2022

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

2022
ENDMILL CATALOG

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 500 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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WE ALSO BUILD THE FUTURE ALONG WITH TODAY

BY AIMING FOR THE EXCELLENCE OF PRODUCTION

STARTING A NEW JOURNEY OF SUCCESS REQUIRES FORESEEN EXPERIENCE, EXPERT TEAM, STRATEGY AND VISION BY STRIVING FOR MANUFACTURING EXCELLENCE.

Dear Valued Customers and Business Partners

We, Karcan, as the biggest cutting tool manufacturer of Turkey with our modern machine and measuring park, R&D Center, number of qualified employees, sales figures and export share, owe you a great debt of gratitude for being a part of our journey all through these years and being a part of our achievement.
As the leading company steering the cutting tool industry of Turkey, we keep being your solution partner in machinability of hi-tech materials thanks to our highly skilled and trained R&D, process and technical sales team by following the recent developments in machining and material engineering and bringing the world's technology to your hands.

We are not just a Cutting Tools manufacturer! We make a difference in terms of our production improving activities, technical applications and consultancy services and we put all our efforts of our valued customers' gaining in 'cost per part' a competitive edge in global markets. From this point of view, we aim to provide products and services 'Beyond The Machining'.

We intend to present at our catalogue the R&D studies and improvements on the series within our standard program carried out together with the national and foreign universities, institutes, local and foreign customers and Tübitak.

We proudly present our 97 Series updated with X-Per Technology, 100 Series- our runner of last three years with the new coating technology, 101 Series highly recognised especially in stainless material face and side milling operations, 123 Series national market leader in machining aluminium with the updated geometry and coated option, again our 133 series takes part for the first time in the catalogue by it's double flute technology and special coating to machine non-ferrous materials, besides our sharpen corner 102 series, ball nose 203 series and corner radius 114 series which are widely acclaimed specially in finishing operations of heat treated materials thanks to their new geometries and last 121 Series makes a big difference in ductile steels up to 48HRC.

Besides all these innovations, we are very glad and excited to bring in our new 155 and 156 Series which made a debut at our recent catalogue; developed after a 2-year R&D study and trials, highly recognised in machining of super alloys both in national and foreign markets in last year. We enable to have high performance multi flutes cutting in super alloys especially in aviation applications by 155 & 156 Series are developed in addition to 98,99,101,111 series.

We have built our unique qualities in our micro line and completed our R&D processes. Here you can find our Mic-Cut series and solutions which can readily be compared with leading global suppliers. We had a brilliant feedback from the market thanks to our 150,153 and 250 series.

Along with our high performance Ultra-Bite series, we changed the idea of 'Cheap Tool' perception thanks to the improvements on coating and edge preparation technologies on our KSNF Series and general purpose applications series which provide economic solutions with regards to price/ performance. We named the new version of these economic series as Eco+ runs properly up to 55HRC. You may find them in this catalogue as sharp, corner radius and ballnose in short and long version both.

We keep on bringing innovations to our customers in our country and 21 countries globally, and keep working with great passion in the belief that improvements are constant and a never ending process.

Welcome again to the world of Karcan Cutting Tools

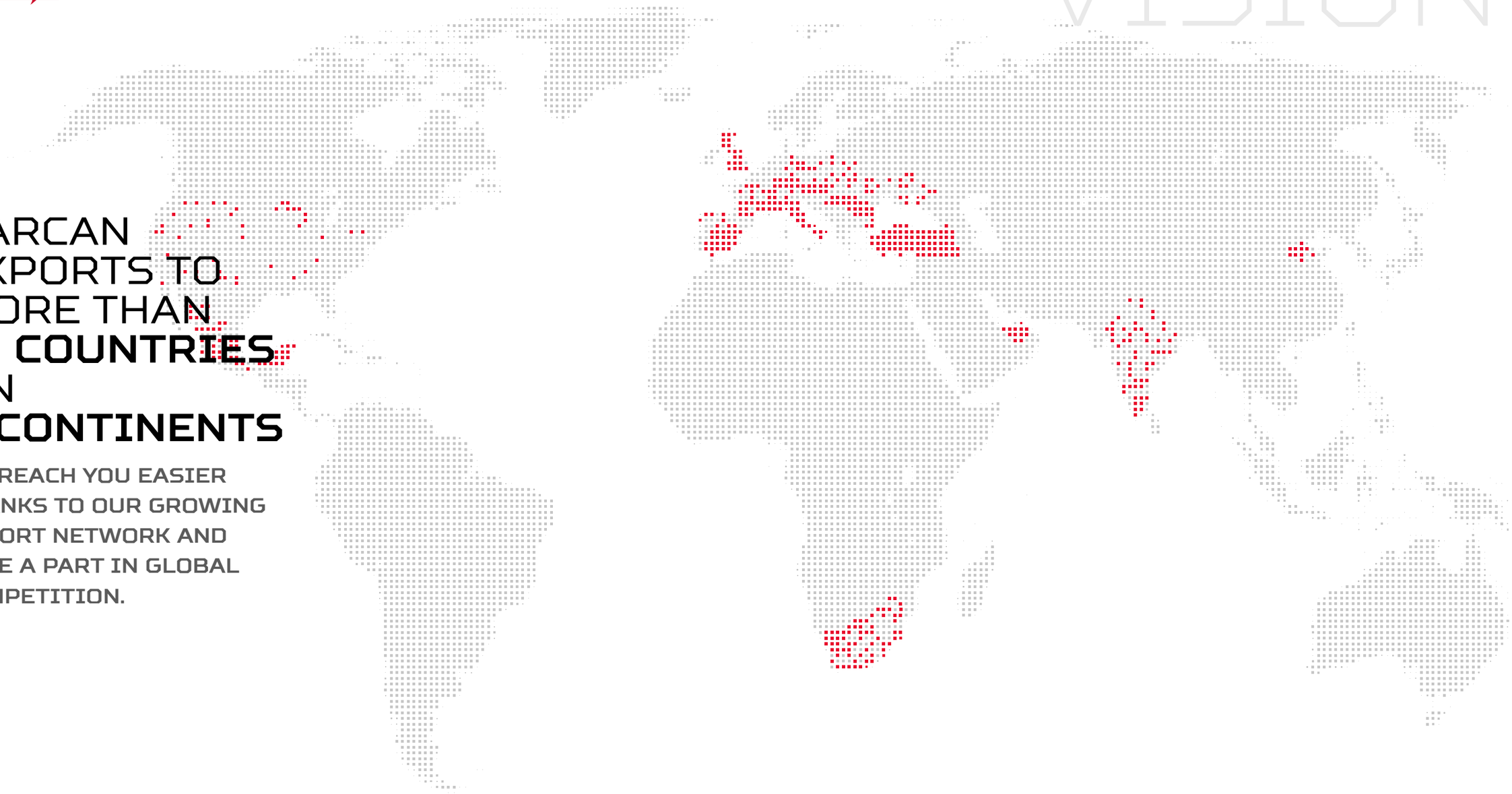
On behalf of Karcan Cutting Tools,

Ümit GEZER
Founder / General Manager

GLOBAL VISION

KARCAN EXPORTS TO MORE THAN **21 COUNTRIES** ON **4 CONTINENTS**

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



EX-PER

To Expand
Tool Life...

FUTURE OF EDGE PREPARATION TECHNOLOGY

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

www.karcan.com

SUPER SOLUTIONS FOR SUPER ALLOYS

WITH THE PARTNERSHIP OF KARCAN & TÜBİTAK

“We keep providing industrial and innovative solutions with our Ultra Bite series; Make your milling operations reliable when machining super alloys and stainless steel!”

Please meet our new generation 98,99,101 and 111 Series developed as a result of exhaustive R&D Studies !

Make a difference with our 155&156 Series which made a debut at our recent catalogue especially in machining of Inconel&Titanium,

We identified the root cause and difficulties encountered when machining super alloys and stainless steel. We have produced more reliable tools as a result of long-run tests and engineering studies which are also in accordance with our customers’ improvement requests.

After the studies of 3-years, we made easier chip removal by special flute designs, angles and optimised flute depths possible by minimising the surface roughness on the cutting tool.

We achieved very stable cutting edges thanks to its unique form, measurable, repeatable, standardised and optimised Radius. By means of this, we improved the face milling, pocket milling, interpolation and ramping operations.

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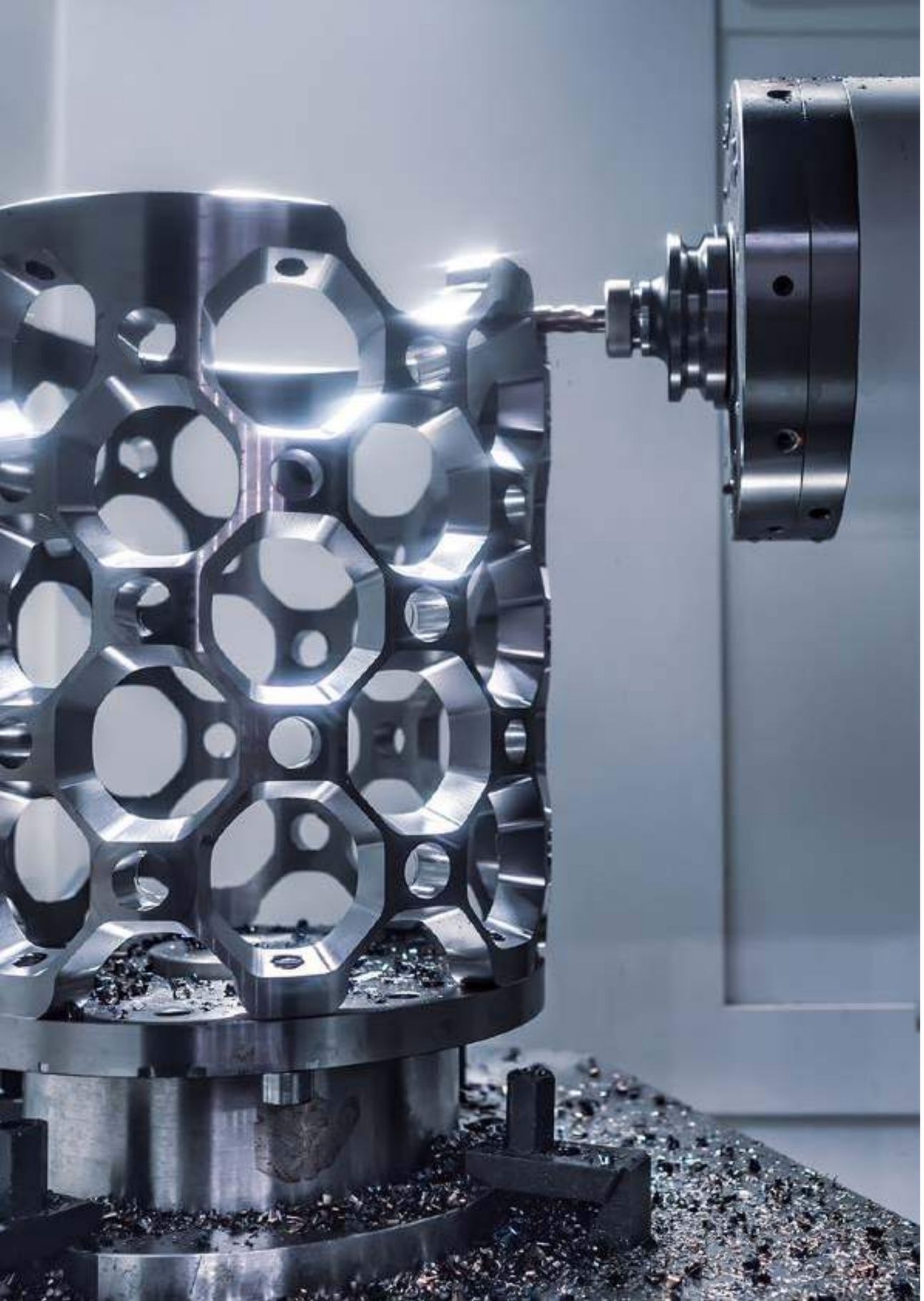
WHY KARCAN?

- Highly skilled and trained R&D, process, application and technical sales team.
- Benefit from our experiences and know-how in various areas, we provide flexible solutions.
- We are price/performance-oriented and we provide cost effective solutions with the sense of constant improvement.
- Capable to compete globally.
- Our well equipped and modern machine park ensures precision and performance at the highest level.
- Strong franchise and sales network. 7/24 available.
- 100% monitorability and repeatable quality ensure sustainable quality.
- Karcan Academy and own testing center enable you to get to know your tools in detail and choose the suitable tool you need.
- Effective stock inventory level.
- Own know-how with qualified labor force and intellectual capitals. Unique.
- Unlimited training opportunities for our customers.
- Specialised in crisis management with emergency action plans and taking quick actions.
- 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.



CHOOSE THE SUITABLE 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 choose the suitable tool according to the machinability of the materials or work pieces 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. Work piece 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 work piece
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 work piece costs by regarding overheads and depreciation
- Our tools ensure the best possible precision and quality on the work piece 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.

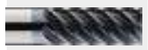
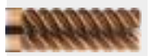
Tools, multi-functionally optimised and standardised, marked with (*) at our catalogue are always available in stock.

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

www.karcan.com

YOUTUBE

ULTRA-BITE 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
97		Z4			FORM HA DIN 6535 FORM HB DIN 6535	+TiSiN +AlCrN	●	◑	◑	○	●	○	○	○	○	24
98		Z3-Z4			FORM HA DIN 6535 FORM HB DIN 6535	+ZrN	○	●	○	○	○	○	○	●	◑	26
99		Z5			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	●	◑	◑	○	●	○	○	●	●	28
100		Z4			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	●	◑	◑	●	●	○	○	○	○	30
101		Z4			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	●	●	◑	○	●	○	○	◑	◑	32
102		Z4			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	○	34
110		Z6-Z8			FORM HA DIN 6535	+AlCrN	●	◑	◑	○	●	○	○	○	●	36
111		Z4			FORM HA DIN 6535 FORM HB DIN 6535	+AlCrN	◑	●	◑	○	○	○	○	●	●	38
112		Z6-Z8			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	◑	40
114		Z4			FORM HA DIN 6535	+AlCrN	●	○	●	●	◑	○	○	○	○	42
121		Z4			FORM HA DIN 6535 FORM HB DIN 6535	+TiSiN +AlCrN	●	○	○	○	◑	○	○	○	○	46
203		Z2			FORM HA DIN 6535	+TiSiN	◑	◑	●	●	○	○	○	○	○	48

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
155		Z5-Z6			FORM HA DIN 6535	+AlCrN	●	●	◑	○	○	○	○	●	●	52
156		Z6			FORM HA DIN 6535	+AlCrN	●	●	◑	○	○	○	○	●	●	54

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	●	●	●	●	◑	○	○	○	●	58
153		Z2			FORM HA DIN 6535	+TiSiN	●	●	●	●	◑	○	○	○	●	60
250		Z2			FORM HA DIN 6535	+TiSiN	●	●	●	●	◑	○	○	○	●	62

* Marked products can be delivered quickly from stock.

ECO+PLUS

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
KSNF		Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	68
KSUF		Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	70
KRSF		Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	72
KRUF		Z4			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	◑	74
KSKF Z4		Z4			FORM HA DIN 6535	+AlCrN	●	◑	◑	○	●	○	○	○	○	76
KSKF Z2		Z2			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	○	78
KKUF Z4		Z4			FORM HA DIN 6535	+AlCrN	●	◑	○	○	●	○	○	○	○	80
KKUF Z2		Z2			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	○	○	○	82
KKSF		Z3			FORM HA DIN 6535	+TiSiN	●	◑	◑	○	●	○	◑	◑	◑	84
MCV		Z3-Z4			FORM HA DIN 6535	+AlCrN	●	◑	◑	○	●	○	◑	◑	◑	86
MCX		Z4-Z5-Z6			FORM HA DIN 6535	+TiAlN	●	◑	◑	○	●	○	○	◑	◑	88
KPAN		Z1			FORM HA DIN 6535	+Blank	●	◑	◑	○	●	○	◑	○	◑	90
KTFF		Z6-Z8-Z10			FORM HA DIN 6535	+TiAlN	●	◑	◑	◑	●	○	○	◑	◑	94

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	○	○	○	○	○	○	●	○	○	98
122		Z2			FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	100
123		Z3			FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	102
133		Z3			FORM HA DIN 6535	+DLC	○	○	○	○	○	○	●	○	○	104
219		Z2			FORM HA DIN 6535	+Blank	○	○	○	○	○	○	●	○	○	106

* Marked products can be delivered quickly from stock.

2022
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.

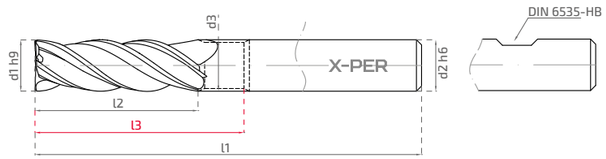
Advanced Rough Milling time reduced up to **%50**

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



Stock	Code	d1h9	d2h6	d3	l1	l2	l3	Ch	R
*	**97403000/97403000W**	3	6	-	50	6	-	-	-
*	**97403051/97403051W**	3	6	-	51	6	-	0,1	-
*	**97403058P/97403058PW**	3	6	2,8	58	6	15	-	R0.15
*	**97403058XL/97403058XLW**	3	6	-	58	10	-	-	R0.15
*	**97404000/97404000W**	4	6	-	50	12	-	-	-
*	**97404058/97404058W**	4	6	-	58	9	-	-	R0.15
*	**97404058P/97404058PW**	4	6	3,8	58	9	18	-	R0.15
*	**97404058XL/97404058XLW**	4	6	3,8	58	12	19	-	R0.15
*	**97405000/97405000W**	5	6	-	50	12	-	-	-
*	**97405058/97405058W**	5	6	4,8	58	13	18	-	R0.15
*	**97406000/97406000W**	6	6	-	50	15	-	-	-
*	**97406058/97406058W**	6	6	5,7	58	16	23	-	R0.15
*	**97408000/97408000W**	8	8	-	64	20	-	-	-
*	**97408064/97408064W**	8	8	7,7	64	20	27	0,2	-
*	**97410000/9741000W**	10	10	-	73	26	-	-	-
*	**97410073/97410073W**	10	10	9,5	73	26	32	0,2	-
*	**97412082/97412082W**	12	12	11,5	82	28	38	0,3	-
*	**97414082/97414082W**	14	14	13,7	82	30	42	0,3	
*	**97416093/97416093W**	16	16	15,5	93	36	44	0,3	-
	97418093/97418093W	18	18	17,5	93	35	44	0,3	
*	**97420105/97420105W**	20	20	19,5	105	38	54	0,3	-
	97420000/9742000W	20	20	19,5	105	38	54	0,3	-
SLOT *	**97412082 XPER SLOT**	12	12	11,7	82	28	36	0,1	-
*	**97405058 UPPER**	5	6	4,8	58	15	18	0,1	-
*	**97406058 UPPER**	6	6	5,7	58	16	23	-	R0.15
*	**97408064 UPPER**	8	8	7,7	64	20	27	0,15	-

Cutting Parameters

	Material	Slotting ap=1.5 - 10 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	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

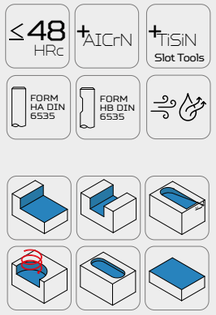
KARCAN cutting tools

*Marked products can be delivered quickly from stock.

Z4

≤48 HRc | +AlCrN | +TiSiN Slot Tools

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
High Performance

General Engineering | Aviation &Aerospace | Defence | Energy

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

Stock	Code	d1h9	d2h6	l1	l2	Ch	R	Z
*	**98303046/97303046W**	3	6	46	6	0.03	-	3
*	**98403002/98403002W**	3	6	46	6	-	0,2	4
*	**98404002/98404002W**	4	6	58	12	-	0,2	4
*	**98404005/98404005W**	4	6	58	12	-	0,5	4
*	**98404010/98404010W**	4	6	58	12	-	1	4
*	**98406002/98406002W**	6	6	58	14	-	0,2	4
*	**98406005/98406005W**	6	6	58	14	-	0,5	4
	98406010/98406010W	6	6	58	14	-	1	4
*	**98408002/98408002W**	8	8	64	23	-	0,2	4
*	**98408005/98408005W**	8	8	64	23	-	0,5	4
	98408020/98408020W	8	8	64	23	-	2	4
*	**98410002/98410002W**	10	10	73	24	-	0,2	4
*	**98410005/98410005W**	10	10	73	24	-	0,5	4
	98410010/98410010W	10	10	73	24	-	1	4
	98410020/98410020W	10	10	73	24	-	2	4
*	**98412002/98412002W**	12	12	82	28	-	0,2	4
*	**98412005/98412005W**	12	12	82	28	-	0,5	4
	98412010/98412010W	12	12	82	28	-	1	4
	98412020/98412020W	12	12	82	28	-	2	4
	98412040/98412040W	12	12	82	28	-	4	4
*	**98416002/98416002W**	16	16	93	38	-	0,2	4
*	**98416005/98416005W**	16	16	93	38	-	0,5	4
	98420050/98420050W	20	20	105	44	-	5	4
SPECIAL	* SP **98408064/98408064W**	8	8	64	17	0.3	-	4

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)
			
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 — Chrome-Cobalt Alloy Cr - Co Al/oys	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
Iron Dirimeçli Süper Alloys — HRSA Hastelloy	30-50	40-60	50-70
Iron Dirimeçli Süper Alloys — HRSA inconel 625	30-50	40-60	50-70
Iron Dirimeçli Süper Alloys — HRSA inconel 718	30-50	40-60	50-70
Iron Dirimeçli Süper Alloys — HRSA Nimonic	30-50	40-60	50-70
Titanium — Titanium	60-80	70-90	80-90
Titanium — Titanium Alloys	60-80	70-90	80-90

Feed Per Tooth (mm/tooth)

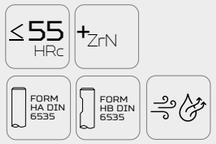
Ø	ap=1Ø	ap=0.50Ø	ae=0.35Ø	ae=0.30Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
3	0.006	0.007	0.007	0.007	0.007	0.008	0.008	0.010
4	0.008	0.010	0.009	0.009	0.010	0.010	0.011	0.014
5	0.011	0.014	0.012	0.013	0.013	0.014	0.015	0.019
6	0.014	0.017	0.015	0.016	0.017	0.018	0.020	0.024
8	0.020	0.024	0.022	0.023	0.024	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

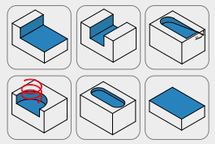
KARCAN

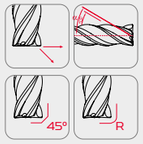
* Marked products can be delivered quickly from stock.

Z3

Z4







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

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

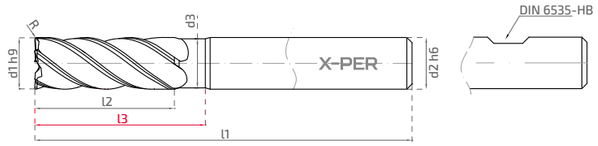
Full slot milling despite having 5-teeth

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.



Stock	Code	d1h9	d2	d3	l1	l2	l3	R
*	**99505002/99505002W**	5	6	4,7	58	15	20	0,2
*	**99505005/99505005W**	5	6	4,7	58	15	20	0,5
*	**99506002/99506002W**	6	6	5,7	58	15	20	0,2
*	**99506005/99506005W**	6	6	5,7	58	15	20	0,5
*	**99506015/99506015W**	6	6	5,7	58	15	20	1,5
*	**99508003/99508003W**	8	8	7,7	64	22	29	0,3
*	**99508005/99508005W**	8	8	7,7	64	22	29	0,5
*	**99510003/99510003W**	10	10	9,5	73	27	33	0,3
*	**99510005/99510005W**	10	10	9,5	73	27	33	0,5
*	**99512003/99512003W**	12	12	11,5	82	30	40	0,3
*	**99512005/99512005W**	12	12	11,5	82	30	40	0,5
*	**99512075/99512075W**	12	12	11,5	82	30	40	0,75
*	**99516003/99516003W**	16	16	15,5	93	37	45	0,3
*	**99516005/99516005W**	16	16	15,5	93	37	45	0,5
*	**99516075/99516075W**	16	16	15,5	93	37	45	0,75
*	**99516100/99516100W**	16	16	15,5	100	50	58	0,75
	99518003/99518003W	18	18	17,5	93	40	50	0,3
	99518075/99518075W	18	18	17,5	93	40	50	0,75
*	**99520075/99520075W**	20	20	19,5	105	40	56	0,75

Cutting Parameters

Material	Trochoidal ap=1.5Ø / ae=0.2Ø - 0.1ØØ Vc (m/min)	Slotting ap= 0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.2ØØ Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.2Ø - 0.1ØØ Vc (m/min)
Steel — Unalloyed Steel	170-200	130-160	150-180	170-200
Steel	170-200	130-160	150-180	170-200
Steel — Tempered Steel	160-190	120-150	140-170	160-190
Steel — Cold Work Tool Steel	100-130	80-100	90-110	100-130
Steel — 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
Stainless Steel — AISI 316 - 440	110-130	90-110	100-120	110-130
Stainless Steel — 17-4 PH 15-5 PH	90-110	70-90	80-100	90-110
Stainless Steel — Chrome-Cobalt Alloy	80-100	60-80	70-90	80-100
Stainless Steel — Duplex F51	70-90	50-70	60-80	70-90
Stainless Steel — Super Duplex F55	70-90	50-70	60-80	70-90
Cast Iron — Gray Cast Iron	150-180	120-150	140-160	150-180
Cast Iron — Alloyed Cast Iron	140-160	110-140	130-150	140-160
Cast Iron — Precision Cast Iron	130-150	110-130	120-140	130-150
Sertleştirilmiş Steel — 54 HRC	120-150	80-120	110-130	120-150
Isıl Dayanımlı Süper Alloys — HRSA hastelloy	60-80	40-60	50-70	60-80
Isıl Dayanımlı Süper Alloys — HRSA inconel 625	60-80	40-60	50-70	60-80
Isıl Dayanımlı Süper Alloys — HRSA inconel 718	60-80	40-60	50-70	60-80
Isıl Dayanımlı Süper Alloys — HRSA nimonic	60-80	40-60	50-70	60-80
Titanium — Titanium	80-100	60-80	70-90	80-100
Titanium — Titanium Alloys	80-100	60-80	70-90	80-100

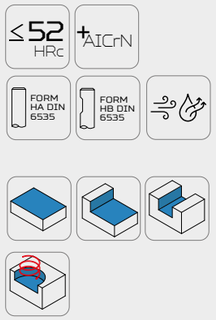
Feed Per Tooth (mm/tooth)

Ø	ap=1Ø	ap=0.5ØØ	ae=0.35Ø	ae=0.3ØØ	ae=0.25Ø	ae=0.2ØØ	ae=0.15Ø	ae=0.1ØØ
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

KARCAN

* Marked products can be delivered quickly from stock.

Z5



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

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.

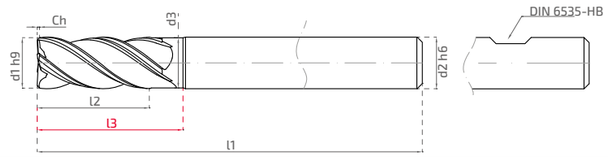
Up to **%40** better surface quality thanks to its special geometry.

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**

CHATTER FREE

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



Short Series

Stock	Code	d1h9	d2h6	d3	l1	l2	l3	Ch
	100401050	1	4		50	2,5		0
	100402050	2	4	1,95	50	4	6	0,08
	100402558	2,5	6	2,4	58	6	10	0,15
	100402558XL	2,5	6	2,4	58	12	16	0,15
*	**100403058/100403058W**	3	6	2,8	58	8	12	0,15
	100403058XL/100403058XLW	3	6	2,8	58	12	16	0,15
*	**100404058/100404058W**	4	6	3,8	58	11	15	0,15
*	**100405058/100405058W**	5	6	4,8	58	12	16	0,25
*	**100406058/100406058W**	6	6	5,8	58	14	19	0,25
*	**100407064/100407064W**	7	8	6,8	64	19	25	0,3
*	**100408064/100408064W**	8	8	7,8	64	20	28	0,3
*	**100410073/100410073W**	10	10	9,7	73	22	32	0,4
*	**100412082/100412082W**	12	12	11,7	82	27	38	0,5
*	**100414082/100414082W**	14	14	13,6	82	32	40	0,5
*	**100416093/100416093W**	16	16	15,5	93	34	49	0,6
*	**100416100/100416100W**	16	16	15,6	100	32	48	0,6
*	**100418093/100418093W**	18	18	17,6	93	35	53	0,6
*	**100420105/100420105W**	20	20	19,6	105	42	60	0,6

Long Series

Stock	Code	d1h9	d2h6	d3	l1	l2	l3	Ch
*	100406100	6	6	5,8	100	25	35	0,10
*	100408100	8	8	7,8	100	35	45	0,10
*	100410110	10	10	9,7	110	40	50	0,10
*	100412110	12	12	11,7	110	40	50	0,10
*	100416125	16	16	15,6	125	55	72	0,15

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	105-125	180-200	150-200	200-250
Steel — Steel	70-90	120-150	150-180	170-220
Steel — Tempered Steel	70-90	120-150	130-160	150-180
Steel — Cold Work Tool Steel	55-75	100-130	120-150	130-160
Steel — 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
Stainless Steel — AISI 316 - 440	15-20	25-35	20-30	25-35
Stainless Steel — 17-4 PH 15-5 PH	15-20	25-35	20-30	25-35
Stainless Steel — Chrome-Cobalt Alloy	15-30	30-50	35-60	45-60
Stainless Steel — Duplex F51	15-30	30-50	35-60	45 -60
Stainless Steel — Super Duplex F55	15-30	30-50	35-60	45 -60
Cast Iron — Gray Cast Iron	70-90	120 -160	160 -200	180-220
Cast Iron — Alloyed Cast Iron	70-90	120-160	160-200	180-220
Cast Iron — Precision Cast Iron	70-90	120-160	160-200	180-220
Sertleştirilmiş 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

* Marked products can be delivered quickly from stock.

Z4

≤62 HRc + AlCrN

FORM HA DIN 6535 | FORM HB DIN 6535

45°

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

101 Series
High Performance

General Engineering | Mold&Die | Automotive

Finish | Rough

Double Action

Designed for a better surface quality while evacuating high chip volumes;

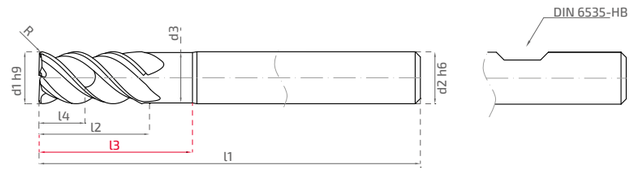
101 Series with Double Flute Technology! Highly recognized by our customers in milling steel and cast iron along with stainless steel and titanium.

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**



Stock	Code	d1h9	d2h6	d3	l1	l2	l3	l4	R
*	**101403002/101403002W**	3	6	2,8	58	11	20	5	0,2
*	**101404002/101404002W**	4	6	3,8	58	12	21	6	0,2
*	**101405002/101405002W**	5	6	4,8	58	13	17	6	0,2
*	**101405005/101405005W**	5	6	4,8	58	13	17	6	0,5
*	**101406002/101406002W**	6	6	5,7	58	15	20	8	0,2
*	**101406005/101406005W**	6	6	5,7	58	15	20	8	0,5
	101407064/101407064W	7	8	6,5	64	21	27	10	0,2
*	**101408002/101408002W**	8	8	7,7	64	21	28	10	0,2
*	**101408005/101408005W**	8	8	7,7	64	21	28	10	0,5
	101408010/101408010W	8	8	7,7	64	21	28	10	1
	101408020/101408020W	8	8	7,7	64	21	28	10	2
*	**101410002/101410002W**	10	10	9,5	73	21	27	12	0,2
*	**101410005/101410005W**	10	10	9,5	73	21	27	12	0,5
	101410008/101410008W	10	10	9,5	73	21	27	12	0,8
	101410010/101410010W	10	10	9,5	73	21	27	12	1
	101410015/101410015W	10	10	9,5	73	21	27	12	1,5
	101410020/101410020W	10	10	9,5	73	21	27	12	2
	101410030/101410030W	10	10	9,5	73	21	27	12	3
*	**101412003/101412003W**	12	12	11,5	82	29	39	16	0,3
*	**101412005/101412005W**	12	12	11,5	82	29	39	16	0,5
	101412010/101412010W	12	12	11,5	82	29	39	16	1
	101412015/101412015W	12	12	11,5	82	29	39	16	1,5
	101412020/101412020W	12	12	11,5	82	29	39	16	2
	101412030/101412030W	12	12	11,5	82	29	39	16	3
	101414000/101414000W	14	14	13,5	82	26	36	13	0
*	**101414003/101414003W**	14	14	13,5	82	26	36	13	0,3
*	**101416003/101416003W**	16	16	15,5	93	36	44	21	0,3
*	**101416005/101416005W**	16	16	15,5	93	36	44	21	0,5
	101416010/101416010W	16	16	15,5	93	36	44	21	1
	101416015/101416015W	16	16	15,5	93	36	44	21	1,5
	101420003/101420003W	20	20	19,5	105	38	54	19	0,3

Cutting Parameters

	Material	Slotting ap=1.00 Vc (m/min)	Shoulder Milling ap=1.50 / ae=0.35 - 0.200 Vc (m/min)	Son Yüzey Frezeleme ap=1.50 / ae=0.20 - 0.100 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
Sertleştirilmiş Steel	< 54 HRC	25-35	35-40	35-45
Isı Dirençli Süper Alloys	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

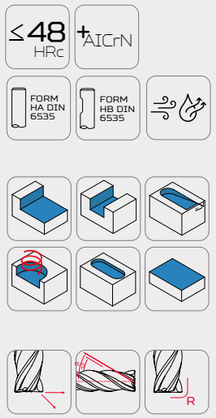
Feed Per Tooth (mm/tooth)

Ø	ap=10	ap=1.500	ae=0.350	ae=0.300	ae=0.250	ae=0.200	ae=0.150	ae=0.100
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	0.189	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

KARCAN cutting tools

* Marked products can be delivered quickly from stock.

Z4



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

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

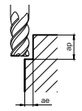
Stock	Code	d1h9	d2h6	l1	l2
*	**102403045**	3	6	45	8
*	**102404045**	4	6	45	11
*	**102405050**	5	6	50	13
*	**102406060**	6	6	60	20
*	**102408060**	8	8	60	20
*	**102410070**	10	10	70	25
*	**102412075**	12	12	75	26

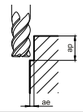
Long Series

Stock	Code	d1h9	d2h6	l1	l2
*	**102403060**	3	3	60	15
*	**102404075**	4	4	75	15
*	**102405075**	5	5	75	20
*	**102406080**	6	6	80	20
*	**102408100**	8	8	100	25
*	**102410100**	10	10	100	30
*	**102412100**	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

* Marked products can be delivered quickly from stock.

Z4

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

● Recommended ◑ Acceptable ○ Not Recommended

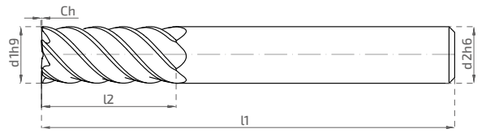
ULTRA-BITE

110 Series
Finishing Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

Special multi flute geometry reduces milling time up to %30



Short Series

Stock	Code	d1h9	d2h6	l1	l2	Ch	Z
*	**110606058**	6	6	58	15	0,1	6
*	**110608064**	8	8	64	19	0,1	6
*	**110610073**	10	10	73	22	0,1	6
*	**110612082**	12	12	82	26	0,1	6
*	**110614082**	14	14	82	31	0,15	6
*	**110616093**	16	16	93	32	0,15	6
	110818093	18	18	93	32	0,15	8
	110820105	20	20	105	38	0,15	8

Long Series

Stock	Code	d1h9	d2h6	l1	l2	Ch	Z
*	**110606080**	6	6	80	30	0,1	6
*	**110608090**	8	8	90	40	0,1	6
*	**110610100**	10	10	100	45	0,1	6
*	**110612110**	12	12	110	55	0,1	6
*	**110614110**	14	14	110	60	0,15	6
*	**110616125**	16	16	125	70	0,15	6
	110818140	18	18	140	70	0,15	8
	110820150	20	20	150	75	0,15	8

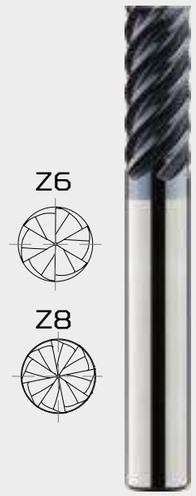
Cutting Parameters

	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	80-110	110-140
	Tempered Steel	80-100	105-130
	Cold Work Tool Steel	60-80	80-105
	Hot Work Tool Steel	60-80	80-105
Stainless Steel	AISI 304 - 416 - 420	40-60	55-80
	AISI 316 - 440	40-60	55-80
	17-4 PH 15-5 PH	40-60	55-80
	Cobalt-Chrome Alloys	40-60	55-80
	Duplex F51	40-60	55-80
	Super Duplex F55	40-60	55-80
Cast Iron	Gray Cast Iron	80-110	110-140
	Alloyed Cast Iron	80-100	105-130
	Precision Cast Iron	80-100	105-130
Titanium	Titanium	40-50	50-70
	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

* Marked products can be delivered quickly from stock.



Z6

Z8

≤48 HRc + AlCrN

FORM HA DIN 6535

45°

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

111 Series
High Performance

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

Finish | Rough

Super Solution for Super Alloys

Game changer 111 Series developed as a result of 3-Years long run R&D studies!

We intend to offer safe milling operations by bringing the world's technology in milling Titanium, Inconel and Stainless Steel.

Minimal chatter thanks to its various helix and intersections.

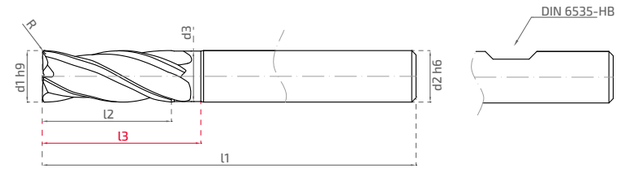
A series to make a breakthrough

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



Stock	Code	d1h9	d2h6	d3	l1	l2	l3	R
*	**111403002/111403002W**	3	6	2,9	58	9	12	0,2
*	**111404002/111404002W**	4	6	3,9	58	12	14	0,2
*	**111405002/111405002W**	5	6	4,9	58	15	19	0,2
*	**111406002/111406002W**	6	6	5,9	58	16	22	0,2
*	**111406005/111406005W**	6	6	5,9	58	16	22	0,5
	111406010/111406010W	6	6	5,7	58	17	28	1
*	**111408002/111408002W**	8	8	7,8	64	20	26	0,2
	111408003/111408003W	8	8	7,8	64	20	26	0,3
*	**111408005/111408005W**	8	8	7,8	64	20	26	0,5
	111408010/111408010W	8	8	7,8	64	20	26	1
*	**111410002/111410002W**	10	10	9,8	73	22	31	0,2
*	**111410005/111410005W**	10	10	9,8	73	22	31	0,5
*	**111410008/111410008W**	10	10	9,8	73	22	31	0,8
	111410010/111410010W	10	10	9,8	73	22	31	1
*	**111412002/111412002W**	12	12	11,7	82	28	40	0,2
*	**111412005/111412005W**	12	12	11,7	82	28	40	0,5
*	**111412008/111412008W**	12	12	11,7	82	28	40	0,8
*	**111412010/111412010W**	12	12	11,7	82	28	40	1
*	**111412015/111412015W**	12	12	11,7	82	28	40	1,5
	111412030/111412030W	12	12	11,7	82	28	40	3
*	**111416002/111416002W**	16	16	15,7	93	36	48	0,2
*	**111416005/111416005W**	16	16	15,7	93	36	48	0,5
*	**111416075/111416075W**	16	16	15,7	93	36	48	0,75
	111416010/111416010W	16	16	15,8	93	36	48	1
*	**111416015/111416015W**	16	16	15,7	93	36	48	1,5
	111420010/111420010W	20	20	19,7	105	38	58	1

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	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
Isıl Dirençli Süper Alaşım	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
Sertleştirilmiş 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	0.003	0.004	0.005	0.007	0.007	0.007	0.008	0.008	0.010
4	0.004	0.005	0.007	0.009	0.009	0.010	0.010	0.011	0.014
5	0.006	0.007	0.009	0.012	0.013	0.013	0.014	0.015	0.019
6	0.007	0.009	0.011	0.015	0.016	0.017	0.018	0.020	0.024
8	0.011	0.014	0.016	0.022	0.023	0.024	0.025	0.028	0.034
10	0.017	0.018	0.020	0.030	0.031	0.032	0.034	0.038	0.046
12	0.021	0.024	0.028	0.040	0.041	0.043	0.045	0.050	0.061
16	0.031	0.038	0.045	0.061	0.063	0.066	0.069	0.077	0.094
20	0.042	0.052	0.063	0.083	0.086	0.090	0.094	0.105	0.128

KARCAN

* Marked products can be delivered quickly from stock.

Z4

≤55 HRc + AlCrN

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

112 Series
Finishing Endmill

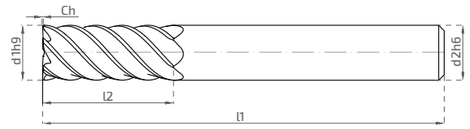
General Engineering | Mold&Die | Automotive

Finish | Rough

To have a super smooth surface in 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



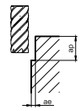
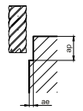
Short Series

Stock	Code	d1h9	d2h6	l1	l2	Ch	Z
*	**112606058**	6	6	58	13	0,1	6
*	**112608064**	8	8	64	19	0,1	6
*	**112610073**	10	10	73	22	0,1	6
*	**112612082**	12	12	82	26	0,1	6
*	**112616093**	16	16	93	32	0,2	6
	112820105	20	20	105	38	0,2	8

Long Series

Stock	Code	d1h9	d2h6	l1	l2	Ch	Z
*	**112606080**	6	6	80	30	0,1	6
*	**112608090**	8	8	90	35	0,1	6
*	**112610100**	10	10	100	45	0,1	6
*	**112612110**	12	12	110	55	0,1	6
*	**112616125**	16	16	125	65	0,2	6
	112820150	20	20	150	75	0,2	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	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
Sertleştirilmiş Steel	≤ 54 HRC	80-110	110-140
Sertleştirilmiş Steel	>54 HRC	20-50	50-80

Feed Per Tooth (mm/tooth)

Ø	ae=0.25Ø	ae=0.20Ø	ae=0.10Ø	ae=0.10Ø
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

* Marked products can be delivered quickly from stock.

Z6

Z8

≥48 HRC | 62 ≤ HRC | +TiSiN

FORM HA DIN 6535

45°

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

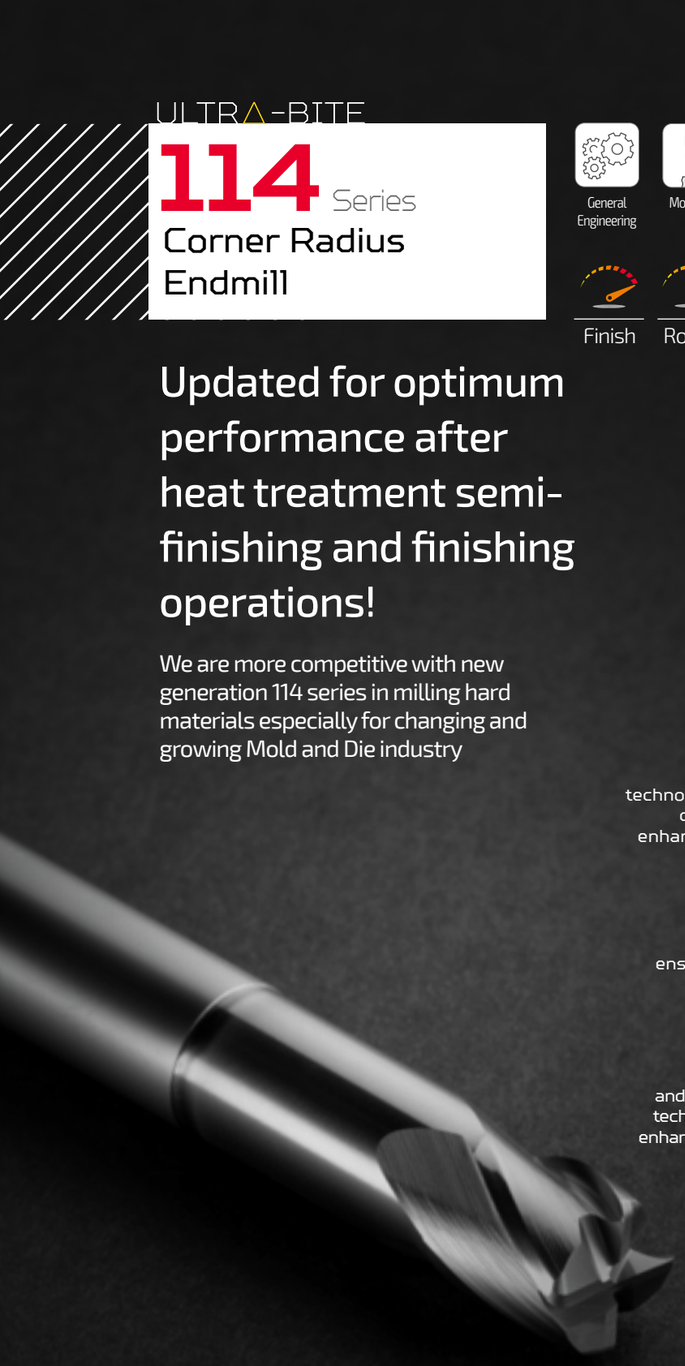
114 Series
Corner Radius Endmill

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



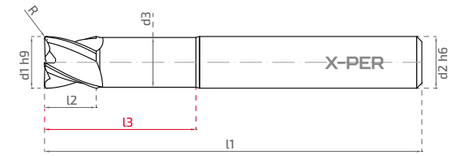
AICrN coating technology and surface quality ensure an enhanced tool life and resistance up to **%35**

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.



Short Series

Stock	Code	d1h9	d2h6	d3	l1	l2	l3	R
*	**114402005**	2	6	1,9	58	2	12	0,5
*	**114403005**	3	6	2,8	58	3	16	0,5
* SP	**114403005**	3	3	2,8	50	3	16	0,5
*	**114404005**	4	6	3,8	58	4	20	0,5
*	**114404010**	4	6	3,8	58	4	20	1
* SP	**114404005**	4	4	3,8	50	4	20	0,5
* SP	**114404010**	4	4	3,8	50	4	20	1
*	**114405005**	5	6	4,8	58	5	18	0,5
*	**114405010**	5	6	4,8	58	5	18	1
	114405015	5	6	4,8	58	5	18	1,5
*	**114406005**	6	6	5,8	58	6	23	0,5
*	**114406010**	6	6	5,8	58	6	23	1
*	**114406015**	6	6	5,8	58	6	23	1,5
*	**114408005**	8	8	7,7	64	8	25	0,5
*	**114408010**	8	8	7,7	64	8	25	1
	114408015	8	8	7,7	64	8	25	1,5
*	**114410005**	10	10	9,7	73	10	32	0,5
*	**114410010**	10	10	9,7	73	10	32	1
	114410015	10	10	9,7	73	10	32	1,5
*	**114412005**	12	12	11,7	82	12	36	0,5
*	**114412010**	12	12	11,7	82	12	36	1
	114412015	12	12	11,7	82	12	36	1,5
	114412020	12	12	11,7	82	12	36	2
	114416010	16	16	15,5	93	16	43	1
	114416015	16	16	15,5	93	16	43	1,5
	114416020	16	16	15,5	93	16	43	2
	114416030	16	16	15,5	93	16	43	3

Cutting Parameters

	Material	Shoulder Milling ap=0.10Ø / ae=0.25 - 0.10Ø Vc (m/min)	Finish Milling ap=0.10Ø / ae=0.10Ø 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
Sertleştirilmiş Steel	≤ 54 HRC	65-90	90-120
Sertleştirilmiş Steel	>54 HRC	60-80	80-110

Feed Per Tooth (mm/tooth)

Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø	ae=0.15Ø	ae=0.10Ø
4	0.031	0.034	0.037	0.040	0.044	0.047
6	0.031	0.034	0.037	0.041	0.045	0.049
8	0.038	0.042	0.047	0.053	0.058	0.066
10	0.049	0.052	0.056	0.061	0.066	0.071
12	0.052	0.056	0.062	0.068	0.074	0.079
16	0.063	0.068	0.076	0.082	0.089	0.097

* Marked products can be delivered quickly from stock.

Z4

≤62 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

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

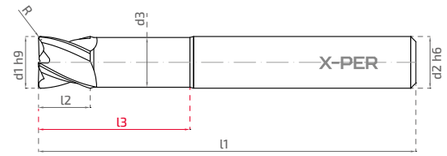
AICrN coating technology and surface quality ensure an enhanced tool life and resistance up to **%35**

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 Series

Stock	Code	d1h9	d2h6	d3	l1	l2	l3	R
*	**114U404005XL**	4	4	3,8	74	10	20	0,5
*	**114U404005**	4	6	3,8	74	10	20	0,5
*	**114U406005**	6	6	5,8	74	16	22	0,5
*	**114U406005XL**	6	6	5,8	100	16	22	0,5
*	**114U406010**	6	6	5,8	74	16	22	1
*	**114U406010XL**	6	6	5,8	100	16	22	1
*	**114U408005**	8	8	7,7	74	16	24	0,5
*	**114U408005XL**	8	8	7,7	100	16	24	0,5
*	**114U408010**	8	8	7,7	74	16	24	1
*	**114U408010XL**	8	8	7,7	100	16	24	1
	114U408015	8	8	7,7	74	16	24	1,5
*	**114U410005**	10	10	9,7	100	18	32	0,5
*	**114U410010**	10	10	9,7	100	18	32	1
	114U410015	10	10	9,7	100	18	32	1,5
	114U410020	10	10	9,7	100	18	32	2
*	**114U412005**	12	12	11,7	100	20	36	0,5
*	**114U412010**	12	12	11,7	100	20	36	1
	114U412015	12	12	11,7	100	20	36	1,5
	114U412020	12	12	11,7	100	20	36	2

Cutting Parameters

Material	Shoulder Milling ap=0.10Ø / ae=0.25 - 0.10Ø Vc (m/min)	Finish Milling ap=0.10Ø / ae=0.10Ø 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
Sertleştirilmiş Steel — ≤ 54 HRC	65-90	90-120
Sertleştirilmiş Steel — >54 HRC	60-80	80-110

Feed Per Tooth (mm/tooth)

Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø	ae=0.15Ø	ae=0.10Ø
4	0.031	0.034	0.037	0.040	0.044	0.047
6	0.031	0.034	0.037	0.041	0.045	0.049
8	0.038	0.042	0.047	0.053	0.058	0.066
10	0.049	0.052	0.056	0.061	0.066	0.071
12	0.052	0.056	0.062	0.068	0.074	0.079

* Marked products can be delivered quickly from stock.

Z4

≤62 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

ULTRA-BITE

121 Series
High Performance

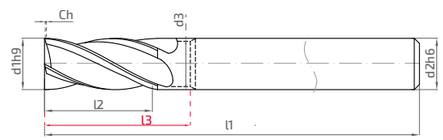
General Engineering | Mold&Die | Automotive | Defence | Rail Systems

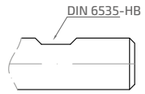
Finish | Rough

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





Stock	Code	d1h9	d2h6	d3	l1	l2	l3	Ch
*	**121403058/121403058W**	3	6	2,9	58	9	12	0,15
*	**121404058/121404058W**	4	6	3,9	58	12	15	0,15
*	**121405058/121405058W**	5	6	4,9	58	15	19	0,2
*	**121406058/121406058W**	6	6	-	58	16	-	0,2
*	**121408064/121408064W**	8	8	-	64	20	-	0,2
*	**121410073/121410073W**	10	10	-	73	22	-	0,2
*	**121412082/121412082W**	12	12	-	82	28	-	0,2
*	**121416093/121416093W**	16	12	-	93	32	-	0,2
SLOT *	**121412082/121412082W SLOT**	12	12	-	82	28	-	0,2

Cutting Parameters

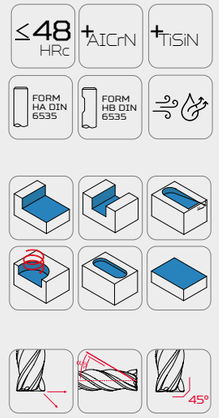
	Material	Slotting ap=1.5 - 1Ø Vc (m/min)	Slotting ap= 1.0 - 0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.35 - 0.20Ø Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.20 - 0.10Ø Vc (m/min)
					
Steel	Unalloyed Steel	130-170	170-200	200-230	230-280
Steel	Steel	120-160	160-190	190-220	220-260
Steel	Tempered 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

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	0.0420
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

* Marked products can be delivered quickly from stock.

Z4



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

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

Short Series

Stock	Code	d1f8	d2h6	l1	l2
*	**203203058**	3	6	58	6
*	**203204058**	4	6	58	9
*	**203205058**	5	6	58	10
*	**203206058**	6	6	58	12
*	**203208064**	8	8	64	15
*	**203210073**	10	10	73	20
*	**203212082**	12	12	82	22

Long Series

Stock	Code	d1f8	d2h6	d3	l1	l2	l3
*	**203203050**	3	3	2,9	50	5	15
*	**203203080**	3	3	2,9	80	5	30
*	**203204050**	4	4	3,8	50	6	15
*	**203204080**	4	4	3,8	80	6	35
*	**203205050**	5	5	4,8	50	7	15
*	**203205080**	5	5	4,8	80	10	35
*	**203206080**	6	6	5,8	80	10	35
*	**203206100**	6	6	5,8	100	10	45
*	**203208100**	8	8	7,7	100	12	45
*	**203210110**	10	10	9,7	110	14	55
*	**203212110**	12	12	11,7	110	16	55

Cutting Parameters

Material	Kopya Frezeleme ap=0.25 - 0.10Ø / ae=0.25 - 0.10Ø	Finish Milling ap=0.10Ø / ae=0.10Ø
	Vc (m/min)	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
Chrome-Cobalt Alloy	70-100	100-130
Sertleştirilmiş Steel — ≤ 54 HRC	90-120	120-150
Sertleştirilmiş Steel — >54 HRC	60-90	90-120

Feed Per Tooth (mm/tooth)

Ø	ae=0.25Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø	ae=0.10Ø	ae=0.10Ø
3	0,050	0,054	0,059	0,062	0,065	0,070
4	0,051	0,058	0,065	0,070	0,074	0,080
6	0,059	0,070	0,083	0,087	0,093	0,100
8	0,061	0,073	0,086	0,091	0,097	0,115
10	0,069	0,082	0,095	0,107	0,114	0,125
12	0,080	0,09	0,110	0,122	0,130	0,140

* Marked products can be delivered quickly from stock.

ULTRA-BITE

203

Ball Nose Endmill

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

2022
Milling Catalogue

HPC
HIGH PERFORMANCE CUTTING

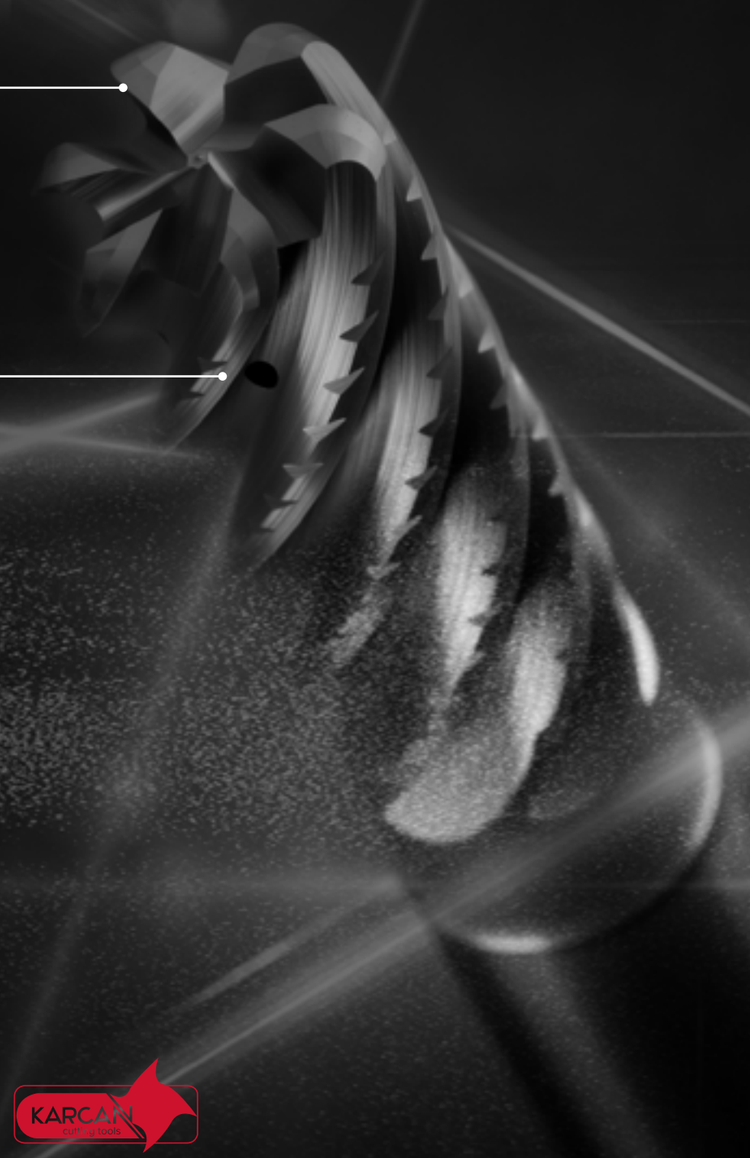
Developing machining technologies and increasing machine abilities enable a faster machining of heat resistant materials. Choosing the best tool is crucial in here. It is why Karcan R&D department developed for you as an essential of new machining era ;

Gen – Z (Generation Z)
Designed to have high performance machining of advanced technology materials.

We reduce your cost per part by new Gen-Z Series while you machine super alloys in next-generation machining methods such as high performance cutting, high speed machining or trochoidal machining.

HIGH PERFORMANCE MACHINING.

HIGH SPEED MACHINING.



HPC

155 Gen-Z Series

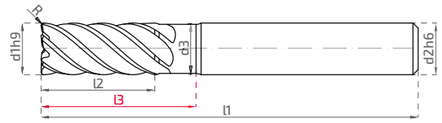
High Performance Machining

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

Finish | Rough

Designed to have high performance machining of advanced technology materials.

new *product*



Short Series

Stock	Code	d1h9	d2h6	d3	l1	l2	l3	R	Z
	155506005	6	6	5,7	58	13	20	0,5	5
	155508005	8	8	7,6	64	18	25	0,5	5
	155610005	10	10	7,5	73	22	30	0,5	6
	155610010	10	10	7,5	73	22	30	1	6
	155612005	12	12	11,4	82	26	36	0,5	6
*	**155612010**	12	12	11,4	82	26	36	1	6
*	**155616003**	16	16	15,2	93	34	42	0,3	6
*	**155616010**	16	16	15,2	93	34	42	1	6
*	**155616020**	16	16	15,2	93	34	42	2	6
	155620030	20	20	19	105	42	52	3	6

Long Series

Stock	Code	d1h9	d2h6	d3	l1	l2	l3	R	Z
	155U610100	10	10	-	100	40	-	1	6
	155U612100	12	12	-	100	48	-	1	6
SP	**155U616010**	16	16	-	100	48	-	1	6
	155U616125	16	16	-	125	64	-	2	6
	155U620165	20	20	-	165	80	-	3	6

Cutting Parameters - Trochoidal

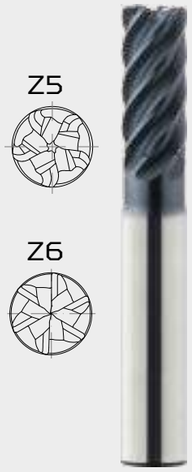
	Material	Shoulder Milling ap=2xØ/ae=0,05-0,12Ø Vc (m/min)	Shoulder Milling ap=3xØ/ae=0,05-0,1Ø Vc (m/min)	Shoulder Milling ap=4xØ/ae=0,05-0,1Ø Vc(m/min)
Steel	Unalloyed Steel	220-250	220-250	200-230
	Steel	210-240	210-240	190-220
	Tempered Steel	110-140	110-140	100-120
	Cold Work Tool Steel	80-110	75-105	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

* Marked products can be delivered quickly from stock.

Z5



Z6

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

● Recommended ◑ Acceptable ○ Not Recommended

HPC

156 Gen-Z Series

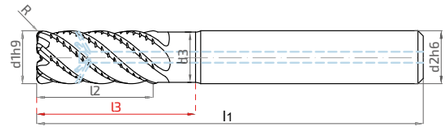
High Performance Machining

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

Finish · Rough

Designed to have high performance machining of advanced technology materials.

new product



Short Series

Stock	Code	d1h9	d2h6	d3	l1	l2	l3	R
	156606005	6	6	5,7	58	13	20	0,5
	156608005	8	8	7,6	64	18	25	0,5
	156610005	10	10	7,5	73	22	30	0,5
	156610010	10	10	7,5	73	22	30	1
	156612005	12	12	11,4	82	26	36	0,5
	156612010	12	12	11,4	82	26	36	1
	156616010	16	16	15,2	93	34	42	1
	156616020	16	16	15,2	93	34	42	2
	156620030	20	20	19	105	42	52	3

Cutting Parameters - Trochoidal

Material		Shoulder Milling ap=2xØ/ae=0,05-0,12Ø Vc (m/min)	Shoulder Milling ap=3xØ/ae=0,05-0,10 Vc (m/min)	Shoulder Milling ap=4xØ/ae=0,05-0,10 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

* Marked products can be delivered quickly from stock.

Z6

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

● Recommended ◑ Acceptable ○ Not Recommended

2022
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 Straight Endmill

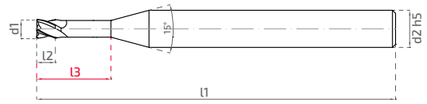
General Engineering | Mold&Die | Finish | Rough

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.

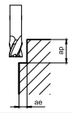
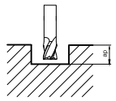
High efficiency and precision milling on work pieces up to 63HRC.

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



Stock	Code	d1	d2h5	l1	l2	l3
*	**150200502**	0,5	4	50	0,5	2
*	**150200503**	0,5	4	50	0,5	3
*	**150200504**	0,5	4	50	0,5	4
	150201002	1	4	50	1	2
*	**150201004**	1	4	50	1	4
*	**150201006**	1	4	50	1	6
*	**150201008**	1	4	50	1	8
*	**150201010**	1	4	50	1	10
*	**150201012**	1	4	50	1	12
	150201014	1	4	50	1	14
*	**150201016**	1	4	50	1	16
*	**150215004**	1,5	4	50	1,5	4
*	**150215006**	1,5	4	50	1,5	6
*	**150215008**	1,5	4	50	1,5	8
*	**150215010**	1,5	4	50	1,5	10
*	**150215012**	1,5	4	50	1,5	12
	150215014	1,5	4	50	1,5	14
*	**150215016**	1,5	4	50	1,5	16
*	**150202004**	2	4	50	2	4
*	**150202006**	2	4	50	2	6
*	**150202008**	2	4	50	2	8
*	**150202010**	2	4	50	2	10
*	**150202012**	2	4	50	2	12
*	**150202016**	2	4	50	2	16
	150202020	2	4	50	2	20
	150225006	2,5	4	50	2,5	6
	150225008	2,5	4	50	2,5	8
	150225010	2,5	4	50	2,5	10
	150225012	2,5	4	50	2,5	12
	150225020	2,5	4	50	2,5	20

Cutting Parameters

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

Feed Per Tooth (mm/tooth)

Ø	ae=0.2Ø	ae=0.1Ø	ae=0.2Ø	ae=0.1Ø
1	0.015	0,020	0.015	0,020
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

* Marked products can be delivered quickly from stock.

D Ø0.5-Ø2.5 +0/-0.01

Z2

≥43 HRc | 63 ≤ HRc | +TiSiN

FORM HA DIN 6535

90°

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

● Recommended ◑ Acceptable ○ Not Recommended

MIC-CUT

153 Series
Micro Corner Radius Endmill

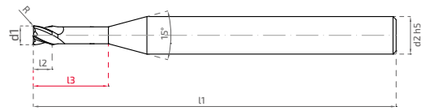
General Engineering | Mold&Die | Finish | Rough

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.



Short Series

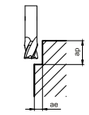
Stock	Code	d1	d2h5	l1	l2	l3	R
	15320050205	0,5	4	50	0,5	2	0,05
	15320050305	0,5	4	50	0,5	3	0,05
	15320050405	0,5	4	50	0,5	4	0,05
*	**15320106010**	1	4	50	1	6	0.10
*	**15320108010**	1	4	50	1	8	0.10
*	**15320110010**	1	4	50	1	10	0.10
*	**15320112010**	1	4	50	1	12	0.10
*	**15321506020**	1,5	4	50	1,5	6	0.20
*	**15321508020**	1,5	4	50	1,5	8	0.20
*	**15321510020**	1,5	4	50	1,5	10	0.20
*	**15321512020**	1,5	4	50	1,5	12	0.20
*	**15320206020**	2	4	50	2	6	0.20
*	**15320206050**	2	4	50	2	6	0.50
*	**15320208020**	2	4	50	2	8	0.20
*	**15320208050**	2	4	50	2	8	0.50
*	**15320210020**	2	4	50	2	10	0.20
*	**15320210050**	2	4	50	2	10	0.50
*	**15320212020**	2	4	50	2	12	0.20
*	**15320212050**	2	4	50	2	12	0.50

Long Series

Stock	Code	d1	d2h5	l1	l2	l3	R
*	**15320116010**	1	4	50	1	16	0.10
	15320120010	1	4	50	1	20	0.10
*	**15321516020**	1,5	4	60	1,5	16	0.20
	15321520020	1,5	4	60	1,5	20	0.20
*	**15320216020**	2	4	50	2	16	0.20
*	**15320216050**	2	4	50	2	16	0.50
	15320220020	2	4	50	2	20	0.20

Cutting Parameters

	Material	Finish Milling ap=0.2Ø / 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	30-60
Sertleştirilmiş Steel	≤ 54 HRC	100-140
	>54 HRC	70-90



Feed Per Tooth (mm/tooth)

Ø	ae=0.20Ø	ae=0.10Ø
1	0.015	0,020
1,5	0.018	0,025
2	0.022	0,031

* Marked products can be delivered quickly from stock.

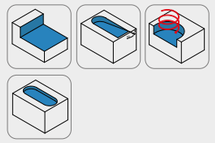
D Ø0.5-Ø2.5 +0/-0,01

R 0.05-0.50 ±0,010

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

MIC-CUT

250 Series
Micro Ball Nose Endmill

General Engineering | Mold&Die | Finish | Rough

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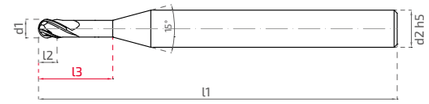
High efficiency and precision milling on work pieces up to **63HRC.**

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



Short Series

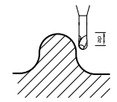
Stock	Code	d1	d2h5	l1	l2	l3
	250200502	0,5	4	50	0,5	2
	250200503	0,5	4	50	0,5	3
	250200504	0,5	4	50	0,5	4
*	**250201006**	1	4	50	1	6
*	**250201008**	1	4	50	1	8
*	**250201010**	1	4	50	1	10
*	**250201012**	1	4	50	1	12
*	**250215006**	1,5	4	50	1,5	6
*	**250215008**	1,5	4	50	1,5	8
*	**250215010**	1,5	4	50	1,5	10
*	**250215012**	1,5	4	50	1,5	12
*	**250202006**	2	4	50	2	6
*	**250202008**	2	4	50	2	8
*	**250202010**	2	4	50	2	10
*	**250202012**	2	4	50	2	12

Long Series

Stock	Code	d1	d2h5	l1	l2	l3
*	**250201016**	1	4	50	1	16
	250201020	1	4	50	1	20
*	**250215016**	1,5	4	50	1,5	16
	250215020	1,5	4	50	1,5	20
*	**250202016**	2	4	50	2	16
	250202020	2	4	50	2	20

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
Sertleştirilmiş Steel	≤ 54 HRC	100-140
	>54 HRC	70-90

Feed Per Tooth (mm/tooth)

Ø	ae=0.20Ø	ae=0.10Ø
1	0.015	0,020
1,5	0.018	0,025
2	0.022	0,031

KARCAN

* Marked products can be delivered quickly from stock.

D Ø0.5-Ø2 +0/-0,01

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

2022
Milling Catalogue

"The Series Raises The Standards"

ECO+PLUS

Forget the first thing that comes to your mind about "Cheap Endmill", because you can't be that rich to buy cheap things...

Therefore, we developed Eco-Line series which offer cost effective solutions without compromising price/performance ratio.

We change the idea of 'Cheap Tool' perception thanks to our new generation Eco+ KSNF,KSUF,KRSF,KRUF,KSKF and KKUF Series.

We ensure a proper machining up to 55 HRC materials.

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.

KARCAN cutting tools

ECO+KSNF

Meet The New Generation Of Eco+ Series!

new *design*

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

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

KARCAN cutting tools

ECO+PLUS

KSNF Series

General Use Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

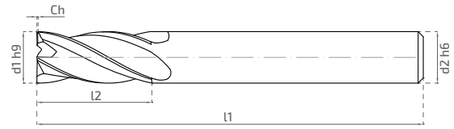
Brand-New Original Geometry, Unique Edge-Preparation, And Advanced Coating Technology,

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



Stock	Code	d1h9	d2h6	l1	l2	Ch
*	**KSNF401050**	1	4	50	3	-
*	**KSNF401550**	1,5	4	50	6	-
*	**KSNF402050**	2	4	50	7	-
*	**KSNF402550**	2,5	4	50	9	-
*	**KSNF403038**	3	3	38	9	-
*	**KSNF403050**	3	4	50	9	-
*	**KSNF404051**	4	4	51	14	0,1
*	**KSNF405051**	5	5	51	15	0,1
*	**KSNF406058**	6	6	58	15	0,1
*	**KSNF407064**	7	8	64	15	0,1
*	**KSNF408064**	8	8	64	20	0,1
*	**KSNF409073**	9	10	73	21	0,1
*	**KSNF410073**	10	10	73	21	0,1
	KSNF411082	11	12	82	25	0,1
*	**KSNF412082**	12	12	82	25	0,15
*	**KSNF414082**	14	14	82	30	0,15
*	**KSNF416093**	16	16	93	35	0,1
*	**KSNF418093**	18	18	93	38	0,1
*	**KSNF420105**	20	20	105	38	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	145	175	290
Steel	Steel	110	135	200
Steel	Tempered Steel	105	100	170
Steel	Cold Work Tool Steel	80	90	130
Steel	Hot Work Tool Steel	80	90	130
Stainless Steel	AISI 304 - 416 - 420	65	80	150
Stainless Steel	AISI 316 - 440	60	75	120
Stainless Steel	17-4 PH 15-5 PH	60	75	120
Stainless Steel	Chrome-Cobalt Alloy	50	60	80
Stainless Steel	Duplex F51	55	70	90
Stainless Steel	Super Duplex F55	55	70	90
Cast Iron	Gray Cast Iron	140	165	150
Cast Iron	Alloyed Cast Iron	130	150	200
Cast Iron	Precision Cast Iron	125	145	155
Titanium	Iron-Based Super Alloys	30	40	50
Titanium	Nickel-Based Super Alloys	30	40	60
Titanium	Titanium-Based Super Alloys	40	50	100

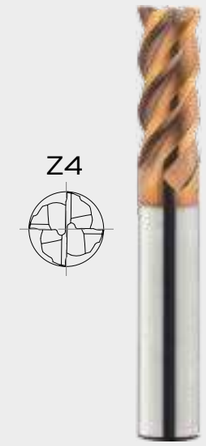
Feed Per Tooth (mm/tooth)

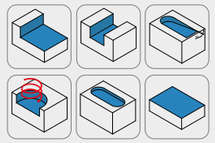
Ø	ap=0,5xØ	ae=0,5xØ ap=1xØ	ae=0,1xØ ap=1,5xØ
4	0,013-0,02	0,08-0,012	0,016-0,025
6	0,02-0,03	0,02-0,03	0,027-0,041
8	0,023-0,04	0,02-0,03	0,041-0,062
10	0,035-0,05	0,027-0,04	0,055-0,082
12	0,04-0,06	0,035-0,05	0,072-0,103
14	0,05-0,07	0,04-0,06	0,082-0,123
16	0,055-0,08	0,05-0,07	0,103-0,144
18	0,06-0,09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

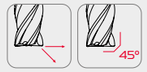
KARCAN

* Marked products can be delivered quickly from stock.

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 Use Endmill

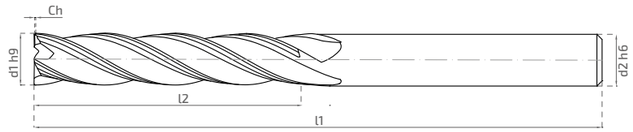
General Engineering | Mold&Die | Automotive

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



Stock	Code	d1h9	d2h6	l1	l2	Ch
*	**KSUF401550**	1,5	4	50	9	-
*	**KSUF402050**	2	4	50	12	-
*	**KSUF403050**	3	3	50	15	0,1
*	**KSUF403075**	3	3	75	15	0,1
*	**KSUF404075**	4	4	75	20	0,1
*	**KSUF404100**	4	4	100	25	0,1
*	**KSUF405075**	5	5	75	20	0,1
*	**KSUF406075**	6	6	75	25	0,1
*	**KSUF406100**	6	6	100	30	0,1
*	**KSUF408100**	8	8	100	35	0,1
*	**KSUF410110**	10	10	110	40	0,1
*	**KSUF412110**	12	12	110	45	0,15
*	**KSUF412150**	12	12	150	60	0,15
	KSUF414150	14	14	150	60	0,15
*	**KSUF416150**	16	16	150	75	0,15
	KSUF418150	18	18	150	75	0,15
*	**KSUF420150**	20	20	150	75	0,15

Cutting Parameters

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

Feed Per Tooth (mm/tooth)

Ø	ap=0.05Ø	ae=0.1ØØ	ae=0.3ØØ	ae=0.2ØØ	ae=0.15Ø	ae=0.1ØØ
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

KARCAN cutting tools

* Marked products can be delivered quickly from stock.

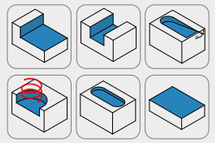
ECO+PLUS

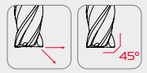
KSUF
General Use Endmill

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

ECO+PLUS

KRSF Series

General Use Corner Radius Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

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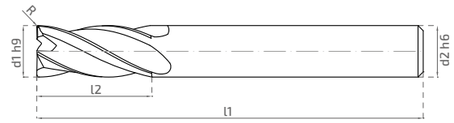
new product

Available from stock in all sizes %100



Stock	Code	d1h9	d2h6	l1	l2	R
*	**KRSF403005**	3	3	51	6	0,5
*	**KRSF403010**	3	3	51	6	1
*	**KRSF404005**	4	4	51	8	0,5
*	**KRSF404010**	4	4	51	8	1
*	**KRSF405005**	5	5	51	11	0,5
*	**KRSF405010**	5	5	51	11	1
*	**KRSF406005**	6	6	58	12	0,5
*	**KRSF406010**	6	6	58	12	1
*	**KRSF408005**	8	8	64	20	0,5
*	**KRSF408010**	8	8	64	20	1
*	**KRSF410005**	10	10	73	21	0,5
*	**KRSF410010**	10	10	73	21	1
*	**KRSF412005**	12	12	82	25	0,5
*	**KRSF412010**	12	12	82	25	1

Cutting Parameters

	Material	Slotting ap=0.5Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.3Ø - 0.2ØØ Vc (m/min)	Finish Milling ap=1.5Ø / ae=0.2Ø - 0.1ØØ Vc (m/min)
Steel	Unalloyed Steel	95-125	150-180	180-210
	Steel	90-120	140-170	170-200
	Tempered 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 Iron	100-130	250-280	280-330
	Alloyed Cast Iron	70-100	150-190	190-240
	Precision Cast Iron	60-90	130-160	160-210

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ap=0.5ØØ	ae=0.35Ø	ae=0.3Ø
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

KARCAN cutting tools

* Marked products can be delivered quickly from stock.

ECO+PLUS

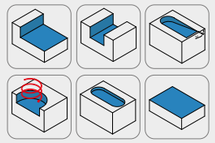
KRSF

General Use
Corner Radius
Endmill

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

ECO+PLUS

KRUF Series

General Use Corner Radius Endmill

General Engineering | Mold&Die | Automotive

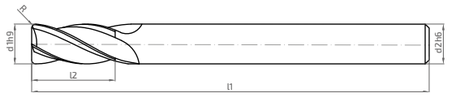
Finish | Rough

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



Stock	Code	d1h9	d2h6	l1	l2	R
*	**KRUF403005**	3	3	75	6	0,5
*	**KRUF403010**	3	3	75	6	1
*	**KRUF404005**	4	4	75	8	0,5
*	**KRUF404010**	4	4	75	8	1
*	**KRUF405005**	5	5	75	11	0,5
*	**KRUF405010**	5	5	75	11	1
*	**KRUF406005**	6	6	75	12	0,5
*	**KRUF406010**	6	6	75	12	1
*	**KRUF406005XL**	6	6	100	12	0,5
*	**KRUF406010XL**	6	6	100	12	1
*	**KRUF408005**	8	8	100	20	0,5
*	**KRUF408010**	8	8	100	20	1
*	**KRUF410005**	10	10	100	21	0,5
*	**KRUF410010**	10	10	100	21	1
*	**KRUF412005**	12	12	100	25	0,5
*	**KRUF412010**	12	12	100	25	1

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	90-120	140-170	170-200
	Tempered 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 Iron	100-130	250-280	280-330
	Alloyed Cast Iron	70-100	150-190	190-240
	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

* Marked products can be delivered quickly from stock.

ECO+PLUS

KRUF

General Use
Corner Radius
Endmill

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

KRUF | Eco-Plus

ECO+PLUS

KSKF Z4 Series

Ball Nose Endmill

General Engineering | Mold&Die | Automotive

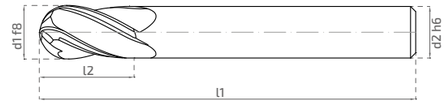
Finish | Rough

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

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

48 HRC
High Performance

Available from stock in all sizes | %100



Stock	Code	d1f8	d2h6	l1	l2
*	**KSKF403038**	3	3	38	12
*	**KSKF404051**	4	4	51	14
*	**KSKF405051**	5	5	51	20
*	**KSKF406058**	6	6	58	20
*	**KSKF408064**	8	8	64	20
*	**KSKF410073**	10	10	73	25
*	**KSKF412082**	12	12	82	25
* SP	**KSKF416093**	16	16	93	32

Cutting Parameters			
Material		Shoulder Milling ap=0.1Ø / ae=0.30 - 0.20Ø	Finish Milling ap=0.1Ø / ae=0.20 - 0.10Ø
		Vc (m/min)	Vc (m/min)
Steel	Unalloyed Steel	200-230	230-260
	Steel	200-230	230-260
	Tempered Steel	180-210	200-230
	Cold Work Tool Steel	150-180	180-210
	Hot Work Tool Steel	140-170	170-200
Stainless Steel	AISI 304 - 416 - 420	90-120	120-150
	AISI 316 - 440	80-110	110-140
	17-4 PH 15-5 PH	80-110	110-140
	Chrome-Cobalt Alloy	70-100	100-130
Cast Iron	Gray Cast Iron	280-310	310-350
	Alloyed Cast Iron	180-210	210-250
	Precision Cast Iron	150-180	180-210

Feed Per Tooth (mm/tooth)				
Ø	ae=0.30Ø	ae=0.20Ø	ae=0.15Ø	ae=0.10Ø
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

* Marked products can be delivered quickly from stock.

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

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,

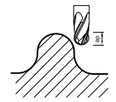
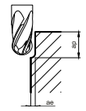
Unrivalled To Machine Workpieces Till 55HRC Hardness In Price-Performance Ratio.

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

Available from stock in all sizes %100

Stock	Code	d1h9	d2h6	l1	l2
*	**KSKF201050**	1	4	50	2
*	**KSKF201550**	1,5	4	50	3
*	**KSKF202050**	2	4	50	4
*	**KSKF202550**	2,5	4	50	5
*	**KSKF203050**	3	4	50	8
*	**KSKF204050**	4	4	51	8
*	**KSKF205051**	5	5	51	10
*	**KSKF206058**	6	6	58	12
*	**KSKF208064**	8	8	64	14
*	**KSKF210073**	10	10	73	18
*	**KSKF212082**	12	12	82	22

Cutting Parameters

	Material	Shoulder Milling ap=0,1Ø / ae=0,30-0,20Ø Vc (m/min)	Finish Milling ap=0,1Ø / ae=0,20-0,10Ø 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=0.30Ø	ae=0.20Ø	ae=0.15Ø
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

* Marked products can be delivered quickly from stock.

Z2

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

KKUF Z4 Series

Ball Nose Endmill

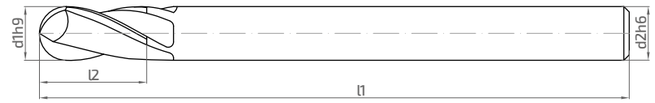
General Engineering | Mold&Die | Automotive

Finish | Rough

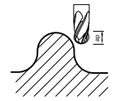
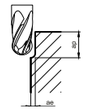
Brand-New Original Geometry, Unique Edge-Preparation, And Advanced Coating Technology,

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

Available from stock in all sizes %100



Stock	Code	d1h9	d2h6	l1	l2
*	**KKUF403075**	3	3	75	8
*	**KKUF404075**	4	4	75	10
*	**KKUF405075**	5	5	75	10
*	**KKUF406075**	6	6	75	10
*	**KKUF406100**	6	6	100	15
*	**KKUF408075**	8	8	75	10
*	**KKUF408100**	8	8	100	15
*	**KKUF410110**	10	10	110	20
*	**KKUF412110**	12	12	110	20

Cutting Parameters			
Material		Shoulder Milling ap=0.1Ø / ae=0.3Ø - 0.2ØØ Vc (m/min)	Finish Milling ap=0.1Ø / ae=0.2Ø - 0.1ØØ Vc (m/min)
			
Steel	Unalloyed Steel	200-230	230-260
	Steel	200-230	230-260
	Tempered Steel	170-200	200-230
	Cold Work Tool Steel	150-180	180-210
	Hot Work Tool Steel	140-170	170-20 0
Stainless Steel	AISI 304 - 416 - 420	90-120	120-150
	AISI 316 - 440	80-110	110-140
	17-4 PH 15-5 PH	80-110	110-140
	Chrome-Cobalt Alloy	70-100	100-130
Cast Iron	Gray Cast Iron	280-310	310-350
	Alloyed Cast Iron	180-210	210-250
	Precision Cast Iron	150-180	180-210

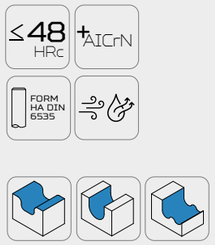
Feed Per Tooth (mm/tooth)				
Ø	ae=0.3ØØ	ae=0.2ØØ	ae=0.15Ø	ae=0.1ØØ
3	0.027	0.031	0.037	0.040
4	0.031	0.037	0.041	0.045
5	0.032	0.037	0.042	0.046
6	0.041	0.046	0.052	0.057
8	0.048	0.052	0.061	0.066
10	0.053	0.057	0.066	0.072
12	0.058	0.064	0.072	0.079

KARCAN

* Marked products can be delivered quickly from stock.

KKUF 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

ECO+PLUS

KKUF Z2 Series

Ball Nose Endmill

General Engineering | Mold&Die | Automotive

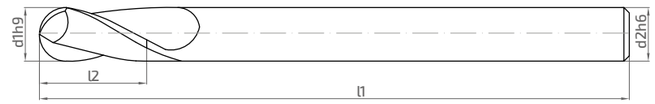
Finish | Rough

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

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

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

Available from stock in all sizes %100



Stock	Code	d1h9	d2h6	l1	l2
*	**KKUF203075**	3	3	75	8
*	**KKUF204075**	4	4	75	10
*	**KKUF205075**	5	5	75	10
*	**KKUF206075**	6	6	75	10
*	**KKUF206100**	6	6	100	15
*	**KKUF208100**	8	8	100	15
*	**KKUF210110**	10	10	110	20
*	**KKUF212110**	12	12	110	22

Cutting Parameters

	Material	Shoulder Milling ap=0,1Ø / ae=0,3Ø-0,2Ø Vc (m/min)	Finish Milling ap=0,1Ø / ae=0,2Ø-0,1Ø 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=0.3Ø	ae=0.2Ø	ae=0.1Ø
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

KARCAN

*Marked products can be delivered quickly from stock.

ECO+PLUS

KKUF Z2 Ball Nose Endmill

Z2

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

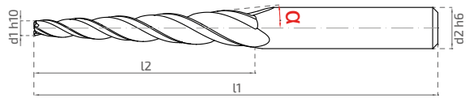
KKSF Series
Tapered Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

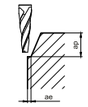
Designed For Aluminium Mold Makers , Became The Favourite Of Export.

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



Stock	Code	d1h10	d2h6	l1	l2	α (°)
*	**KKSF01502004**	2	4	64	35	1,5 °
*	**KKSF01502504**	2,5	4	64	30	1,5°
*	**KKSF01704006**	4	6	75	33	1,7 °
	KKSF02002006	2	6	75	38	2 °
	KKSF02002506	2,5	6	82	43	2 °
	KKSF02002508	2,5	8	82	30	2 °
	KKSF02003006	3	6	82	43	2 °
*	**KKSF02003008**	3	8	82	40	2 °
	KKSF02004008	4	8	75	35	2 °
	KKSF02103006	3	6	82	40	2,1 °
	KKSF02202506	2,5	6	82	42	2,2 °
*	**KKSF02302006**	2	6	82	50	2,3 °
*	**KKSF02802806**	2,8	6	64	33	2,8 °
*	**KKSF02804008**	4	8	82	40	2,8 °
*	**KKSF03002006**	2	6	82	38	3 °
	KKSF03002506	2,5	6	82	33	3 °
*	**KKSF03002508**	2,5	8	82	42	3°
	KKSF03003008	3	6	82	27	3°
*	**KKSF03003008**	3	8	82	42	3 °
*	**KKSF03003000**	3	8	110	40	3 °
	KKSF03004008	4	8	82	38	3 °
	KKSF05002508	2,5	8	82	31	5 °
	KKSF05003008	3	8	82	28	5 °
	KKSF05003010	3	10	110	40	5 °
	KKSF05003012	3	12	100	50	5 °
	KKSF05004012	4	12	100	45	5 °

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=0.150	ae=0.100
2	0.005	0.005
2,5	0.006	0.006
3	0.008	0.008
4	0.012	0.012

KARCAN

* Marked products can be delivered quickly from stock.

ECO+PLUS

KKSF
Tapered Endmill

Z3

≤48 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	◑

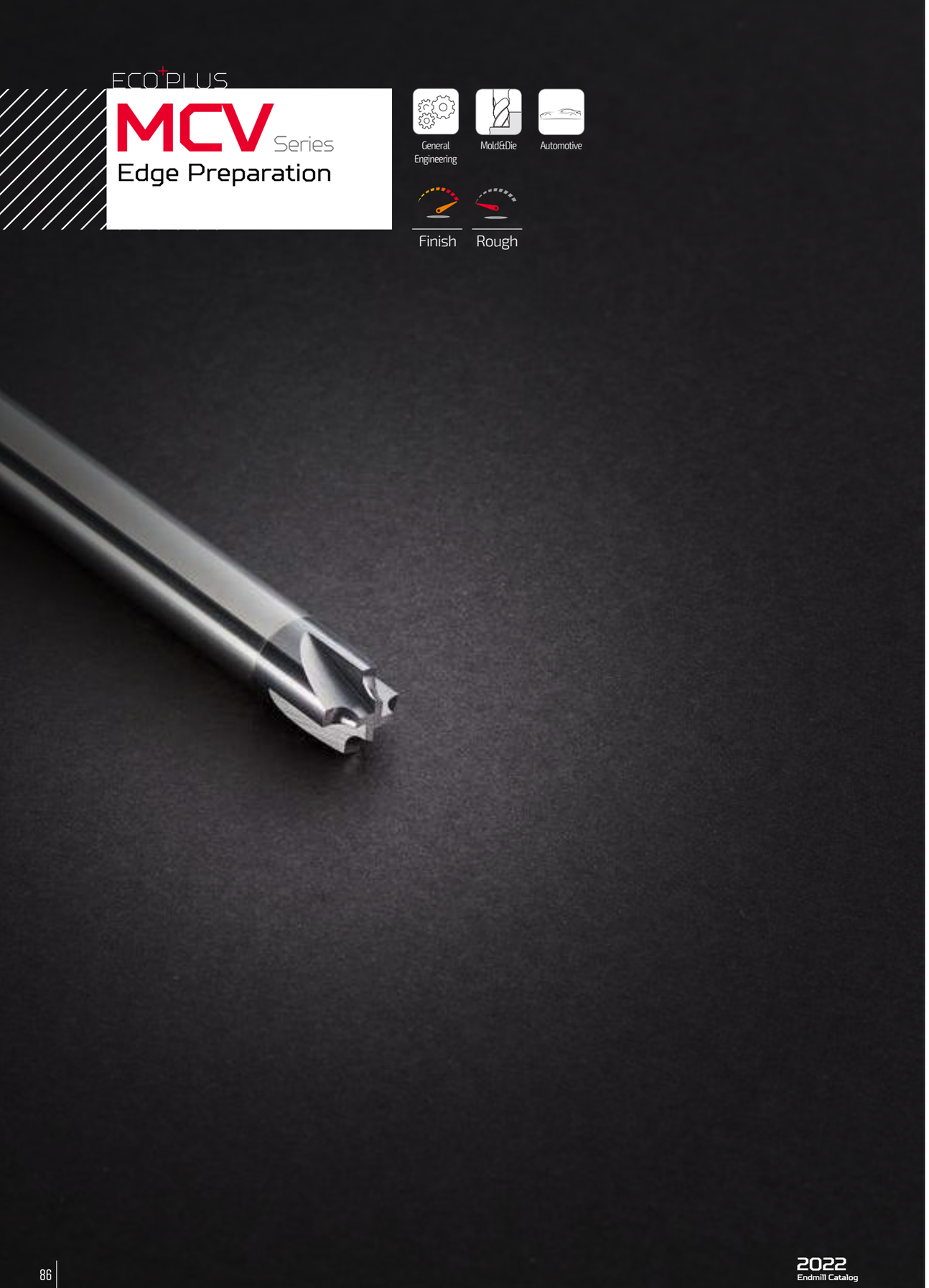
● Recommended ◑ Acceptable ○ Not Recommended

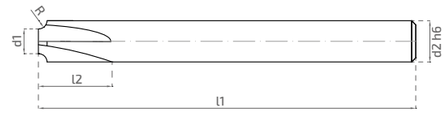
ECO+PLUS

MCV Series
Edge Preparation

General Engineering | Mold&Die | Automotive

Finish | Rough

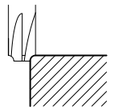




Stock	Code	d1	d2h6	l1	l2	R (±0,02)	Z
	MCV305058	4,5	6	58	7	0,5	3
	MCV307558	4,5	6	58	7	0,75	3
	MCV410064	6	8	64	10	1	4
	MCV415064	5	8	64	10	1,5	4
	MCV420073	5,5	10	73	12	2	4
	MCV425073	3,5	10	73	12	2,5	4
	MCV430082	3,5	12	82	14	3	4
	MCV440082	5,5	14	82	16	4	4
	MCV450093	6	16	93	20	5	4
	MCV460105	8	20	105	20	6	4

Cutting Parameters

Material	Çeyrek Daire
	Vc (m/min)



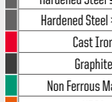
Steel	Unalloyed Steel	280-320
	Steel	220-250
	Tempered Steel	190-220
	Cold Work Tool Steel	100-130
	Hot Work Tool Steel	100-130
Stainless Steel	AISI 304 - 416 - 420	80-110
	AISI 316 - 440	80-110
	17-4 PH 15-5 PH	60-90
	Chrome-Cobalt Alloy	60-90
	Duplex F51	50-70
	Super Duplex F55	50-70
Cast Iron	Gray 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)

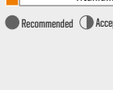
Ø	ae=0,1xØ ap=0,1xØ
4	0,05-0,11
6	0,06-0,15
8	0,08-0,2
10	0,1-0,26
12	0,1-0,26
14	0,1-0,26
16	0,12-0,26
20	0,16-0,44

* Marked products can be delivered quickly from stock.

Z3



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

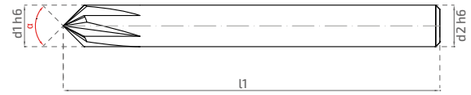
ECO+PLUS

MCX Series
Chamfering Endmill

General Engineering | Mold&Die | Automotive

Finish | Rough

Available from stock in all sizes %100

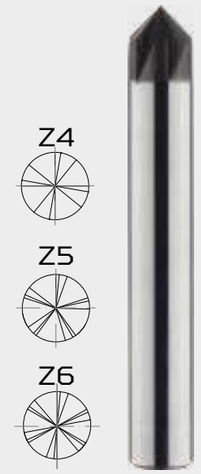


Stock	Code	d1	d2h6	l1	α (°)	Z
*	**MCX404051**	4	6	51	90 °	4
*	**MCX406058**	6	6	58	90 °	4
*	**MCX508064**	8	8	64	90 °	5
*	**MCX610073**	10	10	73	90 °	6
*	**MCX612082**	12	12	82	90 °	6

Cutting Parameters		
Material		Pah Kırma Freze
		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

* Marked products can be delivered quickly from stock.



≤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	◑

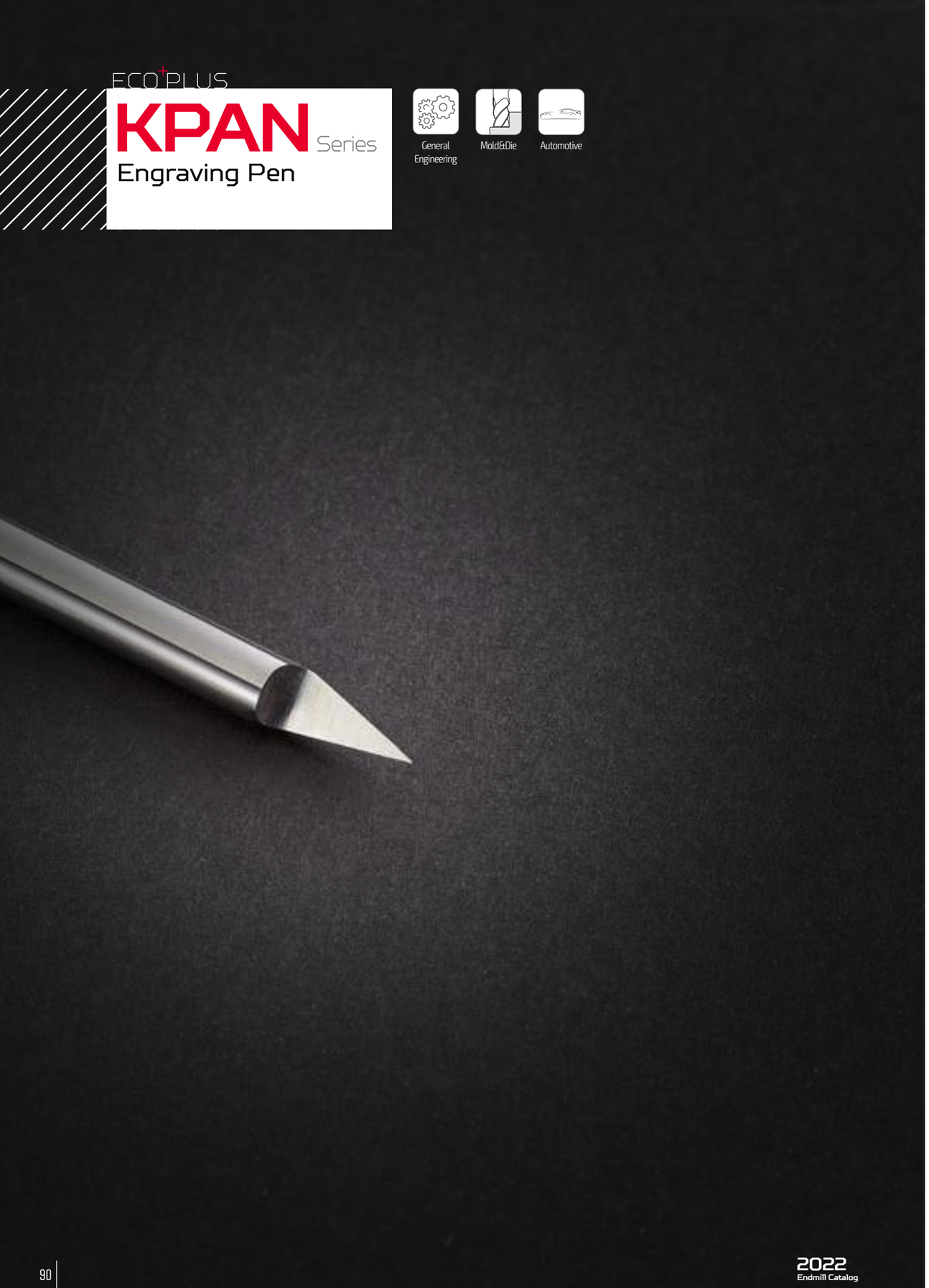
● Recommended ◑ Acceptable ○ Not Recommended

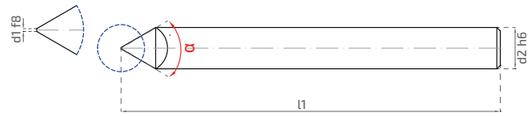
ECO+PLUS

KPAN Series

Engraving Pen

General Engineering | Mold&Die | Automotive





Stock	Code	d1f8	d2h6	l1	α (°)
	KPAN01015	0,1	3	39	15 °
	KPAN02015	0,2	3	39	15 °
	KPAN03030	0,3	3	39	30 °
	KPAN05015	0,5	3	39	15 °
	KPAN07015	0,7	3	39	15 °
	KPAN10015	1	3	39	15 °
	KPAN01030	0,1	3	39	30 °
	KPAN02030	0,2	3	39	30 °
	KPAN05030	0,5	3	39	30 °
	KPAN07030	0,7	3	39	30 °
	KPAN10030	1	3	39	30 °
	KPAN01045	0,1	3	39	45 °
	KPAN02045	0,2	3	39	45 °
	KPAN05045	0,5	3	39	45 °
	KPAN07045	0,7	3	39	45 °
	KPAN10045	1	3	39	45 °

* Marked products can be delivered quickly from stock.

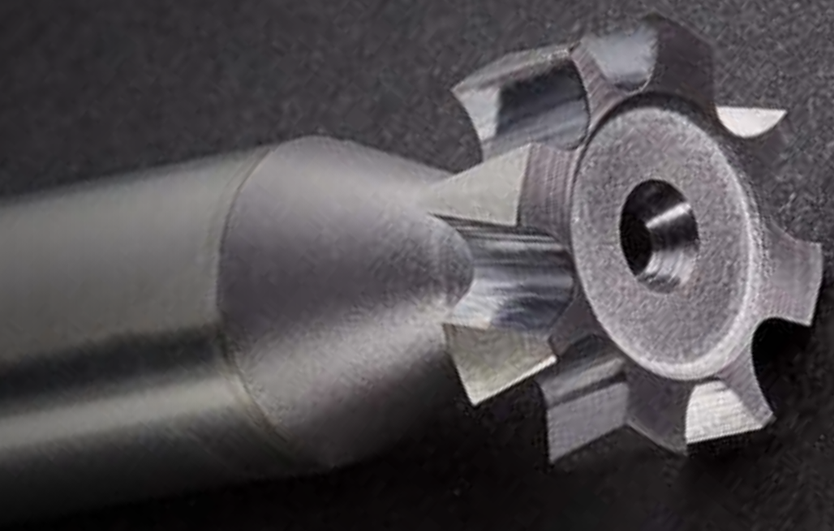
FORM HA DIN 6535

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

● Recommended ◑ Acceptable ○ Not Recommended

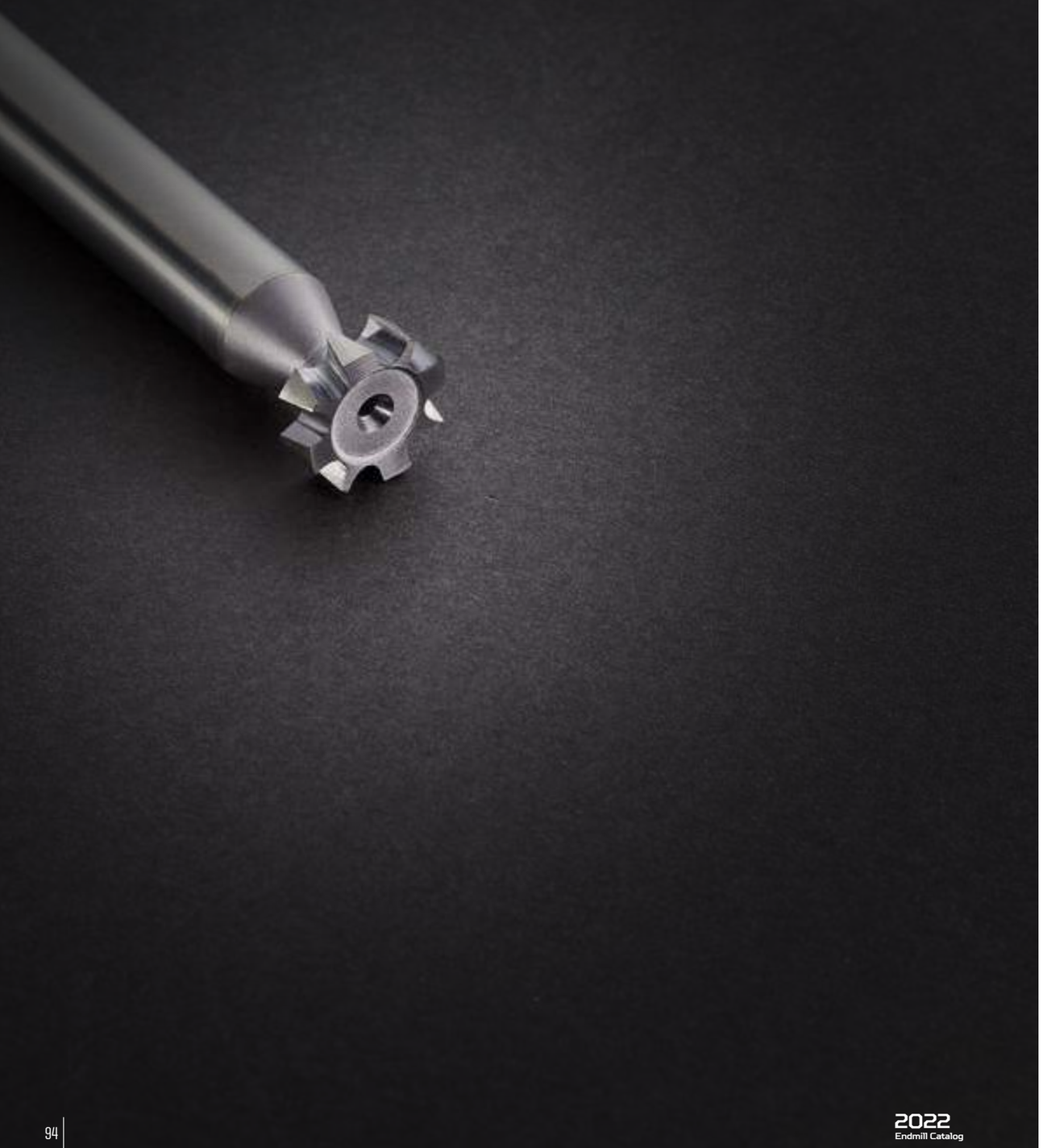
2022
Milling Catalogue

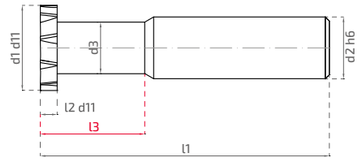
T-SLOTTING MILL



KARCAN cutting tools

KTFF Series
T-Slotting Mill





Stock	Code	d1d11	d2h6	d3	l1	l2 d11	l3	Z
	KTFF604510	4,5	6	3	50	1	15	6
	KTFF607515	7,5	6	4	50	1,5	15	6
	KTFF607520	7,5	6	4	50	2	15	6
	KTFF610520	10,5	6	5	50	2	15	6
	KTFF610525	10,5	6	5	50	2.5	15	6
	KTFF610530	10,5	6	5	50	3	15	6
	KTFF813530	13,5	10	8	56	3	20	8
	KTFF813540	13,5	10	8	56	4	20	8
	KTFF816530	16,5	12	10	56	3	20	8
	KTFF816540	16,5	12	10	56	4	20	8
	KTFF816550	16,5	12	10	56	5	20	8
	KTFF101953	19,5	14	12	56	3	20	10
	KTFF101954	19,5	14	12	56	4	20	10
	KTFF101955	19,5	14	12	56	5	20	10
	KTFF102254	22,5	14	12	63	4	20	10
	KTFF102255	22,5	14	12	63	5	20	10
	KTFF102256	22,5	14	12	63	6	20	10
	KTFF102555	25,5	16	14	63	5	20	10
	KTFF102556	25,5	16	14	63	6	20	10
	KTFF102557	25,5	16	14	63	7	20	10
	KTFF102558	25,5	16	14	63	8	20	10
	KTFF102855	28,5	18	16	63	5	20	10
	KTFF102856	28,5	18	16	63	6	20	10
	KTFF102857	28,5	18	16	63	7	20	10
	KTFF102858	28,5	18	16	63	8	20	10

KTFF
T-Slotting Mill

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.

2022
Milling Catalogue

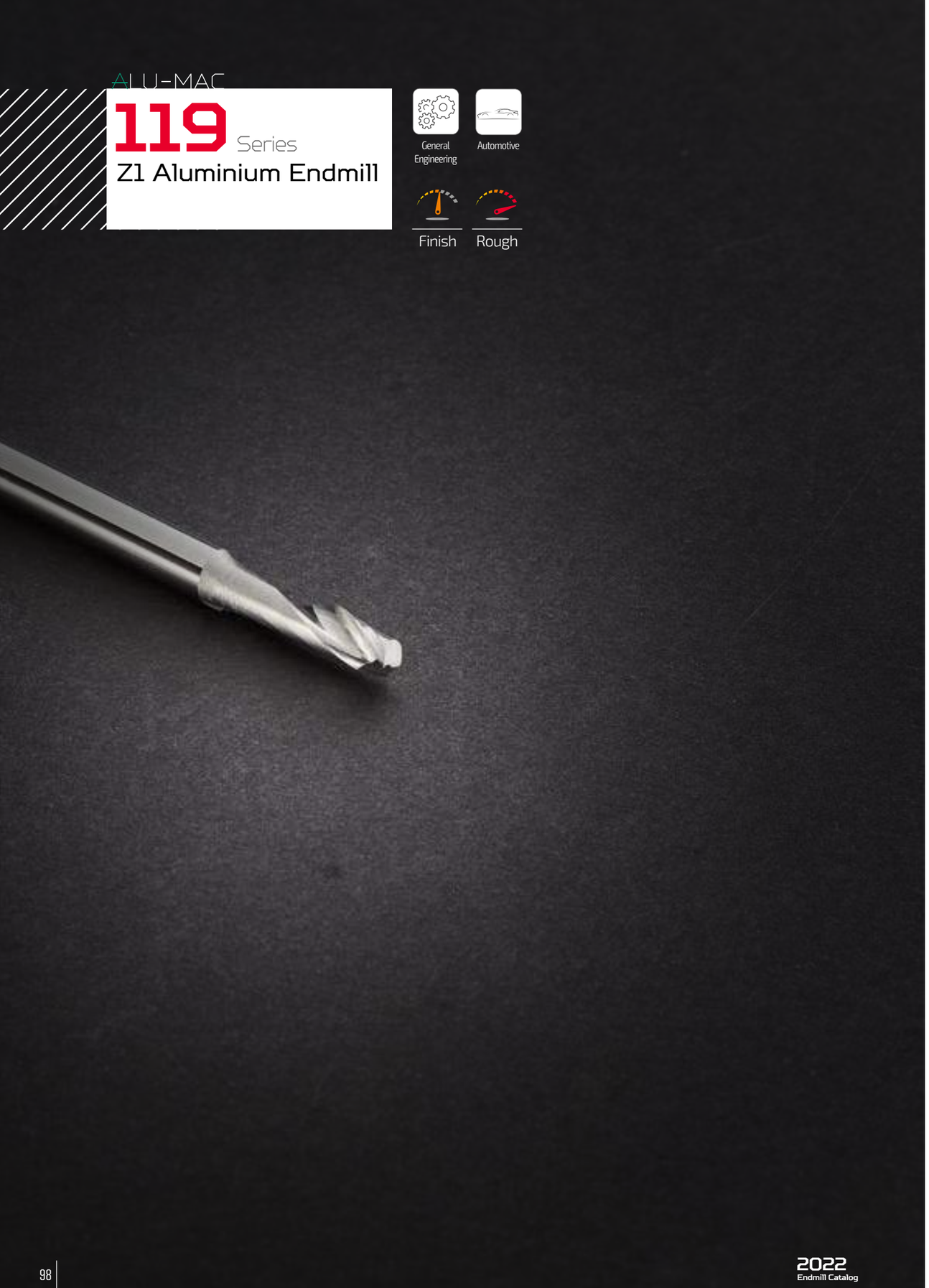
ALU-MAC

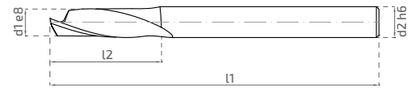
Meet our 119, 122, 123,219 and 133 series has double flute technology which offer high performance in aviation and automotive applications in machining of non-ferrous materials.

119 Series
Z1 Aluminium Endmill

General Engineering | Automotive

Finish | Rough





Stock	Code	d1 e8	d2h6	l1	l2
	119103051	3	4	51	12
	119104051	4	4	51	15
	119105058	5	6	58	16
	119106058	6	6	58	19
	119107064	7	8	64	19
	119108064	8	8	64	22
	119109073	9	10	73	23
	119110073	10	10	73	23
	119111082	11	12	82	25
	119112082	12	12	82	25

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

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

KARCAN cutting tools

* Marked products can be delivered quickly from stock.

119
Z1 Aluminium Endmill

Z1

FORM HA DIN 6535

90°

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

● Recommended ◑ Acceptable ○ Not Recommended

ALU-MAC

122 Series
High Performance Aluminium Endmill

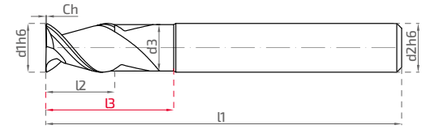
General Engineering · Aviation &Aerospace · Defence

Finish · Rough

Renewed to have longer tool life in roughing operations of Aluminium.

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

Available from stock in all sizes %100

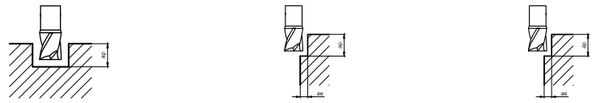


Stock	Code	d1h6	d2h6	d3	l1	l2	l3	Ch
*	**122203058**	3	6	2,7	58	6	12	0,1
*	**122204058**	4	6	3,7	58	6	12	0,15
*	**122205058**	5	6	4,7	58	8	15	0,15
*	**122206058**	6	6	5,7	58	8	16	0,15
*	**122208064**	8	8	7,4	64	10	20	0,15
*	**122210073**	10	10	9,4	73	12	30	0,15
*	**122212082**	12	12	11,4	82	15	30	0,15

Cutting Parameters

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

Non Ferrous Material



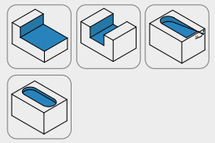
Feed Per Tooth (mm/tooth)

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

KARCAN

* Marked products can be delivered quickly from stock.

Z2



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

● Recommended ◑ Acceptable ○ Not Recommended

ALU-MAC

123 Series
High Performance Aluminium Endmill

General Engineering | Aviation &Aerospace | Defence

Finish | Rough

Rough Milling, Semi-Finishing, Finishing All meets in one series.

Single solution in various aluminum milling operations.

Updated geometry ensures milling at high feed rates and high chip evacuation volumes along with up to 35% better surface quality compared with its competitors.

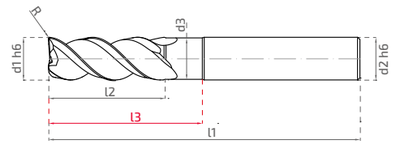
Market Leader

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

improved bottom roughness %35

Available from stock in all sizes %100



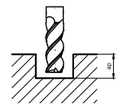
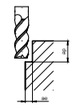
Short Series

Stock	Code	d1h6	d2h6	d3	l1	l2	l3	R
*	**123303058**	3	6	2,8	58	8	13	0,2
*	**123304058**	4	6	3,8	58	13	15,4	0,2
*	**123305058**	5	6	4,8	58	15	21	0,2
*	**123306058**	6	6	5,7	58	17	26	0,2
*	**123308064**	8	8	7,7	64	22	30	0,2
*	**123310073**	10	10	9,7	73	25	35	0,2
*	**123312082**	12	12	11,7	82	28	40	0,2
	123314082	14	14	13,7	82	28	40	0,2
*	**123316093**	16	16	15,7	93	37	53	0,2
*	**123320105**	20	20	19,7	105	38	54	0,2

Long Series

Stock	Code	d1h6	d2h6	d3	l1	l2	l3	R
*	**123306108**	6	6	5,8	108	15	45	0,2
*	**123308108**	8	8	7,8	108	18	62	0,2
*	**123310108**	10	10	9,8	108	20	62	0,2
*	**123312125**	12	12	11,8	125	25	80	0,2
*	**123316160**	16	16	15,8	160	30	110	0,2
	123320200	20	20	19,8	200	30	115	0,2

Cutting Parameters

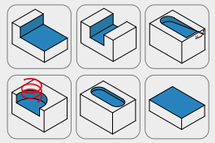
Material	Slotting ap=1.5-1.0Ø Vc (m/min)	Shoulder Milling ap=1.5Ø / ae=0.3 - 0.2 - 0.1Ø Vc (m/min)
		
Non Ferrous Material — Aluminum Alloys	250-300	350-400
Non Ferrous Material — Copper Alloys	200-250	300-350

Feed Per Tooth (mm/tooth)

Ø	ap=1.5Ø	ap=1Ø	ae=0.3Ø	ae=0.2Ø	ae=0.1Ø
3	0,050	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

* Marked products can be delivered quickly from stock.

Z3



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

● Recommended ◑ Acceptable ○ Not Recommended

ALU-MAC

133 Series
High Performance Corner Radius

General Engineering | Aviation &Aerospace | Defence

Finish | Rough

High Performance In High-Alloy Aluminiums !

Thanks to it's double-action double flute technology, optimised corner radius, unique geometry and coating, 133 Series brings lots of advantages with it in alloyed aluminiums.

Various corner radius alternatives better for aviation applications.

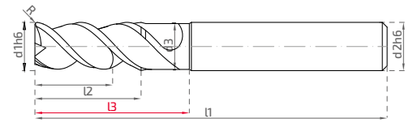
High Chip-Removal In High Speed Machining.

Better Surface Roughness by comparions with equivalents.

Longer Tool Life

new product

CHATTER FREE



Stock	Code	d1h6	d2h6	d3	l1	l2	l3	R
	133303015	3	6	2,8	58	8	13	0,15
	133304015	4	6	3,8	58	11	15,4	0,15
	133305015	5	6	4,8	58	13	21	0,15
*	**133306002**	6	6	5,5	58	13	21	0,2
*	**133306005**	6	6	5,5	58	13	21	0,5
*	**133308025**	8	8	7,5	64	21	27	0,25
	133308005	8	8	7,5	64	21	27	0,5
	133308010	8	8	7,5	64	21	27	1
*	**133310003**	10	10	9,5	73	22	32	0,3
*	**133310005**	10	10	9,5	73	22	32	0,5
	133310010	10	10	9,5	73	22	32	1
*	**133312003**	12	12	11,5	82	26	38	0,3
*	**133312005**	12	12	11,5	82	26	38	0,5
	133312010	12	12	11,5	82	26	38	1
*	**133316004**	16	16	15,5	93	36	44	0,4
	133316010	16	16	15,5	93	36	44	1
	133316020	16	16	15,5	93	36	44	2
*	**133320005**	20	20	19,5	105	41	54	0,5
	133320020	20	20	19,5	105	41	54	2

Cutting Parameters

Material			Slotting ap=1xØ / ae=1xØ	Shoulder Milling ap=1xØ/ ae=0,5xØ
			Vc (m/min)	Vc (m/min)
Non Ferrous Material	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

Feed Per Tooth (mm/tooth)

Ø	ap=1.5ØØ	ap=1Ø	ae=0.3ØØ	ae=0.2ØØ	ae=0.1ØØ
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

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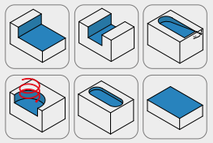
ALU-MAC

133
High Performance Corner Radius

Z3



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

● Recommended ◑ Acceptable ○ Not Recommended

ALU-MAC

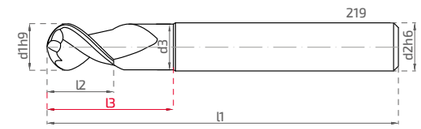
219 Series
High Performance Ball Nose Endmill

General Engineering | Aviation &Aerospace

Finish | Rough

Designed To Have Better Surfaces In Finishing Operations Of Non-Ferrous Materials.

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



Stock	Code	d1h9	d2h6	d3	l1	l2	l3
*	**219203058**	3	6	2,6	58	6	12
*	**219204058**	4	6	3,7	58	6	13
*	**219205058**	5	6	4,5	58	8	15
*	**219206058**	6	6	5,5	58	8	16
*	**219208064**	8	8	7,5	64	10	20
*	**219210073**	10	10	9,4	73	12	30
*	**219212082**	12	12	11,3	82	15	30

Cutting Parameters

Material	Slotting ae=0,1-0,2xØ ap=0,03xØ Vc (m/min)	Shoulder Milling ae=0,3-0,4xØ ap=0,03xØ Vc (m/min)	Shoulder Milling ae=0,6-1xØ ap=0,03xØ 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

* Marked products can be delivered quickly from stock.

ALU-MAC

219
High Performance Ball Nose Endmill

Z2

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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We provide feasible solutions with new ideas for the high-tech manufacturing industries with our carbide cutting tools, we carry on the entire process carefully from design to material selection, planning to production. Our products suitable for many industries such as Aerospace and Aviation, Automotive, Defence, Mold and Die and becomes solutions that offer advantages.

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