ZECHA

MOULD MAKING CATALOGUE

GRAPHITE • STEEL • COPPER

Graphite Steel Copper

About ZECHA

ZECHA Hartmetall-Werkzeugfabrikation GmbH has been a pioneer and trendsetter in the field of micromachining, blanking and shaping tools for over half a century. The company's origins in the chronograph industry can be seen not only in its uncompromising specialisation in the production of miniature tools of the highest precision, but also in its special tool solutions.

Precision and quality are key for the international employment in different industries, such as, for example, in medical and dental technology, the chronograph industry, automotive industry, or in tool and mould making. Experts in the company's own research and development department are constantly developing ground breaking geometries and tools for sophisticated applications and cutting-edge materials.

In addition, tool reproducibility is also guaranteed even for years on account of the life number stamped at the end of the shaft of every tool.

Modern CNC machines, high-end measuring and testing technologies and carefully selected hard metals from leading manufacturers as well as an intensive cooperation with our customers and partners ensure the exceptional perfection of our tools.

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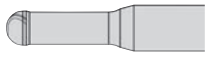
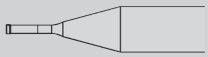
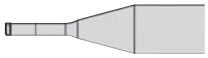
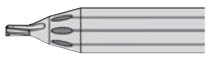
GRAPHITE

Table of content

STEEL

COPPER

Series	Image	Brief description	Flutes	Diameter	Length range	Page
930.B2 IGUANA		Ball nose end mills	2	0.5 - 3.0 mm	3.0 x d	82
935.B2 IGUANA		Ball nose end mills	2	0.3 - 6.0 mm	1.5 x d - 15.0 x d	83
930.T2 IGUANA		End mills with corner radius	2	0.5 - 3.0 mm	3.0 x d	85
931.T3 IGUANA		End mills with corner radius	3	0.5 - 4.0 mm	2.0 x d	86
935.T2 IGUANA		End mills with corner radius	2	0.5 - 0.8 mm	1.5 x d - 20.0 x d	87
935.T3 IGUANA		End mills with corner radius	3	1.0 - 6.0 mm	1.5 x d - 15.0 x d	88
930.F3 IGUANA		End mills	3	1.0 - 6.0 mm	3.0 x d	92
918 IGUANA		End mills	3	0.4 - 2.0 mm	2.0 x d	95
975 IGUANA		Twist drills	2	0.8 - 2.0 mm	2.0 x d	97

Patents
The displayed series 567/568, 577/578, 576.T3, 935.B2, 935.T2, and 935.T3 are protected by patent EP 2540427B1 in the following countries: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR.

The displayed series 576.T3 is furthermore protected by patent DE 10 2019 122 039 B3 in Germany.

Symbols

Tool attributes


One flute


Two flutes


Three flutes


Four flutes


Six flutes


Tools with optimum accuracy within the μ-range

Helix angle

Point angle


One-sided laser processing


Two-sided laser processing


Most precise microgeometry of cutting edges


Tools with diamond coating

Tools with coating adapted to tool application

Tool with ultramodern coating technology

Cubic boron nitride - Tools of the latest CBN generation


Tools with polished cutting edges and flutes

Tools with easy-cutting geometry

Tools with highly stable flutes


Laser-sharpened with sealed diamond coating


Through-tool cooling


Flute exposure

Industries


Standard Machining


Mould Making


Medical Technology


Watch and Jewellery Industry

Usage recommendations

Designed for materials up to the hardness stated

HSC machining

3D machining


Roughing


Pre-finishing


Finishing


Wet machining


Dry machining

For the machining of ceramics

For the machining of high alloy steel

For the machining of stainless steel

For the machining of carbon

For the machining of copper beryllium

For the machining of graphite

For the machining of < 1,000 N/mm² Steel

For the machining of tungsten copper

For the machining of titanium

For the machining of fibre-reinforced materials

For the machining of brass

For the machining of copper

For the machining of plastic

For the machining of aluminium

For the machining of platinum

For the machining of lead-free brass

For the machining of nickel-chromium alloys

For the machining of cast iron

For the machining of gold

Graphite

Challenge:
In tool and mould making the production of graphite electrodes has become an important process. As a modification of carbon, graphite is especially corrosion-proof and heat-resistant as well as highly abrasion-resistant. The high strength and hardness of the material as well as fluctuating material qualities make the machining of graphite a challenge - the use of high-quality tools being crucial.

Especially with filigree electrodes with tolerances in the µm range, all influencing factors must be considered.
The combination of the optimal carbide grade, robust coating, precise grinding and special milling cutter geometry tailored to
graphite processing offer a perfect interplay.

Solution:
The specially developed ZECHA graphite milling cutters of the „Quality Line", „Premium Line" and „High-End Line" stand for stable solid carbide ball nose and torus end mills, which perfectly equip every metal cutting mechanic for graphite material.

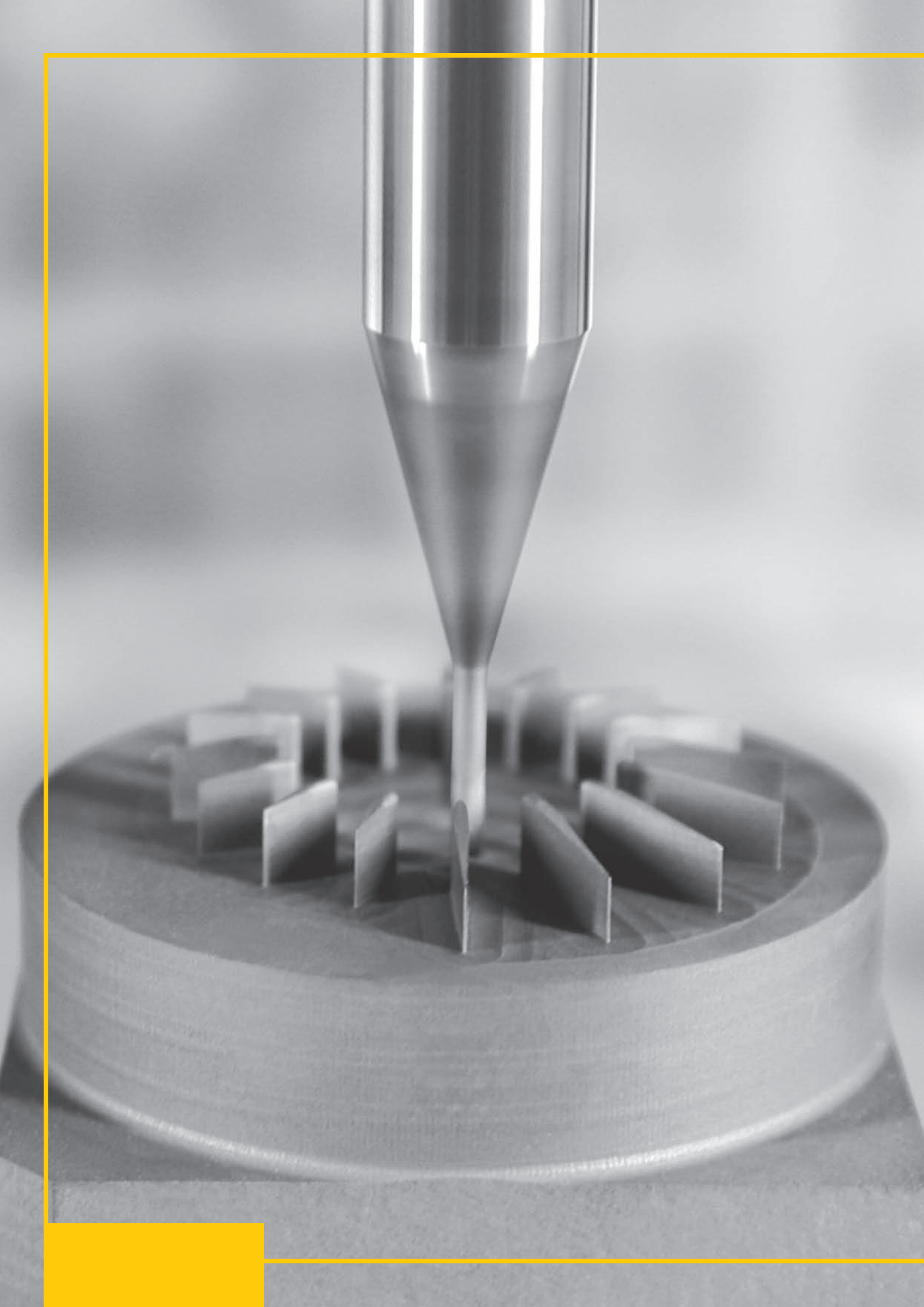
With narrow tolerances in shape, concentricity and diameter and the diamond coating as effective protection against wear, they make a decisive contribution to process reliability and stability.

In addition to the milling cutters in standard lengths, the stable SEAGULL® milling cutters* complete the range of applications for graphite machining: They work reliably within 5 µm with almost no vibration.

The machining of graphite with ZECHA milling cutters is very low-vibration, which is why fine shapes and contours can be milled effortlessly without creating burrs. Manual reworking or wear - loss of material due to oxidation - are a thing of the past thanks to the right mills.

Special feature:
A special alternative to dry milling is the wet milling of graphite. This application technology allows the customer to flexibly process steel, copper and graphite with one milling machine and in doing so to significantly reduce tool costs. Our easy-cutting SEAGULL® mills are ideally suited for wet processing.

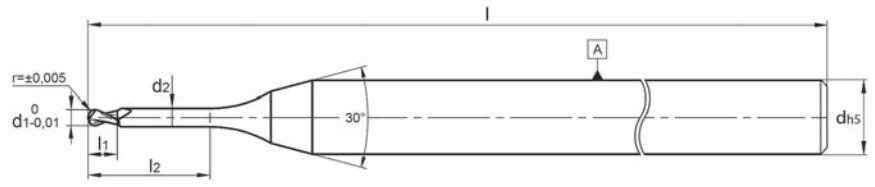
*The SEAGULL series 567/568, 577/578 and 576.T3 are protected by patent EP 2540427B1 in the following countries: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR. The SEAGULL series 576.T3 is furthermore protected by patent DE 10 2019 122 039 B3 in Germany.



Product categories

	★★★★★ High-End Line	★★★★ Premium Line	★★★ Quality Line
Coating	10 µm high performance diamond coating	High performance diamond coating	Approved diamond coating
Shape accuracy	Radius +/- 0.005 mm	Radius +/- 0.010 mm	Radius +/- 0.005 mm
Concentricity	0.003 mm <Ø 6.0 mm <70 mm length	0.010 mm <Ø 6.0 mm <70 mm length	0.003 mm <Ø 6.0 mm <70 mm length
Diameter tolerance	0/-0.010 mm <Ø 6.0 mm	+/- 0.010 mm <Ø 6.0 mm	0/-0.010 mm <Ø 6.0 mm
Application	Ideal for large-scale manufacture	Small and large-scale manufacture	Ideal for standard applications
Specific features	Process-safe milling within 10 µm	Ideally suitable for roughing	Cost-effective quality tool
Control	100% quality control including actual measurement protocol	100% quality control	100% quality control
Life cycle	+++++	++++	+++

560 ★★★★★



Ø ≦ 1,5

Controlled quality

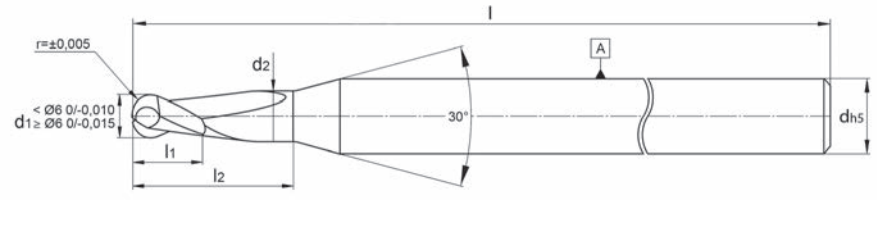
Effective-Ø	5,993	★★★★★
Actual-Ø	5,992	
Concentricity	0,001	

HIGH-END LINE
Solid carbide ball nose end mill

☑ High performance tool for large-scale series
☑ Long life cycles
☑ Process-safe milling within 10 µm
☑ 10 µm-thick high performance diamond coating
☑ 100% quality control
☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l
560.0010.002	0,10	0,09	0,05	0,15	0,2	6,0	60
560.0010.004					0,4		
560.0015.003	0,15	0,14	0,075	0,2	0,3	6,0	60
560.0015.006					0,6		
560.0020.006	0,20	0,18	0,10	0,3	0,6	6,0	60
560.0020.010					1,0		
560.0020.015					1,5		
560.0030.005	0,30	0,27	0,15	0,5	0,5	6,0	60
560.0030.010					1,0		
560.0030.015					1,5		
560.0030.030					3,0		
560.0030.045					4,5		
560.0030.060					6,0		
560.0040.020	0,40	0,36	0,20	0,6	2,0	6,0	60
560.0040.040					4,0		
560.0040.060					6,0		
560.0040.080					8,0		
560.0050.025	0,50	0,45	0,25	0,7	2,5	6,0	60
560.0050.050					5,0		
560.0050.075					7,5		
560.0050.100					10,0		
560.0060.030	0,60	0,55	0,30	1,0	3,0	6,0	60
560.0060.060					6,0		
560.0060.090					9,0		
560.0060.120					12,0		
560.0080.040	0,80	0,75	0,40	1,2	4,0	6,0	60
560.0080.080					8,0		
560.0080.120					12,0		
560.0080.160					16,0		
560.0100.050	1,00	0,95	0,50	1,6	5,0	6,0	60
560.0100.100					10,0		
560.0100.150					15,0		
560.0100.200					20,0		
560.0150.050	1,50	1,40	0,75	2,4	5,0	6,0	60
560.0150.100					10,0		
560.0150.150					15,0		
560.0150.200					20,0		

★★★★★ 560



Ø > 1,5

Effective-Ø	5,993	★★★★★
Actual-Ø	5,992	
Concentricity	0,001	

062

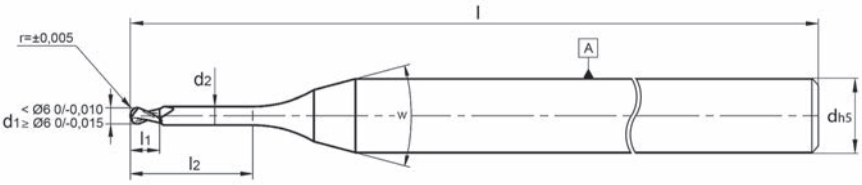
Controlled quality

Order no	d1	d2	r	l1	l2	d	l
560.0200.060					6,0		
560.0200.120					12,0		
560.0200.180	2,00	1,90	1,0	3,0	18,0	6,0	60
560.0200.240					24,0		
560.0200.300					30,0		
560.0300.090					9,0		60
560.0300.140					14,0		60
560.0300.180					18,0		60
560.0300.240	3,00	2,90	1,5	3,5	24,0	6,0	60
560.0300.300					30,0		60
560.0300.350					35,0		70
560.0300.450					45,0		100
560.0400.120					12,0		60
560.0400.160					16,0		60
560.0400.240					24,0		60
560.0400.300					30,0		60
560.0400.350					35,0		70
560.0400.400					40,0		100
560.0500.150					15,0		60
560.0500.300	5,00	4,80	2,5	5,0	30,0	6,0	60
560.0500.500					50,0		100
560.0600.180					18,0		60
560.0600.300					30,0		60
560.0600.350	6,00	5,80	3,0	6,0	35,0	6,0	70
560.0600.450					45,0		100
560.0600.600					60,0		100

HIGH-END LINE
Solid carbide ball nose end mill

☑ High performance tool for large-scale series
☑ Long life cycles
☑ Process-safe milling within 10 µm
☑ 10 µm-thick high performance diamond coating
☑ 100% quality control
☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm

560H ★★★★★



Controlled quality

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HIGH-END LINE
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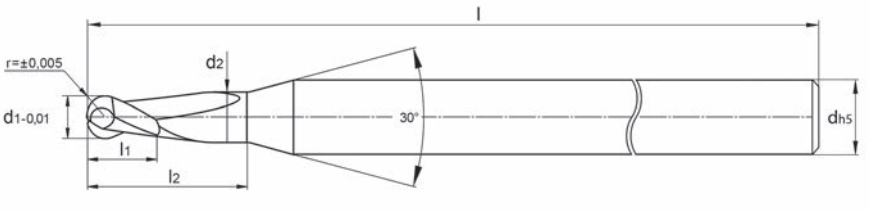
Order no	d1	d2	r	l1	l2	d	l
560H0030.015 560H0030.030	0,3	0,25	0,15	0,5	1,5 3,0	6,0	60
560H0040.020 560H0040.040 560H0040.060	0,4	0,34	0,20	0,6	2,0 4,0 6,0	6,0	60
560H0050.025 560H0050.050 560H0050.075 560H0050.100	0,5	0,44	0,25	0,7	2,5 5,0 7,5 10,0	6,0	60
560H0060.030 560H0060.060 560H0060.090 560H0060.120	0,6	0,54	0,30	1,0	3,0 6,0 9,0 12,0	6,0	60
560H0080.040 560H0080.080	0,8	0,74	0,40	1,2	4,0 8,0	6,0	60
560H0100.050 560H0100.100 560H0100.150 560H0100.200	1,0	0,94	0,50	1,6	5,0 10,0 15,0 20,0	6,0	60
560H0150.050 560H0150.100 560H0150.150 560H0150.200	1,5	1,40	0,75	2,4	5,0 10,0 15,0 20,0	6,0	60
560H0200.060 560H0200.120 560H0200.180 560H0200.240 560H0200.300	2,0	1,90	1,00	3,0	6,0 12,0 18,0 24,0 30,0	6,0	60
560H0300.180 560H0300.240 560H0300.300	3,0	2,80	1,50	3,5	18,0 24,0 30,0	6,0	60
560H0400.240 560H0400.300	4,0	3,80	2,00	4,0	24,0 30,0	6,0	60
560H0600.300 560H0600.350	6,0	5,80	3,00	6,0	30,0 35,0	6,0	60 70



Effective-Ø	5,993	★★★★★
Actual-Ø	5,992	
Concentricity	0,001	

062

Controlled quality

Order no	d1	d2	l1	l2	d	l
564.0050	0,5	0,45	0,6	2,5	3,0	50,0
564.0060	0,6	0,55	0,8	3,0	3,0	50,0
564.0080	0,8	0,75	1,0	4,0	3,0	50,0
564.0100	1,0	0,95	1,5	5,0	3,0	50,0
564.0150	1,5	1,40	3,0	8,0	3,0	50,0
564.0200	2,0	1,90	4,0	10,0	3,0	50,0
564.0250	2,5	2,40	5,0	10,0	3,0	50,0
564.0020.010 564.0020.020	0,2	0,18	0,2	1,0 2,0	4,0	40
564.0030.010 564.0030.020	0,3	0,27	0,3	1,0 2,0	4,0	40
564.0040.010 564.0040.020 564.0040.030	0,4	0,36	0,4	1,0 2,0 3,0	4,0	40
564.0050.020 564.0050.040 564.0050.060	0,5	0,45	0,5	2,0 4,0 6,0	4,0	40
564.0080.040 564.0080.060 564.0080.080	0,8	0,75	0,8	4,0 6,0 8,0	4,0	40
564.0100.060 564.0100.100 564.0100.150	1,0	0,95	1,0	6,0 10,0 15,0	4,0	50
564.0150.060 564.0150.080 564.0150.120	1,5	1,40	1,5	6,0 8,0 12,0	4,0	50
564.0200.100 564.0200.150 564.0200.200	2,0	1,90	2,0	10,0 15,0 20,0	4,0	50
564.0300.100 564.0300.180 564.0300.240	3,0	2,80	6,0	10,0 18,0 24,0	4,0	50

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Solid carbide ball nose end mill

☑ High performance tool for large-scale series
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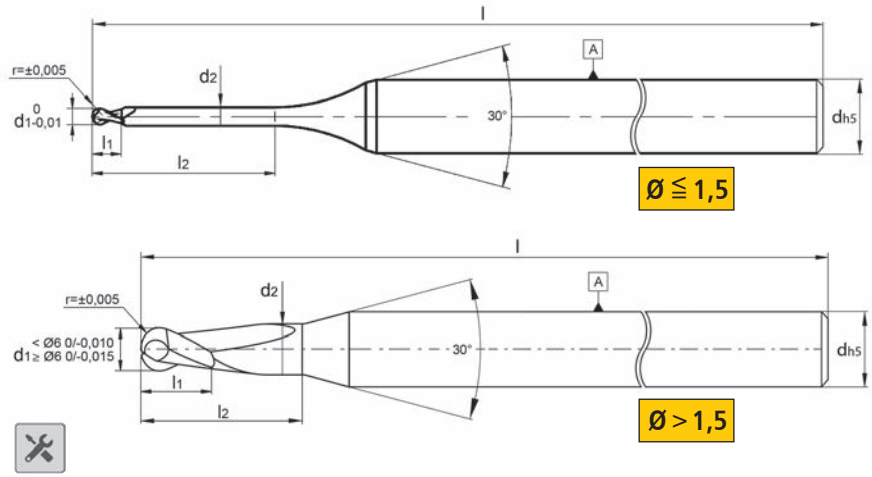
☑ Diameter tolerance: 0/-0.010 mm <Ø 4.0 mm

565 ★★★



QUALITY LINE

Solid carbide ball nose end mill

☑ Quality tool for standard applications
☑ Innovative geometry
☑ Approved diamond coating
☑ Top value for money
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0.003 mm <Ø 6.0 mm <70 mm length
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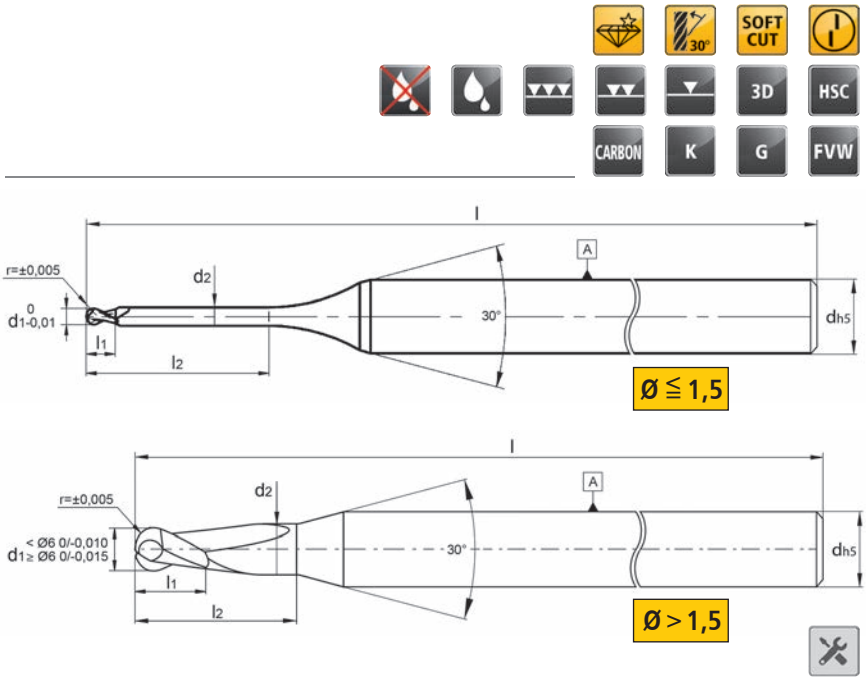
Order no	d1	d2	r	l1	l2	d	l	Inclination angle 30′	1°	1° 30′	2°	3°
565.020.10.004	0,2	0,18	0,10	0,30	0,4	4,0	40	0,82	0,97	1,12	1,27	1,59
565.020.10.006					0,6			1,18	1,36	1,53	1,71	2,06
565.020.10.010					1,0			1,64	1,86	2,07	2,27	2,65
565.020.10.015					1,5			2,20	2,47	2,70	2,93	3,35
565.030.15.005	0,3	0,27	0,15	0,50	0,5	4,0	40	1,14	1,29	1,45	1,61	1,93
565.030.15.010					1,0			1,71	1,91	2,11	2,30	2,67
565.030.15.015					1,5			2,27	2,51	2,74	2,96	3,37
565.030.15.030					3,0			3,93	4,27	4,57	4,84	5,33
565.030.15.045					4,5			5,56	5,98	6,32	6,64	7,20
565.030.15.060					6,0			7,18	7,65	8,05	8,40	9,01
565.040.20.020	0,4	0,36	0,20	0,60	2,0	4,0	40	2,88	3,15	3,39	3,62	4,05
565.040.20.040					4,0			5,07	5,44	5,77	6,06	6,60
565.040.20.060					6,0			7,22	7,68	8,07	8,41	9,02
565.040.20.080					8,0			9,36	9,89	10,32	10,71	11,38
565.050.25.025	0,5	0,45	0,25	0,70	2,5	4,0	40	3,48	3,76	4,02	4,27	4,72
565.050.25.035					3,5		40	4,57	4,91	5,21	5,48	5,99
565.050.25.050					5,0		60	6,19	6,59	6,95	7,26	7,83
565.050.25.075					7,5		60	8,86	9,36	9,78	10,15	10,80
565.050.25.100					10,0		60	11,52	12,09	12,57	12,98	13,70
565.060.30.030	0,6	0,55	0,30	1,00	3,0	4,0	60	4,02	4,33	4,61	4,87	5,35
565.060.30.060					6,0			7,26	7,70	8,08	8,42	9,02
565.060.30.090					9,0			10,45	11,00	11,45	11,85	12,54
565.060.30.110					11,0			12,57	13,17	13,66	14,10	14,84
565.080.40.040	0,8	0,75	0,40	1,20	4,0	4,0	60	5,10	5,45	5,77	6,05	6,57
565.080.40.080					8,0			9,38	9,90	10,32	10,70	11,36
565.080.40.120					12,0			13,62	14,24	14,75	15,20	15,96
565.080.40.160					16,0			17,82	18,54	19,12	19,62	20,46
565.100.50.050	1,0	0,95	0,50	1,60	5,0	4,0	60	6,17	6,56	6,91	7,22	7,77
565.100.50.100					10,0			11,50	12,07	12,54	12,95	13,66
565.100.50.150					15,0			16,77	17,46	18,02	18,51	19,33
565.100.50.200					20,0			22,00	22,80	23,43	23,97	24,88
565.100.50.250					25,0			27,21	28,09	28,79	29,38	-



QUALITY LINE
Solid carbide ball nose end mill

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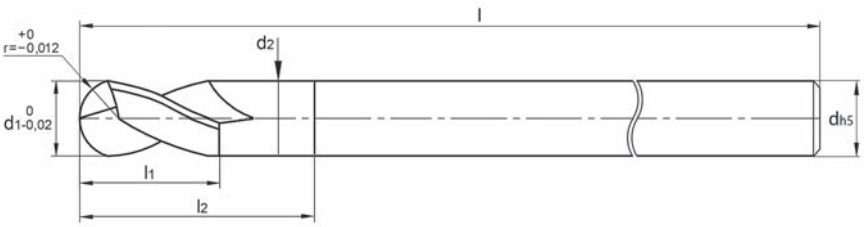
☑ Innovative geometry
☑ Approved diamond coating
☑ Top value for money
☑ Concentricity:
0.003 mm <Ø 6.0 mm <70 mm length
☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Inclination angle 30′	1°	1° 30′	2°	3°
565.120.60.050					5,0			6,16	6,55	6,89	7,20	7,75
565.120.60.100	1,2	1,15	0,60	1,60	10,0	4,0	60	11,49	12,06	12,53	12,94	13,65
565.120.60.150					15,0			16,76	17,46	18,01	18,50	19,32
565.150.75.050					5,0			6,35	6,70	7,01	7,30	7,83
565.150.75.100	1,5	1,40	0,75	2,40	10,0	4,0	60	11,65	12,17	12,62	13,01	13,70
565.150.75.150					15,0			16,90	17,55	18,09	18,56	19,36
565.150.75.200					20,0			22,11	22,87	23,49	24,02	-
565.200.100.060					6,0			6,19	6,41	6,64	6,88	7,44
565.200.100.120					12,0			12,40	12,83	13,30	13,81	14,94
565.200.100.180	2,0	1,90	1,00	3,00	18,0	4,0	60	18,61	19,26	19,97	20,73	-
565.200.100.200					20,0			20,68	21,41	22,19	23,04	-
565.200.100.240					24,0			24,81	25,69	26,64	27,65	-
565.200.100.300					30,0			31,02	32,12	33,30	-	-
565.300.150.080					8,0		60	8,31	8,59	8,89	9,22	9,97
565.300.150.120					12,0		60	12,45	12,88	13,34	13,84	14,97
565.300.150.180	3,0	2,80	1,50	3,50	18,0	6,0	60	18,65	19,30	20,01	20,76	22,47
565.300.150.240					24,0		60	24,86	25,73	26,67	27,68	29,97
565.300.150.300					30,0		60	31,07	32,16	33,34	34,61	-
565.300.150.450					45,0		100	46,58	48,23	50,01	-	-
565.400.200.100					10,0		60	10,37	10,72	11,10	11,51	12,44
565.400.200.120					12,0		60	12,44	12,87	13,33	13,82	14,94
565.400.200.240	4,0	3,80	2,00	4,00	24,0	6,0	60	24,86	25,72	26,66	27,67	-
565.400.200.300					30,0		60	31,06	32,15	33,33	-	-
565.400.200.400					40,0		100	41,41	42,87	-	-	-
565.500.250.150					15,0		60	15,54	16,07	16,65	-	-
565.500.250.300	5,0	4,80	2,50	5,00	30,0	6,0	60	31,06	32,14	-	-	-
565.500.250.400					40,0		100	41,40	-	-	-	-
565.500.250.500					50,0		100	51,75	-	-	-	-
565.600.300.180					18,0		60	-	-	-	-	-
565.600.300.200					20,0		60	-	-	-	-	-
565.600.300.300	6,0	5,80	3,00	6,00	30,0	6,0	60	-	-	-	-	-
565.600.300.450					45,0		100	-	-	-	-	-
565.600.300.600					60,0		100	-	-	-	-	-

561 ★★★★

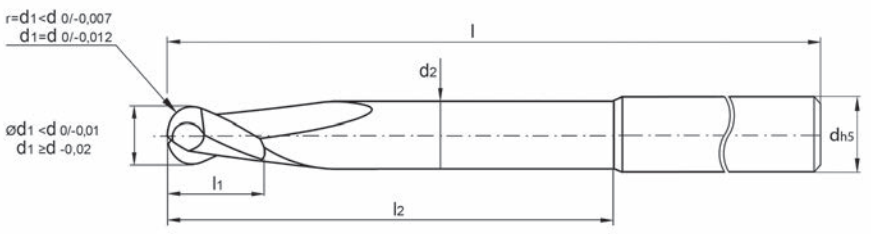


PREMIUM LINE

Solid carbide ball nose end mill

- ☑ High performance tool for small and large-scale series
- ☑ Extremely long life cycles
- ☑ Process-safe milling
- ☑ High performance diamond coating

Order no	d1	d2	l1	l2	d	l
561.0800	8,0	7,7	16,0	30,0	8,0	70
561.1000	10,0	9,7	20,0	30,0	10,0	70
561.1200	12,0	11,7	24,0	30,0	12,0	80

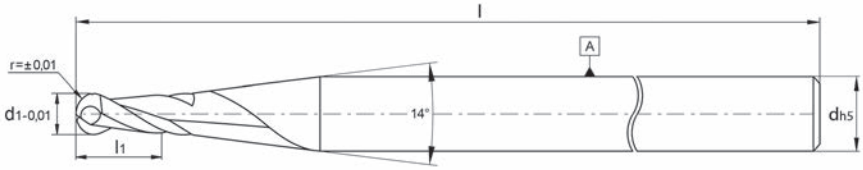


Order no	d1	d2	l1	l2	d	l
562.0100	1,0	0,95	2,0	6,0	6,0	90
562.0150	1,5	1,45	3,0	6,0	6,0	90
562.0200	2,0	1,90	4,0	8,0	6,0	90
562.0300	3,0	2,90	5,0	8,0	6,0	90
562.0400	4,0	3,90	8,0	12,0	6,0	90
562.0500	5,0	4,90	10,0	15,0	6,0	100
562.0600	6,0	5,70	12,0	70,0	6,0	100
562.0800	8,0	7,70	16,0	80,0	8,0	120
562.1000	10,0	9,70	20,0	80,0	10,0	120
562.1200	12,0	11,70	24,0	80,0	12,0	120
562.0800.16	8,0	7,70	16,0	110,0	8,0	150
562.1000.20	10,0	9,70	20,0	110,0	10,0	150
562.1200.24	12,0	11,70	24,0	110,0	12,0	150

PREMIUM LINE
Solid carbide ball nose end mill

- ☑ High performance tool for small and large-scale series
- ☑ Extremely long life cycles
- ☑ Process-safe milling
- ☑ High performance diamond coating

563 ★★★★

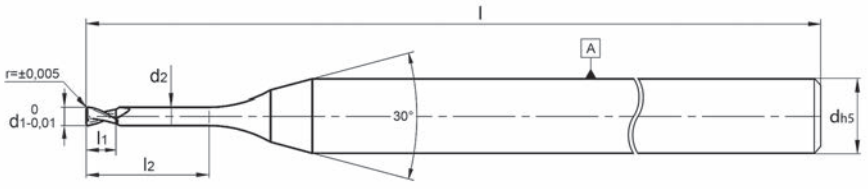


PREMIUM LINE

Solid carbide ball nose end mill

- ☑ High performance tool for small and large-scale series
- ☑ Extremely long life cycles
- ☑ Process-safe milling
- ☑ High performance diamond coating

Order no	d1	l1	d	l
563.0020	0,2	0,3	3,0	40
563.0040	0,4	0,6	3,0	40
563.0050	0,5	1,0	3,0	40
563.0060	0,6	1,0	3,0	40
563.0080	0,8	1,4	3,0	40
563.0100	1,0	5,0	3,0	50
563.0150	1,5	8,0	3,0	50
563.0200	2,0	10,0	3,0	50
563.0250	2,5	10,0	3,0	50
563.0300	3,0	10,0	4,0	50



Ø ≦ 1,5

Effective-Ø	5,993	
Actual-Ø	5,992	
Concentricity	0,001	★★★★★

Controlled quality

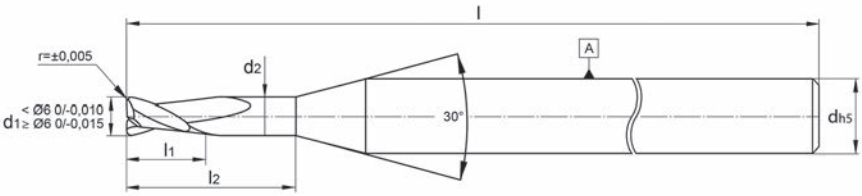
Order no	d1	d2	r	l1	l2	d	l	flutes
570.0010.002.01	0,10	0,08	0,01	0,15	0,2	6,0	60	2
570.0010.004.01					0,4			
570.0015.003.01	0,15	0,13	0,01	0,2	0,3	6,0	60	2
570.0015.006.01					0,6			
570.0020.006.02	0,20	0,17	0,02	0,3	0,6	6,0	60	2
570.0020.010.02					1,0			
570.0020.015.02					1,5			
570.0030.005.02	0,30	0,25	0,02	0,5	0,5	6,0	60	2
570.0030.010.02					1,0			
570.0030.015.02					1,5			
570.0030.030.02					3,0			
570.0030.045.02					4,5			
570.0030.060.02					6,0			
570.0040.020.02	0,40	0,34	0,02	0,6	2,0	6,0	60	2
570.0040.040.02					4,0			
570.0040.060.02					6,0			
570.0040.080.02					8,0			
570.0050.025.05					2,5			
570.0050.035.05	0,50	0,44	0,05	0,7	3,5	6,0	60	2
570.0050.050.05								
570.0050.075.05					7,5			
570.0050.100.05					10,0			
570.0060.030.05	0,60	0,54	0,05	1,0	3,0	6,0	60	2
570.0060.060.05					6,0			
570.0060.090.05					9,0			
570.0060.120.05					12,0			
570.0080.040.05	0,80	0,74	0,05	1,2	4,0	6,0	60	2
570.0080.080.05					8,0			
570.0080.120.05					12,0			
570.0080.160.05					16,0			
570.0100.050.05	1,00	0,94	0,05	1,6	5,0	6,0	60	2
570.0100.100.05			0,05		10,0			
570.0100.150.05			0,05		15,0			
570.0100.200.05			0,05		20,0			
570.0100.050.10			0,10		5,0			
570.0100.100.10			0,10		10,0			
570.0100.150.10			0,10		15,0			
570.0100.200.10			0,10		20,0			
570.0150.050.05	1,50	1,40	0,05	2,4	5,0	6,0	60	2
570.0150.100.05			0,05		10,0			
570.0150.150.05			0,05		15,0			
570.0150.200.05			0,05		20,0			
570.0150.050.15			0,15		5,0			
570.0150.100.15			0,15		10,0			
570.0150.150.15			0,15		15,0			
570.0150.200.15			0,15		20,0			

See also next page ▶

HIGH-END LINE
Solid carbide end mill with corner radius

- ☑ High performance tool for large-scale series
- ☑ Long life cycles
- ☑ Process-safe milling within 10 µm
- ☑ 10 µm-thick high performance diamond coating
- ☑ 100% quality control
- ☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm

570 ★★★★★



Ø > 1,5

Controlled quality

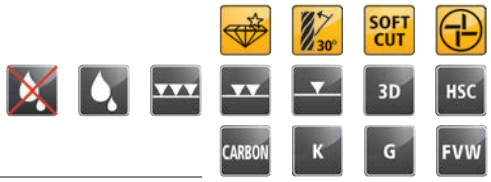
Effective-Ø	5,993	★★★★★
Actual-Ø	5,992	
Concentricity	0,001	

HIGH-END LINE

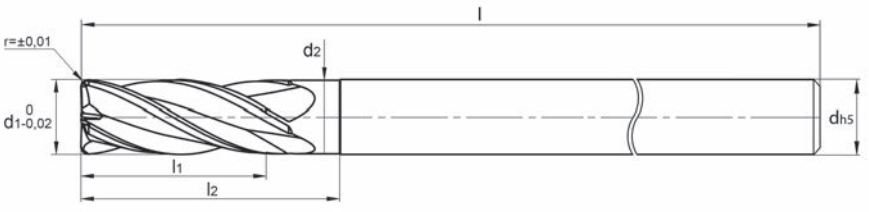
Solid carbide end mill with corner radius

- ☑ High performance tool for large-scale series
- ☑ Long life cycles
- ☑ Process-safe milling within 10 µm
- ☑ 10 µm-thick high performance diamond coating
- ☑ 100% quality control
- ☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	flutes
570.0200.060.05			0,05		6,0	6,0		
570.0200.120.05			0,05		12,0	6,0		
570.0200.180.05			0,05		18,0	6,0		
570.0200.240.05			0,05		24,0	6,0		
570.0200.300.05			0,05		30,0	6,0		
570.0200.200.15	2,00	1,9	0,15	3,0	20,0	4,0	60	2
570.0200.060.30			0,30		6,0	6,0		
570.0200.120.30			0,30		12,0	6,0		
570.0200.180.30			0,30		18,0	6,0		
570.0200.240.30			0,30		24,0	6,0		
570.0200.300.30			0,30		30,0	6,0		
570.0300.090.05			0,05		9,0		60	
570.0300.180.05			0,05		18,0		60	
570.0300.300.05			0,05		30,0		60	
570.0300.450.05			0,05		45,0		100	
570.0300.090.30	3,00	2,8	0,30	3,5	9,0	6,0	60	2
570.0300.180.30			0,30		18,0		60	
570.0300.300.30			0,30		30,0		60	
570.0300.450.30			0,30		45,0		100	
570.0300.080.50			0,50		8,0		60	
570.0400.120.05			0,05		12,0		60	
570.0400.240.05			0,05		24,0		60	
570.0400.400.05	4,00	3,8	0,05	4,0	40,0	6,0	100	2
570.0400.120.50			0,50		12,0		60	
570.0400.240.50			0,50		24,0		60	
570.0400.400.50			0,50		40,0		100	
570.0500.150.05			0,05		15,0		60	
570.0500.300.05			0,05		30,0		60	
570.0500.500.05	5,00	4,8	0,05	5,0	50,0	6,0	100	2
570.0500.150.50			0,50		15,0		60	
570.0500.300.50			0,50		30,0		60	
570.0500.500.50			0,50		50,0		100	
570.0600.180.05			0,05		18,0		60	
570.0600.300.05			0,05		30,0		60	
570.0600.600.05			0,05		60,0		100	
570.0600.180.50	6,00	5,8	0,50	6,0	18,0	6,0	60	2
570.0600.300.50			0,50		30,0		60	
570.0600.450.50			0,50		45,0		100	
570.0600.600.50			0,50		60,0		100	
570.0400.100.50	4,00	3,8	0,50	4,0	10,0	6,0	60	4
570.0600.200.50	6,00	5,8	0,50	9,0	20,0	6,0	60	4
570.0800.350.50	8,00	7,8	0,50	12,0	35,0	8,0	70	4
570.0800.550.50					55,0		90	



★★★★571



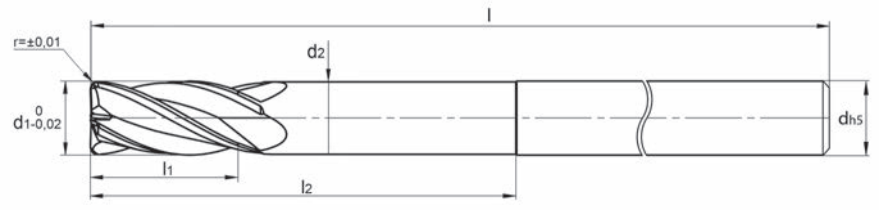
Order no	d1	d2	r	l1	l2	d	l
571.080.05	8,0	7,8	0,5	20,0	30,0	8,0	90
571.080.10			1,0				
571.080.15			1,5				
571.080.20			2,0				
571.100.05	10,0	9,8	0,5	25,0	35,0	10,0	90
571.100.10			1,0				
571.100.15			1,5				
571.100.20			2,0				
571.120.05	12,0	11,8	0,5	30,0	40,0	12,0	100
571.120.10			1,0				
571.120.15			1,5				
571.120.20			2,0				

PREMIUM LINE

Solid carbide end mill with corner radius

- ☑ High performance tool for small and large-scale series
- ☑ Extremely long life cycles
- ☑ Process-safe milling
- ☑ High performance diamond coating

572 ★★★★

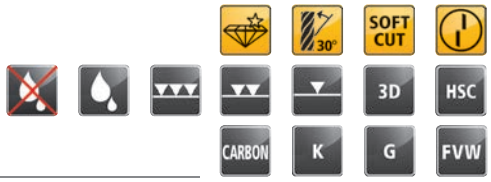


PREMIUM LINE

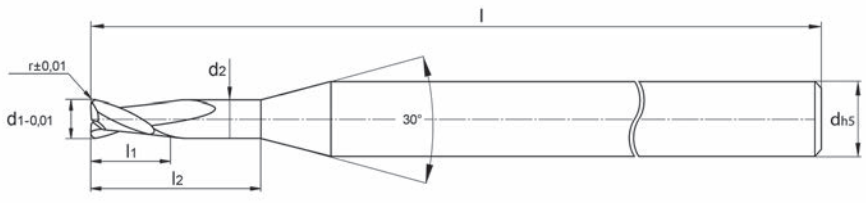
Solid carbide end mill with corner radius

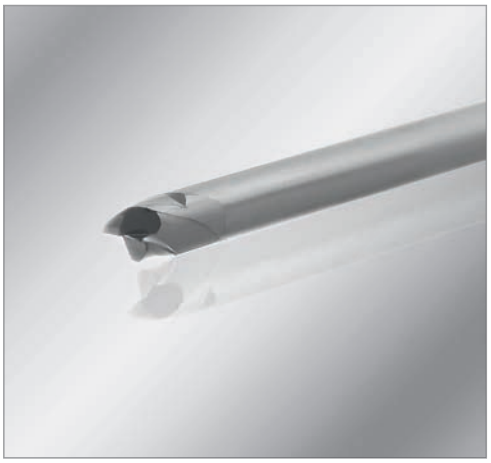
- ☑ High performance tool for small and large-scale series
- ☑ Extremely long life cycles
- ☑ Process-safe milling
- ☑ High performance diamond coating

Order no	d1	d2	r	l1	l2	d	l
572.080.05 572.080.10	8,0	7,8	0,5 1,0	16,0	80,0	8,0	120
572.100.05 572.100.10	10,0	9,8	0,5 1,0	20,0	80,0	10,0	120
572.120.05 572.120.10	12,0	11,8	0,5 1,0	24,0	80,0	12,0	120



★★★★573





Order no	d1	d2	r	l1	l2	d	l
573.0040	0,4	0,36	0,05	0,4	3,5	3,0	50
573.0050	0,5	0,45	0,05	0,5	4,0	3,0	50
573.0060	0,6	0,55	0,05	0,6	5,0	3,0	50
573.0080	0,8	0,75	0,05	0,8	7,0	3,0	50
573.0100	1,0	0,95	0,10	1,0	9,0	3,0	50
573.0150	1,5	1,40	0,15	1,5	12,0	3,0	50
573.0200	2,0	1,90	0,15	2,0	20,0	3,0	50

PREMIUM LINE

Solid carbide end mill with corner radius

- ☑ High performance tool for small and large-scale series
- ☑ Extremely long life cycles
- ☑ Process-safe milling
- ☑ High performance diamond coating
- ☑ Concentricity: 0.010 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: +/- 0.010 mm <Ø 6.0 mm

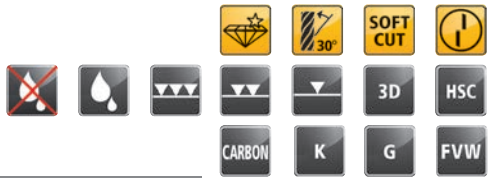
574 ★★★★

PREMIUM LINE

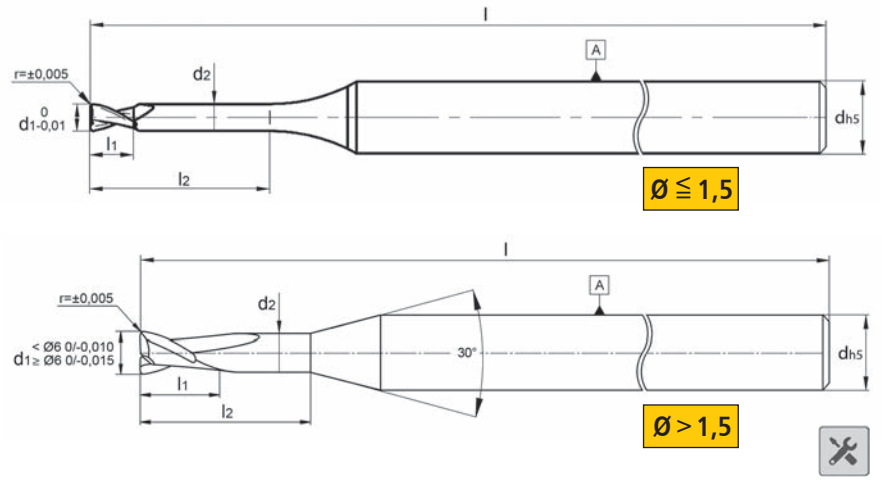
Solid carbide end mill with corner radius

- ☑ High performance tool for small and large-scale series
- ☑ Extremely long life cycles
- ☑ Process-safe milling
- ☑ High performance diamond coating
- ☑ Concentricity: 0.010 mm <Ø 6.0 mm <80 mm length
- ☑ Diameter tolerance: +/- 0.010 mm <Ø 4.0 mm
  - 0.030 mm >Ø 4.0 mm

Order no	d1	r	l1	d	l
574.030.05	3,0	0,5	6,0	4,0	80
574.030.10		1,0			
574.040.05	4,0	0,5	10,0	4,0	80
574.040.10		1,0			
574.050.10	5,0	1,0	13,0	5,0	80
574.060.05	6,0	0,5	15,0	6,0	80
574.060.10		1,0			
574.060.15		1,5			
574.080.05	8,0	0,5	20,0	8,0	90
574.080.10		1,0			
574.080.15		1,5			
574.080.20		2,0			
574.100.05	10,0	0,5	25,0	10,0	90
574.100.10		1,0			
574.100.15		1,5			
574.100.20		2,0			
574.120.05	12,0	0,5	30,0	12,0	100
574.120.10		1,0			
574.120.15		1,5			
574.120.20		2,0			



★★★ 575



QUALITY LINE

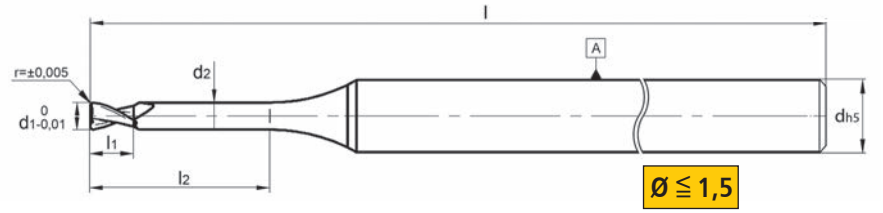
Solid carbide end mill with corner radius

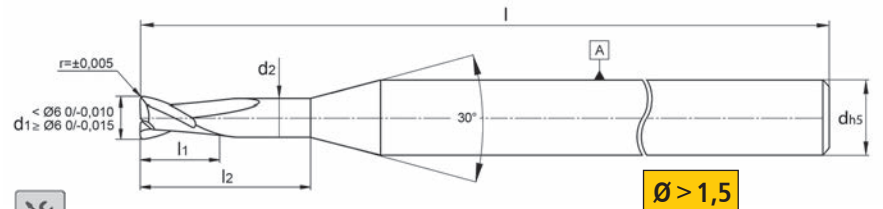
- ☑ Quality tool for standard applications
- ☑ Cost-optimised due to large-scale manufacture
- ☑ Innovative geometry
- ☑ Approved diamond coating
- ☑ Top value for money
- ☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Inclination angle 30′	1°	1° 30′	2°	3°
575.020.02.004	0,2	0,18	0,02	0,3	0,4	4,0	40	0,96	1,12	1,29	1,46	1,80
575.020.02.006					0,6			1,19	1,38	1,56	1,74	2,10
575.020.02.010					1,0			1,65	1,88	2,09	2,29	2,69
575.020.02.015					1,5			2,21	2,48	2,73	2,95	3,38
575.030.02.005	0,3	0,27	0,02	0,5	0,5	4,0	40	1,16	1,32	1,49	1,66	2,00
575.030.02.010					1,0			1,72	1,94	2,14	2,34	2,73
575.030.02.015					1,5			2,28	2,54	2,77	3,00	3,41
575.030.02.030					3,0			3,94	4,29	4,59	4,87	5,37
575.030.02.045					4,5			5,57	5,99	6,35	6,66	7,23
575.030.02.060					6,0			7,19	7,67	8,07	8,42	9,04
575.040.04.020	0,4	0,36	0,04	0,6	2,0	4,0	40	2,90	3,17	3,43	3,66	4,11
575.040.04.040					4,0		40	5,08	5,46	5,79	6,09	6,64
575.040.04.060					6,0		60	7,23	7,70	8,09	8,44	9,05
575.040.04.080					8,0		60	9,37	9,90	10,34	10,73	11,41
575.050.05.025	0,5	0,45	0,05	0,7	2,5	4,0	40	3,50	3,79	4,06	4,31	4,78
575.050.05.035					3,5		40	4,58	4,93	5,24	5,52	6,04
575.050.05.050					5,0		60	6,20	6,62	6,97	7,30	7,87
575.050.05.075					7,5		60	8,87	9,38	9,80	10,18	10,84
575.050.05.100					10,0		60	11,53	12,11	12,59	13,01	13,74
575.060.06.030	0,6	0,55	0,06	1,0	3,0	4,0	60	4,04	4,36	4,65	4,92	5,41
575.060.06.060					6,0			7,27	7,73	8,11	8,46	9,07
575.060.06.090					9,0			10,47	11,02	11,48	11,88	12,58
575.060.06.110					11,0			12,58	13,19	13,69	14,12	14,88
575.080.08.040	0,8	0,75	0,08	1,2	4,0	4,0	60	5,12	5,49	5,82	6,11	6,65
575.080.08.080					8,0			9,40	9,93	10,36	10,75	11,42
575.080.08.120					12,0			13,64	14,27	14,79	15,24	16,01
575.080.08.160					16,0			17,84	18,57	19,15	19,65	20,50
575.100.10.050	1,0	0,95	0,10	1,6	5,0	4,0	60	6,20	6,61	6,97	7,29	7,86
575.100.10.100					10,0			11,52	12,10	12,58	13,00	13,73
575.100.10.150					15,0			16,79	17,49	18,06	18,55	19,39
575.100.10.200					20,0			22,02	22,82	23,46	24,01	24,93

See also next page ▶

575 ★★★



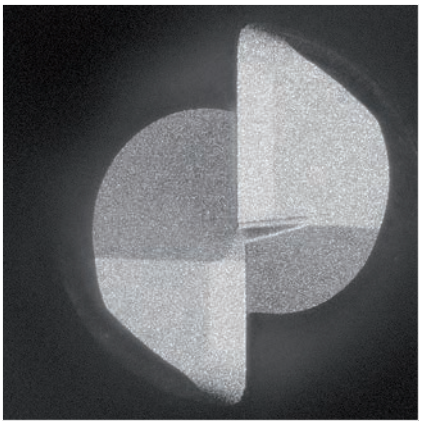


Order no	d1	d2	r	l1	l2	d	l	Inclination angle 30′	1°	1° 30′	2°	3°
575.120.12.050					5,0			6,20	6,61	6,96	7,28	7,86
575.120.12.100	1,2	1,15	0,12	1,6	10,0	4,0	60	11,52	12,10	12,58	13,00	13,72
575.120.12.150					15,0			16,79	17,49	18,06	18,55	19,38
575.150.15.050					5,0			6,39	6,76	7,10	7,40	7,95
575.150.15.100	1,5	1,40	0,15	2,4	10,0	4,0	60	11,68	12,22	12,68	13,08	13,79
575.150.15.150					15,0			16,92	17,59	18,14	18,62	19,44
575.150.15.200					20,0			22,14	22,91	23,54	24,07	-
575.200.20.060			0,20		6,0			6,20	6,42	6,66	6,91	7,48
575.200.20.120			0,20		12,0			12,41	12,85	13,32	13,83	14,98
575.200.20.180			0,20		18,0			18,61	19,28	19,99	20,76	-
575.200.20.200			0,20		20,0			20,68	21,42	22,21	23,06	-
575.200.20.240			0,20		24,0			24,82	25,71	26,66	27,68	-
575.200.20.300	2,0	1,90	0,20	3,0	30,0	4,0	60	31,03	32,13	33,32	-	-
575.200.50.060			0,50		6,0			6,20	6,41	6,65	6,90	7,47
575.200.50.120			0,50		12,0			12,40	12,84	13,32	13,82	14,97
575.200.50.180			0,50		18,0			18,61	19,27	19,98	20,75	-
575.200.50.200			0,50		20,0			20,68	21,41	22,20	23,05	-
575.200.50.240			0,50		24,0			24,82	25,70	26,65	27,67	-
575.200.50.300			0,50		30,0			31,03	32,13	33,32	-	-
575.300.30.080			0,30		8,0		60	8,32	8,61	8,93	9,27	10,03
575.300.30.120			0,30		12,0		60	12,46	12,90	13,37	13,88	15,03
575.300.30.180			0,30		18,0		60	18,66	19,33	20,04	20,80	22,53
575.300.30.240			0,30		24,0		60	24,87	25,75	26,70	27,73	30,03
575.300.30.300			0,30		30,0		60	31,08	32,18	33,37	34,65	-
575.300.30.450	3,0	2,80	0,30	3,5	45,0	6,0	100	46,59	48,25	50,04	-	-
575.300.50.080			0,50		8,0		60	8,32	8,61	8,92	9,26	10,02
575.300.50.120			0,50		12,0		60	12,45	12,89	13,37	13,87	15,02
575.300.50.180			0,50		18,0		60	18,66	19,32	20,03	20,80	22,52
575.300.50.240			0,50		24,0		60	24,87	25,75	26,70	27,72	30,02
575.300.50.300			0,50		30,0		60	31,08	32,18	33,37	34,64	-
575.300.50.450			0,50		45,0		100	46,59	48,25	50,03	-	-
575.400.50.100					10,0		60	10,39	10,75	11,14	11,57	12,52
575.400.50.120					12,0		60	12,45	12,89	13,37	13,87	15,02
575.400.50.240	4,0	3,80	0,50	4,0	24,0	6,0	60	24,87	25,75	26,70	27,72	-
575.400.50.300					30,0		60	31,08	32,18	33,37	-	-
575.400.50.400					40,0		100	41,42	42,89	-	-	-
575.500.50.150					15,0		60	15,56	16,11	16,70	-	-
575.500.50.300	5,0	4,80	0,50	5,0	30,0	6,0	60	31,08	32,18	-	-	-
575.500.50.400					40,0		100	41,42	-	-	-	-
575.500.50.500					50,0		100	51,76	-	-	-	-
575.600.50.180					18,0		60	-	-	-	-	-
575.600.50.200					20,0		60	-	-	-	-	-
575.600.50.300	6,0	5,80	0,50	6,0	30,0	6,0	60	-	-	-	-	-
575.600.50.450					45,0		100	-	-	-	-	-
575.600.50.600					60,0		100	-	-	-	-	-

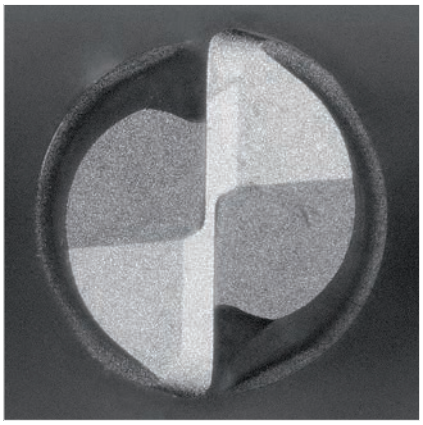
SEAGULL® -Milling cutters – The ultimate benchmark

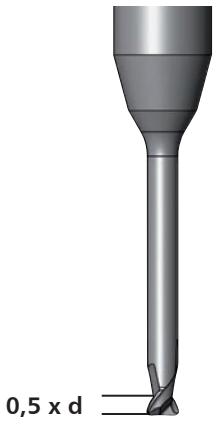
SEAGULL® tools are ultra-stable ball nose end mills and end mills with corner radius that have extremely short flutes and a special geometry designed for minimizing flute pressure in the manufacture of graphite electrodes.
The patented (EP 2 540 427 B1*) very short flute of the SEAGULL® milling cutters, in combination with a specially developed balance of carbide, diamond coating, and geometries, enables easy cutting in the milling of graphite and other hard-brittle non-ferrous materials in dry and wet machining.
SEAGULL® high-end milling cutters in the 567 and 577 series feature extremely tight tolerances. Each individual tool is measured separately, and the actual dimensions are noted on the packaging label.
The SEAGULL® quality milling cutters in the 568 and 578 series offer the best value for price-conscious users who still require high quality machining results.

NEW in the SEAGULL® family is the patented (EP 2 540 427 B1*; DE 10 2019 122039 B3) 576.T3 end mill with corner radius. With its three teeth, it is unique in the market and its combination of geometrical characteristics and flute dimensions creates generous chip space for material removal and high machining volumes during roughing, as well as the most intricate engagement conditions for finishing.

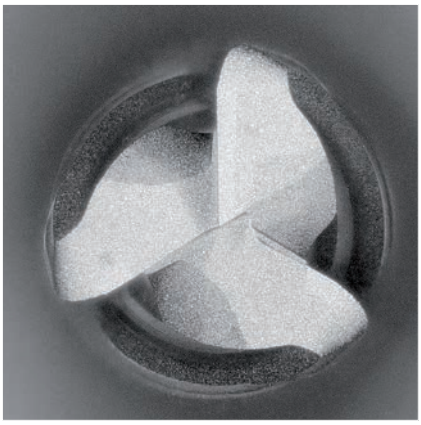


Series 570
Medium finishing and roughing flute





Series 567/568 & 577/578
Short finishing flute
Patented EP 2 540 427 B1*



Series 576.T3
Short finishing and long roughing flute
Patented EP 2 540 427 B1* and
DE 10 2019 122 039 B3

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

SEAGULL®

Overview of the features 577/578 & 567/568

Special cutting geometry for optimal stability and material removal

Very suitable for finishing

For fine-grain graphite

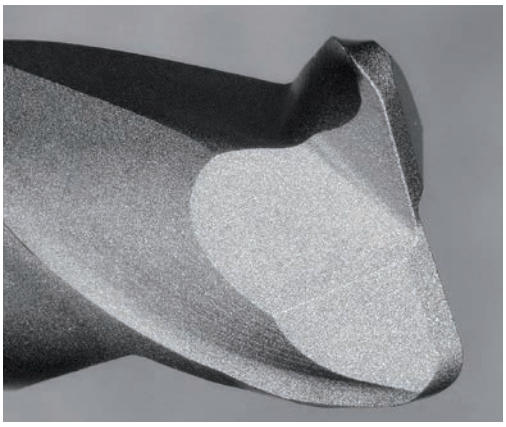
Patent EP 2 540 427 B1*

Short cylindrical flute for finishing

Especially small concentricity tolerances and high dimensional accuracy

Large free lengths - ideal for deep contours

High performance diamond coating for application-specialized coating thickness



SEAGULL®

Overview of the features
576.T3 expansion

ZECHA

Three flutes with large chip space for higher machining volumes

With new corner radii

Variable helix angle for optimum material removal

For all graphite grades

Very suitable for roughing and finishing

Short cylindrical flute for finest finish qualities

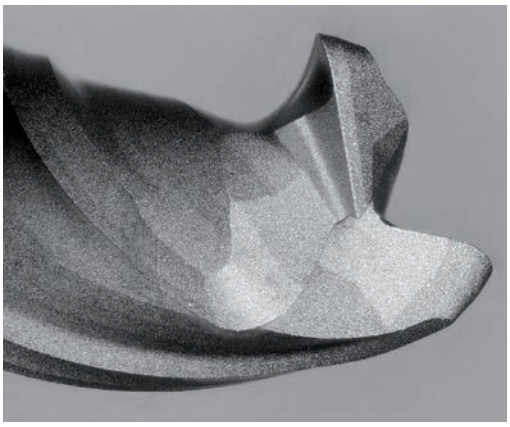
2 x d flute length for roughing

Tapered core for greater rigidity

Long flute run-out - ideal for deep full cut

Patent
EP 2 540 427 B1*; DE 10 2019 122 039 B3

High performance diamond coating for application-specialized coating thickness



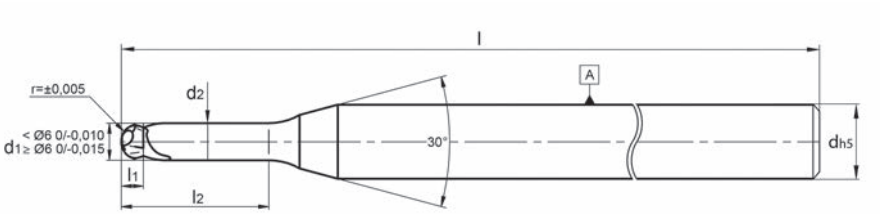
*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

SEAGULL® - Overview of Tools

Series	Teeth	Design	Special characteristics
567/568  SEAGULL®	2	• SEAGULL® ball nose end mill • Short flutes less than 0.5 x d • Spiralization of 40° • Cutting pressure minimisation • 567: Thick high-perfor-mance diamond coating • 568: Tried-and-tested diamond coating	• Very suitable for finishing • For fine-grain graphite • Ideal for thin-walled components/pins • 567: High life cycle and accuracy • 568: Excellent price-performance ratio
577/578  SEAGULL®	2	• SEAGULL® end mill with corner radius • Short flutes less than 0.5 x d • Spiralization of 40° • Cutting pressure minimisation • 577: Thick high-perfor-mance diamond coating • 578: Tried-and-tested diamond coating	• Very suitable for finishing • For fine-grain graphite • Ideal for thin-walled components/pins • 577: High life cycle and accuracy • 578: Excellent price-performance ratio
576.T3  SEAGULL®	3	• SEAGULL® end mill with corner radius • Extremely short finishing flutes less than 0.5 x d • Long roughing flutes of 2 x d • Variable spiralization of 30°- 38° • Tapered core • Long flute run-out and large chip space • Thick high-performance diamond coating	• Very suitable for roughing and finishing • For all graphite grades • Ideal for thin-walled components/pins • High performance potential • For finest finish qualities

Comparison of ZECHA graphite mill cutters outside the SEAGULL® family

570 	2	• End mill with corner radius • Flute length of 1 x d • Spiralization of 30° • High-performance diamond coating	• For roughing and finishing • For various graphite grades • Higher life cycle and accuracy



Effective-Ø	5,993
Actual-Ø	5,992
Concentricity	0,001

062

Controlled quality

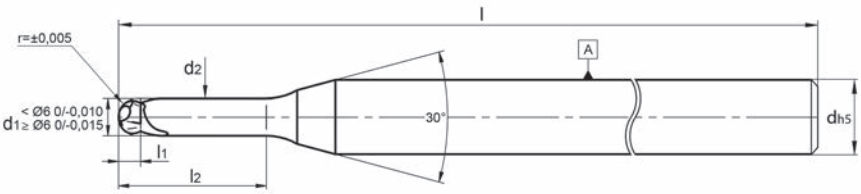
Order no	d1	d2	r	l1	l2	d	l
567.0030.015.015	0,3	0,25	0,15	0,20	1,5	4,0	40
567.0030.015.030					3,0		
567.0030.015.045					4,5		
567.0030.015.060					6,0		
567.0040.020.020	0,4	0,35	0,20	0,30	2,0	4,0	40
567.0040.020.040					4,0		
567.0040.020.060					6,0		
567.0040.020.080					8,0		
567.0050.025.025	0,5	0,45	0,25	0,35	2,5	4,0	60
567.0050.025.050					5,0		
567.0050.025.075					7,5		
567.0050.025.100					10,0		
567.0060.030.030	0,6	0,55	0,30	0,40	3,0	4,0	60
567.0060.030.060					6,0		
567.0060.030.090					9,0		
567.0060.030.120					12,0		
567.0080.040.040	0,8	0,75	0,40	0,50	4,0	4,0	60
567.0080.040.080					8,0		
567.0080.040.120					12,0		
567.0080.040.160					16,0		
567.0100.050.050	1,0	0,95	0,50	0,80	5,0	4,0	60
567.0100.050.100					10,0		
567.0100.050.150					15,0		
567.0100.050.200					20,0		
567.0120.060.150	1,2	1,15	0,60	0,90	15,0	4,0	60
567.0120.060.200					20,0		
567.0150.075.100	1,5	1,40	0,75	1,05	10,0	4,0	60
567.0150.075.150					15,0		
567.0150.075.200					20,0		
567.0150.075.250					25,0		
567.0200.100.120	2,0	1,90	1,00	1,30	12,0	4,0	60
567.0200.100.180					18,0		
567.0200.100.200					20,0		
567.0200.100.240					24,0		
567.0200.100.300					30,0		
567.0300.150.120	3,0	2,80	1,50	1,80	12,0	6,0	60
567.0300.150.180					18,0		60
567.0300.150.240					24,0		60
567.0300.150.300					30,0		70
567.0400.200.300	4,0	3,80	2,00	2,50	30,0	6,0	60
567.0400.200.400					40,0		70
567.0600.300.450	6,0	5,80	3,00	3,50	45,0	6,0	80
567.0600.300.700					70,0		100
567.0800.400.850	8,0	7,80	4,00	4,50	85,0	8,0	120
567.1000.500.850	10,0	9,80	5,00	5,50	85,0	10,0	120

HIGH-END LINE
Solid carbide ball nose end mill

- ☑ Extremely short flute
- ☑ Process-safe milling within 10 µm
- ☑ 10 µm-thick high performance diamond coating
- ☑ Cutting pressure minimisation
- ☑ Machining of small and deep geometries
- ☑ 100% quality control
- ☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm
- ☑ Patented flute exposure EP 2 540 427 B1*

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

568 ★★★



Controlled quality

Effective-Ø	5,993
Actual-Ø	5,992
Concentricity	0,001

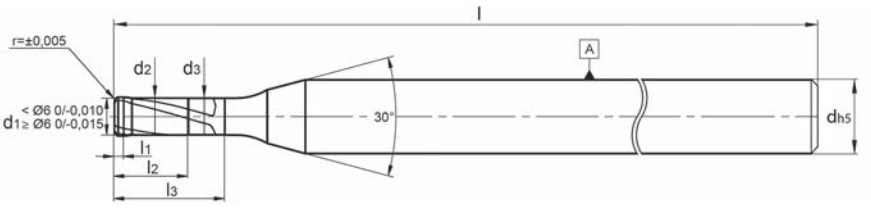
062

QUALITY LINE
Solid carbide ball nose end mill

- ☑ Extremely short flute
- ☑ Special geometry
- ☑ Approved diamond coating
- ☑ Cutting pressure minimisation
- ☑ Machining of small and deep geometries
- ☑ Top value for money
- ☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm
- ☑ Patented flute exposure EP 2 540 427 B1*

Order no	d1	d2	r	l1	l2	d	l
568.0030.015.015	0,3	0,25	0,15	0,20	1,5	4,0	40
568.0030.015.030					3,0		
568.0030.015.045					4,5		
568.0030.015.060					6,0		
568.0040.020.020	0,4	0,35	0,20	0,30	2,0	4,0	40
568.0040.020.040					4,0		
568.0040.020.060					6,0		
568.0040.020.080					8,0		
568.0050.025.025	0,5	0,45	0,25	0,35	2,5	4,0	60
568.0050.025.050					5,0		
568.0050.025.075					7,5		
568.0050.025.100					10,0		
568.0060.030.030	0,6	0,55	0,30	0,40	3,0	4,0	60
568.0060.030.060					6,0		
568.0060.030.090					9,0		
568.0060.030.120					12,0		
568.0080.040.040	0,8	0,75	0,40	0,50	4,0	4,0	60
568.0080.040.080					8,0		
568.0080.040.120					12,0		
568.0080.040.160					16,0		
568.0100.050.050	1,0	0,95	0,50	0,80	5,0	4,0	60
568.0100.050.100					10,0		
568.0100.050.150					15,0		
568.0100.050.200					20,0		
568.0120.060.150	1,2	1,15	0,60	0,90	15,0	4,0	60
568.0120.060.200					20,0		
568.0150.075.100	1,5	1,40	0,75	1,05	10,0	4,0	60
568.0150.075.150					15,0		
568.0150.075.200					20,0		
568.0150.075.250					25,0		
568.0200.100.120	2,0	1,90	1,00	1,30	12,0	4,0	60
568.0200.100.180					18,0		
568.0200.100.200					20,0		
568.0200.100.240					24,0		
568.0200.100.300					30,0		
568.0300.150.120	3,0	2,80	1,50	1,80	12,0	6,0	60
568.0300.150.180					18,0		60
568.0300.150.240					24,0		60
568.0300.150.300					30,0		70
568.0400.200.300	4,0	3,80	2,00	2,50	30,0	6,0	60
568.0400.200.400					40,0		70
568.0600.300.450	6,0	5,80	3,00	3,50	45,0	6,0	80
568.0600.300.700					70,0		100
568.0800.400.850	8,0	7,80	4,00	4,50	85,0	8,0	120
568.1000.500.850	10,0	9,80	5,00	5,50	85,0	10,0	120

576.T3



Effective-Ø	5,993
Actual-Ø	5,992
Concentricity	0,001

062

Controlled quality

Order no	d1	d2	d3	r	l1	l2	l3	d	l	Z
576.T3.0050.010.015	0,5	0,45	0,42	0,10	0,30	1,0	1,5	4,0	50	3
576.T3.0050.010.025							2,5			
576.T3.0050.010.035							3,5			
576.T3.0050.010.050							5,0			
576.T3.0060.010.020	0,6	0,55	0,52	0,10	0,30	1,2	2,0	4,0	50	3
576.T3.0060.010.030							3,0			
576.T3.0060.010.060							6,0			
576.T3.0060.010.080							8,0			
576.T3.0080.010.025	0,8	0,75	0,72	0,10	0,30	1,6	2,5	4,0	50	3
576.T3.0080.010.040							4,0			
576.T3.0080.010.060							6,0			
576.T3.0080.010.080							8,0			
576.T3.0100.010.030	1,0	0,93	0,90	0,10	0,40	2,0	3,0	4,0	50	3
576.T3.0100.010.050				0,10	0,40		5,0			
576.T3.0100.010.100				0,10	0,40		10,0			
576.T3.0100.010.150				0,10	0,40		15,0			
576.T3.0100.010.200				0,10	0,40		20,0			
576.T3.0100.020.030				0,20	0,50		3,0			
576.T3.0100.020.050				0,20	0,50		5,0			
576.T3.0100.020.100				0,20	0,50		10,0			
576.T3.0100.020.150				0,20	0,50		15,0			
576.T3.0100.020.200				0,20	0,50		20,0			
576.T3.0150.010.050	1,5	1,40	1,38	0,10	0,40	3,0	5,0	4,0	50	3
576.T3.0150.010.100				0,10	0,40		10,0			
576.T3.0150.010.150				0,10	0,40		15,0			
576.T3.0150.010.200				0,10	0,40		20,0			
576.T3.0150.015.050				0,15	0,45		5,0			
576.T3.0150.015.100				0,15	0,45		10,0			
576.T3.0150.015.150				0,15	0,45		15,0			
576.T3.0150.015.200				0,15	0,45		20,0			
576.T3.0150.020.050				0,20	0,50		5,0			
576.T3.0150.020.100				0,20	0,50		10,0			
576.T3.0150.020.150				0,20	0,50		15,0			
576.T3.0150.020.200				0,20	0,50		20,0			

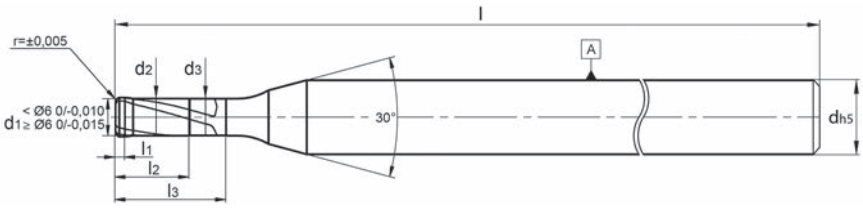
See also next page

Solid carbide end mill with corner radius

- ☑ Short finishing and long roughing flute
- ☑ Stepped cutting edge 2 x d for roughing
- ☑ Special geometry
- ☑ High performance potential
- ☑ Cutting pressure minimisation
- ☑ Machining of small and deep geometries
- ☑ Concentricity: 0.003 mm < Ø 6.0 mm < 70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm < Ø 6.0 mm
- ☑ Patented flute exposure EP 2540427B1*; DE 10 2019 122 039 B3

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

576.T3



Controlled quality

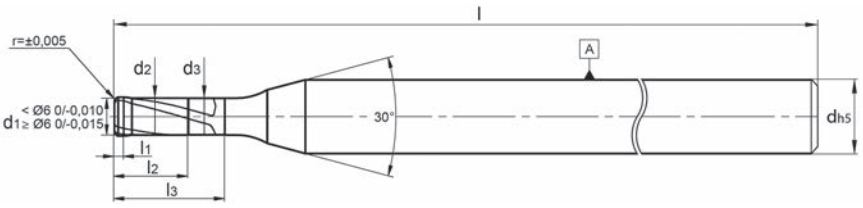
Effective-Ø	5,993
Actual-Ø	5,992
Concentricity	0,001

Solid carbide end mill with corner radius

- ☑ Short finishing and long roughing flute
- ☑ Stepped cutting edge 2 x d for roughing
- ☑ Special geometry
- ☑ High performance potential
- ☑ Cutting pressure minimisation
- ☑ Machining of small and deep geometries
- ☑ Concentricity: 0.003 mm < Ø 6.0 mm < 70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm < Ø 6.0 mm
- ☑ Patented flute exposure EP 2540427B1*; DE 10 2019 122 039 B3

Order no	d1	d2	d3	r	l1	l2	l3	d	l	Z
576.T3.0200.010.060				0,10	0,40		6,0			
576.T3.0200.010.100				0,10	0,40		10,0			
576.T3.0200.010.150				0,10	0,40		15,0			
576.T3.0200.010.200				0,10	0,40		20,0			
576.T3.0200.010.250				0,10	0,40		25,0			
576.T3.0200.020.060				0,20	0,50		6,0			
576.T3.0200.020.100				0,20	0,50		10,0			
576.T3.0200.020.150				0,20	0,50		15,0			
576.T3.0200.020.200				0,20	0,50		20,0			
576.T3.0200.020.250	2,0	1,90	1,88	0,20	0,50	4,0	25,0	4,0	50	3
576.T3.0200.030.060				0,30	0,60		6,0			
576.T3.0200.030.100				0,30	0,60		10,0			
576.T3.0200.030.150				0,30	0,60		15,0			
576.T3.0200.030.200				0,30	0,60		20,0			
576.T3.0200.030.250				0,30	0,60		25,0			
576.T3.0200.050.060				0,50	0,80		6,0			
576.T3.0200.050.100				0,50	0,80		10,0			
576.T3.0200.050.150				0,50	0,80		15,0			
576.T3.0200.050.200				0,50	0,80		20,0			
576.T3.0200.050.250				0,50	0,80		25,0			
576.T3.0300.010.100				0,10	0,40		10,0			
576.T3.0300.010.150				0,10	0,40		15,0			
576.T3.0300.010.200				0,10	0,40		20,0			
576.T3.0300.010.300				0,10	0,40		30,0			
576.T3.0300.020.100				0,20	0,50		10,0			
576.T3.0300.020.150				0,20	0,50		15,0			
576.T3.0300.020.200				0,20	0,50		20,0			
576.T3.0300.020.300	3,0	2,85	2,80	0,20	0,50	6,0	30,0	6,0	60	3
576.T3.0300.030.100				0,30	0,60		10,0			
576.T3.0300.030.150				0,30	0,60		15,0			
576.T3.0300.030.200				0,30	0,60		20,0			
576.T3.0300.030.300				0,30	0,60		30,0			
576.T3.0300.050.100				0,50	0,80		10,0			
576.T3.0300.050.150				0,50	0,80		15,0			
576.T3.0300.050.200				0,50	0,80		20,0			
576.T3.0300.050.300				0,50	0,80		30,0			

576.T3



Effective-Ø	5,993
Actual-Ø	5,992
Concentricity	0,001

062

Controlled quality

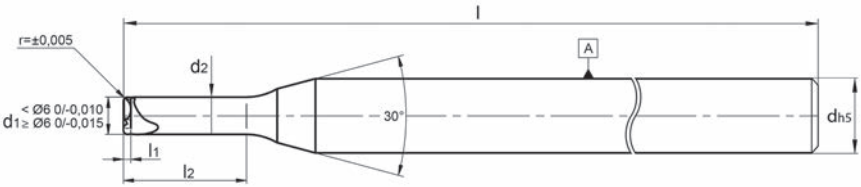
Order no	d1	d2	d3	r	l1	l2	l3	d	l	Z
576.T3.0400.020.120				0,20	0,70		12,0			
576.T3.0400.020.150				0,20	0,70		15,0			
576.T3.0400.020.200				0,20	0,70		20,0			
576.T3.0400.020.250				0,20	0,70		25,0			
576.T3.0400.020.300				0,20	0,70		30,0			
576.T3.0400.030.120				0,30	0,80		12,0			
576.T3.0400.030.150				0,30	0,80		15,0			
576.T3.0400.030.200	4,0	3,85	3,80	0,30	0,80	8,0	20,0	6,0	60	3
576.T3.0400.030.250				0,30	0,80		25,0			
576.T3.0400.030.300				0,30	0,80		30,0			
576.T3.0400.050.120				0,50	1,00		12,0			
576.T3.0400.050.150				0,50	1,00		15,0			
576.T3.0400.050.200				0,50	1,00		20,0			
576.T3.0400.050.250				0,50	1,00		25,0			
576.T3.0400.050.300				0,50	1,00		30,0			
576.T3.0500.030.200				0,30	0,80		20,0		60	
576.T3.0500.030.300				0,30	0,80		30,0		60	
576.T3.0500.030.400				0,30	0,80		40,0		80	
576.T3.0500.030.500				0,30	0,80		50,0		80	
576.T3.0500.050.200	5,0	4,85	4,80	0,50	1,00	10,0	20,0	6,0	60	3
576.T3.0500.050.300				0,50	1,00		30,0		60	
576.T3.0500.050.400				0,50	1,00		40,0		80	
576.T3.0500.050.500				0,50	1,00		50,0		80	
576.T3.0600.020.200				0,20	0,70		20,0		60	
576.T3.0600.020.300				0,20	0,70		30,0		60	
576.T3.0600.020.450				0,20	0,70		45,0		100	
576.T3.0600.020.600				0,20	0,70		60,0		100	
576.T3.0600.030.200				0,30	0,80		20,0		60	
576.T3.0600.030.300				0,30	0,80		30,0		60	
576.T3.0600.030.450	6,0	5,85	5,80	0,30	0,80	12,0	45,0	6,0	100	3
576.T3.0600.030.600				0,30	0,80		60,0		100	
576.T3.0600.050.200				0,50	1,00		20,0		60	
576.T3.0600.050.300				0,50	1,00		30,0		60	
576.T3.0600.050.450				0,50	1,00		45,0		100	
576.T3.0600.050.600				0,50	1,00		60,0		100	

Solid carbide end mill with corner radius

- ☑ Short finishing and long roughing flute
- ☑ Stepped cutting edge 2 x d for roughing
- ☑ Special geometry
- ☑ High performance potential
- ☑ Cutting pressure minimisation
- ☑ Machining of small and deep geometries
- ☑ Concentricity: 0.003 mm < Ø 6.0 mm < 70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm < Ø 6.0 mm
- ☑ Patented flute exposure EP 2540427B1*; DE 10 2019 122 039 B3

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

577 ★★★★★



Controlled quality

Effective-Ø	5,993
Actual-Ø	5,992
Concentricity	0,001

062

SEAGULL®

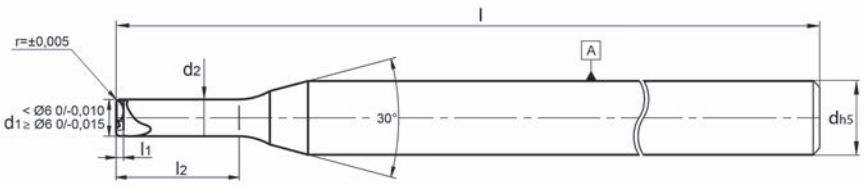
HIGH-END LINE
Solid carbide end mill with corner radius

- ☑ Extremely short flute
- ☑ Process-safe milling within 10 µm
- ☑ 10 µm-thick high performance diamond coating
- ☑ Cutting pressure minimisation
- ☑ Machining of small and deep geometries
- ☑ 100% quality control
- ☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm
- ☑ Patented flute exposure EP 2 540 427 B1*

Order no	d1	d2	r	l1	l2	d	l
577.0100.010.100	1,0	0,95	0,10	0,40	10,0	4,0	60
577.0200.030.120	2,0	1,90	0,30	0,60	12,0	4,0	60
577.0200.050.120			0,50	0,80	12,0		
577.0200.030.240			0,30	0,60	24,0		
577.0200.050.240			0,50	0,80	24,0		
577.0300.010.180	3,0	2,80	0,10	0,40	18,0	6,0	60
577.0300.050.180			0,50	0,80	18,0		
577.0300.010.300			0,10	0,40	30,0		
577.0300.030.300			0,30	0,60	30,0		
577.0400.020.300	4,0	3,80	0,20	0,50	30,0	6,0	60
577.0400.025.300			0,25	0,55	30,0		
577.0400.030.300			0,30	0,60	30,0		
577.0400.050.300			0,50	0,80	30,0		
577.0400.100.300			1,00	1,30	30,0		
577.0600.030.450	6,0	5,80	0,30	0,80	45,0	6,0	70
577.0600.050.450			0,50	1,00	45,0		
577.0600.100.450			1,00	1,50	45,0		
577.0800.050.400	8,0	7,80	0,50	1,00	40,0	8,0	80
577.0800.100.400			1,00	1,50	40,0		80
577.0800.050.600			0,50	1,00	60,0		100
577.0800.100.600			1,00	1,50	60,0		100
577.0800.050.850			0,50	1,00	85,0		120
577.0800.100.850			1,00	1,50	85,0		120
577.1000.050.700	10,0	9,80	0,50	1,00	70,0	10,0	120
577.1000.100.700			1,00	1,50	70,0		
577.1000.050.850			0,50	1,00	85,0		
577.1000.100.850			1,00	1,50	85,0		
577.1200.100.700	12,0	11,80	1,00	1,50	70,0	12,0	110

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

★★★ 578



Effective-Ø	5,993
Actual-Ø	5,992
Concentricity	0,001

062

Controlled quality

Order no	d1	d2	r	l1	l2	d	l
578.0100.010.100	1,0	0,95	0,10	0,40	10,0	4,0	60
578.0200.030.120	2,0	1,90	0,30	0,60	12,0	4,0	60
578.0200.050.120			0,50	0,80	12,0		
578.0200.030.240			0,30	0,60	24,0		
578.0200.050.240			0,50	0,80	24,0		
578.0300.010.180	3,0	2,80	0,10	0,40	18,0	6,0	60
578.0300.050.180			0,50	0,80	18,0		
578.0300.010.300			0,10	0,40	30,0		
578.0300.030.300			0,30	0,60	30,0		
578.0400.020.300	4,0	3,80	0,20	0,50	30,0	6,0	60
578.0400.025.300			0,25	0,55	30,0		
578.0400.030.300			0,30	0,60	30,0		
578.0400.050.300			0,50	0,80	30,0		
578.0400.100.300			1,00	1,30	30,0		
578.0600.030.450	6,0	5,80	0,30	0,80	45,0	6,0	70
578.0600.050.450			0,50	1,00	45,0		
578.0600.100.450			1,00	1,50	45,0		
578.0800.050.400	8,0	7,80	0,50	1,00	40,0	8,0	80
578.0800.100.400			1,00	1,50	40,0		80
578.0800.050.600			0,50	1,00	60,0		100
578.0800.100.600			1,00	1,50	60,0		100
578.0800.050.850			0,50	1,00	85,0		120
578.0800.100.850			1,00	1,50	85,0		120
578.1000.050.700	10,0	9,80	0,50	1,00	70,0	10,0	120
578.1000.100.700			1,00	1,50	70,0		
578.1000.050.850			0,50	1,00	85,0		
578.1000.100.850			1,00	1,50	85,0		
578.1200.100.700	12,0	11,80	1,00	1,50	70,0	12,0	110

QUALITY LINE

Solid carbide end mill with corner radius

- ☑ Extremely short flute
- ☑ Special geometry
- ☑ Approved diamond coating
- ☑ Cutting pressure minimisation
- ☑ Machining of small and deep geometries
- ☑ Top value for money
- ☑ Concentricity: 0.003 mm <Ø 6.0 mm <70 mm length
- ☑ Diameter tolerance: 0/-0.010 mm <Ø 6.0 mm
- ☑ Patented flute exposure EP 2 540 427 B1*

STEEL

Steel

Challenge:
Hard machining has long since been a firm fixture of tool and mould making and offers many advantages over eroding. However, if it is all about milling fine contours in these hard materials, hard milling is becoming a demanding discipline - not just for the machine operator but for the tool, too. The enormous feed and cutting speeds used in milling hardened tool steels subject the tools to high temperatures. Absolute precision and concentric accuracy, diameter and dimensional exactness of the tools are a must. In face of these high demands, only tools of the highest possible quality are able to ensure an economical and process-safe production. For example, the high machining speed used for hardened tool steels requires extremely strong, low-vibration milling cutters with optimised cutting geometries.

Solution:
ZECHA milling cutters for steel machining provide a blend of hard metal, geometry and coating to meet the high quality demands.
In addition to the premium tool series for demanding applications up to 65 HRC, the PEACOCK series can even produce intricate structures in the hardest of materials up to 70 HRC without the need for constant tool changeover or a drop in machining quality that impairs efficiency. Finest surfaces, high dimensional and geometric accuracy with best performance regarding efficiency are the result.

The latest innovation in our program for processreliable machining of steels up to 58 HRC and special materials up to 2,200 N/mm^2. are the QUEEN BEE series.

The range is rounded off by special solutions matched specifically to customer requirements.

QUEEN BEE

Benefits and facts

- Tried and tested carbide type from hard machining
- Latest WAD coating technology with high mechanical load capacity for maximum process reliability
- Cutting edge and micro-geometry adapted to softer steels for good chip removal and smooth cutting
- 100% center cut on all tools results in excellent surface finish even in flat areas
- Highest tool life achievable due to precision in tool manufacture
- Suitable for dry and wet machining

Microgeometry

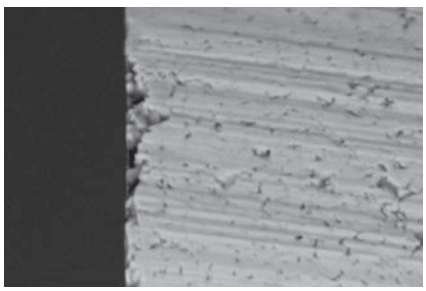
The tool geometry and the cutting edge radius play a central role in chip formation and the wear mechanism on the tool.

A sharp flute generates only low process heat due to its minimal contact area. In turn, however, this increases the tension and force on this area, which often leads to micro-breakouts and a shorter tool life.
For this reason, the ZECHA tool line 589 has a finely homogenized and optimized flute geometry. The tool design was developed with state-of-the-art technology, and the cutting edge radii are manufactured in a tolerance range of +/- 0.3 μm.

An optimum microgeometry has the following advantages:
- Improved coating adherence on the tool
- Improved surface qualities of the component
- Reduction of microbreak-offs at the cutting edge
- Increase in the service life
- Optimum process capability

Cutting edge 589

20,000 x unprepared



5,000 x unprepared

5,000 x prepared

Overview of the features

ZECHA

Point geometry for optimum chip removal

Micro geometry - as a result finest cutting edge structure

Shaft geometry with soft radius transitions for more stability and safety

Labelling not on the shank but on the rear for perfect concentricity

WAD coating

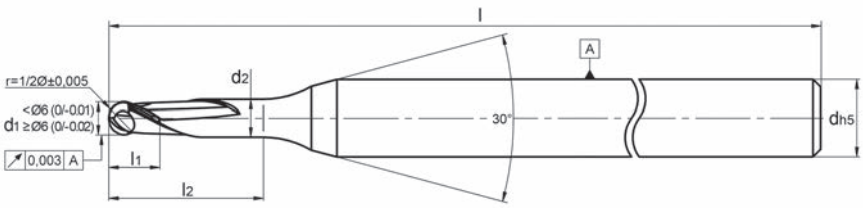
Groove shape for optimum stabilisation

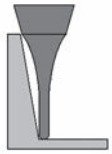
Defined form tolerances through:
Diameter: 0 - 10 µm
Concentricity: max. 3 µm
Line sharpe of the radius: max. 3 µm
Radius tolerance: ± 5 µm

WAD

- High density, high hardness
- Stability and strength
- Excellent adherence
- Very smooth and homogeneous surface
- Exceptional precision and consistency
- Can be used for dry and wet processing

589.B2



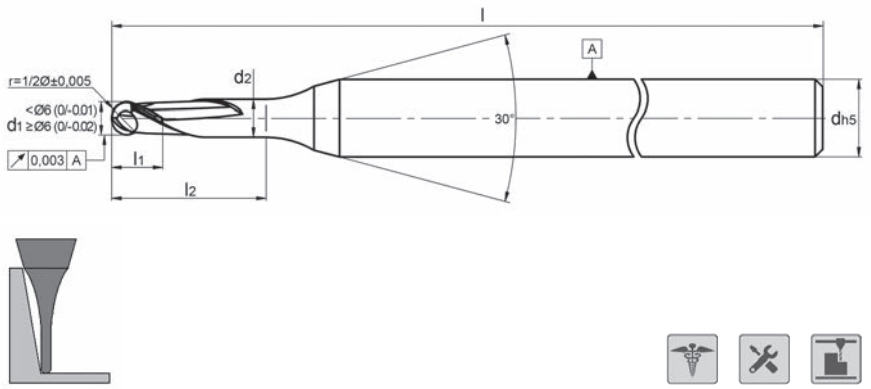


Solid carbide ball nose end mill for HSC milling

- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised centre and micro-geometry
- ☑ Innovative coating technology
- ☑ Ultra-fine surfaces, dimensional accuracy
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
589.B2.0040.020.000	0,4	-	0,20	0,4	-	6,0	60	2	0,49	0,54	0,57	0,60	0,66
589.B2.0050.025.000	0,5	-	0,25	0,5	-	6,0	60	2	0,60	0,65	0,69	0,72	0,78
589.B2.0060.030.000	0,6	-	0,30	0,6	-	6,0	60	2	0,71	0,76	0,80	0,84	0,90
589.B2.0080.040.000		-		0,8	-	6,0	60		0,93	0,98	1,03	1,07	1,14
589.B2.0080.040.020		0,75		1,0	2,0	4,0	48		2,45	2,56	2,66	2,75	2,91
589.B2.0080.040.050	0,8	0,75	0,40	1,0	5,0	4,0	48	2	5,59	5,79	5,95	6,09	6,33
589.B2.0080.040.080		0,75		1,0	8,0	4,0	48		8,71	8,96	9,16	9,33	9,95
589.B2.0080.040.100		0,75		1,0	10,0	4,0	48		10,77	11,06	11,28	11,49	12,45
589.B2.0080.040.120		0,75		1,0	12,0	4,0	48		12,83	13,14	13,39	13,80	14,95
589.B2.0100.050.000		-		1,0	-	6,0	60		1,14	1,20	1,25	1,30	1,37
589.B2.0100.050.020		0.95		1.5	2,0	4,0	48		2,45	2,55	2,65	2,73	2,89
589.B2.0100.050.030		0,95		1.5	3,0	4,0	48		3,50	3,64	3,76	3,87	4,06
589.B2.0100.050.040		0,95		1.5	4,0	4,0	48		4,55	4,71	4,85	4,98	5,20
589.B2.0100.050.050	1,0	0,95	0,50	1.5	5,0	4,0	48	2	5,59	5,78	5,94	6,08	6,32
589.B2.0100.050.060		0,95		1.5	6,0	4,0	48		6,63	6,84	7,02	7,17	7,42
589.B2.0100.050.080		0,95		1.5	8,0	4,0	48		8,70	8,95	9,15	9,32	9,94
589.B2.0100.050.100		0,95		1.5	10,0	4,0	48		10,77	11,05	11,27	11,49	12,44
589.B2.0100.050.120		0,95		1.5	12,0	4,0	48		12,83	13,14	13,38	13,80	14,94
589.B2.0150.075.000		-			-	6,0	60		1,67	1,74	1,80	1,85	1,94
589.B2.0150.075.040		1.45			4,0	4,0	48		4,54	4,69	4,83	4,95	5,16
589.B2.0150.075.060		1.45			6,0	4,0	48		6,62	6,83	7,00	7,14	7,40
589.B2.0150.075.080	1,5	1.45	0,75	1,5	8,0	4,0	48	2	8,70	8,94	9,14	9,30	9,93
589.B2.0150.075.100		1.45			10,0	4,0	48		10,76	11,04	11,26	11,44	12,43
589.B2.0150.075.150		1.45			15,0	4,0	60		15,91	16,25	16,62	17,25	18,68
589.B2.0150.075.200		1.45			20,0	4,0	60		21,03	21,42	22,17	23,02	-
589.B2.0200.100.000		-		2,0	-	6,0	60		2,19	2,28	2,34	2,40	2,49
589.B2.0200.100.040		1.90		2.5	4,0	4,0	48		4,65	4,78	4,90	5,00	5,19
589.B2.0200.100.060		1.90		2.5	6,0	4,0	48		6,72	6,90	7,05	7,19	7,42
589.B2.0200.100.080		1.90		2.5	8,0	4,0	48		8,78	9,00	9,18	9,34	9,94
589.B2.0200.100.100	2,0	1.90	1,00	2.5	10,0	4,0	48	2	10,84	11,10	11,30	11,50	12,44
589.B2.0200.100.120		1.90		2.5	12,0	4,0	48		12,90	13,18	13,41	13,81	14,94
589.B2.0200.100.150		1.90		2.5	15,0	4,0	60		15,98	16,30	16,64	17,27	18,69
589.B2.0200.100.180		1.90		2.5	18,0	4,0	60		19,05	19,40	19,97	20,73	-
589.B2.0200.100.200		1.90		2.5	20,0	4,0	60		21,09	21,41	22,19	23,04	-
589.B2.0300.150.080					8,0		60		8,77	8,98	9,15	9,30	9,92
589.B2.0300.150.120					12,0		60		12,89	13,16	13,38	13,79	14,92
589.B2.0300.150.160	3,0	2.90	1.50	3.5	16,0	6,0	60	2	16,99	17,31	17,73	18,40	19,92
589.B2.0300.150.200					20,0		60		21,08	21,40	22,18	23,02	24,92
589.B2.0300.150.240					24,0		70		25,17	25,68	26,62	27,63	-
589.B2.0400.200.080					8,0		60		8,75	8,95	9,11	9,26	9,89
589.B2.0400.200.100					10,0		60		10,81	11,05	11,24	11,40	12,39
589.B2.0400.200.160	4,0	3.90	2,00	4.5	16,0	6,0	60	2	16,98	17,29	17,72	18,39	19,89
589.B2.0400.200.200					20,0		60		21,07	21,43	22,16	23,00	-
589.B2.0400.200.240					24,0		70		25,16	25,67	26,61	27,62	-
589.B2.0400.200.280					28,0		70		29,23	29,96	31,05	-	-

589.B2

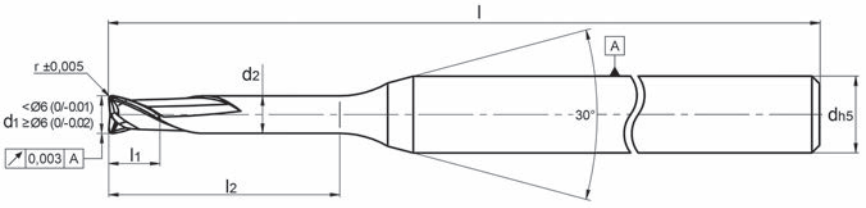


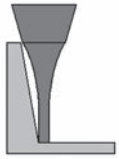
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
589.B2.0500.250.120	5,0	4.90	2.50	5.5	12,0	6,0	60	2	12,86	13,11	13,32	13,75	-
589.B2.0500.250.180					18,0				19,01	19,34	19,93	-	-
589.B2.0600.300.120	6,0	5.90	3,00	6.5	12,0	6,0	60	2	-	-	-	-	-
589.B2.0600.300.160					16,0				-	-	-	-	-
589.B2.0600.300.200					20,0				-	-	-	-	-
589.B2.0800.400.160	8,0	7.90	4,00	8.5	16,0	8,0	60	2	-	-	-	-	-
589.B2.0800.400.240					24,0				-	-	-	-	-
589.B2.1000.500.200	10,0	9.90	5,00	10.5	20,0	10,0	90	2	-	-	-	-	-
589.B2.1000.500.400					40,0				-	-	-	-	-
589.B2.1200.600.240	12,0	11.90	6,00	12.5	24,0	12,0	90	2	-	-	-	-	-
589.B2.1200.600.400					40,0				-	-	-	-	-

Solid carbide ball nose end mill for HSC milling

- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised centre and micro-geometry
- ☑ Innovative coating technology
- ☑ Ultra-fine surfaces, dimensional accuracy
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

589.T2



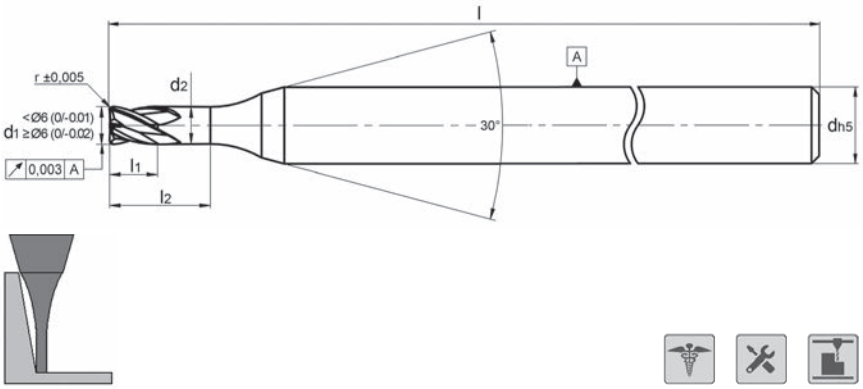


Solid carbide end mill with corner radius for HSC milling

- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised centre and micro-geometry
- ☑ Innovative coating technology
- ☑ Ultra-fine surfaces, dimensional accuracy
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
589.T2.0080.005.020			0,05			4,0			2,47	2,59	2,70	2,80	2,97
589.T2.0080.005.050			0,05			5,0			5,61	5,81	5,98	6,12	6,37
589.T2.0080.005.080	0,8	0,75	0,05	1,0	2,0	8,0	48	2	8,72	8,98	9,18	9,36	9,97
589.T2.0080.020.020			0,20			2,0			2,47	2,58	2,68	2,78	2,95
589.T2.0080.020.050			0,20			5,0			5,60	5,80	5,96	6,11	6,35
589.T2.0080.020.080			0,20			8,0			8,71	8,97	9,17	9,35	9,96
589.T2.0100.010.020			0,10			4,0			2,47	2,59	2,69	2,79	2,97
589.T2.0100.010.040	1,0	0,95	0,10	1,5	2,0	4,0	48	2	4,57	4,74	4,89	5,02	5,25
589.T2.0100.020.020			0,20			2,0			2,47	2,58	2,68	2,78	2,95
589.T2.0100.020.040			0,20			4,0			4,56	4,73	4,88	5,01	5,24
589.T2.0120.010.024					2,4				2,92	3,05	3,17	3,27	3,46
589.T2.0120.010.036	1,2	1,15	0,10	1,8	3,6	4,0	48	2	4,18	4,34	4,49	4,61	4,83
589.T2.0120.010.060					6,0				6,64	6,86	7,04	7,19	7,46
589.T2.0150.020.040					4,0				4,56	4,73	4,88	5,01	5,24
589.T2.0150.020.060	1,5	1,45	0,20	2,0	6,0	4,0	48	2	6,64	6,86	7,04	7,19	7,46
589.T2.0150.020.080					8,0				8,71	8,97	9,17	9,35	9,96
589.T2.0160.010.032					3,2				3,76	3,91	4,05	4,17	4,38
589.T2.0160.010.048	1,6	1,55	0,10	2,1	4,8	4,0	48	2	5,43	5,62	5,79	5,93	6,18
589.T2.0160.010.080					8,0				8,71	8,97	9,17	9,35	9,96
589.T2.0180.010.036					3,6				4,18	4,34	4,49	4,61	4,83
589.T2.0180.010.054	1,8	1,75	0,10	2,4	5,4	4,0	48	2	6,05	6,26	6,43	6,58	6,84
589.T2.0180.010.090					9,0				9,78	10,05	10,27	10,45	11,24
589.T2.0200.020.040		1,95	0,20	2,5	4,0	4,0	48		4,56	4,73	4,88	5,01	5,24
589.T2.0200.020.060		1,95	0,20	2,5	6,0	4,0	48		6,64	6,86	7,04	7,19	7,46
589.T2.0200.020.120	2,0	1,95	0,20	2,5	12,0	4,0	48	2	12,84	13,15	13,40	13,81	14,96
589.T2.0200.050.000		-	0,50	4,0	-	6,0	60		4,27	4,38	4,47	4,35	4,55
589.T2.0200.050.060		1,95	0,50	4,0	6,0	6,0	60		6,63	6,84	7,02	7,17	7,42
589.T2.0300.030.060		2,90	0,30	3,5	6,0				6,74	6,94	7,10	7,25	7,48
589.T2.0300.030.080		2,90	0,30	3,5	8,0				8,81	9,04	9,23	9,40	9,98
589.T2.0300.030.120	3,0	2,90	0,30	3,5	12,0	6,0	60	2	12,92	13,21	13,44	13,83	14,98
589.T2.0300.030.160		2,90	0,30	3,5	16,0				17,02	17,36	17,76	18,45	19,98
589.T2.0300.050.000		-	0,50	6,0	-				6,33	6,46	6,38	6,52	6,82

589.T4

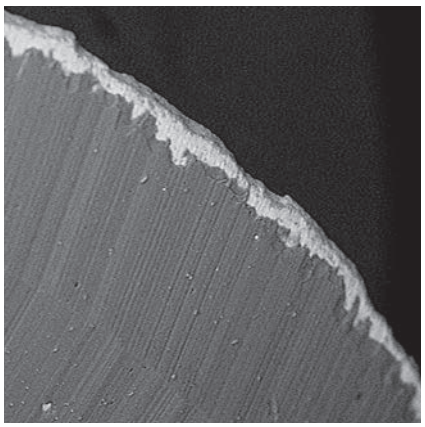


Solid carbide end mill with corner radius for HSC milling

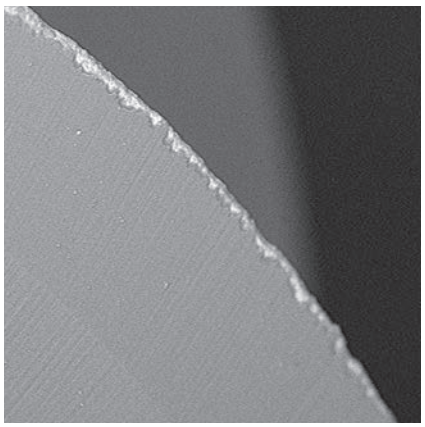
- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised centre and micro-geometry
- ☑ Innovative coating technology
- ☑ Ultra-fine surfaces, dimensional accuracy
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
589.T4.0200.020.040		1,9	0,2	2,5	4,0	4,0	48		4,68	4,83	4,96	5,09	5,30
589.T4.0200.020.060	2,0	1,9	0,2	2,5	6,0	4,0	48	4	6,74	6,94	7,11	7,26	7,48
589.T4.0200.020.120		1,9	0,2	2,5	12,0	4,0	48		12,92	13,21	13,32	13,83	14,98
589.T4.0200.050.000		-	0,5	4,0	-	6,0	60		4,27	4,38	4,47	4,35	4,55
589.T4.0300.010.080		2,9	0,1	3,5	8,0				8,81	9,05	9,24	9,41	9,99
589.T4.0300.010.160		2,9	0,1	3,5	16,0				17,02	17,37	17,77	18,45	19,99
589.T4.0300.020.080		2,9	0,2	3,5	8,0				8,81	9,04	9,24	9,40	9,98
589.T4.0300.020.160	3,0	2,9	0,2	3,5	16,0	6,0	60	4	17,02	17,36	17,77	18,45	19,98
589.T4.0300.030.080		2,9	0,3	3,5	8,0				8,81	9,04	9,23	9,40	9,98
589.T4.0300.030.160		2,9	0,3	3,5	16,0				17,02	17,36	17,76	18,45	19,98
589.T4.0300.050.000		-	0,5	6,0	-				6,33	6,46	6,38	6,52	6,82
589.T4.0400.020.080			0,2		8,0				8,81	9,04	9,24	9,40	9,98
589.T4.0400.020.120			0,2		12,0				12,92	13,21	13,32	13,83	14,98
589.T4.0400.040.080			0,4		8,0				8,80	9,03	9,22	9,39	9,97
589.T4.0400.040.120			0,4		12,0				12,92	13,21	13,44	13,83	14,97
589.T4.0400.050.080	4,0	3,9	0,5	4,5	8,0	6,0	60	4	8,80	9,03	9,22	9,38	9,97
589.T4.0400.050.120			0,5		12,0				12,91	13,20	13,43	13,82	14,97
589.T4.0400.050.200			0,5		20,0				21,10	21,62	22,02	22,69	-
589.T4.0400.050.300			0,5		30,0				31,36	31,98	32,95	-	-
589.T4.0400.100.080			1,0		8,0				8,78	9,00	9,18	9,34	9,94
589.T4.0400.100.120			1,0		12,0				12,90	13,18	13,41	13,81	14,94
589.T4.0500.020.080			0,2		8,0				8,81	9,04	9,24	9,40	9,98
589.T4.0500.020.150	5,0	4,9	0,2	5,5	15,0	6,0	60	4	16,00	16,33	16,66	-	-
589.T4.0500.050.080			0,5		8,0				8,80	9,03	9,22	9,38	9,97
589.T4.0500.050.150			0,5		15,0				15,99	16,32	16,65	-	-
589.T4.0600.020.120			0,2		12,0				-	-	-	-	-
589.T4.0600.020.200			0,2		20,0				-	-	-	-	-
589.T4.0600.030.120			0,3		12,0				-	-	-	-	-
589.T4.0600.030.200	6,0	5,9	0,3	6,5	20,0	6,0	60	4	-	-	-	-	-
589.T4.0600.050.120			0,5		12,0				-	-	-	-	-
589.T4.0600.050.200			0,5		20,0				-	-	-	-	-
589.T4.0600.060.120			0,6		12,0				-	-	-	-	-
589.T4.0600.060.200			0,6		20,0				-	-	-	-	-
589.T4.0800.050.160			0,5		16,0		60		-	-	-	-	-
589.T4.0800.050.400			0,5		40,0		80		-	-	-	-	-
589.T4.0800.100.160	8,0	7,9	1,0	8,5	16,0	8,0	60	4	-	-	-	-	-
589.T4.0800.100.400			1,0		40,0		80		-	-	-	-	-
589.T4.0800.200.160			2,0		16,0		60		-	-	-	-	-
589.T4.0800.200.400			2,0		40,0		80		-	-	-	-	-
589.T4.1000.050.200			0,5		20,0		70		-	-	-	-	-
589.T4.1000.050.400			0,5		40,0		90		-	-	-	-	-
589.T4.1000.100.200			1,0		20,0		70		-	-	-	-	-
589.T4.1000.100.300	10,0	9,9	1,0	10,5	30,0	10,0	70	4	-	-	-	-	-
589.T4.1000.100.400			1,0		40,0		90		-	-	-	-	-
589.T4.1000.100.500			1,0		50,0		90		-	-	-	-	-
589.T4.1000.200.200			2,0		20,0		70		-	-	-	-	-
589.T4.1000.200.400			2,0		40,0		90		-	-	-	-	-
589.T4.1200.100.240			1,0		24,0		70		-	-	-	-	-
589.T4.1200.100.400	12,0	11,9	1,0	12,5	40,0	12,0	90	4	-	-	-	-	-
589.T4.1200.200.240			2,0		24,0		70		-	-	-	-	-
589.T4.1200.200.400			2,0		40,0		90		-	-	-	-	-

PEACOCK **Innovation in hard milling**



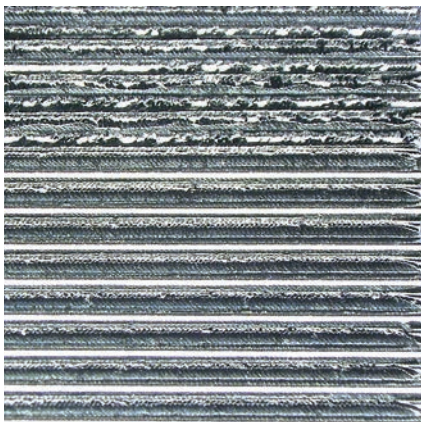
Series 581H / 583H
500-x magnification



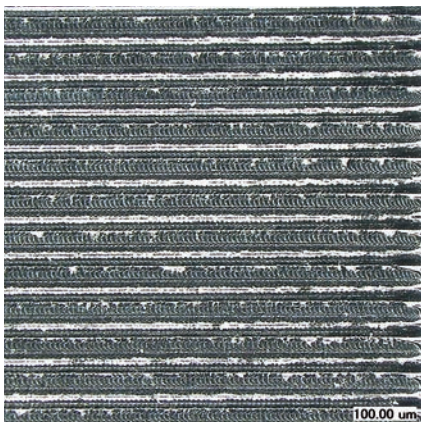
Series 599
500-x magnification

Tool
Ball nose end mill Ø 2.0 mm

Workpiece
Steel 1,2379 (X 155 CrVMo 121)
HRC 62

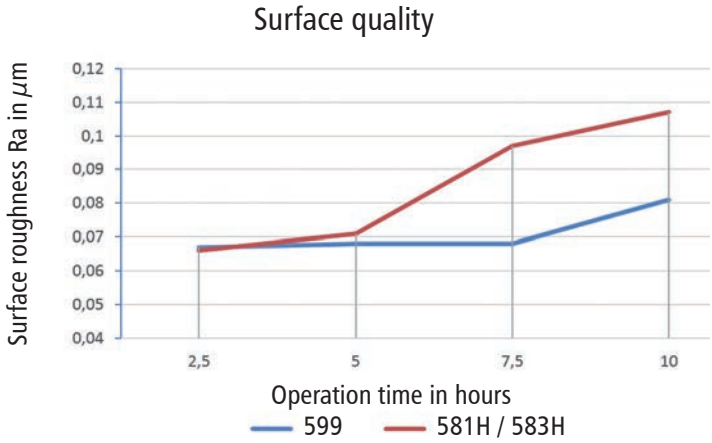


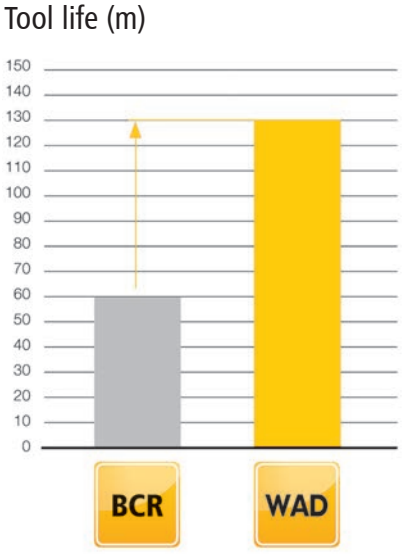
Processed with series 581H / 583H
100-x magnification



Processed with series 599
100-x magnification

Properties
Better performance compared to previous hard milling tools





Point geometry for optimum chip removal

Micro geometry - as a result finest cutting edge structure

Shaft geometry with soft radius transitions for more stability and safety

Labelling not on the shank but on the rear for perfect concentricity

WAD coating

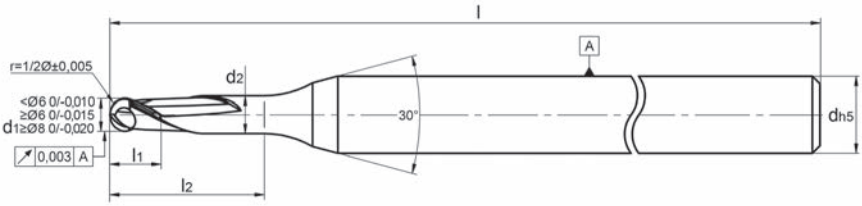
Groove shape for optimum stabilisation

Defined form tolerances through:
Diameter: 0 - 10 µm
Concentricity: max. 3 µm
Line sharpe of the radius: max. 3 µm
Radius tolerance: ± 5 µm

WAD

- High density, high hardness
- Stability and strength
- Excellent adherence
- Very smooth and homogeneous surface
- Exceptional precision and consistency
- Can be used for dry and wet processing

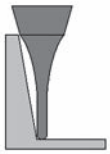
581P.B2



Effective-Ø	5,993	
Actual-Ø	5,992	
Concentricity	0,001	

905325 - 181

Controlled quality

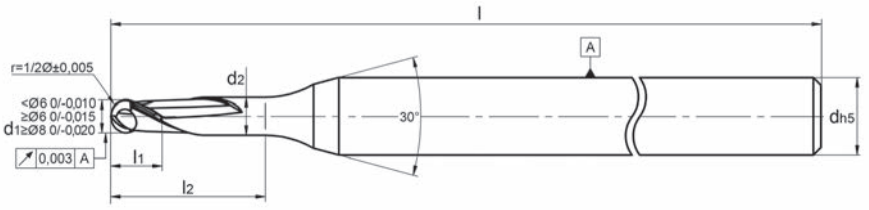


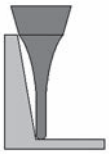
Solid carbide ball nose end mill for HSC milling in mould making

- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised centre and micro-geometry
- ☑ Innovative coating technology
- ☑ Ultra-fine surfaces, dimensional accuracy
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
581PB2.020.010.003	0,2	-	0,10	0,3	0,3	4,0	50	2	0,31	0,32	0,33	0,35	0,38
581PB2.020.010.010		0,18			1,0				1,05	1,10	1,12	1,15	1,25
581PB2.030.015.010	0,3	0,27	0,15	0,5	1,0	4,0	50	2	1,10	1,15	1,20	1,25	1,35
581PB2.030.015.015					1,5				1,95	2,10	2,25	2,40	2,65
581PB2.030.015.020					2,0				2,55	2,75	2,90	3,05	3,30
581PB2.030.015.025					2,5				3,10	3,30	3,45	3,60	3,90
581PB2.040.020.010	0,4	0,35	0,20	0,5	1,0	4,0	50	2	1,15	1,20	1,25	1,30	1,40
581PB2.040.020.015					1,5				2,05	2,20	2,30	2,45	2,70
581PB2.040.020.020					2,0				2,55	2,75	2,90	3,05	3,30
581PB2.040.020.025					2,5				3,10	3,30	3,45	3,60	3,90
581PB2.040.020.030					3,0				3,65	3,85	4,05	4,20	4,50
581PB2.050.025.010	0,5	0,45	0,25	0,5	1,0	4,0	50	2	1,15	1,20	1,25	1,30	1,40
581PB2.050.025.015					1,5				2,05	2,20	2,30	2,45	2,70
581PB2.050.025.020					2,0				2,55	2,75	2,90	3,05	3,30
581PB2.050.025.025					2,5				3,10	3,30	3,45	3,60	3,90
581PB2.050.025.030					3,0				3,65	3,85	4,05	4,20	4,50
581PB2.050.025.040					4,0				4,70	4,95	5,15	5,35	5,65
581PB2.060.030.010	0,6	0,55	0,30	0,6	1,0	4,0	50	2	1,15	1,20	1,25	1,30	1,40
581PB2.060.030.020					2,0				2,55	2,75	2,90	3,05	3,30
581PB2.060.030.030					3,0				3,65	3,85	4,05	4,20	4,50
581PB2.060.030.045					4,5				5,25	5,50	5,70	5,90	6,20
581PB2.060.030.060					6,0				6,80	7,10	7,35	7,55	7,95
581PB2.080.040.020	0,8	0,75	0,40	1,0	2,0	4,0	50	2	2,20	2,25	2,35	2,45	2,65
581PB2.080.040.030					3,0				3,65	3,85	4,05	4,20	4,50
581PB2.080.040.040					4,0				4,70	4,95	5,15	5,35	5,65
581PB2.080.040.060					6,0				6,80	7,10	7,35	7,55	7,95
581PB2.080.040.080					8,0				8,90	9,25	9,50	9,75	10,20
581PB2.100.050.020	1,0	0,95	0,50	1,5	2,0	4,0	50	2	2,20	2,25	2,35	2,45	2,65
581PB2.100.050.020S6					2,0	6,0	60		2,20	2,25	2,35	2,45	2,65
581PB2.100.050.030					3,0	4,0	50		3,65	3,85	4,05	4,20	4,50
581PB2.100.050.040					4,0	4,0	50		4,70	4,95	5,15	5,35	5,65
581PB2.100.050.050					5,0	4,0	50		5,70	6,00	6,15	6,40	6,75
581PB2.100.050.060					6,0	4,0	50		6,80	7,10	7,35	7,55	7,95
581PB2.100.050.080					8,0	4,0	50		8,90	9,25	9,50	9,75	10,20
581PB2.100.050.080S6					8,0	6,0	60		8,90	9,25	9,50	9,75	10,20
581PB2.100.050.100					10,0	4,0	50		11,00	11,30	11,60	11,85	12,30
581PB2.150.075.040	1,5	1,45	0,75	1,5	4,0	4,0	50	2	4,10	4,25	4,40	4,60	4,95
581PB2.150.075.040S6					4,0	6,0	60		4,10	4,25	4,40	4,60	4,95
581PB2.150.075.060					6,0	4,0	50		6,80	7,10	7,35	7,55	7,95
581PB2.150.075.080					8,0	4,0	50		8,90	9,25	9,50	9,75	10,20
581PB2.150.075.100					10,0	4,0	50		10,95	11,30	11,60	11,85	12,30
581PB2.150.075.120S6					12,0	6,0	60		13,15	13,55	13,90	14,15	15,05
581PB2.150.075.150					15,0	4,0	50		16,15	16,60	16,95	17,25	18,30

581P.B2





Controlled quality

Effective-Ø	5,993	
Actual-Ø	5,992	
Concentricity	0,001	905325 - 181

PEACOCK

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
581P.B2.180.090.050					5,0				5,13	5,30	5,45	5,62	6,00
581P.B2.180.090.080	1,8	1,75	0,90	1,8	8,0	4,0	50	2	8,87	9,20	9,47	9,70	10,11
581P.B2.180.090.100					10,0				10,96	11,27	11,57	11,84	12,28
581P.B2.180.090.120					12,0				12,99	13,39	13,72	14,00	14,62
581P.B2.200.100.050					5,0	4,0	50		5,15	5,35	5,50	5,75	6,20
581P.B2.200.100.050S6					5,0	6,0	60		5,15	5,35	5,50	5,75	6,20
581P.B2.200.100.060					6,0	4,0	50		6,80	7,10	7,35	7,55	7,95
581P.B2.200.100.080	2,0	1,95	1,00	2,5	8,0	4,0	50	2	8,90	9,25	9,50	9,75	10,20
581P.B2.200.100.100					10,0	4,0	50		11,00	11,30	11,60	11,85	12,30
581P.B2.200.100.120					12,0	4,0	50		13,00	13,40	13,75	14,05	14,65
581P.B2.200.100.120S6					12,0	6,0	60		13,00	13,40	13,75	14,05	14,65
581P.B2.200.100.160					16,0	4,0	50		17,15	17,60	18,00	18,30	19,50
581P.B2.300.150.060					6,0				6,25	6,50	6,75	7,00	7,55
581P.B2.300.150.080					8,0				9,00	9,35	9,60	9,85	10,25
581P.B2.300.150.120	3,0	2,90	1,50	3,5	12,0	6,0	60	2	13,15	13,55	13,90	14,15	15,05
581P.B2.300.150.160					16,0				17,25	17,70	18,00	18,30	19,50
581P.B2.300.150.200					20,0				21,35	21,85	22,25	22,80	24,30
581P.B2.400.200.080					8,0				8,35	8,65	8,95	9,30	10,05
581P.B2.400.200.120					12,0				13,15	13,55	13,90	14,15	15,05
581P.B2.400.200.160	4,0	3,90	2,00	4,5	16,0	6,0	60	2	17,20	17,65	18,00	18,30	19,00
581P.B2.400.200.200					20,0				21,40	21,90	22,25	23,10	-
581P.B2.400.200.250					25,0				26,50	27,05	27,55	28,45	-
581P.B2.600.300.120					12,0				-	-	-	-	-
581P.B2.600.300.160	6,0	5,90	3,00	6,5	16,0	6,0	60	2	-	-	-	-	-
581P.B2.600.300.200					20,0				-	-	-	-	-
581P.B2.600.300.300					30,0				-	-	-	-	-
581P.B2.800.400.160					16,0				-	-	-	-	-
581P.B2.800.400.300	8,0	7,90	4,00	6,5	30,0	8,0	90	2	-	-	-	-	-
581P.B2.800.400.400					40,0				-	-	-	-	-
581P.B2.1000.500.200	10,0	9,90	5,00	6,5	20,0	10,0	100	2	-	-	-	-	-
581P.B2.1000.500.400					40,0				-	-	-	-	-
581P.B2.1200.600.240	12,0	11,90	6,00	6,5	24,0	12,0	110	2	-	-	-	-	-
581P.B2.1200.600.500					50,0				-	-	-	-	-

Solid carbide ball nose end mill for HSC milling in mould making

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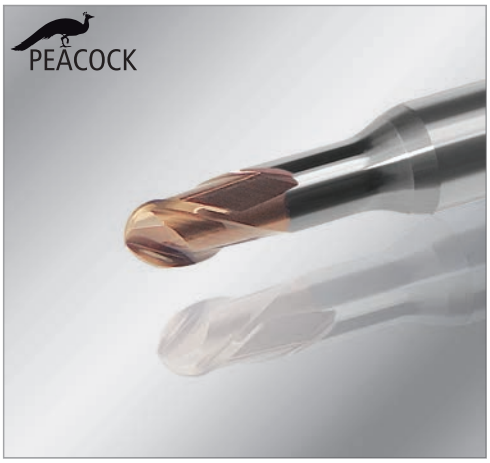
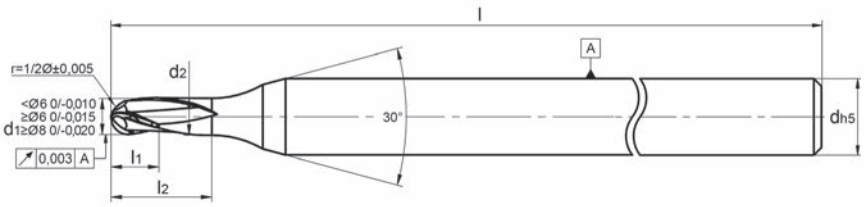
- ☑ Ultra-fine surfaces, dimensional accuracy
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

581P.B3

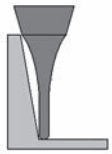




Effective-Ø	5,993	
Actual-Ø	5,992	
Concentricity	0,001	

905325 - 181

Controlled quality



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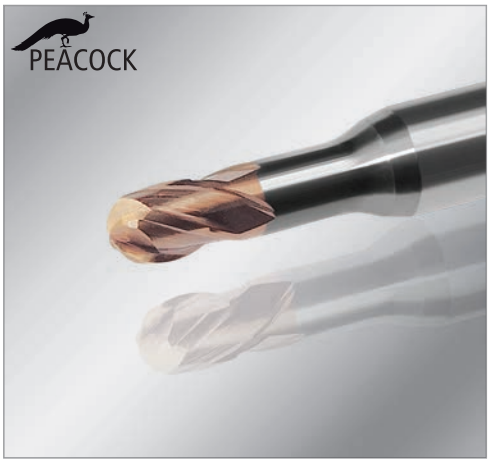
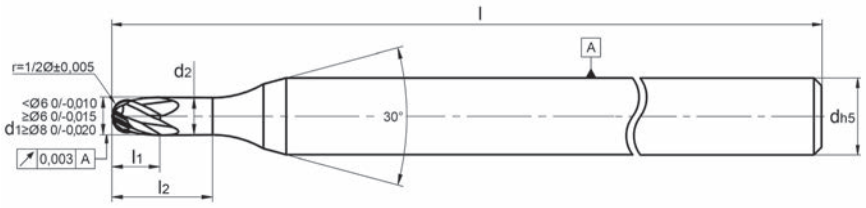
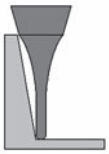
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1°30'	2°	3°
581P.B3.100.050.030	1,0	0,95	0,50	1,5	3,0	4,0	50	3	3,65	3,85	4,05	4,20	4,50
581P.B3.100.050.050					5,0				5,70	6,00	6,15	6,40	6,75
581P.B3.100.050.060					6,0				6,80	7,10	7,35	7,55	7,95
581P.B3.100.050.070					7,0				7,95	8,25	8,50	8,75	9,15
581P.B3.150.075.045	1,5	1,45	0,75	1,5	4,5	4,0	50	3	4,70	4,85	5,00	5,20	5,60
581P.B3.150.075.060					6,0				6,80	7,10	7,35	7,55	7,95
581P.B3.150.075.080					8,0				8,90	9,25	9,50	9,75	10,20
581P.B3.150.075.100					10,0				10,95	11,30	11,60	11,85	12,30
581P.B3.200.100.060	2,0	1,95	1,00	2,5	6,0	4,0	50	3	6,80	7,10	7,35	7,55	7,95
581P.B3.200.100.080					8,0				8,90	9,25	9,50	9,75	10,20
581P.B3.200.100.100					10,0				11,00	11,30	11,60	11,85	12,30
581P.B3.200.100.120					12,0				13,00	13,40	13,75	14,05	14,65
581P.B3.300.150.060	3,0	2,90	1,50	2,5	6,0	6,0	60	3	6,25	6,50	6,75	7,00	7,55
581P.B3.300.150.080					8,0				9,00	9,35	9,60	9,85	10,25
581P.B3.300.150.120					12,0				13,15	13,55	13,90	14,15	15,05
581P.B3.300.150.160					16,0				17,25	17,70	18,00	18,30	19,50
581P.B3.400.200.080	4,0	3,90	2,00	3,5	8,0	6,0	60	3	8,35	8,65	8,95	9,30	10,05
581P.B3.400.200.120					12,0				13,15	13,55	13,90	14,15	15,05
581P.B3.400.200.160					16,0				17,20	17,65	18,00	18,30	19,00
581P.B3.400.200.200					20,0				21,40	21,90	22,25	23,10	-
581P.B3.600.300.120	6,0	5,90	3,00	4,5	12,0	6,0	60	3	-	-	-	-	-
581P.B3.600.300.160					16,0				-	-	-	-	-
581P.B3.600.300.200					20,0				-	-	-	-	-
581P.B3.600.300.300					30,0				-	-	-	-	-
581P.B3.800.400.160	8,0	7,90	4,00	5,5	16,0	8,0	60	3	-	-	-	-	-
581P.B3.800.400.300					30,0		90		-	-	-	-	-
581P.B3.800.400.400					40,0		90		-	-	-	-	-

581P.B4







Controlled quality

Effective-Ø	5,993	
Actual-Ø	5,992	
Concentricity	0,001	905325 - 181

PEACOCK

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
581P.B4.300.150.060	3,0	2,90	1,50	3,5	6,0	6,0	60	4	6,25	6,50	6,75	7,00	7,55
581P.B4.300.150.080					8,0				9,00	9,35	9,60	9,85	10,25
581P.B4.300.150.120					12,0				13,15	13,55	13,90	14,15	15,05
581P.B4.300.150.160					16,0				17,25	17,70	18,00	18,30	19,50
581P.B4.400.200.080	4,0	3,90	2,00	4,5	8,0	6,0	60	4	8,35	8,65	8,95	9,30	10,05
581P.B4.400.200.120					12,0				13,15	13,55	13,90	14,15	15,05
581P.B4.400.200.160					16,0				17,20	17,65	18,00	18,30	19,00
581P.B4.400.200.200					20,0				21,40	21,90	22,25	23,10	-
581P.B4.500.250.100	5,0	4,90	2,50	5,5	10,0	6,0	60	4	11,05	11,40	11,75	12,00	-
581P.B4.500.250.150					15,0				16,50	16,90	17,20	-	-
581P.B4.500.250.200					20,0				21,40	21,90	-	-	-
581P.B4.500.250.250					25,0				26,75	27,30	-	-	-
581P.B4.600.300.120	6,0	5,90	3,00	6,5	12,0	6,0	60	4	-	-	-	-	-
581P.B4.600.300.160					16,0				-	-	-	-	-
581P.B4.600.300.200					20,0				-	-	-	-	-
581P.B4.600.300.300					30,0				-	-	-	-	-
581P.B4.800.400.160	8,0	7,90	4,00	6,5	16,0	8,0	60	4	-	-	-	-	-
581P.B4.800.400.300					30,0		90		-	-	-	-	-
581P.B4.800.400.400					40,0		90		-	-	-	-	-

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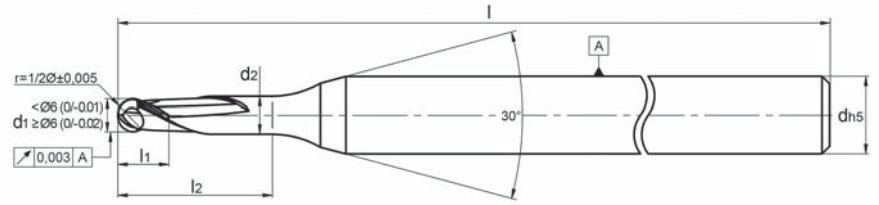
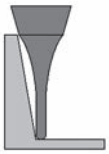
599.B2





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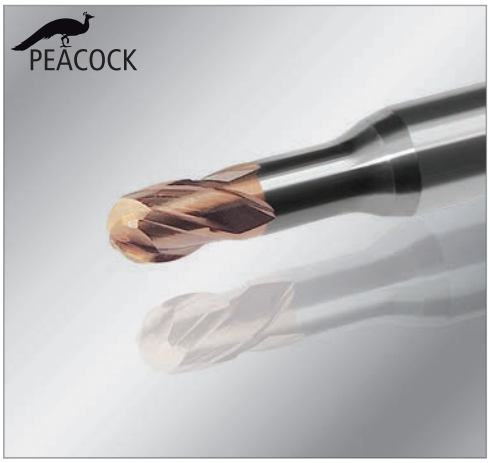
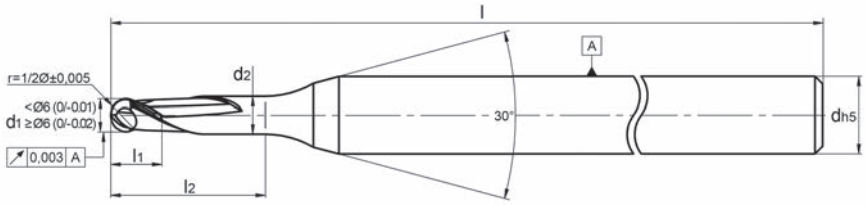
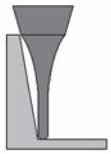
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
599.B2.0010.005.003	0,1	-	0,05	0,3	0,3	4,0	48	2	0,31	0,32	0,34	0,35	0,38
599.B2.0020.010.003		-		0,3	0,3				0,31	0,32	0,34	0,35	0,38
599.B2.0020.010.005	0,2	-	0,10	0,5	0,5	4,0	48	2	0,68	0,81	0,92	1,03	1,23
599.B2.0020.010.010		0,18		0,5	1,0				1,41	1,55	1,67	1,78	2,00
599.B2.0030.015.005		-			0,5				0,52	0,54	0,56	0,58	0,63
599.B2.0030.015.007	0,3	0,27	0,15	0,5	0,7	4,0	48	2	1,19	1,29	1,39	1,49	1,67
599.B2.0030.015.010					1,0				1,46	1,58	1,70	1,81	2,01
599.B2.0030.015.020					2,0				2,55	2,72	2,88	3,02	3,28
599.B2.0040.020.005		-			0,5				0,52	0,54	0,56	0,58	0,63
599.B2.0040.020.010	0,4	0,35	0,20	0,5	1,0	4,0	48	2	1,56	1,66	1,76	1,86	2,06
599.B2.0040.020.020					2,0				2,63	2,79	2,93	3,07	3,32
599.B2.0040.020.030					3,0				3,69	3,89	4,07	4,23	4,52
599.B2.0050.025.005		-			0,5				0,52	0,54	0,56	0,58	0,63
599.B2.0050.025.010					1,0				1,55	1,65	1,75	1,85	2,04
599.B2.0050.025.015					1,5				2,08	2,21	2,33	2,45	2,65
599.B2.0050.025.020	0,5	0,45	0,25	0,5	2,0	4,0	48	2	2,62	2,78	2,92	3,06	3,30
599.B2.0050.025.025					2,5				3,16	3,34	3,50	3,64	3,91
599.B2.0050.025.030					3,0				3,69	3,89	4,06	4,22	4,51
599.B2.0050.025.040					4,0				4,75	4,98	5,18	5,37	5,69
599.B2.0060.030.020					2,0				2,62	2,77	2,92	3,05	3,29
599.B2.0060.030.030	0,6	0,55	0,30	0,6	3,0	4,0	48	2	3,69	3,88	4,06	4,22	4,50
599.B2.0060.030.045					4,5				5,27	5,52	5,73	5,92	6,26
599.B2.0060.030.060					6,0				6,85	7,14	7,39	7,60	7,97
599.B2.0080.040.020					2,0				2,61	2,76	2,90	3,03	3,27
599.B2.0080.040.040					4,0				4,74	4,97	5,17	5,34	5,66
599.B2.0080.040.050	0,8	0,75	0,40	1,0	5,0	4,0	48	2	5,83	6,09	6,31	6,50	6,85
599.B2.0080.040.060					6,0				6,85	7,14	7,38	7,59	7,96
599.B2.0080.040.080					8,0				8,94	9,28	9,56	9,80	10,21
599.B2.0080.040.100					10,0				11,03	11,41	11,71	11,98	12,42
599.B2.0100.050.020					2,0				2,61	2,75	2,88	3,01	3,24
599.B2.0100.050.025					2,5				3,17	3,34	3,49	3,63	3,89
599.B2.0100.050.040					4,0				4,73	4,96	5,16	5,33	5,64
599.B2.0100.050.060	1,0	0,95	0,50	1,5	6,0	4,0	48	2	6,84	7,13	7,37	7,58	7,95
599.B2.0100.050.080					8,0				8,94	9,27	9,55	9,79	10,20
599.B2.0100.050.100					10,0				11,02	11,40	11,71	11,97	12,41
599.B2.0100.050.140					14,0				15,18	15,63	15,98	16,28	17,44
599.B2.0150.075.040					4,0		48		4,72	4,94	5,12	5,29	5,60
599.B2.0150.075.060					6,0		48		6,83	7,11	7,34	7,55	7,91
599.B2.0150.075.080	1,5	1,45	0,75	1,5	8,0	4,0	48	2	8,93	9,26	9,53	9,76	10,16
599.B2.0150.075.100					10,0		48		11,01	11,39	11,69	11,95	12,38
599.B2.0150.075.150					15,0		60		16,20	16,60	17,00	17,30	18,65
599.B2.0150.075.200					20,0		60		21,40	21,90	22,30	23,00	-
599.B2.0200.100.040					4,0		48		4,86	5,04	5,21	5,36	5,64
599.B2.0200.100.060					6,0		48		6,95	7,20	7,41	7,60	7,94
599.B2.0200.100.080					8,0		48		9,04	9,34	9,59	9,81	10,19
599.B2.0200.100.100	2,0	1,90	1,00	2,5	10,0	4,0	48	2	11,12	11,46	11,74	11,99	12,41
599.B2.0200.100.120					12,0		48		13,19	13,57	13,88	14,15	14,94
599.B2.0200.100.160					16,0		60		17,33	17,75	18,13	18,43	19,93
599.B2.0200.100.200					20,0		60		21,45	21,95	22,23	23,03	-
599.B2.0200.100.250					25,0		60		26,55	27,15	27,75	28,81	-

599.B2







Solid carbide ball nose end mill for HSC milling in mould making

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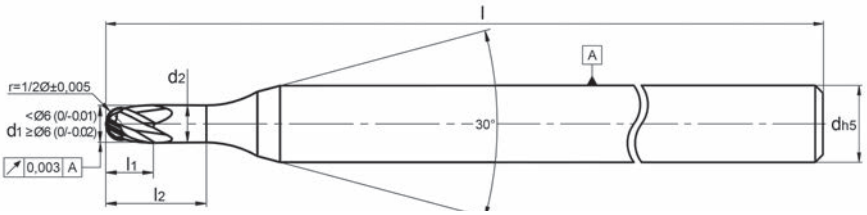
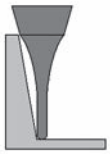
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
599.B2.0300.150.080					8,0		60		9,02	9,30	9,54	9,76	10,13
599.B2.0300.150.120					12,0		60		13,17	13,54	13,85	14,11	14,92
599.B2.0300.150.160	3,0	2,90	1,50	3,5	16,0	6,0	60	2	17,31	17,75	18,10	18,39	19,92
599.B2.0300.150.200					20,0		70		21,45	21,95	22,23	23,03	24,91
599.B2.0300.150.240					24,0		70		25,52	26,08	26,61	27,61	-
599.B2.0400.200.080					8,0		60		9,00	9,27	9,50	9,70	10,06
599.B2.0400.200.100					10,0		60		11,11	11,43	11,69	11,92	12,32
599.B2.0400.200.120					12,0		60		13,15	13,51	13,81	14,06	14,89
599.B2.0400.200.160	4,0	3,90	2,00	4,5	16,0	6,0	60	2	17,29	17,72	18,07	18,36	19,89
599.B2.0400.200.200					20,0		70		21,40	21,90	22,30	23,00	-
599.B2.0400.200.240					24,0		70		25,52	26,08	26,61	27,61	-
599.B2.0400.200.280					28,0		70		29,61	30,21	31,05	-	-
599.B2.0500.250.120	5,0	4,9	2,50	5,5	12,0	6,0	60	2	13,14	13,48	13,77	14,02	-
599.B2.0500.250.180					18,0				19,34	19,79	20,15	-	-
599.B2.0600.300.120					12,0				-	-	-	-	-
599.B2.0600.300.160	6,0	5,90	3,00	6,5	16,0	6,0	60	2	-	-	-	-	-
599.B2.0600.300.200					20,0				-	-	-	-	-
599.B2.0800.400.160					16,0		60		-	-	-	-	-
599.B2.0800.400.240	8,0	7,90	4,00	8,5	24,0	8,0	60	2	-	-	-	-	-
599.B2.0800.400.400					40,0		80		-	-	-	-	-
599.B2.1000.500.200	10,0	9,90	5,00	10,5	20,0	10,0	70	2	-	-	-	-	-
599.B2.1000.500.400					40,0		90		-	-	-	-	-
599.B2.1200.600.240	12,0	11,90	6,00	12,5	24,0	12,0	75	2	-	-	-	-	-
599.B2.1200.600.400					40,0		90		-	-	-	-	-

599.B4





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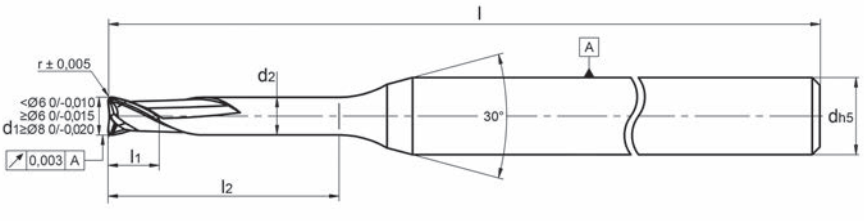
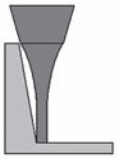
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1°30'	2°	3°
599.B4.0300.150.080					8,0		60		9,02	9,30	9,54	9,76	10,13
599.B4.0300.150.120					12,0		60		13,17	13,54	13,85	14,11	14,92
599.B4.0300.150.160	3,0	2,9	1,5	3,5	16,0	6,0	60	4	17,31	17,75	18,10	18,39	19,92
599.B4.0300.150.200					20,0		70		21,45	21,95	22,23	23,03	24,91
599.B4.0300.150.240					24,0		70		25,52	26,08	26,61	27,61	-
599.B4.0400.200.080					8,0		60		9,00	9,27	9,50	9,70	10,06
599.B4.0400.200.120					12,0		60		13,15	13,51	13,81	14,06	14,89
599.B4.0400.200.160	4,0	3,9	2,0	4,5	16,0	6,0	60	4	17,29	17,72	18,07	18,36	19,89
599.B4.0400.200.200					20,0		70		21,40	21,90	22,30	23,00	-
599.B4.0400.200.240					24,0		70		25,52	26,08	26,61	27,61	-
599.B4.0400.200.280					28,0		70		29,61	30,21	31,05	-	-
599.B4.0600.300.120					12,0			4	-	-	-	-	-
599.B4.0600.300.160	6,0	5,9	3,0	6,5	16,0	6,0	60		-	-	-	-	-
599.B4.0600.300.200					20,0				-	-	-	-	-
599.B4.0800.400.160	8,0	7,9	4,0	8,5	16,0	8,0	60	4	-	-	-	-	-
599.B4.0800.400.400					40,0		80		-	-	-	-	-
599.B4.1000.500.200	10,0	9,9	5,0	10,5	20,0	10,0	70	4	-	-	-	-	-
599.B4.1000.500.400					40,0		90		-	-	-	-	-
599.B4.1200.600.240	12,0	11,9	6,0	12,5	24,0	12,0	75	4	-	-	-	-	-
599.B4.1200.600.400					40,0		90		-	-	-	-	-

583P.T2





Controlled quality

Effective-Ø	5,993	
Actual-Ø	5,992	
Concentricity	0,001	905325 - 181

PEACOCK

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1°30'	2°	3°
583P.T2.020.005.005	0,2	-	0,05	0,5	0,5	4,0	50	2	0,51	0,52	0,54	0,56	0,60
583P.T2.020.005.010		0,18			1,0				1,03	1,05	1,09	1,14	1,20
583P.T2.030.005.010	0,3	0,27	0,05	0,5	1,0	4,0	50	2	1,09	1,13	1,15	1,20	1,30
583P.T2.030.005.015					1,5				2,05	2,20	2,35	2,50	2,70
583P.T2.040.005.010	0,4	0,37	0,05	0,6	1,0	4,0	50	2	2,10	2,20	2,25	2,35	2,50
583P.T2.040.005.020					2,0				2,60	2,75	2,90	3,05	3,32
583P.T2.050.005.010	0,5	0,47	0,05	0,7	1,0	4,0	50	2	1,10	1,15	1,20	1,25	1,35
583P.T2.050.005.020					2,0				2,50	2,70	2,85	3,00	3,25
583P.T2.050.005.030					3,0				3,55	3,80	4,00	4,15	4,45
583P.T2.060.005.010	0,6	0,55	0,05	0,7	1,0	4,0	50	2	1,10	1,15	1,20	1,25	1,35
583P.T2.060.005.020					2,0				2,50	2,70	2,85	3,00	3,25
583P.T2.060.005.030					3,0				3,55	3,80	4,00	4,15	4,45
583P.T2.080.005.020	0,8	0,75	0,05	1,0	2,0	4,0	50	2	2,20	2,25	2,35	2,45	2,65
583P.T2.080.005.040					4,0				4,70	4,95	5,15	5,35	5,65
583P.T2.080.005.060					6,0				6,80	7,10	7,35	7,55	7,95
583P.T2.100.010.020	1,0	0,95	0,10	1,5	2,0	4,0	50	2	2,20	2,25	2,35	2,45	2,65
583P.T2.100.010.040			0,10		4,0				4,70	4,95	5,15	5,35	5,65
583P.T2.100.010.060			0,10		6,0				6,80	7,10	7,35	7,55	7,95
583P.T2.100.010.080			0,10		8,0				8,90	9,20	9,50	9,75	9,85
583P.T2.100.020.020			0,20		2,0				2,20	2,25	2,35	2,45	2,65
583P.T2.100.020.040			0,20		4,0				4,70	4,95	5,15	5,35	5,65
583P.T2.100.020.060			0,20		6,0				6,80	7,10	7,35	7,55	7,95
583P.T2.150.010.040	1,5	1,45	0,10	1,5	4,0	4,0	50	2	4,70	4,95	5,15	5,35	5,65
583P.T2.150.010.060					6,0				6,80	7,10	7,35	7,55	7,95
583P.T2.150.010.080					8,0				8,90	9,20	9,50	9,75	10,05
583P.T2.150.010.100					10,0				11,05	11,40	11,75	12,00	12,50
583P.T2.200.020.060	2,0	1,90	0,20	2,5	6,0	4,0	50	2	6,20	6,40	6,65	6,90	7,45
583P.T2.200.020.080					8,0				8,90	9,25	9,50	9,75	10,20
583P.T2.200.020.120					12,0				13,05	13,50	13,80	14,10	14,60
583P.T2.200.020.160					16,0				17,30	17,75	18,10	18,40	-
583P.T2.200.020.200					20,0				21,40	21,90	22,30	23,05	-
583P.T2.300.050.080	3,0	2,90	0,50	3,5	8,0	6,0	60	2	8,35	8,65	8,95	9,30	10,05
583P.T2.300.050.120					12,0				13,15	13,55	13,90	14,15	15,05
583P.T2.300.050.200					20,0				21,40	21,90	22,30	22,65	23,20
583P.T2.300.050.250					25,0				26,55	27,10	27,75	28,75	-
583P.T2.300.050.300					30,0				31,65	32,30	33,30	34,40	-
583P.T2.400.050.080	4,0	3,90	0,50	4,5	8,0	6,0	60	2	8,90	9,25	9,50	9,75	10,20
583P.T2.400.050.120					12,0				13,15	13,55	13,90	14,15	15,05
583P.T2.400.050.160					16,0				17,30	17,75	18,10	18,40	-
583P.T2.400.050.200					20,0				21,40	21,90	22,30	23,05	-
583P.T2.500.050.100	5,0	4,90	0,50	5,5	10,0	6,0	60	2	11,05	11,40	11,75	12,00	-
583P.T2.500.050.150					15,0				16,50	16,90	17,20	-	-
583P.T2.500.050.200					20,0				21,65	22,10	-	-	-
583P.T2.500.050.250					25,0				26,75	27,30	-	-	-
583P.T2.600.050.100	6,0	5,90	0,50	6,5	10,0	6,0	60	2	-	-	-	-	-
583P.T2.600.050.160					16,0				-	-	-	-	-
583P.T2.600.050.200					20,0				-	-	-	-	-
583P.T2.600.050.300					30,0				-	-	-	-	-

Solid carbide end mill with corner radius for HSC milling in mould making

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- ☑ Optimised centring and micro geometry
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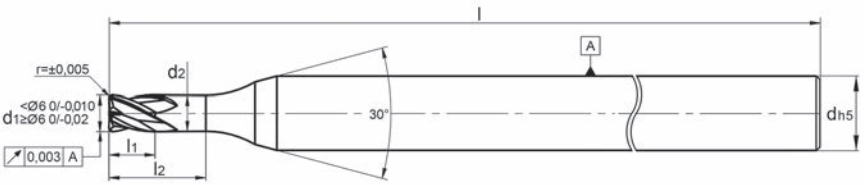
597P.T4

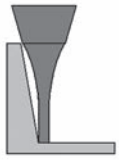


Effective-Ø 5,993
Actual-Ø 5,992
Concentricity 0,001

905325 - 181

PEACOCK

Controlled quality



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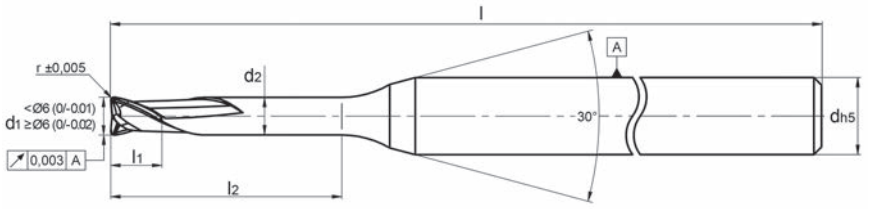
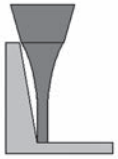
Order no	d1	d2	r	l1	l2	d	l	Z
597P.T4.080.005.020					2,0			
597P.T4.080.005.040	0,8	0,78	0,05	0,5	4,0	4,0	50	4
597P.T4.080.005.060					6,0			
597P.T4.100.005.020			0,05		2,0			
597P.T4.100.005.040			0,05		4,0			
597P.T4.100.005.060			0,05		6,0			
597P.T4.100.005.080			0,05		8,0			
597P.T4.100.010.020	1,0	0,95	0,10	0,8	2,0	4,0	50	4
597P.T4.100.010.040			0,10		4,0			
597P.T4.100.010.060			0,10		6,0			
597P.T4.100.010.080			0,10		8,0			
597P.T4.150.010.040					4,0			
597P.T4.150.010.060					6,0			
597P.T4.150.010.100	1,5	1,45	0,10	1,2	10,0	4,0	50	4
597P.T4.150.010.120					12,0			
597P.T4.150.010.150					15,0			
597P.T4.200.005.060			0,05		6,0			
597P.T4.200.005.150			0,05		15,0			
597P.T4.200.020.060			0,20		6,0			
597P.T4.200.020.080	2,0	1,95	0,20	1,6	8,0	4,0	50	4
597P.T4.200.020.100			0,20		10,0			
597P.T4.200.020.120			0,20		12,0			
597P.T4.300.020.100			0,20		10,0			
597P.T4.300.020.150			0,20		15,0			
597P.T4.300.020.250			0,20		25,0			
597P.T4.300.050.100	3,0	2,90	0,50	2,4	10,0	6,0	55	4
597P.T4.300.050.150			0,50		15,0			
597P.T4.300.050.250			0,50		25,0			
597P.T4.400.020.100			0,20		10,0			
597P.T4.400.020.150			0,20		15,0			
597P.T4.400.020.200			0,20		20,0			
597P.T4.400.020.300			0,20		30,0			
597P.T4.400.040.100	4,0	3,80	0,40	3,2	10,0	6,0	55	4
597P.T4.400.040.150			0,40		15,0			
597P.T4.400.040.200			0,40		20,0			
597P.T4.400.050.100			0,50		10,0			
597P.T4.400.050.150			0,50		15,0			
597P.T4.400.050.200			0,50		20,0			
597P.T4.500.050.150	5,0	4,80	0,50	4,0	15,0	6,0	65	4
597P.T4.500.050.200					20,0			
597P.T4.600.005.120			0,05		12,0			
597P.T4.600.005.180			0,05		18,0			
597P.T4.600.020.120			0,20		12,0			
597P.T4.600.020.180			0,20		18,0			
597P.T4.600.030.120	6,0	5,80	0,30	4,8	12,0	6,0	65	4
597P.T4.600.030.180			0,30		18,0			
597P.T4.600.050.120			0,50		12,0			
597P.T4.600.050.150			0,50		15,0			
597P.T4.600.050.180			0,50		18,0			
597P.T4.600.050.300			0,50		30,0			

599.T2





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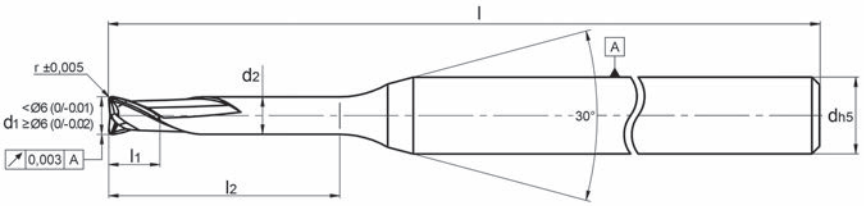
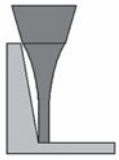
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 µm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
599.T2.0020.005.003		-		0,3	0,3				0,31	0,32	0,34	0,35	0,38
599.T2.0020.005.005	0,2	-	0,05	0,5	0,5	4,0	48	2	0,69	0,83	0,94	1,05	1,25
599.T2.0020.005.010		0,18		0,5	1,0				1,42	1,55	1,68	1,80	2,02
599.T2.0030.005.005		-		0,5	0,5				0,52	0,54	0,56	0,58	0,63
599.T2.0030.005.010	0,3	0,27	0,05	0,6	1,0	4,0	48	2	1,47	1,60	1,72	1,83	2,05
599.T2.0030.005.020				0,6	2,0				2,56	2,74	2,90	3,04	3,31
599.T2.0040.005.005		-		0,5	0,5				0,52	0,54	0,56	0,58	0,63
599.T2.0040.005.010	0,4	0,35	0,05	0,7	1,0	4,0	48	2	1,57	1,68	1,79	1,90	2,10
599.T2.0040.005.020				0,7	2,0				2,64	2,80	2,95	3,09	3,35
599.T2.0040.005.030				0,7	3,0				3,70	3,91	4,09	4,25	4,55
599.T2.0050.005.005		-		0,5	0,5				0,52	0,54	0,56	0,58	0,63
599.T2.0050.005.010				0,7	1,0				1,57	1,68	1,79	1,90	2,10
599.T2.0050.005.020	0,5	0,45	0,05	0,7	2,0	4,0	48	2	2,64	2,80	2,95	3,09	3,35
599.T2.0050.005.025				0,7	2,5				3,17	3,36	3,52	3,68	3,95
599.T2.0050.005.030				0,7	3,0				3,70	3,91	4,09	4,25	4,55
599.T2.0050.005.040				0,7	4,0				4,76	5,00	5,21	5,39	5,72
599.T2.0060.005.020			0,05		2,0				2,64	2,80	2,95	3,09	3,35
599.T2.0060.005.030			0,05		3,0				3,70	3,91	4,09	4,25	4,55
599.T2.0060.005.045	0,6	0,55	0,05	0,8	4,5	4,0	48	2	5,29	5,54	5,76	5,96	6,30
599.T2.0060.005.060			0,05		6,0				6,86	7,16	7,41	7,63	8,01
599.T2.0060.010.020			0,10		2,0				2,63	2,80	2,95	3,08	3,34
599.T2.0060.010.040			0,10		4,0				4,76	5,00	5,20	5,39	5,71
599.T2.0080.005.020			0,05		2,0				2,64	2,80	2,95	3,09	3,35
599.T2.0080.005.040			0,05		4,0				4,76	5,00	5,21	5,39	5,72
599.T2.0080.005.050			0,05		5,0				5,84	6,12	6,34	6,55	6,90
599.T2.0080.005.060			0,05		6,0				6,86	7,16	7,41	7,63	8,01
599.T2.0080.005.080			0,05		8,0				8,96	9,30	9,59	9,83	10,25
599.T2.0080.005.100	0,8	0,75	0,05	1,0	10,0	4,0	48	2	11,04	11,43	11,74	12,01	12,47
599.T2.0080.020.020			0,20		2,0				2,64	2,80	2,95	3,09	3,35
599.T2.0080.020.040			0,20		4,0				4,76	5,00	5,21	5,39	5,72
599.T2.0080.020.050			0,20		5,0				5,84	6,12	6,34	6,55	6,90
599.T2.0080.020.060			0,20		6,0				6,86	7,16	7,41	7,63	8,01
599.T2.0080.020.080			0,20		8,0				8,96	9,30	9,59	9,83	10,25
599.T2.0080.020.100			0,20		10,0				11,04	11,43	11,74	12,01	12,47
599.T2.0100.010.020			0,10		2,0				2,63	2,80	2,95	3,08	3,34
599.T2.0100.010.040	1,0	0,95	0,10	1,5	4,0	4,0	48	2	4,76	5,00	5,20	5,39	5,71
599.T2.0100.010.060					6,0				6,86	7,16	7,41	7,63	8,00
599.T2.0100.010.080					8,0				8,96	9,30	9,58	9,83	10,25
599.T2.0150.015.040			0,15		4,0				4,78	5,02	5,23	5,41	5,73
599.T2.0150.015.060			0,15		6,0				6,86	7,16	7,40	7,62	8,00
599.T2.0150.015.100			0,15		10,0				11,04	11,43	11,74	12,01	12,47
599.T2.0150.015.120	1,5	1,45	0,15	2,0	12,0	4,0	48	2	13,11	13,54	13,87	14,16	14,96
599.T2.0150.020.040			0,20		4,0				4,75	4,99	5,19	5,37	5,70
599.T2.0150.020.060			0,20		6,0				6,86	7,15	7,40	7,61	7,99
599.T2.0150.020.080			0,20		8,0				8,95	9,29	9,57	9,82	10,23

599.T2





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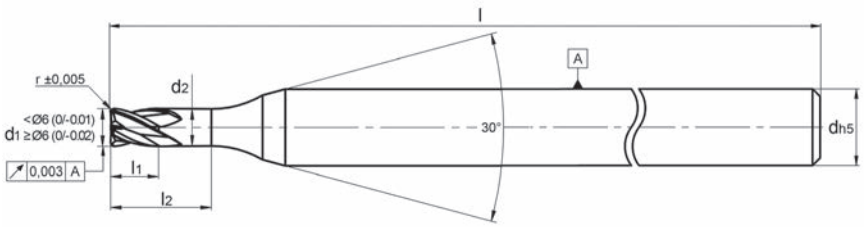
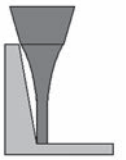
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1°30'	2°	3°
599.T2.0200.020.040	2,0	1,95	0,20	2,5	4,0	4,0	48	2	4,75	4,99	5,19	5,37	5,70
599.T2.0200.020.060					6,0				6,86	7,15	7,40	7,61	7,99
599.T2.0200.020.080					8,0				9,07	9,39	9,65	9,89	10,29
599.T2.0200.020.120					12,0				13,11	13,54	13,87	14,16	14,96
599.T2.0300.030.045	3,0	2,9	0,3	3,5	4,5	6,0	60	2	5,45	5,67	5,87	6,05	6,37
599.T2.0300.030.090					9,0				10,08	10,39	10,66	10,90	11,31
599.T2.0400.050.060	4,0	3,9	0,5	4,5	6,0	6,0	60	2	7,01	7,27	7,49	7,69	8,04
599.T2.0400.050.100					10,0				11,10	11,50	11,80	12,00	12,50
599.T2.0600.060.080	6,0	5,9	0,6	6,5	8,0	6,0	60	2	-	-	-	-	-
599.T2.0600.060.200					20,0				-	-	-	-	-
599.T2.0600.060.250					25,0				-	-	-	-	-

599.T4





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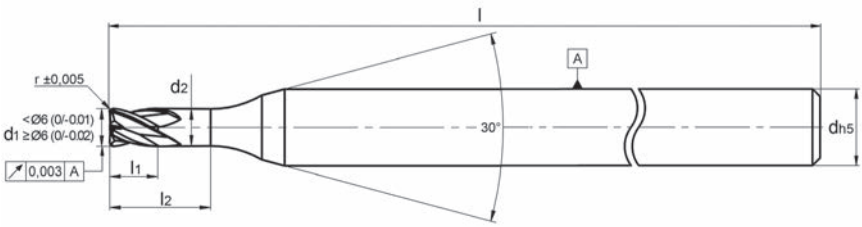
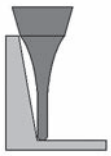
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
599.T4.0100.010.020			0,10		2,0				2,63	2,80	2,95	3,08	3,34
599.T4.0100.010.040			0,10		4,0				4,76	5,00	5,20	5,39	5,71
599.T4.0100.010.060			0,10		6,0				6,86	7,16	7,41	7,63	8,00
599.T4.0100.010.080			0,10		8,0				8,96	9,30	9,58	9,83	10,25
599.T4.0100.010.100			0,10		10,0				11,04	11,43	11,74	12,01	12,46
599.T4.0100.010.140	1,0	0,95	0,10	1,5	14,0	4,0	48	4	15,19	15,65	16,01	16,31	17,46
599.T4.0100.020.020			0,20		2,0				2,63	2,80	2,95	3,08	3,34
599.T4.0100.020.040			0,20		4,0				4,76	5,00	5,20	5,39	5,71
599.T4.0100.020.060			0,20		6,0				6,86	7,16	7,41	7,63	8,00
599.T4.0100.020.080			0,20		8,0				8,96	9,30	9,58	9,83	10,25
599.T4.0100.020.100			0,20		10,0				11,04	11,43	11,74	12,01	12,46
599.T4.0100.020.140			0,20		14,0				15,19	15,65	16,01	16,31	17,46
599.T4.0150.010.040			0,10		4,0		48		4,76	5,00	5,20	5,39	5,71
599.T4.0150.010.060			0,10		6,0		48		6,86	7,16	7,41	7,63	8,00
599.T4.0150.010.100			0,10		10,0		48		11,04	11,43	11,74	12,01	12,46
599.T4.0150.010.120			0,10		12,0		48		13,12	13,54	13,88	14,17	14,96
599.T4.0150.010.150			0,10		15,0		60		16,23	16,70	17,07	17,38	18,71
599.T4.0150.015.040			0,15		4,0		48		4,75	4,99	5,20	5,38	5,70
599.T4.0150.015.060			0,15		6,0		48		6,86	7,16	7,40	7,62	8,00
599.T4.0150.015.080	1,5	1,45	0,15	2,0	8,0	4,0	48	4	8,95	9,30	9,58	9,82	10,24
599.T4.0150.020.040			0,20		4,0		48		4,76	5,00	5,20	5,39	5,71
599.T4.0150.020.060			0,20		6,0		48		6,86	7,16	7,41	7,63	8,00
599.T4.0150.020.080			0,20		8,0		48		8,96	9,30	9,58	9,83	10,25
599.T4.0150.020.100			0,20		10,0		48		11,04	11,43	11,74	12,01	12,46
599.T4.0150.020.120			0,20		12,0		48		13,12	13,54	13,88	14,17	14,96
599.T4.0150.020.150			0,20		15,0		60		16,23	16,70	17,07	17,38	18,71
599.T4.0150.020.200			0,20		20,0		60		21,35	21,89	22,33	23,01	-
599.T4.0200.010.040			0,20		4,0	4,0	48		4,90	5,11	5,30	5,47	5,78
599.T4.0200.010.060			0,20		6,0	4,0	48		6,99	7,26	7,49	7,69	8,06
599.T4.0200.020.040			0,20		4,0	4,0	48		4,90	5,11	5,30	5,47	5,78
599.T4.0200.020.060			0,20		6,0	4,0	48		6,99	7,26	7,49	7,69	8,06
599.T4.0200.020.080			0,20		8,0	4,0	48		9,07	9,39	9,65	9,89	10,29
599.T4.0200.020.100	2,0	1,90	0,20	2,5	10,0	4,0	48	4	11,15	11,51	11,80	12,06	12,48
599.T4.0200.020.120			0,20		12,0	4,0	48		13,22	13,62	13,94	14,22	14,98
599.T4.0200.020.160			0,20		16,0	4,0	60		17,35	17,81	18,18	18,45	-
599.T4.0200.020.200			0,20		20,0	4,0	60		21,45	21,95	22,23	23,03	-
599.T4.0200.020.250			0,20		25,0	4,0	60		26,55	27,15	27,75	28,81	-
599.T4.0200.050.100			0,50		10,0	6,0	60		11,17	11,52	11,81	12,06	12,50
599.T4.0250.050.100	2,5	2,40	0,50	3,0	10,0	6,0	60	4	11,27	11,60	11,88	12,13	12,52
599.T4.0300.010.080			0,10		8,0		60		9,08	9,39	9,66	9,90	10,31
599.T4.0300.010.120			0,10		12,0		60		13,22	13,62	13,95	14,23	14,99
599.T4.0300.010.160			0,10		16,0		60		17,35	17,82	18,19	18,45	19,99
599.T4.0300.020.080			0,20		8,0		60		9,07	9,39	9,65	9,89	10,29
599.T4.0300.020.120	3,0	2,90	0,20	3,5	12,0	6,0	60	4	13,22	13,62	13,94	14,22	14,98
599.T4.0300.020.160			0,20		16,0		60		17,35	17,81	18,18	18,45	19,98
599.T4.0300.020.200			0,20		20,0		70		21,45	21,95	22,23	23,03	24,91
599.T4.0300.020.240			0,20		24,0		70		25,52	26,08	26,61	27,61	-
599.T4.0300.030.100			0,30		10,0		60		11,14	11,50	11,80	12,05	12,48

See also next page

599.T4





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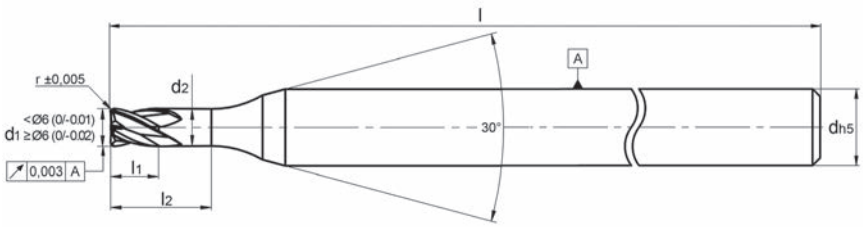
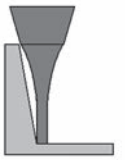
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1°30'	2°	3°
599.T4.0400.020.080			0,20		8,0		60		9,07	9,39	9,65	9,89	10,29
599.T4.0400.020.120			0,20		12,0		60		13,22	13,62	13,94	14,22	14,98
599.T4.0400.020.160			0,20		16,0		60		17,35	17,81	18,18	18,45	-
599.T4.0400.020.200			0,20		20,0		70		21,47	21,99	22,39	23,06	-
599.T4.0400.020.240			0,20		24,0		70		25,52	26,08	26,61	27,61	-
599.T4.0400.020.280			0,20		28,0		70		29,61	30,21	31,05	-	-
599.T4.0400.040.080			0,40		8,0		60		9,00	9,40	9,60	9,90	10,30
599.T4.0400.040.100			0,40		10,0		60		11,10	11,50	11,80	12,00	12,50
599.T4.0400.050.080			0,50		8,0		60		9,06	9,37	9,63	9,86	10,26
599.T4.0400.050.120	4,0	3,90	0,50	4,5	12,0	6,0	60	4	13,21	13,60	13,92	14,19	14,97
599.T4.0400.050.160			0,50		16,0		60		17,34	17,80	18,16	18,44	-
599.T4.0400.050.200			0,50		20,0		70		21,46	21,97	22,37	23,05	-
599.T4.0400.050.240			0,50		24,0		70		25,52	26,08	26,61	27,61	-
599.T4.0400.050.280			0,50		28,0		70		29,61	30,21	31,05	-	-
599.T4.0400.100.080			1,00		8,0		60		9,04	9,34	9,59	9,81	10,19
599.T4.0400.100.120			1,00		12,0		60		13,19	13,57	13,88	14,15	14,94
599.T4.0400.100.160			1,00		16,0		60		17,33	17,77	18,13	18,43	19,94
599.T4.0400.100.200			1,00		20,0		70		21,40	21,90	22,30	23,00	-
599.T4.0400.100.240			1,00		24,0		70		25,52	26,08	26,61	27,61	-
599.T4.0400.100.280			1,00		28,0		70		29,61	30,21	31,05	-	-
599.T4.0500.020.080			0,20		8,0				9,06	9,37	9,63	9,86	10,26
599.T4.0500.020.150	5,0	4,90	0,20	5,5	15,0	6,0	60	4	16,31	16,75	17,10	-	-
599.T4.0500.050.080			0,50		8,0				9,06	9,37	9,63	9,86	10,26
599.T4.0500.050.150			0,50		15,0				16,31	16,75	17,10	-	-
599.T4.0600.020.120			0,20		12,0				-	-	-	-	-
599.T4.0600.020.160			0,20		16,0				-	-	-	-	-
599.T4.0600.020.200			0,20		20,0				-	-	-	-	-
599.T4.0600.030.120			0,30		12,0				-	-	-	-	-
599.T4.0600.030.160			0,30		16,0				-	-	-	-	-
599.T4.0600.030.200			0,30		20,0				-	-	-	-	-
599.T4.0600.030.300			0,30		30,0				-	-	-	-	-
599.T4.0600.050.120	6,0	5,90	0,50	6,5	12,0	6,0	60	4	-	-	-	-	-
599.T4.0600.050.150			0,50		15,0				-	-	-	-	-
599.T4.0600.050.160			0,50		16,0				-	-	-	-	-
599.T4.0600.050.200			0,50		20,0				-	-	-	-	-
599.T4.0600.060.150			0,60		15,0				-	-	-	-	-
599.T4.0600.100.120			1,00		12,0				-	-	-	-	-
599.T4.0600.100.160			1,00		16,0				-	-	-	-	-
599.T4.0600.100.200			1,00		20,0				-	-	-	-	-
599.T4.0600.100.300			1,00		30,0				-	-	-	-	-
599.T4.0800.050.160			0,50		16,0		60		-	-	-	-	-
599.T4.0800.050.400			0,50		40,0		80		-	-	-	-	-
599.T4.0800.080.300	8,0	7,90	0,80	8,5	30,0	8,0	80	4	-	-	-	-	-
599.T4.0800.100.160			1,00		16,0		60		-	-	-	-	-
599.T4.0800.100.400			1,00		40,0		80		-	-	-	-	-

599.T4



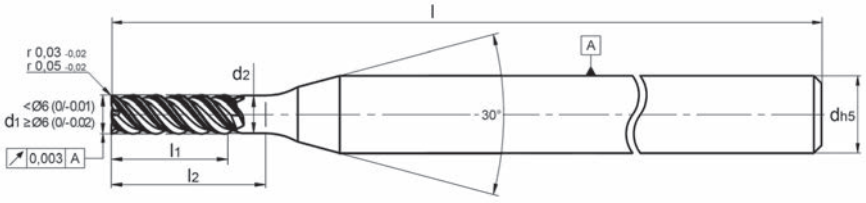


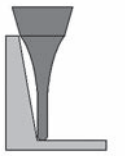
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
599.T4.1000.050.200	10,0	9,90	0,50	10,5	20,0	10,0	70	4	-	-	-	-	-
599.T4.1000.050.400			0,50		40,0		90		-	-	-	-	-
599.T4.1000.100.200			1,00		20,0		70		-	-	-	-	-
599.T4.1000.100.300			1,00		30,0		70		-	-	-	-	-
599.T4.1000.100.400			1,00		40,0		90		-	-	-	-	-
599.T4.1000.100.500			1,00		50,0		90		-	-	-	-	-
599.T4.1200.050.125	12,0	11,90	0,50	12,5	20,0	12,0	70	4	-	-	-	-	-
599.T4.1200.100.240			1,00		24,0		70		-	-	-	-	-
599.T4.1200.100.400			1,00		40,0		90		-	-	-	-	-

Solid carbide end mill with corner radius for HSC milling in mould making

- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised centring and micro geometry
- ☑ Innovative coating technology
- ☑ Finest surfaces, dimensional and geometrical accuracy
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 μm

599.F4



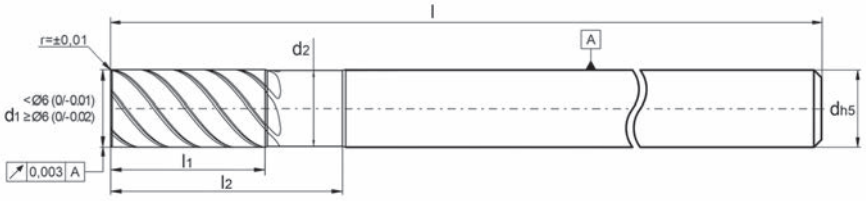


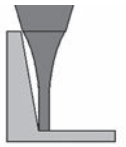
Solid carbide high performance end mill for HSC milling in mould making

- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised micro geometry
- ☑ Innovative coating technology
- ☑ Highly suitable for the machining of hardened steels
- ☑ Highly suitable for circumferential machining with high precision
- ☑ Lateral trochoidal machining
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ Finest ground corner protection radii (0.03-0.05 mm)

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1°30'	2°	3°
599.F4.0100.000.020	1,0	-	0,03	2,0	2,0	4,0	48	4	2,64	2,81	2,96	3,10	3,35
599.F4.0100.000.040		0,95		3,0	4,0				4,76	5,00	5,21	5,40	5,73
599.F4.0150.000.030	1,5	-	0,03	3,0	3,0	4,0	48	4	3,70	3,91	4,09	4,26	4,55
599.F4.0150.000.060		1,45		4,5	6,0				6,87	7,17	7,41	7,63	8,01
599.F4.0200.000.040	2,0	-	0,03	4,0	4,0	4,0	48	4	4,91	5,12	5,31	5,49	5,80
599.F4.0200.000.080		1,90		6,0	8,0	4,0	48		9,08	9,40	9,67	9,91	10,31
599.F4.0200.000.100		-		10,0	10,0	6,0	60		10,95	11,37	11,70	11,98	12,45
599.F4.0300.000.060	3,0	-	0,05	6,0	6,0	6,0	60	4	7,00	7,27	7,50	7,71	8,08
599.F4.0300.000.120		2,90		9,0	12,0				13,23	13,62	13,95	14,23	14,99
599.F4.0400.000.080	4,0	-	0,05	8,0	8,0	6,0	60	4	9,08	9,40	9,67	9,90	10,31
599.F4.0400.000.160		3,90		12,0	16,0				17,36	17,82	18,19	18,45	-
599.F4.0500.000.100	5,0	-	0,05	10,0	10,0	6,0	60	4	11,15	11,52	11,81	12,07	-
599.F4.0500.000.200		4,90		15,0	20,0				21,47	21,99	-	-	-
599.F4.0600.000.120	6,0	-	0,05	12,0	12,0	6,0	60	4	-	-	-	-	-
599.F4.0600.000.240		5,90		18,0	24,0				-	-	-	-	-
599.F4.0800.000.160	8,0	-	0,05	16,0	16,0	8,0	60	4	-	-	-	-	-
599.F4.0800.000.320		7,90		24,0	32,0		70		-	-	-	-	-
599.F4.1000.000.200	10,0	-	0,05	20,0	20,0	10,0	70	4	-	-	-	-	-
599.F4.1000.000.400		9,90		30,0	40,0		80		-	-	-	-	-
599.F4.1200.000.240	12,0	-	0,05	24,0	24,0	12,0	70	4	-	-	-	-	-
599.F4.1200.000.440		11,90		36,0	44,0		90		-	-	-	-	-

599.F6



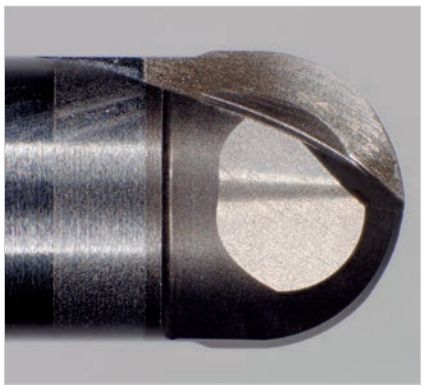


Order no	d1	d2	r	l1	l2	d	l	z	Inclination angle 30′	1°	1°30′	2°	3°
599.F6.0500.020.100	5,0	-	0,20	10,0	10,0	6,0	60	6	11,15	11,52	11,82	12,08	-
599.F6.0500.020.200		4,90		15,0	20,0				21,47	21,99	-	-	-
599.F6.0600.020.120	6,0	-	0,20	12,0	12,0	6,0	60	6	-	-	-	-	-
599.F6.0600.020.240		5,90		18,0	24,0				-	-	-	-	-
599.F6.0800.020.160	8,0	-	0,20	16,0	16,0	8,0	60	6	-	-	-	-	-
599.F6.0800.020.320		7,90		24,0	32,0		70		-	-	-	-	-
599.F6.1000.020.200	10,0	-	0,20	20,0	20,0	10,0	70	6	-	-	-	-	-
599.F6.1000.020.400		9,90		30,0	40,0		80		-	-	-	-	-
599.F6.1200.020.240	12,0	-	0,20	24,0	24,0	12,0	70	6	-	-	-	-	-
599.F6.1200.020.440		11,90		36,0	44,0		90		-	-	-	-	-

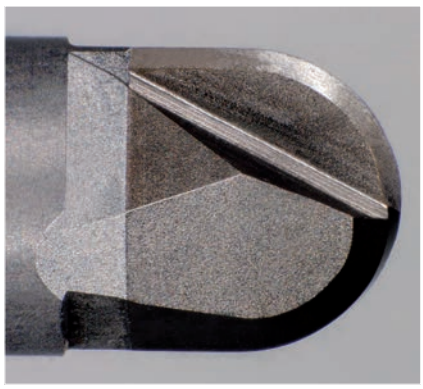
Solid carbide high performance end mill for HSC milling in mould making

- ☑ With free length
- ☑ New shaft geometry
- ☑ Optimised micro geometry
- ☑ Innovative coating technology
- ☑ Highly suitable for the machining of hardened steels
- ☑ Highly suitable for circumferential machining with high precision
- ☑ Lateral trochoidal machining
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ Ultraprecise ground corner radii

PEACOCK **CBN - Innovation in hard milling**



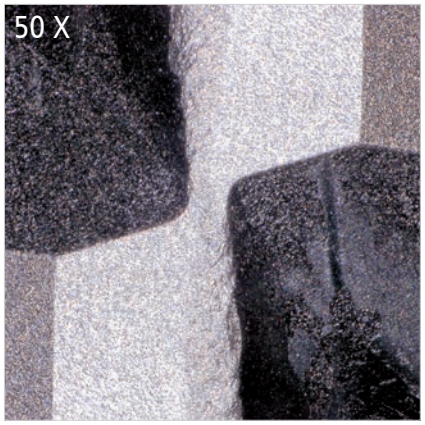
Market companion

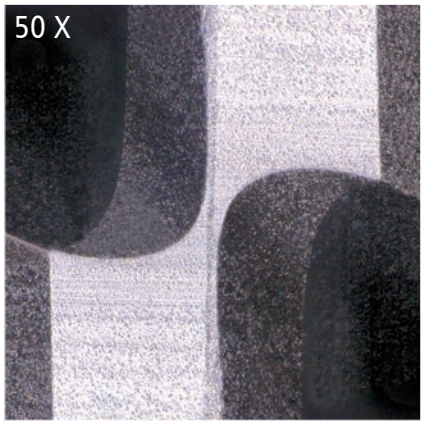


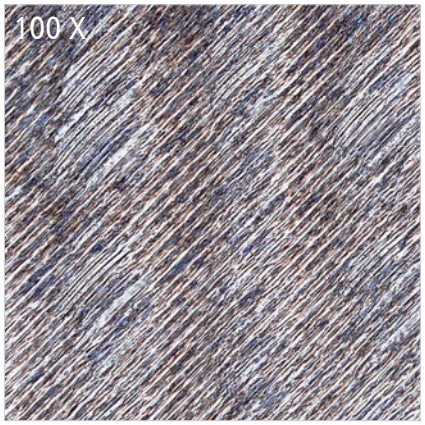
ZECHA

Tool
Ball nose end mill Ø 2.0 mm
Workpiece
Steel 1.2379 (X 155 CrVMo 121)
HRC 62
CBN
Vc 145 m/min (23,000 1/min)
Fz 0.023
Ap 0.012
Ae 0.025

Finishing of the complete surface





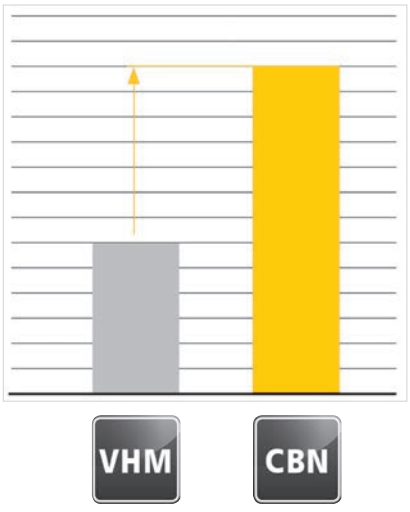


Market companion Ra 0.15 μm

ZECHA Ra 0.113 μm

ZECHA Sample component

Far longer service life compared to standard VHM mill cutters



CBN
CBN is the second hardest material after synthetic diamond.
This is characterised by high hardness and toughness as well as abrasion resistance, which contributes to the longevity of the cutting edge. The thermal and chemical resistance is ideal for the machining of hardened steels.
In comparison with other cutting materials CBN also retains its properties at high temperatures.

CBN End Mill - Overview of the features

End face geometry for optimal chip removal and milling profile

Micro geometry - as a result finest cutting edge structure

Greatest stability due to soldered base body

Substrate
Latest CBN substrate based on titanium nitride with a melting point of approx. 3,000°C

Labelling not on the shank but on the rear for perfect concentricity

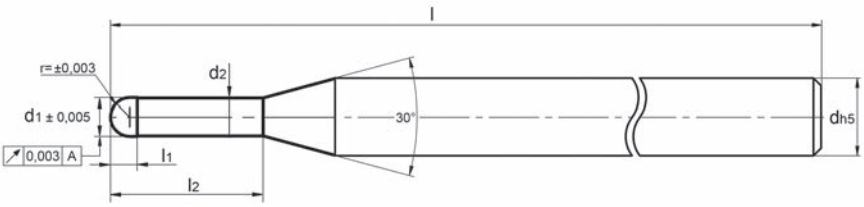
Completely ground - thus highest quality

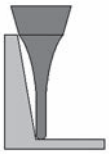
Defined form tolerances through:
Diameter: 0 - 10 µm
tolerances (± 0.005 µm by 950.B2)
Concentricity: max. 3 µm
Line sharpe of the radius: max. 3 µm
Radius tolerance: ± 3 µm

CBN

- High degree of hardness and fracture toughness concerning interrupted cuts at high thermal and chemical stability
- Long shape and dimensional accuracy as our CBN retains its hardness up to approx. 1,400°C. Heating the material makes it momentarily soft. This results in a high service life
- Extreme high density and viscosity to prevent cracking and diffusion

950.B2



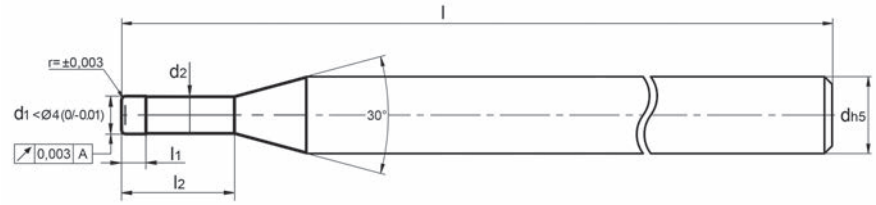


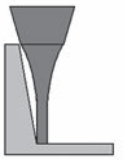
CBN ball nose end mill for HSC milling in mould making

- ☑ Latest CBN substrate
- ☑ With free length
- ☑ Optimised centring and micro geometry
- ☑ Best surface quality
- ☑ Restricted radius tolerance ± 0.003 mm
- ☑ Highly suitable for hardened steels up to 70 HRC
- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 µm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1°30'	2°	3°
950.B2.0020.010.005	0,2	0,18	0,10	0,3	0,5	4,0	50	2	0,5	0,5	0,52	0,54	0,59
950.B2.0030.015.005	0,3	0,28	0,15	0,3	0,5	4,0	50	2	0,5	0,5	0,52	0,54	0,59
950.B2.0040.020.012	0,4	0,37	0,20	0,3	1,2	4,0	50	2	1,20	1,24	1,29	1,34	1,45
950.B2.0040.020.015					1,5				1,51	1,56	1,62	1,68	1,82
950.B2.0050.025.010	0,5	0,47	0,25	0,4	1,0	4,0	50	2	0,99	1,03	1,06	1,11	1,20
950.B2.0050.025.020					2,0				2,03	2,10	2,17	2,26	2,44
950.B2.0060.030.015	0,6	0,57	0,30	0,4	1,5	4,0	50	2	1,51	1,56	1,62	1,68	1,82
950.B2.0060.030.020					2,0				2,03	2,10	2,17	2,26	2,44
950.B2.0080.040.015	0,8	0,77	0,40	0,5	1,5	4,0	50	2	1,51	1,56	1,62	1,68	1,82
950.B2.0080.040.025					2,5				2,54	2,63	2,72	2,83	3,06
950.B2.0100.050.025	1,0	0,97	0,50	0,6	2,5	4,0	50	2	2,54	2,63	2,72	2,83	3,06
950.B2.0100.050.030					3,0				3,06	3,17	3,28	3,40	3,68
950.B2.0100.050.040					4,0				4,09	4,24	4,39	4,56	4,93
950.B2.0150.075.040	1,5	1,47	0,75	0,9	4,0	4,0	50	2	4,09	4,23	4,38	4,55	4,92
950.B2.0150.075.060					6,0				6,20	6,41	6,64	6,89	7,46
950.B2.0200.100.055	2,0	1,97	1,0	1,4	5,5	4,0	50	2	5,64	5,84	6,04	6,27	6,78
950.B2.0200.100.080					8,0				8,23	8,51	8,82	9,16	9,91

950.T2





CBN end mill with corner radius for HSC milling in mould making

- ☑ Latest CBN substrate
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- ☑ Best surface quality
- ☑ Restricted radius tolerance ± 0.003 mm
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- ☑ Concentric accuracy: 0.003 mm ≤ Ø 6.0 mm
- ☑ ≤ Ø 6.0 mm linear form max. 3.0 µm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1°30′	2°	3°
950.T2.0020.005.005	0,2	0,17	0,05	0,1	0,5	4,0	50	2	0,50	0,51	0,51	0,54	0,58
950.T2.0030.005.005	0,3	0,27	0,05	0,15	0,5	4,0	50	2	0,50	0,51	0,51	0,54	0,58
950.T2.0040.005.005	0,4	0,37	0,05	0,2	0,5	4,0	50	2	0,50	0,51	0,51	0,54	0,58
950.T2.0050.005.005					0,5				0,50	0,51	0,51	0,54	0,58
950.T2.0050.005.015	0,5	0,47	0,05	0,3	1,5	4,0	50	2	1,51	1,57	1,63	1,69	1,83
950.T2.0050.005.020					2,0				2,05	2,10	2,18	2,26	2,45
950.T2.0060.005.010	0,6	0,57	0,05	0,4	1,0	4,0	50	2	1,03	1,07	1,10	1,15	1,24
950.T2.0060.005.020					2,0				2,06	2,14	2,22	2,30	2,49
950.T2.0080.005.015	0,8	0,77	0,05	0,5	1,5	4,0	50	2	1,51	1,57	1,63	1,69	1,83
950.T2.0080.005.025					2,5				2,58	2,67	2,77	2,88	3,12
950.T2.0100.005.030			0,05		3,0				3,06	3,17	3,29	3,42	3,71
950.T2.0100.005.050			0,05		5,0				5,13	5,32	5,51	5,73	6,21
950.T2.0100.010.030	1,0	0,97	0,10	0,7	3,0	4,0	50	2	3,06	3,17	3,29	3,42	3,70
950.T2.0100.010.050			0,10		5,0				5,13	5,32	5,51	5,73	6,20
950.T2.0100.020.030			0,20		3,0				3,06	3,17	3,29	3,41	3,70
950.T2.0100.020.050			0,20		5,0				5,13	5,31	5,51	5,72	6,20
950.T2.0150.010.045			0,10		4,5				4,61	4,78	4,96	5,15	5,58
950.T2.0150.010.060	1,5	1,47	0,10	1,2	6,0	4,0	50	2	6,16	6,38	6,62	6,88	7,45
950.T2.0150.020.045			0,20		4,5				4,61	4,78	4,95	5,15	5,57
950.T2.0150.020.060			0,20		6,0				6,16	6,38	6,62	6,88	7,45
950.T2.0200.010.045			0,10		4,5				4,13	4,28	4,44	4,61	4,99
950.T2.0200.010.060			0,10		6,0				6,17	6,39	6,62	6,88	7,45
950.T2.0200.020.045	2,0	1,97	0,20	1,5	4,5	4,0	50	2	4,13	4,28	4,44	4,61	4,99
950.T2.0200.020.060			0,20		6,0				6,17	6,39	6,62	6,88	7,45
950.T2.0200.050.045			0,50		4,5				4,13	4,27	4,43	4,59	4,97
950.T2.0200.050.060			0,50		6,0				6,16	6,38	6,61	6,87	7,43

COPPER

Copper

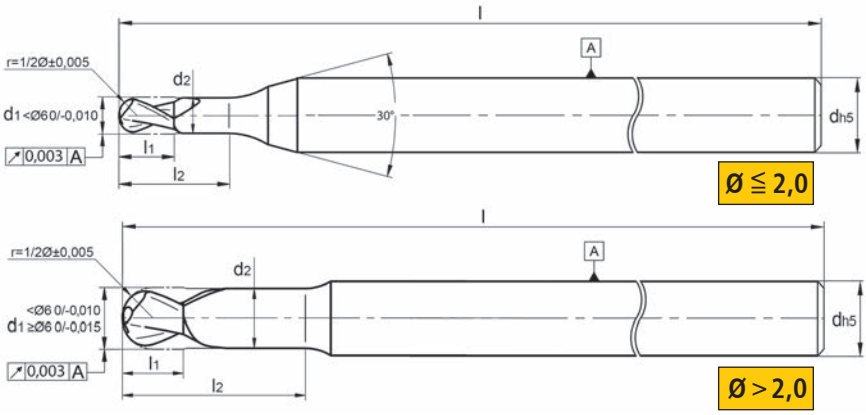
Challenge:
Developments, progress and innovationsmean that process of electrode manufacturing is always in flux.
The miniaturisation of components and lightweight construction lead to increasingly fine geometries in which copper possesses many advantages over graphite. Not only is tool wear drastically reduced in electrode manufacture in comparison to graphite, but also the surface quality and dimensional accuracy are greatly increased.

Nevertheless, the machining of copper and the production of fine contours and shapes as required by mould making throws down its own challenges. Heat sensitivity, builtup edges as well as stress and offset mean that precise copper machining has its own set of problems which make high performance tools with sophisticated geometry and sharp cutting edges for a controlled chip formation an absolute must.

Solution:
The ZECHA copper cutters offer best performance at all machining stages because they are superbly suited in equal measureto roughing, pre-finishing and finishing. The precision tools provide diameter, shape and concentricity accuracy to fulfil even high-end demands.

The award-winning unique high-end line IGUANA is particularly worthy of mention. These ball, torus and end mill cutters are multiple cutters in small diameters ranging from 0.4 mm to 8.0 mm with laser-sharpened cutting edge radii of 1μm - and all this without changes in hardness and strength of the diamond coating. Improved surface qualities of 50%, no burring or chatter marks as well as an exceptional service life are just some of the advantages of this innovative line.

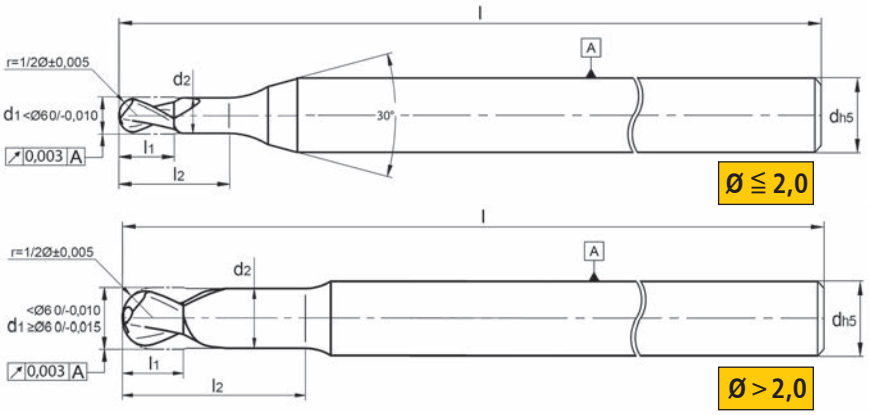
551



Solid carbide ball nose end mill for HSC milling of nonferrous metals

☑ Short design with free length
☑ Finest ground, polished cutting edges and flutes
☑ μ-range precision
☑ Standard without coating
☑ On request with BCR coating
Ordering example: 551.0020.10.015BCR

Order no	d1	d2	r = d 1/2	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
551.0020.10.015	0,2	0,18	0,10	0,3	1,5	4,0	50	2	1,90	2,04	2,17	2,28	2,49
551.0030.15.015	0,3	0,27	0,15	0,5	1,5	4,0	50	2	1,94	2,07	2,19	2,30	2,50
551.0030.15.030					3,0				3,54	3,73	3,90	4,04	4,30
551.0030.15.045					4,5				5,13	5,37	5,56	5,73	6,03
551.0030.15.060					6,5				7,23	7,51	7,74	7,94	8,28
551.0040.20.020	0,4	0,34	0,20	0,6	2,0	4,0	50	2	2,58	2,72	2,84	2,95	3,16
551.0040.20.040					4,0				4,69	4,89	5,06	5,22	5,49
551.0040.20.060					6,0				6,78	7,03	7,24	7,43	7,75
551.0040.20.080					8,0				8,86	9,16	9,40	9,61	9,96
551.0050.25.025	0,5	0,44	0,25	0,7	2,5	4,0	50	2	3,11	3,26	3,39	3,52	3,74
551.0050.25.050					5,0				5,73	5,96	6,15	6,32	6,62
551.0050.25.075					7,5				8,34	8,63	8,86	9,06	9,41
551.0050.25.100					10,0				10,93	11,27	11,53	11,76	12,46
551.0060.30.030	0,6	0,54	0,30	1,0	3,0	4,0	50	2	3,63	3,80	3,95	4,08	4,32
551.0060.30.060					6,0				6,78	7,03	7,24	7,42	7,74
551.0060.30.090					9,0				9,90	10,21	10,46	10,68	11,21
551.0060.30.120					12,0				13,00	13,37	13,65	13,90	14,96
551.0080.40.040	0,8	0,74	0,40	1,2	4,0	4,0	50	2	4,68	4,87	5,04	5,19	5,46
551.0080.40.080					8,0				8,85	9,15	9,38	9,59	9,94
551.0080.40.120					12,0				13,00	13,36	13,65	13,89	14,95
551.0080.40.160					16,0				17,12	17,54	17,87	18,42	19,95
551.0100.50.050	1,0	0,95	0,50	1,6	5,0	4,0	50	2	5,70	5,92	6,11	6,28	6,57
551.0100.50.100					10,0				10,90	11,24	11,50	11,73	12,44
551.0100.50.150					15,0				16,07	16,48	16,80	17,26	18,69
551.0100.50.200					20,0				21,22	21,68	22,18	23,03	24,94
551.0150.75.050	1,5	1,42	0,75	2,4	5,0	4,0	60	2	5,76	5,97	6,14	6,30	6,58
551.0150.75.100					10,0				13,03	13,37	13,65	13,89	14,95
551.0150.75.150					15,0				16,12	16,51	16,82	17,27	18,70
551.0150.75.200					20,0				21,26	21,71	22,19	23,04	-

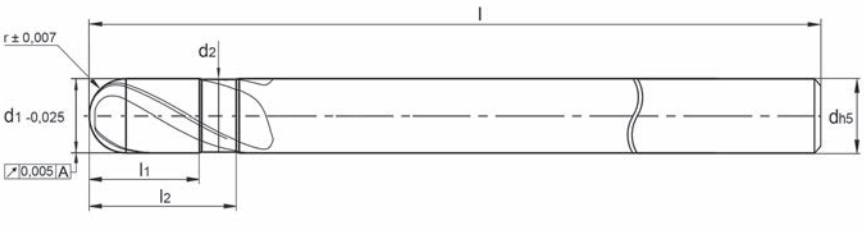


Solid carbide ball nose end mill for HSC milling of nonferrous metals

☑ Short design with free length
☑ Finest ground, polished cutting edges and flutes
☑ μ-range precision
☑ Standard without coating
☑ On request with BCR coating
Ordering example: 551.0020.10.015BCR

Order no	d1	d2	r = d 1/2	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
551.0200.100.060					6,0				6,80	7,02	7,21	7,38	7,67
551.0200.100.120					12,0				13,02	13,36	13,63	13,87	14,93
551.0200.100.180	2,0	1,92	1,00	3,0	18,0	4,0	60	2	19,20	19,62	19,96	20,72	-
551.0200.100.240					24,0				25,35	25,84	26,63	27,64	-
551.0200.100.300					30,0				31,49	32,11	33,29	-	-
551.0300.150.090					9,0				10,09	10,33	10,54	10,73	-
551.0300.150.180	3,0	2,82	1,50	3,5	18,0	4,0	60	2	19,34	19,72	20,00	-	-
551.0300.150.300					30,0				31,60	32,15	-	-	-
551.0400.200.120	4,0	3,82	2,00	4,0	12,0	6,0	60	2	13,16	13,45	13,69	13,90	14,93
551.0400.200.240					24,0				25,46	25,91	26,65	27,66	-
551.0500.250.150	5,0	4,82	2,50	5,0	15,0	6,0	60	2	16,23	16,56	16,83	-	-
551.0500.250.300					30,0				31,58	32,13	-	-	-
551.0600.300.180	6,0	5,82	3,00	6,0	18,0	6,0	60	2	-	-	-	-	-
551.0600.300.300					30,0				-	-	-	-	-

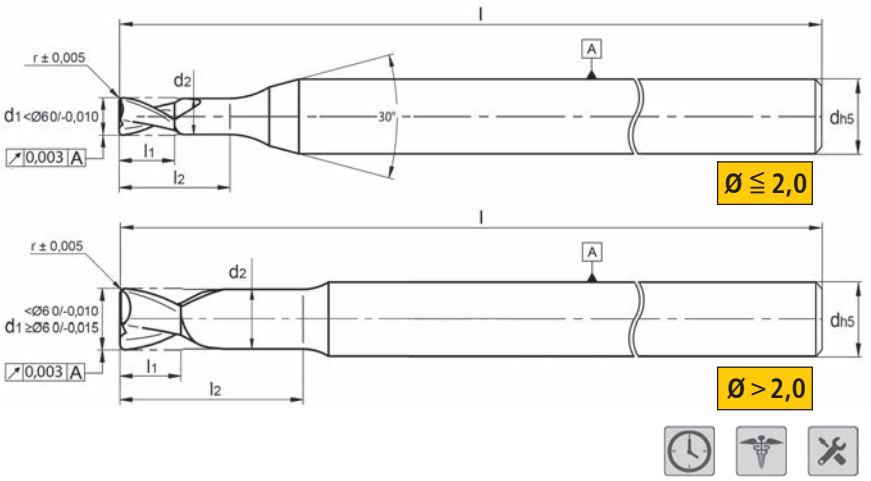
551.B3



Solid carbide ball nose end mill for HSC milling of nonferrous metals

☑ Short design with free length
☑ Finest ground, polished cutting edges and flutes
☑ μ-range precision
☑ Standard without coating
☑ On request with WAD coating
Ordering example:
551.B3.0800.400.160WAD

Order no	d1	d2	r = d 1/2	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
551.B3.0800.400.160	8,0	7,82	4,0	12,0	16,0	8,0	70	3	-	-	-	-	-
551.B3.0800.400.300					30,0				-	-	-	-	-
551.B3.1000.500.200	10,0	9,82	5,0	15,0	20,0	10,0	80	3	-	-	-	-	-
551.B3.1000.500.300					30,0				-	-	-	-	-
551.B3.1200.600.240	12,0	11,82	6,0	18,0	24,0	12,0	80	3	-	-	-	-	-
551.B3.1200.600.300					30,0				-	-	-	-	-

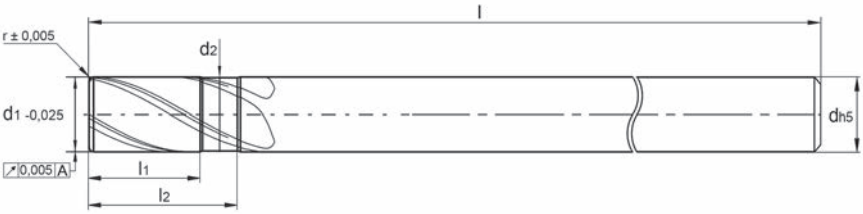


Solid carbide end mill with corner radius for HSC milling of nonferrous metals

☑ Short design with free length
☑ Finest ground, polished cutting edges and flutes
☑ μ-range precision
☑ Standard without coating
☑ On request with BCR coating
Ordering example: 556.0020.02.015BCR

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
556.0020.02.015	0,2	0,17	0,02	0,3	1,5	4,0	50	2	1,75	1,85	1,95	2,04	2,22
556.0030.02.015	0,3	0,27	0,02	0,5	1,5	4,0	50	2	1,75	1,85	1,95	2,04	2,22
556.0030.02.030					3,0				3,40	3,60	3,80	4,00	4,20
556.0040.02.020	0,4	0,34	0,02	0,6	2,0	4,0	50	2	2,10	2,24	2,37	2,48	2,70
556.0040.02.040					4,0				2,40	2,60	2,70	2,90	3,10
556.0050.05.025	0,5	0,44	0,05	0,7	2,5	4,0	50	2	2,63	2,78	2,92	3,05	3,29
556.0050.05.050					5,0				5,25	5,48	5,68	5,85	6,15
556.0050.05.075					7,5				7,85	8,14	8,38	8,59	8,94
556.0050.05.100					10,0				10,45	10,78	11,05	11,28	11,98
556.0060.05.030	0,6	0,54	0,05	1,0	3,0	4,0	50	2	3,15	3,33	3,48	3,62	3,87
556.0060.05.060					6,0				6,29	6,55	6,76	6,95	7,27
556.0080.05.040	0,8	0,74	0,05	1,2	4,0	4,0	50	2	4,20	4,41	4,58	4,74	5,02
556.0080.05.080					8,0				8,37	8,67	8,92	9,13	9,48
556.0100.10.050	1,0	0,95	0,10	1,6	5,0	4,0	50	2	5,22	5,46	5,65	5,83	6,13
556.0100.10.100					10,0				10,42	10,76	11,04	11,27	11,97
556.0100.10.150					15,0				15,59	16,00	16,33	16,78	18,22
556.0150.10.050	1,5	1,42	0,10	2,4	5,0	4,0	60	2	5,30	5,52	5,71	5,88	6,17
556.0150.10.100					10,0				10,49	10,81	11,07	11,30	11,98
556.0150.10.150					15,0				15,64	16,04	16,36	16,79	18,23
556.0150.10.200					20,0				20,78	21,24	21,71	22,56	-
556.0200.20.060	2,0	1,92	0,20	3,0	6,0	4,0	60	2	6,33	6,58	6,78	6,96	7,28
556.0200.20.120					12,0				12,55	12,90	13,19	13,43	14,48
556.0200.20.180					18,0				18,72	19,16	19,48	20,25	-
556.0200.20.240					24,0				24,87	25,38	26,15	27,18	-
556.0200.20.300					30,0				31,01	31,63	32,82	-	-
556.0300.20.090	3,0	2,82	0,20	3,5	9,0	4,0	60	2	9,63	9,90	10,13	10,33	-
556.0300.20.180					18,0				18,87	19,28	19,53	-	-
556.0300.20.300					30,0				31,13	31,68	-	-	-
556.0400.20.120	4,0	3,82	0,20	4,0	12,0	6,0	60	2	12,72	13,04	13,31	13,38	14,53
556.0400.20.240					24,0				25,01	25,25	26,20	27,23	-
556.0500.50.150	5,0	4,82	0,50	5,0	15,0	6,0	60	2	15,79	16,15	16,44	-	-
556.0500.50.300					30,0				31,13	31,67	-	-	-
556.0600.50.180	6,0	5,82	0,50	6,0	18,0	6,0	60	2	-	-	-	-	-
556.0600.50.300					30,0				-	-	-	-	-

556.T4

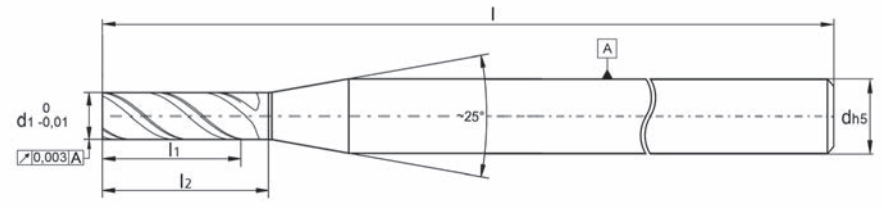


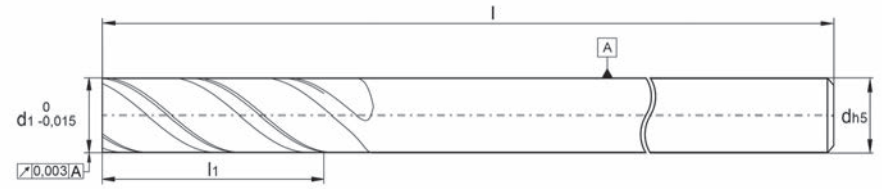
Solid carbide end mill with corner radius for HSC milling of nonferrous metals

☑ Short design with free length
☑ Finest ground, polished cutting edges and flutes
☑ μ-range precision
☑ Standard without coating
☑ On request with WAD coating
Ordering example:
556.T4.0800.050.160WAD

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
556.T4.0800.050.160	8,0	7,82	0,50	12,0	16,0	8,0	70	4	-	-	-	-	-
556.T4.0800.050.300			0,50		30,0				-	-	-	-	-
556.T4.0800.100.160			1,00		16,0				-	-	-	-	-
556.T4.0800.100.300			1,00		30,0				-	-	-	-	-
556.T4.1000.050.200	10,0	9,82	0,50	15,0	20,0	10,0	80	4	-	-	-	-	-
556.T4.1000.050.300			0,50		30,0				-	-	-	-	-
556.T4.1000.100.200			1,00		20,0				-	-	-	-	-
556.T4.1000.100.300			1,00		30,0				-	-	-	-	-
556.T4.1200.050.240	12,0	11,82	0,50	18,0	24,0	12,0	80	4	-	-	-	-	-
556.T4.1200.050.300			0,50		30,0				-	-	-	-	-
556.T4.1200.100.240			1,00		24,0				-	-	-	-	-
556.T4.1200.100.300			1,00		30,0				-	-	-	-	-

533N.F3





Solid carbide end mill for HSC milling

- ☑ With centre cut
- ☑ Easy cutting geometry
- ☑ Cost-optimised standard tool without free length
- ☑ Standard without coating
- ☑ On request with WAD coating

  Ordering example: 533N.F3.0500.000.150WAD

Order no	d1	l1	l2	d	l	Z
533N.F3.0100.000.030	1,0	3,0	3,6	4,0	45	3
533N.F3.0150.000.045	1,5	4,5	5,7	4,0	45	3
533N.F3.0200.000.060	2,0	6,0	7,0	4,0	45	3
533N.F3.0250.000.075	2,5	7,5	9,0	4,0	50	3
533N.F3.0300.000.090	3,0	9,0	11,0	4,0	50	3
533N.F3.0400.000.120	4,0	12,0	-	4,0	50	3
533N.F3.0500.000.150	5,0	15,0	18,0	6,0	50	3
533N.F3.0600.000.180	6,0	18,0	-	6,0	50	3
533N.F3.0800.000.200	8,0	20,0	-	8,0	60	3
533N.F3.1000.000.250	10,0	25,0	-	10,0	75	3
533N.F3.1200.000.300	12,0	30,0	-	12,0	75	3

IGUANA

Overview of the features
Spiralization evolution

Consistent geometric conditions across entire cutting edge

Less heat input

Extremely sharp

Shaft geometry with soft radius transitions for more stability and safety

Geometrical and dimensional accuracy

Very long service life

Selected types of carbide offer the highest possible quality as regards structure, hardness and breaking strength

Even softer cut

Improved chip removal due to spiralization

Expanded range of applications

Easy cutting geometry

Tool cutting free from clusters via laser processing

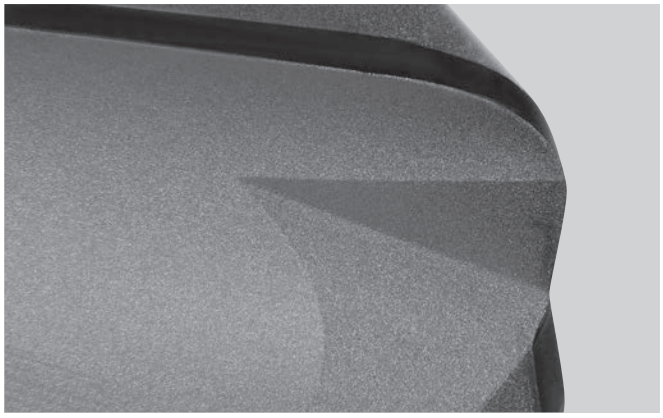
Better surface quality in comparison with the previous diamond coated tools

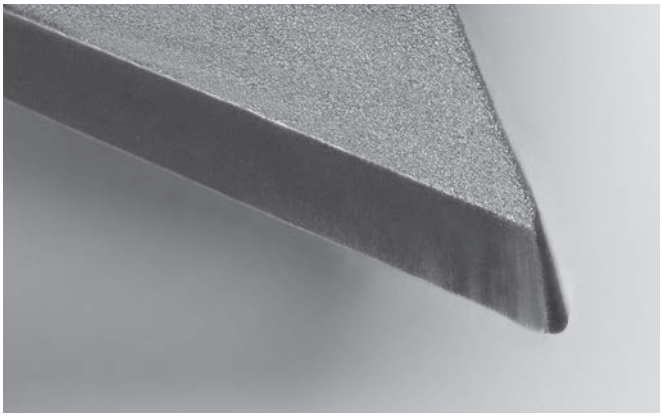
Diameter: 0 - 10 μm
Concentricity: max. 2 μm
Line sharpe: max. 3 μm

IGUANA Lasering of spiralized tools

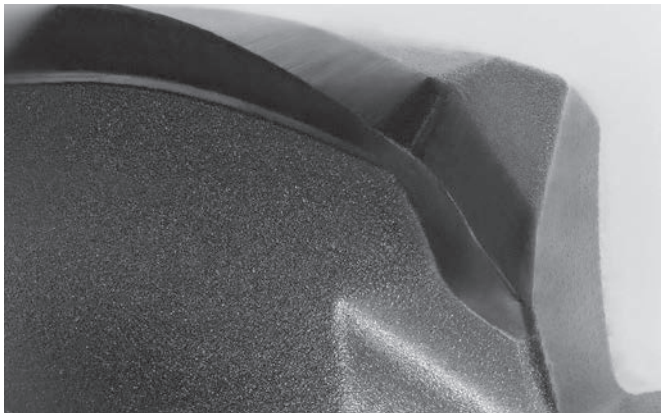
Optimizing of the lasering process makes it possible to integrate a spiralization in the manufacture of the tools and produce sharp cutting edges. In this process, spiralized tools can receive edge protection and sharp cutting edges.

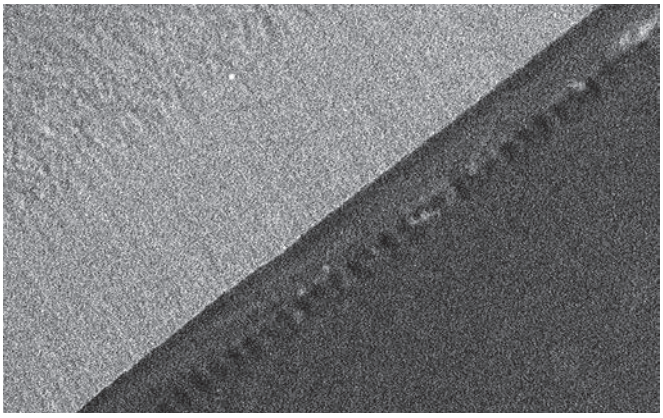
Series 930 - Spiralization with edge protection





Series 931 - Spiralization with sharp cutting edge





The specifically produced cutting edges have a sharpness of 0.73 μm. The cutting edge radii are also produced within a tolerance range of von $\pm$ 0.5 μm.

IGUANA: Diamond coated multi-cutters with laser-sharpened cutting edges

Solid carbide tools in the small diameter range

In various industries, many tools reach their limits when machining highly abrasive materials, non-ferrous metals, or copper. With the IGUANA line of mill cutters, ZECHA is making an evolutionary step in market for diamond coated micro-precision tools. These high-end tools are multi-cutters in the small diameter range with sharp cutting edges and a highly wear-resistant, sealed diamond coating - an absolute innovation.

The specific processing of the cutting edges by means of laser technology (R=1 μm) and the special cutting geometry reduce the cutting forces during use considerably. Optimized tool geometries combined with a sharp and sealed diamond coating lead to significantly higher life cycles. Additional advantages of laser processing are clusterless tool flutes, which produce an improved surface quality compared to conventional diamond coated tools. The potential of IGUANA tools opens up new opportunities for optimizing previously inefficient machining processes. For best results, the IGUANA line of mill cutters based on the initial 902, 912, and 915 series is available in different application-specific version.

IGUANA series

Flutes	Angled position	Spiralization	Two-sided laser processing	One-sided laser processing	Cooling	Patent	Series	Page
2		X		X			930.B2	82
2		X	X			X	935.B2	83
2		X		X			930.T2	85
3		X	X		X		931.T3	86
2		X	X			X	935.T2	87
3		X	X			X	935.T3	88
3		X		X			930.F3	92
3	X	-	X		X		918	95
3		X		X			975	97

* Patent EP 2540427B1: The 935.B2, 935.T2, and 935.T3 series shown are protected by Patent EP 2540427B1 in the following countries: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

IGUANA **IGUANA Milling Challenge**

www.zecha.de/de/iguana-milling-challenge

IGUANA

Overview of the features
Series 935 with spiralization - a global innovation

With typical mold-making free lengths

Spiralization

Minimized cutting pressure

Easy cutting geometry

Special cutting edge exposure

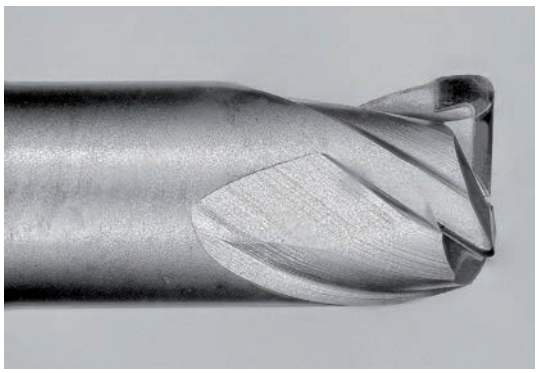
Sealed high-performance diamond coating, laser-processed on both sides

Low vibration

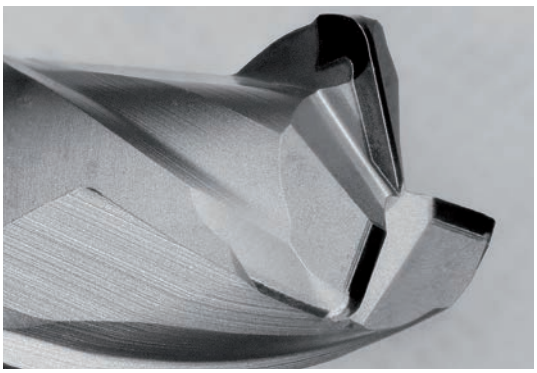
Patented flute exposure EP 2540427B1*

Finest microgeometry
Cutting edge rounding < 1 µm

Consistent geometric conditions across entire cutting edge
Linear form max. 3 µm
Concentric accuracy 2 µm



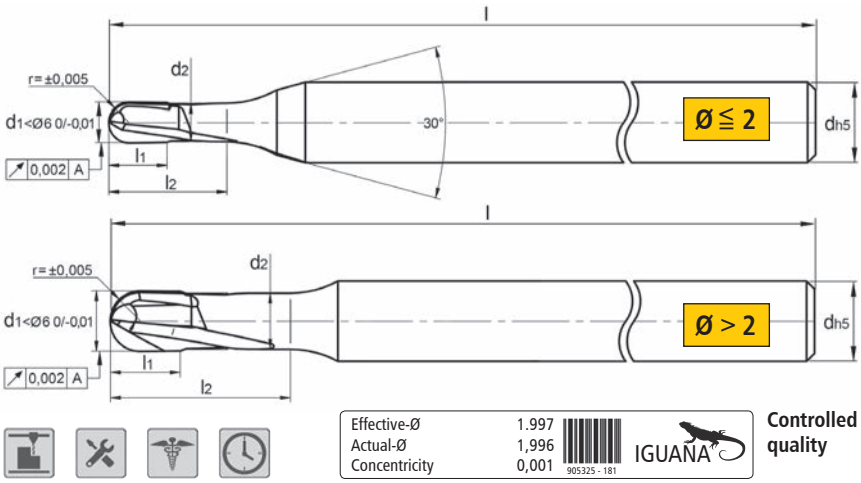
Double-sided, laser-sharpened cutting edge with short flute



One tooth over the center at 935.T3

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

930.B2



Effective-Ø 1.997
Actual-Ø 1,996
Concentricity 0,001
905325 - 181
IGUANA

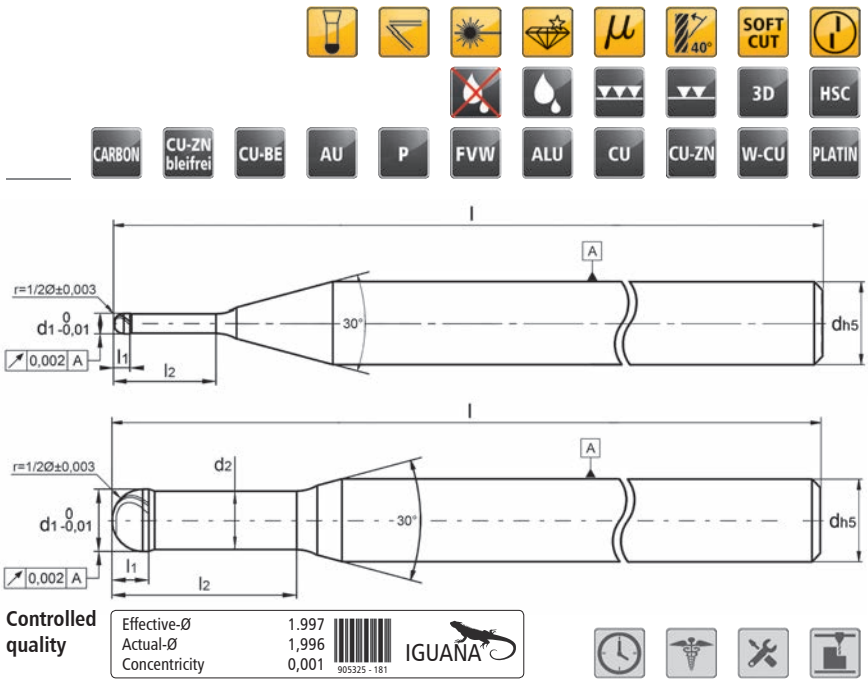
Controlled quality

High-end solid carbide ball nose end mill with edge protection

- ☑ Spiralization
- ☑ One-sided laser processing
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ Centre cut
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

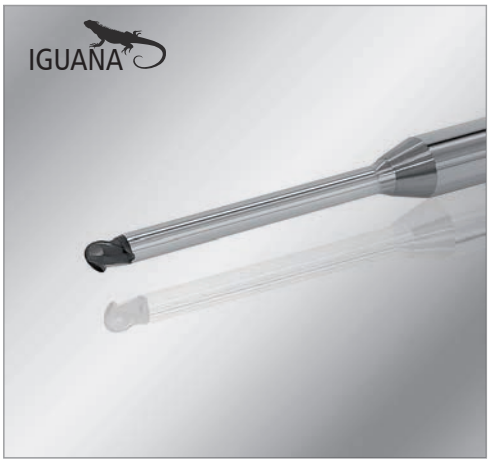
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1° 30'	2°	3°
930.B2.0050.025.015	0,5	0,46	0,25	0,5	1,5	4,0	50	2	2,12	2,30	2,47	2,62	2,89
930.B2.0100.050.030	1,0	0,94	0,50	1,0	3,0	4,0	50	2	3,82	4,07	4,29	4,48	4,82
930.B2.0150.075.045	1,5	1,40	0,75	1,5	4,5	4,0	50	2	5,42	5,64	5,84	6,02	6,34
930.B2.0200.100.060	2,0	1,90	1,00	2,0	6,0	4,0	50	2	6,95	7,20	7,41	7,60	7,94
930.B2.0300.150.090	3,0	2,80	1,50	3,0	9,0	4,0	50	2	10,27	10,54	10,78	10,99	11,36

935.B2



Controlled quality

Effective-Ø	1.997	
Actual-Ø	1,996	
Concentricity	0,001	905325 - 181



High-end solid carbide ball nose end mill

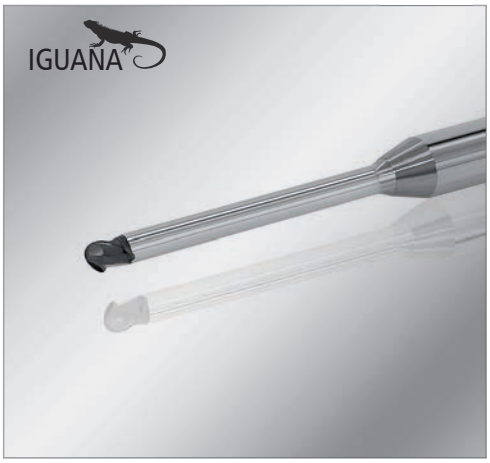
- ☑ Spiralization
- ☑ Two-sided laser processing
- ☑ Patented flute exposure EP 2540427B1*
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ Centre cut
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

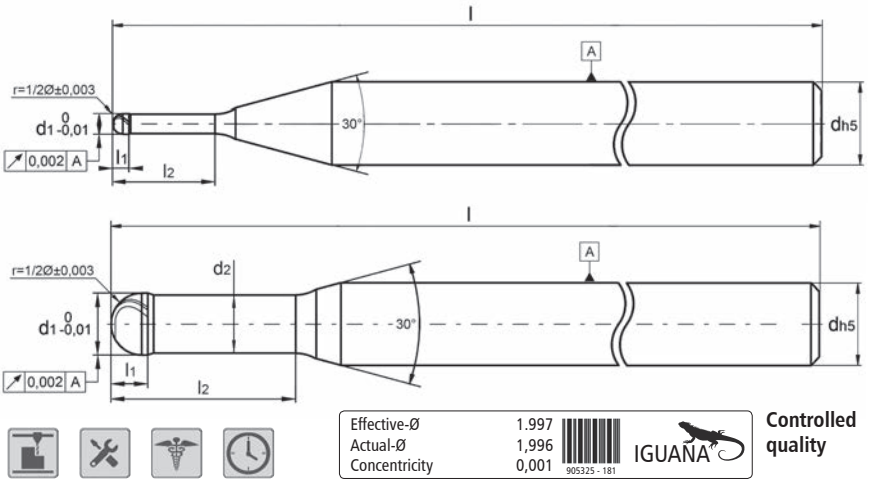
Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
935.B2.0030.015.008					0,8				1,14	1,19	1,23	1,28	1,36
935.B2.0030.015.010					1,0				1,35	1,40	1,46	1,50	1,60
935.B2.0030.015.015	0,3	0,24	0,15	0,35	1,5	4,0	50	2	1,87	1,94	2,01	2,07	2,18
935.B2.0030.015.020					2,0				2,39	2,48	2,56	2,63	2,75
935.B2.0030.015.030					3,0				3,43	3,54	3,64	3,73	3,88
935.B2.0040.020.008					0,8				1,14	1,18	1,23	1,27	1,35
935.B2.0040.020.012	0,4	0,34	0,20	0,35	1,2	4,0	50	2	1,56	1,62	1,67	1,72	1,82
935.B2.0040.020.020					2,0				2,39	2,47	2,55	2,62	2,75
935.B2.0040.020.040					4,0				4,46	4,60	4,71	4,81	4,96
935.B2.0050.025.008					0,8				1,13	1,18	1,22	1,26	1,34
935.B2.0050.025.020					2,0				2,39	2,47	2,55	2,61	2,74
935.B2.0050.025.025					2,5				2,91	3,00	3,09	3,17	3,31
935.B2.0050.025.030	0,5	0,44	0,25	0,35	3,0	4,0	50	2	3,43	3,54	3,63	3,72	3,86
935.B2.0050.025.040					4,0				4,46	4,59	4,70	4,80	4,96
935.B2.0050.025.050					5,0				5,49	5,64	5,77	5,88	6,21
935.B2.0050.025.060					6,0				6,53	6,69	6,83	6,89	7,46
935.B2.0060.030.009					0,9				1,24	1,28	1,33	1,37	1,45
935.B2.0060.030.030					3,0				3,42	3,53	3,63	3,71	3,86
935.B2.0060.030.040	0,6	0,54	0,30	0,40	4,0	4,0	50	2	4,46	4,59	4,70	4,80	4,96
935.B2.0060.030.060					6,0				6,52	6,69	6,83	6,94	7,46
935.B2.0060.030.090					9,0				9,61	9,82	9,97	10,35	11,21
935.B2.0080.040.012					1,2				1,55	1,60	1,65	1,70	1,79
935.B2.0080.040.020	0,8	0,74	0,40	0,50	2,0	4,0	50	2	2,38	2,46	2,53	2,60	2,72
935.B2.0080.040.040					4,0				4,46	4,58	4,69	4,79	4,95
935.B2.0080.040.080					8,0				8,58	8,77	8,93	9,19	9,95
935.B2.0100.050.015					1,5				1,83	1,89	1,95	2,00	2,10
935.B2.0100.050.030					3,0				3,39	3,50	3,59	3,68	3,82
935.B2.0100.050.050					5,0				5,47	5,62	5,74	5,85	6,19
935.B2.0100.050.060	1,0	0,95	0,50	0,80	6,0	4,0	50	2	6,50	6,67	6,80	6,92	7,44
935.B2.0100.050.080					8,0				8,56	8,76	8,91	9,18	9,94
935.B2.0100.050.100					10,0				10,61	10,83	11,07	11,49	12,44
935.B2.0100.050.150					15,0				15,73	16,03	16,62	17,26	18,69

See also next page ▶

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

935.B2



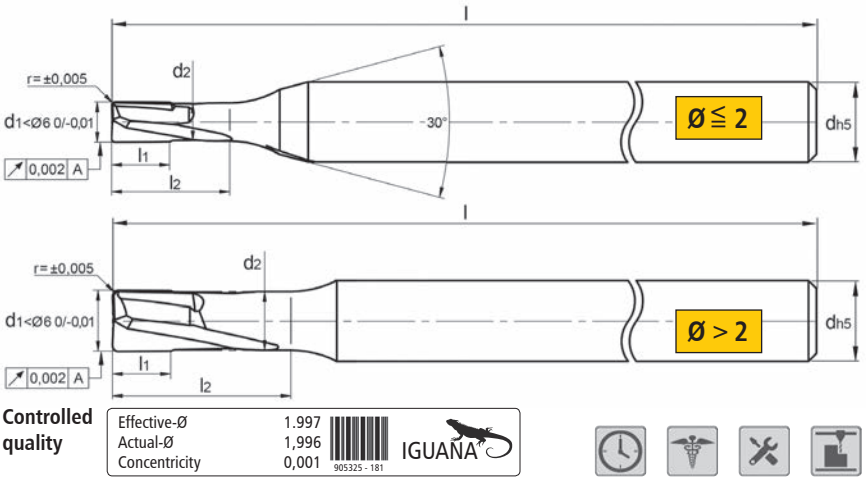


High-end solid carbide ball nose end mill

☑ Spiralization
☑ Two-sided laser processing
☑ Patented flute exposure EP 2540427B1*
☑ Easy cutting tool geometry
☑ Cutting pressure minimisation
☑ Centre cut
☑ With free length
☑ Neck length extension or shank cut (total length)
- on demand
☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30'	1°	1° 30'	2°	3°
935.B2.0150.075.025	1,5	1,42	0,75	1,05	2,5	4,0	50	2	2,93	3,01	3,08	3,14	3,26
935.B2.0150.075.050					5,0		50		5,51	5,65	5,76	5,86	6,20
935.B2.0150.075.080					8,0		50		8,60	8,78	8,93	9,19	9,95
935.B2.0150.075.100					10,0		50		10,65	10,86	11,08	11,50	12,45
935.B2.0150.075.150					15,0		50		15,76	16,04	16,63	17,27	18,70
935.B2.0150.075.200					20,0		60		20,86	21,40	22,19	23,04	-
935.B2.0200.100.030	2,0	1,92	1,00	1,30	3,0	4,0	50	2	3,44	3,52	3,60	3,67	3,79
935.B2.0200.100.060					6,0		50		6,54	6,68	6,81	6,91	7,43
935.B2.0200.100.080					8,0		50		8,25	8,54	8,85	9,18	9,93
935.B2.0200.100.120					12,0		50		12,69	12,92	13,29	13,80	14,93
935.B2.0200.100.180					18,0		60		18,81	19,25	19,96	20,72	-
935.B2.0200.100.240					24,0		60		24,92	25,68	26,63	27,64	-
935.B2.0300.150.060	3,0	2,82	1,50	1,80	6,0	4,0	60	2	6,68	6,79	6,89	6,91	7,46
935.B2.0300.150.090					9,0				9,74	9,90	10,00	10,37	-
935.B2.0300.150.180					18,0				18,91	19,29	20,00	-	-
935.B2.0300.150.240					24,0				24,85	25,72	-	-	-
935.B2.0400.200.080	4,0	3,82	2,00	2,50	8,0	6,0	60	2	8,71	8,85	8,87	9,20	9,93
935.B2.0400.200.120					12,0				12,79	12,86	13,32	13,81	14,93
935.B2.0400.200.240					24,0				24,85	25,71	26,65	27,66	-
935.B2.0500.250.100	5,0	4,82	2,50	3,00	10,0	6,0	60	2	10,74	10,90	11,08	11,49	-
935.B2.0500.250.150					15,0				15,84	16,06	16,64	-	-
935.B2.0500.250.250					25,0				25,88	26,78	-	-	-
935.B2.0600.300.120	6,0	5,82	3,00	3,50	12,0	6,0	60	2	-	-	-	-	-
935.B2.0600.300.180					18,0				-	-	-	-	-
935.B2.0600.300.300					30,0				-	-	-	-	-

930.T2



Controlled quality

Effective-Ø	1.997
Actual-Ø	1,996
Concentricity	0,001

905325 - 181

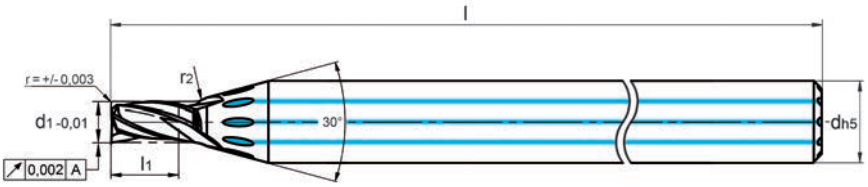
High-end solid carbide end mill with corner radius and edge protection

- ☑ Spiralization
- ☑ One-sided laser processing
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ Two teeth to centre
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no									Inclination angle				
	d1	d2	r	l1	l2	d	l	Z	30'	1°	1° 30'	2°	3°
930.T2.0050.005.015	0,5	0,46	0,05	0,5	1,5	4,0	50	2	2,13	2,33	2,50	2,65	2,93
930.T2.0100.010.030	1,0	0,94	0,10	1,0	3,0	4,0	50	2	3,84	4,10	4,33	4,53	4,88
930.T2.0150.010.045	1,5	1,40	0,10	1,5	4,5	4,0	50	2	5,45	5,69	5,90	6,09	6,44
930.T2.0200.020.060	2,0	1,90	0,20	2,0	6,0	4,0	50	2	6,99	7,26	7,49	7,69	8,06
930.T2.0300.030.090	3,0	2,80	0,30	3,0	9,0	4,0	50	2	10,31	10,61	10,87	11,10	-

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

931.T3



Effective-Ø	1.997	Controlled quality
Actual-Ø	1,996	
Concentricity	0,001	

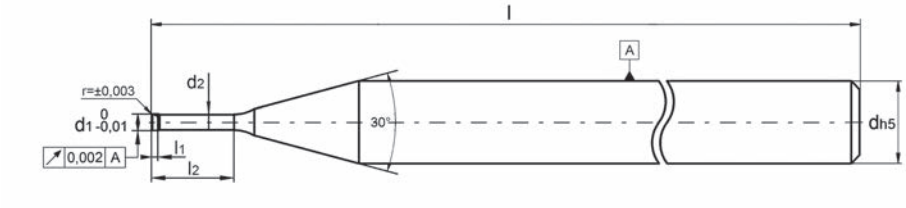
High-end solid carbide end mill with corner radius and coolant channels in shank

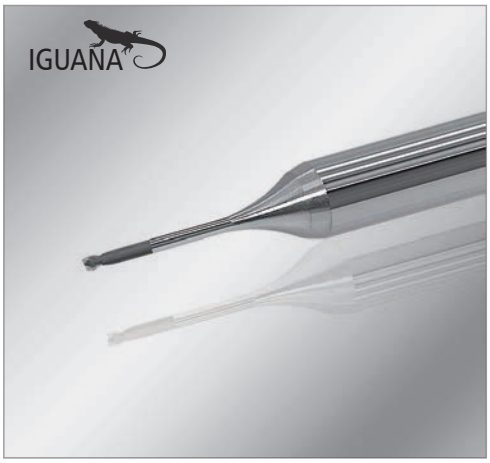
- ☑ Spiralization
- ☑ Two-sided laser processing
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ One tooth over the center
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	r	l1	d	l	Z	Inclination angle 30'	1°	1° 30'	2°	3°
931.T3.0050.003.010	0,5	0,03	1,0	4,0	39	3	1,47	1,58	1,66	1,74	1,87
931.T3.0080.003.016	0,8	0,03	1,6	4,0	39	3	2,12	2,24	2,34	2,42	2,57
931.T3.0100.003.020	1,0	0,03	2,0	4,0	39	3	2,54	2,68	2,78	2,87	3,03
931.T3.0120.003.024	1,2	0,03	2,4	4,0	39	3	2,86	3,00	3,11	3,21	3,37
931.T3.0150.003.030	1,5	0,03	3,0	4,0	39	3	3,49	3,65	3,77	3,87	4,04
931.T3.0200.005.040	2,0	0,05	4,0	4,0	39	3	4,54	4,71	4,85	4,96	5,19
931.T3.0300.005.050	3,0	0,05	5,0	6,0	50	3	6,62	6,83	6,98	7,11	7,69
931.T3.0400.005.060	4,0	0,05	6,0	6,0	50	3	8,69	8,92	9,09	9,40	10,19

SC

935.T2





Controlled quality

Effective-Ø	1.997
Actual-Ø	1,996
Concentricity	0,001

905325 - 181

IGUANA

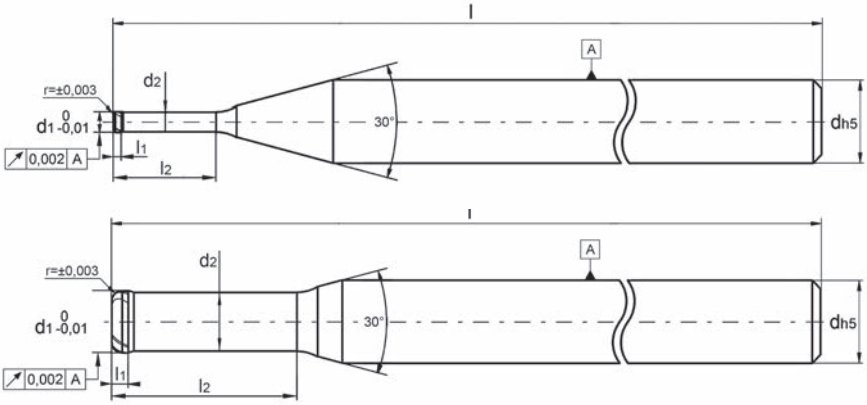
High-end solid carbide end mill with corner radius

- ☑ Spiralization
- ☑ Two-sided laser processing
- ☑ Patented flute exposure EP 2540427B1*
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ Two teeth to centre
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
935.T2.0050.005.008					0,8				1,14	1,19	1,24	1,29	1,38
935.T2.0050.005.025					2,5				2,91	3,02	3,11	3,19	3,33
935.T2.0050.005.050	0,5	0,44	0,05	0,30	5,0	4,0	50	2	5,50	5,66	5,78	5,89	6,22
935.T2.0050.005.075					7,5				8,07	8,27	8,42	8,63	9,35
935.T2.0050.005.100					10,0				10,64	10,86	11,08	11,51	12,47
935.T2.0060.005.009					0,9				1,25	1,30	1,36	1,40	1,50
935.T2.0060.005.030	0,6	0,54	0,05	0,30	3,0	4,0	50	2	3,43	3,55	3,65	3,73	3,89
935.T2.0060.005.060					6,0				6,53	6,70	6,84	6,90	7,47
935.T2.0080.005.012			0,05	0,30	1,2				1,56	1,63	1,69	1,74	1,85
935.T2.0080.005.040	0,8	0,74	0,05	0,30	4,0	4,0	50	2	4,47	4,60	4,72	4,82	4,97
935.T2.0080.005.080			0,05	0,30	8,0				8,59	8,79	8,86	9,20	9,97
935.T2.0080.020.040			0,20	0,45	4,0				4,47	4,60	4,72	4,82	4,97

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

935.T3



Effective-Ø 1.997
Actual-Ø 1.996
Concentricity 0,001

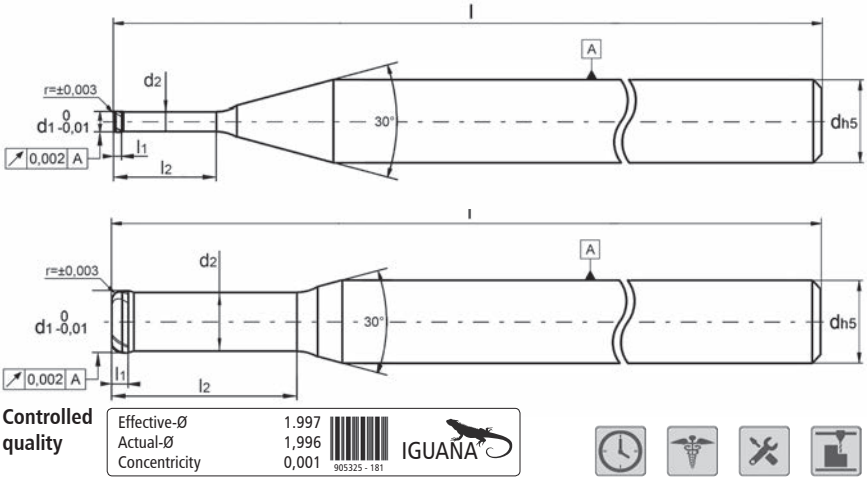
Controlled quality

High-end solid carbide end mill with corner radius

- ☑ Spiralization
- ☑ Two-sided laser processing
- ☑ Patented flute exposure EP 2540427B1*
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ One tooth over the center
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
935.T3.0100.010.015			0,10	0,40	1,5				1,85	1,92	1,99	2,06	2,17
935.T3.0100.010.050			0,10	0,40	5,0				5,48	5,64	5,77	5,88	6,21
935.T3.0100.010.060			0,10	0,40	6,0				6,51	6,69	6,83	6,89	7,46
935.T3.0100.010.100			0,10	0,40	10,0				10,62	10,85	11,08	11,50	12,46
935.T3.0100.010.150	1,0	0,95	0,10	0,40	15,0	4,0	50	3	15,74	16,04	16,63	17,27	18,71
935.T3.0100.020.015			0,20	0,50	1,5				1,84	1,92	1,98	2,04	2,16
935.T3.0100.020.050			0,20	0,50	5,0				5,48	5,63	5,76	5,87	6,21
935.T3.0100.020.100			0,20	0,50	10,0				10,62	10,85	11,08	11,50	12,46
935.T3.0100.020.150			0,20	0,50	15,0				15,74	16,04	16,63	17,27	18,71
935.T3.0150.010.025			0,10	0,40	2,5		50		2,95	3,05	3,13	3,21	3,35
935.T3.0150.010.050			0,10	0,40	5,0		50		5,53	5,68	5,80	5,91	6,23
935.T3.0150.010.100			0,10	0,40	10,0		50		10,67	10,88	11,09	11,52	12,48
935.T3.0150.010.150			0,10	0,40	15,0		50		15,77	16,05	16,65	17,29	18,73
935.T3.0150.010.200			0,10	0,40	20,0		60		20,87	21,41	22,20	23,06	-
935.T3.0150.015.025			0,15	0,45	2,5		50		2,95	3,05	3,13	3,21	3,34
935.T3.0150.015.050			0,15	0,45	5,0		50		5,53	5,68	5,80	5,91	6,23
935.T3.0150.015.100	1,5	1,42	0,15	0,45	10,0	4,0	50	3	10,67	10,88	11,09	11,52	12,48
935.T3.0150.015.150			0,15	0,45	15,0		50		15,77	16,05	16,65	17,29	18,73
935.T3.0150.015.200			0,15	0,45	20,0		60		20,87	21,41	22,20	23,06	-
935.T3.0150.020.025			0,20	0,50	2,5		50		2,95	3,04	3,13	3,20	3,34
935.T3.0150.020.050			0,20	0,50	5,0		50		5,53	5,68	5,80	5,90	6,22
935.T3.0150.020.100			0,20	0,50	10,0		50		10,66	10,88	11,09	11,52	12,47
935.T3.0150.020.150			0,20	0,50	15,0		50		15,77	16,05	16,65	17,29	18,72
935.T3.0150.020.200			0,20	0,50	20,0		60		20,87	21,41	22,20	23,05	-

935.T3



Controlled quality

Effective-Ø	1.997
Actual-Ø	1,996
Concentricity	0,001

905325 - 181

IGUANA

High-end solid carbide end mill with corner radius

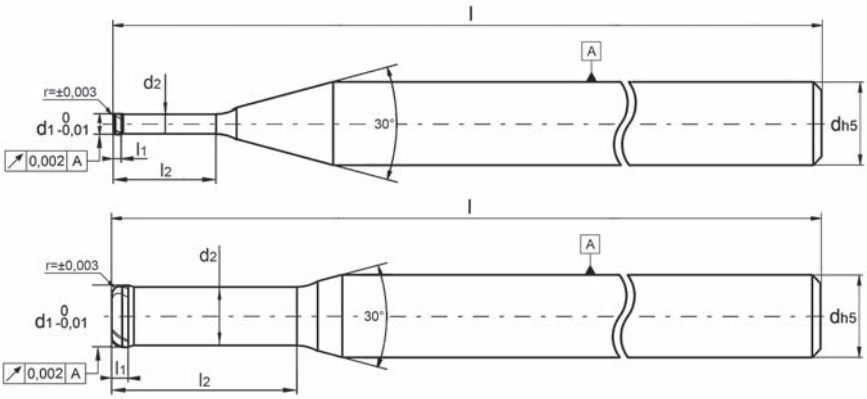
- ☑ Spiralization
- ☑ Two-sided laser processing
- ☑ Patented flute exposure EP 2540427B1*
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ One tooth over the center
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
935.T3.0200.010.030			0,10	0,40	3,0		50		3,47	3,58	3,67	3,76	3,91
935.T3.0200.010.060			0,10	0,40	6,0		50		6,56	6,73	6,86	6,90	7,48
935.T3.0200.010.120			0,10	0,40	12,0		50		12,71	12,84	13,32	13,83	14,98
935.T3.0200.010.180			0,10	0,40	18,0		50		18,83	19,27	19,98	20,75	-
935.T3.0200.010.240			0,10	0,40	24,0		70		24,93	25,70	26,65	27,67	-
935.T3.0200.010.300			0,10	0,40	30,0		70		31,02	32,13	33,32	-	-
935.T3.0200.020.030			0,20	0,50	3,0		50		3,47	3,57	3,66	3,75	3,89
935.T3.0200.020.060			0,20	0,50	6,0		50		6,56	6,72	6,86	6,90	7,47
935.T3.0200.020.100			0,20	0,50	10,0		50		10,33	10,70	11,09	11,52	12,47
935.T3.0200.020.120			0,20	0,50	12,0		50		12,71	12,84	13,31	13,82	14,97
935.T3.0200.020.180			0,20	0,50	18,0		50		18,83	19,27	19,98	20,75	-
935.T3.0200.020.240			0,20	0,50	24,0		70		24,93	25,70	26,65	27,67	-
935.T3.0200.020.300	2,0	1,92	0,20	0,50	30,0	4,0	70	3	31,02	32,12	33,31	-	-
935.T3.0200.030.030			0,30	0,60	3,0		50		3,46	3,57	3,66	3,74	3,88
935.T3.0200.030.060			0,30	0,60	6,0		50		6,56	6,72	6,85	6,90	7,47
935.T3.0200.030.120			0,30	0,60	12,0		50		12,71	12,94	13,31	13,82	14,97
935.T3.0200.030.180			0,30	0,60	18,0		50		18,83	19,27	19,98	20,74	-
935.T3.0200.030.240			0,30	0,60	24,0		70		24,93	25,69	26,64	27,67	-
935.T3.0200.030.300			0,30	0,60	30,0		70		31,02	32,12	33,31	-	-
935.T3.0200.050.030			0,50	0,80	3,0		50		3,46	3,56	3,64	3,72	3,86
935.T3.0200.050.060			0,50	0,80	6,0		50		6,55	6,71	6,84	6,89	7,46
935.T3.0200.050.120			0,50	0,80	12,0		50		12,70	12,93	13,31	13,81	14,96
935.T3.0200.050.180			0,50	0,80	18,0		50		18,82	19,26	19,97	20,74	-
935.T3.0200.050.240			0,50	0,80	24,0		70		24,93	25,69	26,64	27,66	-
935.T3.0200.050.300			0,50	0,80	30,0		70		31,02	32,12	33,31	-	-

See also next page ▶

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

935.T3



Effective-Ø 1.997
Actual-Ø 1,996
Concentricity 0,001
905325 - 181
IGUANA

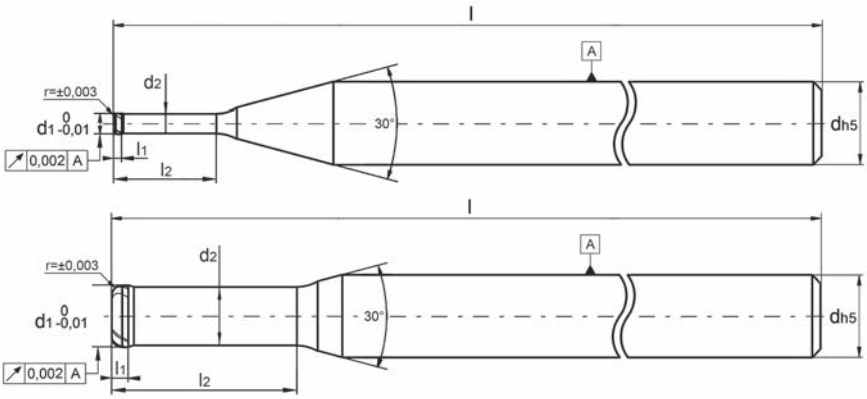
Controlled quality

High-end solid carbide end mill with corner radius

- ☑ Spiralization
- ☑ Two-sided laser processing
- ☑ Patented flute exposure EP 2540427B1*
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ One tooth over the center
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
935.T3.0300.010.060			0,10	0,40	6,0				6,71	6,85	6,70	6,95	7,53
935.T3.0300.010.090			0,10	0,40	9,0				9,77	9,68	10,03	10,42	-
935.T3.0300.010.180			0,10	0,40	18,0				18,94	19,32	20,03	-	-
935.T3.0300.010.240			0,10	0,40	24,0				24,86	25,75	-	-	-
935.T3.0300.020.060			0,20	0,50	6,0				6,71	6,84	6,70	6,95	7,52
935.T3.0300.020.080			0,20	0,50	8,0				8,31	8,60	8,92	9,26	10,02
935.T3.0300.020.090			0,20	0,50	9,0				9,34	9,67	10,03	10,41	-
935.T3.0300.020.160			0,20	0,50	16,0				16,58	17,17	17,81	-	-
935.T3.0300.020.180			0,20	0,50	18,0				18,94	19,32	20,03	-	-
935.T3.0300.020.240	3,0	2,82	0,20	0,50	24,0	4,0	60	3	24,86	25,75	-	-	-
935.T3.0300.030.060			0,30	0,60	6,0				6,70	6,84	6,69	6,95	7,52
935.T3.0300.030.090			0,30	0,60	9,0				9,77	9,94	10,03	10,41	-
935.T3.0300.030.180			0,30	0,60	18,0				18,93	19,32	20,03	-	-
935.T3.0300.030.240			0,30	0,60	24,0				24,86	25,74	-	-	-
935.T3.0300.050.060			0,50	0,80	6,0				6,70	6,83	6,69	6,94	7,51
935.T3.0300.050.090			0,50	0,80	9,0				9,76	9,94	10,02	10,40	-
935.T3.0300.050.160			0,50	0,80	16,0				16,58	17,17	17,80	-	-
935.T3.0300.050.180			0,50	0,80	18,0				18,93	19,31	20,02	-	-
935.T3.0300.050.240			0,50	0,80	24,0				24,86	25,74	-	-	-
935.T3.0400.020.080			0,20	0,70	8,0				8,75	8,91	8,92	9,26	10,02
935.T3.0400.020.120			0,20	0,70	12,0				12,83	12,89	13,36	13,87	15,02
935.T3.0400.020.240			0,20	0,70	24,0				24,86	25,75	26,70	27,72	-
935.T3.0400.030.080			0,30	0,80	8,0				8,75	8,91	8,92	9,26	10,02
935.T3.0400.030.120	4,0	3,82	0,30	0,80	12,0	6,0	60	3	12,83	12,89	13,36	13,87	15,02
935.T3.0400.030.240			0,30	0,80	24,0				24,86	25,74	26,69	27,72	-
935.T3.0400.050.080			0,50	1,00	8,0				8,74	8,90	8,91	9,25	10,01
935.T3.0400.050.120			0,50	1,00	12,0				12,82	12,88	13,36	13,86	15,01
935.T3.0400.050.240			0,50	1,00	24,0				24,86	25,74	26,69	27,71	-

935.T3



Controlled quality

Effective-Ø	1.997	
Actual-Ø	1,996	
Concentricity	0,001	

905325 - 181

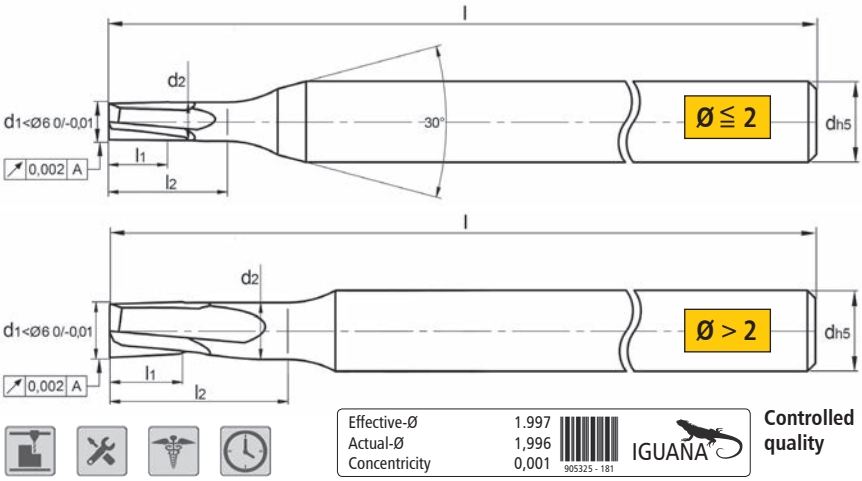
High-end solid carbide end mill with corner radius

- ☑ Spiralization
- ☑ Two-sided laser processing
- ☑ Patented flute exposure EP 2540427B1*
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ One tooth over the center
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	d2	r	l1	l2	d	l	Z	Inclination angle 30′	1°	1° 30′	2°	3°
935.T3.0500.030.080	5,0	4,82	0,30	0,80	8,0	6,0	60	3	8,75	8,91	8,92	9,26	10,02
935.T3.0500.030.150			0,30	0,80	15,0				15,88	16,10	16,69	-	-
935.T3.0500.030.250			0,30	0,80	25,0				25,89	26,82	-	-	-
935.T3.0500.050.080			0,50	1,00	8,0				8,74	8,90	8,91	9,25	10,01
935.T3.0500.050.150			0,50	1,00	15,0				15,88	16,10	16,69	-	-
935.T3.0500.050.250			0,50	1,00	25,0				25,89	26,81	-	-	-
935.T3.0600.020.100	6,0	5,82	0,20	0,70	10,0	6,0	60	3	-	-	-	-	-
935.T3.0600.020.180			0,20	0,70	18,0				-	-	-	-	-
935.T3.0600.020.300			0,20	0,70	30,0				-	-	-	-	-
935.T3.0600.030.100			0,30	0,80	10,0				-	-	-	-	-
935.T3.0600.030.180			0,30	0,80	18,0				-	-	-	-	-
935.T3.0600.030.300			0,30	0,80	30,0				-	-	-	-	-
935.T3.0600.050.100			0,50	1,00	10,0				-	-	-	-	-
935.T3.0600.050.180			0,50	1,00	18,0				-	-	-	-	-
935.T3.0600.050.250			0,50	1,00	25,0				-	-	-	-	-
935.T3.0600.050.300			0,50	1,00	30,0				-	-	-	-	-

*Protected in: DE, AT, CH, LIE, CZ, FR, GB, IT, NL, PL, PT, TR

930.F3



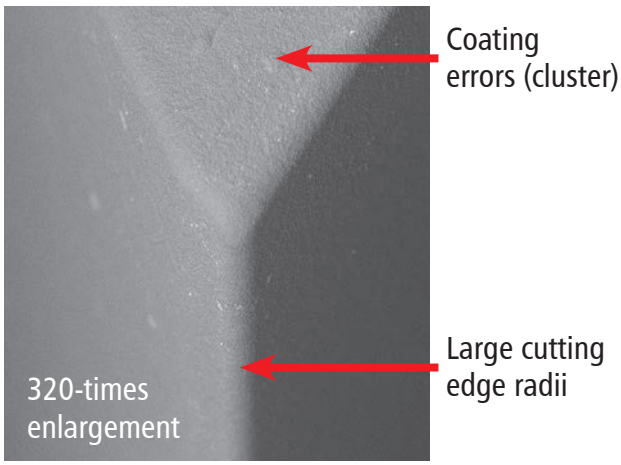
High-end solid carbide micro end mill with edge protection

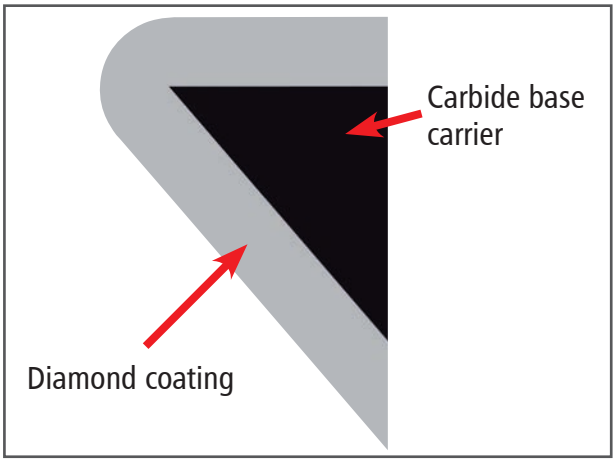
- ☑ Spiralization
- ☑ One-sided laser processing
- ☑ Easy cutting tool geometry
- ☑ Cutting pressure minimisation
- ☑ Three teeth to centre
- ☑ With free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	d2	l1	l2	d	l	Z	Inclination angle 30'	1°	1° 30'	2°	3°
930.F3.0100.000.030	1,0	0,94	2,0	3,0	4,0	50	3	4,85	5,11	5,34	5,54	5,90
930.F3.0150.000.045	1,5	1,40	3,0	4,5	4,0	50	3	5,45	5,70	5,92	6,11	6,45
930.F3.0200.000.060	2,0	1,90	4,0	6,0	4,0	50	3	7,00	7,27	7,51	7,72	8,08
930.F3.0300.000.090	3,0	2,80	6,0	9,0	4,0	50	3	10,32	10,62	10,89	11,12	-
930.F3.0400.000.120	4,0	3,80	8,0	12,0	6,0	60	3	13,41	13,75	14,04	13,30	15,02
930.F3.0600.000.180	6,0	5,90	12,0	18,0	6,0	60	3	-	-	-	-	-

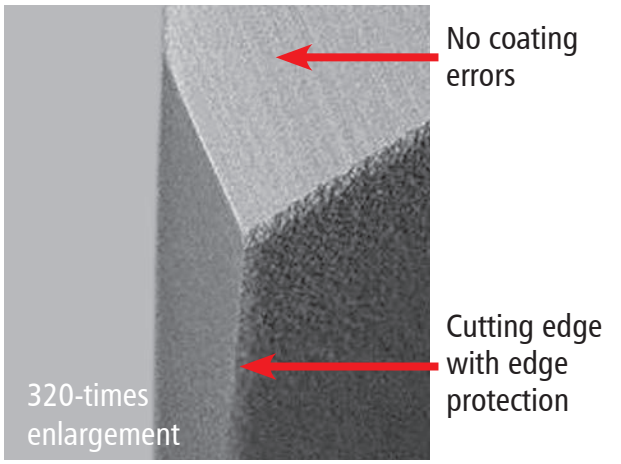
The evolution of diamond coating

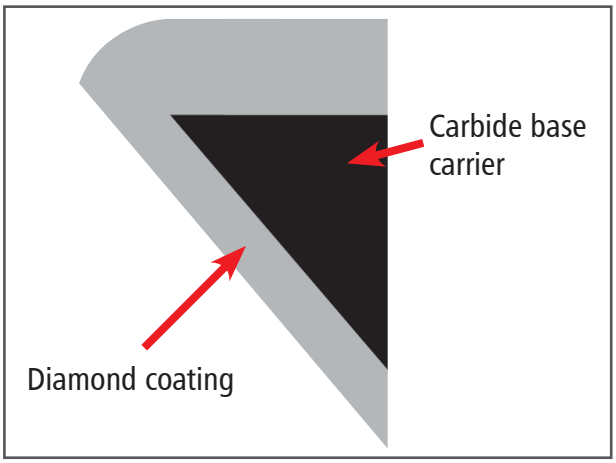
Traditional, diamond coated tools



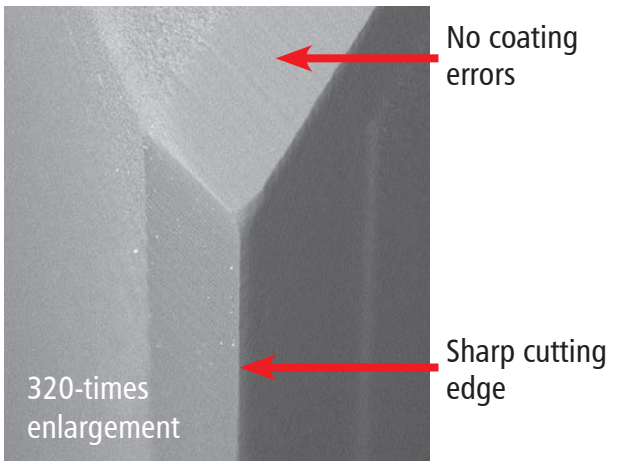


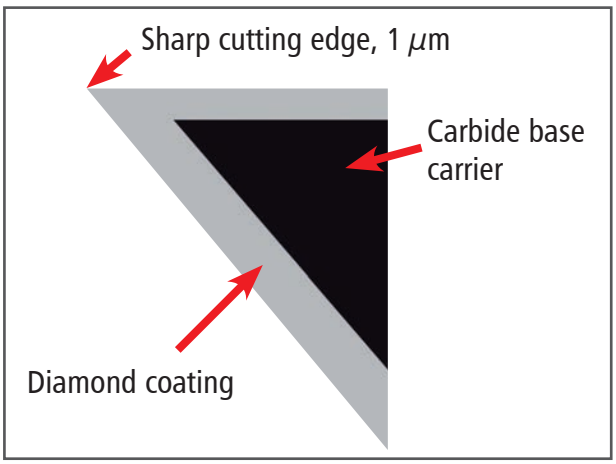
IGUANA - Laser processed tools with edge protection 930





IGUANA - Diamond coated, laser processed tools 918, 931, 935





IGUANA

Overview of the features
Shaft cooling evolution

One tooth over the center

Extremely sharp

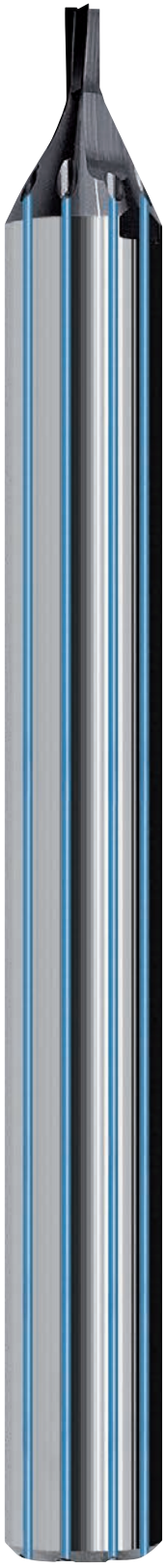
Easy cutting geometry

Shaft geometry with soft radius transitions for more stability and safety

Geometrical and dimensional accuracy

Very long service life

Selected types of carbide offer the highest possible quality as regards structure, hardness and breaking strength



Multi-cutter in the smallest bore sector

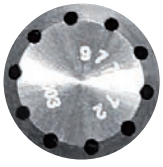
Tool cutting free from clusters via laser processing

Better surface quality in comparison with the previous diamond coated tools

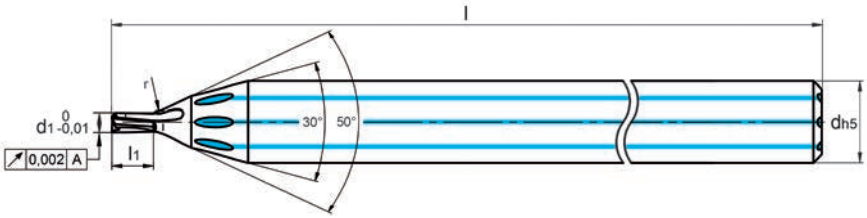
Multiple internal cooling channels through the shaft

Diameter: 0 - 10 μm
Concentricity: max. 2 μm
Line sharpe: max. 3 μm

SC



CARBON | CU-ZN bleifrei | CU-BE | AU | P | FVW | ALU | CU | CU-ZN | W-CU | PLATIN



Controlled quality

Effective-Ø	1.997	
Actual-Ø	1,996	
Concentricity	0,001	

905325 - 181 IGUANA

High-end solid carbide end mill with coolant channels in shank

- ☑ Angled position of the flutes
- ☑ Two-sided laser processing
- ☑ One tooth over the center
- ☑ Without free length
- ☑ Neck length extension or shank cut (total length) - on demand
- ☑ Concentric accuracy: 0.002 mm ≤Ø 6.0 mm
- ☑ Linear form max. 3 µm ≤Ø 6.0 mm

Order no	d1	l1	d	l	Z	Inclination angle 30'	1°	1° 30'	2°	3°
918.F3.0040.000.008	0,4	0,8	4,0	39	3	1,11	1,27	1,41	1,53	1,75
918.F3.0050.000.010	0,5	1,0	4,0	39	3	1,34	1,51	1,66	1,79	2,02
918.F3.0070.000.014	0,7	1,4	4,0	39	3	1,80	1,99	2,15	2,29	2,55
918.F3.0080.000.016	0,8	1,6	4,0	39	3	2,02	2,22	2,39	2,54	2,80
918.F3.0100.000.020	1,0	2,0	4,0	39	3	2,46	2,68	2,86	3,02	3,30
918.F3.0120.000.024	1,2	2,4	4,0	39	3	2,90	3,14	3,33	3,50	3,80
918.F3.0150.000.030	1,5	3,0	4,0	39	3	3,56	3,81	4,02	4,20	4,52
918.F3.0160.000.032	1,6	3,2	4,0	39	3	3,77	4,04	4,25	4,43	4,76
918.F3.0200.000.040	2,0	4,0	4,0	39	3	4,63	4,92	5,15	5,35	5,70

SC

IGUANA

ZECHA

Overview of the features
Twist drill evolution

Degressive helix 30° to 12 °
results in improved chip removal

Extremely sharp

Easy cutting geometry

Shaft geometry with soft radius transitions for more stability and safety

Geometrical and dimensional accuracy

Very long service life

Selected types of carbide offer the highest possible quality as regards structure, hardness and breaking strength

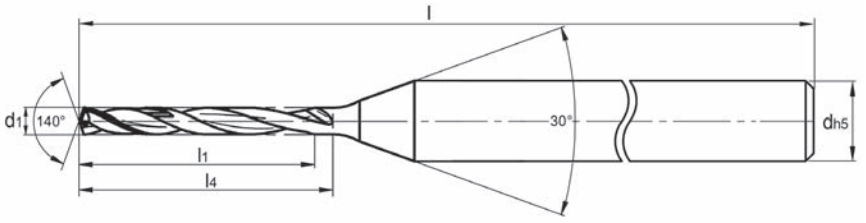
Face 4 surfaces and diameter laser-processed to measure

Due to laser processing concentricity max 2 μm

Tool cutting free from clusters via laser processing

Better surface quality in comparison with the previous diamond coated tools

Diameter: 0 - 10 μm
Concentricity: max. 2 μm
Line sharpe: max. 3 μm



Controlled quality

Effective-Ø	1.997	
Actual-Ø	1,996	
Concentricity	0,001	905325 - 181

IGUANA

d1 +0,005 / –0,000

Order no	d1	l1	l4	d	l
975.0080.06	0,8	6,5	6,8	3,0	38
975.0090.06	0,9	7,0	7,3	3,0	38
975.0100.06	1,0	9,0	9,3	3,0	38
975.0110.06	1,1	9,0	9,3	3,0	38
975.0120.06	1,2	10,0	10,3	3,0	38
975.0130.06	1,3	10,0	10,3	3,0	38
975.0140.06	1,4	11,5	11,8	3,0	38
975.0150.06	1,5	12,0	12,3	3,0	38
975.0160.06	1,6	12,0	12,3	3,0	38
975.0170.06	1,7	12,0	12,3	3,0	38
975.0180.06	1,8	12,0	12,3	3,0	38
975.0190.06	1,9	12,0	12,3	3,0	38
975.0200.06	2,0	12,0	12,3	3,0	38

Solid carbide micro twist drill with digressive helix and edge protection

- ☑ One-sided laser processing
- ☑ Cutting: RH, degressive
- ☑ Point relief: 4 facet - 140°
- ☑ X-point: self-centering
- ☑ Tools with polished cutting edges and flutes
- ☑ Reduction of the process heat
- ☑ Neck length extension or shank cut (total length) - on demand

Quality warranty

Quality assurance

ZECHA manufactures products that meet the highest quality demands. As an accredited company according to DIN EN ISO 9001:2015 quality management is firmly embedded in all processes at ZECHA and this ensures a consistent high level of quality.

ID number

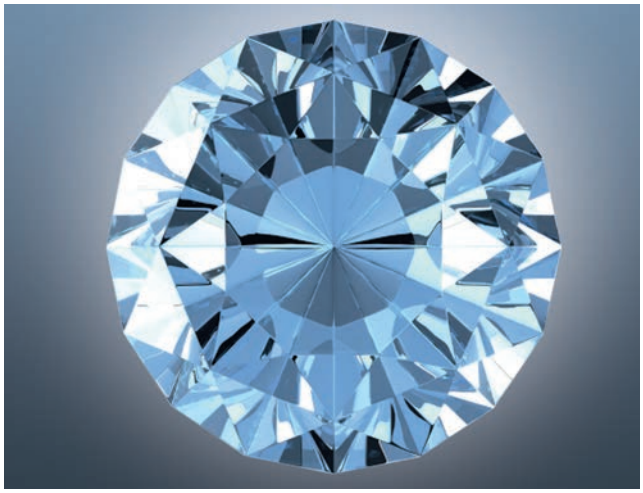
All our tools undergo strict inspection in which all the relevant data is entered in a protocol. The identification number of the tool along with the production batch is engraved onto the base of the shank by laser so that every tool can be individually identified and can be precisely reproduced years later. The optimum concentricity is retained, in contrast to a lasered shank.

Label

Cutters of our High-End Line feature extremely low tolerances and maximum life cycles for process-safe milling.
The tools pass through a 100% quality control. The actual measurements of each tool are marked on the packaging label.

Diamond coating

Diamond is extremely hard and thus especially suitable as a coating of highly stressed tools. In order to be able to guarantee the high quality of our diamond coated cutters, we work closely with renowned coating experts. The diamond coating is perfectly matched to the geometry and the material properties of our tools as well as to the milling of abrasive materials. For diamond coated tools we use specially suitable solid carbides.



Product world

Catalog

Image

Drills catalog

Micro cutting tools

Graphite milling tools

Steel milling tools

Blanking and forming tools

Comprehensive flyer

Product world of mould making

Product world of drills

Tools for medical technology

Blanking and forming

Individual flyer

MARLIN

IGUANA

PEACOCK

Twist drills

TORX®

Plate manufacture

Dental

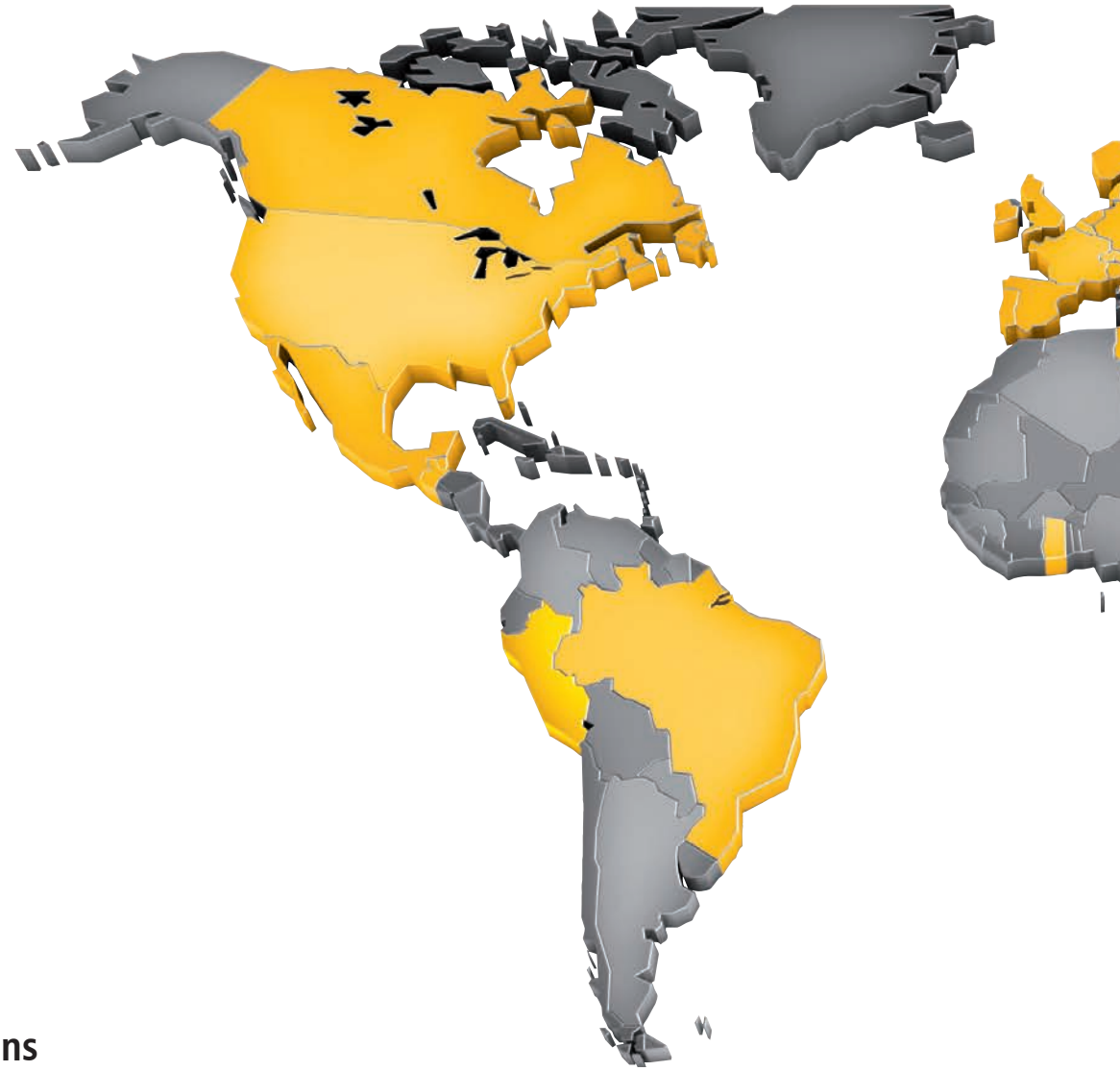
KINGFISHER

SEAGULL®

QUEEN BEE

TORX®: Registered trademark of third parties

Tools in global use



General instructions

We reserve the right to make technical changes to our products and our delivery programme in the course of further development as well as printing errors and mistakes.

Our General Terms and Conditions of Business can also be found in the internet:
http://www.zecha.de/en/terms-cond

www.zecha.de

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