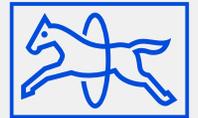


PFERD



TOOLS



Solid carbide tools

Performance. Productivity. Precision.

[pferd.com](https://www.pferd.com)

Solid carbide tools

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Solid carbide tools

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Performance Aluminum solid carbide end mills

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Universal solid carbide drills

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Innovative by Tradition

PFERD TOOLS is synonymous with high-quality, precise and innovative tools with the wow factor. We've been developing solutions for work on surfaces and for cutting and machining materials since 1799.

We have a global presence and are there for you whenever you need us in more than 100 countries, both on site and digitally. With our innovative strength and expertise, we pursue a clear mission: to provide solutions that make a real difference to you and your projects.



Solid carbide tools

Highlights from the PFERD TOOLS range

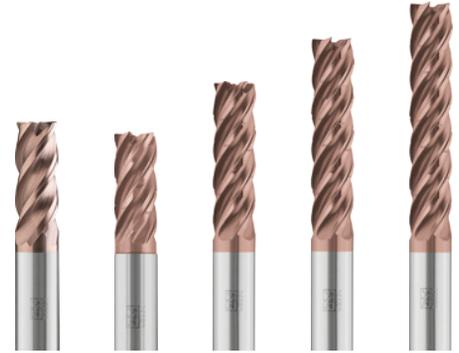


Performance Stainless solid carbide end mills

By combining a material-specific tool geometry and state-of-the-art coatings, the Performance Stainless solid carbide end mills are ideal for machining stainless steel and titanium alloys. These high-performance tools have been optimized for both conventional and dynamic milling to ensure a more reliable process and higher productivity when used on materials that are difficult to machine.

Advantages:

- Optimum temperature control when working on materials that are difficult to machine.
- Optimized helix angle for improved chip evacuation.
- Variable pitch and variable helix angle for low-vibration machining and smooth milling.



Performance Aluminum solid carbide end mills

The material-specific geometry of our solid carbide end mills from the Performance Aluminum Line has been optimized for use in the most demanding aluminum machining scenarios. These high-performance tools are designed for a variety of applications, from roughing to finishing. They can also be used for dynamic milling and in large overhangs and deep cavities, depending on the specific type.

Advantages:

- Large polished chip channels for optimum chip control.
- Increased process reliability at high cutting speeds.
- Variable pitch for low-vibration machining with smooth milling.



Universal solid carbide drills

Solid carbide drills from the Universal Line are designed for the most common materials such as steel, stainless steel, cast iron and non-ferrous metals. To achieve the highest performance, the surface treatment is tailored to each specific drill.

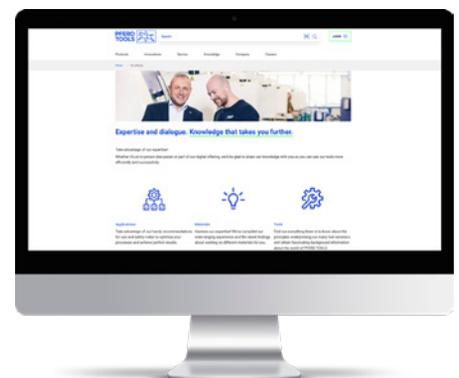
Advantages:

- Double margin flute for increased stability and high-quality bores.
- Internal coolant supply for increased tool life and controlled chip removal.
- State-of-the-art coatings.



Find additional in-depth information online

Scan the QR code to find out a wide range of tool and application knowledge relating to PFERD TOOLS' high-quality tools and their huge variety of materials.



Solid carbide tools

General information



PFERD TOOLS solid carbide tools

PFERD TOOLS supplies cutting tools for all of the most common stationary applications. PFERD TOOLS solid carbide mills are suitable for a wide range of milling operations on lathes and milling machines, and in automated centers. The tools' optimum stock removal rate ensures high productivity.



All the benefits to you at a glance:

- The highest production and quality standards due to precise micro and macro geometry together with tungsten carbide optimized for specific applications.
- High productivity due to optimum stock removal rate.

Comprehensive expertise at all levels



Innovations made in Europe

In our innovative centres of expertise for surface treatment and coatings, located in Germany, Italy and Switzerland, we develop and manufacture solid carbide tools that make a real difference. Our equipment currently includes 93 state-of-the-art CNC tool grinding machines.

Premium quality without compromises

When it comes to the quality of our solid carbide tools, we don't leave anything to chance. We use state-of-the-art measuring equipment to ensure super-accurate tolerances down to the last micrometer, which enables us to meet and exceed the highest demands for process reliability, productivity and precision.

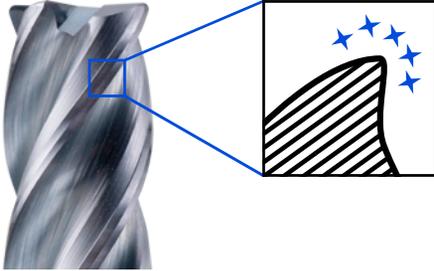
The right choice for every application

Whether it's common, universal machining applications or material-specific high-performance applications, our user-centric range has been tailored to your specific requirements. Depending on the specific tool and type, we can provide solid carbide tools with diameters ranging from 0.1 mm to 32 mm.

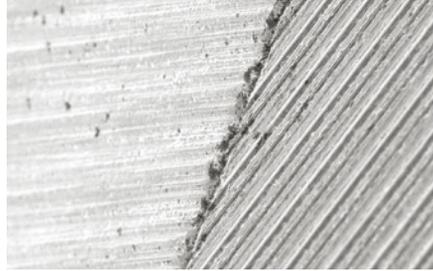
Pooled expertise in surface treatment and coatings

From tool preparation to the coating stage and the post-treatment of the layer: each individual process step is designed to provide the best possible tool solution for your machining processes.

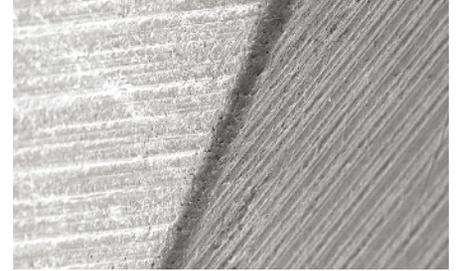
Tool preparation



Defines rounded cutting edges for improved coating adhesion, a sturdier cutting edge and, in turn, a longer tool life and higher tool productivity.



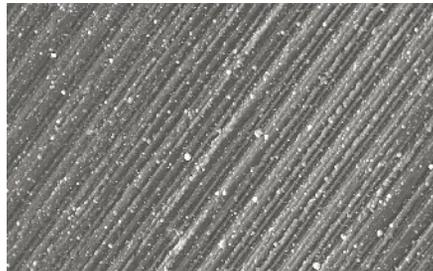
Non-rounded cutting edge.



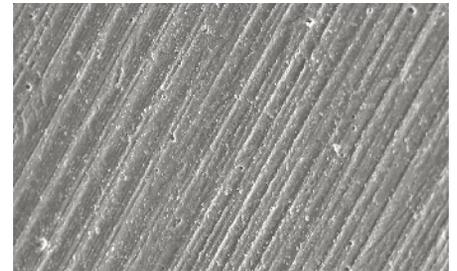
Defines a rounded cutting edge.

Smoothing

Smoothing rough areas on the surface using post-treatment processes (e.g. removing droplets after applying a coating) in order to reduce friction and extend the tool life.



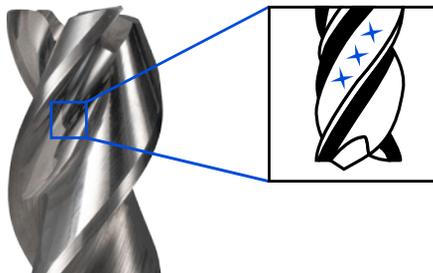
Tool surface with droplets.



Tool surface without droplets.

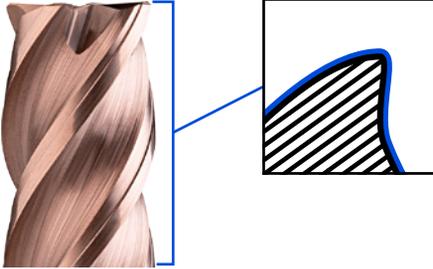
Polishing

Chip channels have been optimized for specific materials, ensuring controlled chip evacuation and preventing clog up when machining non-ferrous metals with a high volume of chips.

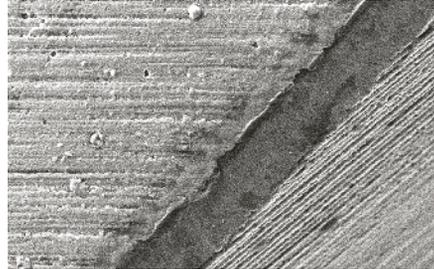


Polished chip channels for optimum chip control.

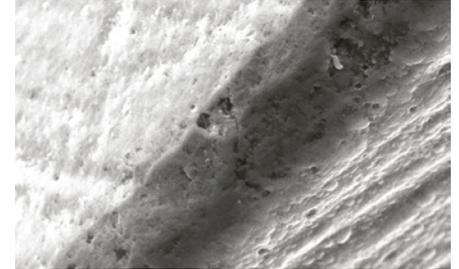
Coatings



High-performance PVD coatings, optimized for use with different materials and applications, using state-of-the-art in-house coating technology.



Coating on an untreated tool surface.



Coating on a treated tool surface.

Technical customer support

If you have any questions about optimizing your stock removal applications, our sales representatives and technical advisers will be happy to help or visit you. PFERD TOOLS works alongside you to provide application engineering solutions for working with diverse materials. Please do not hesitate to contact us for further information. You can find our worldwide sales office addresses at: www.pferd.com.



Custom-made products

If you cannot find the solution for your particular application in our catalog range, we are happy to produce milling tools to meet your wishes and requirements. Our sales representatives and technical advisers will be happy to assist you in analyzing your task.

Find your ideal tool solution in just three steps:

■ 1. Process analysis

Make an appointment with our experienced sales representatives and technical advisers. You can find our worldwide sales office addresses by visiting www.pferd.com.

■ 2. Production

Our production teams create a technical drawing for your made-to-order product.

■ 3. Use

See the quality, performance and economic value of PFERD TOOLS products for yourself!



Solid carbide end mills

Explanation of pictograms

Geometry – Type



45° 45° corner chamfer



90° Sharp



R Radius



60° 60° conical shape



90° 90° conical shape



Full radius

Geometry – Number of flutes



2 Number of flutes

Geometry – Torsion



35°/37° Torsion angle



Unequal helix angle

Norm



Company standard



DIN 6527L



DIN 6527 K

Shank type



HA Smooth cylindrical shank HA



HB Weldon shank HB with flat notch in accordance with DIN 6535

Tool type



DN Reduced neck, neck relief



Polished chip channels



Roughing



Chip divider

Feed direction



Feed xy



Feed xy(z)



Feed xyz

Unequal pitch



Unequal cutting pitch

Applications



Side milling



Slot cutting



Ramping



Drilling



Chamfering/deburring



Profile milling



Profile milling – use of shoulder



Profile milling – use of tip



Dynamic milling/trochoidal milling

Solid carbide end mills

Cutting data formulas



$$n = \frac{v_c \times 1,000}{DC \times \pi} \text{ min}^{-1}$$

$$n = \frac{v_c \times 12}{DC \times \pi} \text{ RPM}$$

Rotational speed

$$v_c = \frac{DC \times \pi \times n}{1,000} \text{ m/min}$$

$$v_c = \frac{DC \times \pi \times n}{12} \text{ ft./min}$$

Peripheral speed

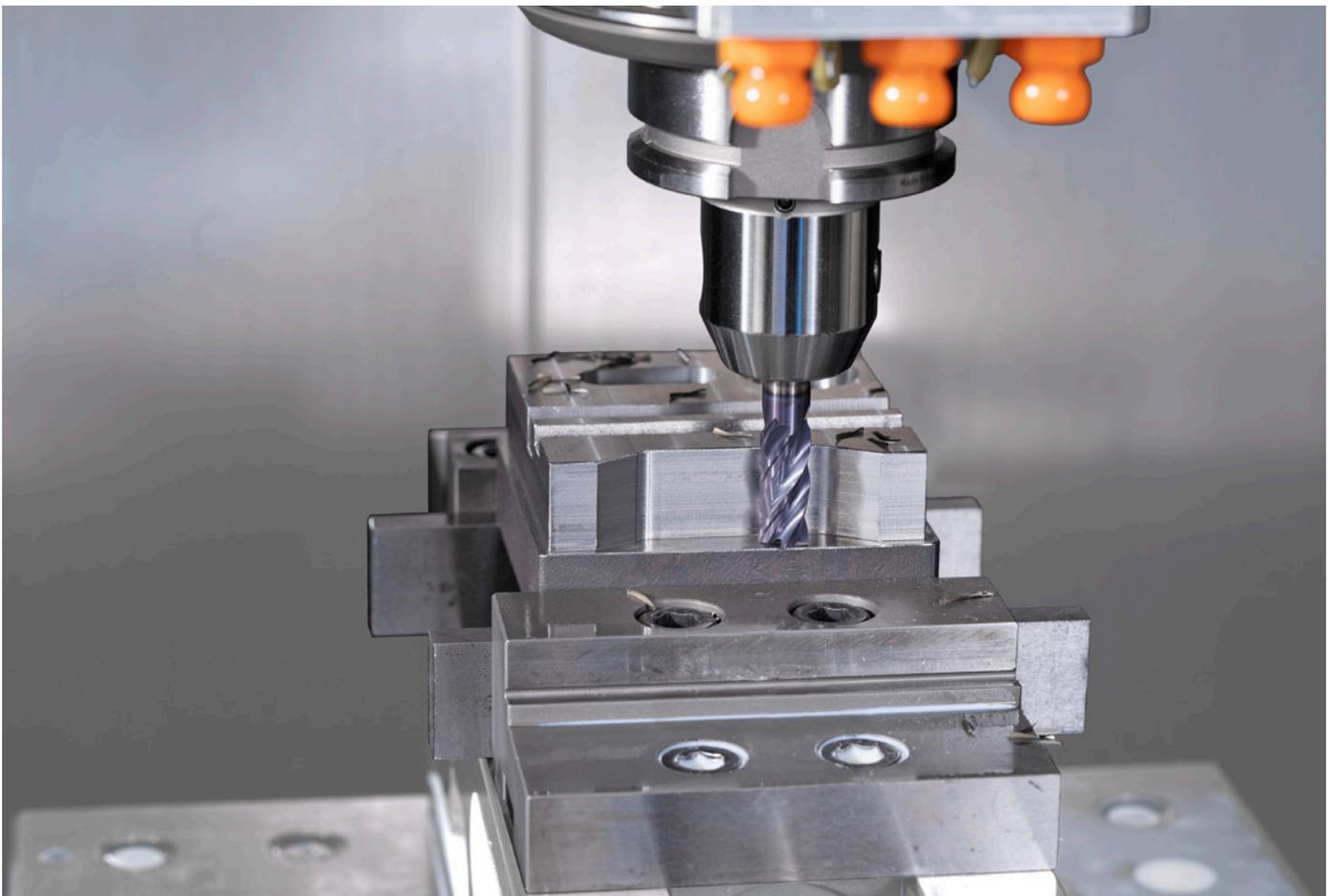
$$v_f = f_z \times ZEFP \times n \text{ mm/min}$$

$$v_f = f_z \times ZEFP \times n \text{ inch/min}$$

Feeding speed

Abbreviations explanation

- a_p = cutting depth
- a_e = contact width
- DC = cutting diameter [inches]
- f_z = feed per tooth in [inch/tooth]
- n = spindle rotational speed in [rev/min]
- v_c = cutting speed [ft./min]
- v_f = feeding speed [inch/min]
- ZEFP = effective no. of flutes



SCM-UC4-M100C-M72HB AL40
① ② ③ ④ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑭

SCM-UC4-I3/8C-M2.5HA AL40
① ② ③ ④ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑭

① Tool group

SCM = Solid carbide mill

② Product line

U = Universal Line

③ Shape

B = Full radius end mill (ball nose)

D = Chamfering end mill (deburring/
chamfering)

C = Cylindrical end mill with center cut

CR = Cylindrical end mill for roughing

CD = Cylindrical end mill with chip divider

④ Number of cutting edges

⑤ Material group

ISO groups P, M, K, N, S, H.

Blank, unless specified.

⑥ Units

M = Metric

I = Imperial

⑦ Cutting diameter

Imperial: Inches

Example: 3/8" diameter

⑧ Corner design

A = Angled

Example: A90°

C = Chamfer

R = Radius with size

Example: R.030 for .030"

S = Sharp

⑨ Cut length class

XS: APMX < 1 x DC

S: APMX 1-2 x DC

M: APMX 2-2.5 x DC

L: APMX 2.5-3 x DC

XL: APMX >3 x DC

XXL: APMX >4 x DC

⑩ Total length

Imperial: overall length LF in inches.

Not specified for chamfering end mills.

⑪ Shank type

HA = Cylindrical

HB = Weldon shank

Additional shank diameter for design with

DC < 1/4" and DCON = 1/4"

⑫ *

⑬ *

⑭ Grade

*Optional

Explanation of short names in accordance with ISO 13399

APMX = Maximum cutting depth

CHW = Chamfer width

DC = Cutting diameter

DCON = Shank diameter

DN = Neck diameter

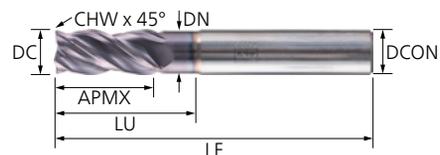
KAPR = Helix angle

LF = Overall length

LU = Usable length

RE = Corner radius

ZEFP = No. of teeth



Universal solid carbide end mills

Material suitability overview



Universal

Material group			Solid carbide end mill (UB)	Deburring end mill (UD)	Solid carbide end mill with two flutes (UC2)	Solid carbide end mill with three flutes (UC3)	Solid carbide end mill with four flutes (UC4)	Solid carbide end mill with four flutes (UCR4)	Solid carbide end mill with five flutes (UC5)	Solid carbide end mill with five flutes (UCD5)	Solid carbide end mill with six/eight flutes (UC6/8)
P	Steel	All types of steel and cast steel	●	●	●	●	●	●	●	●	●
M	Stainless steel	Ferritic and martensitic	●	●	●	●	●	○	●	●	●
		Austenitic	●	●	●	●	●	○	●	●	●
		High-temperature-resistant and ferritic-austenitic (duplex)	○	●	○	○	○	○	○	○	○
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	●	●	●	●	●	●	●	●	●
		Cast iron with nodular graphite (GJS, GGG)	●	●	●	●	●	●	●	●	●
N	Non-ferrous metals	Aluminum	○	●	○	○	○	○	○	○	○
		Copper, brass, bronze and red brass	●	●	○	○	○	○	○	○	○
S	Super and titanium alloys	Heat-resistant super alloys based on Fe, Ni and Co		○		○	○		○	○	●
		Pure titanium		○		○	○	○	○	○	●
		Titanium alloys		○		○	○	○	○	○	●
H	Hard steels and chilled castings	Heat-treated and hardened steels up to 50 HRC	●	○	○	○	○	○	○	○	○
		Hardened steels up to 58 HRC	○								
		Hardened steels over 58 HRC									
O	Other	Thermoplastics	○	○	○	○	○		○	○	○
		Duroplastics									
		GRP/CRP reinforced plastics, graphite									

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with two flutes UC2



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 															
				Cutting speed v_c	Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC														
					1/8 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	16 mm	20 mm	
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	90 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13	
					295 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
			500 to 700 N/mm ² (150 to 208 BHN)	●	85 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13	
					279 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
700 to 1,000 N/mm ² (208 to 296 BHN)	●	80 m/min	0.02		0.02	0.02			0.03	0.04		0.045		0.055	0.07				
		262 ft./min	.0006		.0008			.0008	.0012		.0015		.0019						
1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	70 m/min	0.02		0.02	0.02			0.03	0.04		0.045		0.055	0.07				
		230 ft./min	.0006		.0008			.0008	.0012		.0015		.0019						
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	55 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13	
					180 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	55 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13	
					180 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
High-temperature-resistant and ferritic-austenitic (duplex)	○	45 m/min	0.018		0.018	0.02			0.025	0.03		0.04		0.05	0.065				
		148 ft./min	.0005		.0007			.0008	.0010		.0011		.0017						
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	80 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13	
					262 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	65 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13			
			213 ft./min	.0011		.0013			.0017	.0020		.0023		.0033					
N	Non-ferrous metals	Aluminum	Alu up to 10% Si	○	135 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13	
					443 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
		Alu over 10% Si	○	110 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13		
					361 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
Copper, brass, bronze and red brass	○	90 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13				
		295 ft./min	.0011		.0013			.0017	.0020		.0023		.0033						
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co																
		Pure titanium																	
		Titanium alloys																	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	60 m/min	0.02		0.02	0.02			0.03	0.04		0.055		0.06	0.07	
					197 ft./min	.0006		.0008			.0008	.0012		.0015		.0023			
			up to 58 HRC																
over 58 HRC																			
O	Other	Thermoplastics		○	90 m/min	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13	
					295 ft./min	.0011		.0013			.0017	.0020		.0023		.0033			
		Duroplastics																	
GRP/CRP reinforced plastics, graphite																			

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with two flutes UC2



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Side milling $a_p = 1 \times DC$; $a_e = 0,1 \times DC$ 														
				Cutting speed v_c	Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC													
					1/8 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	16 mm	20 mm
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	210 m/min 689 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2	
			500 to 700 N/mm ² (150 to 208 BHN)	●	190 m/min 623 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2	
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	170 m/min 558 ft./min	0.025 .0008		0.025 .0009	0.035			0.045 .0015	0.06 .0018		0.07 .0023	0.08 .0029	0.1	
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	150 m/min 492 ft./min	0.025 .0008		0.025 .0009	0.035			0.045 .0015	0.06 .0018		0.07 .0023	0.08 .0029	0.1	
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	120 m/min 394 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2	
			Austenitic	e.g. AISI 303, 304, 316, 316L	●	120 m/min 394 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2
		High-temperature-resistant and ferritic-austenitic (duplex)		○	90 m/min 295 ft./min	0.025 .0008		0.025 .0009	0.033			0.038 .0014	0.045 .0015		0.06 .0017	0.08 .0025	0.1	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	180 m/min 591 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2	
			Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	140 m/min 459 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2
N	Non-ferrous metals	Aluminum	Alu up to 10% Si	○	250 m/min 820 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2	
			Alu over 10% Si	○	200 m/min 656 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2	
		Copper, brass, bronze and red brass	○	200 m/min 656 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2		
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co															
		Pure titanium																
		Titanium alloys																
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	75 m/min 246 ft./min	0.025 .0008		0.025 .0009	0.035			0.045 .0015	0.06 .0018		0.07 .0023	0.08 .0029	0.1	
			up to 58 HRC															
			over 58 HRC															
O	Other	Thermoplastics		○	200 m/min 656 ft./min	0.05 .0016		0.05 .0019	0.065			0.075 .0027	0.09 .0029		0.12 .0034	0.16 .0050	0.2	
		Duroplastics																
		GRP/CRP reinforced plastics, graphite																

● = highly recommended ○ = recommended

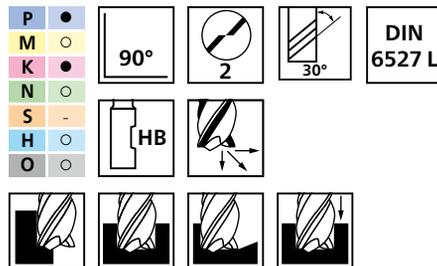
Universal solid carbide end mills

Universal solid carbide end mills with two flutes UC2



Sharp corner design – metric

End mills for slot milling, drilling and roughing with high contact widths. Engineered for universal machining applications on a variety of materials.



Special features:

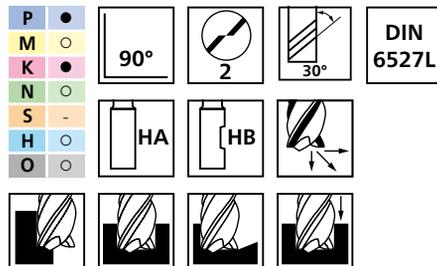
- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Good chip removal due to very large chip channel.

DC [mm]	DCON [mm]	APMX [mm]	LF [mm]	ZEFP		Item no.	Designation
Long HB							
4	6	8	57	2	1	23000124	SCM-UC2-M040S-S57HB6 AL40
5	6	10	57	2	1	23000125	SCM-UC2-M050S-S57HB6 AL40
6	6	10	57	2	1	23000126	SCM-UC2-M060S-S57HB6 AL40
8	8	16	63	2	1	23000127	SCM-UC2-M080S-S63HB6 AL40
10	10	19	72	2	1	23000128	SCM-UC2-M100S-S72HB6 AL40
12	12	22	83	2	1	23000129	SCM-UC2-M120S-S83HB6 AL40
16	16	26	92	2	1	23000130	SCM-UC2-M160S-S92HB6 AL40



Sharp corner design – imperial

End mills for slot milling, drilling and roughing with high contact widths. Engineered for universal machining applications on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Good chip removal due to very large chip channel.

DC [Inch]	DCON [Inch]	APMX [Inch]	LF [Inch]	ZEFP		Item no.	Designation
Long HA							
1/8	1/8	1/4	1-1/2	2	1	23003024	SCM-UC2-11/8S-M1.5HA AL40
3/16	3/16	3/8	2-1/4	2	1	23003025	SCM-UC2-13/16S-M2.25HA AL40
Long HB							
1/4	1/4	1/2	2-1/2	2	1	23003026	SCM-UC2-11/4S-M2.5HB AL40
5/16	5/16	5/8	2-1/2	2	1	23003027	SCM-UC2-15/16S-M2.5HB AL40
3/8	3/8	3/4	2-1/2	2	1	23003028	SCM-UC2-13/8S-M2.5HB AL40
1/2	1/2	1	3	2	1	23003029	SCM-UC2-11/2S-M3HB AL40

Universal solid carbide end mills

Universal solid carbide end mills with three flutes UC3



Recommended peripheral speeds [SFPM]

Material group	Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 																
			Cutting speed v_c	Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC															
				3 mm	1/8 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	5/8 Inch	16 mm	20 mm
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	● 130 m/min	0.01	0.016		0.03	0.03			0.04	0.06		0.06		0.085	0.1		
			427 ft./min		.0004		.0011			.0013	.0016		.0023		.0025	.0033			
			● 120 m/min	0.01	0.016		0.03	0.03			0.04	0.06		0.06		0.085	0.1		
			394 ft./min		.0004		.0011			.0013	.0016		.0023		.0025	.0033			
P Steel	All types of steel and cast steel	500 to 700 N/mm ² (150 to 208 BHN)	● 100 m/min	0.01			0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			328 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
			● 80 m/min	0.01	0.016	0.012	0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			262 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	● 45 m/min	0.01	0.012		0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			148 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
	Austenitic	e.g. AISI 303, 304, 316, 316L	● 50 m/min	0.01	0.012		0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			164 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
	High-temperature-resistant and ferritic-austenitic (duplex)		○ 40 m/min	0.01	0.012		0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			131 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	● 130 m/min	0.01	0.016		0.03	0.03			0.04	0.06		0.06		0.085	0.1		
			427 ft./min		.0004		.0011			.0013	.0016		.0023		.0025	.0033			
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	● 100 m/min	0.01	0.016		0.03	0.03			0.04	0.06		0.06		0.085	0.1		
			328 ft./min		.0004		.0011			.0013	.0016		.0023		.0025	.0033			
N Non-ferrous metals	Aluminum	Alu up to 10% Si	○ 200 m/min	0.03	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13		
			443 ft./min		.0013		.0013			.0017	.0020		.0023		.0033	.0039			
	Alu over 10% Si	○ 180 m/min	0.03	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13			
		361 ft./min		.0013		.0013			.0017	.0020		.0023		.0033	.0039				
Copper, brass, bronze and red brass		○ 200 m/min	0.03	0.035		0.035	0.04			0.05	0.06		0.08		0.1	0.13			
		295 ft./min		.0013		.0013			.0017	.0020		.0023		.0033	.0039				
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○ 35 m/min	0.01	0.012		0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			115 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
	Pure titanium		○ 100 m/min	0.01	0.012		0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			328 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
	Titanium alloys		○ 50 m/min	0.01	0.012		0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			164 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○ 60 m/min	0.01	0.012		0.02	0.02			0.03	0.045		0.045		0.06	0.07		
			197 ft./min		.0004		.0008			.0008	.0012		.0017		.0019	.0023			
O Other	Thermoplastics		○ 110 m/min	0.025		0.035	0.035	0.04		0.05	0.06		0.08		0.1	0.13			
			361 ft./min		.0010		.0013			.0017	.0020		.0023		.0033	.0039			
Duroplastics																			
GRP/CRP reinforced plastics, graphite																			

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with three flutes UC3



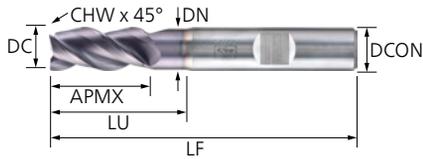
Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Side milling $a_p = 1 \times DC$; $a_e = 0,4 \times DC$ 																	
				Cutting speed v_c	Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC																
				3 mm	1/8 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	5/8 Inch	16 mm	20 mm		
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	● 180 m/min 591 ft./min	0.01		0.016		0.035	0.035			0.045	0.075		0.075			0.1	0.12	
			500 to 700 N/mm ² (150 to 208 BHN)	● 160 m/min 525 ft./min	0.01		0.016		0.035	0.035			0.045	0.075		0.075				0.1	0.12
			700 to 1,000 N/mm ² (208 to 296 BHN)	● 150 m/min 492 ft./min	0.01		0.016		0.025	0.025			0.035	0.055		0.055				0.07	0.085
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	● 110 m/min 361 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055				0.07	0.085
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	● 70 m/min 230 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055			0.07	0.085	
			Austenitic	e.g. AISI 303, 304, 316, 316L	● 75 m/min 246 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055			0.07	0.085
		High-temperature-resistant and ferritic-austenitic (duplex)		○ 60 m/min 197 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055			0.07	0.085	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	● 180 m/min 591 ft./min	0.01		0.016		0.035	0.035			0.045	0.075		0.075			0.1	0.12	
			Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	● 140 m/min 459 ft./min	0.01		0.016		0.035	0.035			0.045	0.075		0.075			0.1	0.12
N	Non-ferrous metals	Aluminum	Alu up to 10% Si	○ 250 m/min 820 ft./min	0.04		0.05		0.05	0.065			0.075	0.09		0.12			0.16	0.2	
			Alu over 10% Si	○ 200 m/min 656 ft./min	0.04		0.05		0.05	0.065			0.075	0.09		0.12			0.16	0.2	
		Copper, brass, bronze and red brass		○ 200 m/min 656 ft./min	0.04		0.05		0.05	0.065			0.075	0.09		0.12			0.16	0.2	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○ 45 m/min 148 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055			0.07	0.085	
			Pure titanium		○ 110 m/min 361 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055			0.07	0.085
		Titanium alloys		○ 60 m/min 197 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055			0.07	0.085	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○ 75 m/min 246 ft./min	0.01		0.012		0.025	0.025			0.035	0.055		0.055			0.07	0.085	
			up to 58 HRC																		
			over 58 HRC																		
O	Other	Thermoplastics		○ 200 m/min 656 ft./min	0.04		0.05		0.05	0.065			0.075	0.09		0.12			0.16	0.2	
			Duroplastics																		
			GRP/CRP reinforced plastics, graphite																		

● = highly recommended ○ = recommended

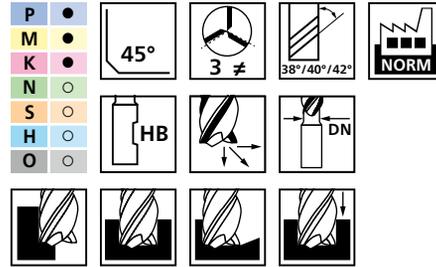
Universal solid carbide end mills

Universal solid carbide end mills with three flutes UC3



Chamfer corner design – metric

End mills for slot milling, drilling and for a wide range of roughing tasks. Engineered for universal machining applications on a variety of materials.



Special features:

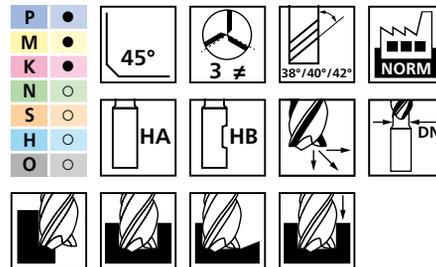
- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEPF		Item no.	Designation
Long HB										
3	6	2.8	8	57	11	0.1	3	1	23000131	SCM-UC3-M030C-M57HB6 AL40
4	6	3.7	11	57	16	0.1	3	1	23000132	SCM-UC3-M040C-M57HB6 AL40
5	6	4.7	13	57	18	0.15	3	1	23000133	SCM-UC3-M050C-M57HB6 AL40
6	6	5.6	13	57	18	0.2	3	1	23000134	SCM-UC3-M060C-M57HB6 AL40
8	8	7.5	19	63	26	0.2	3	1	23000135	SCM-UC3-M080C-M63HB AL40
10	10	9.5	22	72	32	0.2	3	1	23000136	SCM-UC3-M100C-M72HB AL40
12	12	11	26	83	36	0.3	3	1	23000137	SCM-UC3-M120C-M83HB AL40
16	16	15	32	92	42	0.3	3	1	23000138	SCM-UC3-M160C-M92HB AL40



Chamfer corner design – imperial

End mills for slot milling, drilling and for a wide range of roughing tasks. Engineered for universal machining applications on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Neck chip channel.

DC [Inch]	DCON [Inch]	DN [Inch]	APMX [Inch]	LF [Inch]	LU [Inch]	CHW [Inch]	ZEPF		Item no.	Designation
Long HA										
1/8	1/8	.118	1/4	1-1/2	3/8	.015	3	1	23003030	SCM-UC3-11/8C-M1.5HA AL40
3/16	3/16	.176	3/8	2-1/4	9/16	.015	3	1	23003031	SCM-UC3-13/16C-M2.25HA AL40
Long HB										
1/4	1/4	.235	1/2	2-1/2	3/4	.015	3	1	23003032	SCM-UC3-11/4C-M2.5HB AL40
5/16	5/16	.294	5/8	2-1/2	7/8	.015	3	1	23003033	SCM-UC3-15/16C-M2.5HB AL40
3/8	3/8	.353	3/4	2-1/2	1	.020	3	1	23003034	SCM-UC3-13/8C-M2.5HB AL40
1/2	1/2	.470	1	3	1-1/2	.020	3	1	23003035	SCM-UC3-11/2C-M3HB AL40
5/8	5/8	.588	1-1/4	3-1/2	1-3/4	.020	3	1	23003036	SCM-UC3-15/8C-M3.5HB AL40

Universal solid carbide end mills

Universal solid carbide end mills with four flutes UC4



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 																					
				Cutting speed v_c	Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC [mm]																				
					3 mm	1/8 Inch	5/32 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	5/8 Inch	16 mm	3/4 Inch	20 mm			
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	135 m/min	0.01		0.016	0.03	0.03		.0013	.0016	0.04	0.06		0.06		.0025	.0033	0.085	.0038	0.1		
					443 ft./min																				
				●	130 m/min	0.01		0.016	0.03	0.03		.0013	.0016	0.04	0.06		0.06		.0023		.0025	.0033	0.085	.0038	0.1
					427 ft./min																				
			500 to 700 N/mm ² (150 to 208 BHN)	●	110 m/min	0.01		0.016	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0019	.0023	0.06	.0026	0.07		
					361 ft./min																				
				●	80 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0017		.0019	.0023	0.06	.0026	0.07
					262 ft./min																				
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	80 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0019	.0023	0.06	.0026	0.07		
					262 ft./min																				
				○	50 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0017		.0019	.0023	0.06	.0026	0.07
					164 ft./min																				
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	70 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0019	.0023	0.06	.0026	0.07		
					230 ft./min																				
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	60 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0019	.0023	0.06	.0026	0.07		
					197 ft./min																				
High-temperature-resistant and ferritic-austenitic (duplex)			○	50 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0019	.0023	0.06	.0026	0.07			
				164 ft./min																					
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	130 m/min	0.01		0.016	0.03	0.03		.0013	.0016	0.04	0.06		0.06		.0025	.0033	0.085	.0038	0.1		
					427 ft./min																				
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	100 m/min	0.01		0.016	0.03	0.03		.0013	.0016	0.04	0.06		0.06		.0023		.0025	.0033	0.085	.0038	0.1
					328 ft./min																				
N	Non-ferrous metals	Aluminum	Alu up to 10% Si	○	200 m/min	0.02		0.03	0.04	0.05		.0021	.0016	0.06	0.07		0.08		.0033	.0039	0.1	.0041	0.11		
					656 ft./min																				
		Alu over 10% Si	○	180 m/min	0.02		0.03	0.04	0.05		.0021	.0016	0.06	0.07		0.08		0.08		.0033	.0039	0.1	.0041	0.11	
				591 ft./min																					
Copper, brass, bronze and red brass	○	200 m/min	0.02		0.03	0.04	0.05		.0021	.0016	0.06	0.07		0.08		0.08		.0033	.0039	0.1	.0041	0.11			
		656 ft./min																							
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○	35 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0019	.0023	0.06	.0026	0.07		
					115 ft./min																				
		Pure titanium	○	100 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0017		.0019	.0023	0.06	.0026	0.07	
				328 ft./min																					
Titanium alloys	○	50 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0017		.0019	.0023	0.06	.0026	0.07			
		164 ft./min																							
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	60 m/min	0.01		0.012	0.02	0.02		.0008	.0016	0.03	0.045		0.045		.0019	.0023	0.06	.0026	0.07		
					197 ft./min																				
			up to 58 HRC																						
O	Other	Thermoplastics		○	180 m/min	0.02		0.03	0.04	0.05		.0021	.0016	0.06	0.07		0.08		.0033	.0039	0.1	.0041	0.11		
					591 ft./min																				
		Duroplastics																							
		GRP/CRP reinforced plastics, graphite																							

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with four flutes UC4



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Side milling $a_p = 2 \times DC$; $a_e = 0,4 \times DC$ 																							
				Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC																							
				Cutting speed v_c	3 mm	1/8 Inch	5/32 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	5/8 Inch	16 mm	3/4 Inch	20 mm					
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	180 m/min	0.01		0.016	0.035	0.035			.0015	.0018	0.045	0.075		0.075		.0031	.0039	0.1	.0045	0.12			
					591 ft./min		.0004	.0006		.0013										.0028			.0031	.0039	.0045	0.1	0.12
				●	160 m/min	0.01		0.016	0.035	0.035						.0015	.0018	0.045	0.075		0.075		.0031	.0039	0.1	.0045	0.12
					525 ft./min		.0004	.0006		.0013											.0028			.0031	.0039	.0045	0.1
P	Steel	All types of steel and cast steel	500 to 700 N/mm ² (150 to 208 BHN)	●	150 m/min	0.01		0.016	0.025	0.025			.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085			
					492 ft./min		.0004	.0006		.0009										.0021			.0023	.0027	.0032	0.07	0.085
				●	110 m/min	0.01		0.012	0.025	0.025						.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085
					361 ft./min		.0004	.0005		.0009											.0021			.0023	.0027	.0032	0.07
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	85 m/min	0.01		0.012	0.025	0.025			.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085			
					279 ft./min		.0004	.0005		.0009										.0021			.0023	.0027	.0032	0.07	0.085
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	75 m/min	0.01		0.012	0.025	0.025				.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085		
					246 ft./min		.0004	.0005		.0009										.0021			.0023	.0027	.0032	0.07	0.085
High-temperature-resistant and ferritic-austenitic (duplex)			○	65 m/min	0.01		0.012	0.025	0.025				.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085			
				213 ft./min		.0004	.0005		.0009										.0021			.0023	.0027	.0032	0.07	0.085	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	180 m/min	0.01		0.016	0.035	0.035			.0015	.0018	0.045	0.075		0.075		.0031	.0039	0.1	.0045	0.12			
					591 ft./min		.0004	.0006		.0013										.0028			.0031	.0039	.0045	0.1	0.12
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	140 m/min	0.01		0.016	0.035	0.035				.0015	.0018	0.045	0.075		0.075		.0031	.0039	0.1	.0045	0.12		
					459 ft./min		.0004	.0006		.0013										.0028			.0031	.0039	.0045	0.1	0.12
N	Non-ferrous metals	Aluminum	Alu up to 10% Si	○	230 m/min	0.03		0.035	0.035	0.04			.0017	.0020	0.05	0.06		0.08		.0033	.0039	0.1	.0049	0.13			
					755 ft./min		.0013	.0014		.0013										.0023			.0033	.0039	.0049	0.1	0.13
		Alu over 10% Si	○	210 m/min	0.03		0.035	0.035	0.04					.0017	.0020	0.05	0.06		0.08		.0033	.0039	0.1	.0049	0.13		
				689 ft./min		.0013	.0014		.0013											.0023			.0033	.0039	.0049	0.1	0.13
Copper, brass, bronze and red brass			○	230 m/min	0.03		0.035	0.035	0.04				.0017	.0020	0.05	0.06		0.08		.0033	.0039	0.1	.0049	0.13			
				755 ft./min		.0013	.0014		.0013										.0023			.0033	.0039	.0049	0.1	0.13	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○	45 m/min	0.01		0.012	0.025	0.025			.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085			
					148 ft./min		.0004	.0005		.0009										.0021			.0023	.0027	.0032	0.07	0.085
		Pure titanium		○	120 m/min	0.01		0.012	0.025	0.025				.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085		
					394 ft./min		.0004	.0005		.0009										.0021			.0023	.0027	.0032	0.07	0.085
Titanium alloys			○	70 m/min	0.01		0.012	0.025	0.025				.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085			
				230 ft./min		.0004	.0005		.0009										.0021			.0023	.0027	.0032	0.07	0.085	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	75 m/min	0.01		0.012	0.025	0.025			.0010	.0014	0.035	0.055		0.055		.0023	.0027	0.07	.0032	0.085			
					246 ft./min		.0004	.0005		.0009										.0021			.0023	.0027	.0032	0.07	0.085
			over 58 HRC																								
O	Other	Thermoplastics		○	210 m/min	0.04		0.04	0.06	0.06			.0025	.0027	0.07	0.07		0.085		.0035	.0039	0.1	.0045	0.12			
					689 ft./min		.0017	.0016		.0023										.0026			.0035	.0039	.0045	0.1	0.12
Duroplastics																											
GRP/CRP reinforced plastics, graphite																											

● = highly recommended ○ = recommended

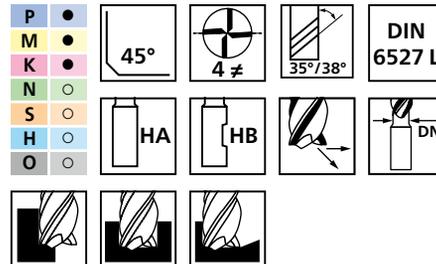
Universal solid carbide end mills

Universal solid carbide end mills with four flutes UC4



Chamfer corner design – metric

End mills for various applications, from roughing to finishing and ramping. Engineered for universal machining applications on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEFP		Item no.	Designation
Long HA										
3	6	2.8	8	57	18	0.13	4	1	23000148	SCM-UC4-M030C-M57HA6 AL40
4	6	3.6	11	57	21	0.13	4	1	23000149	SCM-UC4-M040C-M57HA6 AL40
5	6	4.6	13	57	21	0.2	4	1	23000150	SCM-UC4-M050C-M57HA6 AL40
6	6	5.5	13	57	21	0.2	4	1	23000151	SCM-UC4-M060C-M57HA6 AL40
8	8	7.5	19	63	27	0.2	4	1	23000152	SCM-UC4-M080C-M63HA AL40
10	10	9.5	22	72	32	0.2	4	1	23000153	SCM-UC4-M100C-M72HA AL40
12	12	11.5	26	83	38	0.3	4	1	23000154	SCM-UC4-M120C-M83HA AL40
16	16	15.5	32	92	44	0.3	4	1	23000155	SCM-UC4-M160C-M92HA AL40
20	20	19.5	38	104	54	0.4	4	1	23000156	SCM-UC4-M200C-M104HA AL40
Long HB										
3	6	2.8	8	57	18	0.13	4	1	23000139	SCM-UC4-M030C-M57HB6 AL40
4	6	3.6	11	57	21	0.13	4	1	23000140	SCM-UC4-M040C-M57HB6 AL40
5	6	4.6	13	57	21	0.2	4	1	23000141	SCM-UC4-M050C-M57HB6 AL40
6	6	5.5	13	57	21	0.2	4	1	23000142	SCM-UC4-M060C-M57HB AL40
8	8	7.5	19	63	27	0.2	4	1	23000143	SCM-UC4-M080C-M63HB AL40
10	10	9.5	22	72	32	0.2	4	1	23000144	SCM-UC4-M100C-M72HB AL40
12	12	11.5	26	83	38	0.3	4	1	23000145	SCM-UC4-M120C-M83HB AL40
16	16	15.5	32	92	44	0.3	4	1	23000146	SCM-UC4-M160C-M92HB AL40
20	20	19.5	38	104	54	0.4	4	1	23000147	SCM-UC4-M200C-M104HB AL40

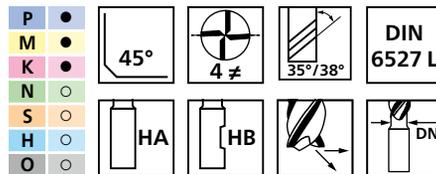
Universal solid carbide end mills

Universal solid carbide end mills with four flutes UC4



Chamfer corner design – imperial

End mills for various applications, from roughing to finishing and ramping. Engineered for universal machining applications on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Neck chip channel.

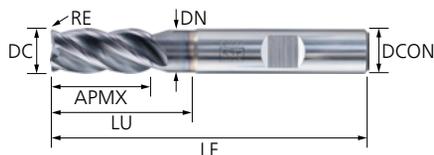


DC [Inch]	DCON [Inch]	DN [Inch]	APMX [Inch]	LF [Inch]	LU [Inch]	CHW [Inch]	ZFP		Item no.	Designation
Long HA HA										
1/8	1/8	.118	1/4	1-1/2	3/8	.015	4	1	23003043	SCM-UC4-11/8C-M1.5HA AL40
5/32	5/32	.147	5/16	2	7/16	.015	4	1	23003044	SCM-UC4-15/32C-M2HA AL40
3/16	3/16	.176	3/8	2-1/4	9/16	.015	4	1	23003045	SCM-UC4-13/16C-M2.25HA AL40
1/4	1/4	.235	1/2	2-1/2	3/4	.015	4	1	23003046	SCM-UC4-11/4C-M2.5HA AL40
5/16	5/16	.294	5/8	2-1/2	7/8	.015	4	1	23003047	SCM-UC4-15/16C-M2.5HA AL40
3/8	3/8	.353	3/4	2-1/2	1	.020	4	1	23003048	SCM-UC4-13/8C-M2.5HA AL40
1/2	1/2	.470	1	3	1-1/2	.020	4	1	23003049	SCM-UC4-11/2C-M3HA AL40
5/8	5/8	.588	1-1/4	3-1/2	1-3/4	.020	4	1	23003050	SCM-UC4-15/8C-M3.5HA AL40
3/4	3/4	.705	1-1/2	4	2-1/4	.020	4	1	23003051	SCM-UC4-13/4C-M4HA AL40

Long HB HB										
1/4	1/4	.235	1/2	2-1/2	3/4	.015	4	1	23003037	SCM-UC4-11/4C-M2.5HB AL40
5/16	5/16	.294	5/8	2-1/2	7/8	.015	4	1	23003038	SCM-UC4-15/16C-M2.5HB AL40
3/8	3/8	.353	3/4	2-1/2	1	.020	4	1	23003039	SCM-UC4-13/8C-M2.5HB AL40
1/2	1/2	.470	1	3	1-1/2	.020	4	1	23003040	SCM-UC4-11/2C-M3HB AL40
5/8	5/8	.588	1-1/4	3-1/2	1-3/4	.020	4	1	23003041	SCM-UC4-15/8C-M3.5HB AL40
3/4	3/4	.705	1-1/2	4	2-1/4	.020	4	1	23003042	SCM-UC4-13/4C-M4HB AL40

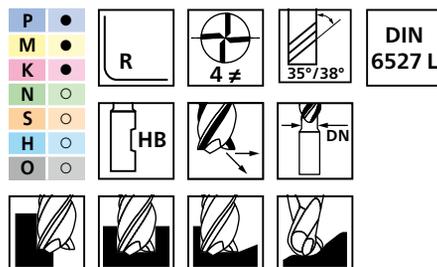
Universal solid carbide end mills

Universal solid carbide end mills with four flutes UC4



Radius – metric

End mills for various applications, from roughing to finishing. The radius design is also suitable for free-form profile cutting. Engineered for universal machining applications on a variety of materials.



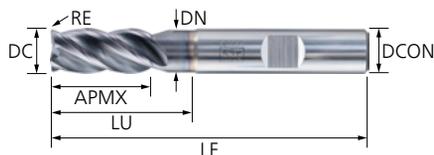
Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
Long HB										
8	8	7.46	19	63	27	0.5	4	1	23000157	SCM-UC4-M080R05-M63HB AL40
						1	4	1	23000158	SCM-UC4-M080R10-M63HB AL40
						1.5	4	1	23000159	SCM-UC4-M080R15-M63HB AL40
10	10	9.5	22	72	32	2	4	1	23000160	SCM-UC4-M080R20-M63HB AL40
						0.5	4	1	23000161	SCM-UC4-M100R05-M72HB AL40
						1	4	1	23000162	SCM-UC4-M100R10-M72HB AL40
12	12	11.5	26	83	38	1.5	4	1	23000163	SCM-UC4-M100R15-M72HB AL40
						2	4	1	23000164	SCM-UC4-M100R20-M72HB AL40
						0.5	4	1	23000165	SCM-UC4-M120R05-M83HB AL40
16	16	15.5	32	92	44	1	4	1	23000166	SCM-UC4-M120R10-M83HB AL40
						1.5	4	1	23000167	SCM-UC4-M120R15-M83HB AL40
						2	4	1	23000168	SCM-UC4-M120R20-M83HB AL40
20	20	19.5	38	104	54	1	4	1	23000169	SCM-UC4-M160R10-M92HB AL40
						1.5	4	1	23000170	SCM-UC4-M160R15-M92HB AL40
						2	4	1	23000171	SCM-UC4-M160R20-M92HB AL40
						1	4	1	23000172	SCM-UC4-M200R10-M104HB AL40
						2	4	1	23000173	SCM-UC4-M200R20-M104HB AL40

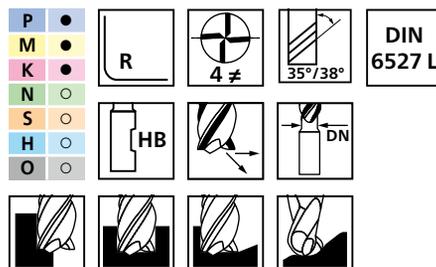
Universal solid carbide end mills

Universal solid carbide end mills with four flutes UC4



Radius – imperial

End mills for various applications, from roughing to finishing. The radius design is also suitable for free-form profile cutting. Engineered for universal machining applications on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.
- Neck chip channel.

DC [Inch]	DCON [Inch]	DN [Inch]	APMX [Inch]	LF [Inch]	LU [Inch]	RE [Inch]	ZEPF		Item no.	Designation
Long HB										
HB										
5/16	5/16	.294	5/8	2-1/2	7/8	.015	4	1	23003052	SCM-UC4-I5/16R0.015-M2.5HB AL40
						.03	4	1	23003053	SCM-UC4-I5/16R0.03-M2.5HB AL40
3/8	3/8	.353	3/4	2-1/2	1	.03	4	1	23003054	SCM-UC4-I3/8R0.03-M2.5HB AL40
						.06	4	1	23003055	SCM-UC4-I3/8R0.06-M2.5HB AL40
1/2	1/2	.470	1	3	1-1/2	.06	4	1	23003056	SCM-UC4-I1/2R0.06-M3HB AL40
						.09	4	1	23003057	SCM-UC4-I1/2R0.09-M3HB AL40
5/8	5/8	.588	1-1/4	3-1/2	1-3/4	.09	4	1	23003058	SCM-UC4-I5/8R0.09-M3.5HB AL40
						.125	4	1	23003059	SCM-UC4-I5/8R0.125-M3.5HB AL40
3/4	3/4	.705	1-1/2	4	2-1/4	.125	4	1	23003060	SCM-UC4-I3/4R0.125-M4HB AL40

Universal solid carbide end mills

Universal solid carbide end mills with four flutes UCR4



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 										
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]									
					3	4	5	6	8	10	12	16	20	
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	140	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
			500 to 700 N/mm ² (150 to 208 BHN)	●	120	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	100	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	70	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	○	50	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
		Austenitic	e.g. AISI 303, 304, 316, 316L	○	45	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
		High-temperature-resistant and ferritic-austenitic (duplex)		○	35	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	120	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB											
N	Non-ferrous metals	Aluminum	Alu up to 10% Si											
			Alu over 10% Si											
		Copper, brass, bronze and red brass												
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co											
		Pure titanium		○	30	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
		Titanium alloys		○	20	0.017	0.022	0.028	0.030	0.040	0.050	0.060	0.080	0.100
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC											
			up to 58 HRC											
			over 58 HRC											
O	Other	Thermoplastics												
		Duroplastics												
		GRP/CRP reinforced plastics, graphite												

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with four flutes UCR4



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Side milling $a_p = \max; a_e = 0,4 \times DC$ 										
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]									
					3	4	5	6	8	10	12	16	20	
P	Steel	All types of steel and cast steel	up to 500 N/mm ²	●	180	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
			500 to 700 N/mm ²	●	160	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
			700 to 1,000 N/mm ²	●	120	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
			1,000 to 1,400 N/mm ²	●	95	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	○	70	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
		Austenitic	e.g. 1.4301, 1.4571	○	60	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
		High-temperature-resistant and ferritic-austenitic (duplex)		○	50	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	160	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB											
N	Non-ferrous metals	Aluminum	Alu up to 10% Si											
			Alu over 10% Si											
		Copper, brass, bronze and red brass												
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co											
		Pure titanium		○	40	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
		Titanium alloys		○	30	0.020	0.026	0.033	0.036	0.048	0.060	0.072	0.096	0.120
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC											
			up to 58 HRC											
			over 58 HRC											
O	Other	Thermoplastics												
		Duroplastics												
		GRP/CRP reinforced plastics, graphite												

● = highly recommended ○ = recommended

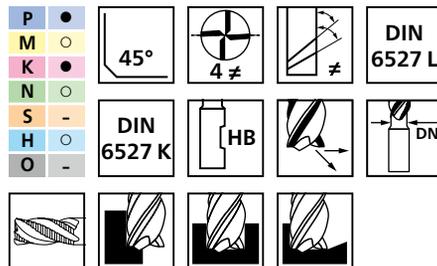
Universal solid carbide end mills

Universal solid carbide end mills with four flutes UCR4



Chamfer corner design for roughing – metric

Roughing end mills for various applications, from roughing to finishing and ramping. Engineered for universal machining applications on a variety of materials.



Special features:

- Neck chip channel.
- Optimum chip control due to roughing cut.
- Variable pitch and variable helix angle for low-vibration machining and smooth milling.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEFP		Item no.	Designation
Short HB										
6	6	5.4	10	54	18	0.15	4	1	23000356	SCM-UCR4-M060C-S54HB AP40
8	8	7.4	12	58	22	0.2	4	1	23000357	SCM-UCR4-M080C-S58HB AP40
10	10	9.4	15	66	26	0.3	4	1	23000358	SCM-UCR4-M100C-S66HB AP40
12	12	11.2	18	73	28	0.4	4	1	23000359	SCM-UCR4-M120C-S73HB AP40
Long HB										
6	6	5.4	15	57	21	0.15	4	1	23000350	SCM-UCR4-M060C-M57HB AP40
8	8	7.4	20	63	27	0.2	4	1	23000351	SCM-UCR4-M080C-M63HB AP40
10	10	9.4	25	72	32	0.3	4	1	23000352	SCM-UCR4-M100C-M72HB AP40
12	12	11.2	30	83	38	0.4	4	1	23000353	SCM-UCR4-M120C-M83HB AP40
16	16	15.2	32	92	42	0.5	4	1	23000354	SCM-UCR4-M160C-M92HB AP40
20	20	19.2	40	104	54	0.6	4	1	23000355	SCM-UCR4-M200C-M104HB AP40

Universal solid carbide end mills

Universal solid carbide end mills with five flutes UC5



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 											
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]										
					3	4	5	6	8	10	12	16	20	25	
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	140	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
			500 to 700 N/mm ² (150 to 208 BHN)	●	120	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	90	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	70	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	○	70	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		Austenitic	e.g. AISI 303, 304, 316, 316L	○	60	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		High-temperature-resistant and ferritic-austenitic (duplex)		○	50	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	120	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	80	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
N	Non-ferrous metals	Aluminum	Alu up to 10% Si												
			Alu over 10% Si												
		Copper, brass, bronze and red brass													
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co												
		Pure titanium		○	40	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		Titanium alloys		○	30	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC												
			up to 58 HRC												
			over 58 HRC												
O	Other	Thermoplastics													
		Duroplastics													
		GRP/CRP reinforced plastics, graphite													

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with five flutes UC5



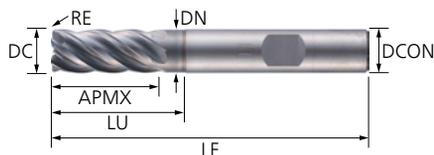
Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Side milling $a_p = 2 \times DC$; $a_e = 0.4 \times D$ 											
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]										
					3	4	5	6	8	10	12	16	20	25	
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	180	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
			500 to 700 N/mm ² (150 to 208 BHN)	●	160	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	120	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	95	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	○	80	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		Austenitic	e.g. 1.4301, 1.4571	○	70	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		High-temperature-resistant and ferritic-austenitic (duplex)		○	60	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	160	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	120	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
N	Non-ferrous metals	Aluminum	Alu up to 10% Si												
			Alu over 10% Si												
		Copper, brass, bronze and red brass													
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co												
		Pure titanium		○	45	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		Titanium alloys		○	35	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC												
			up to 58 HRC												
			over 58 HRC												
O	Other	Thermoplastics													
		Duroplastics													
		GRP/CRP reinforced plastics, graphite													

● = highly recommended ○ = recommended

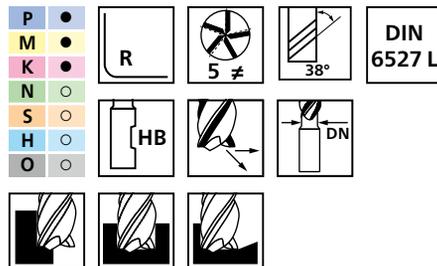
Universal solid carbide end mills

Universal solid carbide end mills with five flutes UC5



Radius – metric

End mills for various applications, from roughing to finishing. Engineered for universal machining applications on a variety of materials.



Special features:

- Variable pitch for low-vibration machining and smooth milling.
- Long tool life due to modern tool coating.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
Long HB										
6	6	5.7	13	57	20	0.5	5	1	23000845	SCM-UC5-M060R05-M57HB AP40
8	8	7.7	19	63	25	0.5	5	1	23000846	SCM-UC5-M080R05-M63HB AP40
10	10	9.7	22	72	30	0.5	5	1	23000847	SCM-UC5-M100R05-M72HB AP40
12	12	11.6	26	83	36	0.5	5	1	23000848	SCM-UC5-M120R05-M83HB AP40
16	16	15.6	32	92	42	1	5	1	23000849	SCM-UC5-M160R10-M92HB AP40
20	20	19.6	38	104	52	1	5	1	23000850	SCM-UC5-M200R10-M104HB AP40
25	25	24.5	45	124	65	1	5	1	23000851	SCM-UC5-M250R10-M124HB AP40

Universal solid carbide end mills

Universal solid carbide end mills with five flutes UCD5



Recommended cutting speeds [SFPM] – radius corner design with chip divider, 2xD

Material group		Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 											
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]										
					3	4	5	6	8	10	12	16	20	25	
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	140	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
			500 to 700 N/mm ² (150 to 208 BHN)	●	120	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	90	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	70	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	○	70	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		Austenitic	e.g. AISI 303, 304, 316, 316L	○	60	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		High-temperature-resistant and ferritic-austenitic (duplex)		○	50	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	120	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	80	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
N	Non-ferrous metals	Aluminum	Alu up to 10% Si												
			Alu over 10% Si												
		Copper, brass, bronze and red brass													
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co												
		Pure titanium		○	40	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
		Titanium alloys		○	30	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.072	0.090	0.113
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC												
			up to 58 HRC												
			over 58 HRC												
O	Other	Thermoplastics													
		Duroplastics													
		GRP/CRP reinforced plastics, graphite													

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with five flutes UCD5



Recommended cutting speeds [SFPM] – radius corner design with chip divider, 2xD

Material group	Specification/ example material	Suitability	Side milling $a_p = 2 \times DC$; $a_e = 0.4 \times D$ 												
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]											
				3	4	5	6	8	10	12	16	20	25		
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	180	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
			500 to 700 N/mm ² (150 to 208 BHN)	●	160	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	120	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	95	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
M	Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	○	80	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		Austenitic	e.g. 1.4301, 1.4571	○	70	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		High-temperature-resistant and ferritic-austenitic (duplex)		○	60	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	160	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	120	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
N	Non-ferrous metals	Aluminum	Alu up to 10% Si												
			Alu over 10% Si												
		Copper, brass, bronze and red brass													
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co												
		Pure titanium		○	45	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
		Titanium alloys		○	35	0.016	0.022	0.027	0.032	0.043	0.054	0.065	0.086	0.108	0.135
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC												
			up to 58 HRC												
			over 58 HRC												
O	Other	Thermoplastics													
		Duroplastics													
		GRP/CRP reinforced plastics, graphite													

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with five flutes UCD5



Recommended cutting speeds [SFPM] – radius corner design with chip divider, 3xD

Material group		Specification/ example material	Suitability	Dynamic milling $a_p = 3 \times DC$; $a_e = 0.08$ 											
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]										
					3	4	5	6	8	10	12	16	20	25	
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	250	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
			500 to 700 N/mm ² (150 to 208 BHN)	●	220	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	160	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	130	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	○	90	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
		Austenitic	e.g. AISI 303, 304, 316, 316L	○	80	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
		High-temperature-resistant and ferritic-austenitic (duplex)		○	70	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	180	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	160	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
N	Non-ferrous metals	Aluminum	Alu up to 10% Si												
			Alu over 10% Si												
		Copper, brass, bronze and red brass													
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co												
		Pure titanium		○	70	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
		Titanium alloys		○	50	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC												
			up to 58 HRC												
			over 58 HRC												
O	Other	Thermoplastics													
		Duroplastics													
		GRP/CRP reinforced plastics, graphite													

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal solid carbide end mills with five flutes UCD5



Recommended cutting speeds [SFPM] – radius corner design with chip divider, 4xD

Material group		Specification/ example material	Suitability	Dynamic milling $a_p = 4 \times DC$; $a_e = 0.06$ 												
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]											
					3	4	5	6	8	10	12	16	20	25		
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	250	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
			500 to 700 N/mm ² (150 to 208 BHN)	●	220	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	160	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	130	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	○	90	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
		Austenitic	e.g. AISI 303, 304, 316, 316L	○	80	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
		High-temperature-resistant and ferritic-austenitic (duplex)		○	70	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	180	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	160	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
N	Non-ferrous metals	Aluminum	Alu up to 10% Si													
			Alu over 10% Si													
		Copper, brass, bronze and red brass														
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
		Pure titanium		○	70	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
		Titanium alloys		○	50	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC													
			up to 58 HRC													
			over 58 HRC													
O	Other	Thermoplastics														
		Duroplastics														
		GRP/CRP reinforced plastics, graphite														

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Universal solid carbide end mills

Universal solid carbide end mills with five flutes UCD5



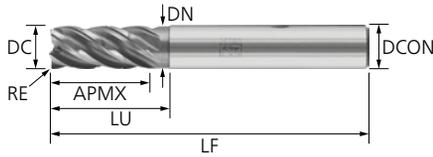
Recommended cutting speeds [SFPM] – radius corner design with chip divider, 5xD

Material group		Specification/ example material	Suitability	Dynamic milling $a_p = 5 \times DC$; $a_e = 0.06$ 												
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]											
					3	4	5	6	8	10	12	16	20	25		
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	250	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
			500 to 700 N/mm ² (150 to 208 BHN)	●	220	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	160	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	130	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	○	90	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
		Austenitic	e.g. AISI 303, 304, 316, 316L	○	80	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
		High-temperature-resistant and ferritic-austenitic (duplex)		○	70	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB	●	180	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB	●	160	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
N	Non-ferrous metals	Aluminum	Alu up to 10% Si													
			Alu over 10% Si													
		Copper, brass, bronze and red brass														
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
		Pure titanium		○	70	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
		Titanium alloys		○	50	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC													
			up to 58 HRC													
			over 58 HRC													
O	Other	Thermoplastics														
		Duroplastics														
		GRP/CRP reinforced plastics, graphite														

● = highly recommended ○ = recommended

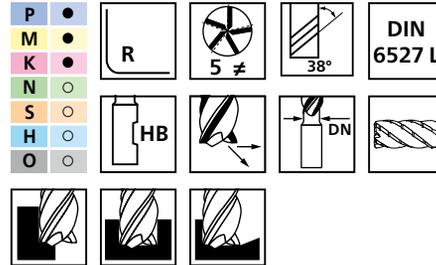
Universal solid carbide end mills

Universal solid carbide end mills with five flutes UCD5



Radius corner design with chip divider, 2xD – metric

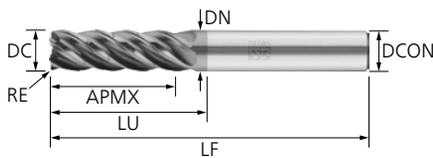
End mills with chip divider for various applications, from roughing to finishing. Engineered for universal machining applications on a variety of materials.



Special features:

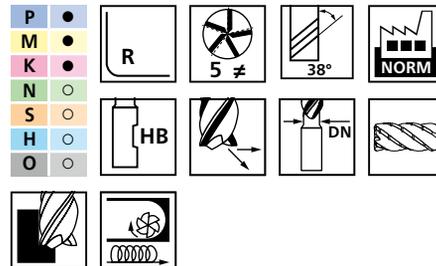
- Optimum chip control due to chip divider.
- Variable pitch for low-vibration machining and smooth milling.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
Long HB										
6	6	5.7	13	57	20	0.5	5	1	23000852	SCM-UCD5-M060R05-M57HB AP40
8	8	7.7	19	63	25	0.5	5	1	23000853	SCM-UCD5-M080R05-M63HB AP40
10	10	9.7	22	72	30	0.5	5	1	23000854	SCM-UCD5-M100R05-M72HB AP40
12	12	11.6	26	83	36	0.5	5	1	23000855	SCM-UCD5-M120R05-M83HB AP40
16	16	15.6	32	92	42	1	5	1	23000856	SCM-UCD5-M160R10-M92HB AP40
20	20	19.6	38	104	52	1	5	1	23000857	SCM-UCD5-M200R10-M104HB AP40
25	25	24.5	45	124	65	1	5	1	23000858	SCM-UCD5-M250R10-M124HB AP40



Radius corner design with chip divider, 3xD – metric

End mills with chip divider and long usable length for dynamic machining and trochoidal milling. Engineered for universal machining applications on a variety of materials.



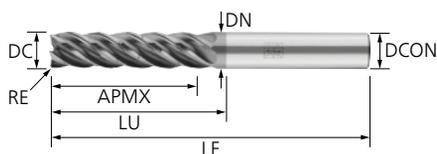
Special features:

- Optimum chip control due to chip divider.
- Variable pitch for low-vibration machining and smooth milling.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
3xD HB										
6	6	5.7	19	66	23	0.5	5	1	23000859	SCM-UCD5-M060R05-L66HB AP40
8	8	7.7	25	70	29	0.5	5	1	23000860	SCM-UCD5-M080R05-L70HB AP40
10	10	9.7	31	78	35	0.5	5	1	23000861	SCM-UCD5-M100R05-L78HB AP40
12	12	11.6	38	92	42	0.5	5	1	23000862	SCM-UCD5-M120R05-L92HB AP40
16	16	15.6	50	110	56	1	5	1	23000863	SCM-UCD5-M160R10-L110HB AP40
20	20	19.6	62	125	70	1	5	1	23000864	SCM-UCD5-M200R10-L125HB AP40
25	25	24.5	78	150	88	1	5	1	23000865	SCM-UCD5-M250R10-L150HB AP40

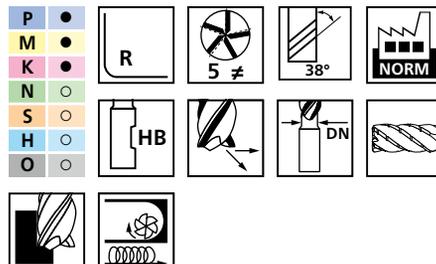
Universal solid carbide end mills

Universal solid carbide end mills with five flutes UCD5



Radius corner design with chip divider, 4xD – metric

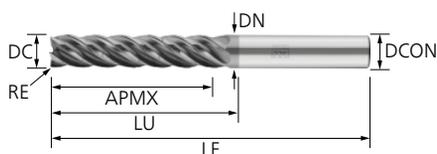
End mills with chip divider and long usable length for dynamic machining and trochoidal milling. Engineered for universal machining applications on a variety of materials.



Special features:

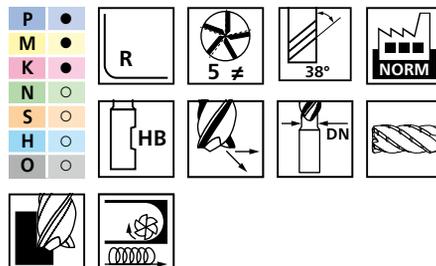
- Optimum chip control due to chip divider.
- Variable pitch for low-vibration machining and smooth milling.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
4xD HB HB										
6	6	5.7	24	66	29	0.5	5	1	23000866	SCM-UCD5-M060R05-XL66HB AP40
8	8	7.7	32	74	37	0.5	5	1	23000867	SCM-UCD5-M080R05-XL74HB AP40
10	10	9.7	40	88	45	0.5	5	1	23000868	SCM-UCD5-M100R05-XL88HB AP40
12	12	11.6	48	105	54	0.5	5	1	23000869	SCM-UCD5-M120R05-XL105HB AP40
16	16	15.6	64	124	72	1	5	1	23000870	SCM-UCD5-M160R10-XL124HB AP40
20	20	19.6	80	148	90	1	5	1	23000871	SCM-UCD5-M200R10-XL148HB AP40
25	25	24.5	100	182	115	1	5	1	23000872	SCM-UCD5-M250R10-XL182HB AP40



Radius corner design with chip divider, 5xD – metric

End mills with chip divider and long usable length for dynamic machining and trochoidal milling. Engineered for universal machining applications on a variety of materials.



Special features:

- Optimum chip control due to chip divider.
- Variable pitch for low-vibration machining and smooth milling.
- Neck chip channel.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
5xD HB HB										
6	6	5.7	30	74	35	0.5	5	1	23000873	SCM-UCD5-M060R05-XXL74HB AP40
8	8	7.7	40	84	45	0.5	5	1	23000874	SCM-UCD5-M080R05-XXL84HB AP40
10	10	9.7	50	100	55	0.5	5	1	23000875	SCM-UCD5-M100R05-XXL100HB AP40
12	12	11.6	60	115	66	0.5	5	1	23000876	SCM-UCD5-M120R05-XXL115HB AP40
16	16	15.6	80	142	88	1	5	1	23000877	SCM-UCD5-M160R10-XXL142HB AP40
20	20	19.6	100	165	110	1	5	1	23000878	SCM-UCD5-M200R10-XXL165HB AP40
25	25	24.5	125	200	138	1	5	1	23000879	SCM-UCD5-M250R10-XXL200HB AP40

Universal solid carbide end mills

Universal solid carbide end mills with six/eight flutes UC6/8



Recommended peripheral speeds [SFPM]

Material group		Specification/ example material		Suitability	Side milling $a_p = 1,5 \times DC$; $a_e = 0,05 \times DC$ 												
					Cutting speed v_c	Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC											
						6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	5/8 Inch	16 mm	20 mm	
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	200 m/min 656 ft./min	0.035			0.04	0.055		0.065			0.08	0.1	
			500 to 700 N/mm ² (150 to 208 BHN)	●	160 m/min 525 ft./min	0.035			0.04	0.055		0.065			0.08	0.1	
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	120 m/min 394 ft./min	0.035			0.04	0.055		0.065			0.08	0.1	
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	100 m/min 328 ft./min	0.025			0.03	0.04		0.05			0.065	0.08	
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	100 m/min 262 ft./min	0.025			0.025	0.04		0.05			0.065	0.08	
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	80 m/min 328 ft./min	0.025			0.03	0.04		0.05			0.065	0.08	
		High-temperature-resistant and ferritic-austenitic (duplex)		○	65 m/min 213 ft./min	0.02			0.025	0.03		0.04			0.05	0.065	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	170 m/min 558 ft./min	0.03			0.04	0.055		0.065			0.08	0.1	
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	140 m/min 459 ft./min	0.03			0.04	0.055		0.065			0.08	0.1	
N	Non-ferrous metals	Aluminum	Alu up to 10% Si	○	340 m/min 1.115 ft./min	0.03			0.04	0.055		0.065			0.08		
			Alu over 10% Si	○	300 m/min 984 ft./min	0.03			0.04	0.055		0.065			0.08	0.1	
		Copper, brass, bronze and red brass		○	340 m/min 1.115 ft./min	0.03			0.04	0.055		0.065			0.08	0.1	
					○	340 m/min 1.115 ft./min	0.03			0.04	0.055		0.065			0.08	0.1
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	●	40 m/min 131 ft./min	0.02			0.025	0.03		0.035			0.045	0.065	
		Pure titanium		●	80 m/min 262 ft./min	0.02			0.025	0.03		0.035			0.045	0.065	
		Titanium alloys		●	70 m/min 230 ft./min	0.02			0.025	0.03		0.035			0.045	0.065	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	60 m/min 197 ft./min	0.025			0.03	0.03		0.035			0.045	0.065	
			up to 58 HRC														
			over 58 HRC														
O	Other	Thermoplastics		○	300 m/min	0.03			0.04	0.055		0.065			0.08	0.1	
		Duroplastics			984 ft./min							.0021		.0027	.0031		
		GRP/CRP reinforced plastics, graphite															

● = highly recommended ○ = recommended

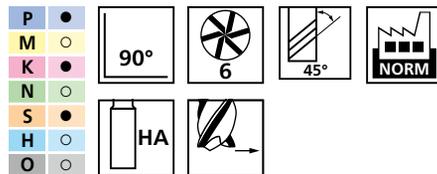
Universal solid carbide end mills

Universal solid carbide end mills with six/eight flutes UC6/8



Sharp corner design – metric

End mills for finishing and for trimming of workpiece contours. The low tool deflection allows very precise working. Engineered for universal machining applications on a variety of materials.



Special features:

- High surface quality.
- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.

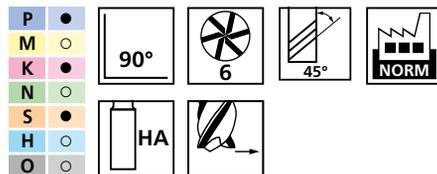


DC [mm]	DCON [mm]	APMX [mm]	LF [mm]	ZEFP		Item no.	Designation
Long HA							
6	6	13	57	6	1	23000174	SCM-UC6-M060S-M57HA AL40
8	8	19	63	6	1	23000175	SCM-UC6-M080S-M63HA AL40
10	10	22	72	6	1	23000176	SCM-UC6-M100S-M72HA AL40
12	12	26	83	6	1	23000177	SCM-UC6-M120S-M83HA AL40
16	16	32	92	6	1	23000178	SCM-UC6-M160S-S92HA AL40
20	20	38	104	8	1	23000179	SCM-UC8-M200S-S104HA AL40



Sharp corner design – imperial

End mills for finishing and for trimming of workpiece contours. The low tool deflection allows very precise working. Engineered for universal machining applications on a variety of materials.



Special features:

- High surface quality.
- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.



DC [Inch]	DCON [Inch]	APMX [Inch]	LF [Inch]	ZEFP		Item no.	Designation
Long HA							
1/4	1/4	1/2	2-1/2	6	1	23003061	SCM-UC6-11/4S-M2.5HA AL40
5/16	5/16	5/8	2-1/2	6	1	23003062	SCM-UC6-15/16S-M2.5HA AL40
3/8	3/8	3/4	2-1/2	6	1	23003063	SCM-UC6-13/8S-M2.5HA AL40
1/2	1/2	1	3	6	1	23003064	SCM-UC6-11/2S-M3HA AL40
5/8	5/8	1-1/4	3-1/2	6	1	23003065	SCM-UC6-15/8S-M3.5HA AL40

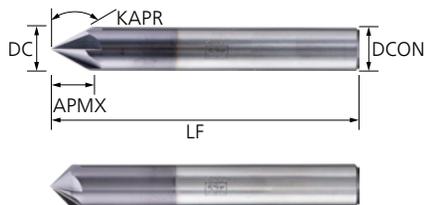
Recommended peripheral speeds [SFPM]

Material group		Specification/ example material	Suitability	Chamfering/deburring $a_p = 0,2 \times DC$; $a_e = 0,1 \times DC$ 										
				Cutting speed v_c	Tooth feed f_z [mm/tooth] [in./tooth] for cutting diameter DC									
					1/8 Inch	6 mm	1/4 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch		
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	180 m/min		0.045		0.065	0.085		0.14		.0058
				●	591 ft./min	.0004		.0019		.0032		.0058		
			500 to 700 N/mm ² (150 to 208 BHN)	●	160 m/min		0.045		0.065	0.085		0.14		.0058
				●	525 ft./min	.0004		.0019		.0032		.0058		
700 to 1,000 N/mm ² (208 to 296 BHN)	●	140 m/min		0.025		0.04	0.045		0.075		.0031			
	●	459 ft./min	.0004		.0010		.0017		.0031					
1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	120 m/min		0.025		0.04	0.045		0.075		.0031			
	●	394 ft./min	.0004		.0010		.0017		.0031					
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	100 m/min		0.025		0.04	0.045		0.075		.0031
				●	246 ft./min	.0004		.0010		.0017		.0031		
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	75 m/min		0.025		0.04	0.045		0.075		.0031
●	328 ft./min	.0004		.0010		.0017		.0031						
High-temperature-resistant and ferritic-austenitic (duplex)	●	60 m/min		0.025		0.04	0.045		0.075		.0031			
	●	197 ft./min	.0004		.0010		.0017		.0031					
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	180 m/min		0.045		0.065	0.085		0.14		.0058
				●	591 ft./min	.0008		.0019		.0032		.0058		
Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	140 m/min		0.025		0.04	0.045		0.075		.0031		
		●	459 ft./min	.0004		.0010		.0017		.0031				
N	Non-ferrous metals	Aluminum	Alu up to 10% Si	●	300 m/min		0.045		0.065	0.085		0.14		.0058
				●	984 ft./min	.0008		.0019		.0032		.0058		
		Alu over 10% Si	●	260 m/min		0.045		0.065	0.085		0.14		.0058	
			●	853 ft./min	.0008		.0019		.0032		.0058			
Copper, brass, bronze and red brass	●	300 m/min		0.045		0.065	0.085		0.14		.0058			
	●	984 ft./min	.0008		.0019		.0032		.0058					
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○	50 m/min		0.025		0.04	0.045		0.075		.0031
				○	164 ft./min	.0004		.0010		.0017		.0031		
		Pure titanium	○	140 m/min		0.025		0.04	0.045		0.075		.0031	
			○	459 ft./min	.0004		.0010		.0017		.0031			
Titanium alloys	○	70 m/min		0.025		0.04	0.045		0.075		.0031			
	○	230 ft./min	.0004		.0010		.0017		.0031					
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	70 m/min		0.025		0.04	0.045		0.075		.0031
				○	230 ft./min	.0004		.0010		.0017		.0031		
				○										
over 58 HRC	○													
	○													
	○													
O	Other	Thermoplastics		○	300 m/min		0.045		0.065	0.085		0.14		.0058
				○	984 ft./min	.0008		.0019		.0032		.0058		
				○										
Duroplastics	○													
	○													
GRP/CRP reinforced plastics, graphite	○													
	○													

● = highly recommended ○ = recommended

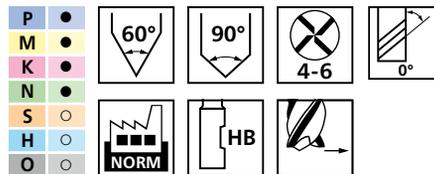
Universal solid carbide end mills

Universal deburring end mill UD



Conical shape – metric

End mills for deburring and chamfering. Engineered for universal machining applications on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.



DC [mm]	DCON [mm]	APMX [mm]	LF [mm]	KAPR	ZEFP		Item no.	Designation
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60° HB

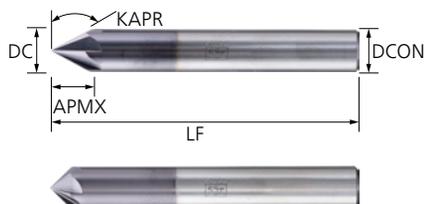


6	6	5.2	57	60	4	1	23000116	SCM-UD4-M060A60°-HB AL40
8	8	6.9	63	60	5	1	23000117	SCM-UD5-M080A60°-HB AL40
10	10	8.7	72	60	6	1	23000118	SCM-UD6-M100A60°-HB AL40
12	12	10.4	83	60	6	1	23000119	SCM-UD6-M120A60°-HB AL40

90° HB

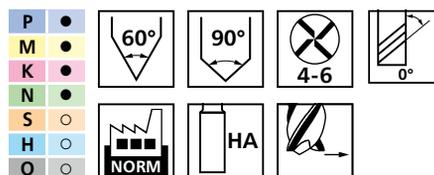


6	6	3	57	45	4	1	23000120	SCM-UD4-M060A90°-HB AL40
8	8	4	63	45	5	1	23000121	SCM-UD5-M080A90°-HB AL40
10	10	5	72	45	6	1	23000122	SCM-UD6-M100A90°-HB AL40
12	12	6	83	45	6	1	23000123	SCM-UD6-M120A90°-HB AL40



Conical shape – imperial

End mills for deburring and chamfering. Engineered for universal machining applications on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.



DC [Inch]	DCON [Inch]	APMX [Inch]	LF [Inch]	KAPR	ZEFP		Item no.	Designation
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60° HA



1/8	1/8	7/64	1-1/2	60	4	1	23003016	SCM-UD4-11/8A60°-HA AL40
1/4	1/4	7/32	2-1/2	60	4	1	23003017	SCM-UD4-11/4A60°-HA AL40
3/8	3/8	21/64	2-1/2	60	6	1	23003018	SCM-UD6-13/8A60°-HA AL40
1/2	1/2	7/16	3	60	6	1	23003019	SCM-UD6-11/2A60°-HA AL40

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Universal solid carbide end mills

Universal deburring end mill UD

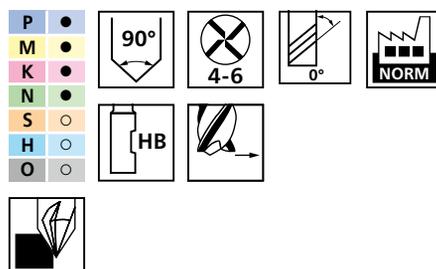


DC [Inch]	DCON [Inch]	APMX [Inch]	LF [Inch]	KAPR	ZEFP		Item no.	Designation
90° HA								
1/8	1/8	1/16	1-1/2	45	4	1	23003020	SCM-UD4-I1/8A90°-HA AL40
1/4	1/4	1/8	2-1/2	45	4	1	23003021	SCM-UD4-I1/4A90°-HA AL40
3/8	3/8	3/16	2-1/2	45	6	1	23003022	SCM-UD6-I3/8A90°-HA AL40
1/2	1/2	1/4	3	45	6	1	23003023	SCM-UD6-I1/2A90°-HA AL40



Set SCM-UD-SET-M060/080/100 A90°HB AL40 3TLG

The set contains three solid carbide end mills for deburring and chamfering. The solid carbide end mills are engineered for universal use in a variety of materials.



Contents:

The set contains one each of the following:
 SCM-UD4-M060A90°-HB AL40,
 SCM-UD5-M080A90°-HB AL40 and
 SCM-UD6-M100A90°-HB AL40.

Type	Contents [Piece]	Contents tool diameter		Item no.	Designation
90°	3	6, 8, 10	1	23000203	SCM-UD-SET-M060/080/100 A 90°HB AL40 3TLG

Universal solid carbide end mills

Universal full radius end mill UB



Recommended peripheral speeds [SFPM]

Material group	Specification/ example material	Suitability	a _p	a _e	Cutting speed v _c	Profile milling – use of tip 															
						Tooth feed f _z [mm/tooth] [in./tooth] for cutting diameter DC															
						3 mm	1/8 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	5/8 Inch	16 mm	3/4 Inch
P Steel	All types of steel and cast steel	● up to 0.1 x D	up to 0.3 x D	up to 500 N/mm ² (150 BHN)	● up to 0.1 x D	up to 0.3 x D	900 m/min 2,953 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.038 0.047	0.047 0.056	0.12	0.056			
				500 to 700 N/mm ² (150 to 208 BHN)	● up to 0.1 x D	up to 0.3 x D	700 m/min 2,297 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.038 0.047	0.047 0.056	0.12	0.056			
				700 to 1,000 N/mm ² (208 to 296 BHN)	● up to 0.1 x D	up to 0.3 x D	550 m/min 1,804 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.038 0.047	0.047 0.056	0.12	0.056			
				1,000 to 1,400 N/mm ² (296 to 415 BHN)	● up to 0.1 x D	up to 0.3 x D	400 m/min 1,312 ft./min	0.015 .0006	0.025 .0011	0.03 0.04	0.04	0.045 0.055	0.055	0.065 0.065	0.065	0.038 0.047	0.047 0.056	0.08	0.038		
M Stainless steel	Ferritic and martensitic	● up to 0.1 x D	up to 0.3 x D	e.g. 410, 420, 430, 440, 440C	● up to 0.1 x D	up to 0.3 x D	180 m/min 591 ft./min	0.015 .0006	0.025 .0011	0.03 0.04	0.04	0.045 0.055	0.055	0.065 0.065	0.065	0.038 0.047	0.047 0.056	0.08			
				Austenitic	● up to 0.1 x D	up to 0.3 x D	e.g. AISI 303, 304, 316, 316L	● up to 0.1 x D	up to 0.3 x D	130 m/min 427 ft./min	0.015 .0006	0.025 .0011	0.03 0.04	0.04	0.045 0.055	0.055	0.065 0.065	0.065	0.038 0.047	0.047 0.056	0.08
	High-temperature-resistant and ferritic-austenitic (duplex)	○ up to 0.1 x D	up to 0.3 x D	100 m/min 328 ft./min	0.01 .0004	0.018 .0008	0.02 0.03	0.03	0.04 0.05	0.05	0.06 0.06	0.06	0.07 0.07	0.07	0.07	0.07	0.07	0.07	0.07		
				100 m/min 328 ft./min	0.01 .0004	0.018 .0008	0.02 0.03	0.03	0.04 0.05	0.05	0.06 0.06	0.06	0.07 0.07	0.07	0.07 0.07	0.07	0.07	0.07	0.07	0.07	
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	● up to 0.1 x D	up to 0.3 x D	up to 180 BHN	● up to 0.1 x D	up to 0.3 x D	800 m/min 2,625 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.038 0.047	0.047 0.056	0.12	0.056			
				160 to 260 BHN	● up to 0.1 x D	up to 0.3 x D	750 m/min 2,461 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.038 0.047	0.047 0.056	0.12	0.056			
N Non-ferrous metals	Aluminum	○ up to 0.1 x D	up to 0.3 x D	Alu up to 10% Si	○ up to 0.1 x D	up to 0.3 x D	1,200 m/min 3,937 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.038 0.047	0.047 0.056	0.12	0.056			
				Alu over 10% Si	● up to 0.1 x D	up to 0.3 x D	850 m/min 2,789 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.038 0.047	0.047 0.056	0.12	0.056			
	Copper, brass, bronze and red brass	● up to 0.1 x D	up to 0.3 x D	1,100 m/min 3,609 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.09	0.038 0.047	0.047 0.056	0.12	0.056					
				1,100 m/min 3,609 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.09	0.038 0.047	0.047 0.056	0.12	0.056					
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co																			
	Pure titanium																				
	Titanium alloys																				
H Hard steels and chilled castings	Heat-treated and hardened steels	● up to 0.1 x D	up to 0.3 x D	up to 50 HRC	● up to 0.1 x D	up to 0.3 x D	200 m/min 656 ft./min	0.01 .0004	0.018 .0008	0.02 0.03	0.03	0.04 0.05	0.05	0.06 0.06	0.06 0.07	0.07 0.07	0.07	0.07			
				up to 58 HRC	○ up to 0.1 x D	up to 0.3 x D	150 m/min 492 ft./min	0.01 .0004	0.018 .0008	0.02 0.03	0.03	0.04 0.05	0.05	0.06 0.06	0.06 0.07	0.07 0.07	0.07	0.07			
		over 58 HRC																			
O Other	Thermoplastics	○ up to 0.1 x D	up to 0.3 x D	1,200 m/min 3,937 ft./min	0.025 .0010	0.04 .0021	0.055 0.065	0.065	0.075 0.08	0.08	0.09 0.09	0.09	0.038 0.047	0.047 0.056	0.12	0.056					
	Duroplastics																				
	GRP/CRP reinforced plastics, graphite																				

● = highly recommended ○ = recommended

Universal solid carbide end mills

Universal full radius end mill UB



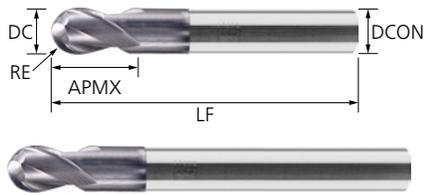
Recommended peripheral speeds [SFPM]

Material group	Specification/ example material	Suitability	Profile milling – use of shoulder 																				
			a _p	a _e	Cutting speed v _c	Tooth feed f _z [mm/tooth] [in./tooth] for cutting diameter DC																	
						3 mm	1/8 Inch	4 mm	3/16 Inch	5 mm	6 mm	1/4 Inch	5/16 Inch	8 mm	10 mm	3/8 Inch	12 mm	1/2 Inch	5/8 Inch	16 mm	3/4 Inch		
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	● up to 0.1 x D	up to 0.45 x D	570 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18			
					1,870 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
					450 m/min	0.04		0.06	0.08	0.1			0.11	0.12		0.14			0.18				
					1,476 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
P Steel	All types of steel and cast steel	500 to 700 N/mm ² (150 to 208 BHN)	● up to 0.1 x D	up to 0.45 x D	350 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18			
					1,148 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
					700 to 1,000 N/mm ² (208 to 296 BHN)	● up to 0.1 x D	up to 0.45 x D	250 m/min	0.02		0.04	0.05	0.06			0.07	0.08			0.1			0.12
					820 ft./min			.0008		.0019			.0025	.0027			.0030	.0042	.0047	.0056			
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	● up to 0.1 x D	up to 0.45 x D	130 m/min	0.02		0.04	0.05	0.06			0.07	0.08			0.1			0.12			
					427 ft./min	.0008		.0019			.0025	.0027			.0030	.0042	.0047	.0056					
	Austenitic	e.g. AISI 303, 304, 316, 316L	● up to 0.1 x D	up to 0.45 x D	80 m/min	0.02		0.04	0.05	0.06			0.07	0.08			0.1			0.12			
					262 ft./min	.0008		.0019			.0025	.0027			.0030	.0042	.0047	.0056					
High-temperature-resistant and ferritic-austenitic (duplex)			○ up to 0.1 x D	up to 0.45 x D	60 m/min	0.015		0.03	0.04	0.05			0.06	0.07			0.08			0.1			
					197 ft./min	.0006		.0015			.0021	.0023			.0026	.0033	.0039	.0047					
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	● up to 0.1 x D	up to 0.45 x D	550 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18			
					1,804 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
K Cast iron	Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	● up to 0.1 x D	up to 0.45 x D	500 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18			
					1,640 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
N Non-ferrous metals	Aluminum	Alu up to 10% Si	○ up to 0.1 x D	up to 0.45 x D	750 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18			
					2,461 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
	Alu over 10% Si	● up to 0.1 x D	up to 0.45 x D	600 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18				
				1,969 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084						
Copper, brass, bronze and red brass			● up to 0.1 x D	up to 0.45 x D	700 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18			
					2,297 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co																					
	Pure titanium																						
	Titanium alloys																						
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	● up to 0.1 x D	up to 0.45 x D	150 m/min	0.02		0.04	0.05	0.06			0.07	0.08			0.1			0.12			
					492 ft./min	.0008		.0019			.0025	.0027			.0030	.0042	.0047	.0056					
		up to 58 HRC	○ up to 0.1 x D	up to 0.45 x D	110 m/min	0.02		0.04	0.05	0.06			0.07	0.08			0.1			0.12			
					361 ft./min	.0008		.0019			.0025	.0027			.0030	.0042	.0047	.0056					
over 58 HRC																							
O Other	Thermoplastics		○ up to 0.1 x D	up to 0.45 x D	750 m/min	0.04		0.06	0.08	0.1			0.11	0.12			0.14			0.18			
					2,461 ft./min	.0017		.0030			.0042	.0043			.0045	.0058	.0070	.0084					
	Duroplastics																						
GRP/CRP reinforced plastics, graphite																							

● = highly recommended ○ = recommended

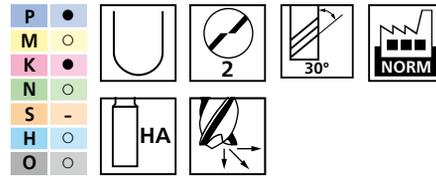
Universal solid carbide end mills

Universal full radius end mill UB



Full radius – metric

End mills for free-form profile cutting. The solid tungsten carbide end mills are engineered for universal use on a variety of materials.



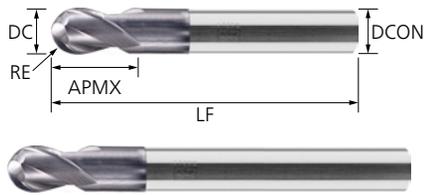
Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.

D _c [mm]	DCON [mm]	APMX [mm]	LF [mm]	RE [mm]	ZEPF		Item no.	Designation
Long HA HA								
3	6	5	54	1.5	2	1	23000100	SCM-UB2-M030R-S54HA6 AL40
4	6	8	54	2	2	1	23000101	SCM-UB2-M040R-S54HA6 AL40
5	6	9	54	2.5	2	1	23000102	SCM-UB2-M050R-S54HA6 AL40
6	6	10	54	3	2	1	23000103	SCM-UB2-M060R-S54HA AL40
8	8	12	58	4	2	1	23000104	SCM-UB2-M080R-S58HA AL40
10	10	14	66	5	2	1	23000105	SCM-UB2-M100R-S66HA AL40
12	12	16	73	6	2	1	23000106	SCM-UB2-M120R-S73HA AL40
16	16	22	82	8	2	1	23000107	SCM-UB2-M160R-S82HA AL40
Extra long HA HA								
3	6	5	80	1.5	2	1	23000108	SCM-UB2-M030R-S80HA6 AL40
4	6	8	80	2	2	1	23000109	SCM-UB2-M040R-S80HA6 AL40
5	6	9	100	2.5	2	1	23000110	SCM-UB2-M050R-S100HA6 AL40
6	6	10	100	3	2	1	23000111	SCM-UB2-M060R-S100HA AL40
8	8	12	100	4	2	1	23000112	SCM-UB2-M080R-S100HA AL40
10	10	14	100	5	2	1	23000113	SCM-UB2-M100R-S100HA AL40
12	12	16	100	6	2	1	23000114	SCM-UB2-M120R-S100HA AL40
16	16	22	150	8	2	1	23000115	SCM-UB2-M160R-S150HA AL40

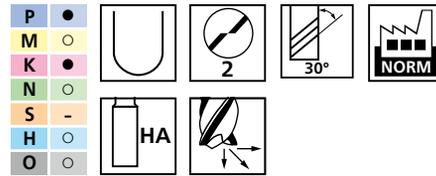
Universal solid carbide end mills

Universal full radius end mill UB



Full radius – imperial

End mills for free-form profile cutting. The solid tungsten carbide end mills are engineered for universal use on a variety of materials.



Special features:

- High productivity due to optimum stock removal rate.
- Long tool life due to modern tool coating.



D _c [Inch]	DCON [Inch]	APMX [Inch]	LF [Inch]	RE [Inch]	ZFP		Item no.	Designation
Long HA HA								
1/8	1/8	1/4	2	1/16	2	1	23003000	SCM-UB2-11/8R-M2HA AL40
3/16	3/16	3/8	2	3/32	2	1	23003001	SCM-UB2-13/16R-M2HA AL40
1/4	1/4	1/2	2	1/8	2	1	23003002	SCM-UB2-11/4R-M2HA AL40
5/16	5/16	5/8	2-1/2	5/32	2	1	23003003	SCM-UB2-15/16R-M2.5HA AL40
3/8	3/8	3/4	2-1/2	3/16	2	1	23003004	SCM-UB2-13/8R-M2.5HA AL40
1/2	1/2	1	3	1/4	2	1	23003005	SCM-UB2-11/2R-M3HA AL40
5/8	5/8	1-1/4	3-1/2	5/16	2	1	23003006	SCM-UB2-15/8R-M3.5HA AL40
3/4	3/4	1-1/2	4	3/8	2	1	23003007	SCM-UB2-13/4R-M4HA AL40
Extra long HA HA								
1/8	1/8	1/4	3	1/16	2	1	23003008	SCM-UB2-11/8R-M3HA AL40
3/16	3/16	3/8	3	3/32	2	1	23003009	SCM-UB2-13/16R-M3HA AL40
1/4	1/4	1/2	3-1/2	1/8	2	1	23003010	SCM-UB2-11/4R-M3.5HA AL40
5/16	5/16	5/8	4	5/32	2	1	23003011	SCM-UB2-15/16R-M4HA AL40
3/8	3/8	3/4	4	3/16	2	1	23003012	SCM-UB2-13/8R-M4HA AL40
1/2	1/2	1	4-1/2	1/4	2	1	23003013	SCM-UB2-11/2R-M4.5HA AL40
5/8	5/8	1-1/4	5	5/16	2	1	23003014	SCM-UB2-15/8R-M5HA AL40
3/4	3/4	1-1/2	6	3/8	2	1	23003015	SCM-UB2-13/4R-M6HA AL40

Performance Stainless solid carbide end mills

Material suitability overview



Performance Stainless

Material group			Solid carbide mill with four flutes HC4M	Solid carbide mill with five flutes HCD5M
P	Steel	All types of steel and cast steel		
M	Stainless steel	Ferritic and martensitic	●	●
		Austenitic	●	●
		High-temperature-resistant and ferritic-austenitic (duplex)	●	●
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)		
		Cast iron with nodular graphite (GJS, GGG)		
N	Non-ferrous metals	Aluminum	○	○
		Copper, brass, bronze and red brass	○	○
S	Super and titanium alloys	Heat-resistant super alloys based on Fe, Ni and Co		
		Pure titanium	●	●
		Titanium alloys	●	●
H	Hard steels and chilled castings	Heat-treated and hardened steels up to 50 HRC		
		Hardened steels up to 58 HRC		
		Hardened steels over 58 HRC		
O	Other	Thermoplastics		
		Duroplastics		
		GRP/CRP reinforced plastics, graphite		

● = highly recommended ○ = recommended

Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with four flutes HC4M



Recommended peripheral speeds [SFPM]

Material group	Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 															
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]														
				1	2	3	4	5	6	8	10	12	16	20	25			
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)																
		500 to 700 N/mm ² (150 to 208 BHN)																
		700 to 1,000 N/mm ² (208 to 296 BHN)																
		1,000 to 1,400 N/mm ² (296 to 415 BHN)																
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	100	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080	0.100	0.125		
	Austenitic	e.g. AISI 303, 304, 316, 316L	●	90	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080	0.100	0.125		
	High-temperature-resistant and ferritic-austenitic (duplex)		●	70	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080	0.100	0.125		
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB																
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB																
N Non-ferrous metals	Aluminum	Al up to 10% Si																
		Al over 10% Si																
	Copper, brass, bronze and red brass																	
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co																
	Pure titanium		●	50	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080	0.100	0.125		
	Titanium alloys		●	40	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080	0.100	0.125		
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC																
		up to 58 HRC																
		over 58 HRC																
O Other	Thermoplastics																	
	Duroplastics																	
	GRP/CRP reinforced plastics, graphite																	

● = highly recommended ○ = recommended

Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with four flutes HC4M



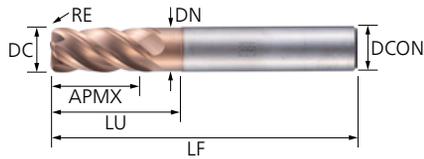
Recommended peripheral speeds [SFPM]

Material group	Specification/ example material	Suitability	Side milling $a_p = 2 \times DC$; $a_e = 0.4 \times DC$ 													
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]												
				1	2	3	4	5	6	8	10	12	16	20	25	
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)														
		500 to 700 N/mm ² (150 to 208 BHN)														
		700 to 1,000 N/mm ² (208 to 296 BHN)														
		1,000 to 1,400 N/mm ² (296 to 415 BHN)														
M Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122	●	110	0.006	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.096	0.120	0.150
	Austenitic	e.g. 1.4301, 1.4571	●	100	0.006	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.096	0.120	0.150
	High-temperature-resistant and ferritic-austenitic (duplex)		●	80	0.006	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.096	0.120	0.150
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB														
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB														
N Non-ferrous metals	Aluminum	Al up to 10% Si														
		Al over 10% Si														
	Copper, brass, bronze and red brass															
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co														
	Pure titanium		●	50	0.006	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.096	0.120	0.150
	Titanium alloys		●	40	0.006	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.096	0.120	0.150
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC														
		up to 58 HRC														
		over 58 HRC														
O Other	Thermoplastics															
	Duroplastics															
	GRP/CRP reinforced plastics, graphite															

● = highly recommended ○ = recommended

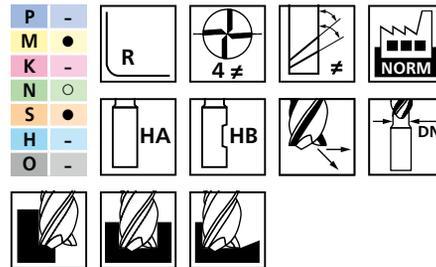
Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with four flutes HC4M



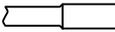
Radius – metric

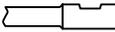
End mills with neck chip channel for various applications from roughing to finishing, as well as slot milling. Due to their material-specific geometry and coating, the end mills have been optimized for use in stainless materials.



Special features:

- Variable pitch and variable helix angle for low-vibration machining and smooth milling.
- Optimized helix angle for improved chip evacuation.
- Optimum temperature control when working on materials that are difficult to machine.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
Long HA  HA										
6	6	5.7	13	57	20	0.5	4	1	23000892	SCM-HC4M-M060R05-M57HA Ti40
						1	4	1	23000893	SCM-HC4M-M060R10-M57HA Ti40
8	8	7	19	63	25	0.5	4	1	23000894	SCM-HC4M-M080R05-M63HA Ti40
						1	4	1	23000895	SCM-HC4M-M080R10-M63HA Ti40
						2	4	1	23000896	SCM-HC4M-M080R20-M63HA Ti40
10	10	9.7	22	72	30	0.5	4	1	23000897	SCM-HC4M-M100R05-M72HA Ti40
						1	4	1	23000898	SCM-HC4M-M100R10-M72HA Ti40
						2	4	1	23000899	SCM-HC4M-M100R20-M72HA Ti40
12	12	11.6	26	83	36	0.5	4	1	23000900	SCM-HC4M-M120R05-M83HA Ti40
						1	4	1	23000901	SCM-HC4M-M120R10-M83HA Ti40
						2	4	1	23000902	SCM-HC4M-M120R20-M83HA Ti40
						3	4	1	23000903	SCM-HC4M-M120R30-M83HA Ti40
16	16	15.6	32	92	42	1	4	1	23000904	SCM-HC4M-M160R10-M92HA Ti40
						2	4	1	23000905	SCM-HC4M-M160R20-M92HA Ti40
						3	4	1	23000906	SCM-HC4M-M160R30-M92HA Ti40
						4	4	1	23000907	SCM-HC4M-M160R40-M92HA Ti40
20	20	19.6	38	104	52	1	4	1	23000908	SCM-HC4M-M200R10-M104HA Ti40
						2	4	1	23000909	SCM-HC4M-M200R20-M104HA Ti40
						3	4	1	23000910	SCM-HC4M-M200R30-M104HA Ti40
						4	4	1	23000911	SCM-HC4M-M200R40-M104HA Ti40
25	25	24.5	45	125	65	2	4	1	23000912	SCM-HC4M-M250R20-M125HA Ti40
						3	4	1	23000913	SCM-HC4M-M250R30-M125HA Ti40
						4	4	1	23000914	SCM-HC4M-M250R40-M125HA Ti40

Long HB  HB										
6	6	5.7	13	57	20	0.5	4	1	23000927	SCM-HC4M-M060R05-M57HB Ti40
						1	4	1	23000928	SCM-HC4M-M060R10-M57HB Ti40
8	8	7	19	63	25	0.5	4	1	23000929	SCM-HC4M-M080R05-M63HB Ti40
						1	4	1	23000930	SCM-HC4M-M080R10-M63HB Ti40
						2	4	1	23000931	SCM-HC4M-M080R20-M63HB Ti40
10	10	9.7	22	72	30	0.5	4	1	23000932	SCM-HC4M-M100R05-M72HB Ti40
						1	4	1	23000933	SCM-HC4M-M100R10-M72HB Ti40
						2	4	1	23000934	SCM-HC4M-M100R20-M72HB Ti40

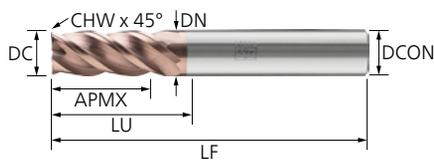
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Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with four flutes HC4M

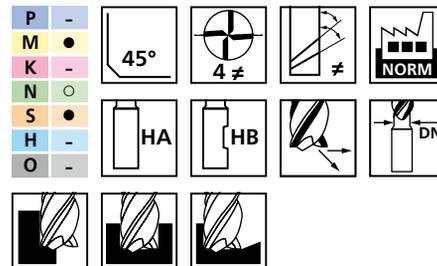


DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEFP		Item no.	Designation
12	12	11.6	26	83	36	0.5	4	1	23000935	SCM-HC4M-M120R05-M83HB Ti40
						1	4	1	23000936	SCM-HC4M-M120R10-M83HB Ti40
						2	4	1	23000937	SCM-HC4M-M120R20-M83HB Ti40
						3	4	1	23000938	SCM-HC4M-M120R30-M83HB Ti40
16	16	15.6	32	92	42	1	4	1	23000939	SCM-HC4M-M160R10-M92HB Ti40
						2	4	1	23000940	SCM-HC4M-M160R20-M92HB Ti40
						3	4	1	23000941	SCM-HC4M-M160R30-M92HB Ti40
						4	4	1	23000942	SCM-HC4M-M160R40-M92HB Ti40
20	20	19.6	38	104	52	1	4	1	23000943	SCM-HC4M-M200R10-M104HB Ti40
						2	4	1	23000944	SCM-HC4M-M200R20-M104HB Ti40
						3	4	1	23000945	SCM-HC4M-M200R30-M104HB Ti40
						4	4	1	23000946	SCM-HC4M-M200R40-M104HB Ti40
25	25	24.5	45	125	65	2	4	1	23000947	SCM-HC4M-M250R20-M125HB Ti40
						3	4	1	23000948	SCM-HC4M-M250R30-M125HB Ti40
						4	4	1	23000949	SCM-HC4M-M250R40-M125HB Ti40



Chamfer corner design – metric

End mills with neck chip channel for various applications from roughing to finishing, as well as slot milling. Due to their material-specific geometry and coating, the end mills have been optimized for use in stainless materials.

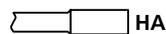


Special features:

- Variable pitch and variable helix angle for low-vibration machining and smooth milling.
- Optimized helix angle for improved chip evacuation.
- Optimum temperature control when working on materials that are difficult to machine.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEFP		Item no.	Designation
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Long HA



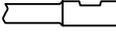
1	6		2	50		0.05	4	1	23000880	SCM-HC4M-M010C-M50HA6 HP40
2	6		4	50		0.05	4	1	23000881	SCM-HC4M-M020C-M50HA6 HP40
3	6		6	57		0.1	4	1	23000882	SCM-HC4M-M030C-M57HA6 HP40
4	6		9	57		0.1	4	1	23000883	SCM-HC4M-M040C-M57HA6 HP40
5	6		13	57		0.1	4	1	23000884	SCM-HC4M-M050C-M57HA6 HP40
6	6	5.7	13	57	20	0.15	4	1	23000885	SCM-HC4M-M060C-M57HA Ti40
8	8	7.7	19	63	25	0.2	4	1	23000886	SCM-HC4M-M080C-M63HA Ti40
10	10	9.7	22	72	30	0.2	4	1	23000887	SCM-HC4M-M100C-M72HA Ti40
12	12	11.6	26	83	36	0.25	4	1	23000888	SCM-HC4M-M120C-M83HA Ti40
16	16	15.6	32	92	42	0.3	4	1	23000889	SCM-HC4M-M160C-M92HA Ti40
20	20	19.6	38	104	52	0.3	4	1	23000890	SCM-HC4M-M200C-M104HA Ti40
25	25	24.5	45	125	65	0.3	4	1	23000891	SCM-HC4M-M250C-M125HA Ti40

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Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with four flutes HC4M



DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEFP		Item no.	Designation
Long HB										
 HB										
1	6		2	50		0.05	4	1	23000915	SCM-HC4M-M010C-M50HB6 HP40
2	6		4	50		0.05	4	1	23000916	SCM-HC4M-M020C-M50HB6 HP40
3	6		6	57		0.1	4	1	23000917	SCM-HC4M-M030C-M57HB6 HP40
4	6		9	57		0.1	4	1	23000918	SCM-HC4M-M040C-M57HB6 HP40
5	6		13	57		0.1	4	1	23000919	SCM-HC4M-M050C-M57HB6 HP40
6	6	5.7	13	57	20	0.15	4	1	23000920	SCM-HC4M-M060C-M57HB TI40
8	8	7.7	19	63	25	0.2	4	1	23000921	SCM-HC4M-M080C-M63HB TI40
10	10	9.7	22	72	30	0.2	4	1	23000922	SCM-HC4M-M100C-M72HB TI40
12	12	11.6	26	83	36	0.25	4	1	23000923	SCM-HC4M-M120C-M83HB TI40
16	16	15.6	32	92	42	0.3	4	1	23000924	SCM-HC4M-M160C-M92HB TI40
20	20	19.6	38	104	52	0.3	4	1	23000925	SCM-HC4M-M200C-M104HB TI40
25	25	24.5	45	125	65	0.3	4	1	23000926	SCM-HC4M-M250C-M125HB TI40

Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with five flutes HCD5M



Recommended cutting speeds [SFPM] – radius corner design with chip divider, 2xD

Material group		Specification/ example material	Suitability	Dynamic milling $a_p = 2 \times DC$; $a_e = 0.08$ 															
				Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]														
					3	4	5	6	8	10	12	16	20	25					
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)																
			500 to 700 N/mm ² (150 to 208 BHN)																
			700 to 1,000 N/mm ² (208 to 296 BHN)																
			1,000 to 1,400 N/mm ² (296 to 415 BHN)																
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	140	0.038	0.050	0.063	0.076	0.101	0.126	0.151	0.202	0.252	0.315				
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	130	0.038	0.050	0.063	0.076	0.101	0.126	0.151	0.202	0.252	0.315				
		High-temperature-resistant and ferritic-austenitic (duplex)		●	100	0.038	0.050	0.063	0.076	0.101	0.126	0.151	0.202	0.252	0.315				
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB																
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB																
N	Non-ferrous metals	Aluminum	Alu up to 10% Si																
			Alu over 10% Si																
		Copper, brass, bronze and red brass																	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co																
		Pure titanium		●	100	0.038	0.050	0.063	0.076	0.101	0.126	0.151	0.202	0.252	0.315				
		Titanium alloys		●	100	0.038	0.050	0.063	0.076	0.101	0.126	0.151	0.202	0.252	0.315				
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC																
			up to 58 HRC																
			over 58 HRC																
O	Other	Thermoplastics																	
		Duroplastics																	
		GRP/CRP reinforced plastics, graphite																	

● = highly recommended ○ = recommended

Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with five flutes HCD5M



Recommended cutting speeds [SFPM] – radius corner design with chip divider, 3xD

Material group	Specification/ example material	Suitability	Dynamic milling $a_p = 3 \times DC$; $a_e = 0.08$ 												
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]											
				3	4	5	6	8	10	12	16	20	25		
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)													
		500 to 700 N/mm ² (150 to 208 BHN)													
		700 to 1,000 N/mm ² (208 to 296 BHN)													
		1,000 to 1,400 N/mm ² (296 to 415 BHN)													
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	140	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284	
	Austenitic	e.g. AISI 303, 304, 316, 316L	●	130	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284	
	High-temperature-resistant and ferritic-austenitic (duplex)		●	100	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284	
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB													
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB													
N Non-ferrous metals	Aluminum	Alu up to 10% Si													
		Alu over 10% Si													
	Copper, brass, bronze and red brass														
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
	Pure titanium		●	100	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284	
	Titanium alloys		●	100	0.034	0.045	0.057	0.068	0.091	0.113	0.136	0.181	0.227	0.284	
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC													
		up to 58 HRC													
		over 58 HRC													
O Other	Thermoplastics														
	Duroplastics														
	GRP/CRP reinforced plastics, graphite														

● = highly recommended ○ = recommended

Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with five flutes HCD5M



Recommended cutting speeds [SFPM] – radius corner design with chip divider, 4xD

Material group	Specification/ example material	Suitability	Dynamic milling $a_p = 4 \times DC$; $a_e = 0.06$ 												
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]											
				3	4	5	6	8	10	12	16	20	25		
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)													
		500 to 700 N/mm ² (150 to 208 BHN)													
		700 to 1,000 N/mm ² (208 to 296 BHN)													
		1,000 to 1,400 N/mm ² (296 to 415 BHN)													
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	140	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
	Austenitic	e.g. AISI 303, 304, 316, 316L	●	130	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
	High-temperature-resistant and ferritic-austenitic (duplex)		●	100	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB													
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB													
N Non-ferrous metals	Aluminum	Alu up to 10% Si													
		Alu over 10% Si													
	Copper, brass, bronze and red brass														
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
	Pure titanium		●	100	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
	Titanium alloys		●	100	0.030	0.040	0.050	0.060	0.081	0.101	0.121	0.161	0.202	0.252	
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC													
		up to 58 HRC													
		over 58 HRC													
O Other	Thermoplastics														
	Duroplastics														
	GRP/CRP reinforced plastics, graphite														

● = highly recommended ○ = recommended

Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with five flutes HCD5M



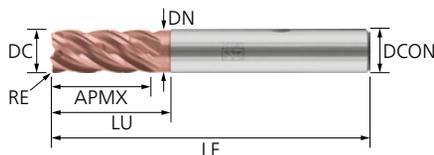
Recommended cutting speeds [SFPM] – radius corner design with chip divider, 5xD

Material group	Specification/ example material	Suitability	Dynamic milling $a_p = 5 \times DC$; $a_e = 0.06$ 												
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]											
				3	4	5	6	8	10	12	16	20	25		
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)													
		500 to 700 N/mm ² (150 to 208 BHN)													
		700 to 1,000 N/mm ² (208 to 296 BHN)													
		1,000 to 1,400 N/mm ² (296 to 415 BHN)													
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	140	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
	Austenitic	e.g. AISI 303, 304, 316, 316L	●	130	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
	High-temperature-resistant and ferritic-austenitic (duplex)		●	100	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB													
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB													
N Non-ferrous metals	Aluminum	Alu up to 10% Si													
		Alu over 10% Si													
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
	Pure titanium		●	100	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
	Titanium alloys		●	100	0.026	0.035	0.044	0.053	0.071	0.088	0.106	0.141	0.176	0.221	
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC													
		up to 58 HRC													
		over 58 HRC													
O Other	Thermoplastics														
	Duroplastics														
	GRP/CRP reinforced plastics, graphite														

● = highly recommended ○ = recommended

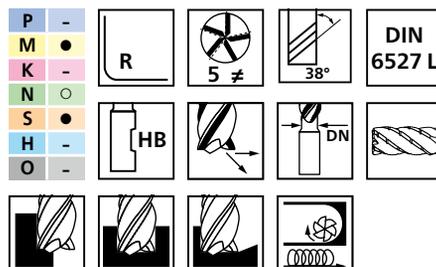
Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with five flutes HCD5M



Radius corner design with chip divider, 2xD – metric

End mills with chip divider and neck chip channel for dynamic machining and trochoidal milling. Due to their material-specific geometry and coating, the end mills have been optimized for use in stainless materials.



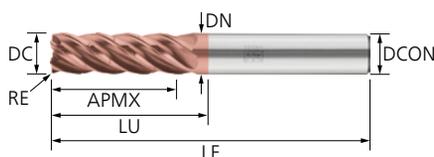
Special features:

- Variable pitch for low-vibration machining and smooth milling.
- Optimized helix angle for improved chip evacuation.
- Optimum temperature control when working on materials that are difficult to machine.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
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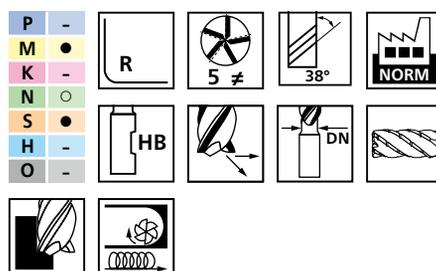
Long HB

6	6	5.7	13	57	20	0.5	5	1	23000950	SCM-HCD5M-M060R05-M57HB Ti40
8	8	7.7	19	63	25	0.5	5	1	23000951	SCM-HCD5M-M080R05-M63HB Ti40
10	10	9.7	22	72	30	0.5	5	1	23000952	SCM-HCD5M-M100R05-M72HB Ti40
12	12	11.6	26	83	36	0.5	5	1	23000953	SCM-HCD5M-M120R05-M83HB Ti40
16	16	15.6	32	92	42	1	5	1	23000954	SCM-HCD5M-M160R10-M92HB Ti40
20	20	19.6	38	104	52	1	5	1	23000955	SCM-HCD5M-M200R10-M104HB Ti40
25	25	24.5	45	124	65	1	5	1	23000956	SCM-HCD5M-M250R10-M124HB Ti40



Radius corner design with chip divider, 3xD – metric

End mills with chip divider and neck chip channel for dynamic machining and trochoidal milling. Due to their material-specific geometry and coating, the end mills have been optimized for use in stainless materials.



Special features:

- Variable pitch for low-vibration machining and smooth milling.
- Optimized helix angle for improved chip evacuation.
- Optimum temperature control when working on materials that are difficult to machine.

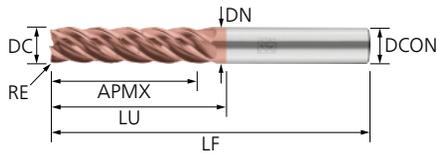
DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
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3xD HB

6	6	5.7	19	66	23	0.5	5	1	23000957	SCM-HCD5M-M060R05-L66HB Ti40
8	8	7.7	25	70	29	0.5	5	1	23000958	SCM-HCD5M-M080R05-L70HB Ti40
10	10	9.7	31	78	35	0.5	5	1	23000959	SCM-HCD5M-M100R05-L78HB Ti40
12	12	11.6	38	92	42	0.5	5	1	23000960	SCM-HCD5M-M120R05-L92HB Ti40
16	16	15.6	50	110	56	1	5	1	23000961	SCM-HCD5M-M160R10-L110HB Ti40
20	20	19.6	62	125	70	1	5	1	23000962	SCM-HCD5M-M200R10-L125HB Ti40
25	25	24.5	78	150	88	1	5	1	23000963	SCM-HCD5M-M250R10-L150HB Ti40

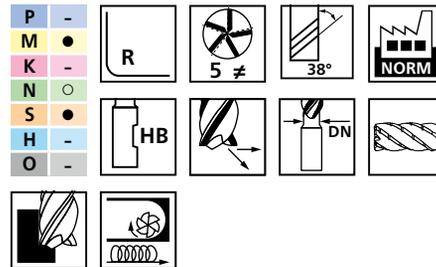
Performance Stainless solid carbide end mills

Performance Stainless solid carbide end mills with five flutes HCD5M



Radius corner design with chip divider, 4xD – metric

End mills with chip divider and neck chip channel for dynamic machining and trochoidal milling. Due to their material-specific geometry and coating, the end mills have been optimized for use in stainless materials.



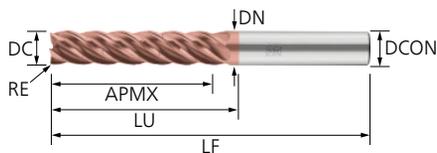
Special features:

- Variable pitch for low-vibration machining and smooth milling.
- Optimized helix angle for improved chip evacuation.
- Optimum temperature control when working on materials that are difficult to machine.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
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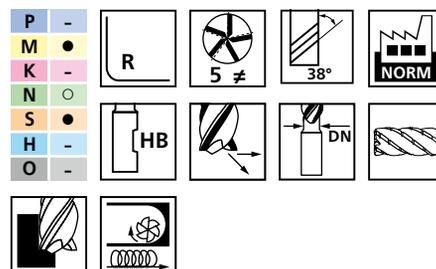
4xD HB

6	6	5.7	24	66	29	0.5	5	1	23000964	SCM-HCD5M-M060R05-XL66HB Ti40
8	8	7.7	32	74	37	0.5	5	1	23000965	SCM-HCD5M-M080R05-XL74HB Ti40
10	10	9.7	40	88	45	0.5	5	1	23000966	SCM-HCD5M-M100R05-XL88HB Ti40
12	12	11.6	48	105	54	0.5	5	1	23000967	SCM-HCD5M-M120R05-XL105HB Ti40
16	16	15.6	64	124	72	1	5	1	23000968	SCM-HCD5M-M160R10-XL124HB Ti40
20	20	19.6	80	148	90	1	5	1	23000969	SCM-HCD5M-M200R10-XL148HB Ti40
25	25	24.5	100	182	115	1	5	1	23000970	SCM-HCD5M-M250R10-XL182HB Ti40



Radius corner design with chip divider, 5xD – metric

End mills with chip divider and neck chip channel for dynamic machining and trochoidal milling. Due to their material-specific geometry and coating, the end mills have been optimized for use in stainless materials.



Special features:

- Variable pitch for low-vibration machining and smooth milling.
- Optimized helix angle for improved chip evacuation.
- Optimum temperature control when working on materials that are difficult to machine.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEPF		Item no.	Designation
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5xD HB

6	6	5.7	30	74	35	0.5	5	1	23000971	SCM-HCD5M-M060R05-XXL74HB Ti40
8	8	7.7	40	84	45	0.5	5	1	23000972	SCM-HCD5M-M080R05-XXL84HB Ti40
10	10	9.7	50	100	55	0.5	5	1	23000973	SCM-HCD5M-M100R05-XXL100HB Ti40
12	12	11.6	60	115	66	0.5	5	1	23000974	SCM-HCD5M-M120R05-XXL115HB Ti40
16	16	15.6	80	142	88	1	5	1	23000975	SCM-HCD5M-M160R10-XXL142HB Ti40
20	20	19.6	100	165	110	1	5	1	23000976	SCM-HCD5M-M200R10-XXL165HB Ti40
25	25	24.5	125	200	138	1	5	1	23000977	SCM-HCD5M-M250R10-XXL200HB Ti40

Performance Aluminum solid carbide end mills

Material suitability overview



Performance Aluminium

Material group			Solid carbide mill with three flutes HC3N
P	Steel	All types of steel and cast steel	
M	Stainless steel	Ferritic and martensitic	
		Austenitic	
		High-temperature-resistant and ferritic-austenitic (duplex)	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	
		Cast iron with nodular graphite (GJS, GGG)	
N	Non-ferrous metals	Aluminum	●
		Copper, brass, bronze and red brass	●
S	Super and titanium alloys	Heat-resistant super alloys based on Fe, Ni and Co	
		Pure titanium	
		Titanium alloys	
H	Hard steels and chilled castings	Heat-treated and hardened steels up to 50 HRC	
		Hardened steels up to 58 HRC	
		Hardened steels over 58 HRC	
O	Other	Thermoplastics	●
		Duroplastics	●
		GRP/CRP reinforced plastics, graphite	

● = highly suitable ○ = suitable

Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



Recommended cutting speeds [SFPM] – radius and chamfer corner designs

Material group	Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 										
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]									
				3	4	5	6	8	10	12	16	20	
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)											
		500 to 700 N/mm ² (150 to 208 BHN)											
		700 to 1,000 N/mm ² (208 to 296 BHN)											
		1,000 to 1,400 N/mm ² (296 to 415 BHN)											
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C											
	Austenitic	e.g. AISI 303, 304, 316, 316L											
	High-temperature-resistant and ferritic-austenitic (duplex)												
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB											
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB											
N Non-ferrous metals	Aluminum	Alu up to 10% Si	●	450	0.027	0.036	0.045	0.055	0.073	0.091	0.109	0.145	0.182
		Alu over 10% Si	●	420	0.027	0.036	0.045	0.055	0.073	0.091	0.109	0.145	0.182
	Copper, brass, bronze and red brass		●	350	0.027	0.036	0.045	0.055	0.073	0.091	0.109	0.145	0.182
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co											
	Pure titanium												
	Titanium alloys												
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC											
		up to 58 HRC											
		over 58 HRC											
O Other	Thermoplastics		●	400	0.027	0.036	0.045	0.055	0.073	0.091	0.109	0.145	0.182
	Duroplastics												
	GRP/CRP reinforced plastics, graphite												

● = highly recommended ○ = recommended

Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



Recommended cutting speeds [SFPM] – radius and chamfer corner designs

Material group	Specification/ example material	Suitability	Side milling $a_p = \max$; $a_e = 0.25 \times DC$ 												
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]											
				3	4	5	6	8	10	12	16	20			
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)													
		500 to 700 N/mm ² (150 to 208 BHN)													
		700 to 1,000 N/mm ² (208 to 296 BHN)													
		1,000 to 1,400 N/mm ² (296 to 415 BHN)													
M Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122													
	Austenitic	e.g. 1.4301, 1.4571													
	High-temperature-resistant and ferritic-austenitic (duplex)														
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB													
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB													
N Non-ferrous metals	Aluminum	Alu up to 10% Si	●	520	0.041	0.055	0.068	0.082	0.109	0.136	0.164	0.218	0.273		
		Alu over 10% Si	●	480	0.041	0.055	0.068	0.082	0.109	0.136	0.164	0.218	0.273		
	Copper, brass, bronze and red brass	●	400	0.041	0.055	0.068	0.082	0.109	0.136	0.164	0.218	0.273			
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co													
	Pure titanium														
	Titanium alloys														
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC													
		up to 58 HRC													
		over 58 HRC													
O Other	Thermoplastics		●	450	0.041	0.055	0.068	0.082	0.109	0.136	0.164	0.218	0.273		
	Duroplastics														
	GRP/CRP reinforced plastics, graphite														

● = highly recommended ○ = recommended

Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



Recommended cutting speeds [SFPM] – chamfer corner design, excessive length

Material group	Specification/ example material	Suitability	Full slot milling $a_p = 1 \times DC$; $a_e = 1 \times DC$ 				
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]			
				10	12	16	
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)					
		500 to 700 N/mm ² (150 to 208 BHN)					
		700 to 1,000 N/mm ² (208 to 296 BHN)					
		1,000 to 1,400 N/mm ² (296 to 415 BHN)					
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C					
	Austenitic	e.g. AISI 303, 304, 316, 316L					
	High-temperature-resistant and ferritic-austenitic (duplex)						
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB					
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB					
N Non-ferrous metals	Aluminum	Alu up to 10% Si	●	430	0.080	0.100	0.120
		Alu over 10% Si	●	400	0.080	0.100	0.120
	Copper, brass, bronze and red brass			●	320	0.080	0.100
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co					
	Pure titanium						
	Titanium alloys						
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC					
		up to 58 HRC					
		over 58 HRC					
O Other	Thermoplastics		●	450	0.080	0.100	0.120
	Duroplastics						

● = highly recommended ○ = recommended

Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



Recommended cutting speeds [SFPM] – chamfer corner design, excessive length

Material group	Specification/ example material	Suitability	Side milling $a_p = \max; a_e = 0.4 \times DC$ 				
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]			
				10	12	16	
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)					
		500 to 700 N/mm ² (150 to 208 BHN)					
		700 to 1,000 N/mm ² (208 to 296 BHN)					
		1,000 to 1,400 N/mm ² (296 to 415 BHN)					
M Stainless steel	Ferritic and martensitic	e.g. 1.4105, 1.4122					
	Austenitic	e.g. 1.4301, 1.4571					
	High-temperature-resistant and ferritic-austenitic (duplex)						
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB					
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB					
N Non-ferrous metals	Aluminum	Alu up to 10% Si	●	490	0.092	0.115	0.138
		Alu over 10% Si	●	450	0.092	0.115	0.138
	Copper, brass, bronze and red brass		●	360	0.092	0.115	0.138
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co					
	Pure titanium						
	Titanium alloys						
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC					
		up to 58 HRC					
		over 58 HRC					
O Other	Thermoplastics		●	450	0.092	0.115	0.138
	Duroplastics						
	GRP/CRP reinforced plastics, graphite						

● = highly recommended ○ = recommended

Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



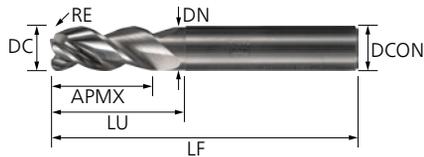
Recommended cutting speeds [SFPM] – chamfer corner design, >4xD

Material group	Specification/ example material	Suitability	Dynamic milling $a_p = \max; a_e = 0.10$ 								
			Cutting speed v_c [m/min]	Tooth feed f_z [mm/tooth] for cutting diameter DC [mm]						16	20
				6	8	10	12	16	20		
P Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)									
		500 to 700 N/mm ² (150 to 208 BHN)									
		700 to 1,000 N/mm ² (208 to 296 BHN)									
		1,000 to 1,400 N/mm ² (296 to 415 BHN)									
M Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C									
	Austenitic	e.g. AISI 303, 304, 316, 316L									
	High-temperature-resistant and ferritic-austenitic (duplex)										
K Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 HB									
	Cast iron with nodular graphite (GJS, GGG)	160 to 260 HB									
N Non-ferrous metals	Aluminium	Alu up to 10% Si	●	450	0.067	0.090	0.112	0.134	0.179	0.224	
		Alu over 10% Si	●	420	0.067	0.090	0.112	0.134	0.179	0.224	
	Copper, brass, bronze and red brass	●	350	0.067	0.090	0.112	0.134	0.179	0.224		
S Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co									
	Pure titanium										
	Titanium alloys										
H Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC									
		up to 58 HRC									
		over 58 HRC									
O Other	Thermoplastics		●	450	0.067	0.090	0.112	0.134	0.179	0.224	
	Duroplastics										

● = highly recommended ○ = recommended

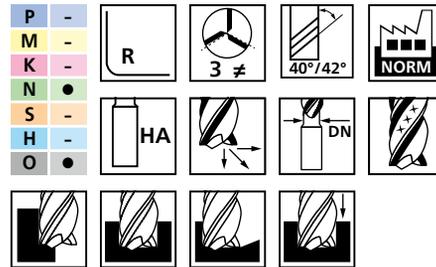
Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



Radius – metric

End mills for various applications, from roughing to finishing. Ideal for machining aluminium alloys, non-ferrous metals and plastics.



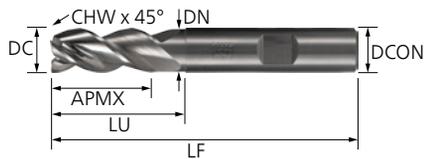
Special features:

- Large polished chip channels for optimum chip control.
- Increased process reliability at high cutting speeds.
- Variable pitch for low-vibration machining and smooth milling.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	RE [mm]	ZEFP		Item no.	Designation
Long HA										
6	6	5.7	13	57	20	0.5	3	1	23000428	SCM-HC3N-M060R05-M57HA UC40
8	8	7.7	19	63	25	0.5	3	1	23000429	SCM-HC3N-M080R05-M63HA UC40
						1	3	1	23000430	SCM-HC3N-M080R10-M63HA UC40
10	10	9.7	22	72	30	1	3	1	23000431	SCM-HC3N-M100R10-M72HA UC40
						1.5	3	1	23000432	SCM-HC3N-M100R15-M72HA UC40
						2	3	1	23000433	SCM-HC3N-M100R20-M72HA UC40
12	12	11.6	26	83	36	1	3	1	23000434	SCM-HC3N-M120R10-M83HA UC40
						1.5	3	1	23000435	SCM-HC3N-M120R15-M83HA UC40
						2	3	1	23000436	SCM-HC3N-M120R20-M83HA UC40
16	16	15.6	32	92	42	1	3	1	23000437	SCM-HC3N-M160R10-M93HA UC40
						2	3	1	23000438	SCM-HC3N-M160R20-M93HA UC40
						3	3	1	23000439	SCM-HC3N-M160R30-M93HA UC40
20	20	19.6	38	104	52	2	3	1	23000440	SCM-HC3N-M200R20-M104HA UC40
						3	3	1	23000441	SCM-HC3N-M200R30-M104HA UC40

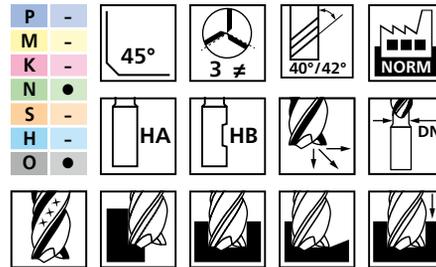
Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



Chamfer corner design – metric

End mills for various applications, from roughing to finishing. Ideal for machining aluminium alloys, non-ferrous metals and plastics.



Special features:

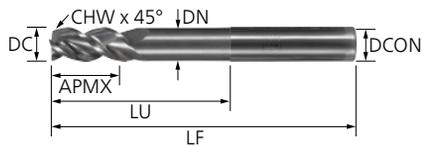
- Large polished chip channels for optimum chip control.
- Increased process reliability at high cutting speeds.
- Variable pitch for low-vibration machining and smooth milling.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEFP		Item no.	Designation
Long HA										
3	6		8	57		0.05	3	1	23000410	SCM-HC3N-M030C-M57HA6 UC40
4	6		11	57		0.05	3	1	23000411	SCM-HC3N-M040C-M57HA6 UC40
5	6		13	57		0.1	3	1	23000412	SCM-HC3N-M050C-M57HA6 UC40
6	6	5.7	13	57	20	0.1	3	1	23000413	SCM-HC3N-M060C-M57HA UC40
8	8	7.7	19	63	25	0.15	3	1	23000414	SCM-HC3N-M080C-M63HA UC40
10	10	9.7	22	72	30	0.2	3	1	23000415	SCM-HC3N-M100C-M72HA UC40
12	12	11.7	26	83	36	0.25	3	1	23000416	SCM-HC3N-M120C-M83HA UC40
16	16	15.6	32	92	42	0.3	3	1	23000417	SCM-HC3N-M160C-M93HA UC40
20	20	19.6	38	104	52	0.35	3	1	23000418	SCM-HC3N-M200C-M104HA UC40

Long HB										
3	6		8	57		0.05	3	1	23000419	SCM-HC3N-M030C-M57HB6 UC40
4	6		11	57		0.05	3	1	23000420	SCM-HC3N-M040C-M57HB6 UC40
5	6		13	57		0.05	3	1	23000421	SCM-HC3N-M050C-M57HB6 UC40
6	6	5.7	13	57	20	0.1	3	1	23000422	SCM-HC3N-M060C-M57HB UC40
8	8	7.7	19	63	25	0.15	3	1	23000423	SCM-HC3N-M080C-M63HB UC40
10	10	9.7	22	72	30	0.2	3	1	23000424	SCM-HC3N-M100C-M72HB UC40
12	12	11.7	26	83	36	0.25	3	1	23000425	SCM-HC3N-M120C-M83HB UC40
16	16	15.6	32	92	42	0.3	3	1	23000426	SCM-HC3N-M160C-M93HB UC40
20	20	19.6	38	104	52	0.35	3	1	23000427	SCM-HC3N-M200C-M104HB UC40

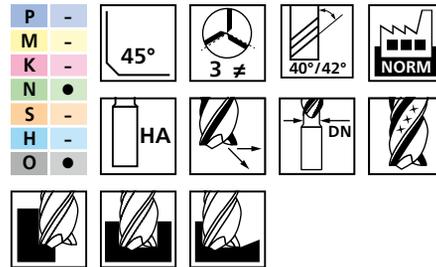
Performance Aluminum solid carbide end mills

Performance Aluminum solid carbide end mills with three flutes HC3N



Chamfer corner design, extra-long – metric

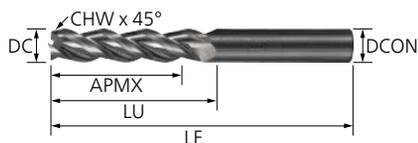
End mills with neck chip channel for use in large overhangs or deep cavities. Ideal for suited to machining aluminium alloys, non-ferrous metals and plastics.



Special features:

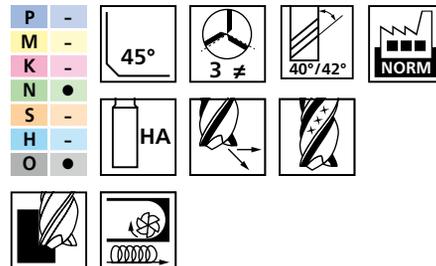
- Large polished chip channels for optimum chip control.
- Increased process reliability at high cutting speeds.
- Variable pitch for low-vibration machining and smooth milling.

DC [mm]	DCON [mm]	DN [mm]	APMX [mm]	LF [mm]	LU [mm]	CHW [mm]	ZEFP		Item no.	Designation
Extra long HA										
10	10	9.7	22	104	55	0.2	3	1	23000448	SCM-HC3N-M100C-M104HA UC40
12	12	11.6	26	110	64	0.25	3	1	23000449	SCM-HC3N-M120C-M110HA UC40
16	16	15.6	32	130	75	0.3	3	1	23000450	SCM-HC3N-M160C-M130HA UC40



Chamfer corner design, >4xD – metric

End mills with long usable length for dynamic machining and trochoidal milling. Ideal for suited to machining aluminium alloys, non-ferrous metals and plastics.



Special features:

- Large polished chip channels for optimum chip control.
- Increased process reliability at high cutting speeds.
- Variable pitch for low-vibration machining and smooth milling.

DC [mm]	DCON [mm]	APMX [mm]	LF [mm]	CHW [mm]	ZEFP		Item no.	Designation
>4xD HA								
6	6	26	75	0.1	3	1	23000442	SCM-HC3N-M060C-XXL75HA UC40
8	8	36	78	0.15	3	1	23000443	SCM-HC3N-M080C-XXL78HA UC40
10	10	45	104	0.2	3	1	23000444	SCM-HC3N-M100C-XXL104HA UC40
12	12	53	110	0.25	3	1	23000445	SCM-HC3N-M120C-XXL110HA UC40
16	16	63	130	0.3	3	1	23000446	SCM-HC3N-M160C-XXL130HA UC40
20	20	75	150	0.35	3	1	23000447	SCM-HC3N-M200C-XXL150HA UC40

Universal solid carbide drills

Material suitability overview

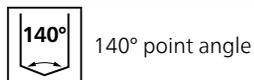


Material group			Universal solid carbide drill U
P	Steel	All types of steel and cast steel	●
M	Stainless steel	Ferritic and martensitic	●
		Austenitic	●
		High-temperature-resistant and ferritic-austenitic (duplex)	○
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	●
		Cast iron with nodular graphite (GJS, GGG)	●
N	Non-ferrous metals	Aluminum	○
		Copper, brass, bronze and red brass	○
S	Super and titanium alloys	Heat-resistant super alloys based on Fe, Ni and Co	○
		Pure titanium	○
		Titanium alloys	○
H	Hard steels and chilled castings	Heat-treated and hardened steels up to 50 HRC	●
		Hardened steels up to 58 HRC	○
		Hardened steels over 58 HRC	○
O	Other	Thermoplastics	○
		Duroplastics	○
		GRP/CRP reinforced plastics, graphite	○

● = highly recommended ○ = recommended

Explanation of pictograms

Geometry – Type



Geometry – Number of flutes



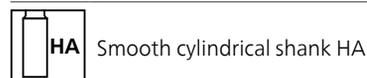
Geometry – Torsion



Norm



Shank type



Tool type



Feed direction



Applications



Universal solid carbide drills

Cutting data formulas



$$n = \frac{v_c \times 1,000}{DC \times \pi} \text{ min}^{-1}$$

$$v_c = \frac{DC \times \pi \times n}{1,000} \text{ m/min}$$

$$v_f = f_n \times n \text{ mm/min}$$

Rotational speed

Peripheral speed

Feeding speed

Abbreviations explanation

- DC = cutting diameter in [inches]
- f_n = feed per revolution
- n = spindle rotational speed in [rev/min]
- v_c = cutting speed [ft/min]
- v_f = feeding speed [in/min]

Explanation of item designation

SCD - U - 5D - M 12.500 - 60IC LA40

① ② ⑤ ⑥ ⑦ ⑨ ⑩ ⑬

① Tool group

SCD = Solid Carbide Drill

② Product line

U = Universal

③ Shape

Omitted if a standard drill.

④ Material group

ISO groups P, M, K, N, S, H, O.
Combinations

Example: MS

Omitted unless specified.

⑤ Working length in the ratio L/D

3D ~ 3xD

5D ~ 5xD

8D ~ 8xD

⑥ Units

M = Metric

⑦ Cutting diameter

Metric: mm x 1000

Example: D 10.5 mm = 10,500

Example: D 8.5 mm = 08.500

⑧ Type

⑨ Working length

Metric: Working length LU in mm

⑩ Shank type

Blank if a cylindrical shank (HA)

⑪ Internal coolant supply

Blank if no IC

IC = Inner Coolant

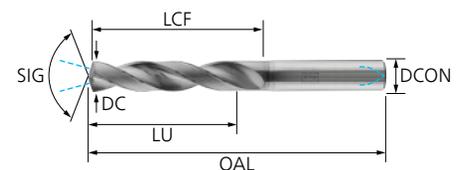
⑫ *

⑬ Grade

*Optional

Explanation of short names in accordance with ISO 13399

- LU = working length
- DC = cutting diameter
- DCON = shank diameter
- OAL = overall length
- SIG = point angle
- LCF = flute length



Universal solid carbide drills

Universal solid carbide drill U



Recommended cutting speeds [SFPM] – version 3xD / 5xD

Material group		Specification/ example material	Suitability	Drilling (3-5xD with IK) 										
				Cutting speed v_c [m/min]	Feed f_n [mm/revolution] for cutting diameter DC [mm]									
					3	4	5	6	8	10	12	16		
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	110	0.110	0.132	0.165	0.176	0.231	0.242	0.286	0.341	
			500 to 700 N/mm ² (150 to 208 BHN)	●	90	0.100	0.120	0.150	0.160	0.210	0.220	0.260	0.310	
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	75	0.085	0.102	0.128	0.136	0.179	0.187	0.221	0.264	
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	60	0.064	0.077	0.096	0.102	0.134	0.140	0.166	0.198	
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	60	0.085	0.102	0.128	0.136	0.179	0.187	0.221	0.264	
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	50	0.050	0.075	0.088	0.100	0.110	0.130	0.140	0.170	
		High-temperature-resistant and ferritic-austenitic (duplex)		○	35	0.038	0.056	0.066	0.075	0.083	0.098	0.105	0.128	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	110	0.150	0.185	0.233	0.280	0.300	0.335	0.375	0,450	
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	80	0.135	0.167	0.209	0.252	0.270	0.302	0.338	0,405	
N	Non-ferrous metals	Aluminum	Al up to 10% Si	○	250	0.150	0.185	0.233	0.280	0.300	0.335	0.375	0,450	
			Al over 10% Si	○	220	0.135	0.167	0.209	0.252	0.270	0.302	0.338	0,405	
		Copper, brass, bronze and red brass	○	160	0.100	0.120	0.150	0.160	0.210	0.220	0.260	0.310		
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○	25	0.034	0.047	0.051	0.055	0.068	0.085	0.102	0.119	
		Pure titanium		○	40	0.040	0.055	0.060	0.065	0.080	0.100	0.120	0.140	
		Titanium alloys		○	30	0.034	0.047	0.051	0.055	0.068	0.085	0.102	0.119	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC	○	30	0.026	0.035	0.038	0.041	0.051	0.064	0.077	0.089	
			up to 58 HRC											
			over 58 HRC											
O	Other	Thermoplastics												
		Duroplastics												
		GRP/CRP reinforced plastics, graphite												

● = highly recommended ○ = recommended

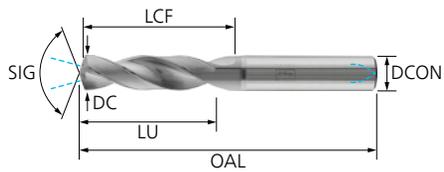
Recommended cutting speeds [SFPM] – version 8xD

Material group		Specification/ example material	Suitability	Drilling (8xD with IK) 										
				Cutting speed v_c [m/min]	Feed f_r [mm/revolution] for cutting diameter DC [mm]									
					3	4	5	6	8	10	12	16		
P	Steel	All types of steel and cast steel	up to 500 N/mm ² (150 BHN)	●	102	0.102	0.123	0.153	0.164	0.215	0.225	0.266	0.317	
			500 to 700 N/mm ² (150 to 208 BHN)	●	84	0.093	0.112	0.140	0.149	0.195	0.205	0.242	0.288	
			700 to 1,000 N/mm ² (208 to 296 BHN)	●	70	0.079	0.095	0.119	0.126	0.166	0.174	0.206	0.245	
			1,000 to 1,400 N/mm ² (296 to 415 BHN)	●	56	0.059	0.071	0.089	0.095	0.125	0.130	0.154	0.184	
M	Stainless steel	Ferritic and martensitic	e.g. 410, 420, 430, 440, 440C	●	56	0.079	0.095	0.119	0.126	0.166	0.174	0.206	0.245	
		Austenitic	e.g. AISI 303, 304, 316, 316L	●	47	0.047	0.070	0.081	0.093	0.102	0.121	0.130	0.158	
		High-temperature-resistant and ferritic-austenitic (duplex)		○	33	0.035	0.052	0.061	0.070	0.077	0.091	0.098	0.119	
K	Cast iron	Cast iron with flake graphite (GJL, GG, grey cast iron)	up to 180 BHN	●	102	0.140	0.172	0.216	0.260	0.279	0.312	0.349	0,419	
		Cast iron with nodular graphite (GJS, GGG)	160 to 260 BHN	●	74	0.126	0.155	0.195	0.234	0.251	0.280	0.314	0.377	
N	Non-ferrous metals	Aluminum	Al up to 10% Si	○	233	0.140	0.172	0.216	0.260	0.279	0.312	0.349	0,419	
			Al over 10% Si	○	205	0.126	0.155	0.195	0.234	0.251	0.280	0.314	0.377	
		Copper, brass, bronze and red brass		○	149	0.093	0.112	0.140	0.149	0.195	0.205	0.242	0.288	
S	Super and titanium alloys	Heat-resistant super alloys	Based on Fe, Ni and Co	○	23	0.032	0.043	0.047	0.051	0.063	0.079	0.095	0.111	
		Pure titanium		○	37	0.037	0.051	0.056	0.060	0.074	0.093	0.112	0.130	
		Titanium alloys		○	28	0.032	0.043	0.047	0.051	0.063	0.079	0.095	0.111	
H	Hard steels and chilled castings	Heat-treated and hardened steels	up to 50 HRC											
			up to 58 HRC											
			over 58 HRC											
O	Other	Thermoplastics												
		Duroplastics												
		GRP/CRP reinforced plastics, graphite												

● = highly recommended ○ = recommended

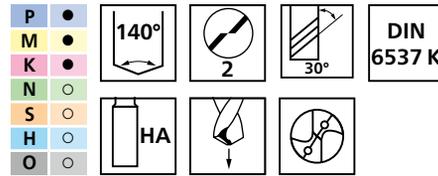
Universal solid carbide drills

Universal solid carbide drill U



3xD type – metric

Solid carbide drills with internal coolant supply and state-of-the-art coating for universal use on a variety of materials.



DIN 6537 K

Special features:

- Double margin flute for increased stability and high-quality bores.
- Internal coolant supply for increased tool life and controlled chip removal.
- Optimised surface finishing for high performance.



DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZEFP		Item no.	Designation
HA with IC								
3	6	62	14	20	2	1	23000494	SCD-U-3D-M03.000-14IC LA40
3.1	6	62	14	20	2	1	23000495	SCD-U-3D-M03.100-14IC LA40
3.2	6	62	14	20	2	1	23000496	SCD-U-3D-M03.200-14IC LA40
3.3	6	62	14	20	2	1	23000497	SCD-U-3D-M03.300-14IC LA40
3.4	6	62	14	20	2	1	23000498	SCD-U-3D-M03.400-14IC LA40
3.5	6	62	14	20	2	1	23000499	SCD-U-3D-M03.500-14IC LA40
3.6	6	62	14	20	2	1	23000500	SCD-U-3D-M03.600-14IC LA40
3.7	6	62	14	20	2	1	23000501	SCD-U-3D-M03.700-14IC LA40
3.8	6	66	17	24	2	1	23000502	SCD-U-3D-M03.800-17IC LA40
3.9	6	66	17	24	2	1	23000503	SCD-U-3D-M03.900-17IC LA40
4	6	66	17	24	2	1	23000504	SCD-U-3D-M04.000-17IC LA40
4.1	6	66	17	24	2	1	23000505	SCD-U-3D-M04.100-17IC LA40
4.2	6	66	17	24	2	1	23000506	SCD-U-3D-M04.200-17IC LA40
4.3	6	66	17	24	2	1	23000507	SCD-U-3D-M04.300-17IC LA40
4.4	6	66	17	24	2	1	23000508	SCD-U-3D-M04.400-17IC LA40
4.5	6	66	17	24	2	1	23000509	SCD-U-3D-M04.500-17IC LA40
4.6	6	66	17	24	2	1	23000510	SCD-U-3D-M04.600-17IC LA40
4.7	6	66	17	24	2	1	23000511	SCD-U-3D-M04.700-17IC LA40
4.8	6	66	20	28	2	1	23000512	SCD-U-3D-M04.800-20IC LA40
4.9	6	66	20	28	2	1	23000513	SCD-U-3D-M04.900-20IC LA40
5	6	66	20	28	2	1	23000514	SCD-U-3D-M05.000-20IC LA40
5.1	6	66	20	28	2	1	23000515	SCD-U-3D-M05.100-20IC LA40
5.2	6	66	20	28	2	1	23000516	SCD-U-3D-M05.200-20IC LA40
5.3	6	66	20	28	2	1	23000517	SCD-U-3D-M05.300-20IC LA40
5.4	6	66	20	28	2	1	23000518	SCD-U-3D-M05.400-20IC LA40
5.5	6	66	20	28	2	1	23000519	SCD-U-3D-M05.500-20IC LA40
5.6	6	66	20	28	2	1	23000520	SCD-U-3D-M05.600-20IC LA40
5.7	6	66	20	28	2	1	23000521	SCD-U-3D-M05.700-20IC LA40
5.8	6	66	20	28	2	1	23000522	SCD-U-3D-M05.800-20IC LA40
5.9	6	66	20	28	2	1	23000523	SCD-U-3D-M05.900-20IC LA40
6	6	66	20	28	2	1	23000524	SCD-U-3D-M06.000-20IC LA40
6.2	8	79	24	34	2	1	23000525	SCD-U-3D-M06.200-24IC LA40
6.3	8	79	24	34	2	1	23000526	SCD-U-3D-M06.300-24IC LA40
6.4	8	79	24	34	2	1	23000527	SCD-U-3D-M06.400-24IC LA40
6.5	8	79	24	34	2	1	23000528	SCD-U-3D-M06.500-24IC LA40

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Universal solid carbide drills

Universal solid carbide drill U



DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZEFP		Item no.	Designation
6.6	8	79	24	34	2	1	23000529	SCD-U-3D-M06.600-24IC LA40
6.7	8	79	24	34	2	1	23000530	SCD-U-3D-M06.700-24IC LA40
6.8	8	79	24	34	2	1	23000531	SCD-U-3D-M06.800-24IC LA40
6.9	8	79	24	34	2	1	23000532	SCD-U-3D-M06.900-24IC LA40
7	8	79	24	34	2	1	23000533	SCD-U-3D-M07.000-24IC LA40
7.2	8	79	29	41	2	1	23000534	SCD-U-3D-M07.200-29IC LA40
7.3	8	79	29	41	2	1	23000535	SCD-U-3D-M07.300-29IC LA40
7.4	8	79	29	41	2	1	23000536	SCD-U-3D-M07.400-29IC LA40
7.5	8	79	29	41	2	1	23000537	SCD-U-3D-M07.500-29IC LA40
7.6	8	79	29	41	2	1	23000538	SCD-U-3D-M07.600-29IC LA40
7.7	8	79	29	41	2	1	23000539	SCD-U-3D-M07.700-29IC LA40
7.8	8	79	29	41	2	1	23000540	SCD-U-3D-M07.800-29IC LA40
7.9	8	79	29	41	2	1	23000541	SCD-U-3D-M07.900-29IC LA40
8	8	79	29	41	2	1	23000542	SCD-U-3D-M08.000-29IC LA40
8.1	10	89	35	47	2	1	23000543	SCD-U-3D-M08.100-35IC LA40
8.2	10	89	35	47	2	1	23000544	SCD-U-3D-M08.200-35IC LA40
8.3	10	89	35	47	2	1	23000545	SCD-U-3D-M08.300-35IC LA40
8.4	10	89	35	47	2	1	23000546	SCD-U-3D-M08.400-35IC LA40
8.5	10	89	35	47	2	1	23000547	SCD-U-3D-M08.500-35IC LA40
8.6	10	89	35	47	2	1	23000548	SCD-U-3D-M08.600-35IC LA40
8.7	10	89	35	47	2	1	23000549	SCD-U-3D-M08.700-35IC LA40
8.8	10	89	35	47	2	1	23000550	SCD-U-3D-M08.800-35IC LA40
9	10	89	35	47	2	1	23000551	SCD-U-3D-M09.000-35IC LA40
9.2	10	89	35	47	2	1	23000552	SCD-U-3D-M09.200-35IC LA40
9.3	10	89	35	47	2	1	23000553	SCD-U-3D-M09.300-35IC LA40
9.4	10	89	35	47	2	1	23000554	SCD-U-3D-M09.400-35IC LA40
9.5	10	89	35	47	2	1	23000555	SCD-U-3D-M09.500-35IC LA40
9.6	10	89	35	47	2	1	23000556	SCD-U-3D-M09.600-35IC LA40
9.8	10	89	35	47	2	1	23000557	SCD-U-3D-M09.800-35IC LA40
9.9	10	89	35	47	2	1	23000558	SCD-U-3D-M09.900-35IC LA40
10	10	89	35	47	2	1	23000559	SCD-U-3D-M10.000-35IC LA40
10.1	12	102	40	55	2	1	23000560	SCD-U-3D-M10.100-40IC LA40
10.2	12	102	40	55	2	1	23000561	SCD-U-3D-M10.200-40IC LA40
10.3	12	102	40	55	2	1	23000562	SCD-U-3D-M10.300-40IC LA40
10.4	12	102	40	55	2	1	23000563	SCD-U-3D-M10.400-40IC LA40
10.5	12	102	40	55	2	1	23000564	SCD-U-3D-M10.500-40IC LA40
10.8	12	102	40	55	2	1	23000565	SCD-U-3D-M10.800-40IC LA40
11	12	102	40	55	2	1	23000566	SCD-U-3D-M11.000-40IC LA40
11.2	12	102	40	55	2	1	23000567	SCD-U-3D-M11.200-40IC LA40
11.3	12	102	40	55	2	1	23000568	SCD-U-3D-M11.300-40IC LA40
11.5	12	102	40	55	2	1	23000569	SCD-U-3D-M11.500-40IC LA40
11.6	12	102	40	55	2	1	23000570	SCD-U-3D-M11.600-40IC LA40
11.8	12	102	40	55	2	1	23000571	SCD-U-3D-M11.800-40IC LA40
12	12	102	40	55	2	1	23000572	SCD-U-3D-M12.000-40IC LA40
12.1	14	107	43	60	2	1	23000573	SCD-U-3D-M12.100-43IC LA40
12.2	14	107	43	60	2	1	23000574	SCD-U-3D-M12.200-43IC LA40
12.5	14	107	43	60	2	1	23000575	SCD-U-3D-M12.500-43IC LA40
12.7	14	107	43	60	2	1	23000576	SCD-U-3D-M12.700-43IC LA40
12.9	14	107	43	60	2	1	23000577	SCD-U-3D-M12.900-43IC LA40

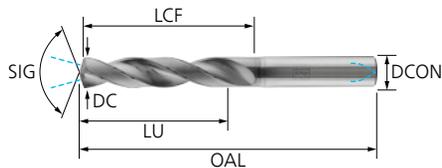
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Universal solid carbide drills

Universal solid carbide drill U

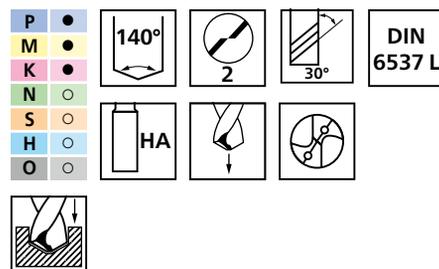


DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZEFP		Item no.	Designation
13	14	107	43	60	2	1	23000578	SCD-U-3D-M13.000-43IC LA40
13.1	14	107	43	60	2	1	23000579	SCD-U-3D-M13.100-43IC LA40
13.5	14	107	43	60	2	1	23000580	SCD-U-3D-M13.500-43IC LA40
14	14	107	43	60	2	1	23000581	SCD-U-3D-M14.000-43IC LA40
14.1	16	115	45	65	2	1	23000582	SCD-U-3D-M14.100-45IC LA40
14.2	16	115	45	65	2	1	23000583	SCD-U-3D-M14.200-45IC LA40
14.5	16	115	45	65	2	1	23000584	SCD-U-3D-M14.500-45IC LA40
14.7	16	115	45	65	2	1	23000585	SCD-U-3D-M14.700-45IC LA40
15	16	115	45	65	2	1	23000586	SCD-U-3D-M15.000-45IC LA40
15.1	16	115	45	65	2	1	23000587	SCD-U-3D-M15.100-45IC LA40
15.2	16	115	45	65	2	1	23000588	SCD-U-3D-M15.200-45IC LA40
15.5	16	115	45	65	2	1	23000589	SCD-U-3D-M15.500-45IC LA40
15.8	16	115	45	65	2	1	23000590	SCD-U-3D-M15.800-45IC LA40
16	16	115	45	65	2	1	23000591	SCD-U-3D-M16.000-45IC LA40



5xD type – metric

Solid carbide drills with internal coolant supply and state-of-the-art coating for universal use on a variety of materials.

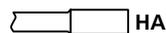


Special features:

- Double margin flute for increased stability and high-quality bores.
- Internal coolant supply for increased tool life and controlled chip removal.
- Optimised surface finishing for high performance.

DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZEFP		Item no.	Designation
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HA with IC



3	6	66	23	27	2	1	23000592	SCD-U-5D-M03.000-23IC LA40
3.1	6	66	23	27	2	1	23000593	SCD-U-5D-M03.100-23IC LA40
3.2	6	66	23	27	2	1	23000594	SCD-U-5D-M03.200-23IC LA40
3.3	6	66	23	27	2	1	23000595	SCD-U-5D-M03.300-23IC LA40
3.4	6	66	23	27	2	1	23000596	SCD-U-5D-M03.400-23IC LA40
3.5	6	66	23	27	2	1	23000597	SCD-U-5D-M03.500-23IC LA40
3.6	6	66	23	27	2	1	23000598	SCD-U-5D-M03.600-23IC LA40
3.7	6	66	23	27	2	1	23000599	SCD-U-5D-M03.700-23IC LA40
3.8	6	74	29	36	2	1	23000600	SCD-U-5D-M03.800-29IC LA40
3.9	6	74	29	36	2	1	23000601	SCD-U-5D-M03.900-29IC LA40
4	6	74	29	36	2	1	23000602	SCD-U-5D-M04.000-29IC LA40
4.1	6	74	29	36	2	1	23000603	SCD-U-5D-M04.100-29IC LA40
4.2	6	74	29	36	2	1	23000604	SCD-U-5D-M04.200-29IC LA40
4.3	6	74	29	36	2	1	23000605	SCD-U-5D-M04.300-29IC LA40
4.4	6	74	29	36	2	1	23000606	SCD-U-5D-M04.400-29IC LA40
4.5	6	74	29	36	2	1	23000607	SCD-U-5D-M04.500-29IC LA40
4.6	6	74	29	36	2	1	23000608	SCD-U-5D-M04.600-29IC LA40

Continued on next page

Universal solid carbide drills

Universal solid carbide drill U



DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZFP		Item no.	Designation
4.7	6	74	29	36	2	1	23000609	SCD-U-5D-M04.700-29IC LA40
4.8	6	82	35	44	2	1	23000610	SCD-U-5D-M04.800-35IC LA40
4.9	6	82	35	44	2	1	23000611	SCD-U-5D-M04.900-35IC LA40
5	6	82	35	44	2	1	23000612	SCD-U-5D-M05.000-35IC LA40
5.1	6	82	35	44	2	1	23000613	SCD-U-5D-M05.100-35IC LA40
5.2	6	82	35	44	2	1	23000614	SCD-U-5D-M05.200-35IC LA40
5.3	6	82	35	44	2	1	23000615	SCD-U-5D-M05.300-35IC LA40
5.4	6	82	35	44	2	1	23000616	SCD-U-5D-M05.400-35IC LA40
5.5	6	82	35	44	2	1	23000617	SCD-U-5D-M05.500-35IC LA40
5.6	6	82	35	44	2	1	23000618	SCD-U-5D-M05.600-35IC LA40
5.7	6	82	35	44	2	1	23000619	SCD-U-5D-M05.700-35IC LA40
5.8	6	82	35	44	2	1	23000620	SCD-U-5D-M05.800-35IC LA40
5.9	6	82	35	44	2	1	23000621	SCD-U-5D-M05.900-35IC LA40
6	6	82	35	44	2	1	23000622	SCD-U-5D-M06.000-35IC LA40
6.1	8	91	43	53	2	1	23000623	SCD-U-5D-M06.100-43IC LA40
6.2	8	91	43	53	2	1	23000624	SCD-U-5D-M06.200-43IC LA40
6.3	8	91	43	53	2	1	23000625	SCD-U-5D-M06.300-43IC LA40
6.4	8	91	43	53	2	1	23000626	SCD-U-5D-M06.400-43IC LA40
6.5	8	91	43	53	2	1	23000627	SCD-U-5D-M06.500-43IC LA40
6.6	8	91	43	53	2	1	23000628	SCD-U-5D-M06.600-43IC LA40
6.7	8	91	43	53	2	1	23000629	SCD-U-5D-M06.700-43IC LA40
6.8	8	91	43	53	2	1	23000630	SCD-U-5D-M06.800-43IC LA40
6.9	8	91	43	53	2	1	23000631	SCD-U-5D-M06.900-43IC LA40
7	8	91	43	53	2	1	23000632	SCD-U-5D-M07.000-43IC LA40
7.2	8	91	43	53	2	1	23000633	SCD-U-5D-M07.200-43IC LA40
7.3	8	91	43	53	2	1	23000634	SCD-U-5D-M07.300-43IC LA40
7.4	8	91	43	53	2	1	23000635	SCD-U-5D-M07.400-43IC LA40
7.5	8	91	43	53	2	1	23000636	SCD-U-5D-M07.500-43IC LA40
7.6	8	91	43	53	2	1	23000637	SCD-U-5D-M07.600-43IC LA40
7.7	8	91	43	53	2	1	23000638	SCD-U-5D-M07.700-43IC LA40
7.8	8	91	43	53	2	1	23000639	SCD-U-5D-M07.800-43IC LA40
7.9	8	91	43	53	2	1	23000640	SCD-U-5D-M07.900-43IC LA40
8	8	91	43	53	2	1	23000641	SCD-U-5D-M08.000-43IC LA40
8.1	10	103	49	61	2	1	23000642	SCD-U-5D-M08.100-49IC LA40
8.2	10	103	49	61	2	1	23000643	SCD-U-5D-M08.200-49IC LA40
8.3	10	103	49	61	2	1	23000644	SCD-U-5D-M08.300-49IC LA40
8.4	10	103	49	61	2	1	23000645	SCD-U-5D-M08.400-49IC LA40
8.5	10	103	49	61	2	1	23000646	SCD-U-5D-M08.500-49IC LA40
8.6	10	103	49	61	2	1	23000647	SCD-U-5D-M08.600-49IC LA40
8.7	10	103	49	61	2	1	23000648	SCD-U-5D-M08.700-49IC LA40
8.8	10	103	49	61	2	1	23000649	SCD-U-5D-M08.800-49IC LA40
9	10	103	49	61	2	1	23000650	SCD-U-5D-M09.000-49IC LA40
9.2	10	103	49	61	2	1	23000651	SCD-U-5D-M09.200-49IC LA40
9.3	10	103	49	61	2	1	23000652	SCD-U-5D-M09.300-49IC LA40
9.4	10	103	49	61	2	1	23000653	SCD-U-5D-M09.400-49IC LA40
9.5	10	103	49	61	2	1	23000654	SCD-U-5D-M09.500-49IC LA40
9.6	10	103	49	61	2	1	23000655	SCD-U-5D-M09.600-49IC LA40
9.8	10	103	49	61	2	1	23000656	SCD-U-5D-M09.800-49IC LA40
9.9	10	103	49	61	2	1	23000657	SCD-U-5D-M09.900-49IC LA40

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Universal solid carbide drills

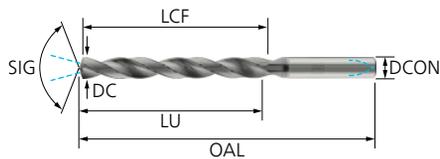
Universal solid carbide drill U



DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZEFP		Item no.	Designation
10	10	103	49	61	2	1	23000658	SCD-U-5D-M10.000-49IC LA40
10.1	12	118	56	71	2	1	23000659	SCD-U-5D-M10.100-56IC LA40
10.2	12	118	56	71	2	1	23000660	SCD-U-5D-M10.200-56IC LA40
10.3	12	118	56	71	2	1	23000661	SCD-U-5D-M10.300-56IC LA40
10.4	12	118	56	71	2	1	23000662	SCD-U-5D-M10.400-56IC LA40
10.5	12	118	56	71	2	1	23000663	SCD-U-5D-M10.500-56IC LA40
10.8	12	118	56	71	2	1	23000664	SCD-U-5D-M10.800-56IC LA40
11	12	118	56	71	2	1	23000665	SCD-U-5D-M11.000-56IC LA40
11.2	12	118	56	71	2	1	23000666	SCD-U-5D-M11.200-56IC LA40
11.3	12	118	56	71	2	1	23000667	SCD-U-5D-M11.300-56IC LA40
11.5	12	118	56	71	2	1	23000668	SCD-U-5D-M11.500-56IC LA40
11.6	12	118	56	71	2	1	23000669	SCD-U-5D-M11.600-56IC LA40
11.8	12	118	56	71	2	1	23000670	SCD-U-5D-M11.800-56IC LA40
12	12	118	56	71	2	1	23000671	SCD-U-5D-M12.000-56IC LA40
12.1	14	124	60	77	2	1	23000672	SCD-U-5D-M12.100-60IC LA40
12.2	14	124	60	77	2	1	23000673	SCD-U-5D-M12.200-60IC LA40
12.5	14	124	60	77	2	1	23000674	SCD-U-5D-M12.500-60IC LA40
12.7	14	124	60	77	2	1	23000675	SCD-U-5D-M12.700-60IC LA40
12.9	14	124	60	77	2	1	23000676	SCD-U-5D-M12.900-60IC LA40
13	14	124	60	77	2	1	23000677	SCD-U-5D-M13.000-60IC LA40
13.1	14	124	60	77	2	1	23000678	SCD-U-5D-M13.100-60IC LA40
13.3	14	124	60	77	2	1	23000679	SCD-U-5D-M13.300-60IC LA40
13.5	14	124	60	77	2	1	23000680	SCD-U-5D-M13.500-60IC LA40
13.8	14	124	60	77	2	1	23000681	SCD-U-5D-M13.800-60IC LA40
14	14	124	60	77	2	1	23000682	SCD-U-5D-M14.000-60IC LA40
14.1	16	133	63	83	2	1	23000683	SCD-U-5D-M14.100-63IC LA40
14.2	16	133	63	83	2	1	23000684	SCD-U-5D-M14.200-63IC LA40
14.5	16	133	63	83	2	1	23000685	SCD-U-5D-M14.500-63IC LA40
14.7	16	133	63	83	2	1	23000686	SCD-U-5D-M14.700-63IC LA40
14.8	16	133	63	83	2	1	23000687	SCD-U-5D-M14.800-63IC LA40
15	16	133	63	83	2	1	23000688	SCD-U-5D-M15.000-63IC LA40
15.1	16	133	63	83	2	1	23000689	SCD-U-5D-M15.100-63IC LA40
15.2	16	133	63	83	2	1	23000690	SCD-U-5D-M15.200-63IC LA40
15.5	16	133	63	83	2	1	23000691	SCD-U-5D-M15.500-63IC LA40
15.8	16	133	63	83	2	1	23000692	SCD-U-5D-M15.800-63IC LA40
16	16	133	63	83	2	1	23000693	SCD-U-5D-M16.000-63IC LA40

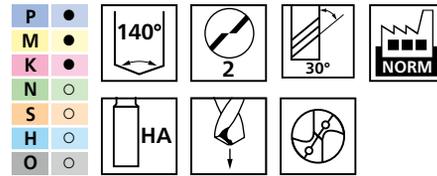
Universal solid carbide drills

Universal solid carbide drill U



8xD type – metric

Solid carbide drills with internal coolant supply and state-of-the-art coating for universal use on a variety of materials.



Special features:

- Double margin flute for increased stability and high-quality bores.
- Internal coolant supply for increased tool life and controlled chip removal.
- Optimised surface finishing for high performance.



DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZEFP		Item no.	Designation
HA with IC								
3	6	74	29	35	2	1	23000694	SCD-U-8D-M03.000-29IC LA40
3.2	6	74	30	35	2	1	23000695	SCD-U-8D-M03.200-30IC LA40
3.3	6	74	30	35	2	1	23000696	SCD-U-8D-M03.300-30IC LA40
3.4	6	74	30	35	2	1	23000697	SCD-U-8D-M03.400-30IC LA40
3.5	6	74	30	35	2	1	23000698	SCD-U-8D-M03.500-30IC LA40
3.6	6	74	30	35	2	1	23000699	SCD-U-8D-M03.600-30IC LA40
3.7	6	74	30	35	2	1	23000700	SCD-U-8D-M03.700-30IC LA40
3.8	6	82	37	44	2	1	23000701	SCD-U-8D-M03.800-37IC LA40
3.9	6	82	37	44	2	1	23000702	SCD-U-8D-M03.900-37IC LA40
4	6	82	37	44	2	1	23000703	SCD-U-8D-M04.000-37IC LA40
4.1	6	82	37	44	2	1	23000704	SCD-U-8D-M04.100-37IC LA40
4.2	6	82	37	44	2	1	23000705	SCD-U-8D-M04.200-37IC LA40
4.3	6	82	37	44	2	1	23000706	SCD-U-8D-M04.300-37IC LA40
4.5	6	82	37	44	2	1	23000707	SCD-U-8D-M04.500-37IC LA40
5	6	95	48	57	2	1	23000708	SCD-U-8D-M05.000-48IC LA40
5.1	6	95	48	57	2	1	23000709	SCD-U-8D-M05.100-48IC LA40
5.2	6	95	48	57	2	1	23000710	SCD-U-8D-M05.200-48IC LA40
5.3	6	95	48	57	2	1	23000711	SCD-U-8D-M05.300-48IC LA40
5.5	6	95	48	57	2	1	23000712	SCD-U-8D-M05.500-48IC LA40
5.6	6	95	48	57	2	1	23000713	SCD-U-8D-M05.600-48IC LA40
5.8	6	95	48	57	2	1	23000714	SCD-U-8D-M05.800-48IC LA40
6	6	95	48	57	2	1	23000715	SCD-U-8D-M06.000-48IC LA40
6.2	8	114	66	76	2	1	23000716	SCD-U-8D-M06.200-66IC LA40
6.5	8	114	66	76	2	1	23000717	SCD-U-8D-M06.500-66IC LA40
6.6	8	114	66	76	2	1	23000718	SCD-U-8D-M06.600-66IC LA40
6.8	8	114	66	76	2	1	23000719	SCD-U-8D-M06.800-66IC LA40
6.9	8	114	66	76	2	1	23000720	SCD-U-8D-M06.900-66IC LA40
7	8	114	66	76	2	1	23000721	SCD-U-8D-M07.000-66IC LA40
7.4	8	114	66	76	2	1	23000722	SCD-U-8D-M07.400-66IC LA40
7.5	8	114	66	76	2	1	23000723	SCD-U-8D-M07.500-66IC LA40
7.8	8	114	66	76	2	1	23000724	SCD-U-8D-M07.800-66IC LA40
8	8	114	66	76	2	1	23000725	SCD-U-8D-M08.000-66IC LA40
8.1	10	138	84	96	2	1	23000726	SCD-U-8D-M08.100-84IC LA40
8.2	10	138	84	96	2	1	23000727	SCD-U-8D-M08.200-84IC LA40
8.5	10	138	84	96	2	1	23000728	SCD-U-8D-M08.500-84IC LA40

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Universal solid carbide drills

Universal solid carbide drill U



DC [mm]	DCON [mm]	OAL [mm]	LU [mm]	LCF [mm]	ZEFP		Item no.	Designation
8.6	10	138	84	96	2	1	23000729	SCD-U-8D-M08.600-84IC LA40
8.7	10	138	84	96	2	1	23000730	SCD-U-8D-M08.700-84IC LA40
8.8	10	138	84	96	2	1	23000731	SCD-U-8D-M08.800-84IC LA40
9	10	138	84	96	2	1	23000732	SCD-U-8D-M09.000-84IC LA40
9.5	10	138	84	96	2	1	23000733	SCD-U-8D-M09.500-84IC LA40
9.6	10	138	84	96	2	1	23000734	SCD-U-8D-M09.600-84IC LA40
9.8	10	138	84	96	2	1	23000735	SCD-U-8D-M09.800-84IC LA40
9.9	10	138	84	96	2	1	23000736	SCD-U-8D-M09.900-84IC LA40
10	10	138	84	96	2	1	23000737	SCD-U-8D-M10.000-84IC LA40
10.2	12	162	100	115	2	1	23000738	SCD-U-8D-M10.200-100IC LA40
10.3	12	162	100	115	2	1	23000739	SCD-U-8D-M10.300-100IC LA40
10.5	12	162	100	115	2	1	23000740	SCD-U-8D-M10.500-100IC LA40
11	12	162	100	115	2	1	23000741	SCD-U-8D-M11.000-100IC LA40
11.2	12	162	100	115	2	1	23000742	SCD-U-8D-M11.200-100IC LA40
11.5	12	162	100	115	2	1	23000743	SCD-U-8D-M11.500-100IC LA40
11.8	12	162	100	115	2	1	23000744	SCD-U-8D-M11.800-100IC LA40
12	12	162	100	115	2	1	23000745	SCD-U-8D-M12.000-100IC LA40
12.5	14	181	117	134	2	1	23000746	SCD-U-8D-M12.500-117IC LA40
13	14	181	117	134	2	1	23000747	SCD-U-8D-M13.000-117IC LA40
13.1	14	181	117	134	2	1	23000748	SCD-U-8D-M13.100-117IC LA40
13.5	14	181	117	134	2	1	23000749	SCD-U-8D-M13.500-117IC LA40
14	14	181	117	134	2	1	23000750	SCD-U-8D-M14.000-117IC LA40
14.5	16	203	133	153	2	1	23000751	SCD-U-8D-M14.500-133IC LA40
15	16	203	133	153	2	1	23000752	SCD-U-8D-M15.000-133IC LA40
15.5	16	203	133	153	2	1	23000753	SCD-U-8D-M15.500-133IC LA40
16	16	203	133	153	2	1	23000774	SCD-U-8D-M16.000-133IC LA40

Subject to technical modifications.

06/2025