	12,0	150	3	2	TM550-SL3-125012150
14,0	40,0	14,0	100	3	2	TM550-SL3-144014100
14,0	50,0	14,0	150	3	2	TM550-SL3-145014150
16,0	55,0	16,0	150	3	2	TM550-SL3-165516150
18,0	55,0	18,0	150	3	2	TM550-SL3-185518150
20,0	55,0	20,0	150	3	2	TM550-SL3-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					910	870	830	930	850	760	620	560
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1040	990	890	980	920	880	740	680
					16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

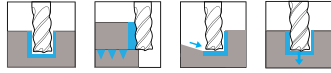
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

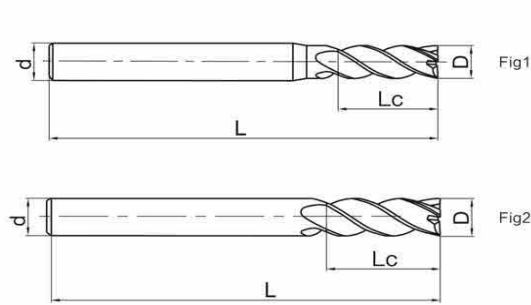
Acero Ordinario, Hierro Fundido

4 Flutes, Square, Standard Length (TM550-S4) / 2 flautas, cuadradas, longitud estándar (TM550-S4)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. Nº de figura	Ordering Code Código de orden
1.00	3.00	4.00	50	4	1	TM550-S4-01030450
1.50	4.00	4.00	50	4	1	TM550-S4-015040450
2.00	6.00	4.00	50	4	1	TM550-S4-02060450
2.50	8.00	4.00	50	4	1	TM550-S4-025080450
3.00	8.00	4.00	50	4	1	TM550-S4-03080450
4.00	11.0	4.00	50	4	2	TM550-S4-04110450
5.00	13.0	5.00	50	4	2	TM550-S4-05130550
5.00	13.0	6.00	50	4	1	TM550-S4-05130650
6.00	16.0	6.00	50	4	2	TM550-S4-06160650
8.00	20.0	8.00	60	4	2	TM550-S4-08200860
10.0	25.0	10.0	75	4	2	TM550-S4-10251075
12.0	30.0	12.0	75	4	2	TM550-S4-12301275
14.0	30.0	14.0	75	4	2	TM550-S4-14301475
16.0	45.0	16.0	100	4	2	TM550-S4-164516100
18.0	45.0	18.0	100	4	2	TM550-S4-184518100
20.0	45.0	20.0	100	4	2	TM550-S4-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
					2140	2060	1830	1860	1830	1720	1720	1720
				1210	1160	1100	1240	1130	1010	830	750	
	M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					1700	1630	1630	1500	1410	1360	1210	1120
				1310	1340	1340	1250	1160	1120	1000	910	

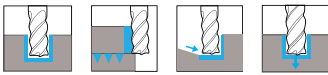
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

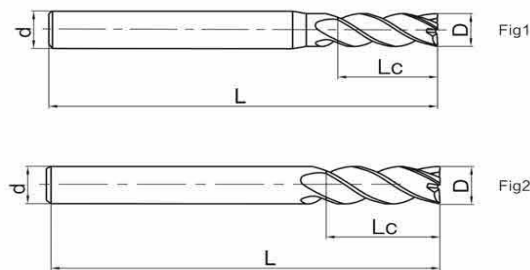
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

2 Flutes, Square, Standard Length (TM550-S2) / 2 flautas, cuadradas, longitud estándar (TM550-S2)



P	•
M	
K	•
N	
S	
H	



Unit	(mm)	
Unidad		
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. N° de figura	Ordering Code Código de orden
4,00	15,0	4,00	75	4	2	TM550-SL4-04150475
4,00	20,0	4,00	100	4	2	TM550-SL4-042004100
5,00	20,0	5,00	75	4	2	TM550-SL4-05200575
5,00	25,0	5,00	100	4	2	TM550-SL4-052505100
6,00	20,0	6,00	75	4	2	TM550-SL4-06200675
6,00	25,0	6,00	100	4	2	TM550-SL4-062506100
8,00	25,0	8,00	75	4	2	TM550-SL4-08250875
8,00	30,0	8,00	100	4	2	TM550-SL4-083008100
10,0	35,0	10,0	100	4	2	TM550-SL4-103510100
10,0	45,0	10,0	150	4	2	TM550-SL4-104510150
12,0	40,0	12,0	100	4	2	TM550-SL4-124012100
12,0	50,0	12,0	150	4	2	TM550-SL4-125012150
14,0	40,0	14,0	100	4	2	TM550-SL4-144014100
14,0	50,0	14,0	150	4	2	TM550-SL4-145014150
16,0	55,0	16,0	150	4	2	TM550-SL4-165516150
18,0	55,0	18,0	150	4	2	TM550-SL4-185518150
20,0	55,0	20,0	150	4	2	TM550-SL4-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
					2140	2060	1830	1860	1830	1720	1720	1720
					13800	10350	6900	5180	4140	3450	2590	2070
M	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1210	1160	1100	1240	1130	1010	830	750
					13800	10350	6900	5180	4140	3450	2590	2070
					1380	1330	1190	1300	1230	1170	980	910
K	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					1700	1630	1630	1500	1410	1360	1210	1120
					14860	11150	7430	5570	4460	3720	2790	2230
	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1310	1340	1340	1250	1160	1120	1000	910
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)								

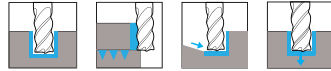
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

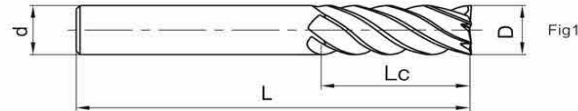
Acero Ordinario, Hierro Fundido

6 Flutes, Square, Standard Length (TM550-S6) / 6 flautas, cuadradas, longitud de flauta larga (TM550-S6)



P	•
M	
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No.	Ordering Code
mm	mm	mm	mm		Nº de figura	Código de orden
6,00	18,0	6,00	60	6	1	TM550-S6-06180660
8,00	20,0	8,00	60	6	1	TM550-S6-08200860
10,0	30,0	10,0	75	6	1	TM550-S6-10301075
12,0	32,0	12,0	75	6	1	TM550-S6-12321275
16,0	40,0	16,0	100	6	1	TM550-S6-164016100
20,0	45,0	20,0	100	6	1	TM550-S6-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
					3210	3100	2750	2800	2750	2580	2580	2580
					13800	10350	6900	5180	4140	3450	2590	2070
M	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1820	1740	1660	1860	1690	1510	1240	1120
					13800	10350	6900	5180	4140	3450	2590	2070
					2070	1990	1780	1960	1840	1760	1480	1370
K	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					2550	2450	2450	2260	2110	2040	1820	1680
					14860	11150	7430	5570	4460	3720	2790	2230
	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1960	2010	2010	1870	1740	1670	1510	1360
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)								

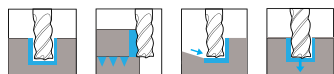
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

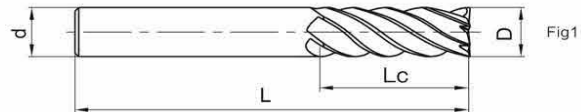
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

6 Flutes, Square, Long Flute Length (TM550-SL6) / 6 flautas, cuadradas, longitud de flauta larga (TM550-SL6)



P	•
M	
K	•
N	
S	
H	



Unit	(mm)	
Unidad		
D	D ≤ 12	D ≥ 12
Tol	0 -0.015	0 -0.02

D	Lc	d	L	Z	Figure No. N° de figura
mm	mm	mm	mm		
6,00	24,0	6,00	75	6	1
8,00	32,0	8,00	75	6	1
10,0	40,0	10,0	100	6	1
12,0	45,0	12,0	100	6	1
16,0	64,0	16,0	150	6	1
20,0	75,0	20,0	150	6	1

Ordering Code Código de orden
TM550-SL6-06240675
TM550-SL6-08320875
TM550-SL6-104010100
TM550-SL6-124512100
TM550-SL6-166416150
TM550-SL6-207520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	3210	3100	2750	2800	2750	2580	2580	2580
					13800	10350	6900	5180	4140	3450	2590	2070
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	1820	1740	1660	1860	1690	1510	1240	1120
					13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	2070	1990	1780	1960	1840	1760	1480	1370
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	2550	2450	2450	2260	2110	2040	1820	1680
					14860	11150	7430	5570	4460	3720	2790	2230
					1960	2010	2010	1870	1740	1670	1510	1360

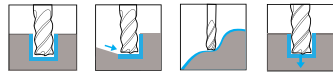
50%-70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

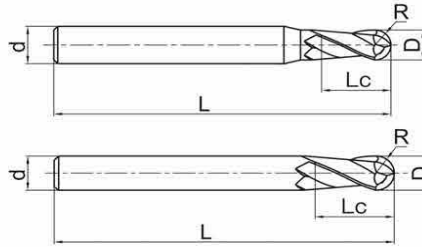
Acero Ordinario, Hierro Fundido

2 Flutes,Ballnose, Standard Length (TM550-B2) 2 flautas, punta esférica, longitud estándar (TM550-B2)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 13
Tol	0 -0.01	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1,00	2,00	3,00	50	0.5	2	1
2,00	4,00	3,00	50	1.0	2	1
3,00	6,00	3,00	50	1.5	2	2
1,00	2,00	4,00	50	0.5	2	1
1,50	3,00	4,00	50	0.75	2	1
2,00	4,00	4,00	50	1.0	2	1
2,50	5,00	4,00	50	1.25	2	1
3,00	6,00	4,00	50	1.5	2	1
3,50	7,00	4,00	50	1.75	2	1
4,00	8,00	4,00	50	2.0	2	2
5,00	10,00	5,00	50	2.5	2	2
6,00	12,00	6,00	50	3.0	2	2
8,00	16,00	8,00	60	4.0	2	2
10,00	20,00	10,00	75	5.0	2	2
12,00	24,00	12,00	75	6.0	2	2
14,00	28,00	14,00	75	7.0	4	2
16,00	32,00	16,00	100	8.0	4	2
18,00	36,00	18,00	100	9.0	4	2
20,00	40,00	20,00	100	10.0	4	2

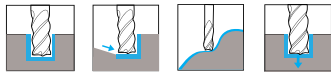
Ordering Code Código de orden
TM550-B2-01020350-R0.5
TM550-B2-02040350-R1.0
TM550-B2-03060350-R1.5
TM550-B2-01020450-R0.5
TM550-B2-015030450-R0.75
TM550-B2-02040450-R1.0
TM550-B2-025050450-R1.25
TM550-B2-03060450-R1.5
TM550-B2-035070450-R1.75
TM550-B2-04080450-R2.0
TM550-B2-05100550-R2.5
TM550-B2-06120650-R3.0
TM550-B2-08160860-R4.0
TM550-B2-10201075-R5.0
TM550-B2-12241275-R6.0
TM550-B2-14281475-R7.0
TM550-B2-163216100-R8.0
TM550-B2-183618100-R9.0
TM550-B2-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/ min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 4 5 6 7 8 9 10 11 12									
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.2D ae≤0.3D	160	rotate speed (min-1) feed velocity (mm/ min)	12740	10190	8490	7280	6370	5660	5100	4630	4250	
	(50HRC) Alloy Steel aleaciones	ap≤0.15D ae≤0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	1020	1020	1020	1020	1020	1020	1020	1020	1020	
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	9550	7640	6370	5460	4780	4250	3820	3470	3190	
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	8760	7010	5840	5010	4380	3890	3500	3190	2920	
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.1D ae≤0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	610	630	640	630	630	620	630	640	640	
					11150	8920	7430	6370	5570	4950	4460	4050	3720	
					780	800	820	800	800	790	800	810	820	
					9550	7640	6370	5460	4780	4250	3820	3470	3190	
					610	640	660	660	670	650	650	660	670	

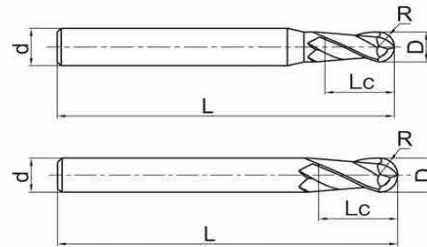
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

2 Flutes, Ballnose, Standard Length (TM550-BH2) / 2 flautas, punta esférica, longitud estándar (TM550-BH2)



P	•
M	
K	•
N	
S	
H	



Unit	(mm)		
Unidad			
D	R ≤ 1.5	1.5 < R < 3	R ≥ 13
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
4.00	8.00	4.00	75	2.0	2	2
4.00	8.00	4.00	100	2.0	2	2
5.00	10.00	5.00	75	2.5	2	2
5.00	10.00	5.00	100	2.5	2	2
5.00	10.00	5.00	150	2.5	2	2
6.00	12.00	6.00	75	3.0	2	2
6.00	12.00	6.00	100	3.0	2	2
6.00	12.00	6.00	150	3.0	2	2
8.00	16.00	8.00	75	4.0	2	2
8.00	16.00	8.00	100	4.0	2	2
8.00	16.00	8.00	150	4.0	2	2
10.00	20.00	10.00	100	5.0	2	2
10.00	20.00	10.00	150	5.0	2	2
12.00	24.00	12.00	100	6.0	2	2
12.00	24.00	12.00	150	6.0	2	2
14.00	28.00	14.00	100	7.0	2	2
14.00	28.00	14.00	150	7.0	2	2
16.00	32.00	16.00	150	8.0	2	2
18.00	36.00	18.00	150	9.0	2	2
20.00	40.00	20.00	150	10.0	2	0

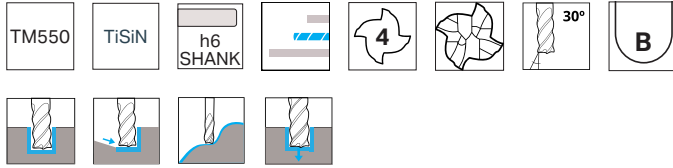
Ordering Code Código de orden
TM550-BH2-04080475-R2.0
TM550-BH2-040804100-R2.0
TM550-BH2-05100575-R2.5
TM550-BH2-051005100-R2.5
TM550-BH2-051005150-R2.5
TM550-BH2-06120675-R3.0
TM550-BH2-061206100-R3.0
TM550-BH2-061206150-R3.0
TM550-BH2-08160875-R4.0
TM550-BH2-081608100-R4.0
TM550-BH2-081608150-R4.0
TM550-BH2-102010100-R5.0
TM550-BH2-102010150-R5.0
TM550-BH2-122412100-R6.0
TM550-BH2-122412150-R6.0
TM550-BH2-142814100-R7.0
TM550-BH2-142814150-R7.0
TM550-BH2-163216150-R8.0
TM550-BH2-183618150-R9.0
TM550-BH2-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					4	5	6	7	8	9	10	11	12
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.2D ae≤0.3D	160	rotate speed (min-1) feed velocity (mm/ min)	12740	10190	8490	7280	6370	5660	5100	4630	4250
	(50HRC) Alloy Steel aleaciones	ap≤0.15D ae≤0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	1020	1020	1020	1020	1020	1020	1020	1020	1020
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	9550	7640	6370	5460	4780	4250	3820	3470	3190
					610	640	660	630	620	610	610	610	610
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	8760	7010	5840	5010	4380	3890	3500	3190	2920
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.1D ae≤0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	610	630	640	630	630	620	630	640	640
					11150	8920	7430	6370	5570	4950	4460	4050	3720
					780	800	820	800	800	790	800	810	820
					9550	7640	6370	5460	4780	4250	3820	3470	3190
					610	640	660	660	670	650	650	660	670

Ordinary Steel, Cast Iron

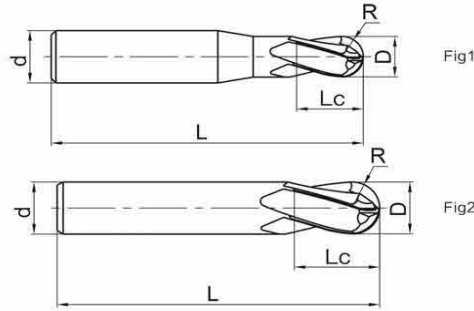
Acero Ordinario, Hierro Fundido

4 Flutes, Ballnose, Standard Length (TM550-B4) / 4 flautas, punta esférica, longitud estándar (TM550-B4)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 13
Tol	0 -0.01	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. Nº de figura
1,00	2,00	3,00	50	0.5	4	1
2,00	4,00	3,00	50	1.0	4	1
3,00	6,00	3,00	50	1.5	4	2
1,00	2,00	4,00	50	0.5	4	1
1,50	3,00	4,00	50	0.75	4	1
2,00	4,00	4,00	50	1.0	4	1
2,50	5,00	4,00	50	1.25	4	1
3,00	6,00	4,00	50	1.5	4	1
3,50	7,00	4,00	50	1.75	4	1
4,00	8,00	4,00	50	2.0	4	2
5,00	10,0	5,00	50	2.5	4	2
6,00	12,0	6,00	50	3.0	4	2
8,00	16,0	8,00	60	4.0	4	2
10,0	20,0	10,0	75	5.0	4	2
12,0	24,0	12,0	75	6.0	4	2
14,0	28,0	14,0	75	7.0	4	2
16,0	32,0	16,0	100	8.0	4	2
18,0	36,0	18,0	100	9.0	4	2
20,0	40,0	20,0	100	10.0	4	2

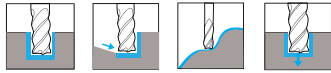
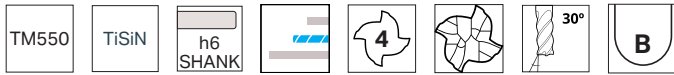
Ordering Code Código de orden
TM550-B4-01020350-R0.5
TM550-B4-02040350-R1.0
TM550-B4-03060350-R1.5
TM550-B4-01020450-R0.5
TM550-B4-015030450-R0.75
TM550-B4-02040450-R1.0
TM550-B4-025050450-R1.25
TM550-B4-03060450-R1.5
TM550-B4-035070450-R1.75
TM550-B4-04080450-R2.0
TM550-B4-05100550-R2.5
TM550-B4-06120650-R3.0
TM550-B4-08160860-R4.0
TM550-B4-10201075-R5.0
TM550-B4-12241275-R6.0
TM550-B4-14281475-R7.0
TM550-B4-163216100-R8.0
TM550-B4-183618100-R9.0
TM550-B4-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/ min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 4 5 6 7 8 9 10 11 12									
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.2D ae≤0.3D	160	rotate speed (min-1) feed velocity (mm/ min)	12740	10190	8490	7280	6370	5660	5100	4630	4250	
	(50HRC) Alloy Steel aleaciones	ap≤0.15D ae≤0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	2040	2040	2040	2040	2040	2040	2040	2040	2040	
					9550	7640	6370	5460	4780	4250	3820	3470	3190	
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	1220	1280	1330	1270	1240	1220	1220	1210	1210	
					8760	7010	5840	5010	4380	3890	3500	3190	2920	
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	1230	1260	1290	1260	1260	1250	1260	1270	1290	
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.1D ae≤0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	11150	8920	7430	6370	5570	4950	4460	4050	3720	
					1560	1610	1640	1610	1610	1590	1610	1620	1640	
					9550	7640	6370	5460	4780	4250	3820	3470	3190	
					1220	1280	1330	1310	1340	1310	1300	1320	1340	

Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

4 Flutes, Ballnose, Standard Length (TM550-BH4) / 4 flautas, punta esférica, longitud estándar (TM550-BH4)



P	•
M	
K	•
N	
S	
H	

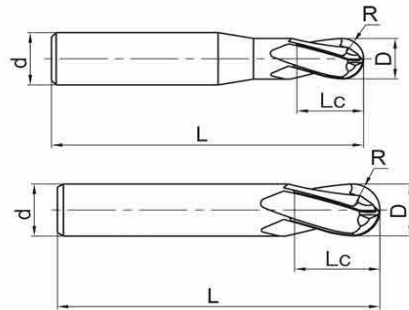


Fig1

Fig2

Unit	(mm)		
Unidad			
D	R ≤ 1.5	1.5 < R < 3	R ≥ 13
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
4,00	8,00	4,00	75	2.0	4	2
4,00	8,00	4,00	100	2.0	4	2
5,00	10,0	5,00	75	2.5	4	2
5,00	10,0	5,00	100	2.5	4	2
5,00	10,0	5,00	150	2.5	4	2
6,00	12,0	6,00	75	3.0	4	2
6,00	12,0	6,00	100	3.0	4	2
6,00	12,0	6,00	150	3.0	4	2
8,00	16,0	8,00	75	4.0	4	2
8,00	16,0	8,00	100	4.0	4	2
8,00	16,0	8,00	150	4.0	4	2
10,0	20,0	10,0	100	5.0	4	2
10,0	20,0	10,0	150	5.0	4	2
12,0	24,0	12,0	100	6.0	4	2
12,0	24,0	12,0	150	6.0	4	2
14,0	28,0	14,0	100	7.0	4	2
14,0	28,0	14,0	150	7.0	4	2
16,0	32,0	16,0	150	8.0	4	2
18,0	36,0	18,0	150	9.0	4	2
20,0	40,0	20,0	150	10.0	4	2

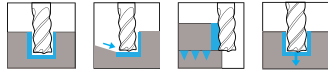
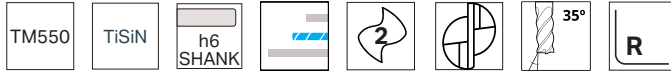
Ordering Code Código de orden
TM550-BH4-04080475-R2.0
TM550-BH4-040804100-R2.0
TM550-BH4-05100575-R2.5
TM550-BH4-051005100-R2.5
TM550-BH4-051005150-R2.5
TM550-BH4-06120675-R3.0
TM550-BH4-061206100-R3.0
TM550-BH4-061206150-R3.0
TM550-BH4-08160875-R4.0
TM550-BH4-081608100-R4.0
TM550-BH4-081608150-R4.0
TM550-BH4-102010100-R5.0
TM550-BH4-102010150-R5.0
TM550-BH4-122412100-R6.0
TM550-BH4-122412150-R6.0
TM550-BH4-142814100-R7.0
TM550-BH4-142814150-R7.0
TM550-BH4-163216150-R8.0
TM550-BH4-183618150-R9.0
TM550-BH4-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/ min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta									
					4	5	6	7	8	9	10	11	12	
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.2D ae≤0.3D	160	rotate speed (min-1) feed velocity (mm/ min)										
					12740	10190	8490	7280	6370	5660	5100	4630	4250	
	(50HRC) Alloy Steel aleaciones	ap≤0.15D ae≤0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	2040	2040	2040	2040	2040	2040	2040	2040	2040	
					9550	7640	6370	5460	4780	4250	3820	3470	3190	
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	1220	1280	1330	1270	1240	1220	1220	1210	1210	
					8760	7010	5840	5010	4380	3890	3500	3190	2920	
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	1230	1260	1290	1260	1260	1250	1260	1270	1290	
					11150	8920	7430	6370	5570	4950	4460	4050	3720	
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.1D ae≤0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	1560	1610	1640	1610	1610	1590	1610	1620	1640	
					9550	7640	6370	5460	4780	4250	3820	3470	3190	
					1220	1280	1330	1310	1340	1310	1300	1320	1340	

Ordinary Steel, Cast Iron

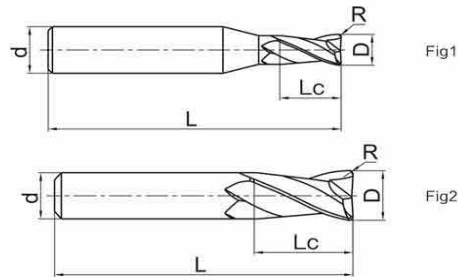
Acero Ordinario, Hierro Fundido

2 Flutes, Corner Radius, Standard Length (TM550-R2) / 2 flautas, radio de esquina, longitud estándar (TM550-R2)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



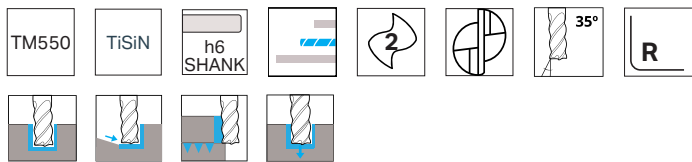
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	0.2	2	1
1,50	4,00	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.5	2	1
2,50	8,00	4,00	50	0.2	2	1
2,50	8,00	4,00	50	0.5	2	1
3,00	8,00	4,00	50	0.2	2	1
3,00	8,00	4,00	50	0.5	2	1
4,00	11,0	4,00	50	0.5	2	2
4,00	11,0	4,00	50	1.0	2	2
5,00	13,0	5,00	50	0.5	2	2
5,00	13,0	5,00	50	1.0	2	2
5,00	13,0	6,00	50	0.5	2	2
5,00	13,0	6,00	50	1.0	2	2
6,00	16,0	6,00	50	0.5	2	2
6,00	16,0	6,00	50	1.0	2	2
8,00	20,0	8,00	60	0.5	2	2
8,00	20,0	8,00	60	1.0	2	2
10,0	25,0	10,0	75	0.5	2	2
10,0	25,0	10,0	75	1.0	2	2
12,0	30,0	12,0	75	0.5	2	2
12,0	30,0	12,0	75	1.0	2	2

Ordering Code Código de orden
TM550-R2-01030450-R0.2
TM550-R2-015040450-R0.2
TM550-R2-02060450-R0.2
TM550-R2-02060450-R0.5
TM550-R2-025080450-R0.2
TM550-R2-025080450-R0.5
TM550-R2-03080450-R0.2
TM550-R2-03080450-R0.5
TM550-R2-041 10450-R0.5
TM550-R2-04110450-R1.0
TM550-R2-05130550-R0.5
TM550-R2-05130550-R1.0
TM550-R2-05130650-R0.5
TM550-R2-05130650-R1.0
TM550-R2-06160650-R0.5
TM550-R2-06160650-R1.0
TM550-R2-08200860-R0.5
TM550-R2-08200860-R1.0
TM550-R2-10251075-R0.5
TM550-R2-10251075-R1.0
TM550-R2-12301275-R0.5
TM550-R2-12301275-R1.0

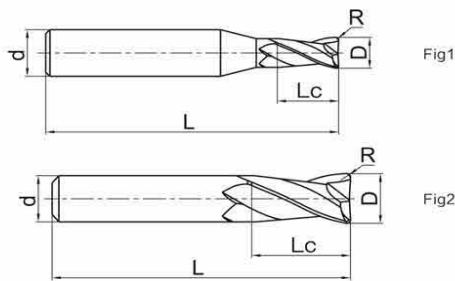
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

2 Flutes, Corner Radius, Standard Length (TM550-R2) / 2 flautas, radio de esquina, longitud estándar (TM550-R2)



P	•
M	
K	•
N	
S	
H	



Unit	(mm)	
Unidad		
D	D ≤12	D>12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	30,0	14,0	75	0.5	2	2
14,0	30,0	14,0	75	1.0	2	2
14,0	30,0	14,0	75	2.0	2	2
16,0	45,0	16,0	100	0.5	2	2
16,0	45,0	16,0	100	1.0	2	2
16,0	45,0	16,0	100	2.0	2	2
16,0	45,0	16,0	100	3.0	2	2
18,0	45,0	18,0	100	0.5	2	2
18,0	45,0	18,0	100	1.0	2	2
18,0	45,0	18,0	100	2.0	2	2
18,0	45,0	18,0	100	3.0	2	2
20,0	45,0	20,0	100	0.5	2	2
20,0	45,0	20,0	100	1.0	2	2
20,0	45,0	20,0	100	2.0	2	2
20,0	45,0	20,0	100	3.0	2	N

Ordering Code Código de orden
TM550-R2-14301475-R0.5
TM550-R2-14301475-R1.0
TM550-R2-14301475-R2.0
TM550-R2-164516100-R0.5
TM550-R2-164516100-R1.0
TM550-R2-164516100-R2.0
TM550-R2-164516100-R3.0
TM550-R2-184518100-R0.5
TM550-R2-184518100-R1.0
TM550-R2-184518100-R2.0
TM550-R2-184518100-R3.0
TM550-R2-204520100-R0.5
TM550-R2-204520100-R1.0
TM550-R2-204520100-R2.0
TM550-R2-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1070	1030	920	930	920	860	860	860
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					610	580	550	620	560	500	410	370
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	690	660	590	650	610	590	490	460
					16990	12740	8490	6370	5100	4250	3190	2550
					850	820	820	750	700	680	610	560
					14860	11150	7430	5570	4460	3720	2790	2230
					650	670	670	620	580	560	500	460

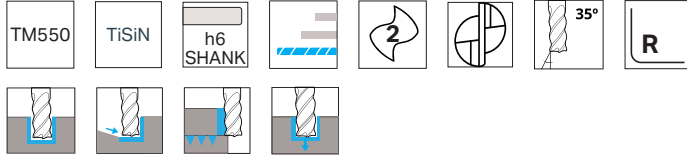
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.

Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

2 Flutes, Corner Radius, Long Flute Length (TM550-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (TM550-RL2)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

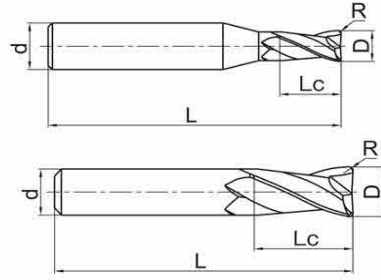


Fig1

Fig2



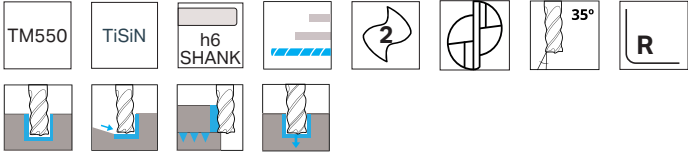
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
4,00	15,0	4,00	75	0.5	2	2
4,00	15,0	4,00	75	1.0	2	2
4,00	20,0	4,00	100	0.5	2	2
4,00	20,0	4,00	100	1.0	2	2
5,00	20,0	5,00	75	0.5	2	2
5,00	20,0	5,00	75	1.0	2	2
5,00	25,0	5,00	100	0.5	2	2
5,00	25,0	5,00	100	1.0	2	2
6,00	20,0	6,00	75	0.5	2	2
6,00	20,0	6,00	75	1.0	2	2
6,00	25,0	6,00	100	0.5	2	2
6,00	25,0	6,00	100	1.0	2	2
8,00	25,0	8,00	75	0.5	2	2
8,00	25,0	8,00	75	1.0	2	2
8,00	30,0	8,00	100	0.5	2	2
8,00	30,0	8,00	100	1.0	2	2
10,0	35,0	10,0	100	0.5	2	2
10,0	35,0	10,0	100	1.0	2	2
10,0	45,0	10,0	150	0.5	2	2
10,0	45,0	10,0	150	1.0	2	2
12,0	40,0	12,0	100	0.5	2	2
12,0	40,0	12,0	100	1.0	2	2
12,0	50,0	12,0	150	0.5	2	2
12,0	50,0	12,0	150	1.0	2	2

Ordering Code Código de orden
TM550-RL2-04150475-R0.5
TM550-RL2-04150475-R1.0
TM550-RL2-042004100-R0.5
TM550-RL2-042004100-R1.0
TM550-RL2-05200575-R0.5
TM550-RL2-05200575-R1.0
TM550-RL2-052505100-R0.5
TM550-RL2-052505100-R1.0
TM550-RL2-06200675-R0.5
TM550-RL2-06200675-R1.0
TM550-RL2-062506100-R0.5
TM550-RL2-062506100-R1.0
TM550-RL2-08250875-R0.5
TM550-RL2-08250875-R1.0
TM550-RL2-083008100-R0.5
TM550-RL2-083008100-R1.0
TM550-RL2-103510100-R0.5
TM550-RL2-103510100-R1.0
TM550-RL2-104510150-R0.5
TM550-RL2-104510150-R1.0
TM550-RL2-124012100-R0.5
TM550-RL2-124012100-R1.0
TM550-RL2-125012150-R0.5
TM550-RL2-125012150-R1.0

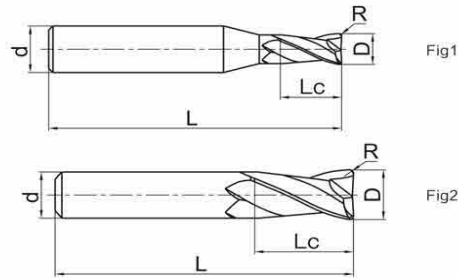
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

2 Flutes, Corner Radius, Long Flute Length (TM550-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (TM550-RL2)



P	•
M	
K	•
N	
S	
H	



Unit	(mm)	
Unidad		
D	D ≤12	D >12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	2	2
14,0	40,0	14,0	100	1.0	2	2
14,0	40,0	14,0	100	2.0	2	2
14,0	50,0	14,0	150	0.5	2	2
14,0	50,0	14,0	150	1.0	2	2
14,0	50,0	14,0	150	2.0	2	2
16,0	55,0	16,0	150	0.5	2	2
16,0	55,0	16,0	150	1.0	2	2
16,0	55,0	16,0	150	2.0	2	2
16,0	55,0	16,0	150	3.0	2	2
18,0	55,0	18,0	150	0.5	2	2
18,0	55,0	18,0	150	1.0	2	2
18,0	55,0	18,0	150	2.0	2	2
18,0	55,0	18,0	150	3.0	2	2
20,0	55,0	20,0	150	0.5	2	2
20,0	55,0	20,0	150	1.0	2	2
20,0	55,0	20,0	150	2.0	2	2
20,0	55,0	20,0	150	3.0	2	2

Ordering Code Código de orden
TM550-RL2-144014100-R0.5
TM550-RL2-144014100-R1.0
TM550-RL2-144014100-R2.0
TM550-RL2-145014150-R0.5
TM550-RL2-145014150-R1.0
TM550-RL2-145014150-R2.0
TM550-RL2-165516150-R0.5
TM550-RL2-165516150-R1.0
TM550-RL2-165516150-R2.0
TM550-RL2-165516150-R3.0
TM550-RL2-185518150-R0.5
TM550-RL2-185518150-R1.0
TM550-RL2-185518150-R2.0
TM550-RL2-185518150-R3.0
TM550-RL2-205520150-R0.5
TM550-RL2-205520150-R1.0
TM550-RL2-205520150-R2.0
TM550-RL2-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1070	1030	920	930	920	860	860	860
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	610	580	550	620	560	500	410	370
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					690	660	590	650	610	590	490	460
					16990	12740	8490	6370	5100	4250	3190	2550
					850	820	820	750	700	680	610	560
					14860	11150	7430	5570	4460	3720	2790	2230
					650	670	670	620	580	560	500	460

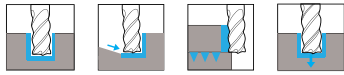
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table. La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

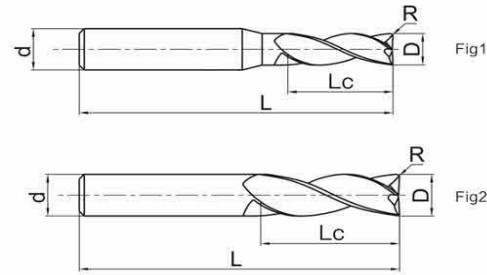
Acero Ordinario, Hierro Fundido

3 Flutes, Corner Radius, Standard Length (TM550-R3) / 3 flautas, radio de esquina, longitud estándar (TM550-R3)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



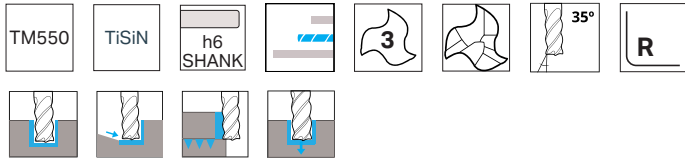
D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
1,00	3,00	4,00	50	0.2	3	1
1,50	4,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.5	3	1
2,50	8,00	4,00	50	0.2	3	1
2,50	8,00	4,00	50	0.5	3	1
3,00	8,00	4,00	50	0.2	3	1
3,00	8,00	4,00	50	0.5	3	1
4,00	11,0	4,00	50	0.5	3	2
4,00	11,0	4,00	50	1.0	3	2
5,00	13,0	5,00	50	0.5	3	2
5,00	13,0	5,00	50	1.0	3	2
5,00	13,0	6,00	50	0.5	3	2
5,00	13,0	6,00	50	1.0	3	2
6,00	16,0	6,00	50	0.5	3	2
6,00	16,0	6,00	50	1.0	3	2
8,00	20,0	8,00	60	0.5	3	2
8,00	20,0	8,00	60	1.0	3	2
10,0	25,0	10,0	75	0.5	3	2
10,0	25,0	10,0	75	1.0	3	2
12,0	30,0	12,0	75	0.5	3	2
12,0	30,0	12,0	75	1.0	3	2

Ordering Code Código de orden
TM550-R3-01030450-R0.2
TM550-R3-015040450-R0.2
TM550-R3-02060450-R0.2
TM550-R3-02060450-R0.5
TM550-R3-025080450-R0.2
TM550-R3-025080450-R0.5
TM550-R3-03080450-R0.2
TM550-R3-03080450-R0.5
TM550-R3-04110450-R0.5
TM550-R3-04110450-R1.0
TM550-R3-05130550-R0.5
TM550-R3-05130550-R1.0
TM550-R3-05130650-R0.5
TM550-R3-05130650-R1.0
TM550-R3-06160650-R0.5
TM550-R3-06160650-R1.0
TM550-R3-08200860-R0.5
TM550-R3-08200860-R1.0
TM550-R3-10251075-R0.5
TM550-R3-10251075-R1.0
TM550-R3-12301275-R0.5
TM550-R3-12301275-R1.0

Ordinary Steel, Cast Iron

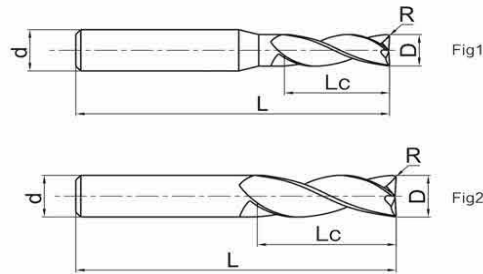
Acero Ordinario, Hierro Fundido

3 Flutes, Corner Radius, Standard Length (TM550-R3) / 3 flautas, radio de esquina, longitud estándar (TM550-R3)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
14,0	30,0	14,0	75	0.5	3	2
14,0	30,0	14,0	75	1.0	3	2
14,0	30,0	14,0	75	2.0	3	2
16,0	45,0	16,0	100	0.5	3	2
16,0	45,0	16,0	100	1.0	3	2
16,0	45,0	16,0	100	2.0	3	2
16,0	45,0	16,0	100	3.0	3	2
18,0	45,0	18,0	100	0.5	3	2
18,0	45,0	18,0	100	1.0	3	2
18,0	45,0	18,0	100	2.0	3	2
18,0	45,0	18,0	100	3.0	3	2
20,0	45,0	20,0	100	0.5	3	2
20,0	45,0	20,0	100	1.0	3	2
20,0	45,0	20,0	100	2.0	3	2
20,0	45,0	20,0	100	3.0	3	2

Ordering Code Código de orden
TM550-R3-14301475-R0.5
TM550-R3-14301475-R1.0
TM550-R3-14301475-R2.0
TM550-R3-164516100-R0.5
TM550-R3-164516100-R1.0
TM550-R3-164516100-R2.0
TM550-R3-164516100-R3.0
TM550-R3-184518100-R0.5
TM550-R3-184518100-R1.0
TM550-R3-184518100-R2.0
TM550-R3-184518100-R3.0
TM550-R3-204520100-R0.5
TM550-R3-204520100-R1.0
TM550-R3-204520100-R2.0
TM550-R3-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					910	870	830	930	850	760	620	560
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1040	990	890	980	920	880	740	680
					16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

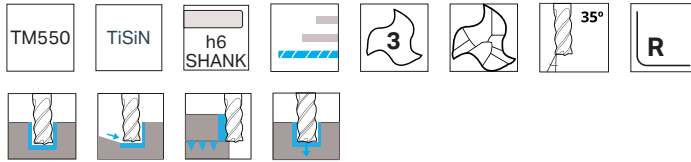
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

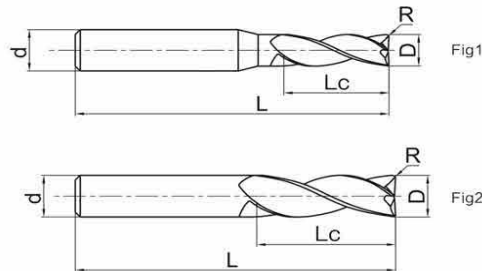
Acero Ordinario, Hierro Fundido

3 Flutes, Corner Radius, Long Flute Length (TM550-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (TM550-RL3)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



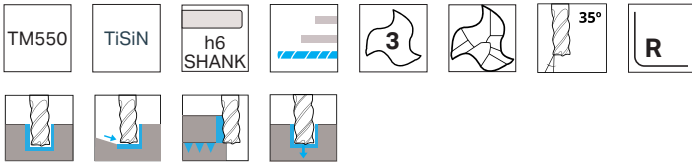
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0.5	3	2
4,00	15,0	4,00	75	1.0	3	2
4,00	20,0	4,00	100	0.5	3	2
4,00	20,0	4,00	100	1.0	3	2
5,00	20,0	5,00	75	0.5	3	2
5,00	20,0	5,00	75	1.0	3	2
5,00	25,0	5,00	100	0.5	3	2
5,00	25,0	5,00	100	1.0	3	2
6,00	20,0	6,00	75	0.5	3	2
6,00	20,0	6,00	75	1.0	3	2
6,00	25,0	6,00	100	0.5	3	2
6,00	25,0	6,00	100	1.0	3	2
8,00	25,0	8,00	75	0.5	3	2
8,00	25,0	8,00	75	1.0	3	2
8,00	30,0	8,00	100	0.5	3	2
8,00	30,0	8,00	100	1.0	3	2
10,0	35,0	10,0	100	0.5	3	2
10,0	35,0	10,0	100	1.0	3	2
10,0	45,0	10,0	150	0.5	3	2
10,0	45,0	10,0	150	1.0	3	2
12,0	40,0	12,0	100	0.5	3	2
12,0	40,0	12,0	100	1.0	3	2
12,0	50,0	12,0	150	0.5	3	2
12,0	50,0	12,0	150	1.0	3	2

Ordering Code Código de orden
TM550-RL3-04150475-R0.5
TM550-RL3-04150475-R1.0
TM550-RL3-042004100-R0.5
TM550-RL3-042004100-R1.0
TM550-RL3-05200575-R0.5
TM550-RL3-05200575-R1.0
TM550-RL3-052505100-R0.5
TM550-RL3-052505100-R1.0
TM550-RL3-06200675-R0.5
TM550-RL3-06200675-R1.0
TM550-RL3-062506100-R0.5
TM550-RL3-062506100-R1.0
TM550-RL3-08250875-R0.5
TM550-RL3-08250875-R1.0
TM550-RL3-083008100-R0.5
TM550-RL3-083008100-R1.0
TM550-RL3-103510100-R0.5
TM550-RL3-103510100-R1.0
TM550-RL3-104510150-R0.5
TM550-RL3-104510150-R1.0
TM550-RL3-124012100-R0.5
TM550-RL3-124012100-R1.0
TM550-RL3-125012150-R0.5
TM550-RL3-125012150-R1.0

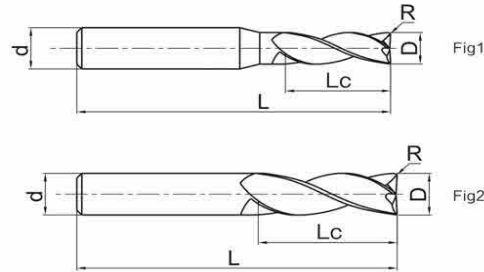
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

3 Flutes, Corner Radius, Standard Length (TM550-R3) / 3 flautas, radio de esquina, longitud estándar (TM550-R3)



P	•
M	
K	•
N	
S	
H	



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14.0	40.0	14.0	100	0.5	3	2
14.0	40.0	14.0	100	1.0	3	2
14.0	40.0	14.0	100	2.0	3	2
14.0	50.0	14.0	150	0.5	3	2
14.0	50.0	14.0	150	1.0	3	2
14.0	50.0	14.0	150	2.0	3	2
16.0	55.0	16.0	150	0.5	3	2
16.0	55.0	16.0	150	1.0	3	2
16.0	55.0	16.0	150	2.0	3	2
16.0	55.0	16.0	150	3.0	3	2
18.0	55.0	18.0	150	0.5	3	2
18.0	55.0	18.0	150	1.0	3	2
18.0	55.0	18.0	150	2.0	3	2
18.0	55.0	18.0	150	3.0	3	2
20.0	55.0	20.0	150	0.5	3	2
20.0	55.0	20.0	150	1.0	3	2
20.0	55.0	20.0	150	2.0	3	2
20.0	55.0	20.0	150	3.0	3	2

Ordering Code Código de orden
TM550-RL3-144014100-R0.5
TM550-RL3-144014100-R1.0
TM550-RL3-144014100-R2.0
TM550-RL3-145014150-R0.5
TM550-RL3-145014150-R1.0
TM550-RL3-145014150-R2.0
TM550-RL3-165516150-R0.5
TM550-RL3-165516150-R1.0
TM550-RL3-165516150-R2.0
TM550-RL3-165516150-R3.0
TM550-RL3-185518150-R0.5
TM550-RL3-185518150-R1.0
TM550-RL3-185518150-R2.0
TM550-RL3-185518150-R3.0
TM550-RL3-205520150-R0.5
TM550-RL3-205520150-R1.0
TM550-RL3-205520150-R2.0
TM550-RL3-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					910	870	830	930	850	760	620	560
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1040	990	890	980	920	880	740	680
					16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

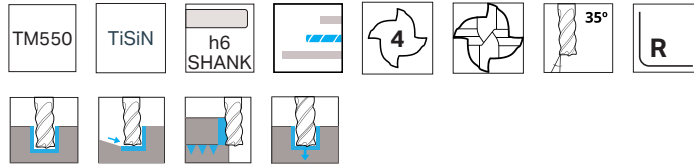
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

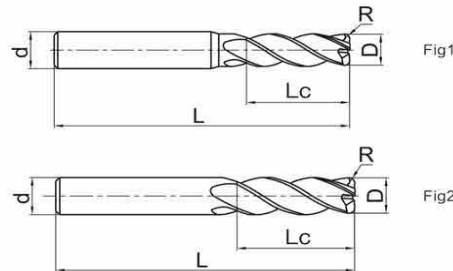
Acero Ordinario, Hierro Fundido

3 Flutes, Corner Radius, Long Flute Length (TM550-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (TM550-RL3)



P	•
M	
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



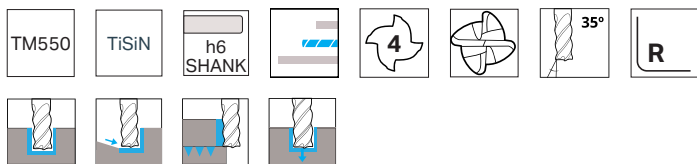
D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
1,00	3,00	4,00	50	0.2	4	1
1,50	4,00	4,00	50	0.2	4	1
2,00	6,00	4,00	50	0.2	4	1
2,00	6,00	4,00	50	0.5	4	1
2,50	8,00	4,00	50	0.2	4	1
2,50	8,00	4,00	50	0.5	4	1
3,00	8,00	4,00	50	0.2	4	1
3,00	8,00	4,00	50	0.5	4	1
4,00	11,0	4,00	50	0.5	4	2
4,00	11,0	4,00	50	1.0	4	2
5,00	13,0	5,00	50	0.5	4	2
5,00	13,0	5,00	50	1.0	4	2
5,00	13,0	6,00	50	0.5	4	2
5,00	13,0	6,00	50	1.0	4	2
6,00	16,0	6,00	50	0.5	4	2
6,00	16,0	6,00	50	1.0	4	2
8,00	20,0	8,00	60	0.5	4	2
8,00	20,0	8,00	60	1.0	4	2
10,0	25,0	10,0	75	0.5	4	2
10,0	25,0	10,0	75	1.0	4	2
12,0	30,0	12,0	75	0.5	4	2
12,0	30,0	12,0	75	1.0	4	2

Ordering Code Código de orden
TM550-R4-01030450-R0.2
TM550-R4-015040450-R0.2
TM550-R4-02060450-R0.2
TM550-R4-02060450-R0.5
TM550-R4-025080450-R0.2
TM550-R4-025080450-R0.5
TM550-R4-03080450-R0.2
TM550-R4-03080450-R0.5
TM550-R4-04110450-R0.5
TM550-R4-04110450-R1.0
TM550-R4-05130550-R0.5
TM550-R4-05130550-R1.0
TM550-R4-05130650-R0.5
TM550-R4-05130650-R1.0
TM550-R4-06160650-R0.5
TM550-R4-06160650-R1.0
TM550-R4-08200860-R0.5
TM550-R4-08200860-R1.0
TM550-R4-10251075-R0.5
TM550-R4-10251075-R1.0
TM550-R4-12301275-R0.5
TM550-R4-12301275-R1.0

Ordinary Steel, Cast Iron

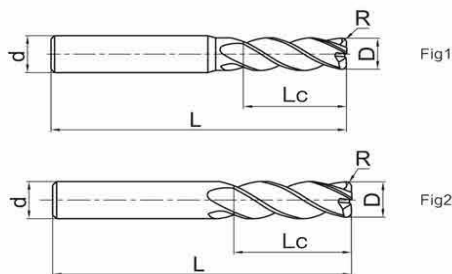
Acero Ordinario, Hierro Fundido

4 Flutes, Corner Radius, Standard Length (TM550-R4) / 4 flautas, radio de esquina, longitud estándar (TM550-R4)



P	•
M	
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14.0	30.0	14.0	75	0.5	4	2
14.0	30.0	14.0	75	1.0	4	2
14.0	30.0	14.0	75	2.0	4	2
16.0	45.0	16.0	100	0.5	4	2
16.0	45.0	16.0	100	1.0	4	2
16.0	45.0	16.0	100	2.0	4	2
16.0	45.0	16.0	100	3.0	4	2
18.0	45.0	18.0	100	0.5	4	2
18.0	45.0	18.0	100	1.0	4	2
18.0	45.0	18.0	100	2.0	4	2
18.0	45.0	18.0	100	3.0	4	2
20.0	45.0	20.0	100	0.5	4	2
20.0	45.0	20.0	100	1.0	4	2
20.0	45.0	20.0	100	2.0	4	2
20.0	45.0	20.0	100	3.0	4	2

Ordering Code Código de orden
TM550-R4-14301475-R0.5
TM550-R4-14301475-R1.0
TM550-R4-14301475-R2.0
TM550-R4-164516100-R0.5
TM550-R4-164516100-R1.0
TM550-R4-164516100-R2.0
TM550-R4-164516100-R3.0
TM550-R4-184518100-R0.5
TM550-R4-184518100-R1.0
TM550-R4-184518100-R2.0
TM550-R4-184518100-R3.0
TM550-R4-204520100-R0.5
TM550-R4-204520100-R1.0
TM550-R4-204520100-R2.0
TM550-R4-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
		ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	2140	2060	1830	1860	1830	1720	1720	1720
	(50HRC) Alloy Steel aleaciones	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1210	1160	1100	1240	1130	1010	830	750
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1380	1330	1190	1300	1230	1170	980	910
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1700	1630	1630	1500	1410	1360	1210	1120
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	14860	11150	7430	5570	4460	3720	2790	2230
					1310	1340	1340	1250	1160	1120	1000	910

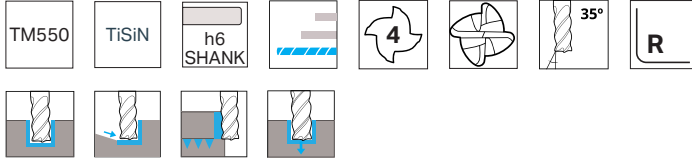
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

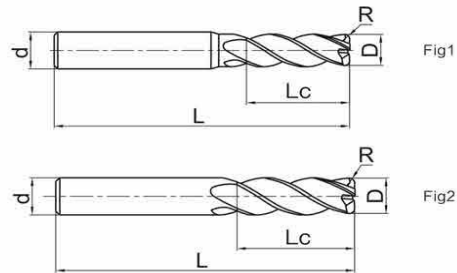
Acero Ordinario, Hierro Fundido

4 Flutes, Corner Radius, Long Flute Length (TM550-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (TM550-RL4)



P	•
M	
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0.5	4	2
4,00	15,0	4,00	75	1.0	4	2
4,00	20,0	4,00	100	0.5	4	2
4,00	20,0	4,00	100	1.0	4	2
5,00	20,0	5,00	75	0.5	4	2
5,00	20,0	5,00	75	1.0	4	2
5,00	25,0	5,00	100	0.5	4	2
5,00	25,0	5,00	100	1.0	4	2
6,00	20,0	6,00	75	0.5	4	2
6,00	20,0	6,00	75	1.0	4	2
6,00	25,0	6,00	100	0.5	4	2
6,00	25,0	6,00	100	1.0	4	2
8,00	25,0	8,00	75	0.5	4	2
8,00	25,0	8,00	75	1.0	4	2
8,00	30,0	8,00	100	0.5	4	2
8,00	30,0	8,00	100	1.0	4	2
10,0	35,0	10,0	100	0.5	4	2
10,0	35,0	10,0	100	1.0	4	2
10,0	45,0	10,0	150	0.5	4	2
10,0	45,0	10,0	150	1.0	4	2
12,0	40,0	12,0	100	0.5	4	2
12,0	40,0	12,0	100	1.0	4	2
12,0	50,0	12,0	150	0.5	4	2
12,0	50,0	12,0	150	1.0	4	2

Ordering Code Código de orden
TM550-RL4-04150475-R0.5
TM550-RL4-04150475-R1.0
TM550-RL4-042004100-R0.5
TM550-RL4-042004100-R1.0
TM550-RL4-05200575-R0.5
TM550-RL4-05200575-R1.0
TM550-RL4-052505100-R0.5
TM550-RL4-052505100-R1.0
TM550-RL4-06200675-R0.5
TM550-RL4-06200675-R1.0
TM550-RL4-062506100-R0.5
TM550-RL4-062506100-R1.0
TM550-RL4-08250875-R0.5
TM550-RL4-08250875-R1.0
TM550-RL4-083008100-R0.5
TM550-RL4-083008100-R1.0
TM550-RL4-103510100-R0.5
TM550-RL4-103510100-R1.0
TM550-RL4-104510150-R0.5
TM550-RL4-104510150-R1.0
TM550-RL4-124012100-R0.5
TM550-RL4-124012100-R1.0
TM550-RL4-125012150-R0.5
TM550-RL4-125012150-R1.0

Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

4 Flutes, Corner Radius, Long Flute Length (TM550-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (TM550-RL4)

TM550

TiSiN

h6 SHANK

P

M

K

N

S

H

Unit

Unidad

D

Tol

(mm)

D ≤ 12

D > 12

0

-0.015

0

-0.02

D	Lc	d	L	R	Z	Figure No.	Ordering Code
mm	mm	mm	mm	mm		Nº de figura	Código de orden
14,0	40,0	14,0	100	0.5	4	2	TM550-RL4-144014100-R0.5
14,0	40,0	14,0	100	1.0	4	2	TM550-RL4-144014100-R1.0
14,0	40,0	14,0	100	2.0	4	2	TM550-RL4-144014100-R2.0
14,0	50,0	14,0	150	0.5	4	2	TM550-RL4-145014150-R0.5
14,0	50,0	14,0	150	1.0	4	2	TM550-RL4-145014150-R1.0
14,0	50,0	14,0	150	2.0	4	2	TM550-RL4-145014150-R2.0
16,0	55,0	16,0	150	0.5	4	2	TM550-RL4-165516150-R0.5
16,0	55,0	16,0	150	1.0	4	2	TM550-RL4-165516150-R1.0
16,0	55,0	16,0	150	2.0	4	2	TM550-RL4-165516150-R2.0
16,0	55,0	16,0	150	3.0	4	2	TM550-RL4-165516150-R3.0
18,0	55,0	18,0	150	0.5	4	2	TM550-RL4-185518150-R0.5
18,0	55,0	18,0	150	1.0	4	2	TM550-RL4-185518150-R1.0
18,0	55,0	18,0	150	2.0	4	2	TM550-RL4-185518150-R2.0
18,0	55,0	18,0	150	3.0	4	2	TM550-RL4-185518150-R3.0
20,0	55,0	20,0	150	0.5	4	2	TM550-RL4-205520150-R0.5
20,0	55,0	20,0	150	1.0	4	2	TM550-RL4-205520150-R1.0
20,0	55,0	20,0	150	2.0	4	2	TM550-RL4-205520150-R2.0
20,0	55,0	20,0	150	3.0	4	2	TM550-RL4-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
		ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	2140	2060	1830	1860	1830	1720	1720	1720
	(50HRC) Alloy Steel aleaciones	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
		ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	1210	1160	1100	1240	1130	1010	830	750
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1380	1330	1190	1300	1230	1170	980	910
		ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1700	1630	1630	1500	1410	1360	1210	1120
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	14860	11150	7430	5570	4460	3720	2790	2230
					1310	1340	1340	1250	1160	1120	1000	910

50%~70%, 40%~60%

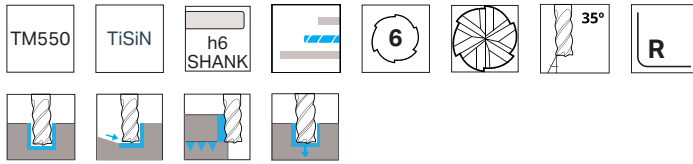
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.

La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

Ordinary Steel, Cast Iron

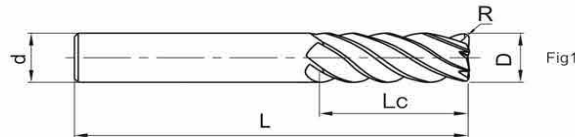
Acero Ordinario, Hierro Fundido

6 Flutes, Corner Radius, Standard Length (TM550-R6) / 6 flautas, radio de esquina, longitud estándar (TM550-R6)



P	•
M	
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No.
mm	mm	mm	mm	mm		Nº de figura
6,00	18,0	6,00	60	0.5	6	1
6,00	18,0	6,00	60	1.0	6	1
8,00	20,0	8,00	60	0.5	6	1
8,00	20,0	8,00	60	1.0	6	1
10,0	30,0	10,0	75	0.5	6	1
10,0	30,0	10,0	75	1.0	6	1
12,0	32,0	12,0	75	0.5	6	1
12,0	32,0	12,0	75	1.0	6	1
16,0	40,0	16,0	100	0.5	6	1
16,0	40,0	16,0	100	1.0	6	1
16,0	40,0	16,0	100	2.0	6	1
16,0	40,0	16,0	100	3.0	6	1
20,0	45,0	20,0	100	0.5	6	1
20,0	45,0	20,0	100	1.0	6	1
20,0	45,0	20,0	100	2.0	6	1
20,0	45,0	20,0	100	3.0	6	1

Ordering Code
Código de orden
TM550-R6-06180660-R0.5
TM550-R6-06180660-R1.0
TM550-R6-08200860-R0.5
TM550-R6-08200860-R1.0
TM550-R6-10301075-R0.5
TM550-R6-10301075-R1.0
TM550-R6-12321275-R0.5
TM550-R6-12321275-R1.0
TM550-R6-164016100-R0.5
TM550-R6-164016100-R1.0
TM550-R6-164016100-R2.0
TM550-R6-164016100-R3.0
TM550-R6-204520100-R0.5
TM550-R6-204520100-R1.0
TM550-R6-204520100-R2.0
TM550-R6-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	3210	3100	2750	2800	2750	2580	2580	2580
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1820	1740	1660	1860	1690	1510	1240	1120
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					2070	1990	1780	1960	1840	1760	1480	1370
					16990	12740	8490	6370	5100	4250	3190	2550
					2550	2450	2450	2260	2110	2040	1820	1680
					14860	11150	7430	5570	4460	3720	2790	2230
					1960	2010	2010	1870	1740	1670	1510	1360

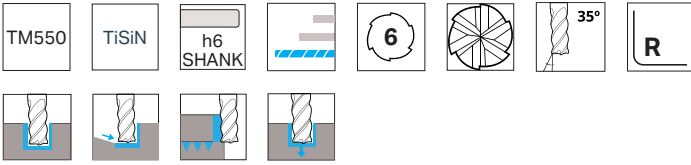
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

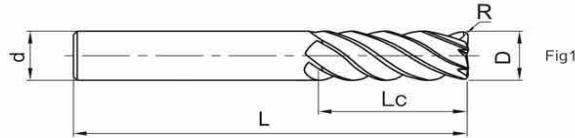
Ordinary Steel, Cast Iron

Acero Ordinario, Hierro Fundido

6 Flutes, Corner Radius, Long Flute Length (TM550-RL6) / 6 flautas, radio de esquina, longitud de flauta larga (TM550-RL6)



P	•
M	
K	•
N	
S	
H	



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No.
mm	mm	mm	mm	mm		Nº de figura
6,00	24,0	6,00	75	0.5	6	1
6,00	24,0	6,00	75	1.0	6	1
8,00	32,0	8,00	75	0.5	6	1
8,00	32,0	8,00	75	1.0	6	1
10,0	40,0	10,0	100	0.5	6	1
10,0	40,0	10,0	100	1.0	6	1
12,0	45,0	12,0	100	0.5	6	1
12,0	45,0	12,0	100	1.0	6	1
16,0	64,0	16,0	150	0.5	6	1
16,0	64,0	16,0	150	1.0	6	1
16,0	64,0	16,0	150	2.0	6	1
16,0	64,0	16,0	150	3.0	6	1
20,0	75,0	20,0	150	0.5	6	1
20,0	75,0	20,0	150	1.0	6	1
20,0	75,0	20,0	150	2.0	6	1
20,0	75,0	20,0	150	3.0	6	1

Ordering Code
Código de orden
TM550-RL6-06240675-R0.5
TM550-RL6-06240675-R1.0
TM550-RL6-08320875-R0.5
TM550-RL6-08320875-R1.0
TM550-RL6-104010100-R0.5
TM550-RL6-104010100-R1.0
TM550-RL6-124512100-R0.5
TM550-RL6-124512100-R1.0
TM550-RL6-166416150-R0.5
TM550-RL6-166416150-R1.0
TM550-RL6-166416150-R2.0
TM550-RL6-166416150-R3.0
TM550-RL6-207520150-R0.5
TM550-RL6-207520150-R1.0
TM550-RL6-207520150-R2.0
TM550-RL6-207520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
		ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	3210	3100	2750	2800	2750	2580	2580	2580
	(50HRC) Alloy Steel aleaciones				13800	10350	6900	5180	4140	3450	2590	2070
M	stainless steel Acero inoxidable				1820	1740	1660	1860	1690	1510	1240	1120
		ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular				2070	1990	1780	1960	1840	1760	1480	1370
		ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
	(35-45HRC) High alloy cast iron Fundición de alta aleación				2550	2450	2450	2260	2110	2040	1820	1680
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	14860	11150	7430	5570	4460	3720	2790	2230
					1960	2010	2010	1870	1740	1670	1510	1360

50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

TM

Suitable for all kinds of steel general processing

Apta para todo tipo de procesamiento general de acero



Edge Precision passivation.

Improve tool life and workpiece surface finish.
Special angle design and high edge strength ensures stronger versatility.

Pasivado de precisión de bordes.

Mejora la vida útil de la herramienta y el acabado superficial de la pieza.
El diseño especial del ángulo y la gran resistencia del filo garantizan una mayor versatilidad.

Large chip groove design.

The cutting and chip removal are more smooth and stable in the high feed processing.

Diseño de ranura de viruta grande.

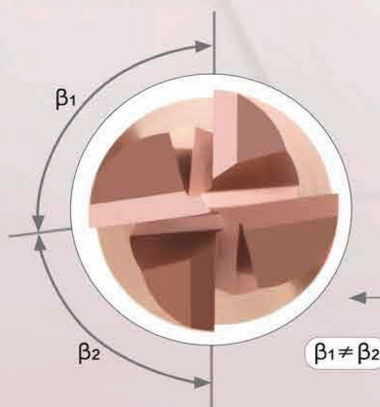
El corte y la eliminación de virutas son más suaves y estables en el procesamiento de alto avance.

Helix angle design

The design of large helix angle and special edge, very suitable for all kinds of steel general processing.

Diseño de ángulo de hélice.

El diseño de gran ángulo de hélice y borde especial, lo hace muy adecuado para todo tipo de procesamiento general de acero.



Variable bottom edges design.

Variable bottom edges design to reduce vibration and improve the surface finish.

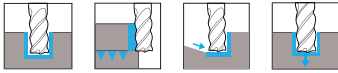
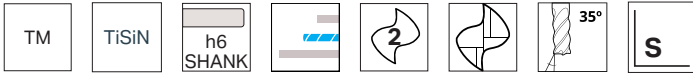
Diseño de bordes inferiores variables.

Diseño de bordes inferiores variables para reducir la vibración y mejorar el acabado superficial.

All kinds of Steel

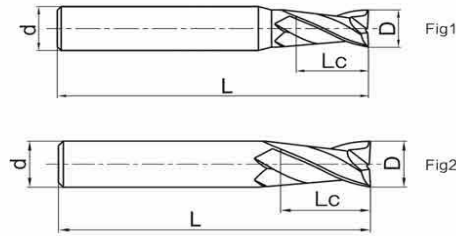
Todo tipo de acero

2 Flutes, Square, Standard Length (TM-S2) / 2 flautas, cuadradas, longitud estándar (TM-S2)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



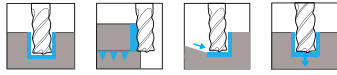
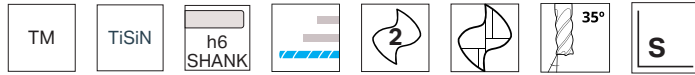
D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
1,00	3,00	4,00	50	2	1	TM-S2-01030450
1,50	4,00	4,00	50	2	1	TM-S2-015040450
2,00	6,00	4,00	50	2	1	TM-S2-02060450
2,50	8,00	4,00	50	2	1	TM-S2-025080450
3,00	8,00	4,00	50	2	1	TM-S2-03080450
4,00	11,0	4,00	50	2	2	TM-S2-04110450
5,00	13,0	5,00	50	2	2	TM-S2-05130550
5,00	13,0	6,00	50	2	1	TM-S2-05130650
6,00	16,0	6,00	50	2	2	TM-S2-06160650
8,00	20,0	8,00	60	2	2	TM-S2-08200860
10,0	25,0	10,0	75	2	2	TM-S2-10251075
12,0	30,0	12,0	75	2	2	TM-S2-12301275
14,0	30,0	14,0	75	2	2	TM-S2-14301475
16,0	45,0	16,0	100	2	2	TM-S2-164516100
18,0	45,0	18,0	100	2	2	TM-S2-184518100
20,0	45,0	20,0	100	2	2	TM-S2-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1070	1030	920	930	920	860	860	860
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	610	580	550	620	560	500	410	370
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	690	660	590	650	610	590	490	460
		ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	850	820	820	750	700	680	610	560
		ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	14860	11150	7430	5570	4460	3720	2790	2230
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	650	670	670	620	580	560	500	460

50%~70%, 40%~60%

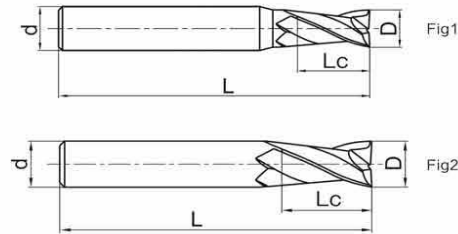
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.

2 Flutes, Square, Long Flute Length (TM-SL2) / 2 flautas, cuadradas, longitud de flauta larga (TM-SL2)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
4,00	15,0	4,00	75	2	2	TM-SL2-04150475
4,00	20,0	4,00	100	2	2	TM-SL2-042004100
5,00	20,0	5,00	75	2	2	TM-SL2-05200575
5,00	25,0	5,00	100	2	2	TM-SL2-052505100
6,00	20,0	6,00	75	2	2	TM-SL2-06200675
6,00	25,0	6,00	100	2	2	TM-SL2-062506100
8,00	25,0	8,00	75	2	2	TM-SL2-08250875
8,00	30,0	8,00	100	2	2	TM-SL2-083008100
10,0	35,0	10,0	100	2	2	TM-SL2-103510100
10,0	45,0	10,0	150	2	2	TM-SL2-104510150
12,0	40,0	12,0	100	2	2	TM-SL2-124012100
12,0	50,0	12,0	150	2	2	TM-SL2-125012150
14,0	40,0	14,0	100	2	2	TM-SL2-144014100
14,0	50,0	14,0	150	2	2	TM-SL2-145014150
16,0	55,0	16,0	150	2	2	TM-SL2-165516150
18,0	55,0	18,0	150	2	2	TM-SL2-185518150
20,0	55,0	20,0	150	2	2	TM-SL2-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
					1070	1030	920	930	920	860	860	860
					13800	10350	6900	5180	4140	3450	2590	2070
M	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	610	580	550	620	560	500	410	370
					13800	10350	6900	5180	4140	3450	2590	2070
					690	660	590	650	610	590	490	460
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					850	820	820	750	700	680	610	560
					14860	11150	7430	5570	4460	3720	2790	2230
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	650	670	670	620	580	560	500	460

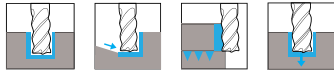
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.

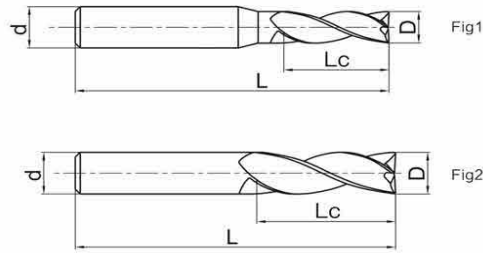
All kinds of Steel

Todo tipo de acero

3 Flutes, Square, Standard Length (TM-S3) / 3 flautas, cuadradas, longitud estándar (TM-S3)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



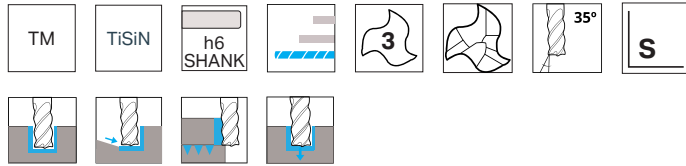
D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
1,00	3,00	4,00	50	3	1	TM-S3-01030450
1,50	4,00	4,00	50	3	1	TM-S3-015040450
2,00	6,00	4,00	50	3	1	TM-S3-02060450
2,50	8,00	4,00	50	3	1	TM-S3-025080450
3,00	8,00	4,00	50	3	1	TM-S3-03080450
4,00	11,0	4,00	50	3	2	TM-S3-04110450
5,00	13,0	5,00	50	3	2	TM-S3-05130550
5,00	13,0	6,00	50	3	1	TM-S3-05130650
6,00	16,0	6,00	50	3	2	TM-S3-06160650
8,00	20,0	8,00	60	3	2	TM-S3-08200860
10,0	25,0	10,0	75	3	2	TM-S3-10251075
12,0	30,0	12,0	75	3	2	TM-S3-12301275
14,0	30,0	14,0	75	3	2	TM-S3-14301475
16,0	45,0	16,0	100	3	2	TM-S3-164516100
18,0	45,0	18,0	100	3	2	TM-S3-184518100
20,0	45,0	20,0	100	3	2	TM-S3-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					910	870	830	930	850	760	620	560
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1040	990	890	980	920	880	740	680
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

50%~70%, 40%~60%

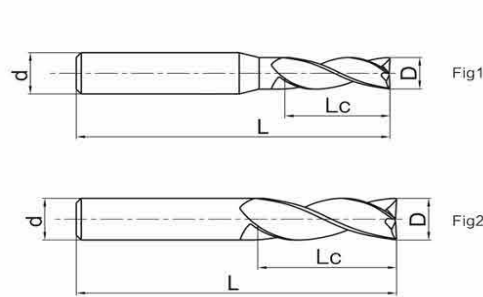
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

2 Flutes, Square, Standard Length (TM-S2) / 2 flautas, cuadradas, longitud estándar (TM-S2)



P	•
M	•
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No.	Ordering Code
mm	mm	mm	mm		Nº de figura	Código de orden
4,00	15,0	4,00	75	3	2	TM-SL3-04150475
4,00	20,0	4,00	100	3	2	TM-SL3-042004100
5,00	20,0	5,00	75	3	2	TM-SL3-05200575
5,00	25,0	5,00	100	3	2	TM-SL3-052505100
6,00	20,0	6,00	75	3	2	TM-SL3-06200675
6,00	25,0	6,00	100	3	2	TM-SL3-062506100
8,00	25,0	8,00	75	3	2	TM-SL3-08250875
8,00	30,0	8,00	100	3	2	TM-SL3-083008100
10,0	35,0	10,0	100	3	2	TM-SL3-103510100
10,0	45,0	10,0	150	3	2	TM-SL3-104510150
12,0	40,0	12,0	100	3	2	TM-SL3-124012100
12,0	50,0	12,0	150	3	2	TM-SL3-125012150
14,0	40,0	14,0	100	3	2	TM-SL3-144014100
14,0	50,0	14,0	150	3	2	TM-SL3-145014150
16,0	55,0	16,0	150	3	2	TM-SL3-165516150
18,0	55,0	18,0	150	3	2	TM-SL3-185518150
20,0	55,0	20,0	150	3	2	TM-SL3-205520150

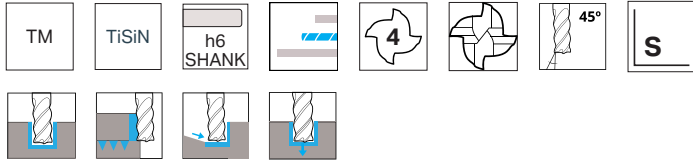
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
					1610	1550	1380	1400	1380	1290	1290	1290
					13800	10350	6900	5180	4140	3450	2590	2070
M	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	910	870	830	930	850	760	620	560
					13800	10350	6900	5180	4140	3450	2590	2070
					1040	990	890	980	920	880	740	680
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	980	1000	1000	940	870	840	750	680

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

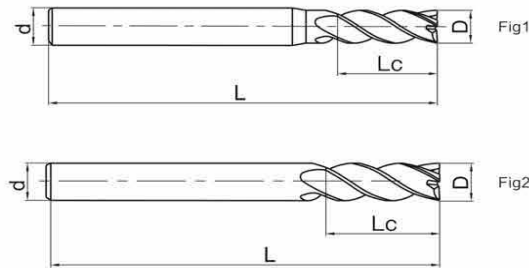
Todo tipo de acero

4 Flutes, Square, Standard Length (TM-S4) / 4 flautas, cuadradas, longitud estándar (TM-S4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



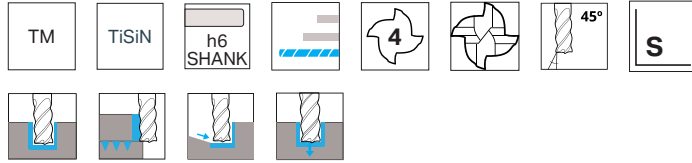
D	Lc	d	L	Z	Figure No.	Ordering Code
mm	mm	mm	mm		Nº de figura	Código de orden
1,00	3,00	4,00	50	4	1	TM-S4-01030450
1,50	4,00	4,00	50	4	1	TM-S4-015040450
2,00	6,00	4,00	50	4	1	TM-S4-02060450
2,50	8,00	4,00	50	4	1	TM-S4-025080450
3,00	8,00	4,00	50	4	1	TM-S4-03080450
4,00	11,0	4,00	50	4	2	TM-S4-04110450
5,00	13,0	5,00	50	4	2	TM-S4-05130550
5,00	13,0	6,00	50	4	1	TM-S4-05130650
6,00	16,0	6,00	50	4	2	TM-S4-06160650
8,00	20,0	8,00	60	4	2	TM-S4-08200860
10,0	25,0	10,0	75	4	2	TM-S4-10251075
12,0	30,0	12,0	75	4	2	TM-S4-12301275
14,0	30,0	14,0	75	4	2	TM-S4-14301475
16,0	45,0	16,0	100	4	2	TM-S4-164516100
18,0	45,0	18,0	100	4	2	TM-S4-184518100
20,0	45,0	20,0	100	4	2	TM-S4-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	2140	2060	1830	1860	1830	1720	1720	1720
					13800	10350	6900	5180	4140	3450	2590	2070
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	1210	1160	1100	1240	1130	1010	830	750
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1380	1330	1190	1300	1230	1170	980	910
					16990	12740	8490	6370	5100	4250	3190	2550
					1700	1630	1630	1500	1410	1360	1210	1120
					14860	11150	7430	5570	4460	3720	2790	2230
					1310	1340	1340	1250	1160	1120	1000	910

50%~70%, 40%~60%

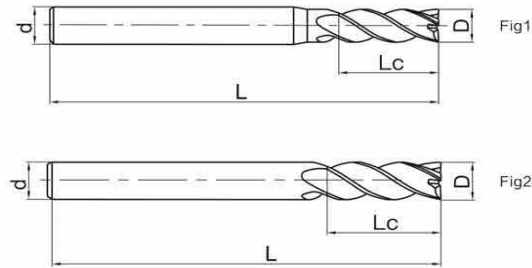
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

4 Flutes, Square, Long Flute Length (TM-SL4) / 4 flautas, cuadradas, longitud de flauta larga (TM-SL4)



P	•
M	•
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No.	Ordering Code
mm	mm	mm	mm		Nº de figura	Código de orden
4,00	15,0	4,00	75	4	2	TM-SL4-04150475
4,00	20,0	4,00	100	4	2	TM-SL4-042004100
5,00	20,0	5,00	75	4	2	TM-SL4-05200575
5,00	25,0	5,00	100	4	2	TM-SL4-052505100
6,00	20,0	6,00	75	4	2	TM-SL4-06200675
6,00	25,0	6,00	100	4	2	TM-SL4-062506100
8,00	25,0	8,00	75	4	2	TM-SL4-08250875
8,00	30,0	8,00	100	4	2	TM-SL4-083008100
10,0	35,0	10,0	100	4	2	TM-SL4-103510100
10,0	45,0	10,0	150	4	2	TM-SL4-104510150
12,0	40,0	12,0	100	4	2	TM-SL4-124012100
12,0	50,0	12,0	150	4	2	TM-SL4-125012150
14,0	40,0	14,0	100	4	2	TM-SL4-144014100
14,0	50,0	14,0	150	4	2	TM-SL4-145014150
16,0	55,0	16,0	150	4	2	TM-SL4-165516150
18,0	55,0	18,0	150	4	2	TM-SL4-185518150
20,0	55,0	20,0	150	4	2	TM-SL4-205520150

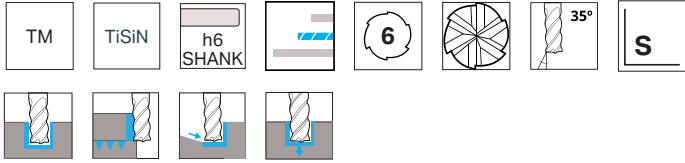
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
					2140	2060	1830	1860	1830	1720	1720	1720
					13800	10350	6900	5180	4140	3450	2590	2070
M	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1210	1160	1100	1240	1130	1010	830	750
					13800	10350	6900	5180	4140	3450	2590	2070
					1380	1330	1190	1300	1230	1170	980	910
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
					1700	1630	1630	1500	1410	1360	1210	1120
					14860	11150	7430	5570	4460	3720	2790	2230
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1310	1340	1340	1250	1160	1120	1000	910

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

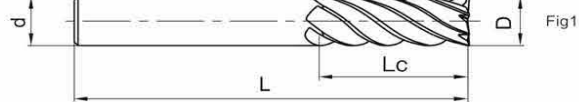
Todo tipo de acero

6 Flutes, Square, Standard Length (TM-S6) / 6 flautas, cuadradas, longitud estándar (TM-S6)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



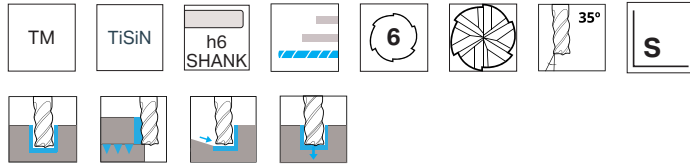
D	Lc	d	L	Z	Figure No.	Ordering Code
mm	mm	mm	mm		Nº de figura	Código de orden
6,00	18,0	6,00	60	6	1	TM-S6-06180660
8,00	20,0	8,00	60	6	1	TM-S6-08200860
10,0	30,0	10,0	75	6	1	TM-S6-10301075
12,0	32,0	12,0	75	6	1	TM-S6-12321275
16,0	40,0	16,0	100	6	1	TM-S6-164016100
20,0	45,0	20,0	100	6	1	TM-S6-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
		ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	3210	3100	2750	2800	2750	2580	2580	2580
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
		ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1820	1740	1660	1860	1690	1510	1240	1120
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	2070	1990	1780	1960	1840	1760	1480	1370
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	2550	2450	2450	2260	2110	2040	1820	1680
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	14860	11150	7430	5570	4460	3720	2790	2230
					1960	2010	2010	1870	1740	1670	1510	1360

50%~70%, 40%~60%

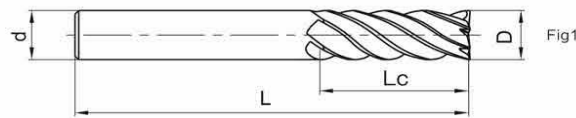
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

6 Flutes, Square, Long Flute Length (TM-SL6) / 6 flautas, cuadradas, longitud de flauta larga (TM-SL6)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
6,00	24,0	6,00	75	6	1	TM-SL6-06240675
8,00	32,0	8,00	75	6	1	TM-SL6-08320875
10,0	40,0	10,0	100	6	1	TM-SL6-104010100
12,0	45,0	12,0	100	6	1	TM-SL6-124512100
16,0	64,0	16,0	150	6	1	TM-SL6-166416150
20,0	75,0	20,0	150	6	1	TM-SL6-207520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
		ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	3210	3100	2750	2800	2750	2580	2580	2580
	(50HRC) Alloy Steel aleaciones	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
		ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1820	1740	1660	1860	1690	1510	1240	1120
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	2070	1990	1780	1960	1840	1760	1480	1370
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	2550	2450	2450	2260	2110	2040	1820	1680
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	14860	11150	7430	5570	4460	3720	2790	2230
					1960	2010	2010	1870	1740	1670	1510	1360

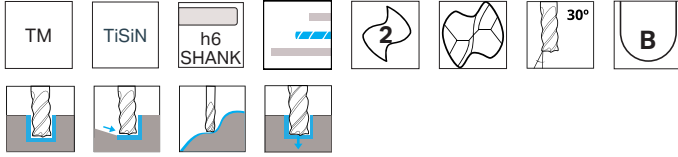
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

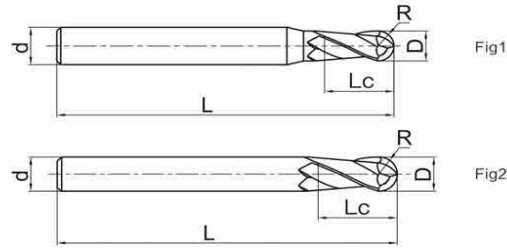
Todo tipo de acero

2 Flutes, Ballnose, Long Shank Length (TM-BH2) / 2 flautas, punta esférica, longitud de vástago largo (TM-BH2)



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02

P	•
M	•
K	•
N	•
S	•
H	•

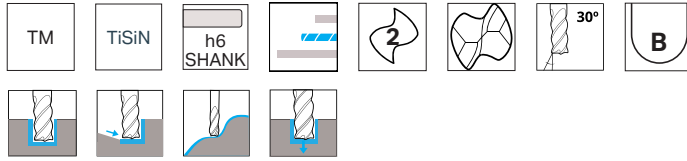


D	Lc	d	L	R	Z	Figure No. N° de figura
1,00	2,00	3,00	50	0.5	2	1
2,00	4,00	3,00	50	1.0	2	1
3,00	6,00	3,00	50	1.5	2	2
1,00	2,00	4,00	50	0.5	2	1
1,50	3,00	4,00	50	0.75	2	1
2,00	4,00	4,00	50	1.0	2	1
2,50	5,00	4,00	50	1.25	2	1
3,00	6,00	4,00	50	1.5	2	1
3,50	7,00	4,00	50	1.75	2	1
4,00	8,00	4,00	50	2.0	2	2
5,00	10,0	5,00	50	2.5	2	2
6,00	12,0	6,00	50	3.0	2	2
8,00	16,0	8,00	60	4.0	2	2
10,0	20,0	10,0	75	5.0	2	2
12,0	24,0	12,0	75	6.0	2	2
14,0	28,0	14,0	75	7.0	2	2
16,0	32,0	16,0	100	8.0	2	2
18,0	36,0	18,0	100	9.0	2	2
20,0	40,0	20,0	100	10.0	2	2

Ordering Code Código de orden
TM-B2-01020350-R0.5
TM-B2-02040350-R1.0
TM-B2-03060350-R1.5
TM-B2-01020450-R0.5
TM-B2-015030450-R0.75
TM-B2-02040450-R1.0
TM-B2-025050450-R1.25
TM-B2-03060450-R1.5
TM-B2-035070450-R1.75
TM-B2-04080450-R2.0
TM-B2-05100550-R2.5
TM-B2-06120650-R3.0
TM-B2-08160860-R4.0
TM-B2-10201075-R5.0
TM-B2-12241275-R6.0
TM-B2-14281475-R7.0
TM-B2-163216100-R8.0
TM-B2-183618100-R9.0
TM-B2-204020100-R10.0

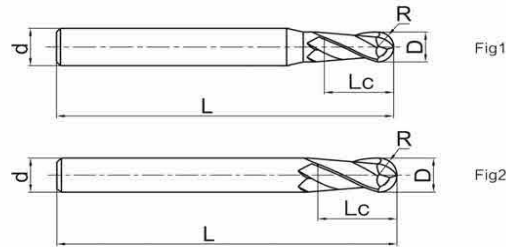
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta									
					4	5	6	7	8	9	10	11	12	
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.2D ae≤0.3D	160	rotate speed (min-1) feed velocity (mm/ min)	12740	10190	8490	7280		6370	5660	5100	4630	4250
					1020	1020	1020	1020	1020	1020	1020	1020	1020	1020
	(50HRC) Alloy Steel Aleaciones de acero	ap≤0.15D ae≤0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	9550	7640	6370	5460	4780	4250	3820	3470	3190	
					610	640	660	630	620	610	610	610	610	610
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	8760	7010	5840	5010	4380	3890	3500	3190	2920	
					610	630	640	630	630	620	630	640	640	
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	11150	8920	7430	6370	5570	4950	4460	4050	3720	
					780	800	820	800	800	790	800	810	820	
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.1D ae≤0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	9550	7640	6370	5460	4780	4250	3820	3470	3190	
					610	640	660	660	670	650	650	660	670	

2 Flutes, Ballnose, Long Shank Length (TM-BH2) / 2 flautas, punta esférica, longitud de vástago largo (TM-BH2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
4,00	8,00	4,00	75	2.0	2	2
4,00	8,00	4,00	100	2.0	2	2
5,00	10,0	5,00	75	2.5	2	2
5,00	10,0	5,00	100	2.5	2	2
5,00	10,0	5,00	150	2.5	2	2
6,00	12,0	6,00	75	3.0	2	2
6,00	12,0	6,00	100	3.0	2	2
6,00	12,0	6,00	150	3.0	2	2
8,00	16,0	8,00	75	4.0	2	2
8,00	16,0	8,00	100	4.0	2	2
8,00	16,0	8,00	150	4.0	2	2
10,0	20,0	10,0	100	5.0	2	2
10,0	20,0	10,0	150	5.0	2	2
12,0	24,0	12,0	100	6.0	2	2
12,0	24,0	12,0	150	6.0	2	2
14,0	28,0	14,0	100	7.0	2	2
14,0	28,0	14,0	150	7.0	2	2
16,0	32,0	16,0	150	8.0	2	2
18,0	36,0	18,0	150	9.0	2	2
20,0	40,0	20,0	150	10.0	2	2

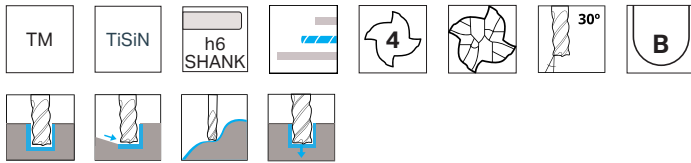
Ordering Code Código de orden
TM-BH2-04080475-R2.0
TM-BH2-040804100-R2.0
TM-BH2-05100575-R2.5
TM-BH2-051005100-R2.5
TM-BH2-051005150-R2.5
TM-BH2-06120675-R3.0
TM-BH2-061206100-R3.0
TM-BH2-061206150-R3.0
TM-BH2-08160875-R4.0
TM-BH2-081608100-R4.0
TM-BH2-081608150-R4.0
TM-BH2-102010100-R5.0
TM-BH2-102010150-R5.0
TM-BH2-122412100-R6.0
TM-BH2-122412150-R6.0
TM-BH2-142814100-R7.0
TM-BH2-142814150-R7.0
TM-BH2-163216150-R8.0
TM-BH2-183618150-R9.0
TM-BH2-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
					4 5 6 7 8 9 10 11 12
P	(<45HRC) Carbon steel alloy steel Acero de carbono	ap≤0.2D ae≤0.3D	160	rotate speed (min-1) feed velocity (mm/ min)	12740 10190 8490 7280 6370 5660 5100 4630 4250
	(50HRC) Alloy Steel aleaciones	ap≤0.15D ae≤0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	1020 1020 1020 1020 1020 1020 1020 1020 1020
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	9550 7640 6370 5460 4780 4250 3820 3470 3190
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	610 640 660 630 620 610 610 610 610
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.1D ae≤0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	8760 7010 5840 5010 4380 3890 3500 3190 2920
					610 630 640 630 630 620 630 640 640
					11150 8920 7430 6370 5570 4950 4460 4050 3720
					780 800 820 800 800 790 800 810 820
					9550 7640 6370 5460 4780 4250 3820 3470 3190
					610 640 660 660 670 650 650 660 670

All kinds of Steel

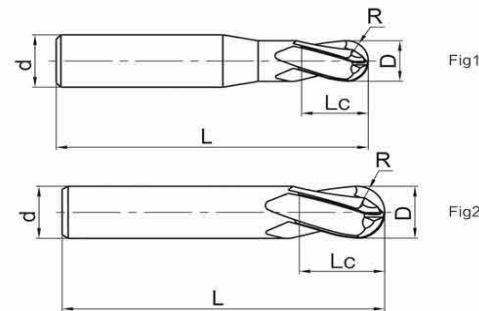
Todo tipo de acero

4 Flutes, Ballnose, Standard Length (TM-B4) / 4 flautas, punta esférica, longitud estándar (TM-B4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)		
Unidad			
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02

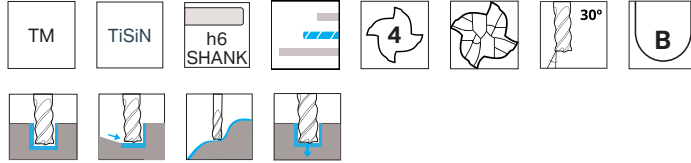


D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
1,00	2,00	3,00	50	0.5	4	1
2,00	4,00	3,00	50	1.0	4	1
3,00	6,00	3,00	50	1.5	4	2
1,00	2,00	4,00	50	0.5	4	1
1,50	3,00	4,00	50	0.75	4	1
2,00	4,00	4,00	50	1.0	4	1
2,50	5,00	4,00	50	1.25	4	1
3,00	6,00	4,00	50	1.5	4	1
3,50	7,00	4,00	50	1.75	4	1
4,00	8,00	4,00	50	2.0	4	2
5,00	10,0	5,00	50	2.5	4	2
6,00	12,0	6,00	50	3.0	4	2
8,00	16,0	8,00	60	4.0	4	2
10,0	20,0	10,0	75	5.0	4	2
12,0	24,0	12,0	75	6.0	4	2
14,0	28,0	14,0	75	7.0	4	2
16,0	32,0	16,0	100	8.0	4	2
18,0	36,0	18,0	100	9.0	4	2
20,0	40,0	20,0	100	10.0	4	2

Ordering Code Código de orden
TM-B4-01020350-R0.5
TM-B4-02040350-R1.0
TM-B4-03060350-R1.5
TM-B4-01020450-R0.5
TM-B4-015030450-R0.75
TM-B4-02040450-R1.0
TM-B4-025050450-R1.25
TM-B4-03060450-R1.5
TM-B4-035070450-R1.75
TM-B4-04080450-R2.0
TM-B4-05100550-R2.5
TM-B4-06120650-R3.0
TM-B4-08160860-R4.0
TM-B4-10201075-R5.0
TM-B4-12241275-R6.0
TM-B4-14281475-R7.0
TM-B4-163216100-R8.0
TM-B4-183618100-R9.0
TM-B4-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta									
					4	5	6	7	8	9	10	11	12	
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.2D ae≤0.3D	160	rotate speed (min-1) feed velocity (mm/ min)	12740	10190	8490	7280	6370	5660	5100	4630	4250	
	(50HRC) Alloy Steel Aleaciones de acero	ap≤0.15D ae≤0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	2040	2040	2040	2040	2040	2040	2040	2040	2040	
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	9550	7640	6370	5460	4780	4250	3820	3470	3190	
					1220	1280	1330	1270	1240	1220	1220	1210	1210	
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	8760	7010	5840	5010	4380	3890	3500	3190	2920	
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.1D ae≤0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	1230	1260	1290	1260	1260	1250	1260	1270	1290	
					11150	8920	7430	6370	5570	4950	4460	4050	3720	
					1560	1610	1640	1610	1610	1590	1610	1620	1640	
					9550	7640	6370	5460	4780	4250	3820	3470	3190	
					1220	1280	1330	1310	1340	1310	1300	1320	1340	

4 Flutes, Ballnose, Long Shank Length (TM-BH4) / 4 flautas, punta esférica, vástago largo (TM-BH4)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02

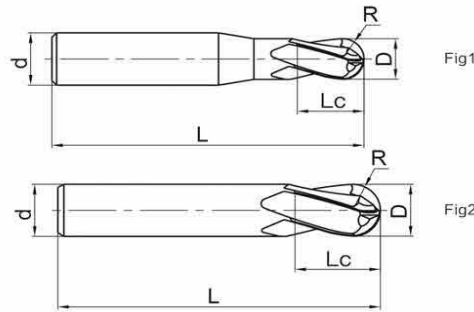


Fig1

Fig2



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. Nº de figura
4,00	8,00	4,00	75	2,0	4	2
4,00	8,00	4,00	100	2,0	4	2
5,00	10,0	5,00	75	2,5	4	2
5,00	10,0	5,00	100	2,5	4	2
5,00	10,0	5,00	150	2,5	4	2
6,00	12,0	6,00	75	3,0	4	2
6,00	12,0	6,00	100	3,0	4	2
6,00	12,0	6,00	150	3,0	4	2
8,00	16,0	8,00	75	4,0	4	2
8,00	16,0	8,00	100	4,0	4	2
8,00	16,0	8,00	150	4,0	4	2
10,0	20,0	10,0	100	5,0	4	2
10,0	20,0	10,0	150	5,0	4	2
12,0	24,0	12,0	100	6,0	4	2
12,0	24,0	12,0	150	6,0	4	2
14,0	28,0	14,0	100	7,0	4	2
14,0	28,0	14,0	150	7,0	4	2
16,0	32,0	16,0	150	8,0	4	2
18,0	36,0	18,0	150	9,0	4	2
20,0	40,0	20,0	150	10,0	4	2

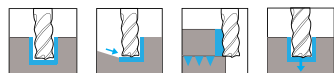
Ordering Code Código de orden
TM-BH4-04080475-R2.0
TM-BH4-040804100-R2.0
TM-BH4-05100575-R2.5
TM-BH4-051005100-R2.5
TM-BH4-051005150-R2.5
TM-BH4-06120675-R3.0
TM-BH4-061206100-R3.0
TM-BH4-061206150-R3.0
TM-BH4-08160875-R4.0
TM-BH4-081608100-R4.0
TM-BH4-081608150-R4.0
TM-BH4-102010100-R5.0
TM-BH4-102010150-R5.0
TM-BH4-122412100-R6.0
TM-BH4-122412150-R6.0
TM-BH4-142814100-R7.0
TM-BH4-142814150-R7.0
TM-BH4-163216150-R8.0
TM-BH4-183618150-R9.0
TM-BH4-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
					4 5 6 7 8 9 10 11 12
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap ≤ 0.2D ae ≤ 0.3D	160	rotate speed (min-1) feed velocity (mm/ min)	12740 10190 8490 7280 6370 5660 5100 4630 4250
	(50HRC) Alloy Steel Aleaciones de acero	ap ≤ 0.15D ae ≤ 0.15D	120	rotate speed (min-1) feed velocity (mm/ min)	2040 2040 2040 2040 2040 2040 2040 2040 2040
M	stainless steel Acero inoxidable	ap ≤ 0.2D ae ≤ 0.2D	110	rotate speed (min-1) feed velocity (mm/ min)	9550 7640 6370 5460 4780 4250 3820 3470 3190
	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap ≤ 0.2D ae ≤ 0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	1220 1280 1330 1270 1240 1220 1220 1210 1210
K	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap ≤ 0.1D ae ≤ 0.1D	120	rotate speed (min-1) feed velocity (mm/ min)	8760 7010 5840 5010 4380 3890 3500 3190 2920
					1230 1260 1290 1260 1260 1250 1260 1270 1290
					11150 8920 7430 6370 5570 4950 4460 4050 3720
					1560 1610 1640 1610 1610 1590 1610 1620 1640
					9550 7640 6370 5460 4780 4250 3820 3470 3190
					1220 1280 1330 1310 1340 1310 1300 1320 1340

All kinds of Steel

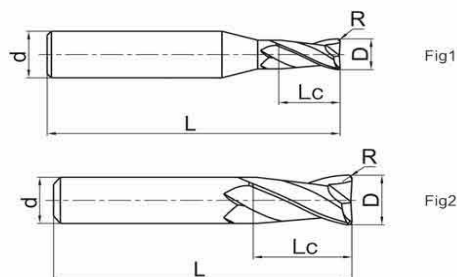
Todo tipo de acero

2 Flutes, Corner Radius, Standard Length (TM-R2) / 2 flautas, radio de esquina, longitud estándar (TM-R2)



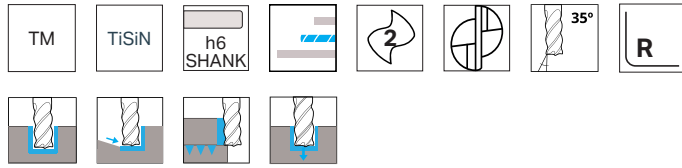
P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



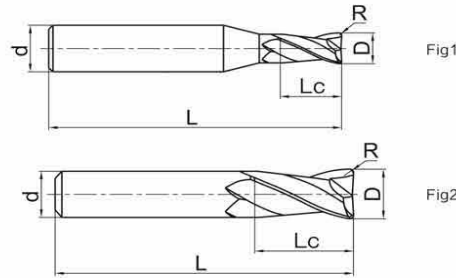
D	Lc	d	L	R	Z	Figure No. N° de figura	Ordering Code Código de orden
4.00	15,0	4,00	75	0.5	2	2	TM-RL2-04150475-R0.5
4.00	15,0	4,00	75	1.0	2	2	TM-RL2-04150475-R1.0
4.00	20,0	4,00	100	0.5	2	2	TM-RL2-042004100-R0.5
4.00	20,0	4,00	100	1.0	2	2	TM-RL2-042004100-R1.0
5.00	20,0	5,00	75	0.5	2	2	TM-RL2-05200575-R0.5
5.00	20,0	5,00	75	1.0	2	2	TM-RL2-05200575-R1.0
5,00	25,0	5,00	100	0.5	2	2	TM-RL2-052505100-R0.5
5,00	25,0	5,00	100	1.0	2	2	TM-RL2-052505100-R1.0
6.00	20,0	6,00	75	0.5	2	2	TM-RL2-06200675-R0.5
6.00	20,0	6,00	75	1.0	2	2	TM-RL2-06200675-R1.0
6.00	25,0	6,00	100	0.5	2	2	TM-RL2-062506100-R0.5
6.00	25,0	6,00	100	1.0	2	2	TM-BL2.062506100-R1.0
8.00	25,0	8,00	75	0.5	2	2	TM-RL2-08250875-R0.5
8.00	25,0	8,00	75	1.0	2	2	TM-RL2-08250875-R1.0
8,00	30,0	8,00	100	0.5	2	2	TM-RL2-083008100-R0.5
8,00	30,0	8,00	100	1.0	2	2	TM-RL2-083008100-R1.0
10.0	35,0	10,0	100	0.5	2	2	TM-RL2-103510100-R0.5
10,0	35,0	10,0	100	1.0	2	2	TM-BL2-103510100-R1.0
10.0	45,0	10,0	150	0.5	2	2	TM-RL2-104510150-B0.5
10.0	45,0	10,0	150	1.0	2	2	TM-RL2-104510150-R1.0
12.0	40,0	12,0	100	0.5	2	2	TM-RL2-124012100-R0.5
12.0	40,0	12,0	100	1.0	2	2	TM-RL2-124012100-R1.0
12.0	50,0	12,0	150	0.5	2	2	TM-RL2-125012150-R0.5
12,0	50,0	12,0	150	1.0	2	2	TM-RL2-125012150-R1.0

2 Flutes, Corner Radius, Standard Length (TM-R2) / 2 flautas, radio de esquina, longitud estándar (TM-R2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
14.0	30.0	14.0	75	0.5	2	2
14.0	30.0	14.0	75	1.0	2	2
14.0	30.0	14.0	75	2.0	2	2
16.0	45.0	16.0	100	0.5	2	2
16.0	45.0	16.0	100	1.0	2	2
16.0	45.0	16.0	100	2.0	2	2
16.0	45.0	16.0	100	3.0	2	2
18.0	45.0	18.0	100	0.5	2	2
18.0	45.0	18.0	100	1.0	2	2
18.0	45.0	18.0	100	2.0	2	2
18.0	45.0	18.0	100	3.0	2	2
20.0	45.0	20.0	100	0.5	2	2
20.0	45.0	20.0	100	1.0	2	2
20.0	45.0	20.0	100	2.0	2	2
20.0	45.0	20.0	100	3.0	2	2

Ordering Code Código de orden
TM-R2-14301475-R0.5
TM-R2-14301475-R1.0
TM-R2-14301475-R2.0
TM-R2-164516100-R0.5
TM-R2-164516100-R1.0
TM-R2-164516100-R2.0
TM-R2-164516100-R3.0
TM-R2-184518100-R0.5
TM-R2-184518100-R1.0
TM-R2-184518100-R2.0
TM-R2-184518100-R3.0
TM-R2-204520100-R0.5
TM-R2-204520100-R1.0
TM-R2-204520100-R2.0
TM-R2-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1070	1030	920	930	920	860	860	860
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	610	580	550	620	560	500	410	370
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					690	660	590	650	610	590	490	460
					16990	12740	8490	6370	5100	4250	3190	2550
					850	820	820	750	700	680	610	560
					14860	11150	7430	5570	4460	3720	2790	2230
					650	670	670	620	580	560	500	460

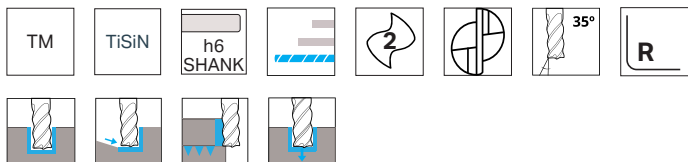
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

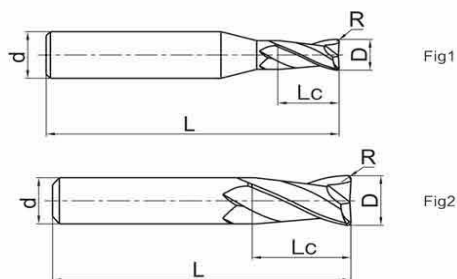
Todo tipo de acero

2 Flutes, Corner Radius, Long Flute Length (TM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (TM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•

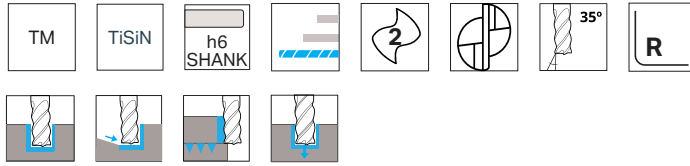
Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0.5	2	2
4,00	15,0	4,00	75	1.0	2	2
4,00	20,0	4,00	100	0.5	2	2
4,00	20,0	4,00	100	1.0	2	2
5,00	20,0	5,00	75	0.5	2	2
5,00	20,0	5,00	75	1.0	2	2
5,00	25,0	5,00	100	0.5	2	2
5,00	25,0	5,00	100	1.0	2	2
6,00	20,0	6,00	75	0.5	2	2
6,00	20,0	6,00	75	1.0	2	2
6,00	25,0	6,00	100	0.5	2	2
6,00	25,0	6,00	100	1.0	2	2
8,00	25,0	8,00	75	0.5	2	2
8,00	25,0	8,00	75	1.0	2	2
8,00	30,0	8,00	100	0.5	2	2
8,00	30,0	8,00	100	1.0	2	2
10,0	35,0	10,0	100	0.5	2	2
10,0	35,0	10,0	100	1.0	2	2
10,0	45,0	10,0	150	0.5	2	2
10,0	45,0	10,0	150	1.0	2	2
12,0	40,0	12,0	100	0.5	2	2
12,0	40,0	12,0	100	1.0	2	2
12,0	50,0	12,0	150	0.5	2	2
12,0	50,0	12,0	150	1.0	2	2

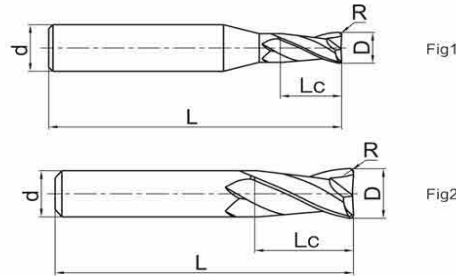
Ordering Code Código de orden
TM-RL2-04150475-R0.5
TM-RL2-04150475-R1.0
TM-RL2-042004100-R0.5
TM-RL2_042004100-B1.0
TM-RL2-05200575-R0.5
TM-RL2-05200575-R1.0
TM-RL2-052505100-R0.5
TM-RL2-052505100-R1.0
TM-BL2-06200675-R0.5
TM-RL2-06200675-R1.0
TM-RL2-062506100-R0.5
TM-BL2.062506100-B1.0
TM-RL2-08250875-R0.5
TM-BI 2_08250875-B1.0
TM-RL2-083008100-R0.5
TM_B[2.083008100-B1.0
TMLBL2.103510100-B0 5
TM.BL9.103510100_B1.0
TM-BI2.104510150_B0 5
TM-RL2-104510150-R1.0
TM-RL2-124012100-R0.5
TM.BI2.124019100-B10
TM.BI9.195019150_00 5
TM-RL2-125012150-R1.0

2 Flutes, Corner Radius, Long Flute Length (TM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (TM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No.
mm	mm	mm	mm	mm		Nº de figura
14,0	40,0	14,0	100	0.5	2	2
14,0	40,0	14,0	100	1.0	2	2
14,0	40,0	14,0	100	2.0	2	2
14,0	50,0	14,0	150	0.5	2	2
14,0	50,0	14,0	150	1.0	2	2
14,0	50,0	14,0	150	2.0	2	2
16,0	55,0	16,0	150	0.5	2	2
16,0	55,0	16,0	150	1.0	2	2
16,0	55,0	16,0	150	2.0	2	2
16,0	55,0	16,0	150	3.0	2	2
18,0	55,0	18,0	150	0.5	2	2
18,0	55,0	18,0	150	1.0	2	2
18,0	55,0	18,0	150	2.0	2	2
18,0	55,0	18,0	150	3.0	2	2
20,0	55,0	20,0	150	0.5	2	2
20,0	55,0	20,0	150	1.0	2	2
20,0	55,0	20,0	150	2.0	2	2
20,0	55,0	20,0	150	3.0	2	2

Ordering Code	Código de orden
TM-RL2-144014100-R0.5	
TM-RL2-144014100-R1.0	
TM-RL2-144014100-R2.0	
TM-RL2-145014150-R0.5	
TM-RL2-145014150-R1.0	
TM-RL2-145014150-R2.0	
TM-RL2-165516150-R0.5	
TM-RL2-165516150-R1.0	
TM-RL2-165516150-R2.0	
TM-RL2-165516150-R3.0	
TM-RL2-185518150-R0.5	
TM-RL2-185518150-R1.0	
TM-RL2-185518150-R2.0	
TM-RL2-185518150-R3.0	
TM-RL2-205520150-R0.5	
TM-RL2-205520150-R1.0	
TM-RL2-205520150-R2.0	
TM-RL2-205520150-R3.0	

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
					3 4 6 8 10 12 16 20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110 14330 9550 7170 5730 4780 3580 2870 1070 1030 920 930 920 860 860 860
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	13800 10350 6900 5180 4140 3450 2590 2070 610 580 550 620 560 500 410 370
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800 10350 6900 5180 4140 3450 2590 2070 690 660 590 650 610 590 490 460
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	16990 12740 8490 6370 5100 4250 3190 2550 850 820 820 750 700 680 610 560
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	14860 11150 7430 5570 4460 3720 2790 2230 650 670 670 620 580 560 500 460

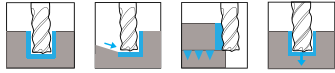
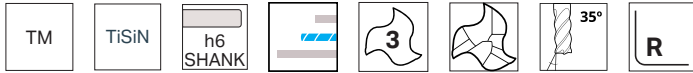
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

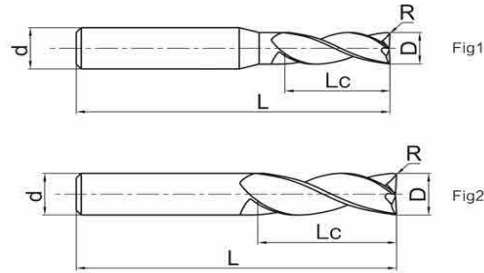
Todo tipo de acero

3 Flutes, Corner Radius, Standard Length (TM-R3) / 3 flautas, radio de esquina, longitud estándar (TM-R3)



P	•
M	•
K	•
N	•
S	•
H	•

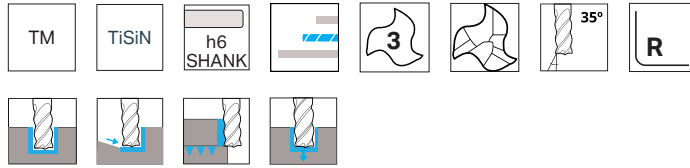
Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1,00	3,00	4,00	50	0.2	3	1
1,50	4,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.5	3	1
2,50	8,00	4,00	50	0.2	3	1
2,50	8,00	4,00	50	0.5	3	1
3,00	8,00	4,00	50	0.2	3	1
3,00	8,00	4,00	50	0.5	3	1
4,00	11,0	4,00	50	0.5	3	2
4,00	11,0	4,00	50	1.0	3	2
5,00	13,0	5,00	50	0.5	3	2
5,00	13,0	5,00	50	1.0	3	2
5,00	13,0	6,00	50	0.5	3	2
5,00	13,0	6,00	50	1.0	3	2
6,00	16,0	6,00	50	0.5	3	2
6,00	16,0	6,00	50	1.0	3	2
8,00	20,0	8,00	60	0.5	3	2
8,00	20,0	8,00	60	1.0	3	2
10,0	25,0	10,0	75	0.5	3	2
10,0	25,0	10,0	75	1.0	3	2
12,0	30,0	12,0	75	0.5	3	2
12,0	30,0	12,0	75	1.0	3	2

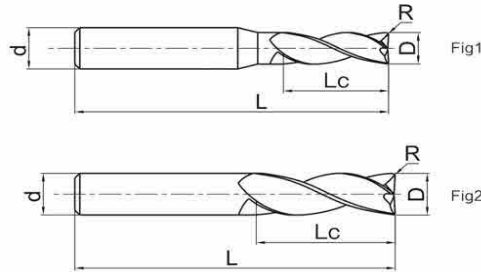
Ordering Code Código de orden
TM-R3-01030450-R0.2
TM-R3-015040450-R0.2
TM-R3-02060450-R0.2
TM-R3-02060450-R0.5
TM-R3-025080450-R0.2
TM-R3-025080450-R0.5
TM-R3-03080450-R0.2
TM-R3-03080450-R0.5
TM-R3-04110450-R0.5
TM-R3-04110450-R1.0
TM-R3-05130550-R0.5
TM-R3-05130550-R1.0
TM-R3-05130650-R0.5
TM-R3-05130650-R1.0
TM-R3-06160650-R0.5
TM-R3-06160650-R1.0
TM-R3-08200860-R0.5
TM-R3-08200860-R1.0
TM-R3-10251075-R0.5
TM-R3-10251075-R1.0
TM-R3-12301275-R0.5
TM-R3-12301275-R1.0

3 Flutes, Corner Radius, Standard Length (TM-R3) / 3 flautas, radio de esquina, longitud estándar (TM-R3)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
14.0	30.0	14.0	75	0.5	3	2
14.0	30.0	14.0	75	1.0	3	2
14.0	30.0	14.0	75	2.0	3	2
16.0	45.0	16.0	100	0.5	3	2
16.0	45.0	16.0	100	1.0	3	2
16.0	45.0	16.0	100	2.0	3	2
16.0	45.0	16.0	100	3.0	3	2
18.0	45.0	18.0	100	0.5	3	2
18.0	45.0	18.0	100	1.0	3	2
18.0	45.0	18.0	100	2.0	3	2
18.0	45.0	18.0	100	3.0	3	2
20.0	45.0	20.0	100	0.5	3	2
20.0	45.0	20.0	100	1.0	3	2
20.0	45.0	20.0	100	2.0	3	2
20.0	45.0	20.0	100	3.0	3	2

Ordering Code Código de orden
TM-R3-14301475-R0.5
TM-R3-14301475-R1.0
TM-R3-14301475-R2.0
TM-R3-164516100-R0.5
TM-R3-164516100-R1.0
TM-R3-164516100-R2.0
TM-R3-164516100-R3.0
TM-R3-184518100-R0.5
TM-R3-184518100-R1.0
TM-R3-184518100-R2.0
TM-R3-184518100-R3.0
TM-R3-204520100-R0.5
TM-R3-204520100-R1.0
TM-R3-204520100-R2.0
TM-R3-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	910	870	830	930	850	760	620	560
K	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					1040	990	890	980	920	880	740	680
					16990	12740	8490	6370	5100	4250	3190	2550
					1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

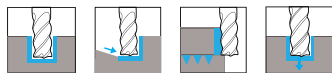
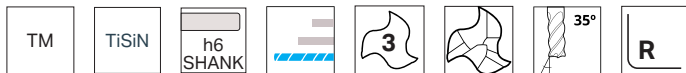
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

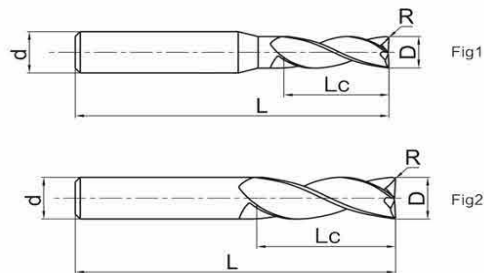
Todo tipo de acero

3 Flutes, Corner Radius, Long Flute Length (TM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (TM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•

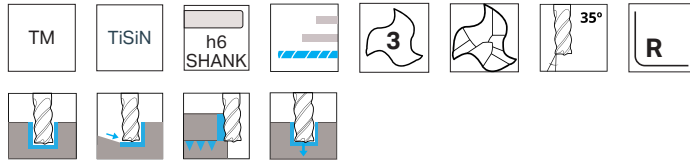
Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
4,00	15,0	4,00	75	0.5	3	2
4,00	15,0	4,00	75	1.0	3	2
4,00	20,0	4,00	100	0.5	3	2
4,00	20,0	4,00	100	1.0	3	2
5,00	20,0	5,00	75	0.5	3	2
5,00	20,0	5,00	75	1.0	3	2
5,00	25,0	5,00	100	0.5	3	2
5,00	25,0	5,00	100	1.0	3	2
6,00	20,0	6,00	75	0.5	3	2
6,00	20,0	6,00	75	1.0	3	2
6,00	25,0	6,00	100	0.5	3	2
6,00	25,0	6,00	100	1.0	3	2
8,00	25,0	8,00	75	0.5	3	2
8,00	25,0	8,00	75	1.0	3	2
8,00	30,0	8,00	100	0.5	3	2
8,00	30,0	8,00	100	1.0	3	2
10,0	35,0	10,0	100	0.5	3	2
10,0	35,0	10,0	100	1.0	3	2
10,0	45,0	10,0	150	0.5	3	2
10,0	45,0	10,0	150	1.0	3	2
12,0	40,0	12,0	100	0.5	3	2
12,0	40,0	12,0	100	1.0	3	2
12,0	50,0	12,0	150	0.5	3	2
12,0	50,0	12,0	150	1.0	3	2

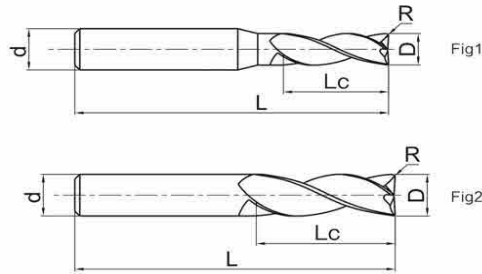
Ordering Code Código de orden
TM-RL3-04150475-R0.5
TM-RL3-04150475-R1.0
TM-RL3-042004100-R0.5
TM-RL3-042004100-R1.0
TM-RL3-05200575-R0.5
TM-RL3-05200575-R1.0
TM-RL3-052505100-R0.5
TM-RL3-052505100-R1.0
TM-RL3-06200675-R0.5
TM-RL3-06200675-R1.0
TM-RL3-062506100-R0.5
TM-RL3-062506100-R1.0
TM-RL3-08250875-R0.5
TM-RL3-08250875-R1.0
TM-RL3-083008100-R0.5
TM-RL3-083008100-R1.0
TM-RL3-103510100-R0.5
TM-RL3-103510100-B1.0
TM-RL3-104510150-R0.5
TM-RL3-104510150-R1.0
TM-RL3-124012100-R0.5
TM-RL3-124012100-R1.0
TM-RL3-125012150-R0.5
TM-RL3-125012150-R1.0

3 Flutes, Corner Radius, Long Flute Length (TM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (TM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No.
mm	mm	mm	mm	mm		Nº de figura
14,0	40,0	14,0	100	0.5	3	2
14,0	40,0	14,0	100	1.0	3	2
14,0	40,0	14,0	100	2.0	3	2
14,0	50,0	14,0	150	0.5	3	2
14,0	50,0	14,0	150	1.0	3	2
14,0	50,0	14,0	150	2.0	3	2
16,0	55,0	16,0	150	0.5	3	2
16,0	55,0	16,0	150	1.0	3	2
16,0	55,0	16,0	150	2.0	3	2
16,0	55,0	16,0	150	3.0	3	2
18,0	55,0	18,0	150	0.5	3	2
18,0	55,0	18,0	150	1.0	3	2
18,0	55,0	18,0	150	2.0	3	2
18,0	55,0	18,0	150	3.0	3	2
20,0	55,0	20,0	150	0.5	3	2
20,0	55,0	20,0	150	1.0	3	2
20,0	55,0	20,0	150	2.0	3	2
20,0	55,0	20,0	150	3.0	3	2

Ordering Code
Código de orden
TM-RL3-144014100-R0.5
TM-RL3-144014100-R1.0
TM-RL3-144014100-R2.0
TM-RL3-145014150-R0.5
TM-RL3-145014150-R1.0
TM-RL3-145014150-R2.0
TM-RL3-165516150-R0.5
TM-RL3-165516150-R1.0
TM-RL3-165516150-R2.0
TM-RL3-165516150-R3.0
TM-RL3-185518150-R0.5
TM-RL3-185518150-R1.0
TM-RL3-185518150-R2.0
TM-RL3-185518150-R3.0
TM-RL3-205520150-R0.5
TM-RL3-205520150-R1.0
TM-RL3-205520150-R2.0
TM-RL3-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	1610	1550	1380	1400	1380	1290	1290	1290
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1040	990	890	980	920	880	740	680
K	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	140	rotate speed (min-1) feed velocity (mm/ min)	16990	12740	8490	6370	5100	4250	3190	2550
		ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	1270	1220	1220	1130	1060	1020	910	840
					14860	11150	7430	5570	4460	3720	2790	2230
					980	1000	1000	940	870	840	750	680

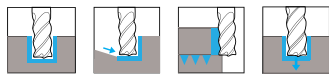
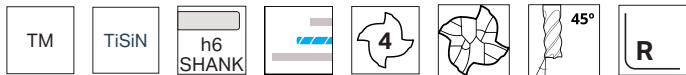
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

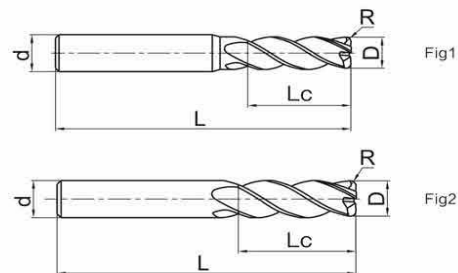
Todo tipo de acero

4 Flutes, Corner Radius, Standard Length (TM-R4) / 4 flautas, radio de esquina, longitud estándar (TM-R4)



P	•
M	•
K	•
N	•
S	•
H	•

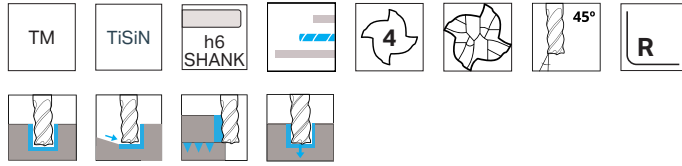
Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1.00	3.00	4.00	50	0.2	4	1
1.50	4.00	4.00	50	0.2	4	1
2.00	6.00	4.00	50	0.2	4	1
2.00	6.00	4.00	50	0.5	4	1
2.50	8.00	4.00	50	0.2	4	1
2.50	8.00	4.00	50	0.5	4	1
3.00	8.00	4.00	50	0.2	4	1
3.00	8.00	4.00	50	0.5	4	1
4.00	11.0	4.00	50	0.5	4	2
4.00	11.0	4.00	50	1.0	4	2
5.00	13.0	5.00	50	0.5	4	2
5.00	13.0	5.00	50	1.0	4	2
5.00	13.0	6.00	50	0.5	4	2
5.00	13.0	6.00	50	1.0	4	2
6.00	16.0	6.00	50	0.5	4	2
6.00	16.0	6.00	50	1.0	4	2
8.00	20.0	8.00	60	0.5	4	2
8.00	20.0	8.00	60	1.0	4	2
10.0	25.0	10.0	75	0.5	4	2
10.0	25.0	10.0	75	1.0	4	2
12.0	30.0	12.0	75	0.5	4	2
12.0	30.0	12.0	75	1.0	4	2

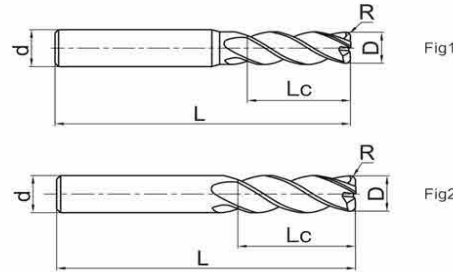
Ordering Code Código de orden
TM-R4-01030450-R0.2
TM-P4-015040450-R0.2
TM-R4-02060450-R0.2
TM-R4-02060450-R0.5
TM-R4-025080450-R0.2
TM-R4-025080450-R0.5
TM-R4-03080450-R0.2
TM-R4-03080450-R0.5
TM-R4-04110450-R0.5
TM-R4-04110450-R1.0
TM-R4-05130550-R0.5
TM-R4-05130550-R1.0
TM-R4-05130650-R0.5
TM-R4-05130650-R1.0
TM-R4-06160650-R0.5
TM-R4-06160650-R1.0
TM-R4-08200860-R0.5
TM-R4-08200860-R1.0
TM-R4-10251075-R0.5
TM-B4-10251075-R1.0
TM-R4-12301275-R0.5
TM-R4-12301275-R1.0

4 Flutes, Corner Radius, Standard Length (TM-R4) / 4 flautas, radio de esquina, longitud estándar (TM-R4)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
14.0	30.0	14.0	75	0.5	4	2
14.0	30.0	14.0	75	1.0	4	2
14.0	30.0	14.0	75	2.0	4	2
16.0	45.0	16.0	100	0.5	4	2
16.0	45.0	16.0	100	1.0	4	2
16.0	45.0	16.0	100	2.0	4	2
16.0	45.0	16.0	100	3.0	4	2
18.0	45.0	18.0	100	0.5	4	2
18.0	45.0	18.0	100	1.0	4	2
18.0	45.0	18.0	100	2.0	4	2
18.0	45.0	18.0	100	3.0	4	2
20.0	45.0	20.0	100	0.5	4	2
20.0	45.0	20.0	100	1.0	4	2
20.0	45.0	20.0	100	2.0	4	2
20.0	45.0	20.0	100	3.0	4	2

Ordering Code Código de orden
TM-R4-14301475-R0.5
TM-B4-14301475-B1.0
TM-R4-14301475-R2.0
TM-R4-164516100-R0.5
TM-R4-164516100-B1.0
TM-R4-164516100-R2.0
TM-R4-164516100-R3.0
TM-R4-184518100-R0.5
TM-R4-184518100-R1.0
TM-R4-184518100-R2.0
TM-R4-184518100-R3.0
TM-R4-204520100-R0.5
TM-B4-204520100-B1.0
TM-R4-204520100-R2.0
TM-R4-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 3 4 6 8 10 12 16 20							
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
M	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	2140	2060	1830	1860	1830	1720	1720	1720
K	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1210	1160	1100	1240	1130	1010	830	750
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					1380	1330	1190	1300	1230	1170	980	910
					16990	12740	8490	6370	5100	4250	3190	2550
					1700	1630	1630	1500	1410	1360	1210	1120
					14860	11150	7430	5570	4460	3720	2790	2230
					1310	1340	1340	1250	1160	1120	1000	910

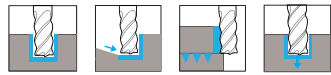
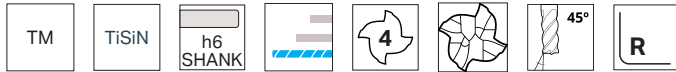
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

All kinds of Steel

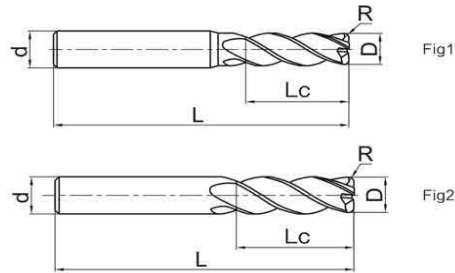
Todo tipo de acero

4 Flutes, Corner Radius, Long Flute Length (TM-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (TM-RL4)



P	•
M	•
K	•
N	•
S	•
H	•

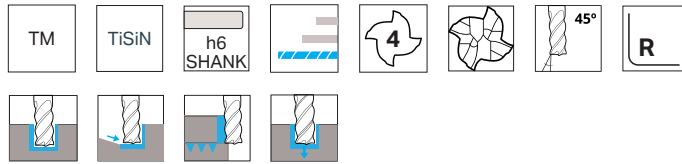
Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0.5	4	1
4,00	15,0	4,00	75	1.0	4	1
4,00	20,0	4,00	100	0.5	4	1
4,00	20,0	4,00	100	1.0	4	1
5,00	20,0	5,00	75	0.5	4	1
5,00	20,0	5,00	75	1.0	4	1
5,00	25,0	5,00	100	0.5	4	1
5,00	25,0	5,00	100	1.0	4	1
6,00	20,0	6,00	75	0.5	4	2
6,00	20,0	6,00	75	1.0	4	2
6,00	25,0	6,00	100	0.5	4	2
6,00	25,0	6,00	100	1.0	4	2
8,00	25,0	8,00	75	0.5	4	2
8,00	25,0	8,00	75	1.0	4	2
8,00	30,0	8,00	100	0.5	4	2
8,00	30,0	8,00	100	1.0	4	2
10,0	35,0	10,0	100	0.5	4	2
10,0	35,0	10,0	100	1.0	4	2
10,0	45,0	10,0	150	0.5	4	2
10,0	45,0	10,0	150	1.0	4	2
12,0	40,0	12,0	100	0.5	4	2
12,0	40,0	12,0	100	1.0	4	2
12,0	50,0	12,0	150	0.5	4	2
12,0	50,0	12,0	150	1.0	4	2

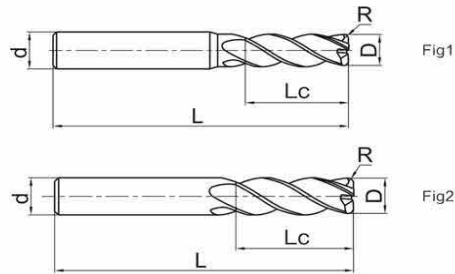
Ordering Code Código de orden
TM-RL4-04150475-R0.5
TM-RL4-04150475-R1.0
TM-RL4-042004100-R0.5
TM-RL4-042004100-R1.0
TM-RL4-05200575-R0.5
TM-RL4-05200575-R1.0
TM-RL4-052505100-R0.5
TM-RL4-052505100-R1.0
TM-RL4-06200675-R0.5
TM-RL4-06200675-R1.0
TM-RL4-062506100-R0.5
TM-RL4-062506100-R1.0
TM-RL4-08250875-R0.5
TM-RL4-08250875-R1.0
TM-RL4-083008100-R0.5
TM-RL4-083008100-R1.0
TM-RL4-103510100-R0.5
TM-RL4-103510100-R1.0
TM-RL4-104510150-R0.5
TM-RL4-104510150-R1.0
TM-RL4-124012100-R0.5
TM-RL4-124012100-R1.0
TM-RL4-125012150-R0.5
TM-RL4-125012150-R1.0

4 Flutes, Corner Radius, Long Flute Length (TM-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (TM-RL4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No.
mm	mm	mm	mm	mm		Nº de figura
14,0	40,0	14,0	100	0.5	4	2
14,0	40,0	14,0	100	1.0	4	2
14,0	40,0	14,0	100	2.0	4	2
14,0	50,0	14,0	150	0.5	4	2
14,0	50,0	14,0	150	1.0	4	2
14,0	50,0	14,0	150	2.0	4	2
16,0	55,0	16,0	150	0.5	4	2
16,0	55,0	16,0	150	1.0	4	2
16,0	55,0	16,0	150	2.0	4	2
16,0	55,0	16,0	150	3.0	4	2
18,0	55,0	18,0	150	0.5	4	2
18,0	55,0	18,0	150	1.0	4	2
18,0	55,0	18,0	150	2.0	4	2
18,0	55,0	18,0	150	3.0	4	2
20,0	55,0	20,0	150	0.5	4	2
20,0	55,0	20,0	150	1.0	4	2
20,0	55,0	20,0	150	2.0	4	2
20,0	55,0	20,0	150	3.0	4	2

Ordering Code
Código de orden
TM-RL4-144014100-R0.5
TM-RL4-144014100-R1.0
TM-RL4-144014100-R2.0
TM-RL4-145014150-R0.5
TM-RL4-145014150-R1.0
TM-RL4-145014150-R2.0
TM-RL4-165516150-R0.5
TM-RL4-165516150-R1.0
TM-RL4-165516150-R2.0
TM-RL4-165516150-R3.0
TM-RL4-185518150-R0.5
TM-RL4-185518150-R1.0
TM-RL4-185518150-R2.0
TM-RL4-185518150-R3.0
TM-RL4-205520150-R0.5
TM-RL4-205520150-R1.0
TM-RL4-205520150-R2.0
TM-RL4-205520150-R3.0

ISO	Workpiece Material
	Material de trabajo
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones
M	(50HRC) Alloy Steel Aleaciones de acero
K	stainless steel Acero inoxidable
	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular
	(35-45HRC) High alloy cast iron Fundición de alta aleación

(mm) Depth of cut	Vc	Rotate Speed
Profundidad del corte	m/min	Feed Velocity
		Velocidad de rotación
		Velocidad de avance
ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)
ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)
ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)
ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)
ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta							
3	4	6	8	10	12	16	20
19110	14330	9550	7170	5730	4780	3580	2870
2140	2060	1830	1860	1830	1720	1720	1720
13800	10350	6900	5180	4140	3450	2590	2070
1210	1160	1100	1240	1130	1010	830	750
13800	10350	6900	5180	4140	3450	2590	2070
1380	1330	1190	1300	1230	1170	980	910
16990	12740	8490	6370	5100	4250	3190	2550
1700	1630	1630	1500	1410	1360	1210	1120
14860	11150	7430	5570	4460	3720	2790	2230
1310	1340	1340	1250	1160	1120	1000	910

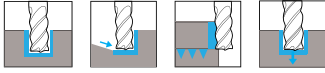
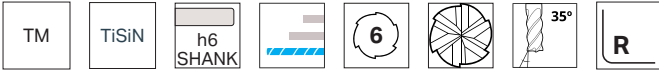
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

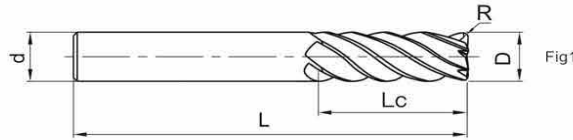
All kinds of Steel

Todo tipo de acero

6 Flutes, Corner Radius, Standard Length (TM-R6) / 6 flautas, radio de esquina, longitud estándar (TM-R6)



P	•
M	•
K	•
N	
S	
H	



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
6,00	18,0	6,00	60	0.5	6	1
6,00	18,0	6,00	60	1.0	6	1
8,00	20,0	8,00	60	0.5	6	1
8,00	20,0	8,00	60	1.0	6	1
10,0	30,0	10,0	75	0.5	6	1
10,0	30,0	10,0	75	1.0	6	1
12,0	32,0	12,0	75	0.5	6	1
12,0	32,0	12,0	75	1.0	6	1
16,0	40,0	16,0	100	0.5	6	1
16,0	40,0	16,0	100	1.0	6	1
16,0	40,0	16,0	100	2.0	6	1
16,0	40,0	16,0	100	3.0	6	1
20,0	45,0	20,0	100	0.5	6	1
20,0	45,0	20,0	100	1.0	6	1
20,0	45,0	20,0	100	2.0	6	1
20,0	45,0	20,0	100	3.0	6	1

Ordering Code Código de orden
TM-R6-06180660-R0.5
TM-R6-06180660-R1.0
TM-R6-08200860-R0.5
TM-R6-08200860-R1.0
TM-R6-10301075-R0.5
TM-R6-10301075-R1.0
TM-R6-12321275-R0.5
TM-R6-12321275-R1.0
TM-R6-164016100-R0.5
TM-R6-164016100-R1.0
TM-R6-164016100-R2.0
TM-R6-164016100-R3.0
TM-R6-204520100-R0.5
TM-R6-204520100-R1.0
TM-R6-204520100-R2.0
TM-R6-204520100-R3.0

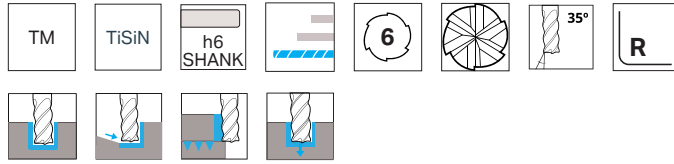
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D aes0.15D	180	rotate speed (min-1) feed velocity (mm/ min)
	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D aes0.12D	130	rotate speed (min-1) feed velocity (mm/ min)
M	stainless steel Acero inoxidable	ap≤1.5D aes0.15D	130	rotate speed (min-1) feed velocity (mm/ min)
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D aes0.15D	160	rotate speed (min-1) feed velocity (mm/ min)
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D aes0.12D	140	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta							
3	4	6	8	10	12	16	20
19110	14330	9550	7170	5730	4780	3580	2870
3210	3100	2750	2800	2750	2580	2580	2580
13800	10350	6900	5180	4140	3450	2590	2070
1820	1740	1660	1860	1690	1510	1240	1120
13800	10350	6900	5180	4140	3450	2590	2070
2070	1990	1780	1960	1840	1760	1480	1370
16990	12740	8490	6370	5100	4250	3190	2550
2550	2450	2450	2260	2110	2040	1820	1680
14860	11150	7430	5570	4460	3720	2790	2230
1960	2010	2010	1870	1740	1670	1510	1360

50%-70%, 40%-60%

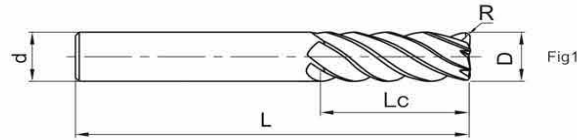
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

6 Flutes, Corner Radius, Long Flute Length (TM-RL6) / 6 flautas, radio de esquina, longitud de flauta larga (TM-RL6)



P	•
M	•
K	•
N	
S	
H	

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
6,00	24,0	6,00	75	0.5	6	1
6,00	24,0	6,00	75	1.0	6	1
8,00	32,0	8,00	75	0.5	6	1
8,00	32,0	8,00	75	1.0	6	1
10,0	40,0	10,0	100	0.5	6	1
10,0	40,0	10,0	100	1.0	6	1
12,0	45,0	12,0	100	0.5	6	1
12,0	45,0	12,0	100	1.0	6	1
16,0	64,0	16,0	150	0.5	6	1
16,0	64,0	16,0	150	1.0	6	1
16,0	64,0	16,0	150	2.0	6	1
16,0	64,0	16,0	150	3.0	6	1
20,0	75,0	20,0	150	0.5	6	1
20,0	75,0	20,0	150	1.0	6	1
20,0	75,0	20,0	150	2.0	6	1
20,0	75,0	20,0	150	3.0	6	1

Ordering Code Código de orden
TM-RL6-06240675-R0.5
TM-RL6-06240675-R1.0
TM-RL6-08320875-R0.5
TM-RL6-08320875-R1.0
TM-RL6-104010100-R0.5
TM-RL6-104010100-R1.0
TM-RL6-124512100-R0.5
TM-RL6-124512100-R1.0
TM-RL6-166416150-R0.5
TM-RL6-166416150-R1.0
TM-RL6-166416150-R2.0
TM-RL6-166416150-R3.0
TM-RL6-207520150-R0.5
TM-RL6-207520150-R1.0
TM-RL6-207520150-R2.0
TM-RL6-207520150-R3.0

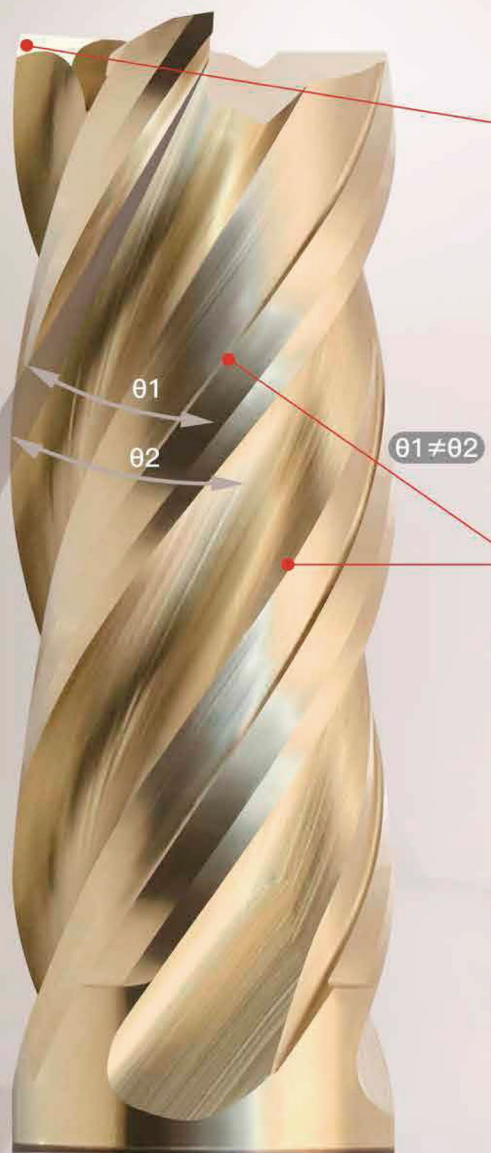
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 3 4 6 8 10 12 16 20							
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	180	rotate speed (min-1) feed velocity (mm/ min)	19110	14330	9550	7170	5730	4780	3580	2870
M	(50HRC) Alloy Steel Aleaciones de acero	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	3210	3100	2750	2800	2750	2580	2580	2580
K	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	130	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	160	rotate speed (min-1) feed velocity (mm/ min)	1820	1740	1660	1860	1690	1510	1240	1120
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	140	rotate speed (min-1) feed velocity (mm/ min)	13800	10350	6900	5180	4140	3450	2590	2070
					2070	1990	1780	1960	1840	1760	1480	1370
					16990	12740	8490	6370	5100	4250	3190	2550
					2550	2450	2450	2260	2110	2040	1820	1680
					14860	11150	7430	5570	4460	3720	2790	2230
					1960	2010	2010	1870	1740	1670	1510	1360

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

EM

Hard steel, Stainless steel high-speed and efficient processing.

Acero duro, Acero inoxidable de alta velocidad y procesamiento eficiente.



Flute edge passivation.
The edge shape optimization.
Improve tool life and workpiece surface finish.

Pasivado del borde de la flauta.
Optimización de la forma del filo.
Mejora la vida útil de la herramienta y el acabado superficial de la pieza.

Unequal helix angle.
Variable flute pitch and unequal helix angle design, with excellent anti-vibration, performance and excellent surface quality.

Ángulo de hélice desigual.
Filo variable y diseño desigual del ángulo de hélice, con excelente rendimiento anti-vibración y excelente calidad superficial.

Special cutter design, very suitable for hard steel.
Diseño especial de la fresa, muy adecuado para acero duro.



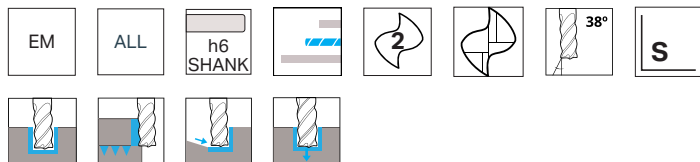
Variable bottom edges design to reduce vibration and improve the surface finish.

Diseño de bordes inferiores variables para reducir la vibración y mejorar el acabado superficial.

High speed and high efficiency • Hard steel, Stainless steel

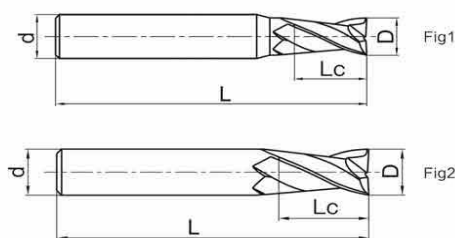
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Square, Standard Length (EM-S2) / 2 flautas, cuadradas, longitud estándar (EM-S2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. Nº de figura	Ordering Code Código de orden
1,00	3,00	4,00	50	2	1	EM-S2-01030450
1,50	4,00	4,00	50	2	1	EM-S2-015040450
2,00	6,00	4,00	50	2	1	EM-S2-02060450
2,50	8,00	4,00	50	2	1	EM-S2-025080450
3,00	8,00	4,00	50	2	1	EM-S2-03080450
4,00	11,0	4,00	50	2	2	EM-S2-04110450
5,00	13,0	5,00	50	2	2	EM-S2-05130550
5,00	13,0	6,00	50	2	1	EM-S2-05130650
6,00	16,0	6,00	50	2	2	EM-S2-06160650
8,00	20,0	8,00	60	2	2	EM-S2-08200860
10,0	25,0	10,0	75	2	2	EM-S2-10251075
12,0	30,0	12,0	75	2	2	EM-S2-12301275
14,0	30,0	14,0	75	2	2	EM-S2-14301475
16,0	45,0	16,0	100	2	2	EM-S2-164516100
18,0	45,0	18,0	100	2	2	EM-S2-184518100
20,0	45,0	20,0	100	2	2	EM-S2-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230	15920	10620	7960	6370	5310	3980	3190
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2040	1960	1690	1670	1620	1590	1490	1480
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
					1290	1180	1080	1160	1050	930	760	680
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	1580	1330	1150	1220	1130	1080	900	820
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	18050	13540	9020	6770	5410	4510	3380	2710
					1620	1500	1440	1300	1200	1150	1020	930
					15920	11940	7960	5970	4780	3980	2990	2390
					1290	1250	1190	1090	1000	960	850	770
					16710	9550	6370	4780	3820	3190	2390	1910
					380	380	380	380	370	360	310	290

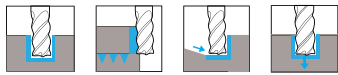
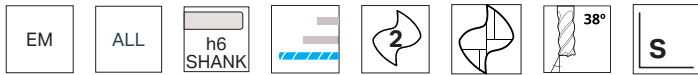
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

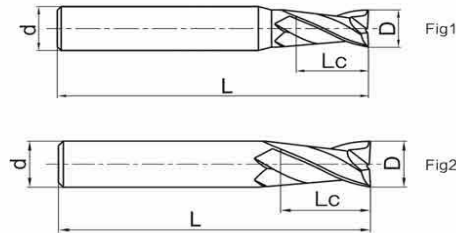
High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Square, Long Flute Length (EM-SL2) / 2 flautas, cuadradas, longitud de flauta larga (EM-SL2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No.	Ordering Code
mm	mm	mm	mm		Nº de figura	Código de orden
4,00	15,0	4,00	75	2	2	EM-SL2-04150475
4,00	20,0	4,00	100	2	2	EM-SL2-042004100
5,00	20,0	5,00	75	2	2	EM-SL2-05200575
5,00	25,0	5,00	100	2	2	EM-SL2-052505100
6,00	20,0	6,00	75	2	2	EM-SL2-06200675
6,00	25,0	6,00	100	2	2	EM-SL2-062506100
8,00	25,0	8,00	75	2	2	EM-SL2-08250875
8,00	30,0	8,00	100	2	2	EM-SL2-083008100
10,0	35,0	10,0	100	2	2	EM-SL2-103510100
10,0	45,0	10,0	150	2	2	EM-SL2-104510150
12,0	40,0	12,0	100	2	2	EM-SL2-124012100
12,0	50,0	12,0	150	2	2	EM-SL2-125012150
14,0	40,0	14,0	100	2	2	EM-SL2-144014100
14,0	50,0	14,0	150	2	2	EM-SL2-145014150
16,0	55,0	16,0	150	2	2	EM-SL2-165516150
18,0	55,0	18,0	150	2	2	EM-SL2-185518150
20,0	55,0	20,0	150	2	2	EM-SL2-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230	15920	10620	7960	6370	5310	3980	3190
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2040	1960	1690	1670	1620	1590	1490	1480
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
					1290	1180	1080	1160	1050	930	760	680
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	1580	1330	1150	1220	1130	1080	900	820
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	18050	13540	9020	6770	5410	4510	3380	2710
					1620	1500	1440	1300	1200	1150	1020	930
					15920	11940	7960	5970	4780	3980	2990	2390
					1290	1250	1190	1090	1000	960	850	770
					16710	9550	6370	4780	3820	3190	2390	1910
					380	380	380	380	370	360	310	290

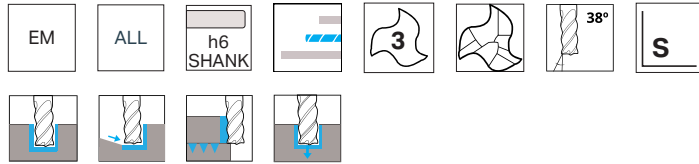
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table. La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

High speed and high efficiency • Hard steel, Stainless steel

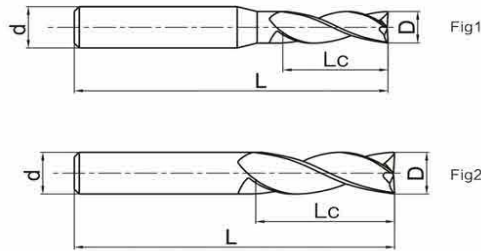
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

3 Flutes, Square, Standard Length (EM-S3) / 3 flautas, cuadradas, longitud estándar (EM-S3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



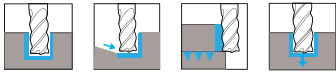
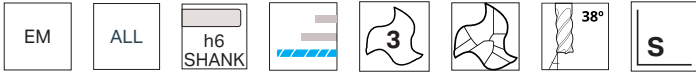
D	Lc	d	L	Z	Figure No. N° de figura
mm	mm	mm	mm		
1,00	3,00	4,00	50	3	1
1,50	4,00	4,00	50	3	1
2,00	6,00	4,00	50	3	1
2,50	8,00	4,00	50	3	1
3,00	8,00	4,00	50	3	1
4,00	11,0	4,00	50	3	2
5,00	13,0	5,00	50	3	2
5,00	13,0	6,00	50	3	1
6,00	16,0	6,00	50	3	2
8,00	20,0	8,00	60	3	2
10,0	25,0	10,0	75	3	2
12,0	30,0	12,0	75	3	2
14,0	30,0	14,0	75	3	2
16,0	45,0	16,0	100	3	2
18,0	45,0	18,0	100	3	2
20,0	45,0	20,0	100	3	2

Ordering Code Código de orden
EM-S3-01030450
EM-S3-015040450
EM-S3-02060450
EM-S3-025080450
EM-S3-03080450
EM-S3-04110450
EM-S3-05130550
EM-S3-05130650
EM-S3-06160650
EM-S3-08200860
EM-S3-10251075
EM-S3-12301275
EM-S3-14301475
EM-S3-164516100
EM-S3-184518100
EM-S3-204520100

High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Square, Standard Length (EM-S2) / 2 flautas, cuadradas, longitud estándar (EM-S2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit
Unidad

(mm)

D

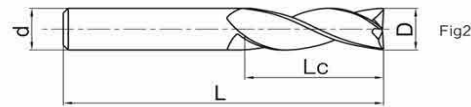
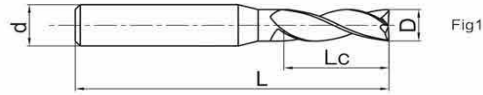
D ≤ 12

D > 12

Tol

0
-0.015

0
-0.02



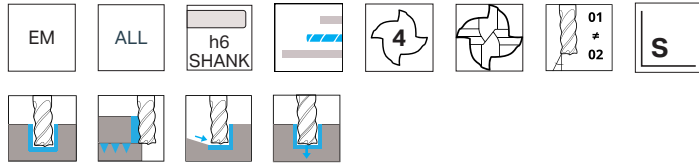
D	Lc	d	L	Z	Figure No. N° de figura
mm	mm	mm	mm		
4,00	15,0	4,00	75	3	1
4,00	20,0	4,00	100	3	1
5,00	20,0	5,00	75	3	1
5,00	25,0	5,00	100	3	1
6,00	20,0	6,00	75	3	1
6,00	25,0	6,00	100	3	2
8,00	25,0	8,00	75	3	2
8,00	30,0	8,00	100	3	1
10,0	35,0	10,0	100	3	2
10,0	45,0	10,0	150	3	2
12,0	40,0	12,0	100	3	2
12,0	50,0	12,0	150	3	2
14,0	40,0	14,0	100	3	2
14,0	50,0	14,0	150	3	2
16,0	55,0	16,0	150	3	2
18,0	55,0	18,0	150	3	2
20,0	55,0	20,0	150	3	2

Ordering Code Código de orden
EM-SL3-04150475
EM-SL3-042004100
EM-SL3-05200575
EM-SL3-052505100
EM-SL3-06200675
EM-SL3-062506100
EM-SL3-08250875
EM-SL3-083008100
EM-SL3-103510100
EM-SL3-104510150
EM-SL3-124012100
EM-SL3-125012150
EM-SL3-144014100
EM-SL3-145014150
EM-SL3-165516150
EM-SL3-185518150
EM-SL3-205520150

High speed and high efficiency • Hard steel, Stainless steel

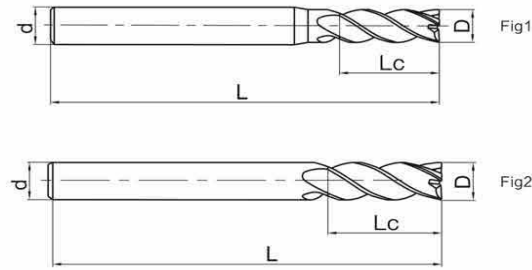
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

4 Flutes, Square, Standard Length (EM-S4) / 4 flautas, cuadradas, longitud estándar (EM-S4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. N° de figura	Ordering Code Código de orden
1,00	3,00	4,00	50	4	1	EM-S4-01030450
1,50	4,00	4,00	50	4	1	EM-S4-015040450
2,00	6,00	4,00	50	4	1	EM-S4-02060450
2,50	8,00	4,00	50	4	1	EM-S4-025080450
3,00	8,00	4,00	50	4	1	EM-S4-03080450
4,00	11,0	4,00	50	4	2	EM-S4-04110450
5,00	13,0	5,00	50	4	2	EM-S4-05130550
5,00	13,0	6,00	50	4	1	EM-S4-05130650
6,00	16,0	6,00	50	4	2	EM-S4-06160650
8,00	20,0	8,00	60	4	2	EM-S4-08200860
10,0	25,0	10,0	75	4	2	EM-S4-10251075
12,0	30,0	12,0	75	4	2	EM-S4-12301275
14,0	30,0	14,0	75	4	2	EM-S4-14301475
16,0	45,0	16,0	100	4	2	EM-S4-164516100
18,0	45,0	18,0	100	4	2	EM-S4-184518100
20,0	45,0	20,0	100	4	2	EM-S4-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230	15920	10620	7960	6370	5310	3980	3190
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2720	2610	2250	2230	2170	2120	1990	1980
	(50HRC) Alloy Steel aleaciones	ap≤1.5D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	1720	1580	1430	1550	1400	1240	1020	910
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	2100	1770	1530	1620	1510	1430	1190	1100
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	18050	13540	9020	6770	5410	4510	3380	2710
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1.5D ae≤0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	2170	2000	1910	1730	1600	1530	1350	1250
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤1.5D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	1720	1670	1590	1460	1340	1270	1140	1020
		ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	16710	9550	6370	4780	3820	3190	2390	1910
					760	760	760	760	730	710	620	570

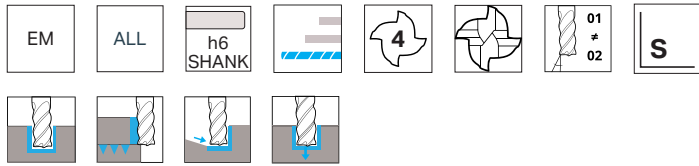
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

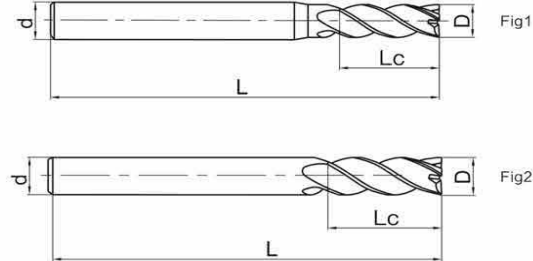
High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

4 Flutes, Square, Long Flute Length (EM-SL4) / 4 flautas, cuadradas, longitud de flauta larga (EM-SL4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

D	Lc	d	L	Z	Figure No. Nº de figura
mm	mm	mm	mm		
4,00	15,0	4,00	75	4	2
4,00	20,0	4,00	100	4	2
5,00	20,0	5,00	75	4	2
5,00	25,0	5,00	100	4	2
6,00	20,0	6,00	75	4	2
6,00	25,0	6,00	100	4	2
8,00	25,0	8,00	75	4	2
8,00	30,0	8,00	100	4	2
10,0	35,0	10,0	100	4	2
10,0	45,0	10,0	150	4	2
12,0	40,0	12,0	100	4	2
12,0	50,0	12,0	150	4	2
14,0	40,0	14,0	100	4	2
14,0	50,0	14,0	150	4	2
16,0	55,0	16,0	150	4	2
18,0	55,0	18,0	150	4	2
20,0	55,0	20,0	150	4	2

Ordering Code Código de orden
EM-SL4-04150475
EM-SL4-042004100
EM-SL4-05200575
EM-SL4-052505100
EM-SL4-06200675
EM-SL4-062506100
EM-SL4-08250875
EM-SL4-083008100
EM-SL4-103510100
EM-SL4-104510150
EM-SL4-124012100
EM-SL4-125012150
EM-SL4-144014100
EM-SL4-145014150
EM-SL4-165516150
EM-SL4-185518150
EM-SL4-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230	15920	10620	7960	6370	5310	3980	3190
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2720	2610	2250	2230	2170	2120	1990	1980
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
					1720	1580	1430	1550	1400	1240	1020	910
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2100	1770	1530	1620	1510	1430	1190	1100
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	18050	13540	9020	6770	5410	4510	3380	2710
					2170	2000	1910	1730	1600	1530	1350	1250
					15920	11940	7960	5970	4780	3980	2990	2390
					1720	1670	1590	1460	1340	1270	1140	1020
					16710	9550	6370	4780	3820	3190	2390	1910
					760	760	760	760	730	710	620	570

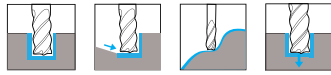
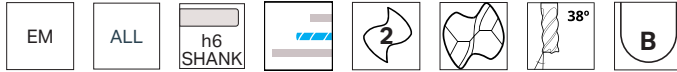
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Ballnose, Standard Length (EM-B2) / 2 flautas, punta esférica, longitud estándar (EM-B2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02

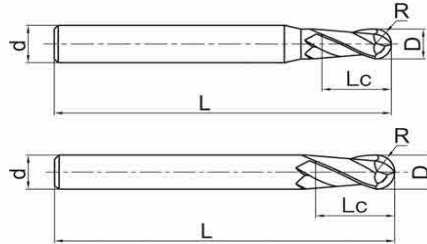


Fig1

Fig2



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
1,00	2,00	3,00	50	0.5	2	1
2,00	4,00	3,00	50	1.0	2	1
3,00	6,00	3,00	50	1.5	2	2
1,00	2,00	4,00	50	0.5	2	1
1,50	3,00	4,00	50	0.75	2	1
2,00	4,00	4,00	50	1.0	2	1
2,50	5,00	4,00	50	1.25	2	1
3,00	6,00	4,00	50	1.5	2	1
3,50	7,00	4,00	50	1.75	2	1
4,00	8,00	4,00	50	2.0	2	2
5,00	10,0	5,00	50	2.5	2	2
6,00	12,0	6,00	50	3.0	2	2
8,00	16,0	8,00	60	4.0	2	2
10,0	20,0	10,0	75	5.0	2	2
12,0	24,0	12,0	75	6.0	2	2
14,0	28,0	14,0	75	7.0	2	2
16,0	32,0	16,0	100	8.0	2	2
18,0	36,0	18,0	100	9.0	2	2
20,0	40,0	20,0	100	10.0	2	2

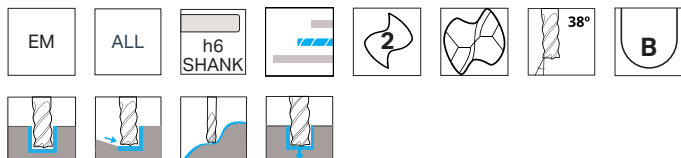
Ordering Code Código de orden
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EM-B2-02040350-R1.0
EM-B2-03060350-R1.5
EM-B2-01020450-R0.5
EM-B2-015030450-R0.75
EM-B2-02040450-R1.0
EM-B2-025050450-R1.25
EM-B2-03060450-R1.5
EM-B2-035070450-R1.75
EM-B2-04080450-R2.0
EM-B2-05100550-R2.5
EM-B2-06120650-R3.0
EM-B2-08160860-R4.0
EM-B2-10201075-R5.0
EM-B2-12241275-R6.0
EM-B2-14281475-R7.0
EM-B2-163216100-R8.0
EM-B2-183618100-R9.0
EM-B2-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					1	2	3	4	6	8	10	12
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.4D ae≤0.4D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
	(50HRC) Alloy Steel aleaciones	ap≤0.02D ae≤0.02D	180	rotate speed (min-1) feed velocity (mm/ min)	2800	2800	2800	2800	2800	2800	2800	2800
M	stainless steel Acero inoxidable	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	28660	19110	14330	9550	7170	5730	4780
					1950	2010	1990	2010	2010	2010	2000	2000
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	2520	2450	2570	2630	2570	2540	2520	2530
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤0.03D ae≤0.03D	200	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
					2520	2450	2570	2630	2570	2540	2520	2530
					50000	35030	23360	17520	11680	8760	7010	5840
					2380	2450	2430	2450	2450	2450	2440	2440
					50000	31840	27860	15920	10620	7960	6370	5310
					510	510	570	570	590	610	570	570

High speed and high efficiency • Hard steel, Stainless steel

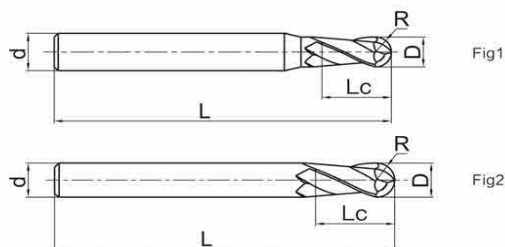
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Ballnose, Long Shank Length (EM-BH2) / 2 flautas, punta esférica, longitud de vástago largo (EM-BH2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
4,00	8,00	4,00	75	2,0	2	2
4,00	8,00	4,00	100	2,0	2	2
5,00	10,0	5,00	75	2,5	2	2
5,00	10,0	5,00	100	2,5	2	2
5,00	10,0	5,00	150	2,5	2	2
6,00	12,0	6,00	75	3,0	2	2
6,00	12,0	6,00	100	3,0	2	2
6,00	12,0	6,00	150	3,0	2	2
8,00	16,0	8,00	75	4,0	2	2
8,00	16,0	8,00	100	4,0	2	2
8,00	16,0	8,00	150	4,0	2	2
10,0	20,0	10,0	100	5,0	2	2
10,0	20,0	10,0	150	5,0	2	2
12,0	24,0	12,0	100	6,0	2	2
12,0	24,0	12,0	150	6,0	2	2
14,0	28,0	14,0	100	7,0	2	2
14,0	28,0	14,0	150	7,0	2	2
16,0	32,0	16,0	150	8,0	2	2
18,0	36,0	18,0	150	9,0	2	2
20,0	40,0	20,0	150	10,0	2	2

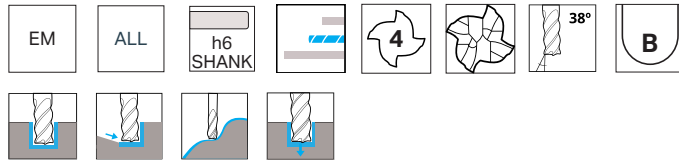
Ordering Code Código de orden
EM-BH2-04080475-R2.0
EM-BH2-040804100-R2.0
EM-BH2-05100575-R2.5
EM-BH2-051005100-R2.5
EM-BH2-051005150-R2.5
EM-BH2-06120675-R3.0
EM-BH2-061206100-R3.0
EM-BH2-061206150-R3.0
EM-BH2-08160875-R4.0
EM-BH2-081608100-R4.0
EM-BH2-081608150-R4.0
EM-BH2-102010100-R5.0
EM-BH2-102010150-R5.0
EM-BH2-122412100-R6.0
EM-BH2-122412150-R6.0
EM-BH2-142814100-R7.0
EM-BH2-142814150-R7.0
EM-BH2-163216150-R8.0
EM-BH2-183618150-R9.0
EM-BH2-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					1	2	3	4	6	8	10	12
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.4D ae≤0.4D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
		ap≤0.02D ae≤0.02D	180	rotate speed (min-1) feed velocity (mm/ min)	2800	2800	2800	2800	2800	2800	2800	2800
M	(50HRC) Alloy Steel aleaciones	ap≤0.02D ae≤0.02D	180	rotate speed (min-1) feed velocity (mm/ min)	50000	28660	19110	14330	9550	7170	5730	4780
		ap≤0.02D ae≤0.02D	180	rotate speed (min-1) feed velocity (mm/ min)	1950	2010	1990	2010	2010	2010	2000	2000
M	stainless steel Acero inoxidable	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
		ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	2520	2450	2570	2630	2570	2540	2520	2530
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
		ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	2520	2450	2570	2630	2570	2540	2520	2530
K	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
		ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	2380	2450	2430	2450	2450	2450	2440	2440
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤0.03D ae≤0.03D	200	rotate speed (min-1) feed velocity (mm/ min)	50000	31840	27860	15920	10620	7960	6370	5310
		ap≤0.03D ae≤0.03D	200	rotate speed (min-1) feed velocity (mm/ min)	510	510	570	570	590	610	570	570

High speed and high efficiency • Hard steel, Stainless steel

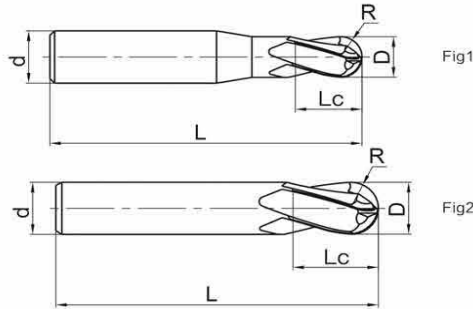
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

4 Flutes, Ballnose, Standard Length (EM-B4) / 4 flautas, punta esférica, longitud estándar (EM-B4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
1,00	2,00	3,00	50	0.5	4	1
2,00	4,00	3,00	50	1.0	4	1
3,00	6,00	3,00	50	1.5	4	2
1,00	2,00	4,00	50	0.5	4	1
1,50	3,00	4,00	50	0.75	4	1
2,00	4,00	4,00	50	1.0	4	1
2,50	5,00	4,00	50	1.25	4	1
3,00	6,00	4,00	50	1.5	4	1
3,50	7,00	4,00	50	1.75	4	1
4,00	8,00	4,00	50	2.0	4	2
5,00	10,0	5,00	50	2.5	4	2
6,00	12,0	6,00	50	3.0	4	2
8,00	16,0	8,00	60	4.0	4	2
10,0	20,0	10,0	75	5.0	4	2
12,0	24,0	12,0	75	6.0	4	2
14,0	28,0	14,0	75	7.0	4	2
16,0	32,0	16,0	100	8.0	4	2
18,0	36,0	18,0	100	9.0	4	2
20,0	40,0	20,0	100	10.0	4	2

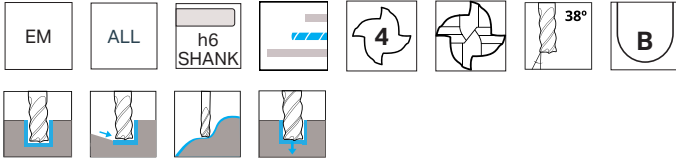
Ordering Code Código de orden
EM-B4-01020350-R0.5
EM-B4-02040350-R1.0
EM-B4-03060350-R1.5
EM-B4-01020450-R0.5
EM-B4-015030450-R0.75
EM-B4-02040450-R1.0
EM-B4-025050450-R1.25
EM-B4-03060450-R1.5
EM-B4-035070450-R1.75
EM-B4-04080450-R2.0
EM-B4-05100550-R2.5
EM-B4-06120650-R3.0
EM-B4-08160860-R4.0
EM-B4-10201075-R5.0
EM-B4-12241275-R6.0
EM-B4-14281475-R7.0
EM-B4-163216100-R8.0
EM-B4-183618100-R9.0
EM-B4-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					1	2	3	4	6	8	10	12
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.4D ae≤0.4D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
	(50HRC) Alloy Steel aleaciones	ap≤0.02D ae≤0.02D	180	rotate speed (min-1) feed velocity (mm/ min)	2800	2800	2800	2800	2800	2800	2800	2800
M	stainless steel Acero inoxidable	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	28660	19110	14330	9550	7170	5730	4780
					1950	2010	1990	2010	2010	2010	2000	2000
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	2520	2450	2570	2630	2570	2540	2520	2530
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤0.03D ae≤0.03D	200	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
					2520	2450	2570	2630	2570	2540	2520	2530
					50000	35030	23360	17520	11680	8760	7010	5840
					2380	2450	2430	2450	2450	2450	2440	2440
					50000	31840	27860	15920	10620	7960	6370	5310
					2040	2300	2010	1150	1190	1210	1150	1150

High speed and high efficiency • Hard steel, Stainless steel

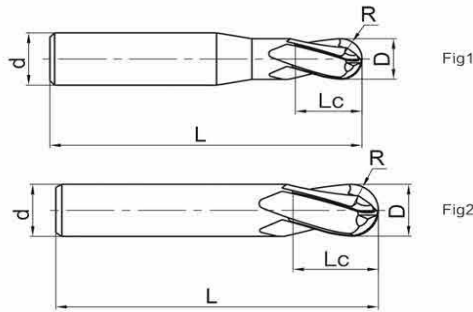
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

4 Flutes, Ballnose, Long Shank Length (EM-BH4) / 4 flautas, punta esférica, longitud de vástago largo (EM-BH4)



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02

P	•
M	•
K	•
N	•
S	•
H	•



D	Lc	d	L	R	Z	Figure No. Nº de figura
4,00	8,00	4,00	75	2.0	4	2
4,00	8,00	4,00	100	2.0	4	2
5,00	10,0	5,00	75	2.5	4	2
5,00	10,0	5,00	100	2.5	4	2
5,00	10,0	5,00	150	2.5	4	2
6,00	12,0	6,00	75	3.0	4	2
6,00	12,0	6,00	100	3.0	4	2
6,00	12,0	6,00	150	3.0	4	2
8,00	16,0	8,00	75	4.0	4	2
8,00	16,0	8,00	100	4.0	4	2
8,00	16,0	8,00	150	4.0	4	2
10,0	20,0	10,0	100	5.0	4	2
10,0	20,0	10,0	150	5.0	4	2
12,0	24,0	12,0	100	6.0	4	2
12,0	24,0	12,0	150	6.0	4	2
14,0	28,0	14,0	100	7.0	4	2
14,0	28,0	14,0	150	7.0	4	2
16,0	32,0	16,0	150	8.0	4	2
18,0	36,0	18,0	150	9.0	4	2
20,0	40,0	20,0	150	10.0	4	2

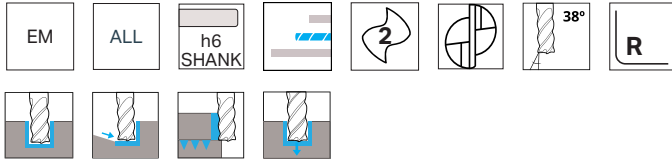
Ordering Code Código de orden
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EM-BH4-040804100-R2.0
EM-BH4-05100575-R2.5
EM-BH4-051005100-R2.5
EM-BH4-051005150-R2.5
EM-BH4-06120675-R3.0
EM-BH4-061206100-R3.0
EM-BH4-061206150-R3.0
EM-BH4-08160875-R4.0
EM-BH4-081608100-R4.0
EM-BH4-081608150-R4.0
EM-BH4-102010100-R5.0
EM-BH4-102010150-R5.0
EM-BH4-122412100-R6.0
EM-BH4-122412150-R6.0
EM-BH4-142814100-R7.0
EM-BH4-142814150-R7.0
EM-BH4-163216150-R8.0
EM-BH4-183618150-R9.0
EM-BH4-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					1	2	3	4	6	8	10	12
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.4D ae≤0.4D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
	(50HRC) Alloy Steel aleaciones	ap≤0.02D ae≤0.02D	180	rotate speed (min-1) feed velocity (mm/ min)	2800	2800	2800	2800	2800	2800	2800	2800
M	stainless steel Acero inoxidable	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	28660	19110	14330	9550	7170	5730	4780
					1950	2010	1990	2010	2010	2010	2000	2000
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.04D ae≤0.04D	220	rotate speed (min-1) feed velocity (mm/ min)	2520	2450	2570	2630	2570	2540	2520	2530
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤0.03D ae≤0.03D	200	rotate speed (min-1) feed velocity (mm/ min)	50000	35030	23360	17520	11680	8760	7010	5840
					2520	2450	2570	2630	2570	2540	2520	2530
					50000	35030	23360	17520	11680	8760	7010	5840
					2380	2450	2430	2450	2450	2450	2440	2440
					50000	31840	27860	15920	10620	7960	6370	5310
					2040	2300	2010	1150	1190	1210	1150	1150

High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Corner Radius, Standard Length (EM-R2) / 2 Flutes, Corner Radius, Standard Length (EM-R2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

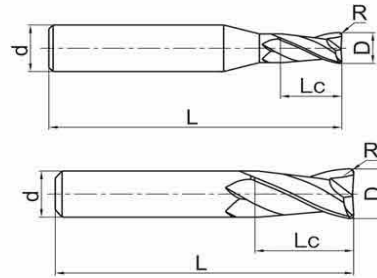


Fig1

Fig2



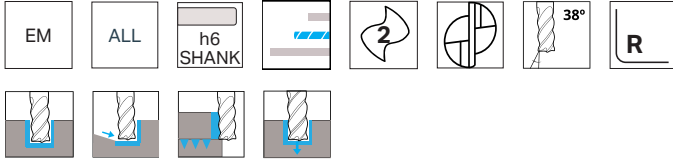
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1,00	3,00	4,00	50	0.2	2	1
1,50	4,00	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.5	2	1
2,50	8,00	4,00	50	0.2	2	1
2,50	8,00	4,00	50	0.5	2	1
3,00	8,00	4,00	50	0.2	2	1
3,00	8,00	4,00	50	0.5	2	1
4,00	11,0	4,00	50	0.5	2	2
4,00	11,0	4,00	50	1.0	2	2
5,00	13,0	5,00	50	0.5	2	2
5,00	13,0	5,00	50	1.0	2	2
5,00	13,0	6,00	50	0.5	2	2
5,00	13,0	6,00	50	1.0	2	2
6,00	16,0	6,00	50	0.5	2	2
6,00	16,0	6,00	50	1.0	2	2
8,00	20,0	8,00	60	0.5	2	2
8,00	20,0	8,00	60	1.0	2	2
10,0	25,0	10,0	75	0.5	2	2
10,0	25,0	10,0	75	1.0	2	2
12,0	30,0	12,0	75	0.5	2	2
12,0	30,0	12,0	75	1.0	2	2

Ordering Code Código de orden
EM-R2-01030450-R0.2
EM-R2-015040450-R0.2
EM-R2-02060450-R0.2
EM-R2-02060450-R0.5
EM-R2-025080450-R0.2
EM-R2-025080450-R0.5
EM-R2-03080450-R0.2
EM-R2-03080450-R0.5
EM-R2-04110450-R0.5
EM-R2-04110450-R1.0
EM-R2-05130550-R0.5
EM-R2-05130550-R1.0
EM-R2-05130650-R0.5
EM-R2-05130650-R1.0
EM-R2-06160650-R0.5
EM-R2-06160650-R1.0
EM-R2-08200860-R0.5
EM-R2-08200860-R1.0
EM-R2-10251075-R0.5
EM-R2-10251075-R1.0
EM-R2-12301275-R0.5
EM-R2-12301275-R1.0

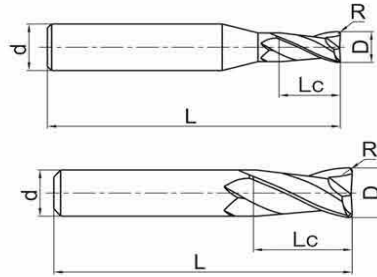
High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Corner Radius, Standard Length (EM-R2) / 2 flautas, radio de esquina, longitud estándar (EM-R2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
14,0	30,0	14,0	75	0.5	2	2
14,0	30,0	14,0	75	1.0	2	2
14,0	30,0	14,0	75	2.0	2	2
16,0	45,0	16,0	100	0.5	2	2
16,0	45,0	16,0	100	1.0	2	2
16,0	45,0	16,0	100	2.0	2	2
16,0	45,0	16,0	100	3.0	2	2
18,0	45,0	18,0	100	0.5	2	2
18,0	45,0	18,0	100	1.0	2	2
18,0	45,0	18,0	100	2.0	2	2
18,0	45,0	18,0	100	3.0	2	2
20,0	45,0	20,0	100	0.5	2	2
20,0	45,0	20,0	100	1.0	2	2
20,0	45,0	20,0	100	2.0	2	2
20,0	45,0	20,0	100	3.0	2	2

Ordering Code Código de orden
EM-R2-14301475-R0.5
EM-R2-14301475-R1.0
EM-R2-14301475-R2.0
EM-R2-164516100-R0.5
EM-R2-164516100-R1.0
EM-R2-164516100-R2.0
EM-R2-164516100-R3.0
EM-R2-184518100-R0.5
EM-R2-184518100-R1.0
EM-R2-184518100-R2.0
EM-R2-184518100-R3.0
EM-R2-204520100-R0.5
EM-R2-204520100-R1.0
EM-R2-204520100-R2.0
EM-R2-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D aes0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230	15920	10620	7960	6370	5310	3980	3190
	(50HRC) Alloy Steel aleaciones	ap≤1D aes0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2040	1960	1690	1670	1620	1590	1490	1480
M	stainless steel Acero inoxidable	ap≤1.5D aes0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
					1290	1180	1080	1160	1050	930	760	680
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D aes0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D aes0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	1580	1330	1150	1220	1130	1080	900	820
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤1.5D aes0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	18050	13540	9020	6770	5410	4510	3380	2710
					1620	1500	1440	1300	1200	1150	1020	930
					15920	11940	7960	5970	4780	3980	2990	2390
					1290	1250	1190	1090	1000	960	850	770
					16710	9550	6370	4780	3820	3190	2390	1910
					380	380	380	380	370	360	310	290

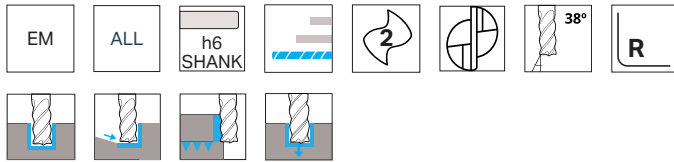
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Corner Radius, Long Flute Length (EM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (EM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

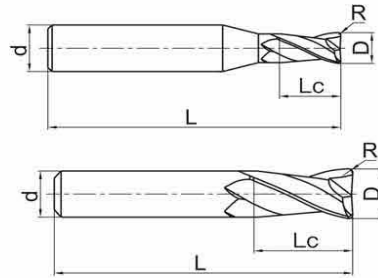


Fig1

Fig2



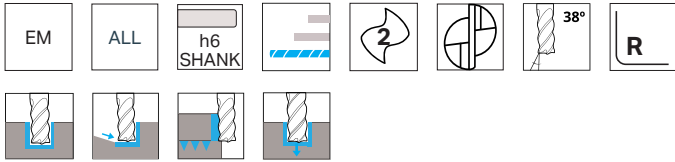
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
4,00	15,0	4,00	75	0,5	2	2
4,00	15,0	4,00	75	1,0	2	2
4,00	20,0	4,00	100	0,5	2	2
4,00	20,0	4,00	100	1,0	2	2
5,00	20,0	5,00	75	0,5	2	2
5,00	20,0	5,00	75	1,0	2	2
5,00	25,0	5,00	100	0,5	2	2
5,00	25,0	5,00	100	1,0	2	2
6,00	20,0	6,00	75	0,5	2	2
6,00	20,0	6,00	75	1,0	2	2
6,00	25,0	6,00	100	0,5	2	2
6,00	25,0	6,00	100	1,0	2	2
8,00	25,0	8,00	75	0,5	2	2
8,00	25,0	8,00	75	1,0	2	2
8,00	30,0	8,00	100	0,5	2	2
8,00	30,0	8,00	100	1,0	2	2
10,0	35,0	10,0	100	0,5	2	2
10,0	35,0	10,0	100	1,0	2	2
10,0	45,0	10,0	150	0,5	2	2
10,0	45,0	10,0	150	1,0	2	2
12,0	40,0	12,0	100	0,5	2	2
12,0	40,0	12,0	100	1,0	2	2
12,0	50,0	12,0	150	0,5	2	2
12,0	50,0	12,0	150	1,0	2	2

Ordering Code Código de orden
EM-RL2-04150475-R0.5
EM-RL2-04150475-R1.0
EM-RL2-042004100-R0.5
EM-RL2-042004100-R1.0
EM-RL2-05200575-R0.5
EM-RL2-05200575-R1.0
EM-RL2-052505100-R0.5
EM-RL2-052505100-R1.0
EM-RL2-06200675-R0.5
EM-RL2-06200675-R1.0
EM-RL2-062506100-R0.5
EM-RL2-062506100-R1.0
EM-RL2-08250875-R0.5
EM-RL2-08250875-R1.0
EM-RL2-083008100-R0.5
EM-RL2-083008100-R1.0
EM-RL2-103510100-R0.5
EM-RL2-103510100-R1.0
EM-RL2-104510150-R0.5
EM-RL2-104510150-R1.0
EM-RL2-124012100-R0.5
EM-RL2-124012100-R1.0
EM-RL2-125012150-R0.5
EM-RL2-125012150-R1.0

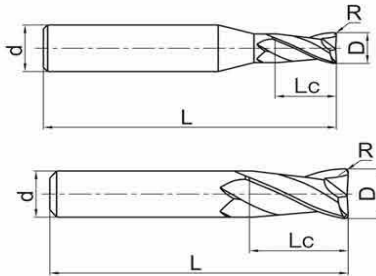
High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Corner Radius, Long Flute Length (EM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (EM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	2	2
14,0	40,0	14,0	100	1.0	2	2
14,0	40,0	14,0	100	2.0	2	2
14,0	50,0	14,0	150	0.5	2	2
14,0	50,0	14,0	150	1.0	2	2
14,0	50,0	14,0	150	2.0	2	2
16,0	55,0	16,0	150	0.5	2	2
16,0	55,0	16,0	150	1.0	2	2
16,0	55,0	16,0	150	2.0	2	2
16,0	55,0	16,0	150	3.0	2	2
18,0	55,0	18,0	150	0.5	2	2
18,0	55,0	18,0	150	1.0	2	2
18,0	55,0	18,0	150	2.0	2	2
18,0	55,0	18,0	150	3.0	2	2
20,0	55,0	20,0	150	0.5	2	2
20,0	55,0	20,0	150	1.0	4	2
20,0	55,0	20,0	150	2.0	4	2
20,0	55,0	20,0	150	3.0	4	2

Ordering Code Código de orden
EM-RL2-144014100-R0.5
EM-RL2-144014100-R1.0
EM-RL2-144014100-R2.0
EM-RL2-145014150-R0.5
EM-RL2-145014150-R1.0
EM-RL2-145014150-R2.0
EM-RL2-165516150-R0.5
EM-RL2-165516150-R1.0
EM-RL2-165516150-R2.0
EM-RL2-165516150-R3.0
EM-RL2-185518150-R0.5
EM-RL2-185518150-R1.0
EM-RL2-185518150-R2.0
EM-RL2-185518150-R3.0
EM-RL2-205520150-R0.5
EM-RL2-205520150-R1.0
EM-RL2-205520150-R2.0
EM-RL2-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230	15920	10620	7960	6370	5310	3980	3190
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2040	1960	1690	1670	1620	1590	1490	1480
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	1290	1180	1080	1160	1050	930	760	680
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
		ap≤1D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	1580	1330	1150	1220	1130	1080	900	820
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	18050	13540	9020	6770	5410	4510	3380	2710
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	1620	1500	1440	1300	1200	1150	1020	930
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
		ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	1290	1250	1190	1090	1000	960	850	770
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	16710	9550	6370	4780	3820	3190	2390	1910
		ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	380	380	380	380	370	360	310	290

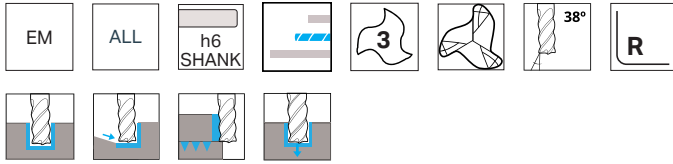
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

High speed and high efficiency • Hard steel, Stainless steel

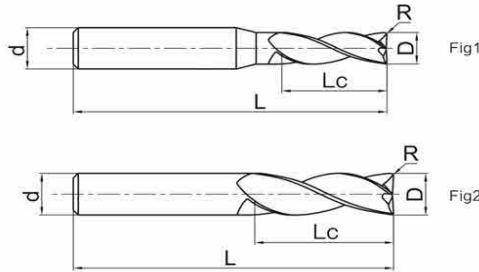
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

3 Flutes, Corner Radius, Standard Length (EM-R3) / 3 flautas, radio de esquina, longitud estándar (EM-R3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



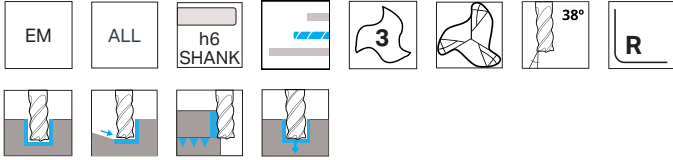
D	Lc	d	L	R	Z	Figure No. N° de figura
1,00	3,00	4,00	50	0.2	3	1
1,50	4,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.5	3	1
2,50	8,00	4,00	50	0.2	3	1
2,50	8,00	4,00	50	0.5	3	1
3,00	8,00	4,00	50	0.2	3	1
3,00	8,00	4,00	50	0.5	3	1
4,00	11,0	4,00	50	0.5	3	2
4,00	11,0	4,00	50	1.0	3	2
5,00	13,0	5,00	50	0.5	3	2
5,00	13,0	5,00	50	1.0	3	2
5,00	13,0	6,00	50	0.5	3	2
5,00	13,0	6,00	50	1.0	3	2
6,00	16,0	6,00	50	0.5	3	2
6,00	16,0	6,00	50	1.0	3	2
8,00	20,0	8,00	60	0.5	3	2
8,00	20,0	8,00	60	1.0	3	2
10,0	25,0	10,0	75	0.5	3	2
10,0	25,0	10,0	75	1.0	3	2
12,0	30,0	12,0	75	0.5	3	2
12,0	30,0	12,0	75	1.0	3	2

Ordering Code Código de orden
EM-R3-01030450-R0.2
EM-R3-015040450-R0.2
EM-R3-02060450-R0.2
EM-R3-02060450-R0.5
EM-R3-025080450-R0.2
EM-R3-025080450-R0.5
EM-R3-03080450-R0.2
EM-R3-03080450-R0.5
EM-R3-04110450-R0.5
EM-R3-04110450-R1.0
EM-R3-05130550-R0.5
EM-R3-05130550-R1.0
EM-R3-05130650-R0.5
EM-R3-05130650-R1.0
EM-R3-06160650-R0.5
EM-R3-06160650-R1.0
EM-R3-08200860-R0.5
EM-R3-08200860-R1.0
EM-R3-10251075-R0.5
EM-R3-10251075-R1.0
EM-R3-12301275-R0.5
EM-R3-12301275-R1.0

High speed and high efficiency • Hard steel, Stainless steel

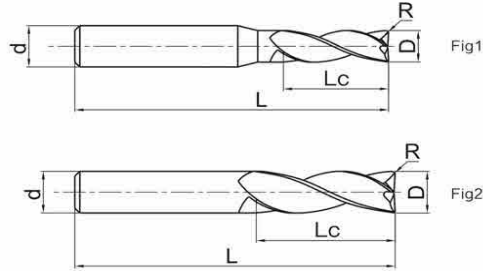
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

3 Flutes, Corner Radius, Standard Length (EM-R3) / 3 flautas, radio de esquina, longitud estándar (EM-R3)



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

P	•
M	•
K	•
N	•
S	•
H	•



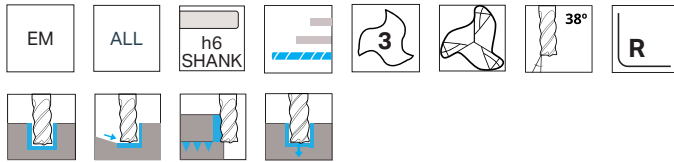
D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
14,0	30,0	14,0	75	0.5	3	2
14,0	30,0	14,0	75	1.0	3	2
14,0	30,0	14,0	75	2.0	3	2
16,0	45,0	16,0	100	0.5	3	2
16,0	45,0	16,0	100	1.0	3	2
16,0	45,0	16,0	100	2.0	3	2
16,0	45,0	16,0	100	3.0	3	2
18,0	45,0	18,0	100	0.5	3	2
18,0	45,0	18,0	100	1.0	3	2
18,0	45,0	18,0	100	2.0	3	2
18,0	45,0	18,0	100	3.0	3	2
20,0	45,0	20,0	100	0.5	3	2
20,0	45,0	20,0	100	1.0	3	2
20,0	45,0	20,0	100	2.0	3	2
20,0	45,0	20,0	100	3.0	3	2

Ordering Code Código de orden
EM-R3-14301475-R0.5
EM-R3-14301475-R1.0
EM-R3-14301475-R2.0
EM-R3-164516100-R0.5
EM-R3-164516100-R1.0
EM-R3-164516100-R2.0
EM-R3-164516100-R3.0
EM-R3-184518100-R0.5
EM-R3-184518100-R1.0
EM-R3-184518100-R2.0
EM-R3-184518100-R3.0
EM-R3-204520100-R0.5
EM-R3-204520100-R1.0
EM-R3-204520100-R2.0
EM-R3-204520100-R3.0

High speed and high efficiency • Hard steel, Stainless steel

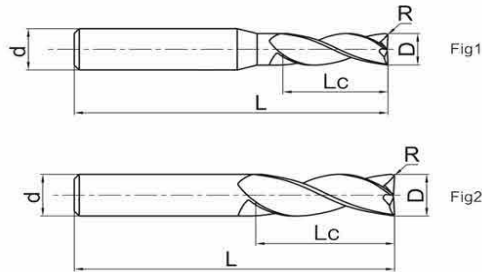
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

3 Flutes, Corner Radius, Long Flute Length (EM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (EM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



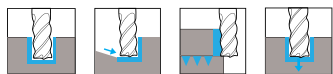
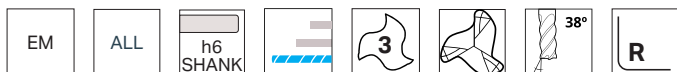
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0,5	3	2
4,00	15,0	4,00	75	1,0	3	2
4,00	20,0	4,00	100	0,5	3	2
4,00	20,0	4,00	100	1,0	3	2
5,00	20,0	5,00	75	0,5	3	2
5,00	20,0	5,00	75	1,0	3	2
5,00	25,0	5,00	100	0,5	3	2
5,00	25,0	5,00	100	1,0	3	2
6,00	20,0	6,00	75	0,5	3	2
6,00	20,0	6,00	75	1,0	3	2
6,00	25,0	6,00	100	0,5	3	2
6,00	25,0	6,00	100	1,0	3	2
8,00	25,0	8,00	75	0,5	3	2
8,00	25,0	8,00	75	1,0	3	2
8,00	30,0	8,00	100	0,5	3	2
8,00	30,0	8,00	100	1,0	3	2
10,0	35,0	10,0	100	0,5	3	2
10,0	35,0	10,0	100	1,0	3	2
10,0	45,0	10,0	150	0,5	3	2
10,0	45,0	10,0	150	1,0	3	2
12,0	40,0	12,0	100	0,5	3	2
12,0	40,0	12,0	100	1,0	3	2
12,0	50,0	12,0	150	0,5	3	2
12,0	50,0	12,0	150	1,0	3	2

Ordering Code Código de orden
EM-RL3-04150475-R0.5
EM-RL3-04150475-R1.0
EM-RL3-042004100-R0.5
EM-RL3-042004100-R1.0
EM-RL3-05200575-R0.5
EM-RL3-05200575-R1.0
EM-RL3-052505100-R0.5
EM-RL3-052505100-R1.0
EM-RL3-06200675-R0.5
EM-RL3-06200675-R1.0
EM-RL3-062506100-R0.5
EM-RL3-062506100-R1.0
EM-RL3-08250875-R0.5
EM-RL3-08250875-R1.0
EM-RL3-083008100-R0.5
EM-RL3-083008100-R1.0
EM-RL3-103510100-R0.5
EM-RL3-103510100-R1.0
EM-RL3-104510150-R0.5
EM-RL3-104510150-R1.0
EM-RL3-124012100-R0.5
EM-RL3-124012100-R1.0
EM-RL3-125012150-R0.5
EM-RL3-125012150-R1.0

High speed and high efficiency • Hard steel, Stainless steel

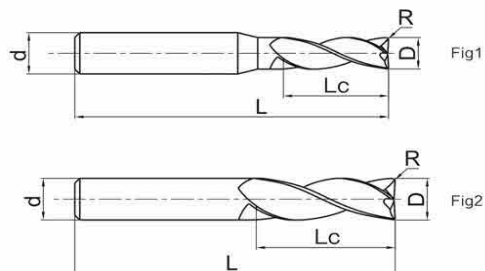
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

3 Flutes, Corner Radius, Long Flute Length (EM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (EM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



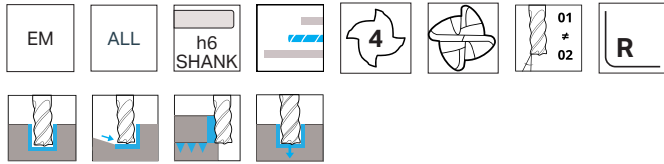
D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	3	2
14,0	40,0	14,0	100	1.0	3	2
14,0	40,0	14,0	100	2.0	3	2
14,0	50,0	14,0	150	0.5	3	2
14,0	50,0	14,0	150	1.0	3	2
14,0	50,0	14,0	150	2.0	3	2
16,0	55,0	16,0	150	0.5	3	2
16,0	55,0	16,0	150	1.0	3	2
16,0	55,0	16,0	150	2.0	3	2
16,0	55,0	16,0	150	3.0	3	2
18,0	55,0	18,0	150	0.5	3	2
18,0	55,0	18,0	150	1.0	3	2
18,0	55,0	18,0	150	2.0	3	2
18,0	55,0	18,0	150	3.0	3	2
20,0	55,0	20,0	150	0.5	3	2
20,0	55,0	20,0	150	1.0	3	2
20,0	55,0	20,0	150	2.0	3	2
20,0	55,0	20,0	150	3.0	3	2

Ordering Code Código de orden
EM-RL3-144014100-R0.5
EM-RL3-144014100-R1.0
EM-RL3-144014100-R2.0
EM-RL3-145014150-R0.5
EM-RL3-145014150-R1.0
EM-RL3-145014150-R2.0
EM-RL3-165516150-R0.5
EM-RL3-165516150-R1.0
EM-RL3-165516150-R2.0
EM-RL3-165516150-R3.0
EM-RL3-185518150-R0.5
EM-RL3-185518150-R1.0
EM-RL3-185518150-R2.0
EM-RL3-185518150-R3.0
EM-RL3-205520150-R0.5
EM-RL3-205520150-R1.0
EM-RL3-205520150-R2.0
EM-RL3-205520150-R3.0

High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

4 Flutes, Corner Radius, Standard Length (EM-R4) / 4 flautas, radio de esquina, longitud estándar (EM-R4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

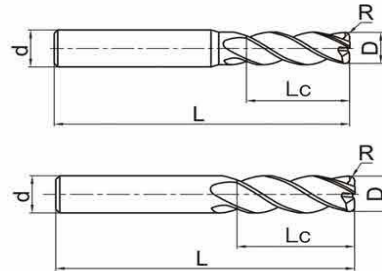


Fig1

Fig2



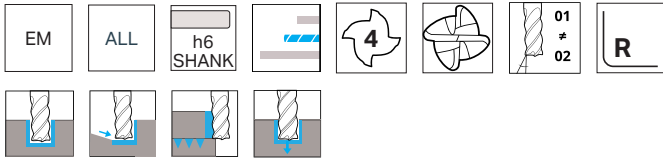
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1.00	3.00	4.00	50	0.2	4	1
1,50	4.00	4,00	50	0.2	4	1
2.00	6.00	4.00	50	0.2	4	1
2,00	6.00	4,00	50	0.5	4	1
2,50	8,00	4,00	50	0.2	4	1
2,50	8.00	4,00	50	0.5	4	1
3,00	8,00	4,00	50	0.2	4	1
3,00	8.00	4,00	50	0.5	4	1
4,00	11,0	4,00	50	0.5	4	2
4,00	11.0	4,00	50	1.0	4	2
5.00	13.0	5.00	50	0.5	4	2
5.00	13,0	5,00	50	1.0	4	2
5,00	13,0	6,00	50	0.5	4	2
5,00	13.0	6,00	50	1.0	4	2
6,00	16,0	6,00	50	0.5	4	2
6,00	16.0	6,00	50	1.0	4	2
8.00	20.0	8.00	60	0.5	4	2
8.00	20,0	8,00	60	1.0	4	2
10,0	25,0	10,0	75	0.5	4	2
10,0	25.0	10,0	75	1.0	4	2
12.0	30.0	12,0	75	0.5	4	2
12,0	30.0	12,0	75	1.0	4	2

Ordering Code Código de orden
EM-R4-01030450-R0.2
EM-R4-015040450-R0.2
EM-R4-02060450-R0.2
EM-R4-02060450-R0.5
EM-R4-025080450-R0.2
EM-R4-025080450-R0.5
EM-R4-03080450-R0.2
EM-R4-03080450-R0.5
EM-R4-04110450-R0.5
EM-R4-04110450-R1.0
EM-R4-05130550-R0.5
EM-R4-05130550-R1.0
EM-R4-05130650-R0.5
EM-R4-05130650-R1.0
EM-R4-06160650-R0.5
EM-R4-06160650-R1.0
EM-R4-08200860-R0.5
EM-R4-08200860-R1.0
EM-R4-10251075-R0.5
EM-R4-10251075-R1.0
EM-R4-12301275-R0.5
EM-R4-12301275-R1.0

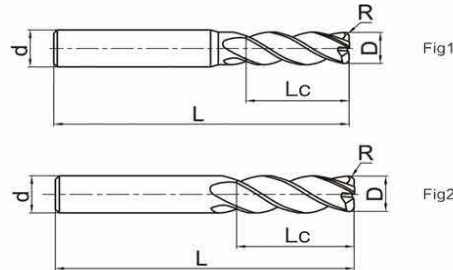
High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

4 Flutes, Corner Radius, Standard Length (EM-R4) / 4 flautas, radio de esquina, longitud estándar (EM-R4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
14,0	30,0	14,0	75	0.5	4	2
14,0	30,0	14,0	75	1.0	4	2
14,0	30,0	14,0	75	2.0	4	2
16,0	45,0	16,0	100	0.5	4	2
16,0	45,0	16,0	100	1.0	4	2
16,0	45,0	16,0	100	2.0	4	2
16,0	45,0	16,0	100	3.0	4	2
18,0	45,0	18,0	100	0.5	4	2
18,0	45,0	18,0	100	1.0	4	2
18,0	45,0	18,0	100	2.0	4	2
18,0	45,0	18,0	100	3.0	4	2
20,0	45,0	20,0	100	0.5	4	2
20,0	45,0	20,0	100	1.0	4	2
20,0	45,0	20,0	100	2.0	4	2
20,0	45,0	20,0	100	3.0	4	2

Ordering Code Código de orden
EM-R4-14301475-R0.5
EM-R4-14301475-R1.0
EM-R4-14301475-R2.0
EM-R4-164516100-R0.5
EM-R4-164516100-R1.0
EM-R4-164516100-R2.0
EM-R4-164516100-R3.0
EM-R4-184518100-R0.5
EM-R4-184518100-R1.0
EM-R4-184518100-R2.0
EM-R4-184518100-R3.0
EM-R4-204520100-R0.5
EM-R4-204520100-R1.0
EM-R4-204520100-R2.0
EM-R4-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
					3 4 6 8 10 12 16 20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	aps1.5D aes0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230 15920 10620 7960 6370 5310 3980 3190
	(50HRC) Alloy Steel aleaciones	aps1D aes0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2720 2610 2250 2230 2170 2120 1990 1980
M	stainless steel Acero inoxidable	aps1.5D aes0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920 11940 7960 5970 4780 3980 2990 2390
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	aps1.5D aes0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	2100 1770 1530 1620 1510 1430 1190 1100
	(35-45HRC) High alloy cast iron Fundición de alta aleación	aps1D aes0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	18050 13540 9020 6770 5410 4510 3380 2710
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	aps1D aes0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	2170 2000 1910 1730 1600 1530 1350 1250
					15920 11940 7960 5970 4780 3980 2990 2390
					1720 1670 1590 1460 1340 1270 1140 1020
					16710 9550 6370 4780 3820 3190 2390 1910
					760 760 760 760 730 710 620 570

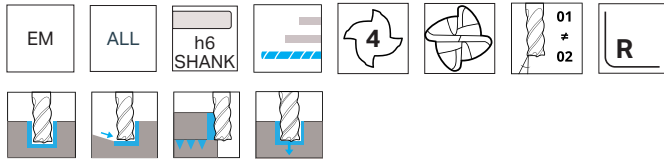
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

High speed and high efficiency • Hard steel, Stainless steel

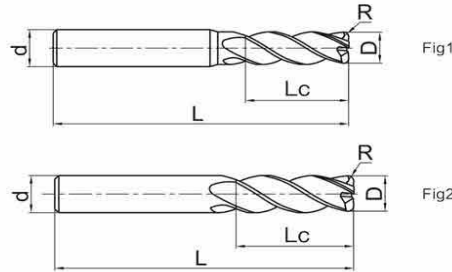
Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

2 Flutes, Corner Radius, Long Flute Length (EM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (EM-RL2)



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

P	•
M	•
K	•
N	•
S	•
H	•



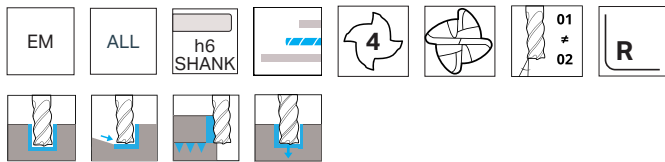
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0,5	4	2
4,00	15,0	4,00	75	1,0	4	2
4,00	20,0	4,00	100	0,5	4	2
4,00	20,0	4,00	100	1,0	4	2
5,00	20,0	5,00	75	0,5	4	2
5,00	20,0	5,00	75	1,0	4	2
5,00	25,0	5,00	100	0,5	4	2
5,00	25,0	5,00	100	1,0	4	2
6,00	20,0	6,00	75	0,5	4	2
6,00	20,0	6,00	75	1,0	4	2
6,00	25,0	6,00	100	0,5	4	2
6,00	25,0	6,00	100	1,0	4	2
8,00	25,0	8,00	75	0,5	4	2
8,00	25,0	8,00	75	1,0	4	2
8,00	30,0	8,00	100	0,5	4	2
8,00	30,0	8,00	100	1,0	4	2
10,0	35,0	10,0	100	0,5	4	2
10,0	35,0	10,0	100	1,0	4	2
10,0	45,0	10,0	150	0,5	4	2
10,0	45,0	10,0	150	1,0	4	2
12,0	40,0	12,0	100	0,5	4	2
12,0	40,0	12,0	100	1,0	4	2
12,0	50,0	12,0	150	0,5	4	2
12,0	50,0	12,0	150	1,0	4	2

Ordering Code Código de orden
EM-RL4-04150475-R0.5
EM-RL4-04150475-R1.0
EM-RL4-042004100-R0.5
EM-RL4-042004100-R1.0
EM-RL4-05200575-R0.5
EM-RL4-05200575-R1.0
EM-RL4-052505100-R0.5
EM-RL4-052505100-R1.0
EM-RL4-06200675-R0.5
EM-RL4-06200675-R1.0
EM-RL4-062506100-R0.5
EM-RL4-062506100-R1.0
EM-RL4-08250875-R0.5
EM-RL4-08250875-R1.0
EM-RL4-083008100-R0.5
EM-RL4-083008100-R1.0
EM-RL4-103510100-R0.5
EM-RL4-103510100-R1.0
EM-RL4-104510150-R0.5
EM-RL4-104510150-R1.0
EM-RL4-124012100-R0.5
EM-RL4-124012100-R1.0
EM-RL4-125012150-R0.5
EM-RL4-125012150-R1.0

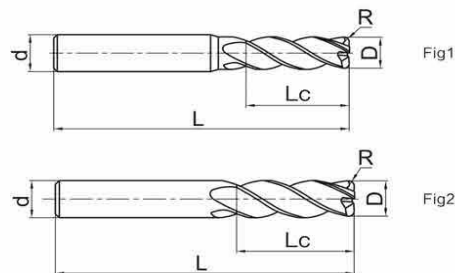
High speed and high efficiency • Hard steel, Stainless steel

Alta velocidad y alta eficiencia • Acero duro, acero inoxidable

4 Flutes, Corner Radius, Long Flute Length (EM-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (EM-RL4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	4	2
14,0	40,0	14,0	100	1.0	4	2
14,0	40,0	14,0	100	2.0	4	2
14,0	50,0	14,0	150	0.5	4	2
14,0	50,0	14,0	150	1.0	4	2
14,0	50,0	14,0	150	2.0	4	2
16,0	55,0	16,0	150	0.5	4	2
16,0	55,0	16,0	150	1.0	4	2
16,0	55,0	16,0	150	2.0	4	2
16,0	55,0	16,0	150	3.0	4	2
18,0	55,0	18,0	150	0.5	4	2
18,0	55,0	18,0	150	1.0	4	2
18,0	55,0	18,0	150	2.0	4	2
18,0	55,0	18,0	150	3.0	4	2
20,0	55,0	20,0	150	0.5	4	2
20,0	55,0	20,0	150	1.0	4	2
20,0	55,0	20,0	150	2.0	4	2
20,0	55,0	20,0	150	3.0	4	2

Ordering Code Código de orden
EM-RL4-144014100-R0.5
EM-RL4-144014100-R1.0
EM-RL4-144014100-R2.0
EM-RL4-145014150-R0.5
EM-RL4-145014150-R1.0
EM-RL4-145014150-R2.0
EM-RL4-165516150-R0.5
EM-RL4-165516150-R1.0
EM-RL4-165516150-R2.0
EM-RL4-165516150-R3.0
EM-RL4-185518150-R0.5
EM-RL4-185518150-R1.0
EM-RL4-185518150-R2.0
EM-RL4-185518150-R3.0
EM-RL4-205520150-R0.5
EM-RL4-205520150-R1.0
EM-RL4-205520150-R2.0
EM-RL4-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					3	4	6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1.5D ae≤0.15D	200	rotate speed (min-1) feed velocity (mm/ min)	21230	15920	10620	7960	6370	5310	3980	3190
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	2720	2610	2250	2230	2170	2120	1990	1980
M	stainless steel Acero inoxidable	ap≤1.5D ae≤0.15D	150	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980	2990	2390
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.5D ae≤0.15D	170	rotate speed (min-1) feed velocity (mm/ min)	2100	1770	1530	1620	1510	1430	1190	1100
H	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	150	rotate speed (min-1) feed velocity (mm/ min)	18050	13540	9020	6770	5410	4510	3380	2710
	(<60HRC) Alloy steel, hardened steel / Aleaciones, acero reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	2170	2000	1910	1730	1600	1530	1350	1250
					15920	11940	7960	5970	4780	3980	2990	2390
					1720	1670	1590	1460	1340	1270	1140	1020
					16710	9550	6370	4780	3820	3190	2390	1910
					760	760	760	760	730	710	620	570

50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

XM

High-speed and efficient processing of high-hard steel

Procesamiento eficiente y de alta velocidad de acero de alta dureza



Cutting edge passivation

The special design that combines the cutting edge strength with sharpness, is very suitable for high-speed and high-efficiency machining of high-hard steel.

Pasivado del filo de corte

El diseño especial que combina la fuerza del filo de corte con la agudeza, es muy adecuado para el mecanizado de alta velocidad y alta eficiencia de acero de alta dureza.

Unequal helix angle.

Variable flute pitch and unequal helix angle design, with excellent anti-vibration. performance and excellent surface quality.

Ángulo de hélice desigual.

Filo variable y diseño desigual del ángulo de hélice, con excelente rendimiento anti-vibración y excelente calidad superficial.



Variable bottom edges and helix angles to reduce vibration and improve the surface finish.

Diseño especial de la fresa, muy adecuado para acero duro.

The special tool design is Very suitable for processing all kinds of hard steel

El diseño especial de la herramienta es muy adecuado para procesar todo tipo de aceros duros.



Variable bottom edges, which greatly suppresses vibration, can realize stable processing

Bordes inferiores variables que suprimen en gran medida la vibración y pueden realizar un procesamiento estable.



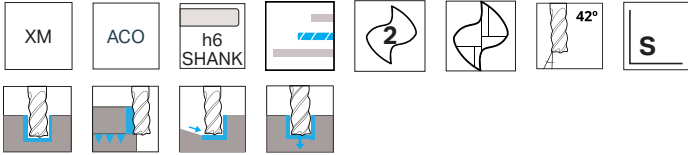
Special chip flute shape, can show excellent performance even in groove and cavity machining

La forma especial de la flauta de viruta, puede mostrar un excelente rendimiento incluso en el mecanizado de ranuras y cavidades

High speed and high efficiency • High hard steel

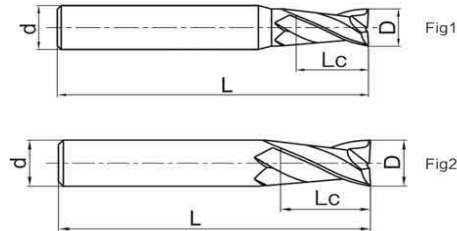
Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Square, Standard Length (XM-S2) / 2 flautas, cuadradas, longitud estándar (XM-S2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	2	1
1,50	4,00	4,00	50	2	1
2,00	6,00	4,00	50	2	1
2,50	8,00	4,00	50	2	1
3,00	8,00	4,00	50	2	1
4,00	11,0	4,00	50	2	2
5,00	13,0	5,00	50	2	2
5,00	13,0	6,00	50	2	2
6,00	16,0	6,00	50	2	2
8,00	20,0	8,00	60	2	2
10,0	25,0	10,0	75	2	2
12,0	30,0	12,0	75	2	2
14,0	30,0	14,0	75	2	2
16,0	45,0	16,0	100	2	2
18,0	45,0	18,0	100	2	2
20,0	45,0	20,0	100	2	2

Ordering Code Código de orden
XM-S2-01030450
XM-S2-015040450
XM-S2-02060450
XM-S2-025080450
XM-S2-03080450
XM-S2-04110450
XM-S2-05130550
XM-S2-05130650
XM-S2-06160650
XM-S2-08200860
XM-S2-10251075
XM-S2-12301275
XM-S2-14301475
XM-S2-164516100
XM-S2-184518100
XM-S2-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 2 4 6 8 10 12					
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, de acero reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110	9550	6370	4780	3820	3190
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	380	380	380	380	370	360
					15920	11940	7960	5970	4780	3980
					260	360	370	360	370	340

50%~70%, 40%~60%

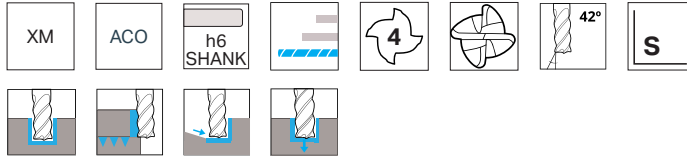
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.

La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

High speed and high efficiency • High hard steel

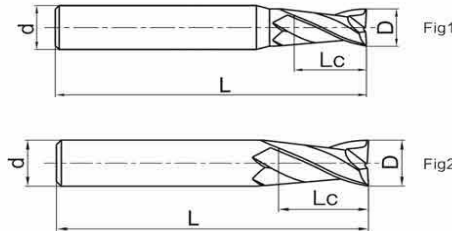
Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Square, Long Flute Length (XM-SL2) / 2 flautas, cuadradas, longitud de flauta larga (XM-SL2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
4,00	15,0	4,00	75	2	2
4,00	20,0	4,00	100	2	2
5,00	20,0	5,00	75	2	2
5,00	25,0	5,00	100	2	2
6,00	20,0	6,00	75	2	2
6,00	25,0	6,00	100	2	2
8,00	25,0	8,00	75	2	2
8,00	30,0	8,00	100	2	2
10,0	35,0	10,0	100	2	2
10,0	45,0	10,0	150	2	2
12,0	40,0	12,0	100	2	2
12,0	50,0	12,0	150	2	2
14,0	40,0	14,0	100	2	2
14,0	50,0	14,0	150	2	2
16,0	55,0	16,0	150	2	2
18,0	55,0	18,0	150	2	2
20,0	55,0	20,0	150	4	2

Ordering Code Código de orden
XM-SL2-04150475
XM-SL2-042004100
XM-SL2-05200575
XM-SL2-052505100
XM-SL2-06200675
XM-SL2-062506100
XM-SL2-08250875
XM-SL2-083008100
XM-SL2-103510100
XM-SL2-104510150
XM-SL2-124012100
XM-SL2-125012150
XM-SL2-144014100
XM-SL2-145014150
XM-SL2-165516150
XM-SL2-185518150
XM-SL2-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					2	4	6	8	10	12
H	(<60HRC) Alloy steel, hardened steel / Aleaciones, de acero reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110	9550	6370	4780	3820	3190
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	380	380	380	380	370	360
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	260	360	370	360	370	340

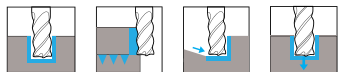
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

3 Flutes, Square, Standard Length (XM-S3) / 3 flautas, cuadradas, longitud estándar (XM-S3)



P	•
M	•
K	•
N	•
S	•
H	•

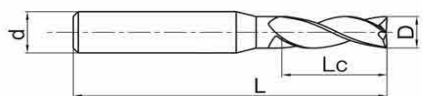


Fig1

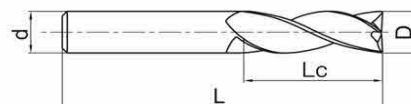


Fig2



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

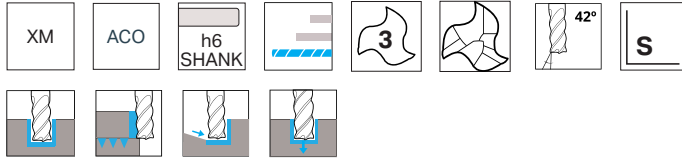
D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	3	1
1,50	4,00	4,00	50	3	1
2,00	6,00	4,00	50	3	1
2,50	8,00	4,00	50	3	1
3,00	8,00	4,00	50	3	1
4,00	11,0	4,00	50	3	2
5,00	13,0	5,00	50	3	2
5,00	13,0	6,00	50	3	1
6,00	16,0	6,00	50	3	2
8,00	20,0	8,00	60	3	2
10,0	25,0	10,0	75	3	2
12,0	30,0	12,0	75	3	2
14,0	30,0	14,0	75	3	2
16,0	45,0	16,0	100	3	2
18,0	45,0	18,0	100	3	2
20,0	45,0	20,0	100	3	2

Ordering Code Código de orden
XM-S3-01030450
XM-S3-015040450
XM-S3-02060450
XM-S3-025080450
XM-S3-03080450
XM-S3-04110450
XM-S3-05130550
XM-S3-05130650
XM-S3-06160650
XM-S3-08200860
XM-S3-10251075
XM-S3-12301275
XM-S3-14301475
XM-S3-164516100
XM-S3-184518100
XM-S3-204520100

High speed and high efficiency • High hard steel

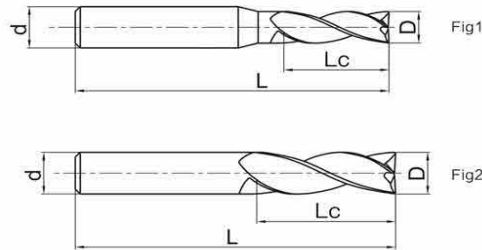
Alta velocidad y alta eficiencia • Acero de Alta dureza

3 Flutes, Square, Long Flute Length (XM-SL3) / 3 flautas, cuadradas, longitud de flauta larga (XM-SL3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



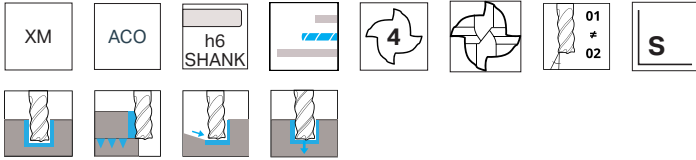
D	Lc	d	L	Z	Figure No. N° de figura
mm	mm	mm	mm		
4,00	15,0	4,00	75	3	2
4,00	20,0	4,00	100	3	2
5,00	20,0	5,00	75	3	2
5,00	25,0	5,00	100	3	2
6,00	20,0	6,00	75	3	2
6,00	25,0	6,00	100	3	2
8,00	25,0	8,00	75	3	2
8,00	30,0	8,00	100	3	2
10,0	35,0	10,0	100	3	2
10,0	45,0	10,0	150	3	2
12,0	40,0	12,0	100	3	2
12,0	50,0	12,0	150	3	2
14,0	40,0	14,0	100	3	2
14,0	50,0	14,0	150	3	2
16,0	55,0	16,0	150	3	2
18,0	55,0	18,0	150	3	2
20,0	55,0	20,0	150	3	2

Ordering Code Código de orden
XM-SL3-04150475
XM-SL3-042004100
XM-SL3-05200575
XM-SL3-052505100
XM-SL3-06200675
XM-SL3-062506100
XM-SL3-08250875
XM-SL3-083008100
XM-SL3-103510100
XM-SL3-104510150
XM-SL3-124012100
XM-SL3-125012150
XM-SL3-144014100
XM-SL3-145014150
XM-SL3-165516150
XM-SL3-185518150
XM-SL3-205520150

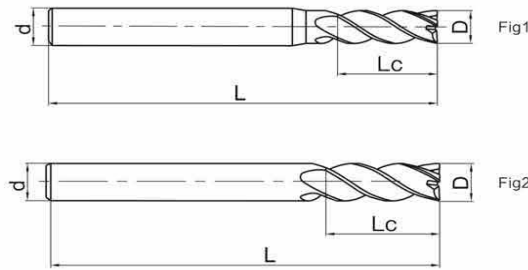
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Square, Standard Length (XM-S4) / 4 flautas, cuadradas, longitud estándar (XM-S4)



Unit Unidad	(mm)	
D	D ≤12	D >12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	4	1
1,50	4,00	4,00	50	4	1
2,00	6,00	4,00	50	4	1
2,50	8,00	4,00	50	4	1
3,00	8,00	4,00	50	4	1
4,00	11,0	4,00	50	4	2
5,00	13,0	5,00	50	4	2
5,00	13,0	6,00	50	4	1
6,00	16,0	6,00	50	4	2
8,00	20,0	8,00	60	4	2
10,0	25,0	10,0	75	4	2
12,0	30,0	12,0	75	4	2
14,0	30,0	14,0	75	4	2
16,0	45,0	16,0	100	4	2
18,0	45,0	18,0	100	4	2
20,0	45,0	20,0	100	4	2

Ordering Code Código de orden
XM-S4-01030450
XM-S4-015040450
XM-S4-02060450
XM-S4-025080450
XM-S4-03080450
XM-S4-04110450
XM-S4-05130550
XM-S4-05130650
XM-S4-06160650
XM-S4-08200860
XM-S4-10251075
XM-S4-12301275
XM-S4-14301475
XM-S4-164516100
XM-S4-184518100
XM-S4-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 2 4 6 8 10 12					
H	(<60HRC) Alloy steel, hardened steel / Aleaciones de acero reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110	9550	6370	4780	3820	3190
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap≤0.7D ae≤0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	760	760	760	760	730	710
					15920	11940	7960	5970	4780	3980
					510	720	730	720	730	670

50%~70%, 40%~60%

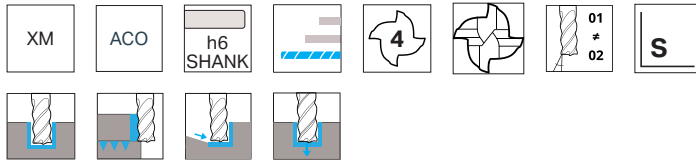
Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.

La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

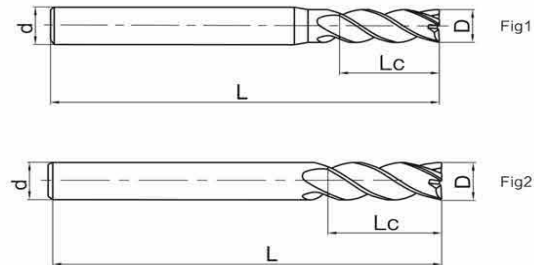
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Square, Long Flute Length (XM-SL4) / 4 flautas, cuadradas, longitud de flauta larga (XM-SL4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. Nº de figura
4,00	15,0	4,00	75	4	2
4,00	20,0	4,00	100	4	2
5,00	20,0	5,00	75	4	2
5,00	25,0	5,00	100	4	2
6,00	20,0	6,00	75	4	2
6,00	25,0	6,00	100	4	2
8,00	25,0	8,00	75	4	2
8,00	30,0	8,00	100	4	2
10,0	35,0	10,0	100	4	2
10,0	45,0	10,0	150	4	2
12,0	40,0	12,0	100	4	2
12,0	50,0	12,0	150	4	2
14,0	40,0	14,0	100	4	2
14,0	50,0	14,0	150	4	2
16,0	55,0	16,0	150	4	2
18,0	55,0	18,0	150	4	2
20,0	55,0	20,0	150	4	2

Ordering Code Código de orden
XM-SL4-04150475
XM-SL4-042004100
XM-SL4-05200575
XM-SL4-052505100
XM-SL4-06200675
XM-SL4-062506100
XM-SL4-08250875
XM-SL4-083008100
XM-SL4-103510100
XM-SL4-104510150
XM-SL4-124012100
XM-SL4-125012150
XM-SL4-144014100
XM-SL4-145014150
XM-SL4-165516150
XM-SL4-185518150
XM-SL4-205520150

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					2	4	6	8	10	12
H	(<60HRC) Alloy steel, hardened steel / Aleaciones de acero reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110	9550	6370	4780	3820	3190
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	760	760	760	760	730	710
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	510	720	730	720	730	670

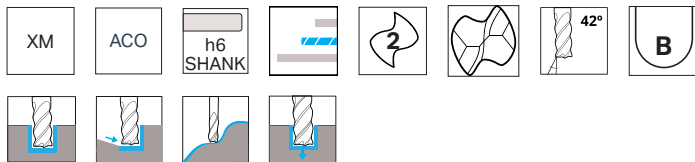
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

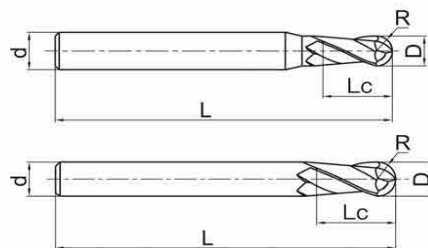
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Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Ballnose, Standard Length (XM-B2) / 2 flautas, punta esférica, longitud estándar (XM-B2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



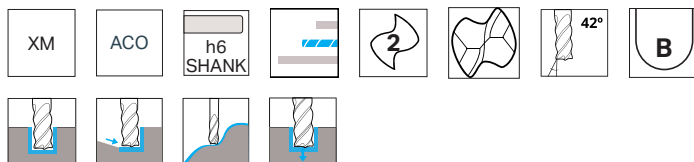
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1,00	2,00	3,00	50	0.5	2	1
2,00	4,00	3,00	50	1.0	2	1
3,00	6,00	3,00	50	1.5	2	2
1,00	2,00	4,00	50	0.5	2	1
1,50	3,00	4,00	50	0.75	2	1
2,00	4,00	4,00	50	1.0	2	1
2,50	5,00	4,00	50	1.25	2	1
3,00	6,00	4,00	50	1.5	2	1
3,50	7,00	4,00	50	1.75	2	1
4,00	8,00	4,00	50	2.0	2	2
5,00	10,0	5,00	50	2.5	2	2
6,00	12,0	6,00	50	3.0	2	2
8,00	16,0	8,00	60	4.0	2	2
10,0	20,0	10,0	75	5.0	2	2
12,0	24,0	12,0	75	6.0	2	2
14,0	28,0	14,0	75	7.0	2	2
16,0	32,0	16,0	100	8.0	2	2
18,0	36,0	18,0	100	9.0	2	2
20,0	40,0	20,0	100	10.0	2	2

Ordering Code Código de orden
XM-B2-01020350-R0.5
XM-B2-02040350-R1.0
XM-B2-03060350-R1.5
XM-B2-01020450-R0.5
XM-B2-015030450-R0.75
XM-B2-02040450-R1.0
XM-B2-025050450-R1.25
XM-B2-03060450-R1.5
XM-B2-035070450-R1.75
XM-B2-04080450-R2.0
XM-B2-05100550-R2.5
XM-B2-06120650-R3.0
XM-B2-08160860-R4.0
XM-B2-10201075-R5.0
XM-B2-12241275-R6.0
XM-B2-14281475-R7.0
XM-B2-163216100-R8.0
XM-B2-183618100-R9.0
XM-B2-204020100-R10.0

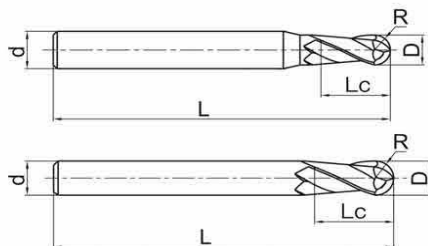
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Ballnose, Long Shank Length (XM-BH2) / 2 flautas, punta esférica, longitud de vástago largo (XM-BH2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit	(mm)		
Unidad			
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



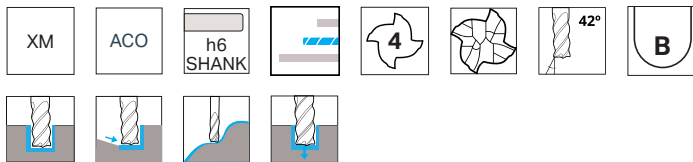
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	8,00	4,00	75	2.0	2	2
4,00	8,00	4,00	100	2.0	2	2
5,00	10,0	5,00	75	2.5	2	2
5,00	10,0	5,00	100	2.5	2	2
5,00	10,0	5,00	150	2.5	2	2
6,00	12,0	6,00	75	3.0	2	2
6,00	12,0	6,00	100	3.0	2	2
6,00	12,0	6,00	150	3.0	2	2
8,00	16,0	8,00	75	4.0	2	2
8,00	16,0	8,00	100	4.0	2	2
8,00	16,0	8,00	150	4.0	2	2
10,0	20,0	10,0	100	5.0	2	2
10,0	20,0	10,0	150	5.0	2	2
12,0	24,0	12,0	100	6.0	2	2
12,0	24,0	12,0	150	6.0	2	2
14,0	28,0	14,0	100	7.0	2	2
14,0	28,0	14,0	150	7.0	2	2
16,0	32,0	16,0	150	8.0	2	2
18,0	36,0	18,0	150	9.0	2	2
20,0	40,0	20,0	150	10.0	2	2

Ordering Code Código de orden
XM-BH2-04080475-R2.0
XM-BH2-040804100-R2.0
XM-BH2-05100575-R2.5
XM-BH2-051005100-R2.5
XM-BH2-051005150-R2.5
XM-BH2-06120675-R3.0
XM-BH2-061206100-R3.0
XM-BH2-061206150-R3.0
XM-BH2-08160875-R4.0
XM-BH2-081608100-R4.0
XM-BH2-081608150-R4.0
XM-BH2-102010100-R5.0
XM-BH2-102010150-R5.0
XM-BH2-122412100-R6.0
XM-BH2-122412150-R6.0
XM-BH2-142814100-R7.0
XM-BH2-142814150-R7.0
XM-BH2-163216150-R8.0
XM-BH2-183618150-R9.0
XM-BH2-204020150-R10.0

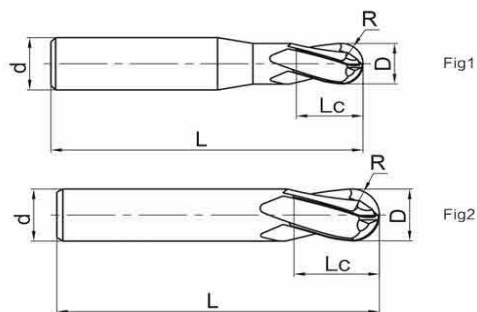
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Ballnose, Standard Length (XM-B4) / 4 flautas, punta esférica, longitud estándar (XM-B4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



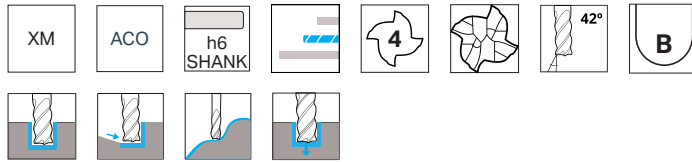
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1,00	2,00	3,00	50	0.5	4	1
2,00	4,00	3,00	50	1.0	4	1
3,00	6,00	3,00	50	1.5	4	2
1,00	2,00	4,00	50	0.5	4	1
1,50	3,00	4,00	50	0.75	4	1
2,00	4,00	4,00	50	1.0	4	1
2,50	5,00	4,00	50	1.25	4	1
3,00	6,00	4,00	50	1.5	4	1
3,50	7,00	4,00	50	1.75	4	1
4,00	8,00	4,00	50	2.0	4	2
5,00	10,0	5,00	50	2.5	4	2
6,00	12,0	6,00	50	3.0	4	2
8,00	16,0	8,00	60	4.0	4	2
10,0	20,0	10,0	75	5.0	4	2
12,0	24,0	12,0	75	6.0	4	2
14,0	28,0	14,0	75	7.0	4	2
16,0	32,0	16,0	100	8.0	4	2
18,0	36,0	18,0	100	9.0	4	2
20,0	40,0	20,0	100	10.0	4	2

Ordering Code Código de orden
XM-B4-01020350-R0.5
XM-B4-02040350-R1.0
XM-B4-03060350-R1.5
XM-B4-01020450-R0.5
XM-B4-015030450-R0.75
XM-B4-02040450-R1.0
XM-B4-025050450-R1.25
XM-B4-03060450-R1.5
XM-B4-035070450-R1.75
XM-B4-04080450-R2.0
XM-B4-05100550-R2.5
XM-B4-06120650-R3.0
XM-B4-08160860-R4.0
XM-B4-10201075-R5.0
XM-B4-12241275-R6.0
XM-B4-14281475-R7.0
XM-B4-163216100-R8.0
XM-B4-183618100-R9.0
XM-B4-204020100-R10.0

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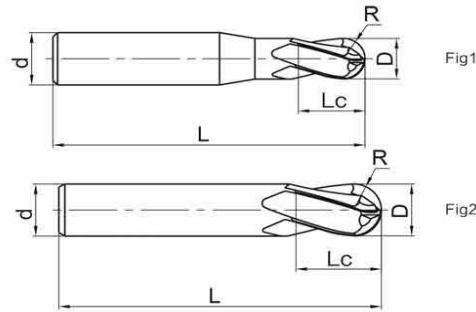
Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Ballnose, Long Shank Length (XM-BH4) / 4 flautas, punta esférica, longitud de vástago largo (XM-BH4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit	(mm)		
Unidad			
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



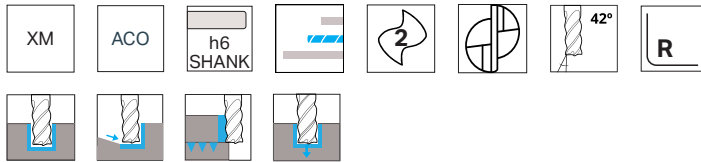
D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
4,00	8,00	4,00	75	2.0	4	2
4,00	8,00	4,00	100	2.0	4	2
5,00	10,0	5,00	75	2.5	4	2
5,00	10,0	5,00	100	2.5	4	2
5,00	10,0	5,00	150	2.5	4	2
6,00	12,0	6,00	75	3.0	4	2
6,00	12,0	6,00	100	3.0	4	2
6,00	12,0	6,00	150	3.0	4	2
8,00	16,0	8,00	75	4.0	4	2
8,00	16,0	8,00	100	4.0	4	2
8,00	16,0	8,00	150	4.0	4	2
10,0	20,0	10,0	100	5.0	4	2
10,0	20,0	10,0	150	5.0	4	2
12,0	24,0	12,0	100	6.0	4	2
12,0	24,0	12,0	150	6.0	4	2
14,0	28,0	14,0	100	7.0	4	2
14,0	28,0	14,0	150	7.0	4	2
16,0	32,0	16,0	150	8.0	4	2
18,0	36,0	18,0	150	9.0	4	2
20,0	40,0	20,0	150	10.0	4	2

Ordering Code Código de orden
XM-BH4-04080475-R2.0
XM-BH4-040804100-R2.0
XM-BH4-05100575-R2.5
XM-BH4-051005100-R2.5
XM-BH4-051005150-R2.5
XM-BH4-06120675-R3.0
XM-BH4-061206100-R3.0
XM-BH4-061206150-R3.0
XM-BH4-08160875-R4.0
XM-BH4-081608100-R4.0
XM-BH4-081608150-R4.0
XM-BH4-102010100-R5.0
XM-BH4-102010150-R5.0
XM-BH4-122412100-R6.0
XM-BH4-122412150-R6.0
XM-BH4-142814100-R7.0
XM-BH4-142814150-R7.0
XM-BH4-163216150-R8.0
XM-BH4-183618150-R9.0
XM-BH4-204020150-R10.0

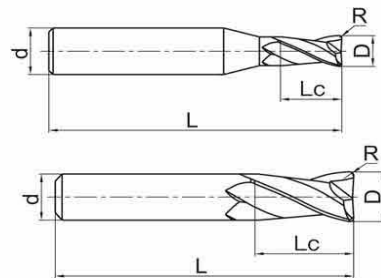
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Corner Radius, Standard Length (XM-R2) / 2 flautas, radio de esquina, longitud estándar (XM-R2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



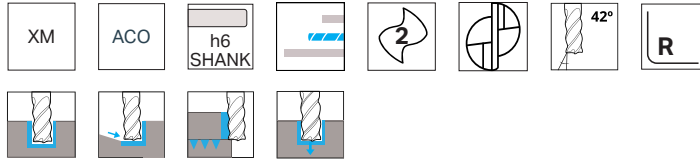
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1,00	3,00	4,00	50	0.2	2	1
1,50	4,00	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.5	2	1
2,50	8,00	4,00	50	0.2	2	1
2,50	8,00	4,00	50	0.5	2	1
3,00	8,00	4,00	50	0.2	2	1
3,00	8,00	4,00	50	0.5	2	1
4,00	11,0	4,00	50	0.5	2	2
4,00	11,0	4,00	50	1.0	2	2
5,00	13,0	5,00	50	0.5	2	2
5,00	13,0	5,00	50	1.0	2	2
5,00	13,0	6,00	50	0.5	2	2
5,00	13,0	6,00	50	1.0	2	2
6,00	16,0	6,00	50	0.5	2	2
6,00	16,0	6,00	50	1.0	2	2
8,00	20,0	8,00	60	0.5	2	2
8,00	20,0	8,00	60	1.0	2	2
10,0	25,0	10,0	75	0.5	2	2
10,0	25,0	10,0	75	1.0	2	2
12,0	30,0	12,0	75	0.5	2	2
12,0	30,0	12,0	75	1.0	2	2

Ordering Code Código de orden
XM-R2-01030450-R0.2
XM-R2-015040450-R0.2
XM-R2-02060450-R0.2
XM-R2-02060450-R0.5
XM-R2-025080450-R0.2
XM-R2-025080450-R0.5
XM-R2-03080450-R0.2
XM-R2-03080450-R0.5
XM-R2-04110450-R0.5
XM-R2-04110450-R1.0
XM-R2-05130550-R0.5
XM-R2-05130550-R1.0
XM-R2-05130650-R0.5
XM-R2-05130650-R1.0
XM-R2-06160650-R0.5
XM-R2-06160650-R1.0
XM-R2-08200860-R0.5
XM-B2-08200860-R1.0
XM-R2-10251075-R0.5
XM-R2-10251075-R1.0
XM-R2-12301275-R0.5
XM-R2-12301275-R1.0

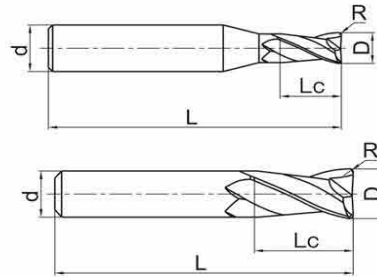
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Corner Radius, Standard Length (XM-R2) / 2 flautas, radio de esquina, longitud estándar (XM-R2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
14,0	30,0	14,0	75	0.5	2	2
14,0	30,0	14,0	75	1.0	2	2
14,0	30,0	14,0	75	2.0	2	2
16,0	45,0	16,0	100	0.5	2	2
16,0	45,0	16,0	100	1.0	2	2
16,0	45,0	16,0	100	2.0	2	2
16,0	45,0	16,0	100	3.0	2	2
18,0	45,0	18,0	100	0.5	2	2
18,0	45,0	18,0	100	1.0	2	2
18,0	45,0	18,0	100	2.0	2	2
18,0	45,0	18,0	100	3.0	2	2
20,0	45,0	20,0	100	0.5	2	2
20,0	45,0	20,0	100	1.0	2	2
20,0	45,0	20,0	100	2.0	2	2
20,0	45,0	20,0	100	3.0	2	2

Ordering Code Código de orden
XM-R2-14301475-R0.5
XM-R2-14301475-R1.0
XM-R2-14301475-R2.0
XM-R2-164516100-R0.5
XM-R2-164516100-B1.0
XM-R2-164516100-R2.0
XM-R2-164516100-R3.0
XM-R2-184518100-R0.5
XM-R2-184518100-R1.0
XM-R2-184518100-B2.0
XM-R2-184518100-R3.0
XM-R2-204520100-B0.5
XM-R2-204520100-B1.0
XM-R2-204520100-R2.0
XM-R2-204520100-B3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					2	4	6	8	10	12
H	(<60HRC) Alloy steel, hardened steel / Aleaciones de acero reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110	9550	6370	4780	3820	3190
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	380	380	380	380	370	360
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	260	360	370	360	370	340

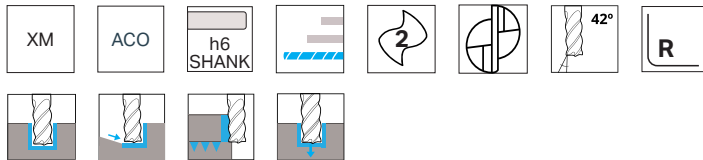
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

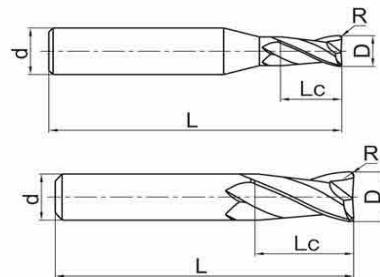
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Corner Radius, Long Flute Length (XM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (XM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



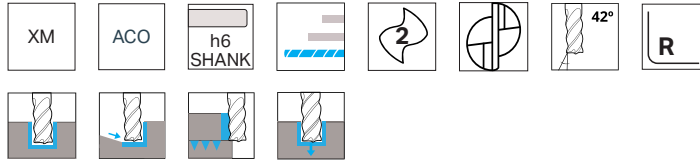
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0.5	2	2
4,00	15,0	4,00	75	1.0	2	2
4,00	20,0	4,00	100	0.5	2	2
4,00	20,0	4,00	100	1.0	2	2
5,00	20,0	5,00	75	0.5	2	2
5,00	20,0	5,00	75	1.0	2	2
5,00	25,0	5,00	100	0.5	2	2
5,00	25,0	5,00	100	1.0	2	2
6,00	20,0	6,00	75	0.5	2	2
6,00	20,0	6,00	75	1.0	2	2
6,00	25,0	6,00	100	0.5	2	2
6,00	25,0	6,00	100	1.0	2	2
8,00	25,0	8,00	75	0.5	2	2
8,00	25,0	8,00	75	1.0	2	2
8,00	30,0	8,00	100	0.5	2	2
8,00	30,0	8,00	100	1.0	2	2
10,0	35,0	10,0	100	0.5	2	2
10,0	35,0	10,0	100	1.0	2	2
10,0	45,0	10,0	150	0.5	2	2
10,0	45,0	10,0	150	1.0	2	2
12,0	40,0	12,0	100	0.5	2	2
12,0	40,0	12,0	100	1.0	2	2
12,0	50,0	12,0	150	0.5	2	2
12,0	50,0	12,0	150	1.0	2	2

Ordering Code Código de orden
XM-RL2-04150475-R0.5
XM-RL2-04150475-R1.0
XM-RL2-042004100-R0.5
XM-RL2-042004100-R1.0
XM-RL2-05200575-R0.5
XM-RL2-05200575-R1.0
XM-RL2-052505100-R0.5
XM-RL2-052505100-R1.0
XM-RL2-06200675-R0.5
XM-RL2-06200675-R1.0
XM-RL2-062506100-R0.5
XM-RL2-062506100-R1.0
XM-RL2-08250875-R0.5
XM-RL2-08250875-R1.0
XM-RL2-083008100-R0.5
XM-RL2-083008100-R1.0
XM-RL2-103510100-R0.5
XM-RL2-103510100-R1.0
XM-RL2-104510150-R0.5
XM-RL2-104510150-R1.0
XM-RL2-124012100-R0.5
XM-RL2-124012100-R1.0
XM-RL2-125012150-R0.5
XM-RL2-125012150-R1.0

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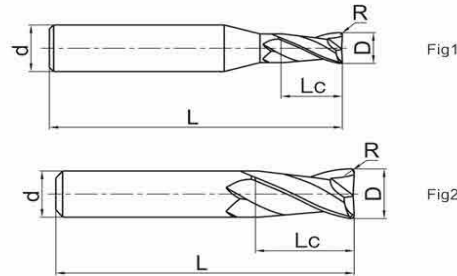
Alta velocidad y alta eficiencia • Acero de Alta dureza

2 Flutes, Corner Radius, Long Flute Length (XM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (XM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
14,0	40,0	14,0	100	0.5	2	2
14,0	40,0	14,0	100	1.0	2	2
14,0	40,0	14,0	100	2.0	2	2
14,0	50,0	14,0	150	0.5	2	2
14,0	50,0	14,0	150	1.0	2	2
14,0	50,0	14,0	150	2.0	2	2
16,0	55,0	16,0	150	0.5	2	2
16,0	55,0	16,0	150	1.0	2	2
16,0	55,0	16,0	150	2.0	2	2
16,0	55,0	16,0	150	3.0	2	2
18,0	55,0	18,0	150	0.5	2	2
18,0	55,0	18,0	150	1.0	2	2
18,0	55,0	18,0	150	2.0	2	2
18,0	55,0	18,0	150	3.0	2	2
20,0	55,0	20,0	150	0.5	2	2
20,0	55,0	20,0	150	1.0	2	2
20,0	55,0	20,0	150	2.0	2	2
20,0	55,0	20,0	150	3.0	2	2

Ordering Code Código de orden
XM-RL2-144014100-R0.5
XM-RL2-144014100-R1.0
XM-RL2-144014100-R2.0
XM-RL2-145014150-R0.5
XM-RL2-145014150-R1.0
XM-RL2-145014150-R2.0
XM-RL2-165516150-R0.5
XM-RL2-165516150-R1.0
XM-RL2-165516150-R2.0
XM-RL2-165516150-R3.0
XM-RL2-185518150-R0.5
XM-RL2-185518150-R1.0
XM-RL2-185518150-R2.0
XM-RL2-185518150-R3.0
XM-RL2-205520150-R0.5
XM-RL2-205520150-R1.0
XM-RL2-205520150-R2.0
XM-RL2-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					2	4	6	8	10	12
H	(<60HRC) Alloy steel, hardened steel / Aleaciones de acero reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110	9550	6370	4780	3820	3190
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	380	380	380	380	370	360
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap ≤ 1D ae ≤ 0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980
		ap ≤ 0.7D ae ≤ 0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	260	360	370	360	370	340

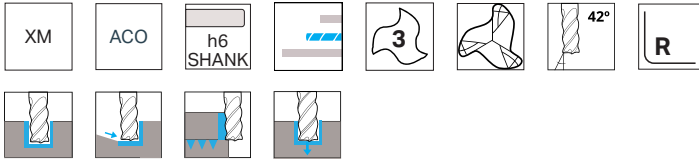
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

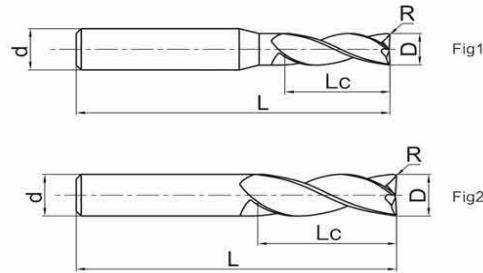
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

3 Flutes, Corner Radius, Standard Length (XM-R3) / 3 flautas, radio de esquina, longitud estándar (XM-R3)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



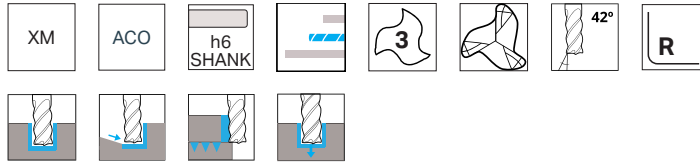
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1,00	3,00	4,00	50	0.2	3	1
1,50	4,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.5	3	1
2,50	8,00	4,00	50	0.2	3	1
2,50	8,00	4,00	50	0.5	3	1
3,00	8,00	4,00	50	0.2	3	1
3,00	8,00	4,00	50	0.5	3	1
4,00	11,0	4,00	50	0.5	3	2
4,00	11,0	4,00	50	1.0	3	2
5,00	13,0	5,00	50	0.5	3	2
5,00	13,0	5,00	50	1.0	3	2
5,00	13,0	6,00	50	0.5	3	2
5,00	13,0	6,00	50	1.0	3	2
6,00	16,0	6,00	50	0.5	3	2
6,00	16,0	6,00	50	1.0	3	2
8,00	20,0	8,00	60	0.5	3	2
8,00	20,0	8,00	60	1.0	3	2
10,0	25,0	10,0	75	0.5	3	2
10,0	25,0	10,0	75	1.0	3	2
12,0	30,0	12,0	75	0.5	3	2
12,0	30,0	12,0	75	1.0	3	2

Ordering Code Código de orden
XM-R3-01030450-R0.2
XM-R3-015040450-R0.2
XM-R3-02060450-R0.2
XM-R3-02060450-R0.5
XM-R3-025080450-R0.2
XM-R3-025080450-R0.5
XM-R3-03080450-R0.2
XM-R3-03080450-R0.5
XM-R3-04110450-R0.5
XM-R3-04110450-R1.0
XM-R3-05130550-R0.5
XM-R3-05130550-R1.0
XM-R3-05130650-R0.5
XM-R3-05130650-R1.0
XM-R3-06160650-R0.5
XM-R3-06160650-R1.0
XM-R3-08200860-R0.5
XM-R3-08200860-R1.0
XM-R3-10251075-R0.5
XM-R3-10251075-R1.0
XM-R3-12301275-R0.5
XM-R3-12301275-R1.0

High speed and high efficiency • High hard steel

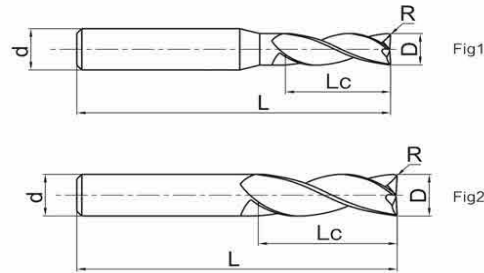
Alta velocidad y alta eficiencia • Acero de Alta dureza

3 Flutes, Corner Radius, Standard Length (XM-R3) / 3 flautas, radio de esquina, longitud estándar (XM-R3)



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

P	•
M	•
K	•
N	•
S	•
H	•



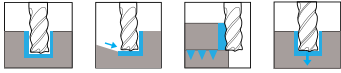
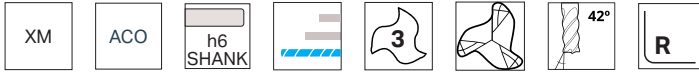
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14.0	30.0	14.0	75	0.5	3	2
14.0	30.0	14.0	75	1.0	3	2
14.0	30.0	14.0	75	2.0	3	2
16.0	45.0	16.0	100	0.5	3	2
16.0	45.0	16.0	100	1.0	3	2
16.0	45.0	16.0	100	2.0	3	2
16.0	45.0	16.0	100	3.0	3	2
18.0	45.0	18.0	100	0.5	3	2
18.0	45.0	18.0	100	1.0	3	2
18.0	45.0	18.0	100	2.0	3	2
18.0	45.0	18.0	100	3.0	3	2
20.0	45.0	20.0	100	0.5	3	2
20.0	45.0	20.0	100	1.0	3	2
20.0	45.0	20.0	100	2.0	3	2
20.0	45.0	20.0	100	3.0	3	2

Ordering Code Código de orden
XM-R3-14301475-R0.5
XM-R3-14301475-R1.0
XM-R3-14301475-R2.0
XM-R3-164516100-R0.5
XM-R3-164516100-R1.0
XM-R3-164516100-R2.0
XM-R3-164516100-R3.0
XM-R3-184518100-R0.5
XM-R3-184518100-R1.0
XM-R3-184518100-R2.0
XM-R3-184518100-R3.0
XM-R3-204520100-R0.5
XM-R3-204520100-R1.0
XM-R3-204520100-B2.0
XM-R3-204520100-R3.0

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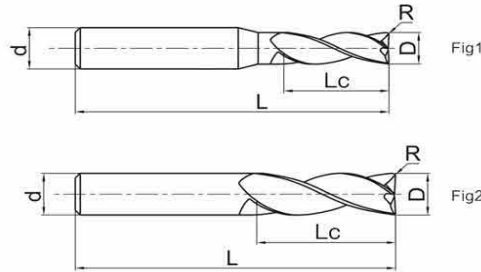
Alta velocidad y alta eficiencia • Acero de Alta dureza

3 Flutes, Corner Radius, Long Flute Length (XM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (XM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



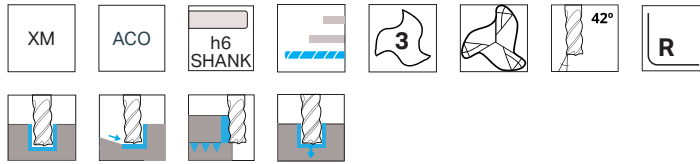
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	15,0	4,00	75	0.5	3	2
4,00	15,0	4,00	75	1.0	3	2
4,00	20,0	4,00	100	0.5	3	2
4,00	20,0	4,00	100	1.0	3	2
5,00	20,0	5,00	75	0.5	3	2
5,00	20,0	5,00	75	1.0	3	2
5,00	25,0	5,00	100	0.5	3	2
5,00	25,0	5,00	100	1.0	3	2
6,00	20,0	6,00	75	0.5	3	2
6,00	20,0	6,00	75	1.0	3	2
6,00	25,0	6,00	100	0.5	3	2
6,00	25,0	6,00	100	1.0	3	2
8,00	25,0	8,00	75	0.5	3	2
8,00	25,0	8,00	75	1.0	3	2
8,00	30,0	8,00	100	0.5	3	2
8,00	30,0	8,00	100	1.0	3	2
10,0	35,0	10,0	100	0.5	3	2
10,0	35,0	10,0	100	1.0	3	2
10,0	45,0	10,0	150	0.5	3	2
10,0	45,0	10,0	150	1.0	3	2
12,0	40,0	12,0	100	0.5	3	2
12,0	40,0	12,0	100	1.0	3	2
12,0	50,0	12,0	150	0.5	3	2
12,0	50,0	12,0	150	1.0	3	2

Ordering Code Código de orden
XM-RL3-04150475-R0.5
XM-RL3-04150475-R1.0
XM-RL3-042004100-R0.5
XM-RL3-042004100-R1.0
XM-RL3-05200575-R0.5
XM-RL3-05200575-R1.0
XM-BL3-052505100-R0.5
XM-RL3-052505100-R1.0
XM-RL3-06200675-R0.5
XM-RL3-06200675-R1.0
XM-RL3-062506100-R0.5
XM-RL3-062506100-B1.0
XM-RL3-08250875-R0.5
XM-BL3-08250875-B1.0
XM_RI3-083008100_R0 5
XM-RL3-083008100-R1.0
XM_BI3_103510100_B0 5
XM-BL3-103510100-R1.0
XM-BL3.104510150-B05
XM_RI3.104510150_B1 0
XM-RL3-124012100-R0.5
XM-RL3-124012100-R1.0
XM-RL3-125012150-R0.5
XM-RL3-125012150-B1.0

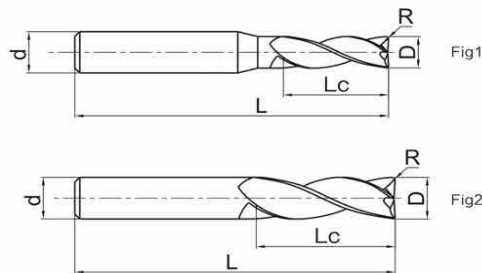
High speed and high efficiency • High hard steel

Alta velocidad y alta eficiencia • Acero de Alta dureza

3 Flutes, Corner Radius, Long Flute Length (XM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (XM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

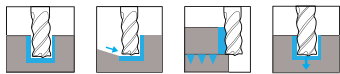
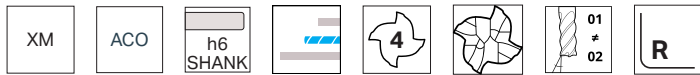
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	3	2
14,0	40,0	14,0	100	1.0	3	2
14,0	40,0	14,0	100	2.0	3	2
14,0	50,0	14,0	150	0.5	3	2
14,0	50,0	14,0	150	1.0	3	2
14,0	50,0	14,0	150	2.0	3	2
16,0	55,0	16,0	150	0.5	3	2
16,0	55,0	16,0	150	1.0	3	2
16,0	55,0	16,0	150	2.0	3	2
16,0	55,0	16,0	150	3.0	3	2
18,0	55,0	18,0	150	0.5	3	2
18,0	55,0	18,0	150	1.0	3	2
18,0	55,0	18,0	150	2.0	3	2
18,0	55,0	18,0	150	3.0	3	2
20,0	55,0	20,0	150	0.5	3	2
20,0	55,0	20,0	150	1.0	3	2
20,0	55,0	20,0	150	2.0	3	2
20,0	55,0	20,0	150	3.0	3	2

Ordering Code Código de orden
XM-RL3-144014100-R0.5
XM-RL3-144014100-R1.0
XM-RL3-144014100-R2.0
XM-RL3-145014150-R0.5
XM-RL3-145014150-R1.0
XM-RL3-145014150-R2.0
XM-RL3-165516150-R0.5
XM-RL3-165516150-R1.0
XM-RL3-165516150-R2.0
XM-RL3-165516150-R3.0
XM-RL3-185518150-R0.5
XM-RL3-185518150-R1.0
XM-RL3-185518150-R2.0
XM-RL3-185518150-R3.0
XM-RL3-205520150-R0.5
XM-RL3-205520150-R1.0
XM-RL3-205520150-R2.0
XM-RL3-205520150-R3.0

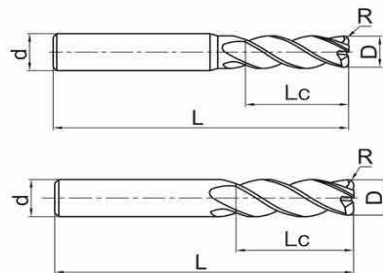
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Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Corner Radius, Standard Length (XM-R4) / 4 flautas, radio de esquina, longitud estándar (XM-R4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



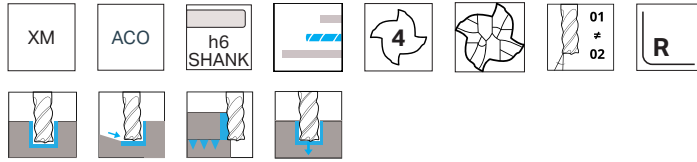
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
1,00	3,00	4,00	50	0.2	4	1
1,50	4,00	4,00	50	0.2	4	1
2,00	6,00	4,00	50	0.2	4	2
2,00	6,00	4,00	50	0.5	4	2
2,50	8,00	4,00	50	0.2	4	2
2,50	8,00	4,00	50	0.5	4	2
3,00	8,00	4,00	50	0.2	4	2
3,00	8,00	4,00	50	0.5	4	2
4,00	11,0	4,00	50	0.5	4	2
4,00	11,0	4,00	50	1.0	4	2
5,00	13,0	5,00	50	0.5	4	2
5,00	13,0	5,00	50	1.0	4	2
5,00	13,0	6,00	50	0.5	4	2
5,00	13,0	6,00	50	1.0	4	2
6,00	16,0	6,00	50	0.5	4	2
6,00	16,0	6,00	50	1.0	4	2
8,00	20,0	8,00	60	0.5	4	2
8,00	20,0	8,00	60	1.0	4	2
10,0	25,0	10,0	75	0.5	4	2
10,0	25,0	10,0	75	1.0	4	2
12,0	30,0	12,0	75	0.5	4	2
12,0	30,0	12,0	75	1.0	4	2

Ordering Code Código de orden
XM-R4-01030450-R0.2
XM-R4-015040450-R0.2
XM-R4-02060450-R0.2
XM-R4-02060450-R0.5
XM-R4-025080450-R0.2
XM-R4-025080450-R0.5
XM-R4-03080450-R0.2
XM-R4-03080450-R0.5
XM-R4-04110450-R0.5
XM-R4-04110450-R1.0
XM-R4-05130550-R0.5
XM-R4-05130550-R1.0
XM-R4-05130650-R0.5
XM-R4-05130650-R1.0
XM-R4-06160650-R0.5
XM-R4-06160650-R1.0
XM-R4-08200860-R0.5
XM-R4-08200860-R1.0
XM-R4-10251075-R0.5
XM-R4-10251075-R1.0
XM-R4-12301275-R0.5
XM-R4-12301275-R1.0

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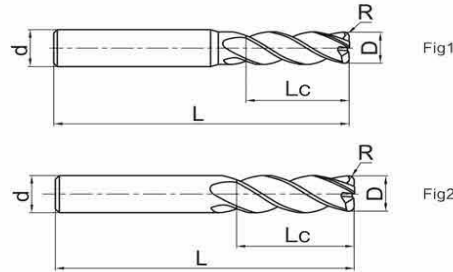
Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Corner Radius, Standard Length (XM-R4) / 4 flautas, radio de esquina, longitud estándar (XM-R4)



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

P	•
M	•
K	•
N	•
S	•
H	•



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	30,0	14,0	75	0.5	4	2
14,0	30,0	14,0	75	1.0	4	2
14,0	30,0	14,0	75	2.0	4	2
16,0	45,0	16,0	100	0.5	4	2
16,0	45,0	16,0	100	1.0	4	2
16,0	45,0	16,0	100	2.0	4	2
16,0	45,0	16,0	100	3.0	4	2
18,0	45,0	18,0	100	0.5	4	2
18,0	45,0	18,0	100	1.0	4	2
18,0	45,0	18,0	100	2.0	4	2
18,0	45,0	18,0	100	3.0	4	2
20,0	45,0	20,0	100	0.5	4	2
20,0	45,0	20,0	100	1.0	4	2
20,0	45,0	20,0	100	2.0	4	2
20,0	45,0	20,0	100	3.0	4	2

Ordering Code Código de orden
XM-R4-14301475-R0.5
XM-R4-14301475-R1.0
XM-R4-14301475-R2.0
XM-R4-164516100-R0.5
XM-R4-164516100-R1.0
XM-R4-164516100-R2.0
XM-R4-164516100-R3.0
XM-R4-184518100-R0.5
XM-R4-184518100-R1.0
XM-R4-184518100-R2.0
XM-R4-184518100-R3.0
XM-R4-204520100-R0.5
XM-R4-204520100-R1.0
XM-R4-204520100-R2.0
XM-R4-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					2	4	6	8	10	12
H	(<60HRC) Alloy steel, hardened steel / Aleaciones de acero reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110	9550	6370	4780	3820	3190
		ap≤0.7D ae≤0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	760	760	760	760	730	710
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap≤1D ae≤0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	15920	11940	7960	5970	4780	3980
		ap≤0.7D ae≤0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	510	720	730	720	730	670

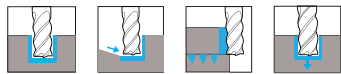
50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

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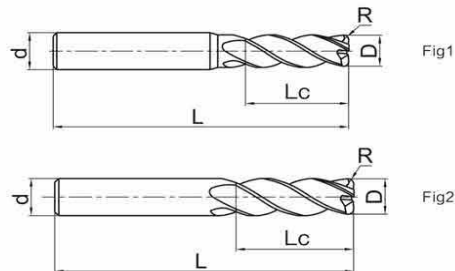
Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Corner Radius, Long Flute Length (XM-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (XM-RL4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



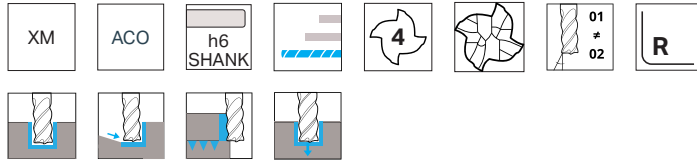
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4.00	15.0	4.00	75	0.5	4	2
4.00	15.0	4.00	75	1.0	4	2
4.00	20.0	4.00	100	0.5	4	2
4.00	20.0	4.00	100	1.0	4	2
5.00	20.0	5.00	75	0.5	4	2
5.00	20.0	5.00	75	1.0	4	2
5.00	25.0	5.00	100	0.5	4	2
5.00	25.0	5.00	100	1.0	4	2
6.00	20.0	6.00	75	0.5	4	2
6.00	20.0	6.00	75	1.0	4	2
6.00	25.0	6.00	100	0.5	4	2
6.00	25.0	6.00	100	1.0	4	2
8.00	25.0	8.00	75	0.5	4	2
8.00	25.0	8.00	75	1.0	4	2
8.00	30.0	8.00	100	0.5	4	2
8.00	30.0	8.00	100	1.0	4	2
10.0	35.0	10.0	100	0.5	4	2
10.0	35.0	10.0	100	1.0	4	2
10.0	45.0	10.0	150	0.5	2	2
10.0	45.0	10.0	150	1.0	2	2
12.0	40.0	12.0	100	0.5	2	2
12.0	40.0	12.0	100	1.0	2	2
12.0	50.0	12.0	150	0.5	2	2
12.0	50.0	12.0	150	1.0	2	2

Ordering Code Código de orden
XM-RL4-04150475-R0.5
XM-RL4-04150475-R1.0
XM-RL4-042004100-R0.5
XM-RL4-042004100-B1.0
XM-RL4-05200575-R0.5
XM-RL4-05200575-R1.0
XM-RL4-052505100-R0.5
XM-RL4-052505100-R1.0
XM-RL4-06200675-R0.5
XM-RL4-06200675-R1.0
XM-RL4-062506100-R0.5
XM-RL4-062506100-R1.0
XM-RL4-08250875-R0.5
XM-RL4-08250875-R1.0
XM-RL4-083008100-R0.5
XM-RL4-083008100-R1.0
XM-RL4-103510100-R0.5
XM-RL4-103510100-R1.0
XM-RL4-104510150-R0.5
XM-RL4-104510150-R1.0
XM-RL4-124012100-R0.5
XM-RL4-124012100-R1.0
XM-RL4-125012150-R0.5
XM-RL4-125012150-R1.0

High speed and high efficiency • High hard steel

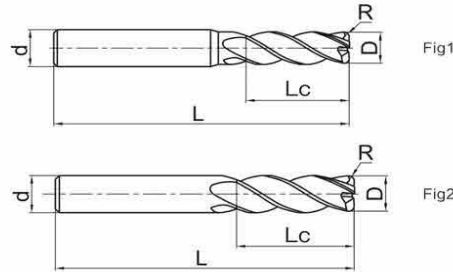
Alta velocidad y alta eficiencia • Acero de Alta dureza

4 Flutes, Corner Radius, Long Flute Length (XM-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (XM-RL4)



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

P	•
M	•
K	•
N	•
S	•
H	•



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	4	2
14,0	40,0	14,0	100	1.0	4	2
14,0	40,0	14,0	100	2.0	4	2
14,0	50,0	14,0	150	0.5	4	2
14,0	50,0	14,0	150	1.0	4	2
14,0	50,0	14,0	150	2.0	4	2
16,0	55,0	16,0	150	0.5	4	2
16,0	55,0	16,0	150	1.0	4	2
16,0	55,0	16,0	150	2.0	4	2
16,0	55,0	16,0	150	3.0	4	2
18,0	55,0	18,0	150	0.5	4	2
18,0	55,0	18,0	150	1.0	4	2
18,0	55,0	18,0	150	2.0	4	2
18,0	55,0	18,0	150	3.0	4	2
20,0	55,0	20,0	150	0.5	4	2
20,0	55,0	20,0	150	1.0	4	2
20,0	55,0	20,0	150	2.0	4	2
20,0	55,0	20,0	150	3.0	4	2

Ordering Code Código de orden
XM-RL4-144014100-R0.5
XM-RL4-144014100-R1.0
XM-RL4-144014100-R2.0
XM-RL4-145014150-R0.5
XM-RL4-145014150-R1.0
XM-RL4-145014150-R2.0
XM-RL4-165516150-R0.5
XM-RL4-165516150-R1.0
XM-RL4-165516150-R2.0
XM-RL4-165516150-R3.0
XM-RL4-185518150-R0.5
XM-RL4-185518150-R1.0
XM-RL4-185518150-R2.0
XM-RL4-185518150-R3.0
XM-RL4-205520150-R0.5
XM-RL4-205520150-R1.0
XM-RL4-205520150-R2.0
XM-RL4-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
					2 4 6 8 10 12
H	(<60HRC) Alloy steel, hardened steel / Aleaciones de acero reforzado	ap≤1D aes0.05D	120	rotate speed (min-1) feed velocity (mm/ min)	19110 9550 6370 4780 3820 3190 760 760 760 760 730 710
	(<65HRC) Alloy steel, hardened steel / Aleaciones de acero, reforzado	ap≤0.7D aes0.03D	90	rotate speed (min-1) feed velocity (mm/ min)	15920 11940 7960 5970 4780 3980 510 720 730 720 730 670

50%~70%, 40%~60%

Above table is the standard cutting data for side milling machining, if for groove cutting, the VC should reach 50%-70% and the feed should reach 40%-60% based on the table.
La tabla de arriba son los datos de corte estándar para el mecanizado de fresado lateral. Si se utiliza para el corte de ranuras, la velocidad de corte debe alcanzar el 50%-70% y el avance debe alcanzar el 40%-60% basado en la tabla.

SM

Stainless steel, titanium alloy machining

Mecanizado de acero inoxidable y aleación de titanio.



Edge Precision passivation

Improve tool life and workpiece surface finish.

Pasivación de precisión de bordes

Mejore la vida útil de la herramienta y el acabado de la superficie de la pieza de trabajo.

$\theta 1 \neq \theta 2$

$\theta 1$

$\theta 2$

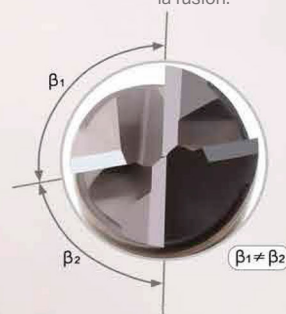
Chip space
Large chip flute, large chip removal, perfect cutting surface, stable chip removal.

Espacio para virutas
Gran canal de viruta, gran evacuación de viruta, superficie de corte perfecta, evacuación de viruta estable.



Large helix angle and rake angle design, sharp cutting edge, unique blade shape can suppress the impact of cutting heat on the blade tip, greatly improve wear resistance and fusion resistance.

Gran ángulo de hélice y diseño de ángulo de inclinación, cuchilla de corte afilado, la forma única de la cuchilla puede suprimir el impacto del calor de corte en la punta de la cuchilla, mejorar en gran medida la resistencia al desgaste y la resistencia a la fusión.



Large end teeth capacity space, unequal bottom, reduce vibration, high surface finish.

Gran espacio de capacidad de los dientes del extremo, fondo desigual, reducir la vibración, alto acabado superficial.

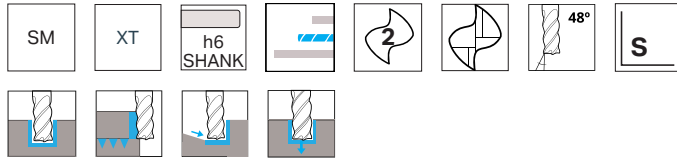
Outstanding performance comes from high-quality ultra-fine particle cemented carbide matrix, tool wear resistance and cutting edge strength are perfectly combined.

El rendimiento excepcional proviene de la matriz de carburo cementado de partículas ultrafinas de alta calidad, la resistencia al desgaste de la herramienta y la resistencia del filo de corte se combinan perfectamente.

Stainless Steel, Titanium Alloy

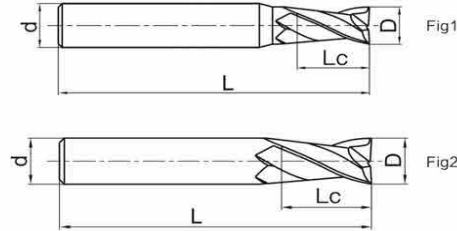
Acero inoxidable, aleación de titanio.

2 Flutes, Square, Standard Length (SM-S2) / 2 flautas, cuadradas, longitud estándar (SM-S2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	2	2
1,50	4,00	4,00	50	2	2
2,00	6,00	4,00	50	2	1
2,50	8,00	4,00	50	2	1
3,00	8,00	4,00	50	2	1
4,00	11,0	4,00	50	2	2
5,00	13,0	5,00	50	2	2
5,00	13,0	6,00	50	2	1
6,00	16,0	6,00	50	2	2
8,00	20,0	8,00	60	2	2
10,0	25,0	10,0	75	2	2
12,0	30,0	12,0	75	2	2
14,0	30,0	14,0	75	2	2
16,0	45,0	16,0	100	2	2
18,0	45,0	18,0	100	2	2
20,0	45,0	20,0	100	2	2

Ordering Code Código de orden
SM-S2-01030450
SM-S2-015040450
SM-S2-02060450
SM-S2-025080450
SM-S2-03080450
SM-S2-04110450
SM-S2-05130550
SM-S2-05130650
SM-S2-06160650
SM-S2-08200860
SM-S2-10251075
SM-S2-12301275
SM-S2-14301475
SM-S2-164516100
SM-S2-184518100
SM-S2-204520100

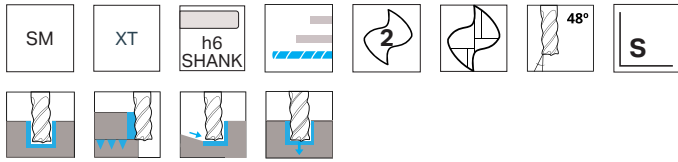
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta									
					1	2	4	6	8	10	12	16	20	
M	stainless steel Acero inoxidable	ap≤1D ae≤0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)		25000	15900	7960	5300	3980	3180	2650	1990	1590
						350	320	350	340	365	330	300	245	230

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
M	stainless steel Acero inoxidable	ap≤0.1D ae≤1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)									
					14330	7165	3580	2390	1790	1430	1195	895	715
					200	140	120	155	155	155	155	135	120

Stainless Steel, Titanium Alloy

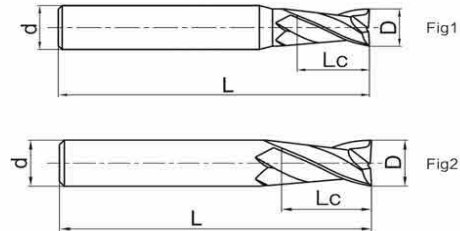
Acero inoxidable, aleación de titanio.

2 Flutes, Square, Long Flute Length (SM-SL2) / 2 flautas, cuadradas, longitud de flauta larga (SM-SL2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. N° de figura
4,00	15,0	4,00	75	2	2
4,00	20,0	4,00	100	2	2
5,00	20,0	5,00	75	2	2
5,00	25,0	5,00	100	2	2
6,00	20,0	6,00	75	2	2
6,00	25,0	6,00	100	2	2
8,00	25,0	8,00	75	2	2
8,00	30,0	8,00	100	2	2
10,0	35,0	10,0	100	2	2
10,0	45,0	10,0	150	2	2
12,0	40,0	12,0	100	2	2
12,0	50,0	12,0	150	2	2
14,0	40,0	14,0	100	2	2
14,0	50,0	14,0	150	2	2
16,0	55,0	16,0	150	2	2
18,0	55,0	18,0	150	2	2
20,0	55,0	20,0	150	2	2

Ordering Code Código de orden
SM-SL2-04150475
SM-SL2-042004100
SM-SL2-05200575
SM-SL2-052505100
SM-SL2-06200675
SM-SL2-062506100
SM-SL2-08250875
SM-SL2-083008100
SM-SL2-103510100
SM-SL2-104510150
SM-SL2-124012100
SM-SL2-125012150
SM-SL2-144014100
SM-SL2-145014150
SM-SL2-165516150
SM-SL2-185518150
SM-SL2-205520150

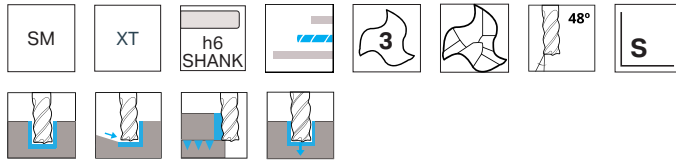
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
M	stainless steel Acero inoxidable	ap≤1D ae≤0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)	1	2	4	6	8	10	12	16	20
					25000	15900	7960	5300	3980	3180	2650	1990	1590
					350	320	350	340	365	330	300	245	230

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
M	stainless steel Acero inoxidable	ap≤0.1D ae≤1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)	1	2	4	6	8	10	12	16	20
					14330	7165	3580	2390	1790	1430	1195	895	715
					200	140	120	155	155	155	155	135	120

Stainless Steel, Titanium Alloy

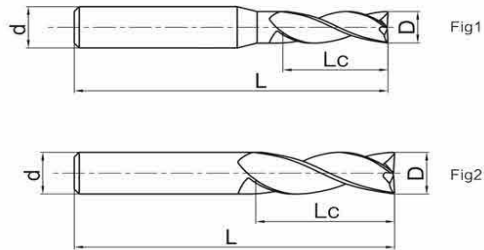
Acero inoxidable, aleación de titanio.

3 Flutes, Square, Standard Length (SM-S3) / 3 flautas, cuadradas, longitud estándar (SM-S3)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



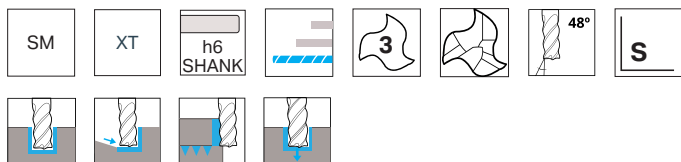
D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	3	1
1,50	4,00	4,00	50	3	1
2,00	6,00	4,00	50	3	1
2,50	8,00	4,00	50	3	1
3,00	8,00	4,00	50	3	1
4,00	11,0	4,00	50	3	2
5,00	13,0	5,00	50	3	2
5,00	13,0	6,00	50	3	2
6,00	16,0	6,00	50	3	2
8,00	20,0	8,00	60	3	2
10,0	25,0	10,0	75	3	2
12,0	30,0	12,0	75	3	2
14,0	30,0	14,0	75	3	2
16,0	45,0	16,0	100	3	2
18,0	45,0	18,0	100	3	2
20,0	45,0	20,0	100	3	2

Ordering Code Código de orden
SM-S3-01030450
SM-S3-015040450
SM-S3-02060450
SM-S3-025080450
SM-S3-03080450
SM-S3-04110450
SM-S3-05130550
SM-S3-05130650
SM-S3-06160650
SM-S3-08200860
SM-S3-10251075
SM-S3-12301275
SM-S3-14301475
SM-S3-164516100
SM-S3-184518100
SM-S3-204520100

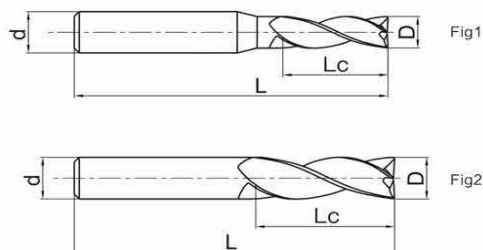
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

3 Flutes, Square, Long Flute Length (SM-SL3) / 3 flautas, cuadradas, longitud de flauta larga (SM-SL3)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



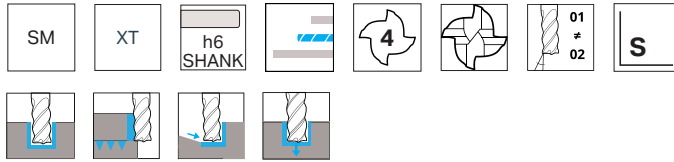
D	Lc	d	L	Z	Figure No. N° de figura
mm	mm	mm	mm		
4,00	15,0	4,00	75	3	2
4,00	20,0	4,00	100	3	2
5,00	20,0	5,00	75	3	2
5,00	25,0	5,00	100	3	2
6,00	20,0	6,00	75	3	2
6,00	25,0	6,00	100	3	2
8,00	25,0	8,00	75	3	2
8,00	30,0	8,00	100	3	2
10,0	35,0	10,0	100	3	2
10,0	45,0	10,0	150	3	2
12,0	40,0	12,0	100	3	2
12,0	50,0	12,0	150	3	2
14,0	40,0	14,0	100	3	2
14,0	50,0	14,0	150	3	2
16,0	55,0	16,0	150	3	2
18,0	55,0	18,0	150	3	2
20,0	55,0	20,0	150	3	2

Ordering Code Código de orden
SM-SL3-04150475
SM-SL3-042004100
SM-SL3-05200575
SM-SL3-052505100
SM-SL3-06200675
SM-SL3-062506100
SM-SL3-08250875
SM-SL3-083008100
SM-SL3-103510100
SM-SL3-104510150
SM-SL3-124012100
SM-SL3-125012150
SM-SL3-144014100
SM-SL3-145014150
SM-SL3-165516150
SM-SL3-185518150
SM-SL3-205520150

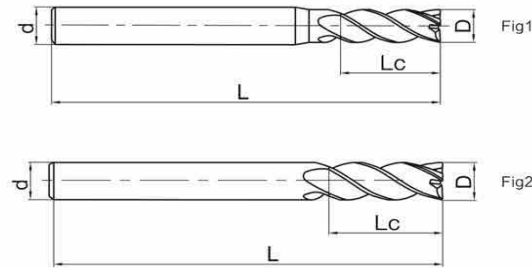
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

4 Flutes, Square, Standard Length (SM-S4) / 4 flautas, cuadradas, longitud estándar (SM-S4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	4	1
1,50	4,00	4,00	50	4	1
2,00	6,00	4,00	50	4	1
2,50	8,00	4,00	50	4	1
3,00	8,00	4,00	50	4	1
4,00	11,0	4,00	50	4	2
5,00	13,0	5,00	50	4	2
5,00	13,0	6,00	50	4	1
6,00	16,0	6,00	50	4	2
8,00	20,0	8,00	60	4	2
10,0	25,0	10,0	75	4	2
12,0	30,0	12,0	75	4	2
14,0	30,0	14,0	75	4	2
16,0	45,0	16,0	100	4	2
18,0	45,0	18,0	100	4	2
20,0	45,0	20,0	100	4	2

Ordering Code Código de orden
SM-S4-01030450
SM-S4-015040450
SM-S4-02060450
SM-S4-025080450
SM-S4-03080450
SM-S4-04110450
SM-S4-05130550
SM-S4-05130650
SM-S4-06160650
SM-S4-08200860
SM-S4-10251075
SM-S4-12301275
SM-S4-14301475
SM-S4-164516100
SM-S4-184518100
SM-S4-204520100

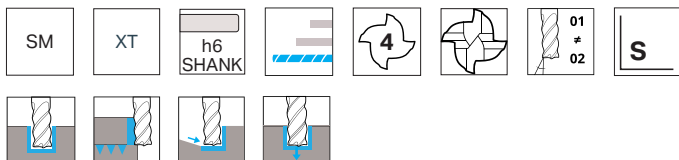
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta									
					1	2	4	6	8	10	12	16	20	
M	stainless steel Acero inoxidable	ap≤1D ae≤0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)		25000	15900	7960	5300	3980	3180	2650	1990	1590
						700	635	700	680	730	660	600	490	460

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
M	stainless steel Acero inoxidable	ap≤0.1D ae≤1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)									
					14330	7165	3580	2390	1790	1430	1195	895	715
					400	280	240	310	310	310	310	270	240

Stainless Steel, Titanium Alloy

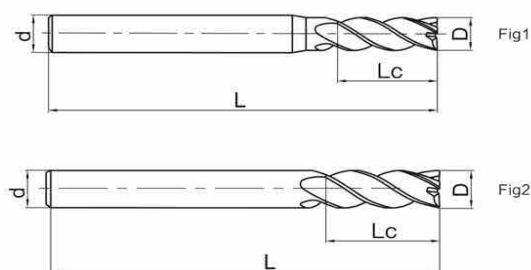
Acero inoxidable, aleación de titanio.

4 Flutes, Square, Long Flute Length (SM-SL4) / 4 flautas, cuadradas, longitud de flauta larga (SM-SL4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. Nº de figura
mm	mm	mm	mm		
4,00	15,0	4,00	75	4	2
4,00	20,0	4,00	100	4	2
5,00	20,0	5,00	75	4	2
5,00	25,0	5,00	100	4	2
6,00	20,0	6,00	75	4	2
6,00	25,0	6,00	100	4	2
8,00	25,0	8,00	75	4	2
8,00	30,0	8,00	100	4	2
10,0	35,0	10,0	100	4	2
10,0	45,0	10,0	150	4	2
12,0	40,0	12,0	100	4	2
12,0	50,0	12,0	150	4	2
14,0	40,0	14,0	100	4	2
14,0	50,0	14,0	150	4	2
16,0	55,0	16,0	150	4	2
18,0	55,0	18,0	150	4	2
20,0	55,0	20,0	150	4	2

Ordering Code Código de orden
SM-SL4-04150475
SM-SL4-042004100
SM-SL4-05200575
SM-SL4-052505100
SM-SL4-06200675
SM-SL4-062506100
SM-SL4-08250875
SM-SL4-083008100
SM-SL4-103510100
SM-SL4-104510150
SM-SL4-124012100
SM-SL4-125012150
SM-SL4-144014100
SM-SL4-145014150
SM-SL4-165516150
SM-SL4-185518150
SM-SL4-205520150

ISO	Workpiece Material Material de trabajo
M	stainless steel Acero inoxidable

(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
ap ≤ 1D ae ≤ 0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta								
1	2	4	6	8	10	12	16	20
25000	15900	7960	5300	3980	3180	2650	1990	1590
700	635	700	680	730	660	600	490	460

ISO	Workpiece Material Material de trabajo
M	stainless steel Acero inoxidable

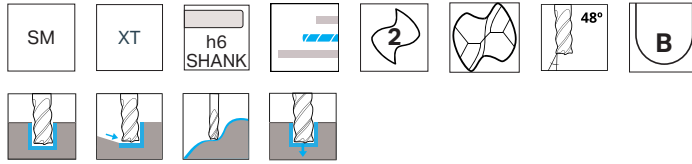
(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
ap ≤ 0.1D ae ≤ 1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta								
1	2	4	6	8	10	12	16	20
14330	7165	3580	2390	1790	1430	1195	895	715
400	280	240	310	310	310	310	270	240

Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

2 Flutes, Ballnose, Standard Length (SM-B2) / 2 flautas, punta esférica, longitud estándar (SM-B2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02

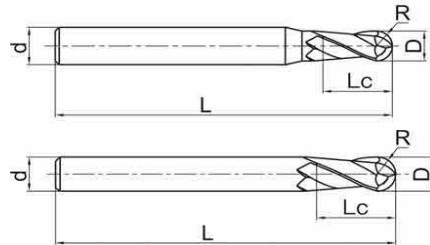


Fig1

Fig2



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1,00	2,00	3,00	50	0.5	2	1
2,00	4,00	3,00	50	1.0	2	1
3,00	6,00	3,00	50	1.5	2	2
1,00	2,00	4,00	50	0.5	2	1
1,50	3,00	4,00	50	0.75	2	1
2,00	4,00	4,00	50	1.0	2	1
2,50	5,00	4,00	50	1.25	2	1
3,00	6,00	4,00	50	1.5	2	1
3,50	7,00	4,00	50	1.75	2	1
4,00	8,00	4,00	50	2.0	2	2
5,00	10,0	5,00	50	2.5	2	2
6,00	12,0	6,00	50	3.0	2	2
8,00	16,0	8,00	60	4.0	2	2
10,0	20,0	10,0	75	5.0	2	2
12,0	24,0	12,0	75	6.0	2	2
14,0	28,0	14,0	75	7.0	2	2
16,0	32,0	16,0	100	8.0	2	2
18,0	36,0	18,0	100	9.0	2	2
20,0	40,0	20,0	100	10.0	2	2

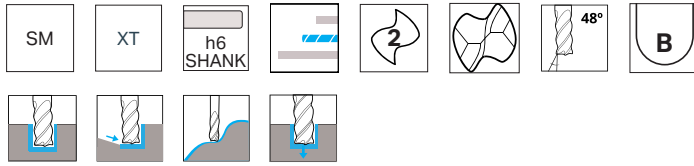
Ordering Code Código de orden
SM-B2-01020350-R0.5
SM-B2-02040350-R1.0
SM-B2-03060350-R1.5
SM-B2-01020450-R0.5
SM-B2-015030450-R0.75
SM-B2-02040450-R1.0
SM-B2-025050450-R1.25
SM-B2-03060450-R1.5
SM-B2-035070450-R1.75
SM-B2-04080450-R2.0
SM-B2-05100550-R2.5
SM-B2-06120650-R3.0
SM-B2-08160860-R4.0
SM-B2-10201075-R5.0
SM-B2-12241275-R6.0
SM-B2-14281475-R7.0
SM-B2-163216100-R8.0
SM-B2-183618100-R9.0
SM-B2-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
M	stainless steel Acero inoxidable	ap≤0.2D aes≤0.2D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)	1 2 4 6 8 10 12 16 20
					25000 15900 7960 5300 3980 3180 2650 1990 1590 280 480 510 550 560 540 560 520 510

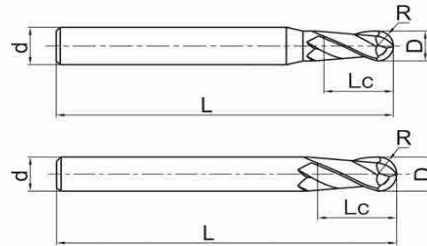
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

2 Flutes, Ballnose, Long Shank Length (SM-BH2) / 2 flautas, punta esférica, longitud de vástago largo (SM-BH2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
4,00	8,00	4,00	75	2.0	2	2
4,00	8,00	4,00	100	2.0	2	2
5,00	10,0	5,00	75	2.5	2	2
5,00	10,0	5,00	100	2.5	2	2
5,00	10,0	5,00	150	2.5	2	2
6,00	12,0	6,00	75	3.0	2	2
6,00	12,0	6,00	100	3.0	2	2
6,00	12,0	6,00	150	3.0	2	2
8,00	16,0	8,00	75	4.0	2	2
8,00	16,0	8,00	100	4.0	2	2
8,00	16,0	8,00	150	4.0	2	2
10,0	20,0	10,0	100	5.0	2	2
10,0	20,0	10,0	150	5.0	2	2
12,0	24,0	12,0	100	6.0	2	2
12,0	24,0	12,0	150	6.0	2	2
14,0	28,0	14,0	100	7.0	2	2
14,0	28,0	14,0	150	7.0	2	2
16,0	32,0	16,0	150	8.0	2	2
18,0	36,0	18,0	150	9.0	2	2
20,0	40,0	20,0	150	10.0	2	2

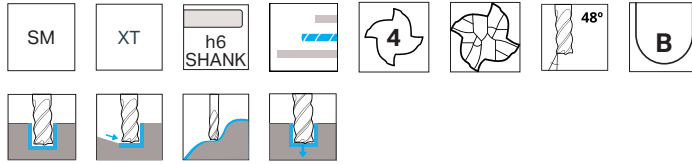
Ordering Code Código de orden
SM-BH2-04080475-R2.0
SM-BH2-040804100-R2.0
SM-BH2-05100575-R2.5
SM-BH2-051005100-R2.5
SM-BH2-051005150-R2.5
SM-BH2-06120675-R3.0
SM-BH2-061206100-R3.0
SM-BH2-061206150-R3.0
SM-BH2-08160875-R4.0
SM-BH2-081608100-R4.0
SM-BH2-081608150-R4.0
SM-BH2-102010100-R5.0
SM-BH2-102010150-R5.0
SM-BH2-122412100-R6.0
SM-BH2-122412150-R6.0
SM-BH2-142814100-R7.0
SM-BH2-142814150-R7.0
SM-BH2-163216150-R8.0
SM-BH2-183618150-R9.0
SM-BH2-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta									
					1	2	4	6	8	10	12	16	20	
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)	25000	15900	7960	5300		3980	3180	2650	1990	1590
					280	480	510	550	560	540	560	520	510	

Stainless Steel, Titanium Alloy

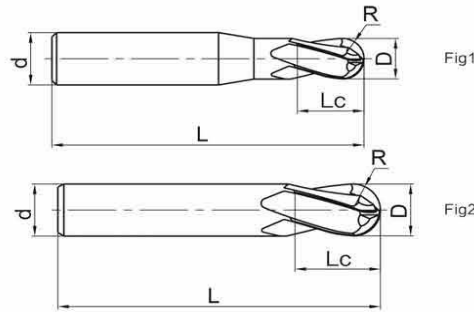
Acero inoxidable, aleación de titanio.

4 Flutes, Ballnose, Standard Length (SM-B4) / 4 flautas, punta esférica, longitud estándar (SM-B4)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1,00	2,00	3,00	50	0.5	4	1
2,00	4,00	3,00	50	1.0	4	1
3,00	6,00	3,00	50	1.5	4	2
1,00	2,00	4,00	50	0.5	4	1
1,50	3,00	4,00	50	0.75	4	1
2,00	4,00	4,00	50	1.0	4	1
2,50	5,00	4,00	50	1.25	4	1
3,00	6,00	4,00	50	1.5	4	1
3,50	7,00	4,00	50	1.75	4	1
4,00	8,00	4,00	50	2.0	4	2
5,00	10,0	5,00	50	2.5	4	2
6,00	12,0	6,00	50	3.0	4	2
8,00	16,0	8,00	60	4.0	4	2
10,0	20,0	10,0	75	5.0	4	2
12,0	24,0	12,0	75	6.0	4	2
14,0	28,0	14,0	75	7.0	4	2
16,0	32,0	16,0	100	8.0	4	2
18,0	36,0	18,0	100	9.0	4	2
20,0	40,0	20,0	100	10.0	4	2

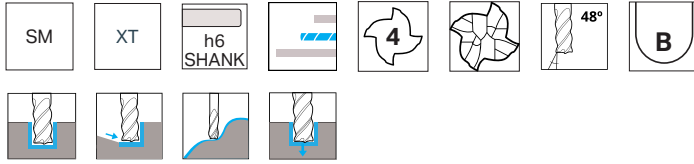
Ordering Code Código de orden
SM-B4-01020350-RO.5
SM-B4-02040350-R1.0
SM-B4-03060350-R1.5
SM-B4-01020450-RO.5
SM-B4-015030450-RO.75
SM-B4-02040450-R1.0
SM-B4-025050450-R1.25
SM-B4-03060450-R1.5
SM-B4-035070450-R1.75
SM-B4-04080450-R2.0
SM-B4-05100550-R2.5
SM-B4-06120650-R3.0
SM-B4-08160860-R4.0
SM-B4-10201075-R5.0
SM-B4-12241275-R6.0
SM-B4-14281475-R7.0
SM-B4-163216100-R8.0
SM-B4-183618100-R9.0
SM-B4-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)	1 2 4 6 8 10 12 16 20
					25000 15900 7960 5300 3980 3180 2650 1990 1590 560 955 1020 1100 1110 1080 1115 1030 1020

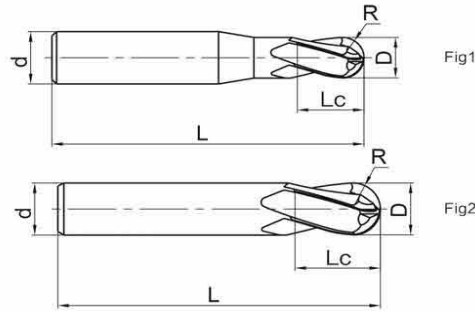
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

4 Flutes, Ballnose, Long Shank Length (SM-BH4) / 4 flautas, punta esférica, longitud de vástago largo (SM-BH4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
4.00	8.00	4.00	75	2.0	4	2
4.00	8.00	4.00	100	2.0	4	2
5.00	10.0	5.00	75	2.5	4	2
5.00	10.0	5.00	100	2.5	4	2
5.00	10.0	5.00	150	2.5	4	2
6.00	12.0	6.00	75	3.0	4	2
6.00	12.0	6.00	100	3.0	4	2
6.00	12.0	6.00	150	3.0	4	2
8.00	16.0	8.00	75	4.0	4	2
8.00	16.0	8.00	100	4.0	4	2
8.00	16.0	8.00	150	4.0	4	2
10.0	20.0	10.0	100	5.0	4	2
10.0	20.0	10.0	150	5.0	4	2
12.0	24.0	12.0	100	6.0	4	2
12.0	24.0	12.0	150	6.0	4	2
14.0	28.0	14.0	100	7.0	4	2
14.0	28.0	14.0	150	7.0	4	2
16.0	32.0	16.0	150	8.0	4	2
18.0	36.0	18.0	150	9.0	4	2
20.0	40.0	20.0	150	10.0	4	2

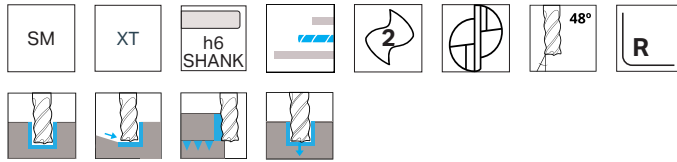
Ordering Code Código de orden
SM-BH4-04080475-R2.0
SM-BH4-040804100-R2.0
SM-BH4-05100575-R2.5
SM-BH4-051005100-R2.5
SM-BH4-051005150-R2.5
SM-BH4-06120675-R3.0
SM-BH4-061206100-R3.0
SM-BH4-061206150-R3.0
SM-BH4-08160875-R4.0
SM-BH4-081608100-R4.0
SM-BH4-081608150-R4.0
SM-BH4-102010100-R5.0
SM-BH4-102010150-R5.0
SM-BH4-122412100-R6.0
SM-BH4-122412150-R6.0
SM-BH4-142814100-R7.0
SM-BH4-142814150-R7.0
SM-BH4-163216150-R8.0
SM-BH4-183618150-R9.0
SM-BH4-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.2D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)									
					25000	15900	7960	5300	3980	3180	2650	1990	1590
					560	955	1020	1100	1110	1080	1115	1030	1020

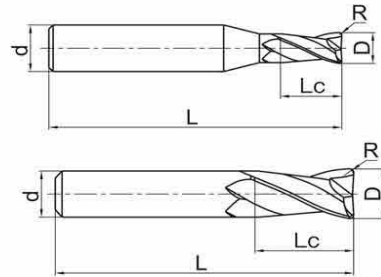
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

2 Flutes, Corner Radius, Standard Length (SM-R2) / 2 flautas, radio de esquina, longitud estándar (SM-R2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



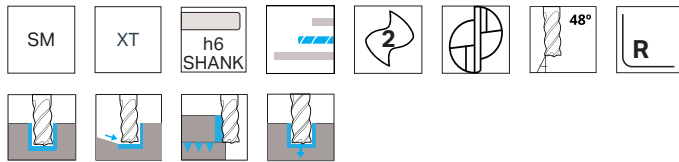
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1.00	3.00	4.00	50	0.2	2	1
1.50	4.00	4.00	50	0.2	2	1
2.00	6.00	4.00	50	0.2	2	1
2.00	6.00	4.00	50	0.5	2	1
2.50	8.00	4.00	50	0.2	2	1
2.50	8.00	4.00	50	0.5	2	1
3.00	8.00	4.00	50	0.2	2	1
3.00	8.00	4.00	50	0.5	2	1
4.00	11.0	4.00	50	0.5	2	2
4.00	11.0	4.00	50	1.0	2	2
5.00	13.0	5.00	50	0.5	2	2
5.00	13.0	5.00	50	1.0	2	2
5.00	13.0	6.00	50	0.5	2	2
5.00	13.0	6.00	50	1.0	2	2
6.00	16.0	6.00	50	0.5	2	2
6.00	16.0	6.00	50	1.0	2	2
8.00	20.0	8.00	60	0.5	2	2
8.00	20.0	8.00	60	1.0	2	2
10.0	25.0	10.0	75	0.5	2	2
10.0	25.0	10.0	75	1.0	2	2
12.0	30.0	12.0	75	0.5	2	2
12.0	30.0	12.0	75	1.0	2	2

Ordering Code Código de orden
SM-R2-01030450-R0.2
SM-R2-015040450-R0.2
SM-R2-02060450-R0.2
SM-R2-02060450-R0.5
SM-R2-025080450-R0.2
SM-R2-025080450-R0.5
SM-R2-03080450-R0.2
SM-R2-03080450-R0.5
SM-R2-04110450-R0.5
SM-R2-04110450-R1.0
SM-R2-05130550-R0.5
SM-R2-05130550-R1.0
SM-R2-05130650-R0.5
SM-R2-05130650-R1.0
SM-R2-06160650-R0.5
SM-R2-06160650-R1.0
SM-R2-08200860-R0.5
SM-R2-08200860-R1.0
SM-R2-10251075-R0.5
SM-R2-10251075-R1.0
SM-R2-12301275-R0.5
SM-R2-12301275-R1.0

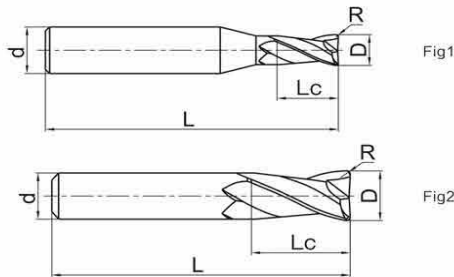
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

2 Flutes, Corner Radius, Standard Length (SM-R2) / 2 flautas, radio de esquina, longitud estándar (SM-R2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14.0	30.0	14.0	75	0.5	2	2
14.0	30.0	14.0	75	1.0	2	2
14.0	30.0	14.0	75	2.0	2	2
16.0	45.0	16.0	100	0.5	2	2
16.0	45.0	16.0	100	1.0	2	2
16.0	45.0	16.0	100	2.0	2	2
16.0	45.0	16.0	100	3.0	2	2
18.0	45.0	18.0	100	0.5	2	2
18.0	45.0	18.0	100	1.0	2	2
18.0	45.0	18.0	100	2.0	2	2
18.0	45.0	18.0	100	3.0	2	2
20.0	45.0	20.0	100	0.5	2	2
20.0	45.0	20.0	100	1.0	2	2
20.0	45.0	20.0	100	2.0	2	2
20.0	45.0	20.0	100	3.0	2	2

Ordering Code Código de orden
SM-R2-14301475-R0.5
SM-R2-14301475-R1.0
SM-R2-14301475-R2.0
SM-R2-164516100-R0.5
SM-R2-164516100-R1.0
SM-R2-164516100-R2.0
SM-R2-164516100-R3.0
SM-R2-184518100-R0.5
SM-R2-184518100-R1.0
SM-R2-184518100-R2.0
SM-R2-184518100-R3.0
SM-R2-204520100-R0.5
SM-R2-204520100-R1.0
SM-R2-204520100-R2.0
SM-R2-204520100-R3.0

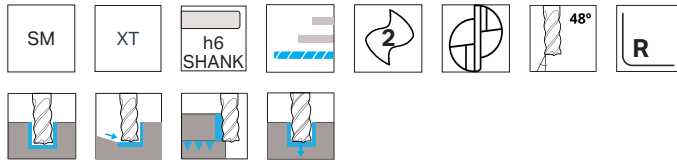
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
M	stainless steel Acero inoxidable	ap≤1D ae≤0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)	25000 350	15900 320	7960 350	5300 340	3980 365	3180 330	2650 300	1990 245	1590 230

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
M	stainless steel Acero inoxidable	ap≤0.1D ae≤1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)	14330 200	7165 140	3580 120	2390 155	1790 155	1430 155	1195 155	895 135	715 120

Stainless Steel, Titanium Alloy

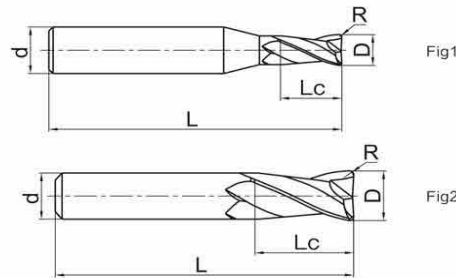
Acero inoxidable, aleación de titanio.

2 Flutes, Corner Radius, Long Flute Length (SM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (SM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



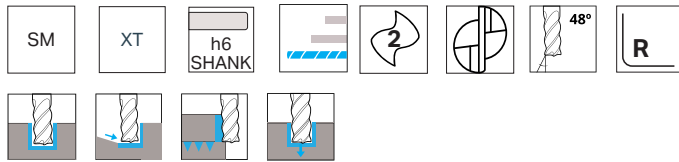
D	Lc	d	L	R	Z	Figure No. N° de figura
4.00	15.0	4.00	75	0.5	2	2
4.00	15.0	4.00	75	1.0	2	2
4.00	20.0	4.00	100	0.5	2	2
4.00	20.0	4.00	100	1.0	2	2
5.00	20.0	5.00	75	0.5	2	2
5.00	20.0	5.00	75	1.0	2	2
5.00	25.0	5.00	100	0.5	2	2
5.00	25.0	5.00	100	1.0	2	2
6.00	20.0	6.00	75	0.5	2	2
6.00	20.0	6.00	75	1.0	2	2
6.00	25.0	6.00	100	0.5	2	2
6.00	25.0	6.00	100	1.0	2	2
8.00	25.0	8.00	75	0.5	2	2
8.00	25.0	8.00	75	1.0	2	2
8.00	30.0	8.00	100	0.5	2	2
8.00	30.0	8.00	100	1.0	2	2
10.0	35.0	10.0	100	0.5	2	2
10.0	35.0	10.0	100	1.0	2	2
10.0	45.0	10.0	150	0.5	2	2
10.0	45.0	10.0	150	1.0	2	2
12.0	40.0	12.0	100	0.5	2	2
12.0	40.0	12.0	100	1.0	2	2
12.0	50.0	12.0	150	0.5	2	2
12.0	50.0	12.0	150	1.0	2	2

Ordering Code Código de orden
SM-RL2-04150475-R0.5
SM-RL2-04150475-R1.0
SM-RL2-042004100-R0.5
SM-RL2-042004100-R1.0
SM-RL2-05200575-R0.5
SM-RL2-05200575-R1.0
SM-BL2-052505100-B0.5
SM-RL2-052505100-R1.0
SM-RL2-06200675-R0.5
SM-RL2-06200675-R1.0
SM-RL2-062506100-R0.5
SM-RL2-062506100-R1.0
SM-RL2-08250875-R0.5
SM-RL2-08250875-R1.0
SM-RL2-083008100-R0.5
SM-RL2-083008100-R1.0
SM-RL2-103510100-R0.5
SM-RL2-103510100-R1.0
SM-BL2-104510150-R0.5
SM-RL2-104510150-R1.0
SM-RL2-124012100-R0.5
SM-RL2-124012100-R1.0
SM-RL2-125012150-R0.5
SM-RL2-125012150-R1.0

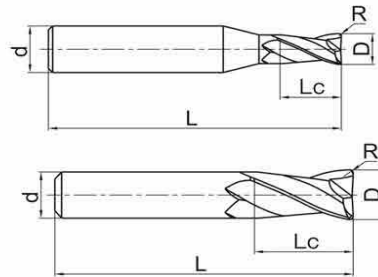
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

2 Flutes, Corner Radius, Long Flute Length (SM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (SM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	2	2
14,0	40,0	14,0	100	1.0	2	2
14,0	40,0	14,0	100	2.0	2	2
14,0	50,0	14,0	150	0.5	2	2
14,0	50,0	14,0	150	1.0	2	2
14,0	50,0	14,0	150	2.0	2	2
16,0	55,0	16,0	150	0.5	2	2
16,0	55,0	16,0	150	1.0	2	2
16,0	55,0	16,0	150	2.0	2	2
16,0	55,0	16,0	150	3.0	2	2
18,0	55,0	18,0	150	0.5	2	2
18,0	55,0	18,0	150	1.0	2	2
18,0	55,0	18,0	150	2.0	2	2
18,0	55,0	18,0	150	3.0	2	2
20,0	55,0	20,0	150	0.5	2	2
20,0	55,0	20,0	150	1.0	2	2
20,0	55,0	20,0	150	2.0	2	2
20,0	55,0	20,0	150	3.0	2	2

Ordering Code Código de orden
SM-RL2-144014100-R0.5
SM-RL2-144014100-R1.0
SM-RL2-144014100-R2.0
SM-RL2-145014150-R0.5
SM-RL2-145014150-R1.0
SM-RL2-145014150-R2.0
SM-RL2-165516150-R0.5
SM-RL2-165516150-R1.0
SM-RL2-165516150-R2.0
SM-RL2-165516150-R3.0
SM-RL2-185518150-R0.5
SM-RL2-185518150-R1.0
SM-RL2-185518150-R2.0
SM-RL2-185518150-R3.0
SM-RL2-205520150-R0.5
SM-RL2-205520150-R1.0
SM-RL2-205520150-R2.0
SM-RL2-205520150-R3.0

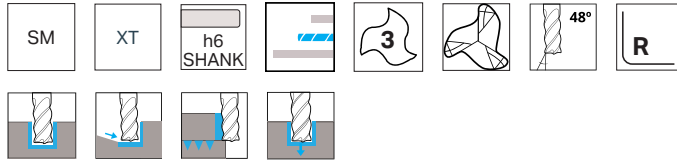
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
M	stainless steel Acero inoxidable	ap≤1D ae≤0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)	25000 350	15900 320	7960 350	5300 340	3980 365	3180 330	2650 300	1990 245	1590 230

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
M	stainless steel Acero inoxidable	ap≤0.1D ae≤1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)	14330 200	7165 140	3580 120	2390 155	1790 155	1430 155	1195 155	895 135	715 120

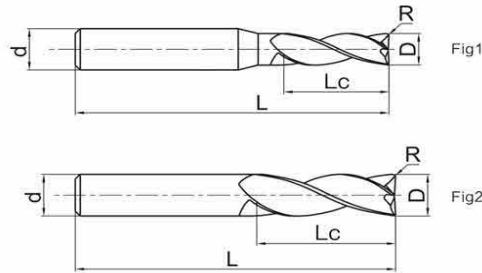
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

2 Flutes, Corner Radius, Long Flute Length (SM-RL2) / 2 flautas, radio de esquina, longitud de flauta larga (SM-RL2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



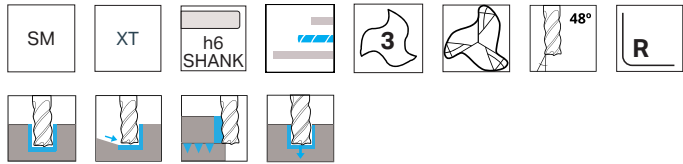
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	0.2	3	1
1,50	4,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.2	3	1
2,00	6,00	4,00	50	0.5	3	1
2,50	8,00	4,00	50	0.2	3	1
2,50	8,00	4,00	50	0.5	3	2
3,00	8,00	4,00	50	0.2	3	1
3,00	8,00	4,00	50	0.5	3	1
4,00	11,0	4,00	50	0.5	3	2
4,00	11,0	4,00	50	1.0	3	2
5,00	13,0	5,00	50	0.5	3	2
5,00	13,0	5,00	50	1.0	3	2
5,00	13,0	6,00	50	0.5	3	2
5,00	13,0	6,00	50	1.0	3	2
6,00	16,0	6,00	50	0.5	3	2
6,00	16,0	6,00	50	1.0	3	2
8,00	20,0	8,00	60	0.5	3	2
8,00	20,0	8,00	60	1.0	3	2
10,0	25,0	10,0	75	0.5	3	2
10,0	25,0	10,0	75	1.0	3	2
12,0	30,0	12,0	75	0.5	3	2
12,0	30,0	12,0	75	1.0	3	2
12,0	50,0	12,0	150	0.5	2	2
12,0	50,0	12,0	150	1.0	2	2

Ordering Code Código de orden
SM-RL2-04150475-R0.5
SM-RL2-04150475-R1.0
SM-RL2-042004100-R0.5
SM-RL2-042004100-R1.0
SM-RL2-05200575-R0.5
SM-RL2-05200575-R1.0
SM-BL2-052505100-B0.5
SM-RL2-052505100-R1.0
SM-RL2-06200675-R0.5
SM-RL2-06200675-R1.0
SM-RL2-062506100-R0.5
SM-RL2-062506100-R1.0
SM-RL2-08250875-R0.5
SM-RL2-08250875-R1.0
SM-RL2-083008100-R0.5
SM-RL2-083008100-R1.0
SM-RL2-103510100-R0.5
SM-RL2-103510100-R1.0
SM-BL2-104510150-R0.5
SM-RL2-104510150-R1.0
SM-RL2-124012100-R0.5
SM-RL2-124012100-R1.0
SM-RL2-125012150-R0.5
SM-RL2-125012150-R1.0

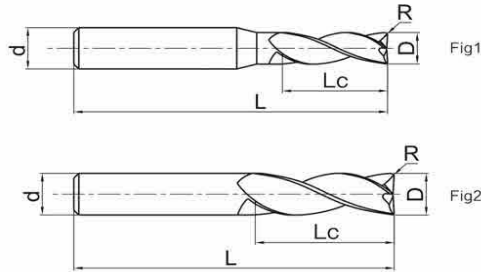
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

3 Flutes, Corner Radius, Standard Length (SM-R3) / 3 flautas, radio de esquina, longitud estándar (SM-R3)



Unit	(mm)	
Unidad		
D	D ≤12	D >12
Tol	0 -0.015	0 -0.02



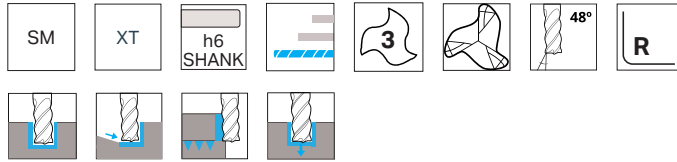
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	30,0	14,0	75	0.5	3	2
14,0	30,0	14,0	75	1.0	3	2
14,0	30,0	14,0	75	2.0	3	2
16,0	45,0	16,0	100	0.5	3	2
16,0	45,0	16,0	100	1.0	3	2
16,0	45,0	16,0	100	2.0	3	2
16,0	45,0	16,0	100	3.0	3	2
18,0	45,0	18,0	100	0.5	3	2
18,0	45,0	18,0	100	1.0	3	2
18,0	45,0	18,0	100	2.0	3	2
18,0	45,0	18,0	100	3.0	3	2
20,0	45,0	20,0	100	0.5	3	2
20,0	45,0	20,0	100	1.0	3	2
20,0	45,0	20,0	100	2.0	3	2
20,0	45,0	20,0	100	3.0	3	2

Ordering Code Código de orden
SM-R3-14301475-R0.5
SM-R3-14301475-R1.0
SM-R3-14301475-R2.0
SM-R3-164516100-R0.5
SM-R3-164516100-R1.0
SM-R3-164516100-R2.0
SM-R3-164516100-R3.0
SM-R3-184518100-R0.5
SM-R3-184518100-R1.0
SM-R3-184518100-R2.0
SM-R3-184518100-R3.0
SM-R3-204520100-R0.5
SM-R3-204520100-R1.0
SM-R3-204520100-R2.0
SM-R3-204520100-R3.0

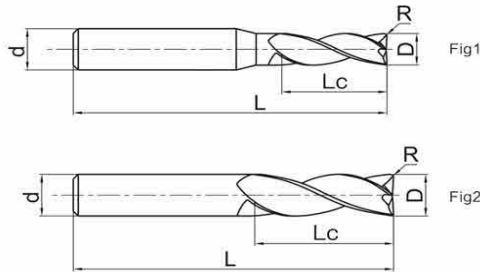
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

3 Flutes, Corner Radius, Long Flute Length (SM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (SM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



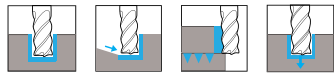
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4.00	15.0	4.00	75	0.5	3	2
4.00	15.0	4.00	75	1.0	3	2
4.00	20.0	4.00	100	0.5	3	2
4.00	20.0	4.00	100	1.0	3	2
5.00	20.0	5.00	75	0.5	3	2
5.00	20.0	5.00	75	1.0	3	2
5.00	25.0	5.00	100	0.5	3	2
5.00	25.0	5.00	100	1.0	3	2
6.00	20.0	6.00	75	0.5	3	2
6.00	20.0	6.00	75	1.0	3	2
6.00	25.0	6.00	100	0.5	3	2
6.00	25.0	6.00	100	1.0	3	2
8.00	25.0	8.00	75	0.5	3	2
8.00	25.0	8.00	75	1.0	3	2
8.00	30.0	8.00	100	0.5	3	2
8.00	30.0	8.00	100	1.0	3	2
10.0	35.0	10.0	100	0.5	3	2
10.0	35.0	10.0	100	1.0	3	2
10.0	45.0	10.0	150	0.5	3	2
10.0	45.0	10.0	150	1.0	3	2
12.0	40.0	12.0	100	0.5	3	2
12.0	40.0	12.0	100	1.0	3	2
12.0	50.0	12.0	150	0.5	3	2
12.0	50.0	12.0	150	1.0	3	2

Ordering Code Código de orden
SM-RL3-04150475-R0.5
SM-RL3-04150475-R1.0
SM-RL3-042004100-R0.5
SM-RL3-042004100-B1.0
SM-RL3-05200575-R0.5
SM-RL3-05200575-R1.0
SM-RL3-052505100-R0.5
SM-RL3-052505100-R1.0
SM-RL3-06200675-R0.5
SM-RL3-06200675-R1.0
SM-RL3-062506100-R0.5
SM-RL3-062506100-R1.0
SM-RL3-08250875-R0.5
SM-RL3-08250875-R1.0
SM-RL3-083008100-R0.5
SM-RL3-083008100-R1.0
SM-PL3-103510100-R0.5
SM-RL3-103510100-R1.0
SM-RL3-104510150-R0.5
SM-RL3-104510150-B1.0
SM-RL3-124012100-R0.5
SM-RL3-124012100-R1.0
SM-RL3-125012150-R0.5
SM-RL3-125012150-R1.0

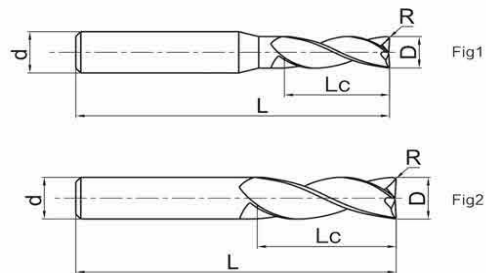
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

3 Flutes, Corner Radius, Long Flute Length (SM-RL3) / 3 flautas, radio de esquina, longitud de flauta larga (SM-RL3)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤12	D >12
Tol	0 -0.015	0 -0.02



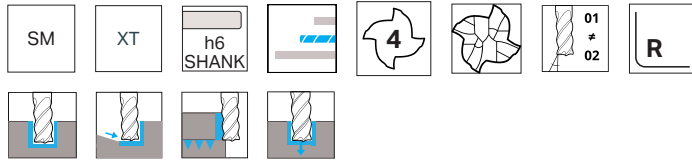
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	40,0	14,0	100	0.5	3	2
14,0	40,0	14,0	100	1.0	3	2
14,0	40,0	14,0	100	2.0	3	2
14,0	50,0	14,0	150	0.5	3	2
14,0	50,0	14,0	150	1.0	3	2
14,0	50,0	14,0	150	2.0	3	2
16,0	55,0	16,0	150	0.5	3	2
16,0	55,0	16,0	150	1.0	3	2
16,0	55,0	16,0	150	2.0	3	2
16,0	55,0	16,0	150	3.0	3	2
18,0	55,0	18,0	150	0.5	3	2
18,0	55,0	18,0	150	1.0	3	2
18,0	55,0	18,0	150	2.0	3	2
18,0	55,0	18,0	150	3.0	3	2
20,0	55,0	20,0	150	0.5	3	2
20,0	55,0	20,0	150	1.0	3	2
20,0	55,0	20,0	150	2.0	3	2
20,0	55,0	20,0	150	3.0	3	2

Ordering Code Código de orden
SM-RL3-144014100-R0.5
SM-RL3-144014100-R1.0
SM-RL3-144014100-R2.0
SM-RL3-145014150-R0.5
SM-RL3-145014150-R1.0
SM-RL3-145014150-R2.0
SM-RL3-165516150-R0.5
SM-RL3-165516150-R1.0
SM-RL3-165516150-R2.0
SM-RL3-165516150-R3.0
SM-RL3-185518150-R0.5
SM-RL3-185518150-R1.0
SM-RL3-185518150-R2.0
SM-RL3-185518150-R3.0
SM-RL3-205520150-R0.5
SM-RL3-205520150-R1.0
SM-RL3-205520150-R2.0
SM-RL3-205520150-R3.0

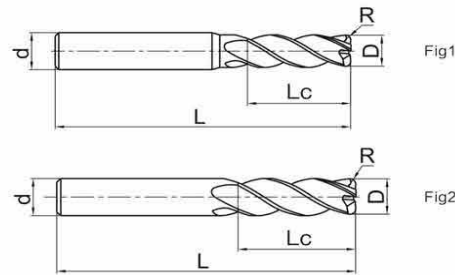
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

4 Flutes, Corner Radius, Standard Length (SM-R4) / 4 flautas, radio de esquina, longitud estándar (SM-R4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



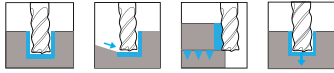
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	0.2	4	1
1,50	4,00	4,00	50	0.2	4	1
2,00	6,00	4,00	50	0.2	4	1
2,00	6,00	4,00	50	0.5	4	1
2,50	8,00	4,00	50	0.2	4	1
2,50	8,00	4,00	50	0.5	4	1
3,00	8,00	4,00	50	0.2	4	1
3,00	8,00	4,00	50	0.5	4	1
4,00	11,0	4,00	50	0.5	4	2
4,00	11,0	4,00	50	1.0	4	2
5,00	13,0	5,00	50	0.5	4	2
5,00	13,0	5,00	50	1.0	4	2
5,00	13,0	6,00	50	0.5	4	2
5,00	13,0	6,00	50	1.0	4	2
6,00	16,0	6,00	50	0.5	4	2
6,00	16,0	6,00	50	1.0	4	2
8,00	20,0	8,00	60	0.5	4	2
8,00	20,0	8,00	60	1.0	4	2
10,0	25,0	10,0	75	0.5	4	2
10,0	25,0	10,0	75	1.0	4	2
12,0	30,0	12,0	75	0.5	4	2
12,0	30,0	12,0	75	1.0	4	2

Ordering Code Código de orden
SM-R4-01030450-R0.2
SM-R4-015040450-R0.2
SM-R4-02060450-R0.2
SM-R4-02060450-R0.5
SM-R4-025080450-R0.2
SM-R4-025080450-R0.5
SM-R4-03080450-R0.2
SM-R4-03080450-R0.5
SM-R4-04110450-R0.5
SM-R4-04110450-R1.0
SM-R4-05130550-R0.5
SM-R4-05130550-R1.0
SM-R4-05130650-R0.5
SM-R4-05130650-R1.0
SM-R4-06160650-R0.5
SM-R4-06160650-R1.0
SM-R4-08200860-R0.5
SM-R4-08200860-R1.0
SM-R4-10251075-R0.5
SM-R4-10251075-R1.0
SM-R4-12301275-R0.5
SM-R4-12301275-R1.0

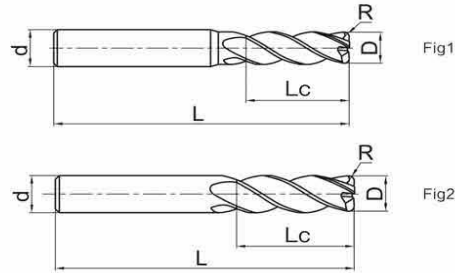
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

4 Flutes, Corner Radius, Standard Length (SM-R4) / 4 flautas, radio de esquina, longitud estándar (SM-R4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
14,0	30,0	14,0	75	0.5	4	2
14,0	30,0	14,0	75	1.0	4	2
14,0	30,0	14,0	75	2.0	4	2
16,0	45,0	16,0	100	0.5	4	2
16,0	45,0	16,0	100	1.0	4	2
16,0	45,0	16,0	100	2.0	4	2
16,0	45,0	16,0	100	3.0	4	2
18,0	45,0	18,0	100	0.5	4	2
18,0	45,0	18,0	100	1.0	4	2
18,0	45,0	18,0	100	2.0	4	2
18,0	45,0	18,0	100	3.0	4	2
20,0	45,0	20,0	100	0.5	4	2
20,0	45,0	20,0	100	1.0	4	2
20,0	45,0	20,0	100	2.0	4	2
20,0	45,0	20,0	100	3.0	4	2

Ordering Code Código de orden
SM-R4-14301475-R0.5
SM-R4-14301475-R1.0
SM-R4-14301475-R2.0
SM-R4-164516100-R0.5
SM-R4-164516100-R1.0
SM-R4-164516100-R2.0
SM-R4-164516100-R3.0
SM-R4-184518100-R0.5
SM-R4-184518100-R1.0
SM-R4-184518100-R2.0
SM-R4-184518100-R3.0
SM-R4-204520100-R0.5
SM-R4-204520100-R1.0
SM-R4-204520100-R2.0
SM-R4-204520100-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
M	stainless steel Acero inoxidable	ap ≤ 1D ae ≤ 0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta									
1	2	4	6	8	10	12	16	20	
25000	15900	7960	5300	3980	3180	2650	1990	1590	
700	635	700	680	730	660	600	490	460	

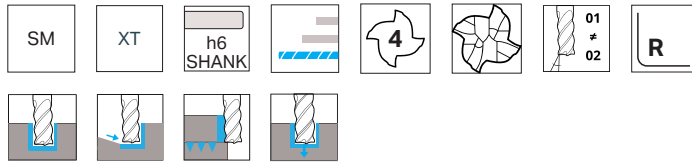
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
M	stainless steel Acero inoxidable	ap ≤ 0.1D ae ≤ 1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta									
1	2	4	6	8	10	12	16	20	
14330	7165	3580	2390	1790	1430	1195	895	715	
400	280	240	310	310	310	310	270	240	

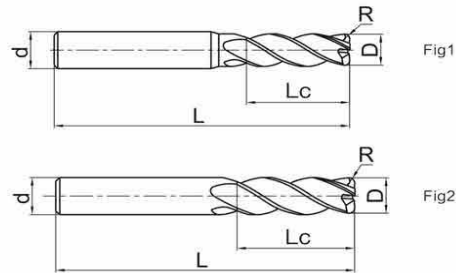
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

4 Flutes, Corner Radius, Long Flute Length (SM-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (SM-RL4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



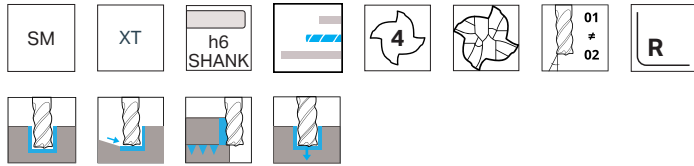
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4.00	15.0	4.00	75	0.5	4	2
4.00	15.0	4.00	75	1.0	4	2
4.00	20.0	4.00	100	0.5	4	2
4.00	20.0	4.00	100	1.0	4	2
5.00	20.0	5.00	75	0.5	4	2
5.00	20.0	5.00	75	1.0	4	2
5.00	25.0	5.00	100	0.5	4	2
5.00	25.0	5.00	100	1.0	4	2
6.00	20.0	6.00	75	0.5	4	2
6.00	20.0	6.00	75	1.0	4	2
6.00	25.0	6.00	100	0.5	4	2
6.00	25.0	6.00	100	1.0	4	2
8.00	25.0	8.00	75	0.5	4	2
8.00	25.0	8.00	75	1.0	4	2
8.00	30.0	8.00	100	0.5	4	2
8.00	30.0	8.00	100	1.0	4	2
10.0	35.0	10.0	100	0.5	4	2
10.0	35.0	10.0	100	1.0	4	2
10.0	45.0	10.0	150	0.5	4	2
10.0	45.0	10.0	150	1.0	4	2
12.0	40.0	12.0	100	0.5	4	2
12.0	40.0	12.0	100	1.0	4	2
12.0	50.0	12.0	150	0.5	4	2
12.0	50.0	12.0	150	1.0	4	2

Ordering Code Código de orden
SM-RL4-04150475-R0.5
SM-RL4-04150475-R1.0
SM-RL4-042004100-R0.5
SM-RL4-042004100-B1.0
SM-RL4-05200575-R0.5
SM-RL4-05200575-R1.0
SM-RL4-052505100-R0.5
SM-RL4-052505100-R1.0
SM-RL4-06200675-R0.5
SM-RL4-06200675-R1.0
SM-RL4.062506100-B05
SM-RL4.062506100-B10
SM-RL4-08250875-R0.5
SM-RL4-08250875-R1.0
SM-RL4.083008100-B05
SM-RL4.083008100-B10
SM-RL4-103510100-R0.5
SM-RL4-103510100-R1.0
SM-RL4-104510150-B0 5
SM-RL4-104510150-R1.0
SM-RL4-124012100-R0.5
SM-RL4-124012100-R1.0
SM-RL4-125012150-B0 5
SM-RL4-125012150-B1.0

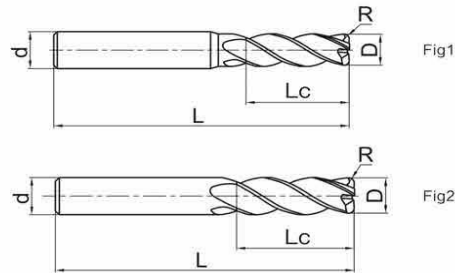
Stainless Steel, Titanium Alloy

Acero inoxidable, aleación de titanio.

4 Flutes, Corner Radius, Long Flute Length (SM-RL4) / 4 flautas, radio de esquina, longitud de flauta larga (SM-RL4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
14,0	40,0	14,0	100	0.5	4	2
14,0	40,0	14,0	100	1.0	4	2
14,0	40,0	14,0	100	2.0	4	2
14,0	50,0	14,0	150	0.5	4	2
14,0	50,0	14,0	150	1.0	4	2
14,0	50,0	14,0	150	2.0	4	2
16,0	55,0	16,0	150	0.5	4	2
16,0	55,0	16,0	150	1.0	4	2
16,0	55,0	16,0	150	2.0	4	2
16,0	55,0	16,0	150	3.0	4	2
18,0	55,0	18,0	150	0.5	4	2
18,0	55,0	18,0	150	1.0	4	2
18,0	55,0	18,0	150	2.0	4	2
18,0	55,0	18,0	150	3.0	4	2
20,0	55,0	20,0	150	0.5	4	2
20,0	55,0	20,0	150	1.0	2	2
20,0	55,0	20,0	150	2.0	2	2
20,0	55,0	20,0	150	3.0	2	2

Ordering Code Código de orden
SM-RL4-144014100-R0.5
SM-RL4-144014100-R1.0
SM-RL4-144014100-R2.0
SM-RL4-145014150-R0.5
SM-RL4-145014150-R1.0
SM-RL4-145014150-R2.0
SM-RL4-165516150-R0.5
SM-RL4-165516150-R1.0
SM-RL4-165516150-R2.0
SM-RL4-165516150-R3.0
SM-RL4-185518150-R0.5
SM-RL4-185518150-R1.0
SM-RL4-185518150-R2.0
SM-RL4-185518150-R3.0
SM-RL4-205520150-R0.5
SM-RL4-205520150-R1.0
SM-RL4-205520150-R2.0
SM-RL4-205520150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
M	stainless steel Acero inoxidable	ap≤1D ae≤0.1D	100 (80~120)	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta									
1	2	4	6	8	10	12	16	20	
25000	15900	7960	5300	3980	3180	2650	1990	1590	
700	635	700	680	730	660	600	490	460	

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
M	stainless steel Acero inoxidable	ap≤0.1D ae≤1D	45 (35~55)	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta									
1	2	4	6	8	10	12	16	20	
14330	7165	3580	2390	1790	1430	1195	895	715	
400	280	240	310	310	310	310	270	240	

AL

Aluminum alloy material efficient ultra-bright processing

Material de aleación de aluminio procesamiento ultrabrillante eficiente



Inhibition of burr

Large front Angle and small edge achieve excellent cutting effect.

Inhibición de rebabas

El gran ángulo frontal y el borde pequeño logran un excelente efecto de corte.

Large Chip flute

The cutting and chip removal are more smooth and stable in the high feed processing.

Flauta de chip grande

El corte y la eliminación de virutas son más suaves y estables en el procesamiento de alto avance.

Sharp cutting edge

Sharp cutting edge and large spiral angle design effectively prevent the generation of built-up edge.

Filo afilado

El filo afilado y el diseño de gran ángulo en espiral previenen eficazmente la generación de filo acumulado.



Special edge design Effectively solve the sticking **HIGHLIGHT**

Diseño de borde especial
Resuelve eficazmente el pegado.

DESTACAR



1 Large chip removal space, not easy to accumulate chips

Gran espacio de extracción de virutas, no es fácil acumular virutas

2 Anti-seismic technology, sharp crescent edge

Tecnología antisísmica, borde creciente afilado



Full-edge anti-vibration design can suppress vibration during processing and improve the quality of the processed surface

El diseño antivibración de borde completo puede suprimir la vibración durante el procesamiento y mejorar la calidad de la superficie procesada.

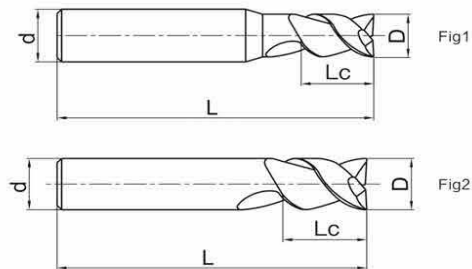
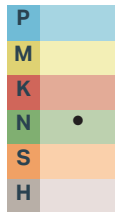
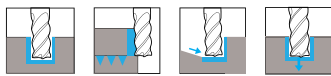
Special chip flute shape, can show excellent performance even in groove and cavity machining.

La forma especial de la flauta de viruta puede mostrar un rendimiento excelente incluso en el mecanizado de ranuras y cavidades.

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Square, Standard Length (AL-S2) / 2 flautas, cuadradas, longitud estándar (AL-S2)



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	2	1
1,50	4,50	4,00	50	2	1
2,00	6,00	4,00	50	2	1
2,50	8,00	4,00	50	2	1
3,00	9,00	4,00	50	2	1
4,00	12,0	4,00	50	2	2
5,00	15,0	5,00	50	2	2
5,00	15,0	6,00	50	2	1
6,00	18,0	6,00	50	2	2
8,00	20,0	8,00	60	2	2
10,0	30,0	10,0	75	2	2
12,0	32,0	12,0	75	2	2
14,0	32,0	14,0	75	2	2
16,0	45,0	16,0	100	2	2
18,0	45,0	18,0	100	2	2
20,0	45,0	20,0	100	2	2

Ordering Code Código de orden
AL-S2-01030450
AL-S2-0150450450
AL-S2-02060450
AL-S2-025080450
AL-S2-03090450
AL-S2-04120450
AL-S2-05150550
AL-S2-05150650
AL-S2-06180650
AL-S2-08200860
AL-S2-10301075
AL-S2-12321275
AL-S2-14321475
AL-S2-164516100
AL-S2-184518100
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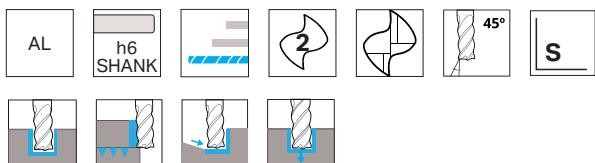
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	12700	12000	10600	10000	9500	9280	7000	5600
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	580	710	1200	1280	1390	1720	2400	2500	2450
					16000	12700	12000	10600	10000	9500	9280	7000	5600
					520	650	1070	1150	1250	1550	2170	2250	2200

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	400	500	810	920	1100	1280	1300	1310	1200
					16000	10000	9000	8000	7800	8000	6800	5000	4000
					380	450	800	830	1000	1150	1130	1000	1080

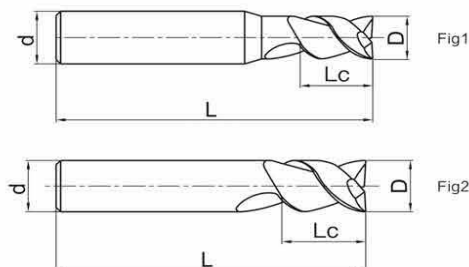
Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Square, Long Flute Length (AL-SL2) / 2 flautas, cuadradas, longitud de flauta larga (AL-SL2)



P	
M	
K	
N	•
S	
H	



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. Nº de figura
mm	mm	mm	mm		
4,00	16,0	4,00	75	2	2
4,00	20,0	4,00	100	2	2
5,00	25,0	5,00	75	2	2
5,00	30,0	5,00	100	2	2
6,00	25,0	6,00	75	2	2
6,00	30,0	6,00	100	2	2
8,00	30,0	8,00	75	2	2
8,00	35,0	8,00	100	2	2
10,0	45,0	10,0	100	2	2
10,0	60,0	10,0	150	2	2
12,0	45,0	12,0	100	2	2
12,0	60,0	12,0	150	2	2
14,0	45,0	14,0	100	2	2
14,0	55,0	14,0	150	2	2
16,0	60,0	16,0	150	2	2
18,0	60,0	18,0	150	2	2
20,0	60,0	20,0	150	2	2

Ordering Code Código de orden
AL-SL2-04160475
AL-SL2-042004100
AL-SL2-05250575
AL-SL2-053005100
AL-SL2-06250675
AL-SL2-063006100
AL-SL2-08300875
AL-SL2-083508100
AL-SL2-104510100
AL-SL2-106010150
AL-SL2-124512100
AL-SL2-126012150
AL-SL2-144514100
AL-SL2-145514150
AL-SL2-166016150
AL-SL2-186018150
AL-SL2-206020150

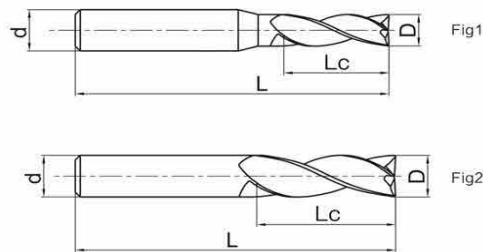
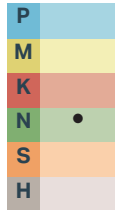
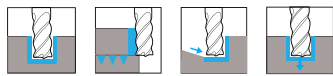
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	12700	12000	10600	10000	9500	9280	7000	5600
					580	710	1200	1280	1390	1720	2400	2500	2450
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	12700	12000	10600	10000	9500	9280	7000	5600
					520	650	1070	1150	1250	1550	2170	2250	2200

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
					400	500	810	920	1100	1280	1300	1310	1200
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
					380	450	800	830	1000	1150	1130	1000	1080

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

3 Flutes, Square, Standard Length (AL-S3) / 3 flautas, cuadradas, longitud estándar (AL-S3)



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. Nº de figura
1,00	3,00	4,00	50	3	1
1,50	4,50	4,00	50	3	1
2,00	6,00	4,00	50	3	1
2,50	8,00	4,00	50	3	1
3,00	9,00	4,00	50	3	1
4,00	12,0	4,00	50	3	2
5,00	15,0	5,00	50	3	2
5,00	15,0	6,00	50	3	1
6,00	18,0	6,00	50	3	2
8,00	20,0	8,00	60	3	2
10,0	30,0	10,0	75	3	2
12,0	32,0	12,0	75	3	2
14,0	32,0	14,0	75	3	2
16,0	45,0	16,0	100	3	2
18,0	45,0	18,0	100	3	2
20,0	45,0	20,0	100	3	2

Ordering Code Código de orden
AL-S3-01030450
AL-S3-0150450450
AL-S3-02060450
AL-S3-025080450
AL-S3-03090450
AL-S3-04120450
AL-S3-05150550
AL-S3-05150650
AL-S3-06180650
AL-S3-08200860
AL-S3-10301075
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AL-S3-164516100
AL-S3-184518100
AL-S3-204520100

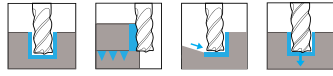
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	13000	12000	10600	10000	9500	9280	7000	5600
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	650	850	1430	1530	1670	2050	2800	3000	3150
					16000	13000	12000	10600	10000	9500	9280	7000	5600
					720	900	1200	1200	1500	1800	2225	2500	3000

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	450	570	960	1050	1300	1500	1620	1680	1800
					16000	10000	9000	8000	7800	8000	6800	5000	4000
					450	520	860	830	960	1240	1500	1550	1510

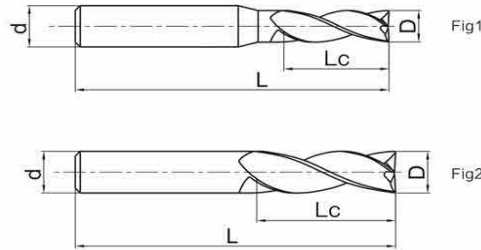
Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

3 Flutes, Square, Long Flute Length (AL-SL3) / 3 flautas, cuadradas, longitud estándar (AL-S3)



P	
M	
K	
N	•
S	
H	



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D	Lc	d	L	Z	Figure No. Nº de figura
mm	mm	mm	mm		
4,00	16,0	4,00	75	3	2
4,00	20,0	4,00	100	3	2
5,00	25,0	5,00	75	3	2
5,00	30,0	5,00	100	3	2
6,00	25,0	6,00	75	3	2
6,00	30,0	6,00	100	3	2
8,00	30,0	8,00	75	3	2
8,00	35,0	8,00	100	3	2
10,0	45,0	10,0	100	3	2
10,0	60,0	10,0	150	3	2
12,0	45,0	12,0	100	3	2
12,0	60,0	12,0	150	3	2
14,0	45,0	14,0	100	3	2
14,0	55,0	14,0	150	3	2
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18,0	60,0	18,0	150	3	2
20,0	60,0	20,0	150	3	2

Ordering Code Código de orden
AL-SL3-04160475
AL-SL3-042004100
AL-SL3-05250575
AL-SL3-053005100
AL-SL3-06250675
AL-SL3-063006100
AL-SL3-08300875
AL-SL3-083508100
AL-SL3-104510100
AL-SL3-106010150
AL-SL3-124512100
AL-SL3-126012150
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AL-SL3-145514150
AL-SL3-166016150
AL-SL3-186018150
AL-SL3-206020150

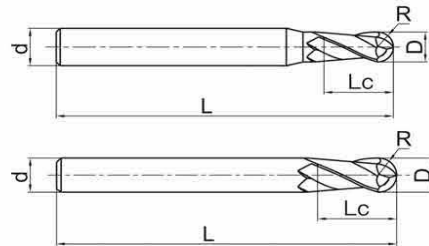
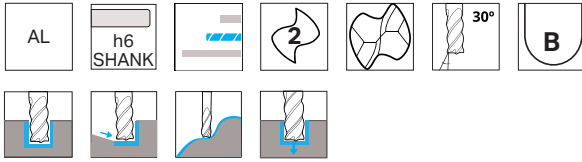
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	13000	12000	10600	10000	9500	9280	7000	5600
					650	850	1430	1530	1670	2050	2800	3000	3150
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	13000	12000	10600	10000	9500	9280	7000	5600
					720	900	1200	1200	1500	1800	2225	2500	3000

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
					450	570	960	1050	1300	1500	1620	1680	1800
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
					450	520	860	830	960	1240	1500	1550	1510

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Ballnose, Standard Length (AL-B2) / 2 flautas, punta esférica, longitud estándar (AL-B2)



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
1,00	2,00	3,00	50	0.5	2	1
2,00	4,00	3,00	50	1.0	2	1
3,00	6,00	3,00	50	1.5	2	2
1,00	2,00	4,00	50	0.5	2	1
1,50	3,00	4,00	50	0.75	2	1
2,00	4,00	4,00	50	1.0	2	1
2,50	5,00	4,00	50	1.25	2	1
3,00	6,00	4,00	50	1.5	2	1
3,50	7,00	4,00	50	1.75	2	1
4,00	8,00	4,00	50	2.0	2	2
5,00	10,0	5,00	50	2.5	2	2
6,00	12,0	6,00	50	3.0	2	2
8,00	16,0	8,00	60	4.0	2	2
10,0	20,0	10,0	75	5.0	2	2
12,0	24,0	12,0	75	6.0	2	2
14,0	28,0	14,0	75	7.0	2	2
16,0	32,0	16,0	100	8.0	2	2
18,0	36,0	18,0	100	9.0	2	2
20,0	40,0	20,0	100	10.0	2	2

Ordering Code Código de orden
AL-B2-01020350-R0.5
AL-B2-02040350-R1.0
AL-B2-03060350-R1.5
AL-B2-01020450-R0.5
AL-B2-015030450-R0.75
AL-B2-02040450-R1.0
AL-B2-025050450-R1.25
AL-B2-03060450-R1.5
AL-B2-035070450-R1.75
AL-B2-04080450-R2.0
AL-B2-05100550-R2.5
AL-B2-06120650-R3.0
AL-B2-08160860-R4.0
AL-B2-10201075-R5.0
AL-B2-12241275-R6.0
AL-B2-14281475-R7.0
AL-B2-163216100-R8.0
AL-B2-183618100-R9.0
AL-B2-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					1	2	4	6	8	10	12	16
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.3D ae≤0.3D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	19000	15900	11900	10600	8000	7950	7950	7000
	(<200HB) Copper alloy Aleación de cobre	ap≤0.3D ae≤0.3D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	950	1600	1900	2500	2550	3800	3800	4450
					19000	15900	11900	10600	8000	7950	7950	7000
					860	1430	1720	2300	2300	2850	3450	4010

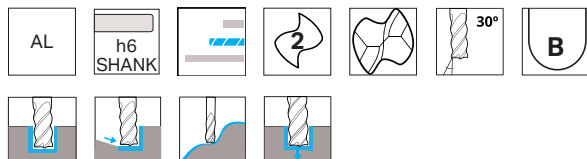
1. Please use high-precision machine tools and tool holder.
2. Pls use oil cooled cutting liquid.
3. When the rigidity of the machine tool and the workpiece is poorly installed, vibration and abnormal sound will occur. At this time, the rotation speed and feed rate of the above table should be reduced.
4. Keep the tool overhang as short as possible without interference.

1. Utilice máquinas herramienta y portaherramientas de alta precisión.
2. Utilice líquido de corte enfriado por aceite.
3. Cuando la rigidez de la máquina herramienta y la pieza de trabajo están mal instaladas, se producirán vibraciones y sonidos anormales. En este momento, se deben reducir la velocidad de rotación y el avance de la tabla anterior.
4. Mantenga el saliente de la herramienta lo más corto posible sin interferencias.

Aluminum Alloy, Super Bright High Efficient

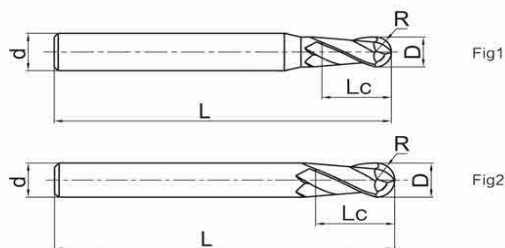
Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Ballnose, Long Shank Length (AL-BH2) / 2 flautas, punta esférica, longitud de vástago largo (AL-BH2)



P	
M	
K	
N	•
S	
H	

Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	8,00	4,00	75	2.0	2	2
4,00	8,00	4,00	100	2.0	2	2
5,00	10,0	5,00	75	2.5	2	2
5,00	10,0	5,00	100	2.5	2	2
5,00	10,0	5,00	150	2.5	2	2
6,00	12,0	6,00	75	3.0	2	2
6,00	12,0	6,00	100	3.0	2	2
6,00	12,0	6,00	150	3.0	2	2
8,00	16,0	8,00	75	4.0	2	2
8,00	16,0	8,00	100	4.0	2	2
8,00	16,0	8,00	150	4.0	2	2
10,0	20,0	10,0	100	5.0	2	2
10,0	20,0	10,0	150	5.0	2	2
12,0	24,0	12,0	100	6.0	2	2
12,0	24,0	12,0	150	6.0	2	2
14,0	28,0	14,0	100	7.0	2	2
14,0	28,0	14,0	150	7.0	2	2
16,0	32,0	16,0	150	8.0	2	2
18,0	36,0	18,0	150	9.0	2	2
20,0	40,0	20,0	150	10.0	2	2

Ordering Code Código de orden
AL-BH2-04080475-R2.0
AL-BH2-040804100-R2.0
AL-BH2-05100575-R2.5
AL-BH2-051005100-R2.5
AL-BH2-051005150-R2.5
AL-BH2-06120675-R3.0
AL-BH2-061206100-R3.0
AL-BH2-061206150-R3.0
AL-BH2-08160875-R4.0
AL-BH2-081608100-R4.0
AL-BH2-081608150-R4.0
AL-BH2-102010100-R5.0
AL-BH2-102010150-R5.0
AL-BH2-122412100-R6.0
AL-BH2-122412150-R6.0
AL-BH2-142814100-R7.0
AL-BH2-142814150-R7.0
AL-BH2-163216150-R8.0
AL-BH2-183618150-R9.0
AL-BH2-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.3D ae≤0.3D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)
	(<200HB) Copper alloy Aleación de cobre	ap≤0.3D ae≤0.3D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta							
1	2	4	6	8	10	12	16
19000	15900	11900	10600	8000	7950	7950	7000
950	1600	1900	2500	2550	3800	3800	4450
19000	15900	11900	10600	8000	7950	7950	7000
860	1430	1720	2300	2300	2850	3450	4010

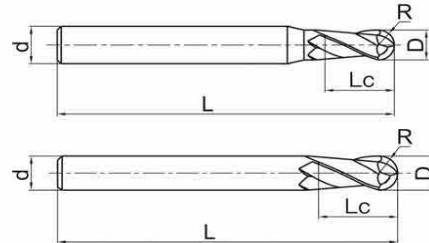
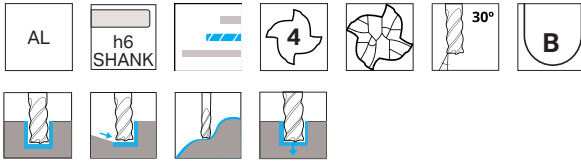
- Please use high-precision machine tools and tool holder.
- Pls use oil cooled cutting liquid.
- When the rigidity of the machine tool and the workpiece is poorly installed, vibration and abnormal sound will occur.
At this time, the rotation speed and feed rate of the above table should be reduced.
- Keep the tool overhang as short as possible without interference.

- Utilice máquinas herramienta y portaherramientas de alta precisión.
- Utilice líquido de corte enfriado por aceite.
- Cuando la rigidez de la máquina herramienta y la pieza de trabajo están mal instaladas, se producirán vibraciones y sonidos anormales.
En este momento, se deben reducir la velocidad de rotación y el avance de la tabla anterior.
- Mantenga el saliente de la herramienta lo más corto posible sin interferencias.

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

4 Flutes, Ballnose, Standard Length (AL-B4) / 4 flautas, punta esférica, longitud estándar (AL-B4)



Unit Unidad	(mm)		
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
1,00	2,00	3,00	50	0.5	4	1
2,00	4,00	3,00	50	1.0	4	1
3,00	6,00	3,00	50	1.5	4	2
1,00	2,00	4,00	50	0.5	4	1
1,50	3,00	4,00	50	0.75	4	1
2,00	4,00	4,00	50	1.0	4	1
2,50	5,00	4,00	50	1.25	4	1
3,00	6,00	4,00	50	1.5	4	1
3,50	7,00	4,00	50	1.75	4	1
4,00	8,00	4,00	50	2.0	4	2
5,00	10,0	5,00	50	2.5	4	2
6,00	12,0	6,00	50	3.0	4	2
8,00	16,0	8,00	60	4.0	4	2
10,0	20,0	10,0	75	5.0	4	2
12,0	24,0	12,0	75	6.0	4	2
14,0	28,0	14,0	75	7.0	4	2
16,0	32,0	16,0	100	8.0	4	2
18,0	36,0	18,0	100	9.0	4	2
20,0	40,0	20,0	100	10.0	4	2

Ordering Code Código de orden
AL-B4-01020350-R0.5
AL-B4-02040350-R1.0
AL-B4-03060350-R1.5
AL-B4-01020450-R0.5
AL-B4-015030450-R0.75
AL-B4-02040450-R1.0
AL-B4-025050450-R1.25
AL-B4-03060450-R1.5
AL-B4-035070450-R1.75
AL-B4-04080450-R2.0
AL-B4-05100550-R2.5
AL-B4-06120650-R3.0
AL-B4-08160860-R4.0
AL-B4-10201075-R5.0
AL-B4-12241275-R6.0
AL-B4-14281475-R7.0
AL-B4-163216100-R8.0
AL-B4-183618100-R9.0
AL-B4-204020100-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					1	2	4	6	8	10	12	16
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.3D ae≤0.3D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	19000	15900	11900	10600	8000	7950	7950	7000
	(<200HB) Copper alloy Aleación de cobre	ap≤0.3D ae≤0.3D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	950	1600	1900	2500	2550	3800	3800	4450
					19000	15900	11900	10600	8000	7950	7950	7000
					860	1430	1720	2300	2300	2850	3450	4010

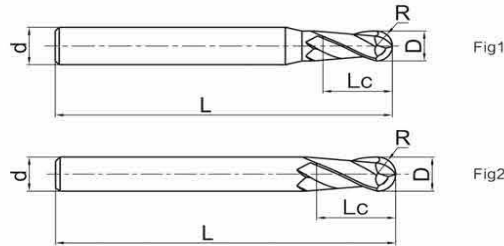
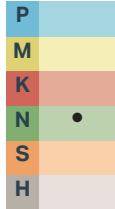
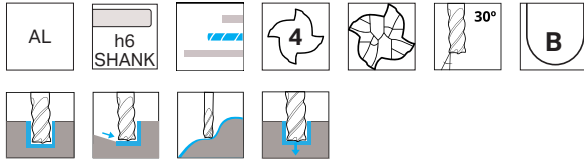
1. Please use high-precision machine tools and tool holder.
2. Pls use oil cooled cutting liquid.
3. When the rigidity of the machine tool and the workpiece is poorly installed, vibration and abnormal sound will occur.
At this time, the rotation speed and feed rate of the above table should be reduced.
4. Keep the tool overhang as short as possible without interference.

1. Utilice máquinas herramienta y portaherramientas de alta precisión.
2. Utilice líquido de corte enfriado por aceite.
3. Cuando la rigidez de la máquina herramienta y la pieza de trabajo están mal instaladas, se producirán vibraciones y sonidos anormales.
En este momento, se deben reducir la velocidad de rotación y el avance de la tabla anterior.
4. Mantenga el saliente de la herramienta lo más corto posible sin interferencias.

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

4 Flutes, Ballnose, Long Shank Length (AL-BH4) / 4 flautas, punta esférica, vástago largo (AL-BH4)



Unit	(mm)		
Unidad			
D	R ≤ 1.5	1.5 < R < 3	R ≥ 3
Tol	0 -0.01	0 -0.015	0 -0.02



D	Lc	d	L	R	Z	Figure No. Nº de figura
mm	mm	mm	mm	mm		
4,00	8,00	4,00	75	2.0	4	2
4,00	8,00	4,00	100	2.0	4	2
5,00	10,0	5,00	75	2.5	4	2
5,00	10,0	5,00	100	2.5	4	2
5,00	10,0	5,00	150	2.5	4	2
6,00	12,0	6,00	75	3.0	4	2
6,00	12,0	6,00	100	3.0	4	2
6,00	12,0	6,00	150	3.0	4	2
8,00	16,0	8,00	75	4.0	4	2
8,00	16,0	8,00	100	4.0	4	2
8,00	16,0	8,00	150	4.0	4	2
10,0	20,0	10,0	100	5.0	4	2
10,0	20,0	10,0	150	5.0	4	2
12,0	24,0	12,0	100	6.0	4	2
12,0	24,0	12,0	150	6.0	4	2
14,0	28,0	14,0	100	7.0	4	2
14,0	28,0	14,0	150	7.0	4	2
16,0	32,0	16,0	150	8.0	4	2
18,0	36,0	18,0	150	9.0	4	2
20,0	40,0	20,0	150	10.0	4	2

Ordering Code Código de orden
AL-BH4-04080475-R2.0
AL-BH4-040804100-R2.0
AL-BH4-05100575-R2.5
AL-BH4-051005100-R2.5
AL-BH4-051005150-R2.5
AL-BH4-06120675-R3.0
AL-BH4-061206100-R3.0
AL-BH4-061206150-R3.0
AL-BH4-08160875-R4.0
AL-BH4-081608100-R4.0
AL-BH4-081608150-R4.0
AL-BH4-102010100-R5.0
AL-BH4-102010150-R5.0
AL-BH4-122412100-R6.0
AL-BH4-122412150-R6.0
AL-BH4-142814100-R7.0
AL-BH4-142814150-R7.0
AL-BH4-163216150-R8.0
AL-BH4-183618150-R9.0
AL-BH4-204020150-R10.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.3D	150	rotate speed (min-1)
		ae≤0.3D	(60~350)	feed velocity (mm/ min)
	(<200HB) Copper alloy Aleación de cobre	ap≤0.3D	150	rotate speed (min-1)
		ae≤0.3D	(60~350)	feed velocity (mm/ min)

Tool Diameter (mm) Diámetro de la herramienta							
1	2	4	6	8	10	12	16
19000	15900	11900	10600	8000	7950	7950	7000
950	1600	1900	2500	2550	3800	3800	4450
19000	15900	11900	10600	8000	7950	7950	7000
860	1430	1720	2300	2300	2850	3450	4010

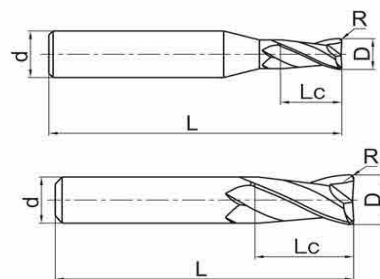
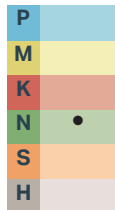
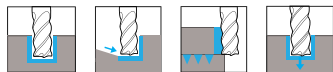
1. Please use high-precision machine tools and tool holder.
2. Pls use oil cooled cutting liquid.
3. When the rigidity of the machine tool and the workpiece is poorly installed, vibration and abnormal sound will occur.
At this time, the rotation speed and feed rate of the above table should be reduced.
4. Keep the tool overhang as short as possible without interference.

1. Utilice máquinas herramienta y portaherramientas de alta precisión.
2. Utilice líquido de corte enfriado por aceite.
3. Cuando la rigidez de la máquina herramienta y la pieza de trabajo están mal instaladas, se producirán vibraciones y sonidos anormales.
En este momento, se deben reducir la velocidad de rotación y el avance de la tabla anterior.
4. Mantenga el saliente de la herramienta lo más corto posible sin interferencias.

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Corner Radius, Standard Length (AL-R2) / 2 flautas, radio de esquina, longitud estándar (AL-R2)



Unit Unidad	(mm)	
	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02
Fig1		
Fig2		

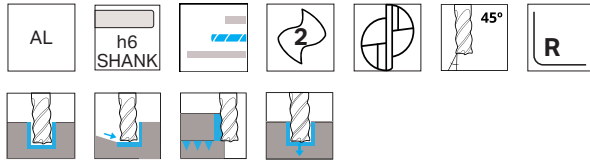
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1,00	3,00	4,00	50	0.2	2	1
1,50	4,50	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.2	2	1
2,00	6,00	4,00	50	0.5	2	1
2,50	8,00	4,00	50	0.2	2	1
2,50	8,00	4,00	50	0.5	2	1
3,00	9,00	4,00	50	0.2	2	1
3,00	9,00	4,00	50	0.5	2	1
4,00	12,0	4,00	50	0.5	2	2
4,00	12,0	4,00	50	1.0	2	2
5,00	15,0	5,00	50	0.5	2	2
5,00	15,0	5,00	50	1.0	2	2
5,00	15,0	6,00	50	0.5	2	2
5,00	15,0	6,00	50	1.0	2	2
6,00	18,0	6,00	50	0.5	2	2
6,00	18,0	6,00	50	1.0	2	2
8,00	20,0	8,00	60	0.5	2	2
8,00	20,0	8,00	60	1.0	2	2
10,0	30,0	10,0	75	0.5	2	2
10,0	30,0	10,0	75	1.0	2	2
12,0	32,0	12,0	75	0.5	2	2
12,0	32,0	12,0	75	1.0	2	2

Ordering Code Código de orden
AL-R2-01030450-R0.2
AL-R2-0150450450-R0.2
AL-R2-02060450-R0.2
AL-R2-02060450-R0.5
AL-R2-025080450-R0.2
AL-R2-025080450-R0.5
AL-R2-03090450-R0.2
AL-R2-03090450-R0.5
AL-R2-04120450-R0.5
AL-R2-04120450-R1.0
AL-R2-05150550-R0.5
AL-R2-05150550-R1.0
AL-R2-05150650-R0.5
AL-R2-05150650-R1.0
AL-R2-06180650-R0.5
AL-R2-06180650-R1.0
AL-R2-08200860-R0.5
AL-R2-08200860-R1.0
AL-R2.10301075-R0.5
AL-R2-10301075-R1.0
AL-R2-12321275-R0.5
AL-R2-12321275-R1.0

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Corner Radius, Standard Length (AL-R2) 2 Flautas, Radio de Esquina, Longitud Estándar



P	
M	
K	
N	•
S	
H	

Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

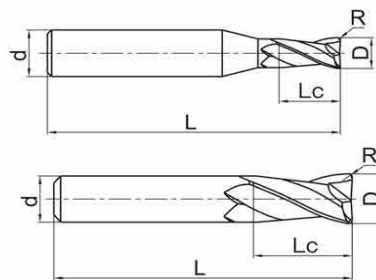


Fig1

Fig2



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. Nº de figura
14.0	32.0	14.0	75	0.5	2	2
14.0	32.0	14.0	75	1.0	2	2
14.0	32.0	14.0	75	2.0	2	2
16.0	45.0	16.0	100	0.5	2	2
16.0	45.0	16.0	100	1.0	2	2
16.0	45.0	16.0	100	2.0	2	2
16.0	45.0	16.0	100	3.0	2	2
18.0	45.0	18.0	100	0.5	2	2
18.0	45.0	18.0	100	1.0	2	2
18.0	45.0	18.0	100	2.0	2	2
18.0	45.0	18.0	100	3.0	2	2
20.0	45.0	20.0	100	0.5	2	2
20.0	45.0	20.0	100	1.0	2	2
20.0	45.0	20.0	100	2.0	2	2
20.0	45.0	20.0	100	3.0	2	2

Ordering Code Código de orden
AL-R2-14321475-R0.5
AL-R2-14321475-R1.0
AL-R2-14321475-R2.0
AL-R2-164516100-R0.5
AL-R2-164516100-R1.0
AL-R2-164516100-R2.0
AL-R2-164516100-R3.0
AL-R2-184518100-R0.5
AL-R2-184518100-R1.0
AL-R2-184518100-R2.0
AL-R2-184518100-R3.0
AL-R2-204520100-R0.5
AL-R2-204520100-R1.0
AL-R2-204520100-R2.0
AL-R2-204520100-R3.0

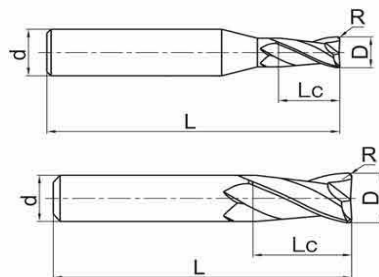
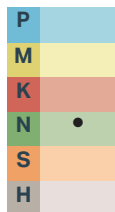
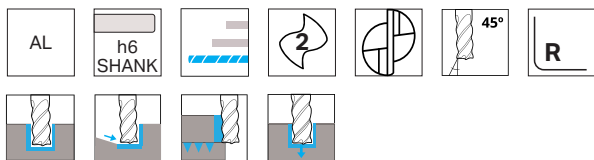
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	12700	12000	10600	10000	9500	9280	7000	5600
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	580	710	1200	1280	1390	1720	2400	2500	2450
					16000	12700	12000	10600	10000	9500	9280	7000	5600
					520	650	1070	1150	1250	1550	2170	2250	2200

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
	(<200HB) Copper alloy Aleación de cobre	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	400	500	810	920	1100	1280	1300	1310	1200
					16000	10000	9000	8000	7800	8000	6800	5000	4000
					380	450	800	830	1000	1150	1130	1000	1080

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Corner Radius, Long Flute Length (AL-RL2) / 2 Flautas, Radio De Esquina, Longitud De Flauta Larga



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02
Fig1		
Fig2		

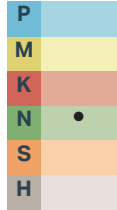
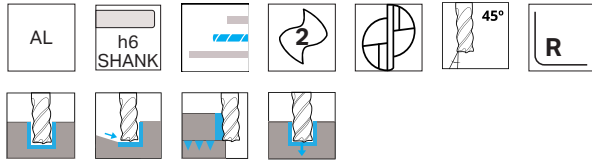
D	Lc	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm		
4,00	16,0	4,00	75	0.5	2	2
4,00	16,0	4,00	75	1.0	2	2
4,00	20,0	4,00	100	0.5	2	2
4,00	20,0	4,00	100	1.0	2	2
5,00	25,0	5,00	75	0.5	2	2
5,00	25,0	5,00	75	1.0	2	2
5,00	30,0	5,00	100	0.5	2	2
5,00	30,0	5,00	100	1.0	2	2
6,00	25,0	6,00	75	0.5	2	2
6,00	25,0	6,00	75	1.0	2	2
6,00	30,0	6,00	100	0.5	2	2
6,00	30,0	6,00	100	1.0	2	2
8,00	30,0	8,00	75	0.5	2	2
8,00	30,0	8,00	75	1.0	2	2
8,00	35,0	8,00	100	0.5	2	2
8,00	35,0	8,00	100	1.0	2	2
10,0	45,0	10,0	100	0.5	2	2
10,0	45,0	10,0	100	1.0	2	2
10,0	60,0	10,0	150	0.5	2	2
10,0	60,0	10,0	150	1.0	2	2
12,0	45,0	12,0	100	0.5	2	2
12,0	45,0	12,0	100	1.0	2	2
12,0	60,0	12,0	150	0.5	4	2
12,0	60,0	12,0	150	1.0	4	2

Ordering Code Código de orden
AL-RL2-04160475-R0.5
AL-RL2-04160475-R1.0
AL-RL2-042004100-R0.5
AL-RL2-042004100-R1.0
AL-RL2-05250575-R0.5
AL-RL2-05250575-R1.0
AL-RL2-053005100-R0.5
AL-RL2-053005100-R1.0
AL-RL2-06250675-R0.5
AL-RL2-06250675-R1.0
AL-RL2-063006100-R0.5
AL-RL2-063006100-R1.0
AL-RL2-08300875-R0.5
AL-RL2-08300875-R1.0
AL-RL2-083508100-R0.5
AL-RL2-083508100-R1.0
AL-RL2-104510100-R0.5
AL-RL2-104510100-R1.0
AL-RL2-106010150-R0.5
AL-RL2-106010150-R1.0
AL-RL2-124512100-R0.5
AL-RL2-124512100-R1.0
AL-RL2-126012150-R0.5
AL-RL2-126012150-R1.0

Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

2 Flutes, Corner Radius, Long Flute Length (AL-RL2) 2 Flautas, Radio de Esquina, Longitud Estándar



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

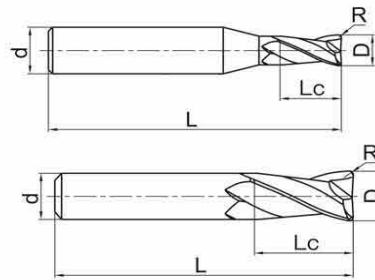


Fig1

Fig2



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. Nº de figura
14,0	45,0	14,0	100	0.5	2	2
14,0	45,0	14,0	100	1.0	2	2
14,0	45,0	14,0	100	2.0	2	2
14,0	55,0	14,0	150	0.5	2	2
14,0	55,0	14,0	150	1.0	2	2
14,0	55,0	14,0	150	2.0	2	2
16,0	60,0	16,0	150	0.5	2	2
16,0	60,0	16,0	150	1.0	2	2
16,0	60,0	16,0	150	2.0	2	2
16,0	60,0	16,0	150	3.0	2	2
18,0	60,0	18,0	150	0.5	2	2
18,0	60,0	18,0	150	1.0	2	2
18,0	60,0	18,0	150	2.0	2	2
18,0	60,0	18,0	150	3.0	2	2
20,0	60,0	20,0	150	0.5	2	2
20,0	60,0	20,0	150	1.0	2	2
20,0	60,0	20,0	150	2.0	2	2
20,0	60,0	20,0	150	3.0	2	2

Ordering Code Código de orden
AL-RL2-144514100-R0.5
AL-RL2-144514100-R1.0
AL-RL2-144514100-R2.0
AL-RL2-145514150-R0.5
AL-RL2-145514150-R1.0
AL-RL2-145514150-R2.0
AL-RL2-166016150-R0.5
AL-RL2-166016150-R1.0
AL-RL2-166016150-R2.0
AL-RL2-166016150-R3.0
AL-RL2-186018150-R0.5
AL-RL2-186018150-R1.0
AL-RL2-186018150-R2.0
AL-RL2-186018150-R3.0
AL-RL2-206020150-R0.5
AL-RL2-206020150-R1.0
AL-RL2-206020150-R2.0
AL-RL2-206020150-R3.0

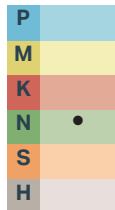
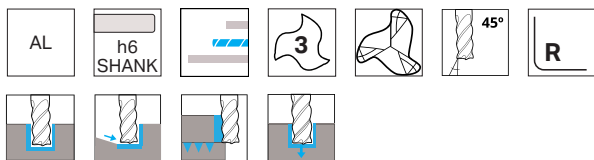
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
1	2	4	6	8	10	12	16	20					
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	12700	12000	10600	10000	9500	9280	7000	5600
		ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	580	710	1200	1280	1390	1720	2400	2500	2450
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	12700	12000	10600	10000	9500	9280	7000	5600
		ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	520	650	1070	1150	1250	1550	2170	2250	2200

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
1	2	4	6	8	10	12	16	20					
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
		ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	400	500	810	920	1100	1280	1300	1310	1200
	(<200HB) Copper alloy Aleación de cobre	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
		ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	380	450	800	830	1000	1150	1130	1000	1080

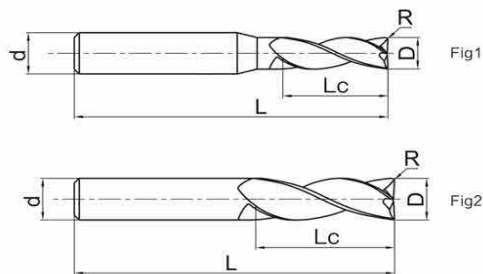
Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

3 Flutes, Corner Radius, Long Flute Length (AL-RL3)/ 3 Flautas, Radio De Esquina, Longitud Estándar (AL-R3)



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



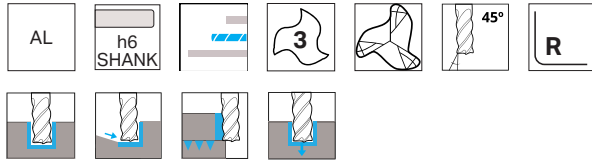
D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. N° de figura
1.00	3.00	4.00	50	0.2	3	1
1.50	4.50	4.00	50	0.2	3	1
2.00	6.00	4.00	50	0.2	3	1
2.00	6.00	4.00	50	0.5	3	1
2.50	8.00	4.00	50	0.2	3	1
2.50	8.00	4.00	50	0.5	3	1
3.00	9.00	4.00	50	0.2	3	1
3.00	9.00	4.00	50	0.5	3	1
4.00	12.0	4.00	50	0.5	3	2
4.00	12.0	4.00	50	1.0	3	2
5.00	15.0	5.00	50	0.5	3	2
5.00	15.0	5.00	50	1.0	3	2
5.00	15.0	6.00	50	0.5	3	2
5.00	15.0	6.00	50	1.0	3	2
6.00	18.0	6.00	50	0.5	3	2
6.00	18.0	6.00	50	1.0	3	2
8.00	20.0	8.00	60	0.5	3	2
8.00	20.0	8.00	60	1.0	3	2
10.0	30.0	10.0	75	0.5	3	2
10.0	30.0	10.0	75	1.0	3	2
12.0	32.0	12.0	75	0.5	3	2
12.0	32.0	12.0	75	1.0	3	2

Ordering Code Código de orden
AL-R3-01030450-R0.2
AL-R3-0150450450-R0.2
AL-R3-02060450-R0.2
AL-R3-02060450-R0.5
AL-R3-025080450-R0.2
AL-R3-025080450-R0.5
AL-R3-03090450-R0.2
AL-R3-03090450-R0.5
AL-R3-04120450-R0.5
AL-R3-04120450-R1.0
AL-R3-05150550-R0.5
AL-R3-05150550-R1.0
AL-R3-05150650-R0.5
AL-R3-05150650-R1.0
AL-R3-06180650-R0.5
AL-R3-06180650-R1.0
AL-R3-08200860-R0.5
AL-R3-08200860-R1.0
AL-R3-10301075-R0.5
AL-R3-10301075-R1.0
AL-R3-12321275-R0.5
AL-R3-12321275-R1.0

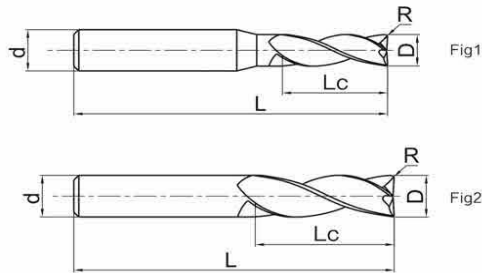
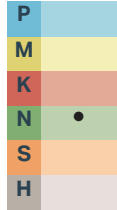
Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

3 Flutes, Corner Radius, Standard Length (AL-R3) / 3 Flautas, Radio De Esquina, Longitud Estándar (AL-R3)



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. Nº de figura
14.0	32.0	14.0	75	0.5	3	2
14.0	32.0	14.0	75	1.0	3	2
14.0	32.0	14.0	75	2.0	3	2
16.0	45.0	16.0	100	0.5	3	2
16.0	45.0	16.0	100	1.0	3	2
16.0	45.0	16.0	100	2.0	3	2
16.0	45.0	16.0	100	3.0	3	2
18.0	45.0	18.0	100	0.5	3	2
18.0	45.0	18.0	100	1.0	3	2
18.0	45.0	18.0	100	2.0	3	2
18.0	45.0	18.0	100	3.0	3	2
20.0	45.0	20.0	100	0.5	3	2
20.0	45.0	20.0	100	1.0	3	2
20.0	45.0	20.0	100	2.0	3	2
20.0	45.0	20.0	100	3.0	3	2

Ordering Code Código de orden
AL-R3-14321475-R0.5
AL-R3-14321475-R1.0
AL-R3-14321475-R2.0
AL-R3-164516100-R0.5
AL-R3-164516100-R1.0
AL-R3-164516100-R2.0
AL-R3-164516100-R3.0
AL-R3-184518100-R0.5
AL-R3-184518100-R1.0
AL-R3-184518100-R2.0
AL-R3-184518100-R3.0
AL-R3-204520100-R0.5
AL-R3-204520100-R1.0
AL-R3-204520100-R2.0
AL-R3-204520100-R3.0

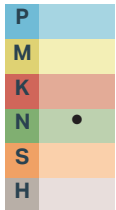
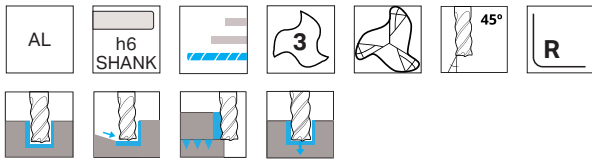
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta								
					1	2	4	6	8	10	12	16	20
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	13000	12000	10600	10000	9500	9280	7000	5600
					650	850	1430	1530	1670	2050	2800	3000	3150
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	13000	12000	10600	10000	9500	9280	7000	5600
					720	900	1200	1200	1500	1800	2225	2500	3000

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta									
					1	2	4	6	8	10	12	16	20	
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)										
					16000	10000	9000	8000	7800	8000	6800	5000	4000	
	450	570	960	1050	1300	1500	1620	1680	1800					
	<200HB) Copper alloy Aleación de cobre	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000	
450					520	860	830	960	1240	1500	1550	1510		

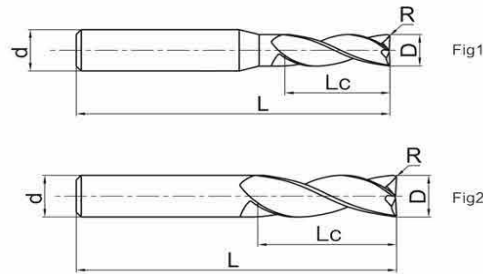
Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

3 Flutes, Corner Radius, Long Flute Length (AL-RL3) / 3 Flautas, Radio De Esquina, Longitud De Flauta Larga (AL-RL3)



Unit	(mm)	
Unidad		
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



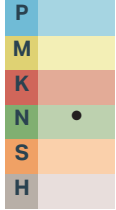
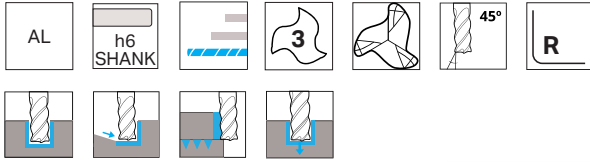
D	Lc	d	L	R	Z	Figure No.
mm	mm	mm	mm	mm		N° de figura
4,00	16,0	4,00	75	0.5	3	2
4,00	16,0	4,00	75	1.0	3	2
4,00	20,0	4,00	100	0.5	3	2
4,00	20,0	4,00	100	1.0	3	2
5,00	25,0	5,00	75	0.5	3	2
5,00	25,0	5,00	75	1.0	3	2
5,00	30,0	5,00	100	0.5	3	2
5,00	30,0	5,00	100	1.0	3	2
6,00	25,0	6,00	75	0.5	3	2
6,00	25,0	6,00	75	1.0	3	2
6,00	30,0	6,00	100	0.5	3	2
6,00	30,0	6,00	100	1.0	3	2
8,00	30,0	8,00	75	0.5	3	2
8,00	30,0	8,00	75	1.0	3	2
8,00	35,0	8,00	100	0.5	3	2
8,00	35,0	8,00	100	1.0	3	2
10,0	45,0	10,0	100	0.5	3	2
10,0	45,0	10,0	100	1.0	3	2
10,0	60,0	10,0	150	0.5	3	2
10,0	60,0	10,0	150	1.0	3	2
12,0	45,0	12,0	100	0.5	3	2
12,0	45,0	12,0	100	1.0	3	2
12,0	60,0	12,0	150	0.5	4	2
12,0	60,0	12,0	150	1.0	4	2

Ordering Code
Código de orden
AL-RL3-04160475-R0.5
AL-RL3-04160475-R1.0
AL-RL3-042004100-R0.5
AL-RL3-042004100-R1.0
AL-RL3-05250575-R0.5
AL-RL3-05250575-R1.0
AL-RL3-053005100-R0.5
AL-RL3-053005100-B1.0
AL-RL3-06250675-B0.5
AL-RL3-06250675-R1.0
AL-RL3-063006100-R0.5
AL-RL3-063006100-R1.0
AL-RL3-08300875-R0.5
AL-RL3-08300875-R1.0
AL-RL3-083508100-R0.5
AL-RL3-083508100-R1.0
AL-RL3-104510100-B0.5
AL-RL3-104510100-R1.0
AL-RL3-106010150-B0.5
AL-RL3-106010150-B1.0
AL-RL3-124512100-R0.5
AL-RL3-124512100-R1.0
AL-RL3-126012150-R0.5
AL-RL3-126012150-R1.0

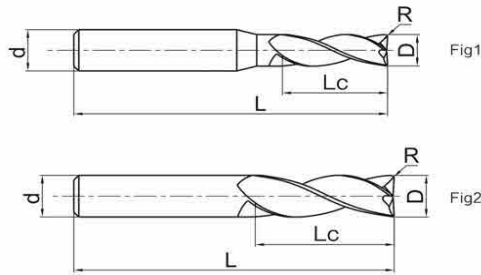
Aluminum Alloy, Super Bright High Efficient

Aleación de Aluminio, Súper Brillante de Alta Eficiencia

3 Flutes, Corner Radius, Long Flute Length (AL-RL3) / 3 Flautas, Radio De Esquina, Longitud De Flauta Larga (AL-RL3)



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	R mm	Z	Figure No. Nº de figura
14,0	45,0	14,0	100	0.5	3	2
14,0	45,0	14,0	100	1.0	3	2
14,0	45,0	14,0	100	2.0	3	2
14,0	55,0	14,0	150	0.5	3	2
14,0	55,0	14,0	150	1.0	3	2
14,0	55,0	14,0	150	2.0	3	2
16,0	60,0	16,0	150	0.5	3	2
16,0	60,0	16,0	150	1.0	3	2
16,0	60,0	16,0	150	2.0	3	2
16,0	60,0	16,0	150	3.0	3	2
18,0	60,0	18,0	150	0.5	3	2
18,0	60,0	18,0	150	1.0	3	2
18,0	60,0	18,0	150	2.0	3	2
18,0	60,0	18,0	150	3.0	3	2
20,0	60,0	20,0	150	0.5	3	2
20,0	60,0	20,0	150	1.0	3	2
20,0	60,0	20,0	150	2.0	3	2
20,0	60,0	20,0	150	3.0	3	2

Ordering Code Código de orden
AL-RL3-144514100-R0.5
AL-RL3-144514100-R1.0
AL-RL3-144514100-R2.0
AL-RL3-145514150-R0.5
AL-RL3-145514150-R1.0
AL-RL3-145514150-R2.0
AL-RL3-166016150-R0.5
AL-RL3-166016150-R1.0
AL-RL3-166016150-R2.0
AL-RL3-166016150-R3.0
AL-RL3-186018150-R0.5
AL-RL3-186018150-R1.0
AL-RL3-186018150-R2.0
AL-RL3-186018150-R3.0
AL-RL3-206020150-R0.5
AL-RL3-206020150-R1.0
AL-RL3-206020150-R2.0
AL-RL3-206020150-R3.0

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)									
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.2D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	13000	12000	10600	10000	9500	9280	7000	5600
					650	850	1430	1530	1670	2050	2800	3000	3150
					16000	13000	12000	10600	10000	9500	9280	7000	5600
					720	900	1200	1200	1500	1800	2225	2500	3000

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta 1 2 4 6 8 10 12 16 20								
N	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)									
	(<200HB) Copper alloy Aleación de cobre	ap≤0.5D ae≤1D	150 (60~350)	rotate speed (min-1) feed velocity (mm/ min)	16000	10000	9000	8000	7800	8000	6800	5000	4000
					450	570	960	1050	1300	1500	1620	1680	1800
					16000	10000	9000	8000	7800	8000	6800	5000	4000
					450	520	860	830	960	1240	1500	1550	1510

MM

Suitable for High-precision micro diameter pocket machining

Adecuado para mecanizado de cavidades de microdiámetro de alta precisión



Knife edge optimization, fine grinding, precise size.

Optimización del filo del cuchillo, pulido fino, tamaño preciso.

Long neck design avoid collisions with workpiece, Suitable for deep pocket milling of mold rib areas.

El diseño de cuello largo evita colisiones con la pieza de trabajo. Adecuado para fresado de cavidades profundas en áreas de nervaduras del molde.

TiN+TiSiN

High-performance TiSiN coating for high temperature and wear resistance.

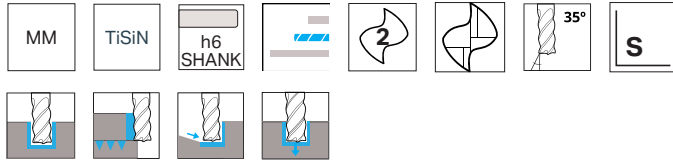
Recubrimiento TiSiN de alto rendimiento para alta temperatura y resistencia al desgaste.



Ultrafine grain carbide with excellent wear resistance and toughness.

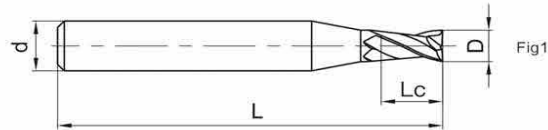
Carburo de grano ultrafino con excelente resistencia al desgaste y tenacidad.

2 Flutes, Square, Miniature Sizes (MM-S2) / 2 Flautas, Cuadradas, Tamaños Miniatura (MM-S2)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)
D	D
Tol	0 -0.015



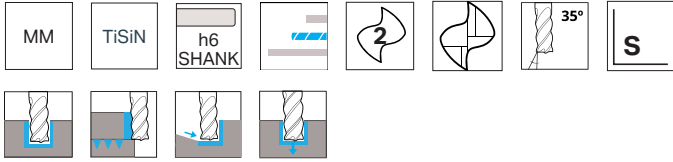
D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
0,30	0,60	4,00	50	2	1	MM-S2-0030060450
0,40	0,80	4,00	50	2	1	MM-S2-0040080450
0,50	1,00	4,00	50	2	1	MM-S2-005010450
0,60	1,20	4,00	50	2	1	MM-S2-0060120450
0,70	1,40	4,00	50	2	1	MM-S2-0070140450
0,80	1,60	4,00	50	2	1	MM-S2-0080160450
0,90	1,80	4,00	50	2	1	MM-S2-0090180450
1,00	2,00	4,00	50	2	1	MM-S2-01020450
1,10	2,00	4,00	50	2	1	MM-S2-011020450
1,20	2,50	4,00	50	2	1	MM-S2-0120250450
1,30	2,50	4,00	50	2	1	MM-S2-0130250450
1,40	3,00	4,00	50	2	1	MM-S2-014030450
1,50	3,00	4,00	50	2	1	MM-S2-015030450
1,60	3,50	4,00	50	2	1	MM-S2-0160350450

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.5D ae≤0.05D	90	rotate speed (min-1) feed velocity (mm/ min)	35830	31850	28660	23890	20470	17910	15920	14330
	(50HRC) Alloy Steel aleaciones	ap≤0.5D ae≤0.05D	70	rotate speed (min-1) feed velocity (mm/ min)	1150	1150	1150	1100	1110	1070	1110	1150
M	stainless steel Acero inoxidable	ap≤0.5D ae≤0.03D	60	rotate speed (min-1) feed velocity (mm/ min)	27870	24770	22290	18580	15920	13930	12380	11150
					840	840	850	820	800	780	820	850
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.5D ae≤0.05D	90	rotate speed (min-1) feed velocity (mm/ min)	23890	21230	19110	15920	13650	11940	10620	9550
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.5D ae≤0.03D	80	rotate speed (min-1) feed velocity (mm/ min)	760	760	760	730	740	720	740	760
					35830	31850	28660	23890	20470	17910	15920	14330
					1150	1150	1150	1100	1110	1070	1110	1150
					31850	28310	25480	21230	18200	15920	14150	12740
					830	850	820	760	800	860	910	940

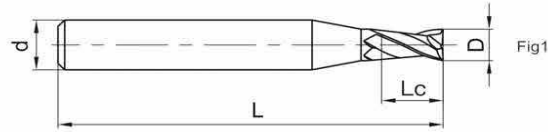
Steel, Cast iron

Acero, acero fundido

2 Flutes, Square, Miniature Sizes (MM-S2) / 2 Flautas, Cuadradas, Tamaños Miniatura (MM-S2)



P	•
M	•
K	•
N	•
S	•
H	•



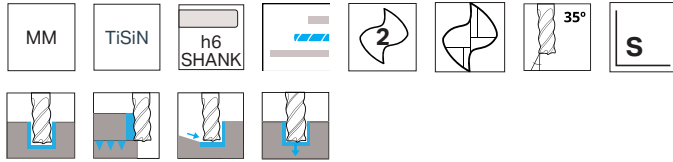
Unit Unidad	(mm)
D	D
Tol	0 -0.015



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
1,70	3.50	4,00	50	2	1	MM-S2-0170350450
1.80	4.00	4.00	50	2	1	MM-S2-018040450
1,90	4.00	4.00	50	2	1	MM-S2-019040450
2,00	4,00	4.00	50	2	1	MM-S2-02040450
2,10	4.00	4.00	50	2	1	MM-S2-021040450
2,20	4 50	4.00	50	2	1	MM-S2-0220450450
2.30	4.50	4.00	50	2	1	MM-S2-0230450450
2.40	5.00	4 00	50	2	1	MM-S2-024050450
2,50	5.00	4.00	50	2	1	MM-S2-025050450
2,60	5.00	4 00	50	2	1	MM-S2_096050450
2.70	5.50	4.00	50	2	1	MM-S2.0270550450
2,80	5,50	4.00	50	2	1	MM-S2-0280550450
2.90	6.00	4.00	50	2	1	MM-S2-029060450
3,00	6.00	4.00	50	2	1	MM-S2-03060450

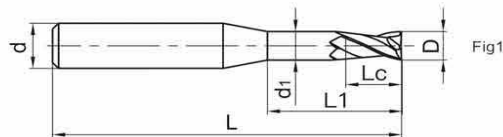
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta
					0.8 0.9 1.0 1.2 1.4 1.6 1.8 2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.3D	50	rotate speed (min-1) feed velocity (mm/ min)	19900 17690 15920 13270 11370 9950 8850 7960
	(50HRC) Alloy Steel aleaciones	ap≤0.1D	40	rotate speed (min-1) feed velocity (mm/ min)	400 390 380 370 390 400 410 400
M	stainless steel Acero inoxidable	ap≤0.2D	40	rotate speed (min-1) feed velocity (mm/ min)	15920 14150 12740 10620 9100 7960 7080 6370
					250 250 250 250 270 290 300 290
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.3D	40	rotate speed (min-1) feed velocity (mm/ min)	13930 12380 11150 9290 7960 6970 6190 5570
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.2D	30	rotate speed (min-1) feed velocity (mm/ min)	250 250 250 240 250 260 270 270
					15920 14150 12740 10620 9100 7960 7080 6370
					320 310 310 300 310 320 330 320
					11940 10620 9550 7960 6820 5970 5310 4780
					210 210 210 210 220 230 230 230

2 Flutes, Square, Miniature Sizes with Long Neck (MM-SN2) / 2 Flautas, Cuadradas, Tamaños Miniatura con Cuello Largo (MM-SN2)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)
D	D
Tol	0 -0.015



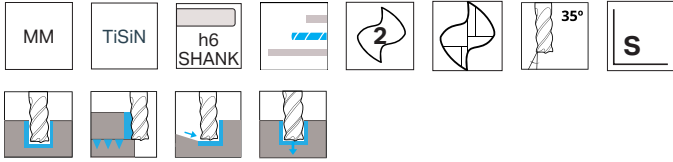
D	Lc	L1	d1	d	L	Z	Figure No. N° de figura	Ordering Code Código de orden
0.50	0.70	4.00	0.45	4.00	50	2	1	MM-SN2-0050070450 (L1=4)
0.50	0.70	6.00	0.45	4.00	50	2	1	MM-SN2-0050070450 (L1=6)
0.50	0.70	8.00	0.45	4.00	50	2	1	MM-SN2-0050070450 (L1=8)
0.80	1.20	4.00	0.75	4.00	50	2	1	MM-SN2-0080120450 (L1=4)
0.80	1.20	6.00	0.75	4.00	50	2	1	MM-SN2-0080120450 (L1=6)
0.80	1.20	8.00	0.75	4.00	50	2	1	MM-SN2-0080120450 (L1=8)
0.80	1.20	10.0	0.75	4.00	50	2	1	MM-SN2-0080120450 (L1=10)
1.00	1.50	4.00	0.95	4.00	50	2	1	MM-SN2-010150450 (L1=4)
1.00	1.50	6.00	0.95	4.00	50	2	1	MM-SN2-010150450 (L1=6)
1.00	1.50	8.00	0.95	4.00	50	2	1	MM-SN2-010150450 (L1=8)
1.00	1.50	10.0	0.95	4.00	50	2	1	MM-SN2-010150450 (L1=10)
1.00	1.50	12.0	0.95	4.00	50	2	1	MM-SN2-010150450 (L1=12)
1.00	1.50	14.0	0.95	4.00	50	2	1	MM-SN2-010150450 (L1=14)

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.5D ae≤0.05D	90	rotate speed (min-1) feed velocity (mm/ min)	35830	31850	28660	23890	20470	17910	15920	14330
	(50HRC) Alloy Steel aleaciones	ap≤0.5D ae≤0.05D	70	rotate speed (min-1) feed velocity (mm/ min)	1150	1150	1150	1100	1110	1070	1110	1150
M	stainless steel Acero inoxidable	ap≤0.5D ae≤0.03D	60	rotate speed (min-1) feed velocity (mm/ min)	27870	24770	22290	18580	15920	13930	12380	11150
					840	840	850	820	800	780	820	850
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.5D ae≤0.05D	90	rotate speed (min-1) feed velocity (mm/ min)	23890	21230	19110	15920	13650	11940	10620	9550
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.5D ae≤0.03D	80	rotate speed (min-1) feed velocity (mm/ min)	760	760	760	730	740	720	740	760
					35830	31850	28660	23890	20470	17910	15920	14330
					1150	1150	1150	1100	1110	1070	1110	1150
					31850	28310	25480	21230	18200	15920	14150	12740
					830	850	820	760	800	860	910	940

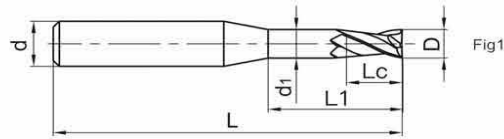
Steel, Cast iron

Acero, acero fundido

2 Flutes, Square, Miniature Sizes With Long Neck (MM-SN2) / 2 Flautas, Cuadradas, Tamaños Miniatura Con Cuello Largo (MM-SN2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit	(mm)
Unidad	
D	D
Tol	0 -0.015

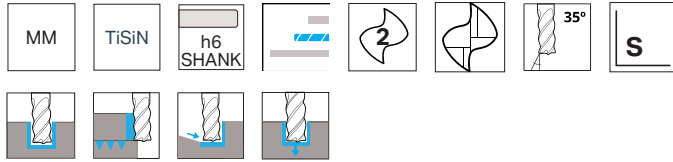


D	Lc	L1	d1	d	L	Z	Figure No. N° de figura
mm	mm	mm	mm	mm	mm		
1,20	1,80	6,00	1,15	4,00	50	2	1
1,20	1,80	8,00	1,15	4,00	50	2	1
1,20	1,80	10,0	1,15	4,00	50	2	1
1,20	1,80	12,0	1,15	4,00	50	2	1
1,50	2,30	6,00	1,45	4,00	50	2	1
1,50	2,30	8,00	1,45	4,00	50	2	1
1,50	2,30	10,0	1,45	4,00	50	2	1
1,50	2,30	12,0	1,45	4,00	50	2	1
1,50	2,30	14,0	1,45	4,00	50	2	1
2,00	3,00	6,00	1,95	4,00	50	2	1
2,00	3,00	8,00	1,95	4,00	50	2	1
2,00	3,00	10,0	1,95	4,00	50	2	1
2,00	3,00	12,0	1,95	4,00	50	2	1
2,00	3,00	14,0	1,95	4,00	50	2	1
2,00	3,00	16,0	1,95	18,0	100	2	2

Ordering Code Código de orden
MM-SN2-0120180450 (L1=6)
MM-SN2-0120180450 (L1=8)
MM-SN2-0120180450 (L1=10)
MM-SN2-0120180450 (L1=12)
MM-SN2-0150230450 (L1=6)
MM-SN2-0150230450 (L1=8)
MM-SN2-0150230450 (L1=10)
MM-SN2-0150230450 (L1=12)
MM-SN2-0150230450 (L1=14)
MM-SN2-0150230450 (L1=16)
MM-SN2-02030450 (L1=6)
MM-SN2-02030450 (L1=8)
MM-SN2-02030450 (L1=10)
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MM-SN2-02030450 (L1=14)
MM-SN2-02030450 (L1=16)

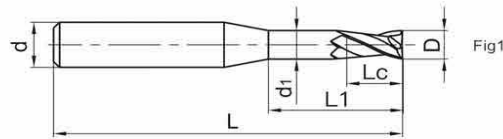
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.3D	50	rotate speed (min-1) feed velocity (mm/ min)	19900	17690	15920	13270	11370	9950	8850	7960
	(50HRC) Alloy Steel aleaciones	ap≤0.1D	40	rotate speed (min-1) feed velocity (mm/ min)	400	390	380	370	390	400	410	400
					15920	14150	12740	10620	9100	7960	7080	6370
M	stainless steel Acero inoxidable	ap≤0.2D	40	rotate speed (min-1) feed velocity (mm/ min)	250	250	250	250	270	290	300	290
					13930	12380	11150	9290	7960	6970	6190	5570
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.3D	40	rotate speed (min-1) feed velocity (mm/ min)	250	250	250	240	250	260	270	270
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.2D	30	rotate speed (min-1) feed velocity (mm/ min)	15920	14150	12740	10620	9100	7960	7080	6370
					320	310	310	300	310	320	330	320
					11940	10620	9550	7960	6820	5970	5310	4780
					210	210	210	210	220	230	230	230

2 Flutes, Square, Miniature Sizes with Long Neck (MM-SN2) / 2 Flautas, Cuadradas, Tamaños Miniatura con Cuello Largo (MM-SN2)



P	•
M	•
K	•
N	
S	
H	

Unit Unidad	(mm)
D	D
Tol	0 -0.015



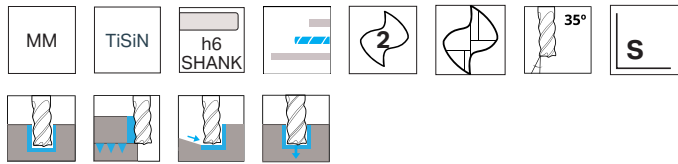
D	Lc	L1	d1	d	L	Z	Figure No. Nº de figura	Ordering Code Código de orden
mm	mm	mm	mm	mm	mm			
2,50	3,70	8,00	2,40	4,00	50	2	1	MM-SN2-0250370450 (L1=8)
2,50	3,70	10,0	2,40	4,00	50	2	1	MM-SN2-0250370450 (L1=10)
2,50	3,70	12,0	2,40	4,00	50	2	1	MM-SN2-0250370450 (L1=12)
2,50	3,70	14,0	2,40	4,00	50	2	1	MM-SN2-0250370450 (L1=14)
2,50	3,70	16,0	2,40	4,00	50	2	1	MM-SN2-0250370460 (L1=16)
2,50	3,70	18,0	2,40	4,00	50	2	1	MM-SN2-0250370460 L1 = 18)
2,50	3,70	20,0	2,40	4,00	50	2	1	MM-SN2_0250370460 / 1=20)
3,00	4,50	6,00	2,85	4,00	50	2	1	MM-SN2.030450650 (L1=6)
3,00	4,50	8,00	2,85	4,00	50	2	1	MM-SN2.030450650 / 11=8)
3,00	4,50	10,0	2,85	4,00	50	2	1	MM-SN2-030450650 (L1=10)
3,00	4,50	12,0	2,85	4,00	50	2	1	MM-SN2-030450650 (L1 =12)

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.5D ae≤0.05D	90	rotate speed (min-1) feed velocity (mm/ min)	35830	31850	28660	23890	20470	17910	15920	14330
	(50HRC) Alloy Steel aleaciones	ap≤0.5D ae≤0.05D	70	rotate speed (min-1) feed velocity (mm/ min)	1150	1150	1150	1100	1110	1070	1110	1150
M	stainless steel Acero inoxidable	ap≤0.5D ae≤0.03D	60	rotate speed (min-1) feed velocity (mm/ min)	27870	24770	22290	18580	15920	13930	12380	11150
					840	840	850	820	800	780	820	850
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.5D ae≤0.05D	90	rotate speed (min-1) feed velocity (mm/ min)	23890	21230	19110	15920	13650	11940	10620	9550
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.5D ae≤0.03D	80	rotate speed (min-1) feed velocity (mm/ min)	760	760	760	730	740	720	740	760
					35830	31850	28660	23890	20470	17910	15920	14330
					1150	1150	1150	1100	1110	1070	1110	1150
					31850	28310	25480	21230	18200	15920	14150	12740
					830	850	820	760	800	860	910	940

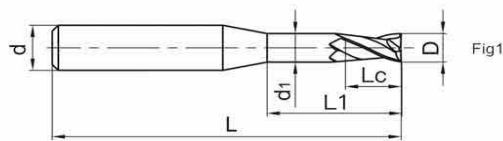
Steel, Cast iron

Acero, acero fundido

2 Flutes, Square, Miniature Sizes With Long Neck (MM-SN2) / 2 Flautas, Cuadradas, Tamaños Miniatura Con Cuello Largo (MM-SN2)



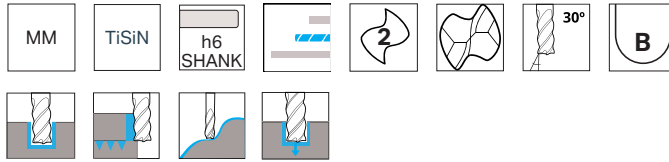
P	•
M	•
K	•
N	•
S	•
H	•



D	Lc	L1	d1	d	L	Z	Figure No. N° de figura	Ordering Code Código de orden
mm	mm	mm	mm	mm	mm			
3.00	4.50	14.0	2.85	6.00	60	2	1	MM-SN2-030450660 (L1=14)
3.00	4.50	16.0	2.85	6.00	60	2	1	MM-SN2-030450660 (L1=16)
3.00	4.50	18.0	2.85	6.00	60	2	1	MM-SN2-030450660 (L1=18)
3.00	4.50	20.0	2.85	6.00	60	2	1	MM-SN2-030450660 (L1=20)
4.00	6.00	12.0	3.85	6.00	50	2	1	MM-SN2-04060650 (L1=12)
4.00	6.00	16.0	3.85	6.00	60	2	1	MM-SN2-04060660 (L1=16)
4.00	6.00	20.0	3.85	6.00	60	2	1	MM-SN2-04060660 (L1=20)
4.00	6.00	25.0	3.85	6.00	60	2	1	MM-SN2-04060660 (L1=25)
5.00	7.50	16.0	4.85	6.00	60	2	1	MM-SN2-050750660 (L1=16)
5.00	7.50	25.0	4.85	6.00	70	2	1	MM-SN2-050750670 (L1=25)

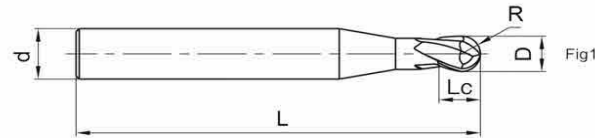
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta							
					0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.3D	50	rotate speed (min-1) feed velocity (mm/ min)	19900	17690	15920	13270	11370	9950	8850	7960
	(50HRC) Alloy Steel aleaciones	ap≤0.1D	40	rotate speed (min-1) feed velocity (mm/ min)	400	390	380	370	390	400	410	400
					15920	14150	12740	10620	9100	7960	7080	6370
M	stainless steel Acero inoxidable	ap≤0.2D	40	rotate speed (min-1) feed velocity (mm/ min)	250	250	250	250	270	290	300	290
					13930	12380	11150	9290	7960	6970	6190	5570
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.3D	40	rotate speed (min-1) feed velocity (mm/ min)	250	250	250	240	250	260	270	270
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.2D	30	rotate speed (min-1) feed velocity (mm/ min)	15920	14150	12740	10620	9100	7960	7080	6370
					320	310	310	300	310	320	330	320
					11940	10620	9550	7960	6820	5970	5310	4780
					210	210	210	210	220	230	230	230

2 Flutes, Ballnose, Miniature Sizes (MM-B2) / 2 Flautas, Punta Esférica, Tamaños Miniatura (MM-B2)



Unit Unidad	(mm)
R	R
Tol	± 0.015

P	•
M	•
K	•
N	•
S	•
H	•



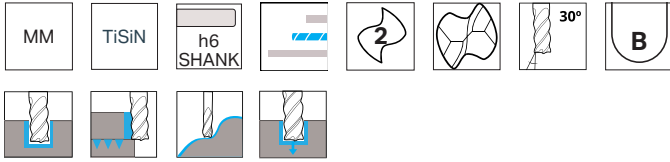
D	Lc	d	L	R	Z	Figure No. N° de figura	Ordering Code Código de orden
0,30	0,50	4,00	50	0,15	2	1	MM-B2-0030050450-R0.15
0,40	0,60	4,00	50	0,20	2	1	MM-B2-0040060450-R0.2
0,50	0,80	4,00	50	0,25	2	1	MM-B2-0050080450-R0.25
0,60	0,90	4,00	50	0,30	2	1	MM-B2-0060090450-R0.3
0,70	1,00	4,00	50	0,35	2	1	MM-B2-007010450-R0.35
0,80	1,20	4,00	50	0,40	2	1	MM-B2-0080120450-R0.4
0,90	1,30	4,00	50	0,45	2	1	MM-B2-0090130450-R0.45
1,00	1,50	4,00	50	0,50	2	1	MM-B2-010150450-R0.5
1,20	1,80	4,00	50	0,60	2	1	MM-B2-0120180450-R0.6
1,40	2,00	4,00	50	0,70	2	1	MM-B2-014020450-R0.7
1,50	2,30	4,00	50	0,75	2	1	MM-B2-0150230450-R0.75
1,60	2,50	4,00	50	0,80	2	1	MM-B2-0160250450-R0.8
1,80	2,70	4,00	50	0,90	2	1	MM-B2-0180270450-R0.9
2,00	3,00	4,00	50	1,00	2	1	MM-B2-02030450-R1.0
2,50	3,70	4,00	100	1,25	2	2	MM-B2-0250370450-R1.25
3,00	4,50	4,00	100	1,50	2	2	MM-B2-030450450-R1.5

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					0.6	0.8	1.0	1.2	1.6	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.02D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	28660	23890	20470	21230	15920	12740
	(50HRC) Alloy Steel aleaciones	ap≤0.01D ae≤0.01D	70	rotate speed (min-1) feed velocity (mm/ min)	1150	1100	1110	1490	1430	1400
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	22290	18580	15920	18580	13930	11150
					850	820	800	1190	1170	1160
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	19110	15920	13650	17250	12940	10350
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.2D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	760	730	740	1210	1160	1140
					28660	23890	20470	21230	15920	12740
					1150	1100	1110	1490	1430	1400
					25480	21230	18200	18580	13930	11150
					820	760	800	1190	1170	1160

Steel, Cast iron

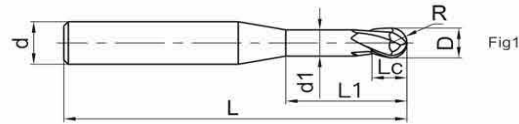
Acero, acero fundido

2 Flutes, Ballnose, Miniature Sizes With Long Neck (MM-BN2) / 2 Flautas, Punta Esférica, Tamaños Miniatura Con Cuello Largo (MM-BN2)



P	•
M	•
K	•
N	•
S	•
H	•

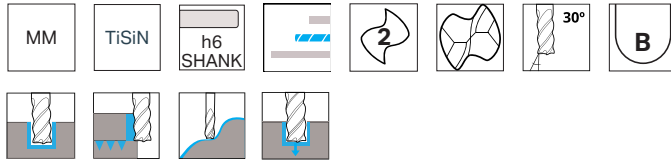
Unit Unidad	(mm)
R	R
Tol	± 0.015



D	Lc	L1	d1	d	L	R	Z	Figure No. N° de figura	Ordering Code Código de orden
mm	mm	mm	mm	mm	mm	mm			
0.50	0.70	4.00	0.45	4.00	50	0.25	2	1	MM-BN2-0050070450-R0.25 (L1=4)
0.50	0.70	6.00	0.45	4.00	50	0.25	2	1	MM-BN2-0050070450-R0.25 (L1=6)
0.60	0.90	4.00	0.55	4.00	50	0.30	2	1	MM-BN2-0060090450-R0.3 (L1=4)
0.60	0.90	6.00	0.55	4.00	50	0.30	2	1	MM-BN2-0060090450-R0.3 (L1=6)
0.60	0.90	8.00	0.55	4.00	50	0.30	2	1	MM-BN2-0060090450-R0.3 (L1=8)
0.80	1.20	4.00	0.75	4.00	50	0.40	2	1	MM-BN2-0080120450-R0.4 (L1=4)
0.80	1.20	6.00	0.75	4.00	50	0.40	2	1	MM-BN2-0080120450-R0.4 (L1=6)
0.80	1.20	8.00	0.75	4.00	50	0.40	2	1	MM-BN2-0080120450-R0.4 (L1=8)
0.80	1.20	10.0	0.75	4.00	50	0.40	2	1	MM-BN2-0080120450-R0.4 (L1=10)
1.00	1.50	4.00	0.95	4.00	50	0.50	2	1	MM-BN2-010150450-R0.5 (L1=4)
1.00	1.50	6.00	0.95	4.00	50	0.50	2	1	MM-BN2-010150450-R0.5 (L1=6)
1.00	1.50	8.00	0.95	4.00	50	0.50	2	1	MM-BN2-010150450-R0.5 (L1=8)
1.00	1.50	10.0	0.95	4.00	50	0.50	2	1	MM-BN2-010150450-R0.5 (L1=10)
1.00	1.50	12.0	0.95	4.00	50	0.50	2	1	MM-BN2-010150450-R0.5 (L1=12)

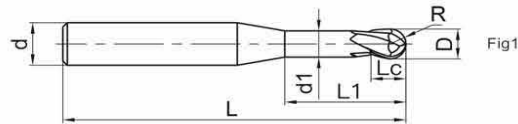
ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					0.6	0.8	1.0	1.2	1.6	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.02D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	42460 1440	31850 1460	25480 1430	21230 1490	15920 1430	12740 1400
	(50HRC) Alloy Steel aleaciones	ap≤0.01D ae≤0.01D	70	rotate speed (min-1) feed velocity (mm/ min)	37150 1190	27870 1170	22290 1160	18580 1190	13930 1170	11150 1160
	stainless steel Acero inoxidable	ap≤0.02D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	34500 1170	25880 1190	20700 1160	17250 1210	12940 1160	10350 1140
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.02D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	42460 1440	31850 1460	25480 1430	21230 1490	15920 1430	12740 1400
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.02D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	37150 1190	27870 1170	22290 1160	18580 1190	13930 1170	11150 1160

2 Flutes, Ballnose, Miniature Sizes With Long Neck (MM-BN2) / 2 Flautas, Punta Esférica, Tamaños Miniatura Con Cuello Largo (MM-BN2)



Unit Unidad	(mm)
R	R
Tol	± 0.015

P	•
M	•
K	•
N	
S	
H	



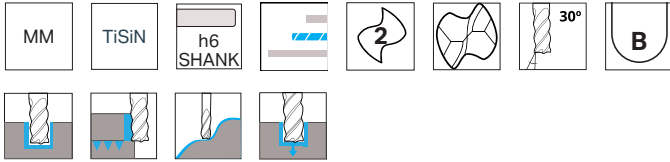
D	Lc	L1	d1	d	L	R	Z	Figure No. Nº de figura	Ordering Code Código de orden
1.20	1.80	6.00	1.15	4.00	50	0.60	2	1	MM-BN2-0120180450-R0.6 (L1=6)
1.20	1.80	8.00	1.15	4.00	50	0.60	2	1	MM-BN2-0120180450-R0.6 (L1=8)
1.20	1.80	12.0	1.15	4.00	50	0.60	2	1	MM-BN2-0120180450-R0.6 (L1=12)
1.20	1.80	16.0	1.15	4.00	50	0.60	2	1	MM-BN2-0120180450-B0.6(L1=16)
1.50	2.30	8.00	1.45	4.00	50	0.75	2	1	MM-BN2-0150230450-R0.75 (L1=8)
1.50	2.30	12.0	1.45	4.00	50	0.75	2	1	MM-BN2-0150230450-R0.75 (L1=12)
1.50	2.30	16.0	1.45	4.00	50	0.75	2	1	MM-BN2_0150230450-B0 75(L1=16)
2.00	3.00	6.00	1.95	4.00	50	1.00	2	1	MM-BN2-02030450-R1.0 (L1=6)
2.00	3.00	8.00	1.95	4.00	50	1.00	2	1	MM-BN2-02030450-B1.0 /L1=8)
2.00	3.00	10.0	1.95	4.00	50	1.00	2	1	MM-BN2-02030450-R1.0 (L1=10)
2.00	3.00	12.0	1.95	4.00	50	1.00	2	1	MM-BN2-02030450-B1.0 (L1=12)
2.00	3.00	16.0	1.95	4.00	50	1.00	2	1	MM-BN2-02030450-B1.0 /L1=16)
2.00	3.00	20.0	1.95	4.00	50	1.00	2	1	MM-BN2-02030450-R1.0 /11=20)

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					0.6	0.8	1.0	1.2	1.6	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.02D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	42460	31850	25480	21230	15920	12740
					1440	1460	1430	1490	1430	1400
	(50HRC) Alloy Steel aleaciones	ap≤0.01D ae≤0.01D	70	rotate speed (min-1) feed velocity (mm/ min)	37150	27870	22290	18580	13930	11150
					1190	1170	1160	1190	1170	1160
M	stainless steel Acero inoxidable	ap≤0.2D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	34500	25880	20700	17250	12940	10350
					1170	1190	1160	1210	1160	1140
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.2D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	42460	31850	25480	21230	15920	12740
					1440	1460	1430	1490	1430	1400
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.2D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	37150	27870	22290	18580	13930	11150
					1190	1170	1160	1190	1170	1160

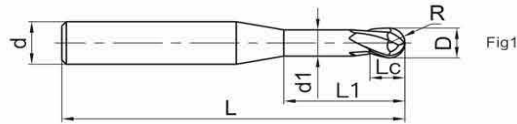
Steel, Cast iron

Acero, acero fundido

2 Flutes, Ballnose, Miniature Sizes With Long Neck (MM-BN2) / 2 Flautas, Punta Esférica, Tamaños Miniatura Con Cuello Largo (MM-BN2)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)
R	R
Tol	± 0.015

D	Lc	L1	d1	d	L	R	Z	Figure No. N° de figura
mm	mm	mm	mm	mm	mm	mm		
2,50	3,70	8,00	2,40	4,00	50	1,25	2	1
2,50	3,70	12,0	2,40	4,00	50	1,25	2	1
2,50	3,70	16,0	2,40	4,00	60	1,25	2	1
2,50	3,70	20,0	2,40	4,00	60	1,25	2	1
3,00	4,50	8,00	2,85	6,00	50	1,50	2	1
3,00	4,50	10,0	2,85	6,00	50	1,50	2	1
3,00	4,50	12,0	2,85	6,00	50	1,50	2	1
3,00	4,50	16,0	2,85	6,00	60	1,50	2	1
3,00	4,50	20,0	2,85	6,00	60	1,50	2	1
4,00	6,00	10,0	3,85	6,00	60	2,00	2	1
4,00	6,00	16,0	3,85	6,00	60	2,00	2	1
4,00	6,00	20,0	3,85	6,00	60	2,00	2	1
4,00	6,00	25,0	3,85	6,00	60	2,00	2	1
5,00	7,50	16,0	4,85	6,00	60	2,50	2	1
5,00	7,50	25,0	4,85	6,00	70	2,50	2	2

Ordering Code Código de orden
MM-BN2-0250370450-R1.25 (L1=8)
MM-BN2-0250370450-R1.25 (L1=12)
MM-BN2-0250370460-R1.25 (L1=16)
MM-BN2-0250370460-R1.25 (L1=20)
MM-BN2-030450650-R1.5 (L1=8)
MM-BN2-030450650-R1.5 (L1=10)
MM-BN2-030450650-R1.5 (L1=12)
MM-BN2-030450660-R1.5 (L1=16)
MM-BN2-030450660-R1.5 (L1=20)
MM-BN2-04060660-R2.0 (L1=10)
MM-BN2-04060660-R2.0 (L1=16)
MM-BN2-04060660-R2.0 (L1=20)
MM-BN2-04060660-R2.0 (L1=25)
MM-BN2-050750660-R2,5 (L1=16)
MM-BN2-050750670-R2.5 (L1=25)

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					0.6	0.8	1.0	1.2	1.6	2.0
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤0.02D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	42460 1440	31850 1460	25480 1430	21230 1490	15920 1430	12740 1400
	(50HRC) Alloy Steel aleaciones	ap≤0.01D ae≤0.01D	70	rotate speed (min-1) feed velocity (mm/ min)	37150 1190	27870 1170	22290 1160	18580 1190	13930 1170	11150 1160
	stainless steel Acero inoxidable	ap≤0.02D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	34500 1170	25880 1190	20700 1160	17250 1210	12940 1160	10350 1140
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤0.02D ae≤0.02D	80	rotate speed (min-1) feed velocity (mm/ min)	42460 1440	31850 1460	25480 1430	21230 1490	15920 1430	12740 1400
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.02D ae≤0.02D	70	rotate speed (min-1) feed velocity (mm/ min)	37150 1190	27870 1170	22290 1160	18580 1190	13930 1170	11150 1160

TMR/EMR

Rough processing for steel and cast iron material

Procesamiento desbaste de material de acero y hierro fundido.



High-toughness ultra-fine cemented carbide substrate can be easily achieved even with heavy-duty rough machining.

Se puede lograr fácilmente un sustrato de carburo cementado ultrafino de alta tenacidad incluso con mecanizado en desbaste de alta resistencia.

Waveform design for P-type materials, properly control the size of chips, improve the life and stability of roughing tools.

Diseño de forma de onda para materiales tipo P, controla adecuadamente el tamaño de las virutas, mejora la vida útil y la estabilidad de las herramientas de desbaste.



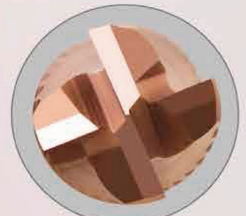
Special R-angle waveform cutting edge, stress concentration, suppression of collapse, stable processing.

Filo especial con forma de onda en ángulo R, concentración de tensión, supresión del colapso, procesamiento estable.

TMP
Low-Carbon Steel
Acero bajo en carbono



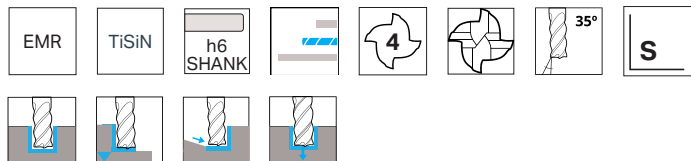
EMR
Hard Steel
Acero duro



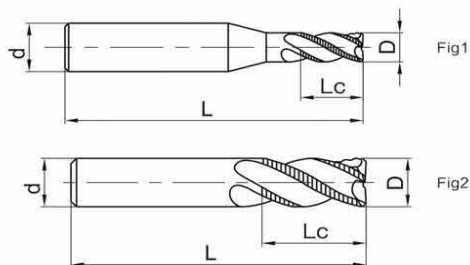
Steel, Cast iron

Acero, acero fundido

4 Flutes, Square, for Roughing Machining (TMR-S4) / 4 Flautas, Cuadradas, Para Mecanizado De Desbaste (TMR-S4)



P	•
M	•
K	•
N	•
S	•
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02

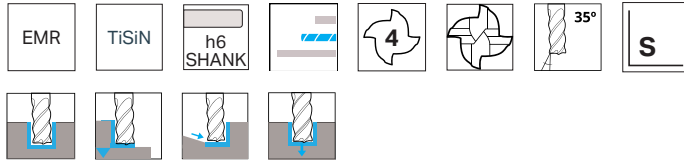


D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura
6,00	16,0	6,00	50	4	2
8,00	20,0	8,00	60	4	2
10,0	25,0	10,0	75	4	2
12,0	30,0	12,0	75	4	2
14,0	30,0	14,0	75	4	2
16,0	45,0	16,0	100	4	2
18,0	45,0	18,0	100	4	2
20,0	45,0	20,0	100	4	2

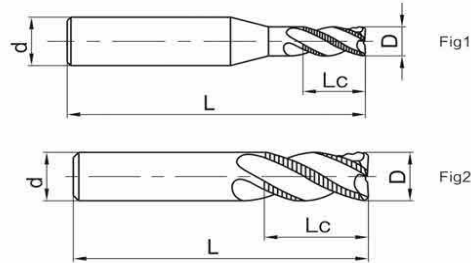
Ordering Code Código de orden
TMB-S4-06160650
TMR-S4-08200860
TMR-S4-10251075
TMR-S4-12301275
TMR-S4-14301475
TMR-S4-164516100
TMR-S4-184518100
TMR-S4-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	ap≤1D ae≤0.2D	140	rotate speed (min-1) feed velocity (mm/ min)	7430	5570	4460	3720	2790	2230
	(50HRC) Alloy Steel aleaciones	ap≤1D ae≤0.12D	110	rotate speed (min-1) feed velocity (mm/ min)	1250	1250	1250	1190	1120	980
M	stainless steel Acero inoxidable	ap≤1D ae≤0.2D	130	rotate speed (min-1) feed velocity (mm/ min)	5840	4380	3500	2920	2190	1750
					700	700	700	700	700	630
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1D ae≤0.02D	140	rotate speed (min-1) feed velocity (mm/ min)	6900	5180	4140	3450	2590	2070
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤1D ae≤0.12D	130	rotate speed (min-1) feed velocity (mm/ min)	990	990	990	990	930	830
K	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1.5D ae≤0.3D	350	rotate speed (min-1) feed velocity (mm/ min)	18580	13930	11150	9290	6970	5570
	(<200HB) Copper alloy Aleación de cobre	ap≤1.5D ae≤0.3D	300	rotate speed (min-1) feed velocity (mm/ min)	4460	4460	4460	4460	4460	4460
					15920	11940	9550	7960	5970	4780
					3500	3340	3440	3190	3110	3060

4 Flutes, Square, for Roughing Machining (EMR-S4) / 4 Flautas, Cuadradas, Para Mecanizado De Desbaste (EMR-S4)



P	•
M	•
K	•
N	
S	
H	•



Unit Unidad	(mm)	
D	D ≤ 12	D > 12
Tol	0 -0.015	0 -0.02



D mm	Lc mm	d mm	L mm	Z	Figure No. N° de figura	Ordering Code Código de orden
6,00	16,0	6,00	50	4	2	EMR-S4-06160650
8,00	20,0	8,00	60	4	2	EMR-S4-08200860
10,0	25,0	10,0	75	4	2	EMB-S4-10251075
12,0	30,0	12,0	75	4	2	EMR-S4-12301275
14,0	30,0	14,0	75	4	2	EMB-S4-14301475
16,0	45,0	16,0	100	4	2	EMB-S4-164516100
18,0	45,0	18,0	100	4	2	EMR-S4-184518100
20,0	45,0	20,0	100	4	2	EMR-S4-204520100

ISO	Workpiece Material Material de trabajo	(mm) Depth of cut Profundidad del corte	Vc m/min	Rotate Speed Feed Velocity Velocidad de rotación Velocidad de avance	Tool Diameter (mm) Diámetro de la herramienta					
					6	8	10	12	16	20
P	(<45HRC) Carbon steel alloy steel Acero de carbono y aleaciones	aps1D	80	rotate speed (min-1) feed velocity (mm/ min)	4250	3190	2550	2120	1590	1270
	(50HRC) Alloy Steel aleaciones	ap≤0.5D	60	rotate speed (min-1) feed velocity (mm/ min)	760	700	660	640	700	710
					3190	2390	1910	1590	1190	960
M	stainless steel Acero inoxidable	ap≤0.5D	55	rotate speed (min-1) feed velocity (mm/ min)	380	380	380	380	330	310
					2920	2190	1750	1460	1100	880
					350	350	350	350	310	280
K	(<32HRC) Gray cast iron, nodular cast iron / Hierro de fundición gris, hierro de fundición nodular	ap≤1.D	55	rotate speed (min-1) feed velocity (mm/ min)	2920	2190	1750	1460	1100	880
	(35-45HRC) High alloy cast iron Fundición de alta aleación	ap≤0.8D	55	rotate speed (min-1) feed velocity (mm/ min)	370	370	360	350	310	280
					2920	2190	1750	1460	1100	880
K	(S≤12%) Forging and casting aluminum alloy / Aleación de aluminio para forjado y fundición	ap≤1D	180	rotate speed (min-1) feed velocity (mm/ min)	350	350	350	320	290	260
	(<200HB) Copper alloy Aleación de cobre	ap≤1D	160	rotate speed (min-1) feed velocity (mm/ min)	9550	7170	5730	4780	3580	2870
					1910	1720	1610	1530	1860	1830
					8490	6370	5100	4250	3190	2550
					1530	1400	1330	1270	1400	1430