2025

MILLING TOOLS
SOLID ENDMILLS
CATALOGUE
EN

BEYOND THE MACHINING

www.karcan.com

KARCAN cutting tools

IMAGINATION AND FUNCTIONALITY IS HARMONIZED WITH MATERIALS AND **TOOL COMES TRUE...**

KARCAN
cutting tools

2025

ENDMILL CATALOG


KARCAN
cutting tools

KARCAN cutting tools

WELCOME TO THE WORLD OF **KARCAN CUTTING TOOLS...**

Who we are?

Founded in 1996 in Eskişehir,Turkey to manufacture carbide cutting tools, we are the first and largest carbide cutting tool manufacturer and one of the top 130 R&D centers in our country. From this aspect, we are the first and the only R&D Center in the cutting tool industry of Turkey.

What we manufacture?

- Carbide Endmills
- Carbide Drill Bits
- Carbide Reamers
- Form Endmills, Drill Bits, Reamers
- Form Carbide,PCD & CBN Inserts
- Micro Tools
- Combined Tools

Which industries we serve?

General Engineering | Mold&Die | Aviation &Aerospace | Defence | Automotive | Medical | Energy | Rail Systems

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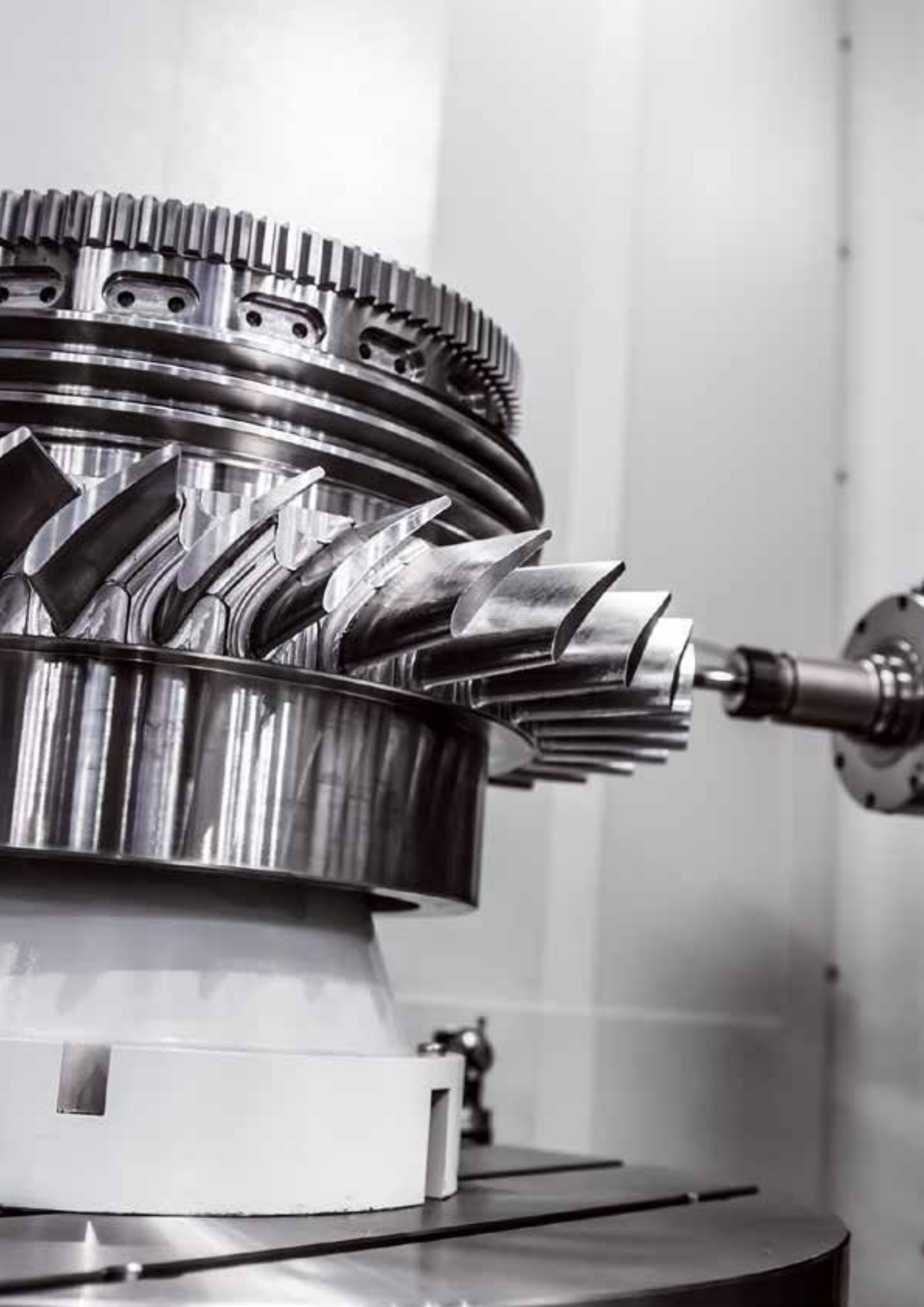


Dear Valued Customers and Business Partners,

We, Karcan, as the biggest cutting tools manufacturer of Turkey with our modern machine and measuring park, R&D Center, number of qualified employees, sales figures and export share, owe you all a great debt of gratitude for being with us last 30 years and contributing to our success.

As the leading cutting tools manufacturer in Turkey, we closely follow all the latest developments in machining and materials engineering and bring the latest technologies to your hands. With our strong R&D department, well trained and competent process team, and competent technical sales team, we are your trusted solution partner in machinability of high-tech materials We are not just a cutting tools manufacturer! We create value through our production improvement activities, technical applications and consultancy services and we work hard to help our valued customers gain a competitive edge in “cost per part” in global markets. In this respect, we aim to provide products and services that go “Beyond Machining.”
In 2025, we are launching our second factory which will be the first in our country to write its own unique recipes and will include the future of cutting tool coating technology is HiPIMS. In this field, we have been co-operating with our German business partners who lead the sector globally. We have seen significant increases in our cutting tool performances during widespread trials conducted over three years in our test center and in the customers’ field. Furthermore, in our new factory, we are also implementing robotic manufacturing with 5G technologies, smart factory systems, and digital transformations. This will provide us capacity increase up to a 40%.

We continue our R&D and innovation based growth strategy !

We are expanding our R&D and Test center tenfold in our new factory. In parallel, we are equipping our machine-measuring park with the most advanced technologies in the world. We aim to increase the number of qualified employees working in R&D by 50% within two years.

Our product catalogue showcases the improvements we have achieved through the R&D work, which we carried out in collaboration with the national and international universities, research institutes, local and international customers and the Scientific and Technical Research Council of Turkiye (TUBITAK). we developed our Evo series to further increase the performance of our Eco-Plus series at 45-55 HRC hardness. We designed our 157 series with chip breaker form as an expansion of our 99 series. We breathe into rough milling with our 158 series. Our 222 series is poised to be the best in it’s class with its chatter-free geometry. We challenge to hardness with our 203 Plus and 112 Plus series. As an expansion of our 111 Series, the 111U Plus series has been developed for more precise full slotting operations with tighter diameter and radius tolerances.123 Plus, the new member of Alu-Mac family, is providing perfect chip evacuation with its excellent flute polish.

We have also developed a unique quality range in our micro tool and micro drill lines and succeeded in our R&D endevaours. We have included solutions that compete comfortably with well-known world brands on our website and in this catalog. We strongly recommend our newly added DX Series in the D-Tech hole-making family, specifically designed for long-chipping workpiece materials like ST type, ductile steels such as 1020, 1040, stainless steels, or titanium.

In addition, we have achieved remarkable results with our Meditan series, catering to medical and titanium processing clients. Our innovative design enables exceptionally high cutting speeds and extended tool life simultaneously
We continue to bring innovation to our customers in our country and 28 countries globally, and keep working with great passion in the belief that progress is a never ending process.

Welcome again to the world of Karcan Cutting Tools

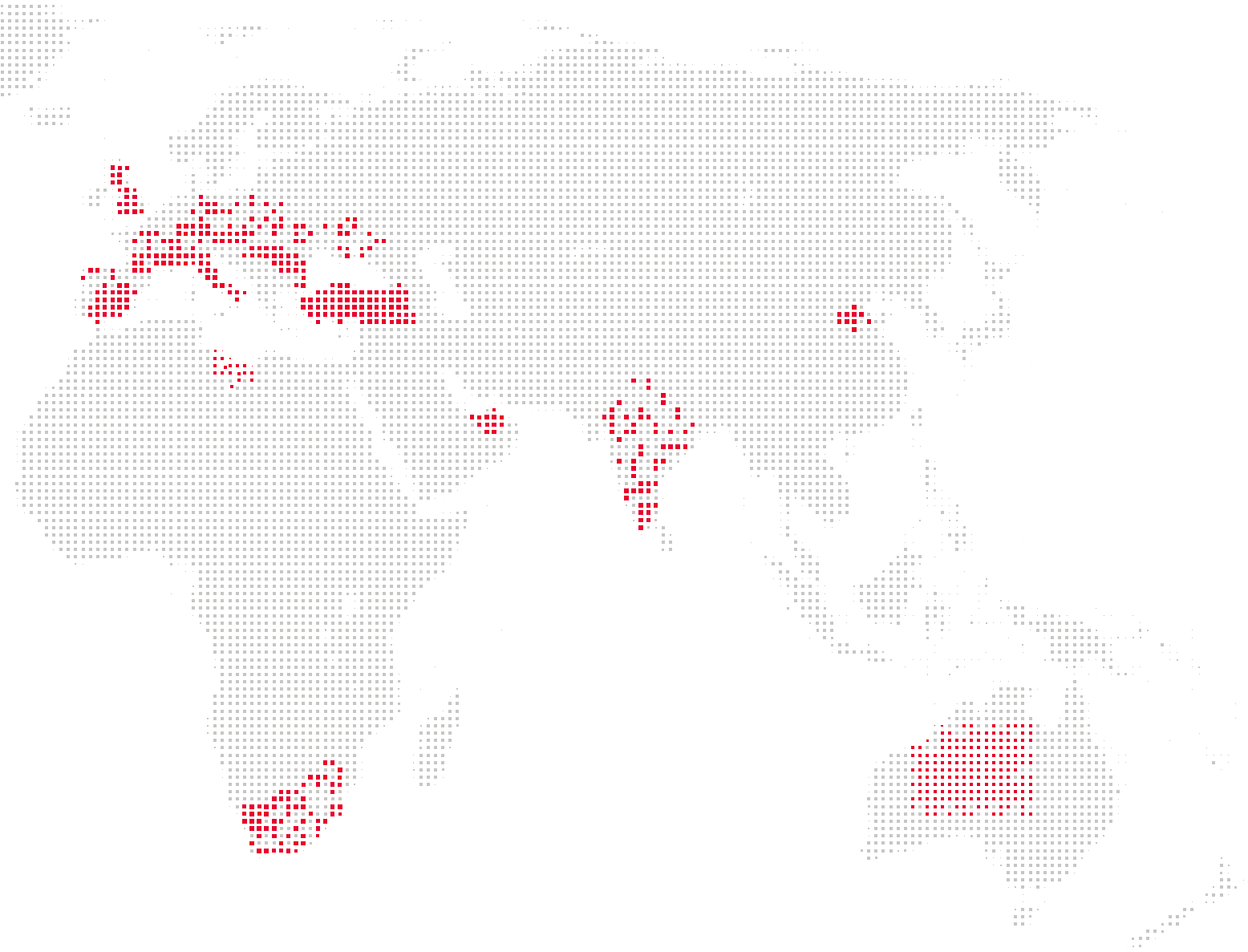
Ümit GEZER
Founder / General Manager

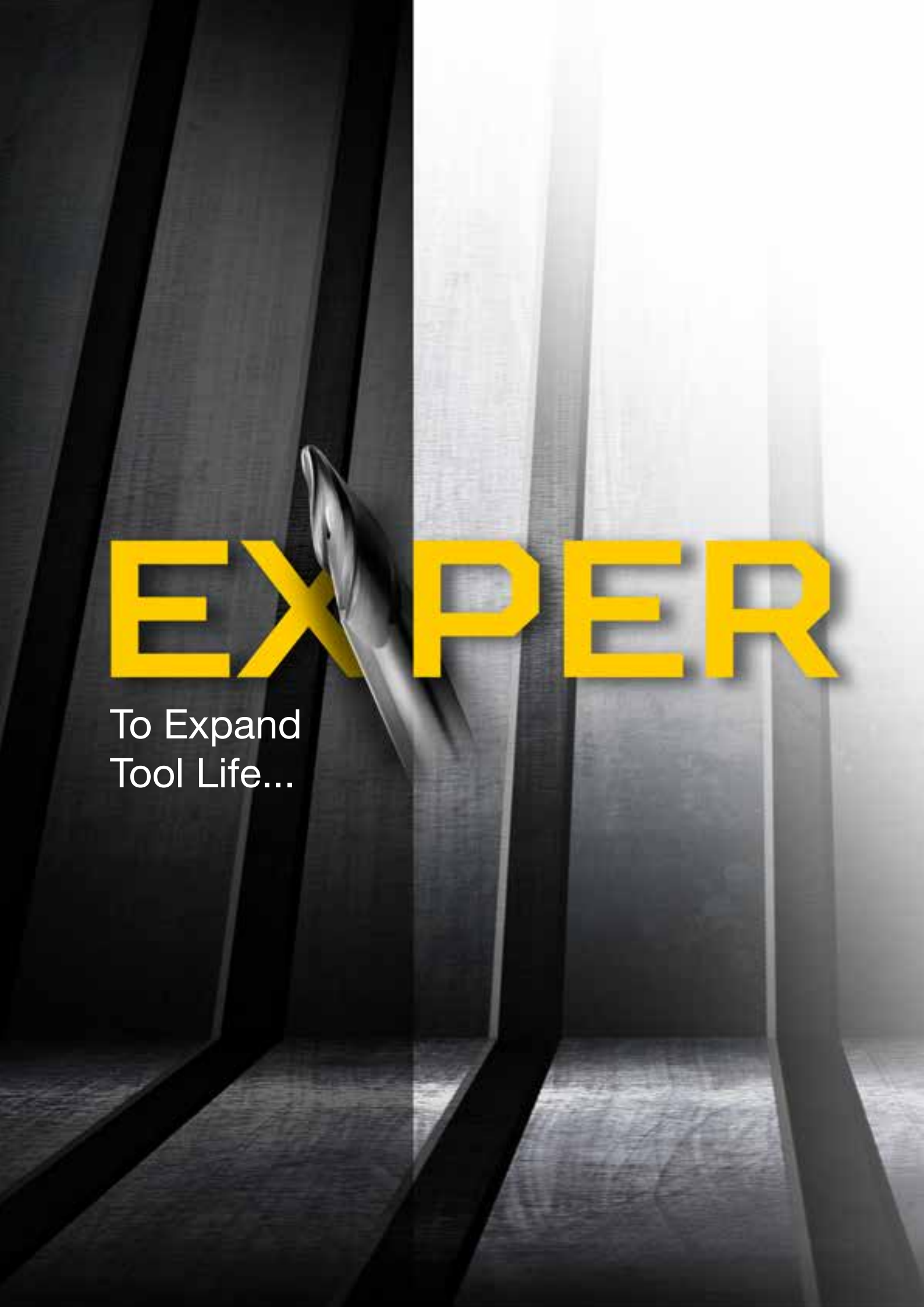
KARCAN
cutting tools

KARCAN EXPORTS TO MORE THAN **32 COUNTRIES** ON **4 CONTINENTS**

WE REACH YOU EASIER THANKS TO OUR GROWING EXPORT NETWORK AND TAKE A PART IN GLOBAL COMPETITION.

GLOBAL VISION




EXPER
To Expand
Tool Life...

KARCAN
cutting tools

FUTURE OF EDGE PREPERATION TECHNOLOGY

The EX-PER technology is developed as a result of exhaustive Karcan R&D studies, ensuring higher performance and improved tool life.

www.karcan.com

SUPER ALLOYS SUPER SOLUTIONS

IN PARTNERSHIP WITH KARCAN & TÜBİTAK

We continue to provide industrial and innovative solutions with our Ultra Bite series. Ensure the reliability of your milling operations when machining super alloys and stainless steel!

Meet our new generation 98, 99, 101, and 111 Series, developed as a result of exhaustive R&D studies! Make a difference with our 154, 155,156 & 157 Series which debuted as HPC series in our recent catalogue, especially designed for machining Inconel & Titanium. We have identified the root causes and difficulties encountered when machining super alloys and stainless steel. Our production of more reliable tools resulted from extensive long-run tests and engineering studies that are also in accordance with our customers' improvement requests.

After five years of research, we have made chip removal easier through special flute designs, angles, and optimized flute depths to minimize surface roughness on the cutting tool.

We have achieved very stable cutting edges thanks to their unique form; measurable, repeatable standardization; and optimized radius. As a result of this progress is significant improvements in face milling operations pocket milling interpolation and ramping."

WHY KARCAN?

• A highly skilled and trained R&D, process, application, and technical sales team.
• Benefit from our experience and know-how in various areas; we provide flexible solutions.
• We are price/performance-oriented and provide cost-effective solutions with a sense of constant improvement.
• Capable of competing globally.
• Our well-equipped and modern machine park ensures precision and performance at the highest level.
• A strong franchise and sales network, available 24/7.
• 100% traceability and repeatable processes ensure sustainable quality.
• Karcan Academy and our own test center enable you to understand your tools in detail and choose the most suitable one for your needs.
• Effective stock inventory level.
• Own know-how with qualified labor force and intellectual capitals. Unique.
• Unlimited training opportunities for our customers.
• Specialized in crisis management with emergency action plans, enabling quick responses.
• We closely follow the recent developments in the sector and constantly keep up with the advancing material and machining technology. We are open to innovation and improvement.
• 100% customer-oriented.
• Working with the globally verified suppliers such as machine, equipment, raw material, coating, diamond grinding wheels, filtration and coolant, which are directly related to cutting tool quality.

SELECT THE BEST TOOL

Raw material, geometry, edge preparation and coating in manufacturing cutting tools have a direct effect on tool quality. It is highly recommended that our customers take account of the guidances at our catalogue in order to get the optimum efficiency on our high performance series which are developed after optimising all the parameters. You can also select the suitable tool according to the machinability of the materials or workpieces and operation method by reaching our sales representatives or application team.

Following details are very important in terms of elaboration of suggestions for machining within the shortest time,

1. Workpiece to be machined? (Turbine blade, injector, engine block, brake disc etc.)
2. Material to be machined? (Inconel, titanium, stainless Steel, Steel, Cast Iron iron, in accordance with which of the ISO or DIN standards?)
3. Operation method? (“Side milling” “Shoulder milling” “Slotting” “Ramping” “Plunging”)
4. Material Hardness? Heat-treated?
5. Type of cooling? (Oil, emulsion, air, internal or external coolant, pressure?)
6. Type of Holder? (Shrink, hydrolic, “Collet” “HSK” “BT” “SK” Etc.)
7. Type and power of spindle?
8. Machining method? (Vertical-Horizontal or 5-Axis)
9. Fixing type of worpiece
10. Current tool and parameters in use, if available
11. The problems encountered with the current tool or tool life, if available.

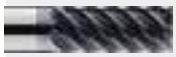
YOU ALREADY HAVE THE ADVANTAGE!

- High performance machining
- Considerable cost reduction per workpiece costs by regarding overheads and depreciation
- Our tools ensure the best possible precision and quality on the workpiece machined.
- Optimal loading for your machines
- Longer tool life and holder life
- Reduced the overall cutting tool costs
- Improved utilisation of your capacity. You don’t have to rush in a new machine investment.

Tools, multi-functionally optimised and standardised, marked with (*) at our catalogue are always available in stock.

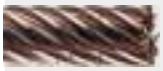
Get to know our tools in detail, please watch the videos and animations. You can easily find these documents in our web site, YouTube, Instagram and Linked-in accounts.

Quick Selection Guide

	Model	Image	Number of Teeth	Finish	Rough	Shank	Coating	Steel	Stainless Steel	Hardened Steel ≤54 HRc	Hardened Steel >54 HRc	Cast Iron	Graphite	Non Ferrous Material	HRSA	Titanium	Page
97			Z4			FORM HA DIN 6535 FORM HB DIN 6535	+TiSiN +AlTiN	●	◑	◑	○	●	○	○	○	○	26
98			Z3-Z4			FORM HA DIN 6535 FORM HB DIN 6535	+ZrN	○	●	○	○	○	○	○	●	◑	28
99			Z5			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	●	◑	◑	○	●	○	○	●	●	30
100			Z4			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	●	◑	◑	●	●	○	○	○	○	32
101			Z4			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	●	●	◑	○	●	○	○	◑	◑	34
102			Z4			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	○	36
110			Z6-Z8			FORM HA DIN 6535	+AlCrN	●	◑	◑	○	●	○	○	○	●	38
111			Z4			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	◑	●	◑	○	○	○	○	●	●	40
111 P			Z4			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	◑	●	◑	○	○	○	○	●	●	42
112			Z6-Z8			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	◑	44
112 P			Z6-Z8			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	◑	46
114			Z4			FORM HA DIN 6535	+AlCrN	●	○	●	●	◑	○	○	○	○	48
121			Z4			FORM HA DIN 6535 FORM HB DIN 6535	+TiSiN +AlCrN	●	◑	○	○	◑	○	○	○	○	52
203			Z2			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	○	54
203 P			Z2			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	○	56
222			Z4			FORM HA DIN 6535	+AlCrN	●	●	○	○	●	●	○	○	○	58

HPC

Quick Selection Guide

	Model	Number of Teeth	Finish	Rough	Shank	Coating	Steel	Stainless Steel	Hardened Steel ≤54 HRc	Hardened Steel >54 HRc	Cast Iron	Graphite	Non Ferrous Material	HRSA	Titanium	Page
154		Z5			FORM HA DIN 6535	+AlCrN	●	●	◑	○	●	○	○	●	●	62
155		Z5-Z6			FORM HA DIN 6535	+AlCrN	●	●	◑	○	○	○	○	●	●	64
156		Z6			FORM HA DIN 6535	+AlCrN	●	●	◑	○	○	○	○	●	●	66
157		Z5			FORM HA DIN 6535	+AlCrN	●	◑	◑	○	●	○	○	●	●	68
158		Z4-Z5			FORM HA DIN 6535	+AlCrN	●	◑	◑	●	●	○	○	◑	◑	70
160		Z7			FORM HA DIN 6535 FORM HB DIN 6535	+TiSiN	●	●	○	○	●	○	○	●	●	72
161		Z9			FORM HA DIN 6535 FORM HB DIN 6535	+TiSiN	●	●	○	○	●	○	○	●	●	74

MIC-CUT

Quick Selection Guide

	Model	Number of Teeth	Finish	Rough	Shank	Coating	Steel	Stainless Steel	Hardened Steel ≤54 HRc	Hardened Steel >54 HRc	Cast Iron	Graphite	Non Ferrous Material	HRSA	Titanium	Page
150		Z2			FORM HA DIN 6535	+TiSiN	●	●	●	●	◑	○	○	○	●	78
153		Z2			FORM HA DIN 6535	+TiSiN	●	●	●	●	◑	○	○	○	●	80
250		Z2			FORM HA DIN 6535	+TiSiN	●	●	●	●	◑	○	○	○	●	82

* Marked products can be delivered quickly from stock.

Quick Selection Guide

Model	Number of Teeth	Finish	Rough	Shank	Coating	Steel	Stainless Steel	Hardened Steel ≤54 HRc	Hardened Steel >54 HRc	Cast Iron	Graphite	Non Ferrous Material	HRSA	Titanium	Page
103 EVO	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	86
104 EVO	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	88
105 EVO	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	90
106 EVO	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	92
KSNF	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	94
KSUF	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	96
KRSF	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	98
KRUF	Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	100
KSKF Z4	Z4			FORM HA DIN 6535	+AlCrN	●	◑	◑	○	●	○	○	○	○	102
KSKF Z2	Z2			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	○	104
KKUF Z4	Z4			FORM HA DIN 6535	+AlCrN	●	◑	○	○	●	○	○	○	○	106
KKUF Z2	Z2			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	○	108
KKSF	Z3			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	◑	◑	◑	110
MCV	Z3-Z4			FORM HA DIN 6535	+AlCrN	●	◑	◑	○	●	○	◑	◑	◑	112
MCX	Z4-Z5-Z6			FORM HA DIN 6535	+TiAlN	●	◑	◑	○	●	○	○	◑	◑	114
MCY	Z4-Z5-Z6			FORM HA DIN 6535	+TiAlN	●	◑	◑	○	●	○	○	◑	◑	116
KPAN	Z1			FORM HA DIN 6535	+Blank	●	◑	◑	○	●	○	◑	○	◑	118
DBRA	Z2			FORM HA DIN 6535	+AlCrN	●	◑	◑	◑	●	◑	◑	◑	◑	120
KTFF	Z6-Z8-Z10			FORM HA DIN 6535	+TiAlN	●	◑	◑	◑	●	○	○	◑	◑	124

ALU-MAC

Quick Selection Guide

	Model	Number of Teeth	Finish	Rough	Shank	Coating	Steel	Stainless Steel	Hardened Steel ≤54 HRc	Hardened Steel >54 HRc	Cast Iron	Graphite	Non Ferrous Material	HRSA	Titanium	Page
119		Z1			 FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	128
122		Z2			 FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	130
123		Z3			 FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	132
123 P		Z3			 FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	134
133		Z3			 FORM HA DIN 6535	+DLC	○	○	○	○	○	○	●	○	○	136
219		Z2			 FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	138

THREAD MILL

Quick Selection Guide

	Model	Number of Teeth	Finish	Rough	Shank	Coating	Steel	Stainless Steel	Hardened Steel ≤54 HRc	Hardened Steel >54 HRc	Cast Iron	Graphite	Non Ferrous Material	HRSA	Titanium	Page
401							●	●	●	●	●	●	●	●	●	142
403							●	●	○	○	●	●	●	●	●	144
403 L							○	○	●	●	○	○	○	●	●	150
404							●	●	●	●	●	●	●	●	●	154
414							●	●	●	●	●	●	●	●	●	160

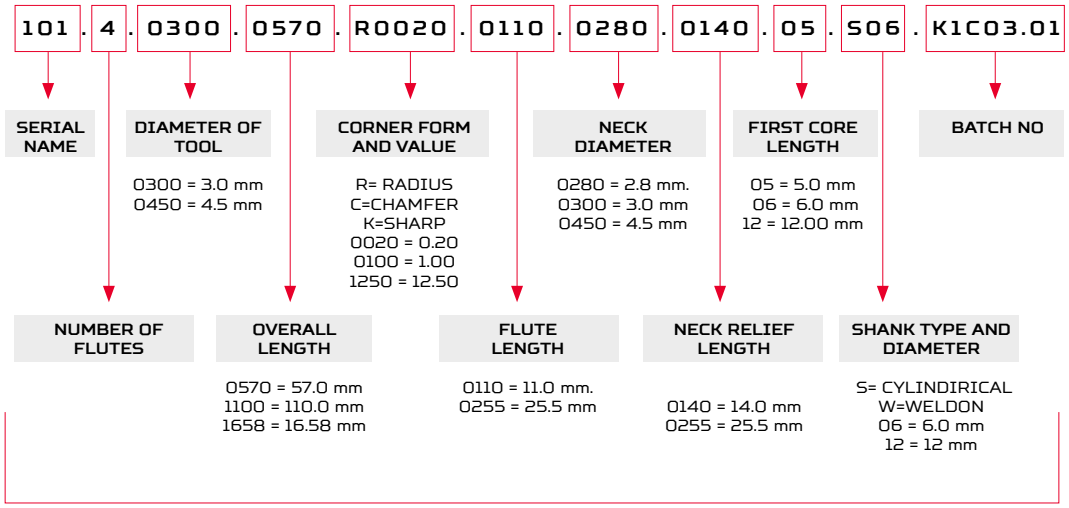
* Marked products can be delivered quickly from stock.


KARCAN
cutting tools
Columbia

SOLID CARBIDE MILLING CONFIGURATION TABLE

YOU CAN READ ALL THE TECHNICAL DETAILS OF A TOOL THAT YOU SELECT WITH JUST ONE SMART CODE AND UNIQUE ORDERCODE!

Our new configuration is now both easier and more practical.



ONE ORDER NO:10100 (EXAMPLE)

2025

Milling Catalogue

ULTRA-BITE

Perfect engineering design and
high-tech material offer optimum
performance even under hardest conditions.

KARCAN
cutting tools

ULTRA-BITE

97 Series
High Performance

General Engineering | Mold&Die | Automotive | Defence | Rail Systems

Finish | Rough

Full Slot!
Full Performance!

Your solution partner with various helix, various intersections and special geometry offer especially milling 2XØ in full slot operations along with side milling.

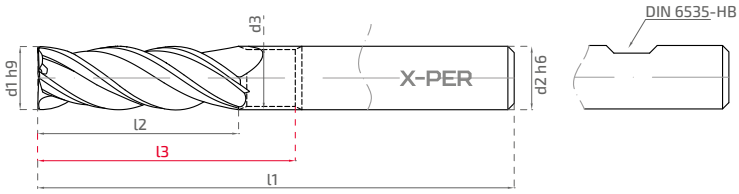
Advanced Rough Milling time reduced up to **%50**

Various coating options and special edge preparations ensure an enhanced tool life up to **%50**

Advanced rough milling and chatter free geometry reduce tensions up to **%35**

Available from stock in all sizes **%100**

CHATTER FREE



S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
*	**10100**	97.4.0300.0500.K0000.0060.0000.0000.00.S06B1A01.01	3	6	-	50	6	-	Ch 0.00	**10101**
*	**10102**	97.4.0300.0510.C0010.0060.0000.0000.00.S06H1A01.01	3	6	-	51	6	-	Ch 0.10	**10103**
	10104	97.4.0300.0510.C0010.0030.0280.0063.00.S06H1A01.01	3	6	2,8	51	3	6,3	Ch 0.10	**10105**
*	**10106**	97.4.0300.0580.R0015.0060.0280.0150.00.S06H1A01.01	3	6	2,8	58	6	15	R 0.15	**10107**
*	**10108**	97.4.0300.0580.R0015.0100.0280.0130.00.S06H1A01.01	3	6	2,8	58	10	13	R 0.15	**10109**
*	**10110**	97.4.0400.0500.K0000.0120.0380.0200.00.S06B1A01.01	4	6	3,8	50	12	20	Ch 0.00	**10111**
*	**10112**	97.4.0400.0580.R0015.0090.0380.0120.00.S06H1A01.01	4	6	3,8	58	9	12	R 0.15	**10113**
*	**10114**	97.4.0400.0580.R0015.0090.0380.0180.00.S06H1A01.01	4	6	3,8	58	9	18	R 0.15	**10115**
*	**10116**	97.4.0400.0580.R0015.0120.0380.0190.00.S06H1A01.01	4	6	3,8	58	12	19	R 0.15	**10117**
*	**10118**	97.4.0500.0500.K0000.0120.0480.0180.00.S06B1A01.01	5	6	4,8	50	12	18	Ch 0.00	**10119**
*	**10120**	97.4.0500.0580.R0015.0130.0480.0180.00.S06B1A01.01	5	6	4,8	58	13	18	R 0.15	**10121**
*	**10122**	97.4.0600.0500.K0000.0150.0000.0000.00.S06B1A01.01	6	6	-	50	15	0	Ch 0.00	**10123**
*	**10124**	97.4.0600.0580.R0015.0160.0570.0230.00.S06B1A01.01	6	6	5,7	58	16	23	R 0.15	**10125**
	10126	97.4.0700.0640.C0020.0200.0670.0270.00.S08B1A01.01	7	8	6,7	64	20	27	Ch 0.20	**10127**
*	**10128**	97.4.0800.0640.K0000.0200.0000.0000.00.S08B1A01.01	8	8	-	64	20	-	Ch 0.00	**10129**
*	**10130**	97.4.0800.0640.C0020.0200.0770.0270.00.S08B1A01.01	8	8	7,7	64	20	27	Ch 0.20	**10131**
*	**10132**	97.4.1000.0730.K0000.0260.0000.0000.00.S10B1A01.01	10	10	-	73	26	-	Ch 0.00	**10133**
*	**10134**	97.4.1000.0730.C0020.0260.0950.0320.00.S10B1A01.01	10	10	9,5	73	26	32	Ch 0.20	**10135**
*	**10136**	97.4.1200.0820.C0030.0280.1150.0380.00.S12B1A01.01	12	12	11,5	82	28	38	Ch 0.30	**10137**
*	**10138**	97.4.1400.0820.C0030.0300.1370.0420.00.S14B1A01.01	14	14	13,7	82	30	42	Ch 0.30	**10139**
*	**10140**	97.4.1600.0930.C0030.0360.1550.0440.00.S16B1A01.01	16	16	15,5	93	36	44	Ch 0.30	**10141**
	10142	97.4.1600.0930.C0050.0340.0000.0000.00.S16B1A01.01	16	16	-	93	34	-	Ch 0.50	**10143**
	10144	97.4.1800.0930.C0030.0350.1750.0440.00.S18B1A01.01	18	18	17,5	93	35	44	Ch 0.30	**10145**
*	**10146**	97.4.2000.1050.C0030.0380.1950.0540.00.S20B1A01.01	20	20	19,5	105	38	54	Ch 0.30	**10147**
	10148	97.4.2000.1050.K0000.0380.1950.0540.00.S20B1A01.01	20	20	19,5	105	38	54	Ch 0.00	**10149**
Slot *	**10150**	97.4.1200.0820.C0010.0280.1170.0360.00.S12B1A02.01	12	12	11,7	82	28	36	Ch 0.10	**10151**
*	**10152**	97.4.1200.0820.C0010.0280.1170.0360.00.S12C1A02.01	12	12	11,7	82	28	36	Ch 0.10	**10153**
Upper *	**10154**	97.4.0500.0580.C0010.0150.0480.0180.00.S06C1A02.01	5	6	4,8	58	15	18	Ch 0.10	**10155**
*	**10156**	97.4.0600.0580.R0015.0160.0570.0230.00.S06H1A02.01	6	6	5,7	58	16	23	R 0.15	**10157**
*	**10158**	97.4.0800.0640.C0015.0200.0770.0270.00.S08C1A02.01	8	8	7,7	64	20	27	Ch 0.15	**10159**

Cutting Parameters

	Material	Slotting ap=1.5 - 1Ø	Slotting ap= 1.0 - 0.5Ø	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø
		Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)
Steel	Unalloyed Steel	150-190	190-220	220-250	250-300
	Steel	140-180	180-210	210-240	240-280
	Tempered Steel	80-110	100-130	130-160	160-200
	Cold Work Tool Steel	80-100	90-120	110-140	130-150
	Hot Work Tool Steel	70-100	80-110	100-130	120-140
Stainless Steel	AISI 304 - 416 - 420		50-70	70-90	80-100
	AISI 316 - 440		45-70	55-80	60-90
	17-4 PH 15-5 PH		45-70	55-80	60-90
	Cobalt-Chrome Alloys		30-50	35-55	40-70
	Duplex F51		60-80	65-85	70-90
	Super Duplex F55		60-80	65-85	70-90
Cast Iron	Gray Cast Iron	90-130	130-180	180-220	220-260
	Alloyed Cast Iron	90-130	130-180	180-220	220-260
	Precision Cast Iron	80-120	120-160	160-195	180-220

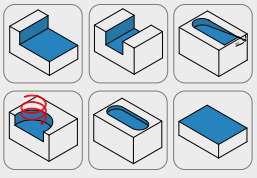
Feed Per Tooth (mm/tooth)

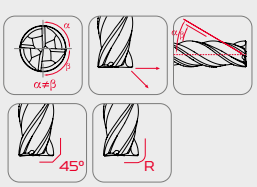
Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0.004	0.006	0.008	0.010	0.012	0.016	0.020	0.030	0.042
4	0.007	0.009	0.013	0.016	0.020	0.025	0.030	0.038	0.049
5	0.010	0.013	0.017	0.020	0.025	0.031	0.036	0.046	0.058
6	0.014	0.018	0.022	0.026	0.030	0.037	0.044	0.050	0.062
8	0.020	0.025	0.029	0.034	0.040	0.048	0.056	0.064	0.073
10	0.026	0.030	0.038	0.042	0.050	0.059	0.067	0.076	0.088
12	0.035	0.042	0.053	0.060	0.070	0.080	0.092	0.102	0.115
16	0.042	0.060	0.082	0.100	0.110	0.120	0.130	0.138	0.150
20	0.05	0.065	0.085	0.100	0.110	0.120	0.130	0.138	0.150

* Marked products can be delivered quickly from stock.

Z4

≤48 HRc | +AlTiN | +TiSiN SlotTools | +TiSiN UpperTools | FORM HA DIN 6535 | FORM HB DIN 6535





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

ULTRA-BITE

98 Series
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General Engineering | Aviation &Aerospace | Defence | Energy | Automotive

Finish | Rough

High Resistance High Performance For Nickel Alloys and High Heat Resistant Materials

Benefit from Karcan's experiences and know-how, make a difference in face and side milling operations on the work pieces difficult to machine such as Inconel, Titanium and Stainless Steel.

ZrN Coating Technology and surface quality ensure an enhanced tool life up to **%35**

Special geometry and edge preparations ensure a better chip removal up **%30**

up to **%30** reduced tensions in the tool thanks to optimized chatter free geometry

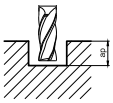
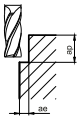
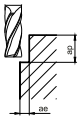
CHATTER FREE

S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Z	Weldon Order No
*	**11100**	98.3.0300.0510.C0003.0060.0000.0000.00.S06C1C02.01	3	6	51	6	Ch 0.03	3	11101
*	**11102**	98.4.0300.0510.R0020.0060.0000.0000.00.S06C1B01.01	3	6	51	6	R 0.20	4	11103
*	**11104**	98.4.0400.0580.R0020.0120.0000.0000.00.S06C1B01.01	4	6	58	12	R 0.20	4	11105
*	**11106**	98.4.0400.0580.R0050.0120.0000.0000.00.S06C1B01.01	4	6	58	12	R 0.50	4	11107
*	**11108**	98.4.0400.0580.R0100.0120.0000.0000.00.S06C1B01.01	4	6	58	12	R 1.00	4	11109
*	**11110**	98.4.0600.0580.R0020.0140.0000.0000.00.S06C1B01.01	6	6	58	14	R 0.20	4	11111
*	**11112**	98.4.0600.0580.R0050.0140.0000.0000.00.S06C1B01.01	6	6	58	14	R 0.50	4	11113
*	**11114**	98.4.0600.0580.R0100.0140.0000.0000.00.S06C1B01.01	6	6	58	14	R 1.00	4	11115
	11116	98.4.0600.0580.R0150.0140.0000.0000.00.S06C1B01.01	6	6	58	14	R 1.50	4	11117
*	**11118**	98.4.0800.0640.R0020.0230.0000.0000.00.S08C1B01.01	8	8	64	23	R 0.20	4	11119
*	**11120**	98.4.0800.0640.R0050.0230.0000.0000.00.S08C1B01.01	8	8	64	23	R 0.50	4	11121
	11122	98.4.0800.0640.R0150.0230.0000.0000.00.S08C1B01.01	8	8	64	23	R 1.50	4	11123
	11124	98.4.0800.0640.R0200.0230.0000.0000.00.S08C1B01.01	8	8	64	23	R 2.00	4	11125
*	**11152**	98.4.0800.0640.C0030.0170.0000.0000.00.S08C1B01.01	8	8	64	17	Ch 0.30	4	11153
*	**11126**	98.4.1000.0730.R0020.0240.0000.0000.00.S10C1B01.01	10	10	73	24	R 0.20	4	11127
*	**11128**	98.4.1000.0730.R0050.0240.0000.0000.00.S10C1B01.01	10	10	73	24	R 0.50	4	11129
*	**11130**	98.4.1000.0730.R0100.0240.0000.0000.00.S10C1B01.01	10	10	73	24	R 1.00	4	11131
	11132	98.4.1000.0730.R0200.0240.0000.0000.00.S10C1B01.01	10	10	73	24	R 2.00	4	11133
	11134	98.4.1200.0650.R0020.0260.0000.0000.00.S12C2B01.01	12	12	65	26	R 0.20	4	11135
*	**11136**	98.4.1200.0820.R0020.0280.0000.0000.00.S12C1B01.01	12	12	82	28	R 0.20	4	11137
*	**11138**	98.4.1200.0820.R0050.0280.0000.0000.00.S12C1B01.01	12	12	82	28	R 0.50	4	11139
*	**11140**	98.4.1200.0820.R0100.0280.0000.0000.00.S12C1B01.01	12	12	82	28	R 1.00	4	11141
	11142	98.4.1200.0820.R0200.0280.0000.0000.00.S12C1B01.01	12	12	82	28	R 2.00	4	11143
	11144	98.4.1200.0820.R0400.0280.0000.0000.00.S12C1B01.01	12	12	82	28	R 4.00	4	11145
*	**11146**	98.4.1600.0930.R0020.0380.0000.0000.00.S16C1B01.01	16	16	93	38	R 0.20	4	11147
*	**11148**	98.4.1600.0930.R0050.0380.0000.0000.00.S16C1B01.01	16	16	93	38	R 0.50	4	11149
	11150	98.4.2000.1050.R0500.0440.0000.0000.00.S20C1B01.01	20	20	105	44	R 5.00	4	11151

Z3

Z4

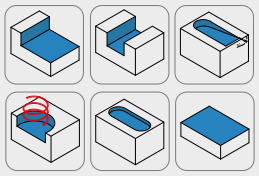
Cutting Parameters

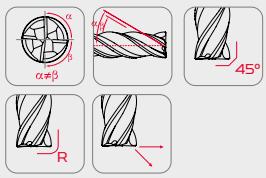
Material	Slotting ap=1.0 - 0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
			
AISI 304 - 416 - 420	50-70	70-90	80-100
AISI 316 - 440	45-70	55-80	60-90
17-4 PH 15-5 PH	45-70	55-80	60-90
Chrome-Cobalt Alloy	30-50	35-55	40-70
Cr - Co Alloys	60-80	65-85	70-90
Duplex F51	60-80	65-85	70-90
Super Duplex F55	30-50	40-60	50-70
HRSA Hastelloy	30-50	40-60	50-70
HRSA Incoinel 625	30-50	40-60	50-70
HRSA Incoinel 718	30-50	40-60	50-70
HRSA Nimonic	60-80	70-90	80-90
Titanium	60-80	70-90	80-90

Stainless Steel
HRSA
Titanium

Feed Per Tooth (mm/tooth)

Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0.006	0.007	0.007	0.007	0.007	0.008	0.008	0.010
4	0.008	0.010	0.009	0.009	0.010	0.010	0.011	0.014
5	0.011	0.014	0.012	0.013	0.013	0.014	0.015	0.019
6	0.014	0.017	0.015	0.016	0.017	0.018	0.020	0.024
8	0.020	0.024	0.022	0.023	0.024	0.025	0.028	0.034
10	0.027	0.029	0.030	0.031	0.032	0.034	0.038	0.046
12	0.035	0.040	0.040	0.041	0.043	0.045	0.050	0.061
16	0.055	0.065	0.061	0.063	0.066	0.069	0.077	0.094
20	0.075	0.090	0.083	0.086	0.090	0.094	0.105	0.128





Steel	○
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

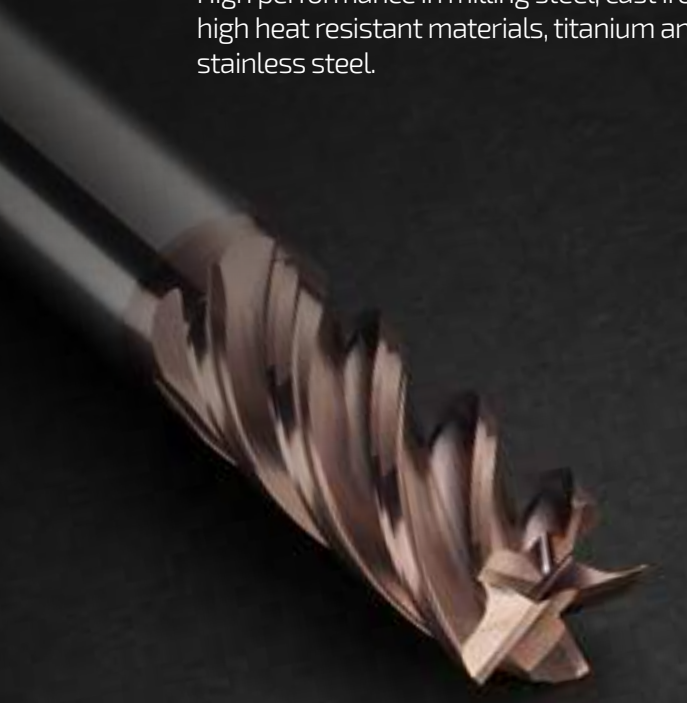
99 Series
High Performance

General Engineering | Mold&Die | Aviation &Aerospace | Automotive | Medical | Energy

Finish | Rough

Endmill Standards Of Future Has Already Been Shaped

High performance in milling steel, cast iron, high heat resistant materials, titanium and stainless steel.



Make difference in Trochoidal milling

Expert in both rough and finishing milling

Has chatter free feature despite having multi flutes

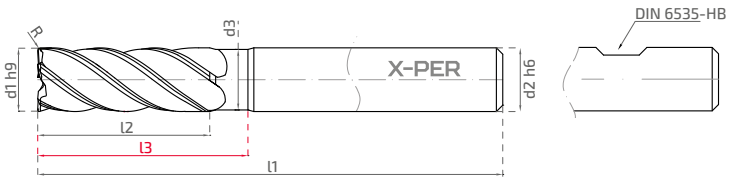
Full slot milling despite having 5-teeth

up to %40 higher performance compared with its competitors in Trochoidal milling thanks to Toric Radius technology.

Better chip removal reduces milling time up to %50 compared with its competitors.

CHATTER FREE

up to %40 better surface quality in finishing operations thanks to its special geometry.



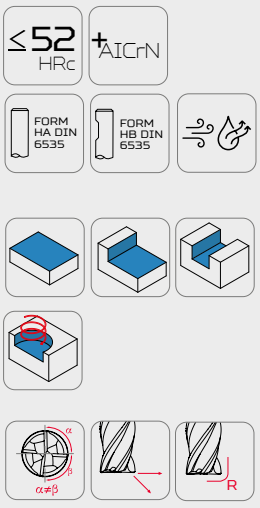
S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
*	**12100**	99.5.0500.0580.R0020.0150.0470.0200.00.S06B1C01.01	5	6	4,7	58	15	20	R 0.20	**12101**
*	**12102**	99.5.0500.0580.R0050.0150.0470.0200.00.S06B1C01.01	5	6	4,7	58	15	20	R 0.50	**12103**
*	**12104**	99.5.0600.0580.K0000.0150.0570.0200.00.S06B1C01.01	6	6	5,7	58	15	20	Ch 0.00	**12105**
*	**12106**	99.5.0600.0580.R0020.0150.0570.0200.00.S06B1C01.01	6	6	5,7	58	15	20	R 0.20	**12107**
*	**12108**	99.5.0600.0580.R0050.0150.0570.0200.00.S06B1C01.01	6	6	5,7	58	15	20	R 0.50	**12109**
*	**12110**	99.5.0600.0580.R0100.0150.0570.0200.00.S06B1C01.01	6	6	5,7	58	15	20	R 1.00	**12111**
*	**12112**	99.5.0600.0580.R0150.0150.0570.0200.00.S06B1C01.01	6	6	5,7	58	15	20	R 1.50	**12113**
	12114	99.5.0600.1000.R0050.0150.0570.0600.00.S06B1C01.01	6	6	5,7	100	15	60	R 0.50	**12115**
*	**12116**	99.5.0800.0640.K0000.0220.0770.0290.00.S08B1C01.01	8	8	7,7	64	22	29	Ch 0.00	**12117**
*	**12118**	99.5.0800.0640.R0030.0220.0770.0290.00.S08B1C01.01	8	8	7,7	64	22	29	R 0.30	**12119**
*	**12120**	99.5.0800.0640.R0050.0220.0770.0290.00.S08B1C01.01	8	8	7,7	64	22	29	R 0.50	**12121**
	12122	99.5.0800.1100.R0050.0220.0770.0650.00.S08B1C01.01	8	8	7,7	110	22	65	R 0.50	**12123**
*	**12124**	99.5.1000.0730.K0000.0270.0950.0330.00.S10B1C01.01	10	10	9,5	73	27	33	Ch 0.00	**12125**
*	**12126**	99.5.1000.0730.R0030.0270.0950.0330.00.S10B1C01.01	10	10	9,5	73	27	33	R 0.30	**12127**
*	**12128**	99.5.1000.0730.R0050.0270.0950.0330.00.S10B1C01.01	10	10	9,5	73	27	33	R 0.50	**12129**
*	**12130**	99.5.1000.0730.R0100.0270.0950.0330.00.S10B1C01.01	10	10	9,5	73	27	33	R 1.00	**12131**
	12132	99.5.1000.0730.R0150.0270.0950.0330.00.S10B1C01.01	10	10	9,5	73	27	33	R 1.50	**12133**
*	**12134**	99.5.1200.0820.K0000.0300.1150.0400.00.S12B1C01.01	12	12	11,5	82	30	40	Ch 0.00	**12135**
*	**12136**	99.5.1200.0820.R0030.0300.1150.0400.00.S12B1C01.01	12	12	11,5	82	30	40	R 0.30	**12137**
*	**12138**	99.5.1200.0820.R0050.0300.1150.0400.00.S12B1C01.01	12	12	11,5	82	30	40	R 0.50	**12139**
*	**12140**	99.5.1200.0820.R0075.0300.1150.0400.00.S12B1C01.01	12	12	11,5	82	30	40	R 0.75	**12141**
	12142	99.5.1200.1250.R0050.0300.1150.0750.00.S12B1C01.01	12	12	11,5	125	30	75	R 0.50	**12143**
	12144	99.5.1400.0930.K0000.0450.1380.0500.00.S14B2C01.01	14	14	13,8	93	45	50	Ch 0.00	**12145**
	12146	99.5.1400.0930.R0050.0450.1380.0500.00.S14B2C01.01	14	14	13,8	93	45	50	R 0.50	**12147**
	12148	99.5.1400.0930.R0100.0450.1380.0500.00.S14B2C01.01	14	14	13,8	93	45	50	R 1.00	**12149**
	12150	99.5.1600.0930.C0020.0370.1550.0450.00.S16B1C01.01	16	16	15,5	93	37	45	Ch 0.20	**12151**
*	**12152**	99.5.1600.0930.R0030.0370.1550.0450.00.S16B1C01.01	16	16	15,5	93	37	45	R 0.30	**12153**
*	**12154**	99.5.1600.0930.R0050.0370.1550.0450.00.S16B1C01.01	16	16	15,5	93	37	45	R 0.50	**12155**
*	**12156**	99.5.1600.0930.R0075.0370.1550.0450.00.S16B1C01.01	16	16	15,5	93	37	45	R 0.75	**12157**
*	**12158**	99.5.1600.1000.R0075.0500.1550.0580.00.S16B1C01.01	16	16	15,5	100	50	58	R 0.75	**12159**
	12160	99.5.1600.1500.R0075.0500.1550.1000.00.S16B1C01.01	16	16	15,5	150	50	100	R 0.75	**12161**
	12162	99.5.1800.0930.R0030.0400.1750.0500.00.S18B1C01.01	18	18	17,5	93	40	50	R 0.30	**12163**
	12164	99.5.1800.0930.R0075.0400.1750.0500.00.S18B1C01.01	18	18	17,5	93	40	50	R 0.75	**12165**
	12166	99.5.2000.1050.K0000.0400.1950.0560.00.S20B1C01.01	20	20	19,5	105	40	56	Ch 0.00	**12167**
*	**12168**	99.5.2000.1050.R0075.0400.1950.0560.00.S20B1C01.01	20	20	19,5	105	40	56	R 0.75	**12169**
	12170	99.5.1000.0730.R0150.0270.0950.0330.00.S10B1C01.02	10	10	9,5	73	27	33	R 1,50	**12171**

Cutting Parameters

	Material	Trochoidal ap=1.5Ø / ae=0.20 - 0.10Ø	Slotting ap= 0.5Ø	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø
		Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)
Steel	Unalloyed Steel	170-200	130-160	150-180	170-200
	Steel	170-200	130-160	150-180	170-200
	Tempered Steel	160-190	120-150	140-170	160-190
	Cold Work Tool Steel	100-130	80-100	90-110	100-130
	Hot Work Tool Steel	90-110	70-90	80-100	90-110
Stainless Steel	AISI 304 - 416 - 420	110-130	90-110	100-120	110-130
	AISI 316 - 440	110-130	90-110	100-120	110-130
	17-4 PH 15-5 PH	90-110	70-90	80-100	90-110
	Chrome-Cobalt Alloy	80-100	60-80	70-90	80-100
	Duplex F51	70-90	50-70	60-80	70-90
	Super Duplex F55	70-90	50-70	60-80	70-90
Cast Iron	Gray Cast Iron	150-180	120-150	140-160	150-180
	Alloyed Cast Iron	140-160	110-140	130-150	140-160
	Precision Cast Iron	130-150	110-130	120-140	130-150
Hardened Steel	54 HRC	120-150	80-120	110-130	120-150
HRSA	HRSA Hastelloy	60-80	40-60	50-70	60-80
	HRSA inconel 625	60-80	40-60	50-70	60-80
	HRSA inconel 718	60-80	40-60	50-70	60-80
	HRSA Nimonic	60-80	40-60	50-70	60-80
Titanium	Titanium	80-100	60-80	70-90	80-100
	Titanium Alloys	80-100	60-80	70-90	80-100

Feed Per Tooth (mm/tooth)

Ø	ap=1Ø	ap=1.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0,012	0,015	0,016	0,020	0,022	0,025	0,026	0,030
4	0,020	0,024	0,020	0,023	0,026	0,030	0,032	0,036
5	0,023	0,026	0,023	0,027	0,031	0,036	0,040	0,045
6	0,026	0,030	0,034	0,038	0,043	0,049	0,050	0,060
8	0,033	0,038	0,036	0,042	0,048	0,054	0,060	0,075
10	0,044	0,049	0,045	0,053	0,063	0,070	0,072	0,084
12	0,045	0,051	0,047	0,053	0,064	0,072	0,080	0,088
16	0,056	0,062	0,058	0,064	0,069	0,075	0,090	0,100
20	0,065	0,073	0,066	0,074	0,080	0,092	0,102	0,110
20	0.046	0.054	0.070	0.076	0.084	0.090	0.096	0.011



Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

100 Series
High Performance

General Engineering | Mold&Die | Automotive | Rail Systems

Finish | Rough

100% Efficiency In Advanced Rough Operations Both Milling Hard And Soft Materials.

Designed for optimum efficiency in milling steel and cast iron, the competitor of 100 series is itself especially in side milling operations.

Top Seller of
Last 3 Year

Reduced rough milling time up to **%45** compared with its competitors.

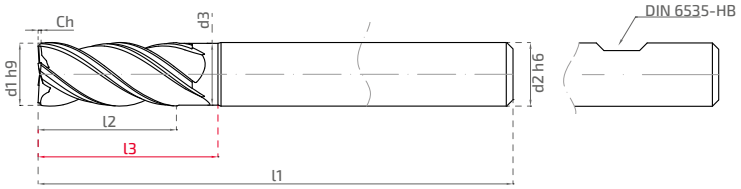
Up to **%40** better surface quality thanks to its special geometry.

Advanced coating and edge preparation technology ensure an enhanced tool life up to **%50**

High chip removal and chatter free features reduce tensions up to **%35**

Available from stock in all sizes **%100**

CHATTER FREE



Short Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
	13100	100.4.0100.0510.K0000.0025.0000.0000.00.S04H1A03.01	1	4	-	51	2,5	-	Ch 0.00	**13101**
	13102	100.4.0200.0510.C0008.0040.0190.0060.00.S04H1A03.01	2	4	1,95	51	4	6	Ch 0.08	**13103**
	13104	100.4.0200.0580.C0008.0040.0190.0060.00.S06H1A03.01	2	6	1,95	58	4	6	Ch 0.08	**13105**
	13106	100.4.0250.0580.C0015.0060.0240.0100.00.S06H1A03.01	2,5	6	2,4	58	6	10	Ch 0.15	**13107**
	13108	100.4.0250.0580.C0015.0120.0240.0160.00.S06H1A03.01	2,5	6	2,4	58	12	16	Ch 0.15	**13109**
*	**13110**	100.4.0300.0580.C0015.0080.0280.0120.00.S06B1A01.01	3	6	2,8	58	8	12	Ch 0.15	**13111**
	13112	100.4.0300.0580.C0015.0120.0280.0160.00.S06B1A01.01	3	6	2,8	58	12	16	Ch 0.15	**13113**
*	**13114**	100.4.0400.0580.C0015.0110.0380.0150.00.S06B1A01.01	4	6	3,8	58	11	15	Ch 0.15	**13115**
*	**13116**	100.4.0500.0580.C0025.0120.0480.0160.00.S06B1A01.01	5	6	4,8	58	12	16	Ch 0.25	**13117**
*	**13118**	100.4.0600.0580.C0025.0140.0580.0180.00.S06B1A01.01	6	6	5,8	58	14	18	Ch 0.25	**13119**
*	**13120**	100.4.0700.0640.C0030.0190.0680.0250.00.S08B1A01.01	7	8	6,8	64	19	25	Ch 0.30	**13121**
*	**13122**	100.4.0800.0640.C0030.0200.0780.0270.00.S08B1A01.01	8	8	7,8	64	20	27	Ch 0.30	**13123**
*	**13124**	100.4.1000.0730.C0040.0220.0970.0310.00.S10B1A01.01	10	10	9,7	73	22	31	Ch 0.40	**13125**
*	**13126**	100.4.1200.0820.C0050.0270.1170.0370.00.S12B1A01.01	12	12	11,7	82	27	37	Ch 0.50	**13127**
*	**13128**	100.4.1400.0820.C0050.0320.1360.0390.00.S14B1A01.01	14	14	13,6	82	32	39	Ch 0.50	**13129**
*	**13130**	100.4.1600.0930.C0060.0340.1550.0480.00.S16B1A01.01	16	16	15,5	93	34	48	Ch 0.60	**13131**
*	**13132**	100.4.1600.1000.C0060.0320.1560.0480.00.S16B1A01.01	16	16	15,6	100	32	48	Ch 0.60	**13133**
*	**13134**	100.4.1800.0930.C0060.0350.1760.0520.00.S18B1A01.01	18	18	17,6	93	35	52	Ch 0.60	**13135**
*	**13136**	100.4.2000.1050.C0060.0420.1960.0590.00.S20B1A01.01	20	20	19,6	105	42	59	Ch 0.60	**13137**

Long Series

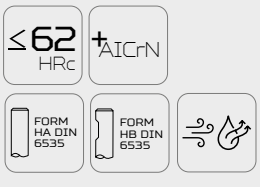
S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
*	**13138**	100.4.0600.1000.C0010.0250.0580.0350.00.S06B1A01.01	6	6	5,8	100	25	35	Ch 0.10	**13139**
*	**13140**	100.4.0800.1000.C0010.0350.0780.0450.00.S08B1A01.01	8	8	7,8	100	35	45	Ch 0.10	**13141**
*	**13142**	100.4.1000.1100.C0010.0400.0970.0500.00.S10B1A01.01	10	10	9,7	110	40	50	Ch 0.10	**13143**
*	**13144**	100.4.1200.1100.C0010.0400.1170.0500.00.S12B1A01.01	12	12	11,7	110	40	50	Ch 0.10	**13145**
*	**13146**	100.4.1600.1100.C0060.0550.1580.0700.00.S16B1A01.01	16	16	15,8	110	55	70	Ch 0.60	**13147**
*	**13148**	100.4.1600.1250.C0015.0550.1560.0720.00.S16B1A01.01	16	16	15,6	125	55	72	Ch 0.15	**13149**

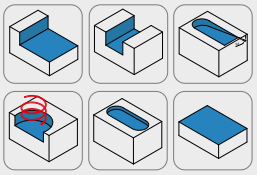
Cutting Parameters

	Material	Slotting ap=1.5 - 1Ø Vc (m/min)	Slotting ap= 1.0 - 0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
Steel	Unalloyed Steel	105-125	180-200	150-200	200-250
	Steel	70-90	120-150	150-180	170-220
	Tempered Steel	70-90	120-150	130-160	150-180
	Cold Work Tool Steel	55-75	100-130	120-150	130-160
	Hot Work Tool Steel	40-60	70-100	100-130	120-150
Stainless Steel	AISI 304 - 416 - 420	15-20	25 -35	20-30	25 -35
	AISI 316 - 440	15-20	25-35	20-30	25-35
	17-4 PH 15-5 PH	15-20	25-35	20-30	25-35
	Chrome-Cobalt Alloy	15-30	30-50	35-60	45-60
	Duplex FS1	15-30	30-50	35-60	45 -60
	Super Duplex F55	15-30	30-50	35-60	45 -60
Cast Iron	Gray Cast Iron	70-90	120 -160	160 -200	180-220
	Alloyed Cast Iron	70-90	120-160	160-200	180-220
	Precision Cast Iron	70-90	120-160	160-200	180-220
Hardened Steel	> 54 HRC	15-20	25-35	35-40	35-45

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0.012	0.015	0.020	0.015	0.017	0.020	0.023	0.025	0.035
4	0.014	0.017	0.021	0.017	0.022	0.025	0.032	0.035	0.040
5	0.017	0.020	0.024	0.020	0.025	0.030	0.035	0.040	0.045
6	0.020	0.022	0.028	0.022	0.028	0.033	0.038	0.045	0.050
8	0.025	0.030	0.035	0.030	0.035	0.045	0.055	0.060	0.070
10	0.030	0.035	0.040	0.035	0.042	0.050	0.060	0.072	0.085
12	0.035	0.041	0.047	0.041	0.049	0.057	0.068	0.078	0.090
14	0.036	0.042	0.048	0.042	0.050	0.058	0.069	0.080	0.094
16	0.045	0.055	0.065	0.061	0.070	0.082	0.094	0.110	0.125
18	0.050	0.068	0.072	0.072	0.085	0.095	0.100	0.120	0.135
20	0.055	0.070	0.090	0.090	0.105	0.120	0.140	0.150	0.165





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	●
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

101 Series
High Performance

General Engineering | Mold&Die | Automotive

Double Action

Finish | Rough

Designed For A Better Surface Quality While Evacuating High Chip Volumes;

101 Series with Double Flute Technology! Highly recognized by our customers in milling steel and cast iron along with stainless steel and titanium.

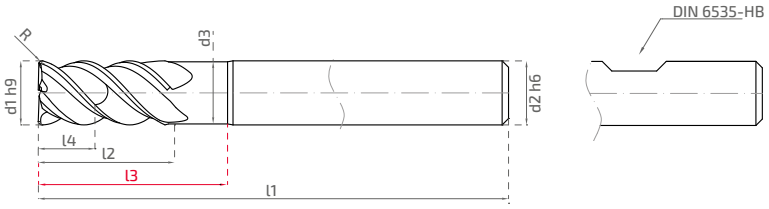
Finishing milling time reduced up to **%45** compared with its competitors.

Up to **%40** better surface quality thanks to its special geometry compared with competitors' semi roughing tools

Advanced coating and edge preparation technology ensure an enhanced tool life up to **%50**

Chatter free geometry reduces tensions up to **%35**

CHATTER FREE



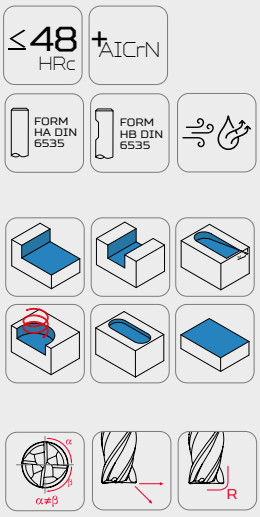
S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	l4	Corner	Weldon Order No
*	**14100**	101.4.0300.0570.R0020.0110.0280.0140.05.S06K1C03.01	3	6	2,8	57	11	14	5	R 0.20	**14101**
*	**14102**	101.4.0400.0570.R0020.0120.0380.0160.06.S06K1C03.01	4	6	3,8	57	12	16	6	R 0.20	**14103**
*	**14104**	101.4.0500.0570.R0020.0130.0480.0170.06.S06K1C03.01	5	6	4,8	57	13	17	6	R 0.20	**14105**
*	**14106**	101.4.0500.0570.R0050.0130.0480.0170.06.S06K1C03.01	5	6	4,8	57	13	17	6	R 0.50	**14107**
*	**14108**	101.4.0600.0570.R0020.0150.0570.0190.08.S06K1C03.01	6	6	5,7	57	15	19	8	R 0.20	**14109**
*	**14110**	101.4.0600.0570.R0050.0150.0570.0190.08.S06K1C03.01	6	6	5,7	57	15	19	8	R 0.50	**14111**
	14112	101.4.0700.0630.R0020.0210.0650.0270.10.S08K1C03.01	7	8	6,5	63	21	27	10	R 0.20	**14113**
*	**14114**	101.4.0800.0630.R0020.0210.0770.0270.10.S08K1C03.01	8	8	7,7	63	21	27	10	R 0.20	**14115**
*	**14116**	101.4.0800.0630.R0050.0210.0770.0270.10.S08K1C03.01	8	8	7,7	63	21	27	10	R 0.50	**14117**
	14118	101.4.0800.0630.R0100.0210.0770.0270.10.S08K1C03.01	8	8	7,7	63	21	27	10	R 1.00	**14119**
	14120	101.4.0800.0630.R0200.0210.0770.0270.10.S08K1C03.01	8	8	7,7	63	21	27	10	R 2.00	**14121**
*	**14122**	101.4.1000.0720.R0020.0210.0950.0260.12.S10K1C03.01	10	10	9,5	72	21	26	12	R 0.20	**14123**
*	**14124**	101.4.1000.0720.R0050.0210.0950.0260.12.S10K1C03.01	10	10	9,5	72	21	26	12	R 0.50	**14125**
	14126	101.4.1000.0720.R0080.0210.0950.0260.12.S10K1C03.01	10	10	9,5	72	21	26	12	R 0.80	**14127**
	14128	101.4.1000.0720.R0100.0210.0950.0260.12.S10K1C03.01	10	10	9,5	72	21	26	12	R 1.00	**14129**
	14130	101.4.1000.0720.R0150.0210.0950.0260.12.S10K1C03.01	10	10	9,5	72	21	26	12	R 1.50	**14131**
	14132	101.4.1000.0720.R0200.0210.0950.0260.12.S10K1C03.01	10	10	9,5	72	21	26	12	R 2.00	**14133**
	14134	101.4.1000.0720.R0300.0210.0950.0260.12.S10K1C03.01	10	10	9,5	72	21	26	12	R 3.00	**14135**
*	**14136**	101.4.1200.0830.R0030.0290.1150.0380.16.S12K1C03.01	12	12	11,5	83	29	38	16	R 0.30	**14137**
*	**14138**	101.4.1200.0830.R0050.0290.1150.0380.16.S12K1C03.01	12	12	11,5	83	29	38	16	R 0.50	**14139**
	14140	101.4.1200.0830.R0100.0290.1150.0380.16.S12K1C03.01	12	12	11,5	83	29	38	16	R 1.00	**14141**
	14142	101.4.1200.0830.R0150.0290.1150.0380.16.S12K1C03.01	12	12	11,5	83	29	38	16	R 1.50	**14143**
	14144	101.4.1200.0830.R0200.0290.1150.0380.16.S12K1C03.01	12	12	11,5	83	29	38	16	R 2.00	**14145**
	14146	101.4.1200.0830.R0300.0290.1150.0380.16.S12K1C03.01	12	12	11,5	83	29	38	16	R 3.00	**14147**
	14148	101.4.1400.0820.K0000.0260.1350.0350.13.S14K1C03.01	14	14	13,5	82	26	35	13	Ch 0.00	**14149**
*	**14150**	101.4.1400.0820.R0030.0260.1350.0350.13.S14K1C03.01	14	14	13,5	82	26	35	13	R 0.30	**14151**
*	**14152**	101.4.1600.0920.R0030.0360.1550.0430.21.S16K1C03.01	16	16	15,5	92	36	43	21	R 0.30	**14153**
*	**14154**	101.4.1600.0920.R0050.0360.1550.0430.21.S16K1C03.01	16	16	15,5	92	36	43	21	R 0.50	**14155**
	14156	101.4.1600.0920.R0100.0360.1550.0430.21.S16K1C03.01	16	16	15,5	92	36	43	21	R 1.00	**14157**
	14158	101.4.1600.0920.R0150.0360.1550.0430.21.S16K1C03.01	16	16	15,5	92	36	43	21	R 1.50	**14159**
	14160	101.4.2000.1040.R0030.0380.1950.0530.19.S20K1C03.01	20	20	19,5	104	38	53	19	R 0.30	**14161**

Cutting Parameters

	Material	Slotting ap=1.0Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø Vc (m/min)	Son Yüzey Frezeleme ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
Steel	Unalloyed Steel	100-130	130-160	150-180
	Steel	100-130	130-160	150-180
	Tempered Steel	80-110	110-140	130-160
	Cold Work Tool Steel	70-100	90-120	110-135
	Hot Work Tool Steel	65-95	80-110	100-125
Stainless Steel	AISI 304 - 416 - 420	20-50	30-60	50-90
	AISI 316 - 440	20-50	30-60	50-90
	17-4 PH 15-5 PH	20-40	30-50	40-70
	Chrome-Cobalt Alloy	20-40	30-50	40 -70
Cast Iron	Gray Cast Iron	70-100	100-130	120-150
	Alloyed Cast Iron	70-100	90-120	110-145
	Precision Cast Iron	50-80	70-100	90-115
Hardened Steel	< 54 HRC	25-35	35-40	35-45
HRSA	HRSA Hastelloy	30-50	40-60	50-70
	HRSA inconel 625	30-50	40-60	50-70
	HRSA inconel 718	30-50	40-60	50-70
	HRSA Nimonic	30-50	40-60	50-70
Titanium	Titanium	30-50	70-90	80-90
	Titanium Alloys	30-50	70-90	80-90

Feed Per Tooth (mm/tooth)

Ø	ap=1Ø	ap=1.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0.003	0.004	0.010	0.012	0.013	0.015	0.016	0.017
4	0.005	0.005	0.012	0.015	0.019	0.020	0.022	0.026
5	0.006	0.007	0.015	0.018	0.022	0.027	0.030	0.035
6	0.007	0.009	0.017	0.020	0.023	0.028	0.031	0.036
8	0.011	0.014	0.019	0.022	0.025	0.029	0.032	0.037
10	0.014	0.018	0.300	0.032	0.036	0.039	0.041	0.046
12	0.020	0.025	0.034	0.038	0.041	0.045	0.047	0.051
14	0.025	0.031	0.040	0.045	0.050	0.056	0.061	0.066
16	0.031	0.038	0.050	0.056	0.062	0.068	0.073	0.078
20	0.046	0.054	0.070	0.076	0.084	0.090	0.096	0.011



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

102 Series
Finishing Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

High Performance In Hard Materials After Heat Treatment

Special geometry and edge preparations ensure a better chip removal up to **%30**

Chatter free geometry reduces tensions up to **%30**

Available from stock in all sizes **%100**

Short Series

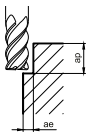
S	Order No	Code	d1h9	d2h6	l1	l2
*	**15100**	102.4.0300.0510.K0000.0080.0000.0000.00.S06H1A02.01	3	6	51	8
*	**15102**	102.4.0400.0510.K0000.0110.0000.0000.00.S06H1A02.01	4	6	51	11
*	**15104**	102.4.0500.0510.K0000.0130.0000.0000.00.S06H1A02.01	5	6	51	13
*	**15106**	102.4.0600.0580.K0000.0200.0000.0000.00.S06H1A02.01	6	6	58	20
*	**15108**	102.4.0800.0640.K0000.0200.0000.0000.00.S08H1A02.01	8	8	64	20
*	**15110**	102.4.1000.0730.K0000.0250.0000.0000.00.S10H1A02.01	10	10	73	25
*	**15112**	102.4.1200.0750.K0000.0260.0000.0000.00.S12H2A02.01	12	12	75	26

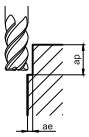
Long Series

S	Order No	Code	d1h9	d2h6	l1	l2
*	**15114**	102.4.0300.0600.K0000.0150.0000.0000.00.S03H2A02.01	3	3	60	15
*	**15116**	102.4.0400.0750.K0000.0150.0000.0000.00.S04J1A02.01	4	4	75	15
*	**15118**	102.4.0500.0750.K0000.0200.0000.0000.00.S05J1A02.01	5	5	75	20
*	**15120**	102.4.0600.0800.K0000.0200.0000.0000.00.S06J1A02.01	6	6	80	20
*	**15122**	102.4.0800.1000.K0000.0250.0000.0000.00.S08H1A02.01	8	8	100	25
*	**15124**	102.4.1000.1000.K0000.0300.0000.0000.00.S10H1A02.01	10	10	100	30
*	**15126**	102.4.1200.1000.K0000.0350.0000.0000.00.S12H1A02.01	12	12	100	35

Cutting Parameters

Shoulder Milling ap≤1.5Ø ae≤0.05Ø	Shoulder Milling ap≤1Ø ae≤0.03Ø (D<Ø3) ae≤0.05Ø (D≥Ø3) max: 0.5mm
Vc (m/min)	Vc (m/min)
Hardened Steel / 45-55 HRc	Hardened Steel / 48-63 HRc





Ø		Ø	
3	140 - 160	3	90 -110
4	140 - 160	4	90 - 110
5	180 - 220	5	110 -130
6	180 - 220	6	110 -130
8	180 - 220	8	110 -130
10	180 - 220	10	110 -130
12	180 - 220	12	110 -130

Feed Per Tooth (mm/tooth)

Ø		Ø	
3	0.020	3	0.015
4	0.025	4	0.020
5	0.030	5	0.025
6	0.035	6	0.030
8	0.045	8	0.035
10	0.050	10	0.040
12	0.060	12	0.045

Z4

≤63 HRc + TiSiN

FORM HA DIN 6535

Steel	◑
Stainless Steel	◑
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

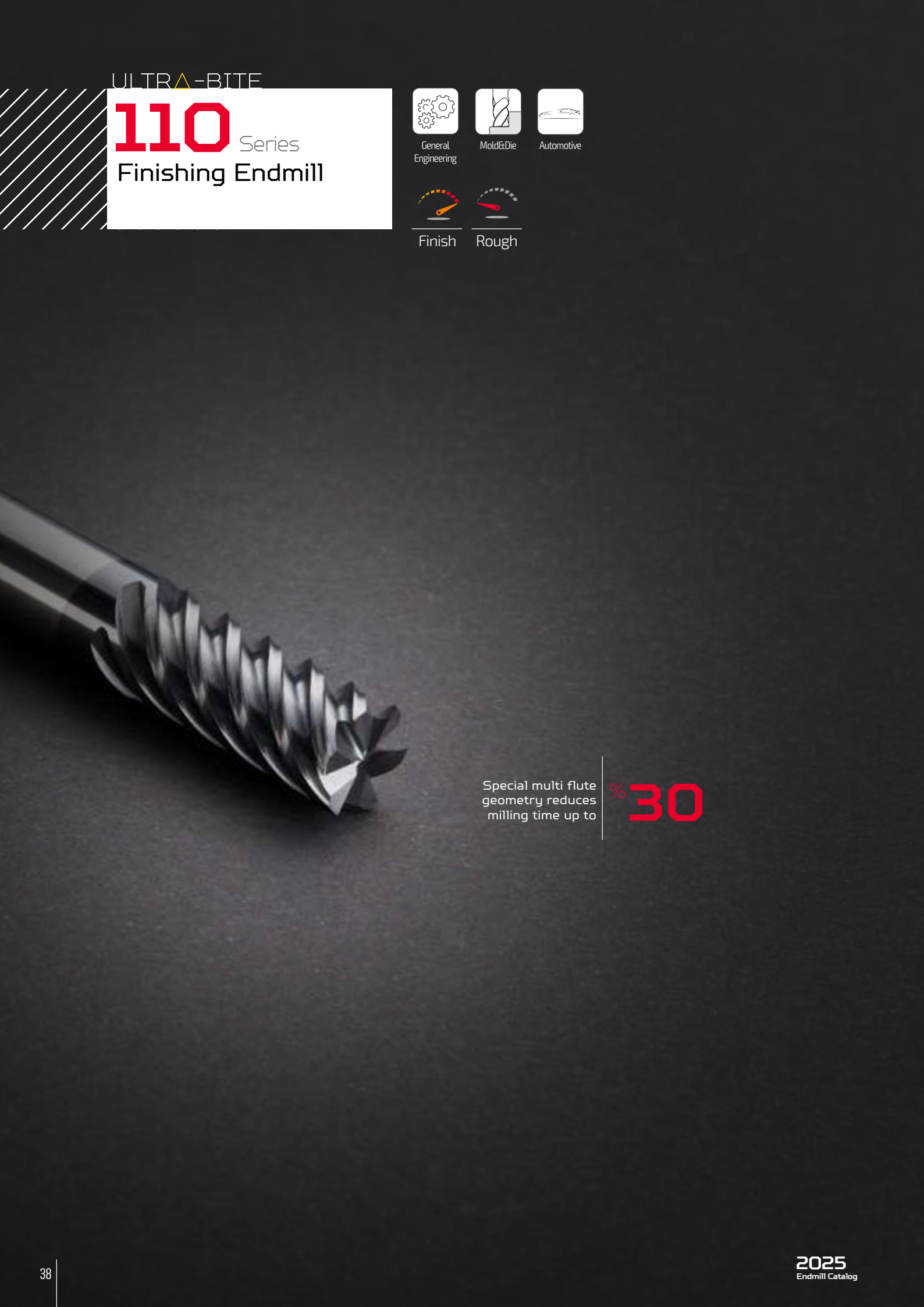
* Marked products can be delivered quickly from stock.

ULTRA-BITE

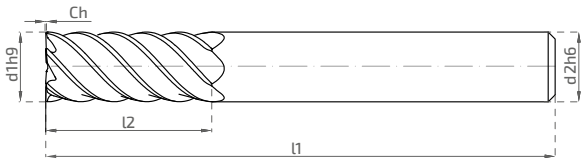
110 Series
Finishing Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough



Special multi flute geometry reduces milling time up to %30



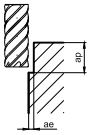
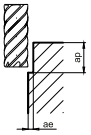
Short Series

S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Z
*	**15128**	110.6.0600.0580.C0010.0150.0000.0000.00.S06B1A01.01	6	6	58	15	Ch 0.10	6
*	**15130**	110.6.0800.0640.C0010.0190.0000.0000.00.S08B1A01.01	8	8	64	19	Ch 0.10	6
*	**15132**	110.6.1000.0730.C0010.0220.0000.0000.00.S10B1A01.01	10	10	73	22	Ch 0.10	6
*	**15134**	110.6.1200.0820.C0010.0260.0000.0000.00.S12B1A01.01	12	12	82	26	Ch 0.10	6
*	**15136**	110.6.1400.0820.C0015.0310.0000.0000.00.S14B1A01.01	14	14	82	31	Ch 0.15	6
*	**15138**	110.6.1600.0930.C0015.0320.0000.0000.00.S16B1A01.01	16	16	93	32	Ch 0.15	6
	15140	110.8.1800.0930.C0015.0320.0000.0000.00.S18B1A01.01	18	18	93	32	Ch 0.15	8
	15142	110.8.2000.1050.C0015.0380.0000.0000.00.S20B1A01.01	20	20	105	38	Ch 0.15	8

Long Series

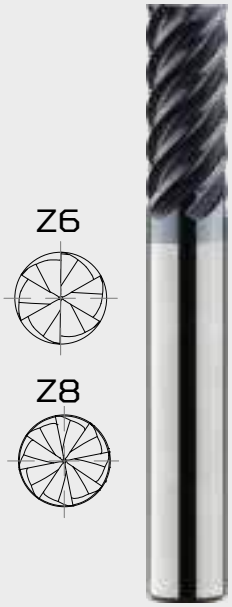
S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Z
*	**15144**	110.6.0600.0820.C0010.0300.0000.0000.00.S06B1A01.01	6	6	82	30	Ch 0.10	6
*	**15146**	110.6.0800.0910.C0010.0400.0000.0000.00.S08B1A01.01	8	8	91	40	Ch 0.10	6
*	**15148**	110.6.1000.1000.C0010.0450.0000.0000.00.S10B1A01.01	10	10	100	45	Ch 0.10	6
*	**15150**	110.6.1200.1100.C0010.0550.0000.0000.00.S12B1A01.01	12	12	110	55	Ch 0.10	6
*	**15152**	110.6.1400.1100.C0015.0600.0000.0000.00.S14B1A01.01	14	14	110	60	Ch 0.15	6
*	**15154**	110.6.1600.1250.C0015.0700.0000.0000.00.S16B1A01.01	16	16	125	70	Ch 0.15	6
	15156	110.8.1800.1430.C0015.0700.0000.0000.00.S18B1A01.01	18	18	143	70	Ch 0.15	8
	15158	110.8.2000.1500.C0015.0750.0000.0000.00.S20B1A01.01	20	20	150	75	Ch 0.15	8

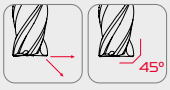
Cutting Parameters

	Material	Shoulder Milling ap=2.0Ø / ae=0.25Ø Vc (m/min)	Shoulder Milling ap=2.0Ø / ae=0.20- 0.10Ø Vc (m/min)
			
Steel	Unalloyed Steel	100-140	140-170
Steel	Steel	80-110	110-140
Steel	Tempered Steel	80-100	105-130
Steel	Cold Work Tool Steel	60-80	80-105
Steel	Hot Work Tool Steel	60-80	80-105
Stainless Steel	AISI 304 - 416 - 420	40-60	55-80
Stainless Steel	AISI 316 - 440	40-60	55-80
Stainless Steel	17-4 PH 15-5 PH	40-60	55-80
Stainless Steel	Cobalt-Chrome Alloys	40-60	55-80
Stainless Steel	Duplex F51	40-60	55-80
Stainless Steel	Super Duplex F55	40-60	55-80
Cast Iron	Gray Cast Iron	80-110	110-140
Cast Iron	Alloyed Cast Iron	80-100	105-130
Cast Iron	Precision Cast Iron	80-100	105-130
Titanium	Titanium	40-50	50-70
Titanium	Titanium Alloys	40-50	50-70

Feed Per Tooth (mm/tooth)

Ø	ae=0.25Ø	ae=0.20Ø	ae=0.10Ø
6	0.028	0.030	0.024
8	0.046	0.051	0.045
10	0.054	0.059	0.051
12	0.060	0.066	0.057
14	0.064	0.074	0.063
16	0.073	0.079	0.069
18	0.078	0.086	0.074
20	0.085	0.092	0.080





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

111 Series
High Performance

General Engineering | Mold&Die | Aviation &Aerospace | Defence | Automotive | Medical | Rail Systems

Finish | Rough

Super Solution for Super Alloys

The Game Changer 111 Series has been developed as a result of 3 years of intensive R&D studies.

Our aim is to provide safe milling operations by integrating cutting-edge preparation technology for milling titanium, inconel, and stainless steel.

Minimal chatter thanks to its various helix and intersections.

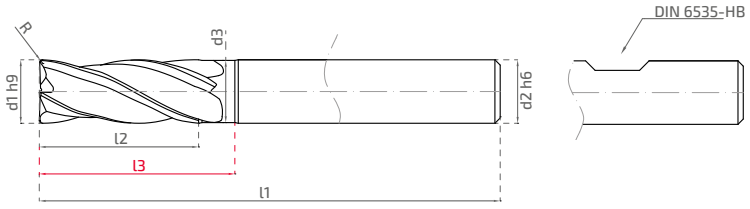
A series to make a breakthrough

AICrN coating technology and surface quality ensure an enhanced tool life up to %35

Special geometry and edge preparations ensure a better chip removal up to %40

Optimized Radius forms ensure a better surface quality and high performance up to %45 in operations such as face milling, pocket milling and interpolation.

CHATTER FREE



S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
*	**16100**	111.4.0300.0580.R0020.0090.0290.0120.00.S06C1C01.01	3	6	2,9	58	9	12	R 0.20	16101
*	**16102**	111.4.0400.0580.R0020.0120.0390.0150.00.S06C1C01.01	4	6	3,9	58	12	15	R 0.20	16103
	16104	111.4.0400.0580.R0050.0120.0390.0150.00.S06C1C01.01	4	6	3,9	58	12	15	R 0.50	16105
*	**16106**	111.4.0500.0580.R0020.0150.0490.0180.00.S06C1C01.01	5	6	4,9	58	15	18	R 0.20	16107
*	**16108**	111.4.0600.0580.R0020.0160.0590.0210.00.S06C1C01.01	6	6	5,9	58	16	21	R 0.20	16109
*	**16110**	111.4.0600.0580.R0050.0160.0590.0210.00.S06C1C01.01	6	6	5,9	58	16	21	R 0.50	16111
*	**16112**	111.4.0600.0580.R0100.0170.0570.0270.00.S06C1C01.01	6	6	5,7	58	17	27	R 1.00	16113
*	**16114**	111.4.0800.0640.R0020.0200.0780.0250.00.S08C1C01.01	8	8	7,8	64	20	25	R 0.20	16115
	16116	111.4.0800.0640.R0030.0200.0780.0250.00.S08C1C01.01	8	8	7,8	64	20	25	R 0.30	16117
*	**16118**	111.4.0800.0640.R0050.0200.0780.0250.00.S08C1C01.01	8	8	7,8	64	20	25	R 0.50	16119
	16120	111.4.0800.0640.R0100.0200.0780.0250.00.S08C1C01.01	8	8	7,8	64	20	25	R 1.00	16121
	16122	111.4.0800.0640.R0200.0200.0780.0250.00.S08C1C01.01	8	8	7,8	64	20	25	R 2.00	16123
	16124	111.4.0800.0640.R0300.0200.0780.0250.00.S08C1C01.01	8	8	7,8	64	20	25	R 3.00	16125
*	**16126**	111.4.1000.0730.R0020.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 0.20	16127
*	**16128**	111.4.1000.0730.R0050.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 0.50	16129
*	**16130**	111.4.1000.0730.R0080.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 0.80	16131
	16132	111.4.1000.0730.R0100.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 1.00	16133
	16134	111.4.1000.0730.R0200.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 2.00	16135
	16136	111.4.1000.0730.R0300.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 3.00	16137
*	**16138**	111.4.1200.0820.R0020.0280.1170.0390.00.S12C1C01.01	12	12	11,7	82	28	39	R 0.20	16139
*	**16140**	111.4.1200.0820.R0050.0280.1170.0390.00.S12C1C01.01	12	12	11,7	82	28	39	R 0.50	16141
*	**16142**	111.4.1200.0820.R0080.0280.1170.0390.00.S12C1C01.01	12	12	11,7	82	28	39	R 0.80	16143
*	**16144**	111.4.1200.0820.R0100.0280.1170.0390.00.S12C1C01.01	12	12	11,7	82	28	39	R 1.00	16145
*	**16146**	111.4.1200.0820.R0150.0280.1170.0390.00.S12C1C01.01	12	12	11,7	82	28	39	R 1.50	16147
	16148	111.4.1200.0820.R0300.0280.1170.0390.00.S12C1C01.01	12	12	11,7	82	28	39	R 3.00	16149
*	**16150**	111.4.1600.0930.R0020.0360.1570.0470.00.S16C1C01.01	16	16	15,7	93	36	47	R 0.20	16151
	16152	111.4.1600.0930.R0030.0360.1570.0470.00.S16C1C01.01	16	16	15,7	93	36	47	R 0.30	16153
*	**16154**	111.4.1600.0930.R0050.0360.1570.0470.00.S16C1C01.01	16	16	15,7	93	36	47	R 0.50	16155
	16156	111.4.1600.0930.R0200.0360.1570.0470.00.S16C1C01.01	16	16	15,7	93	32	46	R 2.00	16157
*	**16158**	111.4.1600.0930.R0400.0320.1570.0460.00.S16C1C01.01	16	16	15,7	93	36	47	R 4.00	16159
*	**16160**	111.4.1600.0930.R0075.0360.1570.0470.00.S16C1C01.01	16	16	15,7	93	36	47	R 0.75	16161
	16162	111.4.1600.0930.R0100.0360.1570.0470.00.S16C1C01.01	16	16	15,7	93	36	47	R 1.00	16163
*	**16164**	111.4.1600.0930.R0150.0360.1570.0470.00.S16C1C01.01	16	16	15,7	93	36	47	R 1.50	16165
	16166	111.4.2000.1050.R0050.0380.1970.0570.00.S20C1C01.01	20	20	19,7	105	38	57	R 0.50	16167
	16168	111.4.2000.1050.R0100.0380.1970.0570.00.S20C1C01.01	20	20	19,7	105	38	57	R 1.00	16169

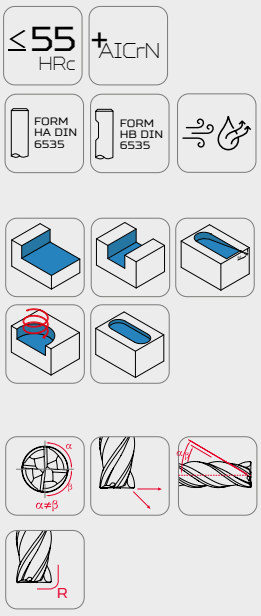
Cutting Parameters

	Material	Slotting ap=1.5 - 1Ø	Slotting ap=1.0 - 0.5Ø	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø
		Vc (m/min)	Vc (m/min)	Vc (m/min)	Vc (m/min)
Steel	Unalloyed Steel	100-130	120 -160	150-180	170-220
	Steel	100-130	120 -150	150-180	170-220
	Tempered Steel	90-120	110 -150	130-170	150-200
	Cold Work Tool Steel	80 -110	100-140	120 -150	140-180
	Hot Work Tool Steel	80-110	100-140	120 -150	140-180
Stainless Steel	AISI 304 - 416 - 420		50-70	70-90	80-100
	AISI 316 - 440		45-70	55-80	60-90
	17-4 PH 15-5 PH		45-70	55-80	60-90
	Cobalt-Chrome Alloys		30-50	35-55	40-70
	Duplex F51		60-80	65-85	70-90
	Super Duplex F55		60-80	65-85	70-90
HRSA	HRSA Hastelloy	35-60	30-50	40-60	50-70
	HRSA inconel 625	35-60	30-50	40-60	50-70
	HRSA inconel 718	35-60	30-50	40-60	50-70
	HRSA Nimonic	35-60	30-50	40-60	50-70
Titanium	Titanium	50-70	60-80	70-90	80-90
	Titanium Alloys	50-70	60-80	70-90	80-90
Hardened Steel	< 54 HRC		50-70	55-75	60-85

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0,007	0,008	0,009	0,01	0,012	0,0125	0,013	0,014	0,016
4	0,009	0,01	0,01	0,02	0,025	0,026	0,028	0,029	0,03
5	0,01	0,011	0,02	0,03	0,035	0,036	0,038	0,04	0,045
6	0,02	0,028	0,03	0,045	0,05	0,057	0,059	0,061	0,065
8	0,03	0,04	0,045	0,05	0,06	0,068	0,07	0,073	0,078
10	0,04	0,045	0,05	0,06	0,07	0,075	0,078	0,08	0,082
12	0,05	0,06	0,065	0,07	0,08	0,09	0,1	0,11	0,13
16	0,08	0,095	0,1	0,12	0,13	0,14	0,145	0,15	0,16
20	0,09	0,12	0,15	0,17	0,175	0,18	0,185	0,19	0,22

Z4



Steel	◑
Stainless Steel	●
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

111 PLUS Series
High Performance

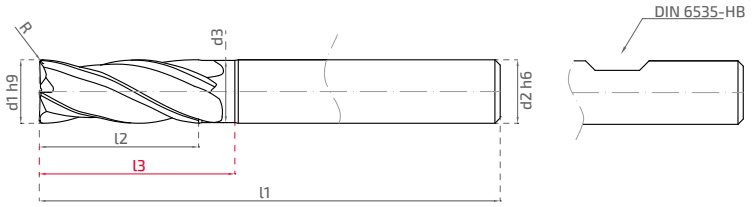
General Engineering | Mold&Die | Aviation &Aerospace | Defence | Automotive | Medical | Rail Systems

Finish | Rough

Well Known 111 Quality + Higher Precision!

An Expansion Of Our 111 Series, 111 Plus Series Has Been Developed For Higher Precision Slotting Operations Thanks To It's Shrinked Diameter and Radius Tolerance.

Although All Our Tools Are Manufactured To The Highest Precision Standard We Have Reduced The Tolerances On The Cutting Diameter and Corner Radius to Ensure The Most Precise Results Achievable From An Endmill.



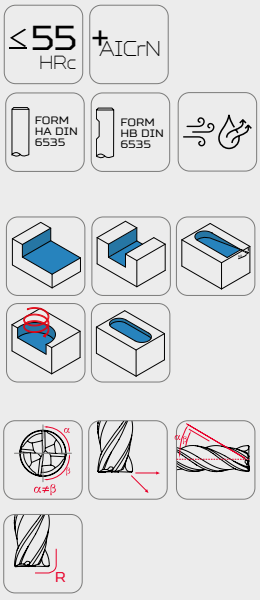
S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner
	17100	111P.4.0600.0800.R0050.0160.0590.0217.00.S06C1C01.01	6	6	5,9	80	16	21,7	R 0.50
	17102	111P.4.0600.0800.R0100.0160.0590.0217.00.S06C1C01.01	6	6	5,9	80	16	21,7	R 1.00
	17104	111P.4.0800.0800.R0050.0200.0780.0255.00.S08C1C01.01	8	8	7,8	80	20	25,5	R 0.50
	17106	111P.4.0800.0800.R0100.0200.0780.0255.00.S08C1C01.01	8	8	7,8	80	20	25,5	R 1.00
	17108	111P.4.1000.1000.R0050.0220.0980.0315.00.S10C1C01.01	10	10	9,8	100	22	31,5	R 0.50
	17110	111P.4.1000.1000.R0100.0220.0980.0315.00.S10C1C01.01	10	10	9,8	100	22	31,5	R 1.00
	17112	111P.4.1200.1000.R0050.0280.1170.0392.00.S12C1C01.01	12	12	11,7	100	28	39,2	R 0.50
	17114	111P.4.1200.1000.R0100.0280.1170.0392.00.S12C1C01.01	12	12	11,7	100	28	39,2	R 1.00

Cutting Parameters

	Material	Slotting ap=1.5 - 1Ø Vc (m/min)	Slotting ap= 1.0 - 0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
Steel	Unalloyed Steel	100-130	120 -160	150-180	170-220
	Steel	100-130	1 20 -150	150-180	170-220
	Tempered Steel	90-120	110 -150	130-170	150-200
	Cold Work Tool Steel	80 -110	100-140	120 -150	140-180
	Hot Work Tool Steel	80-110	100-140	120 -150	140-180
Stainless Steel	AISI 304 - 416 - 420		50-70	70-90	80-100
	AISI 316 - 440		45-70	55-80	60-90
	17-4 PH 15-5 PH		45-70	55-80	60-90
	Cobalt-Chrome Alloys		30-50	35-55	40-70
	Duplex F51		60-80	65-85	70-90
	Super Duplex F55		60-80	65-85	70-90
HRSA	HRSA Hastelloy	35-60	30-50	40-60	50-70
	HRSA Incoinel 625	35-60	30-50	40-60	50-70
	HRSA Incoinel 718	35-60	30-50	40-60	50-70
	HRSA Nimonic	35-60	30-50	40-60	50-70
Titanium	Titanium	50-70	60-80	70-90	80-90
	Titanium alloys	50-70	60-80	70-90	80-90
Hardened Steel	>54 HRC		50-70	55-75	60-85

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0,007	0,008	0,009	0,01	0,012	0,0125	0.013	0,014	0,016
4	0,009	0,01	0,01	0,02	0,025	0,026	0,028	0,029	0,03
5	0,01	0,011	0,02	0,03	0,035	0,036	0,038	0,04	0,045
6	0,02	0,028	0,03	0,045	0,05	0,057	0,059	0,061	0,065
8	0,03	0,04	0,045	0,05	0,06	0,068	0,07	0,073	0,078
10	0,04	0,045	0,05	0,06	0,07	0,075	0,078	0,08	0,082
12	0,05	0,06	0,065	0,07	0,08	0,09	0,1	0,11	0,13
16	0,08	0,095	0,1	0,12	0,13	0,14	0,145	0,15	0,16
20	0,09	0,12	0,15	0,17	0,175	0,18	0,185	0,19	0,22



Steel	◑
Stainless Steel	●
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

112 Series
Finishing Endmill

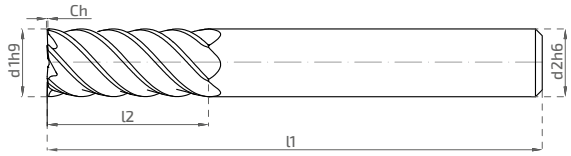
General Engineering | Mold&Die | Automotive

Finish | Rough

To Achieve A Super Smooth Surface On Heat-Treated Materials.

New geometry and developed coating ensure an expanded tool life up to **%40**

Better surface rougness thanks to unique edge preparation. **%30**



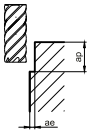
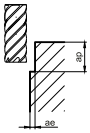
Short Series

S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Z
*	**18100**	112.6.0600.0570.C0010.0130.0000.0000.00.S06G1A02.01	6	6	57	13	Ch 0.10	6
*	**18102**	112.6.0800.0630.C0010.0190.0000.0000.00.S08G1A02.01	8	8	63	19	Ch 0.10	6
*	**18104**	112.6.1000.0720.C0010.0220.0000.0000.00.S10G1A02.01	10	10	72	22	Ch 0.10	6
*	**18106**	112.6.1200.0830.C0010.0260.0000.0000.00.S12G1A02.01	12	12	83	26	Ch 0.10	6
*	**18108**	112.6.1600.0920.C0020.0320.0000.0000.00.S16G1A02.01	16	16	92	32	Ch 0.20	6
	18110	112.8.2000.1040.C0020.0380.0000.0000.00.S20G1A02.01	20	20	104	38	Ch 0.20	8

Long Series

S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Z
*	**18112**	112.6.0600.0800.C0010.0300.0000.0000.00.S06G1A02.01	6	6	80	30	Ch 0.10	6
*	**18114**	112.6.0800.1000.C0010.0350.0000.0000.00.S08G1A02.01	8	8	100	35	Ch 0.10	6
*	**18116**	112.6.1000.1000.C0010.0450.0000.0000.00.S10G1A02.01	10	10	100	45	Ch 0.10	6
*	**18118**	112.6.1200.1100.C0010.0550.0000.0000.00.S12G1A02.01	12	12	110	55	Ch 0.10	6
*	**18120**	112.6.1600.1300.C0020.0650.0000.0000.00.S16G1A02.01	16	16	130	65	Ch 0.20	6
*	**18122**	112.8.2000.1500.C0020.0750.0000.0000.00.S20G1A02.01	20	20	150	75	Ch 0.20	8

Cutting Parameters

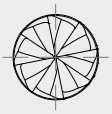
Material	Shoulder Milling ap=2.0Ø / ae=0.025Ø Vc (m/min)	Finish Milling ap=2.0Ø / ae=0.020 - 0.010Ø Vc (m/min)
		
Steel — Cold Work Tool Steel	110-150	150-180
Steel — Hot Work Tool Steel	100-140	140-170
Stainless Steel — AISI 304 - 416 - 420	70-100	100-130
Stainless Steel — AISI 316 - 440	70-100	100-130
Stainless Steel — 17-4 PH 15-5 PH	65-90	90-120
Stainless Steel — Chrome-Cobalt Alloy	65-90	90-120
Stainless Steel — Duplex F51	60-80	80-110
Stainless Steel — Super Duplex F55	60-80	80-110
Titanium — Titanium	60-80	70-100
Titanium — Titanium Alloysı	55-75	65-95
Hardened Steel — ≤ 54 HRC	80-110	110-140
Hardened Steel — >54 HRC	20-50	50-80

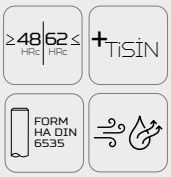
Feed Per Tooth (mm/tooth)

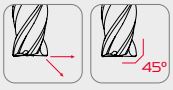
Ø	ae=0,035Ø	ae=0.020Ø	ae=0.010Ø	ae=0.010Ø
6	0.018	0.019	0.024	0.024
8	0.027	0.030	0.042	0.045
10	0.035	0.037	0.048	0.051
12	0.037	0.040	0.054	0.057
16	0.045	0.049	0.064	0.069
20	0.052	0.058	0.075	0.080

Z6

Z8







Steel	◑
Stainless Steel	◑
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

112 PLUS Series
Finishing Endmill

General Engineering | Mold&Die | Automotive

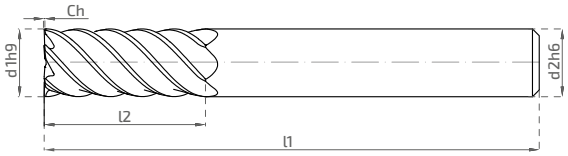
Finish | Rough

Challenge To Hardness !

An Expansion Of Our 112 Series, 112 Plus Series Is Developed For Longer Tool Life In Workpiece Materials Between 55 and 70 HRC Hardness.

Thanks To It's Innovative Coating and Special Grade Raw, 112 Plus Series Allows High Performance Milling In Workpiece Materials Up To 70HRC.

We Are Now More Competitive In The Developing Mold&Die Industry with our New 112 Plus Series! You Can Compare It With Well Known World Brands.



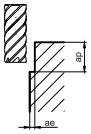
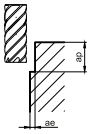
Short Series

S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Z
*	**19100**	112P.6.0600.0570.K0000.0130.0000.0000.00.S06E2S01.01	6	6	57	13	Ch 0.00	6
*	**19102**	112P.6.0800.0630.K0000.0190.0000.0000.00.S08E2S01.01	8	8	63	19	Ch 0.00	6
*	**19104**	112P.6.1000.0720.K0000.0220.0000.0000.00.S10E2S01.01	10	10	72	22	Ch 0.00	6
*	**19106**	112P.6.1200.0820.K0000.0260.0000.0000.00.S12E2S01.01	12	12	82	26	Ch 0.00	6
	19108	112P.6.1400.0820.K0000.0260.0000.0000.00.S14E2S01.01	14	14	82	26	Ch 0.00	6
*	**19110**	112P.6.1600.0920.K0000.0320.0000.0000.00.S16E2S01.01	16	16	92	32	Ch 0.00	6
	19112	112P.8.2000.1040.K0000.0380.0000.0000.00.S20E2S01.01	20	20	104	38	Ch 0.00	8

Long Series

S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Z
*	**19114**	112P.6.0600.0700.K0000.0260.0000.0000.00.S06E2S01.01	6	6	70	26	Ch 0.00	6
*	**19116**	112P.6.0800.0900.K0000.0360.0000.0000.00.S08E2S01.01	8	8	90	36	Ch 0.00	6
*	**19118**	112P.6.1000.1000.K0000.0460.0000.0000.00.S10E2S01.01	10	10	100	46	Ch 0.00	6
*	**19120**	112P.6.1200.1100.K0000.0560.0000.0000.00.S12E2S01.01	12	12	110	56	Ch 0.00	6
*	**19122**	112P.6.1600.1300.K0000.0660.0000.0000.00.S16E2S01.01	16	16	130	66	Ch 0.00	6
	19124	112P.8.2000.1400.K0000.0760.0000.0000.00.S20E2S01.01	20	20	140	76	Ch 0.00	8

Cutting Parameters

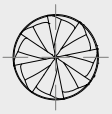
	Material	Shoulder Milling ap=2.0Ø / ae=0.035Ø Vc (m/min)	Finish Milling ap=2.0Ø / ae=0.020 - 0.010Ø Vc (m/min)
			
Steel	Cold Work Tool Steel	110-150	150-180
Steel	Hot Work Tool Steel	100-140	140-170
Stainless Steel	AISI 304 - 416 - 420	70-100	100-130
Stainless Steel	AISI 316 - 440	70-100	100-130
Stainless Steel	17-4 PH 15-5 PH	65-90	90-120
Stainless Steel	Chrome-Cobalt Alloy	65-90	90-120
Stainless Steel	Duplex F51	60-80	80-110
Stainless Steel	Super Duplex F55	60-80	80-110
Titanium	Titanium	60-80	70-100
Titanium	Titanium Alloysı	55-75	65-95
Hardened Steel	≤ 54 HRC	80-110	110-140
Hardened Steel	>54 HRC	20-50	50-80

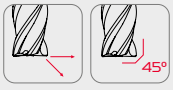
Feed Per Tooth (mm/tooth)

Ø	ae=0,025Ø	ae=0.020Ø	ae=0.010Ø	ae=0.010Ø
6	0.018	0.019	0.024	0.024
8	0.027	0.030	0.042	0.045
10	0.035	0.037	0.048	0.051
12	0.037	0.040	0.054	0.057
16	0.045	0.049	0.064	0.069
20	0.052	0.058	0.075	0.080

Z6

Z8





Steel	◑
Stainless Steel	◑
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

114 Series
Corner Radius Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

Updated For Optimal Performance After Heat Treatment, Our New Generation 114 Series Is More Competitive In Milling Hard Materials,

Particularly for the evolving Mold and Die industry. This series is designed for semifinishing and finishing operations.

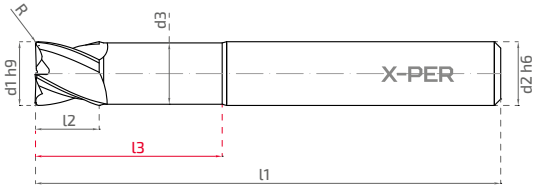
AICrN coating technology and surface quality ensure an enhanced tool life and resistance up to **%35**

Flute geometry and center form ensure a better chip evacuation up to **%30** in hard materials.

Advanced coating and edge preparation technology ensure an enhanced tool life up to **%50**

%100 Traceability of optimized special radius forms reflect the radius form on the work piece.

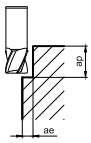
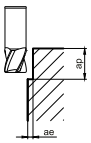
Up to **%35** reduced tensions in the tool thanks to optimized chatter free geometry.

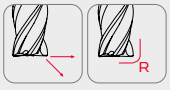


Short Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner
	20100	114.4.0200.0500.R0050.0020.0190.0120.00.S04G1A01.01	2	4	1,9	50	2	12	R 0.50
	20102	114.4.0300.0500.R0020.0030.0280.0160.00.S04G1A01.01	3	4	2,8	50	3	16	R 0.20
*	**20104**	114.4.0200.0570.R0050.0020.0190.0120.00.S06G1A01.01	2	6	1,9	57	2	12	R 0.50
*	**20106**	114.4.0300.0570.R0050.0030.0280.0160.00.S06G1A01.01	3	6	2,8	57	3	16	R 0.50
*	**20108**	114.4.0300.0510.R0050.0030.0280.0160.00.S03G1A01.01	3	3	2,8	51	3	16	R 0.50
*	**20110**	114.4.0400.0570.R0050.0040.0380.0200.00.S06G1A01.01	4	6	3,8	57	4	20	R 0.50
*	**20112**	114.4.0400.0570.R0100.0040.0380.0200.00.S06G1A01.01	4	6	3,8	57	4	20	R 1.00
*	**20114**	114.4.0400.0500.R0050.0040.0380.0200.00.S04G1A01.01	4	4	3,8	50	4	20	R 0.50
*	**20116**	114.4.0400.0500.R0100.0040.0380.0200.00.S04G1A01.01	4	4	3,8	50	4	20	R 1.00
*	**20118**	114.4.0500.0570.R0050.0050.0480.0170.00.S06G1A01.01	5	6	4,8	57	5	17	R 0.50
*	**20120**	114.4.0500.0570.R0100.0050.0480.0170.00.S06G1A01.01	5	6	4,8	57	5	17	R 1.00
	20122	114.4.0500.0570.R0150.0050.0480.0170.00.S06G1A01.01	5	6	4,8	57	5	17	R 1.50
*	**20124**	114.4.0600.0570.R0050.0060.0580.0220.00.S06G1A01.01	6	6	5,8	57	6	22	R 0.50
*	**20126**	114.4.0600.0570.R0100.0060.0580.0220.00.S06G1A01.01	6	6	5,8	57	6	22	R 1.00
*	**20128**	114.4.0600.0570.R0150.0060.0580.0220.00.S06G1A01.01	6	6	5,8	57	6	22	R 1.50
*	**20130**	114.4.0800.0630.R0050.0080.0770.0240.00.S08G1A01.01	8	8	7,7	63	8	24	R 0.50
*	**20132**	114.4.0800.0630.R0100.0080.0770.0240.00.S08G1A01.01	8	8	7,7	63	8	24	R 1.00
	20134	114.4.0800.0630.R0150.0080.0770.0240.00.S08G1A01.01	8	8	7,7	63	8	24	R 1.50
*	**20136**	114.4.1000.0720.R0050.0100.0970.0310.00.S10G1A01.01	10	10	9,7	72	10	31	R 0.50
*	**20138**	114.4.1000.0720.R0100.0100.0970.0310.00.S10G1A01.01	10	10	9,7	72	10	31	R 1.00
	20140	114.4.1000.0720.R0150.0100.0970.0310.00.S10G1A01.01	10	10	9,7	72	10	31	R 1.50
*	**20142**	114.4.1200.0830.R0050.0120.1170.0350.00.S12G1A01.01	12	12	11,7	83	12	35	R 0.50
*	**20144**	114.4.1200.0830.R0100.0120.1170.0350.00.S12G1A01.01	12	12	11,7	83	12	35	R 1.00
	20146	114.4.1200.0830.R0150.0120.1170.0350.00.S12G1A01.01	12	12	11,7	83	12	35	R 1.50
	20148	114.4.1200.0830.R0200.0120.1170.0350.00.S12G1A01.01	12	12	11,7	83	12	35	R 2.00
	20150	114.4.1400.0820.R0100.0140.1370.0350.00.S14G1A01.01	14	14	13,7	82	14	35	R 1.00
	20152	114.4.1600.0920.R0050.0160.1550.0420.00.S16G1A01.01	16	16	15,5	92	16	42	R 0.50
	20154	114.4.1600.0920.R0100.0160.1550.0420.00.S16G1A01.01	16	16	15,5	92	16	42	R 1.00
	20156	114.4.1600.0920.R0150.0160.1550.0420.00.S16G1A01.01	16	16	15,5	92	16	42	R 1.50
	20158	114.4.1600.0920.R0200.0160.1550.0420.00.S16G1A01.01	16	16	15,5	92	16	42	R 2.00
	20160	114.4.1600.0920.R0300.0160.1550.0420.00.S16G1A01.01	16	16	15,5	92	16	42	R 3.00

Cutting Parameters

Material	Shoulder Milling ap=0.10Ø / ae=0.025 - 0.01Ø Vc (m/min)	Finish Milling ap=0.10Ø / ae=0.01Ø Vc (m/min)
		
Steel — Cold Work Tool Steel	110-150	150-180
Steel — Hot Work Tool Steel	100-140	140-170
Cast Iron — Gray Cast Iron	70-100	100-130
Cast Iron — Alloyed Cast Iron	70-100	100-130
Cast Iron — Precision Cast Iron	65-90	90-120
Hardened Steel — ≤ 54 HRC	65-90	90-120
Hardened Steel — >54 HRC	60-80	80-110



Feed Per Tooth (mm/tooth)

Ø	ae=0.025Ø	ae=0.02Ø	ae=0.015Ø	ae=0.01Ø
4	0.031	0.034	0.037	0.040
6	0.031	0.034	0.037	0.041
8	0.038	0.042	0.047	0.053
10	0.049	0.052	0.056	0.061
12	0.052	0.056	0.062	0.068
16	0.063	0.068	0.076	0.082

Steel	●
Stainless Steel	○
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	◑
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

114 Long Series
Corner Radius Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

Updated For Optimum Performance After Heat Treatment Semi-Finishing And Finishing Operations!

We are more competitive with new generation 114 series in milling hard materials especially for changing and growing Mold and Die industry

AICrN coating technology and surface quality ensure an enhanced tool life and resistance up to **%35**

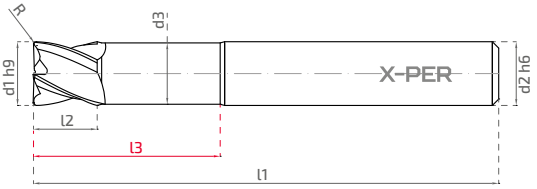
Flute geometry and center form ensure a better chip evacuation up to **%30** in hard materials.

Advanced coating and edge preparation technology ensure an enhanced tool life up to **%50**

%100 Traceability of optimized special radius forms reflect the radius form on the work piece.

Up to **%35** reduced tensions in the tool thanks to optimized chatter free geometry.

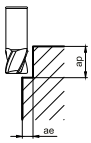
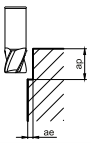
Long 114
Corner Radius Endmill



Long Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner
*	**20162**	114.4.0400.0750.R0050.0100.0380.0200.00.S06G1A01.01	4	6	3,8	75	10	20	R 0.50
	20164	114.4.0400.0750.R0100.0100.0380.0200.00.S06G1A01.01	4	6	3,8	75	10	20	R 1.00
*	**20166**	114.4.0400.0750.R0050.0100.0380.0200.00.S04G1A01.01	4	4	3,8	75	10	20	R 0.50
*	**20168**	114.4.0600.0750.R0050.0160.0580.0220.00.S06G1A01.01	6	6	5,8	75	16	22	R 0.50
*	**20170**	114.4.0600.0750.R0100.0160.0580.0220.00.S06G1A01.01	6	6	5,8	75	16	22	R 1.00
*	**20172**	114.4.0600.1000.R0050.0160.0580.0210.00.S06G1A01.01	6	6	5,8	100	16	21	R 0.50
*	**20174**	114.4.0600.1000.R0100.0160.0580.0210.00.S06G1A01.01	6	6	5,8	100	16	21	R 1.00
*	**20176**	114.4.0800.0750.R0050.0160.0770.0230.00.S08G1A01.01	8	8	7,7	75	16	23	R 0.50
*	**20178**	114.4.0800.0750.R0100.0160.0770.0230.00.S08G1A01.01	8	8	7,7	75	16	23	R 1.00
	20180	114.4.0800.0750.R0150.0160.0770.0230.00.S08G1A01.01	8	8	7,7	75	16	23	R 1.50
*	**20182**	114.4.0800.1000.R0050.0160.0770.0230.00.S08G1A01.01	8	8	7,7	100	16	23	R 0.50
*	**20184**	114.4.0800.1000.R0100.0160.0770.0230.00.S08G1A01.01	8	8	7,7	100	16	23	R 1.00
*	**20186**	114.4.1000.1000.R0050.0180.0970.0310.00.S10G1A01.01	10	10	9,7	100	18	31	R 0.50
*	**20188**	114.4.1000.1000.R0100.0180.0970.0310.00.S10G1A01.01	10	10	9,7	100	18	31	R 1.00
	20190	114.4.1000.1000.R0150.0180.0970.0310.00.S10G1A01.01	10	10	9,7	100	18	31	R 1.50
	20192	114.4.1000.1000.R0200.0180.0970.0310.00.S10G1A01.01	10	10	9,7	100	18	31	R 2.00
*	**20194**	114.4.1200.1000.R0050.0200.1170.0350.00.S12G1A01.01	12	12	11,7	100	20	35	R 0.50
*	**20196**	114.4.1200.1000.R0100.0200.1170.0350.00.S12G1A01.01	12	12	11,7	100	20	35	R 1.00
	20198	114.4.1200.1000.R0150.0200.1170.0350.00.S12G1A01.01	12	12	11,7	100	20	35	R 1.50
	20200	114.4.1200.1000.R0200.0200.1170.0350.00.S12G1A01.01	12	12	11,7	100	20	35	R 2.00

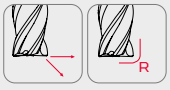
Cutting Parameters

Material	Shoulder Milling ap=0.10Ø / ae=0.025 - 0.01Ø Vc (m/min)	Finish Milling ap=0.10Ø / ae=0.01Ø Vc (m/min)
		
Steel — Cold Work Tool Steel	110-150	150-180
Steel — Hot Work Tool Steel	100-140	140-170
Cast Iron — Gray Cast Iron	70-100	100-130
Cast Iron — Alloyed Cast Iron	70-100	100-130
Cast Iron — Precision Cast Iron	65-90	90-120
Hardened Steel — ≤ 54 HRC	65-90	90-120
Hardened Steel — >54 HRC	60-80	80-110

Feed Per Tooth (mm/tooth)

Ø	ae=0.025Ø	ae=0.02Ø	ae=0.015Ø	ae=0.01Ø
4	0.031	0.034	0.037	0.040
6	0.031	0.034	0.037	0.041
8	0.038	0.042	0.047	0.053
10	0.049	0.052	0.056	0.061
12	0.052	0.056	0.062	0.068
16	0.063	0.068	0.076	0.082

Z4



Steel	●
Stainless Steel	○
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	◑
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

121 Series
High Performance

General Engineering | Mold&Die | Automotive | Defence | Rail Systems

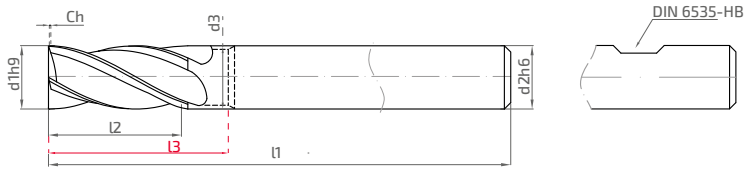
Finish | Rough

Pro-Soft - Designed To Have High Performance In Semi-Finish And Roughing Operations Of Ductile Steels Up To 48 Hrc.

new product

Available from stock in all sizes %100

CHATTER FREE



Short Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
*	**21136**	121.4.0300.0500.C0015.0050.0290.0080.00.S06B1A01.01	3	6	2,9	50	5	8	Ch 0.15	**21137**
*	**21138**	121.4.0400.0500.C0015.0060.0390.0080.00.S06B1A01.01	4	6	3,9	50	6	8	Ch 0.15	**21139**
*	**21140**	121.4.0500.0540.C0020.0090.0490.0140.00.S06B1A01.01	5	6	4,9	54	9	14	Ch 0.20	**21141**
*	**21142**	121.4.0600.0540.C0020.0100.0000.0000.00.S06B1A01.01	6	6	-	54	10	-	Ch 0.20	**21143**
*	**21144**	121.4.0800.0580.C0020.0120.0000.0000.00.S08B1A01.01	8	8	-	58	12	-	Ch 0.20	**21145**
*	**21146**	121.4.1000.0660.C0020.0140.0000.0000.00.S10B1A01.01	10	10	-	66	14	-	Ch 0.20	**21147**
*	**21148**	121.4.1200.0730.C0020.0160.0000.0000.00.S12B1A01.01	12	12	-	73	16	-	Ch 0.20	**21149**
*	**21150**	121.4.1600.0820.C0040.0230.0000.0000.00.S16B1A01.01	16	16	-	82	23	-	Ch 0.40	**21151**
*	**21152**	121.4.2000.0920.C0050.0260.0000.0000.00.S20B1A01.01	20	20	-	92	26	-	Ch 0.50	**21153**

Long Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
*	**21100**	121.4.0300.0580.C0015.0090.0290.0120.00.S06B1A01.01	3	6	2,9	58	9	12	Ch 0.15	**21101**
*	**21102**	121.4.0400.0580.C0015.0120.0390.0150.00.S06B1A01.01	4	6	3,9	58	12	15	Ch 0.15	**21103**
*	**21104**	121.4.0500.0580.C0020.0150.0490.0180.00.S06B1A01.01	5	6	4,9	58	15	18	Ch 0.20	**21105**
*	**21106**	121.4.0600.0580.C0020.0160.0000.0000.00.S06B1A01.01	6	6	-	58	16	-	Ch 0.20	**21107**
*	**21108**	121.4.0600.0580.C0020.0160.0590.0217.00.S06B1A01.01	6	6	5,9	58	16	21,7	Ch 0.20	**21109**
*	**21110**	121.4.0700.0640.C0020.0190.0000.0000.00.S08B1A01.01	7	8	-	64	19	-	Ch 0.20	**21111**
*	**21112**	121.4.0800.0640.C0020.0200.0000.0000.00.S08B1A01.01	8	8	-	64	20	-	Ch 0.20	**21113**
*	**21114**	121.4.0800.0640.C0020.0200.0780.0250.00.S08B1A01.01	8	8	7,8	64	20	25	Ch 0.20	**21115**
*	**21116**	121.4.0900.0730.C0020.0220.0000.0000.00.S10B1A01.01	9	10	-	73	22	-	Ch 0.20	**21117**
*	**21118**	121.4.1000.0730.C0020.0220.0000.0000.00.S10B1A01.01	10	10	-	73	22	-	Ch 0.20	**21119**
*	**21120**	121.4.1000.0730.C0020.0220.0980.0310.00.S10B1A01.01	10	10	9,8	73	22	31	Ch 0.20	**21121**
*	**21122**	121.4.1200.0820.C0020.0280.0000.0000.00.S12B1A01.01	12	12	-	82	28	0	Ch 0.20	**21123**
*	**21124**	121.4.1200.0820.C0020.0280.1170.0370.00.S12B1A01.01	12	12	11,7	82	28	37	Ch 0.20	**21125**
*	**21126**	121.4.1600.0930.C0020.0360.0000.0000.00.S16B1A01.01	16	16	-	93	36	-	Ch 0.20	**21127**
*	**21128**	121.4.1600.0930.C0020.0360.1580.0470.00.S16B1A01.01	16	16	15,8	93	36	47	Ch 0.20	**21129**
	21130	121.4.2000.1050.C0050.0380.0000.0000.00.S20B1A01.01	20	20	-	105	38	-	Ch 0.50	**21131**
*	**21132**	121.4.2000.1050.C0050.0380.1950.0540.00.S20B1A01.01	20	20	19,5	105	38	54	Ch 0.50	**21133**

Slot Series (Tisin Coating)

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
*	**21154**	121.4.0300.0500.C0015.0050.0290.0080.00.S06B1C04.01	3	6	2,9	50	5	8	Ch 0.15	**21155**
*	**21156**	121.4.0400.0500.C0015.0060.0390.0080.00.S06B1C04.01	4	6	3,9	50	6	8	Ch 0.15	**21157**
*	**21158**	121.4.0500.0540.C0020.0090.0490.0140.00.S06B1C04.01	5	6	4,9	54	9	14	Ch 0.20	**21159**
*	**21160**	121.4.0600.0540.C0020.0100.0000.0000.00.S06B1C04.01	6	6	-	54	10	-	Ch 0.20	**21161**
*	**21162**	121.4.0800.0580.C0020.0120.0000.0000.00.S08B1C04.01	8	8	-	58	12	-	Ch 0.20	**21163**
*	**21164**	121.4.1000.0660.C0020.0140.0000.0000.00.S10B1C04.01	10	10	-	66	14	-	Ch 0.20	**21165**
*	**21166**	121.4.1200.0730.C0020.0160.0000.0000.00.S12B1C04.01	12	12	-	73	16	-	Ch 0.20	**21167**
*	**21134**	121.4.1200.0820.C0020.0280.0000.0000.00.S12B1A01.02	12	12	-	82	28	-	Ch 0.20	**21135**
*	**21168**	121.4.1600.0820.C0040.0230.0000.0000.00.S16B1C04.01	16	16	-	82	23	-	Ch 0.40	**21169**
*	**21170**	121.4.2000.0920.C0050.0260.0000.0000.00.S20B1C04.01	20	20	-	92	26	-	Ch 0.50	**21171**

Cutting Parameters

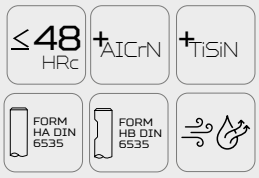
	Material	Slotting ap=1.5 - 10 Vc (m/min)	Slotting ap= 1.0 - 0.50 Vc (m/min)	Shoulder Milling ap=1.50 /ae=0.35 - 0.200 Vc (m/min)	Finish Milling ap=1.50 /ae=0.20 - 0.100 Vc (m/min)
Steel	Unalloyed Steel	130-170	170-200	200-230	230-280
Steel	Steel	120-160	160-190	190-220	220-260
Steel	Tempered Steel	80-110	100-130	130-160	160-200
Steel	Cold Work Tool Steel	80-100	90-120	110-140	130-150
Steel	Hot Work Tool Steel	70-100	80-110	100-130	120-140
Cast Iron	Gray Cast Iron	90-130	130-180	180-220	220-260
Cast Iron	Alloyed Cast Iron	90-130	130-180	180-220	220-260
Cast Iron	Precision Cast Iron	80-120	120-160	160-195	180-220

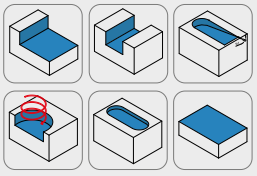
	Slot Series (Tisin Coating)				
Steel	Unalloyed Steel	100-130	120 -160	150-180	170-220
Steel	Steel	100-130	120 -150	150-180	170-220
Steel	Tempered Steel	90-120	110 -150	130-170	150-200
Steel	Cold Work Tool Steel	80 -110	100-140	120 -150	140-180
Steel	Hot Work Tool Steel	80-110	100-140	120 -150	140-180
Stainless Steel	AISI 304 - 416 - 420		50-70	70-90	80-100
Stainless Steel	AISI 316 - 440		45-70	55-80	60-90
Stainless Steel	17-4 PH 15-5 PH		45-70	55-80	60-90
Stainless Steel	Cobalt-Chrome Alloys		30-50	35-55	40-70
Stainless Steel	Duplex F51		60-80	65-85	70-90
Stainless Steel	Super Duplex F55		60-80	65-85	70-90
HRSA	HRSA Hastelloy	35-60	30-50	40-60	50-70
HRSA	HRSA inconel 625	35-60	30-50	40-60	50-70
HRSA	HRSA inconel 718	35-60	30-50	40-60	50-70
HRSA	HRSA Nimonic	35-60	30-50	40-60	50-70
Titanium	Titanium	50-70	60-80	70-90	80-90
Titanium	Titanium Alloys	50-70	60-80	70-90	80-90
Hardened Steel	< 54 HRC		50-70	55-75	60-85

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.3Ø	ae=0.25Ø	ae=0.2Ø	ae=0.15Ø	ae=0.1Ø
3	0.004	0.006	0.008	0.010	0.012	0.016	0.020	0.030	0.0420
4	0.007	0.009	0.013	0.016	0.020	0.025	0.030	0.038	0.0490
5	0.010	0.013	0.017	0.020	0.025	0.031	0.036	0.046	0.0580
6	0.014	0.018	0.022	0.026	0.030	0.037	0.044	0.050	0.0620
8	0.020	0.025	0.029	0.034	0.040	0.048	0.056	0.064	0.0730
10	0.026	0.030	0.038	0.042	0.050	0.059	0.067	0.076	0.0880
12	0.035	0.042	0.053	0.060	0.070	0.080	0.092	0.102	0.1150
16	0.042	0.060	0.082	0.100	0.110	0.120	0.130	0.138	0.1500

Z4





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	◑
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

203 Series
Ball Nose Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

Updated For Optimum Performance After Heat Treatment Finishing Operations!

We are more competitive with new generation 203 series in milling hard materials especially for changing and growing Mold and Die industry.

High performance up to **63 HRC** hardness.

Up to **%35** heat resistance and enhanced tool life with new generation TiSiN coating technology and surface quality

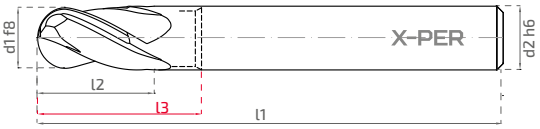
Up to **%30** better chip evacuation in milling hard work pieces with its developed center form.

%40 better surface quality

Up to **%35** reduced tensions in the tool thanks to optimized chatter free geometry.

Available from stock in all sizes **%100**

203
Ball Nose Endmill



Short Series

S	Order No	Code	d1f8	d2h6	d3	l1	l2	l3	Corner
*	**22100**	203.2.0100.0500.R0050.0020.0100.0045.00.S04G1A02.01	1	4	1	50	2	4,5	R 0.50
*	**22102**	203.2.0150.0500.R0075.0030.0150.0050.00.S04G1A02.01	1,5	4	1,5	50	3	5	R 0.75
*	**22104**	203.2.0200.0500.R0100.0040.0200.0060.00.S04G1A02.01	2	4	2	50	4	6	R 1.00
*	**22106**	203.2.0300.0570.R0150.0060.0300.0115.00.S06G1A02.01	3	6	3	57	6	11,5	R 1.50
*	**22108**	203.2.0400.0570.R0200.0090.0400.0148.00.S06G1A02.01	4	6	4	57	9	14,8	R 2.00
*	**22110**	203.2.0500.0570.R0250.0100.0500.0156.00.S06G1A02.01	5	6	5	57	10	15,6	R 2.50
*	**22112**	203.2.0600.0570.R0300.0120.0000.0000.00.S06G1A02.01	6	6	-	57	12	-	R 3.00
*	**22114**	203.2.0800.0630.R0400.0150.0000.0000.00.S08G1A02.01	8	8	-	63	15	-	R 4.00
*	**22116**	203.2.1000.0720.R0500.0200.0000.0000.00.S10G1A02.01	10	10	-	72	20	-	R 5.00
*	**22118**	203.2.1200.0830.R0600.0220.0000.0000.00.S12G1A02.01	12	12	-	83	22	-	R 6.00

Long Series

S	Order No	Code	d1f8	d2h6	d3	l1	l2	l3	Corner
*	**22120**	203.2.0300.0510.R0150.0050.0290.0150.00.S03G1A02.01	3	3	2,9	51	5	15	R 1.50
*	**22122**	203.2.0300.0750.R0150.0050.0290.0300.00.S03G1A02.01	3	3	2,9	75	5	30	R 1.50
*	**22124**	203.2.0400.0500.R0200.0060.0380.0150.00.S04G1A02.01	4	4	3,8	50	6	15	R 2.00
*	**22126**	203.2.0400.0800.R0200.0060.0380.0350.00.S04G1A02.01	4	4	3,8	80	6	35	R 2.00
*	**22128**	203.2.0500.0500.R0250.0070.0480.0150.00.S05G1A02.01	5	5	4,8	50	7	15	R 2.50
*	**22130**	203.2.0500.0750.R0250.0100.0480.0350.00.S05G1A02.01	5	5	4,8	75	10	35	R 2.50
*	**22132**	203.2.0600.0800.R0300.0100.0580.0350.00.S06G1A02.01	6	6	5,8	80	10	35	R 3.00
*	**22134**	203.2.0600.1000.R0300.0100.0580.0450.00.S06G1A02.01	6	6	5,8	100	10	45	R 3.00
*	**22136**	203.2.0800.1000.R0400.0120.0770.0450.00.S08G1A02.01	8	8	7,7	100	12	45	R 4.00
*	**22138**	203.2.1000.1100.R0500.0140.0970.0550.00.S10G1A02.01	10	10	9,7	110	14	55	R 5.00
*	**22140**	203.2.1200.1100.R0600.0160.1170.0550.00.S12G1A02.01	12	12	11,7	110	16	55	R 6.00

Cutting Parameters

Material	Copy Milling ap=0.25 - 0.10Ø / ae=0.025 - 0.10Ø Vc (m/min)	Finish Milling ap=0.10Ø / ae=0.01Ø Vc (m/min)
Steel — Cold Work Tool Steel	170-200	190-230
Steel — Hot Work Tool Steel	160-190	180-220
Stainless Steel — AISI 304 - 416 - 420	90-120	120-150
Stainless Steel — AISI 316 - 440	80-110	110-140
Stainless Steel — 17-4 PH 15-5 PH	80-110	110-140
Stainless Steel — Chrome-Cobalt Alloy	70-100	100-130
Hardened Steel — ≤ 54 HRC	90-120	120-150
Hardened Steel — >54 HRC	60-90	90-120

Feed Per Tooth (mm/tooth)

Ø	ae=0.025Ø	ae=0.020Ø	ae=0.015Ø	ae=0.010Ø
3	0,050	0,054	0,059	0,062
4	0,051	0,058	0,065	0,070
6	0,059	0,070	0,083	0,087
8	0,061	0,073	0,086	0,091
10	0,069	0,082	0,095	0,107
12	0,080	0,09	0,110	0,122

Z2

≥43 HRc | 63≤ HRc | +TiSiN

FORM HA DIN 6535

Steel	◑
Stainless Steel	◑
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

203 PLUS Series
Ball Nose Endmill

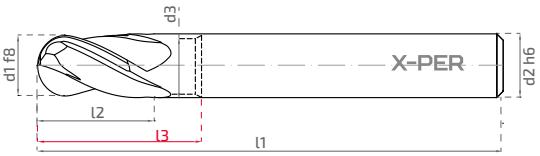
General Engineering | Mold&Die | Automotive

Finish | Rough

Challenge To Hardness !

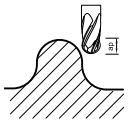
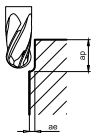
An Expansion Of Our 203 Series, 203 Plus Series Is Developed For Longer Tool Life In Workpiece Materials Between 55 and 70 HRC Hardness.

Thanks To It's Innovative Coating and Special Grade Raw, 203 Plus Series Allows High Performance Milling In Workpiece Materials Up To 70HRC.



S	Order No	Code	d1f8	d2h6	d3	l1	l2	l3	Corner
	22142	203P.2.0100.0500.R0050.0020.0100.0045.00.S04E2S01.01	1	4	1	50	2	4,5	R 0.50
	22144	203P.2.0200.0500.R0100.0040.0200.0060.00.S04E2S01.01	2	4	2	50	4	6	R 1.00
	22146	203P.2.0300.0570.R0150.0060.0000.0000.00.S06E2S01.01	3	6	-	57	6	-	R 1.50
	22148	203P.2.0400.0570.R0200.0090.0000.0000.00.S06E2S01.01	4	6	-	57	9	-	R 2.00
	22150	203P.2.0500.0570.R0250.0100.0000.0000.00.S06E2S01.01	5	6	-	57	10	-	R 2.50
	22152	203P.2.0600.0570.R0300.0120.0000.0000.00.S06E2S01.01	6	6	-	57	12	-	R 3.00
	22154	203P.2.0800.0630.R0400.0150.0000.0000.00.S08E2S01.01	8	8	-	63	15	-	R 4.00
	22156	203P.2.1000.0720.R0500.0200.0000.0000.00.S10E2S01.01	10	10	-	72	20	-	R 5.00
	22158	203P.2.1200.0820.R0600.0220.0000.0000.00.S12E2S01.01	12	12	-	82	22	-	R 6.00

Cutting Parameters

Material	Copy Milling ap=0.25 - 0.10Ø / ae=0.025 - 0.01Ø Vc (m/min)	Finish Milling ap=0.10Ø / ae=0.01Ø Vc (m/min)
		
Steel — Unalloyed Steel	120-140	230-260
Steel	120-140	200-230
Steel — Tempered Steel	120-140	230-260
Cold Work Tool Steel	90-110	200-230
Hot Work Tool Steel	90-110	200-230
Stainless Steel — AISI 304-416-420	90-120	180-210
AISI 316-440	80-110	170-20 0
17-4 PH 15-5 PH	80-110	120-150
Cobalt-Chrome Alloys	80-110	110-140
Duplex F51	80-110	110-140
Super Duplex F55	80-110	110-140
Hardened Steel — > 54 HRC	30-60	50-70

Feed Per Tooth (mm/tooth)

Ø	ae=0.025Ø	ae=0.020Ø	ae=0.015Ø	ae=0.010Ø
1	0.020	0.025	0.030	0.033
2	0.020	0.025	0.030	0.033
3	0.026	0.031	0.037	0.04
4	0.032	0.037	0.041	0.045
5	0.032	0.037	0.042	0.046
6	0.041	0.046	0.052	0.057
8	0.047	0.052	0.061	0.066
10	0.052	0.057	0.066	0.072
12	0.051	0.058	0.072	0.079

Z2

Steel	◑
Stainless Steel	◑
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ULTRA-BITE

222 Series
High Performance

General Engineering | Mold&Die | Automotive | Defence

Finish | Rough

222 Series Stands For Being The Best Of It's Class With It's New Generation Chatter Free Geometry !

More Effective Anti-Vibrational Feature By It's Various Helix, Unequal Intersection and Various Core Diameter
High Performance Milling Up To 48HRC

High performance up to **63 HRC** hardness.

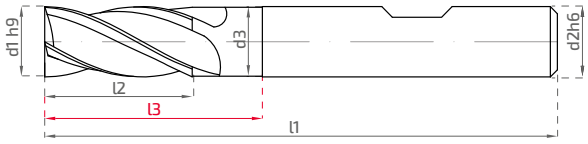
Longer Tool Life Up to **%50**

Lower Loading Up To **%30** By It's Unique Design In Comparison To Equivalents.

The Standard Lengths Available In The 222 Series — Along With It's Superior Anti Vibration Geometry

Makes It The First Choice For Use On Lathes — With Live Tooling Capability As Well As Machining Centres.

CHATTER FREE



Short Series

S	Order No	Code	d1h9	d2h6	l1	l2	Corner	Weldon Order No
	23100	222.4.0300.0500.C0006.0060.0000.0000.00.S06B1A01.01	3	6	50	6	Ch 0.06	**23101**
	23102	222.4.0400.0540.C0008.0080.0000.0000.00.S06B1A01.01	4	6	54	8	Ch 0.08	**23103**
	23104	222.4.0500.0540.C0010.0090.0000.0000.00.S06B1A01.01	5	6	54	9	Ch 0.10	**23105**
	23106	222.4.0600.0540.C0012.0100.0000.0000.00.S06B1A01.01	6	6	54	10	Ch 0.12	**23107**
	23108	222.4.0800.0580.C0016.0120.0000.0000.00.S08B1A01.01	8	8	58	12	Ch 0.16	**23109**
	23110	222.4.1000.0660.C0020.0140.0000.0000.00.S10B1A01.01	10	10	66	14	Ch 0.20	**23111**
	23112	222.4.1200.0730.C0030.0160.0000.0000.00.S12B1A01.01	12	12	73	16	Ch 0.30	**23113**
	23114	222.4.1400.0750.C0028.0160.0000.0000.00.S14B1A01.01	14	14	75	16	Ch 0.28	**23115**
	23116	222.4.1600.0820.C0032.0220.0000.0000.00.S16B1A01.01	16	16	82	22	Ch 0.32	**23117**
	23118	222.4.1800.0820.C0036.0220.0000.0000.00.S18B1A01.01	18	18	82	22	Ch 0.36	**23119**
	23120	222.4.2000.0920.C0040.0260.0000.0000.00.S20B1A01.01	20	20	92	26	Ch 0.40	**23121**

Long Series

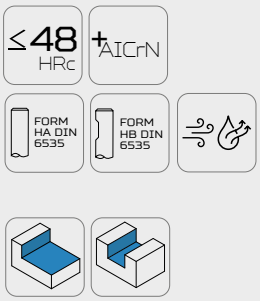
S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Weldon Order No
	23122	222.4.0300.0580.C0006.0080.0000.0000.00.S06B1A01.01	3	6	-	58	8	-	Ch 0.06	**23123**
	23124	222.4.0400.0580.C0008.0110.0000.0000.00.S06B1A01.01	4	6	-	58	11	-	Ch 0.08	**23125**
	23126	222.4.0500.0580.C0010.0130.0000.0000.00.S06B1A01.01	5	6	-	58	13	-	Ch 0.10	**23127**
	23128	222.4.0600.0580.C0012.0130.0570.0190.00.S06B1A01.01	6	6	5,7	58	13	19	Ch 0.12	**23129**
	23130	222.4.0800.0640.C0016.0210.0780.0240.00.S08B1A01.01	8	8	7,8	64	21	24	Ch 0.16	**23131**
	23132	222.4.1000.0730.C0020.0220.0970.0290.00.S10B1A01.01	10	10	9,7	73	22	29	Ch 0.20	**23133**
	23134	222.4.1200.0820.C0024.0260.1170.0350.00.S12B1A01.01	12	12	11,7	82	26	35	Ch 0.24	**23135**
	23136	222.4.1400.0820.C0028.0260.0000.0360.00.S14B1A01.01	14	14	-	82	26	36	Ch 0.28	**23137**
	23138	222.4.1600.0930.C0032.0360.1570.0410.00.S16B1A01.01	16	16	15,7	93	36	41	Ch 0.32	**23139**
	23140	222.4.1800.0930.C0036.0360.0000.0420.00.S18B1A01.01	18	18	-	93	36	42	Ch 0.36	**23141**
	23142	222.4.2000.1050.C0040.0410.0000.0530.00.S20B1A01.01	20	20	-	105	41	53	Ch 0.40	**23143**

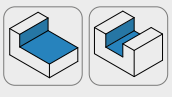
Cutting Parameters

	Material	Shoulder Milling ap=0.25 - 0.10Ø / ae=0.025 - 0.010Ø Vc (m/min)		Finish Milling ap=0.10Ø / ae=0.010Ø Vc (m/min)
Steel	Unalloyed Steel	170	345	505
Steel	Steel	155	315	460
Steel	Tempered Steel	140	280	415
Steel	Cold Work Tool Steel	105	220	320
Steel	Hot Work Tool Steel	100	205	300
Stainless Steel	AISI 304 - 416 - 420	45	95	140
Stainless Steel	AISI 316 - 440	45	105	130
Stainless Steel	17-4 PH 15-5 PH	50	90	110
Stainless Steel	Cobalt-Chrome Alloys	45	85	100
Stainless Steel	Duplex F51	45	90	100
Stainless Steel	Super Duplex F55	45	90	100
Cast Iron	Gray cast	170	370	500
Cast Iron	Alloyed cast	140	320	415
Cast Iron	Precision cast	120	250	360

Feed Per Tooth (mm/tooth)

Ø	ap=1Ø	ap=0.50Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0,01-0,017	0,012-0,019	0,021	0,024	0,028	0,031	0,034	0,027
4	0,017-0,021	0,019-0,024	0,03	0,032	0,035	0,037	0,039	0,031
5	0,020-0,025	0,023-0,028	0,033	0,035	0,039	0,044	0,048	0,035
6	0,026-0,03	0,029-0,033	0,045	0,048	0,050	0,054	0,058	0,079
8	0,033-0,038	0,037-0,040	0,058	0,06	0,065	0,068	0,07	0,102
10	0,040-0,046	0,043-0,049	0,071	0,073	0,078	0,08	0,084	0,124
12	0,050-0,054	0,054-0,058	0,079	0,087	0,091	0,095	0,099	0,144
14	0,055-0,06	0,058-0,063	0,081	0,082	0,086	0,09	0,108	0,16
16	0,061-0,067	0,064-0,069	0,110	0,114	0,114	0,118	0,12	0,180
18	0,068-0,073	0,069-0,076	0,112	0,115	0,117	0,128	0,13	0,14
20	0,072-0,078	0,074-0,079	0,125	0,13	0,132	0,135	0,138	0,2





Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	●
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

Developing machining technologies and enhancing machine capabilities enable faster machining of heat-resistant materials. Choosing the best tool is crucial. That's why our R&D department has developed an essential component for the new era of machining:

Gen-Z (Generation Z). Designed to deliver high-performance machining of advanced technology materials, the Gen-Z Series reduces your cost per part when working with super alloys using next-generation machining methods such as high-performance cutting, high-speed machining, or trochoidal machining.

2025
Milling Catalogue

HPC

HIGH PERFORMANCE CUTTING

KARCAN
cutting tools

HPC

154 Gen-Z Serisi

High Performance Machining

General Engineering | Mold&Die | Defence | Aviation &Aerospace | Energy

Finish | Rough

Designed For High-Performance Machining Of Advanced Technology Materials.

new product

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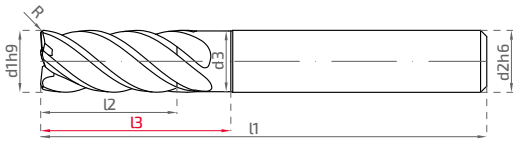

Short Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner
	61100	154.5.0300.0580.R0020.0080.0290.0100.00.S06H1C01.01	3	6	2,9	58	8	10	R 0.20
	61102	154.5.0300.0580.R0050.0080.0290.0100.00.S06H1C01.01	3	6	2,9	58	8	10	R 0.50
	61104	154.5.0400.0580.R0050.0110.0390.0130.00.S06H1C01.01	4	6	3,9	58	11	13	R 0.50
	61106	154.5.0500.0580.R0020.0130.0490.0160.00.S06H1C01.01	5	6	4,9	58	13	16	R 0.20
	61108	154.5.0500.0580.R0050.0130.0490.0160.00.S06H1C01.01	5	6	4,9	58	13	16	R 0.50
	61110	154.5.0600.0580.R0025.0130.0590.0190.00.S06H1C01.01	6	6	5,9	58	13	19	R 0.25
	61112	154.5.0600.0580.R0050.0130.0590.0190.00.S06H1C01.01	6	6	5,9	58	13	19	R 0.50
	61114	154.5.0600.0580.R0100.0130.0590.0190.00.S06H1C01.01	6	6	5,9	58	13	19	R 1.00
	61116	154.5.0800.0640.R0020.0190.0770.0250.00.S08H1C01.01	8	8	7,7	64	19	25	R 0.20
	61118	154.5.0800.0640.R0050.0190.0770.0250.00.S08H1C01.01	8	8	7,7	64	19	25	R 0.50
	61120	154.5.0800.0640.R0100.0190.0770.0250.00.S08H1C01.01	8	8	7,7	64	19	25	R 1.00
	61122	154.5.0800.0640.R0150.0190.0770.0250.00.S08H1C01.01	8	8	7,7	64	19	25	R 1.50
	61124	154.5.0800.0640.R0200.0190.0770.0250.00.S08H1C01.01	8	8	7,7	64	19	25	R 2.00
	61126	154.5.1000.0730.R0050.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 0.50
	61128	154.5.1000.0730.R0100.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 1.00
	61130	154.5.1000.0730.R0200.0220.0980.0310.00.S10C1C01.01	10	10	9,8	73	22	31	R 2.00
	61132	154.5.1200.0820.R0050.0260.1140.0370.00.S12C1C01.01	12	12	11,4	82	26	37	R 0.50
	61134	154.5.1200.0820.R0100.0260.1140.0370.00.S12C1C01.01	12	12	11,4	82	26	37	R 1.00
	61136	154.5.1200.0820.R0150.0260.1140.0370.00.S12C1C01.01	12	12	11,4	82	26	37	R 1.50
	61138	154.5.1200.0820.R0200.0260.1140.0370.00.S12C1C01.01	12	12	11,4	82	26	37	R 2.00
	61140	154.5.1200.0820.R0250.0260.1140.0370.00.S12C1C01.01	12	12	11,4	82	26	37	R 2.50
	61142	154.5.1200.0820.R0300.0260.1140.0370.00.S12C1C01.01	12	12	11,4	82	26	37	R 3.00
	61144	154.5.1200.0820.R0400.0260.1140.0370.00.S12C1C01.01	12	12	11,4	82	26	37	R 4.00
	61146	154.5.1600.1000.R0050.0350.1520.0490.00.S16C2C01.01	16	16	15,2	100	35	49	R 0.50
	61148	154.5.1600.1000.R0100.0350.1520.0490.00.S16C2C01.01	16	16	15,2	100	35	49	R 1.00
	61150	154.5.1600.1000.R0150.0350.1520.0490.00.S16C2C01.01	16	16	15,2	100	35	49	R 1.50
	61152	154.5.1600.1000.R0250.0350.1520.0490.00.S16C2C01.01	16	16	15,2	100	35	49	R 2.50
	61154	154.5.1600.1000.R0300.0350.1520.0490.00.S16C2C01.01	16	16	15,2	100	35	49	R 3.00
	61156	154.5.1600.1000.R0400.0350.1520.0490.00.S16C2C01.01	16	16	15,2	100	35	49	R 4.00
	61158	154.5.2000.1120.R0100.0400.1920.0620.00.S20C2C01.01	20	20	19,2	112	40	62	R 1.00
	61160	154.5.2000.1120.R0200.0400.1920.0620.00.S20C2C01.01	20	20	19,2	112	40	62	R 2.00
	61162	154.5.2000.1120.R0300.0400.1920.0620.00.S20C2C01.01	20	20	19,2	112	40	62	R 3.00
	61164	154.5.2000.1120.R0400.0400.1920.0620.00.S20C2C01.01	20	20	19,2	112	40	62	R 4.00
	61166	154.5.2500.1250.R0100.0400.2460.0720.00.S25C1C01.01	25	25	24,6	125	40	72	R 1.00
	61168	154.5.2500.1250.R0300.0400.2460.0720.00.S25C1C01.01	25	25	24,6	125	40	72	R 3.00
	61170	154.5.2500.1250.R0400.0400.2460.0720.00.S25C1C01.01	25	25	24,6	125	40	72	R 4.00

Cutting Parameters

	Material	Shoulder Milling ap=2xØ/ae=0,05-0,10 Vc (m/min)	Shoulder Milling ap=2xØ/ae=0,1-0,25Ø Vc (m/min)	Shoulder Milling ap=2xØ/ae=0,25-0,5Ø Vc (m/min)	Slotting ap=0,25-0,5Ø Vc (m/min)	Slotting ap=0,5-1Ø Vc (m/min)
Steel	Unalloyed Steel	170-200	130-160	110-130	150-180	120-140
Steel	Steel	170-200	130-160	110-130	150-180	120-140
Steel	Tempered Steel	160190	120-150	100-120	140-170	110-140
Steel	Cold Work Tool Steel	100-130	80-100	60-70	90-110	80-100
Steel	Hot work tool stee	90-110	70-90	60-70	80-100	75-95
Stainless Steel	AISI 304-416-420	110-130	90-110	80-100	100-120	90-110
Stainless Steel	AISI 316-440	110-130	90-110	80-100	80-100	80-90
Stainless Steel	17-4 PH 15-5 PH	90-110	70-90	60-80	70-90	70-80
Stainless Steel	Chrome-Cobalt alloy	80-100	60-80	60-80	60-80	60-70
Stainless Steel	Duplex F51	70-90	50-70	50-60	60-80	60-70
Stainless Steel	Super Duplex F55	70-90	50-70	50-60	60-80	60-70
Cast Iron	Gray cast	150-180	120-150	90-120	140-160	120-150
Cast Iron	Alloyed cast	140-160	110-140	90-110	130-150	110-140
Cast Iron	Precision cast	130-150	110-130	90-110	120-140	110-130
Titanium	Iron-based superalloys	60-80	40-60	40-50	50-70	50-60
Titanium	Nickel-based superalloys	60-80	40-60	40-50	50-70	50-60
Titanium	Titanium-based superalloys	60-80	40-60	40-50	50-70	50-60
Hardened Steel	≤ 54 HRC	100-120	80-120	70-90	70-90	60-70
Hardened Steel	>54 HRC	80-100	70-90	60-70	70-90	60-70

HPC

Steel	Unalloyed Steel	350-450	300-350	150-300	160	150-170
Steel	Steel	275-345	255-275	175-255	90	80
Steel	Tempered Steel	255-315	230-255	175-230	90	80
Steel	Cold Work Tool Steel	125-155	85-125	60-85	85	65
Steel	Hot work tool stee	150-185	100-150	75-100	75	65
Stainless Steel	AISI 304-416-420	130-160	120-130	65-120	80	70
Stainless Steel	AISI 316-440	100-125	90-100	65-90	80	70
Stainless Steel	17-4 PH 15-5 PH	130-160	120-130	35-120	60	40
Stainless Steel	Chrome-Cobalt alloy	100-125	90-100	40-90	60	45
Stainless Steel	Duplex F51	60-75	55-60	40-55	60	45
Stainless Steel	Super Duplex F55	60-75	55-60	35-55	50	40
Cast Iron	Gray cast	395-495	265-395	110-265	105	110
Cast Iron	Alloyed cast	165-205	155-165	80-155	80	85
Cast Iron	Precision cast	165-205	155-165	80-155	80	85
Titanium	Iron-based Superalloys	45-55	40-45	25-40	40	30
Titanium	Nickel-based Superalloys	45-55	40-45	25-40	40	30
Titanium	Titanium-based Superalloys	105-115	100-105	55-100	60	55
Hardened Steel	≤ 54 HRC	150-185	100-150	75-100	80	70
Hardened Steel	>54 HRC	125-155	85-125	60-85	65	55

Feed Per Tooth (mm/tooth)

Ø	ae=0,05xØ	ae=0,1xØ	ae=0,25xØ	ae=0,5xØ	ap=0,25-1Ø
3	0,035	0,025	0,021	0,02	0,01
4	0,045	0,035	0,03	0,029	0,02
5	0,06	0,045	0,04	0,035	0,025
6	0,07	0,05	0,041	0,04	0,03
8	0,08	0,07	0,062	0,06	0,04
10	0,09	0,08	0,071	0,07	0,05
12	0,12	0,99	0,085	0,08	0,06
16	0,15	0,12	0,11	0,1	0,08
18	0,18	0,14	0,12	0,11	0,09
20	0,2	0,16	0,131	0,12	0,1
25	0,25	0,19	0,16	0,15	0,125

HPC

Ø	ae=0,05xØ	ae=0,1xØ	ae=0,25xØ	ae=0,5xØ	ap=0,25-1Ø
3	0,069	0,054	0,036	0,03	0,01
4	0,092	0,072	0,048	0,04	0,02
5	0,115	0,09	0,06	0,05	0,025
6	0,138	0,108	0,072	0,06	0,03
8	0,184	0,144	0,096	0,08	0,04
10	0,23	0,18	0,12	0,1	0,05
12	0,276	0,216	0,144	0,12	0,06
16	0,368	0,288	0,192	0,16	0,08
18	0,414	0,324	0,216	0,18	0,09
20	0,46	0,36	0,24	0,2	0,1
25	0,575	0,45	0,3	0,25	0,125

Z5

Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

HPC

155 Gen-Z Series

High Performance Machining

General Engineering | Mold&Die | Defence | Aviation &Aerospace | **Energy**

Finish | Rough

Designed For High-Performance Machining Of Advanced Technology Materials.

new product

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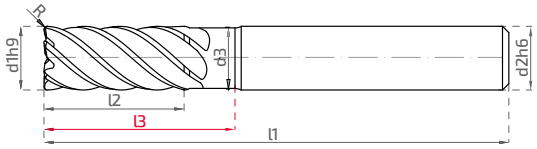


Short Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Z
	62100	155.5.0600.0580.R0050.0130.0570.0200.00.S06D1C01.01	6	6	5,7	58	13	20	R 0.50	5
	62102	155.5.0800.0640.R0050.0180.0760.0250.00.S08D1C01.01	8	8	7,6	64	18	25	R 0.50	5
	62104	155.5.0800.0640.R0100.0180.0760.0250.00.S08D1C01.01	8	8	7,6	64	18	25	R 1.00	5
	62106	155.6.1000.0730.R0050.0220.0950.0300.00.S10D1C01.01	10	10	9,5	73	22	30	R 0.50	6
	62108	155.6.1000.0730.R0100.0220.0950.0300.00.S10D1C01.01	10	10	9,5	73	22	30	R 1.00	6
	62110	155.6.1200.0650.R0050.0360.0000.0000.00.S12D1C01.01	12	12	-	65	36	-	R 0.50	6
	62112	155.6.1200.0870.R0050.0360.0000.0000.00.S12D1C01.01	12	12	-	87	36	-	R 0.50	6
	62114	155.6.1200.0820.R0050.0260.1140.0370.00.S12D1C01.01	12	12	11,4	82	26	37	R 0.50	6
*	**62116**	155.6.1200.0820.R0100.0260.1140.0370.00.S12D1C01.01	12	12	11,4	82	26	37	R 1.00	6
	62118	155.6.1200.0820.R0200.0260.1140.0370.00.S12D1C01.01	12	12	11,4	82	26	37	R 2.00	6
	62120	155.6.1200.0820.R0300.0260.1140.0370.00.S12D1C01.01	12	12	11,4	82	26	37	R 3.00	6
*	**62122**	155.6.1600.0930.R0030.0340.1520.0420.00.S16D1C01.01	16	16	15,2	93	34	42	R 0.30	6
*	**62124**	155.6.1600.0930.R0100.0340.1520.0420.00.S16D1C01.01	16	16	15,2	93	34	42	R 1.00	6
*	**62126**	155.6.1600.0930.R0200.0340.1520.0420.00.S16D1C01.01	16	16	15,2	93	34	42	R 2.00	6
	62128	155.6.1600.0930.R0300.0340.1520.0420.00.S16D1C01.01	16	16	15,2	93	34	42	R 3.00	6
	62130	155.6.2000.1050.R0300.0420.1900.0520.00.S20D1C01.01	20	20	19	105	42	52	R 3.00	6

Long Series

S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner	Z
	62132	155.6.1000.1000.R0100.0400.0000.0000.00.S10D1C01.01	10	10	-	100	40	-	R 1.00	6
	62134	155.6.1200.1000.R0100.0480.0000.0000.00.S12D1C01.01	12	12	-	100	48	-	R 1.00	6
	62136	155.6.1600.1100.R0050.0480.1520.0650.00.S16D2C01.01	16	16	15,2	110	48	65	R 0.50	6
	62138	155.6.1600.1000.R0100.0480.0000.0000.00.S16D2C01.01	16	16	-	100	48	-	R 1.00	6
	62140	155.6.1600.1200.R0200.0640.0000.0000.00.S16D1C01.01	16	16	-	120	64	-	R 2.00	6
	62142	155.6.2000.1650.R0300.0800.0000.0000.00.S20D1C01.01	20	20	-	165	80	-	R 3.00	6
	62144	155.6.2000.1650.R0150.0600.0000.0000.00.S20D2C01.01	20	20	-	165	60	-	R 1.50	6

Cutting Parameters - Trochoidal

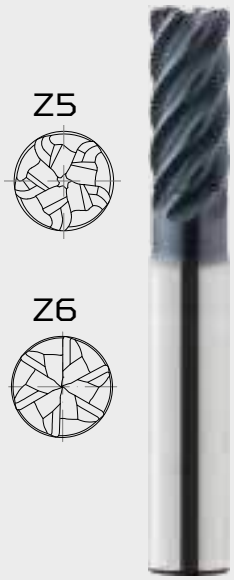
	Material	Shoulder Milling ap=2xØ/ae=0,05-0,12Ø Vc (m/min)	Shoulder Milling ap=3xØ/ae=0,05-0,1Ø Vc (m/min)	Shoulder Milling ap=4xØ/ae=0,05-0,1Ø Vc(m/min)
Steel	Unalloyed Steel	220-250	220-250	200-230
Steel	Steel	210-240	210-240	190-220
Steel	Tempered Steel	110-140	110-140	100-120
Steel	Cold Work Tool Steel	80-110	75-105	70-90
Steel	Hot Work Tool Steel	80-110	75-105	70-90
Stainless Steel	AISI 304-416-420	120-150	120-150	95-125
Stainless Steel	AISI 316-440	100-130	90-120	80-110
Stainless Steel	17-4 PH 15-5 PH	90-120	80-110	70-100
Stainless Steel	Chrome-Cobalt Alloy	70-100	70-90	65-85
Stainless Steel	Duplex F51	90-130	90-130	70-110
Stainless Steel	Super Duplex F55	90-130	90-130	70-110
Cast Iron	Gray Cast Iron	200-235	200-235	195-215
Cast Iron	Alloyed Cast Iron	200-240	200-240	190-220
Cast Iron	Precision Cast Iron	200-245	200-245	190-225
Titanium	Iron-Based Super Alloys	45-65	45-65	40-60
Titanium	Nickel-Based Super Alloys	40-55	40-55	40-50
Titanium	Titanium-Based Super Alloys	100-120	95-115	90-105

Feed Per Tooth (mm/tooth)

Ø	ap=2xØ	ap=3xØ	ap=4xØ
4	0,016-0,032		
6	0,036-0,072	0,036-0,072	0,04-0,07
8	0,048-0,096	0,048-0,086	0,05-0,08
10	0,075-0,15	0,06-0,12	0,05-0,08
12	0,09-0,18	0,072-0,144	0,06-0,09
14	0,105-0,21	0,084-0,168	0,07-0,1
16	0,12-0,24	0,07-0,1	0,07-0,1
18	0,135-0,27	0,12-0,15	0,12-0,15
20	0,15-0,3	0,12-0,24	0,13-0,16

HPC
HIGH PERFORMANCE CUTTING

Gen-Z 155
High Performance Machining



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

HPC

156 Gen-Z Series

High Performance Machining

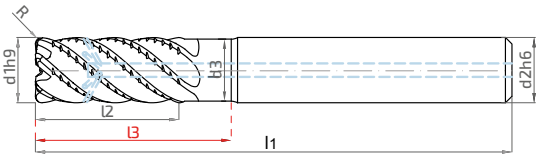
General Engineering | Mold&Die | Defence | Aviation &Aerospace | Energy

Finish | Rough

Designed For High-Performance Machining Of Advanced Technology Materials.

new product

CHATTER FREE



S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner
	63100	156.6.1000.0730.R0050.0220.0950.0300.00.S10C3C01.01	10	10	9,5	73	22	30	R 0.50
	63102	156.6.1000.0730.R0100.0220.0950.0300.00.S10C3C01.01	10	10	9,5	73	22	30	R 1.00
	63104	156.6.1200.0820.R0050.0260.1140.0360.00.S12C3C01.01	12	12	11,4	82	26	36	R 0.50
	63106	156.6.1200.0820.R0100.0260.1140.0360.00.S12C3C01.01	12	12	11,4	82	26	36	R 1.00
	63108	156.6.1600.0930.R0100.0340.1520.0410.00.S16C3C01.01	16	16	15,2	93	34	41	R 1.00
	63110	156.6.1600.0930.R0200.0340.1520.0410.00.S16C3C01.01	16	16	15,2	93	34	41	R 2.00
	63112	156.6.2000.1050.R0300.0420.1900.0520.00.S20C3C01.01	20	20	19	105	42	52	R 3.00

Cutting Parameters - Trochoidal

	Material	Shoulder Milling ap=2xØ/ae=0,05-0,12Ø Vc (m/min)	Shoulder Milling ap=3xØ/ae=0,05-0,1Ø Vc (m/min)	Shoulder Milling ap=4xØ/ae=0,05-0,1Ø Vc(m/min)
Steel	Unalloyed Steel	220-250	220-250	200-230
	Steel	210-240	210-240	190-220
	Tempered Steel	110-140	110-140	100-120
	Cold Work Tool Steel	80-110	75-105	70-90
	Hot Work Tool Steel	80-110	75-105	70-90
Stainless Steel	AISI 304-416-420	120-150	120-150	95-125
	AISI 316-440	100-130	90-120	80-110
	17-4 PH 15-5 PH	90-120	80-110	70-100
	Chrome-Cobalt Alloy	70-100	70-90	65-85
	Duplex F51	90-130	90-130	70-110
	Super Duplex F55	90-130	90-130	70-110
Cast Iron	Gray Cast Iron	200-235	200-235	195-215
	Alloyed Cast Iron	200-240	200-240	190-220
	Precision Cast Iron	200-245	200-245	190-225
Titanium	Iron-Based Super Alloys	45-65	45-65	40-60
	Nickel-Based Super Alloys	40-55	40-55	40-50
	Titanium-Based Super Alloys	100-120	95-115	90-105

Feed Per Tooth (mm/tooth)

Ø	ap=2xØ	ap=3xØ	ap=4xØ
4	0,016-0,032		
6	0,036-0,072	0,036-0,072	0,04-0,07
8	0,048-0,096	0,048-0,086	0,05-0,08
10	0,075-0,15	0,06-0,12	0,05-0,08
12	0,09-0,18	0,072-0,144	0,06-0,09
14	0,105-0,21	0,084-0,168	0,07-0,1
16	0,12-0,24	0,07-0,1	0,07-0,1
18	0,135-0,27	0,12-0,15	0,12-0,15
20	0,15-0,3	0,12-0,24	0,13-0,16

Z6

Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

HPC

157 Gen-Z Series

High Performance Machining

General Engineering | Mold&Die | Defence | Aviation &Aerospace | Energy

Finish | Rough

An Addition To Endmill Standards Of Future...

Introducing An Expansion Of Our 99 Series, 157 Series Will Be Your Essential In Your 3D,4D and 5D Milling Operations In Long Chipping Workpiece Materials By It's Unique Chip Breaker Geometry.

new *product*

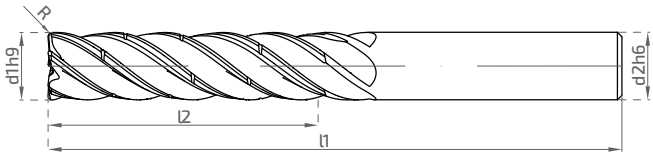
It Makes A Big Difference In Deep Trochoidal Milling...

Better And Easier Chip Removal Reduces Milling Time Up To **%50**

Longer Tool Life Up To **%40** By Reinforced Cutting Edge

Recommended In A Large Scale Of Workpiece Materials

CHATTER FREE



S	Order No	Code	d1h9	d2h6	l1	l2	Corner
	64100	157.5.0800.0640.R0050.0240.0800.0290.00.S08B1C01.01	8	8	64	24	R 0.50
	64102	157.5.1000.0730.R0050.0300.1000.0350.00.S10B1C01.01	10	10	73	30	R 0.50
	64104	157.5.1200.0900.R0075.0360.1200.0410.00.S12B1C01.01	12	12	90	36	R 0.75
	64106	157.5.1600.0930.R0100.0480.1600.0530.00.S16B1C01.01	16	16	93	48	R 1.00
	64108	157.5.2000.1100.R0100.0600.2000.0650.00.S20B1C01.01	20	20	110	60	R 1.00
	64110	157.5.2500.1250.R0100.0750.2500.0800.00.S25B1C01.01	25	25	125	75	R 1.00
	64112	157.5.0800.0750.R0050.0320.0800.0350.00.S08B1C01.01	8	8	75	32	R 0.50
	64114	157.5.1000.0850.R0050.0400.1000.0440.00.S10B1C01.01	10	10	85	40	R 0.50
	64116	157.5.1200.1020.R0075.0480.1200.0520.00.S12B1C01.01	12	12	102	48	R 0.75
	64118	157.5.1600.1200.R0100.0640.1600.0700.00.S16B1C01.01	16	16	120	64	R 1.00
	64120	157.5.2000.1420.R0100.0800.2000.0850.00.S20B1C01.01	20	20	142	80	R 1.00
	64122	157.5.2500.1500.R0100.1000.2500.1050.00.S25B1C01.01	25	25	150	100	R 1.00
	64124	157.5.0800.0900.R0050.0400.0800.0480.00.S08B1C01.01	8	8	90	40	R 0.50
	64126	157.5.1000.1000.R0050.0500.1000.0600.00.S10B1C01.01	10	10	100	50	R 0.50
	64128	157.5.1200.1270.R0075.0600.1200.0720.00.S12B1C01.01	12	12	127	60	R 0.75
	64130	157.5.1600.1500.R0100.0800.1600.0930.00.S16B1C01.01	16	16	150	80	R 1.00
	64132	157.5.2000.1650.R0100.1000.2000.1200.00.S20B1C01.01	20	20	165	100	R 1.00
	64134	157.5.2500.2000.R0100.1250.2500.1440.00.S25B2C01.01	25	25	200	125	R 1.00

Cutting Parameters - Trochoidal

	Material	Trochoidal ap=1.2Ø / ae=0.20 - 0.10Ø Vc (m/min)	Slotting ap= 0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø Vc(m/min)
Steel	Unalloyed Steel	170-200	130-160	150-180
	Steel	170-200	130-160	150-180
	Tempered Steel	160-190	120-150	140-170
	Cold Work Tool Steel	100-130	80-100	90-110
	Hot work tool stee	90-110	70-90	80-100
Stainless Steel	AISI 304 - 416 - 420	110-130	90-110	100-120
	AISI 316 - 440	110-130	90-110	100-120
	17-4 PH 15-5 PH	90-110	70-90	80-100
	Chrome-Cobalt alloy	80-100	60-80	70-90
	Duplex F51	70-90	50-70	60-80
	Super Duplex F55	70-90	50-70	60-80
Cast Iron	Gray cast	150-180	120-150	140-160
	Alloyed cast	140-160	110-140	130-150
	Precision cast	130-150	110-130	120-140
	54 HRC	120-150	80-120	110-130
Titanium	HRSA Hastelloy	60-80	40-60	50-70
	HRSA inconel 625	60-80	40-60	50-70
	HRSA inconel 718	60-80	40-60	50-70
	HRSA Nimonic	60-80	40-60	50-70
	Titanium	80-100	60-80	70-90
	Titanium Alloys	80-100	60-80	70-90

Feed Per Tooth (mm/tooth)

Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0,012	0,015	0,016	0,02	0,022	0,025	0,026	0,03
4	0,02	0,024	0,02	0,023	0,026	0,03	0,032	0,036
5	0,023	0,026	0,023	0,027	0,031	0,036	0,04	0,045
6	0,026	0,03	0,034	0,038	0,043	0,049	0,05	0,06
8	0,033	0,038	0,036	0,042	0,048	0,054	0,06	0,075
10	0,044	0,049	0,045	0,053	0,063	0,07	0,072	0,084
12	0,045	0,051	0,047	0,053	0,064	0,072	0,08	0,088
16	0,056	0,062	0,058	0,064	0,069	0,075	0,09	0,1
20	0,065	0,073	0,066	0,074	0,08	0,092	0,102	0,11

* Marked products can be delivered quickly from stock.

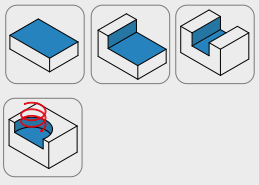
HPC
HIGH PERFORMANCE CUTTING

Gen-Z 157
High Performance Machining

Z5

≤52 HRc | +AlCrN

FORM HA DIN 6535



Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

HPC

158 Gen-Z Series

High Performance Machining

General Engineering | Mold&Die | Defence | Aviation &Aerospace | **Energy**

Finish | Rough

A Brand-New Breath In Rough Milling, Higher Performance !

Faster & Stronger In Slotting And Shoulder Milling As Well.

new product

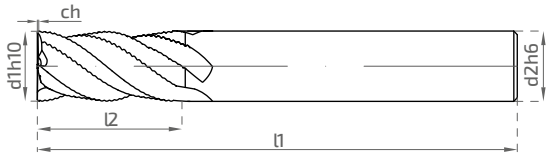
Applicable For Trochoidal Milling.

High Performance In A Large Scale Of Workpiece Materials Such As HRSA, Stainless Steels & General Steels.

Longer Tool Life Up To **%40** By It's Optimised Edge-Rounding In Comparison To Equivalent Tools

Faster Rough Milling Up To **%45** By It's Unique Chip Breaker Form In Comparison To Equivalent Tools.

CHATTER FREE



S	Order No	Code	d1h10	d2h6	l1	l2	Corner	Z
	65100	158.4.0600.0580.C0015.0140.0000.0000.00.S06C1C01.01	6	6	58	14	Ch 0.15	4
	65102	158.4.0800.0640.C0020.0200.0000.0000.00.S08C1C01.01	8	8	64	20	Ch 0.20	4
	65104	158.4.1000.0730.C0020.0220.0000.0000.00.S10C1C01.01	10	10	73	22	Ch 0.20	4
	65106	158.4.1200.0820.C0025.0270.0000.0000.00.S12C1C01.01	12	12	82	27	Ch 0.25	4
	65108	158.4.1400.0840.C0025.0320.0000.0000.00.S14C1C01.01	14	14	84	32	Ch 0.25	4
	65110	158.5.1600.0930.C0035.0350.0000.0000.00.S16C1C01.01	16	16	93	35	Ch 0.35	5
	65112	158.5.1800.0930.C0035.0350.0000.0000.00.S18C1C01.01	18	18	93	35	Ch 0.35	5
	65114	158.5.2000.1050.C0040.0420.0000.0000.00.S20C1C01.01	20	20	105	42	Ch 0.40	5

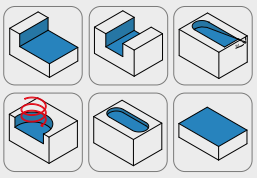
Cutting Parameters - Trochoidal

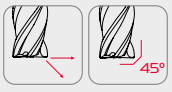
	Material	Slotting ap= 0.5xØ Vc (m/min)	Slotting ap= 1xØ Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø Vc(m/min)
Steel	Unalloyed Steel	130-160	110-140	210-240
	Steel	130-160	110-130	190-230
	Tempered Steel	120-150	100-130	140-160
	Cold Work Tool Steel	80-100	70-90	90-110
	Hot Work Tool Steel	70-90	80-90	80-100
Stainless Steel	AISI 304 - 416 - 420	90-110	80-100	100-120
	AISI 316 - 440	90-110	80-100	100-120
	17-4 PH 15-5 PH	70-90	60-80	80-100
	Chrome-Cobalt alloy	60-80	50-70	70-90
	Duplex F51	50-70	50-70	60-80
	Super Duplex F55	50-70	50-70	60-80
Cast Iron	Gray cast	120-150	110-130	140-160
	Alloyed cast	110-140	100-120	130-150
	Precision cast	110-130	100-120	120-140
	54 HRC	80-120	60-80	110-130
Titanium	HRSA Hastelloy	40-60	40-60	50-70
	HRSA inconel 625	40-60	40-60	50-70
	HRSA inconel 718	40-60	40-60	50-70
	HRSA Nimonic	40-60	40-60	50-70
	Titanium	60-80	60-80	70-90
	Titanium Alloys	60-80	60-80	70-90

Feed Per Tooth (mm/tooth)

Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0,012	0,015	0,016	0,02	0,022	0,025	0,026	0,03
4	0,02	0,024	0,02	0,023	0,026	0,03	0,032	0,036
5	0,023	0,026	0,023	0,027	0,031	0,036	0,04	0,045
6	0,026	0,03	0,034	0,038	0,043	0,049	0,05	0,06
8	0,033	0,038	0,036	0,042	0,048	0,054	0,06	0,075
10	0,044	0,049	0,045	0,053	0,063	0,07	0,072	0,084
12	0,045	0,051	0,047	0,053	0,064	0,072	0,08	0,088
16	0,056	0,062	0,058	0,064	0,069	0,075	0,09	0,1
20	0,065	0,073	0,066	0,074	0,08	0,092	0,102	0,11

Z4 - Z5





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	●
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

HPC

160 Falcon Series

High Performance Machining

General Engineering | Mold&Die | Aviation &Aerospace | Automotive | Energy | Medical

Finish | Rough

New Member of Gen-Z HPC Series...

A Falcon eye on Trochoidal and High Feed Milling operations!

Suitable for a variety of materials and industries—from aerospace to automotive—making it an essential addition to any workshop focused on advanced manufacturing techniques.

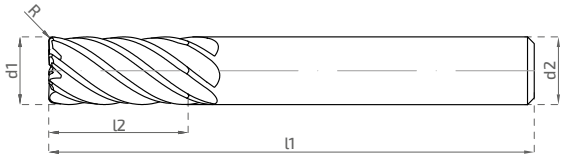
7 Flutes
Performance
Stars

It has been developed by Karcan R&D for the machinability of advanced materials and designed specifically for trochoidal milling strategies, this new member optimizes chip removal while minimizing tool wear.

Perfect for difficult materials where conventional methods struggle. Falcon has been also engineered for high feed rates, allowing users to achieve faster machining cycles without sacrificing accuracy or surface finish.

CHATTER FREE

new product



Falcon Standart Series (Z7) - HPC / Normal Cutting Edge

S	Order Code	Code	d1h10	d2h6	ØxD	l1	l2	Corner	W.Order No
	81100	160.7.0800.0640.R0030.0160.0000.0000.00.S08D1T01.01	8	8	2xD	64	16	R 0.30	**81101**
	81102	160.7.0800.0640.R0050.0200.0000.0000.00.S08D1T01.01	8	8	2,5xD	64	20	R 0.50	**81103**
	81104	160.7.0800.0640.R0050.0160.0000.0000.00.S08D1T01.01	8	8	2xD	64	16	R 0.50	**81105**
	81106	160.7.0800.0640.R0030.0200.0000.0000.00.S08D1T01.01	8	8	2,5xD	64	20	R 0.30	**81107**
	81108	160.7.1000.0730.R0050.0200.0000.0000.00.S10D1T01.01	10	10	2xD	73	20	R 0.50	**81109**
	81110	160.7.1000.0730.R0100.0250.0000.0000.00.S10D1T01.01	10	10	2,5xD	73	25	R 1.00	**81111**
	81112	160.7.1000.0730.R0100.0200.0000.0000.00.S10D1T01.01	10	10	2xD	73	20	R 1.00	**81113**
	81114	160.7.1000.0730.R0050.0250.0000.0000.00.S10D1T01.01	10	10	2,5xD	73	25	R 0.50	**81115**
	81116	160.7.1200.0840.R0050.0240.0000.0000.00.S12D1T01.01	12	12	2xD	84	24	R 0.50	**81117**
	81118	160.7.1200.0840.R0100.0300.0000.0000.00.S12D1T01.01	12	12	2,5xD	84	30	R 1.00	**81119**
	81120	160.7.1200.0840.R0100.0240.0000.0000.00.S12D1T01.01	12	12	2xD	84	24	R 1.00	**81121**
	81122	160.7.1200.0840.R0050.0300.0000.0000.00.S12D1T01.01	12	12	2,5xD	84	30	R 0.50	**81123**
	81124	160.7.1600.0930.R0050.0320.0000.0000.00.S16D1T01.01	16	16	2xD	93	32	R 0.50	**81125**
	81126	160.7.1600.0930.R0100.0400.0000.0000.00.S16D1T01.01	16	16	2,5xD	93	40	R 1.00	**81127**
	81128	160.7.1600.0930.R0100.0320.0000.0000.00.S16D1T01.01	16	16	2xD	93	32	R 1.00	**81129**
	81130	160.7.1600.0930.R0050.0400.0000.0000.00.S16D1T01.01	16	16	2,5xD	93	40	R 0.50	**81131**

Falcon Long Series (Z7) - HPC / Chip Splitter

S	Order Code	Code	d1h10	d2h6	ØxD	l1	l2	Corner	W.Order No
	81132	160CS.7.0800.0640.R0030.0240.0000.0000.00.S08D1T01.01	8	8	3xD	64	24	R 0.30	**81133**
	81134	160CS.7.0800.0640.R0050.0240.0000.0000.00.S08D1T01.01	8	8	3xD	64	24	R 0.50	**81135**
	81136	160CS.7.1000.0730.R0050.0300.0000.0000.00.S10D1T01.01	10	10	3xD	73	30	R 0.50	**81137**
	81138	160CS.7.1000.0730.R0100.0300.0000.0000.00.S10D1T01.01	10	10	3xD	73	30	R 1.00	**81139**
	81140	160CS.7.1200.0840.R0050.0360.0000.0000.00.S12D1T01.01	12	12	3xD	84	36	R 0.50	**81141**
	81142	160CS.7.1200.0840.R0100.0360.0000.0000.00.S12D1T01.01	12	12	3xD	84	36	R 1.00	**81143**
	81144	160CS.7.1600.1100.R0050.0480.0000.0000.00.S16D1T01.01	16	16	3xD	110	48	R 0.50	**81145**
	81146	160CS.7.1600.1100.R0100.0480.0000.0000.00.S16D1T01.01	16	16	3xD	110	48	R 1.00	**81147**

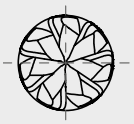
Cutting Parameters - Trochoidal

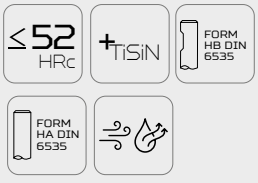
	Material	Trochoidal & HPC ap=2xØ-2,5xØ / ae=0.03 - 0.06 x Ø Vc (m/min)	Trochoidal & HPC ap=3xØ / ae=0.03 - 0.06 x Ø Vc (m/min)
Steel	Unalloyed Steel	130-160	130-150
	Steel	125-145	125-140
	Tempered Steel	120-140	120-135
	Cold Work Tool Steel	110-130	110-125
	Hot Work Tool Steel	100-120	100-115
Stainless Steel	AISI 304 - 416 - 420	130-150	130-145
	AISI 316 - 440	130-150	130-145
	17-4 PH 15-5 PH	110-140	110-130
	Chrome-Cobalt alloy	110-135	110-130
	Duplex F51	110-130	110-125
	Super Duplex F55	110-130	110-125
Cast Iron	Gray cast	110-130	110-125
	Alloyed cast	110-130	110-125
	Precision cast	100-120	95-115
Titanium	HRSA Hastelloy	60-90	60-80
	HRSA inconel 625	60-90	60-80
	HRSA inconel 718	60-90	60-80
	HRSA Nimonic	60-90	60-80
	Titanium	110-130	100-120
	Titanium Alloys	110-120	100-120

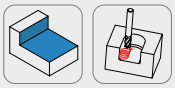
Feed Per Tooth (mm/tooth)

Ø	ae=0.06xØ	ae=0.03xØ	ae=0.015xØ
8	0,071-0,11	0,08-0,12	0,045-0,08
10	0,081-0,14	0,091-0,15	0,055-0,1
12	0,098-0,16	0,1-0,18	0,065-0,12
16	0,135-0,21	0,15-0,23	0,08-0,16

Z7







Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

HPC

161 Archon Series

High Performance Machining

General Engineering | Mold&Die | Aviation &Aerospace | Automotive | Energy | Medical

Finish | Rough

Lord of Gen-Z HPC Series...

An Archon reign on Trochoidal and High Feed Milling operations !

Suitable for a variety of materials and industries—from aerospace to automotive—making it an essential addition to any workshop focused on advanced manufacturing techniques.

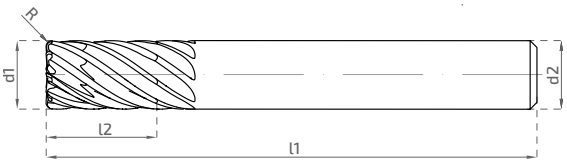
9
- Flutes
- **Performance**
- Stars

It has been developed by Karcan R&D for the machinability of advanced materials and designed specifically for trochoidal milling strategies, this new member optimizes chip removal while minimizing tool wear.

Perfect for difficult materials where conventional methods struggle. Falcon has been also engineered for high feed rates, allowing users to achieve faster machining cycles without sacrificing accuracy or surface finish.

CHATTER FREE

new product



Archon Standart Series (Z9) - HPC / Normal Cutting Edge

S	Order Code	Code	d1h9	d2h6	ØxD	l1	l2	Corner	W.Order No
	82100	161.9.0800.0640.R0030.0160.0000.0000.00.S08B1T01.01	8	8	2xD	64	16	R 0.30	**82101**
	82102	161.9.0800.0640.R0050.0200.0000.0000.00.S08B1T01.01	8	8	2,5xD	64	20	R 0.50	**82103**
	82104	161.9.0800.0640.R0050.0160.0000.0000.00.S08B1T01.01	8	8	2xD	64	16	R 0.50	**82105**
	82106	161.9.0800.0640.R0030.0200.0000.0000.00.S08B1T01.01	8	8	2,5xD	64	20	R 0.30	**82107**
	82108	161.9.1000.0730.R0050.0200.0000.0000.00.S10B1T01.01	10	10	2xD	73	20	R 0.50	**82109**
	82110	161.9.1000.0730.R0100.0250.0000.0000.00.S10B1T01.01	10	10	2,5xD	73	25	R 1.00	**82111**
	82112	161.9.1000.0730.R0100.0200.0000.0000.00.S10B1T01.01	10	10	2xD	73	20	R 1.00	**82113**
	82114	161.9.1000.0730.R0050.0250.0000.0000.00.S10B1T01.01	10	10	2,5xD	73	25	R 0.50	**82115**
	82116	161.9.1200.0830.R0050.0240.0000.0000.00.S12B1T01.01	12	12	2xD	83	24	R 0.50	**82117**
	82118	161.9.1200.0830.R0100.0300.0000.0000.00.S12B1T01.01	12	12	2,5xD	83	30	R 1.00	**82119**
	82120	161.9.1200.0830.R0100.0240.0000.0000.00.S12B1T01.01	12	12	2xD	83	24	R 1.00	**82121**
	82122	161.9.1200.0830.R0050.0300.0000.0000.00.S12B1T01.01	12	12	2,5xD	83	30	R 0.50	**82123**
	82124	161.9.1600.0930.R0050.0320.0000.0000.00.S16B1T01.01	16	16	2xD	93	32	R 0.50	**82125**
	82126	161.9.1600.0930.R0100.0400.0000.0000.00.S16B1T01.01	16	16	2,5xD	93	40	R 1.00	**82127**
	82128	161.9.1600.0930.R0100.0320.0000.0000.00.S16B1T01.01	16	16	2xD	93	32	R 1.00	**82129**
	82130	161.9.1600.0930.R0050.0400.0000.0000.00.S16B1T01.01	16	16	2,5xD	93	40	R 0.50	**82131**

Archon Standart Series (Z9) - HPC / Chip Splitter

S	Order Code	Code	d1h9	d2h6	ØxD	l1	l2	Corner	W.Order No
	82132	161CS.9.0800.0640.R0030.0240.0000.0000.00.S08B1T01.01	8	8	3xD	64	24	R 0.30	**82133**
	82134	161CS.9.0800.0640.R0050.0240.0000.0000.00.S08B1T01.01	8	8	3xD	64	24	R 0.50	**82135**
	82136	161CS.9.1000.0730.R0050.0300.0000.0000.00.S10B1T01.01	10	10	3xD	73	30	R 0.50	**82137**
	82138	161CS.9.1000.0730.R0100.0300.0000.0000.00.S10B1T01.01	10	10	3xD	73	30	R 1.00	**82139**
	82140	161CS.9.1200.0830.R0050.0360.0000.0000.00.S12B1T01.01	12	12	3xD	83	36	R 0.50	**82141**
	82142	161CS.9.1200.0830.R0100.0360.0000.0000.00.S12B1T01.01	12	12	3xD	83	36	R 1.00	**82143**
	82144	161CS.9.1600.1000.R0050.0480.0000.0000.00.S16B1T01.01	16	16	3xD	100	48	R 0.50	**82145**
	82146	161CS.9.1600.1000.R0100.0480.0000.0000.00.S16B1T01.01	16	16	3xD	100	48	R 1.00	**82147**

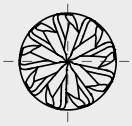
Cutting Parameters - Trochoidal

	Material	Trochoidal & HPC ap=2xØ-2,5xØ / ae=0.03 - 0.06 x Ø Vc (m/min)	Trochoidal & HPC ap=3xØ / ae=0.03 - 0.06 x Ø Vc (m/min)
Steel	Unalloyed Steel	130-160	130-150
	Steel	125-145	125-140
	Tempered Steel	120-140	120-135
	Cold Work Tool Steel	110-130	110-125
	Hot Work Tool Steel	100-120	100-115
Stainless Steel	AISI 304 - 416 - 420	130-150	130-145
	AISI 316 - 440	130-150	130-145
	17-4 PH 15-5 PH	110-140	110-130
	Chrome-Cobalt alloy	110-135	110-130
	Duplex F51	110-130	110-125
	Super Duplex F55	110-130	110-125
Cast Iron	Gray cast	110-130	110-125
	Alloyed cast	110-130	110-125
	Precision cast	100-120	95-115
	54 HRC	60-90	60-80
Titanium	HRSA Hastelloy	60-90	60-80
	HRSA inconel 625	60-90	60-80
	HRSA inconel 718	60-90	60-80
	HRSA Nimonic	110-130	100-120
	Titanium	110-120	100-120
	Titanium Alloys	60-80	60-80

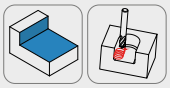
Feed Per Tooth (mm/tooth)

Ø	ae=0.06 xØ	ae=0.03 xØ	ae=0.015 xØ
8	0,071-0,11	0,08-0,12	0,045-0,08
10	0,081-0,14	0,091-0,15	0,055-0,1
12	0,098-0,16	0,1-0,18	0,065-0,12
16	0,135-0,21	0,15-0,23	0,08-0,16

Z9



≤52 HRc | +TiSiN | FORM HB DIN 6535 | FORM HA DIN 6535



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

2025
Milling Catalogue

MIC-CUT

High Precision, Advanced Technology, Know-how,

Swiss and German technologies met Karcan expertise and passion, we intended to achieve Japanese performance, here's our new series; 150, 153 and 250.

KARCAN
cutting tools

MIC-CUT

150 Series
Micro Sharpen Edge Endmill

General Engineering

Mold&Die

Finish

Rough

High Precision, Advanced Technology, Know-how

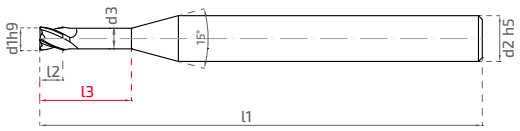
Swiss and German technologies met Karcan expertise and passion, we intended to achieve Japanese performance, here's our new series; 150, 153 and 250.

High efficiency and precision milling on work pieces up to 63HRC.

Up to 40% enhanced tool life with special grades and coating technology developed for micro end mills.

150

Micro Sharpen-Edge Endmill



S	Order No	Code	d1h9	d2h5	d3	l1	l2	l3	Corner
	24100	150.2.0040.0510.K0000.0010.0000.0000.00.S04H1A04.01	0,4	4	-	51	1	-	Ch 0.00
*	**24102**	150.2.0050.0510.K0000.0005.0047.0020.00.S04H1A04.01	0,5	4	0,47	51	0,5	2	Ch 0.00
*	**24104**	150.2.0050.0510.K0000.0005.0047.0030.00.S04H1A04.01	0,5	4	0,47	51	0,5	3	Ch 0.00
*	**24106**	150.2.0050.0510.K0000.0005.0047.0040.00.S04H1A04.01	0,5	4	0,47	51	0,5	4	Ch 0.00
	24108	150.2.0060.0510.K0000.0006.0055.0020.00.S04H1A04.01	0,6	4	0,55	51	0,6	2	Ch 0.00
	24110	150.2.0060.0510.K0000.0006.0055.0040.00.S04H1A04.01	0,6	4	0,55	51	0,6	4	Ch 0.00
	24112	150.2.0060.0510.K0000.0006.0055.0060.00.S04H1A04.01	0,6	4	0,55	51	0,6	6	Ch 0.00
	24114	150.2.0100.0510.K0000.0010.0094.0028.00.S04H1A04.01	1	4	0,94	51	1	2,8	Ch 0.00
*	**24116**	150.2.0100.0510.K0000.0010.0094.0040.00.S04H1A04.01	1	4	0,94	51	1	4	Ch 0.00
*	**24118**	150.2.0100.0510.K0000.0010.0094.0060.00.S04H1A04.01	1	4	0,94	51	1	6	Ch 0.00
*	**24120**	150.2.0100.0510.K0000.0010.0094.0080.00.S04H1A04.01	1	4	0,94	51	1	8	Ch 0.00
*	**24122**	150.2.0100.0510.K0000.0010.0094.0100.00.S04H1A04.01	1	4	0,94	51	1	10	Ch 0.00
*	**24124**	150.2.0100.0510.K0000.0010.0094.0120.00.S04H1A04.01	1	4	0,94	51	1	12	Ch 0.00
	24126	150.2.0100.0510.K0000.0010.0094.0140.00.S04H1A04.01	1	4	0,94	51	1	14	Ch 0.00
*	**24128**	150.2.0100.0510.K0000.0010.0094.0160.00.S04H1A04.01	1	4	0,94	51	1	16	Ch 0.00
*	**24130**	150.2.0150.0510.K0000.0015.0140.0040.00.S04H1A04.01	1,5	4	1,4	51	1,5	4	Ch 0.00
*	**24132**	150.2.0150.0510.K0000.0015.0140.0060.00.S04H1A04.01	1,5	4	1,4	51	1,5	6	Ch 0.00
*	**24134**	150.2.0150.0510.K0000.0015.0140.0080.00.S04H1A04.01	1,5	4	1,4	51	1,5	8	Ch 0.00
*	**24136**	150.2.0150.0510.K0000.0015.0140.0100.00.S04H1A04.01	1,5	4	1,4	51	1,5	10	Ch 0.00
*	**24138**	150.2.0150.0510.K0000.0015.0140.0120.00.S04H1A04.01	1,5	4	1,4	51	1,5	12	Ch 0.00
	24140	150.2.0150.0510.K0000.0015.0140.0140.00.S04H1A04.01	1,5	4	1,4	51	1,5	14	Ch 0.00
*	**24142**	150.2.0150.0510.K0000.0015.0140.0160.00.S04H1A04.01	1,5	4	1,4	51	1,5	16	Ch 0.00
*	**24144**	150.2.0200.0510.K0000.0020.0190.0040.00.S04H1A04.01	2	4	1,9	51	2	4	Ch 0.00
*	**24146**	150.2.0200.0510.K0000.0020.0190.0060.00.S04H1A04.01	2	4	1,9	51	2	6	Ch 0.00
*	**24148**	150.2.0200.0510.K0000.0020.0190.0080.00.S04H1A04.01	2	4	1,9	51	2	8	Ch 0.00
*	**24150**	150.2.0200.0510.K0000.0020.0190.0100.00.S04H1A04.01	2	4	1,9	51	2	10	Ch 0.00
*	**24152**	150.2.0200.0510.K0000.0020.0190.0120.00.S04H1A04.01	2	4	1,9	51	2	12	Ch 0.00
*	**24154**	150.2.0200.0510.K0000.0020.0190.0160.00.S04H1A04.01	2	4	1,9	51	2	16	Ch 0.00
	24156	150.2.0200.0510.K0000.0020.0190.0200.00.S04H1A04.01	2	4	1,9	51	2	20	Ch 0.00
	24158	150.2.0200.0750.K0000.0060.0190.0400.00.S04J1A04.01	2	4	1,9	75	6	40	Ch 0.00
	24160	150.2.0250.0510.K0000.0025.0240.0060.00.S04H1A04.01	2,5	4	2,4	51	2,5	6	Ch 0.00
	24162	150.2.0250.0510.K0000.0025.0240.0080.00.S04H1A04.01	2,5	4	2,4	51	2,5	8	Ch 0.00
	24164	150.2.0250.0510.K0000.0025.0240.0100.00.S04H1A04.01	2,5	4	2,4	51	2,5	10	Ch 0.00
	24166	150.2.0250.0510.K0000.0025.0240.0120.00.S04H1A04.01	2,5	4	2,4	51	2,5	12	Ch 0.00
	24168	150.2.0250.0510.K0000.0025.0240.0200.00.S04H1A04.01	2,5	4	2,4	51	2,5	20	Ch 0.00
	24170	150.2.0250.0750.K0000.0060.0240.0500.00.S04J1A04.01	2,5	4	2,4	75	6	50	Ch 0.00

Makro Series

S	Order No	Code	d1h9	d2h5	d3	l1	l2	l3	Corner
	24172	150.2.0300.0580.K0000.0025.0290.0100.00.S06H1A04.01	3	6	2,9	58	2,5	10	Ch 0.00
	24174	150.2.0300.0580.K0000.0025.0290.0120.00.S06H1A04.01	3	6	2,9	58	2,5	12	Ch 0.00
	24176	150.2.0300.0580.K0000.0025.0290.0160.00.S06H1A04.01	3	6	2,9	58	2,5	16	Ch 0.00
	24178	150.2.0300.0750.K0000.0025.0290.0200.00.S06J1A04.01	3	6	2,9	75	2,5	20	Ch 0.00
	24180	150.2.0300.0750.K0000.0025.0290.0250.00.S06J1A04.01	3	6	2,9	75	2,5	25	Ch 0.00
	24182	150.2.0300.0750.K0000.0025.0290.0300.00.S06J1A04.01	3	6	2,9	75	2,5	30	Ch 0.00
	24184	150.2.0300.0750.K0000.0060.0290.0500.00.S04J1A04.01	3	4	2,9	75	6	50	Ch 0.00
	24186	150.2.0350.0510.K0000.0100.0340.0150.00.S04H1A04.01	3,5	4	3,4	51	10	15	Ch 0.00
	24188	150.2.0400.0580.K0000.0040.0390.0120.00.S06H1A04.01	4	6	3,9	58	4	12	Ch 0.00
	24190	150.2.0400.0580.K0000.0040.0390.0160.00.S06H1A04.01	4	6	3,9	58	4	16	Ch 0.00
	24192	150.2.0400.0750.K0000.0040.0390.0200.00.S06J1A04.01	4	6	3,9	75	4	20	Ch 0.00
	24194	150.2.0400.0750.K0000.0040.0390.0250.00.S06J1A04.01	4	6	3,9	75	4	25	Ch 0.00
	24196	150.2.0400.0750.K0000.0040.0390.0300.00.S06J1A04.01	4	6	3,9	75	4	30	Ch 0.00
	24198	150.2.0400.0750.K0000.0100.0390.0500.00.S04J1A04.01	4	4	3,9	75	10	50	Ch 0.00

Cutting Parameters

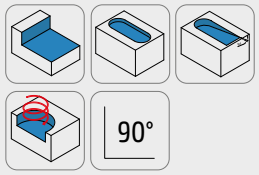
	Material	Shoulder Milling ap=0.2Ø / ae=0.20 - 0.10Ø	Slotting ap=0.1Ø
		Vc (m/min)	Vc (m/min)
Steel	Unalloyed Steel	170-220	170-220
	Steel	170-220	170-220
	Tempered Steel	140-180	140-180
	Cold Work Tool Steel	140-180	140-180
	Hot Work Tool Steel	110-150	110-150
Stainless Steel	AISI 304 - 416 - 420	80-130	80-130
	AISI 316 - 440	70-120	70-120
	17-4 PH 15-5 PH	70-100	70-100
	Cobalt-Chrome Alloys	60-100	60-10
	Duplex F51	50-80	50-80
	Super Duplex F55	50-80	50-80
Cast Iron	Gray Cast Iron	110-150	110-150
Titanium	Titanium	30-60	30-60
	Titanium Alloys	30-60	30-60
Hardened Steel	≤ 54 HRC	100-140	100-140
	>54 HRC	70-90	70-90

Feed Per Tooth (mm/tooth)

Ø	ae=0.20Ø	ae=0.10Ø	ae=0.20Ø	ae=0.10Ø
0,5	0,007	0,009	0,1	0,12
1	0.015	0,02	0.015	0,02
1,5	0.018	0,025	0.018	0,025
2	0.022	0,031	0.022	0,031
2,5	0.027	0,038	0.027	0,038
3	0,03	0,042	0,035	0,045
4	0,035	0,048	0,044	0,049

D
Ø0.5-Ø2.5
+0/-0,01

Z2



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	◑
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

153 Series
Micro Corner Radius Endmill

General Engineering

Mold&Die

Finish

Rough

High Precision, Advanced Technology, Know-how

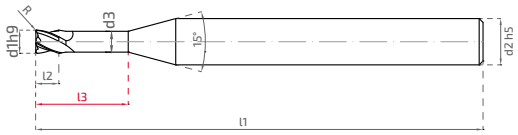
Swiss and German technologies met Karcan expertise and passion, we intended to achieve Japanese performance, here's our new series; 150, 153 and 250.

High efficiency and precision milling on work pieces up to 63HRC.

Up to 40% enhanced tool life with special grades and coating technology developed for micro end mills.

153

Micro Corner Radius Endmill

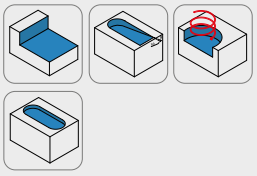


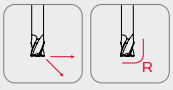
Short Series

S	Order No	Code	d1h9	d2h5	d3	l1	l2	l3	Corner
	25100	153.2.0050.0510.R0005.0005.0047.0020.00.S04H1A04.01	0,5	4	0,47	51	0,5	2	R 0.05
	25102	153.2.0050.0510.R0005.0005.0047.0030.00.S04H1A04.01	0,5	4	0,47	51	0,5	3	R 0.05
	25104	153.2.0050.0510.R0005.0005.0047.0040.00.S04H1A04.01	0,5	4	0,47	51	0,5	4	R 0.05
*	**25106**	153.2.0100.0510.R0010.0010.0094.0060.00.S04H1A04.01	1	4	0,94	51	1	6	R 0.10
	25108	153.2.0100.0510.R0020.0010.0094.0060.00.S04H1A04.01	1	4	0,94	51	1	6	R 0.20
*	**25110**	153.2.0100.0510.R0010.0010.0094.0080.00.S04H1A04.01	1	4	0,94	51	1	8	R 0.10
	25112	153.2.0100.0510.R0020.0010.0094.0080.00.S04H1A04.01	1	4	0,94	51	1	8	R 0.20
*	**25114**	153.2.0100.0510.R0010.0010.0094.0100.00.S04H1A04.01	1	4	0,94	51	1	10	R 0.10
*	**25116**	153.2.0100.0510.R0010.0010.0094.0120.00.S04H1A04.01	1	4	0,94	51	1	12	R 0.10
	25118	153.2.0100.0510.R0020.0010.0094.0120.00.S04H1A04.01	1	4	0,94	51	1	12	R 0.20
	25120	153.2.0100.0510.R0020.0010.0094.0160.00.S04H1A04.01	1	4	0,94	51	1	16	R 0.20
	25122	153.2.0100.0510.R0020.0010.0094.0200.00.S04H1A04.01	1	4	0,94	51	1	20	R 0.20
*	**25124**	153.2.0150.0510.R0020.0015.0140.0060.00.S04H1A04.01	1,5	4	1,4	51	1,5	6	R 0.20
	25126	153.2.0150.0510.R0050.0015.0140.0060.00.S04H1A04.01	1,5	4	1,4	51	1,5	6	R 0.50
	25128	153.2.0150.0510.R0010.0015.0140.0080.00.S04H1A04.01	1,5	4	1,4	51	1,5	8	R 0.10
*	**25130**	153.2.0150.0510.R0020.0015.0140.0080.00.S04H1A04.01	1,5	4	1,4	51	1,5	8	R 0.20
	25132	153.2.0150.0510.R0050.0015.0140.0080.00.S04H1A04.01	1,5	4	1,4	51	1,5	8	R 0.50
*	**25134**	153.2.0150.0510.R0020.0015.0140.0100.00.S04H1A04.01	1,5	4	1,4	51	1,5	10	R 0.20
	25136	153.2.0150.0510.R0050.0015.0140.0100.00.S04H1A04.01	1,5	4	1,4	51	1,5	10	R 0.50
	25138	153.2.0150.0510.R0010.0015.0140.0120.00.S04H1A04.01	1,5	4	1,4	51	1,5	12	R 0.10
*	**25140**	153.2.0150.0510.R0020.0015.0140.0120.00.S04H1A04.01	1,5	4	1,4	51	1,5	12	R 0.20
*	**25142**	153.2.0200.0510.R0020.0020.0195.0060.00.S04H1A04.01	2	4	1,95	51	2	6	R 0.20
*	**25144**	153.2.0200.0510.R0050.0020.0195.0060.00.S04H1A04.01	2	4	1,95	51	2	6	R 0.50
*	**25146**	153.2.0200.0510.R0020.0020.0195.0080.00.S04H1A04.01	2	4	1,95	51	2	8	R 0.20
*	**25148**	153.2.0200.0510.R0050.0020.0195.0080.00.S04H1A04.01	2	4	1,95	51	2	8	R 0.50
*	**25150**	153.2.0200.0510.R0020.0020.0195.0100.00.S04H1A04.01	2	4	1,95	51	2	10	R 0.20
*	**25152**	153.2.0200.0510.R0050.0020.0195.0100.00.S04H1A04.01	2	4	1,95	51	2	10	R 0.50
*	**25154**	153.2.0200.0510.R0020.0020.0195.0120.00.S04H1A04.01	2	4	1,95	51	2	12	R 0.20
*	**25156**	153.2.0200.0510.R0050.0020.0195.0120.00.S04H1A04.01	2	4	1,95	51	2	12	R 0.50

Long Series

S	Order No	Code	d1h9	d2h5	d3	l1	l2	l3	Corner
*	**25158**	153.2.0100.0510.R0010.0010.0094.0160.00.S04H1A04.01	1	4	0,94	51	1	16	R 0.10
	25160	153.2.0100.0510.R0010.0010.0094.0200.00.S04H1A04.01	1	4	0,94	51	1	20	R 0.10
*	**25162**	153.2.0150.0510.R0020.0015.0140.0160.00.S04H1A04.01	1,5	4	1,4	51	1,5	16	R 0.20
	25164	153.2.0150.0510.R0020.0015.0140.0200.00.S04H1A04.01	1,5	4	1,4	51	1,5	20	R 0.20
*	**25166**	153.2.0200.0510.R0020.0020.0194.0160.00.S04H1A04.01	2	4	1,94	51	2	16	R 0.20
*	**25168**	153.2.0200.0510.R0050.0020.0194.0160.00.S04H1A04.01	2	4	1,94	51	2	16	R 0.50
	25170	153.2.0200.0510.R0020.0020.0194.0200.00.S04H1A04.01	2	4	1,94	51	2	20	R 0.20





Cutting Parameters

	Material	Finish Milling ap=0.2Ø / ae=0.2Ø - 0.1Ø Vc (m/min)
Steel	Unalloyed Steel	170-220
	Steel	170-220
	Tempered Steel	140-180
	Cold Work Tool Steel	140-180
	Hot Work Tool Steel	110-150
Stainless Steel	AISI 304 - 416 - 420	80-130
	AISI 316 - 440	70-120
	17-4 PH 15-5 PH	70-100
	Cobalt-Chrome Alloys	60-100
	Duplex F51	50-80
	Super Duplex F55	50-80
Cast Iron	Gray Cast Iron	110-150
Titanium	Titanium	30-60
	Titanium Alloys	30-60
Hardened Steel	≤ 54 HRC	100-140
	>54 HRC	70-90

Feed Per Tooth (mm/tooth)

Ø	ae=0.2Ø	ae=0.1Ø
0,5	0,07	0,01
1	0.015	0,02
1,5	0.018	0,025
2	0.022	0,031

Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	◑
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

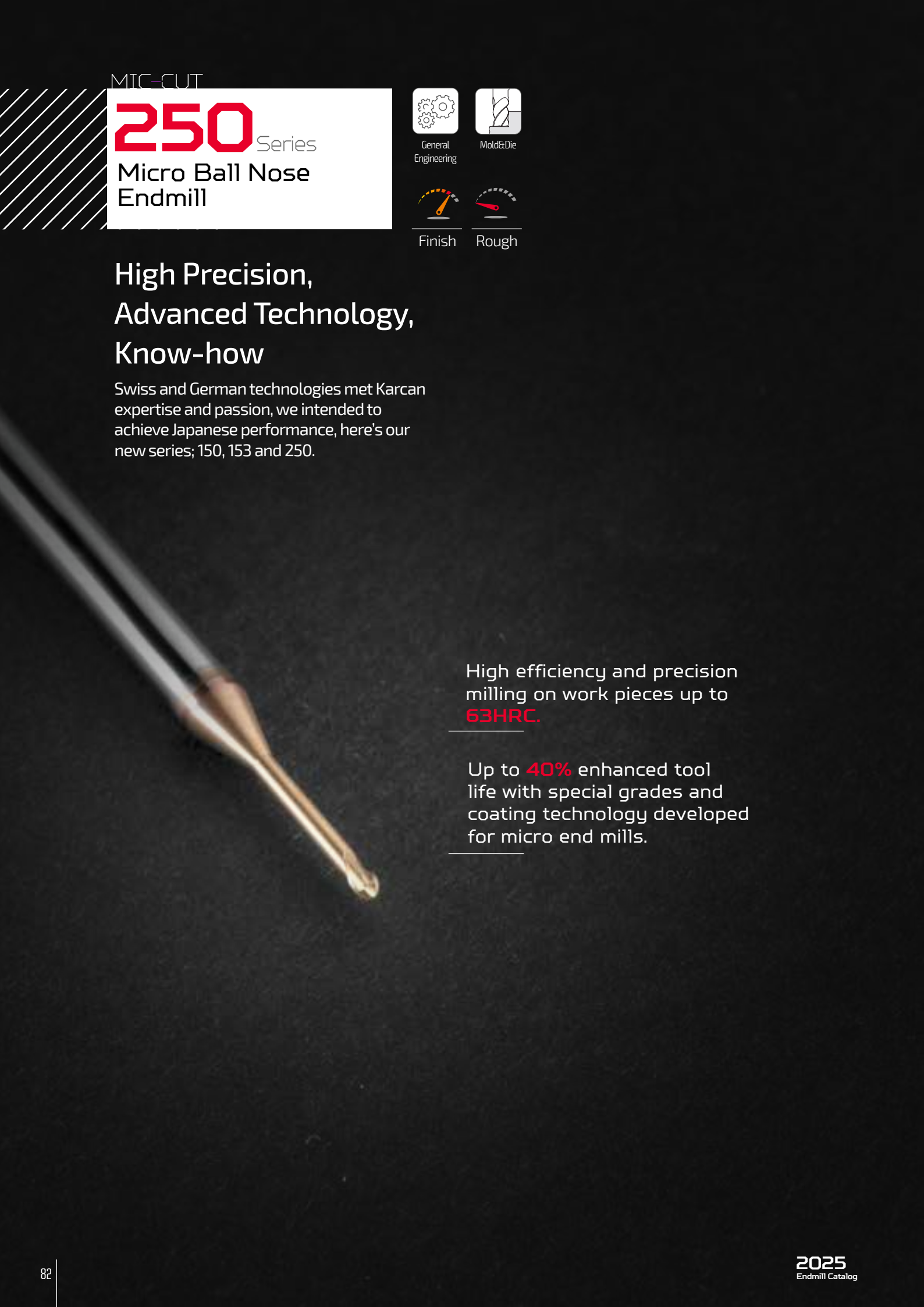
250 Series
Micro Ball Nose Endmill

General Engineering | Mold&Die

Finish | Rough

High Precision, Advanced Technology, Know-how

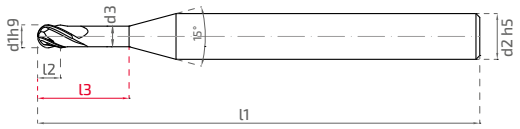
Swiss and German technologies met Karcan expertise and passion, we intended to achieve Japanese performance, here's our new series; 150, 153 and 250.



High efficiency and precision milling on work pieces up to 63HRC.

Up to 40% enhanced tool life with special grades and coating technology developed for micro end mills.

250
Micro Ball Nose Endmill



S	Order No	Code	d1h9	d2h5	d3	l1	l2	l3
	26100	250.2.0050.0510.R0025.0005.0047.0020.00.S04H1A04.01	0,5	4	0,47	51	0,5	2
	26102	250.2.0050.0510.R0025.0005.0047.0030.00.S04H1A04.01	0,5	4	0,47	51	0,5	3
	26104	250.2.0050.0510.R0025.0005.0047.0040.00.S04H1A04.01	0,5	4	0,47	51	0,5	4
	26106	250.2.0060.0510.R0030.0006.0055.0040.00.S04H1A04.01	0,6	4	0,55	51	0,6	4
	26108	250.2.0060.0510.R0030.0006.0055.0060.00.S04H1A04.01	0,6	4	0,55	51	0,6	6
	26110	250.2.0060.0510.R0030.0006.0055.0080.00.S04H1A04.01	0,6	4	0,55	51	0,6	8
	26112	250.2.0080.0510.R0040.0008.0075.0040.00.S04H1A03.01	0,8	4	0,75	51	0,8	4
	26114	250.2.0080.0510.R0040.0008.0075.0060.00.S04H1A03.01	0,8	4	0,75	51	0,8	6
	26116	250.2.0080.0510.R0040.0008.0075.0080.00.S04H1A03.01	0,8	4	0,75	51	0,8	8
	26118	250.2.0090.0510.R0045.0009.0084.0040.00.S04H1A04.01	0,9	4	0,84	51	0,9	4
*	**26120**	250.2.0100.0510.R0050.0010.0094.0040.00.S04H1A04.01	1	4	0,94	51	1	4
*	**26122**	250.2.0100.0510.R0050.0010.0094.0060.00.S04H1A04.01	1	4	0,94	51	1	6
*	**26124**	250.2.0100.0510.R0050.0010.0094.0080.00.S04H1A04.01	1	4	0,94	51	1	8
*	**26126**	250.2.0100.0510.R0050.0010.0094.0100.00.S04H1A04.01	1	4	0,94	51	1	10
*	**26128**	250.2.0100.0510.R0050.0010.0094.0120.00.S04H1A04.01	1	4	0,94	51	1	12
	26130	250.2.0110.0510.R0055.0011.0104.0040.00.S04H1A04.01	1,1	4	1,04	51	1,1	4
	26132	250.2.0120.0510.R0060.0012.0113.0040.00.S04H1A04.01	1,2	4	1,13	51	1,2	4
	26134	250.2.0130.0510.R0065.0013.0124.0040.00.S04H1A04.01	1,3	4	1,24	51	1,3	4
*	**26136**	250.2.0150.0510.R0075.0015.0140.0060.00.S04H1A04.01	1,5	4	1,4	51	1,5	6
*	**26138**	250.2.0150.0510.R0075.0015.0140.0080.00.S04H1A04.01	1,5	4	1,4	51	1,5	8
*	**26140**	250.2.0150.0510.R0075.0015.0140.0100.00.S04H1A04.01	1,5	4	1,4	51	1,5	10
*	**26142**	250.2.0150.0510.R0075.0015.0140.0120.00.S04H1A04.01	1,5	4	1,4	51	1,5	12
	26144	250.2.0190.0510.R0095.0019.0180.0120.00.S04H1A04.01	1,9	4	1,8	51	1,9	12
	26146	250.2.0200.0510.R0100.0020.0190.0040.00.S04H1A04.01	2	4	1,9	51	2	4
*	**26148**	250.2.0200.0510.R0100.0020.0190.0060.00.S04H1A04.01	2	4	1,9	51	2	6
*	**26150**	250.2.0200.0510.R0100.0020.0190.0080.00.S04H1A04.01	2	4	1,9	51	2	8
*	**26152**	250.2.0200.0510.R0100.0020.0190.0100.00.S04H1A04.01	2	4	1,9	51	2	10
*	**26154**	250.2.0200.0510.R0100.0020.0190.0120.00.S04H1A04.01	2	4	1,9	51	2	12
	26156	250.2.0220.0510.R0110.0022.0210.0120.00.S04H1A04.01	2,2	4	2,1	51	2,2	12
	26158	250.2.0250.0510.R0125.0025.0240.0120.00.S04H1A04.01	2,5	4	2,4	51	2,5	12

Long Series

S	Order No	Code	d1h9	d2h5	d3	l1	l2	l3
*	**26160**	250.2.0100.0510.R0050.0010.0094.0160.00.S04H1A04.01	1	4	0,94	51	1	16
	26162	250.2.0100.0510.R0050.0010.0094.0200.00.S04H1A04.01	1	4	0,94	51	1	20
*	**26164**	250.2.0150.0510.R0075.0015.0140.0160.00.S04H1A04.01	1,5	4	1,4	51	1,5	16
	26166	250.2.0150.0510.R0075.0015.0140.0200.00.S04H1A04.01	1,5	4	1,4	51	1,5	20
*	**26168**	250.2.0200.0510.R0100.0020.0190.0160.00.S04H1A04.01	2	4	1,9	51	2	16
	26170	250.2.0200.0510.R0100.0020.0190.0200.00.S04H1A04.01	2	4	1,9	51	2	20

Makro Series

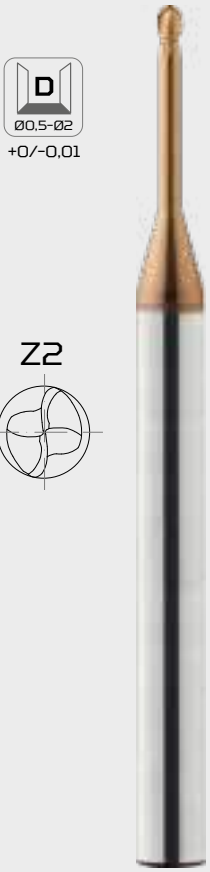
S	Order No	Code	d1h9	d2h5	d3	l1	l2	l3
	26172	250.2.0300.0580.R0150.0030.0290.0100.00.S06H1A04.01	3	6	2,9	58	3	10
	26174	250.2.0300.0580.R0150.0030.0290.0120.00.S06H1A04.01	3	6	2,9	58	3	12
	26176	250.2.0300.0580.R0150.0030.0290.0160.00.S06H1A04.01	3	6	2,9	58	3	16
	26178	250.2.0300.0750.R0150.0030.0290.0200.00.S06J1A04.01	3	6	2,9	75	3	20
	26180	250.2.0300.0750.R0150.0030.0290.0250.00.S06J1A04.01	3	6	2,9	75	3	25
	26182	250.2.0300.0750.R0150.0030.0290.0300.00.S06J1A04.01	3	6	2,9	75	3	30
	26184	250.2.0400.0580.R0200.0040.0390.0120.00.S06H1A04.01	4	6	3,9	58	4	12
	26186	250.2.0400.0580.R0200.0040.0390.0160.00.S06H1A04.01	4	6	3,9	58	4	16
	26188	250.2.0400.0750.R0200.0040.0390.0200.00.S06J1A04.01	4	6	3,9	75	4	20
	26190	250.2.0400.0750.R0200.0040.0390.0250.00.S06J1A04.01	4	6	3,9	75	4	25
	26192	250.2.0400.0750.R0200.0040.0390.0300.00.S06J1A04.01	4	6	3,9	75	4	30

Cutting Parameters

	Material	Shoulder Milling ap=0.10Ø /ae=0.20 - 0.10Ø Vc (m/min)
Steel	Unalloyed Steel	170-220
	Steel	170-220
	Tempered Steel	140-180
	Cold Work Tool Steel	140-180
	Hot Work Tool Steel	110-150
Stainless Steel	AISI 304 - 416 - 420	80-130
	AISI 316 - 440	70-120
	17-4 PH 15-5 PH	70-100
	Cobalt-Chrome Alloys	60-100
	Duplex F51	50-80
	Super Duplex F55	50-80
Cast Iron	Gray Cast Iron	110-150
Titanium	Titanium	30-60
	Titanium Alloys	30-50
Hardened Steel	≤ 54 HRC	100-140
	>54 HRC	70-90

Feed Per Tooth (mm/tooth)

Ø	ae=0.20Ø	ae=0.10Ø
0,5	0,07	0,01
1	0,015	0,02
1,5	0,018	0,025
2	0,022	0,031
3	0,027	0,037
4	0,035	0,042



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast Iron	◑
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

Eliminate the idea of buying ‘cheap’ endmills, as you can’t afford to buy low-quality tools. Therefore, we have developed the Eco-Line series, which provides cost-effective solutions without compromising on the price/ performance ratio.

We are changing the perception of ‘cheap tools’ with our new generation Eco+ KSNF, KSUF, KRSF, KRUF, KSKF and KKUF Series. Our tools ensure proper machining for materials up to 55 HRC.”

Machinability of a wide spectrum such as steel, cast iron, non-metallic materials, graphite and stainless steel.

Unbeatable Price/ Performance Ratio

Up to

% 40

enhanced tool life thanks to newly developed coating technology.

Unique geometry allows up to

% 30

reduced tensions compared with competitors’ cost effective endmills.

% 100

Available from stock in all sizes.

2025
Milling Catalogue

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ECO+PLUS

KARCAN
cutting tools

ECO+PLUS

103 EVO Series

General Purpose Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

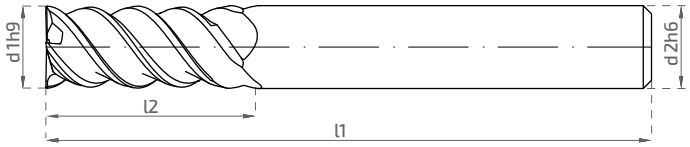
Affordable Evolution For Hardness

An Expansion Of Our Eco-Plus Series, EVOLine Series Is Developed For Longer Tool Life In Workpiece Materials between 45 And 55 HRC Hardness.

new product

Up to %50 Longer Tool Life

Up to %40 Less Cycle Time In Comparison To Equivalent Tools.



S	Order No	Code	d1h9	d2h6	l1	l2	Corner
	34100	103E.4.0200.0500.C0020.0070.0000.0000.00.S04B1A02.01	2	4	50	7	Ch 0.20
	34102	103E.4.0300.0390.C0020.0090.0000.0000.00.S03B1A02.01	3	3	39	9	Ch 0.20
	34104	103E.4.0400.0500.C0020.0140.0000.0000.00.S04B1A02.01	4	4	50	14	Ch 0.20
	34106	103E.4.0500.0510.C0020.0150.0000.0000.00.S05B1A02.01	5	5	51	15	Ch 0.20
	34108	103E.4.0600.0580.C0020.0150.0000.0000.00.S06B1A02.01	6	6	58	15	Ch 0.20
	34110	103E.4.0800.0640.C0020.0200.0000.0000.00.S08B1A02.01	8	8	64	20	Ch 0.20
	34112	103E.4.1000.0730.C0020.0210.0000.0000.00.S10B1A02.01	10	10	73	21	Ch 0.20
	34114	103E.4.1200.0820.C0020.0250.0000.0000.00.S12B1A02.01	12	12	82	25	Ch 0.20
	34116	103E.4.1400.0820.C0020.0300.0000.0000.00.S14B1A02.01	14	14	82	30	Ch 0.20
	34118	103E.4.1600.0930.C0020.0350.0000.0000.00.S16B1A02.01	16	16	93	35	Ch 0.20
	34120	103E.4.2000.1050.C0020.0380.0000.0000.00.S20B1A02.01	20	20	105	38	Ch 0.20

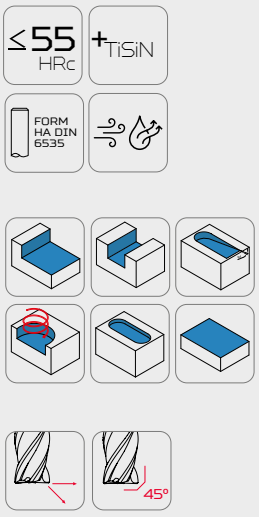
Cutting Parameters

	Material	Slotting ap=0,5xØ Vc (m/min)	Shoulder Milling ae=0,5xØ ap=1xØ Vc (m/min)	Shoulder Milling ae=0,1xØ ap=1,5xØ Vc (m/min)
Steel	Unalloyed Steel	95-125	150-180	180-210
	Steel	90-120	140-170	170-200
	Reclamation steel	80-110	130-160	160-190
	Cold Work Tool Steel	70-90	120-150	150-180
	Hot Work Tool Steel	60-80	120-150	150-180
Stainless Steel	AISI 304 - 416 - 420	70-90	80-110	110-150
	AISI 316 - 440	65-85	70-100	100-130
	17-4 PH 15-5 PH	60-80	70-100	100-130
	Chrome-Cobalt alloy	50-70	60-90	90-120
Cast Iron	Gray cast	100-130	250-280	280-330
	Alloyed cast	70-100	150-190	190-240
	Precision cast	60-90	130-160	160-210
Hardened Steel	>54 HRC	40-60	50-70	70-90

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø
3	0.007	0.032	0.037	0.039	0.041
4	0.012	0.039	0.043	0.045	0.047
5	0.018	0.042	0.044	0.046	0.048
6	0.023	0.049	0.053	0.055	0.057
8	0.028	0.056	0.060	0.063	0.066
10	0.036	0.064	0.068	0.071	0.074
12	0.045	0.069	0.074	0.077	0.080
14	0.054	0.074	0.079	0.083	0.086
16	0.065	0.079	0.084	0.089	0.093
18	0.076	0.082	0.088	0.093	0.097
20	0.087	0.087	0.095	0.100	0.105
25	0.115	0.092	0.105	0.110	0.119

Z4



Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO+PLUS

104 EVO Series

General Purpose Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

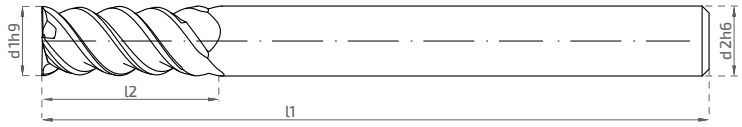
Affordable Evolution For Hardness

An Expansion Of Our Eco-Plus Series, EVOLine Series Is Developed For Longer Tool Life In Workpiece Materials between 45 And 55 HRC Hardness.

new product

Up to %50 Longer Tool Life

Up to %40 Less Cycle Time In Comparison To Equivalent Tools.



S	Order No	Code	d1h9	d2h6	l1	l2	Corner
	35100	104E.4.0300.0750.C0020.0150.0000.0000.00.S03B1A02.01	3	3	75	15	Ch 0.20
	35102	104E.4.0400.0750.C0020.0200.0000.0000.00.S04B1A02.01	4	4	75	20	Ch 0.20
	35104	104E.4.0500.0750.C0020.0200.0000.0000.00.S05B1A02.01	5	5	75	20	Ch 0.20
	35106	104E.4.0600.1000.C0020.0300.0000.0000.00.S06B1A02.01	6	6	100	30	Ch 0.20
	35108	104E.4.0800.1000.C0020.0350.0000.0000.00.S08B1A02.01	8	8	100	35	Ch 0.20
	35110	104E.4.1000.1100.C0020.0400.0000.0000.00.S10B1A02.01	10	10	110	40	Ch 0.20
	35112	104E.4.1200.1100.C0020.0450.0000.0000.00.S12B1A02.01	12	12	110	45	Ch 0.20
	35114	104E.4.1600.1000.C0020.0450.0000.0000.00.S16B1A02.01	16	16	100	45	Ch 0.20
	35116	104E.4.2000.1500.C0020.0750.0000.0000.00.S20B1A02.01	20	20	150	75	Ch 0.20

Cutting Parameters

	Material	Slotting ap=0.5 - 0.1Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.30 - 0.2Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.1Ø Vc (m/min)
Steel	Unalloyed Steel	95-125	180-210	210-230
Steel	Steel	90-120	180-210	210-230
Steel	Tempered Steel	80-110	160-190	190-120
Steel	Cold Work Tool Steel	70-90	150-180	170-200
Steel	Hot Work Tool Steel	60-80	140-170	160-190
Cast Iron	Gray cast	100-130	250-280	280-330
Cast Iron	Alloyed cast	70-100	150-190	190-240
Cast Iron	Precision cast	60-90	130-160	160-210
Hardened Steel	<54 HRC	50-70	70-90	75-90
Hardened Steel	>54 HRC	40-60	50-70	70-90

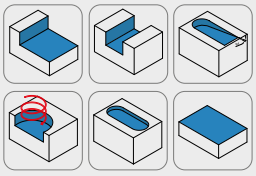
Feed Per Tooth (mm/tooth)

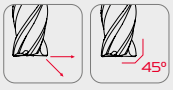
Ø	ap=0.05Ø	ae=0.1Ø	ae=0.3Ø	ae=0.2Ø	ae=0.15Ø	ae=0.1Ø
3	0.005	0.006	0.031	0.036	0.038	0.040
4	0.008	0.011	0.038	0.042	0.044	0.046
5	0.013	0.017	0.041	0.043	0.045	0.047
6	0.016	0.022	0.048	0.052	0.054	0.056
8	0.021	0.027	0.054	0.058	0.061	0.064
10	0.029	0.035	0.062	0.066	0.069	0.072
12	0.038	0.043	0.067	0.072	0.075	0.079
14	0.047	0.052	0.072	0.077	0.080	0.083
16	0.056	0.063	0.076	0.081	0.086	0.090
18	0.068	0.073	0.079	0.085	0.089	0.095
20	0.078	0.084	0.084	0.092	0.097	0.098
25	0.105	0.110	0.088	0.100	0.110	0.110

Z4

≤55 HRc | +TiSiN

FORM HA DIN 6535





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

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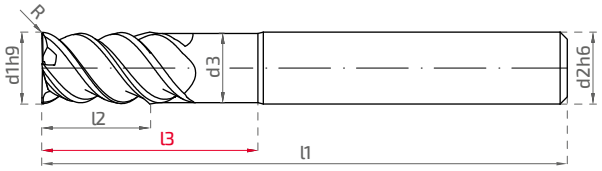
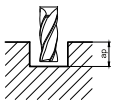
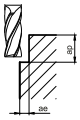
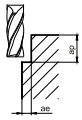


S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner
*	**36100**	105E.4.0300.0600.R0020.0080.0280.0120.00.S03B1A02.01	3	3	2,8	60	8	12	R 0.20
*	**36102**	105E.4.0400.0600.R0050.0110.0380.0150.00.S04B1A02.01	4	4	3,8	60	11	15	R 0.50
*	**36104**	105E.4.0600.0580.R0100.0120.0550.0240.00.S06B1A02.01	6	6	5,5	58	12	24	R 1.00
*	**36106**	105E.4.0800.0640.R0100.0120.0750.0240.00.S08B1A02.01	8	8	7,5	64	12	24	R 1.00
*	**36108**	105E.4.1000.0730.R0100.0150.0960.0300.00.S10B1A02.01	10	10	9,6	73	15	30	R 1.00
*	**36110**	105E.4.1200.0820.R0100.0250.1170.0370.00.S12B1A02.01	12	12	11,7	82	25	37	R 1.00
*	**36112**	105E.4.1400.0820.R0100.0320.1360.0390.00.S14B1A02.01	14	14	13,6	82	32	39	R 1.00
*	**36114**	105E.4.1600.0930.R0100.0320.1555.0500.00.S16B1A02.01	16	16	15,55	93	32	50	R 1.00
*	**36116**	105E.4.2000.1050.R0100.0420.1960.0590.00.S20B1A02.01	20	20	19,6	105	42	59	R 1.00

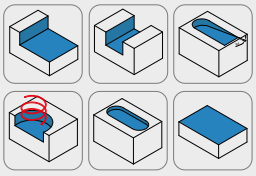
Cutting Parameters

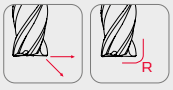
	Material	Slotting ap=0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.30 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
				
Steel	Unalloyed Steel	95-125	150-180	180-210
Steel	Steel	90-120	140-170	170-200
Steel	Reclamation steel	80-110	130-160	160-190
Steel	Cold Work Tool Steel	70-90	120-150	150-180
Steel	Hot Work Tool Steel	60-80	120-150	150-180
Stainless Steel	AISI 304 - 416 - 420	70-90	80-110	110-150
Stainless Steel	AISI 316 - 440	65-85	70-100	100-130
Stainless Steel	17-4 PH 15-5 PH	60-80	70-100	100-130
Stainless Steel	Chrome-Cobalt alloy	50-70	60-90	90-120
Cast Iron	Gray cast	100-130	250-280	280-330
Cast Iron	Alloyed cast	70-100	150-190	190-240
Cast Iron	Precision cast	60-90	130-160	160-210
Hardened Steel	>54 HRC	40-60	50-70	70-90

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø
3	0.007	0.032	0.037	0.039	0.041
4	0.012	0.039	0.043	0.045	0.047
5	0.018	0.042	0.044	0.046	0.048
6	0.023	0.049	0.053	0.055	0.057
8	0.028	0.056	0.060	0.063	0.066
10	0.036	0.064	0.068	0.071	0.074
12	0.045	0.069	0.074	0.077	0.080
14	0.054	0.074	0.079	0.083	0.086
16	0.065	0.079	0.084	0.089	0.093
18	0.076	0.082	0.088	0.093	0.097
20	0.087	0.087	0.095	0.100	0.105
25	0.115	0.092	0.105	0.110	0.119

Z4





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

106 EVO Series

General Purpose Corner Radius Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

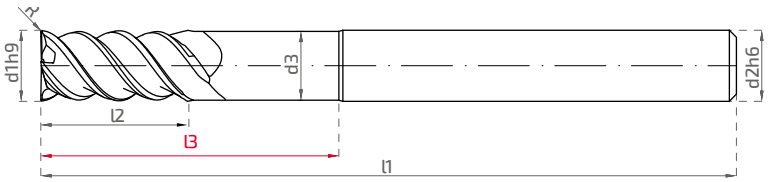
Affordable Evolution For Hardness

An Expansion Of Our Eco-Plus Series, EVOLine Series Is Developed For Longer Tool Life In Workpiece Materials between 45 And 55 HRC Hardness.

new product

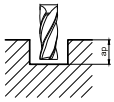
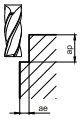
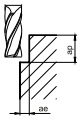
Up to %50 Longer Tool Life

Up to %40 Less Cycle Time In Comparison To Equivalent Tools.



S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3	Corner
*	**37100**	106E.4.0600.1000.R0100.0120.0580.0240.00.S06B1A02.01	6	6	5,8	100	12	24	R 1.00
*	**37102**	106E.4.0800.1000.R0100.0160.0780.0320.00.S08B1A02.01	8	8	7,8	100	16	32	R 1.00
*	**37104**	106E.4.1000.1000.R0100.0200.0970.0400.00.S10B1A02.01	10	10	9,7	100	20	40	R 1.00
*	**37106**	106E.4.1200.1100.R0100.0250.1170.0500.00.S12B1A02.01	12	12	11,7	110	25	50	R 1.00

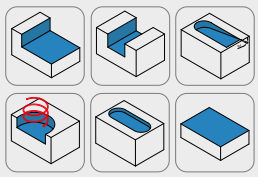
Cutting Parameters

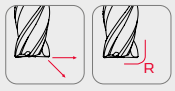
	Material	Slotting ap=0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.30 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
				
Steel	Unalloyed Steel	95-125	180-210	210-230
Steel	Steel	90-120	180-210	210-230
Steel	Reclamation steel	80-110	160-190	190-120
Steel	Cold Work Tool Steel	70-90	150-180	170-200
Steel	Hot Work Tool Steel	60-80	140-170	160-190
Stainless Steel	Gray cast	100-130	250-280	280-330
Stainless Steel	Alloyed cast	70-100	150-190	190-240
Stainless Steel	Precision cast	60-90	130-160	160-210
Cast Iron	<54 hrc	50-70	70-90	75-90
Cast Iron	>54 hrc	40-60	50-70	70-90

Feed Per Tooth (mm/tooth)

Ø	ap=0.050Ø	ae=0.10Ø	ae=0.30Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0.005	0.006	0.031	0.036	0.038	0.040
4	0.008	0.011	0.038	0.042	0.044	0.046
5	0.013	0.017	0.041	0.043	0.045	0.047
6	0.016	0.022	0.048	0.052	0.054	0.056
8	0.021	0.027	0.054	0.058	0.061	0.064
10	0.029	0.035	0.062	0.066	0.069	0.072
12	0.038	0.043	0.067	0.072	0.075	0.079
14	0.047	0.052	0.072	0.077	0.080	0.083
16	0.056	0.063	0.076	0.081	0.086	0.090
18	0.068	0.073	0.079	0.085	0.089	0.095
20	0.078	0.084	0.084	0.092	0.097	0.098
25	0.105	0.110	0.088	0.100	0.110	0.110

Z4





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO+PLUS

KSNF Series

General Purpose Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

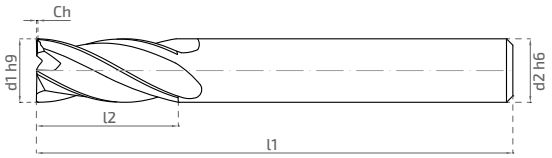
Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

Unrivalled To Machine Workpieces Till 55HRC Hardness In Price-Performance Ratio.

new *product*

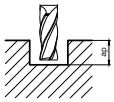
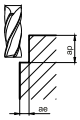
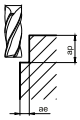
Meet The New Generation Of Eco+ Series!

Available from stock in all sizes %100



S	Order No	Code	d1h9	d2h6	l1	l2	Corner
*	**27100**	KSNF.4.0100.0500.K0000.0030.0000.0000.00.S04A1A04.01	1	4	50	3	Ch 0.00
*	**27102**	KSNF.4.0150.0500.K0000.0060.0000.0000.00.S04A1A04.01	1,5	4	50	6	Ch 0.00
*	**27104**	KSNF.4.0200.0500.K0000.0070.0000.0000.00.S04A1A04.01	2	4	50	7	Ch 0.00
*	**27106**	KSNF.4.0250.0500.K0000.0090.0000.0000.00.S04A1A04.01	2,5	4	50	9	Ch 0.00
*	**27108**	KSNF.4.0300.0390.K0000.0090.0000.0000.00.S03A1A02.01	3	3	39	9	Ch 0.00
*	**27110**	KSNF.4.0300.0500.K0000.0090.0000.0000.00.S04A1A02.01	3	4	50	9	Ch 0.00
*	**27112**	KSNF.4.0400.0500.C0010.0140.0000.0000.00.S04A1A02.01	4	4	50	14	Ch 0.10
*	**27114**	KSNF.4.0400.0500.K0000.0140.0000.0000.00.S04A1A02.01	4	4	50	14	Ch 0.00
*	**27116**	KSNF.4.0500.0510.C0010.0150.0000.0000.00.S05A1A02.01	5	5	51	15	Ch 0.10
*	**27118**	KSNF.4.0600.0580.C0010.0150.0000.0000.00.S06A1A02.01	6	6	58	15	Ch 0.10
*	**27120**	KSNF.4.0600.0580.K0000.0150.0000.0000.00.S06A1A02.01	6	6	58	15	Ch 0.00
*	**27122**	KSNF.4.0700.0640.C0010.0150.0000.0000.00.S08A1A02.01	7	8	64	15	Ch 0.10
*	**27124**	KSNF.4.0800.0640.C0010.0200.0000.0000.00.S08A1A02.01	8	8	64	20	Ch 0.10
*	**27126**	KSNF.4.0800.0640.K0000.0200.0000.0000.00.S08A1A02.01	8	8	64	20	Ch 0.00
*	**27128**	KSNF.4.0900.0730.C0010.0210.0000.0000.00.S10A1A02.01	9	10	73	21	Ch 0.10
*	**27130**	KSNF.4.1000.0730.C0010.0210.0000.0000.00.S10A1A02.01	10	10	73	21	Ch 0.10
*	**27132**	KSNF.4.1000.0730.K0000.0210.0000.0000.00.S10A1A02.01	10	10	73	21	Ch 0.00
*	**27134**	KSNF.4.1100.0820.C0010.0250.0000.0000.00.S12A1A02.01	11	12	82	25	Ch 0.10
*	**27136**	KSNF.4.1200.0820.C0015.0250.0000.0000.00.S12A1A02.01	12	12	82	25	Ch 0.15
*	**27138**	KSNF.4.1200.0820.K0000.0250.0000.0000.00.S12A1A02.01	12	12	82	25	Ch 0.00
*	**27140**	KSNF.4.1300.0830.C0010.0300.0000.0000.00.S14A1A02.01	13	14	83	30	Ch 0.10
*	**27142**	KSNF.4.1400.0830.C0015.0300.0000.0000.00.S14A1A02.01	14	14	83	30	Ch 0.15
*	**27144**	KSNF.4.1500.0930.C0010.0350.0000.0000.00.S16A1A02.01	15	16	93	35	Ch 0.10
*	**27146**	KSNF.4.1600.0930.C0010.0350.0000.0000.00.S16A1A02.01	16	16	93	35	Ch 0.10
*	**27148**	KSNF.4.1800.0930.C0010.0380.0000.0000.00.S18A1A02.01	18	18	93	38	Ch 0.10
*	**27150**	KSNF.4.2000.1050.C0015.0380.0000.0000.00.S20A1A02.01	20	20	105	38	Ch 0.15

Cutting Parameters

	Material	Slotting ap=0,5xØ Vc (m/min)	Shoulder Milling ae=0,5xØ ap=1xØ Vc (m/min)	Shoulder Milling ae=0,1xØ ap=1,5xØ Vc (m/min)
				
Steel	Unalloyed Steel	130-150	150-170	150-170
Steel	Steel	100-130	125-145	125-170
Steel	Tempered Steel	100-120	90-120	150-180
Steel	Cold Work Tool Steel	70-100	80-110	120-140
Steel	Hot Work Tool Steel	70-100	80-110	120-140
Stainless Steel	AISI 304 - 416 - 420	60-80	70-90	140-160
Stainless Steel	AISI 316 - 440	60-80	65-85	110-130
Stainless Steel	17-4 PH 15-5 PH	60-70	65-85	110-130
Stainless Steel	Chrome-Cobalt Alloy	50-70	60-80	70-90
Stainless Steel	Duplex F51	50-70	60-80	70-90
Stainless Steel	Super Duplex F55	50-70	60-80	80-100
Cast Iron	Gray Cast Iron	130-150	150-170	140-160
Cast Iron	Alloyed Cast Iron	120-140	140-160	180-220
Cast Iron	Precision Cast Iron	115-135	135-155	140-160
Titanium	Iron-Based Super Alloys	30-50	40-50	40-60
Titanium	Nickel-Based Super Alloys	30-50	40-50	40-60
Titanium	Titanium-Based Super Alloys	30-60	40-60	70-90

Feed Per Tooth (mm/tooth)

Ø	ap=0,5xØ	ae=0,5xØ ap=1xØ	ae=0,1xØ ap=1,5xØ
4	0,013-0,02	0,08-0,012	0,016-0,025
6	0,02-0,03	0,02-0,03	0,027-0,041
8	0,023-0,04	0,02-0,03	0,041-0,062
10	0,035-0,05	0,027-0,04	0,055-0,082
12	0,04-0,06	0,035-0,05	0,072-0,103
14	0,05-0,07	0,04-0,06	0,082-0,123
16	0,055-0,08	0,05-0,07	0,103-0,144
18	0,06-0,09	0,055-0,08	0,113-0,164
20	0,07-0,1	0,06-0,09	0,123-0,185

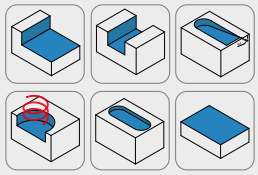
* Marked products can be delivered quickly from stock.

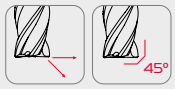
ECO+PLUS

KSNF

General Purpose Endmill

Z4





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

ECO+PLUS

KSUF Series

General Purpose Endmill

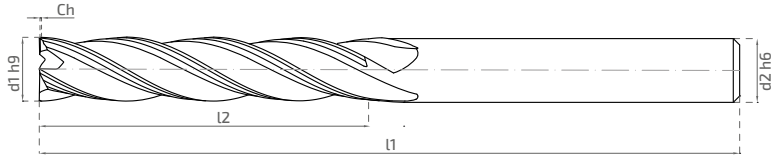
General Engineering | Mold&Die | Automotive

Finish | Rough

Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

Unrivalled To Machine Workpieces Till 55HRC Hardness In Price-Performance Ratio.

new product



ECO+PLUS

KSUF

General Purpose Endmill

S	Order No	Code	d1h9	d2h6	l1	l2	Corner
*	**28100**	KSUF.4.0150.0500.K0000.0090.0000.0000.00.S04A1A02.01	1,5	4	50	9	Ch 0.00
*	**28102**	KSUF.4.0200.0500.K0000.0120.0000.0000.00.S04A1A02.01	2	4	50	12	Ch 0.00
*	**28104**	KSUF.4.0300.0500.C0010.0150.0000.0000.00.S03A1A02.01	3	3	50	15	Ch 0.10
*	**28106**	KSUF.4.0300.0750.C0010.0150.0000.0000.00.S03A1A02.01	3	3	75	15	Ch 0.10
*	**28108**	KSUF.4.0400.0750.C0010.0200.0000.0000.00.S04A1A02.01	4	4	75	20	Ch 0.10
*	**28110**	KSUF.4.0400.1000.C0010.0250.0000.0000.00.S04A1A02.01	4	4	100	25	Ch 0.10
*	**28112**	KSUF.4.0500.0750.C0010.0200.0000.0000.00.S05A1A02.01	5	5	75	20	Ch 0.10
	28114	KSUF.4.0500.1000.C0010.0250.0000.0000.00.S05A1A02.01	5	5	100	25	Ch 0.10
*	**28116**	KSUF.4.0600.0750.C0010.0250.0000.0000.00.S06A1A02.01	6	6	75	25	Ch 0.10
*	**28118**	KSUF.4.0600.1000.C0010.0300.0000.0000.00.S06A1A02.01	6	6	100	30	Ch 0.10
*	**28120**	KSUF.4.0800.1000.C0010.0350.0000.0000.00.S08A1A02.01	8	8	100	35	Ch 0.10
*	**28122**	KSUF.4.1000.1100.C0010.0400.0000.0000.00.S10A1A02.01	10	10	110	40	Ch 0.10
*	**28124**	KSUF.4.1200.1100.C0015.0450.0000.0000.00.S12A2A02.01	12	12	110	45	Ch 0.15
*	**28126**	KSUF.4.1200.1500.C0015.0600.0000.0000.00.S12A2A02.01	12	12	150	60	Ch 0.15
	28128	KSUF.4.1400.1500.C0015.0600.0000.0000.00.S14A1A02.01	14	14	150	60	Ch 0.15
	28130	KSUF.4.1500.1000.C0010.0450.0000.0000.00.S16A1A02.01	15	16	100	45	Ch 0.10
	28132	KSUF.4.1600.1000.C0015.0450.0000.0000.00.S16A1A02.01	16	16	100	45	Ch 0.15
*	**28134**	KSUF.4.1600.1500.C0015.0750.0000.0000.00.S16A2A02.01	16	16	150	75	Ch 0.15
	28136	KSUF.4.1650.1500.C0015.0750.0000.0000.00.S18A1A02.01	16,5	18	150	75	Ch 0.15
	28138	KSUF.4.1700.1500.C0015.0750.0000.0000.00.S18A1A02.01	17	18	150	75	Ch 0.15
	28140	KSUF.4.1750.1500.C0015.0750.0000.0000.00.S18A1A02.01	17,5	18	150	75	Ch 0.15
	28142	KSUF.4.1800.1500.C0015.0750.0000.0000.00.S18A1A02.01	18	18	150	75	Ch 0.15
	28144	KSUF.4.1850.1500.C0015.0750.0000.0000.00.S20A1A02.01	18,5	20	150	75	Ch 0.15
*	**28146**	KSUF.4.2000.1500.C0015.0750.0000.0000.00.S20A1A02.01	20	20	150	75	Ch 0.15

Z4

Cutting Parameters

Material	Slotting ap=0.5 - 0.1Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.30 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
Steel — Unalloyed Steel	95-125	180-210	210-230
Steel — Steel	90-120	180-210	210-230
Steel — Tempered Steel	80-110	160-190	190-120
Steel — Cold Work Tool Steel	70-90	150-180	170-200
Steel — Hot Work Tool Steel	60-80	140-170	160-190
Cast Iron — Gray Cast Iron	100-130	250-280	280-330
Cast Iron — Alloyed Cast Iron	70-100	150-190	190-240
Cast Iron — Precision Cast Iron	60-90	130-160	160-210

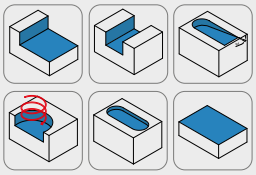
Feed Per Tooth (mm/tooth)

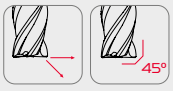
Ø	ap=0.05Ø	ae=0.10Ø	ae=0.30Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0.005	0.006	0.031	0.036	0.038	0.040
4	0.008	0.011	0.038	0.042	0.044	0.046
5	0.013	0.017	0.041	0.043	0.045	0.047
6	0.016	0.022	0.048	0.052	0.054	0.056
8	0.021	0.027	0.054	0.058	0.061	0.064
10	0.029	0.035	0.062	0.066	0.069	0.072
12	0.038	0.043	0.067	0.072	0.075	0.079
14	0.047	0.052	0.072	0.077	0.080	0.083
16	0.056	0.063	0.076	0.081	0.086	0.090
18	0.068	0.073	0.079	0.085	0.089	0.095
20	0.078	0.084	0.084	0.092	0.097	0.098

≤55 HRc

+TiSiN

FORM HA DIN 6535





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

KRSF Series

General Purpose Corner Radius Endmill

General Engineering | Mold&Die | Automotive

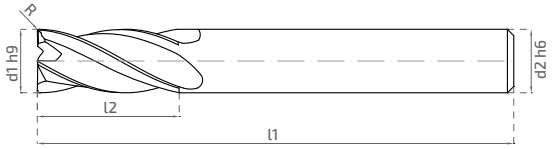
Finish | Rough

Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

Unrivalled To Machine Workpieces Till 55HRC Hardness In Price-Performance Ratio.

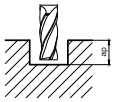
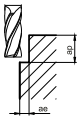
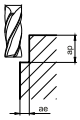
new product

Available from stock in all sizes %100



S	Order No	Code	d1h9	d2h6	l1	l2	Corner
	31100	KRSF.4.0150.0500.R0020.0030.0000.0000.00.S04B1A04.01	1,5	4	50	3	R 0.20
	31102	KRSF.4.0150.0500.R0030.0030.0000.0000.00.S04B1A04.01	1,5	4	50	3	R 0.30
	31104	KRSF.4.0150.0500.R0050.0030.0000.0000.00.S04B1A04.01	1,5	4	50	3	R 0.50
	31106	KRSF.4.0200.0500.R0020.0040.0000.0000.00.S04B1A04.01	2	4	50	4	R 0.20
	31108	KRSF.4.0200.0500.R0050.0040.0000.0000.00.S04B1A04.01	2	4	50	4	R 0.50
*	**31110**	KRSF.4.0300.0500.R0050.0060.0000.0000.00.S03B1A02.01	3	3	50	6	R 0.50
	31112	KRSF.4.0300.0500.R0020.0060.0000.0000.00.S04B1A02.01	3	4	50	6	R 0.20
*	**31114**	KRSF.4.0300.0500.R0100.0060.0000.0000.00.S03B1A02.01	3	3	50	6	R 1.00
	31116	KRSF.4.0400.0500.R0020.0080.0000.0000.00.S04B1A02.01	4	4	50	8	R 0.20
*	**31118**	KRSF.4.0400.0500.R0050.0080.0000.0000.00.S04B1A02.01	4	4	50	8	R 0.50
*	**31120**	KRSF.4.0400.0500.R0100.0080.0000.0000.00.S04B1A02.01	4	4	50	8	R 1.00
*	**31122**	KRSF.4.0500.0510.R0050.0110.0000.0000.00.S05B1A02.01	5	5	51	11	R 0.50
*	**31124**	KRSF.4.0500.0510.R0100.0110.0000.0000.00.S05B1A02.01	5	5	51	11	R 1.00
	31126	KRSF.4.0600.0580.R0020.0120.0000.0000.00.S06B1A02.01	6	6	58	12	R 0.20
*	**31128**	KRSF.4.0600.0580.R0050.0120.0000.0000.00.S06B1A02.01	6	6	58	12	R 0.50
*	**31130**	KRSF.4.0600.0580.R0100.0120.0000.0000.00.S06B1A02.01	6	6	58	12	R 1.00
*	**31132**	KRSF.4.0800.0640.R0050.0200.0000.0000.00.S08B1A02.01	8	8	64	20	R 0.50
*	**31134**	KRSF.4.0800.0640.R0100.0200.0000.0000.00.S08B1A02.01	8	8	64	20	R 1.00
*	**31136**	KRSF.4.1000.0730.R0050.0210.0000.0000.00.S10B1A02.01	10	10	73	21	R 0.50
*	**31138**	KRSF.4.1000.0730.R0100.0210.0000.0000.00.S10B1A02.01	10	10	73	21	R 1.00
*	**31140**	KRSF.4.1200.0820.R0050.0250.0000.0000.00.S12B1A02.01	12	12	82	25	R 0.50
*	**31142**	KRSF.4.1200.0820.R0100.0250.0000.0000.00.S12B1A02.01	12	12	82	25	R 1.00
*	**31144**	KRSF.4.0200.0500.R0050.0040.0000.0000.00.S04B1A04.02	2	4	50	4	R 0.5

Cutting Parameters

Material	Slotting ap=0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.30 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
			
Steel — Unalloyed Steel	95-125	150-180	180-210
Steel — Steel	90-120	140-170	170-200
Steel — Tempered Steel	80-110	130-160	160-190
Steel — Cold Work Tool Steel	70-90	120-150	150-180
Steel — Hot Work Tool Steel	60-80	120-150	150-180
Stainless Steel — AISI 304 - 416 - 420	70-90	80-110	110-150
Stainless Steel — AISI 316 - 440	65-85	70-100	100-130
Stainless Steel — 17-4 PH 15-5 PH	60-80	70-100	100-130
Stainless Steel — Chrome-Cobalt Alloy	50-70	60-90	90-120
Cast Iron — Gray Cast Iron	100-130	250-280	280-330
Cast Iron — Alloyed Cast Iron	70-100	150-190	190-240
Cast Iron — Precision Cast Iron	60-90	130-160	160-210

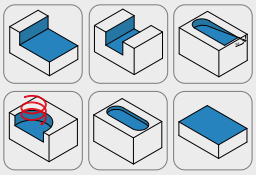
Feed Per Tooth (mm/tooth)

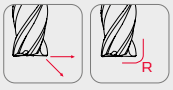
Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø
3	0.007	0.032	0.037	0.039	0.041
4	0.012	0.039	0.043	0.045	0.047
5	0.018	0.042	0.044	0.046	0.048
6	0.023	0.049	0.053	0.055	0.057
8	0.028	0.056	0.060	0.063	0.066
10	0.036	0.064	0.068	0.071	0.074
12	0.045	0.069	0.074	0.077	0.080

KRSF

General Purpose
Corner Radius
Endmill

Z4





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO+PLUS

KRUF Series

General Purpose Corner Radius Endmill

General Engineering | Mold&Die | Automotive

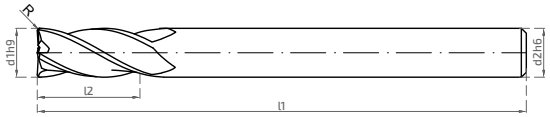
Finish | Rough

Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

Unrivalled To Machine Workpieces Till 55HRC Hardness In Price-Performance Ratio.

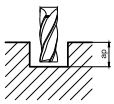
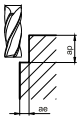
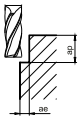
new product

Available from stock in all sizes %100



S	Order No	Code	d1h9	d2h6	l1	l2	Corner
*	**32100**	KRUF.4.0300.0750.R0050.0060.0000.0000.00.S03B1A02.01	3	3	75	6	R 0.50
*	**32102**	KRUF.4.0300.0750.R0100.0060.0000.0000.00.S03B1A02.01	3	3	75	6	R 1.00
*	**32104**	KRUF.4.0400.0750.R0050.0080.0000.0000.00.S04B1A02.01	4	4	75	8	R 0.50
*	**32106**	KRUF.4.0400.0750.R0100.0080.0000.0000.00.S04B1A02.01	4	4	75	8	R 1.00
*	**32108**	KRUF.4.0500.0750.R0050.0110.0000.0000.00.S05B1A02.01	5	5	75	11	R 0.50
*	**32110**	KRUF.4.0500.0750.R0100.0110.0000.0000.00.S05B1A02.01	5	5	75	11	R 1.00
*	**32112**	KRUF.4.0600.0750.R0050.0120.0000.0000.00.S06B1A02.01	6	6	75	12	R 0.50
*	**32114**	KRUF.4.0600.0750.R0100.0120.0000.0000.00.S06B1A02.01	6	6	75	12	R 1.00
*	**32116**	KRUF.4.0600.1000.R0050.0120.0000.0000.00.S06B1A02.01	6	6	100	12	R 0.50
*	**32118**	KRUF.4.0600.1000.R0100.0120.0000.0000.00.S06B1A02.01	6	6	100	12	R 1.00
*	**32120**	KRUF.4.0800.1000.R0050.0200.0000.0000.00.S08B1A02.01	8	8	100	20	R 0.50
*	**32122**	KRUF.4.0800.1000.R0100.0200.0000.0000.00.S08B1A02.01	8	8	100	20	R 1.00
	32124	KRUF.4.0800.1500.R0050.0200.0000.0000.00.S08B1A02.01	8	8	150	20	R 0.50
*	**32126**	KRUF.4.1000.1000.R0050.0210.0000.0000.00.S10B1A02.01	10	10	100	21	R 0.50
*	**32128**	KRUF.4.1000.1000.R0100.0210.0000.0000.00.S10B1A02.01	10	10	100	21	R 1.00
*	**32130**	KRUF.4.1200.1000.R0050.0250.0000.0000.00.S12B1A02.01	12	12	100	25	R 0.50
*	**32132**	KRUF.4.1200.1000.R0100.0250.0000.0000.00.S12B1A02.01	12	12	100	25	R 1.00

Cutting Parameters

	Material	Slotting ap=0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.30 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
				
Steel	Unalloyed Steel	95-125	150-180	180-210
Steel	Steel	90-120	140-170	170-200
Steel	Tempered Steel	80-110	130-160	160-190
Steel	Cold Work Tool Steel	70-90	120-150	150-180
Steel	Hot Work Tool Steel	60-80	120-150	150-180
Stainless Steel	AISI 304 - 416 - 420	70-90	80-110	110-150
Stainless Steel	AISI 316 - 440	65-85	70-100	100-130
Stainless Steel	17-4 PH 15-5 PH	60-80	70-100	100-130
Stainless Steel	Chrome-Cobalt Alloy	50-70	60-90	90-120
Cast Iron	Gray Cast Iron	100-130	250-280	280-330
Cast Iron	Alloyed Cast Iron	70-100	150-190	190-240
Cast Iron	Precision Cast Iron	60-90	130-160	160-210

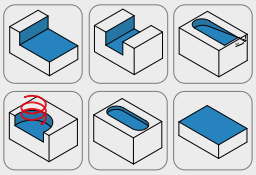
Feed Per Tooth (mm/tooth)

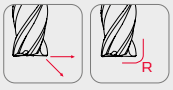
Ø	ap=1.5Ø	ap=1Ø	ap=0.5Ø	ae=0.35Ø	ae=0.30Ø
3	0.007	0.032	0.037	0.039	0.041
4	0.012	0.039	0.043	0.045	0.047
5	0.018	0.042	0.044	0.046	0.048
6	0.023	0.049	0.053	0.055	0.057
8	0.028	0.056	0.060	0.063	0.066
10	0.036	0.064	0.068	0.071	0.074
12	0.045	0.069	0.074	0.077	0.080

KRUF

General Purpose
Corner Radius
Endmill

Z4





Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

KSKF Z4 Series

Ball Nose Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

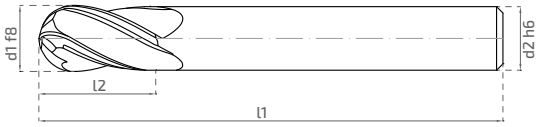
Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

Unrivalled To Machine Workpieces Till 48HRC Hardness In Price-Performance Ratio

new product

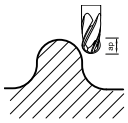
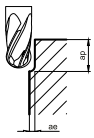
48 HRC
High Performance

Available from stock in all sizes **%100**



S	Order No	Code	d1f8	d2h6	l1	l2
*	**29100**	KSKF.4.0300.0390.R0150.0120.0000.0000.00.S03B1A03.01	3	3	39	12
*	**29102**	KSKF.4.0400.0500.R0200.0140.0000.0000.00.S04B1A01.01	4	4	50	14
*	**29104**	KSKF.4.0500.0510.R0250.0200.0000.0000.00.S05B1A01.01	5	5	51	20
*	**29106**	KSKF.4.0600.0580.R0300.0200.0000.0000.00.S06B1A01.01	6	6	58	20
*	**29108**	KSKF.4.0800.0640.R0400.0200.0000.0000.00.S08B1A01.01	8	8	64	20
*	**29110**	KSKF.4.1000.0730.R0500.0250.0000.0000.00.S10B1A01.01	10	10	73	25
*	**29112**	KSKF.4.1200.0820.R0600.0250.0000.0000.00.S12B1A01.01	12	12	82	25
*	**29114**	KSKF.4.1600.0930.R0800.0320.0000.0000.00.S16B1A01.01	16	16	93	32
*	**29116**	KSKF.4.1600.0930.R0800.0320.0000.0000.00.S16B1A01.02	16	16	93	32

Cutting Parameters

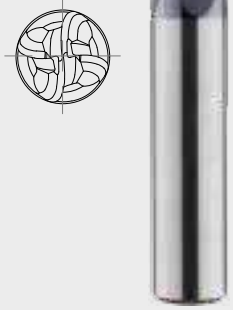
	Material	Shoulder Milling ap=0.1Ø / ae=0.030 - 0.020Ø Vc (m/min)	Finish Milling ap=0.1Ø / ae=0.02 - 0.01Ø Vc (m/min)
			
Steel	Unalloyed Steel	200-230	230-260
Steel	Steel	200-230	230-260
Steel	Tempered Steel	180-210	200-230
Steel	Cold Work Tool Steel	150-180	180-210
Steel	Hot Work Tool Steel	140-170	170-200
Stainless Steel	AISI 304 - 416 - 420	90-120	120-150
Stainless Steel	AISI 316 - 440	80-110	110-140
Stainless Steel	17-4 PH 15-5 PH	80-110	110-140
Stainless Steel	Chrome-Cobalt Alloy	70-100	100-130
Cast Iron	Gray Cast Iron	280-310	310-350
Cast Iron	Alloyed Cast Iron	180-210	210-250
Cast Iron	Precision Cast Iron	150-180	180-210

Feed Per Tooth (mm/tooth)

Ø	ae=0.03Ø	ae=0.02Ø	ae=0.015Ø	ae=0.01Ø
3	0.027	0.031	0.037	0.040
4	0.031	0.037	0.041	0.045
5	0.032	0.037	0.042	0.046
6	0.041	0.046	0.052	0.057
8	0.048	0.052	0.061	0.066
10	0.053	0.057	0.066	0.072
12	0.058	0.064	0.072	0.079

KSKF
Z4 Ball Nose Endmill

Z4



	Steel	●
	Stainless Steel	◑
	Hardened Steel ≤54 HRc	◑
	Hardened Steel >54 HRc	○
	Cast Iron	●
	Graphite	○
	Non Ferrous Material	○
	HRSA	○
	Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

KSKF Z2 Series

Ball Nose Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

Unrivalled To Machine Workpieces Till 55HRC Hardness In Price-Performance Ratio.

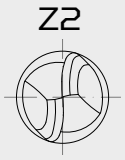
new *product*

Up to %40 longer tool life thanks to it's new geometry and developed coating

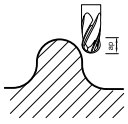
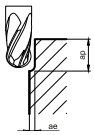
Available from stock in all sizes %100

KSKF Z2 Ball Nose Endmill

S	Order No	Code	d1h9	d2h6	l1	l2
*	**30100**	KSKF.2.0100.0500.R0050.0020.0000.0000.00.S04B1A01.01	1	4	50	2
	30102	KSKF.2.0150.0500.R0075.0040.0000.0000.00.S04B1A01.01	1,5	4	50	4
*	**30104**	KSKF.2.0150.0500.R0075.0030.0000.0000.00.S04B1A01.01	1,5	4	50	3
	30106	KSKF.2.0200.0400.R0100.0050.0000.0000.00.S02F1A01.01	2	2	40	5
	30108	KSKF.2.0200.0500.R0100.0050.0000.0000.00.S04B1A01.01	2	4	50	5
*	**30110**	KSKF.2.0200.0500.R0100.0040.0000.0000.00.S04B1A01.01	2	4	50	4
*	**30112**	KSKF.2.0250.0500.R0125.0050.0000.0000.00.S04B1A01.01	2,5	4	50	5
*	**30114**	KSKF.2.0300.0500.R0150.0080.0000.0000.00.S04B1A01.01	3	4	50	8
*	**30116**	KSKF.2.0400.0500.R0200.0080.0000.0000.00.S04B1A01.01	4	4	50	8
*	**30118**	KSKF.2.0500.0510.R0250.0100.0000.0000.00.S05B1A01.01	5	5	51	10
*	**30120**	KSKF.2.0600.0580.R0300.0120.0000.0000.00.S06B1A01.01	6	6	58	12
*	**30122**	KSKF.2.0800.0640.R0400.0140.0000.0000.00.S08B1A01.01	8	8	64	14
*	**30124**	KSKF.2.1000.0730.R0500.0180.0000.0000.00.S10B1A01.01	10	10	73	18
*	**30126**	KSKF.2.1200.0820.R0600.0220.0000.0000.00.S12B1A01.01	12	12	82	22
	30128	KSKF.2.1600.0930.R0800.0320.0000.0000.00.S16B1A01.01	16	16	93	32
	30130	KSKF.2.1800.0930.R0900.0300.0000.0000.00.S18B1A01.01	18	18	93	30
	30132	KSKF.2.2000.1050.R1000.0350.0000.0000.00.S20B1A01.01	20	20	105	35



Cutting Parameters

	Material	Shoulder Milling ap=0,1Ø / ae=0,03-0,02Ø Vc (m/min)	Finish Milling ap=0,1Ø / ae=0,02-0,01Ø Vc (m/min)
			
Steel	Unalloyed Steel	200-230	230-260
Steel	Steel	200-230	230-260
Steel	Tempered Steel	180-210	200-230
Steel	Cold Work Tool Steel	150-180	180-210
Steel	Hot Work Tool Steel	140-170	170-200
Stainless Steel	AISI 304 - 416 - 420	90-120	120-150
Stainless Steel	AISI 316 - 440	80-110	110-140
Stainless Steel	17-4 PH 15-5 PH	80-110	110-140
Stainless Steel	Chrome-Cobalt Alloy	70-100	100-130
Cast Iron	Gray Cast Iron	280-310	310-350
Cast Iron	Alloyed Cast Iron	180-210	210-250
Cast Iron	Precision Cast Iron	150-180	180-210

Feed Per Tooth (mm/tooth)

Ø	ae=0.03Ø	ae=0.02Ø	ae=0.015Ø
3	0,020	0,023	0,027
4	0,023	0,027	0,030
5	0,024	0,027	0,030
6	0,030	0,035	0,040
8	0,036	0,040	0,045
10	0,040	0,042	0,050
12	0,045	0,048	0,055

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

KKUF Z4 Series

Ball Nose Endmill

General Engineering | Mold&Die | Automotive

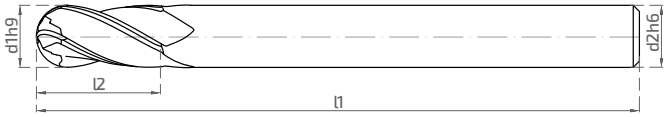
Finish | Rough

Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

Unrivalled To Machine Workpieces Till 48HRC Hardness In Price-Performance Ratio

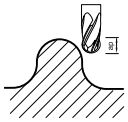
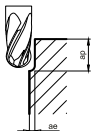
new product

Available from stock in all sizes %100



S	Order No	Code	d1h9	d2h6	l1	l2
*	**38100**	KKUF.4.0300.0750.R0150.0080.0000.0000.00.S03B1A01.01	3	3	75	8
*	**38102**	KKUF.4.0400.0750.R0200.0100.0000.0000.00.S04B1A01.01	4	4	75	10
*	**38104**	KKUF.4.0500.0750.R0250.0100.0000.0000.00.S05B1A01.01	5	5	75	10
*	**38106**	KKUF.4.0600.0750.R0300.0100.0000.0000.00.S06B1A01.01	6	6	75	10
*	**38108**	KKUF.4.0600.1000.R0300.0150.0000.0000.00.S06B1A01.01	6	6	100	15
*	**38110**	KKUF.4.0800.0750.R0400.0100.0000.0000.00.S08B1A01.01	8	8	75	10
*	**38112**	KKUF.4.0800.1000.R0400.0150.0000.0000.00.S08B1A01.01	8	8	100	15
*	**38114**	KKUF.4.1000.1100.R0500.0200.0000.0000.00.S10B1A01.01	10	10	110	20
*	**38116**	KKUF.4.1200.1100.R0600.0200.0000.0000.00.S12B1A01.01	12	12	110	20

Cutting Parameters

	Material	Shoulder Milling ap=0.1Ø / ae=0.03 - 0.02Ø Vc (m/min)	Finish Milling ap=0.1Ø / ae=0.02 - 0.01Ø Vc (m/min)
			
Steel	Unalloyed Steel	200-230	230-260
Steel	Steel	200-230	230-260
Steel	Tempered Steel	170-200	200-230
Steel	Cold Work Tool Steel	150-180	180-210
Steel	Hot Work Tool Steel	140-170	170-20 0
Stainless Steel	AISI 304 - 416 - 420	90-120	120-150
Stainless Steel	AISI 316 - 440	80-110	110-140
Stainless Steel	17-4 PH 15-5 PH	80-110	110-140
Stainless Steel	Chrome-Cobalt Alloy	70-100	100-130
Cast Iron	Gray Cast Iron	280-310	310-350
Cast Iron	Alloyed Cast Iron	180-210	210-250
Cast Iron	Precision Cast Iron	150-180	180-210

Feed Per Tooth (mm/tooth)

Ø	ae=0.03Ø	ae=0.02Ø	ae=0.015Ø	ae=0.01Ø
3	0.027	0.031	0.037	0.040
4	0.031	0.037	0.041	0.045
5	0.032	0.037	0.042	0.046
6	0.041	0.046	0.052	0.057
8	0.048	0.052	0.061	0.066
10	0.053	0.057	0.066	0.072
12	0.058	0.064	0.072	0.079

KKUF Z4 Ball Nose Endmill

Z4

≤48 HRc + AlCrN

FORM HA DIN 6535

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

KKUF Z2 Series

Ball Nose Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

Brand-New Original Geometry, Unique Edge-Preparation And Advanced Coating Technology

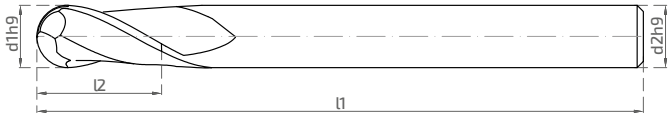
Unrivalled To Machine Workpieces Till 55HRC Hardness In Price-Performance Ratio.

new product

Up to %40 longer tool life thanks to it's new geometry and developed coating

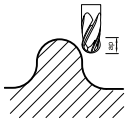
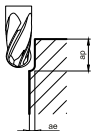
Available from stock in all sizes %100

KKUF Z2 Ball Nose Endmill



S	Order No	Code	d1h9	d2h6	l1	l2
*	**33100**	KKUF.2.0300.0750.R0150.0080.0000.0000.00.S03B1A04.01	3	3	75	8
*	**33102**	KKUF.2.0400.0750.R0200.0100.0000.0000.00.S04B1A02.01	4	4	75	10
	33104	KKUF.2.0400.1000.R0200.0100.0000.0000.00.S04B1A02.01	4	4	100	10
*	**33106**	KKUF.2.0500.0750.R0250.0100.0000.0000.00.S05B1A02.01	5	5	75	10
	33108	KKUF.2.0500.1000.R0250.0100.0000.0000.00.S05B1A02.01	5	5	100	10
*	**33110**	KKUF.2.0600.0750.R0300.0100.0000.0000.00.S06B1A02.01	6	6	75	10
*	**33112**	KKUF.2.0600.1100.R0300.0150.0000.0000.00.S06B1A02.01	6	6	110	15
	33114	KKUF.2.0800.0750.R0400.0100.0000.0000.00.S08B1A02.01	8	8	75	10
*	**33116**	KKUF.2.0800.1000.R0400.0150.0000.0000.00.S08B1A02.01	8	8	100	15
*	**33118**	KKUF.2.1000.1100.R0500.0200.0000.0000.00.S10B1A02.01	10	10	110	20
*	**33120**	KKUF.2.1200.1100.R0600.0220.0000.0000.00.S12B1A02.01	12	12	110	22

Cutting Parameters

	Material	Profile Milling ap=0,1Ø / ae=0,03-0,02Ø Vc (m/min)	Finish Milling ap=0,1Ø / ae=0,02-0,01Ø Vc (m/min)
			
Steel	Unalloyed Steel	200-230	230-260
Steel	Steel	200-230	230-260
Steel	Tempered Steel	180-210	200-230
Steel	Cold Work Tool Steel	150-180	180-210
Steel	Hot Work Tool Steel	140-170	170-200
Stainless Steel	AISI 304 - 416 - 420	90-120	120-150
Stainless Steel	AISI 316 - 440	80-110	110-140
Stainless Steel	17-4 PH 15-5 PH	80-110	110-140
Stainless Steel	Chrome-Cobalt Alloy	70-100	100-130
Cast Iron	Gray Cast Iron	280-310	310-350
Cast Iron	Alloyed Cast Iron	180-210	210-250
Cast Iron	Precision Cast Iron	150-180	180-210

Feed Per Tooth (mm/tooth)

Ø	ae=0.03Ø	ae=0.02Ø	ae=0.015Ø
3	0,020	0,023	0,027
4	0,023	0,027	0,030
5	0,024	0,027	0,030
6	0,030	0,035	0,040
8	0,036	0,040	0,045
10	0,040	0,042	0,050
12	0,045	0,048	0,055

Z2

≤55 HRc | +TiSiN

FORM HA DIN 6535

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO+PLUS

KKSF Series

Tapered Endmill

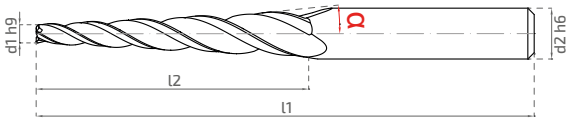
General Engineering | Mold&Die | Automotive

Finish | Rough

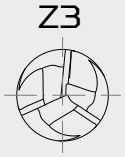
Designed For Aluminium Mold Makers , Became The Favourite Of Export.

Reinforced corner radiuses ensure an expanded tool life up to %30

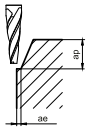
KKSF
Tapered Endmill



S	Order No	Code	d1h9	d2h6	l1	l2	α	Corner
	68100	KKSF.3.0200.0640.R0010.0350.0000.0010.00.S06A1A02.01	2	6	64	35	1	R 0.10
	68102	KKSF.3.0250.0750.R0010.0300.0000.0010.00.S04A1A02.01	2,5	4	75	30	1	R 0.10
	68104	KKSF.3.0250.0640.R0010.0300.0000.0010.00.S06A1A02.01	2,5	6	64	30	1	R 0.10
	68106	KKSF.3.0300.0640.R0010.0300.0000.0010.00.S06A1A02.01	3	6	64	30	1	R 0.10
	68108	KKSF.3.0300.0800.R0010.0400.0000.0010.00.S06A1A02.01	3	6	80	40	1	R 0.10
	68110	KKSF.3.0300.0800.R0010.0400.0000.0010.00.S08A1A02.01	3	8	80	40	1	R 0.10
	68112	KKSF.3.0200.0750.R0010.0350.0000.0015.00.S04A1A02.01	2	4	75	35	1,5	R 0.10
	68114	KKSF.3.0250.0640.R0010.0300.0000.0015.00.S06A1A02.01	2,5	6	64	30	1,5	R 0.10
	68116	KKSF.3.0250.0800.R0010.0400.0000.0015.00.S08A1A02.01	2,5	8	80	40	1,5	R 0.10
	68118	KKSF.3.0300.1100.R0010.0400.0000.0015.00.S06A1A02.01	3	6	110	40	1,5	R 0.10
	68120	KKSF.3.0200.0640.R0010.0300.0000.0020.00.S06A1A02.01	2	6	64	30	2	R 0.10
	68122	KKSF.3.0250.0640.R0010.0600.0000.0020.00.S06A1A02.01	2,5	6	64	60	2	R 0.10
	68124	KKSF.3.0300.0800.R0010.0400.0000.0020.00.S06A1A02.01	3	6	80	40	2	R 0.10
	68126	KKSF.3.0300.1100.R0010.0600.0000.0020.00.S08A1A02.01	3	8	110	60	2	R 0.10
	68128	KKSF.3.0200.0800.R0010.0500.0000.0023.00.S06A1A02.01	2	6	80	50	2,3	R 0.10
	68130	KKSF.3.0200.0750.R0010.0280.0000.0025.00.S06A1A02.01	2	6	75	28	2,5	R 0.10
	68132	KKSF.3.0250.0750.R0010.0280.0000.0025.00.S06A1A02.01	2,5	6	75	28	2,5	R 0.10
	68134	KKSF.3.0300.0750.R0010.0280.0000.0025.00.S06A1A02.01	3	6	75	28	2,5	R 0.10
	68136	KKSF.3.0280.0750.R0010.0320.0000.0028.00.S06A1A02.01	2,8	6	75	32	2,8	R 0.10
	68138	KKSF.3.0200.0640.R0010.0300.0000.0030.00.S06A1A02.01	2	6	64	30	3	R 0.10
	68140	KKSF.3.0200.0800.R0010.0400.0000.0030.00.S08A1A02.01	2	8	80	40	3	R 0.10
	68142	KKSF.3.0250.0640.R0010.0300.0000.0030.00.S06A1A02.01	2,5	6	64	30	3	R 0.10
	68144	KKSF.3.0250.0800.R0010.0400.0000.0030.00.S08A1A02.01	2,5	8	80	40	3	R 0.10
	68146	KKSF.3.0250.1000.R0010.0400.0000.0030.00.S08A1A02.01	2,5	8	100	40	3	R 0.10
	68148	KKSF.3.0300.0640.R0010.0280.0000.0030.00.S06A1A02.01	3	6	64	28	3	R 0.10
	68150	KKSF.3.0300.0800.R0010.0400.0000.0030.00.S08A1A02.01	3	8	80	40	3	R 0.10
	68152	KKSF.3.0300.1000.R0010.0480.0000.0030.00.S08A1A02.01	3	8	100	48	3	R 0.10



Cutting Parameters	
Material	Shoulder Milling ap=0.10 / ae=0.30 - 0.200 Vc (m/min)



Steel	Unalloyed Steel	100-130
	Steel	100-130
	Tempered Steel	90-120
	Cold Work Tool Steel	80-110
	Hot Work Tool Steel	70-100
Stainless Steel	AISI 304 - 416 - 420	50-80
	AISI 316 - 440	30-60
	17-4 PH 15-5 PH	30-60
	Duplex F51	25-40
Non Ferrous Cast Iron	Gray Cast Iron	100-130
Material	Copper Alloys	100-130
HRSA	HRSA Hastelloy	10--20
	HRSA inconel 625	10--20
	HRSA inconel 718	10--20
	HRSA Nimonic	10--20
Titanium	Titanium	20-30
	Titanium Alloys	20-30

Feed Per Tooth (mm/tooth)		
Ø	ae=0.15Ø	ae=0.10Ø
2	0.005	0.005
2,5	0.006	0.006
3	0.008	0.008
4	0.012	0.012

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	◑
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

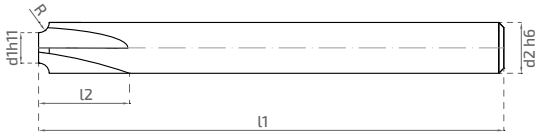
ECO PLUS

MCV Series

Edge Preparation

General Engineering | Mold&Die | Automotive

Finish | Rough



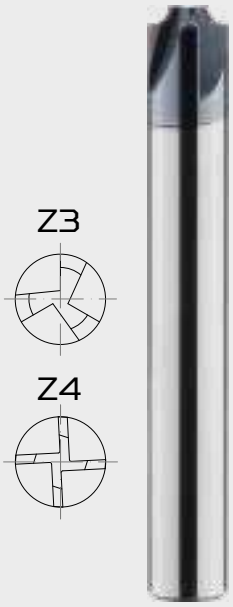
S	Order No	Code	d1h11	d2h6	l1	l2	Corner	Z
	42100	MCV.3.0450.0580.R0050.0070.0000.0000.00.S06A1A01.01	4,5	6	58	7	R 0.50	3
	42102	MCV.3.0450.0580.R0075.0070.0000.0000.00.S06A1A01.01	4,5	6	58	7	R 0.75	3
	42104	MCV.4.0600.0640.R0100.0100.0000.0000.00.S08A1A01.01	6	8	64	10	R 1.00	4
	42106	MCV.4.0500.0640.R0150.0100.0000.0000.00.S08A1A01.01	5	8	64	10	R 1.50	4
	42108	MCV.4.0550.0730.R0200.0120.0000.0000.00.S10A1A01.01	5,5	10	73	12	R 2.00	4
	42110	MCV.4.0350.0730.R0250.0120.0000.0000.00.S10A1A01.01	3,5	10	73	12	R 2.50	4
	42112	MCV.4.0350.0820.R0300.0140.0000.0000.00.S12A1A01.01	3,5	12	82	14	R 3.00	4
	42114	MCV.4.0550.0830.R0400.0160.0000.0000.00.S14A1A01.01	5,5	14	83	16	R 4.00	4
	42116	MCV.4.0600.0930.R0500.0200.0000.0000.00.S16A1A01.01	6	16	93	20	R 5.00	4
	42118	MCV.4.0800.1050.R0600.0200.0000.0000.00.S20A1A01.01	8	20	105	20	R 6.00	4

Cutting Parameters

	Material	Quarter Circle Vc (m/min)
Steel	Unalloyed Steel	280-320
	Steel	220-250
	Tempered Steel	190-220
	Cold Work Tool Steel	100-130
	Hot Work Tool Steel	100-130
Stainless Steel	AISI 304 - 416 - 420	80-110
	AISI 316 - 440	80-110
	17-4 PH 15-5 PH	60-90
	Chrome-Cobalt Alloy	60-90
	Duplex F51	50-70
	Super Duplex F55	50-70
Cast Iron	Gray Cast Iron	200-240
	Alloyed Cast Iron	200-240
	Precision Cast Iron	180-215
Non Ferrous Material	Aluminum Alloys	230-370
	Copper Alloys	650-680
Titanium	Iron-Based Super Alloys	40-50
	Nickel-Based Super Alloys	40-50
	Titanium-Based Super Alloys	70-90

Feed Per Tooth (mm/tooth)

Ø	ae=0,1xØ ap=0,1xØ
4	0,05-0,11
6	0,06-0,15
8	0,08-0,2
10	0,1-0,26
12	0,1-0,26
14	0,1-0,26
16	0,12-0,26
20	0,16-0,44



Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	◑
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

MCX Series
Chamfering Endmill

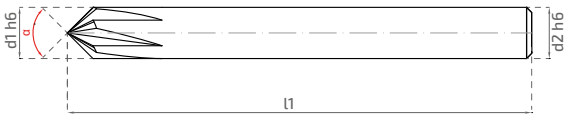
General Engineering | Mold&Die | Automotive

Finish | Rough

Available from stock in all sizes

%100

MCX
Chamfering Endmill



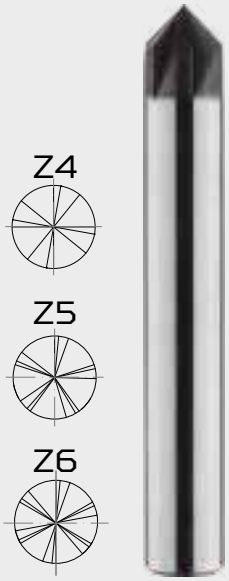
S	Order No	Code	d1h6	d2h6	l1	l2	α	Z
*	**39100**	MCX.4.0400.0500.A090.0100.0000.0000.00.S04A1A01.01	4	4	50	10	90	4
*	**39102**	MCX.4.0600.0580.A090.0120.0000.0000.00.S06A1A01.01	6	6	58	12	90	4
*	**39104**	MCX.5.0800.0640.A090.0150.0000.0000.00.S08A1A01.01	8	8	64	15	90	5
*	**39106**	MCX.6.1000.0730.A090.0140.0000.0000.00.S10A1A01.01	10	10	73	14	90	6
*	**39108**	MCX.6.1200.0820.A090.0140.0000.0000.00.S12A1A01.01	12	12	82	14	90	6

Cutting Parameters

	Material	Quarter Circle Vc (m/min)
Steel	Unalloyed Steel	280-320
	Steel	220-250
	Tempered Steel	190-220
	Cold Work Tool Steel	100-130
	Hot Work Tool Steel	100-130
Stainless Steel	AISI 304 - 416 - 420	80-110
	AISI 316 - 440	80-110
	17-4 PH 15-5 PH	60-90
	Chrome-Cobalt Alloy	60-90
	Duplex F51	50-70
	Super Duplex F55	50-70
Cast Iron	Gray Cast Iron	200-240
	Alloyed Cast Iron	200-240
	Precision Cast Iron	180-215
Non Ferrous Material	Aluminum Alloys	230-370
	Copper Alloys	650-680
Titanium Material	Iron-Based Super Alloys	40-50
	Nickel-Based Super Alloys	40-50
	Titanium-Based Super Alloys	70-90

Feed Per Tooth (mm/tooth)

Ø	ae=0,1xØ ap=0,1xØ
4	0,05-0,11
6	0,06-0,15
8	0,08-0,2
10	0,1-0,26
12	0,1-0,26
14	0,1-0,26
16	0,12-0,26
20	0,16-0,44



≤48 HRc
+TiAlN
FORM HA DIN 6535

α 90°

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

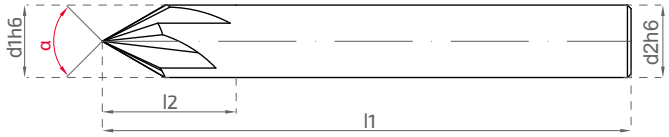
MCY Series

Chamfering Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

MCY
Chamfering Endmill



S	Order No	Code	d1h6	d2h6	l1	l2	α	Z
*	**40100**	MCY.4.0400.0500.A060.0100.0000.0000.00.S04A1A01.01	4	4	50	10	60	4
*	**40102**	MCY.4.0600.0580.A060.0150.0000.0000.00.S06A1A01.01	6	6	58	15	60	4
*	**40104**	MCY.5.0800.0640.A060.0150.0000.0000.00.S08A1A01.01	8	8	64	15	60	5
*	**40106**	MCY.6.1000.0730.A060.0180.0000.0000.00.S10A1A01.01	10	10	73	18	60	6
*	**40108**	MCY.6.1200.0820.A060.0210.0000.0000.00.S12A1A01.01	12	12	82	21	60	6

Cutting Parameters

	Material	Quarter Circle Vc (m/min)
Steel	Unalloyed Steel	120-150
	Steel	120-150
	Tempered Steel	110-140
	Cold Work Tool Steel	90-120
	Hot Work Tool Steel	80-110
Stainless Steel	AISI 304 - 416 - 420	60-90
	AISI 316 - 440	40-70
	17-4 PH 15-5 PH	40-70
	Chrome-Cobalt alloy	35-65
	Duplex F51	35-65
	Super Duplex F55	30-40
Cast Iron	HRSA Hastelloy	40-70
	HRSA Incoinel 625	40-70
	HRSA Incoinel 718	40-70
Non Ferrous Material	HRSA Nimonic	40-70
	Titanium	50-80
Titanium	Titanium alloys	50-80
	≤ 54 HRC	70-100
	>54 HRC	50-80

Feed Per Tooth (mm/tooth)

Ø	ae=0.1xØ ap=0.1xØ
4	0.05-0.11
6	0.06-015
8	0.08-0.2
10	0.1-0.26
12	0.1-0.26

≤48 HRc
+TiAlN
FORM HA DIN 6535

α 60°

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

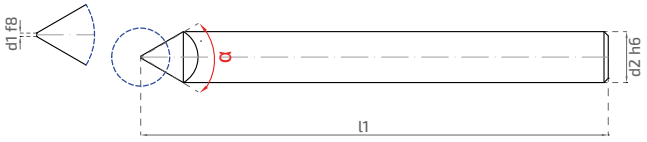
ECO+PLUS

KPAN Series

Engraving Pen

General Engineering | Mold&Die | Automotive

KPAN
Engraving Pen



S	Order No	Code	d1f8	d2h6	l1	α
	43100	KPAN.1.0010.0390.A015.0000.0000.0000.00.S03A1Y01.01	0,1	3	39	15
	43102	KPAN.1.0020.0390.A015.0000.0000.0000.00.S03A1Y01.01	0,2	3	39	15
	43104	KPAN.1.0030.0390.A030.0000.0000.0000.00.S03A1Y01.01	0,3	3	39	30
	43106	KPAN.1.0050.0390.A015.0000.0000.0000.00.S03A1Y01.01	0,5	3	39	15
	43108	KPAN.1.0070.0390.A015.0000.0000.0000.00.S03A1Y01.01	0,7	3	39	15
	43110	KPAN.1.0100.0390.A015.0000.0000.0000.00.S03A1Y01.01	1	3	39	15
	43112	KPAN.1.0010.0390.A030.0000.0000.0000.00.S03A1Y01.01	0,1	3	39	30
	43114	KPAN.1.0020.0390.A030.0000.0000.0000.00.S03A1Y01.01	0,2	3	39	30
	43116	KPAN.1.0050.0390.A030.0000.0000.0000.00.S03A1Y01.01	0,5	3	39	30
	43118	KPAN.1.0070.0390.A030.0000.0000.0000.00.S03A1Y01.01	0,7	3	39	30
	43120	KPAN.1.0100.0390.A030.0000.0000.0000.00.S03A1Y01.01	1	3	39	30
	43122	KPAN.1.0010.0390.A045.0000.0000.0000.00.S03A1Y01.01	0,1	3	39	45
	43124	KPAN.1.0020.0390.A045.0000.0000.0000.00.S03A1Y01.01	0,2	3	39	45
	43126	KPAN.1.0050.0390.A045.0000.0000.0000.00.S03A1Y01.01	0,5	3	39	45
	43128	KPAN.1.0070.0390.A045.0000.0000.0000.00.S03A1Y01.01	0,7	3	39	45
	43130	KPAN.1.0100.0390.A045.0000.0000.0000.00.S03A1Y01.01	1	3	39	45

FORM HA DIN 6535

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	○
Cast Iron	●
Graphite	○
Non Ferrous Material	◑
HRSA	○
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ECO PLUS

DBRA Series

Deburring

General Engineering | Mold&Die | Aviation &Aerospace | Defence | Automotive | Energy

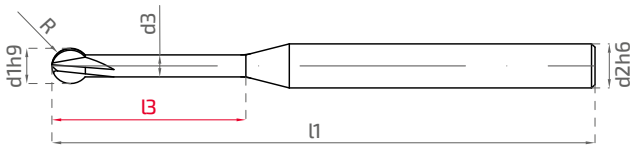
Finish | Rough

Meet The New Back&Front Deburring Series DBRA

Much Faster Deburring In Comparison To Conventional Method – At Least 2 Times Cycle Time Improvement.

Longer Tool Life & More Affordable In Comparison To Blade-Type Deburring Tools.

DBRA
Deburring



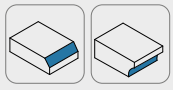
S	Order No	Code	d1h9	d2h6	d3	l1	l3
	66100	DBRA.2.0080.0600.R0040.0050.0048.0000.00.S03B1A01.01	0,8	3	0,48	60	5
	66102	DBRA.2.0130.0600.R0065.0080.0078.0000.00.S03B1A01.01	1,3	3	0,78	60	8
	66104	DBRA.2.0180.0600.R0090.0100.0110.0000.00.S03B1A01.01	1,8	3	1,1	60	10
	66106	DBRA.2.0230.0750.R0115.0125.0140.0000.00.S03B1A01.01	2,3	3	1,4	75	12,5
	66108	DBRA.2.0280.0750.R0140.0150.0170.0000.00.S04B1A01.01	2,8	4	1,7	75	15
	66110	DBRA.2.0330.0750.R0165.0175.0200.0000.00.S04B1A01.01	3,3	4	2	75	17,5
	66112	DBRA.2.0380.0750.R0190.0200.0240.0000.00.S04B1A01.01	3,8	4	2,4	75	20
	66114	DBRA.2.0480.0750.R0240.0250.0300.0000.00.S06B1A01.01	4,8	6	3	75	25
	66116	DBRA.2.0580.0750.R0290.0300.0350.0000.00.S06B1A01.01	5,8	6	3,5	75	30
	66118	DBRA.2.0780.1000.R0390.0400.0470.0000.00.S08B1A01.01	7,8	8	4,7	100	40
	66120	DBRA.2.0980.1200.R0490.0500.0590.0000.00.S10B1A01.01	9,8	10	5,9	120	50

Cutting Parameters

	Material	Deburring
		Vc (m/dk)
Steel	Unalloyed Steel	70-130
Steel	Steel	70-120
Steel	Reclamation steel	70-110
Steel	Cold Work Tool Steel	60-100
Steel	Hot Work Tool Steel	60-100
Stainless Steel	AISI 304 - 416 - 420	50-80
Stainless Steel	AISI 316 - 440	50-80
Stainless Steel	17-4 PH 15-5 PH	50-70
Stainless Steel	Chrome-Cobalt alloy	50-70
Stainless Steel	Duplex F51	70-90
Stainless Steel	Super Duplex F55	70-90
Cast Iron	Gray cast	80-130
Cast Iron	Alloyed cast	80-120
Cast Iron	Precision cast	80-120
Non Ferrous Material	HRSA inconel 718	60-80
Titanium	Titanium	80-100
Titanium	Titanium alloys	80-100
HRSA	HRSA	60-80

Feed Per Tooth (mm/tooth)

Ø (d1h6)	ap=3xØ
0,8	0,04-0,08
1,3	0,05-0,08
1,8	0,06-0,09
2,3	0,09-0,1
2,8	0,1-0,15
3,3	0,15-0,18
3,8	0,15-0,19
4,8	0,15-0,20
5,8	0,16-0,21
7,8	0,17-0,22
9,8	0,18-0,23



Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	◑
Cast Iron	●
Graphite	◑
Non Ferrous Material	◑
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

2025
Milling Catalogue

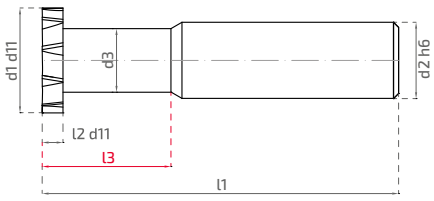
T-SLOTTING MILL

KARCAN
cutting tools

KTFF Series

T-Slotting Mill

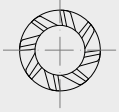
KTFF
T-Slotting Mill



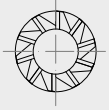
S	Order No	Code	d1d11	d2h6	d3	l1	l2d11	l3	Z
	44100	KTFF.6.0450.0500.K0000.0010.0300.0150.00.S06A1A01.01	4,5	6	3	50	1	15	6
	44102	KTFF.6.0750.0500.K0000.0015.0400.0150.00.S06A3A01.01	7,5	6	4	50	1,5	15	6
	44104	KTFF.6.0750.0500.K0000.0020.0400.0150.00.S06A3A01.01	7,5	6	4	50	2	15	6
	44106	KTFF.6.1050.0500.K0000.0020.0400.0150.00.S06A3A01.01	10,5	6	4	50	2	15	6
	44108	KTFF.6.1050.0500.K0000.0025.0400.0150.00.S06A3A01.01	10,5	6	4	50	2,5	15	6
	44110	KTFF.6.1050.0500.K0000.0030.0400.0150.00.S06A3A01.01	10,5	6	4	50	3	15	6
	44112	KTFF.8.1350.0560.K0000.0030.0600.0200.00.S10A3A01.01	13,5	10	6	56	3	20	8
	44114	KTFF.8.1350.0560.K0000.0040.0600.0200.00.S10A3A01.01	13,5	10	6	56	4	20	8
	44116	KTFF.8.1650.0560.K0000.0030.0800.0200.00.S12A3A01.01	16,5	12	8	56	3	20	8
	44118	KTFF.8.1650.0560.K0000.0040.0800.0200.00.S12A3A01.01	16,5	12	8	56	4	20	8
	44120	KTFF.8.1650.0560.K0000.0050.0800.0200.00.S12A3A01.01	16,5	12	8	56	5	20	8
	44122	KTFF.8.1950.0560.K0000.0030.1000.0200.00.S14A3A01.01	19,5	14	10	56	3	20	8
	44124	KTFF.8.1950.0560.K0000.0040.1000.0200.00.S14A3A01.01	19,5	14	10	56	4	20	8
	44126	KTFF.8.1950.0560.K0000.0050.1000.0200.00.S14A3A01.01	19,5	14	10	56	5	20	8
	44128	KTFF.8.2250.0630.K0000.0040.1000.0200.00.S14A3A01.01	22,5	14	10	63	4	20	8
	44130	KTFF.8.2250.0630.K0000.0050.1000.0200.00.S14A3A01.01	22,5	14	10	63	5	20	8
	44132	KTFF.8.2250.0630.K0000.0060.1000.0200.00.S14A3A01.01	22,5	14	10	63	6	20	8
	44134	KTFF.8.2550.0630.K0000.0050.1200.0200.00.S16A3A01.01	25,5	16	12	63	5	20	8
	44136	KTFF.8.2550.0630.K0000.0060.1200.0200.00.S16A3A01.01	25,5	16	12	63	6	20	8
	44138	KTFF.8.2550.0630.K0000.0070.1200.0200.00.S16A3A01.01	25,5	16	12	63	7	20	8
	44140	KTFF.8.2550.0630.K0000.0080.1200.0200.00.S16A3A01.01	25,5	16	12	63	8	20	8
	44142	KTFF.10.2850.0630.K0000.0050.1200.0200.00.S18A3A01.01	28,5	18	12	63	5	20	10
	44144	KTFF.10.2850.0630.K0000.0060.1200.0200.00.S18A3A01.01	28,5	18	12	63	6	20	10
	44146	KTFF.10.2850.0630.K0000.0070.1200.0200.00.S18A3A01.01	28,5	18	12	63	7	20	10
	44148	KTFF.10.2850.0630.K0000.0080.1200.0200.00.S18A3A01.01	28,5	18	12	63	8	20	10

Z6

Z8



Z10



Cutting Parameters

	Material	Slotting ap=0,25 Ø Vc(m/dk)
Steel	Unalloyed Steel	130-160
	Steel	100-150
	Reclamation steel	90-130
	Cold Work Tool Steel	70-100
	Hot Work Tool Steel	70-100
Stainless Steel	AISI 304 - 416 - 420	70-90
	AISI 316 - 440	70-90
	17-4 PH 15-5 PH	60-80
	Chrome-Cobalt alloy	60-80
	Duplex F51	30-50
	Super Duplex F55	30-50
Cast Iron	Gray cast	100-150
	Alloyed cast	100-140
	Precision cast	100-140
Non Ferrous Material	Hardened Steel ≤ 54 HRc	70-90
	Hardened Steel > 54 HRc	40-80
Titanium	HRSA	30-70
	Titanium	30-70

Feed Per Tooth (mm/tooth)

Ø	ap=0,25 Ø
4,5	0,009
7,5	0,011
10,5	0,016
13,5	0,021
16,5	0,023
19,5	0,028
22,5	0,031
25,5	0,035
28,5	0,04

Steel	●
Stainless Steel	◑
Hardened Steel ≤54 HRc	◑
Hardened Steel >54 HRc	◑
Cast Iron	●
Graphite	○
Non Ferrous Material	○
HRSA	◑
Titanium	◑

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

2025
Milling Catalogue

ALU-MAC

Our 119, 122, 123, 123Plus, 219, and 133 series feature double flute technology that delivers high performance in machining non-ferrous materials for aviation and automotive applications.

KARCAN
cutting tools

ALU-MAC

119 Series

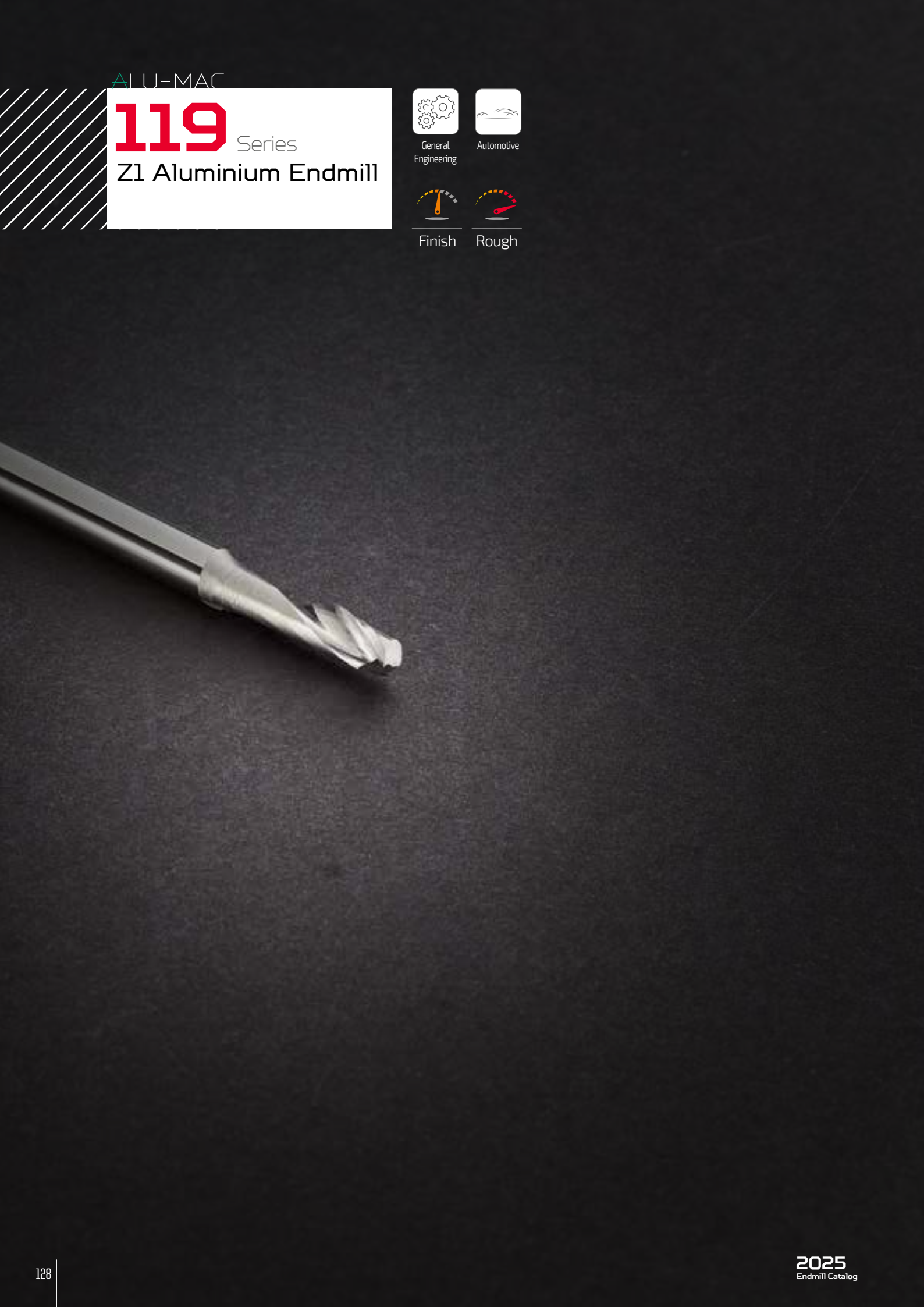
Z1 Aluminium Endmill

General Engineering

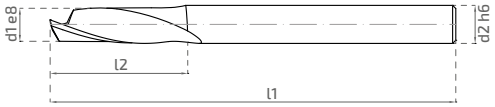
Automotive

Finish

Rough



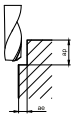
119
Z1 Aluminium Endmill



S	Order No	Code	d1e8	d2h6	l1	l2	Corner
*	**56100**	119.1.0300.0500.C0010.0120.0000.0000.00.S04A1Y01.01	3	4	50	12	Ch 0.10
*	**56102**	119.1.0400.0500.C0010.0150.0000.0000.00.S04A1Y01.01	4	4	50	15	Ch 0.10
*	**56104**	119.1.0500.0580.C0010.0160.0000.0000.00.S06A1Y01.01	5	6	58	16	Ch 0.10
*	**56106**	119.1.0600.0580.C0010.0190.0000.0000.00.S06A1Y01.01	6	6	58	19	Ch 0.10
	56108	119.1.0700.0640.C0010.0190.0000.0000.00.S08A1Y01.01	7	8	64	19	Ch 0.10
*	**56110**	119.1.0800.0640.C0010.0220.0000.0000.00.S08A1Y01.01	8	8	64	22	Ch 0.10
	56112	119.1.0900.0730.C0010.0230.0000.0000.00.S10A1Y01.01	9	10	73	23	Ch 0.10
*	**56114**	119.1.1000.0730.C0010.0230.0000.0000.00.S10A1Y01.01	10	10	73	23	Ch 0.10
	56116	119.1.1100.0820.C0010.0250.0000.0000.00.S12A1Y01.01	11	12	82	25	Ch 0.10
*	**56118**	119.1.1200.0820.C0010.0250.0000.0000.00.S12A1Y01.01	12	12	82	25	Ch 0.10

Cutting Parameters

Material	Shoulder Milling ae=0,4xØ ap=1xØ
	Vc (m/min)
Aluminum Based Alloys	250-450



Non Ferrous Material

Feed Per Tooth (mm/tooth)

Ø	ae=1xØ ap=1xØ	ae=0,4xØ ap=1xØ	ae=0,1xØ ap=1xØ
2	0,016-0,018	0,024-0,026	0,018-0,022
3	0,024-0,026	0,032-0,036	0,027-0,033
4	0,032-0,034	0,042-0,048	0,036-0,044
5	0,04-0,043	0,056-0,06	0,036-0,044
6	0,048-0,051	0,066-0,072	0,054-0,066
8	0,06-0,07	0,09-0,1	0,07-0,09
10	0,08-0,09	0,11-0,12	0,09-0,011
12	0,09-0,1	0,125-0,14	0,11-0,13

Z1

Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	●
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ALU-MAC

122 Series

High Performance Aluminium Endmill

General Engineering | Aviation &Aerospace | Defence

Finish | Rough

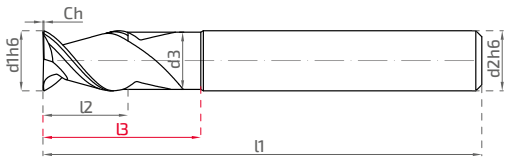
Renewed For Extended Tool Life In Roughing Operations For Aluminum.

Up to %40 longer tool life thanks to it's new geometry and developed coating

Available from stock in all sizes %100

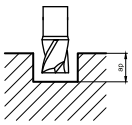
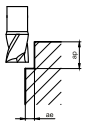
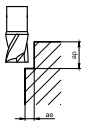
122

High Performance Aluminium Endmill



S	Order No	Code	d1h6	d2h6	d3	l1	l2	l3	Corner
*	**57100**	122.2.0300.0580.C0010.0060.0270.0120.00.S06B1Y01.01	3	6	2,7	58	6	12	Ch 0.10
*	**57102**	122.2.0400.0580.C0015.0060.0370.0120.00.S06B1Y01.01	4	6	3,7	58	6	12	Ch 0.15
*	**57104**	122.2.0500.0580.C0017.0080.0470.0150.00.S06B1Y01.01	5	6	4,7	58	8	15	Ch 0.17
*	**57106**	122.2.0600.0580.C0015.0080.0570.0160.00.S06B1Y01.01	6	6	5,7	58	8	16	Ch 0.15
*	**57108**	122.2.0800.0640.C0017.0100.0740.0200.00.S08B1Y01.01	8	8	7,4	64	10	20	Ch 0.17
*	**57110**	122.2.1000.0730.C0015.0120.0940.0300.00.S10B1Y01.01	10	10	9,4	73	12	30	Ch 0.15
*	**57112**	122.2.1200.0820.C0015.0150.1140.0300.00.S12B1Y01.01	12	12	11,4	82	15	30	Ch 0.15

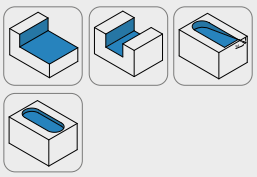
Cutting Parameters

Material	Slotting ae=0,1-0,2xØ ap=1xØ	Shoulder Milling ae=0,3-0,4xØ ap=1xØ	Shoulder Milling ae=0,6-1xØ ap=1xØ
	Vc (m/min)	Vc (m/min)	Vc (m/min)
			
Non Ferrous Material — Aluminum Alloys	250-400	230-380	200-350
Non Ferrous Material — Copper Alloys	175-200	160-190	150-180

Feed Per Tooth (mm/tooth)

Ø	ae=0,1-0,2xØ ap=1xØ	ae=0,3-0,4xØ ap=1xØ	ae=0,6-1xØ ap=1xØ
2	0,018-0,036	0,014-0,028	0,01-0,02
3	0,027-0,054	0,021-0,042	0,015-0,03
4	0,036-0,072	0,028-0,055	0,02-0,04
5	0,05-0,09	0,037-0,067	0,025-0,045
6	0,06-0,1	0,045-0,075	0,03-0,05
8	0,08-0,12	0,06-0,089	0,04-0,06s
10	0,1-0,14	0,075-0,104	0,05-0,07
12	0,12-0,16	0,089-0,119	0,06-0,08

Z2



Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	●
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ALU-MAC

123 Series

High Performance Aluminium Endmill

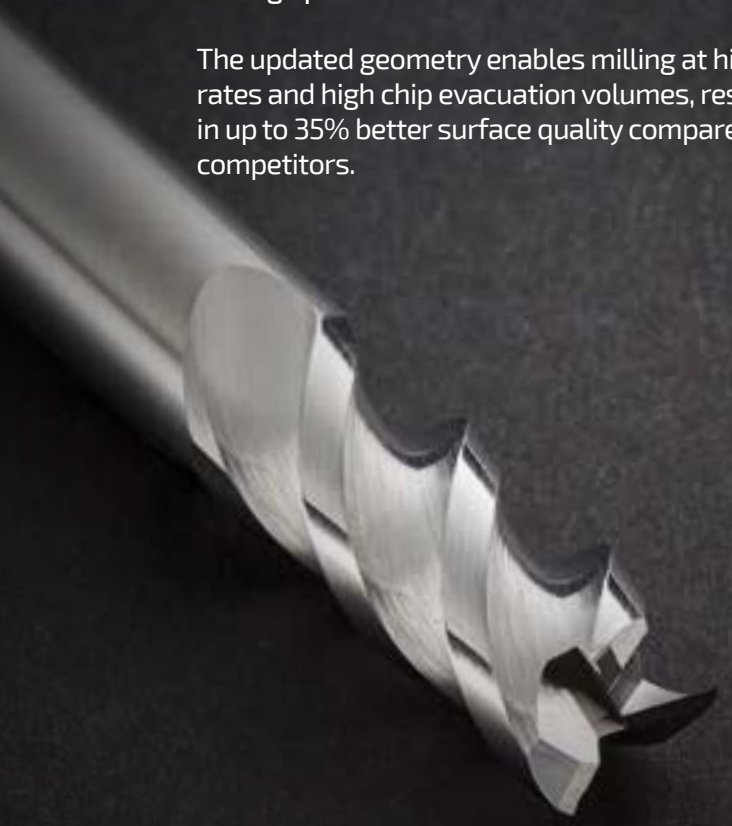
General Engineering | Aviation &Aerospace | Defence

Finish | Rough

Rough Milling, Semi-Finishing, And Finishing Operations Are All Combined In One Series,Making It A Market Leader.

This single solution is ideal for various aluminum milling operations.

The updated geometry enables milling at high feed rates and high chip evacuation volumes, resulting in up to 35% better surface quality compared to its competitors.



Market Leader

Up to %60 enhanced tool life with coated option in milling high-alloy Aluminum.

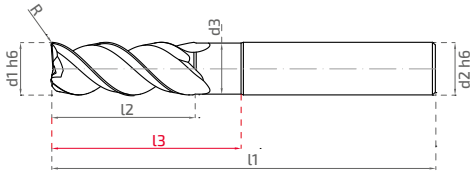
Up to %45 enhanced tool life and up to 35% improved bottom surface roughness thanks to optimized and 100% traceable special Radius forms

%35 improved bottom roughness

%100 Available from stock in all sizes

123

High Performance Aluminium Endmill



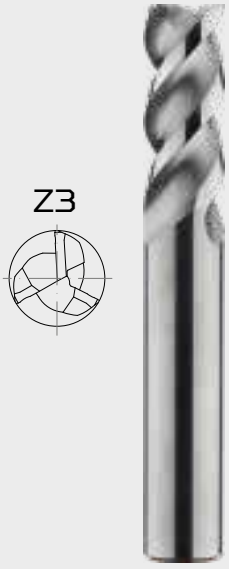
Short Series

S	Order No	Code	d1h6	d2h6	d3	l1	l2	l3	Corner
*	**58100**	123.3.0200.0580.C0004.0050.0190.0120.00.S06B1Y01.01	2	6	1,9	58	5	12	Ch 0.04
*	**58102**	123.3.0250.0580.C0005.0080.0240.0160.00.S06B1Y01.01	2,5	6	2,4	58	8	16	Ch 0.05
*	**58104**	123.3.0300.0580.R0020.0080.0280.0130.00.S06B1Y01.01	3	6	2,8	58	8	13	R 0.20
*	**58106**	123.3.0400.0580.R0020.0130.0380.0154.00.S06B1Y01.01	4	6	3,8	58	13	15,4	R 0.20
*	**58108**	123.3.0500.0580.R0020.0150.0480.0210.00.S06B1Y01.01	5	6	4,8	58	15	21	R 0.20
*	**58110**	123.3.0600.0580.R0020.0170.0570.0260.00.S06B1Y01.01	6	6	5,7	58	17	26	R 0.20
*	**58112**	123.3.0800.0640.R0020.0220.0770.0300.00.S08B1Y01.01	8	8	7,7	64	22	30	R 0.20
*	**58114**	123.3.1000.0730.R0020.0250.0970.0350.00.S10B1Y01.01	10	10	9,7	73	25	35	R 0.20
*	**58116**	123.3.1200.0820.R0020.0280.1170.0400.00.S12B1Y01.01	12	12	11,7	82	28	40	R 0.20
	58118	123.3.1400.0820.R0020.0280.1370.0400.00.S14B1Y01.01	14	14	13,7	82	28	40	R 0.20
*	**58120**	123.3.1600.0930.R0020.0370.1570.0530.00.S16B1Y01.01	16	16	15,7	93	37	53	R 0.20
*	**58122**	123.3.2000.1050.R0020.0380.1970.0520.00.S20B1Y01.01	20	20	19,7	105	38	52	R 0.20

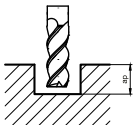
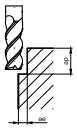
Long Series

S	Order No	Code	d1h6	d2h6	d3	l1	l2	l3	Corner
	58124	123.3.0300.0750.R0020.0080.0280.0130.00.S06B1Y01.01	3	6	2,8	75	8	13	R 0.20
*	**58126**	123.3.0600.1000.R0020.0150.0580.0450.00.S06B1Y01.01	6	6	5,8	100	15	45	R 0.20
*	**58128**	123.3.0800.1000.R0020.0180.0780.0620.00.S08B1Y01.01	8	8	7,8	100	18	62	R 0.20
*	**58130**	123.3.1000.1100.R0020.0200.0980.0620.00.S10B1Y01.01	10	10	9,8	110	20	62	R 0.20
	58132	123.3.1200.1000.R0020.0250.1170.0400.00.S12B1Y01.01	12	12	11,7	100	25	40	R 0.20
*	**58134**	123.3.1200.1270.R0020.0250.1180.0800.00.S12B1Y01.01	12	12	11,8	127	25	80	R 0.20
	58136	123.3.1200.1500.R0020.0320.1180.1050.00.S12B1Y01.01	12	12	11,8	150	32	105	R 0.20
	58138	123.3.1600.1100.R0020.0500.1570.0600.00.S16B1Y01.01	16	16	15,7	110	50	60	R 0.20
	58140	123.3.1600.1100.R0020.0550.1570.0620.00.S16B1Y01.01	16	16	15,7	110	55	62	R 0.20
	58142	123.3.1600.1250.R0020.0350.1580.0750.00.S16B1Y01.01	16	16	15,8	125	35	75	R 0.20
*	**58144**	123.3.1600.1600.R0020.0300.1580.1100.00.S16B1Y01.01	16	16	15,8	160	30	110	R 0.20
	58146	123.3.1600.2000.R0020.0300.0000.0000.00.S16B2Y01.01	16	16	0	200	30	0	R 0.20
	58148	123.3.2000.2000.R0020.0300.1980.1150.00.S20B2Y01.01	20	20	19,8	200	30	115	R 0.20
	58180	123.3.0400.0750.R0020.0130.0380.0154.00.S06B1Y01.01	4	6	3,8	75	13	15,4	R 0.20

Z3



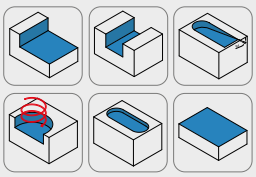
Cutting Parameters

Material	Slotting ap=1.5-1.0Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.3 - 0.2 - 0.1Ø Vc (m/min)
		
Aluminum Alloys	250-300	350-400
Copper Alloys	200-250	300-350

Non Ferrous Material

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ae=0.3Ø	ae=0.2Ø	ae=0.1Ø
3	0,01	0,015	0,03	0,035	0,04
4	0,056	0,068	0,08	0,09	0,1
5	0,06	0,07	0,09	0,1	0,12
6	0,07	0,075	0,1	0,12	0,15
8	0,072	0,083	0,168	0,21	0,281
10	0,075	0,088	0,173	0,22	0,3
12	0,084	0,093	0,2	0,26	0,325
16	0,09	0,103	0,24	0,3	0,36
20	0,1	0,112	0,28	0,34	0,4



Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	●
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ALU-MAC

123 PLUS Series

High Performance Aluminium Endmill

General Engineering | Aviation &Aerospace | Defence

Finish | Rough

New Star Of Karcan Shines Bright Like A Diamond...

An Expansion Of Our 123 Series, 123 Plus Series Has Been Developed For Perfect Chip Evacuation Without Any Build Up Edge Thanks To It's Super Polished Bright Flutes.

In Comparison To Equivalents;

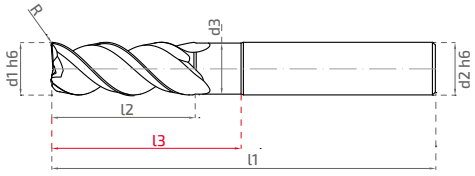
Longer tool Life Up To **%42**

Better Surface Roughness Up To **%45**

Reduced Milling Time Up To **%40**

Flutes Look Like A Mirror But We Do Not Recommend To Use As Mirror.

PLUS 123
High Performance Aluminium Endmill



Short Series

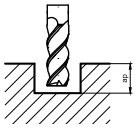
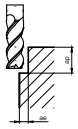
S	Order No	Code	d1h6	d2h6	d3	l1	l2	l3	Corner
*	**58150**	123P.3.0600.0580.R0020.0170.0570.0260.00.S06B1Y01.01	6	6	5,7	58	17	26	R 0.20
*	**58152**	123P.3.0800.0640.R0020.0220.0770.0300.00.S08B1Y01.01	8	8	7,7	64	22	30	R 0.20
*	**58154**	123P.3.1000.0730.R0020.0250.0970.0350.00.S10B1Y01.01	10	10	9,7	73	25	35	R 0.20
*	**58156**	123P.3.1200.0820.R0020.0280.1170.0400.00.S12B1Y01.01	12	12	11,7	82	28	40	R 0.20
*	**58158**	123P.3.1400.0820.R0020.0280.1370.0400.00.S14B1Y01.01	14	14	13,7	82	28	40	R 0.20
*	**58160**	123P.3.1600.0930.R0020.0370.1570.0530.00.S16B1Y01.01	16	16	15,7	93	37	53	R 0.20
*	**58162**	123P.3.2000.1050.R0020.0380.1970.0540.00.S20B1Y01.01	20	20	19,7	105	38	54	R 0.20

Long Series

S	Order No	Code	d1h6	d2h6	d3	l1	l2	l3	Corner
*	**58164**	123P.3.0600.1080.R0020.0150.0580.0450.00.S06B1Y01.01	6	6	5,8	108	15	45	R 0.20
*	**58166**	123P.3.0800.1100.R0020.0180.0780.0620.00.S08B1Y01.01	8	8	7,8	110	18	62	R 0.20
*	**58168**	123P.3.1000.1100.R0020.0200.0980.0620.00.S10B1Y01.01	10	10	9,8	110	20	62	R 0.20
*	**58170**	123P.3.1200.1270.R0020.0250.1180.0800.00.S12B1Y01.01	12	12	11,8	127	25	80	R 0.20
*	**58172**	123P.3.1200.1500.R0020.0320.1180.1050.00.S12B1Y01.01	12	12	11,8	150	32	105	R 0.20
*	**58174**	123P.3.1600.1100.R0020.0500.1570.0600.00.S16B1Y01.01	16	16	15,7	110	50	60	R 0.20
*	**58176**	123P.3.1600.1600.R0020.0300.1580.1100.00.S16B1Y01.01	16	16	15,8	160	30	110	R 0.20
*	**58178**	123P.3.2000.2000.R0020.0300.1980.1144.00.S20B2Y01.01	20	20	19,8	200	30	114,4	R 0.20

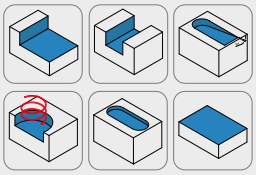
Z3

Cutting Parameters

Material	Slotting ap=1.5-1.0Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.3 - 0.2 - 0.1Ø Vc (m/min)
		
Non Ferrous Material — Aluminum Alloys	250-300	350-400
Copper Alloys	200-250	300-350

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ae=0.3Ø	ae=0.2Ø	ae=0.1Ø
3	0,01	0,015	0,03	0,035	0,04
4	0,056	0,068	0,08	0,09	0,1
5	0,06	0,07	0,09	0,1	0,12
6	0,07	0,075	0,1	0,12	0,15
8	0,072	0,083	0,168	0,21	0,281
10	0,075	0,088	0,173	0,22	0,3
12	0,084	0,093	0,2	0,26	0,325
16	0,09	0,103	0,24	0,3	0,36
20	0,1	0,112	0,28	0,34	0,4



Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	●
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ALU-MAC

133 Series
High Performance Corner Radius

General Engineering | Aviation &Aerospace | Defence

Finish | Rough

High Performance In High-Alloy Aluminiums !

Thanks to its double-action, double-flute technology, optimized corner radius, unique geometry, and coating, the 133 Series offers numerous advantages for machining alloyed aluminum materials

Various corner radius alternatives better for aviation applications.

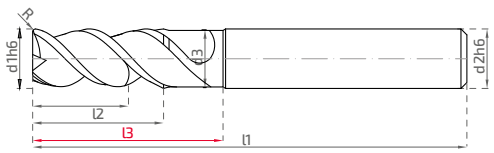
High Chip-Removal In High Speed Machining.

Better Surface Roughness by comparions with equivalents.

Longer Tool Life

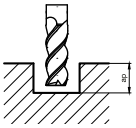
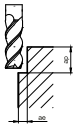
new product

CHATTER FREE



S	Order No	Code	d1h6	d2h6	d3	l1	l2	l3	Corner
	59100	133.3.0300.0580.R0015.0080.0280.0130.00.S06E2V01.01	3	6	2,8	58	8	13	R 0.15
	59102	133.3.0300.0580.K0000.0080.0280.0130.00.S06E2V01.01	3	6	2,8	58	8	13	Ch 0.00
	59104	133.3.0400.0580.R0015.0130.0380.0154.00.S06E2V01.01	4	6	3,8	58	13	15,4	R 0.15
	59106	133.3.0500.0580.R0015.0130.0480.0210.00.S06E2V01.01	5	6	4,8	58	13	21	R 0.15
	59108	133.3.0500.0580.K0000.0130.0480.0210.00.S06E2V01.01	5	6	4,8	58	13	21	Ch 0.00
*	**59110**	133.3.0600.0580.R0020.0130.0550.0210.00.S06E2V01.01	6	6	5,5	58	13	21	R 0.20
*	**59112**	133.3.0600.0580.R0050.0130.0550.0210.00.S06E2V01.01	6	6	5,5	58	13	21	R 0.50
*	**59114**	133.3.0800.0640.R0025.0210.0750.0280.00.S08E2V01.01	8	8	7,5	64	21	28	R 0.25
	59116	133.3.0800.0640.R0050.0210.0750.0280.00.S08E2V01.01	8	8	7,5	64	21	28	R 0.50
	59118	133.3.0800.0640.R0100.0210.0750.0280.00.S08E2V01.01	8	8	7,5	64	21	28	R 1.00
*	**59120**	133.3.1000.0730.R0030.0220.0950.0320.00.S10E2V01.01	10	10	9,5	73	22	32	R 0.30
*	**59122**	133.3.1000.0730.R0050.0220.0950.0320.00.S10E2V01.01	10	10	9,5	73	22	32	R 0.50
	59124	133.3.1000.0730.R0100.0220.0950.0320.00.S10E2V01.01	10	10	9,5	73	22	32	R 1.00
*	**59126**	133.3.1200.0820.R0030.0260.1150.0400.00.S12E2V01.01	12	12	11,5	82	26	40	R 0.30
*	**59128**	133.3.1200.0820.R0050.0260.1150.0400.00.S12E2V01.01	12	12	11,5	82	26	40	R 0.50
	59130	133.3.1200.0820.R0100.0260.1150.0400.00.S12E2V01.01	12	12	11,5	82	26	40	R 1.00
*	**59132**	133.3.1600.0930.R0040.0360.1550.0530.00.S16E2V01.01	16	16	15,5	93	36	53	R 0.40
	59134	133.3.1600.0930.R0100.0360.1550.0530.00.S16E2V01.01	16	16	15,5	93	36	53	R 1.00
	59136	133.3.1600.0930.R0200.0360.1550.0530.00.S16E2V01.01	16	16	15,5	93	36	53	R 2.00
*	**59138**	133.3.2000.1050.R0050.0410.1950.0540.00.S20E2V01.01	20	20	19,5	105	41	54	R 0.50
	59140	133.3.2000.1050.R0200.0410.1950.0540.00.S20E2V01.01	20	20	19,5	105	41	54	R 2.00

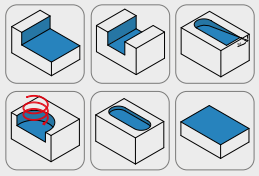
Cutting Parameters

Material		Slotting ap=1xØ / ae=1xØ Vc (m/min)	Shoulder Milling ap=1xØ/ ae=0,5xØ Vc (m/min)
			
Aluminum Alloys	<%6 Si	380-430	380-430
	<%12 Si	330-380	330-380
	>%12 Si	200-250	200-250
Copper Alloys		140-180	140-180

Non Ferrous Material

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ae=0.3Ø	ae=0.2Ø	ae=0.1Ø
3	0,050	0,061	0,120	0,160	0,200
4	0,056	0,068	0,130	0,178	0,221
5	0,062	0,076	0,152	0,190	0,240
6	0,068	0,080	0,161	0,200	0,262
8	0,072	0,083	0,168	0,210	0,281
10	0,075	0,088	0,173	0,220	0,300
12	0,084	0,093	0,200	0,260	0,325
16	0,090	0,103	0,240	0,300	0,360
20	0,100	0,112	0,280	0,340	0,400



Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	●
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

ALU-MAC

219 Series

High Performance Ball Nose Endmill

General Engineering

Aviation &Aerospace

Finish

Rough

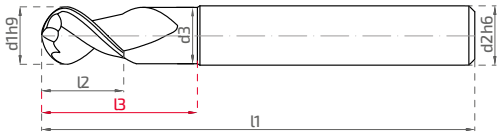
Designed To Provide Better Surface Roughness In Finishing Operations For Non-Ferrous Materials

Available from stock in all sizes

%100

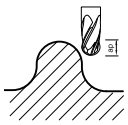
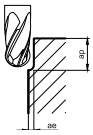
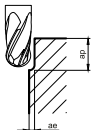
219

High Performance Ball Nose Endmill



S	Order No	Code	d1h9	d2h6	d3	l1	l2	l3
*	**60100**	219.2.0300.0580.R0150.0060.0260.0120.00.S06B1Y01.01	3	6	2,6	58	6	12
*	**60102**	219.2.0400.0580.R0200.0060.0370.0130.00.S06B1Y01.01	4	6	3,7	58	6	13
*	**60104**	219.2.0500.0580.R0250.0080.0450.0150.00.S06B1Y01.01	5	6	4,5	58	8	15
*	**60106**	219.2.0600.0580.R0300.0080.0550.0150.00.S06B1Y01.01	6	6	5,5	58	8	15
*	**60108**	219.2.0800.0640.R0400.0100.0750.0190.00.S08B1Y01.01	8	8	7,5	64	10	19
*	**60110**	219.2.1000.0730.R0500.0120.0940.0290.00.S10B1Y01.01	10	10	9,4	73	12	29
*	**60112**	219.2.1200.0820.R0600.0150.1130.0290.00.S12B1Y01.01	12	12	11,3	82	15	29

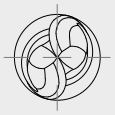
Cutting Parameters

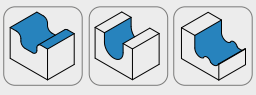
Material	Shoulder Milling ae=0,1-0,2xØ ap=0,03xØ	Shoulder Milling ae=0,3-0,4xØ ap=0,03xØ	Shoulder Milling ae=0,6-1xØ ap=0,03xØ
	Vc (m/min)	Vc (m/min)	Vc (m/min)
			
Non Ferrous Material — Aluminum Alloys	250-400	230-380	200-350
Non Ferrous Material — Copper Alloys	175-200	160-190	150-180

Feed Per Tooth (mm/tooth)

Ø	ae=0,1-0,2xØ ap=1xØ	ae=0,3-0,4xØ ap=1xØ	ae=0,6-1xØ ap=1xØ
3	0,027-0,054	0,021-0,042	0,015-0,03
4	0,036-0,072	0,028-0,055	0,2-0,4
5	0,05-0,09	0,037-0,067	0,025-0,045
6	0,06-0,1	0,045-0,075	0,03-0,05
8	0,08-0,012	0,06-0,089	0,04-0,06
10	0,1-0,14	0,075-0,104	0,05-0,07
12	0,12-0,16	0,089-0,119	0,06-0,08

Z2

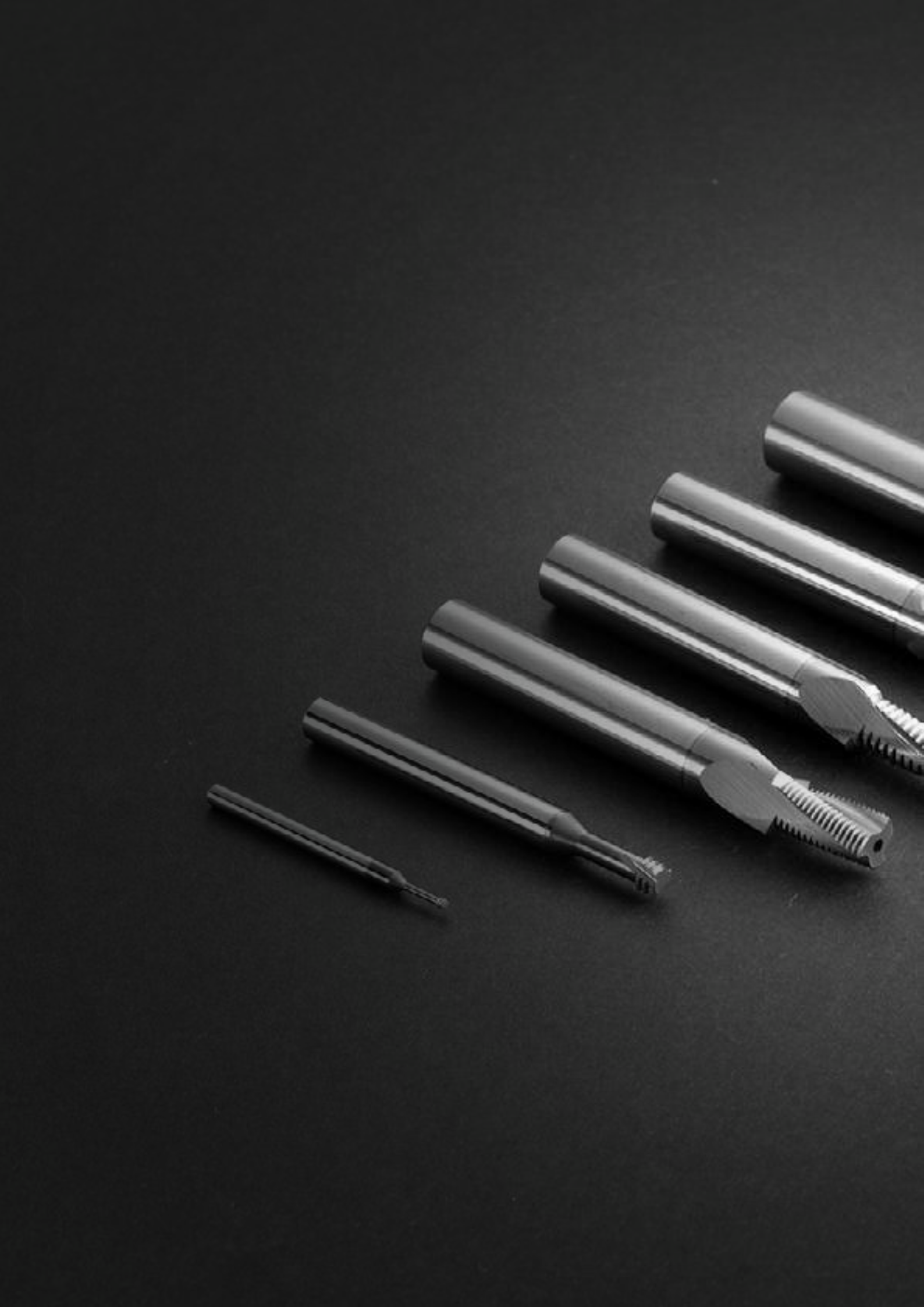




Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast Iron	○
Graphite	○
Non Ferrous Material	●
HRSA	○
Titanium	○

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.



2025
Milling Catalogue

THREAD MILL

KARCAN
cutting tools

THREAD MILL

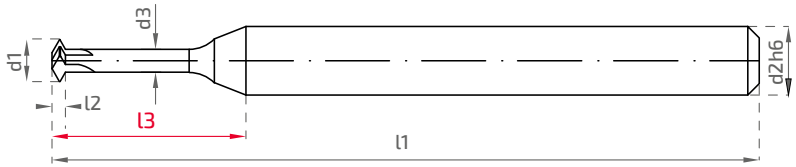
401 Series

Thread Mill

Single Solution for Different Workpiece Materials

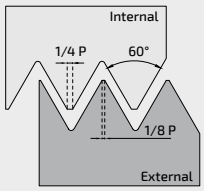
From M1.6 to M6 Thread Form

401
Thread Mill



ISO METRIC INTERNAL 2xD1										
Stock	Code	Thread	Pitch	d1	l2	l3	l1	d2	d3	Flute
	401316005	M1.6	0,35	1,18	0,4	5,0	32	3	0,64	3
	401416625	M1.6	0,35	1,18	0,4	6,25	32	3	0,64	4
	401318005	M1.8	0,35	1,38	0,5	5,0	32	3	0,7	3
	401420005	M2	0,4	1,5	0,56	5,0	32	3	0,9	4
	401425006	M2.5	0,45	1,95	0,6	6,0	32	3	1,15	4
	401430007	M3	0,5	2,4	0,6	7,0	32	3	1,6	4
	401435008	M3.5	0,6	2,8	0,74	8,0	32	3	1,8	4
	401440009	M4	0,7	3,1	0,82	9,0	44	5	1,98	4
	401450010	M5	0,8	3,6	0,98	10,0	44	5	2,2	4
	401460122	M6	1	4,1	0,98	12,2	44	5	2,7	4

Cutting Parameters										
	Material	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
				ø1	ø1,5	ø2	ø3	ø4	ø5	ø6
Steel	Low and Medium Carbon Steel	60-120	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13
Steel	High Carbon Steel	60-90	60- 90	0,03	0,04	0,05	0,06	0,08	0,09	0,1
Steel	Alloys Steel	50-80	50- 80	0,03	0,04	0,04	0,05	0,05	0,06	0,07
Stainless Steel	Stainless Steel-Ferritic	70-100	70-100	0,02	0,03	0,03	0,04	0,05	0,06	0,06
Stainless Steel	Stainless Steel-Austenite	60-90	60- 90	0,02	0,03	0,03	0,04	0,05	0,06	0,06
Stainless Steel	Cast Steel	70-90	70- 90	0,03	0,04	0,04	0,05	0,05	0,06	0,07
Cast Iron	Cast Iron, Modular Cast Iron, Malleable Iron	40-80	40- 80	0,04	0,05	0,05	0,07	0,09	0,11	0,13
Non Ferrous Material	Aluminum ≤12%Si, Copper	100-200	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13
Non Ferrous Material	Aluminum >12% Si	60-140	60-140	0,03	0,03	0,03	0,04	0,05	0,06	0,06
Non Ferrous Material	Plastic, Bronze, Brass	50-200	50-200	0,09	0,1	0,11	0,12	0,14	0,16	0,18
Super Alloys	Nickel Alloys, Titanium Alloys	20-40	20- 40	0,03	0,03	0,03	0,04	0,04	0,05	0,06



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

THREAD MILL

403 Series
Thread Mill

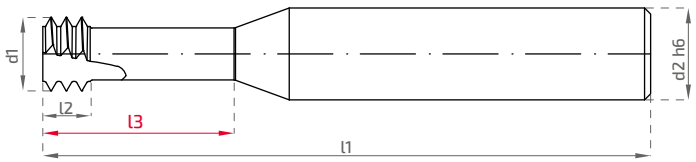
Thanks to the Unique Cutting Edge Profile enables Low Cutting Forces

Smooth Surface Quality

M, UN, BSP Thread Forms

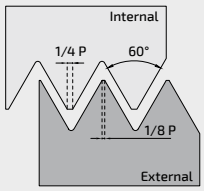
Better Chip Evacuation
with Helical Flutes
Threading
Up to

5xD



ISO METRIC INTERNAL 2xD1								
Stock	Code	Thread	Pitch	d1	l3	l1	d2	Flute
	403007025 ISO	M1	0,25	0,72	2,5	39	3	3
	403009030 ISO	M1,2	0,25	0,90	3,0	39	3	3
	403045145 ISO	M5	0,35	4,50	14,5	58	6	4
	403015045 ISO	M2	0,4	1,53	4,5	58	6	3
	403015045-XL ISO	M2	0,4	1,53	4,5	100	6	3
	403016050 ISO	M2,2	0,45	1,65	5,0	58	6	3
	403019055 ISO	M2,5	0,45	1,95	5,5	58	6	3
	403019055-XL ISO	M2,5	0,45	1,95	5,5	100	6	3
	403023065 ISO	M3	0,5	2,37	6,5	58	6	3
	403023065-XL ISO	M3	0,5	2,37	6,5	100	6	3
	403031090 ISO	M4	0,7	3,10	9,0	58	6	3
	403080250 ISO	M10	0,75	8,00	25,0	63	8	4
	403038125 ISO	M5	0,8	3,80	12,5	58	6	3
	403046140 ISO	M6	1,0	4,65	14,0	58	6	3
	403048125-SP ISO	M6	1,0	4,80	12,5	58	6	3
	403060180 ISO	M8	1,25	6,00	18,0	58	6	3
	403078230 ISO	M10	1,5	7,80	23,0	63	8	3
	403090260 ISO	M12	1,75	9,00	26,0	72	10	3
	4040118350 ISO	M16	2,0	11,80	35,0	82	12	4
	4050150430 ISO	M20	2,5	15,00	43,0	105	16	5

ISO METRIC INTERNAL 3xD1								
Stock	Code	Thread	Pitch	d1	l3	l1	d2	Flute
	403010040 ISO	M1.4	0.3	1.05	4.0	39	3	3
	403010040-SP ISO	M1.4	0.3	1.05	4.0	39	3	3
	403012048 ISO	M1.6	0.35	1.20	4.8	39	3	3
	403012048-XL ISO	M1.6	0.35	1.20	4.8	100	6	3
	403012050-SP ISO	M1.6	0.35	1.20	4.8	39	3	3
	403045145 ISO	M5	0.35	4.50	14.5	58	6	4
	403015060 ISO	M2	0.4	1.53	6.0	39	3	3
	403015060-SP ISO	M2	0.4	1.53	6.0	39	3	3
	403016070 ISO	M2.2	0.45	1.65	7.0	39	3	3
	403019075 ISO	M2.5	0.45	1.95	7.5	58	6	3
	403019080-XL ISO	M2.5	0.45	1.95	8.0	100	6	3
	403023095 ISO	M3	0.5	2.37	9.5	58	6	3
	403023095-XL ISO	M3	0.5	2.37	9.5	100	6	3
	403053200 ISO	M6, M7	0.5	5.35	20.0	58	6	4
	403027105 ISO	M3.5	0.6	2.75	10.5	58	6	3
	403031125 ISO	M4	0.7	3.10	12.5	58	6	3
	403031125-XL ISO	M4	0.7	3.10	12.5	100	6	3
	403038160 ISO	M5	0.8	3.80	16.0	58	6	3
	403038160-XL ISO	M5	0.8	3.80	16.0	100	6	3
	403046200 ISO	M6	1.0	4.65	20.0	58	6	3
	403046200-XL ISO	M6	1.0	4.65	20.0	100	6	3
	403080310 ISO	M10	1.0	8.00	31.0	63	8	4
	403060240 ISO	M8	1.25	6.00	24.0	58	6	3
	40306240-XL ISO	M8	1.25	6.00	24.0	100	6	3
	403078315 ISO	M10	1.5	7.80	31.5	63	8	3
	403078315-XL ISO	M10	1.5	7.80	31.5	100	8	3
	403090378 ISO	M12	1.75	9.00	37.8	72	10	3
	403118500 ISO	M16	2.0	11.80	50.0	105	12	4



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

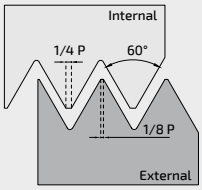
* Marked products can be delivered quickly from stock.

403
Thread Mill

ISO METRIC INTERNAL 4xD1								
Stock	Code	Thread	Pitch	d1	l3	l1	d2	Flute
	403019105 ISO	M2.5	0.45	1.95	10.5	39	3	3
	403024125 ISO	M3	0.5	2.40	12.5	39	3	3
	403031167 ISO	M4	0.7	3.10	16.7	58	6	3
	403040208 ISO	M5	0.8	4.00	20.8	58	6	3
	403048250 ISO	M6	1.0	4.80	25.0	58	6	3

ISO METRIC INTERNAL 5xD1								
Stock	Code	Thread	Pitch	d1	l3	l1	d2	Flute
	403024155 ISO	M3	0.5	2.40	15.5	39	3	3

Cutting Parameters																
	Material	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter												
				ø1	ø1,5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø16
Steel	Low and Medium Carbon Steel	60-120	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Steel	High Carbon Steel	60-90	60- 90	0,03	0,04	0,05	0,06	0,08	0,09	0,10	0,12	0,13	0,14	0,14	0,16	0,17	0,18
Steel	Alloys Steel	50-80	50- 80	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Stainless Steel	Stainless Steel-Ferritic	70-100	70-100	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
Stainless Steel	Stainless Steel-Austenite	60-90	60- 90	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
Stainless Steel	Cast Steel	70-90	70- 90	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Cast Iron	Cast Iron, Modular Cast Iron, Malleable Iron	40-80	40- 80	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Non Ferrous Material	Aluminum ≤12%Si, Copper	100-200	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Non Ferrous Material	Aluminum >12% Si	60-140	60-140	0,03	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,13	0,14
Non Ferrous Material	Plastic, Bronze, Brass	50-200	50-200	0,09	0,10	0,11	0,12	0,14	0,16	0,18	0,19	0,19	0,19	0,19	0,19	0,20	0,20
Super Alloys	Nickel Alloys, Titanium Alloys	20-40	20- 40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

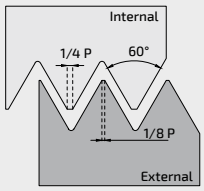
UNC, UNF

Unified Thread Internal Threading 2xD1

Stock	Code	Thread Size		Pitch TPI	d1	l3	l1	d2	Flute
		Coarse UNC	FineUNF						
	403014037 UN		1	72	1.45	3.7	58	6	3
	403016044-XL UN	2	3	56	1.65	4.4	58	6	3
	403021063-XL UN	4		40	2.10	6.3	100	6	3
	403033090 UN		8	36	3.30	9.0	58	6	3
	403025071 UN	6		32	2.55	7.1	58	6	3
	403025071-XL UN	6		32	2.55	7.1	100	6	3
	403032095 UN	8		32	3.20	9.5	58	6	3
	403032095-XL UN	8		32	3.20	9.5	100	6	3
	403042110 UN		12	28	4.20	11.0	58	6	3
	403050145 UN		1/4	28	5.00	14.5	58	6	3
	403035106 UN	10,12		24	3.50	10.6	58	6	3
	403066170 UN		5/16,3/8	24	6.60	17.0	63	8	3
	403047140 UN	1/4		20	4.75	14.0	58	6	3
	403080250 UN		7/16	20	8.00	25.0	63	8	3
	403060170 UN	5/16		18	6.00	17.0	58	6	3
	403120350 UN		5/8	18	12.00	35.0	82	12	4
	403067220 UN	3/8		16	6.70	22.0	63	8	3
	403077250 UN	7/16		14	7.70	25.0	63	8	3
	403092275 UN	1/2		13	9.20	27.5	72	10	3
	403105315 UN	9/16		12	10.50	31.5	82	12	3
	403114345 UN	5/8		11	11.40	34.5	82	12	3
	403144415 UN	3/4		10	14.40	41.5	105	16	4

(UNC, UNF) Unified Thread Internal Threading 3xD1

Stock	Code	Thread Size		Pitch TPI	d1	l3	l1	d2	Flute
		Coarse UNC	FineUNF						
	403011040 UN		0	80	1.15	4.0	58	6	3
	403014060 UN		1	*72	1.45	6.0	39	3	3
	403016066 UN	2	3	56	1.65	6.6	39	3	3
	403016066-XL UN	2	3	56	1.65	6.6	58	6	3
	403021080 UN	4		40	2.10	8.0	39	3	3
	403021080-XL UN	4		40	2.10	8.0	58	6	3
	403024096 UN	5	6	40	2.45	9.6	58	6	3
	403025105 UN	6		32	2.55	10.5	39	3	3
	403025105-XL UN	6		32	2.55	10.5	58	6	3
	403032125 UN	8		32	3.20	12.5	58	6	3
	403032125-XL UN	8		32	3.20	12.5	100	6	3
	403037150 UN		10	32	3.70	15.0	58	6	3
	403037150-XL UN		10	32	3.70	15.0	100	6	3
	403050190 UN		1/4	28	5.00	19.0	58	6	3
	40305190-XL UN	1/4		28	5.00	19.0	100	6	3
	403035155 UN	10,12		24	3.50	15.5	58	6	3
	403066240 UN		5/16,3/8	24	6.60	24.0	63	8	3
	403047190 UN	1/4		20	4.75	19.0	58	6	3
	403047190-XL UN	1/4		20	4.75	19.0	100	6	3
	403080346 UN		7/16	20	8.00	34.6	63	8	3
	403060230 UN	5/16		18	6.00	23.0	58	6	3
	403067302 UN	3/8		16	6.70	30.2	64	8	3
	403092275 UN	1/2		13	9.20	27.5	73	10	3
	403105450 UN	9/16		12	10.50	45.0	105	12	3
	403114500 UN	5/8		11	11.40	50.0	105	12	3
	403144597 UN	3/4		10	14.40	59.7	105	16	4



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

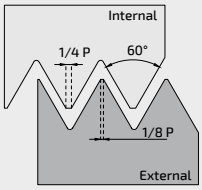
● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

403
Thread Mill

UNC, UNF									
Unified Thread Internal Threading 4xD1									
Stock	Code	Thread Size		Pitch TPI	d1	l3	l1	d2	Flute
		Coarse UNC	FineUNF						
	403016092 UN	2	3	56	1.65	9.2	39	3	3
	403021120 UN	4		40	2.10	12.0	39	3	3
	403025148 UN	6		32	2.55	14.8	39	3	3
	403032175 UN	8		32	3.20	17.5	58	6	3

Cutting Parameters																
	Material	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter												
				ø1	ø1,5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø16
Steel	Low and Medium Carbon Steel	60-120	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Steel	High Carbon Steel	60-90	60- 90	0,03	0,04	0,05	0,06	0,08	0,09	0,10	0,12	0,13	0,14	0,14	0,16	0,17	0,18
Steel	Alloys Steel	50-80	50- 80	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Stainless Steel	Stainless Steel-Ferritic	70-100	70-100	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
Stainless Steel	Stainless Steel-Austenite	60-90	60- 90	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
Stainless Steel	Cast Steel	70-90	70- 90	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Cast Iron	Cast Iron, Modular Cast Iron, Malleable Iron	40-80	40- 80	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Non Ferrous Material	Aluminum ≤12%Si, Copper	100-200	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Non Ferrous Material	Aluminum >12% Si	60-140	60-140	0,03	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,13	0,14
Non Ferrous Material	Plastic, Bronze, Brass	50-200	50-200	0,09	0,10	0,11	0,12	0,14	0,16	0,18	0,19	0,19	0,19	0,19	0,19	0,20	0,20
Super Alloys	Nickel Alloys, Titanium Alloys	20-40	20- 40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

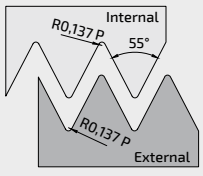
● Recommended ◑ Acceptable ○ Not Recommended

403
Thread Mill

BSP(G)								
Thread Internal 2xD1								
Stock	Code	Thread	TPI	d1	l3	l1	d2	Flute
	403078195 BSP	1/8"	28	7.8	19.5	63	8	3
	403100300 BSP	1/4" - 3/8"	19	10.0	30.0	72	10	4
	403120370 BSP	1/2" - 7/8"	14	12.0	37.0	82	12	4
	403160440 BSP	≥ 1"	11	16.0	44.0	105	16	4

Cutting Parameters

	Material	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter ø1	ø1,5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø16
Steel	Low and Medium Carbon Steel	60-120	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Steel	High Carbon Steel	60-90	60- 90	0,03	0,04	0,05	0,06	0,08	0,09	0,10	0,12	0,13	0,14	0,14	0,16	0,17	0,18
Steel	Alloys Steel	50-80	50- 80	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Stainless Steel	Stainless Steel-Ferritic	70-100	70-100	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
Stainless Steel	Stainless Steel-Austenite	60-90	60- 90	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
Stainless Steel	Cast Steel	70-90	70- 90	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Cast Iron	Cast Iron, Modular Cast Iron, Malleable Iron	40-80	40- 80	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Non Ferrous Material	Aluminum ≤12%Si, Copper	100-200	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Non Ferrous Material	Aluminum >12% Si	60-140	60-140	0,03	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,13	0,14
Non Ferrous Material	Plastic, Bronze, Brass	50-200	50-200	0,09	0,10	0,11	0,12	0,14	0,16	0,18	0,19	0,19	0,19	0,19	0,19	0,20	0,20
Super Alloys	Nickel Alloys, Titanium Alloys	20-40	20- 40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	○
Hardened Steel >54 HRc	○
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

THREAD MILL

403 L Series

Left Helix, Left Cut

Thanks to the Unique Cutting Edge Profile enables Low Cutting Forces

Smooth Surface Quality

Thread Forms Starting from M1.4 x 0.3 and 0-80 UN

Perfect Solutions for the Mold and Die Industry Threading Up to **3xD**

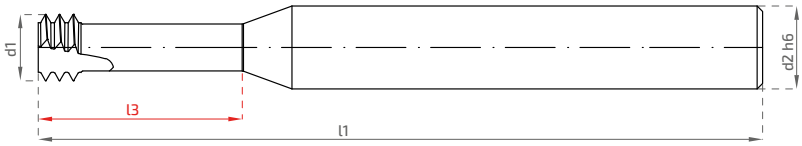
Short Chips prevent Chip Sticking

High Cutting Speeds

Specially Designed for Hardened Materials

403 L

Left Helix, Left Cut

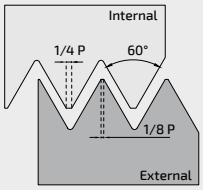


ISO METRIC THREAD								
INTERNAL THREADING - HELICAL								
ISO METRIC INTERNAL 2xD1								
Stock	Code	Thread	TP	d1	l3	l1	d2	Flute
	403L015045 ISO	M2	0.4	1.53	4.5	58	6	3
	403L015045 ISO	M2	0,4	1,53	4,5	58	6	3
	403L016050 ISO	M2.2	0,45	1,65	5,0	58	6	3
	403L019055 ISO	M2.5	0,45	1,95	5,5	58	6	3
	403L023065 ISO	M3	0,5	2,37	6,5	58	6	3
	403L031090 ISO	M4	0,7	3,1	9,0	58	6	3
	403L038125 ISO	M5	0,8	3,8	12,5	58	6	3
	403L046140 ISO	M6	1	4,65	14,0	58	6	3
	403060180 ISO	M8	1,25	6	18,0	58	6	3
	403078230 ISO	M10	1,5	7,8	23,0	64	8	3
	403090260 ISO	M12	1,75	9	26,0	72	10	3
	403L118350 ISO	M16	2	11,8	35,0	82	12	4

ISO METRIC INTERNAL 3xD1								
Stock	Code	Thread	TP	d1	l3	l1	d2	Flute
	403L010040 ISO	M1.4	0,3	1,05	4,0	39	3	3
	403L015060 ISO	M2	0,4	1,53	6,0	39	3	3
	403L016070 ISO	M2.2	0,45	1,65	7,0	58	6	3
	403L019075 ISO	M2.5	0,45	1,95	7,5	58	6	3
	403L023095 ISO	M3	0,5	2,37	9,5	58	6	3
	403L027105 ISO	M3.5	0,6	2,75	10,5	58	6	3
	403L032125 ISO	M4	0,7	3,2	12,5	58	6	3
	403L038160 ISO	M5	0,8	3,8	16,0	58	6	3
	403L046200 ISO	M6	1	4,65	20,0	58	6	3
	403L060240 ISO	M8	1,25	6	24,0	58	6	3

Cutting Parameters

	Material	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter													
				ø1	ø1,5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø16
Super Alloys	Nickel Alloys		20- 40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08
Super Alloys	Titanium Alloys																
Super Alloys	High Temperature Alloys																
Hard Materials	Hardened Steel	45-50	60-70	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,1	0,11
Hard Materials	Hardened Steel	51-55	50-55	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,10
Hard Materials	Hardened Steel	56-52	40-50	0,01	0,02	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,07	0,08	0,09



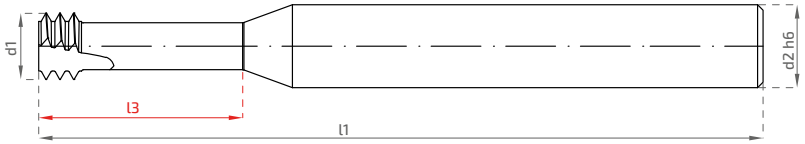
Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	○
Grafit	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

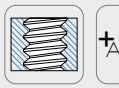
403 L

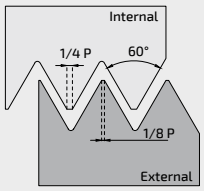
Left Helix, Left Cut



UNC, UNF									
Unified Thread Internal Threading 2xD1									
Stock	Code	Thread Size		Pitch TPI	d1	l3	l1	d2	Flute
		Coarse UNC	FineUNF						
	403L014037 UN		1	72	1.45	3.7	58	6	3
	403L014037 UN		1	72	1,5	3,7	58	6	3
	403L014038 UN	1	2	64	1,4	3,8	58	6	3
	403L016044 UN	2	3	56	1,7	4,4	58	6	3
	403L019052 UN	3	4	48	1,9	5,2	58	6	3
	403L021063 UN	4		40	2,1	6,3	58	6	3
	403L024070 UN	5	6	40	2,5	7	58	6	3
	403L033090 UN		8	36	3,3	9	58	6	3
	403L025071 UN	6		32	2,6	7,1	58	6	3
	403L032095 UN	8		32	3,2	9,5	58	6	3
	403L037105 UN		10	32	3,7	10,5	58	6	3
	403L042110 UN		12	28	4,2	11	58	6	3
	403L050145 UN		1/4	28	5,0	14,5	58	6	3
	403L035106 UN	10, 12		24	3,5	10,6	58	6	3
	403L066170 UN		5/16, 3/8	24	6,6	17	64	8	3
	403L047140 UN	1/4		20	4,8	14	58	6	3
	403L080250 UN		7/16	20	8,0	25	64	8	3
	403L060170 UN	5/16		18	6,0	17	58	6	4
	403L067220 UN	3/8		16	6,7	22	64	8	3
	403L077250 UN	7/16		14	7,7	25	64	8	3
	403L092275 UN	1/2		13	9,2	27,5	73	10	3
	403L105315 UN	9/16		12	10,5	31,5	84	12	3
	403L114345 UN	5/8		11	11,4	34,5	84	12	4

(UNC, UNF) Unified Thread Internal Threading 2xD1									
Stock	Code	Thread Size		Pitch TPI	d1	l3	l1	d2	Flute
		Coarse UNC	FineUNF						
	403L011040 UN		0	80	1.15	4.0	58	6	3
	403L011040 UN		0	80	1,2	4	58	6	3
	403L014060 UN		1	72	1,5	6	39	3	3
	403L016066 UN	2	3	56	1,7	6,6	58	6	3
	403L021080 UN	4		40	2,1	8	58	6	3
	403L024096 UN	5	6	40	2,5	9,6	58	6	3
	403L025105 UN	6		32	2,6	10,5	58	6	3
	403L032125 UN	8		32	3,2	12,5	58	6	3
	403L037150 UN		10	32	3,7	15	58	6	3
	403L050190 UN		1/4	28	5,0	19	58	6	3
	403L066240 UN		5/16, 3/8	24	6,6	24	64	8	3
	403L047190 UN	1/4		20	4,8	19	58	6	3
	403L060230 UN	5/16		18	6,0	23	58	6	3





Cutting Parameters																
	Material	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter												
				ø1	ø1,5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø16
Super Alloys	Nickel Alloys Titanium Alloys High Temperature Alloys		20- 40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08
Hard Materials		45-50	60-70	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,1	0,11
		51-55	50-55	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,10
		56-52	40-50	0,01	0,02	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,07	0,08	0,09

Steel	○
Stainless Steel	○
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	○
Grafit	○
Non Ferrous Material	○
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

THREAD MILL

404 Series

Left Helix, Left Cut

Expanded Tool Life By Coating

Smooth Surface Qualit

M, UN, NPT, BSP, BSPT Thread Forms

Single Solution for Different Workpiece Materials

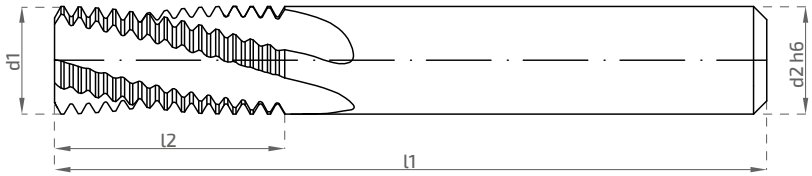
Better Chip Evacuation with Helical Flutes

Improved Cycle Time Thanks to Number of Flutes Range from 3 to 6

Low Cutting Force enables thin wall machining

404

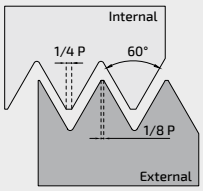
Left Helix, Left Cut



ISO METRIC THREAD INTERNAL THREADING - HELICAL									
Stock	Code	Thread Size		Pitch mm	d1	d2	l1	l2	Flute
		Coarse	Fine						
	404038103ISO		M5	0,5	3,8	6	57	10,3	3
	404038103ISO		M5	0,5	3,8	6	57	10,3	3
	404059102ISO		M7	0,5	5,9	6	57	10,2	3
	404036101ISO	M4.5	M5	0,75	3,6	6	57	10,1	3
	404059108ISO		M8	0,75	5,9	6	57	10,8	3
	404079153ISO		M10	0,75	7,9	8	63	15,3	4
	404039100ISO	M5		0,8	3,9	6	57	10	3
	404048115ISO	M6	M7	1	4,8	6	57	11,5	3
	404048145ISO	M6	M7	1	4,8	6	57	14,5	3
	404059125ISO		M8	1	5,9	6	57	12,5	3
	404079175ISO		M10	1	7,9	8	63	17,5	4
	404099205ISO		M12	1	9,9	10	73	20,5	4
	404059144ISO	M8	M9	1,25	5,9	6	57	14,4	3
	404059195ISO	M8	M9	1,25	5,9	6	57	19,5	3
	404079185ISO	M10	M11	1,5	7,9	8	63	18,5	3
	404099218ISO		M13	1,5	9,9	10	73	21,8	4
	404119263ISO		M15	1,5	11,9	12	84	26,3	4
	404159352ISO		M20	1,5	15,9	16	105	35,2	6
	404092218ISO	M12		1,75	9,2	10	73	21,8	3
	404099250ISO	M14		2	9,9	10	73	25	3
	404119270ISO	M16		2	11,9	12	84	27	4
	404159370ISO		M20	2	15,9	16	105	37	5
	404159363ISO	M20		2,5	15,9	16	105	36,3	5
	404159405ISO	M24	M27	3	15,9	16	105	40,5	3
	404199430ISO	M27		3	19,9	20	105	43	4

Cutting Parameters								
Hardness HB	Cutting Speed m/min (Vc)	ø1	ø1,5	ø2	ø3	ø4	ø5	ø6
		Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	40-80	0,02	0,02	0,02	0,03	0,04	0,04	0,05
	30-60	0,02	0,02	0,02	0,03	0,03	0,04	0,05
	20-50	0,02	0,02	0,02	0,03	0,03	0,03	0,04
	20-50	0,02	0,02	0,02	0,02	0,03	0,03	0,04
50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03

Steel
Stainless Steel
Cast Iron
Non Ferrous Material
Super Alloys
Hardened Steel



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

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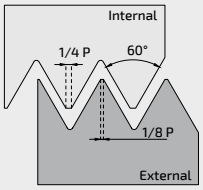
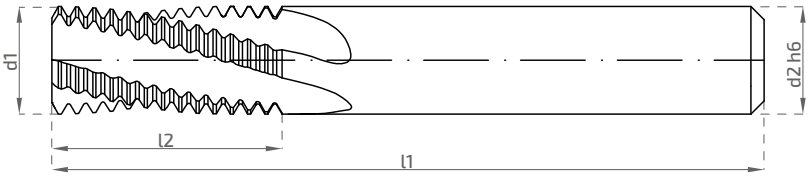


Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended



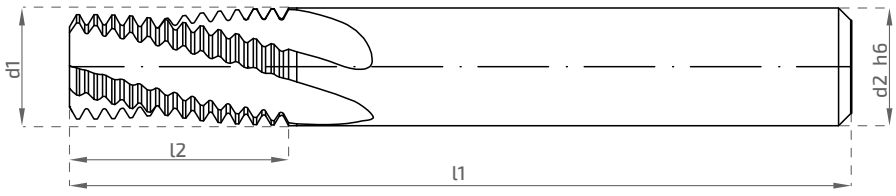
UNC, UNF, UNEF

UNIFIED THREAD INTERNAL THREADING - HELICAL

Stock	Code	Thread Size			Pitch TPI	d1	d2	l1	l2	Flute
		Coarse UNC	Fine UNF	Extra FineUNEF						
	404049140UN			5/16"	32	5,9	6	57	14	3
	404049140UN			5/16"	32	5,9	6	57	14	3
	404079180UN			3/8"	32	7,9	8	63	18	3
	404041122UN		1/4"		28	5,1	6	57	12,2	3
	404079158UN			7/16"-1/2"	28	7,9	8	63	15,8	4
	404049108UN		5/16"		24	5,9	6	57	10,8	3
	404079153UN		3/8"		24	7,9	8	63	15,3	4
	404119227UN		9/16", 5/8"		24	11,9	12	84	22,7	4
	404048120UN	1/4"			20	4,8	6	57	12	3
	404079197UN		7/16"		20	7,9	8	63	19,7	3
	404099225UN		1/2"		20	9,9	10	73	22,5	4
	404119260UN			3/4"-1"	20	11,9	12	84	26	4
	404057160UN	5/16"			18	5,7	6	57	16	3
	404099235UN		9/16", 5/8"		18	9,9	10	73	23,5	4
	404068182UN	3/8"			16	6,8	8	63	18,2	3
	404119262UN		3/4"		16	11,9	12	84	26,2	4
	404078208UN	7/16"			14	7,8	8	63	20,8	3
	404119245UN		7/8"		14	11,9	12	84	24,5	4
	404093244UN	1/2"			13	9,3	10	73	24,4	3
	404106264UN	9/16"			12	10,6	12	84	26,4	4
	404149391UN		1"		12	15,9	16	105	39,1	5
	404115311UN	5/8"			11	11,5	12	84	31,1	3
	404143368UN	3/4"			10	14,3	16	105	36,8	4
	404149409UN	7/8"			9	15,9	16	105	40,9	4
	404197428UN	1"			8	19,7	20	105	42,8	4

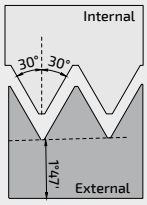
Cutting Parameters

	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0,02	0,02	0,02	0,03	0,04	0,04	0,05
		30-60	0,02	0,02	0,02	0,03	0,03	0,04	0,05
		20-50	0,02	0,02	0,02	0,03	0,03	0,03	0,04
		20-50	0,02	0,02	0,02	0,02	0,03	0,03	0,04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



NPT								
INTERNAL/EXTERNAL THREADING - HELICAL								
Stock	Code	Thread Size	Pitch TPI	d1	d2	l1	l2	Flute
	404059098 NPT	1/16"	27	5,9	6	57	9,8	3
	404059098 NPT	1/16"	27	5,9	6	57	9,8	3
	404077109 NPT	1/8"	27	7,7	8	63	10,9	3
	404099164 NPT	1/4"-3/8"	18	9,9	10	73	16,4	4
	404099164-SP NPT	3/8"	18	9,9	10	73	16,4	4
	404119208 NPT	1/2"	14	11,9	12	84	20,8	4
	404159208 NPT	1/2"	14	15,9	16	93	20,8	4
	404199297 NPT	1"-2"	11,5	19,9	20	105	29,7	4
	404199381 NPT	1"-2"	8	19,9	20	105	38,1	4

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0,02	0,02	0,02	0,03	0,04	0,04	0,05
		30-60	0,02	0,02	0,02	0,03	0,03	0,04	0,05
		20-50	0,02	0,02	0,02	0,03	0,03	0,03	0,04
		20-50	0,02	0,02	0,02	0,02	0,03	0,03	0,04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

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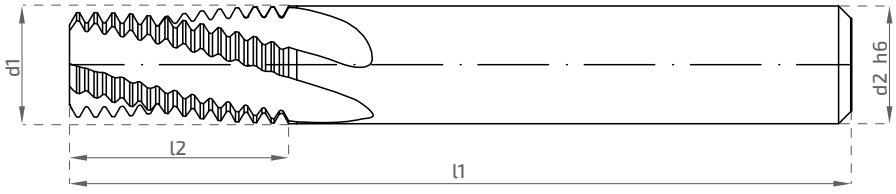
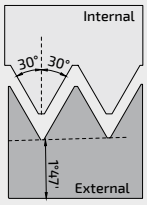


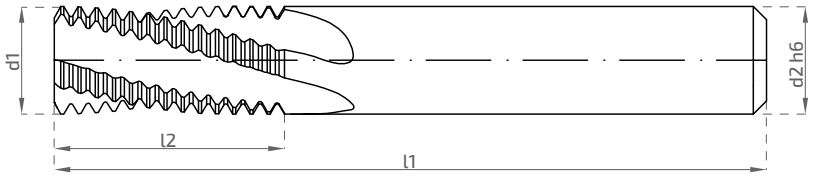
NPTF								
INTERNAL/EXTERNAL THREADING - HELICAL								
Stock	Code	Thread Size	Pitch TPI	d1	d2	l1	l2	Flute
	404059099 NPTF	1/16"	27	5,9	6	57	9,9	3
	404059099 NPTF	1/16"	27	5,9	6	57	9,9	3
	404077108 NPTF	1/8"	27	7,7	8	63	10,8	3
	404099162 NPTF	1/4"-3/8"	18	9,9	10	73	16,2	4
	404119208 NPTF	1/2"	14	11,9	12	84	20,8	4
	404199297 NPTF	1"-2"	11,5	19,9	20	105	29,7	4
	404199381 NPTF	2 1/2"-6"	8	19,9	20	105	38,1	4

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0.02	0.02	0.02	0.03	0.04	0.04	0.05
		30-60	0.02	0.02	0.02	0.03	0.03	0.04	0.05
		20-50	0.02	0.02	0.02	0.03	0.03	0.03	0.04
		20-50	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



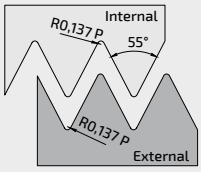
Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended



BSP(G)								
INTERNAL/EXTERNAL THREADING - HELICAL								
Stock	Code	Thread Size	Pitch TPI	d1	d2	l1	l2	Flute
	404059113 BSP(G)	1/16"	28	5,9	6	57	11,3	3
	404059113 BSP(G)	1/16"	28	5,9	6	57	11,3	3
	404079140 BSP(G)	1/8"	28	7,9	8	63	14	3
	404099166 BSP(G)	1/4"-3/8"	19	9,9	10	73	16,6	4
	404079187-SP BSP(G)	1/4"-3/8"	19	7,9	10	73	18,7	3
	404119227 BSP(G)	1/2"-7/8"	14	11,9	12	84	22,7	4
	404159321 BSP(G)	1"-2"	11	15,9	16	105	32,1	4
	404199404 BSP(G)	1"-6"	11	19,9	20	105	40,4	5

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0.02	0.02	0.02	0.03	0.04	0.04	0.05
		30-60	0.02	0.02	0.02	0.03	0.03	0.04	0.05
		20-50	0.02	0.02	0.02	0.03	0.03	0.03	0.04
		20-50	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

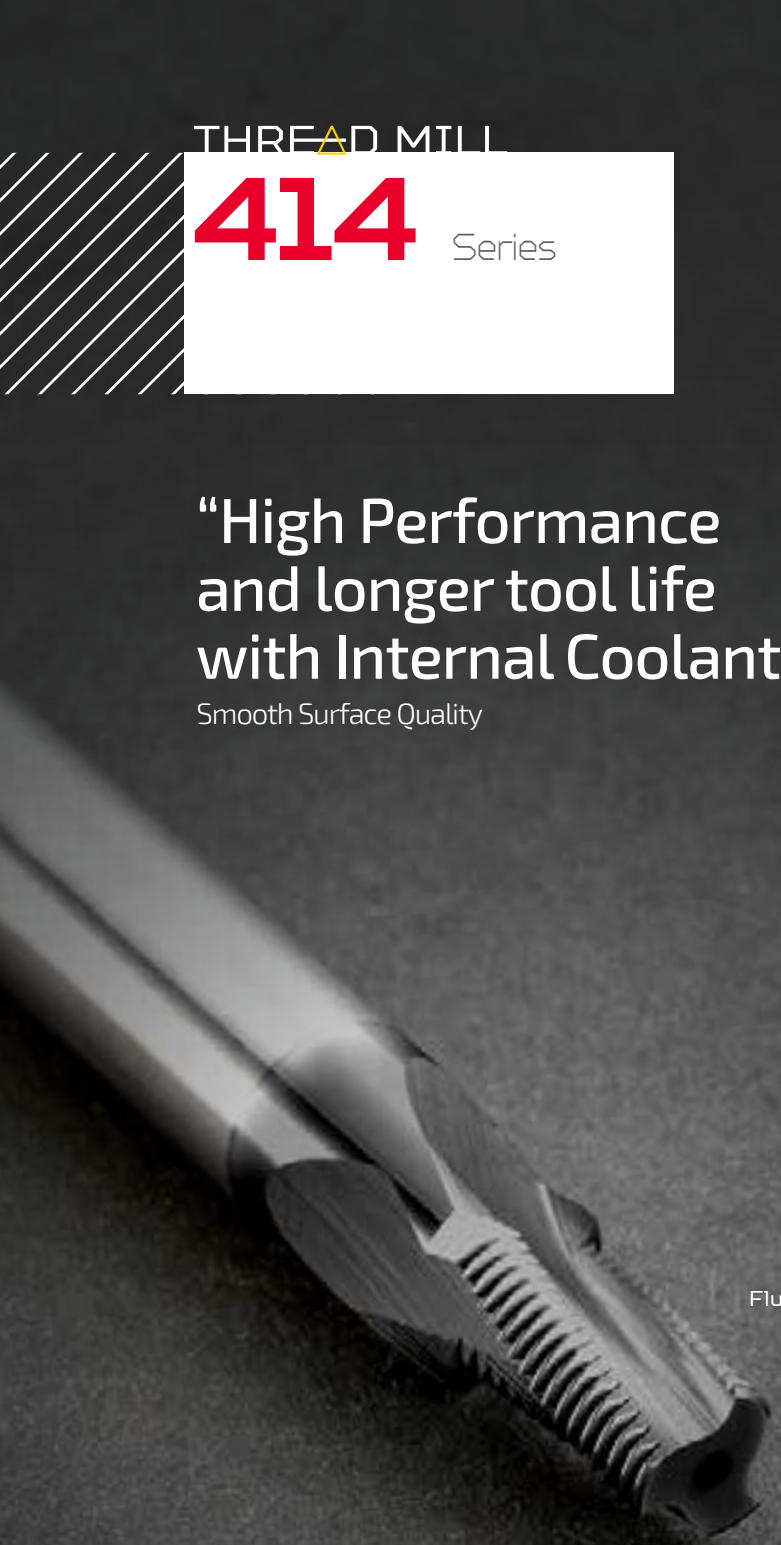
* Marked products can be delivered quickly from stock.

THREAD MILL

414 Series

“High Performance and longer tool life with Internal Coolant”

Smooth Surface Quality



M, UN, NPT, BSP, BSPT Thread Forms

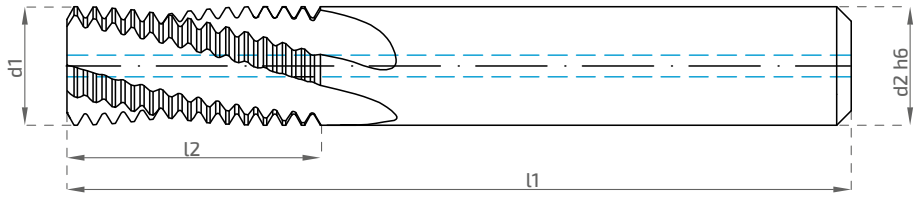
Single Solution for Different Workpiece Materials

Better Chip Evacuation with Helical Flutes

İmproved Cycle Time Thanks to Number of Flutes Range from 3 to 6

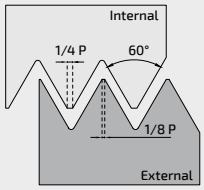
Low Cutting Force enables thin wall machining

Expanded Tool Life By Coating



ISO METRIC THREAD - INTERNAL THREADING - HELICAL WITH INTERNAL COOLANT									
Stock	Code	Thread Size		Pitch mm	d1	d2	l1	l2	Flute
		Coarse	Fine						
	414038103ISO		M5	0,5	3,8	6	57	10,3	3
	414038103ISO		M5	0,5	3,8	6	57	10,3	3
	414059102ISO		M7	0,5	5,9	6	57	10,2	3
	414036101ISO	M4.5	M5	0,75	3,6	6	57	10,1	3
	414059108ISO		M8	0,75	5,9	6	57	10,8	3
	414079153ISO		M10	0,75	7,9	8	63	15,3	4
	414039100ISO	M5		0,8	3,9	6	57	10	3
	414048115ISO	M6	M7	1	4,8	6	57	11,5	3
	414048145ISO	M6	M7	1	4,8	6	57	14,5	3
	414059125ISO		M8	1	5,9	6	57	12,5	3
	414079175ISO		M10	1	7,9	8	63	17,5	4
	414079150-SP ISO		M10	1	7,9	8	63	15,0	5
	414099205ISO		M12	1	9,9	10	73	20,5	4
	414059144ISO	M8	M9	1,25	5,9	6	57	14,4	3
	414059195ISO	M8	M9	1,25	5,9	6	57	19,5	3
	414079185ISO	M10	M11	1,5	7,9	8	63	18,5	3
	414099218ISO		M13	1,5	9,9	10	73	21,8	4
	414119263ISO		M15	1,5	11,9	12	84	26,3	4
	414159352ISO		M20	1,5	15,9	16	105	35,2	6
	414092218ISO	M12		1,75	9,2	10	73	21,8	3
	414099250ISO	M14		2	9,9	10	73	25	3
	414119270ISO	M16		2	11,9	12	84	27	4
	414159370ISO		M20	2	15,9	16	105	37	5
	414159363ISO	M20		2,5	15,9	16	105	36,3	5
	414159405ISO	M24	M27	3	15,9	16	105	40,5	3
	414199430ISO	M27		3	19,9	20	105	43	4

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0.02	0.02	0.02	0.03	0.04	0.04	0.05
		30-60	0.02	0.02	0.02	0.03	0.03	0.04	0.05
		20-50	0.02	0.02	0.02	0.03	0.03	0.03	0.04
		20-50	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03

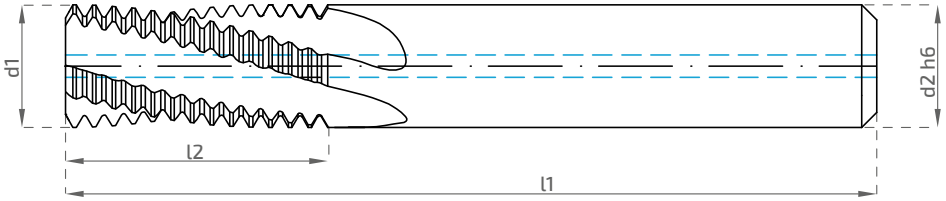


Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

414



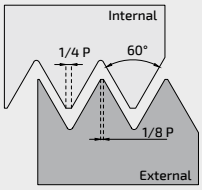
(UNC, UNF, UNEF)

UNIFIED THREAD INTERNAL THREADING - HELICAL WITH INTERNAL COOLANT

Stock	Code	Thread Size			Pitch TPI	d1	d2	l1	l2	Flute
		Coarse UNC	Fine UNF	Extra FineUNEF						
	414059140UN			5/16"	32	5,9	6	57	14	3
	414059140UN			5/16"	32	5,9	6	57	14	3
	414079180UN			3/8"	32	7,9	8	63	18	3
	414051122UN		1/4"		28	5,1	6	57	12,2	3
	414079158UN			7/16"-1/2"	28	7,9	8	63	15,8	4
	414059108UN		5/16"		24	5,9	6	57	10,8	3
	414079153UN		3/8"		24	7,9	8	63	15,3	4
	414119227UN		9/16", 5/8"		24	11,9	12	84	22,7	4
	414048120UN	1/4"			20	4,8	6	57	12	3
	414079197UN		7/16"		20	7,9	8	63	19,7	3
	414099225UN		1/2"		20	9,9	10	73	22,5	4
	414119260UN			3/4"-1"	20	11,9	12	84	26	4
	414057160UN	5/16"			18	5,7	6	57	16	3
	414099235UN		9/16", 5/8"		18	9,9	10	73	23,5	4
	414068182UN	3/8"			16	6,8	8	63	18,2	3
	414119262UN		3/4"		16	11,9	12	84	26,2	4
	414078208UN	7/16"			14	7,8	8	63	20,8	3
	414119245UN		7/8"		14	11,9	12	84	24,5	4
	414093244UN	1/2"			13	9,3	10	73	24,4	3
	414106264UN	9/16"			12	10,6	12	84	26,4	4
	414159391UN		1"		12	15,9	16	105	39,1	5
	414115311UN	5/8"			11	11,5	12	84	31,1	3
	414143368UN	3/4"			10	14,3	16	105	36,8	4
	414159409UN	7/8"			9	15,9	16	105	40,9	4
	414197428UN	1"			8	19,7	20	105	42,8	4

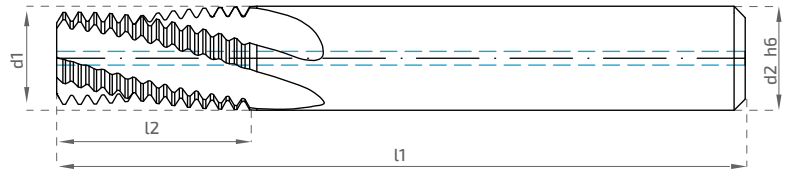
Cutting Parameters

	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0,02	0,02	0,02	0,03	0,04	0,04	0,05
		30-60	0,02	0,02	0,02	0,03	0,03	0,04	0,05
		20-50	0,02	0,02	0,02	0,03	0,03	0,03	0,04
		20-50	0,02	0,02	0,02	0,02	0,03	0,03	0,04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



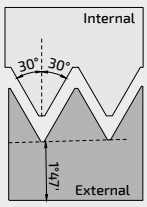
Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended



NPT								
INTERNAL/EXTERNAL THREADING - HELICAL WITH INTERNAL COOLANT								
Stock	Code	Thread Size	Pitch TPI	d1	d2	l1	l2	Flute
	414059098 NPT	1/16"	27	5,9	6	57	9,8	3
	414059098 NPT	1/16"	27	6	6,0	57	10	3
	414077109 NPT	1/8"	27	8	8,0	63	11	3
	414099164 NPT	1/4"-3/8"	18	10	10,0	73	16	4
	414119208 NPT	1/2"	14	12	12,0	84	21	4
	414159208 NPT	1/2"	14	16	16,0	93	21	4
	414199297 NPT	1"-2"	11,5	19,9	20,0	105	30	4
	414199381 NPT	1"-2"	8	20	20,0	105	38	4

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0.02	0.02	0.02	0.03	0.04	0.04	0.05
		30-60	0.02	0.02	0.02	0.03	0.03	0.04	0.05
		20-50	0.02	0.02	0.02	0.03	0.03	0.03	0.04
		20-50	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03

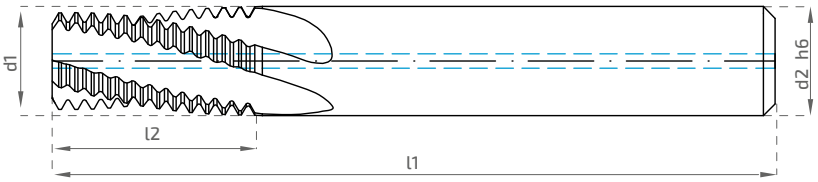


Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

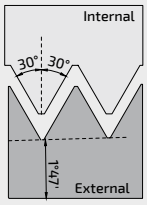
* Marked products can be delivered quickly from stock.

414



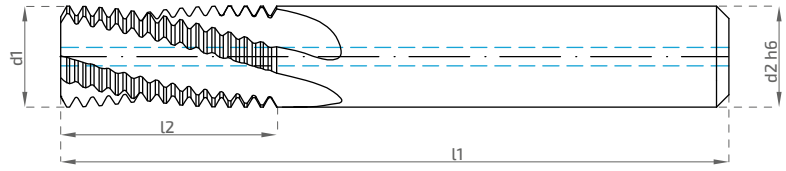
NPTF								
INTERNAL/EXTERNAL THREADING - HELICAL WITH INTERNAL COOLANT								
Stock	Code	Thread Size	Pitch TPI	d1	d2	l1	l2	Flute
	414059099 NPTF	1/16"	27	5,9	6	57	9,9	3
	414059099 NPTF	1/16"	27	5,9	6	57	9,9	3
	414077108 NPTF	1/8"	27	7,7	8	63	10,8	3
	414099100 NPTF	1/4"-3/8"	18	9,9	10	73	16,2	4
	414119208 NPTF	1/2"	14	11,9	12	84	20,8	4
	414199297 NPTF	1"-2"	11,5	19,9	20	105	29,7	4
	414199381 NPTF	2 1/2"-6"	8	19,9	20	105	38,1	4

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0.02	0.02	0.02	0.03	0.04	0.04	0.05
		30-60	0.02	0.02	0.02	0.03	0.03	0.04	0.05
		20-50	0.02	0.02	0.02	0.03	0.03	0.03	0.04
		20-50	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



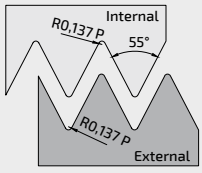
Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended



BSP(G)								
INTERNAL/EXTERNAL THREADING - HELICAL WITH INTERNAL COOLANT								
Stock	Code	Thread Size	Pitch TPI	d1	d2	l1	l2	Flute
	414059113 BSP(G)	1/16"	28	5,9	6	57	11,3	3
	414059113 BSP(G)	1/16"	28	5,9	6	57	11,3	3
	414079140 BSP(G)	1/8"	28	7,9	8	63	14	3
	414079140-SP BSP(G)	1/8"	28	7,9	10	73	14	4
	414099166 BSP(G)	1/4"-3/8"	19	9,9	10	73	16,6	4
	414119227 BSP(G)	1/2"-7/8"	14	11,9	12	84	22,7	4
	414159321 BSP(G)	1"-2"	11	15,9	16	105	32,1	4
	414199404 BSP(G)	1"-6"	11	19,9	20	105	40,4	5

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter						
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0,02	0,02	0,02	0,03	0,04	0,04	0,05
		30-60	0,02	0,02	0,02	0,03	0,03	0,04	0,05
		20-50	0,02	0,02	0,02	0,03	0,03	0,03	0,04
		20-50	0,02	0,02	0,02	0,02	0,03	0,03	0,04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

* Marked products can be delivered quickly from stock.

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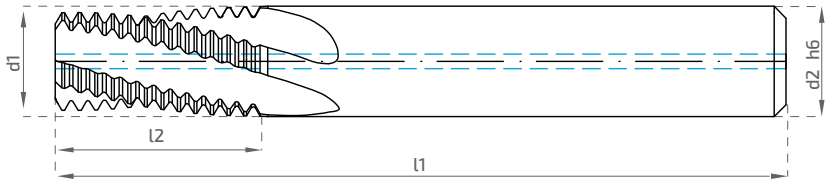
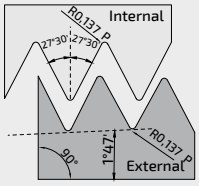


BSPT(RC)								
INTERNAL/EXTERNAL THREADING - HELICAL WITH INTERNAL COOLANT								
Stock	Code	Thread Size	Pitch TPI	d1	d2	l1	l2	Flute
	414059113 BSPT(Rc)	1/16"	28	5,9	6	57	11,3	3
	414059113 BSPT(Rc)	1/16"	28	5,9	6	57	11,3	3
	414079140 BSPT(Rc)	1/8"	28	7,9	8	63	14,0	3
	414099166 BSPT(Rc)	1/4"-3/8"	19	9,9	10	73	16,6	4
	414119227 BSPT(Rc)	1/2"-7/8"	14	11,9	12	84	22,7	4
	414159321 BSPT(Rc)	1"-2"	11	15,9	16	105	32,1	4
	414199404 BSPT(Rc)	1"-6"	11	19,9	20	105	40,4	5

Cutting Parameters								
	Hardness HB	Cutting Speed m/min (Vc)	Feedrate mm/Tooth Cutting Diameter					
			Ø1.5-3	Ø3-5	Ø5-7	Ø7-9	Ø9-11	Ø11-14	Ø14-20
Steel	130	70-130	0,03	0,04	0,06	0,07	0,09	0,09	0,12
	200	60-120	0,02	0,04	0,05	0,06	0,08	0,08	0,1
	240	60-110	0,02	0,03	0,04	0,05	0,05	0,05	0,08
	270	60-100	0,02	0,03	0,04	0,05	0,05	0,05	0,06
	400	50-80	0,01	0,02	0,03	0,03	0,04	0,04	0,05
Stainless Steel	200	70-100	0,02	0,02	0,03	0,04	0,05	0,05	0,07
	240	70-90	0,02	0,02	0,03	0,04	0,04	0,04	0,06
	400	60-80	0,015	0,02	0,02	0,03	0,03	0,03	0,04
Cast Iron	190	60-110	0,02	0,03	0,06	0,07	0,08	0,09	0,11
	180	60-90	0,02	0,03	0,05	0,06	0,08	0,09	0,12
	240	60-90	0,02	0,02	0,03	0,05	0,07	0,08	0,11
Non Ferrous Material	80	80-300	0,03	0,04	0,06	0,07	0,10	0,13	0,15
	90	100-300	0,03	0,04	0,06	0,07	0,11	0,13	0,16
	100	60-250	0,03	0,04	0,06	0,07	0,11	0,13	0,16
		100-400	0,05	0,06	0,08	0,09	0,13	0,15	0,18
Super Alloys	270	25-50	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	350	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
	300	20-40	0,01	0,01	0,01	0,02	0,02	0,03	0,03
		40-80	0.02	0.02	0.02	0.03	0.04	0.04	0.05
		30-60	0.02	0.02	0.02	0.03	0.03	0.04	0.05
		20-50	0.02	0.02	0.02	0.03	0.03	0.03	0.04
		20-50	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Hardened Steel	50 HRc	25-40	0,01	0,01	0,02	0,02	0,02	0,03	0,03
	56 HRc	25-50	0,01	0,01	0,02	0,02	0,02	0,03	0,03



Steel	●
Stainless Steel	●
Hardened Steel ≤54 HRc	●
Hardened Steel >54 HRc	●
Cast	●
Grafit	●
Non Ferrous Material	●
HRSA	●
Titanium	●

● Recommended ◑ Acceptable ○ Not Recommended

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