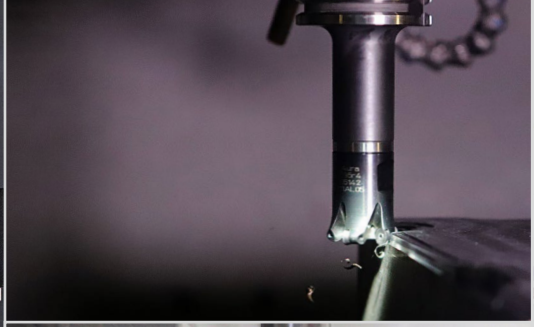
Milling - the Main Catalog

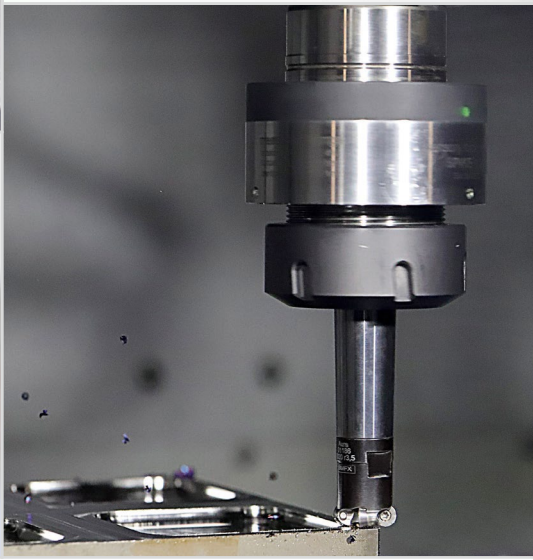
AURA®
FRÄSTECHNIK GMBH

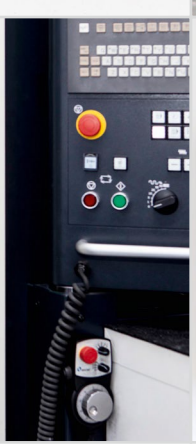
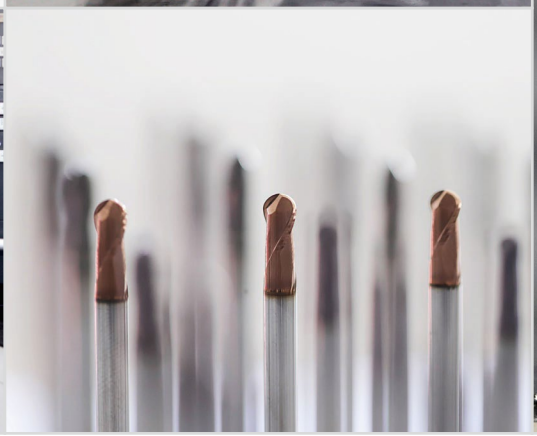
tools. simply. different.

Plan. Develop. Realize.

AURA® is a tool manufacturer specialised in the development of milling tools. As a team of applications engineers, sales representatives, engineers and software developers we are able to develop and to distribute our products in hardware and software ourselves.
Our products are tested and perfected at our in-house milling laboratory where we gained much years of milling experience.
We are focused on tool development for tool making, mould construction and die making and due to the proximity to our customers, we were able to gather cross-sector experience at HSC machining.
We optimize our customer projects with our tooling and the gathered expertise from milling tools, strategies, CAM programming, workpiece and tool clamping. By practical machining of real components we reduce the processing times and tool wear and raise accuracy and surface qualities.

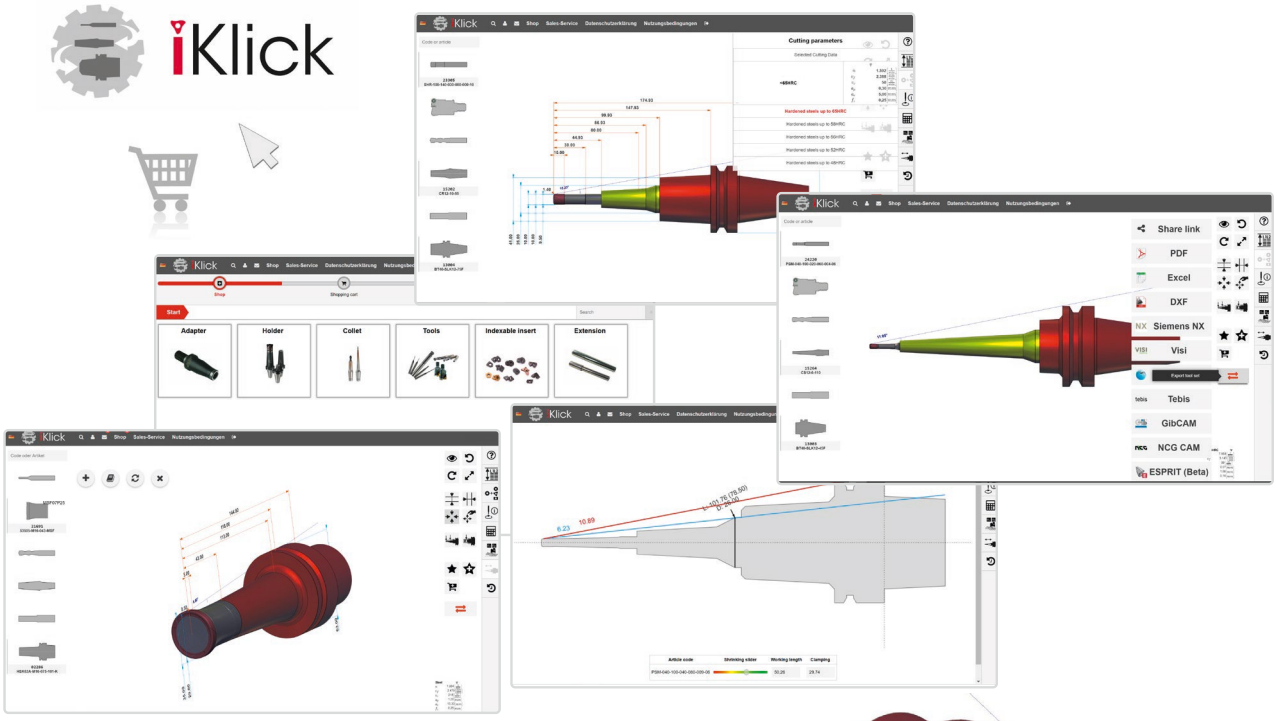
AURA® Training center

Benefit from our seminars and workshops.
In our training rooms we determine a solution for your application together with you. We share our constantly growing knowledge with our customers and train them daily at our training center.

It`s very important for us that our sales representatives come „from the machine" to practically assistance on site at our customers projects. We share our experience with you and your employees and give a special attention to your individual needs.

By the connection to our machining centers, milling laboratory and the CAM working places we are able to offer you a live demonstration of the programming and milling of your components. As well we implement new strategies on your machines on site.

By planning the development and implementation we can focus on your tasks and optimize and exploit the specifically determined potentials.



Select - combine - export - order... and mill

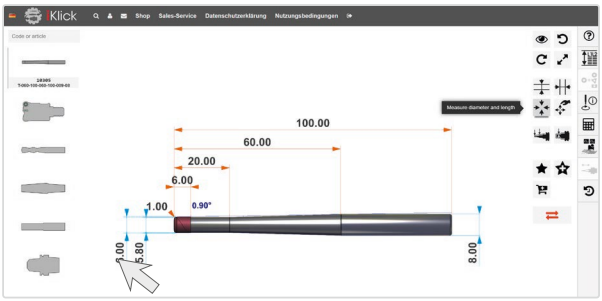
With AURA® iKlick you can choose your tool and combine it with the matching tool holder.

After checking the holder geometries with the calculated shaft profile you can order the complete set at our AURA iKlick shop.

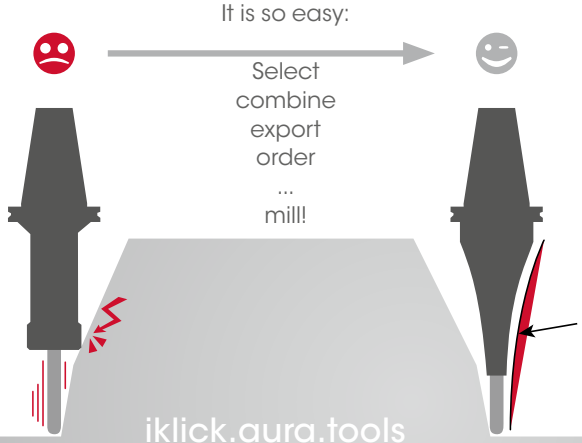
At the iKlick shop you will find your individual prices, add users of your company, manage budgets and show completed orders.

Also you can export complete tool sets into different CAM systems and take the cutting data for the machining material. AURA iKlick is basend on modern web technologies and can be used on each PC, smartphone or tablet where a browser is executed.

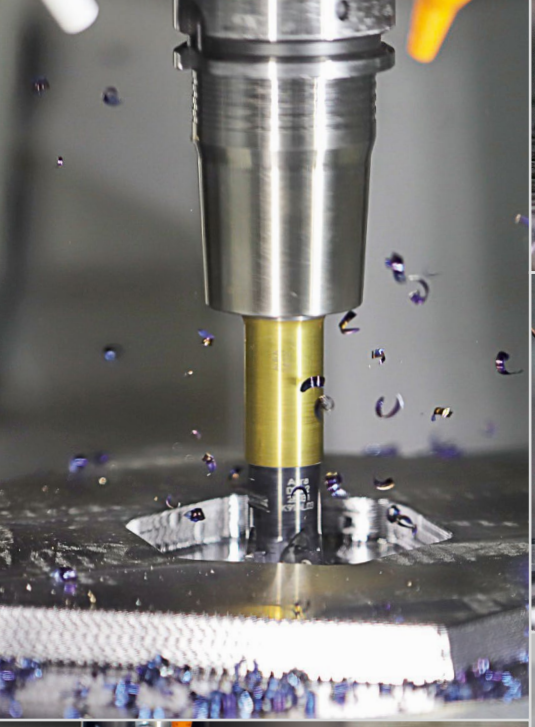
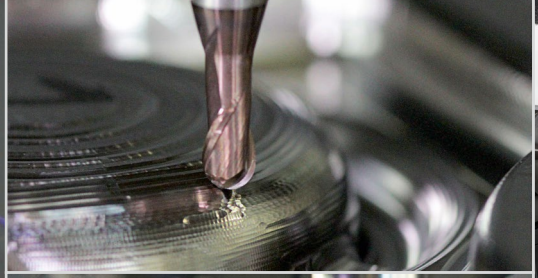
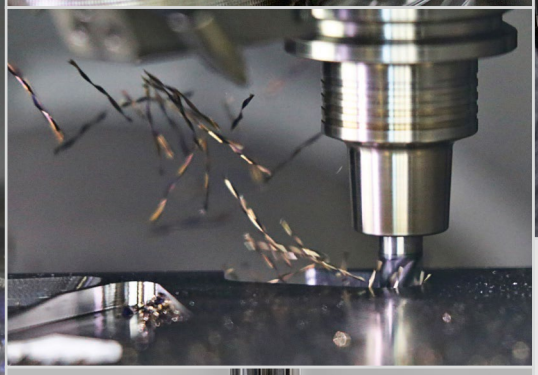
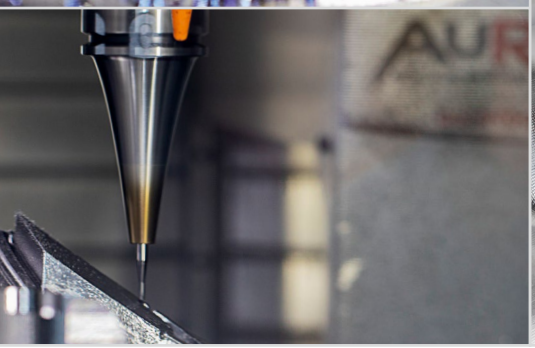
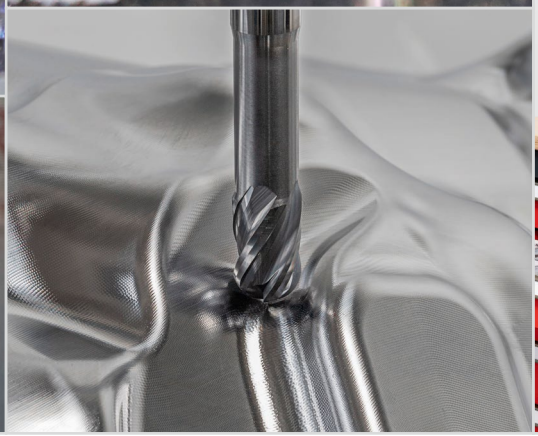
Become our customer and benefit from all the advantages of our unique software.

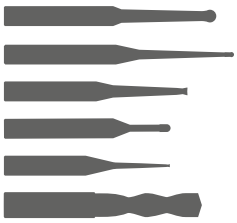


- Cutting data
- geometry
- 3-D preview
- virtual shrinking
- Shop
- tool measurement
- export complete tool

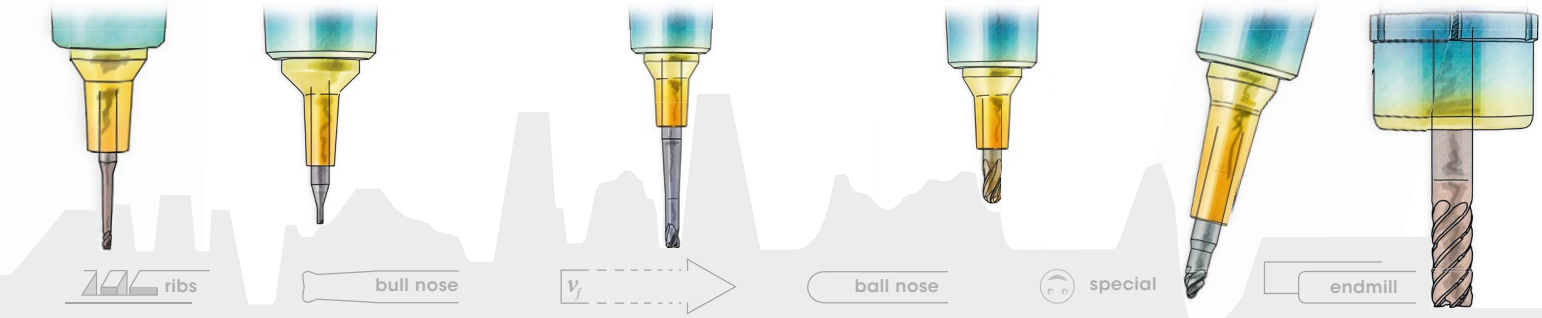


You can find all available tools and information online at: **iklick.aura.tools**



Our product range of solid carbide milling cutters can be devided in the categories listed below, based on their properties and geometries. Subsequent all the milling cutters are listed, sorted to the materials (hardness) to be machined.



FILON®

- FILON® [**psm**]
- FILON® [**psmz**]
- FILON® [**f**]
- FILON® [**fz**]

SANTOS®

- SANTOS® [**hgt**]
- SANTOS® [**sht**]
- SANTOS® [**ht**]
- SANTOS® [**t**]
- SANTOS® [**cft**]
- SANTOS® [**hmta**]
- SANTOS® [**sgt**]
- SANTOS® [**shz**]
- SANTOS® [**tz**]
- SANTOS® [**1cbnt**]
- SANTOS® [**2cbnt**]

POTON®

- POTON® [**shr**]
- POTON® [**pl**]
- POTON® [**plk**]
- POTON® [**vs**]

KULON®

- KULON® [**4shk**]
- KULON® [**4shkz**]
- KULON® [**shk**]
- KULON® [**shkz**]
- KULON® [**mshkz**]
- KULON® [**hkz**]
- KULON® [**hk**]
- KULON® [**4kz**]
- KULON® [**k**]
- KULON® [**kz**]
- KULON® [**mk**]
- KULON® [**sk**]
- KULON® [**4sfb**]
- KULON® [**1cbnk**]
- KULON® [**2cbnk**]
- KULON® [**vphk**]

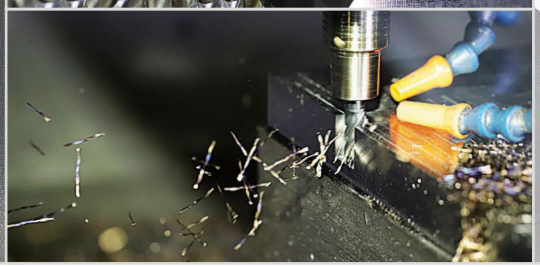
VILAS®

- VILAS® [**scmsf**]
- VILAS® [**cbc**]
- VILAS® [**pbn**]
- VILAS® [**peb**]

KANTOS®

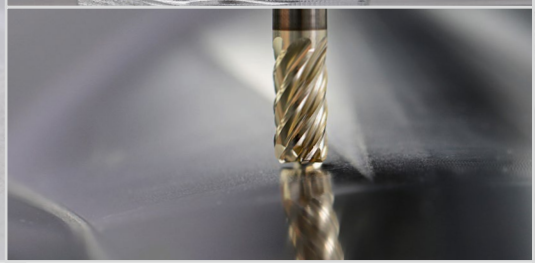
- KANTOS® [**rdg**]
- KANTOS® [**rdf**]
- KANTOS® [**3esv**]
- KANTOS® [**ssf**]
- KANTOS® [**4esv**]
- KANTOS® [**4esvc**]
- KANTOS® [**3esvr**]
- KANTOS® [**4esvr**]
- KANTOS® [**kan**]
- KANTOS® [**lkan**]
- KANTOS® [**4krc**]
- KANTOS® [**4rvs**]
- KANTOS® [**4hqc**]
- KANTOS® [**4hqcr**]






Solid carbide HSC-tools





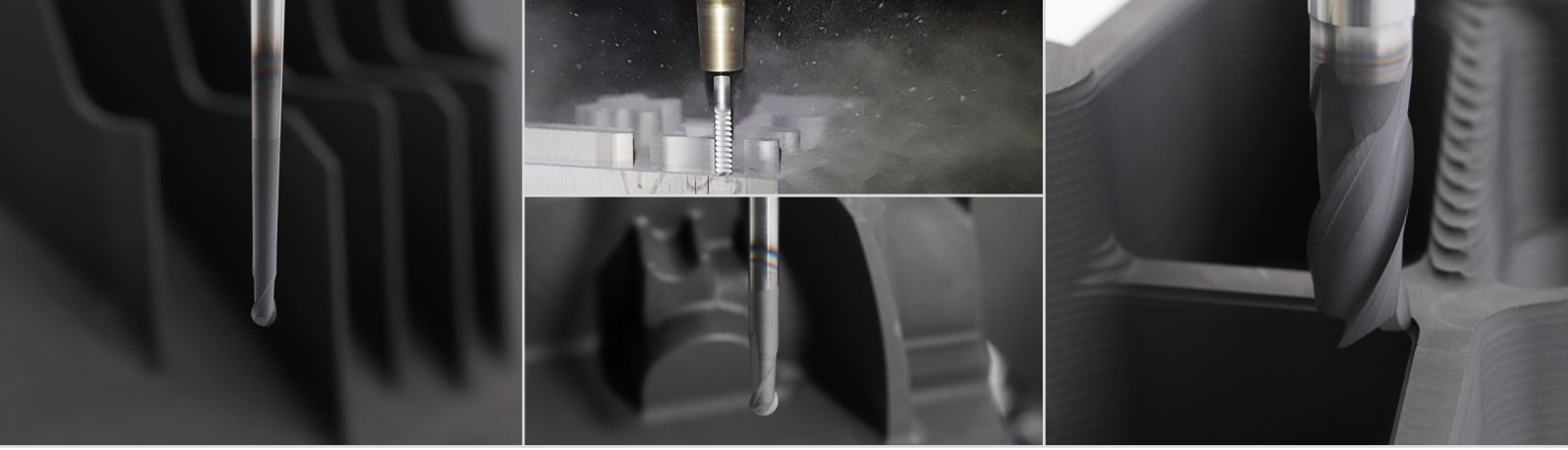

Solid carbide HSC-tools

Page

Geometry +
z = Number of flutes

General steel processing up to 56 HRC

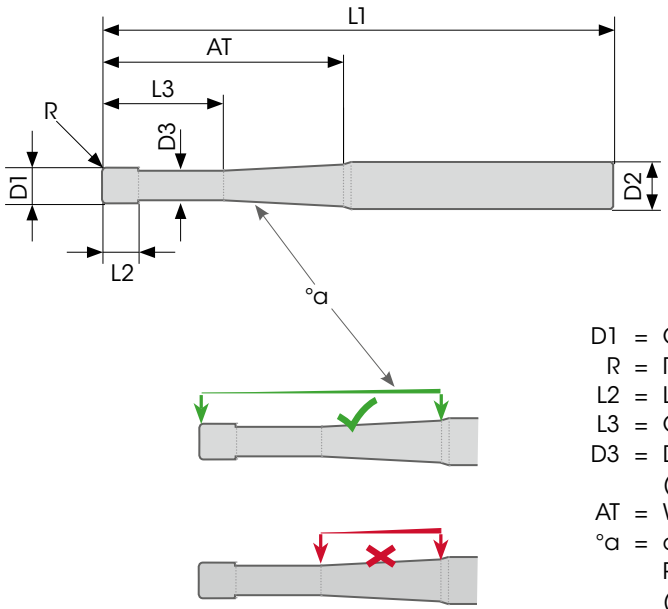
Aluminium alloys < 6% silicium, plastics, titanium



Solid carbide HSC-tools

Page

Geometry +
z = Number of flutes



D1 = Cutter diameter
R = Radius
L2 = Length of the cut
L3 = Cylindrical free length
D3 = Diameter after length of the cut (grounded free)
AT = Working depth
°a = data for possibly conical shape of the workpiece Please note the picture (Conical shape from the end of the radius to AT data)
L1 = Total length
D2 = Shank diameter (Clamping diameter)
Z = Number of teeth
IKZ = Internal cooling supply Yes No

Article number = Group type - D1 - R - AT - L1 - °a - D2
Example: PSM - 040 - 100 - 020 - 060 - 004 - 06

Group type: [psm] Power Slot Milling
D1: 4.00 mm
R: 1.00 mm
AT: 20 mm
L1: 60 mm
°a: 0.40 mm
D2: 6.00 mm

Roughing
Finishing
Roughing and finishing
Internal cooling Yes No
Trochoidal machining
Diamond coated
CBN (Cubic crystalline boron nitride)
Surface roughness in the nanometer range

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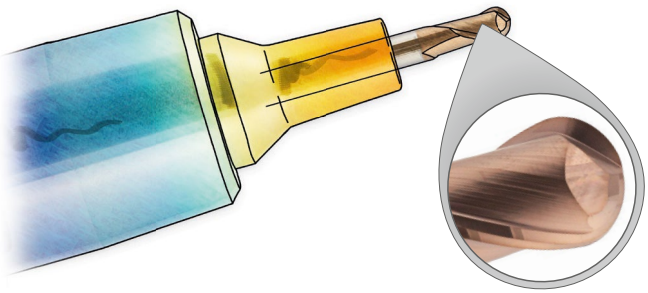
You can find our general terms and conditions at
http://aura-tools.de/downloads/aura-agb.pdf

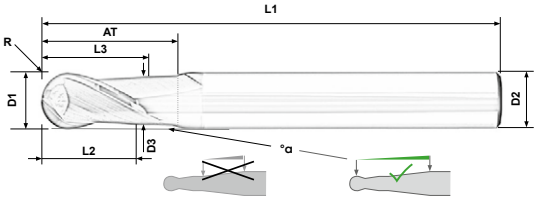


KULON® [vphk]

▼ + ▼▼▼

High precision TSC® ballnose cutter. Excellent surfaces in hardened and ductile tool steels as well as powder steels from 40 to 65 HRC. The special center assures a long consistent surface quality. Large chip spaces and an optimised flank design guarantee a high tool life and dimensional accuracy over the entire radius.

+ roughing and finishing of hardened materials
+ special design of the center and the flanks for an optimised performance
+ also suitable for finishing in powder steels
+ suitable for flat and sloped surfaces
+ conically and cylindrically stepped version



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 32100 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<52 HRC	11412	3287	215	0.15	0.15	0.14

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	1.5	2	0.96	4	7	0.9	51	2	-	32112	VPHK-010-050-007-051-009-04
1	0.5	1.5	2	0.96	4	7	1.4	51	2	-	32113	VPHK-010-050-007-051-014-04
1	0.5	1.5	2	0.96	4	10	0.9	51	2	-	32114	VPHK-010-050-010-051-009-04
1	0.5	1.5	2	0.96	4	10	1.4	51	2	-	32115	VPHK-010-050-010-051-014-04
1	0.5	1.5	2	0.96	4	15	0.9	60	2	-	32116	VPHK-010-050-015-060-009-04
1	0.5	1.5	2	0.96	4	15	1.4	60	2	-	32117	VPHK-010-050-015-060-014-04
1.5	0.75	2.25	3	1.42	4	10.5	0.9	51	2	-	32118	VPHK-015-075-010-051-009-04
1.5	0.75	2.25	3	1.42	4	10.5	1.4	51	2	-	32119	VPHK-015-075-010-051-014-04
1.5	0.75	2.25	3	1.42	4	15	0.9	51	2	-	32120	VPHK-015-075-015-051-009-04
1.5	0.75	2.25	3	1.42	4	15	1.4	51	2	-	32121	VPHK-015-075-015-051-014-04
1.5	0.75	2.25	3	1.42	4	22.5	0.9	60	2	-	32122	VPHK-015-075-022-060-009-04
1.5	0.75	2.25	3	1.42	4	22.5	1.4	60	2	-	32123	VPHK-015-075-022-060-014-04
2	1	3	4	1.92	4	14	0.9	51	2	-	32124	VPHK-020-100-014-051-009-04
2	1	3	4	1.92	4	14	1.4	51	2	-	32125	VPHK-020-100-014-051-014-04
2	1	3	4	1.92	4	20	0.9	60	2	-	32126	VPHK-020-100-020-060-009-04
2	1	3	4	1.92	4	20	1.4	60	2	-	32127	VPHK-020-100-020-060-014-04
2	1	3	4	1.92	4	30	0.9	70	2	-	32128	VPHK-020-100-030-070-009-04
2	1	3	4	1.92	4	30	1.4	70	2	-	32129	VPHK-020-100-030-070-014-04
3	1.5	4.5	6	2.88	6	15	0.9	60	2	-	32130	VPHK-030-150-015-060-009-06
3	1.5	4.5	6	2.88	6	15	1.4	60	2	-	32131	VPHK-030-150-015-060-014-06
3	1.5	4.5	6	2.88	6	21	0.9	70	2	-	32132	VPHK-030-150-021-070-009-06
3	1.5	4.5	6	2.88	6	21	1.4	70	2	-	32133	VPHK-030-150-021-070-014-06
3	1.5	4.5	6	2.88	6	30	0.9	70	2	-	32134	VPHK-030-150-030-070-009-06
3	1.5	4.5	6	2.88	6	30	1.4	70	2	-	32135	VPHK-030-150-030-070-014-06
4	2	6	8	3.88	6	20	0.9	60	2	-	32136	VPHK-040-200-020-060-009-06
4	2	6	8	3.88	6	20	1.4	60	2	-	32137	VPHK-040-200-020-060-014-06

*Technical changes reserved.

„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GJV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics

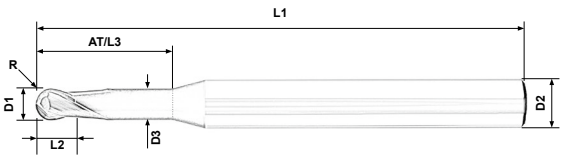
KULON® [vphk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	2	6	8	3.88	6	28	0.9	70	2	-	32138	VPHK-040-200-028-070-009-06
4	2	6	8	3.88	6	28	1.4	70	2	-	32139	VPHK-040-200-028-070-014-06
4	2	6	8	3.88	6	40	0.9	80	2	-	32140	VPHK-040-200-040-080-009-06
4	2	6	8	3.88	6	40	1.4	80	2	-	32141	VPHK-040-200-040-080-014-06
5	2.5	7.5	10	4.84	8	25	0.9	70	2	-	32142	VPHK-050-250-025-070-009-08
5	2.5	7.5	10	4.84	8	25	1.4	70	2	-	32143	VPHK-050-250-025-070-014-08
5	2.5	7.5	10	4.84	8	35	0.9	75	2	-	32144	VPHK-050-250-035-075-009-08
5	2.5	7.5	10	4.84	8	35	1.4	75	2	-	32145	VPHK-050-250-035-075-014-08
5	2.5	7.5	10	4.84	8	50	0.9	90	2	-	32146	VPHK-050-250-050-090-009-08
5	2.5	7.5	10	4.84	8	50	1.4	90	2	-	32147	VPHK-050-250-050-090-014-08
6	3	9	12	5.8	8	30	0.9	70	2	-	32148	VPHK-060-300-030-070-009-08
6	3	9	12	5.8	8	30	1.4	70	2	-	32149	VPHK-060-300-030-070-014-08
6	3	9	12	5.8	10	42	0.9	90	2	-	32150	VPHK-060-300-042-090-009-10
6	3	9	12	5.8	10	42	1.4	90	2	-	32151	VPHK-060-300-042-090-014-10
6	3	9	12	5.8	10	60	0.9	120	2	-	32152	VPHK-060-300-060-120-009-10
6	3	9	12	5.8	10	60	1.4	100	2	-	32153	VPHK-060-300-060-100-014-10

KULON® [vphk]

Cylindrically stepped version



D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
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1	0.5	1.5	5	0.96	4	5	0	51	2	-	32088	VPHK-010-050-005-051-000-04
1.5	0.75	2.25	4.5	1.42	4	4.5	0	51	2	-	32089	VPHK-015-075-004-051-000-04
1.5	0.75	2.25	7.5	1.42	4	7.5	0	51	2	-	32090	VPHK-015-075-007-051-000-04
2	1	3	6	1.92	4	6	0	51	2	-	32091	VPHK-020-100-006-051-000-04
2	1	3	10	1.92	4	10	0	51	2	-	32092	VPHK-020-100-010-051-000-04
3	1.5	4.5	9	2.88	4	9	0	51	2	-	32093	VPHK-030-150-009-051-000-04
3	1.5	4.5	15	2.88	4	15	0	51	2	-	32094	VPHK-030-150-015-051-000-04
4	2	6	6	4	4	6	0	60	2	-	32097	VPHK-040-200-006-060-000-04
4	2	6	12	3.88	4	12	0	51	2	-	32095	VPHK-040-200-012-051-000-04
4	2	6	20	3.88	4	20	0	60	2	-	32096	VPHK-040-200-020-060-000-04
5	2.5	7.5	15	4.84	6	15	0	60	2	-	32098	VPHK-050-250-015-060-000-06
5	2.5	7.5	25	4.84	6	25	0	70	2	-	32099	VPHK-050-250-025-070-000-06
6	3	9	9	6	6	9	0	70	2	-	32102	VPHK-060-300-009-070-000-06
6	3	9	18	5.8	6	18	0	60	2	-	32100	VPHK-060-300-018-060-000-06
6	3	9	30	5.8	6	30	0	70	2	-	32101	VPHK-060-300-030-070-000-06
8	4	12	12	8	8	12	0	80	2	-	32105	VPHK-080-400-012-080-000-08
8	4	12	24	7.76	8	24	0	59	2	-	32103	VPHK-080-400-024-059-000-08
8	4	12	40	7.76	8	40	0	80	2	-	32104	VPHK-080-400-040-080-000-08
10	5	15	15	10	10	15	0	90	2	-	32108	VPHK-100-500-015-090-000-10
10	5	15	30	9.68	10	30	0	70	2	-	32106	VPHK-100-500-030-070-000-10
10	5	15	50	9.68	10	50	0	90	2	-	32107	VPHK-100-500-050-090-000-10
12	6	18	18	12	12	18	0	100	2	-	32111	VPHK-120-600-018-100-000-12
12	6	18	36	11.64	12	36	0	75	2	-	32109	VPHK-120-600-036-075-000-12
12	6	18	60	11.64	12	60	0	100	2	-	32110	VPHK-120-600-060-100-000-12

*Technical changes reserved.

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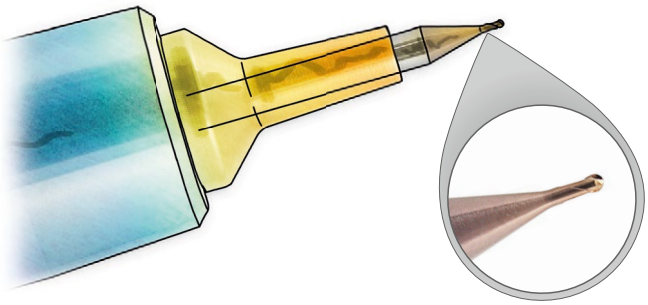
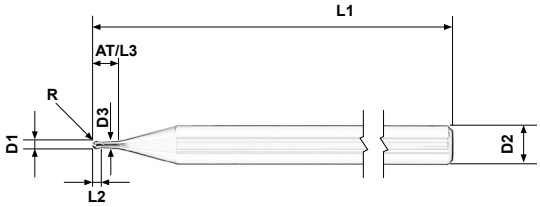


KULON® [mshkz]

High precision TSC® micro ballnose cutter for excellent surfaces. The [**mshkz**] is designed for finishing and pre-finishing as well as rest roughing of hardened and high-alloyed steels from 40 to 65 HRC. The tool center micro geometry enables the creation of homogeneous and shiny surfaces in flat areas. A shortened side cutting edge allows finishing of 90° surfaces.

+ high dimensional accuracy for high-precision machined components
+ high surface quality with roughness Rz ≤ 1µm
+ rework is reduced to a minimum



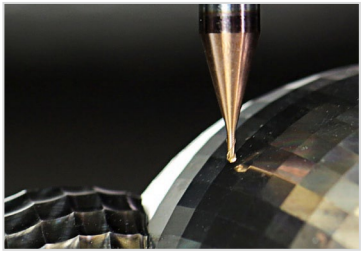
You can find all available tools and information online at: iklick.aura.tools

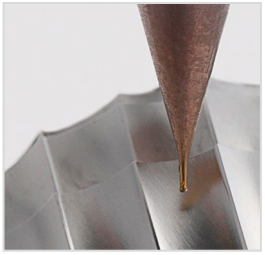
Exemplary Cutting Data for Code 26637 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<52 HRC	34501	414	65	0.025	0.15	0.006

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.2	0.1	0.15	0.4	0.18	4	0.4	0	51	2	-	23557	MSHKZ-002-010-0004-051-000-04
0.2	0.1	0.15	0.6	0.18	4	0.6	0	51	2	-	23558	MSHKZ-002-010-0006-051-000-04
0.2	0.1	0.15	1	0.18	4	1	0	51	2	-	30103	MSHKZ-002-010-0010-051-000-04
0.2	0.1	0.15	1.4	0.18	4	1.4	0	51	2	-	30104	MSHKZ-002-010-0014-051-000-04
0.3	0.15	0.23	0.6	0.28	4	0.6	0	51	2	-	23559	MSHKZ-003-015-0006-051-000-04
0.3	0.15	0.23	0.9	0.28	4	0.9	0	51	2	-	23560	MSHKZ-003-015-0009-051-000-04
0.3	0.15	0.23	1.5	0.28	4	1.5	0	51	2	-	30105	MSHKZ-003-015-0015-051-000-04
0.3	0.15	0.23	2.1	0.28	4	2.1	0	51	2	-	30106	MSHKZ-003-015-0021-051-000-04
0.4	0.2	0.3	0.8	0.38	4	0.8	0	51	2	-	23561	MSHKZ-004-020-0008-051-000-04
0.4	0.2	0.3	1.2	0.38	4	1.2	0	51	2	-	23562	MSHKZ-004-020-0012-051-000-04
0.4	0.2	0.3	2	0.38	4	2	0	51	2	-	30107	MSHKZ-004-020-0020-051-000-04
0.4	0.2	0.3	2.8	0.38	4	2.8	0	51	2	-	30108	MSHKZ-004-020-0028-051-000-04
0.5	0.25	0.38	1	0.48	4	1	0	51	2	-	23563	MSHKZ-005-025-0010-051-000-04
0.5	0.25	0.38	1.5	0.48	4	1.5	0	51	2	-	23564	MSHKZ-005-025-0015-051-000-04
0.5	0.25	0.38	2.5	0.48	4	2.5	0	51	2	-	30109	MSHKZ-005-025-0025-051-000-04
0.5	0.25	0.38	3.5	0.48	4	3.5	0	51	2	-	30110	MSHKZ-005-025-0035-051-000-04
0.5	0.25	0.75	2	0.48	4	2	0	51	2	-	26255	MSHKZ-005-025-0020-051-000-04
0.6	0.3	0.45	1.2	0.58	4	1.2	0	51	2	-	26637	MSHKZ-006-030-0012-051-000-04
0.6	0.3	0.45	1.8	0.56	4	1.8	0	51	2	-	23565	MSHKZ-006-030-0018-051-000-04
0.6	0.3	0.45	2.4	0.58	4	2.4	0	51	2	-	26268	MSHKZ-006-030-0024-051-000-04
0.6	0.3	0.45	3	0.58	4	3	0	51	2	-	23566	MSHKZ-006-030-0030-051-000-04
0.6	0.3	0.45	4.2	0.56	4	4.2	0	51	2	-	30111	MSHKZ-006-030-0042-051-000-04
0.8	0.4	0.6	1.6	0.76	4	1.6	0	51	2	-	30112	MSHKZ-008-040-0016-051-000-04
0.8	0.4	0.6	2	0.76	4	2	0	51	2	-	26266	MSHKZ-008-040-0020-051-000-04
0.8	0.4	0.6	2.4	0.78	4	2.4	0	51	2	-	23567	MSHKZ-008-040-0024-051-000-04
0.8	0.4	0.6	3.2	0.78	4	3.2	0	51	2	-	26574	MSHKZ-008-040-0032-051-000-04
0.8	0.4	0.6	4	0.78	4	4	0	51	2	-	23568	MSHKZ-008-040-0040-051-000-04
0.8	0.4	0.6	5.6	0.76	4	5.6	0	51	2	-	30113	MSHKZ-008-040-0056-051-000-04





[**mshkz**]
Code 23562
D1 = 0.4 mm R = 0.2 mm

*Technical changes reserved.

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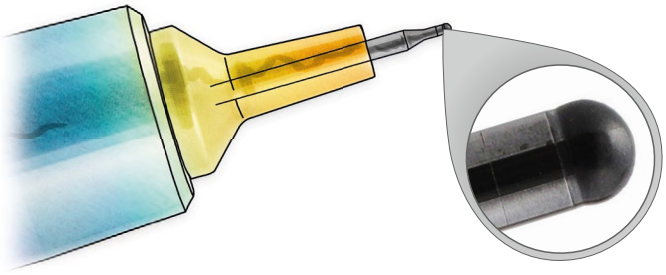
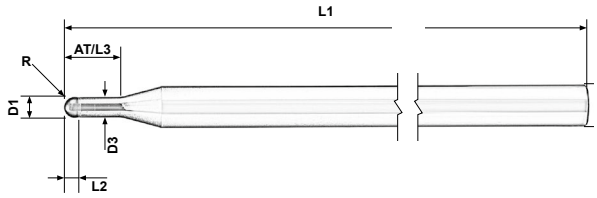


VILAS® [pbn]

Polishing ball made of PKD to create surface roughness in the nanometer range in steel. Due to its geometrically undefined cutting edge only a few micrometers can be removed and an even and shiny surface is created. To avoid chemical wear, a precise preparatory work and calibration of the machine is necessary.

+ surfaces with Ra < 0,06 µm without polishing and dressing
+ usable in tough and hard steels



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 21743 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	36000	360	226	0.005	0.005	0.01

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	50	0.5	0.96	4	2.5	0	50	1	-	21744	PBN-010-050-0025-050-000-04
1.5	0.75	50	0.75	1.45	4	3.75	0	50	1	-	23110	PBN-015-075-0037-050-000-04
2	1	50	1	1.95	4	5	0	50	1	-	21743	PBN-020-100-0050-050-000-04

*Technical changes reserved.

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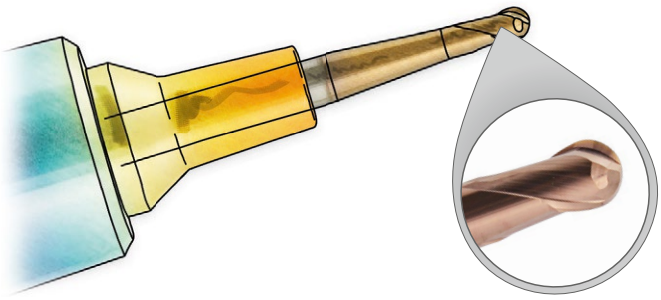
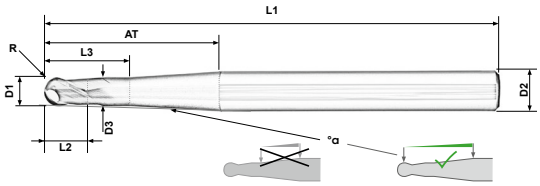


KULON® [shk]

Conical, high-precision TSC® ballnose cutter.
Excellent surface quality in soft and hardened tool steels up to 65 HRC. Special geometry in the center.

+ very accurate
+ suitable for flat surfaces
+ roughing and finishing of hardened materials



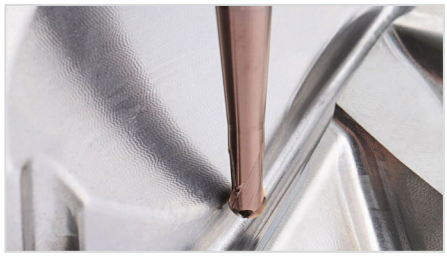
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 23757 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	12739	510	60	0.015	0.35	0.02

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	0.75	3	0.97	6	10	0.4	60	2	-	19265	SHK-010-050-010-060-004-06
1	0.5	0.75	3	0.97	6	10	0.9	60	2	-	19266	SHK-010-050-010-060-009-06
1	0.5	0.75	3	0.97	6	10	1.4	60	2	-	19267	SHK-010-050-010-060-014-06
1	0.5	0.75	3	0.97	6	15	0.4	60	2	-	19268	SHK-010-050-015-060-004-06
1	0.5	0.75	3	0.97	6	15	0.9	60	2	-	19269	SHK-010-050-015-060-009-06
1	0.5	0.75	3	0.97	6	15	1.4	60	2	-	19270	SHK-010-050-015-060-014-06
1	0.5	0.75	3	0.97	6	20	0.4	60	2	-	19271	SHK-010-050-020-060-004-06
1	0.5	0.75	3	0.97	6	20	0.9	60	2	-	19272	SHK-010-050-020-060-009-06
1	0.5	0.75	3	0.97	6	20	1.4	60	2	-	19273	SHK-010-050-020-060-014-06
1	0.5	0.75	3	0.97	6	25	0.4	70	2	-	19274	SHK-010-050-025-070-004-06
1	0.5	0.75	3	0.97	6	25	0.9	70	2	-	19275	SHK-010-050-025-070-009-06
1	0.5	0.75	3	0.97	6	25	1.4	70	2	-	19276	SHK-010-050-025-070-014-06
1	0.5	0.75	3	0.97	6	30	0.4	70	2	-	19277	SHK-010-050-030-070-004-06
1	0.5	0.75	3	0.97	6	30	0.9	70	2	-	19278	SHK-010-050-030-070-009-06
1	0.5	0.75	3	0.97	6	30	1.4	70	2	-	19279	SHK-010-050-030-070-014-06
1	0.5	0.75	3	0.97	6	35	0.4	75	2	-	19280	SHK-010-050-035-075-004-06
1	0.5	0.75	3	0.97	6	35	0.9	75	2	-	19281	SHK-010-050-035-075-009-06
1	0.5	0.75	3	0.97	6	35	1.4	75	2	-	19282	SHK-010-050-035-075-014-06
1.5	0.75	2	4	1.45	6	15	0.9	60	2	-	23756	SHK-015-075-015-060-009-06
1.5	0.75	2	4	1.45	6	20	0.9	60	2	-	23757	SHK-015-075-020-060-009-06
1.5	0.75	2	4	1.45	6	40	0.9	80	2	-	27169	SHK-015-075-040-080-009-06
2	1	2	6	1.9	6	15	0.4	60	2	-	19283	SHK-020-100-015-060-004-06
2	1	2	6	1.93	6	15	0.9	60	2	-	19284	SHK-020-100-015-060-009-06
2	1	2	6	1.9	6	15	1.4	60	2	-	19285	SHK-020-100-015-060-014-06
2	1	2	6	1.9	6	20	0.4	60	2	-	19286	SHK-020-100-020-060-004-06
2	1	2	6	1.9	6	20	0.9	60	2	-	19287	SHK-020-100-020-060-009-06
2	1	2	6	1.9	6	20	1.4	60	2	-	19288	SHK-020-100-020-060-014-06
2	1	2	6	1.9	6	25	0.4	70	2	-	19289	SHK-020-100-025-070-004-06
2	1	2	6	1.9	6	25	0.9	70	2	-	19290	SHK-020-100-025-070-009-06



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KULON® [shk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	1	2	6	1.9	6	25	1.4	70	2	-	19291	SHK-020-100-025-070-014-06
2	1	2	6	1.9	6	30	0.4	70	2	-	19292	SHK-020-100-030-070-004-06
2	1	2	6	1.9	6	30	0.9	70	2	-	19293	SHK-020-100-030-070-009-06
2	1	2	6	1.9	6	30	1.4	70	2	-	19294	SHK-020-100-030-070-014-06
2	1	2	6	1.9	6	35	0.4	75	2	-	19295	SHK-020-100-035-075-004-06
2	1	2	6	1.9	6	35	0.9	75	2	-	19296	SHK-020-100-035-075-009-06
2	1	2	6	1.9	6	35	1.4	75	2	-	19297	SHK-020-100-035-075-014-06
2.5	1.25	2.5	7	2.35	6	25	1.5	70	2	-	23286	SHK-025-125-025-070-015-06
2.5	1.25	2.5	7	2.35	6	25	0.9	70	2	-	23287	SHK-025-125-025-070-009-06
2.5	1.25	2.5	7	2.35	6	35	1.5	75	2	-	23284	SHK-025-125-035-075-015-06
2.5	1.25	2.5	7	2.35	6	35	0.9	75	2	-	23285	SHK-025-125-035-075-009-06
3	1.5	3	7.5	2.85	6	15	0.4	60	2	-	19298	SHK-030-150-015-060-004-06
3	1.5	3	7.5	2.85	6	15	0.9	60	2	-	19299	SHK-030-150-015-060-009-06
3	1.5	3	7.5	2.85	6	15	1.4	60	2	-	19300	SHK-030-150-015-060-014-06
3	1.5	3	7.5	2.85	6	16	5.4	60	2	-	17995	SHK-030-150-016-060-054-06
3	1.5	3	7.5	2.85	6	20	0.4	60	2	-	19301	SHK-030-150-020-060-004-06
3	1.5	3	7.5	2.85	6	20	0.9	60	2	-	19302	SHK-030-150-020-060-009-06
3	1.5	3	7.5	2.85	6	20	1.4	60	2	-	19303	SHK-030-150-020-060-014-06
3	1.5	3	7.5	2.85	6	25	0.4	70	2	-	19304	SHK-030-150-025-070-004-06
3	1.5	3	7.5	2.85	6	25	0.9	70	2	-	19305	SHK-030-150-025-070-009-06
3	1.5	3	7.5	2.85	6	25	1.4	70	2	-	19306	SHK-030-150-025-070-014-06
3	1.5	3	7.5	2.85	6	30	0.4	70	2	-	19307	SHK-030-150-030-070-004-06
3	1.5	3	7.5	2.85	6	30	0.9	70	2	-	19308	SHK-030-150-030-070-009-06
3	1.5	3	7.5	2.85	6	30	1.4	70	2	-	19309	SHK-030-150-030-070-014-06
3	1.5	3	7.5	2.85	6	35	0.4	75	2	-	19310	SHK-030-150-035-075-004-06
3	1.5	3	7.5	2.85	6	35	0.9	75	2	-	19311	SHK-030-150-035-075-009-06
3	1.5	3	7.5	2.85	6	35	1.4	75	2	-	19312	SHK-030-150-035-075-014-06
3	1.5	3	7.5	2.85	6	40	0.4	80	2	-	19313	SHK-030-150-040-080-004-06
3	1.5	3	7.5	2.85	6	40	0.9	80	2	-	19314	SHK-030-150-040-080-009-06
3	1.5	3	7.5	2.85	6	40	1.4	80	2	-	19315	SHK-030-150-040-080-014-06
4	2	4	10	3.85	6	15	3.7	60	2	-	17996	SHK-040-200-015-060-037-06
4	2	4	10	3.85	6	20	0.4	60	2	-	19316	SHK-040-200-020-060-004-06
4	2	4	10	3.85	6	20	0.9	60	2	-	19317	SHK-040-200-020-060-009-06
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4	2	4	10	3.85	6	24	2.4	70	2	-	12119	SHK-040-200-024-070-024-06
4	2	4	10	3.85	6	25	0.4	70	2	-	19319	SHK-040-200-025-070-004-06
4	2	4	10	3.85	6	25	0.9	70	2	-	19320	SHK-040-200-025-070-009-06
4	2	4	10	3.85	6	25	1.4	70	2	-	19321	SHK-040-200-025-070-014-06
4	2	4	10	3.85	6	30	0.4	70	2	-	19322	SHK-040-200-030-070-004-06
4	2	4	10	3.85	6	30	0.9	70	2	-	19323	SHK-040-200-030-070-009-06
4	2	4	10	3.85	6	30	1.4	70	2	-	19324	SHK-040-200-030-070-014-06
4	2	4	10	3.85	6	35	0.4	75	2	-	19325	SHK-040-200-035-075-004-06
4	2	4	10	3.85	6	35	0.9	75	2	-	19326	SHK-040-200-035-075-009-06
4	2	4	10	3.85	6	35	1.4	75	2	-	19327	SHK-040-200-035-075-014-06
4	2	4	10	3.85	6	40	0.4	80	2	-	19328	SHK-040-200-040-080-004-06
4	2	4	10	3.85	6	40	0.9	80	2	-	19329	SHK-040-200-040-080-009-06
4	2	4	10	3.88	8	40	1.4	80	2	-	19330	SHK-040-200-040-080-014-08

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„xy" **HRC** = Machining of hardened materials possible up to the declared value; **1.400N** = Materials like 1.2714HH; **1.000N** = materials like 1.2311, 1.2379; **steel** = materials like 1.1730; **CrNi** = Nickel-chromium alloys; **Titan** = Titanium alloys; **INC** = Nickel-base alloys; **GG** = Casting alloys; **GjV** = Alloyed cast steels; **ALU** = Aluminium alloys; **AlSi** = Aluminium-silicon alloys; **Cu** = Copper; **GRAPH** = Graphite; **GFK** = Glass fiber reinforced plastics

KULON® [shk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	2	4	10	3.85	6	40	1.4	80	2	-	27184	SHK-040-200-040-080-014-06
4	2	4	10	3.85	6	50	0.4	90	2	-	19331	SHK-040-200-050-090-004-06
4	2	4	10	3.85	6	50	0.9	90	2	-	19332	SHK-040-200-050-090-009-06
4	2	4	10	3.85	8	50	1.4	90	2	-	19333	SHK-040-200-050-090-014-08
4	2	4	10	3.85	6	65	0.4	100	2	-	19334	SHK-040-200-065-100-004-06
4	2	4	10	3.85	6	65	0.9	100	2	-	19335	SHK-040-200-065-100-009-06
4	2	4	10	3.85	8	65	1.4	100	2	-	19336	SHK-040-200-065-100-014-08
5	2.5	5	10	4.85	6	24	1.2	70	2	-	20407	SHK-050-250-024-070-012-06
5	2.5	5	10	4.85	8	40	1.5	75	2	-	23097	SHK-050-250-040-075-015-08
6	3	8	16	5.8	8	34	1.7	90	2	-	12118	SHK-060-300-034-090-017-08
6	3	9	15	5.8	8	30	0.4	80	2	-	19337	SHK-060-300-030-080-004-08
6	3	9	15	5.8	8	30	0.9	80	2	-	19338	SHK-060-300-030-080-009-08
6	3	9	15	5.8	8	30	1.4	80	2	-	19339	SHK-060-300-030-080-014-08
6	3	9	15	5.8	8	35	0.4	80	2	-	19340	SHK-060-300-035-080-004-08
6	3	9	15	5.8	8	35	0.9	80	2	-	19341	SHK-060-300-035-080-009-08
6	3	9	15	5.8	8	35	1.4	80	2	-	19342	SHK-060-300-035-080-014-08
6	3	9	15	5.8	8	40	1.4	85	2	-	17997	SHK-060-300-040-085-014-08
6	3	9	15	5.8	8	40	0.4	85	2	-	19343	SHK-060-300-040-085-004-08
6	3	9	15	5.8	8	40	0.9	85	2	-	19344	SHK-060-300-040-085-009-08
6	3	9	15	5.8	8	50	0.4	90	2	-	19345	SHK-060-300-050-090-004-08
6	3	9	15	5.8	8	50	0.9	90	2	-	19346	SHK-060-300-050-090-009-08
6	3	9	15	5.8	10	50	1.4	90	2	-	19347	SHK-060-300-050-090-014-10
6	3	9	25	5.8	10	65	1.4	120	2	-	18298	SHK-060-300-065-120-014-10
6	3	9	15	5.8	8	65	0.4	100	2	-	19348	SHK-060-300-065-100-004-08
6	3	9	15	5.8	8	65	0.9	100	2	-	19349	SHK-060-300-065-100-009-08
6	3	9	15	5.8	10	65	1.4	100	2	-	19350	SHK-060-300-065-100-014-10
8	4	10	15	7.7	10	50	0.9	100	2	-	18154	SHK-080-400-050-100-009-10
8	4	10	15	7.7	10	60	0.9	100	2	-	19666	SHK-080-400-060-100-009-10

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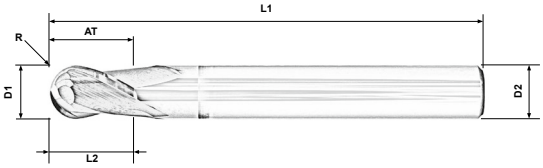
KULON® [shkz]

Cylindrical, high-precision TSC® ballnose cutter.
Excellent surface quality in soft and hardened tool steels up to 65 HRC. Special geometry in the center.

+ very accurate
+ suitable for flat surfaces
+ roughing and finishing of hardened materials



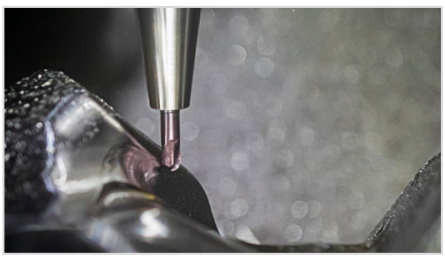
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 19230 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	15924	414	75	0.025	0.38	0.013

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	0.75	2	0.97	4	2	0	51	2	-	19217	SHKZ-010-050-002-051-000-04
1	0.5	0.75	3	0.96	6	3	0	60	2	-	19225	SHKZ-010-050-003-060-000-06
1	0.5	0.75	4	0.96	6	4	0	60	2	-	19610	SHKZ-010-050-004-060-000-06
1	0.5	0.75	4	0.97	4	4	0	51	2	-	21568	SHKZ-010-050-004-051-000-04
1	0.5	0.75	5	0.96	6	5	0	60	2	-	19226	SHKZ-010-050-005-060-000-06
1	0.5	0.75	6	0.97	6	6	0	60	2	-	19611	SHKZ-010-050-006-060-000-06
1	0.5	0.75	6	0.97	4	6	0	51	2	-	22066	SHKZ-010-050-006-051-000-04
1	0.5	0.75	7	0.97	6	7	0	60	2	-	19227	SHKZ-010-050-007-060-000-06
1	0.5	0.75	8	0.96	6	8	0	60	2	-	19612	SHKZ-010-050-008-060-000-06
1	0.5	0.75	10	0.97	6	10	0	60	2	-	19613	SHKZ-010-050-010-060-000-06
1	0.5	0.75	12	0.97	6	12	0	60	2	-	19614	SHKZ-010-050-012-060-000-06
1	0.5	0.75	15	0.97	6	15	0	60	2	-	19615	SHKZ-010-050-015-060-000-06
1.5	0.75	1.15	3	1.47	4	3	0	51	2	-	18016	SHKZ-015-075-003-051-000-04
1.5	0.75	1.15	5	1.43	6	5	0	60	2	-	19228	SHKZ-015-075-005-060-000-06
1.5	0.75	1.15	6	1.47	4	6	0	51	2	-	22034	SHKZ-015-075-006-051-000-04
1.5	0.75	1.15	8	1.43	6	8	0	60	2	-	18313	SHKZ-015-075-008-060-000-06
1.5	0.75	1.15	10	1.47	6	10	0	60	2	-	19616	SHKZ-015-075-010-060-000-06
1.5	0.75	1.15	11	1.47	6	11	0	60	2	-	19230	SHKZ-015-075-011-060-000-06
1.5	0.75	1.15	12	1.47	6	12	0	60	2	-	19617	SHKZ-015-075-012-060-000-06
1.5	0.75	1.15	15	1.47	6	15	0	60	2	-	19618	SHKZ-015-075-015-060-000-06
1.5	0.75	1.15	20	1.47	6	20	0	60	2	-	19619	SHKZ-015-075-020-060-000-06
2	1	2	4	1.93	4	4	0	51	2	-	18017	SHKZ-020-100-004-051-000-04
2	1	2	5	1.93	6	5	0	60	2	-	19620	SHKZ-020-100-005-060-000-06
2	1	2	6	1.93	6	6	0	60	2	-	19231	SHKZ-020-100-006-060-000-06
2	1	2	10	1.93	6	10	0	60	2	-	19232	SHKZ-020-100-010-060-000-06
2	1	2	12	1.9	6	12	0	60	2	-	19621	SHKZ-020-100-012-060-000-06
2	1	2	14	1.93	6	14	0	60	2	-	19233	SHKZ-020-100-014-060-000-06



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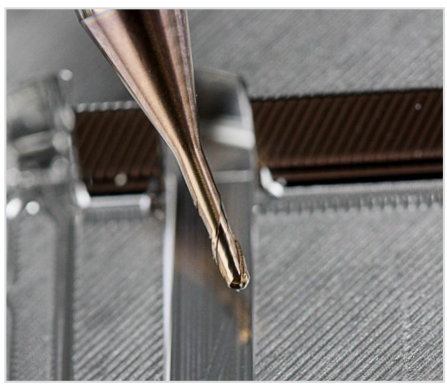
KULON® [shkz]

<65HRC	<58HRC	<56HRC	<52HRC	<48HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	1	2	15	1.93	6	15	0	60	2	-	19622	SHKZ-020-100-015-060-000-06
2	1	2	20	1.9	6	20	0	60	2	-	19234	SHKZ-020-100-020-060-000-06
2	1	2	25	1.9	6	25	0	60	2	-	19623	SHKZ-020-100-025-060-000-06
2.5	1.25	2.5	5	2.35	4	5	0	51	2	-	19221	SHKZ-025-125-005-051-000-04
2.5	1.25	2.5	8	2.35	6	8	0	60	2	-	19235	SHKZ-025-125-008-060-000-06
2.5	1.25	2.5	13	2.38	6	13	0	60	2	-	19236	SHKZ-025-125-013-060-000-06
2.5	1.25	2.5	18	2.35	6	18	0	60	2	-	19237	SHKZ-025-125-018-060-000-06
2.5	1.25	2.5	25	2.35	6	25	0	60	2	-	19238	SHKZ-025-125-025-060-000-06
3	1.5	3	6	2.85	4	6	0	51	2	-	18018	SHKZ-030-150-006-051-000-04
3	1.5	3	6	2.85	6	6	0	60	2	-	19624	SHKZ-030-150-006-060-000-06
3	1.5	3	9	2.85	6	9	0	60	2	-	19239	SHKZ-030-150-009-060-000-06
3	1.5	3	10	2.85	6	10	0	60	2	-	19625	SHKZ-030-150-010-060-000-06
3	1.5	3	12	2.85	6	12	0	60	2	-	19626	SHKZ-030-150-012-060-000-06
3	1.5	3	15	2.85	6	15	0	60	2	-	19240	SHKZ-030-150-015-060-000-06
3	1.5	3	18	2.88	6	18	0	60	2	-	19627	SHKZ-030-150-018-060-000-06
3	1.5	3	21	2.88	6	21	0	60	2	-	19241	SHKZ-030-150-021-060-000-06
3	1.5	3	27	2.85	6	27	0	70	2	-	19628	SHKZ-030-150-027-070-000-06
3	1.5	3	30	2.85	6	30	0	70	2	-	19242	SHKZ-030-150-030-070-000-06
4	2	4	8	3.88	4	8	0	51	2	-	18019	SHKZ-040-200-008-051-000-04
4	2	4	10	3.88	6	10	0	60	2	-	19629	SHKZ-040-200-010-060-000-06
4	2	4	12	3.88	6	12	0	60	2	-	19243	SHKZ-040-200-012-060-000-06
4	2	4	16	3.88	6	16	0	60	2	-	17992	SHKZ-040-200-016-060-000-06
4	2	4	20	3.88	6	20	0	60	2	-	19245	SHKZ-040-200-020-060-000-06
4	2	4	28	3.85	6	28	0	70	2	-	19246	SHKZ-040-200-028-070-000-06
4	2	4	32	3.85	6	32	0	70	2	-	19247	SHKZ-040-200-032-070-000-06
4	2	4	36	3.85	6	36	0	70	2	-	19248	SHKZ-040-200-036-070-000-06
5	2.5	5	15	4.83	6	15	0	60	2	-	19249	SHKZ-050-250-015-060-000-06
5	2.5	5	20	4.83	6	20	0	60	2	-	19250	SHKZ-050-250-020-060-000-06
5	2.5	5	25	4.83	6	25	0	60	2	-	19251	SHKZ-050-250-025-060-000-06
5	2.5	5	30	4.8	6	30	0	70	2	-	19252	SHKZ-050-250-030-070-000-06
5	2.5	5	35	4.8	6	35	0	70	2	-	19253	SHKZ-050-250-035-070-000-06
6	3	9	9	6	6	9	0	60	2	-	17993	SHKZ-060-300-009-060-000-06
6	3	9	9	6	6	9	0	75	2	-	19255	SHKZ-060-300-009-075-000-06
6	3	9	9	6	6	9	0	100	2	-	19256	SHKZ-060-300-009-100-000-06
6	3	9	20	5.83	6	20	0	60	2	-	21299	SHKZ-060-300-020-060-000-06
6	3	9	25	5.83	6	25	0	60	2	-	18311	SHKZ-060-300-025-060-000-06
8	4	12	12	8	8	12	0	64	2	-	17994	SHKZ-080-400-012-064-000-08
8	4	12	12	8	8	12	0	100	2	-	19258	SHKZ-080-400-012-100-000-08
8	4	12	35	7.7	8	35	0	64	2	-	22286	SHKZ-080-400-035-064-000-08
10	5	15	15	10	10	15	0	73	2	-	18075	SHKZ-100-500-015-073-000-10
10	5	15	15	10	10	15	0	100	2	-	18076	SHKZ-100-500-015-100-000-10
12	6	20	20	12	12	20	0	74	2	-	18077	SHKZ-120-600-020-074-000-12
12	6	20	20	12	12	20	0	100	2	-	18078	SHKZ-120-600-020-100-000-12
16	8	26	26	16	16	26	0	100	2	-	21343	SHKZ-160-800-026-100-000-16



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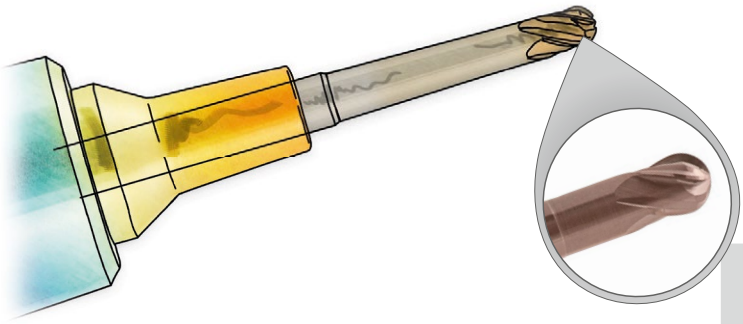
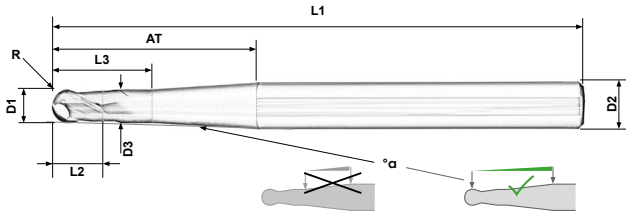


KULON® [4shk]

Conical, high-precision TSC® ballnose cutter with four cutting edges. Excellent surface quality in soft and hardened tool steels up to 65 HRC. Special geometry in the center.

+ very accurate
+ suitable for flat surfaces
+ roughing and finishing of hardened materials
+ nearly doubled feed rate compared to [shk]



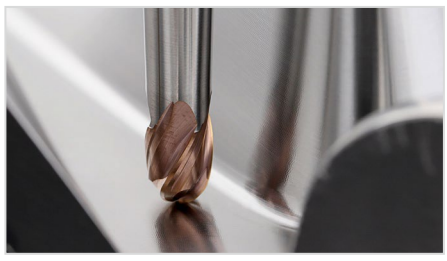
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 25566 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	5971	1361	75	0.064	1.00	0.057

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	1.5	3	7.5	2.85	4	30	0.9	60	4	-	25556	4SHK-030-150-030-060-009-04
3	1.5	3	7.5	2.85	6	30	1.4	70	4	-	25557	4SHK-030-150-030-070-014-06
3	1.5	3	7.5	2.85	4	20	1.4	51	4	-	25558	4SHK-030-150-020-051-014-04
3	1.5	3	7.5	2.85	4	15	1.4	51	4	-	25559	4SHK-030-150-015-051-014-04
3	1.5	3	7.5	2.85	6	35	1.4	75	4	-	25560	4SHK-030-150-035-075-014-06
4	2	4	10	3.88	6	24	2.4	70	4	-	25561	4SHK-040-200-024-070-024-06
4	2	4	10	3.85	6	30	1.4	70	4	-	25562	4SHK-040-200-030-070-014-06
4	2	4	10	3.85	6	30	0.9	70	4	-	25563	4SHK-040-200-030-070-009-06
4	2	4	10	3.85	6	40	0.9	80	4	-	25564	4SHK-040-200-040-080-009-06
4	2	4	10	3.85	6	40	1.4	80	4	-	25566	4SHK-040-200-040-080-014-06
5	2.5	5	10	4.85	6	24	1.2	70	4	-	25567	4SHK-050-250-024-070-012-06
5	2.5	5	10	4.85	8	40	1.5	75	4	-	25568	4SHK-050-250-040-075-015-08
6	3	9	15	5.8	8	40	0.9	85	4	-	25569	4SHK-060-300-040-085-009-08
6	3	8	16	5.8	8	34	1.7	90	4	-	25570	4SHK-060-300-034-090-017-08
6	3	9	15	5.8	8	40	1.4	85	4	-	25571	4SHK-060-300-040-085-014-08
8	4	10	15	7.7	10	50	0.9	100	4	-	25572	4SHK-080-400-050-100-009-10



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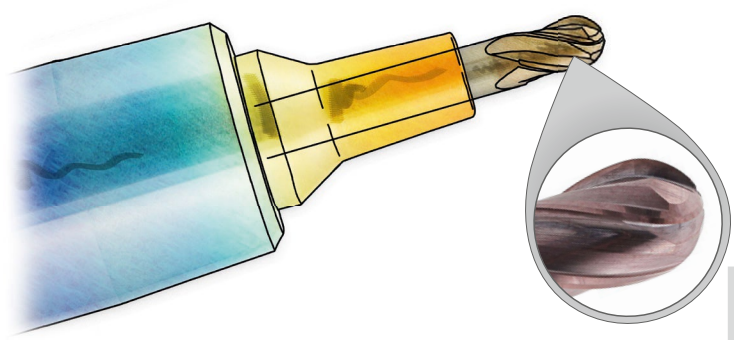
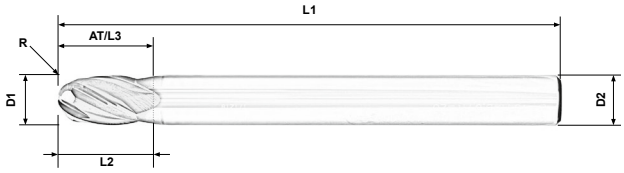


KULON® [4shkz]

Cylindrical, high-precision TSC® ballnose cutter with four cutting edges. Excellent surface quality in soft and hardened tool steels up to 65 HRC. Special geometry in the center.

+ very accurate
+ suitable for flat surfaces
+ roughing and finishing of hardened materials
+ nearly doubled feed rate compared to [shkz]



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 24431 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	3185	1401	100	0.20	2.50	0.11

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number.
3	1.5	3	6	2.85	4	6	0	51	4	-	24849	4SHKZ-030-150-006-051-000-04
3	1.5	3	9	2.85	4	9	0	51	4	-	24847	4SHKZ-030-150-009-051-000-04
3	1.5	3	10	2.85	4	10	0	51	4	-	24846	4SHKZ-030-150-010-051-000-04
3	1.5	3	12	2.85	4	12	0	51	4	-	24845	4SHKZ-030-150-012-051-000-04
3	1.5	3	15	2.85	4	15	0	51	4	-	24844	4SHKZ-030-150-015-051-000-04
3	1.5	3	18	2.85	4	18	0	51	4	-	24851	4SHKZ-030-150-018-051-000-04
3	1.5	3	21	2.85	4	21	0	51	4	-	24850	4SHKZ-030-150-021-051-000-04
4	2	4	8	3.85	4	8	0	51	4	-	24856	4SHKZ-040-200-008-051-000-04
4	2	4	10	3.85	6	10	0	60	4	-	24855	4SHKZ-040-200-010-060-000-06
4	2	4	12	3.85	6	12	0	60	4	-	24854	4SHKZ-040-200-012-060-000-06
4	2	4	16	3.85	6	16	0	60	4	-	24852	4SHKZ-040-200-016-060-000-06
4	2	4	20	3.85	6	20	0	60	4	-	24853	4SHKZ-040-200-020-060-000-06
4	2	4	28	3.85	6	28	0	70	4	-	24857	4SHKZ-040-200-028-070-000-06
5	2.5	5	15	4.8	6	15	0	60	4	-	24859	4SHKZ-050-250-015-060-000-06
5	2.5	5	20	4.8	6	20	0	60	4	-	24858	4SHKZ-050-250-020-060-000-06
6	3	9	9	6	6	9	0	60	4	-	24860	4SHKZ-060-300-009-060-000-06
6	3	9	9	6	6	9	0	100	4	-	24861	4SHKZ-060-300-009-100-000-06
6	3	9	9	6	6	9	0	75	4	-	24862	4SHKZ-060-300-009-075-000-06
6	3	9	20	5.7	6	20	0	60	4	-	24863	4SHKZ-060-300-020-060-000-06
6	3	9	25	5.7	6	25	0	60	4	-	24864	4SHKZ-060-300-025-060-000-06
8	4	12	12	8	8	12	0	100	4	-	24865	4SHKZ-080-400-012-100-000-08
8	4	12	12	8	8	12	0	64	4	-	24866	4SHKZ-080-400-012-064-000-08
10	5	15	15	10	10	15	0	73	4	-	24867	4SHKZ-100-500-015-073-000-10
10	5	20	20	10	10	20	0	100	4	-	24431	4SHKZ-100-500-020-100-000-10
12	6	20	20	12	12	20	0	100	4	-	24432	4SHKZ-120-600-020-100-000-12
12	6	20	20	12	12	20	0	74	4	-	24868	4SHKZ-120-600-020-074-000-12

*Technical changes reserved.

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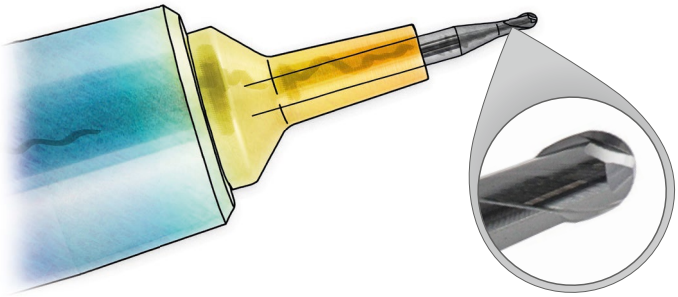
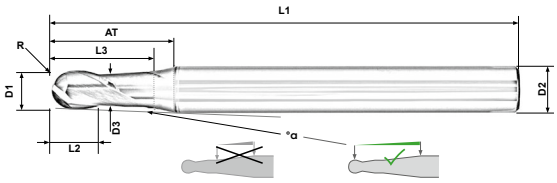


KULON® [hk]

▼ + ▼▼▼

Conically strengthened, high-precision ballnose cutter with two cutting edges. The cutting geometry is designed for maximum process reliability in hardened tool steels up to 65 HRC.

+ high process reliability
+ universally usable
+ conically strengthened



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 07979 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	5460	841	60	0.116	0.00	0.077

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+/-	+/-	+/-	+/-	+/-	+	+/-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.8	0.4	0.6	2	0.78	6	13	2.2	58	2	-	12534	HK-008-040-013-058-022-06
1	0.5	0.75	2.5	0.97	6	13.8	10.3	58	2	-	07975	HK-010-050-013-058-103-06
1	0.5	0.75	3	0.97	4	14	6.1	51	2	-	11313	HK-010-050-014-051-061-04
1.5	0.75	1.15	4	1.47	4	15	4.7	51	2	-	11308	HK-015-075-015-051-047-04
1.5	0.75	1.15	4.3	1.47	6	17	7.9	58	2	-	07976	HK-015-075-017-058-079-06
2	1	2	5	1.9	6	16.3	7.45	58	2	-	07974	HK-020-100-016-058-075-06
2.5	1.25	2.5	6.3	2.35	6	16.2	6.2	58	2	-	07977	HK-025-125-016-058-062-06
3	1.5	3	7.5	2.85	6	16	5.4	58	2	-	07978	HK-030-150-016-058-054-06
3.5	1.75	3.5	8.8	3.35	6	15.8	4.5	58	2	-	07979	HK-035-175-015-058-045-06
4	2	4	10	3.85	6	15.7	3.7	58	2	-	07980	HK-040-200-015-058-037-06
5	2.5	5	12.5	4.8	6	15.3	1.9	58	2	-	07981	HK-050-250-015-058-019-06

*Technical changes reserved.

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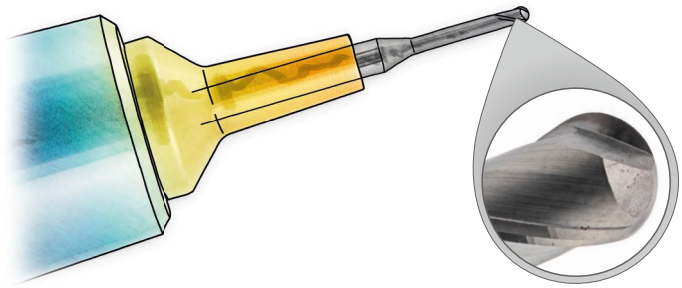
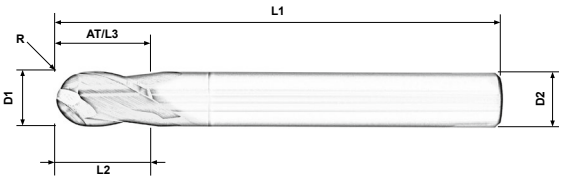


KULON® [hkz]

Cylindrical, high-precision ballnose cutter.
Excellent stability at the machining of welded-on dies.

+ very accurate
+ smooth running
+ roughing and finishing of hardened materials



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 11171 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	7431	535	35	0.02	0.00	0.036

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.5	0.25	0.4	1.5	0.48	6	1.5	0	60	2	-	11400	HKZ-005-025-001-060-000-06
0.5	0.25	0.4	2.5	0.48	6	2.5	0	60	2	-	11399	HKZ-005-025-002-060-000-06
0.6	0.3	0.45	2	0.58	6	2	0	60	2	-	10696	HKZ-006-030-002-060-000-06
0.6	0.3	0.45	3	0.56	6	3	0	60	2	-	09836	HKZ-006-030-003-060-000-06
0.8	0.4	0.6	6	0.78	6	6	0	60	2	-	10527	HKZ-008-040-006-060-000-06
0.8	0.4	0.6	10	0.78	6	10	0	60	2	-	10528	HKZ-008-040-010-060-000-06
1	0.5	0.75	4	0.97	4	4	0	50	2	-	10072	HKZ-010-050-004-050-000-04
1	0.5	0.75	5	0.97	6	5	0	60	2	-	11186	HKZ-010-050-005-060-000-06
1	0.5	0.75	6	0.97	6	6	0	60	2	-	16313	HKZ-010-050-006-060-000-06
1	0.5	0.75	8	0.96	6	8	0	60	2	-	16314	HKZ-010-050-008-060-000-06
1	0.5	0.75	10	0.96	6	10	0	60	2	-	19213	HKZ-010-050-010-060-000-06
1.5	0.75	1.15	6	1.43	6	6	0	60	2	-	07708	HKZ-015-075-006-060-000-06
1.5	0.75	1.15	8	1.47	6	8	0	60	2	-	11171	HKZ-015-075-008-060-000-06
1.8	0.9	1.8	3	1.7	6	3	0	60	2	-	09870	HKZ-018-090-003-060-000-06
1.8	0.9	1.8	6	1.7	6	6	0	60	2	-	09871	HKZ-018-090-006-060-000-06
1.8	0.9	1.8	9	1.7	6	9	0	60	2	-	09872	HKZ-018-090-009-060-000-06
1.8	0.9	1.8	12	1.7	6	12	0	60	2	-	09873	HKZ-018-090-012-060-000-06
1.8	0.9	1.8	15	1.7	6	15	0	60	2	-	09874	HKZ-018-090-015-060-000-06
2	1	2	6	1.9	6	6	0	60	2	-	07554	HKZ-020-100-006-060-000-06
2	1	2	8	1.9	6	8	0	60	2	-	19214	HKZ-020-100-008-060-000-06
2	1	2	10	1.9	6	10	0	60	2	-	19215	HKZ-020-100-010-060-000-06
2	1	2	12	1.9	6	12	0	60	2	-	17544	HKZ-020-100-012-060-000-06
2	1	2	15	1.9	6	15	0	60	2	-	19676	HKZ-020-100-015-060-000-06
2	1	2	20	1.9	6	20	0	60	2	-	19677	HKZ-020-100-020-060-000-06
2.5	1.25	2.5	15	2.35	6	15	0	60	2	-	19678	HKZ-025-125-015-060-000-06
2.5	1.25	2.5	20	2.35	6	20	0	60	2	-	19679	HKZ-025-125-020-060-000-06

*Technical changes reserved.

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KULON® [hkz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	1.5	3	15	2.85	6	15	0	60	2	-	11383	HKZ-030-150-015-060-000-06
3	1.5	3	20	2.85	6	20	0	60	2	-	10483	HKZ-030-150-020-060-000-06
3	1.5	3	25	2.85	6	25	0	60	2	-	10484	HKZ-030-150-025-060-000-06
3	1.5	3	30	2.85	6	30	0	70	2	-	12148	HKZ-030-150-030-070-000-06
4	2	4	15	3.88	6	15	0	60	2	-	11384	HKZ-040-200-015-060-000-06
4	2	4	20	3.85	6	20	0	60	2	-	10485	HKZ-040-200-020-060-000-06
4	2	4	25	3.85	6	25	0	60	2	-	10486	HKZ-040-200-025-060-000-06
4	2	4	30	3.85	6	30	0	70	2	-	11385	HKZ-040-200-030-070-000-06
4	2	4	35	3.85	6	35	0	70	2	-	11386	HKZ-040-200-035-070-000-06
5	2.5	5	15	4.8	6	15	0	60	2	-	11387	HKZ-050-250-015-060-000-06
5	2.5	5	20	4.8	6	20	0	60	2	-	10918	HKZ-050-250-020-060-000-06
5	2.5	5	25	4.8	6	25	0	60	2	-	10487	HKZ-050-250-025-060-000-06
5	2.5	5	30	4.8	6	30	0	70	2	-	11388	HKZ-050-250-030-070-000-06
5	2.5	5	35	4.8	6	35	0	70	2	-	11389	HKZ-050-250-035-070-000-06
6	3	9	9	6	6	9	0	60	2	-	07505	HKZ-060-300-009-060-000-06
6	3	9	9	6	6	9	0	100	2	-	09725	HKZ-060-300-009-100-000-06
8	4	12	12	8	8	12	0	64	2	-	07507	HKZ-080-400-012-064-000-08
8	4	12	12	8	8	12	0	100	2	-	10375	HKZ-080-400-012-100-000-08
10	5	15	15	10	10	15	0	73	2	-	07508	HKZ-100-500-015-073-000-10
10	5	15	15	10	10	15	0	100	2	-	10376	HKZ-100-500-015-100-000-10
12	6	20	20	12	12	20	0	100	2	-	10059	HKZ-120-600-020-100-000-12
12	6	20	20	12	12	20	0	74	2	-	10664	HKZ-120-600-020-074-000-12

*Technical changes reserved.

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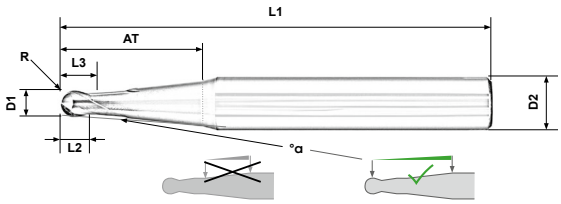
AURA® Frästechnik GmbH

KULON® [sk]

Double edged, extra conically strengthened ballnose cutter for five-axis machining. Perfect for simultaneous milling due to its sturdy design.

+ high concentricity
+ low deflection
+ perfect for simultaneous milling



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 04727 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	5096	1274	80	0.165	0.00	0.125

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	0.75	2.5	0.97	6	20	4	60	2	-	04723	SK-010-050-020-060-040-06
2	1	2	4	2	6	20	4	60	2	-	04724	SK-020-100-020-060-040-06
3	1.5	3	6	3	8	20	4	64	2	-	04725	SK-030-150-020-064-040-08
4	2	4	6.5	4	8	20	4	64	2	-	04726	SK-040-200-020-064-040-08
5	2.5	5	8	5	8	22	4	64	2	-	04727	SK-050-250-022-064-040-08
6	3	6	8	6	8	19	3	64	2	-	04728	SK-060-300-019-064-030-08
8	4	7	10	8	10	19	3	75	2	-	04729	SK-080-400-019-075-030-10
10	5	8	12	10	12	29	2	84	2	-	04730	SK-100-500-029-084-020-12

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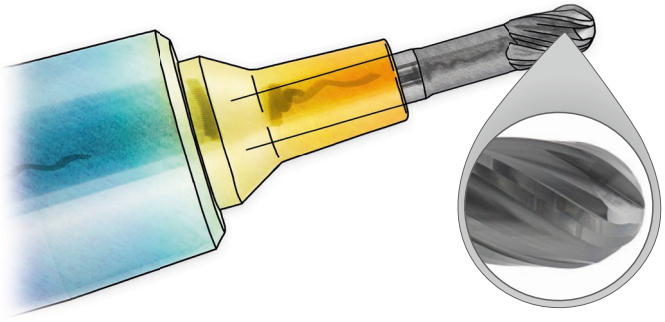
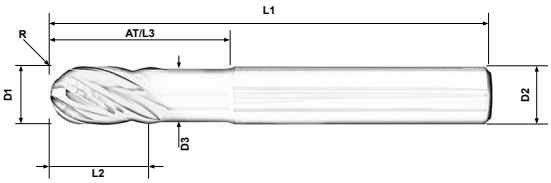


KULON® [4kz]

Ballnose cutter with four flutes for the machining of hardened tool steel up to 65 HRC.

+ cutting in to the center
+ roughing and finishing
+ ≥ D6 mm regrindable



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00560 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	3 185	1 440	60	0.141	0.00	0.113

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+/-	+/-	+/-	+/-	-	+	+/-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	1.5	4	12	2.7	6	12	0	60	4	-	09750	4KZ-030-150-012-060-000-06
4	2	5	12	3.7	6	12	0	60	4	-	00474	4KZ-040-200-012-060-000-06
4	2	5	20	3.7	6	20	0	60	4	-	01090	4KZ-040-200-020-060-000-06
6	3	10	20	5.6	6	20	0	60	4	-	00475	4KZ-060-300-020-060-000-06
6	3	10	30	5.6	6	30	0	80	4	-	00560	4KZ-060-300-030-080-000-06
8	4	12	26	7.73	8	26	0	75	4	-	00476	4KZ-080-400-026-075-000-08
8	4	12	40	7.73	8	40	0	100	4	-	00561	4KZ-080-400-040-100-000-08
10	5	16	28	9.2	10	28	0	75	4	-	00562	4KZ-100-500-028-075-000-10
10	5	16	40	9.2	10	40	0	100	4	-	00477	4KZ-100-500-040-100-000-10
10	5	16	80	9.2	10	80	0	120	4	-	01110	4KZ-100-500-080-120-000-10
12	6	16	30	11.65	12	30	0	100	4	-	00478	4KZ-120-600-030-100-000-12
12	6	16	30	11	12	30	0	120	4	-	04028	4KZ-120-600-030-120-000-12
16	8	18	32	15	16	32	0	100	4	-	01005	4KZ-160-800-032-100-000-16

*Technical changes reserved.

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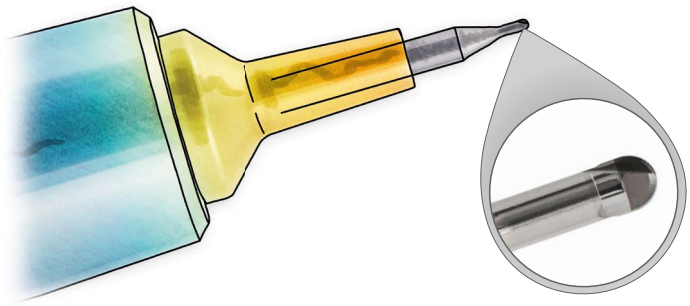
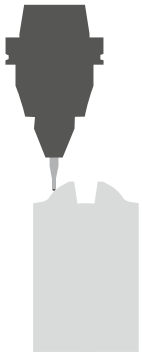
„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics

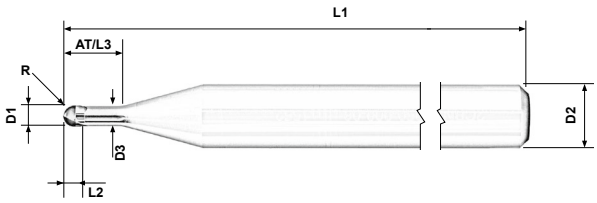




KULON® [1cbnk] & [2cbnk]

Cubic crystalline boron nitride (CBN) is particularly suitable for the machining of steels in the hardness range from 54 to 65 HRC. Wear tend to be lower than with conventional cutting metrials. A continous wear process generates even surfaces with less steps, especially at runtimes > 8 h.

+ high cutting speeds towards carbide (factor 1.3 - 2.0)
+ tight tool tolerances enable precise milling work at a long tool life
+ steel machining and cast machining possible



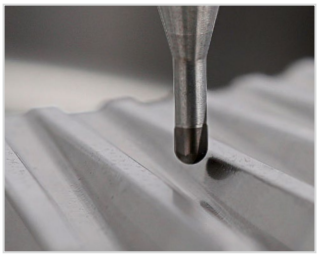
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 20160 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	42000	336	66	0.014	0.014	0.004

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+/-	-	-	-	-	-	-	-	+	+	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.1	0.05	0.1	0.3	0.09	4	0.3	0	50	1	-	18301	1CBNK-001-005-0003-050-000-04
0.2	0.1	0.2	0.6	0.18	4	0.6	0	50	1	-	18254	1CBNK-002-010-0006-050-000-04
0.3	0.15	0.3	0.9	0.28	4	0.9	0	50	2	-	18362	2CBNK-003-015-0009-050-000-04
0.4	0.2	0.4	12	0.37	4	1.2	0	50	2	-	18361	2CBNK-004-020-0012-050-000-04
0.5	0.25	0.5	1.5	0.46	4	1.5	0	50	2	-	20160	2CBNK-005-025-0015-050-000-04
0.6	0.3	0.6	1.8	0.56	4	1.8	0	50	2	-	20162	2CBNK-006-030-0018-050-000-04
0.8	0.4	0.8	2.4	0.76	4	2.4	0	50	2	-	20164	2CBNK-008-040-0024-050-000-04
1	0.5	1	3	0.95	4	3	0	50	2	-	20166	2CBNK-010-050-0030-050-000-04
1	0.5	1	6	0.95	4	6	0	50	2	-	20167	2CBNK-010-050-0060-050-000-04
1.5	0.75	1.5	4.5	1.45	4	4.5	0	50	2	-	20172	2CBNK-015-075-0045-050-000-04
1.5	0.75	1.5	9	1.45	4	9	0	50	2	-	20173	2CBNK-015-075-0090-050-000-04
2	1	1.5	6	1.95	4	6	0	50	2	-	20178	2CBNK-020-100-0060-050-000-04
2	1	1.5	12	1.95	4	12	0	50	2	-	20179	2CBNK-020-100-0120-050-000-04
3	1.5	2	9	2.95	4	9	0	50	2	-	20180	2CBNK-030-150-0090-050-000-04
3	1.5	2	18	2.95	4	18	0	60	2	-	20181	2CBNK-030-150-0180-060-000-04



*Technical changes reserved.

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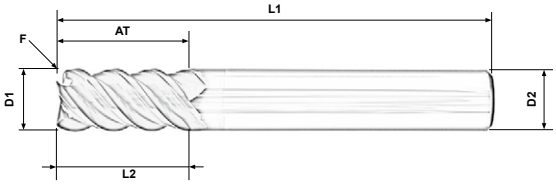
KANTOS® [4hqc]

End mill with four flutes and protective chamfer for machining hardened tool steels up to 65 HRC.
The cutting geometry is designed for trochoidal machining as well as shoulder milling.

+ high process safety
+ pre-finishing and finishing
+ trochoidal milling
+ creates excellent vertical walls



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 04460 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	796	105	25	18.00	1.00	0.033

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+/-	+/-	-	-	-	-	+	-	-	-	-	-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.05	7	9	2.88	6	9	0	60	4	-	04453	4HQC-030-005-007-060-000-06
3	0.05	10	12	2.88	6	12	0	60	4	-	04454	4HQC-030-005-010-060-000-06
4	0.05	8	10	3.85	6	10	0	60	4	-	06487	4HQC-040-005-010-060-000-06
4	0.05	13	15	3.88	6	15	0	60	4	-	06488	4HQC-040-005-013-060-000-06
6	0.1	16	-	-	6	16	0	60	4	-	04455	4HQC-060-010-016-060-000-06
6	0.1	26	-	-	6	26	0	70	4	-	04456	4HQC-060-010-026-070-000-06
8	0.1	16	-	-	8	16	0	64	4	-	04457	4HQC-080-010-016-064-000-08
8	0.1	25	-	-	8	25	0	64	4	-	05123	4HQC-080-010-025-064-000-08
8	0.1	36	-	-	8	36	0	80	4	-	06489	4HQC-080-010-036-080-000-08
10	0.1	20	-	-	10	20	0	75	4	-	04458	4HQC-100-010-020-075-000-10
10	0.1	25	-	-	10	25	0	85	4	-	04459	4HQC-100-010-025-085-000-10
10	0.1	46	-	-	10	46	0	100	4	-	04460	4HQC-100-010-046-100-000-10
12	0.1	24	-	-	12	24	0	84	4	-	04461	4HQC-120-010-024-084-000-12
12	0.1	42	-	-	12	42	0	100	4	-	04462	4HQC-120-010-042-100-000-12
12	0.1	56	-	-	12	56	0	120	4	-	04463	4HQC-120-010-056-120-000-12
16	0.1	48	-	-	16	48	0	100	4	-	04464	4HQC-160-010-048-100-000-16
16	0.1	66	-	-	16	66	0	130	4	-	04465	4HQC-160-010-066-130-000-16
20	0.1	45	-	-	20	45	0	100	4	-	04466	4HQC-200-010-045-100-000-20
20	0.1	60	-	-	20	60	0	125	4	-	04467	4HQC-200-010-060-125-000-20
20	0.1	80	-	-	20	80	0	150	4	-	04468	4HQC-200-010-080-150-000-20

*Technical changes reserved.

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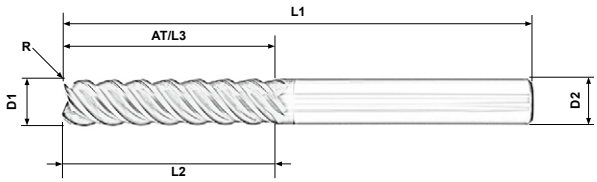
KANTOS® [4hqcr]

End mill with four flutes and corner radius for machining hardened tool steels up to 65 HRC.
The cutting geometry is designed for trochoidal machining as well as shoulder milling.

+ high process safety
+ pre-finishing and finishing
+ trochoidal milling
+ creates excellent vertical walls



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 19430 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	1 327	106	25	10.00	0.70	0.02

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+/-	+/-	-	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.05	7	9	2.9	6	9	0	60	4	-	19415	4HQCR-030-005-009-060-000-06
3	0.05	10	12	2.9	6	12	0	60	4	-	19416	4HQCR-030-005-012-060-000-06
3	0.3	7	9	2.9	6	9	0	60	4	-	19417	4HQCR-030-030-009-060-000-06
3	0.3	10	12	2.9	6	12	0	60	4	-	19418	4HQCR-030-030-012-060-000-06
3	0.5	7	9	2.9	6	9	0	60	4	-	19419	4HQCR-030-050-009-060-000-06
3	0.5	10	12	2.9	6	12	0	60	4	-	19420	4HQCR-030-050-012-060-000-06
4	0.05	8	10	3.9	6	10	0	60	4	-	19421	4HQCR-040-005-010-060-000-06
4	0.05	13	15	3.9	6	15	0	60	4	-	19422	4HQCR-040-005-015-060-000-06
4	0.3	8	10	3.9	6	10	0	60	4	-	19423	4HQCR-040-030-010-060-000-06
4	0.3	13	15	3.88	6	15	0	60	4	-	19424	4HQCR-040-030-015-060-000-06
4	0.5	8	10	3.9	6	10	0	60	4	-	19425	4HQCR-040-050-010-060-000-06
4	0.5	13	15	3.9	6	15	0	60	4	-	19426	4HQCR-040-050-015-060-000-06
6	0.05	16	16	-	6	16	0	60	4	-	19427	4HQCR-060-005-016-060-000-06
6	0.05	26	26	-	6	26	0	70	4	-	19428	4HQCR-060-005-026-070-000-06
6	0.3	16	16	-	6	16	0	60	4	-	19429	4HQCR-060-030-016-060-000-06
6	0.3	26	26	-	6	26	0	70	4	-	19430	4HQCR-060-030-026-070-000-06
6	0.5	16	16	-	6	16	0	60	4	-	19431	4HQCR-060-050-016-060-000-06
6	0.5	26	26	-	6	26	0	70	4	-	19432	4HQCR-060-050-026-070-000-06
8	0.05	16	16	-	8	16	0	64	4	-	19433	4HQCR-080-005-016-064-000-08
8	0.05	25	25	-	8	25	0	64	4	-	19434	4HQCR-080-005-025-064-000-08
8	0.05	36	36	-	8	36	0	80	4	-	19435	4HQCR-080-005-036-080-000-08
8	0.3	16	16	-	8	16	0	64	4	-	19436	4HQCR-080-030-016-064-000-08
8	0.3	25	25	-	8	25	0	64	4	-	19437	4HQCR-080-030-025-064-000-08
8	0.3	36	36	-	8	36	0	80	4	-	19438	4HQCR-080-030-036-080-000-08
8	0.5	16	16	-	8	16	0	64	4	-	19439	4HQCR-080-050-016-064-000-08
8	0.5	25	25	-	8	25	0	64	4	-	19440	4HQCR-080-050-025-064-000-08
8	0.5	36	36	-	8	36	0	80	4	-	19441	4HQCR-080-050-036-080-000-08

*Technical changes reserved.

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KANTOS® [4hqcr]

<65HRC	<58HRC	<56HRC	<52HRC	<48HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+/-	+/-	-	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
10	0.5	20	20	-	10	20	0	75	4	-	19442	4HQCR-100-050-020-075-000-10
10	0.5	25	25	-	10	25	0	85	4	-	19443	4HQCR-100-050-025-085-000-10
10	0.5	46	46	-	10	46	0	100	4	-	19444	4HQCR-100-050-046-100-000-10
10	1	20	20	-	10	20	0	75	4	-	19445	4HQCR-100-100-020-075-000-10
10	1	25	25	-	10	25	0	85	4	-	19446	4HQCR-100-100-025-085-000-10
10	1	46	46	-	10	46	0	100	4	-	19447	4HQCR-100-100-046-100-000-10
12	0.5	24	24	-	12	24	0	84	4	-	19448	4HQCR-120-050-024-084-000-10
12	0.5	42	42	-	12	42	0	100	4	-	19449	4HQCR-120-050-042-100-000-12
12	0.5	56	56	-	12	56	0	120	4	-	19450	4HQCR-120-050-056-120-000-12
12	1	24	24	-	12	24	0	84	4	-	19451	4HQCR-120-100-024-084-000-12
12	1	42	42	-	12	42	0	100	4	-	19452	4HQCR-120-100-042-100-000-12
12	1	56	56	-	12	56	0	120	4	-	19453	4HQCR-120-100-056-120-000-12
16	0.5	48	48	-	16	48	0	100	4	-	19454	4HQCR-160-050-048-100-000-16
16	0.5	66	66	-	16	66	0	130	4	-	19455	4HQCR-160-050-066-130-000-16
16	1	48	48	-	16	48	0	100	4	-	19456	4HQCR-160-100-048-100-000-16
16	1	66	66	-	16	66	0	130	4	-	19457	4HQCR-160-100-066-130-000-16
20	0.5	45	45	-	20	45	0	100	4	-	19458	4HQCR-200-050-045-100-000-20
20	0.5	60	60	-	20	60	0	125	4	-	19459	4HQCR-200-050-060-125-000-20
20	0.5	80	80	-	20	80	0	150	4	-	19460	4HQCR-200-050-080-150-000-20
20	1	45	45	-	20	45	0	100	4	-	19461	4HQCR-200-100-045-100-000-20
20	1	60	60	-	20	60	0	125	4	-	19462	4HQCR-200-100-060-125-000-20
20	1	80	80	-	20	80	0	150	4	-	19463	4HQCR-200-100-080-150-000-20

*Technical changes reserved.

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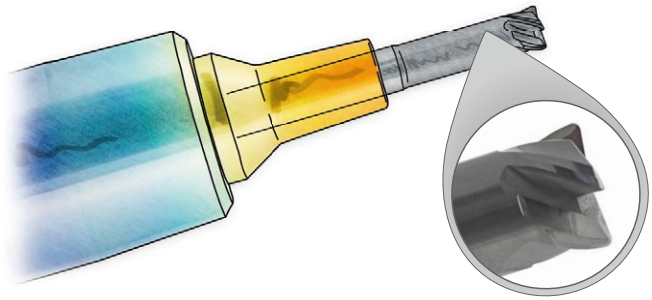
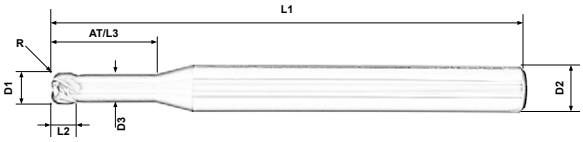


SANTOS® [hgt]

Torus cutter with four flutes, very short cutting edge and great corner radius, cylindrically stepped. For HSC machining of hardened tool steel up to 65 HRC.

+ better surfaces at impure and unalloyed tool steels
+ excellent for copy milling and multipass milling
+ internal cooling supply
+ unequally divided and very short cutting edges
+ ≥ D6 mm regrindable



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 23000 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	6369	764	60	0.05	0.00	0.04

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+/-	+/-	-	-	-	+	-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	0.2	2	8	1.9	6	8	0	60	3	-	22991	3HGT-020-020-008-060-000-06
2	0.2	2	10	1.9	6	10	0	60	3	-	22994	3HGT-020-020-010-060-000-06
2	0.2	2	12	1.9	6	12	0	60	3	-	22995	3HGT-020-020-012-060-000-06
2	0.2	2	15	1.9	6	15	0	60	3	-	22996	3HGT-020-020-015-060-000-06
2	0.2	2	6	1.9	6	20	5.7	60	3	-	20042	3HGTK-020-020-020-060-057-06
2	0.2	2	6	1.9	6	20	5.7	60	4	IKZ	11302	HGTK-020-020-020-060-057-06
2	0.5	2	6	1.9	6	20	5.7	60	3	-	19508	3HGTK-020-050-020-060-057-06
2	0.5	2	6	1.9	6	20	5.7	60	4	IKZ	07589	HGTK-020-050-020-060-057-06
3	0.2	2	10	2.82	6	10	0	60	3	-	22997	3HGT-030-020-010-060-000-06
3	0.2	2	15	2.8	6	15	0	60	3	-	22998	3HGT-030-020-015-060-000-06
3	0.3	2	10	2.8	6	10	0	60	3	-	22999	3HGT-030-030-010-060-000-06
3	0.3	2	15	2.8	6	15	0	60	3	-	23000	3HGT-030-030-015-060-000-06
3	0.5	2	10	2.82	6	10	0	60	3	-	23001	3HGT-030-050-010-060-000-06
3	0.5	2	15	2.8	6	15	0	60	3	-	23002	3HGT-030-050-015-060-000-06
3	0.5	2	9	2.8	6	20	4.3	60	3	-	20044	3HGTK-030-050-020-060-043-06
3	0.5	2	9	2.8	6	20	4.3	60	4	IKZ	10733	HGTK-030-050-020-060-043-06
3	0.75	2	9	2.8	6	15	2.8	60	3	-	20045	3HGTK-030-075-015-060-028-06
3	0.8	2	9	2.8	6	20	4.3	60	3	-	20046	3HGTK-030-080-020-060-043-06
3	0.8	2	9	2.8	6	20	4.3	60	4	IKZ	07590	HGTK-030-080-020-060-043-06
4	0.4	2	16	3.6	6	16	0	60	4	IKZ	10268	HGT-040-040-016-060-000-06
4	0.5	2	16	3.6	6	16	0	60	4	IKZ	10269	HGT-040-050-016-060-000-06
4	0.5	2	21	3.6	6	21	0	60	3	-	23003	3HGT-040-050-021-060-000-06
4	1	2	12	3.64	6	12	0	60	4	IKZ	06601	HGT-040-100-012-060-000-06
4	1	2	16	3.6	6	16	0	60	4	IKZ	08085	HGT-040-100-016-060-000-06
4	1	2	10	3.6	6	40	0.9	85	4	IKZ	18029	HGTK-040-100-040-085-009-06
5	0.5	3	16	4.6	6	16	0	60	4	IKZ	11397	HGT-050-050-016-060-000-06
5	1	3	15	4.64	6	15	0	60	4	IKZ	07438	HGT-050-100-015-060-000-06

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SANTOS® [hgt]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+/-	+/-	-	-	-	+	-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
5	1	3	16	4.6	6	16	0	60	4	IKZ	10270	HGT-050-100-016-060-000-06
6	0.5	3	18	5.64	6	18	0	60	4	IKZ	07780	HGT-060-050-018-060-000-06
6	1	3	18	5.6	6	18	0	60	4	IKZ	06602	HGT-060-100-018-060-000-06
6	1.5	3	18	5.6	6	18	0	60	4	IKZ	07591	HGT-060-150-018-060-000-06
6	1.5	3	24	5.6	6	24	0	75	4	IKZ	10680	HGT-060-150-024-075-000-06
6	1.5	3	30	5.6	6	30	0	90	4	IKZ	10087	HGT-060-150-030-090-000-06
6	2	4	18	5.64	6	18	0	60	4	IKZ	11448	HGT-060-200-018-060-000-06
8	0.5	4	24	7.6	8	24	0	65	4	IKZ	07781	HGT-080-050-024-065-000-08
8	1	4	24	7.64	8	24	0	65	4	IKZ	08796	HGT-080-100-024-065-000-08
8	2	4	24	7.64	8	24	0	65	4	IKZ	06603	HGT-080-200-024-065-000-08
8	2	4	10	7.6	10	50	0.4	100	4	IKZ	11443	HGTK-080-200-050-100-004-10
8	2	4	10	7.6	10	50	0.9	100	4	IKZ	11444	HGTK-080-200-050-100-009-10
8	2	4	10	7.6	10	50	1.19	100	4	IKZ	11445	HGTK-080-200-050-100-012-10
10	1	5	30	9.6	10	30	0	85	4	IKZ	08082	HGT-100-100-030-085-000-10
10	2	5	30	9.64	10	30	0	85	4	IKZ	06604	HGT-100-200-030-085-000-10
12	1	6	35	11.6	12	35	0	80	4	IKZ	08620	HGT-120-100-035-080-000-12
12	1	6	50	11.6	12	50	0	100	4	IKZ	21616	HGT-120-100-050-100-000-12
12	2	6	60	11.64	12	60	0	100	4	IKZ	07676	HGT-120-200-060-100-000-12
12	3	6	40	11.6	12	40	0	100	4	IKZ	06605	HGT-120-300-040-100-000-12

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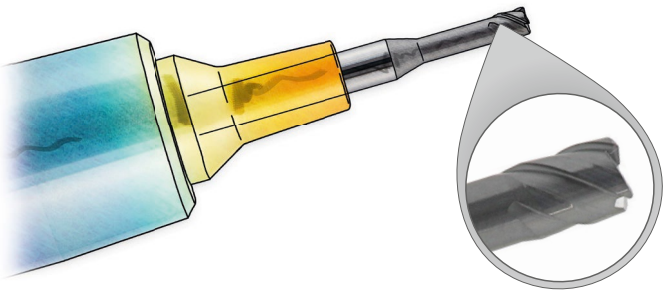
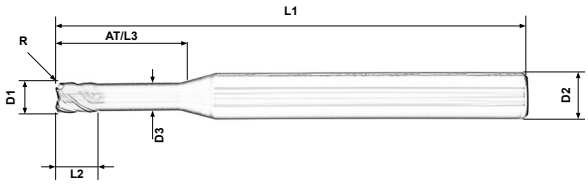


SANTOS® [hmta]

Universally usable end mill with corner radius and short cutting edge for machining hardened tool steel up to 65 HRC. Optimized for universal wall and pocket machining.

+ short cutting edge, prevent chips of jamming
+ roughing and finishing
+ wall and ground machining
+ 2-D and 3-D machining



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00025 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	2389	1032	75	0.075	0.00	0.108

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+/-	+/-	-	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.1	3	12	2.8	6	12	0	60	4	-	00923	HMTA-030-010-012-060-000-06
3	0.25	3	15	2.8	6	15	0	60	4	-	06362	HMTA-030-025-015-060-000-06
3.5	0.3	3	12	3.3	6	12	0	60	4	-	00071	HMTA-035-030-012-060-000-06
3.5	0.5	3	12	3.3	6	12	0	60	4	-	16224	HMTA-035-050-012-060-000-06
4	0.1	4	15	3.64	6	15	0	60	4	-	06363	HMTA-040-010-015-060-000-06
4	0.3	4	15	3.6	6	15	0	60	4	-	01025	HMTA-040-030-015-060-000-06
4	0.5	4	15	3.64	6	15	0	60	4	-	06365	HMTA-040-050-015-060-000-06
4	1	4	15	3.6	6	15	0	60	4	-	16225	HMTA-040-100-015-060-000-06
5	0.1	4	15	4.6	6	15	0	60	4	-	00924	HMTA-050-010-015-060-000-06
5	0.3	4	15	4.6	6	15	0	60	4	-	06366	HMTA-050-030-015-060-000-06
5	0.5	4	15	4.6	6	15	0	60	4	-	00701	HMTA-050-050-015-060-000-06
6	0.1	5	18	5.64	6	18	0	60	4	-	00925	HMTA-060-010-018-060-000-06
6	0.3	5	18	5.6	6	18	0	60	4	-	06367	HMTA-060-030-018-060-006-06
6	0.5	5	18	5.64	6	18	0	60	4	-	00702	HMTA-060-050-018-060-000-06
6	0.5	5	30	5.6	6	30	0	60	4	-	05432	HMTA-060-050-030-060-000-06
6	1	5	18	5.64	6	18	0	60	4	-	01042	HMTA-060-100-018-060-000-06
8	0.5	8	26	7.64	8	26	0	64	4	-	00024	HMTA-080-050-026-064-000-08
8	1	8	26	7.64	8	26	0	64	4	-	01026	HMTA-080-100-026-064-000-08
10	0.5	8	30	9.6	10	30	0	75	4	-	00025	HMTA-100-050-030-075-000-10
10	1	8	30	9.6	10	30	0	75	4	-	01088	HMTA-100-100-030-075-000-10
12	0.5	10	40	11.6	12	40	0	84	6	-	06368	HMTA-120-050-040-084-000-12
12	1	10	30	11.6	12	30	0	100	6	-	00552	HMTA-120-100-030-100-000-12
12	1	10	40	11.6	12	40	0	84	6	-	06369	HMTA-120-100-040-084-000-12
12	1	10	40	11.6	12	40	0	100	6	-	07086	HMTA-120-100-040-100-000-12

*Technical changes reserved.

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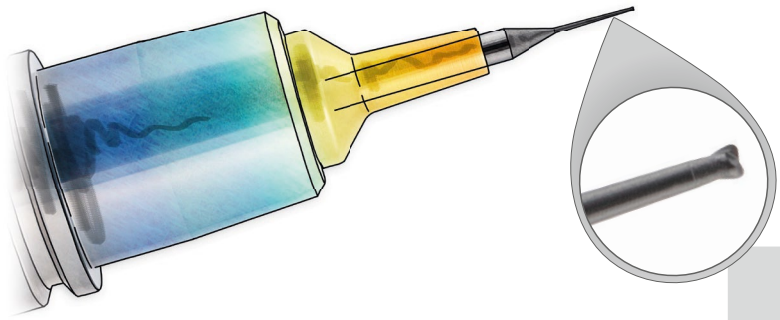
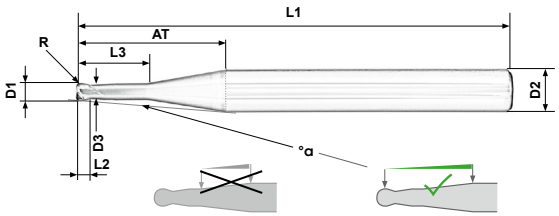


SANTOS® [ht]

Torus cutter with two flutes, conically strengthened.
The cutting geometry is designed for maximum process reliabilty in hardened tool steels up to 65 HRC.

+ high process reliabilty
+ universally usable
+ conically strenghtened



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 07850 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	8493	645	40	0.035	0.00	0.038

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	-	-	+	+	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.6	0.1	0.45	1.5	0.58	6	15	1.1	51	2	-	09969	HT-006-010-015-051-011-06
0.8	0.2	1.3	2.4	0.76	6	2.4	0	60	2	-	12364	HTZA-008-020-002-060-000-06
1	0.2	0.75	5	0.97	6	20	7.2	51	2	-	07852	HT-010-020-020-051-072-06
1.5	0.3	1.15	6	1.47	6	20	6.5	58	2	-	07851	HT-015-030-020-058-065-06
1.5	0.5	1.15	6	1.47	6	20	6.5	58	2	-	07850	HT-015-050-020-058-065-06
1.7	0.3	1.7	7	1.6	6	20	6.2	58	2	-	07849	HT-017-030-020-058-062-06
1.7	0.5	1.7	7	1.63	6	20	6.2	58	2	-	07848	HT-017-050-020-058-062-06
2	0.5	2	8	1.9	6	20	5.8	58	2	-	07846	HT-020-050-020-058-058-06
2.5	0.5	2.5	9	2.35	6	20	5	58	2	-	07845	HT-025-050-020-058-050-06
3	0.5	3	10	2.85	6	20	4.4	58	2	-	07082	HT-030-050-020-058-044-06

*Technical changes reserved.

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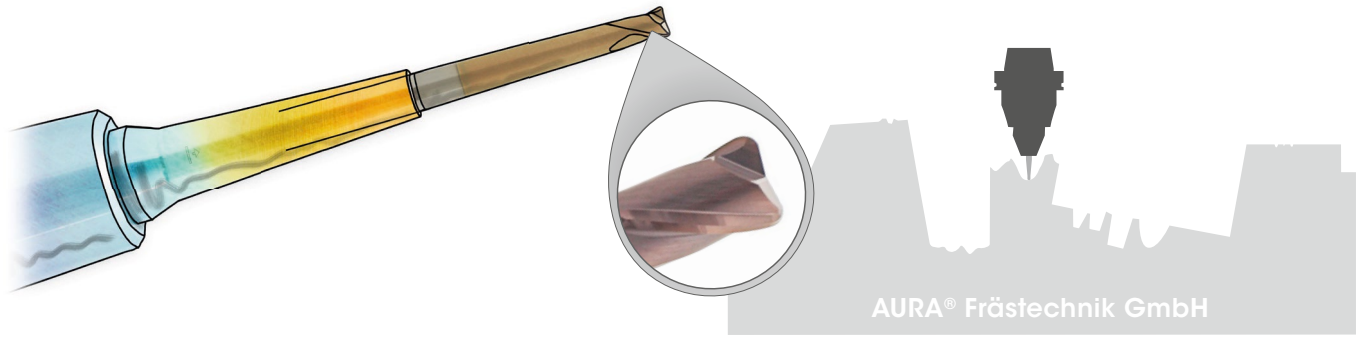
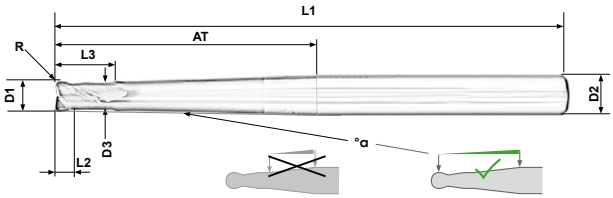


SANTOS® [sht]

▼ + ▼▼▼

Torical high-precision end mill with two flutes, conically strengthened. The cutting geometry is designed for maximum process reliabilty in hardened tool steels up to 65 HRC.

+ high process reliabilty
+ universally usable
+ conically strenghtened



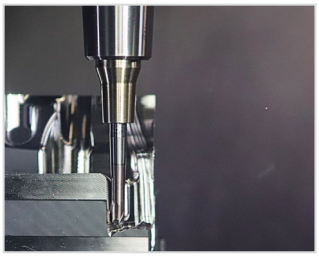
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 19400 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	4777	573	60	0.05	2.40	0.06

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	0.5	2	6	1.9	6	20	0.9	60	2	-	19392	SHT-020-050-020-060-009-06
2	0.5	2	6	1.9	6	25	0.9	70	2	-	19393	SHT-020-050-025-070-009-06
2	0.5	2	6	1.9	6	32	1.4	70	2	-	19394	SHT-020-050-032-070-014-06
2.5	0.5	2.5	8	2.35	6	35	1.4	80	2	-	18047	SHT-025-050-035-080-014-06
2.5	0.5	4	8	2.35	6	25	1.4	70	2	-	23759	SHT-025-050-025-070-014-06
3	0.5	3	8	2.85	6	35	0.9	75	2	-	19395	SHT-030-050-035-075-009-06
3	0.5	3	8	2.85	6	40	0.9	75	2	-	19396	SHT-030-050-040-075-009-06
3	0.5	3	8	2.85	6	45	1.4	100	2	-	19397	SHT-030-050-045-100-014-06
3	0.5	3	8	2.85	8	60	1.4	100	2	-	19398	SHT-030-050-060-100-014-08
3	1	3	8	2.85	6	40	0.9	75	2	-	19399	SHT-030-100-040-075-009-06
4	0.5	4	10	3.85	6	40	0.9	80	2	-	19400	SHT-040-050-040-080-009-06
4	0.5	4	10	3.85	8	60	1.4	100	2	-	19401	SHT-040-050-060-100-014-08
4	0.5	4	10	3.85	8	75	0.9	120	2	-	19402	SHT-040-050-075-120-009-08
4	0.5	6	8	3.85	6	30	0.9	75	2	-	23758	SHT-040-050-030-075-009-06
4	1	4	10	3.85	6	40	0.9	80	2	-	19403	SHT-040-100-040-080-009-06
4	1	4	10	3.85	6	40	1.4	80	2	-	19404	SHT-040-100-040-080-014-06
4	1	4	10	3.85	8	60	0.9	120	2	-	19405	SHT-040-100-060-120-009-08
4	1.5	4	10	3.85	6	40	1.4	80	2	-	19406	SHT-040-150-040-080-014-06
6	0.5	8	15	5.8	8	40	0.9	80	2	-	19407	SHT-060-050-040-080-009-08
6	1	8	15	5.8	8	40	0.9	80	2	-	19408	SHT-060-100-040-080-009-08
6	1	8	15	5.8	8	50	1.2	100	2	-	19409	SHT-060-100-050-100-012-08
6	1	8	15	5.8	8	60	0.9	100	2	-	19410	SHT-060-100-060-100-009-08
8	1	8	20	7.7	10	50	1.1	100	2	-	18043	SHT-080-100-050-100-011-10
8	1	8	20	7.7	10	65	0.9	120	2	-	19412	SHT-080-100-065-120-009-10
8	2	8	20	7.7	10	65	0.9	120	2	-	19413	SHT-080-200-065-120-009-10
10	1	10	30	9.69	12	70	0.8	120	2	-	19414	SHT-100-100-070-120-008-12



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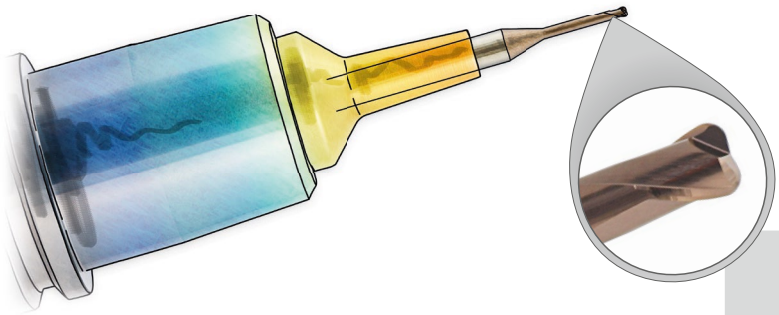
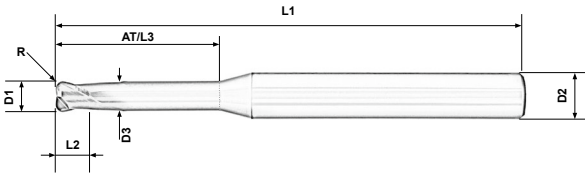


SANTOS® [shz]

▼ + ▼▼▼

Torical high-precision end mill with two flutes, cylindrically stepped. The cutting geometry is designed for maximum process reliabilty in hardened tool steels up to 65 HRC.

+ high process reliabilty
+ universally usable
+ conically strenghtened



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 19360 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	4777	382	60	0.05	1.50	0.04

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	+	+	+	+	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.1	0.75	6	0.97	6	6	0	60	2	-	19351	SHTZA-010-010-006-060-000-06
1	0.2	0.75	4	0.97	4	4	0	50	2	-	10068	SHTZA-010-020-004-050-000-04
1.5	0.15	1.15	10	1.47	6	10	0	60	2	-	19352	SHTZA-015-015-010-060-000-06
2	0.2	2	8	1.9	6	8	0	60	2	-	19353	SHTZA-020-020-008-060-000-06
2	0.2	2	10	1.93	6	10	0	60	2	-	19354	SHTZA-020-020-010-060-000-06
2	0.5	2	10	1.9	6	10	0	60	2	-	19355	SHTZA-020-050-010-060-000-06
2	0.5	2	15	1.93	6	15	0	60	2	-	19356	SHTZA-020-050-015-060-000-06
3	0.5	3	10	2.85	6	10	0	60	2	-	19357	SHTZA-030-050-010-060-000-06
3	0.5	3	15	2.85	6	15	0	60	2	-	19358	SHTZA-030-050-015-060-000-06
4	0.2	4	20	3.85	6	20	0	60	2	-	23659	SHTZA-040-020-020-060-000-06
4	0.5	4	15	3.85	6	15	0	60	2	-	18045	SHTZA-040-050-015-060-000-06
4	0.5	4	20	3.85	6	20	0	60	2	-	19359	SHTZA-040-050-020-060-000-06
4	1	4	15	3.85	6	15	0	60	2	-	19360	SHTZA-040-100-015-060-000-06
4	1	4	20	3.85	6	20	0	60	2	-	19361	SHTZA-040-100-020-060-000-06
6	1	6	20	5.8	6	20	0	60	2	-	19362	SHTZA-060-100-020-060-000-06
6	1	6	40	5.8	6	40	0	75	2	-	19363	SHTZA-060-100-040-075-000-06
6	2	6	20	5.8	6	20	0	60	2	-	19364	SHTZA-060-200-020-060-000-06
8	1	8	40	7.7	8	40	0	75	2	-	19365	SHTZA-080-100-040-075-000-08

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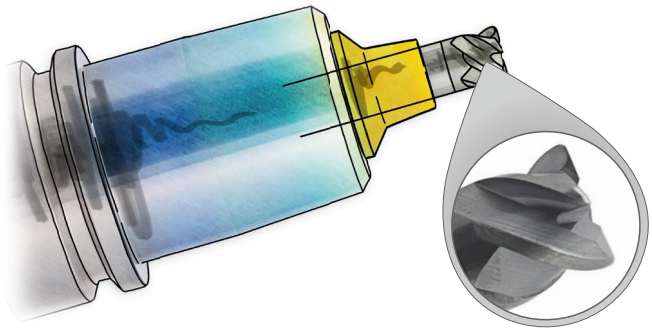
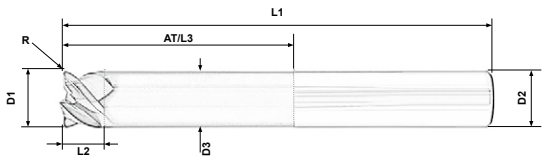


VILAS® [scmsf]

TSC® torus cutter for surface finishing applications in hard machining. Solid carbide torus cutter which complements our product range for surface finishing with small diameters. For finishing planar surfaces in hard machining, with high runout accuracy < 3µm. Plane surfaces without steps are created even at high feed rates.

+ high-precision surfaces with low roughness and small stepovers
+ regrindable solid carbide tool
+ great stability due to short overhangs
+ short processing times due to high feed rates



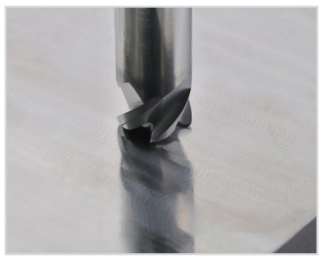
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 26433 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<58 HRC	1911	1911	60	0.05	3.60	0.25

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+/-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	+/-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	0°a	L1	z	IKZ	Code	Article number
6	0.5	4	12	5.83	6	12	0	51	4	-	29094	SCMSF-060-050-120-051-000-06
6	1	4	12	5.9	6	12	0	51	4	-	29095	SCMSF-060-100-120-051-000-06
8	0.5	5	16	7.73	8	16	0	59	4	-	29096	SCMSF-080-050-160-059-000-08
8	1	5	16	7.9	8	16	0	59	4	-	29097	SCMSF-080-100-160-059-000-08
10	0.5	6	6	10	10	6	0	51	4	-	26432	SCMSF-100-050-060-051-000-10
10	1	6	6	10	10	6	0	51	4	-	26433	SCMSF-100-100-060-051-000-10
12	0.5	8	8	12	12	8	0	51	4	-	26434	SCMSF-120-050-080-051-000-12
12	0.5	8	48	11.65	12	48	0	90	4	-	27117	SCMSF-120-050-480-090-000-12
12	1	8	8	12	12	8	0	51	4	-	26435	SCMSF-120-100-080-051-000-12
12	1	8	48	11.9	12	48	0	90	4	-	27116	SCMSF-120-100-480-090-000-12



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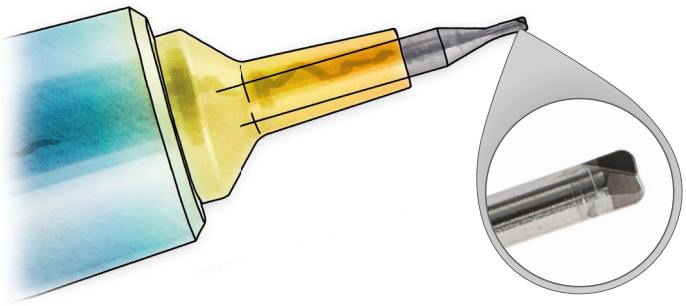
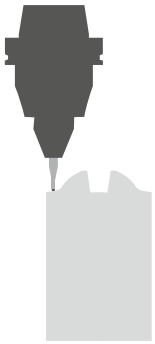
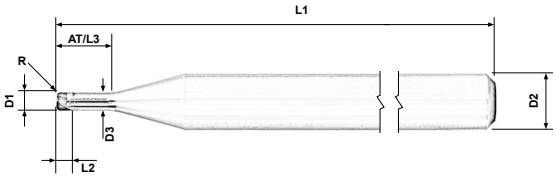




SANTOS® [1cbnt] & [2cbnt]

Cubic crystalline boron nitride (CBN) is particularly suitable for the machining of steels in the hardness range from 54 to 65 HRC. Wear tend to be lower than with conventional cutting metrials. A continous wear process generates even surfaces with less steps, especially at runtimes > 8 h.

+ high cutting speeds towards carbide (factor 1.3 - 2.0)
+ tight tool tolerances enable precise milling work at a long tool life
+ steel machining and cast machining possible



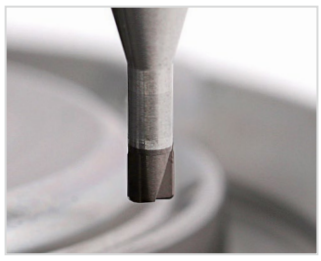
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 20228 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	42 000	252	40	0.005	0.005	0.003

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+/-	-	-	-	-	-	-	-	+	+	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.1	0.01	0.1	0.3	0.09	4	0.3	0	50	1	-	20205	1CBNT-001-001-0003-050-000-04
0.2	0.01	0.2	0.6	0.18	4	0.6	0	50	1	-	20207	1CBNT-002-001-0006-050-000-04
0.3	0.03	0.3	0.9	0.26	4	0.9	0	50	2	-	20228	2CBNT-003-003-0009-050-000-04
0.4	0.05	0.4	1.2	0.36	4	1.2	0	50	2	-	20237	2CBNT-004-005-0012-050-000-04
0.5	0.1	0.5	1.5	0.46	4	1.5	0	50	2	-	20254	2CBNT-005-010-0015-050-000-04
1	0.2	1	3	0.95	4	3	0	50	2	-	20279	2CBNT-010-020-0030-050-000-04
1.5	0.2	1.5	4.5	1.45	4	4.5	0	50	2	-	20291	2CBNT-015-020-0045-050-000-04
2	0.3	1.5	6	1.95	4	6	0	50	2	-	20301	2CBNT-020-030-0060-050-000-04
3	0.5	2	9	2.95	4	9	0	50	2	-	20313	2CBNT-030-050-0090-050-000-04



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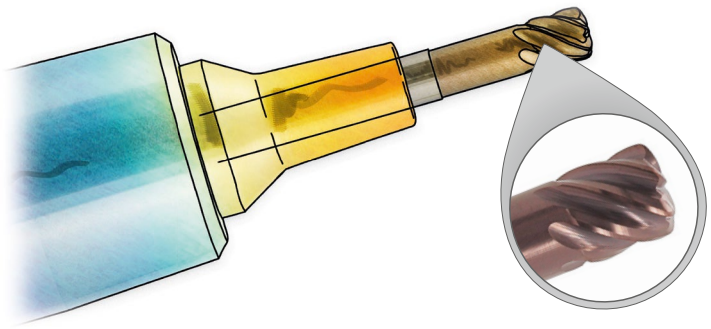
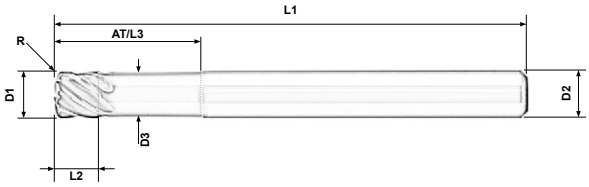


POTON® [shr]

Highly effective contour roughing in hardened mould construction steels. This tool was specially developed for hard machining for which no efficient solution was previously available. A moderate wear behaviour and a high splinter ablation range enables a high machining efficiency.

+ short working depth
+ high feed rates
+ hardened materials 44-65 HRC



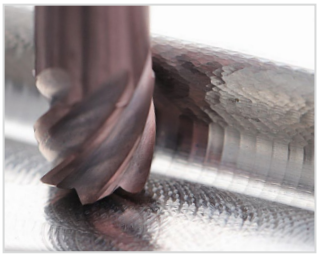
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 23303 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<58 HRC	3981	3583	75	0.20	2.00	0.15

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	-	-	-	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.4	2	9	2.85	6	9	0	50	5		23540	SHR-030-040-009-050-000-06
4	0.6	3	12	3.8	6	12	0	50	5		23539	SHR-040-060-012-050-000-06
5	0.7	4	15	4.8	6	15	0	60	5		23946	SHR-050-070-015-060-000-06
6	0.9	5	18	5.7	6	18	0	60	6		23303	SHR-060-090-018-060-000-06
8	1.2	8	24	7.6	8	24	0	75	6		23304	SHR-080-120-024-075-000-08
10	1.4	10	30	9.5	10	30	0	80	6		23305	SHR-100-140-030-080-000-10



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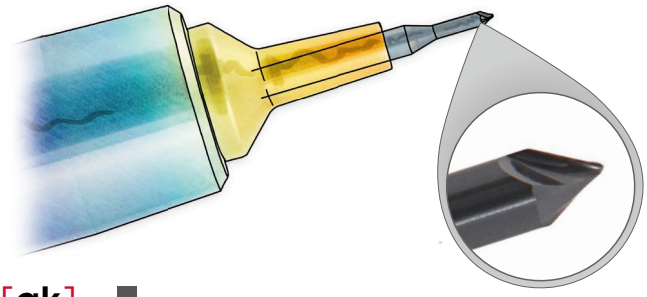
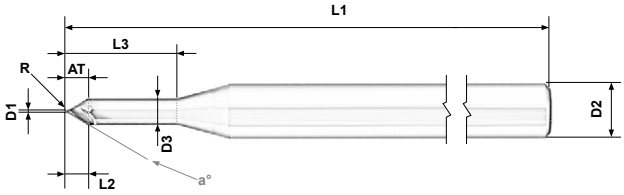


[gk]

Engraving ball for milling engravings and fonts.
Type plates injection moulding, waffle pattern pressure die casting, batch numbers at forming.
Applicable with low rotational speed.

+ super strong
+ super solid cutting edge geometry



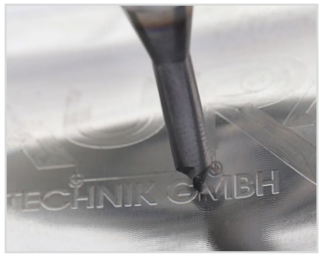
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 03894 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	42000	336	26	0.02	0.00	0.004

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+/-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	+/-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.12	0.06	5.38	12	2	6	5.38	10	60	2	-	10155	GK-0012-006-012-060-100-06
0.15	0.075	5.31	12	2	6	5.31	10	60	2	-	04853	GK-0015-0075-012-060-100-06
0.2	0.1	1.46	12	3	6	1.46	45	60	2	-	16309	GK-002-010-012-060-450-06
0.2	0.1	2.5	12	3	6	2.5	30	60	2	-	03894	GK-002-010-012-060-300-06
0.2	0.1	5.31	12	3	6	5.31	15	60	2	-	06390	GK-002-010-012-060-150-06
0.3	0.15	2.45	12	3	6	2.45	30	60	2	-	01115	GK-003-015-012-060-300-06
0.3	0.15	5.17	12	3	6	5.17	15	60	2	-	01258	GK-003-015-012-060-150-06
0.3	0.15	5.59	5.6	6	6	5.59	27.5	60	2	-	10960	GK-003-015-005-060-275-06
0.3	0.15	7.79	12	3	6	7.79	10	60	2	-	07672	GK-003-015-012-060-100-06
0.4	0.2	2.4	12	3	6	2.4	30	60	2	-	17109	GK-004-020-012-060-300-06
0.5	0.25	2.35	12	3	6	2.35	30	60	2	-	01114	GK-005-025-012-060-300-06
0.5	0.25	4.88	12	3	6	4.88	15	60	2	-	01259	GK-005-025-012-060-150-06
0.6	0.3	2.3	12	3	6	2.3	30	60	2	-	01116	GK-006-030-012-060-300-06
0.6	0.3	3.54	12	3	6	3.54	20	60	2	-	02137	GK-006-030-012-060-200-06
0.6	0.3	4.74	12	3	6	4.74	15	60	2	-	01260	GK-006-030-012-060-150-06
0.6	0.3	6.81	12	3	6	6.81	5	60	2	-	08805	GK-006-030-012-060-050-06
0.6	0.3	7.08	12	3	6	7.08	10	60	2	-	07671	GK-006-030-012-060-100-06
0.8	0.4	1.5	25	3	6	1.5	5	60	2	-	11300	GK-008-040-025-060-050-06
1	0.5	1.79	12	4	6	1.79	45	60	2	-	01523	GK-010-050-012-060-450-06
1	0.5	2.96	12	4	6	2.96	30	60	2	-	06393	GK-010-050-012-060-300-06
1	0.5	4.02	12	4	6	4.02	22.5	60	2	-	06392	GK-010-050-012-060-225-06
1	0.5	6.03	12	4	6	6.03	15	60	2	-	06391	GK-010-050-012-060-150-06



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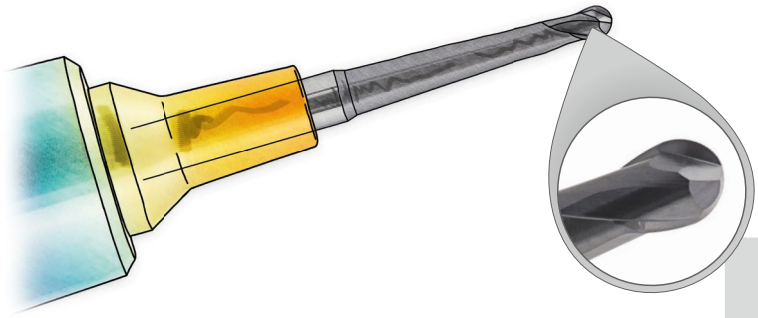
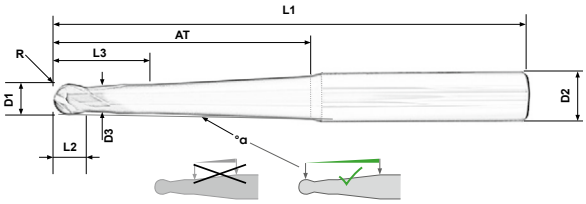


KULON® [k]

Conical strengthened ballnose cutter with two flutes.
The cutting geometry is designed for maximum process reliabilty in hardened tool steels up to 65 HRC.

+ high process reliabilty
+ universally usable
+ conically strenghtened
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 06100 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	13 800	414	65	0.025	0.15	0.015

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	0.75	4	0.97	6	10	0.9	60	2	IKZ	06335	K-010-050-010-060-009-06
1	0.5	0.75	4	0.97	6	15	0.9	60	2	IKZ	06337	K-010-050-015-060-009-06
1	0.5	0.75	4	0.97	6	15	0.4	60	2	IKZ	10724	K-010-050-015-060-004-06
1	0.5	0.75	4	0.97	6	20	0.9	60	2	IKZ	06336	K-010-050-020-060-009-06
1	0.5	0.75	4	0.97	6	30	1.5	75	2	-	00305	K-010-050-030-075-015-06
1	0.5	0.75	4	0.97	6	39	3.7	75	2	-	00528	K-010-050-039-075-037-06
1	0.5	0.75	4	0.97	6	40	3.6	80	2	-	09743	K-010-050-040-080-036-06
1.3	0.65	1	4	1.27	6	18	1.5	60	2	IKZ	00027	K-013-065-018-060-015-06
1.3	0.65	1	4	1.27	6	26	1.5	75	2	-	00029	K-013-065-026-075-015-06
1.5	0.75	1.15	4	1.47	6	15	0.4	60	2	IKZ	00991	K-015-075-015-060-004-06
1.5	0.75	1.15	4	1.43	6	15	0.9	60	2	IKZ	00992	K-015-075-015-060-009-06
1.5	0.75	1.15	4	1.47	6	20	0.4	60	2	IKZ	00367	K-015-075-020-060-004-06
1.5	0.75	1.15	4	1.47	6	20	0.9	60	2	IKZ	00993	K-015-075-020-060-009-06
1.5	0.75	1.15	4	1.47	6	25	3	60	2	IKZ	06100	K-015-075-025-060-030-06
1.5	0.75	1.15	4	1.47	6	30	1.5	75	2	-	00919	K-015-075-030-075-015-06
1.5	0.75	1.15	4	1.47	8	50	3	100	2	-	00306	K-015-075-050-100-030-08
2	1	2	6	1.93	6	15	0.9	60	2	-	20047	K-020-100-015-060-009-06
2	1	2	6	1.9	6	18	1.5	60	2	-	03002	K-020-100-018-060-015-06
2	1	2	6	1.9	6	20	0.9	60	2	-	00805	K-020-100-020-060-009-06
2	1	2	6	1.9	6	20	0.4	60	2	-	00988	K-020-100-020-060-004-06
2	1	2	6	1.9	6	25	1.5	75	2	-	00043	K-020-100-025-075-015-06
2	1	2	6	1.9	6	25	0.4	70	2	-	00989	K-020-100-025-070-004-06
2	1	2	6	1.93	6	25	0.9	70	2	-	00990	K-020-100-025-070-009-06
2	1	2	6	1.9	6	32	1.5	75	2	-	00045	K-020-100-032-075-015-06

*Technical changes reserved.

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KULON® [k]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	1	2	6	1.9	6	35	0.9	75	2	-	07238	K-020-100-035-075-009-06
2	1	2	6	1.93	6	45	1.4	85	2	-	05147	K-020-100-045-085-014-06
2	1	2	6	1.9	6	45	0.9	85	2	-	05148	K-020-100-045-085-009-06
2	1	2	6	1.9	6	60	0.9	100	2	-	05149	K-020-100-060-100-009-06
2	1	2	6	1.9	6	60	1.4	100	2	-	05150	K-020-100-060-100-014-06
2.5	1.25	2.5	6	2.35	6	25	1.5	75	2	-	00033	K-025-125-025-075-015-06
2.5	1.25	2.5	6	2.35	6	25	0.9	75	2	-	20048	K-025-125-025-075-009-06
2.5	1.25	2.5	6	2.35	6	35	1.5	75	2	-	00035	K-025-125-035-075-015-06
2.5	1.25	2.5	6	2.35	6	40	1.5	75	2	-	00037	K-025-125-040-075-015-06
2.5	1.25	2.5	6	2.35	6	40	0.9	75	2	-	20050	K-025-125-040-075-009-06
3	1.5	3	6	2.85	6	23	2	60	2	-	07777	K-030-150-023-060-020-06
3	1.5	3	6	2.85	6	25	1	75	2	-	00039	K-030-150-025-075-010-06
3	1.5	3	6	2.85	6	30	1.5	75	2	-	00578	K-030-150-030-075-015-06
3	1.5	3	6	2.85	6	30	0.9	75	2	-	07239	K-030-150-030-075-009-06
3	1.5	3	6	2.85	6	40	0.9	80	2	-	00055	K-030-150-040-080-009-06
3	1.5	3	6	2.85	6	40	1.5	85	2	-	00057	K-030-150-040-085-015-06
3	1.5	3	6	2.85	6	40	2.2	75	2	-	00452	K-030-150-040-075-022-06
3	1.5	3	6	2.85	8	50	1.5	100	2	-	00227	K-030-150-050-100-015-08
3	1.5	3	6	2.85	8	50	1	100	2	-	00040	K-030-150-050-100-010-08
3	1.5	3	6	2.85	6	63	1.3972	100	2	-	00382	K-030-150-063-100-014-06
3	1.5	3	6	2.85	6	63	0.9	100	2	-	11311	K-030-150-063-100-009-06
3	1.5	3	6	2.85	6	65	0.9	100	2	-	02278	K-030-150-065-100-009-06
4	2	4	12	3.85	6	20	1	70	2	-	06338	K-040-200-020-070-010-06
4	2	4	12	3.85	6	20	3	90	2	-	10145	K-040-200-020-090-030-06
4	2	4	12	3.85	6	24	2.4	70	2	-	07778	K-040-200-024-070-024-06
4	2	4	12	3.85	6	30	1.5	75	2	-	00442	K-040-200-030-075-015-06
4	2	4	12	3.85	6	30	1	75	2	-	06339	K-040-200-030-075-010-06
4	2	4	12	3.85	6	40	1.5	85	2	-	00438	K-040-200-040-085-015-06
4	2	4	12	3.85	6	40	0.9	85	2	-	00046	K-040-200-040-085-009-06
4	2	4	12	3.85	6	40	1.4	100	2	-	01543	K-040-200-040-100-014-06
4	2	4	12	3.85	6	40	1.5	90	2	-	10147	K-040-200-040-090-015-06
4	2	4	12	3.85	8	45	2.5	100	2	-	00223	K-040-200-045-100-025-08
4	2	4	12	3.85	8	50	1.5	100	2	-	00073	K-040-200-050-100-015-08
4	2	4	12	3.85	8	60	1.5	120	2	-	00077	K-040-200-060-120-015-08
4	2	4	12	3.85	6	65	0.9	100	2	-	00682	K-040-200-065-100-009-06
5	2.5	5	10	4.8	6	40	0.7	75	2	-	00502	K-050-250-040-075-007-06
5	2.5	5	15	4.8	8	40	2.1	100	2	-	03329	K-050-250-040-100-021-08
5	2.5	5	15	4.8	8	40	1.5	75	2	-	07442	K-050-250-040-075-015-08
5	2.5	5	10	4.8	6	40	0.7	100	2	-	11291	K-050-250-040-100-007-06
5	2.5	5	15	4.8	8	60	1.5	120	2	-	00550	K-050-250-060-120-015-08
5	2.5	5	10	4.8	8	60	1.5	110	2	-	10149	K-050-250-060-110-015-08
6	3	9	12	5.8	8	20	3	100	2	-	10150	K-060-300-020-100-030-08
6	3	9	12	5.8	12	30	6.34	100	2	-	06544	K-060-300-030-100-063-12
6	3	9	16	5.8	8	40	1.5	85	2	-	00439	K-060-300-040-085-015-08
6	3	9	16	5.8	8	40	0.9	85	2	-	06117	K-060-300-040-085-009-08

*Technical changes reserved.

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KULON® [k]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	3	9	16	5.8	10	45	2.5	100	2	-	00224	K-060-300-045-100-025-10
6	3	9	16	5.8	8	50	0.4	90	2	-	10093	K-060-300-050-090-004-08
6	3	9	16	5.8	8	50	0.9	90	2	-	10094	K-060-300-050-090-009-08
6	3	9	25	5.8	8	60	1	100	2	-	09747	K-060-300-060-100-010-08
6	3	9	16	5.8	8	64	0.9	100	2	-	00858	K-060-300-064-100-009-08
6	3	9	25	5.8	10	65	1.5	120	2	-	00700	K-060-300-065-120-015-10
6	3	9	16	5.8	8	65	0.88	120	2	-	01657	K-060-300-065-120-010-08
8	4	10	14	7.7	10	20	3	100	2	-	10151	K-080-400-020-100-030-10
8	4	10	15	7.73	12	30	0.9	100	2	-	07121	K-080-400-030-100-009-12
8	4	10	14	7.7	10	40	1.5	100	2	-	10152	K-080-400-040-100-015-10
8	4	10	15	7.7	10	50	0.4	100	2	-	10096	K-080-400-050-100-004-10
8	4	10	30	7.7	12	55	2.1	110	2	-	10889	K-080-400-055-110-021-12
8	4	10	20	7.7	10	60	0.9	120	2	-	00670	K-080-400-060-120-009-10
8	4	10	15	7.7	10	60	0.9	100	2	-	00857	K-080-400-060-100-009-10
8	4	10	25	7.7	10	70	0.9	110	2	-	10888	K-080-400-070-110-009-10
10	5	12	17	9.65	12	20	3	110	2	-	10153	K-100-500-020-110-030-12
10	5	12	17	9.65	12	40	1.5	130	2	-	10154	K-100-500-040-130-015-12
10	5	12	20	9.65	12	60	0.9	130	2	-	09943	K-100-500-060-130-009-12
10	5	12	25	9.65	12	60	0.9	100	2	-	10097	K-100-500-060-100-009-12
10	5	12	25	9.65	12	60	0.4	100	2	-	10098	K-100-500-060-100-004-12
10	5	15	20	9.65	16	110	1.5	155	2	-	12489	K-100-500-110-155-015-16
10	5	20	30	9.65	12	62	0.9	110	2	-	10890	K-100-500-062-110-009-12
10	5	20	30	9.65	16	90	1.9	150	2	-	10891	K-100-500-090-150-019-16
12	6	15	15	11.6	16	80	1.5	160	2	-	10020	K-120-600-080-160-015-16
12	6	15	35	11.6	16	100	1.2	150	2	-	09665	K-120-600-100-150-012-16

*Technical changes reserved.

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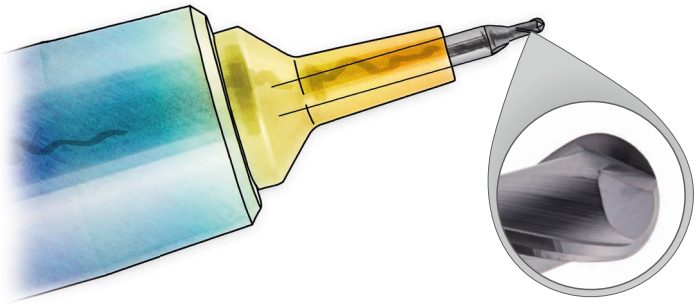
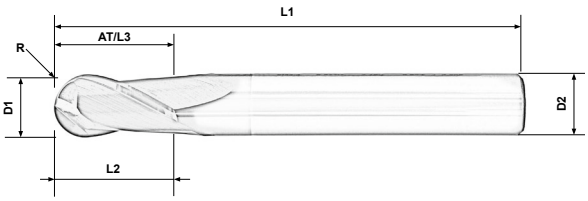


KULON® [kz]

Universally usable ballnose cutter with two flutes.
The cutting geometry is designed for maximum process reliabilty in hardened tool steels up to 65 HRC.

+ high process reliability
+ universally usable
+ very well suited for 1.2083 / 1.2085 soft



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00050 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	6369	930	100	0.156	0.00	0.073

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	0.75	2.5	0.97	6	2.5	0	60	2	IKZ	00485	KZ-010-050-025-060-000-06
1.3	0.65	2	4	1.25	6	4	0	60	2	-	01411	KZ-013-065-040-060-000-06
1.5	0.75	1.15	3	1.47	6	3	0	60	2	IKZ	00437	KZ-015-075-030-060-000-06
1.8	0.9	1.8	3	1.7	6	3	0	60	2	-	01409	KZ-018-090-030-060-000-06
2	1	2	3.5	1.93	6	3.5	0	60	2	-	00416	KZ-020-100-035-060-000-06
2	1	2	3.5	1.9	6	3.5	0	75	2	-	00873	KZ-020-100-035-075-000-06
2.5	1.25	2.5	4	2.35	6	4	0	60	2	-	00047	KZ-025-125-040-060-000-06
3	1.5	3	5	2.85	6	5	0	60	2	-	00421	KZ-030-150-050-060-000-06
3	1.5	3	5	2.85	6	5	0	75	2	-	00048	KZ-030-150-050-075-000-06
3.5	1.75	3.5	6	3.35	6	6	0	60	2	-	00336	KZ-035-175-060-060-000-06
4	2	4	7	3.85	6	7	0	60	2	-	00422	KZ-040-200-070-060-000-06
4	2	4	7	3.85	6	7	0	75	2	-	00049	KZ-040-200-070-075-000-06
5	2.5	5	8	4.8	6	8	0	60	2	-	00050	KZ-050-250-080-060-000-06
5	2.5	5	8	4.8	6	8	0	75	2	-	00051	KZ-050-250-080-075-000-06
6	3	10	10	0	6	10	0	60	2	-	00423	KZ-060-300-100-060-000-06
6	3	10	10	0	6	10	0	100	2	-	00720	KZ-060-300-100-100-000-06
6	3	10	10	6	6	10	0	75	2	-	00052	KZ-060-300-100-075-000-06
6	3	10	12	5.8	8	12	0	64	2	-	00888	KZ-060-300-100-064-000-08
6	3	10	44	5.8	6	44	0	80	2	-	00626	KZ-060-300-440-080-000-06
8	4	12	12	8	8	12	0	59	2	-	00460	KZ-080-400-120-059-000-08
8	4	12	12	8	8	12	0	80	2	-	00053	KZ-080-400-120-080-000-08
8	4	12	12	8	8	12	0	100	2	-	00054	KZ-080-400-120-100-000-08
8	4	12	12	0	8	12	0	150	2	-	06387	KZ-080-400-120-150-000-08
8	4	12	12	0	8	12	0	120	2	-	09393	KZ-080-400-120-120-000-08
8	4	12	20	7.7	8	20	0	59	2	-	10029	KZ-080-400-200-059-000-08

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KULON® [kz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
8	4	12	26	7.73	8	26	0	59	2	-	06205	KZ-080-400-260-059-000-08
8	4	12	40	7.7	8	40	0	80	2	-	07278	KZ-080-400-400-080-000-08
10	5	18	18	0	10	18	0	75	2	-	00056	KZ-100-500-180-075-000-10
10	5	18	18	0	10	18	0	100	2	-	00058	KZ-100-500-180-100-000-10
10	5	18	18	0	10	18	0	150	2	-	00059	KZ-100-500-180-150-000-10
10	5	18	18	0	10	18	0	120	2	-	07490	KZ-100-500-180-120-000-10
10	5	18	31	9.69	10	31	0	75	2	-	04883	KZ-100-500-310-075-000-10
10	5	18	35	9.65	10	35	0	60	2	-	07469	KZ-100-500-350-060-000-10
12	6	20	20	0	12	20	0	84	2	-	00680	KZ-120-600-200-084-000-12
12	6	20	20	0	12	20	0	120	2	-	00060	KZ-120-600-200-120-000-12
12	6	20	20	0	12	20	0	150	2	-	00061	KZ-120-600-200-150-000-12
12	6	20	20	0	12	20	0	100	2	-	03783	KZ-120-600-200-100-000-12
12	6	20	43	11.6	12	43	0	84	2	-	04884	KZ-120-600-430-084-000-12
16	8	26	26	0	16	26	0	100	2	-	00062	KZ-160-800-260-100-000-16

*Technical changes reserved.

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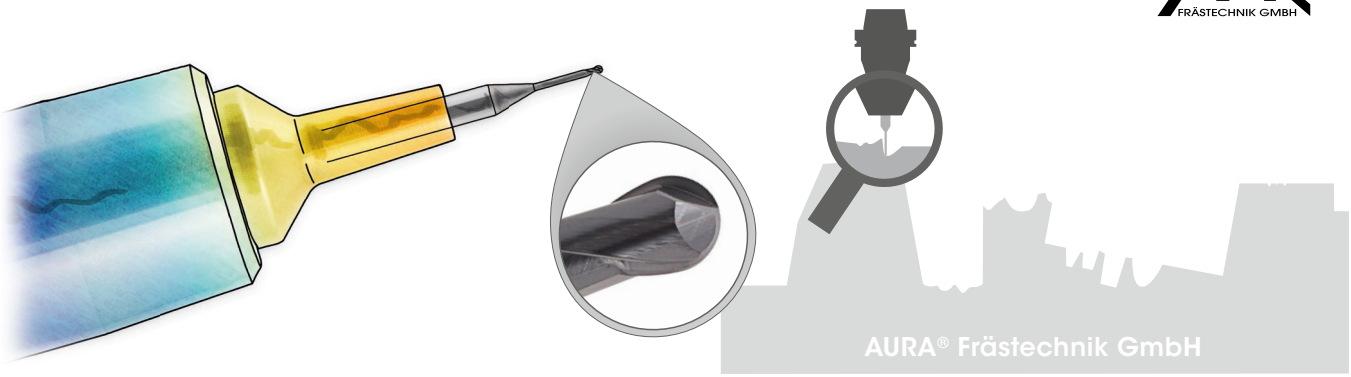
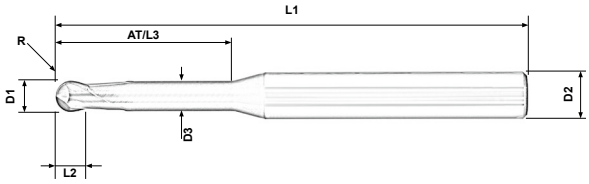


KULON® [mk]

Universally usable ballnose cutter with two flutes, cylindrically stepped. The cutting geometry is designed for maximum process reliabilty in hardened tool steels up to 65 HRC.

+ high process reliability
+ minimal concentricity tolerances
+ cylindrically stepped
+ very well suited for 1.2083 / 1.2085 soft



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00616 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	42000	588	79	0.015	0.00	0.07

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.3	0.15	0.25	2	0.28	6	2	0	60	2	IKZ	00806	MK-003-015-002-060-000-06
0.3	0.15	0.25	2	0.285	4	2	0	50	2	-	05797	MK-003-015-002-050-000-04
0.3	0.15	0.25	3	0.28	6	3	0	60	2	IKZ	00807	MK-003-015-003-060-000-06
0.3	0.15	0.25	3	0.28	4	3	0	50	2	-	05798	MK-003-015-003-050-000-04
0.3	0.15	0.25	5	0.28	6	5	0	60	2	IKZ	00808	MK-003-015-005-060-000-06
0.3	0.15	0.25	5	0.28	4	5	0	50	2	-	05799	MK-003-015-005-050-000-04
0.4	0.2	0.3	2	0.38	6	2	0	60	2	IKZ	00809	MK-004-020-002-060-000-06
0.4	0.2	0.3	2	0.38	4	2	0	50	2	-	05800	MK-004-020-002-050-000-04
0.4	0.2	0.3	4	0.38	6	4	0	60	2	IKZ	00810	MK-004-020-004-060-000-06
0.4	0.2	0.3	4	0.38	4	4	0	50	2	-	05801	MK-004-020-004-050-000-04
0.4	0.2	0.3	6	0.38	6	6	0	60	2	IKZ	00811	MK-004-020-006-060-000-06
0.4	0.2	0.3	6	0.38	4	6	0	50	2	-	05802	MK-004-020-006-050-000-04
0.5	0.25	0.4	2	0.48	6	2	0	60	2	IKZ	00812	MK-005-025-002-060-000-06
0.5	0.25	0.4	2	0.48	4	2	0	50	2	-	05279	MK-005-025-002-050-000-04
0.5	0.25	0.4	3	0.48	4	3	0	50	2	-	11033	MK-005-025-003-050-000-04
0.5	0.25	0.4	5	0.48	6	5	0	60	2	IKZ	00813	MK-005-025-005-060-000-06
0.5	0.25	0.4	5	0.48	4	5	0	50	2	-	05280	MK-005-025-005-050-000-04
0.5	0.25	0.4	7	0.48	6	7	0	60	2	IKZ	00814	MK-005-025-007-060-000-06
0.5	0.25	0.4	7	0.48	4	7	0	50	2	-	05414	MK-005-025-007-050-000-04
0.6	0.3	0.45	3	0.57	4	3	0	50	2	-	05041	MK-006-030-003-050-000-04
0.6	0.3	0.45	3	0.58	6	3	0	60	2	IKZ	11039	MK-006-030-003-060-000-06
0.6	0.3	0.45	6	0.56	4	6	0	50	2	-	03810	MK-006-030-006-050-000-04
0.6	0.3	0.45	6	0.58	6	6	0	60	2	IKZ	11040	MK-006-030-006-060-000-06
0.6	0.3	0.45	9	0.58	6	9	0	60	2	IKZ	00616	MK-006-030-009-060-000-06
0.6	0.3	0.45	9	0.58	4	9	0	50	2	-	05803	MK-006-030-009-050-000-04
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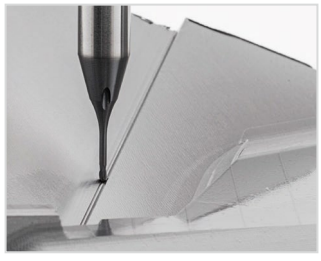

*Technical changes reserved.

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KULON® [mk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.7	0.35	0.55	3	0.68	6	3	0	60	2	IKZ	00818	MK-007-035-003-060-000-06
0.7	0.35	0.55	7	0.68	6	7	0	60	2	IKZ	00819	MK-007-035-007-060-000-06
0.7	0.35	0.55	10	0.68	6	10	0	60	2	IKZ	00820	MK-007-035-010-060-000-06
0.8	0.4	0.6	2	0.76	6	2	0	60	2	IKZ	01080	MK-008-040-002-060-000-06
0.8	0.4	0.6	4	0.76	6	4	0	60	2	IKZ	00588	MK-008-040-004-060-000-06
0.8	0.4	0.6	4	0.78	4	4	0	50	2	-	03342	MK-008-040-004-050-000-04
0.8	0.4	0.6	5	0.78	6	5	0	60	2	IKZ	11038	MK-008-040-005-060-000-06
0.8	0.4	0.6	6	0.76	4	6	0	50	2	-	03476	MK-008-040-006-050-000-04
0.8	0.4	0.6	8	0.78	6	8	0	60	2	IKZ	00617	MK-008-040-008-060-000-06
0.8	0.4	0.6	8	0.76	4	8	0	50	2	-	05804	MK-008-040-008-050-000-04
0.8	0.4	0.6	10	0.78	6	10	0	60	2	IKZ	09395	MK-008-040-010-060-000-06
0.8	0.4	0.6	12	0.78	6	12	0	60	2	IKZ	00618	MK-008-040-012-060-000-06
0.8	0.4	0.6	12	0.76	4	12	0	50	2	-	05805	MK-008-040-012-050-000-04
0.9	0.45	0.7	4	0.88	6	4	0	60	2	IKZ	00824	MK-009-045-004-060-000-06
0.9	0.45	0.7	9	0.88	6	9	0	60	2	IKZ	00825	MK-009-045-009-060-000-06
0.9	0.45	0.7	13	0.88	6	13	0	60	2	IKZ	00826	MK-009-045-013-060-000-06
1	0.5	0.75	2	0.97	4	2	0	50	2	-	03352	MK-010-050-002-050-000-04
1	0.5	0.75	3	0.97	4	3	0	50	2	-	06811	MK-010-050-003-050-000-04
1	0.5	0.75	4	0.97	4	4	0	50	2	-	10005	MK-010-050-004-050-000-04
1	0.5	0.75	5	0.96	6	5	0	60	2	IKZ	00594	MK-010-050-005-060-000-06
1	0.5	0.75	5	0.97	4	5	0	50	2	-	05806	MK-010-050-005-050-000-04
1	0.5	0.75	6	0.97	4	6	0	50	2	-	03343	MK-010-050-006-050-000-04
1	0.5	0.75	6	0.97	6	6	0	60	2	IKZ	11285	MK-010-050-006-060-000-06
1	0.5	0.75	8	0.97	4	8	0	50	2	-	03344	MK-010-050-008-050-000-04
1	0.5	0.75	8	0.96	6	8	0	60	2	IKZ	11041	MK-010-050-008-060-000-06
1	0.5	0.75	8	0.97	4	8	0	60	2	-	11045	MK-010-050-008-060-000-04
1	0.5	0.75	10	0.97	6	10	0	60	2	IKZ	00498	MK-010-050-010-060-000-06
1	0.5	0.75	10	0.97	4	10	0	50	2	-	03806	MK-010-050-010-050-000-04
1	0.5	0.75	12	0.97	6	12	0	60	2	IKZ	02819	MK-010-050-012-060-000-06
1	0.5	0.75	12	0.97	4	12	0	50	2	-	03807	MK-010-050-012-050-000-04
1	0.5	0.75	15	0.97	6	15	0	60	2	IKZ	00499	MK-010-050-015-060-000-06
1	0.5	0.75	15	0.97	4	15	0	50	2	-	05807	MK-010-050-015-050-000-04
1	0.5	0.75	18	0.97	6	18	0	60	2	IKZ	05764	MK-010-050-018-060-000-06
1	0.5	0.75	18	0.97	4	18	0	50	2	-	05808	MK-010-050-018-050-000-04
1	0.5	0.75	21	0.97	6	21	0	60	2	IKZ	05765	MK-010-050-021-060-000-06
1	0.5	0.75	21	0.97	4	21	0	50	2	-	05809	MK-010-050-021-050-000-04
1.2	0.6	0.9	3	1.13	4	3	0	50	2	-	03353	MK-012-060-003-050-000-04
1.2	0.6	0.9	8	1.17	6	8	0	60	2	IKZ	10667	MK-012-060-008-060-000-06
1.2	0.6	0.9	10	1.17	6	10	0	60	2	IKZ	07466	MK-012-060-010-060-000-06
1.2	0.6	0.9	12	1.17	4	12	0	55	2	-	10022	MK-012-060-012-055-000-04
1.2	0.6	0.9	18	1.17	4	18	0	50	2	-	16322	MK-012-060-018-050-000-04
1.4	0.7	1.05	12	1.37	4	12	0	55	2	-	10023	MK-014-070-012-055-000-04
1.5	0.75	1.15	3	1.43	4	3	0	50	2	-	10508	MK-015-075-003-050-000-04
1.5	0.75	1.15	6	1.47	4	6	0	50	2	-	03473	MK-015-075-006-050-000-04
1.5	0.75	1.15	7	1.47	4	7	0	60	2	-	04484	MK-015-075-007-060-000-04
1.5	0.75	1.15	8	1.47	6	8	0	60	2	IKZ	00065	MK-015-075-008-060-000-06
1.5	0.75	1.15	8	1.43	4	8	0	50	2	-	03477	MK-015-075-008-050-000-04
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1.5	0.75	1.15	12	1.47	6	12	0	60	2	IKZ	02824	MK-015-075-012-060-000-06
1.5	0.75	1.15	12	1.43	4	12	0	50	2	-	04486	MK-015-075-012-050-000-04
1.5	0.75	1.15	15	1.43	6	15	0	60	2	IKZ	00500	MK-015-075-015-060-000-06

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KULON® [mk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
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1.5	0.75	1.15	20	1.47	6	20	0	60	2	IKZ	02825	MK-015-075-020-060-000-06
1.5	0.75	1.15	20	1.47	4	20	0	50	2	-	04488	MK-015-075-020-050-000-04
1.5	0.75	1.15	23	1.47	4	23	0	60	2	-	04489	MK-015-075-023-060-000-04
1.5	0.75	1.15	25	1.47	6	25	0	60	2	IKZ	11484	MK-015-075-025-060-000-06
1.8	0.9	1.8	16	1.7	4	16	0	55	2	-	10025	MK-018-090-016-055-000-04
2	1	2	5	1.9	6	5	0	60	2	-	10181	MK-020-100-005-060-000-06
2	1	2	6	1.9	6	6	0	60	2	-	02826	MK-020-100-006-060-000-06
2	1	2	6	1.9	4	6	0	50	2	-	05810	MK-020-100-006-050-000-04
2	1	2	8	1.93	4	8	0	50	2	-	03345	MK-020-100-008-050-000-04
2	1	2	10	1.93	6	10	0	60	2	-	00066	MK-020-100-010-060-000-06
2	1	2	10	1.93	4	10	0	50	2	-	03346	MK-020-100-010-050-000-04
2	1	2	12	1.93	6	12	0	60	2	-	02828	MK-020-100-012-060-000-06
2	1	2	12	1.93	4	12	0	50	2	-	03808	MK-020-100-012-050-000-04
2	1	2	15	1.9	6	15	0	60	2	-	02829	MK-020-100-015-060-000-06
2	1	2	16	1.9	4	16	0	50	2	-	03492	MK-020-100-016-050-000-04
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2	1	2	20	1.93	6	20	0	60	2	-	00067	MK-020-100-020-060-000-06
2	1	2	20	1.9	4	20	0	50	2	-	03809	MK-020-100-020-050-000-04
2	1	2	25	1.9	6	25	0	60	2	-	02830	MK-020-100-025-060-000-06
2	1	2	25	1.9	4	25	0	60	2	-	05811	MK-020-100-025-060-000-04
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2	1	2	30	1.9	4	30	0	70	2	-	05812	MK-020-100-030-070-000-04
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3	1.5	3	10	2.85	6	10	0	60	2	-	02832	MK-030-150-010-060-000-06
3	1.5	3	10	2.88	4	10	0	50	2	-	05814	MK-030-150-010-050-000-04
3	1.5	3	12	2.85	6	12	0	60	2	-	03355	MK-030-150-012-060-000-06
3	1.5	3	12	2.85	4	12	0	50	2	-	05815	MK-030-150-012-050-000-04
3	1.5	3	15	2.88	6	15	0	60	2	-	01054	MK-030-150-015-060-000-06
3	1.5	3	15	2.85	4	15	0	50	2	-	05816	MK-030-150-015-050-000-04
3	1.5	3	21	2.88	6	21	0	60	2	-	01055	MK-030-150-021-060-000-06
3	1.5	3	21	2.85	4	21	0	50	2	-	05817	MK-030-150-021-050-000-04
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3	1.5	3	27	2.85	4	27	0	70	2	-	05818	MK-030-150-027-070-000-04
3	1.5	3	30	2.85	6	30	0	75	2	-	10123	MK-030-150-030-075-000-06
3	1.5	3	33	2.85	6	33	0	75	2	-	01057	MK-030-150-033-075-000-06
3	1.5	3	33	2.85	4	33	0	70	2	-	05819	MK-030-150-033-070-000-04
3	1.5	3	38	2.85	6	38	0	75	2	-	05766	MK-030-150-038-075-000-06
3	1.5	3	38	2.85	4	38	0	75	2	-	05820	MK-030-150-038-075-000-04
4	2	4	10	3.88	6	10	0	60	2	-	02833	MK-040-200-010-060-000-06
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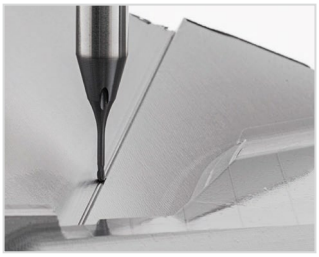
4	2	4	16	3.85	4	16	0	60	2	-	05412	MK-040-200-016-060-000-04
4	2	4	20	3.85	6	20	0	60	2	-	11047	MK-040-200-020-060-000-06



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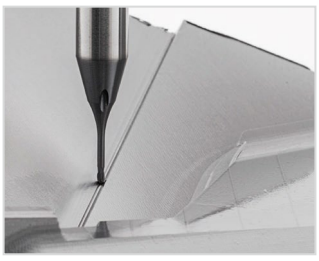
KULON® [mk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	2	4	22	3.88	6	22	0	60	2	-	01059	MK-040-200-022-060-000-06
4	2	4	22	3.85	4	22	0	60	2	-	05822	MK-040-200-022-060-000-04
4	2	4	25	3.85	6	25	0	70	2	-	10709	MK-040-200-025-070-000-06
4	2	4	25	3.88	6	25	0	60	2	-	11286	MK-040-200-025-060-000-06
4	2	4	28	3.85	6	28	0	75	2	-	01060	MK-040-200-028-075-000-06
4	2	4	28	3.85	4	28	0	70	2	-	05413	MK-040-200-028-070-000-04
4	2	4	34	3.85	6	34	0	75	2	-	01061	MK-040-200-034-075-000-06
4	2	4	34	3.85	4	34	0	70	2	-	05823	MK-040-200-034-070-000-04
4	2	4	40	3.85	6	40	0	80	2	-	05767	MK-040-200-040-080-000-06
4	2	4	40	3.85	4	40	0	70	2	-	05824	MK-040-200-040-070-000-04
5	2.5	5	15	4.83	6	15	0	60	2	-	07884	MK-050-250-015-060-000-06
5	2.5	5	16	4.8	6	16	0	60	2	-	03495	MK-050-250-016-060-000-06
5	2.5	5	20	4.8	6	20	0	60	2	-	07909	MK-050-250-020-060-000-06
5	2.5	5	25	4.8	6	25	0	60	2	-	06816	MK-050-250-025-060-000-06
6	3	9	20	5.8	6	20	0	60	2	-	07358	MK-060-300-020-060-000-06
6	3	9	25	5.8	6	25	0	60	2	-	03505	MK-060-300-025-060-000-06



*Technical changes reserved.

aura-tools.de

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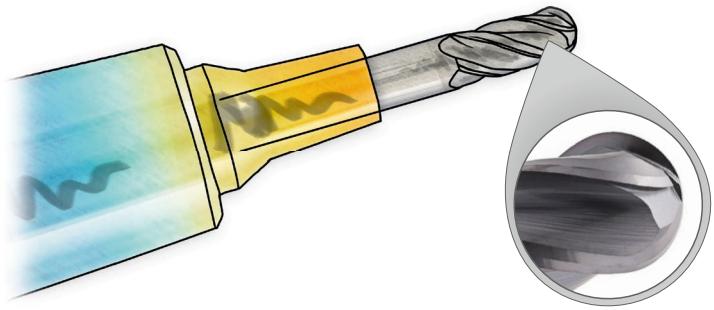
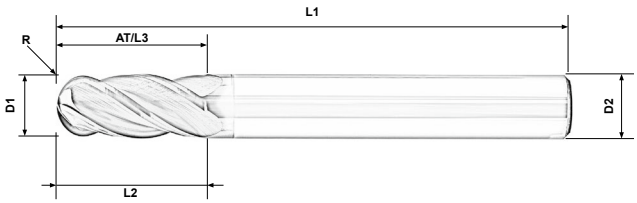


KULON® [4sfb]

Cylindrical, precise TSC® ballnose cutter. High surface qualitiy in soft tool steels as well as low alloyed steels, e.g. 1.1730. Two of the four flutes does not reach to the center to avoid chip clamping.

+ suitable for plane surfaces
+ roughing and finishing
+ creates homogeneous surfaces



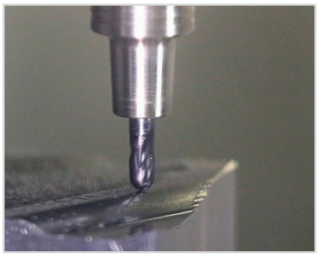
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 23813 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Steel	13694	3287	215	0.15	1.25	0.06

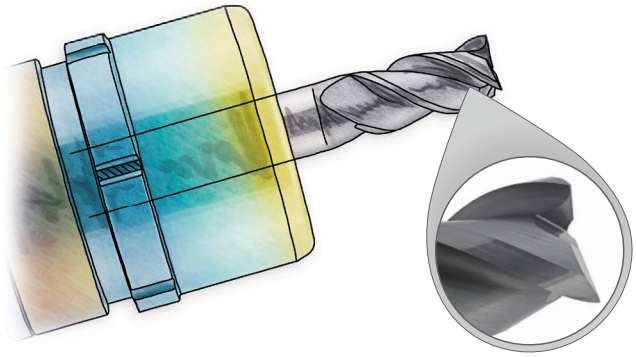
<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	1.5	8	10	2.85	4	10	0	51	4	-	23811	4SFB-030-150-008-051-000-04
4	2	10	10	4	4	10	0	51	4	-	23812	4SFB-040-200-010-051-000-04
5	2.5	12	15	4.8	6	15	0	60	4	-	23813	4SFB-050-250-015-060-000-06
6	3	15	15	6	6	15	0	60	4	-	23814	4SFB-060-300-015-060-000-06
8	4	17	17	8	8	17	0	64	4	-	23815	4SFB-080-400-017-064-000-08
10	5	22	22	10	10	22	0	75	4	-	23816	4SFB-100-500-022-075-000-10
12	6	25	25	12	12	25	0	84	4	-	22465	4SFB-120-600-025-084-000-12



*Technical changes reserved.

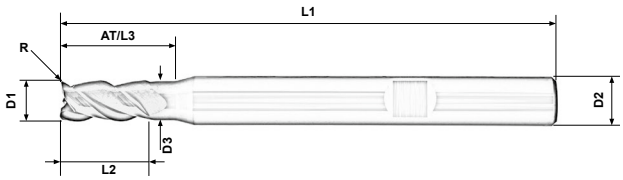
„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics



KANTOS® [3esv]

End mill with three flutes and protective chamfer. The cutting geometry is designed for maximum process reliabilty even under adverse conditions.

+ high process reliability
+ universally usable
+ drilling and diving
+ smooth run



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00385 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	2919	184	110	9.00	0.00	0.021

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+/-	+	+	+	+	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0	10	13	2.9	6	13	0	58	3	-	00627	3ESV-030-000-010-058-000-06
3.5	0	10	13	3.34	6	13	0	58	3	-	00628	3ESV-035-000-010-058-000-06
4	0	10	13	3.8	6	13	0	58	3	-	00456	3ESV-040-000-010-058-000-06
4.5	0	10	13	4.3	6	13	0	58	3	-	00629	3ESV-045-000-010-058-000-06
5	0	10	13	4.8	6	13	0	58	3	-	00413	3ESV-050-000-010-058-000-06
5.5	0	10	13	5.3	6	13	0	58	3	-	06350	3ESV-055-000-010-058-000-06
6	0	15	-	-	6	15	0	58	3	-	00420	3ESV-060-000-015-058-000-06
6	0	15	20	5.6	6	20	0	58	3	-	19740	3ESV-060-000-020-058-000-06
6	0	15	25	5.6	6	25	0	58	3	-	19741	3ESV-060-000-025-058-000-06
7	0	17	-	-	8	17	0	64	3	-	01541	3ESV-070-000-017-064-000-08
8	0	17	-	-	8	17	0	64	3	-	00383	3ESV-080-000-017-064-000-08
8	0	17	26	7.6	8	26	0	64	3	-	19742	3ESV-080-000-026-064-000-08
8	0	17	30	7.6	8	30	0	64	3	-	19743	3ESV-080-000-030-064-000-08
9	0	20	-	-	10	20	0	73	3	-	01542	3ESV-090-000-020-073-000-10
9.5	0	22	-	-	10	22	0	73	3	-	06351	3ESV-095-000-022-073-000-10
10	0	22	-	-	10	22	0	73	3	-	00384	3ESV-100-000-022-073-000-10
10	0	22	32	9.5	10	32	0	73	3	-	19744	3ESV-100-000-032-073-000-10
10	0	22	35	9.5	10	35	0	73	3	-	19745	3ESV-100-000-035-073-000-10
11	0	25	-	-	12	25	0	84	3	-	06352	3ESV-110-000-025-084-000-12
12	0	25	-	-	12	25	0	84	3	-	00385	3ESV-120-000-025-084-000-12
12	0	25	35	11.5	12	35	0	84	3	-	19746	3ESV-120-000-035-084-000-12
12	0	25	38	11.5	12	38	0	84	3	-	19747	3ESV-120-000-038-084-000-12
14	0	28	-	-	14	28	0	90	3	-	00630	3ESV-140-000-028-090-000-14
16	0	32	-	-	16	32	0	93	3	-	00386	3ESV-160-000-032-093-000-16
20	0	40	-	-	20	40	0	105	3	-	00387	3ESV-200-000-040-105-000-20
20	0	60	-	-	20	60	0	125	3	-	19748	3ESV-200-000-060-125-000-20

*Technical changes reserved.

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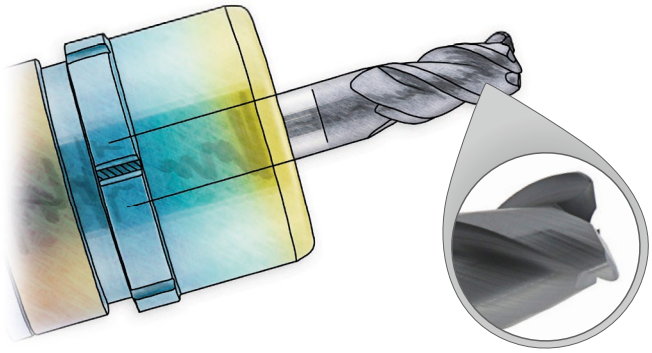
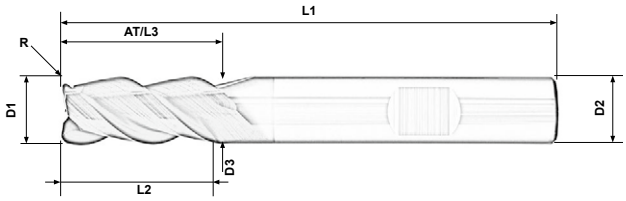


KANTOS® [3esvr]

End mill with three flutes and corner radius.
The cutting geometry is designed for maximum process reliabilty even under adverse conditions.

+ high process reliability
+ 2-D and 3-D milling
+ drilling and diving
+ smooth run



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00390 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	3503	452	110	4.00	0.00	0.043

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+/-	+	+	+	+	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.5	10	13	2.93	6	13	0	58	3	-	06354	3ESVR-030-050-010-058-000-06
3.5	1	10	13	-	6	13	0	58	3	-	06355	3ESVR-035-100-010-058-000-06
6	1	15	-	-	6	15	0	58	3	-	00388	3ESVR-060-100-015-058-000-06
6	1	15	25	5.6	6	25	0	58	3	-	19777	3ESVR-060-100-025-058-000-06
6	2	15	-	-	6	15	0	58	3	-	06356	3ESVR-060-200-015-058-000-06
6	2	15	25	5.6	6	25	0	58	3	-	19778	3ESVR-060-200-025-058-000-06
8	1	17	-	-	8	17	0	64	3	-	00389	3ESVR-080-100-017-064-000-08
8	1	17	30	7.6	8	30	0	64	3	-	16404	3ESVR-080-100-030-064-000-08
8	2	17	-	-	8	17	0	64	3	-	06357	3ESVR-080-200-017-064-000-08
8	2	17	30	7.6	8	30	0	64	3	-	19779	3ESVR-080-200-030-064-000-08
8	3	17	-	-	8	17	0	64	3	-	06360	3ESVR-080-300-017-064-000-08
8	3	17	30	7.6	8	30	0	64	3	-	19780	3ESVR-080-300-030-064-000-08
10	1	22	-	-	10	22	0	73	3	-	00390	3ESVR-100-100-022-073-000-10
10	1	22	35	9.5	10	35	0	73	3	-	19781	3ESVR-100-100-035-073-000-10
10	2	22	-	-	10	22	0	73	3	-	06358	3ESVR-100-200-022-073-000-10
10	2	22	35	9.5	10	35	0	73	3	-	19782	3ESVR-100-200-035-073-000-10
10	3	22	-	-	10	22	0	73	3	-	06359	3ESVR-100-300-022-073-000-10
10	3	22	35	9.5	10	35	0	73	3	-	19783	3ESVR-100-300-035-073-000-10
12	1	25	-	-	12	25	0	84	3	-	19784	3ESVR-120-100-025-084-000-12
12	1	25	35	11.5	12	35	0	84	3	-	19785	3ESVR-120-100-035-084-000-12
12	1	25	40	11.5	12	40	0	84	3	-	00565	3ESVR-120-100-040-084-000-12
12	2	25	-	-	12	25	0	84	3	-	19786	3ESVR-120-200-025-084-000-12

*Technical changes reserved.

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KANTOS® [3esvr]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+/-	+	+	+	+	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
12	2	25	35	11.5	12	35	0	84	3	-	19787	3ESVR-120-200-035-084-000-12
12	2	25	40	11.5	12	40	0	84	3	-	01358	3ESVR-120-200-040-084-000-12
12	3	25	-	-	12	25	0	84	3	-	19788	3ESVR-120-300-025-084-000-12
12	3	25	35	11.5	12	35	0	84	3	-	19789	3ESVR-120-300-035-084-000-12
12	3	25	40	11.5	12	40	0	84	3	-	06361	3ESVR-120-300-040-084-000-12
16	1	32	-	-	16	32	0	93	3	-	19790	3ESVR-160-100-032-093-000-16
16	1	32	55	15.5	16	55	0	93	3	-	01359	3ESVR-160-100-055-093-000-16
16	2	32	-	-	16	32	0	93	3	-	19791	3ESVR-160-200-032-093-000-16
16	2	32	55	15.5	16	55	0	93	3	-	01360	3ESVR-160-200-055-093-000-16
16	3	32	-	-	16	32	0	93	3	-	01480	3ESVR-160-300-032-093-000-16
20	1	38	-	-	20	38	0	105	3	-	19792	3ESVR-200-100-038-105-000-20
20	1	38	55	19.5	20	55	0	105	3	-	01361	3ESVR-200-100-055-105-000-20
20	2	38	-	-	20	38	0	105	3	-	19793	3ESVR-200-200-038-105-000-20
20	2	38	55	19.5	20	55	0	105	3	-	01362	3ESVR-200-200-055-105-000-20
20	3	38	-	-	20	38	0	105	3	-	05713	3ESVR-200-300-038-105-000-20

*Technical changes reserved.

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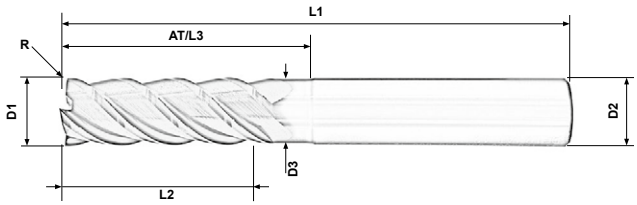
KANTOS® [ssf]

Universally usable end mill without protective chamfer for finishing vertical walls and floor areas.

+ smooth run
+ without protective chamfer
+ wall and floor area machining



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 02520 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	2389	392	90	0.00	0.00	0.041

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0	6	7.5	2.88	6	7.5	0	51	4	-	02522	SSF-030-000-006-051-000-06
3	0	9	10.5	2.85	6	10.5	0	51	4	-	02521	SSF-030-000-009-051-000-06
4	0	8	10	3.88	6	10	0	51	4	-	00639	SSF-040-000-008-051-000-06
4	0	12	14	3.88	6	14	0	51	4	-	00640	SSF-040-000-012-051-000-06
5	0	10	12.5	4.85	6	12.5	0	60	4	-	00641	SSF-050-000-010-060-000-06
5	0	15	17.5	4.83	6	17.5	0	60	4	-	00642	SSF-050-000-015-060-000-06
6	0	12	15	5.8	6	15	0	60	5	-	00637	SSF-060-000-012-060-000-06
6	0	18	21	5.83	6	21	0	60	4	-	00643	SSF-060-000-018-060-000-06
8	0	16	20	7.7	8	20	0	64	5	-	00644	SSF-080-000-016-064-000-08
8	0	24	28	7.73	8	28	0	70	4	-	00632	SSF-080-000-024-070-000-08
10	0	20	25	9.65	10	25	0	75	5	-	00633	SSF-100-000-020-075-000-10
10	0	30	35	9.65	10	35	0	80	4	-	00645	SSF-100-000-030-080-000-10
12	0	24	30	11.65	12	30	0	84	5	-	00425	SSF-120-000-024-084-000-12
12	0	36	42	11.6	12	42	0	90	4	-	02520	SSF-120-000-036-090-000-12
16	0	32	40	15.55	16	40	0	93	6	-	00426	SSF-160-000-032-093-000-16
16	0	48	56	15.55	16	56	0	100	5	-	00419	SSF-160-000-048-100-000-16
20	0	40	50	19.56	20	50	0	100	5	-	00418	SSF-200-000-040-100-000-20
20	0	60	70	19.56	20	70	0	125	5	-	02683	SSF-200-000-060-125-000-20
20	0	80	110	19.56	20	110	0	150	5	-	02754	SSF-200-000-080-150-000-20
25	0	60	70	24.5	25	70	0	125	6	-	06389	SSF-250-000-060-125-000-25
25	0	90	100	24.5	25	100	0	150	6	-	06388	SSF-250-000-090-150-000-25

*Technical changes reserved.

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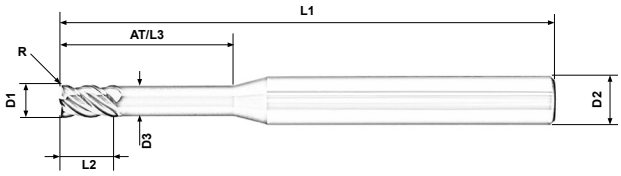
KANTOS® [kan]

Universally usable end mill with corner radius and short cutting edge. Optimized for universal wall and pocket machining.

+ short cutting edge, prevent chips of jamming
+ roughing and finishing
+ wall and floor area machining
+ 2-D and 3-D machining



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 03110 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	5839	1355	110	0.01	0.00	0.058

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.1	6	12	2.8	6	12	0	60	4	-	01481	KAN-030-010-012-060-000-06
3	0.1	6	20	2.83	6	20	0	60	4	-	01237	KAN-030-010-020-060-000-06
3	0.1	6	25	2.83	6	25	0	60	4	-	11917	KAN-030-010-025-060-000-06
4	0.1	6	20	3.8	6	20	0	60	4	-	01236	KAN-040-010-020-060-000-06
4	0.1	6	25	3.83	6	25	0	60	4	-	02648	KAN-040-010-025-060-000-06
4	0.5	6	20	3.8	6	20	0	60	4	-	00195	KAN-040-050-020-060-000-06
4	1	6	20	3.8	6	20	0	60	4	-	00994	KAN-040-100-020-060-000-06
4	1	6	30	3.83	6	30	0	80	4	-	00995	KAN-040-100-030-080-000-06
5	0.1	8	25	4.8	6	25	0	60	4	-	03111	KAN-050-010-025-060-000-06
5	0.5	5	20	4.83	6	20	0	60	4	-	04880	KAN-050-050-020-060-000-06
6	0.1	8	20	5.8	6	20	0	60	4	-	01235	KAN-060-010-020-060-000-06
6	0.1	8	25	5.8	6	25	0	60	4	-	03110	KAN-060-010-025-060-000-06
6	0.5	8	20	5.83	6	20	0	60	4	-	00716	KAN-060-050-020-060-000-06
6	1	8	20	5.8	6	20	0	60	4	-	01191	KAN-060-100-020-060-000-06
6	2	8	20	5.8	6	20	0	60	4	-	00206	KAN-060-200-020-060-000-06
8	0.5	10	35	7.8	8	35	0	64	4	-	00717	KAN-080-050-035-064-000-08
8	1	10	35	7.8	8	35	0	64	4	-	00668	KAN-080-100-035-064-000-08
8	2	10	35	7.8	8	35	0	64	4	-	00204	KAN-080-200-035-064-000-08
10	0.5	10	35	9.7	10	35	0	75	4	-	00016	KAN-100-050-035-075-000-10
10	1	10	35	9.7	10	35	0	75	4	-	00018	KAN-100-100-035-075-000-10
12	0.5	12	45	11.7	12	45	0	100	4	-	00020	KAN-120-050-045-100-000-12
12	1	12	45	11.7	12	45	0	100	4	-	00021	KAN-120-100-045-100-000-12

*Technical changes reserved.

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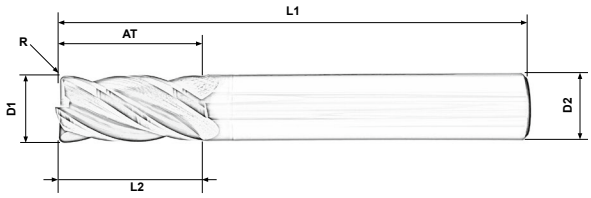
KANTOS® [4krc]

Universally usable end mill with corner radius for pre-finishing and finishing of vertical walls and floor areas as well as milling open spaces.

+ universally usable
+ wall and floor area machining
+ version with corner radius



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 06400 ▽

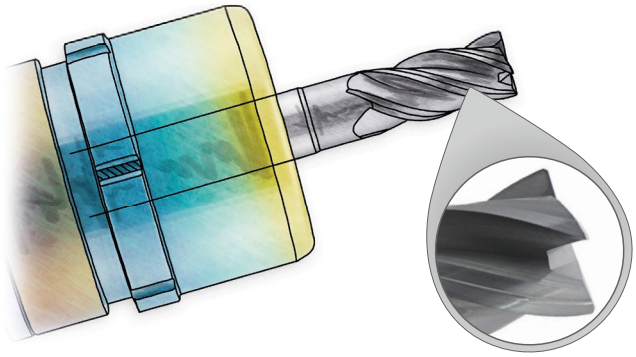
Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Steel	6128	2941	154	0.22	0.00	0.12

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	+/-	-	-	+	+/-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	0.4	7	-	-	4	7	0	50	4	-	00186	4KRC-040-040-007-050-000-04
4	1	7	-	-	4	7	0	50	4	-	06395	4KRC-040-100-007-050-000-04
4	1	12	15	3.8	6	15	0	60	4	-	02505	4KRC-040-100-012-060-000-06
5	0.5	8	10	4.8	6	10	0	60	4	-	00187	4KRC-050-050-008-060-000-06
6	0.5	15	-	-	6	15	0	60	4	-	00188	4KRC-060-050-015-060-000-06
6	1	15	-	-	6	15	0	60	4	-	00189	4KRC-060-100-015-060-000-06
6	1.5	15	-	-	6	15	0	60	4	-	02507	4KRC-060-150-015-060-000-06
8	0.5	17	-	-	8	17	0	64	4	-	00190	4KRC-080-050-017-064-000-08
8	1	17	-	-	8	17	0	64	4	-	00191	4KRC-080-100-017-064-000-08
8	1.5	17	-	-	8	17	0	64	4	-	06400	4KRC-080-150-017-064-000-08
8	2	17	-	-	8	17	0	64	4	-	02509	4KRC-080-200-017-064-000-08
8	3	17	-	-	8	17	0	64	4	-	11159	4KRC-080-300-017-064-000-08
10	0.5	22	-	-	10	22	0	75	4	-	00192	4KRC-100-050-022-075-000-10
10	1	22	-	-	10	22	0	75	4	-	00648	4KRC-100-100-022-075-000-10
10	2	22	-	-	10	22	0	75	4	-	02511	4KRC-100-200-022-075-000-10
10	3	22	-	-	10	22	0	75	4	-	06405	4KRC-100-300-022-075-000-10
12	0.5	25	-	-	12	25	0	84	4	-	00193	4KRC-120-050-025-084-000-12
12	0.8	25	-	-	12	25	0	84	4	-	06406	4KRC-120-080-025-084-000-12
12	1	25	-	-	12	25	0	84	4	-	00194	4KRC-120-100-025-084-000-12
12	1.5	25	-	-	12	25	0	84	4	-	06407	4KRC-120-150-025-084-000-12
12	2	25	-	-	12	25	0	84	4	-	02512	4KRC-120-200-025-084-000-12
12	3	25	-	-	12	25	0	84	4	-	03834	4KRC-120-300-025-084-000-12
16	0.8	32	-	-	16	32	0	100	4	-	06403	4KRC-160-080-032-100-000-16
16	1	32	-	-	16	32	0	100	4	-	06411	4KRC-160-100-032-100-000-16
16	1.5	32	-	-	16	32	0	100	4	-	20055	4KRC-160-150-032-100-000-16
16	2	32	-	-	16	32	0	100	4	-	03991	4KRC-160-200-032-100-000-16
16	3	32	-	-	16	32	0	100	4	-	04950	4KRC-160-300-032-100-000-16

*Technical changes reserved.

„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics

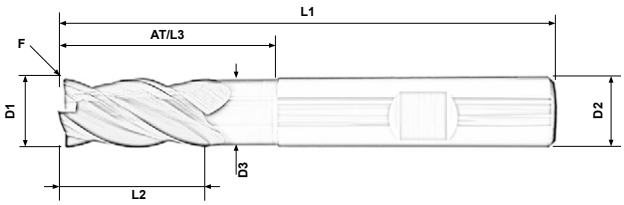


KANTOS® [4esv]

▼ + ▼▼▼

End mill with four flutes and protective chamfer with different angles of twist. The cutting geometry is designed for slot milling, trimming and drill milling, so it is universally usable.

+ high process reliability
+ universally usable
+ drilling and diving
+ smooth run



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 01399 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1.000 N	5175	828	130	8.00	0.00	0.04

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	-	-	-	+	-	-	-	-	-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.1	4.5	6	2.93	6	6	0	51	4	-	05729	4ESV-030-010-006-051-000-06
3	0.1	6	9	2.93	6	9	0	51	4	-	05732	4ESV-030-010-009-051-000-06
4	0.1	6	8	3.8	6	8	0	51	4	-	05730	4ESV-040-010-008-051-000-06
4	0.1	8	12	3.84	6	12	0	51	4	-	05733	4ESV-040-010-012-051-000-06
4	0.1	15	15	3.8	4	15	0	60	4	-	10304	4ESV-040-010-015-060-000-04
5	0.1	7.5	10	4.8	6	10	0	51	4	-	05731	4ESV-050-010-010-051-000-06
5	0.1	10	15	4.65	6	15	0	51	4	-	05734	4ESV-050-010-015-051-000-06
6	0.1	9	12	5.6	6	12	0	51	4	-	02136	4ESV-060-010-012-051-000-06
6	0.1	12	18	5.6	6	18	0	60	4	-	01398	4ESV-060-010-018-060-000-06
6	0.1	12	30	5.65	6	30	0	70	4	-	04874	4ESV-060-010-030-070-000-06
8	0.15	12	16	7.6	8	16	0	59	4	-	02151	4ESV-080-015-016-059-000-08
8	0.15	16	24	7.6	8	24	0	64	4	-	01399	4ESV-080-015-024-064-000-08
8	0.15	16	40	7.65	8	40	0	80	4	-	19734	4ESV-080-015-040-080-000-08
10	0.2	15	20	9.55	10	20	0	67	4	-	02152	4ESV-100-020-020-067-000-10
10	0.2	20	30	9.65	10	30	0	75	4	-	01400	4ESV-100-020-030-075-000-10
10	0.2	20	50	9.5	10	50	0	90	4	-	19735	4ESV-100-020-050-090-000-10
12	0.25	18	24	11.5	12	24	0	74	4	-	02153	4ESV-120-025-024-074-000-12
12	0.25	24	36	11.5	12	36	0	84	4	-	01401	4ESV-120-025-036-084-000-12
12	0.25	24	60	11.5	12	60	0	110	4	-	19736	4ESV-120-025-060-110-000-12
14	0.25	21	28	13.5	14	28	0	80	4	-	19730	4ESV-140-025-028-080-000-14
14	0.25	28	42	13.55	14	42	0	90	4	-	19732	4ESV-140-025-042-090-000-14
14	0.25	28	70	13.5	14	70	0	120	4	-	19737	4ESV-140-025-070-120-000-14
16	0.3	24	32	15.38	16	32	0	93	4	-	02154	4ESV-160-030-032-093-000-16
16	0.3	32	48	15.55	16	48	0	100	4	-	01402	4ESV-160-030-048-100-000-16
16	0.3	32	80	15.55	16	80	0	130	4	-	05291	4ESV-160-030-080-130-000-16
16	0.3	50	80	15.38	16	80	0	130	4	-	20834	4ESV-160-030-080-130-000-16 / SL50
18	0.3	27	36	17.3	18	36	0	93	4	-	19731	4ESV-180-030-036-093-000-18
18	0.3	36	54	17.3	18	54	0	105	4	-	19733	4ESV-180-030-054-105-000-18
18	0.3	36	90	17.3	18	90	0	140	4	-	19738	4ESV-180-030-090-140-000-18
20	0.35	30	40	19.38	20	40	0	100	4	-	02155	4ESV-200-035-040-100-000-20
20	0.35	40	60	19.38	20	60	0	125	4	-	01403	4ESV-200-035-060-125-000-20
20	0.35	40	100	19.38	20	100	0	150	4	-	19739	4ESV-200-035-100-150-000-20

*Technical changes reserved.

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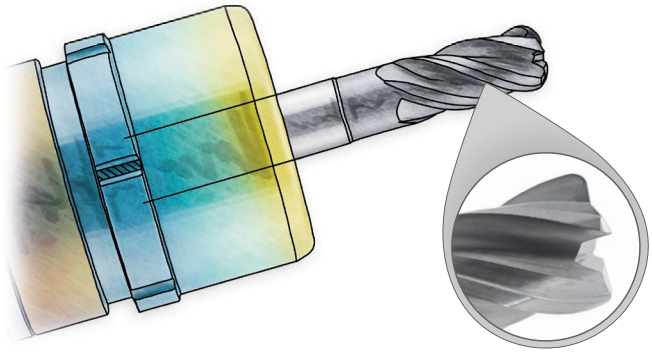
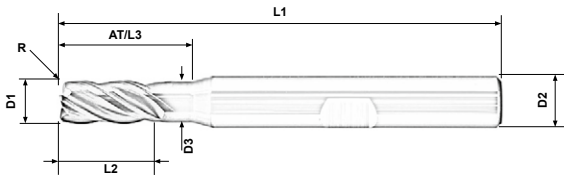
„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics



KANTOS® [4esvr]

End mill with four flutes and protective chamfer with different angles of twist. The cutting geometry is designed for slot milling, trimming and drill milling, so it is universally usable.

+ face milling and contour milling
+ helical and linear diving and ramping
+ two universal varieties for low-alloyed, untempered and unhardened steels, general tool steels and harended steels < 52 HRC
+ low radial forces



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 11505 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1.000 N	6369	637	120	6.00	0.00	0.025

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	-	-	-	+	-	-	-	-	-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.25	6	9	2.9	6	9	0	51	4	-	19750	4ESVR-030-025-009-051-000-06
3	1	6	9	2.9	6	9	0	51	4	-	19751	4ESVR-030-100-009-051-000-06
4	0.25	8	12	3.8	6	12	0	51	4	-	19752	4ESVR-040-025-012-051-000-06
4	0.5	8	12	3.84	6	12	0	51	4	-	07757	4ESVR-040-050-012-051-000-06
4	1	8	12	3.8	6	12	0	51	4	-	19753	4ESVR-040-100-012-051-000-06
4	1.5	8	12	3.8	6	12	0	51	4	-	19754	4ESVR-040-150-012-051-000-06
5	0.25	10	15	4.8	6	15	0	51	4	-	19755	4ESVR-050-025-015-051-000-06
5	0.5	10	15	4.8	6	15	0	51	4	-	07771	4ESVR-050-050-015-051-000-06
5	1	10	15	4.8	6	15	0	51	4	-	19756	4ESVR-050-100-015-051-000-06
6	0.25	12	18	5.6	6	18	0	60	4	-	02160	4ESVR-060-025-018-060-000-06
6	0.5	12	18	5.6	6	18	0	60	4	-	02159	4ESVR-060-050-018-060-000-06
6	0.8	12	18	5.6	6	18	0	60	4	-	19757	4ESVR-060-080-018-060-000-06
6	1	12	18	5.6	6	18	0	60	4	-	04566	4ESVR-060-100-018-060-000-06
6	1.5	12	18	5.6	6	18	0	60	4	-	06730	4ESVR-060-150-018-060-000-06
6	2	12	18	5.6	6	18	0	60	4	-	11505	4ESVR-060-200-018-060-000-06
8	0.25	16	24	7.65	8	24	0	64	4	-	02158	4ESVR-080-025-024-064-000-08
8	0.5	16	24	7.65	8	24	0	64	4	-	02157	4ESVR-080-050-024-064-000-08
8	0.8	16	24	7.6	8	24	0	64	4	-	19758	4ESVR-080-080-024-064-000-08
8	1	16	24	7.6	8	24	0	64	4	-	02156	4ESVR-080-100-024-064-000-08
8	1.5	16	24	7.6	8	24	0	64	4	-	06319	4ESVR-080-150-024-064-000-08
8	2	16	24	7.65	8	24	0	64	4	-	06320	4ESVR-080-200-024-064-000-08
8	3	16	24	7.6	8	24	0	64	4	-	03993	4ESVR-080-300-024-064-000-08
10	0.25	20	30	9.5	10	30	0	75	4	-	02161	4ESVR-100-025-030-075-000-10
10	0.5	20	30	9.55	10	30	0	75	4	-	02162	4ESVR-100-050-030-075-000-10
10	0.8	20	30	9.5	10	30	0	75	4	-	10758	4ESVR-100-080-030-075-000-10
10	1	20	30	9.5	10	30	0	75	4	-	02163	4ESVR-100-100-030-075-000-10

*Technical changes reserved.

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KANTOS® [4esvr]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	-	-	-	+	-	-	-	-	-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
10	1.25	20	30	9.5	10	30	0	75	4	-	19759	4ESVR-100-125-030-075-000-10
10	1.5	20	30	9.5	10	30	0	75	4	-	06321	4ESVR-100-150-030-075-000-10
10	2	20	30	9.5	10	30	0	75	4	-	06322	4ESVR-100-200-030-075-000-10
10	2.5	20	30	9.5	10	30	0	75	4	-	19760	4ESVR-100-250-030-075-000-10
10	3	20	30	9.5	10	30	0	75	4	-	19761	4ESVR-100-300-030-075-000-10
12	0.25	24	36	11.55	12	36	0	84	4	-	02164	4ESVR-120-025-036-084-000-12
12	0.5	24	36	11.5	12	36	0	84	4	-	02165	4ESVR-120-050-036-084-000-12
12	0.8	24	36	11.5	12	36	0	84	4	-	19762	4ESVR-120-080-036-084-000-12
12	1	24	36	11.5	12	36	0	84	4	-	02166	4ESVR-120-100-036-084-000-12
12	1.25	24	36	11.5	12	36	0	84	4	-	19763	4ESVR-120-125-036-084-000-12
12	1.5	24	36	11.5	12	36	0	84	4	-	02168	4ESVR-120-150-036-084-000-12
12	2	24	36	11.55	12	36	0	84	4	-	06341	4ESVR-120-200-036-084-000-12
12	2.5	24	36	11.5	12	36	0	84	4	-	19764	4ESVR-120-250-036-084-000-12
12	3	24	36	11.5	12	36	0	84	4	-	19765	4ESVR-120-300-036-084-000-12
12	3.5	24	36	11.5	12	36	0	84	4	-	19766	4ESVR-120-350-036-084-000-12
12	4	24	36	11.5	12	36	0	84	4	-	19767	4ESVR-120-400-036-084-000-12
12	5	24	36	11.5	12	36	0	84	4	-	19768	4ESVR-120-500-036-084-000-12
16	0.5	32	48	15.3	16	48	0	100	4	-	02169	4ESVR-160-050-048-100-000-16
16	0.8	32	48	15.3	16	48	0	100	4	-	19769	4ESVR-160-080-048-100-000-16
16	1	32	48	15.38	16	48	0	100	4	-	02170	4ESVR-160-100-048-100-000-16
16	1.5	32	48	15.3	16	48	0	100	4	-	06342	4ESVR-160-150-048-100-000-16
16	2	32	48	15.3	16	48	0	100	4	-	02171	4ESVR-160-200-048-100-000-16
16	2.5	32	48	15.3	16	48	0	100	4	-	19770	4ESVR-160-250-048-100-000-16
16	3	32	48	15.38	16	48	0	100	4	-	06343	4ESVR-160-300-048-100-000-16
16	3.5	32	48	15.38	16	48	0	100	4	-	19771	4ESVR-160-350-048-100-000-16
16	4	32	48	15.3	16	48	0	100	4	-	06344	4ESVR-160-400-048-100-000-16
16	5	32	48	15.38	16	48	0	100	4	-	19772	4ESVR-160-500-048-100-000-16
20	0.5	40	60	19.3	20	60	0	125	4	-	02172	4ESVR-200-050-060-125-000-20
20	0.8	40	60	19.3	20	60	0	125	4	-	19773	4ESVR-200-080-060-125-000-20
20	1	40	60	19.3	20	60	0	125	4	-	02173	4ESVR-200-100-060-125-000-20
20	1.5	40	60	19.3	20	60	0	125	4	-	06346	4ESVR-200-150-060-125-000-20
20	2	40	60	19.3	20	60	0	125	4	-	06347	4ESVR-200-200-060-125-000-20
20	2.5	40	60	19.3	20	60	0	125	4	-	19774	4ESVR-200-250-060-125-000-20
20	3	40	60	19.3	20	60	0	125	4	-	06348	4ESVR-200-300-060-125-000-20
20	3.5	40	60	19.3	20	60	0	125	4	-	19775	4ESVR-200-350-060-125-000-20
20	4	40	60	19.3	20	60	0	125	4	-	06349	4ESVR-200-400-060-125-000-20
20	4.5	40	60	19.3	20	60	0	125	4	-	19776	4ESVR-200-450-060-125-000-20
20	5	40	60	19.3	20	60	0	125	4	-	07280	4ESVR-200-500-060-125-000-20

*Technical changes reserved.

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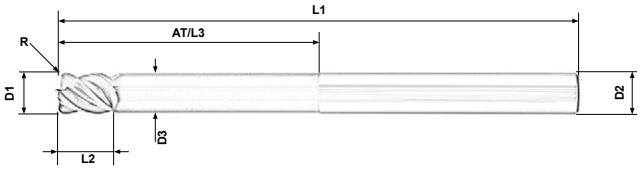
„xy" **HRC** = Machining of hardened materials possible up to the declared value; **1.400N** = Materials like 1.2714HH; **1.000N** = materials like 1.2311, 1.2379; **steel** = materials like 1.1730; **CrNi** = Nickel-chromium alloys; **Titan** = Titanium alloys; **INC** = Nickel-base alloys; **GG** = Casting alloys; **GjV** = Alloyed cast steels; **ALU** = Aluminium alloys; **AlSi** = Aluminium-silicon alloys; **Cu** = Copper; **GRAPH** = Graphite; **GFK** = Glass fiber reinforced plastics

KANTOS® [Ikan]

Extra long, cylindrical stepped end mill with corner radius for custom-fit milling of high vertical shoulders as well as face milling operation in pockets. The corner radius protects the pockets against cracks.

+ adjusted cutting length L2 to reduce vibration
+ strong cutting edge for smooth run
+ version with corner radius



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00328 ▽

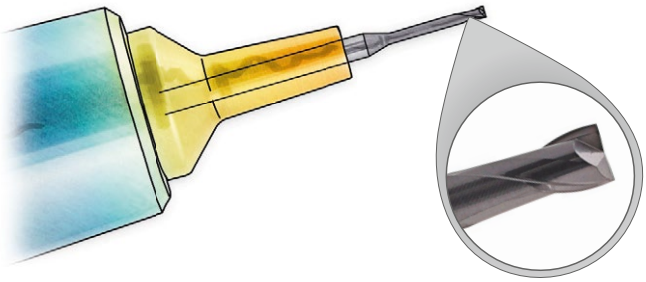
Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	1 095	569	55	20.00	0.00	0.13

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	+/-	+/-	+/-	+	+/-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3.5	0.1	6	25	3.3	6	25	0	60	4	-	03107	LKAN-035-010-025-060-000-06
3.5	0.1	6	35	3.3	6	35	0	70	4	-	11199	LKAN-035-010-035-070-000-06
6	1.5	8	25	5.8	6	25	0	100	4	-	03102	LKAN-060-150-025-100-000-06
6	1.5	8	40	5.8	6	40	0	75	4	-	04411	LKAN-060-150-040-075-000-06
8	1	10	50	7.8	8	50	0	100	4	-	01201	LKAN-080-100-050-100-000-08
10	0.5	12	40	9.7	10	40	0	85	4	-	11893	LKAN-100-050-040-085-000-10
10	0.5	12	50	9.7	10	50	0	100	4	-	11894	LKAN-100-050-050-100-000-10
10	0.5	12	60	9.7	10	60	0	100	4	-	11895	LKAN-100-050-060-100-000-10
10	1	12	40	9.7	10	40	0	85	4	-	11896	LKAN-100-100-040-085-000-10
10	1	12	50	9.7	10	50	0	120	4	-	00034	LKAN-100-100-050-120-000-10
10	1	12	60	9.7	10	60	0	100	4	-	11897	LKAN-100-100-060-100-000-10
10	1	12	82	9.7	10	82	0	150	4	-	00775	LKAN-100-100-082-150-000-10
10	1	12	105	9.7	10	105	0	150	4	-	04426	LKAN-100-100-105-150-000-10
12	0.5	14	60	11.7	12	60	0	120	4	-	11898	LKAN-120-050-060-120-000-12
12	0.5	14	82	11.7	12	82	0	150	4	-	11899	LKAN-120-050-082-150-000-12
12	1	14	60	11.7	12	60	0	120	4	-	00468	LKAN-120-100-060-120-000-12
12	1	14	82	11.7	12	82	0	150	4	-	00208	LKAN-120-100-082-150-000-12
12	1	14	82	11.7	12	82	0	125	4	-	07088	LKAN-120-100-082-125-000-12
12	1	14	105	11.73	12	105	0	150	4	-	04427	LKAN-120-100-105-150-000-12
16	0.5	16	50	15.7	16	50	0	100	4	-	00022	LKAN-160-050-050-100-000-16
16	1	16	50	15.7	16	50	0	100	4	-	00023	LKAN-160-100-050-100-000-16
16	1	40	100	15.7	16	100	0	150	4	-	01278	LKAN-160-100-100-150-000-16
16	1	50	80	15.73	16	80	0	130	4	-	00328	LKAN-160-100-080-130-000-16
20	1	30	100	19.5	20	100	0	150	4	-	00327	LKAN-200-100-100-150-000-20
20	1	50	105	19.5	20	105	0	150	4	-	00957	LKAN-200-100-105-150-000-20
25	1	60	100	24.5	25	100	0	150	4	-	01190	LKAN-250-100-100-150/60
25	1	70	125	24.5	25	125	0	180	4	-	00350	LKAN-250-100-125-180-000-25
25	1	80	160	24.55	25	160	0	220	4	-	01111	LKAN-250-100-160-220-000-25
25	1	105	115	24.5	25	115	0	180	4	-	03844	LKAN-250-100-115-180-000-25
32	1	155	170	31	32	170	0	230	4	-	05010	LKAN-320-100-170-230-000-32

*Technical changes reserved.

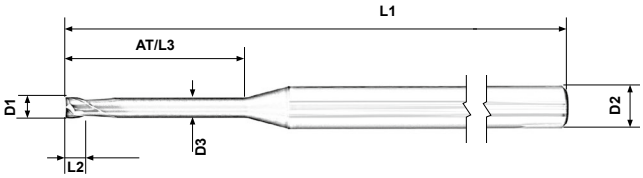
„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics



KANTOS® [sza]

Sharp end mill for machining tool steel up to 56 HRC.

+ without corner radius and without corner protection bevel
+ high concentricity



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 04320 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	7 166	330	45	0.097	0.00	0.023

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.5	0	0.4	3	0.48	4	3	0	60	2	-	04565	SZA-005-000-003-060-000-04
0.8	0	0.6	4	0.78	4	4	0	60	2	-	06374	SZA-008-000-004-060-000-04
1	0	0.75	6	0.97	4	6	0	60	2	-	04324	SZA-010-000-006-060-000-04
1	0	0.75	8	0.97	4	8	0	60	2	-	04325	SZA-010-000-008-060-000-04
1	0	0.75	10	0.97	4	10	0	60	2	-	04326	SZA-010-000-010-060-000-04
1	0	0.75	12	0.97	4	12	0	60	2	-	04327	SZA-010-000-012-060-000-04
1.5	0	1.15	4	1.47	6	4	0	51	2	-	06456	SZA-015-000-004-050-000-06
2	0	2	6	1.93	6	6	0	51	2	-	02193	SZA-020-000-006-050-000-06
2	0	2	8	1.93	4	8	0	60	2	-	04320	SZA-020-000-008-060-000-04
2	0	2	12	1.93	4	12	0	60	2	-	04321	SZA-020-000-012-060-000-04
2	0	2	16	1.93	4	16	0	60	2	-	04322	SZA-020-000-016-060-000-04
2	0	2	20	1.93	4	20	0	60	2	-	04323	SZA-020-000-020-060-000-04

*Technical changes reserved.

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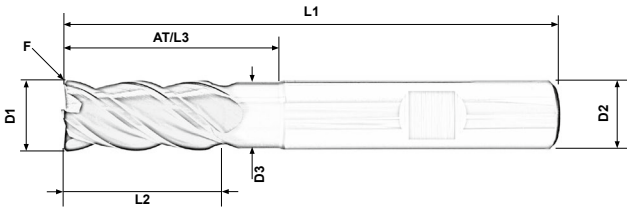
KANTOS® [4rvs]

End mill with multiple flutes and protective chamfer for machining materials with chromium and nickel. The cutting geometry is designed for shoulder milling as well as trochoidal machining.

+ high process reliablity
+ pre-finishing and finishing
+ trochoidal milling
+ creates excellent vertical walls



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 05740 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
CrNi	4140	994	130	18.00	0.00	0.06

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	+/-	+/-	+/-	+/-	+/-	+	+	+	+/-	+	+/-	-	+/-	-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.15	6	9	2.9	6	9	0	51	4	-	05735	4RVS-030-015-009-051-000-06
4	0.15	8	12	3.8	6	12	0	51	4	-	05736	4RVS-040-015-012-051-000-06
5	0.15	10	15	4.84	6	15	0	51	4	-	05737	4RVS-050-015-015-051-000-06
6	0.25	12	18	5.6	6	18	0	58	4	-	05738	4RVS-060-025-018-058-000-06
8	0.3	16	24	7.6	8	24	0	64	4	-	05739	4RVS-080-030-024-064-000-08
10	0.4	20	30	9.65	10	30	0	73	4	-	05740	4RVS-100-040-030-073-000-10
12	0.5	24	36	11.55	12	36	0	84	4	-	05741	4RVS-120-050-036-084-000-12
16	0.5	32	48	15.3	16	48	0	100	4	-	05742	4RVS-160-050-048-100-000-16
20	0.6	40	60	19.2	20	60	0	125	4	-	05743	4RVS-200-060-060-125-000-20

*Technical changes reserved.

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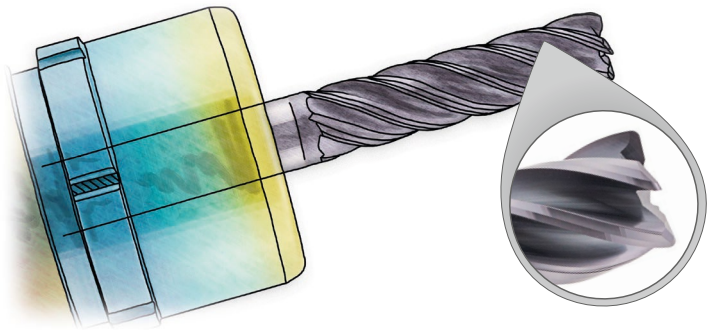
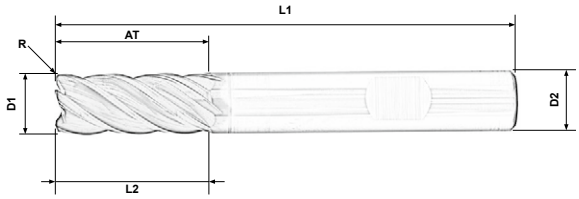


KANTOS® [rdf]

Solid metal end mill with five flutes and corner radius and Weldon clamping surface. For trochoidal machining of steel up to 56 HRC with dymanic machines. High cutting speeds and high feed rates can be realized by a constantly programmed wrap angle. Additional to product group [**rdf**] the product group [**rdg**] is offered for trochoidal milling.

+ with corner radius
+ for trochoidal milling and multipass milling
+ designed for constant wrap angle
+ for high Vc and therefore for dynamic machines



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 20517 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	7962	1421	200	16.00	0.10	0.036

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0.25	14	-	-	6	14	0	58	5	-	19493	RDF-060-025-014-058-000-06
6	0.25	20	-	-	6	20	0	60	5	-	20514	RDF-060-025-020-060-000-06
6	0.5	14	-	-	6	14	0	58	5	-	19494	RDF-060-050-014-058-000-06
6	0.5	20	-	-	6	20	0	60	5	-	20515	RDF-060-050-020-060-000-06
8	0.25	19	-	-	8	19	0	64	5	-	19495	RDF-080-025-019-064-000-08
8	0.25	26	-	-	8	26	0	64	5	-	20516	RDF-080-025-026-064-000-08
8	0.5	19	-	-	8	19	0	64	5	-	19496	RDF-080-050-019-064-000-08
8	0.5	26	-	-	8	26	0	64	5	-	20517	RDF-080-050-026-064-000-08
10	0.5	24	-	-	10	24	0	73	5	-	17943	RDF-100-050-024-073-000-10
10	0.5	32	-	-	10	32	0	75	5	-	20518	RDF-100-050-032-075-000-10
10	1	24	-	-	10	24	0	73	5	-	19497	RDF-100-100-024-073-000-10
10	1	32	-	-	10	32	0	75	5	-	20519	RDF-100-100-032-075-000-10
12	0.5	30	-	-	12	30	0	84	5	-	19498	RDF-120-050-030-084-000-12
12	0.5	43	-	-	12	43	0	90	5	-	20520	RDF-120-050-043-090-000-12
12	1	30	-	-	12	30	0	84	5	-	19499	RDF-120-100-030-084-000-12
12	1	43	-	-	12	43	0	90	5	-	20521	RDF-120-100-043-090-000-12
16	1	40	-	-	16	40	0	93	5	-	19500	RDF-160-100-040-093-000-16
16	1	52	-	-	16	52	0	110	5	-	20522	RDF-160-100-052-110-000-16

*Technical changes reserved.

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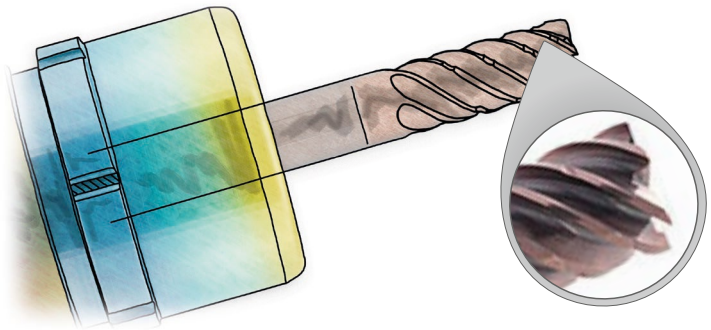
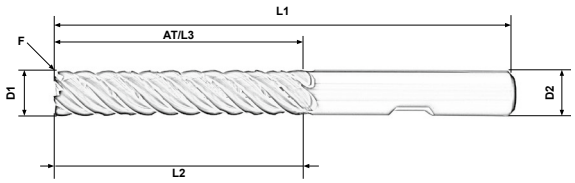


KANTOS® [rdg]

Solid metal end mill for trochoidal machining, with 45° angle of twist, chip breaker and with Weldon clamping surface. The tool creates short, easily removable chips thanks to its great angle of twist and the included chip breaker. Additional to product group [**rdf**] the product group [**rdg**] is offered for trochoidal milling.

+ great axial infeed at high feed rates for trochoidal milling
+ process reliability machining by litte chips
+ up to 5×D cutting lengths ex stock



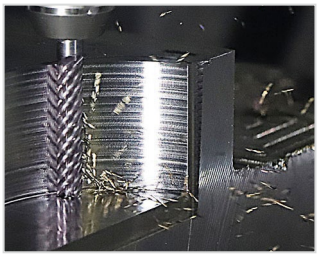
You can find all available tools and information online at: **iklick.aura.tools**

Exemplary Cutting Data for Code 24440 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000 N	4 777	602	120	16.00	0.10	0.021

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	+/-	-	-	+	+/-	-	-	-	+/-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0.1	13	19	5.9	6	19	0	57	6	-	24435	RDG-060-010-019-057-000-06
6	0.1	19	24	5.9	6	24	0	62	6	-	24436	RDG-060-010-024-062-000-06
6	0.1	32	-	-	6	32	0	70	6	-	24437	RDG-060-010-032-070-000-06
8	0.2	19	25	7.8	8	25	0	63	6	-	24438	RDG-080-020-025-063-000-08
8	0.2	25	30	7.8	8	30	0	68	6	-	24439	RDG-080-020-030-068-000-08
8	0.2	42	-	-	8	42	0	80	6	-	24440	RDG-080-020-042-080-000-08
10	0.2	22	30	9.8	10	30	0	72	6	-	24441	RDG-100-020-030-072-000-10
10	0.2	31	38	9.8	10	38	0	80	6	-	24442	RDG-100-020-038-080-000-10
10	0.2	52	-	-	10	52	0	100	6	-	24443	RDG-100-020-052-100-000-10
12	0.3	26	36	11.7	12	36	0	83	6	-	24444	RDG-120-030-036-083-000-12
12	0.3	37	46	11.7	12	46	0	93	6	-	24445	RDG-120-030-046-093-000-12
12	0.3	62	-	-	12	62	0	116	6	-	24446	RDG-120-030-062-116-000-12
16	0.3	32	42	15.5	16	42	0	92	6	-	24448	RDG-160-030-042-092-000-16
16	0.3	49	58	15.5	16	58	0	108	6	-	24383	RDG-160-030-058-108-000-16
16	0.3	62	-	-	16	62	0	120	6	-	24762	RDG-160-030-062-120-000-16
16	0.3	82	-	-	16	82	0	140	6	-	24449	RDG-160-030-082-140-000-16
18	0.3	54	66	17.5	18	66	0	114	6	-	24450	RDG-180-030-066-114-000-18
20	0.3	38	52	19.5	20	52	0	103	6	-	24451	RDG-200-030-052-103-000-20
20	0.3	61	74	19.5	20	74	0	126	6	-	24452	RDG-200-030-074-126-000-20
20	0.3	82	-	-	20	82	0	145	6	-	24763	RDG-200-030-082-145-000-20
20	0.3	102	-	-	20	102	0	163	6	-	24453	RDG-200-030-102-163-000-20



*Technical changes reserved.

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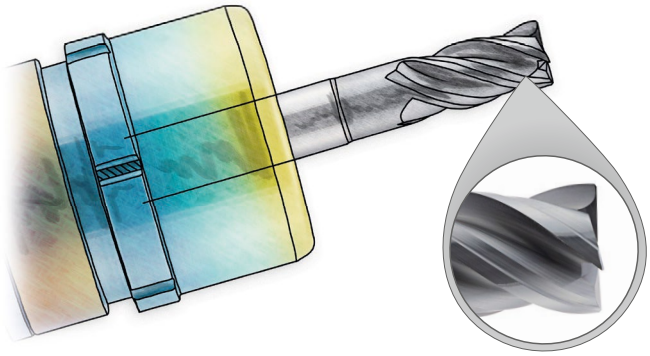
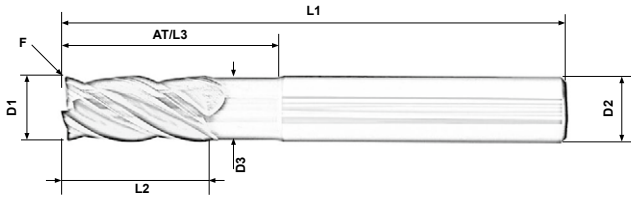


KANTOS® [4esvc]

▼ + ▼▼▼

End mill with four flutes with protective chamfer and differnet angles of twist. The cutting geometry is designed for slot milling, trimming and drill milling, so it is universally usable.

+ high process reliability
+ universally usable
+ drilling and diving
+ smooth run



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 21420 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Steel	3554	967	134	12.00	0.00	0.068

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	+/-	-	-	+	+/-	-	-	-	+/-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.1	4.5	6	2.9	6	6	0	51	4	-	21408	4ESVC-030-010-006-051-000-06
3	0.1	6	9	2.9	6	9	0	51	4	-	21409	4ESVC-030-010-009-051-000-06
4	0.1	6	8	3.8	6	8	0	51	4	-	21410	4ESVC-040-010-008-051-000-06
4	0.1	8	12	3.8	6	12	0	51	4	-	21411	4ESVC-040-010-012-051-000-06
5	0.1	7.5	10	4.8	6	10	0	51	4	-	21412	4ESVC-050-010-010-051-000-06
5	0.1	10	15	4.8	6	15	0	51	4	-	21413	4ESVC-050-010-015-051-000-06
6	0.1	9	12	5.6	6	12	0	51	4	-	21414	4ESVC-060-010-012-051-000-06
6	0.1	12	18	5.6	6	18	0	60	4	-	21415	4ESVC-060-010-018-060-000-06
6	0.1	12	30	5.6	6	30	0	70	4	-	21757	4ESVC-060-010-030-070-000-06
8	0.15	12	16	7.6	8	16	0	59	4	-	21416	4ESVC-080-015-016-059-000-08
8	0.15	16	24	7.6	8	24	0	64	4	-	21417	4ESVC-080-015-024-064-000-08
10	0.2	15	20	9.5	10	20	0	67	4	-	21418	4ESVC-100-020-020-067-000-10
10	0.2	20	30	9.5	10	30	0	75	4	-	21419	4ESVC-100-020-030-075-000-10
12	0.25	18	24	11.5	12	24	0	74	4	-	21420	4ESVC-120-025-024-074-000-12
12	0.25	24	36	11.5	12	36	0	84	4	-	21421	4ESVC-120-025-036-084-000-12
16	0.3	32	48	15.55	16	48	0	100	4	-	22065	4ESVC-160-030-048-100-000-16

*Technical changes reserved.

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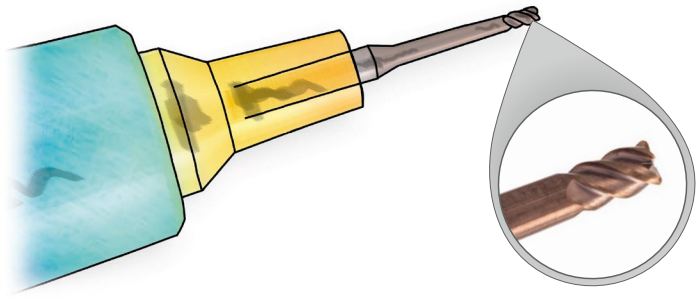

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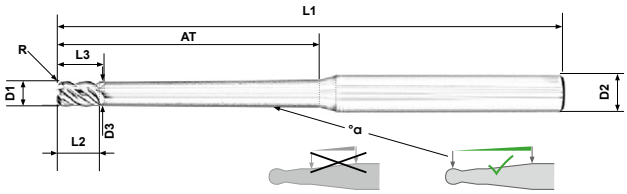
Revolutionary TSC® machining of complex and deep 3-D cavities.
Torical HSC cutter with four flutes and conical stepped neck.
For machining deep ribs. Also suitable for hardened tool steels up to 56 HRC.

+ great feed rates
+ reducing vibration
+ roughing and finishing
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 24160 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	14597	701	55	0.02	0.60	0.012

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.15	1	2	0.95	4	5	0.4	60	4	-	24147	PSM-010-015-005-060-004-04
1	0.15	1	2	0.95	4	5	0.9	60	4	-	24148	PSM-010-015-005-060-009-04
1	0.15	1	2	0.95	4	10	0.4	60	4	-	24149	PSM-010-015-010-060-004-04
1	0.15	1	2	0.95	4	10	0.9	60	4	-	24150	PSM-010-015-010-060-009-04
1	0.15	1	2	0.95	4	15	0.4	60	4	-	24151	PSM-010-015-015-060-004-04
1	0.15	1	2	0.95	4	15	0.9	60	4	-	24152	PSM-010-015-015-060-009-04
1	0.15	1	2	0.95	4	20	0.4	60	4	-	24153	PSM-010-015-020-060-004-04
1	0.15	1	2	0.95	4	20	0.9	60	4	-	24154	PSM-010-015-020-060-009-04
1	0.2	1	2	0.95	4	5	0.4	60	4	-	25133	PSM-010-020-005-060-004-04
1	0.2	1	2	0.95	4	5	0.9	60	4	-	25134	PSM-010-020-005-060-009-04
1	0.2	1	2	0.95	4	10	0.4	60	4	-	25135	PSM-010-020-010-060-004-04
1	0.2	1	2	0.95	4	10	0.9	60	4	-	25136	PSM-010-020-010-060-009-04
1	0.2	1	2	0.95	4	15	0.4	60	4	-	25137	PSM-010-020-015-060-004-04
1	0.2	1	2	0.95	4	15	0.9	60	4	-	25138	PSM-010-020-015-060-009-04
1	0.2	1	2	0.95	4	20	0.4	60	4	-	25139	PSM-010-020-020-060-004-04
1	0.2	1	2	0.95	4	20	0.9	60	4	-	25140	PSM-010-020-020-060-009-04
1.2	0.2	1.5	2.5	1.1	4	6	0.4	60	4	-	24155	PSM-012-020-006-060-004-04
1.2	0.2	1.5	2.5	1.1	4	6	0.9	60	4	-	24156	PSM-012-020-006-060-009-04
1.2	0.2	1.5	2.5	1.1	4	12	0.4	60	4	-	24157	PSM-012-020-012-060-004-04
1.2	0.2	1.5	2.5	1.1	4	12	0.9	60	4	-	24158	PSM-012-020-012-060-009-04
1.2	0.2	1.5	2.5	1.1	4	18	0.4	60	4	-	24159	PSM-012-020-018-060-004-04
1.2	0.2	1.5	2.5	1.1	4	18	0.9	60	4	-	24160	PSM-012-020-018-060-009-04
1.2	0.2	1.5	2.5	1.1	4	24	0.4	60	4	-	24161	PSM-012-020-024-060-004-04
1.2	0.2	1.5	2.5	1.1	4	24	0.9	60	4	-	24162	PSM-012-020-024-060-009-04
1.5	0.25	2	3	1.4	4	8	0.4	60	4	-	24163	PSM-015-025-008-060-004-04
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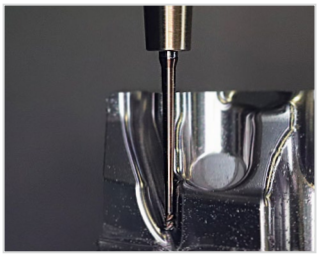

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<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1.5	0.25	2	3	1.4	4	15	0.4	60	4	-	24165	PSM-015-025-015-060-004-04
1.5	0.25	2	3	1.4	4	15	0.9	60	4	-	24166	PSM-015-025-015-060-009-04
1.5	0.25	2	3	1.4	4	23	0.4	60	4	-	24167	PSM-015-025-023-060-004-04
1.5	0.25	2	3	1.4	4	23	0.9	60	4	-	24168	PSM-015-025-023-060-009-04
1.5	0.25	2	3	1.4	4	30	0.4	60	4	-	24169	PSM-015-025-030-060-004-04
1.5	0.25	2	3	1.4	4	30	0.9	60	4	-	24170	PSM-015-025-030-060-009-04
2	0.25	3	4	1.9	6	10	0.9	60	4	-	23235	PSM-020-025-010-060-009-06
2	0.25	3	4	1.9	6	10	0.4	60	4	-	24171	PSM-020-025-010-060-004-06
2	0.25	3	4	1.9	6	16	0.9	60	4	-	23236	PSM-020-025-016-060-009-06
2	0.25	3	4	1.9	6	16	0.4	60	4	-	24173	PSM-020-025-016-060-004-06
2	0.25	3	4	1.9	6	20	0.9	60	4	-	23237	PSM-020-025-020-060-009-06
2	0.25	3	4	1.9	6	20	0.4	60	4	-	24175	PSM-020-025-020-060-004-06
2	0.25	3	4	1.9	6	30	0.4	70	4	-	24177	PSM-020-025-030-070-004-06
2	0.25	3	4	1.9	6	30	0.9	70	4	-	24179	PSM-020-025-030-070-009-06
2	0.25	3	4	1.9	6	40	0.4	80	4	-	24181	PSM-020-025-040-080-004-06
2	0.25	3	4	1.9	6	40	0.9	80	4	-	24183	PSM-020-025-040-080-009-06
2	0.25	3	4	1.9	6	50	0.4	100	4	-	24185	PSM-020-025-050-100-004-06
2	0.25	3	4	1.9	6	50	0.9	100	4	-	24187	PSM-020-025-050-100-009-06
2	0.5	3	4	1.9	6	10	0.9	60	4	-	23238	PSM-020-050-010-060-009-06
2	0.5	3	4	1.9	6	10	0.4	60	4	-	24172	PSM-020-050-010-060-004-06
2	0.5	3	4	1.9	6	16	0.9	60	4	-	23239	PSM-020-050-016-060-009-06
2	0.5	3	4	1.9	6	16	0.4	60	4	-	24174	PSM-020-050-016-060-004-06
2	0.5	3	4	1.9	6	20	0.9	60	4	-	23240	PSM-020-050-020-060-009-06
2	0.5	3	4	1.9	6	20	0.4	60	4	-	24176	PSM-020-050-020-060-004-06
2	0.5	3	4	1.9	6	30	0.4	70	4	-	24178	PSM-020-050-030-070-004-06
2	0.5	3	4	1.93	6	30	0.9	70	4	-	24180	PSM-020-050-030-070-009-06
2	0.5	3	4	1.9	6	40	0.4	80	4	-	24182	PSM-020-050-040-080-004-06
2	0.5	3	4	1.9	6	40	0.9	80	4	-	24184	PSM-020-050-040-080-009-06
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2	0.5	3	4	1.9	6	50	0.9	100	4	-	24188	PSM-020-050-050-100-009-06
2.5	0.25	3	4	2.4	6	10	0.9	60	4	-	23241	PSM-025-025-010-060-009-06
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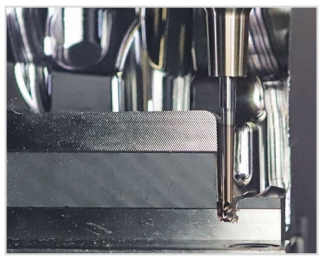
2.5	0.25	3	4	2.4	6	16	0.9	60	4	-	23242	PSM-025-025-016-060-009-06
2.5	0.25	3	4	2.4	6	16	0.4	60	4	-	24191	PSM-025-025-016-060-004-06
2.5	0.25	3	4	2.4	6	23	0.9	60	4	-	23243	PSM-025-025-023-060-009-06
2.5	0.25	3	4	2.4	6	23	0.4	60	4	-	24193	PSM-025-025-023-060-004-06
2.5	0.25	3	4	2.4	6	30	0.9	70	4	-	23244	PSM-025-025-030-070-009-06
2.5	0.25	3	4	2.4	6	30	0.4	70	4	-	24195	PSM-025-025-030-070-004-06
2.5	0.25	3	4	2.4	6	36	0.9	70	4	-	23245	PSM-025-025-036-070-009-06
2.5	0.25	3	4	2.4	6	36	0.4	70	4	-	24196	PSM-025-025-036-070-004-06
2.5	0.25	3	4	2.4	6	40	0.4	80	4	-	24199	PSM-025-025-040-080-004-06
2.5	0.25	3	4	2.4	6	40	0.9	80	4	-	24201	PSM-025-025-040-080-009-06
2.5	0.25	3	4	2.4	6	50	0.4	100	4	-	24203	PSM-025-025-050-100-004-06
2.5	0.25	3	4	2.4	6	50	0.9	100	4	-	24205	PSM-025-025-050-100-009-06
2.5	0.5	3	4	2.4	6	10	0.9	60	4	-	23246	PSM-025-050-010-060-009-06
2.5	0.5	3	4	2.4	6	10	0.4	60	4	-	24190	PSM-025-050-010-060-004-06
2.5	0.5	3	4	2.4	6	16	0.9	60	4	-	23247	PSM-025-050-016-060-009-06
2.5	0.5	3	4	2.4	6	16	0.4	60	4	-	24192	PSM-025-050-016-060-004-06



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<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2.5	0.5	3	4	2.4	6	23	0.9	60	4	-	23248	PSM-025-050-023-060-009-06
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2.5	0.5	3	4	2.4	6	30	0.9	70	4	-	23249	PSM-025-050-030-070-009-06
2.5	0.5	3	4	2.4	6	30	0.4	70	4	-	24197	PSM-025-050-030-070-004-06
2.5	0.5	3	4	2.4	6	36	0.9	70	4	-	23250	PSM-025-050-036-070-009-06
2.5	0.5	3	4	2.4	6	36	0.4	70	4	-	24198	PSM-025-050-036-070-004-06
2.5	0.5	3	4	2.4	6	40	0.4	80	4	-	24200	PSM-025-050-040-080-004-06
2.5	0.5	3	4	2.4	6	40	0.9	80	4	-	24202	PSM-025-050-040-080-009-06
2.5	0.5	3	4	2.4	6	50	0.4	100	4	-	24204	PSM-025-050-050-100-004-06
2.5	0.5	3	4	2.4	6	50	0.9	100	4	-	24206	PSM-025-050-050-100-009-06
3	0.4	4.5	5.5	2.85	6	18	0.9	60	4	-	23251	PSM-030-040-018-060-009-06
3	0.4	4.5	5.5	2.85	6	18	0.4	60	4	-	24207	PSM-030-040-018-060-004-06
3	0.4	4.5	5.5	2.85	6	24	0.9	60	4	-	23252	PSM-030-040-024-060-009-06
3	0.4	4.5	5.5	2.85	6	24	0.4	60	4	-	24209	PSM-030-040-024-060-004-06
3	0.4	4.5	5.5	2.85	6	30	0.9	75	4	-	23253	PSM-030-040-030-075-009-06
3	0.4	4.5	5.5	2.85	6	30	0.4	75	4	-	24211	PSM-030-040-030-075-004-06
3	0.4	4.5	5.5	2.85	6	35	0.9	75	4	-	23254	PSM-030-040-035-075-009-06
3	0.4	4.5	5.5	2.85	6	40	0.9	75	4	-	23255	PSM-030-040-040-075-009-06
3	0.4	4.5	5.5	2.85	6	40	0.4	75	4	-	24213	PSM-030-040-040-075-004-06
3	0.4	4.5	5.5	2.85	6	50	0.9	100	4	-	23936	PSM-030-040-050-100-009-06
3	0.4	4.5	5.5	2.85	6	50	0.4	100	4	-	24215	PSM-030-040-050-100-004-06
3	0.5	4.5	5.5	2.85	6	40	1	75	4	-	27479	PSM-030-050-040-075-010-06
3	0.8	4.5	5.5	2.85	6	18	0.9	60	4	-	23256	PSM-030-080-018-060-009-06
3	0.8	4.5	5.5	2.85	6	18	0.4	60	4	-	24208	PSM-030-080-018-060-004-06
3	0.8	4.5	5.5	2.85	6	24	0.9	60	4	-	23257	PSM-030-080-024-060-009-06
3	0.8	4.5	5.5	2.85	6	24	0.4	60	4	-	24210	PSM-030-080-024-060-004-06
3	0.8	4.5	5.5	2.85	6	30	0.9	75	4	-	23258	PSM-030-080-030-075-009-06
3	0.8	4.5	5.5	2.85	6	30	0.4	75	4	-	24212	PSM-030-080-030-075-004-06
3	0.8	4.5	5.5	2.85	6	35	0.9	75	4	-	23259	PSM-030-080-035-075-009-06
3	0.8	4.5	5.5	2.85	6	40	0.9	75	4	-	23260	PSM-030-080-040-075-009-06
3	0.8	4.5	5.5	2.85	6	40	0.4	75	4	-	24214	PSM-030-080-040-075-004-06
3	0.8	4.5	5.5	2.85	6	50	0.4	100	4	-	24216	PSM-030-080-050-100-004-06
3	0.8	4.5	5.5	2.85	6	50	0.9	100	4	-	24218	PSM-030-080-050-100-009-06
3	1	4.5	5.5	2.85	6	30	0.9	75	4	-	25141	PSM-030-100-030-075-009-06
3	1	4.5	5.5	2.85	6	40	0.9	75	4	-	25142	PSM-030-100-040-075-009-06
3	1	4.5	5.5	2.85	6	60	0.9	100	4	-	25143	PSM-030-100-060-100-009-06
4	0.4	6	7	3.85	6	20	0.9	60	4	-	23261	PSM-040-040-020-060-009-06
4	0.4	6	7	3.85	6	20	0.4	60	4	-	24219	PSM-040-040-020-060-004-06
4	0.4	6	7	3.85	6	28	0.9	70	4	-	23262	PSM-040-040-028-070-009-06
4	0.4	6	7	3.85	6	28	0.4	70	4	-	24221	PSM-040-040-028-070-004-06
4	0.4	6	7	3.85	6	32	0.9	80	4	-	23263	PSM-040-040-032-080-009-06
4	0.4	6	7	3.85	6	32	0.4	80	4	-	24223	PSM-040-040-032-080-004-06
4	0.4	6	7	3.85	6	40	0.9	80	4	-	23264	PSM-040-040-040-080-009-06
4	0.4	6	7	3.85	6	40	0.4	80	4	-	24225	PSM-040-040-040-080-004-06
4	0.4	6	7	3.85	6	50	0.9	100	4	-	23935	PSM-040-040-050-100-009-06
4	0.4	6	7	3.85	6	52	0.4	100	4	-	24227	PSM-040-040-052-100-004-06
4	0.4	6	7	3.85	6	52	0.9	100	4	-	24229	PSM-040-040-052-100-009-06
4	1	6	7	3.85	6	20	0.9	60	4	-	23265	PSM-040-100-020-060-009-06

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<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

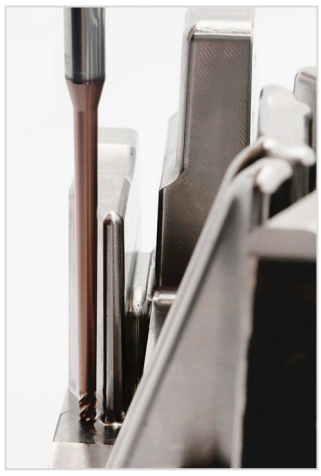
D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	1	6	7	3.85	6	20	0.4	60	4	-	24220	PSM-040-100-020-060-004-06
4	1	6	7	3.85	6	28	0.9	70	4	-	23266	PSM-040-100-028-070-009-06
4	1	6	7	3.85	6	28	0.4	70	4	-	24222	PSM-040-100-028-070-004-06
4	1	6	7	3.85	6	32	0.9	80	4	-	23267	PSM-040-100-032-080-009-06
4	1	6	7	3.85	6	32	0.4	80	4	-	24224	PSM-040-100-032-080-004-06
4	1	6	7	3.85	6	40	0.9	80	4	-	23268	PSM-040-100-040-080-009-06
4	1	6	7	3.85	6	40	0.4	80	4	-	24226	PSM-040-100-040-080-004-06
4	1	6	7	3.85	6	52	0.4	100	4	-	24228	PSM-040-100-052-100-004-06
4	1	6	7	3.85	6	52	0.9	100	4	-	24230	PSM-040-100-052-100-009-06
6	1	6	15	5.8	8	40	0.9	80	4	-	25144	PSM-060-100-040-080-009-08
6	1	6	15	5.8	8	50	0.9	100	4	-	25145	PSM-060-100-050-100-009-08
6	1	6	15	5.8	8	50	1.2	80	4	-	25146	PSM-060-100-050-100-012-08
6	1	6	15	5.8	8	60	0.9	100	4	-	25147	PSM-060-100-060-100-009-08
6	2	6	15	5.8	8	40	1.5	80	4	-	27476	PSM-060-200-040-080-015-08
6	2	6	15	5.8	8	50	1.1935	100	4	-	27475	PSM-060-200-050-100-012-08
8	1	8	20	7.7	10	50	0.9	100	4	-	25148	PSM-080-100-050-100-009-10
8	1	8	20	7.7	10	50	1.1	100	4	-	25149	PSM-080-100-050-100-011-10
8	1	8	20	7.7	10	65	0.9	120	4	-	25150	PSM-080-100-065-120-009-10
8	1	8	20	7.7	12	90	1	150	4	-	27472	PSM-080-100-090-150-010-12
8	1	8	20	7.7	12	120	0.963	175	4	-	27473	PSM-080-100-120-175-010-12
8	2	8	20	7.7	10	50	1.5	100	4	-	27474	PSM-080-200-050-100-015-10
8	2	8	20	7.7	10	50	0.9	100	4	-	27480	PSM-080-200-050-100-009-10
10	1	10	20	9.65	12	70	0.8	120	4	-	27477	PSM-100-100-070-120-008-12
10	2	10	20	9.65	12	65	0.9	120	4	-	27478	PSM-100-200-065-120-009-12

v_c (m/min)	a_p (mm)	f_z (mm)	S (U/min)	F (mm/min)
80.4	0.075	0.19	6400	4800

Cutting data for illustrated work piece
1.2343 50 HRC

[psm] Code 23268

D1	R	AT	°a
4.00 mm	1.00 mm	40.00 mm	0.90°



*Technical changes reserved.

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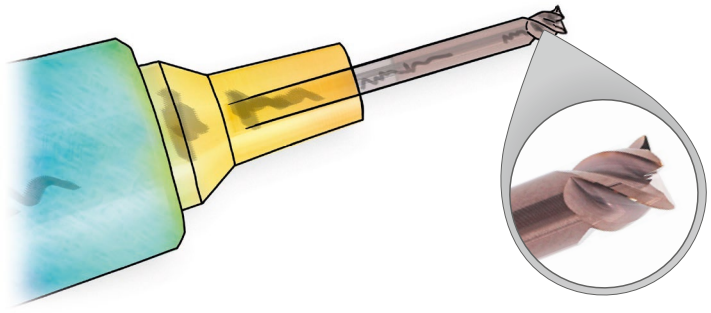
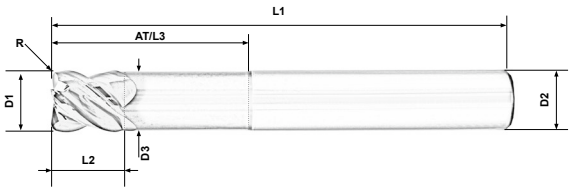


FILON® [psmz]

▼ + ▼▼▼

Revolutionary TSC® machining of complex and deep 3-D cavities.
Torical HSC cutter with four flutes and conical stepped neck.
For machining deep ribs. Also suitable for hardened tool steels up to 56 HRC.

+ great feed rates
+ reducing vibration
+ roughing and finishing
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 24938 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	15924	2548	100	0.05	1.20	0.04

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.15	1	4	0.95	4	4	0	51	4	-	24885	PSMZ-010-015-004-051-000-04
1	0.15	1	5	0.95	4	5	0	51	4	-	24886	PSMZ-010-015-005-051-000-04
1	0.15	1	6	0.95	4	6	0	51	4	-	24887	PSMZ-010-015-006-051-000-04
1	0.15	1	8	0.95	4	8	0	51	4	-	24888	PSMZ-010-015-008-051-000-04
1	0.15	1	10	0.95	4	10	0	51	4	-	24889	PSMZ-010-015-010-051-000-04
1	0.15	1	12	0.95	4	12	0	51	4	-	24890	PSMZ-010-015-012-051-000-04
1	0.15	1	15	0.95	4	15	0	51	4	-	24891	PSMZ-010-015-015-051-000-04
1	0.2	1	4	0.95	4	4	0	51	4	-	24892	PSMZ-010-020-004-051-000-04
1	0.2	1	5	0.95	4	5	0	51	4	-	24893	PSMZ-010-020-005-051-000-04
1	0.2	1	6	0.95	4	6	0	51	4	-	24894	PSMZ-010-020-006-051-000-04
1	0.2	1	8	0.95	4	8	0	51	4	-	24895	PSMZ-010-020-008-051-000-04
1	0.2	1	10	0.95	4	10	0	51	4	-	24896	PSMZ-010-020-010-051-000-04
1	0.2	1	12	0.95	4	12	0	51	4	-	24897	PSMZ-010-020-012-051-000-04
1	0.2	1	15	0.95	4	15	0	51	4	-	24898	PSMZ-010-020-015-051-000-04
1	0.3	1	4	0.95	4	4	0	51	4	-	24899	PSMZ-010-030-004-051-000-04
1	0.3	1	5	0.95	4	5	0	51	4	-	24900	PSMZ-010-030-005-051-000-04
1	0.3	1	6	0.95	4	6	0	51	4	-	24901	PSMZ-010-030-006-051-000-04
1	0.3	1	8	0.95	4	8	0	51	4	-	24902	PSMZ-010-030-008-051-000-04
1	0.3	1	10	0.95	4	10	0	51	4	-	24903	PSMZ-010-030-010-051-000-04
1	0.3	1	12	0.95	4	12	0	51	4	-	24904	PSMZ-010-030-012-051-000-04
1	0.3	1	15	0.95	4	15	0	51	4	-	24905	PSMZ-010-030-015-051-000-04
1.2	0.2	1.2	4	1.1	4	4	0	51	4	-	24906	PSMZ-012-020-004-051-000-04
1.2	0.2	1.2	5	1.13	4	5	0	51	4	-	24907	PSMZ-012-020-005-051-000-04
1.2	0.2	1.2	6	1.1	4	6	0	51	4	-	24908	PSMZ-012-020-006-051-000-04
1.2	0.2	1.2	8	1.1	4	8	0	51	4	-	24909	PSMZ-012-020-008-051-000-04
1.2	0.2	1.2	10	1.1	4	10	0	51	4	-	24910	PSMZ-012-020-010-051-000-04
1.2	0.2	1.2	12	1.1	4	12	0	51	4	-	24911	PSMZ-012-020-012-051-000-04
1.2	0.2	1.2	15	1.1	4	15	0	51	4	-	24912	PSMZ-012-020-015-051-000-04

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FILON® [psmz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1.2	0.3	1.2	4	1.1	4	4	0	51	4	-	24913	PSMZ-012-030-004-051-000-04
1.2	0.3	1.2	5	1.1	4	5	0	51	4	-	24914	PSMZ-012-030-005-051-000-04
1.2	0.3	1.2	6	1.1	4	6	0	51	4	-	24915	PSMZ-012-030-006-051-000-04
1.2	0.3	1.2	8	1.1	4	8	0	51	4	-	24916	PSMZ-012-030-008-051-000-04
1.2	0.3	1.2	10	1.1	4	10	0	51	4	-	24917	PSMZ-012-030-010-051-000-04
1.2	0.3	1.2	12	1.1	4	12	0	51	4	-	24918	PSMZ-012-030-012-051-000-04
1.2	0.3	1.2	15	1.1	4	15	0	51	4	-	24919	PSMZ-012-030-015-051-000-04
1.5	0.15	1.5	5	1.4	4	5	0	51	4	-	24920	PSMZ-015-015-005-051-000-04
1.5	0.15	1.5	7	1.4	4	7	0	51	4	-	24921	PSMZ-015-015-007-051-000-04
1.5	0.15	1.5	10	1.4	4	10	0	51	4	-	24922	PSMZ-015-015-010-051-000-04
1.5	0.15	1.5	12	1.4	4	12	0	51	4	-	24923	PSMZ-015-015-012-051-000-04
1.5	0.15	1.5	15	1.4	4	15	0	51	4	-	24924	PSMZ-015-015-015-051-000-04
1.5	0.15	1.5	18	1.4	4	18	0	51	4	-	24925	PSMZ-015-015-018-051-000-04
1.5	0.25	1.5	5	1.4	4	5	0	51	4	-	24926	PSMZ-015-025-005-051-000-04
1.5	0.25	1.5	7	1.4	4	7	0	51	4	-	24927	PSMZ-015-025-007-051-000-04
1.5	0.25	1.5	10	1.4	4	10	0	51	4	-	24928	PSMZ-015-025-010-051-000-04
1.5	0.25	1.5	12	1.4	4	12	0	51	4	-	24929	PSMZ-015-025-012-051-000-04
1.5	0.25	1.5	15	1.4	4	15	0	51	4	-	24930	PSMZ-015-025-015-051-000-04
1.5	0.25	1.5	18	1.4	4	18	0	51	4	-	24931	PSMZ-015-025-018-051-000-04
1.5	0.3	1.5	5	1.43	4	5	0	51	4	-	24932	PSMZ-015-030-005-051-000-04
1.5	0.3	1.5	7	1.4	4	7	0	51	4	-	24933	PSMZ-015-030-007-051-000-04
1.5	0.3	1.5	10	1.4	4	10	0	51	4	-	24934	PSMZ-015-030-010-051-000-04
1.5	0.3	1.5	12	1.4	4	12	0	51	4	-	24935	PSMZ-015-030-012-051-000-04
1.5	0.3	1.5	15	1.4	4	15	0	51	4	-	24936	PSMZ-015-030-015-051-000-04
1.5	0.3	1.5	18	1.4	4	18	0	51	4	-	24937	PSMZ-015-030-018-051-000-04
2	0.25	2	6	1.93	4	6	0	60	4	-	24938	PSMZ-020-025-006-060-000-04
2	0.25	2	8	1.9	4	8	0	60	4	-	24939	PSMZ-020-025-008-060-000-04
2	0.25	2	10	1.93	4	10	0	60	4	-	24940	PSMZ-020-025-010-060-000-04
2	0.25	2	12	1.9	4	12	0	60	4	-	24941	PSMZ-020-025-012-060-000-04
2	0.25	2	15	1.93	4	15	0	60	4	-	24942	PSMZ-020-025-015-060-000-04
2	0.25	2	18	1.9	4	18	0	60	4	-	24943	PSMZ-020-025-018-060-000-04
2	0.25	2	20	1.9	4	20	0	60	4	-	24944	PSMZ-020-025-020-060-000-04
2	0.25	2	22	1.9	4	22	0	60	4	-	24945	PSMZ-020-025-022-060-000-04
2	0.25	2	25	1.9	4	25	0	60	4	-	24946	PSMZ-020-025-025-060-000-04
2	0.5	2	6	1.93	4	6	0	60	4	-	24947	PSMZ-020-050-006-060-000-04
2	0.5	2	8	1.93	4	8	0	60	4	-	24948	PSMZ-020-050-008-060-000-04
2	0.5	2	10	1.93	4	10	0	60	4	-	24949	PSMZ-020-050-010-060-000-04
2	0.5	2	12	1.9	4	12	0	60	4	-	24950	PSMZ-020-050-012-060-000-04
2	0.5	2	15	1.9	4	15	0	60	4	-	24951	PSMZ-020-050-015-060-000-04
2	0.5	2	18	1.9	4	18	0	60	4	-	24952	PSMZ-020-050-018-060-000-04
2	0.5	2	20	1.9	4	20	0	60	4	-	24953	PSMZ-020-050-020-060-000-04
2	0.5	2	22	1.9	4	22	0	60	4	-	24954	PSMZ-020-050-022-060-000-04
2	0.5	2	25	1.9	4	25	0	60	4	-	24955	PSMZ-020-050-025-060-000-04
2.5	0.25	2.5	6	2.35	4	6	0	60	4	-	24956	PSMZ-025-025-006-060-000-04
2.5	0.25	2.5	8	2.35	4	8	0	60	4	-	24957	PSMZ-025-025-008-060-000-04
2.5	0.25	2.5	10	2.35	4	10	0	60	4	-	24958	PSMZ-025-025-010-060-000-04
2.5	0.25	2.5	12	2.35	4	12	0	60	4	-	24959	PSMZ-025-025-012-060-000-04
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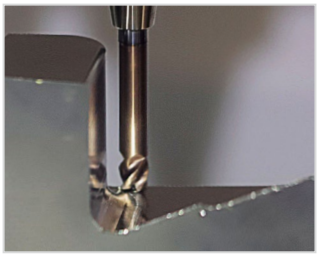

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FILON® [psmz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2.5	0.25	2.5	18	2.35	4	18	0	60	4	-	24961	PSMZ-025-025-018-060-000-04
2.5	0.25	2.5	20	2.35	4	20	0	60	4	-	24962	PSMZ-025-025-020-060-000-04
2.5	0.25	2.5	22	2.35	4	22	0	60	4	-	24963	PSMZ-025-025-022-060-000-04
2.5	0.25	2.5	25	2.35	4	25	0	60	4	-	24964	PSMZ-025-025-025-060-000-04
2.5	0.5	2.5	6	2.35	4	6	0	60	4	-	24965	PSMZ-025-050-006-060-000-04
2.5	0.5	2.5	8	2.35	4	8	0	60	4	-	24966	PSMZ-025-050-008-060-000-04
2.5	0.5	2.5	10	2.35	4	10	0	60	4	-	24967	PSMZ-025-050-010-060-000-04
2.5	0.5	2.5	12	2.35	4	12	0	60	4	-	24968	PSMZ-025-050-012-060-000-04
2.5	0.5	2.5	15	2.35	4	15	0	60	4	-	24969	PSMZ-025-050-015-060-000-04
2.5	0.5	2.5	18	2.35	4	18	0	60	4	-	24970	PSMZ-025-050-018-060-000-04
2.5	0.5	2.5	20	2.35	4	20	0	60	4	-	24971	PSMZ-025-050-020-060-000-04
2.5	0.5	2.5	22	2.35	4	22	0	60	4	-	24972	PSMZ-025-050-022-060-000-04
2.5	0.5	2.5	25	2.35	4	25	0	60	4	-	24973	PSMZ-025-050-025-060-000-04
3	0.25	3	8	2.85	4	8	0	60	4	-	24974	PSMZ-030-025-008-060-000-04
3	0.25	3	8	2.85	6	8	0	60	4	-	24975	PSMZ-030-025-008-060-000-06
3	0.25	3	10	2.85	4	10	0	60	4	-	24976	PSMZ-030-025-010-060-000-04
3	0.25	3	10	2.85	6	10	0	60	4	-	24977	PSMZ-030-025-010-060-000-06
3	0.25	3	15	2.85	4	15	0	60	4	-	24978	PSMZ-030-025-015-060-000-04
3	0.25	3	15	2.85	6	15	0	60	4	-	24979	PSMZ-030-025-015-060-000-06
3	0.25	3	20	2.85	4	20	0	60	4	-	24980	PSMZ-030-025-020-060-000-04
3	0.25	3	20	2.85	6	20	0	60	4	-	24981	PSMZ-030-025-020-060-000-06
3	0.25	3	25	2.85	4	25	0	60	4	-	24982	PSMZ-030-025-025-060-000-04
3	0.25	3	25	2.85	6	25	0	60	4	-	24983	PSMZ-030-025-025-060-000-06
3	0.5	3	8	2.85	4	8	0	60	4	-	24984	PSMZ-030-050-008-060-000-04
3	0.5	3	8	2.85	6	8	0	60	4	-	24985	PSMZ-030-050-008-060-000-06
3	0.5	3	10	2.85	4	10	0	60	4	-	24986	PSMZ-030-050-010-060-000-04
3	0.5	3	10	2.85	6	10	0	60	4	-	24987	PSMZ-030-050-010-060-000-06
3	0.5	3	15	2.85	4	15	0	60	4	-	24988	PSMZ-030-050-015-060-000-04
3	0.5	3	15	2.85	6	15	0	60	4	-	24989	PSMZ-030-050-015-060-000-06
3	0.5	3	20	2.85	4	20	0	60	4	-	24990	PSMZ-030-050-020-060-000-04
3	0.5	3	20	2.88	6	20	0	60	4	-	24991	PSMZ-030-050-020-060-000-06
3	0.5	3	25	2.85	4	25	0	60	4	-	24992	PSMZ-030-050-025-060-000-04
3	0.5	3	25	2.85	6	25	0	60	4	-	24993	PSMZ-030-050-025-060-000-06
3	0.8	3	8	2.85	4	8	0	60	4	-	24994	PSMZ-030-080-008-060-000-04
3	0.8	3	8	2.88	6	8	0	60	4	-	24995	PSMZ-030-080-008-060-000-06
3	0.8	3	10	2.85	4	10	0	60	4	-	24996	PSMZ-030-080-010-060-000-04
3	0.8	3	10	2.85	6	10	0	60	4	-	24997	PSMZ-030-080-010-060-000-06
3	0.8	3	15	2.85	4	15	0	60	4	-	24998	PSMZ-030-080-015-060-000-04
3	0.8	3	15	2.85	6	15	0	60	4	-	24999	PSMZ-030-080-015-060-000-06
3	0.8	3	20	2.85	4	20	0	60	4	-	25000	PSMZ-030-080-020-060-000-04
3	0.8	3	20	2.85	6	20	0	60	4	-	25001	PSMZ-030-080-020-060-000-06
3	0.8	3	25	2.85	4	25	0	60	4	-	25002	PSMZ-030-080-025-060-000-04
3	0.8	3	25	2.85	6	25	0	60	4	-	25003	PSMZ-030-080-025-060-000-06
3	1	3	8	2.85	4	8	0	60	4	-	25004	PSMZ-030-100-008-060-000-04
3	1	3	8	2.85	6	8	0	60	4	-	25005	PSMZ-030-100-008-060-000-06
3	1	3	10	2.85	4	10	0	60	4	-	25006	PSMZ-030-100-010-060-000-04
3	1	3	10	2.85	6	10	0	60	4	-	25007	PSMZ-030-100-010-060-000-06
3	1	3	15	2.85	4	15	0	60	4	-	25008	PSMZ-030-100-015-060-000-04
3	1	3	15	2.85	6	15	0	60	4	-	25009	PSMZ-030-100-015-060-000-06
3	1	3	20	2.85	4	20	0	60	4	-	25010	PSMZ-030-100-020-060-000-04
3	1	3	20	2.85	6	20	0	60	4	-	25011	PSMZ-030-100-020-060-000-06
3	1	3	25	2.85	4	25	0	60	4	-	25012	PSMZ-030-100-025-060-000-04
3	1	3	25	2.85	6	25	0	60	4	-	25013	PSMZ-030-100-025-060-000-06

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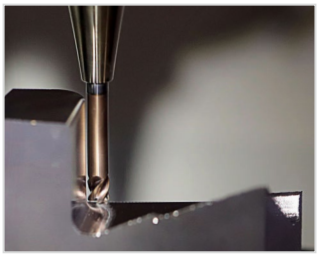
FILON® [psmz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	0.25	4	12	3.85	6	12	0	60	4	-	25014	PSMZ-040-025-012-060-000-06
4	0.25	4	16	3.85	6	16	0	60	4	-	25015	PSMZ-040-025-016-060-000-06
4	0.25	4	20	3.85	6	20	0	60	4	-	25016	PSMZ-040-025-020-060-000-06
4	0.25	4	24	3.85	6	24	0	60	4	-	25017	PSMZ-040-025-024-060-000-06
4	0.25	4	28	3.85	6	28	0	70	4	-	25018	PSMZ-040-025-028-070-000-06
4	0.25	4	32	3.85	6	32	0	70	4	-	25019	PSMZ-040-025-032-070-000-06
4	0.25	4	36	3.85	6	36	0	70	4	-	25020	PSMZ-040-025-036-070-000-06
4	0.25	4	40	3.88	6	40	0	70	4	-	25021	PSMZ-040-025-040-070-000-06
4	0.4	4	12	3.85	6	12	0	60	4	-	25022	PSMZ-040-040-012-060-000-06
4	0.4	4	16	3.88	6	16	0	60	4	-	25023	PSMZ-040-040-016-060-000-06
4	0.4	4	20	3.85	6	20	0	60	4	-	25024	PSMZ-040-040-020-060-000-06
4	0.4	4	24	3.85	6	24	0	60	4	-	25025	PSMZ-040-040-024-060-000-06
4	0.4	4	28	3.85	6	28	0	70	4	-	25026	PSMZ-040-040-028-070-000-06
4	0.4	4	32	3.85	6	32	0	70	4	-	25027	PSMZ-040-040-032-070-000-06
4	0.4	4	36	3.85	6	36	0	70	4	-	25028	PSMZ-040-040-036-070-000-06
4	0.4	4	40	3.85	6	40	0	70	4	-	25029	PSMZ-040-040-040-070-000-06
4	0.5	4	12	3.85	4	12	0	60	4	-	25030	PSMZ-040-050-012-060-000-04
4	0.5	4	12	3.85	6	12	0	60	4	-	25031	PSMZ-040-050-012-060-000-06
4	0.5	4	16	3.85	4	16	0	60	4	-	25032	PSMZ-040-050-016-060-000-04
4	0.5	4	16	3.88	6	16	0	60	4	-	25033	PSMZ-040-050-016-060-000-06
4	0.5	4	20	3.85	4	20	0	60	4	-	25034	PSMZ-040-050-020-060-000-04
4	0.5	4	20	3.85	6	20	0	60	4	-	25035	PSMZ-040-050-020-060-000-06
4	0.5	4	24	3.85	4	24	0	60	4	-	25036	PSMZ-040-050-024-060-000-04
4	0.5	4	24	3.85	6	24	0	60	4	-	25037	PSMZ-040-050-024-060-000-06
4	0.5	4	28	3.85	4	28	0	70	4	-	25038	PSMZ-040-050-028-070-000-04
4	0.5	4	28	3.85	6	28	0	70	4	-	25039	PSMZ-040-050-028-070-000-06
4	0.5	4	32	3.85	4	32	0	70	4	-	25040	PSMZ-040-050-032-070-000-04
4	0.5	4	32	3.85	6	32	0	70	4	-	25041	PSMZ-040-050-032-070-000-06
4	0.5	4	36	3.85	4	36	0	70	4	-	25042	PSMZ-040-050-036-070-000-04
4	0.5	4	36	3.85	6	36	0	70	4	-	25043	PSMZ-040-050-036-070-000-06
4	0.5	4	40	3.85	4	40	0	70	4	-	25044	PSMZ-040-050-040-070-000-04
4	0.5	4	40	3.88	6	40	0	70	4	-	25045	PSMZ-040-050-040-070-000-06
4	1	4	12	3.85	4	12	0	60	4	-	25046	PSMZ-040-100-012-060-000-04
4	1	4	12	3.85	6	12	0	60	4	-	25047	PSMZ-040-100-012-060-000-06
4	1	4	16	3.85	4	16	0	60	4	-	25048	PSMZ-040-100-016-060-000-04
4	1	4	16	3.88	6	16	0	60	4	-	25049	PSMZ-040-100-016-060-000-06
4	1	4	20	3.85	4	20	0	60	4	-	25050	PSMZ-040-100-020-060-000-04
4	1	4	20	3.85	6	20	0	60	4	-	25051	PSMZ-040-100-020-060-000-06
4	1	4	24	3.85	4	24	0	60	4	-	25052	PSMZ-040-100-024-060-000-04
4	1	4	24	3.88	6	24	0	60	4	-	25053	PSMZ-040-100-024-060-000-06
4	1	4	28	3.85	4	28	0	70	4	-	25054	PSMZ-040-100-028-070-000-04
4	1	4	28	3.85	6	28	0	70	4	-	25055	PSMZ-040-100-028-070-000-06
4	1	4	32	3.85	4	32	0	70	4	-	25056	PSMZ-040-100-032-070-000-04
4	1	4	32	3.85	6	32	0	70	4	-	25057	PSMZ-040-100-032-070-000-06
4	1	4	36	3.85	4	36	0	70	4	-	25058	PSMZ-040-100-036-070-000-04
4	1	4	36	3.85	6	36	0	70	4	-	25059	PSMZ-040-100-036-070-000-06
4	1	4	40	3.85	4	40	0	70	4	-	25060	PSMZ-040-100-040-070-000-04
4	1	4	40	3.85	6	40	0	70	4	-	25061	PSMZ-040-100-040-070-000-06



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FILON® [psmz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0.25	6	15	5.8	6	15	0	60	4	-	25062	PSMZ-060-025-015-060-000-06
6	0.25	6	20	5.8	6	20	0	60	4	-	25063	PSMZ-060-025-020-060-000-06
6	0.25	6	25	5.8	6	25	0	60	4	-	25064	PSMZ-060-025-025-060-000-06
6	0.25	6	30	5.8	6	30	0	75	4	-	25065	PSMZ-060-025-030-075-000-06
6	0.25	6	35	5.8	6	35	0	75	4	-	25066	PSMZ-060-025-035-075-000-06
6	0.25	6	40	5.8	6	40	0	75	4	-	25067	PSMZ-060-025-040-075-000-06
6	0.5	6	15	5.8	6	15	0	60	4	-	25068	PSMZ-060-050-015-060-000-06
6	0.5	6	20	5.83	6	20	0	60	4	-	25069	PSMZ-060-050-020-060-000-06
6	0.5	6	25	5.8	6	25	0	60	4	-	25070	PSMZ-060-050-025-060-000-06
6	0.5	6	30	5.8	6	30	0	75	4	-	25071	PSMZ-060-050-030-075-000-06
6	0.5	6	35	5.8	6	35	0	75	4	-	25072	PSMZ-060-050-035-075-000-06
6	0.5	6	40	5.8	6	40	0	75	4	-	25073	PSMZ-060-050-040-075-000-06
6	1	6	15	5.8	6	15	0	60	4	-	25074	PSMZ-060-100-015-060-000-06
6	1	6	20	5.83	6	20	0	60	4	-	25075	PSMZ-060-100-020-060-000-06
6	1	6	25	5.8	6	25	0	60	4	-	25076	PSMZ-060-100-025-060-000-06
6	1	6	30	5.83	6	30	0	75	4	-	25077	PSMZ-060-100-030-075-000-06
6	1	6	35	5.8	6	35	0	75	4	-	25078	PSMZ-060-100-035-075-000-06
6	1	6	40	5.8	6	40	0	75	4	-	25079	PSMZ-060-100-040-075-000-06
6	1.5	6	15	5.8	6	15	0	60	4	-	25080	PSMZ-060-150-015-060-000-06
6	1.5	6	20	5.8	6	20	0	60	4	-	25081	PSMZ-060-150-020-060-000-06
6	1.5	6	25	5.8	6	25	0	60	4	-	25082	PSMZ-060-150-025-060-000-06
6	1.5	6	30	5.8	6	30	0	75	4	-	25083	PSMZ-060-150-030-075-000-06
6	1.5	6	35	5.8	6	35	0	75	4	-	25084	PSMZ-060-150-035-075-000-06
6	1.5	6	40	5.8	6	40	0	75	4	-	25085	PSMZ-060-150-040-075-000-06
6	2	6	15	5.8	6	15	0	60	4	-	25086	PSMZ-060-200-015-060-000-06
6	2	6	20	5.8	6	20	0	60	4	-	25087	PSMZ-060-200-020-060-000-06
6	2	6	25	5.8	6	25	0	60	4	-	25088	PSMZ-060-200-025-060-000-06
6	2	6	30	5.8	6	30	0	75	4	-	25089	PSMZ-060-200-030-075-000-06
6	2	6	35	5.8	6	35	0	75	4	-	25090	PSMZ-060-200-035-075-000-06
6	2	6	40	5.8	6	40	0	75	4	-	25091	PSMZ-060-200-040-075-000-06
8	0.5	8	20	7.7	8	20	0	64	4	-	25092	PSMZ-080-050-020-064-000-08
8	0.5	8	30	7.73	8	30	0	75	4	-	25093	PSMZ-080-050-030-075-000-08
8	0.5	8	40	7.7	8	40	0	85	4	-	25094	PSMZ-080-050-040-085-000-08
8	0.5	8	50	7.7	8	50	0	100	4	-	25095	PSMZ-080-050-050-100-000-08
8	1	8	20	7.7	8	20	0	64	4	-	25096	PSMZ-080-100-020-064-000-08
8	1	8	30	7.73	8	30	0	75	4	-	25097	PSMZ-080-100-030-075-000-08
8	1	8	40	7.73	8	40	0	85	4	-	25098	PSMZ-080-100-040-085-000-08
8	1	8	50	7.7	8	50	0	100	4	-	25099	PSMZ-080-100-050-100-000-08
8	2	8	20	7.7	8	20	0	64	4	-	25100	PSMZ-080-200-020-064-000-08
8	2	8	30	7.7	8	30	0	75	4	-	25101	PSMZ-080-200-030-075-000-08
8	2	8	40	7.7	8	40	0	85	4	-	25102	PSMZ-080-200-040-085-000-08
8	2	8	50	7.7	8	50	0	100	4	-	25103	PSMZ-080-200-050-100-000-08
8	3	8	16	7.73	8	16	0	64	4	-	27036	PSMZ-080-300-016-064-000-08
8	3	8	20	7.7	8	20	0	64	4	-	25104	PSMZ-080-300-020-064-000-08
8	3	8	30	7.7	8	30	0	75	4	-	25105	PSMZ-080-300-030-075-000-08
8	3	8	40	7.7	8	40	0	85	4	-	25106	PSMZ-080-300-040-085-000-08
8	3	8	50	7.7	8	50	0	100	4	-	25107	PSMZ-080-300-050-100-000-08

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FILON® [psmz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
10	1	10	30	9.65	10	30	0	75	4	-	25108	PSMZ-100-100-030-075-000-10
10	1	10	40	9.65	10	40	0	85	4	-	25109	PSMZ-100-100-040-085-000-10
10	1	10	50	9.69	10	50	0	100	4	-	25110	PSMZ-100-100-050-100-000-10
10	2	10	30	9.65	10	30	0	75	4	-	25111	PSMZ-100-200-030-075-000-10
10	2	10	40	9.65	10	40	0	85	4	-	25112	PSMZ-100-200-040-085-000-10
10	2	10	50	9.65	10	50	0	100	4	-	25113	PSMZ-100-200-050-100-000-10
10	3	10	30	9.65	10	30	0	75	4	-	25114	PSMZ-100-300-030-075-000-10
10	3	10	40	9.65	10	40	0	85	4	-	25115	PSMZ-100-300-040-085-000-10
10	3	10	50	9.65	10	50	0	100	4	-	25116	PSMZ-100-300-050-100-000-10
10	4	10	20	9.65	10	20	0	75	4	-	27037	PSMZ-100-400-020-075-000-10
12	1	12	30	11.6	12	30	0	74	4	-	25117	PSMZ-120-100-030-074-000-12
12	1	12	40	11.6	12	40	0	84	4	-	25118	PSMZ-120-100-040-084-000-12
12	1	12	50	11.6	12	50	0	100	4	-	25119	PSMZ-120-100-050-100-000-12
12	1	12	60	11.65	12	60	0	120	4	-	25120	PSMZ-120-100-060-120-000-12
12	2	12	30	11.6	12	30	0	74	4	-	25121	PSMZ-120-200-030-074-000-12
12	2	12	40	11.6	12	40	0	84	4	-	25122	PSMZ-120-200-040-084-000-12
12	2	12	50	11.6	12	50	0	100	4	-	25123	PSMZ-120-200-050-100-000-12
12	2	12	60	11.65	12	60	0	120	4	-	25124	PSMZ-120-200-060-120-000-12
12	3	12	30	11.6	12	30	0	74	4	-	25125	PSMZ-120-300-030-074-000-12
12	3	12	40	11.6	12	40	0	84	4	-	25126	PSMZ-120-300-040-084-000-12
12	3	12	50	11.6	12	50	0	100	4	-	25127	PSMZ-120-300-050-100-000-12
12	3	12	60	11.6	12	60	0	120	4	-	25128	PSMZ-120-300-060-120-000-12
12	4	12	30	11.6	12	30	0	74	4	-	25129	PSMZ-120-400-030-074-000-12
12	4	12	40	11.6	12	40	0	84	4	-	25130	PSMZ-120-400-040-084-000-12
12	4	12	50	11.6	12	50	0	100	4	-	25131	PSMZ-120-400-050-100-000-12
12	4	12	60	11.6	12	60	0	120	4	-	25132	PSMZ-120-400-060-120-000-12
12	5	12	24	11.6	12	24	0	74	4	-	27038	PSMZ-120-500-024-074-000-12

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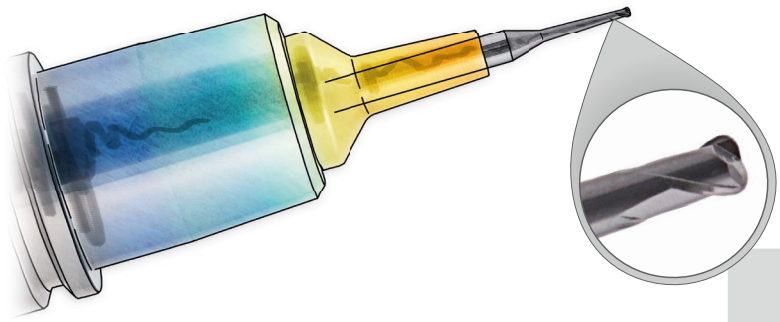
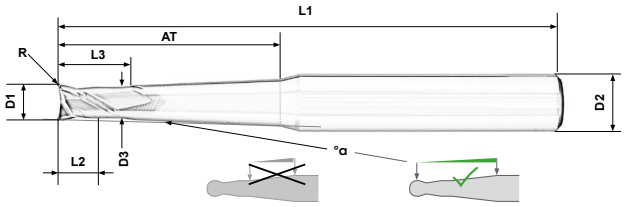


SANTOS® [t]

Toric end mill with two flutes, conically strengthened. The cutting geometry is designed for maximum process reliabilty even under adverse conditions.

+ high process reliabilty
+ universally usable
+ conically strengthened
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00115 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	11 146	624	70	0.059	0.00	0.028

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.4	0.1	0.3	2	0.38	4	20	5.1	51	2	-	05963	T-004-010-020-051-051-04
0.6	0.1	0.45	2	0.58	4	20	5.1	51	2	-	07354	T-006-010-020-051-051-04
0.8	0.1	0.6	4	0.78	6	5	0.4	60	2	IKZ	00391	T-008-010-005-060-004-06
0.8	0.1	0.6	4	0.78	6	8	0.4	60	2	IKZ	00406	T-008-010-008-060-004-06
0.8	0.1	0.6	4	0.78	6	11	0.4	60	2	IKZ	00407	T-008-010-011-060-004-06
1	0.15	0.75	4	0.97	6	5	0.9	60	2	IKZ	00659	T-010-015-005-060-009-06
1	0.15	0.75	4	0.97	6	5	0.4	60	2	IKZ	00882	T-010-015-005-060-004-06
1	0.15	0.75	4	0.97	6	8	0.4	60	2	IKZ	00349	T-010-015-008-060-004-06
1	0.15	0.75	4	0.97	6	10	0.4	60	2	IKZ	00703	T-010-015-010-060-004-06
1	0.15	0.75	4	0.97	6	10	0.9	60	2	IKZ	06326	T-010-015-010-060-009-06
1	0.15	0.75	4	0.97	6	15	0.4	60	2	IKZ	00704	T-010-015-015-060-004-06
1	0.15	0.75	4	0.97	6	15	0.9	60	2	IKZ	06327	T-010-015-015-060-009-06
1	0.15	0.75	4	0.97	6	25	1.5	70	2	-	07443	T-010-015-025-070-015-06
1.2	0.1	0.9	4	1.17	4	24	4.2	51	2	-	11521	T-012-010-020-051-042-04
1.5	0.25	1.15	4	1.47	6	8	1.5	60	2	IKZ	00087	T-015-025-008-060-015-06
1.5	0.25	1.15	4	1.47	6	26	1.5	60	2	IKZ	06328	T-015-025-026-060-015-06
1.5	0.5	1.15	4	1.47	6	16	1.5	60	2	-	12105	T-015-050-016-060-015-06
1.7	0.5	1.7	4	1.6	6	16	1.5	60	2	IKZ	12104	T-017-050-016-060-015-06
2	0.3	2	10	1.9	6	67	1.4	100	2	-	05625	T-020-030-067-100-014-06
2	0.5	2	6	1.9	6	20	0.9	60	2	-	00115	T-020-050-020-060-009-06
2	0.5	2	6	1.9	6	20	0.4	60	2	-	00985	T-020-050-020-060-004-06
2	0.5	2	6	1.9	6	20	5.9	60	2	-	07325	T-020-050-020-060-059-06
2	0.5	2	6	1.9	6	25	1.5	70	2	-	00117	T-020-050-025-070-015-06
2	0.5	2	6	1.9	6	25	0.9	70	2	-	00986	T-020-050-025-070-009-06
2	0.5	2	6	1.9	6	25	0.4	70	2	-	00987	T-020-050-025-070-004-06
2	0.5	2	6	1.9	6	27	4.2	60	2	-	02546	T-020-050-027-060-042-06

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SANTOS® [t]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	0.5	2	6	1.9	6	32	1.5	70	2	-	00119	T-020-050-032-070-015-06
2	0.5	2	6	1.9	6	32	0.9	70	2	-	19813	T-020-050-032-070-009-06
2	0.5	2	6	1.9	6	43	2.5	75	2	-	00760	T-020-050-043-075-025-06
2	0.5	2	6	1.9	6	60	1.5	100	2	-	05927	T-020-050-060-100-015-06
2	0.75	2	6	1.9	6	22	2.5	60	2	-	10066	T-020-075-022-060-025-06
2.5	0.5	2.5	8	2.35	6	13	1.5	60	2	-	00101	T-025-050-013-060-015-06
2.5	0.5	2.5	8	2.35	6	16	1.5	60	2	-	12324	T-025-050-016-060-015-06
2.5	0.5	2.5	8	2.35	6	25	1.5	70	2	-	00103	T-025-050-025-070-015-06
2.5	0.5	2.5	8	2.35	6	35	1.5	80	2	-	00105	T-025-050-035-080-015-06
2.5	1	2.5	8	2.35	6	25	1.5	70	2	-	20053	T-025-100-025-070-015-06
2.5	1	2.5	8	2.35	6	35	1.5	80	2	-	01158	T-025-100-035-080-015-06
3	0.1	3	8	2.85	6	40	0.9	75	2	-	07730	T-030-010-040-075-009-06
3	0.1	3	8	2.85	6	50	0.9	100	2	-	07731	T-030-010-050-100-009-06
3	0.25	3	8	2.85	8	90	1	150	2	-	00922	T-030-025-090-150-010-08
3	0.5	3	8	2.85	6	30	1.5	75	2	-	00139	T-030-050-030-075-015-06
3	0.5	3	8	2.85	6	35	1	75	2	-	00729	T-030-050-035-075-010-06
3	0.5	3	8	2.85	6	40	1	75	2	-	05953	T-030-050-040-075-010-06
3	0.5	3	8	2.85	6	45	1.5	100	2	-	00141	T-030-050-045-100-015-06
3	0.5	3	8	2.85	8	60	1.5	100	2	-	00143	T-030-050-060-100-015-08
3	0.5	3	8	2.85	6	75	0.4	120	2	-	09984	T-030-050-075-120-004-06
3	1	3	8	2.85	6	30	0.9	75	2	-	20054	T-030-100-030-075-009-06
3	1	3	8	2.85	6	40	1	75	2	-	06192	T-030-100-040-075-010-06
3	1	3	8	2.85	6	60	0.9	100	2	-	06682	T-030-100-060-100-009-06
4	0.5	4	8	3.85	6	30	1.5	75	2	-	00167	T-040-050-030-075-015-06
4	0.5	4	8	3.85	6	30	1.2	75	2	-	02547	T-040-050-030-075-012-06
4	0.5	4	8	3.85	6	30	1	75	2	-	06329	T-040-050-030-075-010-06
4	0.5	4	8	3.85	8	40	1.5	85	2	-	00163	T-040-050-040-085-015-08
4	0.5	4	15	3.85	6	40	1.4	100	2	-	00492	T-040-050-040-100-014-06
4	0.5	4	8	3.85	6	40	0.9	80	2	-	06116	T-040-050-040-080-009-06
4	0.5	4	8	3.85	8	60	1.5	100	2	-	00165	T-040-050-060-100-015-08
4	0.5	4	8	3.85	8	75	1	120	2	-	00217	T-040-050-075-120-010-08
4	0.5	4	8	3.85	8	90	1	150	2	-	00218	T-040-050-090-150-010-08
4	1	4	8	3.85	6	30	0.9	80	2	-	10676	T-040-100-030-080-009-06
4	1	4	15	3.85	6	40	1.4	100	2	-	00493	T-040-100-040-100-014-06
4	1	4	20	3.85	6	40	1.4688	80	2	-	00597	T-040-100-040-080-015-06
4	1	4	20	3.85	6	40	0.9	80	2	-	01227	T-040-100-040-080-009-06
4	1	4	20	3.85	8	60	1.5	120	2	-	00030	T-040-100-060-120-015-08
4	1	4	20	3.85	8	60	0.9	120	2	-	02277	T-040-100-060-120-009-08
4	1.5	4	20	3.85	6	40	1.5	80	2	-	01156	T-040-150-040-080-015-06
5	0.5	5	10	4.8	8	30	1.5	70	2	-	00441	T-050-050-030-070-015-08
5	0.5	5	10	4.8	8	40	1.5	100	2	-	00228	T-050-050-040-100-015-08
5	0.5	5	10	4.8	8	60	1.5	120	2	-	01653	T-050-050-060-120-015-08

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SANTOS® [t]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
5	1	5	10	4.8	6	45	0.6	100	2	-	00394	T-050-100-045-100-006-06
6	0.5	6	20	5.8	8	40	1.5	80	2	-	00032	T-060-050-040-080-015-08
6	0.5	6	20	5.8	8	40	0.9	80	2	-	05370	T-060-050-040-080-009-08
6	0.5	6	20	5.8	8	65	0.8882	120	2	-	12190	T-060-050-065-120-009-08
6	0.5	6	15	5.8	10	75	1.3	120	2	-	12063	T-060-050-075-120-013-10
6	1	6	20	5.8	10	30	0.9	80	2	-	10678	T-060-100-030-080-009-10
6	1	6	20	5.8	8	40	1.5	80	2	-	00031	T-060-100-040-080-015-08
6	1	6	20	5.8	8	40	0.9	80	2	-	01437	T-060-100-040-080-009-08
6	1	6	20	5.8	8	50	1.1691	100	2	-	00482	T-060-100-050-100-012-08
6	1	6	20	5.8	8	60	0.9	100	2	-	10305	T-060-100-060-100-009-08
6	1	6	20	5.8	10	75	1.3	120	2	-	00455	T-060-100-075-120-013-10
6	1	6	20	5.8	10	75	0.9	120	2	-	11312	T-060-100-075-120-009-10
6	1	6	15	5.8	10	85	1	150	2	-	00219	T-060-100-085-150-010-10
6	1	6	12	5.8	12	110	1	165	2	-	00220	T-060-100-110-165-010-12
6	2	6	20	5.8	8	40	1.5	80	2	-	00598	T-060-200-040-080-015-08
6	2	6	20	5.8	8	50	1.1935	100	2	-	00481	T-060-200-050-100-012-08
6	2	6	20	5.8	8	75	0.4	120	2	-	09983	T-060-200-075-120-004-08
6	2.5	6	20	5.8	8	40	1.5	80	2	-	01157	T-060-250-040-080-015-08
8	0.5	12	15	7.7	10	65	0.8882	120	2	-	03119	T-080-050-065-120-009-10
8	1	12	20	7.7	10	50	1.15	100	2	-	00431	T-080-100-050-100-011-10
8	1	12	15	7.7	10	65	0.8952	120	2	-	00470	T-080-100-065-120-009-10
8	1	12	15	7.7	12	90	1	150	2	-	00221	T-080-100-090-150-010-12
8	1	12	15	7.7	12	120	0.9629	175	2	-	00222	T-080-100-120-175-010-12
8	2	12	20	7.7	10	50	1.5	100	2	-	00432	T-080-200-050-100-015-10
8	2	12	15	7.7	10	50	0.9	100	2	-	07592	T-080-200-050-100-009-10
8	2	12	15	7.7	10	65	0.9	120	2	-	00457	T-080-200-065-120-009-10
10	1	15	30	9.65	12	70	0.8	120	2	-	00673	T-100-100-070-120-008-12
10	1	15	30	9.65	16	100	0.9	150	2	-	06331	T-100-100-100-150-009-16
10	2	15	30	9.65	12	65	0.9	120	2	-	00705	T-100-200-065-120-009-12
10	3	15	30	9.65	12	65	0.9	120	2	-	03310	T-100-300-065-120-009-12
10	3	15	30	9.65	16	100	0.9	150	2	-	06333	T-100-300-100-150-009-16

*Technical changes reserved.

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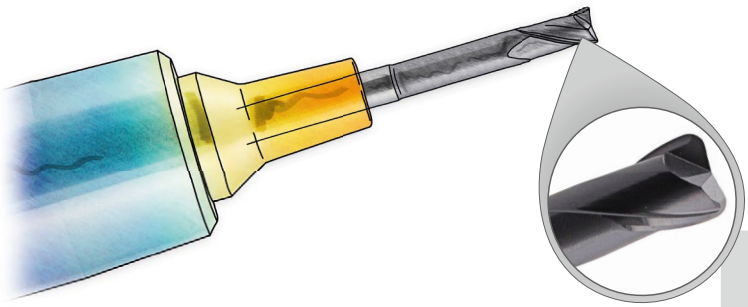
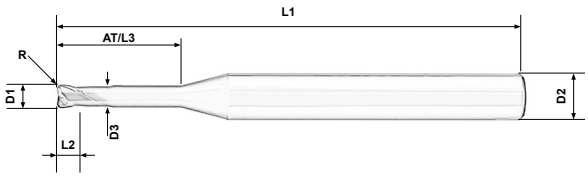


SANTOS® [tz]

Toric end mill with two flutes, conically strengthened. The cutting geometry is designed for maximum process reliabilty even under adverse conditions.

+ high process reliabilty
+ universally usable
+ conically strengthened
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 10060 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	15924	637	100	0.02	0.00	0.02

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.3	0.05	0.25	1	0.28	4	1	0	60	2	-	06132	TZA-003-005-001-060-000-04
0.3	0.05	0.25	1.5	0.28	6	1.5	0	60	2	IKZ	01216	TZA-003-005-001-060-000-06
0.4	0.05	0.3	2	0.38	6	2	0	60	2	IKZ	01218	TZA-004-005-002-060-000-06
0.4	0.05	0.3	4	0.38	6	4	0	60	2	IKZ	07538	TZA-004-005-004-060-000-06
0.5	0.1	0.4	2	0.48	4	2	0	60	2	-	07376	TZA-005-010-002-060-000-04
0.5	0.1	0.4	2.5	0.48	6	2.5	0	60	2	IKZ	01219	TZA-005-010-002-060-000-06
0.6	0.06	0.45	3	0.56	6	3	0	60	2	-	06203	TZA-006-006-003-060-000-06
0.6	0.06	0.45	6	0.58	6	6	0	60	2	-	06204	TZA-006-006-006-060-000-06
0.6	0.1	0.45	3	0.56	6	3	0	60	2	IKZ	01220	TZA-006-010-003-060-000-06
0.6	0.1	0.45	6	0.58	6	6	0	60	2	IKZ	06813	TZA-006-010-006-060-000-06
0.7	0.1	0.55	3.5	0.68	6	3.5	0	60	2	IKZ	01221	TZA-007-010-003-060-000-06
0.8	0.1	0.6	4	0.78	6	4		60	2	IKZ	01222	TZA-008-010-004-060-000-06
0.9	0.1	0.7	4.5	0.88	6	4.5	0	60	2	IKZ	01223	TZA-009-010-004-060-000-06
1	0.1	0.75	1.5	0.97	6	1.5	0	60	2	IKZ	05445	TZA-010-010-0015-060-000-06
1	0.1	0.75	5	0.97	4	5	0	60	2	-	05510	TZA-010-010-005-060-000-04
1	0.1	0.75	6	0.97	6	6	0	60	2	IKZ	02809	TZA-010-010-006-060-000-06
1	0.1	0.75	10	0.97	6	10	0	60	2	IKZ	02810	TZA-010-010-010-060-000-06
1	0.1	0.75	10	0.97	4	10	0	60	2	-	05511	TZA-010-010-010-060-000-04
1	0.1	0.75	15	0.97	6	15	0	60	2	IKZ	03725	TZA-010-010-015-060-000-06
1	0.1	0.75	15	0.97	4	15	0	60	2	-	05512	TZA-010-010-015-060-000-04
1	0.15	0.75	5	0.96	6	5	0	60	2	IKZ	01224	TZA-010-015-005-060-000-06
1	0.15	0.75	10	0.97	6	10	0	60	2	IKZ	00660	TZA-010-015-010-060-000-06
1	0.2	0.75	1.5	0.97	6	1.5	0	60	2	IKZ	05446	TZA-010-020-0015-060-000-06
1	0.2	0.75	8	0.96	6	8	0	60	2	IKZ	02499	TZA-010-020-008-060-000-06
1	0.2	0.75	8	0.97	4	8	0	60	2	-	06624	TZA-010-020-008-060-000-04
1	0.2	0.75	20	0.97	6	20	0	60	2	IKZ	02498	TZA-010-020-020-060-000-06

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SANTOS® [tz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.25	0.75	1.5	0.97	6	1.5	0	60	2	IKZ	05447	TZA-010-025-0015-060-000-06
1.2	0.1	0.9	10	1.17	6	10	0	60	2	IKZ	08751	TZA-012-010-010-060-000-06
1.5	0.15	1.15	10	1.48	6	10	0	60	2	IKZ	02811	TZA-015-015-010-060-000-06
1.5	0.15	1.15	15	1.47	4	15	0	60	2	-	05514	TZA-015-015-015-060-000-04
1.5	0.15	1.15	15	1.47	6	15	0	60	2	IKZ	07462	TZA-015-015-015-060-000-06
1.5	0.15	1.15	23	1.47	4	23	0	60	2	-	05515	TZA-015-015-023-060-000-04
1.5	0.2	1.15	10	1.47	6	10	0	60	2	IKZ	10193	TZA-015-020-010-060-000-06
1.5	0.25	1.15	2.5	1.47	6	2.5	0	60	2	IKZ	05449	TZA-015-025-0025-060-000-06
1.5	0.25	1.15	10	1.47	6	10	0	60	2	IKZ	05519	TZA-015-025-010-060-000-06
1.5	0.25	1.15	15	1.47	6	15	0	60	2	IKZ	05520	TZA-015-025-015-060-000-06
1.5	0.5	1.15	2.5	1.47	6	2.5	0	60	2	IKZ	05450	TZA-015-050-0025-060-000-06
2	0.1	2	10	1.93	6	10	0	60	2	-	10060	TZA-020-010-010-060-000-06
2	0.2	2	5	1.9	6	5	0	60	2	-	03501	TZA-020-020-005-060-000-06
2	0.2	2	8	1.93	6	8	0	60	2	-	02500	TZA-020-020-008-060-000-06
2	0.2	2	8	1.9	4	8	0	60	2	-	05281	TZA-020-020-008-060-000-04
2	0.2	2	10	1.93	6	10	0	60	2	-	02812	TZA-020-020-010-060-000-06
2	0.2	2	10	1.93	4	10	0	60	2	-	05516	TZA-020-020-010-060-000-04
2	0.2	2	12	1.93	6	12	0	60	2	-	02516	TZA-020-020-012-060-000-06
2	0.2	2	12	1.9	4	12	0	60	2	-	05284	TZA-020-020-012-060-000-04
2	0.2	2	16	1.93	6	16	0	60	2	-	02501	TZA-020-020-016-060-000-06
2	0.2	2	20	1.93	6	20	0	60	2	-	02794	TZA-020-020-020-060-000-06
2	0.2	2	20	1.9	4	20	0	60	2	-	05517	TZA-020-020-020-060-000-04
2	0.2	2	25	1.9	6	25	0	60	2	-	02795	TZA-020-020-025-060-000-06
2	0.2	2	30	1.9	6	30	0	70	2	-	02797	TZA-020-020-030-070-000-06
2	0.2	2	30	1.9	4	30	0	60	2	-	05518	TZA-020-020-030-060-000-04
2	0.25	2	4	1.9	6	4	0	60	2	-	05452	TZA-020-025-004-060-000-06
2	0.25	2	5	1.9	6	5	0	60	2	-	00867	TZA-020-025-005-060-000-06
2	0.25	2	15	1.9	6	15	0	60	2	-	07163	TZA-020-025-015-060-000-06
2	0.25	2	20	1.9	6	20	0	60	2	-	05521	TZA-020-025-020-060-000-06
2	0.4	2	4	1.9	6	4	0	60	2	-	05453	TZA-020-040-004-060-000-06
2	0.5	2	4	1.93	6	4	0	60	2	-	05454	TZA-020-050-004-060-000-06
2	0.5	2	10	1.93	6	10	0	60	2	-	01122	TZA-020-050-010-060-000-06
2	0.5	2	10	1.9	4	10	0	60	2	-	10966	TZA-020-050-010-060-000-04
2	0.5	2	15	1.93	6	15	0	60	2	-	01119	TZA-020-050-015-060-000-06
2	0.5	2	20	1.9	6	20	0	60	2	-	01120	TZA-020-050-020-060-000-06
2.5	0.2	2.5	10	2.35	6	10	0	60	2	-	07663	TZA-025-020-010-060-000-06
2.5	0.25	2.5	4	2.35	6	4	0	60	2	-	05455	TZA-025-025-004-060-000-06
2.5	0.4	2.5	4	2.35	6	4	0	60	2	-	05456	TZA-025-040-004-060-000-06
2.5	0.5	2.5	4	2.35	6	4	0	60	2	-	05457	TZA-025-050-004-060-000-06
2.5	0.5	2.5	11	2.38	6	11	0	60	2	-	07452	TZA-025-050-011-060-000-06
2.5	1	2.5	4	2.35	6	4	0	60	2	-	05458	TZA-025-100-004-060-000-06
3	0.2	3	12	2.88	6	12	0	60	2	-	02502	TZA-030-020-012-060-000-06
3	0.2	3	20	2.88	6	20	0	60	2	-	02514	TZA-030-020-020-060-000-06
3	0.2	3	30	2.85	6	30	0	70	2	-	02515	TZA-030-020-030-070-000-06
3	0.25	3	5	2.85	6	5	0	60	2	-	05459	TZA-030-025-005-060-000-06
3	0.25	3	20	2.85	6	20	0	60	2	-	05523	TZA-030-025-020-060-000-06
3	0.3	3	12	2.88	6	12	0	60	2	-	07910	TZA-030-030-012-060-000-06
3	0.5	3	5	2.88	6	5	0	60	2	-	02147	TZA-030-050-005-060-000-06
3	0.5	3	10	2.85	6	10	0	60	2	-	02798	TZA-030-050-010-060-000-06
3	0.5	3	15	2.85	6	15	0	60	2	-	02800	TZA-030-050-015-060-000-06

*Technical changes reserved.

„xy" **HRC** = Machining of hardened materials possible up to the declared value; **1.400N** = Materials like 1.2714HH; **1.000N** = materials like 1.2311, 1.2379; **steel** = materials like 1.1730; **CrNi** = Nickel-chromium alloys; **Titan** = Titanium alloys; **INC** = Nickel-base alloys; **GG** = Casting alloys; **GjV** = Alloyed cast steels; **ALU** = Aluminium alloys; **AlSi** = Aluminium-silicon alloys; **Cu** = Copper; **GRAPH** = Graphite; **GFK** = Glass fiber reinforced plastics

SANTOS® [tz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.5	3	20	2.85	6	20	0	60	2	-	00527	TZA-030-050-020-060-000-06
3	0.5	3	25	2.85	6	25	0	70	2	-	02801	TZA-030-050-025-070-000-06
3	0.5	3	30	2.88	6	30	0	70	2	-	02802	TZA-030-050-030-070-000-06
3	0.5	3	35	2.85	6	35	0	70	2	-	11042	TZA-030-050-035-070-000-06
3	0.5	3	40	2.85	6	40	0	75	2	-	05525	TZA-030-050-040-070-000-06
3	1	3	10	2.85	6	10	0	60	2	-	19795	TZA-030-100-010-060-000-06
4	0.25	4	6	3.85	6	6	0	60	2	-	06370	TZA-040-025-006-060-000-06
4	0.4	4	6	3.85	6	6	0	60	2	-	05461	TZA-040-040-006-060-000-06
4	0.5	4	6	3.85	6	6	0	60	2	-	05462	TZA-040-050-006-060-000-06
4	0.5	4	15	3.88	6	15	0	60	2	-	00074	TZA-040-050-015-060-000-06
4	0.5	4	20	3.85	6	20	0	60	2	-	06195	TZA-040-050-020-060-000-06
4	0.5	4	25	3.85	6	25	0	60	2	IKZ	01031	TZA-040-050-025-060-000-06
4	0.5	4	30	3.85	6	30	0	70	2	-	00380	TZA-040-050-030-070-000-06
4	1	4	6	3.85	6	6	0	60	2	-	05463	TZA-040-100-006-060-000-06
4	1	4	12	3.85	6	12	0	60	2	-	02814	TZA-040-100-012-060-000-06
4	1	4	15	3.88	6	15	0	60	2	-	02785	TZA-040-100-015-060-000-06
4	1	4	20	3.85	6	20	0	60	2	-	02804	TZA-040-100-020-060-000-06
4	1	4	20	3.85	4	20	0	60	2	-	11320	TZA-040-100-020-060-000-04
4	1	4	25	3.85	6	25	0	60	2	-	05527	TZA-040-100-025-060-000-06
4	1	4	30	3.85	4	30	0	70	2	-	07728	TZA-040-100-030-070-000-04
4	1	4	30	3.85	6	30	0	70	2	-	19796	TZA-040-100-030-070-000-06
4	1	4	40	3.85	6	40	0	70	2	-	05528	TZA-040-100-040-070-000-06
4	1	4	40	3.85	4	40	0	80	2	-	07729	TZA-040-100-040-080-000-04
4	1.5	4	15	3.85	6	15	0	60	2	-	10533	TZA-040-150-015-060-000-06
5	0.5	5	20	4.83	6	20	0	60	2	-	04857	TZA-050-050-020-060-000-06
5	0.5	5	25	4.83	6	25	0	60	2	IKZ	01032	TZA-050-050-025-060-000-06
5	0.5	5	40	4.8	6	40	0	70	2	-	00010	TZA-050-050-040-070-000-06
5	1	5	40	4.8	6	40	0	70	2	-	05530	TZA-050-100-040-070-000-06
5	2	5	20	4.83	6	20	0	60	2	-	12404	TZA-050-200-020-060-000-06
6	0.25	9	40	5.8	6	40	0	75	2	-	05531	TZA-060-025-040-075-000-06
6	0.25	12	0	0	6	12	0	60	2	-	05468	TZ-060-025-012-060-000-06
6	0.25	12	0	0	6	12	0	70	2	-	05473	TZ-060-025-012-070-000-06
6	0.5	9	25	5.83	6	25	0	70	2	-	07913	TZA-060-050-025-070-000-06
6	0.5	12	0	0	6	12	0	70	2	-	00864	TZ-060-050-012-070-000-06
6	0.5	12	0	0	6	12	0	60	2	-	05469	TZ-060-050-012-060-000-06
6	0.5	12	0	0	6	12	0	100	2	-	05476	TZ-060-050-012-100-000-06
6	1	9	20	5.83	6	20	0	60	2	IKZ	06891	TZA-060-100-020-060-000-06
6	1	9	30	5.8	6	30	0	60	2	-	07272	TZA-060-100-030-060-000-06
6	1	9	40	5.8	6	40	0	75	2	-	00718	TZA-060-100-040-075-000-06
6	1	12	0	0	6	12	0	70	2	-	00346	TZ-060-100-012-070-000-06
6	1	12	0	0	6	12	0	60	2	-	05470	TZ-060-100-012-060-000-06
6	1	12	0	0	6	12	0	100	2	-	05477	TZ-060-100-012-100-000-06
6	1.5	9	40	5.8	6	40	0	75	2	-	05533	TZA-060-150-040-075-000-06
6	1.5	12	0	0	6	12	0	70	2	-	05474	TZ-060-150-012-070-000-06
6	2	9	20	5.83	6	20	0	60	2	-	07867	TZA-060-200-020-060-000-06
6	2	9	40	5.8	6	40	0	75	2	-	05534	TZA-060-200-040-075-000-06
6	2	12	0	0	6	12	0	70	2	-	00762	TZ-060-200-012-070-000-06
6	2	12	0	0	6	12	0	100	2	-	05479	TZ-060-200-012-100-000-06
8	0.25	12	40	7.7	8	40	0	75	2	-	10368	TZA-080-025-040-075-000-08
8	0.5	12	20	7.7	8	20	0	70	2	-	07277	TZA-080-050-020-070-000-08

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SANTOS® [tz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
8	0.5	12	20	7.7	8	20	0	100	2	-	07821	TZA-080-050-020-100-000-08
8	0.5	12	40	7.7	8	40	0	75	2	-	05415	TZA-080-050-040-075-000-08
8	0.5	12	55	7.7	8	55	0	100	2	-	05537	TZA-080-050-055-100-000-08
8	0.5	14	0	0	8	14	0	70	2	-	05480	TZ-080-050-014-070-000-08
8	0.5	14	0	0	8	14	0	100	2	-	05482	TZ-080-050-014-100-000-08
8	1	12	35	7.73	8	35	0	75	2	-	06193	TZA-080-100-035-075-000-08
8	1	12	40	7.7	8	40	0	75	2	IKZ	03845	TZA-080-100-040-075-000-08
8	1	14	0	0	8	14	0	70	2	-	00398	TZ-080-100-014-070-000-08
8	1	14	0	0	8	14	0	100	2	-	00399	TZ-080-100-014-100-000-08
8	1.5	12	55	7.7	8	55	0	100	2	-	05539	TZA-080-150-055-100-000-08
8	1.5	14	0	0	8	14	0	70	2	-	05481	TZ-080-150-014-070-000-08
8	1.5	14	0	0	8	14	0	100	2	-	05484	TZ-080-150-014-100-000-08
8	2	12	25	7.7	8	25	0	70	2	-	07827	TZA-080-200-025-070-000-08
8	2	12	35	7.7	8	35	0	75	2	-	19797	TZA-080-200-035-075-000-08
8	2	12	55	7.7	8	55	0	100	2	-	05540	TZA-080-200-055-100-000-08
8	2	14	0	0	8	14	0	70	2	-	00494	TZ-080-200-014-070-000-08
8	2	14	0	0	8	14	0	100	2	-	00937	TZ-080-200-014-100-000-08
8	2.5	14	0	0	8	14	0	70	2	-	19794	TZ-080-250-014-070-000-08
8	3	14	0	0	8	14	0	70	2	-	10658	TZ-080-300-014-070-000-08
10	0.5	15	55	9.65	10	55	0	100	2	-	05541	TZA-100-050-055-100-000-10
10	0.5	16	0	0	10	16	0	75	2	-	05486	TZ-100-050-016-075-000-10
10	0.5	16	0	0	10	16	0	100	2	-	05490	TZ-100-050-016-100-000-10
10	1	15	30	9.65	10	30	0	120	2	-	00309	TZA-100-100-030-120-000-10
10	1	16	0	0	10	16	0	75	2	-	05487	TZ-100-100-016-075-000-10
10	1	16	0	0	10	16	0	100	2	-	05491	TZ-100-100-016-100-000-10
10	1.5	16	0	0	10	16	0	75	2	-	05488	TZ-100-150-016-075-000-10
10	1.5	16	0	0	10	16	0	100	2	-	05492	TZ-100-150-016-100-000-10
10	2	16	0	0	10	16	0	75	2	-	05489	TZ-100-200-016-075-000-10
10	2	16	0	0	10	16	0	100	2	-	05493	TZ-100-200-016-100-000-10
10	3	15	30	9.69	10	30	0	75	2	-	07793	TZA-100-300-030-075-000-10
12	0.5	18	0	0	12	18	0	84	2	-	05498	TZ-120-050-018-084-000-12
12	0.5	18	0	0	12	18	0	100	2	-	05502	TZ-120-050-018-100-000-12
12	0.5	18	0	0	12	18	0	120	2	-	05506	TZ-120-050-018-120-000-12
12	1	18	0	0	12	18	0	100	2	-	00855	TZ-120-100-018-100-000-12
12	1	18	0	0	12	18	0	84	2	-	05499	TZ-120-100-018-084-000-12
12	1	18	0	0	12	18	0	120	2	-	05507	TZ-120-100-018-120-000-12
12	1.5	18	0	0	12	18	0	84	2	-	05500	TZ-120-150-018-084-000-12
12	1.5	18	0	0	12	18	0	100	2	-	05504	TZ-120-150-018-100-000-12
12	1.5	18	0	0	12	18	0	120	2	-	05508	TZ-120-150-018-120-000-12
12	2	18	0	0	12	18	0	84	2	-	05501	TZ-120-200-018-084-000-12
12	2	18	0	0	12	18	0	100	2	-	05505	TZ-120-200-018-100-000-12
12	2	18	0	0	12	18	0	120	2	-	05509	TZ-120-200-018-120-000-12
12	2	18	35	11.6	12	35	0	84	2	-	07826	TZA-120-200-035-084-000-12
12	4	18	0	0	12	18	0	84	2	-	07290	TZ-120-400-018-084-000-12

*Technical changes reserved.

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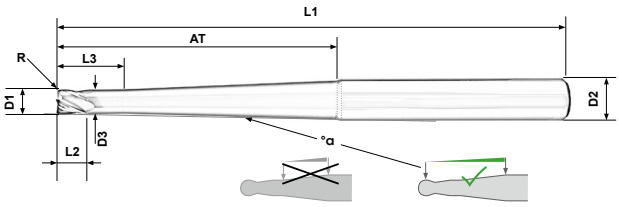
FILON® [f]

▼+▼▼▼

Toric end mill with four flutes, conically strengthened. The tool is designed for milling ribs in steel up to a hardness of 56 HRC. Quite a few litte diameters are included for the cooling to remove chips from the ribs.

+ high process reliabilty
+ universally usable
+ conically strengthened
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00330 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	8493	340	40	0.025	0.00	0.01

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.8	0.1	1.2	3	0.75	6	5	0.4	60	4	IKZ	03846	F-008-010-005-060-004-06
0.8	0.1	1.2	3	0.75	6	5	0.9	60	4	IKZ	05556	F-008-010-005-060-009-06
0.8	0.1	1.2	3	0.75	6	8	0.4	60	4	IKZ	03848	F-008-010-008-060-004-06
0.8	0.1	1.2	3	0.75	6	8	0.9	60	4	IKZ	05557	F-008-010-008-060-009-06
0.8	0.1	1.2	3	0.75	6	12	0.4	60	4	IKZ	05555	F-008-010-012-060-004-06
0.8	0.1	1.2	3	0.75	6	12	0.9	60	4	IKZ	05558	F-008-010-012-060-009-06
1	0.15	1.5	4	0.95	6	8	0.4	60	4	IKZ	03849	F-010-015-008-060-004-06
1	0.15	1.5	4	0.95	6	8	0.9	60	4	IKZ	05559	F-010-015-008-060-009-06
1	0.15	1.5	4	0.95	6	12	0.4	60	4	IKZ	03850	F-010-015-012-060-004-06
1	0.15	1.5	4	0.95	6	12	0.9	60	4	IKZ	03851	F-010-015-012-060-009-06
1	0.15	1.5	4	0.95	6	15	0.4	60	4	IKZ	03852	F-010-015-015-060-004-06
1	0.15	1.5	4	0.95	6	15	0.9	60	4	IKZ	03853	F-010-015-015-060-009-06
1.2	0.2	2	4	1.1	6	10	0.4	60	4	IKZ	00529	F-012-020-010-060-004-06
1.2	0.2	2	4	1.1	6	10	0.9	60	4	IKZ	00531	F-012-020-010-060-009-06
1.2	0.2	2	4	1.1	6	15	0.4	60	4	IKZ	00530	F-012-020-015-060-004-06
1.2	0.2	2	4	1.1	6	15	0.9	60	4	IKZ	00537	F-012-020-015-060-009-06
1.2	0.2	2	4	1.1	6	20	0.9	60	4	IKZ	00532	F-012-020-020-060-009-06
1.2	0.2	2	4	1.1	6	20	0.4	60	4	IKZ	00536	F-012-020-020-060-004-06
1.2	0.2	2	4	1.1	6	25	0.4	60	4	IKZ	05560	F-012-020-025-060-004-06
1.2	0.2	2	4	1.1	6	25	0.9	60	4	IKZ	05562	F-012-020-025-060-009-06
1.2	0.2	2	4	1.1	6	30	0.9	70	4	-	01043	F-012-020-030-070-009-06
1.2	0.2	2	4	1.1	6	30	0.4	70	4	-	05561	F-012-020-030-070-004-06
1.4	0.25	2	4	1.3	6	10	0.9	60	4	IKZ	00517	F-014-025-010-060-009-06
1.4	0.25	2	4	1.3	6	10	0.4	60	4	IKZ	00533	F-014-025-010-060-004-06
1.4	0.25	2	4	1.3	6	15	0.4	60	4	IKZ	00534	F-014-025-015-060-004-06
1.4	0.25	2	4	1.3	6	15	0.9	60	4	IKZ	00535	F-014-025-015-060-009-06

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FILON® [f]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1.4	0.25	2	4	1.3	6	20	0.4	60	4	IKZ	05563	F-014-025-020-060-004-06
1.4	0.25	2	4	1.3	6	20	0.9	60	4	IKZ	05566	F-014-025-020-060-009-06
1.4	0.25	2	4	1.3	6	25	0.4	60	4	IKZ	05564	F-014-025-025-060-004-06
1.4	0.25	2	4	1.3	6	25	0.9	60	4	IKZ	05567	F-014-025-025-060-009-06
1.4	0.25	2	4	1.3	6	30	0.4	70	4	-	05565	F-014-025-030-070-004-06
1.4	0.25	2	4	1.3	6	30	0.9	70	4	-	05568	F-014-025-030-070-009-06
1.5	0.15	3	5	1.4	6	60	0.9	100	4	-	00892	F-015-015-060-100-009-06
1.5	0.25	3	5	1.4	6	8	0.4	60	4	IKZ	00392	F-015-025-008-060-004-06
1.5	0.25	3	5	1.4	6	8	0.9	60	4	IKZ	05572	F-015-025-008-060-009-06
1.5	0.25	3	5	1.4	6	10	0.9	60	4	IKZ	00538	F-015-025-010-060-009-06
1.5	0.25	3	5	1.4	6	10	0.4	60	4	IKZ	05569	F-015-025-010-060-004-06
1.5	0.25	3	5	1.4	6	15	0.4	60	4	IKZ	00348	F-015-025-015-060-004-06
1.5	0.25	3	5	1.4	6	15	0.9	60	4	IKZ	00539	F-015-025-015-060-009-06
1.5	0.25	3	5	1.4	6	20	0.4	60	4	IKZ	00393	F-015-025-020-060-004-06
1.5	0.25	3	5	1.4	6	20	0.9	60	4	IKZ	05573	F-015-025-020-060-009-06
1.5	0.25	3	5	1.4	6	26	0.9	70	4	-	00330	F-015-025-026-070-009-06
1.5	0.25	3	5	1.4	6	26	0.4	70	4	-	01238	F-015-025-026-070-004-06
1.5	0.25	3	5	1.4	6	30	1.5	75	4	-	00663	F-015-025-030-075-015-06
1.5	0.25	3	5	1.4	6	30	0.4	75	4	-	05570	F-015-025-030-075-004-06
1.5	0.25	3	5	1.4	6	30	0.9	75	4	-	05574	F-015-025-030-075-009-06
1.5	0.25	3	5	1.4	6	35	0.9	80	4	-	00936	F-015-025-035-080-009-06
1.5	0.25	3	5	1.4	6	35	0.4	80	4	-	05571	F-015-025-035-080-004-06
1.5	0.25	3	5	1.4	6	50	1.5	100	4	-	00662	F-015-025-050-100-015-06
1.5	0.25	3	5	1.4	6	50	1	100	4	-	00887	F-015-025-050-100-010-06
1.7	0.25	3	5	1.6	6	12	0.4	60	4	IKZ	05575	F-017-025-012-060-004-06
1.7	0.25	3	5	1.6	6	12	0.9	60	4	IKZ	05578	F-017-025-012-060-009-06
1.7	0.25	3	5	1.6	6	17	0.9	60	4	IKZ	02304	F-017-025-017-060-009-06
1.7	0.25	3	5	1.6	6	17	0.4	60	4	IKZ	05576	F-017-025-017-060-004-06
1.7	0.25	3	5	1.6	6	22	0.4	60	4	IKZ	01435	F-017-025-022-060-004-06
1.7	0.25	3	5	1.6	6	22	0.9	60	4	IKZ	05579	F-017-025-022-060-009-06
1.7	0.25	3	5	1.6	6	28	0.4	70	4	-	05577	F-017-025-028-070-004-06
1.7	0.25	3	5	1.6	6	28	0.9	70	4	-	05580	F-017-025-028-070-009-06
1.7	0.4	3	5	1.6	6	15	0.4	60	4	IKZ	01202	F-017-040-015-060-004-06
1.7	0.5	3	5	1.6	6	15	0.4	60	4	IKZ	03456	F-017-050-015-060-004-06
1.9	0.2	3	6	1.8	6	50	0.9	100	4	-	00917	F-019-020-050-100-009-06
1.9	0.2	3	6	1.8	6	70	0.9	120	4	-	00891	F-019-020-070-120-009-06
1.9	0.25	3	6	1.8	6	15	0.9	60	4	-	00914	F-019-025-015-060-009-06
1.9	0.25	3	6	1.8	6	15	0.4	60	4	-	05581	F-019-025-015-060-004-06
1.9	0.25	3	6	1.8	6	25	0.9	60	4	-	00915	F-019-025-025-060-009-06
1.9	0.25	3	6	1.8	6	25	0.4	60	4	-	01286	F-019-025-025-060-004-06
1.9	0.25	3	6	1.8	6	35	0.9	80	4	-	00916	F-019-025-035-080-009-06
1.9	0.25	3	6	1.8	6	35	0.4	80	4	-	05582	F-019-025-035-080-004-06
1.9	0.4	3	6	1.8	6	15	0.9	60	4	-	04043	F-019-040-015-060-009-06
2	0.3	3	6	1.9	6	20	0.9	60	4	-	02212	F-020-030-020-060-009-06
2	0.3	3	6	1.9	6	20	0.4	60	4	-	06334	F-020-030-020-060-004-06
2	0.3	3	6	1.9	6	30	0.4	70	4	-	05583	F-020-030-030-070-004-06
2	0.3	3	6	1.9	6	30	0.9	70	4	-	05585	F-020-030-030-070-009-06
2	0.3	3	6	1.9	6	40	0.4	80	4	-	05584	F-020-030-040-080-004-06
2	0.3	3	6	1.9	6	40	0.9	80	4	-	05586	F-020-030-040-080-009-06
2.5	0.25	4	7	2.35	6	15	0.9	60	4	-	00850	F-025-025-015-060-009-06
2.5	0.25	4	7	2.35	6	15	0.4	60	4	-	05587	F-025-025-015-060-004-06
2.5	0.25	4	7	2.35	6	15	1.5	60	4	-	05591	F-025-025-015-060-015-06

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FILON® [f]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2.5	0.25	4	7	2.35	6	30	1.5	75	4	-	00665	F-025-025-030-075-015-06
2.5	0.25	4	7	2.35	6	30	0.4	75	4	-	01343	F-025-025-030-075-004-06
2.5	0.25	4	7	2.35	6	30	0.9	75	4	-	05589	F-025-025-030-075-009-06
2.5	0.25	4	7	2.35	6	40	0.9	80	4	-	05590	F-025-025-040-080-009-06
2.5	0.25	4	7	2.35	6	40	1.5	80	4	-	05592	F-025-025-040-080-015-06
2.5	0.25	4	7	2.35	6	50	1.5	100	4	-	00664	F-025-025-050-100-015-06
2.5	0.4	4	7	2.35	6	15	0.9	60	4	-	07236	F-025-040-015-060-009-06
2.5	0.4	4	7	2.35	6	30	1.5	75	4	-	00667	F-025-040-030-075-015-06
2.5	0.4	4	7	2.35	6	30	0.9	75	4	-	07235	F-025-040-030-075-009-06
2.5	0.4	4	7	2.35	6	40	0.9	75	4	-	07317	F-025-040-040-075-009-06
2.5	0.4	4	7	2.35	6	50	1.5	100	4	-	00666	F-025-040-050-100-015-06
2.5	0.4	4	7	2.4	6	55	1.2	100	4	-	17277	F-025-040-055-100-012-06
3	0.25	4	7	2.85	6	30	0.9	75	4	-	06075	F-030-025-030-075-009-06
3	0.4	4	7	2.85	6	30	0.4	75	4	-	05593	F-030-040-030-075-004-06
3	0.4	4	7	2.85	6	30	0.9	75	4	-	05596	F-030-040-030-075-009-06
3	0.4	4	7	2.85	6	40	0.9	80	4	-	07299	F-030-040-040-080-009-06
3	0.4	4	7	2.85	6	50	0.9	100	4	-	00009	F-030-040-050-100-009-06
3	0.4	4	7	2.85	6	50	0.4	100	4	-	05594	F-030-040-050-100-004-06
3	0.4	4	7	2.85	6	55	1.5	100	4	-	00011	F-030-040-055-100-015-06
3	0.4	4	7	2.85	6	70	0.9	120	4	-	02270	F-030-040-070-120-009-06
4	0.4	5	8	3.85	6	35	0.4	80	4	-	05597	F-040-040-035-080-004-06
4	0.4	5	8	3.85	6	35	0.9	80	4	-	07237	F-040-040-035-080-009-06
4	0.4	5	8	3.85	8	50	0.9	100	4	-	00015	F-040-040-050-100-009-08
4	0.4	5	8	3.85	6	50	0.4	100	4	-	05598	F-040-040-050-100-004-06
4	0.4	5	8	3.85	8	55	1.5	100	4	-	00017	F-040-040-055-100-015-08
4	0.4	5	8	3.85	8	65	0.9	120	4	-	02269	F-040-040-065-120-009-08
4	0.4	5	8	3.85	6	65	0.4	120	4	-	05599	F-040-040-065-120-004-06
4	0.4	5	8	3.85	8	65	1.5	120	4	-	05600	F-040-040-065-120-015-08
6	0.5	6	15	5.8	10	65	0.9	120	4	-	05601	F-060-050-065-120-009-10
6	0.5	6	15	5.8	10	65	1.5	120	4	-	05603	F-060-050-065-120-015-10
6	0.5	6	15	5.8	10	70	0.4	120	4	-	00251	F-060-050-070-120-004-10
6	1	6	15	5.8	8	40	0.9	80	4	-	08071	F-060-100-040-080-009-08
6	1	6	15	5.8	10	65	1.5	120	4	-	00207	F-060-100-065-120-015-10
6	1	6	15	5.8	10	65	0.9	120	4	-	05602	F-060-100-065-120-009-10
8	1	8	20	7.7	10	62	0.9	100	4	-	01184	F-080-100-062-100-009-10
8	1	8	20	7.7	12	70	1.5	150	4	-	00342	F-080-100-070-150-015-12
8	1	8	20	7.7	10	70	0.9	150	4	-	05605	F-080-100-070-150-009-10
8	2	8	20	7.7	10	70	1	125	4	-	00575	F-080-200-070-125-010-10
10	1	10	20	9.65	12	60	0.9	100	4	-	01183	F-100-100-060-100-009-12
10	1	10	20	9.65	12	70	0.8	150	4	-	00335	F-100-100-070-150-008-12
10	1	10	20	9.65	12	70	0.4	150	4	-	05608	F-100-100-070-150-004-12
12	1	12	24	11.6	16	70	1.5	150	4	-	00472	F-120-100-070-150-015-16
12	1	12	24	11.6	16	70	1.6	170	4	-	01048	F-120-100-070-170-016-16

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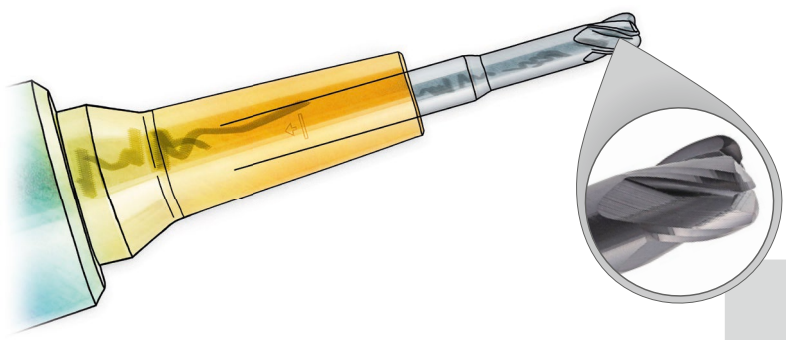
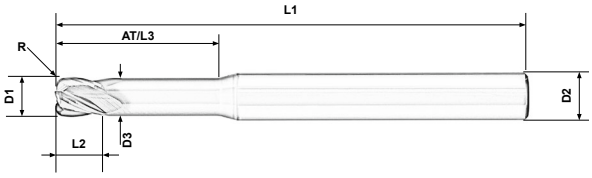


FILON® [fz]

Toric end mill with four flutes, conically strengthened. The tool is designed for milling ribs in steel up to a hardness of 56 HRC. Quite a few litte diameters are included for the cooling to remove chips from the ribs.

+ high process reliabilty
+ universally usable
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 05550 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	3583	1863	90	0.12	0.00	0.13

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.8	0.1	1.2	4	0.75	6	4	0	60	4	IKZ	03854	FZ-008-010-004-060-000-06
0.8	0.1	1.2	8	0.75	6	8	0	60	4	IKZ	06382	FZ-008-010-008-060-000-06
0.8	0.1	1.2	12	0.75	6	12	0	60	4	IKZ	05545	FZ-008-010-012-060-000-06
1	0.15	1.5	5	0.95	6	5	0	60	4	IKZ	03855	FZ-010-015-005-060-000-06
1	0.15	1.5	8	0.96	6	8	0	60	4	IKZ	03856	FZ-010-015-008-060-000-06
1.2	0.2	1.8	6	1.13	6	6	0	60	4	IKZ	03857	FZ-012-020-006-060-000-06
1.2	0.2	1.8	10	1.1	6	10	0	60	4	IKZ	00540	FZ-012-020-010-060-000-06
1.2	0.2	1.8	15	1.1	6	15	0	60	4	IKZ	00541	FZ-012-020-015-060-000-06
1.5	0.25	2.25	6	1.43	6	6	0	60	4	IKZ	03858	FZ-015-025-006-060-000-06
1.5	0.25	2.25	10	1.43	6	10	0	60	4	IKZ	00542	FZ-015-025-010-060-000-06
1.5	0.25	2.25	15	1.4	6	15	0	60	4	IKZ	00543	FZ-015-025-015-060-000-06
1.5	0.25	2.25	20	1.4	6	20	0	60	4	IKZ	00544	FZ-015-025-020-060-000-06
1.5	0.3	2.25	6	1.4	6	6	0	60	4	IKZ	07772	FZ-015-030-006-060-000-06
1.5	0.5	2.25	6	1.4	6	6	0	60	4	IKZ	07773	FZ-015-050-006-060-000-06
2	0.2	2	4	1.93	4	4	0	60	4	-	05345	FZ-020-020-004-060-000-04
2	0.2	2	8	1.93	4	8	0	60	4	-	05346	FZ-020-020-008-060-000-04
2	0.2	2	10	1.9	4	10	0	60	4	-	05347	FZ-020-020-010-060-000-04
2	0.2	2	12	1.9	4	12	0	60	4	-	05348	FZ-020-020-012-060-000-04
2	0.2	2	16	1.9	4	16	0	60	4	-	05349	FZ-020-020-016-060-000-04
2	0.2	2	20	1.9	4	20	0	60	4	-	05350	FZ-020-020-020-060-000-04
2	0.25	3	10	1.93	6	10	0	60	4	-	04860	FZ-020-025-010-060-000-06
2	0.25	3	15	1.93	6	15	0	60	4	-	01465	FZ-020-025-015-060-000-06
2	0.25	3	20	1.93	6	20	0	60	4	-	00436	FZ-020-025-020-060-000-06
2.5	0.4	3.8	10	2.35	6	10	0	60	4	-	20051	FZ-025-040-010-060-000-06
3	0.25	4.5	10	2.85	6	10	0	60	4	-	04855	FZ-030-025-010-060-000-06
3	0.25	4.5	15	2.88	6	15	0	60	4	-	03870	FZ-030-025-015-060-000-06

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FILON® [fz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.25	4.5	20	2.88	6	20	0	60	4	-	00828	FZ-030-025-020-060-000-06
3	0.25	4.5	30	2.85	6	30	0	70	4	-	03871	FZ-030-025-030-070-000-06
3	0.3	3	6	2.88	4	6	0	60	4	-	05351	FZ-030-030-006-060-000-04
3	0.3	3	9	2.88	4	9	0	60	4	-	05352	FZ-030-030-009-060-000-04
3	0.3	3	12	2.85	4	12	0	60	4	-	05353	FZ-030-030-012-060-000-04
3	0.3	3	15	2.85	4	15	0	60	4	-	05354	FZ-030-030-015-060-000-04
3	0.3	3	18	2.85	4	18	0	60	4	-	05355	FZ-030-030-018-060-000-04
3	0.3	3	24	2.88	4	24	0	70	4	-	05356	FZ-030-030-024-070-000-04
3	0.3	3	30	2.85	4	30	0	70	4	-	05357	FZ-030-030-030-070-000-04
3	0.5	3	16	2.85	4	16	0	60	4	-	12538	FZ-030-050-016-060-000-04
3	0.5	4.5	15	2.85	6	15	0	60	4	-	05546	FZ-030-050-015-060-000-06
3	0.5	4.5	16	2.85	6	16	0	60	4	-	10503	FZ-030-050-016-060-000-06
3	0.5	4.5	20	2.88	6	20	0	60	4	-	00568	FZ-030-050-020-060-000-06
3	0.5	4.5	25	2.85	6	25	0	70	4	-	10118	FZ-030-050-025-070-000-06
3	0.5	4.5	30	2.85	6	30	0	70	4	-	05547	FZ-030-050-030-070-000-06
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4	0.25	6	15	3.88	6	15	0	60	4	-	04854	FZ-040-025-015-060-000-06
4	0.25	6	20	3.88	6	20	0	60	4	-	07434	FZ-040-025-020-060-000-06
4	0.25	6	30	3.85	6	30	0	70	4	-	00829	FZ-040-025-030-070-000-06
4	0.25	6	46	3.85	6	46	0	80	4	-	01030	FZ-040-025-046-080-000-06
4	0.4	4	8	3.85	4	8	0	60	4	-	05358	FZ-040-040-008-060-000-04
4	0.4	4	12	3.85	4	12	0	60	4	-	05359	FZ-040-040-012-060-000-04
4	0.4	4	16	3.88	4	16	0	60	4	-	05360	FZ-040-040-016-060-000-04
4	0.4	4	24	3.85	4	24	0	70	4	-	05361	FZ-040-040-024-070-000-04
4	0.4	4	32	3.85	4	32	0	70	4	-	05362	FZ-040-040-032-070-000-04
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4	0.4	6	16	3.85	6	16	0	60	4	-	10284	FZ-040-040-016-060-000-06
4	0.4	6	24	3.85	6	24	0	70	4	-	10285	FZ-040-040-024-070-000-06
4	0.5	6	24	3.85	6	24	0	70	4	-	10704	FZ-040-050-024-070-000-06
4	0.5	6	30	3.88	6	30	0	70	4	-	00566	FZ-040-050-030-070-000-06
4	0.5	6	50	3.88	6	50	0	100	4	-	09831	FZ-040-050-050-100-000-06
4	1	4	20	3.85	4	20	0	60	4	-	07727	FZ-040-100-020-060-000-04
4	1	6	16	3.85	6	16	0	60	4	-	10705	FZ-040-100-016-060-000-06
4	1	6	28	3.88	6	28	0	70	4	-	02506	FZ-040-100-028-070-000-06
4	1	6	32	3.85	6	32	0	70	4	-	10121	FZ-040-100-032-070-000-06
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5	0.5	6	40	4.8	6	40	0	70	4	-	00567	FZ-050-050-040-070-000-06
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6	0.25	6	20	5.8	6	20	0	60	4	-	04858	FZ-060-025-020-060-000-06
6	0.25	6	30	5.83	6	30	0	60	4	-	10497	FZ-060-025-030-060-000-06
6	0.25	6	40	5.8	6	40	0	75	4	-	00831	FZ-060-025-040-075-000-06
6	0.25	6	70	5.8	6	70	0	120	4	-	05899	FZ-060-025-070-120-000-06
6	0.5	6	20	5.8	6	20	0	60	4	-	05416	FZ-060-050-020-060-000-06
6	0.5	6	30	5.8	6	30	0	60	4	-	07136	FZ-060-050-030-060-000-06
6	0.5	6	40	5.8	6	40	0	75	4	-	00551	FZ-060-050-040-075-000-06
6	0.8	6	20	5.8	6	20	0	60	4	-	05993	FZ-060-080-020-060-000-06
6	1	6	20	5.8	6	20	0	60	4	-	04859	FZ-060-100-020-060-000-06

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FILON® [fz]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+/-	+/-	-	+/-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	1	6	30	5.83	6	30	0	60	4	-	03790	FZ-060-100-030-060-000-06
6	1	6	40	5.8	6	40	0	75	4	-	00379	FZ-060-100-040-075-000-06
6	1.5	6	42	5.8	6	42	0	75	4	-	02508	FZ-060-150-042-075-000-06
6	2	6	40	5.8	6	40	0	75	4	-	00832	FZ-060-200-040-075-000-06
8	0.2	8	40	7.73	8	40	0	70	4	-	02510	FZ-080-020-040-070-000-08
8	0.25	8	35	7.7	8	35	0	70	4	-	02237	FZ-080-025-035-070-000-08
8	0.25	8	55	7.73	8	55	0	100	4	-	05548	FZ-080-025-055-100-000-08
8	0.5	8	35	7.7	8	35	0	70	4	-	05549	FZ-080-050-035-070-000-08
8	0.5	8	55	7.7	8	55	0	100	4	-	00833	FZ-080-050-055-100-000-08
8	1	8	25	7.7	8	25	0	59	4	-	05409	FZ-080-100-025-059-000-08
8	1	8	35	7.73	8	35	0	70	4	-	05550	FZ-080-100-035-070-000-08
8	1	8	55	7.7	8	55	0	100	4	-	00545	FZ-080-100-055-100-000-08
8	2	8	40	7.73	8	40	0	70	4	-	04032	FZ-080-200-040-070-000-08
8	2	8	55	7.7	8	55	0	100	4	-	00834	FZ-080-200-055-100-000-08
10	0.25	10	35	9.65	10	35	0	75	4	-	02238	FZ-100-025-035-075-000-10
10	0.5	10	35	9.69	10	35	0	75	4	-	05551	FZ-100-050-035-075-000-10
10	0.5	10	55	9.69	10	55	0	100	4	-	00835	FZ-100-050-055-100-000-10
10	1	10	35	9.69	10	35	0	75	4	-	05552	FZ-100-100-035-075-000-10
10	1	10	55	9.69	10	55	0	100	4	-	00546	FZ-100-100-055-100-000-10
10	1.5	10	55	9.8	10	55	0	100	4	-	00836	FZ-100-150-055-100-000-10
10	2	10	35	9.8	10	35	0	75	4	-	06822	FZ-100-200-035-075-000-10
10	2	12	55	9.69	10	55	0	100	4	-	00837	FZ-100-200-055-100-000-10
12	0.25	12	45	11.6	12	45	0	100	4	-	02239	FZ-120-025-045-100-000-12
12	0.25	12	55	11.6	12	55	0	100	4	-	10870	FZ-120-025-055-100-000-12
12	0.5	12	45	11.65	12	45	0	100	4	-	05553	FZ-120-050-045-100-000-12

*Technical changes reserved.

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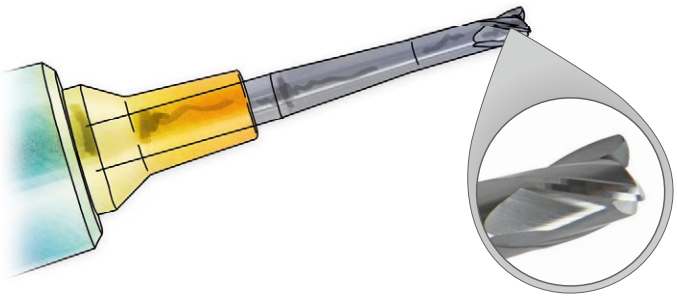
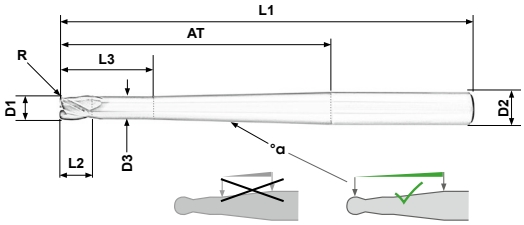


POTON® [plk]

Toric end mill with three flutes, conically stepped. For fast roughing on dynamic machines. POTON® [**plk**] has a polygon cutting edge. For soft and tough materials (1.2311, 1.4301, 1.4305, 1.2316, titanium) up to 48 HRC.

+ high feed rates
+ reducing vibration
+ internal cooling supply
+ great overhangs



iKlick export data
with real cutting geometry
(Tebis and PowerMill)

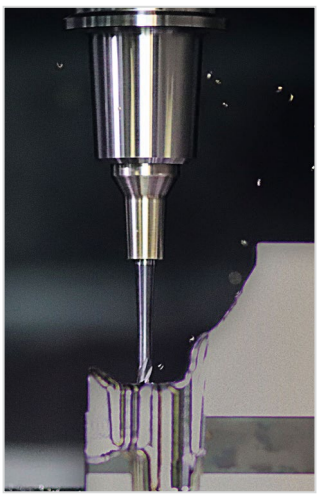
You can find all available tools and information online at: **iklick.aura.tools**

Exemplary Cutting Data for Code 02774 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000 N	5308	3026	100	0.15	3.90	0.19

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+/-	+	+	+	+	+/-	+/-	+/-	+/-	+/-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	0.28	4	12	3.6	6	40	0.9	80	3	IKZ	01357	PLK-040-028-012/040-080-009-06
4	0.28	4	12	3.6	6	65	0.9	100	3	IKZ	07810	PLK-040-028-012/065-100-009-06
6	0.42	6	20	5.64	8	40	0.9	85	3	IKZ	01276	PLK-060-042-020/040-085-009-08
6	0.42	6	20	5.6	10	65	1.5	120	3	IKZ	02774	PLK-060-042-020/065-120-015-10
6	0.42	6	20	5.6	8	65	0.8871	100	3	IKZ	07809	PLK-060-042-020/065-100-009-08
8	0.56	8	20	7.6	10	45	0.9	100	3	IKZ	01277	PLK-080-056-020/045-100-009-10
8	0.56	8	20	7.6	10	65	0.889	120	3	IKZ	02775	PLK-080-056-020/065-120-009-10



*Technical changes reserved.

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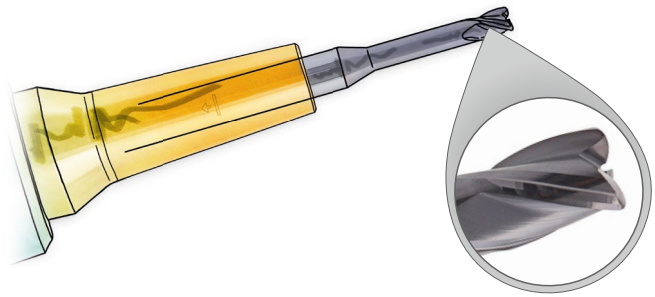
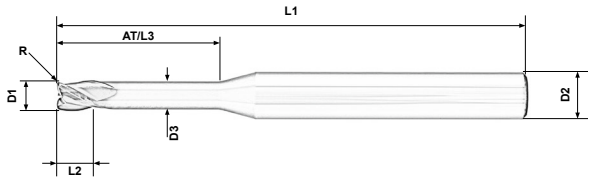


POTON® [pl]

Toric end mill with three flutes, cylindrically stepped. For fast roughing on dynamic machines. POTON® [**pl**] has a polygon cutting edge. For soft and tough materials (1.2311, 1.4301, 1.4305, 1.2316, tinanium) up to 48 HRC.

+ high feed rates
+ reducing vibration
+ internal cooling supply
+ great overhangs



iKlick export data
with real cutting geometry
(Tebis and PowerMill)

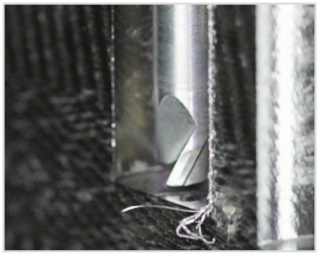
You can find all available tools and
information online at: **iklick.aura.tools**

Exemplary Cutting Data for Code 04003 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000 N	6824	4913	150	0.22	4.55	0.24

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+/-	+	+	+	+	+/-	+/-	+/-	+/-	+/-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	0.28	4	10	3.64	6	10	0	60	3	IKZ	05762	PL-040-028-010-060-000-06
4	0.28	4	20	3.64	6	20	0	60	3	IKZ	01356	PL-040-028-020-060-000-06
5	0.35	6	25	4.6	6	25	0	60	3	IKZ	03978	PL-050-035-025-060-000-06
5	0.35	6	40	4.6	6	40	0	80	3	IKZ	03979	PL-050-035-040-080-000-06
6	0.42	6	15	5.6	6	15	0	60	3	IKZ	16147	PL-060-042-015-060-000-06
6	0.42	6	25	5.64	6	25	0	60	3	IKZ	01353	PL-060-042-025-060-000-06
6	0.42	6	40	5.64	6	40	0	75	3	IKZ	03980	PL-060-042-040-075-000-06
6	0.42	6	40	5.6	6	40	0	60	3	IKZ	04877	PL-060-042-040-060-000-06
6	0.42	6	60	5.6	6	60	0	100	3	IKZ	02282	PL-060-042-060-100-000-06
7	0.49	8	30	6.6	8	30	0	65	3	IKZ	04003	PL-070-049-030-065-000-08
8	0.56	8	30	7.64	8	30	0	65	3	IKZ	01355	PL-080-056-030-065-000-08
8	0.56	8	40	7.64	8	40	0	75	3	IKZ	22096	PL-080-056-040-075-000-08
8	0.56	8	60	7.64	8	60	0	100	3	IKZ	02283	PL-080-056-060-100-000-08
10	0.7	8	40	9.64	10	40	0	100	3	IKZ	00778	PL-100-070-040-100-000-10
10	0.7	8	40	9.64	10	40	0	75	3	IKZ	03665	PL-100-070-040-075-000-10
12	0.84	8	50	11.64	12	50	0	125	3	IKZ	00890	PL-120-084-050-125-000-12
12	0.84	8	50	11.6	12	50	0	100	3	IKZ	07087	PL-120-084-050-100-000-12



*Technical changes reserved.

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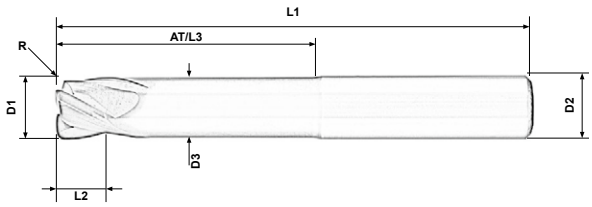
POTON® [vs]

Toric end mill with three flutes, conically stepped. For fast roughing on dynamic machines. POTON® [**vs**] has a polygon cutting edge with a flat bow. For tool steels up to 56 HRC.

+ high feed rates
+ short version
+ reducing vibration
+ internal cooling supply



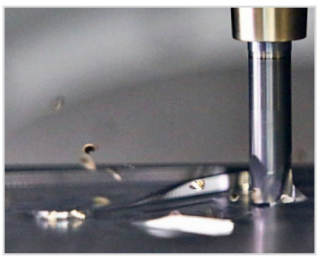
You can find all available tools and information online at: **iklick.aura.tools**

Exemplary Cutting Data for Code 00613 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<48 HRC	4777	50016	150	0.30	6.50	0.35

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+/-	+	+	+	+	+	+	+	+/-	+/-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0.66	6	25	5.6	6	25	0	60	3	IKZ	11404	VS-060-066-025-060-000-06
8	0.88	8	30	7.64	8	30	0	65	3	IKZ	11405	VS-080-088-030-065-000-08
10	1.1	8	40	9.6	10	40	0	75	3	IKZ	00613	VS-100-110-040-075-000-10
12	1.1	8	40	11.64	12	40	0	80	3	IKZ	00889	VS-120-110-040-080-000-12
12	1.1	8	60	11.64	12	60	0	100	3	IKZ	05958	VS-120-110-060-100-000-12



*Technical changes reserved.

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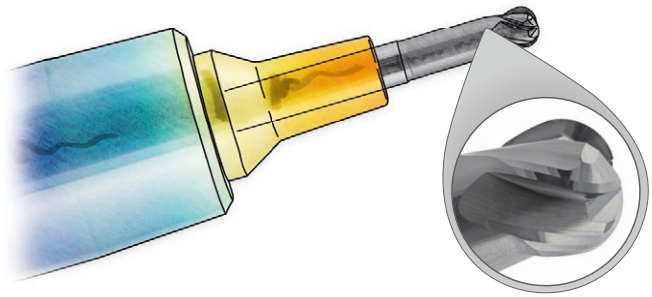
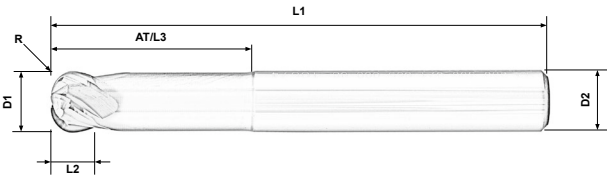


SANTOS® [sgt]

Torus cutter with four flutes, very short cutting edge and great corner radii, cylindrically stepped. For HSC machining up to 56 HRC.

+ for internal cooling supply
+ excellent for copy milling with high feed rates
+ unequal divided with very short cutting edge
+ ≥ D6 mm regrindable



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 20060 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<52 HRC	5 860	703	55	0.08	0.00	0.04

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	+/-	+	+	+	+	+	-	-	-	+	-	-	-	-	+/-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	0.5	2	6	1.9	6	20	5.7	60	3	-	20056	3SGTK-020-050-006/020-060-057-06
2	0.5	2	10	1.9	6	20	5.7	60	3	-	20057	3SGTK-020-050-010/020-060-057-06
3	0.8	2	9	2.8	6	20	4.3	60	3	-	20058	3SGTK-030-080-009/020-060-043-06
3	1	2	9	2.8	6	20	4.3	60	3	-	20059	3SGTK-030-100-009/020-060-043-06
3	1	2	10	2.8	6	40	1.2	75	3	-	20060	3SGTK-030-100-010/040-075-012-06
3	1	2	10	2.8	6	40	2.2	75	3	-	20061	3SGTK-030-100-010/040-075-022-06
4	1	2	12	3.6	6	12	0	60	4	IKZ	06446	SGT-040-100-012-060-000-06
4	1	2	16	3.64	6	16	0	60	4	IKZ	08084	SGT-040-100-016-060-000-06
4	1	2	12	3.6	6	40	1.5	75	4	IKZ	10990	SGTK-040-100-012/040-075-015-06
6	1	3	18	5.6	6	18	0	60	4	IKZ	06447	SGT-060-100-018-060-000-06
6	1.5	3	18	5.6	6	18	0	60	4	IKZ	07588	SGT-060-150-018-060-000-06
6	1.5	3	18	5.6	6	18	0	110	4	IKZ	10143	SGT-060-150-018-110-000-06
8	1	4	24	7.6	8	24	0	65	4	IKZ	11546	SGT-080-100-024-065-000-08
8	2	4	24	7.64	8	24	0	65	4	IKZ	06007	SGT-080-200-024-065-000-08
8	2	4	35	7.6	8	35	0	65	4	IKZ	06883	SGT-080-200-035-065-000-08
8	3	4	24	7.6	8	24	0	65	4	IKZ	10674	SGT-080-300-024-065-000-08
10	1	5	30	9.64	10	30	0	85	4	IKZ	08794	SGT-100-100-030-085-000-10
10	2	5	30	9.64	10	30	0	85	4	IKZ	04532	SGT-100-200-030-085-000-10
10	2	5	30	9.6	10	30	0	110	4	IKZ	10144	SGT-100-200-030-110-000-10
12	2	6	40	11.64	12	40	0	100	4	IKZ	08795	SGT-120-200-040-100-000-12
12	3	6	40	11.64	12	40	0	100	4	IKZ	04533	SGT-120-300-040-100-000-12
12	3.5	6	55	11.6	12	55	0	100	4	IKZ	17257	SGT-120-350-055-100-000-12

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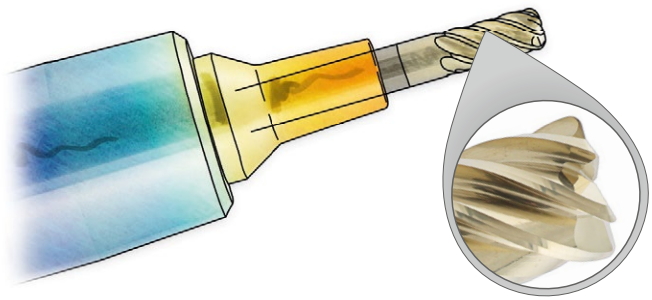
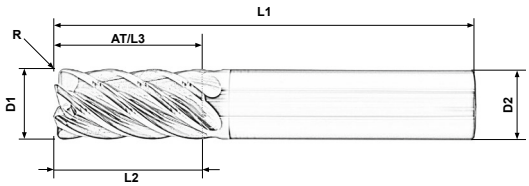


SANTOS® [cft]

Cermet finishing tool for excellent surfaces in soft mould construction steels. [**cft**] are sanded shank-torus cutter made of the cutting material „cermet". Cermets are composites of ceramics and metals and combine the advantages of both material groups. Even in impured and unalloyed steels the [**cft**] create excellent finishing surfaces and long tool lifes.

+ better surfaces in impured and unalloyed tool steels
+ observance of narrowest tolerances even at long intervention times
+ low roughness even at high feed rates
+ regrindable tool



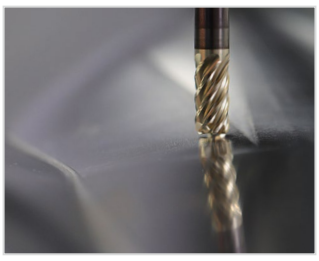
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 25920 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Steel	11 346	6 808	285	0.125	0.14	0.10

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	+	+	+	-	-	-	+	-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	1	12	0	0	6	12	0	50	5	-	25918	CFST-060-100-012-050-000-06
6	2	12	0	0	6	12	0	50	5	-	25919	CFBT-060-200-012-050-000-06
8	1	16	0	0	8	16	0	60	6	-	25920	CFST-080-100-016-060-000-08
8	2	16	0	0	8	16	0	60	6	-	25921	CFNT-080-200-016-060-000-08
8	3	16	0	0	8	16	0	60	6	-	25922	CFBT-080-300-016-060-000-08
10	1	20	0	0	10	20	0	65	6	-	25923	CFST-100-100-020-065-000-10
10	2	20	0	0	10	20	0	65	6	-	25924	CFNT-100-200-020-065-000-10
10	4	20	0	0	10	20	0	65	6	-	25925	CFBT-100-400-020-065-000-10
12	1	24	0	0	12	24	0	70	6	-	25926	CFST-120-100-024-070-000-12
12	3	24	0	0	12	24	0	70	6	-	25927	CFNT-120-300-024-070-000-12
12	5	24	0	0	12	24	0	70	6	-	25928	CFBT-120-500-024-070-000-12
16	3	32	0	0	16	32	0	80	7	-	25929	CFNT-160-300-032-080-000-16
16	6	32	0	0	16	32	0	80	7	-	25930	CFBT-160-600-032-080-000-16



*Technical changes reserved.

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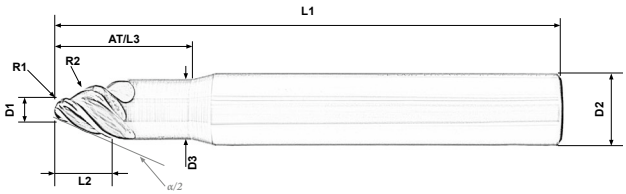
VILAS® [cbc]

Conical barrel cutter for efficient finishing of simple contours.

+ substantial time saving
+ short tools and unclamping length for greater stability
+ low load-bearing capacity by cutting radius and long tool lifes
+ universal material range



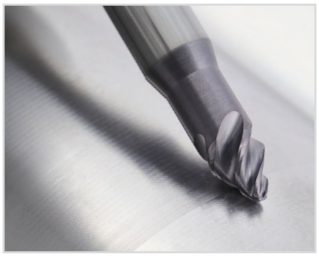
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 27090 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<56 HRC	7962	1752	75	1.00	0.10	0.055

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+	+	+/-	+	+	+	-	-	+/-	-

D1	R1	R2	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	1	360	4.77	12	6	8	12	30	52	4	-	27089	CBC-020-30-005-052-360-08
2	1	360	5.58	14	6	8	14	25	54	4	-	27088	CBC-020-25-006-054-360-08
2	1	360	6.81	18	6	8	18	20	58	4	-	27087	CBC-020-20-007-058-360-08
2	1	360	8.93	23	6	8	23	15	64	4	-	27085	CBC-020-15-009-064-360-08
2	1	500	13.3	35	6	8	35	10	76	4	-	29067	CBC-020-10-013-076-500-08
2	1	360	13.73	35	6	8	35	10	76	4	-	27084	CBC-020-10-014-076-360-08
3	1.5	280	6.05	16	8	10	16	30	67	4	-	27094	CBC-030-30-006-067-280-10
3	1.5	280	7.12	18	8	10	18	25	67	4	-	27093	CBC-030-25-007-067-280-10
3	1.5	280	8.75	22	8	10	22	20	73	4	-	27092	CBC-030-20-009-073-280-10
3	1.5	280	11.63	30	8	10	30	15	81	4	-	27091	CBC-030-15-012-081-280-10
3	1.5	500	17.16	48	8	10	48	10	101	4	-	29068	CBC-030-10-017-101-500-10
3	1.5	280	18.89	48	8	10	48	10	101	4	-	27090	CBC-030-10-019-101-280-10
4	2	200	7.39	19	10	12	19	30	84	4	-	27099	CBC-040-30-007-084-200-12
4	2	360	7.39	19	10	12	19	30	84	4	-	29073	CBC-040-30-007-084-360-12
4	2	200	8.76	22	10	12	22	25	84	4	-	27098	CBC-040-25-009-084-200-12
4	2	360	8.76	22	10	12	22	25	84	4	-	29072	CBC-040-25-009-084-360-12
4	2	200	10.89	28	10	12	28	20	84	4	-	27097	CBC-040-20-011-084-200-12
4	2	360	10.89	28	10	12	28	20	84	4	-	29071	CBC-040-20-011-084-360-12
4	2	360	14.02	38	10	12	38	15	94	4	-	29070	CBC-040-15-014-094-360-12
4	2	200	14.91	38	10	12	38	15	94	4	-	27096	CBC-040-15-015-094-200-12
4	2	500	21.19	52	10	12	52	10	110	4	-	29069	CBC-040-10-021-110-500-12



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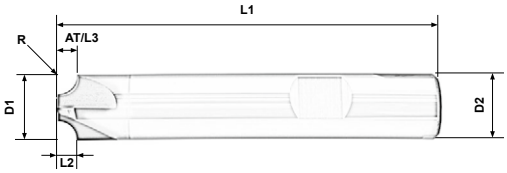
[vkf]

Solid carbide end mill to place outer radii, universally usable.

+ roughing and finishing
+ universally usable
+ special sizes on demand



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 02784 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<52 HRC	2919	1518	110	3.50	0.00	0.13

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+/-	+/-	+/-	-	+	+	+/-	+/-	+/-	+/-	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
8	0.5	0.5	0.5	8	8	0.5	0	65	4	-	06394	VKF-R0.5-060-080-065
8	1	1	1	8	8	1	0	65	4	-	02779	VKF-R1-060-080-065
10	1.5	1.5	1.5	10	10	1.5	0	70	4	-	02780	VKF-R1.5-070-100-070
10	2	2	2	10	10	2	0	70	4	-	02781	VKF-R2-060-100-070
10	2.5	2.5	2.5	10	10	2.5	0	70	4	-	02782	VKF-R2.5-050-100-070
12	3	3	3	12	12	3	0	70	4	-	02783	VKF-R3-060-120-070
12	3.5	3.5	3.5	12	12	3.5	0	70	4	-	02784	VKF-R3.5-050-120-070
16	4	4	4	16	16	4	0	75	4	-	02786	VKF-R4-080-160-075
16	4.5	4.5	4.5	16	16	4.5	0	75	4	-	02787	VKF-R4.5-070-160-075
16	5	5	5	16	16	5	0	75	4	-	02788	VKF-R5-060-160-075

*Technical changes reserved.

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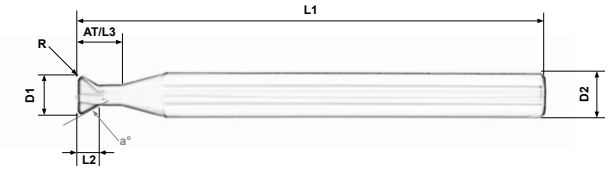
[dsf]

Solid carbide end mill to place outer sealing grooves, universally usable.

+ roughing and finishing
+ universally usable
+ special sizes on demand



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Exemplary Cutting Data for Code 01022 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1.000 N	5 590	1 303	100	5.80	0.00	0.121

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	-	-	+	+/-	-	-	-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
5.04	0.5	2.49	5	2.9	6	5	-30	60	4	-	10573	DSF-0504-050-003-060-30°
6.75	0	4.5	9.5	4.338	8	9.5	-15	60	3	-	18352	DSF-067-000-095-064-15-08
8	0	4	12	6	8	12	-14	65	3	-	07635	DSF-080-000-012-065/14°
8	0	5.5	12	5.05	8	12	-15	60	3	-	11758	DSF-080-000-012-060/15°
8.284	1	6	1.5	4.772	10	7.5	-20	75	3	-	18289	DSF-091-100-007-075-40-10
8.81	0.8	5.06	12	5	10	12	-25	75	3	-	15842	DSF-088-080-012-075/25°
8.87	0	5.8	12	5.76	10	12	-15	75	3	-	01022	DSF-088-000-006-075/15°
9.8	0.5	8	13	7.018	10	13	-10	75	3	-	03539	DSF-098-050-013-075/10°
12	0	7.5	20.5	9.35	12	20.5	-10	80	3	-	01021	DSF-120-000-020-080/10°
12	0	8	15	7.5	12	15	-15	80	3	-	01024	DSF-120-000-008-080/15°
12	0	8	15	9.75	12	15	-8	65	4	-	07634	DSF-120-000-015-065/8°
12	0	8.5	15	9	12	15	-10	80	3	-	01023	DSF-120-000-015-080/10°

*Technical changes reserved.

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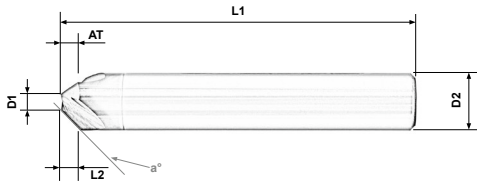
[ff] ▼+▼▼▼

Solid carbide end mill to place chamfers, universally usable.

+ roughing and finishing
+ universally usable
+ special sizes on demand



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 06030 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<52 HRC	5839	1051	110	7.00	0.00	0.06

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	+/-	+	+	+	+	+	+	+/-	+/-	+/-	+	+	+/-	+/-	+/-	+/-	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3.7	0	2	-	-	6	2	30	51	4	-	06031	FF-037-000-002-051-300-06
4	0	1	-	-	6	1	45	51	3	-	06025	FF-040-000-001-051-450-06
4	0	2	-	-	8	2	45	59	3	-	06026	FF-040-000-002-059-450-08
4	0	3	-	-	10	3	45	67	3	-	06027	FF-040-000-003-067-450-10
4	0	4	-	-	12	4	45	74	3	-	06028	FF-040-000-004-074-450-12
4.4	0	3	-	-	6	3	15	51	4	-	06037	FF-044-000-003-051-150-06
4.5	0	3	-	-	8	3	30	59	4	-	06032	FF-045-000-003-059-300-08
5	0	6	-	-	12	6	30	74	4	-	06034	FF-050-000-006-074-300-12
5.4	0	4	-	-	10	4	30	67	4	-	06033	FF-054-000-004-067-300-10
5.6	0	9	-	-	16	9	30	83	4	-	06035	FF-056-000-009-083-300-16
5.85	0	4	-	-	8	4	15	59	4	-	06038	FF-059-000-004-059-150-08
6	0	5	-	-	16	5	45	83	3	-	06029	FF-060-000-005-083-450-16
6	0	7	-	-	20	7	45	100	3	-	06030	FF-060-000-007-100-450-20
6.15	0	12	-	-	20	12	30	100	4	-	06036	FF-062-000-012-100-300-20
6.8	0	6	-	-	10	6	15	67	4	-	06039	FF-068-000-006-067-150-10
7.7	0	8	-	-	12	8	15	74	4	-	06040	FF-077-000-008-074-150-12
10.65	0	10	-	-	16	10	15	83	4	-	06041	FF-107-000-010-083-150-16
12	0	15	-	-	20	15	15	100	4	-	06042	FF-120-000-015-100-150-20

*Technical changes reserved.

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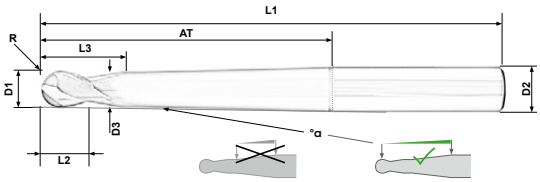
[ck] ▼+▼▼▼

Conical strengthened ballnose cutter with two flutes for machining NE metal. The cutting geometry is designed for maximum process reliabilty even under bad conditions.

+ high process reliabilty
+ creates very good surfaces
+ conically strenghtened
+ great overhangs



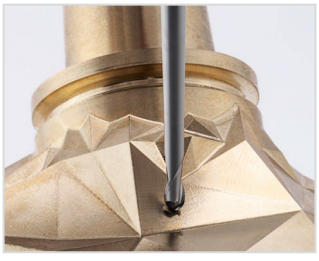
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 01166 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	19904	2269	250	0.133	0.00	0.057

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.8	0.4	1.2	3	0.7	6	12	1	60	2	-	00247	CK-008-040-012-060-010-06
0.8	0.4	1.2	3	0.7	6	22	0.8	70	2	-	00270	CK-008-040-022-070-008-06
1	0.5	1.5	4	0.9	6	12	1	60	2	-	00248	CK-010-050-012-060-010-06
1	0.5	1.5	4	0.9	6	22	0.8	70	2	-	00271	CK-010-050-022-070-008-06
1	0.5	1.5	4	0.9	6	33	0.8	80	2	-	00311	CK-010-050-033-080-008-06
1.5	0.75	2.25	7	1.4	6	25	0.6	60	2	-	04536	CK-015-075-025-060-006-06
1.5	0.75	2.25	7	1.4	6	40	0.6	75	2	-	04537	CK-015-075-040-075-006-06
1.5	0.75	2.25	7	1.4	6	60	0.9	100	2	-	04538	CK-015-075-060-100-009-06
2	1	3	8	1.9	6	20	0.9	60	2	-	04415	CK-020-100-020-060-009-06
2	1	3	8	1.9	6	40	0.9	80	2	-	04416	CK-020-100-040-080-009-06
2	1	4	8	1.9	6	30	0.9	70	2	-	11945	CK-020-100-030-070-009-06
3	1.5	4	20	2.9	6	40	0.9	85	2	-	11931	CK-030-150-040-085-009-06
3	1.5	4	12	2.9	6	45	0.9	80	2	-	12132	CK-030-150-045-080-009-06
3	1.5	4.5	20	2.9	6	80	0.9	120	2	-	00895	CK-030-150-080-120-009-06
4	2	6	20	3.8	6	40	0.9	80	2	-	01165	CK-040-200-040-080-009-06
4	2	6	20	3.8	6	40	1.5	100	2	-	01166	CK-040-200-040-100-015-06
4	2	6	20	3.8	6	64	0.9	100	2	-	00894	CK-040-200-064-100-009-06
4	2	6	20	3.8	6	64	0.9	120	2	-	12381	CK-040-200-064-120-009-06
6	3	8	15	5.8	8	40	0.9	80	2	-	00715	CK-060-300-040-080-009-08
6	3	8	20	5.8	8	64	0.9	100	2	-	04417	CK-060-300-064-100-009-08
6	3	8	20	5.8	8	70	0.8	120	2	-	01176	CK-060-300-070-120-008-08
6	3	8	20	5.8	8	90	0.6	150	2	-	01164	CK-060-300-090-150-006-08
8	4	10	20	7.8	10	62	0.9	100	2	-	04418	CK-080-400-062-100-009-10
8	4	10	25	7.8	10	80	0.9	120	2	-	00893	CK-080-400-080-120-009-10
8	4	10	20	7.8	10	90	0.6	150	2	-	01169	CK-080-400-090-150-006-10
10	5	10	30	9.7	12	70	0.8	120	2	-	01174	CK-100-500-070-120-008-12
10	5	10	30	9.7	12	90	0.6	150	2	-	01175	CK-100-500-090-150-006-12
10	5	12	20	9.7	12	65	0.9	100	2	-	04420	CK-100-500-065-100-009-12



*Technical changes reserved.

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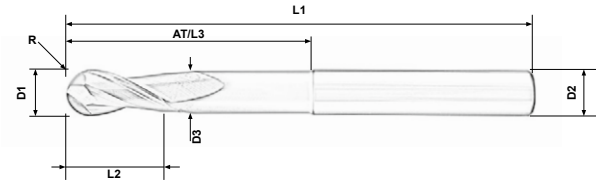
[ckz]

Universally usable ballnose cutter with two flutes for machining NE metal. The cutting geometry is designed for maximum process reliabilty even under bad conditions.

+ high process reliabilty
+ universally usable
+ creates very plain surfaces



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 05300 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	19108	3439	300	0.425	0.00	0.09

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.8	0.4	1	10	0.75	6	10	0	60	2	-	07802	CKZ-008-040-010-060-000-06
1	0.5	2	10	0.9	6	10	0	60	2	-	07801	CKZ-010-050-010-060-000-06
1.8	0.9	3	3	1.8	6	3	0	40	2	-	07534	CKZ-018-090-003-040-000-06
2	1	4	10	1.92	6	10	0	60	2	-	11472	CKZ-020-100-010-060-000-06
3	1.5	6	9	2.7	6	9	0	75	2	-	05298	CKZ-030-150-009-075-000-06
3	1.5	6	10	2.88	6	10	0	60	2	-	07042	CKZ-030-150-010-060-000-06
3	1.5	6	15	2.88	6	15	0	60	2	-	07881	CKZ-030-150-015-060-000-06
3	1.5	6	20	2.7	6	20	0	60	2	-	07043	CKZ-030-150-020-060-000-06
3	1.5	6	25	2.7	6	25	0	75	2	-	08762	CKZ-030-150-025-075-000-06
4	2	8	12	3.7	6	12	0	75	2	-	05299	CKZ-040-200-012-075-000-06
4	2	8	15	3.73	6	15	0	60	2	-	07044	CKZ-040-200-015-060-000-06
4	2	8	25	3.7	6	25	0	60	2	-	07045	CKZ-040-200-025-060-000-06
4	2	8	25	3.73	6	25	0	75	2	-	08763	CKZ-040-200-025-075-000-06
5	2.5	8	15	4.7	6	15	0	60	2	-	07882	CKZ-050-250-015-060-000-06
5	2.5	10	15	4.7	6	15	0	80	2	-	05300	CKZ-050-250-015-080-000-06
5	2.5	10	25	4.7	6	25	0	60	2	-	07883	CKZ-050-250-025-060-000-06
5	2.5	10	25	4.7	6	25	0	75	2	-	08764	CKZ-050-250-025-075-000-06
6	3	12	15	5.5	6	15	0	60	2	-	01689	CKZ-060-300-015-060-000-06
6	3	12	20	5.54	6	20	0	80	2	-	05681	CKZ-060-300-020-080-000-06
6	3	12	30	5.5	6	30	0	80	2	-	04544	CKZ-060-300-030-080-000-06
8	4	16	20	7.5	8	20	0	64	2	-	02363	CKZ-080-400-020-064-000-08
8	4	16	26	7.54	8	26	0	90	2	-	06483	CKZ-080-400-026-090-000-08
8	4	16	40	7.5	8	40	0	80	2	-	00785	CKZ-080-400-040-080-000-08
10	5	20	25	9.3	10	25	0	75	2	-	04419	CKZ-100-500-025-075-000-10
10	5	20	31	9.3	10	31	0	100	2	-	06484	CKZ-100-500-031-100-000-10
10	5	20	45	9.36	10	45	0	100	2	-	04542	CKZ-100-500-045-100-000-10
10	5	20	50	9.3	10	50	0	150	2	-	06485	CKZ-100-500-050-150-000-10
12	6	24	30	11.35	12	30	0	100	2	-	04421	CKZ-120-600-030-100-000-12
12	6	24	37	11.3	12	37	0	120	2	-	05682	CKZ-120-600-037-120-000-12
12	6	24	90	11.3	12	90	0	150	2	-	01177	CKZ-120-600-090-150-000-12

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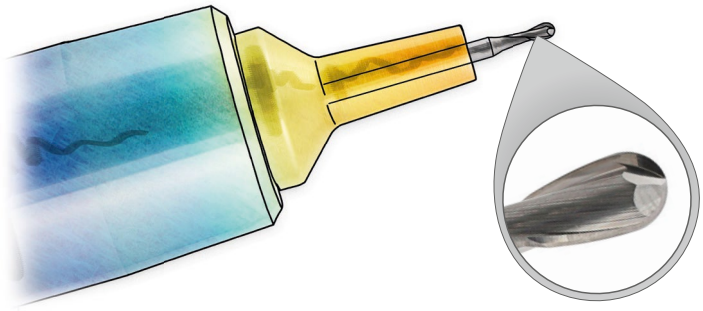
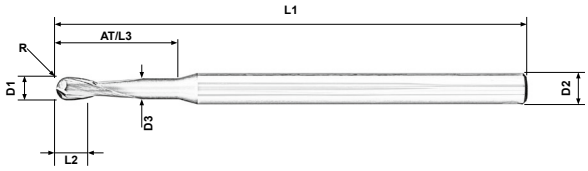


[mkne]

▼+▼▼▼

Universally usable ballnose cutter with two flutes, cylindrically stepped, for machining NE metal. The cutting geometry is suitable for conventional machining and HSC machining.

+ low concentricity tolerances
+ cylindrically stepped
+ excellent finishing



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 03570 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	42000	336	92	0.032	0.00	0.004

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.3	0.15	0.5	2	0.25	4	2	0	60	2	-	03551	MKNE-003-015-002-060-000-04
0.3	0.15	0.5	3	0.25	4	3	0	60	2	-	03555	MKNE-003-015-003-060-000-04
0.3	0.15	0.5	5	0.25	4	5	0	60	2	-	03556	MKNE-003-015-005-060-000-04
0.4	0.2	0.6	2	0.35	4	2	0	60	2	-	03557	MKNE-004-020-002-060-000-04
0.4	0.2	0.6	4	0.35	4	4	0	60	2	-	03558	MKNE-004-020-004-060-000-04
0.4	0.2	0.6	6	0.35	4	6	0	60	2	-	03559	MKNE-004-020-006-060-000-04
0.5	0.25	0.8	2	0.45	4	2	0	60	2	-	03560	MKNE-005-025-002-060-000-04
0.5	0.25	0.8	5	0.45	4	5	0	60	2	-	03561	MKNE-005-025-005-060-000-04
0.5	0.25	0.8	7	0.45	4	7	0	60	2	-	03562	MKNE-005-025-007-060-000-04
0.5	0.25	0.8	10	0.45	4	10	0	60	2	-	03563	MKNE-005-025-010-060-000-04
0.6	0.3	0.9	3	0.55	4	3	0	60	2	-	03564	MKNE-006-030-003-060-000-04
0.6	0.3	0.9	6	0.55	4	6	0	60	2	-	03565	MKNE-006-030-006-060-000-04
0.6	0.3	0.9	9	0.55	4	9	0	60	2	-	03566	MKNE-006-030-009-060-000-04
0.6	0.3	0.9	12	0.55	4	12	0	60	2	-	03567	MKNE-006-030-012-060-000-04
0.7	0.35	1.1	4	0.65	4	4	0	60	2	-	03568	MKNE-007-035-004-060-000-04
0.7	0.35	1.1	7	0.65	4	7	0	60	2	-	03569	MKNE-007-035-007-060-000-04
0.7	0.35	1.1	11	0.65	4	11	0	60	2	-	03570	MKNE-007-035-011-060-000-04
0.8	0.4	1.2	3	0.7	4	3	0	60	2	-	03571	MKNE-008-040-003-060-000-04
0.8	0.4	1.2	6	0.75	4	6	0	60	2	-	03572	MKNE-008-040-006-060-000-04
0.8	0.4	1.2	9	0.75	4	9	0	60	2	-	03573	MKNE-008-040-009-060-000-04
0.8	0.4	1.2	12	0.75	4	12	0	60	2	-	03574	MKNE-008-040-012-060-000-04
0.9	0.45	1.4	5	0.85	4	5	0	60	2	-	03575	MKNE-009-045-005-060-000-04
0.9	0.45	1.4	9	0.85	4	9	0	60	2	-	03576	MKNE-009-045-009-060-000-04
0.9	0.45	1.4	14	0.85	4	14	0	60	2	-	03577	MKNE-009-045-014-060-000-04
1	0.5	1.5	3	0.9	4	3	0	60	2	-	03578	MKNE-010-050-003-060-000-04

*Technical changes reserved.

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[mkne]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	1.5	5	0.9	4	5	0	60	2	-	03579	MKNE-010-050-005-060-000-04
1	0.5	1.5	7	0.9	4	7	0	60	2	-	10336	MKNE-010-050-007-060-000-04
1	0.5	1.5	8	0.9	4	8	0	60	2	-	03580	MKNE-010-050-008-060-000-04
1	0.5	1.5	10	0.9	4	10	0	60	2	-	10337	MKNE-010-050-010-060-000-04
1	0.5	1.5	11	0.9	4	11	0	60	2	-	03582	MKNE-010-050-011-060-000-04
1	0.5	1.5	15	0.9	4	15	0	60	2	-	03583	MKNE-010-050-015-060-000-04
1.2	0.6	1.8	5	1.1	4	5	0	60	2	-	06694	MKNE-012-060-005-060-000-04
1.2	0.6	1.8	10	1.1	4	10	0	60	2	-	06695	MKNE-012-060-010-060-000-04
1.5	0.75	2.3	5	1.35	4	5	0	60	2	-	03584	MKNE-015-075-005-060-000-04
1.5	0.75	2.3	8	1.4	4	8	0	60	2	-	03585	MKNE-015-075-008-060-000-04
1.5	0.75	2.3	12	1.4	4	12	0	60	2	-	03586	MKNE-015-075-012-060-000-04
1.5	0.75	2.3	16	1.4	4	16	0	60	2	-	10338	MKNE-015-075-016-060-000-04
1.5	0.75	2.3	19	1.4	4	19	0	60	2	-	03589	MKNE-015-075-019-060-000-04
1.5	0.75	2.3	23	1.35	4	23	0	60	2	-	03590	MKNE-015-075-023-060-000-04
2	1	3	5	1.85	4	5	0	60	2	-	03592	MKNE-020-100-005-060-000-04
2	1	3	10	1.85	4	10	0	60	2	-	04543	MKNE-020-100-010-060-000-04
2	1	3	12	1.85	4	12	0	60	2	-	04586	MKNE-020-100-012-060-000-04
2	1	3	15	1.85	4	15	0	60	2	-	03595	MKNE-020-100-015-060-000-04
2	1	3	16	1.85	4	16	0	60	2	-	04587	MKNE-020-100-016-060-000-04
2	1	3	20	1.85	4	20	0	60	2	-	04588	MKNE-020-100-020-060-000-04
2	1	3	25	1.85	4	25	0	70	2	-	03598	MKNE-020-100-025-070-000-04
2	1	3	30	1.85	4	30	0	70	2	-	12479	MKNE-020-100-030-070-000-04
2	1	3	35	1.85	4	35	0	70	2	-	03600	MKNE-020-100-035-070-000-04
3	1.5	4.5	10	2.7	4	10	0	60	2	-	03601	MKNE-030-150-010-060-000-04
3	1.5	4.5	15	2.7	4	15	0	60	2	-	03602	MKNE-030-150-015-060-000-04
3	1.5	4.5	24	2.7	4	24	0	70	2	-	03604	MKNE-030-150-024-070-000-04
4	2	6	16	3.7	4	16	0	60	2	-	03608	MKNE-040-200-016-060-000-04
4	2	6	24	3.7	4	24	0	70	2	-	03610	MKNE-040-200-024-070-000-04
4	2	6	30	3.7	4	30	0	70	2	-	03611	MKNE-040-200-030-070-000-04
4	2	6	36	3.7	4	36	0	70	2	-	03612	MKNE-040-200-036-070-000-04

*Technical changes reserved.

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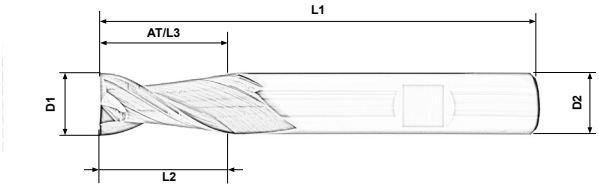
[2aluw]

▼ + ▼▼▼

Universal slot milling cutter with two flutes and corner protective chamfer for machining NE metal.

+ universally usable
+ great chip spaces
+ drilling



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 02370 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	7 962	1 306	250	9.80	0.00	0.082

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0	10	13	2.7	6	13	0	60	2	-	02364	ALUW2-030-000-010-060-000-06
4	0	10	13	3.7	6	13	0	60	2	-	02365	ALUW2-040-000-010-060-000-06
5	0	10	13	4.7	6	13	0	60	2	-	02366	ALUW2-050-000-010-060-000-06
6	0	15	-	-	6	15	0	60	2	-	02368	ALUW2-060-000-015-060-000-06
8	0	17	-	-	8	17	0	64	2	-	02369	ALUW2-080-000-017-064-000-08
8	0	17	30	7.5	8	30	0	64	2	-	04707	ALUW2-080-000-030-064-000-08
10	0	22	-	-	10	22	0	75	2	-	02370	ALUW2-100-000-022-075-000-10
10	0	22	30	9.5	10	30	0	75	2	-	04708	ALUW2-100-000-030-075-000-10
12	0	25	-	-	12	25	0	84	2	-	02371	ALUW2-120-000-025-084-000-12
12	0	25	30	11.5	12	30	0	84	2	-	04709	ALUW2-120-000-030-084-000-12
16	0	32	-	-	16	32	0	100	2	-	02372	ALUW2-160-000-032-100-000-16
16	0	32	40	15.5	16	40	0	100	2	-	04710	ALUW2-160-000-040-100-000-16

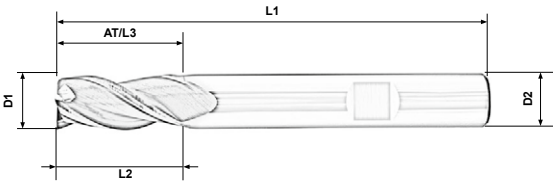
*Technical changes reserved.

„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GJV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics

[3aluw]

Universal slot milling cutter with three flutes and corner protective chamfer for machining NE metal.

+ universally usable
+ great chip spaces
+ drilling



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 02380 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	6635	1971	250	11.80	0.00	0.099

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0	10	13	2.7	6	13	0	60	3	-	02374	ALUW3-030-000-010-060-000-06
4	0	10	13	3.7	6	13	0	60	3	-	02375	ALUW3-040-000-010-060-000-06
5	0	10	13	4.7	6	13	0	60	3	-	02376	ALUW3-050-000-010-060-000-06
6	0	15	15	6	6	15	0	60	3	-	02377	ALUW3-060-000-015-060-000-06
8	0	17	17	8	8	17	0	64	3	-	02378	ALUW3-080-000-017-064-000-08
10	0	22	22	10	10	22	0	75	3	-	02379	ALUW3-100-000-022-075-000-10
12	0	25	25	12	12	25	0	84	3	-	02380	ALUW3-120-000-025-084-000-12
16	0	32	32	16	16	32	0	100	3	-	02381	ALUW3-160-000-032-100-000-16
20	0	38	38	20	20	38	0	100	3	-	02382	ALUW3-200-000-038-100-000-20
8	0	17	30	7.6	8	30	0	64	3	-	04712	ALUW3-080-000-030-064-000-08
10	0	22	30	9.5	10	30	0	75	3	-	04713	ALUW3-100-000-030-075-000-10
12	0	25	30	11.5	12	30	0	84	3	-	04714	ALUW3-120-000-030-084-000-12
16	0	32	40	15.5	16	40	0	100	3	-	04715	ALUW3-160-000-040-100-000-16
7	0	15	17	6.5	8	17	0	100	3	-	07360	ALUW3-070-000-015-100-000-08

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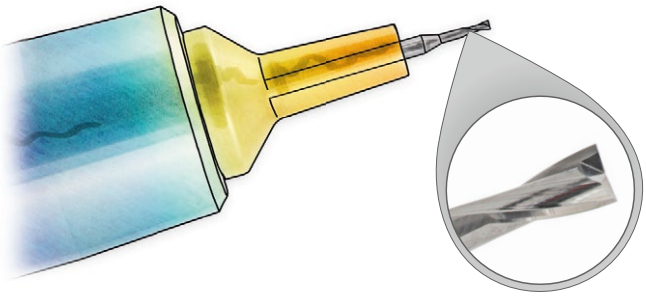
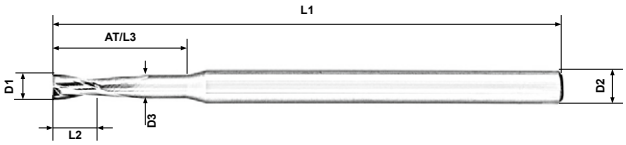


[nesza]

Sharp end mill for machining NE metal.

+ without protective chamfer and without corner radius
+ high concentricity



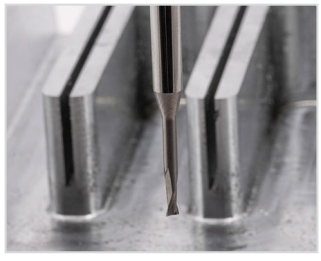
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 04550 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	18577	1672	175	0.085	0.00	0.045

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.5	0	1.5	3	0.4	4	3	0	60	2	-	04560	NESZA-005-000-003-060-000-04
1	0	2	5	0.9	4	5	0	60	2	-	04545	NESZA-010-000-005-060-000-04
1.2	0	2	6	1.1	4	6	0	60	2	-	04546	NESZA-012-000-006-060-000-04
1.5	0	3	8	1.4	4	8	0	60	2	-	04547	NESZA-015-000-008-060-000-04
1.5	0	3	10	1.4	4	10	0	60	2	-	06173	NESZA-015-000-010-060-000-04
2	0	3	10	1.9	4	10	0	60	2	-	04548	NESZA-020-000-010-060-000-04
3	0	5	15	2.9	4	15	0	60	2	-	04550	NESZA-030-000-015-060-000-04
4	0	8	20	3.8	4	20	0	60	2	-	04551	NESZA-040-000-020-060-000-04
6	0	18	30	5.8	6	30	0	60	3	-	04555	NESZA-060-000-030-060-000-06
8	0	24	40	7.8	8	40	0	80	3	-	04556	NESZA-080-000-040-080-000-08
10	0	30	45	9.7	10	45	0	80	3	-	04557	NESZA-100-000-045-080-000-10



*Technical changes reserved.

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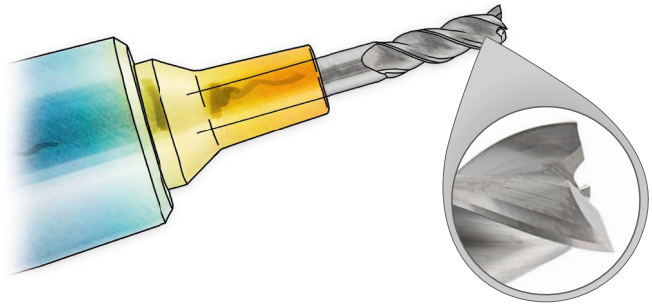
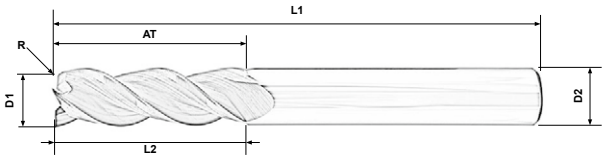


[tva]

End mill with three flutes for machining NE metal.
The cutting geometry is designed for volume milling with high feeds.

+ high process safety
+ pre-finishing and finishing
+ usable for trochoidal milling



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 06911 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	12739	5350	400	10.00	8.00	0.14

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+/-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0	15	15	6	6	15	0	51	3	-	06897	TVA-060-000-015-051-000-06
6	0	20	20	6	6	20	0	60	3	-	06898	TVA-060-000-020-060-000-06
8	0	17	17	8	8	17	0	59	3	-	06901	TVA-080-000-017-059-000-08
8	0	25	25	8	8	25	0	64	3	-	06902	TVA-080-000-025-064-000-08
10	0	22	22	10	10	22	0	73	3	-	06911	TVA-100-000-022-073-000-10
10	0	32	32	10	10	32	0	80	3	-	06912	TVA-100-000-032-080-000-10
12	0	25	25	12	12	25	0	80	3	-	06923	TVA-120-000-025-080-000-12
12	0	38	38	12	12	38	0	100	3	-	06924	TVA-120-000-038-100-000-12
16	0	35	35	16	16	35	0	93	3	-	06935	TVA-160-000-035-093-000-16
16	0	50	50	16	16	50	0	100	3	-	06936	TVA-160-000-050-100-000-16
20	0	42	42	20	20	42	0	100	3	-	06949	TVA-200-000-042-100-000-20
20	0	60	60	20	20	60	0	125	3	-	06950	TVA-200-000-060-125-000-20

*Technical changes reserved.

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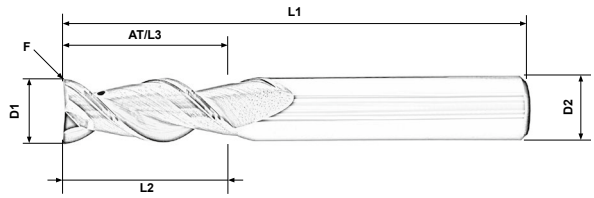
[chpc]

End mill with two and three flutes with corner protective chamfer, for milling high-strength aluminium alloys, especially for the application on highly dynamic machines. With IKZ canals in polished chip spaces. For highest feeds and infeeds.

+ high removal rates
+ for internal cooling supply
+ for highly dynamic machines
+ polished chip spaces



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Exemplary Cutting Data for Code 20063 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	11 898	3 569	299	2.00	0.00	0.10

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+/-	-	-

D1	F	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0.1	20	20	6	6	20	0	58	2	IKZ	09987	2CHPC-060-010-020-060-000-06
6	0.1	20	20	6	6	20	0	58	3	IKZ	20062	3CHPC-060-010-020-058-000-06
8	0.1	25	25	8	8	25	0	64	2	IKZ	09988	2CHPC-080-010-025-064-000-08
8	0.1	25	25	8	8	25	0	64	3	IKZ	20063	3CHPC-080-010-025-064-000-08
10	0.2	26	26	10	10	26	0	73	2	IKZ	10509	2CHPC-100-020-026-073-000-10
10	0.2	26	26	10	10	26	0	73	3	IKZ	20064	3CHPC-100-020-026-073-000-10
12	0.2	28	28	12	12	28	0	84	2	IKZ	09989	2CHPC-120-020-028-084-000-12
12	0.2	28	28	12	12	28	0	84	3	IKZ	20065	3CHPC-120-020-028-084-000-12
14	0.2	32	32	14	14	32	0	84	3	IKZ	07847	3CHPC-140-020-032-084-000-14
16	0.2	35	35	16	16	35	0	93	3	IKZ	10489	3CHPC-160-020-035-093-000-16

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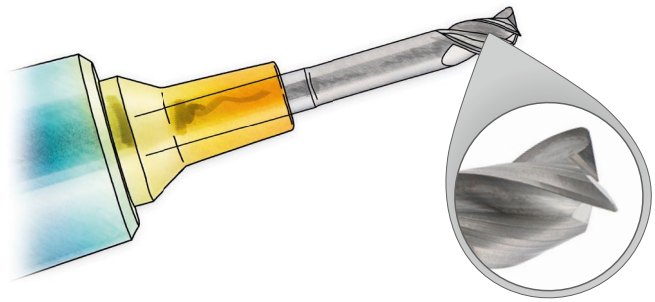
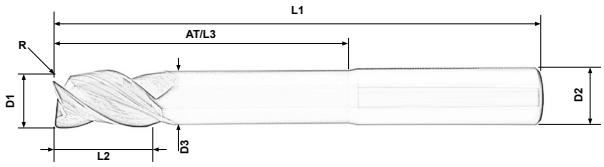


[tvar]

End mill with three flutes for machining NE metal.
The cutting geometry is designed for volume milling with high feeds.

+ high process safety
+ pre-finishing and finishing
+ 2-D and 3-D machining with corner radius
+ usable for trochoidal milling



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Exemplary Cutting Data for Code 20029 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	15924	4777	400	0.50	4.20	0.10

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+/-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	0.2	6	20	3.7	6	20	0	60	3	-	06894	TVAR-040-020-020-060-000-06
4	0.2	10	16	3.7	6	16	0	51	3	-	06893	TVAR-040-020-016-051-000-06
5	0.2	8	25	4.7	6	25	0	65	3	-	06896	TVAR-050-020-025-065-000-06
5	0.2	12	20	4.7	6	20	0	60	3	-	06895	TVAR-050-020-020-060-000-06
6	0.2	9	30	5.73	6	30	0	65	3	-	06900	TVAR-060-020-030-065-000-06
6	0.2	16	24	5.73	6	24	0	60	3	-	06899	TVAR-060-020-024-060-000-06
6	1	20	-	-	6	20	0	60	3	-	11514	TVAR-060-100-020-060-000-06
8	0.2	12	40	7.6	8	40	0	75	3	-	06904	TVAR-080-020-040-075-000-08
8	0.2	20	32	7.6	8	32	0	70	3	-	06903	TVAR-080-020-032-070-000-08
8	0.5	12	40	7.6	8	40	0	75	3	-	20028	TVAR-080-050-040-075-000-08
8	0.5	20	32	7.6	8	32	0	70	3	-	20027	TVAR-080-050-032-070-000-08
8	0.8	12	40	7.6	8	40	0	75	3	-	06906	TVAR-080-080-040-075-000-08
8	0.8	20	32	7.6	8	32	0	70	3	-	06905	TVAR-080-080-032-070-000-08
8	1	12	40	7.6	8	40	0	75	3	-	20030	TVAR-080-100-040-075-000-08
8	1	20	32	7.6	8	32	0	70	3	-	20029	TVAR-080-100-032-070-000-08
8	1.6	12	40	7.6	8	40	0	75	3	-	06908	TVAR-080-160-040-075-000-08
8	2	12	40	7.6	8	40	0	75	3	-	06910	TVAR-080-200-040-075-000-08
8	2	20	32	7.6	8	32	0	70	3	-	06909	TVAR-080-200-032-070-000-08
8	3.2	12	40	7.6	8	40	0	75	3	-	11036	TVAR-080-320-040-075-000-08
8	3.2	20	32	7.6	8	32	0	70	3	-	20031	TVAR-080-320-032-070-000-08
10	0.2	15	50	9.5	10	50	0	90	3	-	06914	TVAR-100-020-050-090-000-10
10	0.2	22	40	9.55	10	40	0	80	3	-	06913	TVAR-100-020-040-080-000-10
10	0.5	15	50	9.5	10	50	0	90	3	-	20033	TVAR-100-050-050-090-000-10
10	0.5	22	40	9.5	10	40	0	90	3	-	20032	TVAR-100-050-040-080-000-10
10	0.8	15	50	9.5	10	50	0	90	3	-	06916	TVAR-100-080-050-090-000-10
10	0.8	22	40	9.5	10	40	0	80	3	-	06915	TVAR-100-080-040-080-000-10
10	1	15	50	9.5	10	50	0	90	3	-	20035	TVAR-100-100-050-090-000-10
10	1	22	40	9.5	10	40	0	80	3	-	20034	TVAR-100-100-040-080-000-10

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[tvar]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+/-	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
10	1	32	-	-	10	32	0	80	3	-	11515	TVAR-100-100-032-080-000-10
10	1.6	15	50	9.5	10	50	0	90	3	-	06918	TVAR-100-160-050-090-000-10
10	1.6	22	40	9.5	10	40	0	80	3	-	06917	TVAR-100-160-040-080-000-10
10	2	15	50	9.5	10	50	0	90	3	-	06920	TVAR-100-200-050-090-000-10
10	2	22	40	9.55	10	40	0	80	3	-	06919	TVAR-100-200-040-080-000-10
10	3.2	15	50	9.5	10	50	0	90	3	-	06922	TVAR-100-320-050-090-000-10
10	3.2	22	40	9.5	10	40	0	80	3	-	06921	TVAR-100-320-040-080-000-10
12	0.2	18	60	11.35	12	60	0	100	3	-	06926	TVAR-120-020-060-100-000-12
12	0.2	26	48	11.35	12	48	0	90	3	-	06925	TVAR-120-020-048-090-000-12
12	0.5	18	60	11.35	12	60	0	100	3	-	20037	TVAR-120-050-060-100-000-12
12	0.5	26	48	11.3	12	48	0	90	3	-	20036	TVAR-120-050-048-090-000-12
12	0.8	18	60	11.3	12	60	0	100	3	-	06928	TVAR-120-080-060-100-000-12
12	0.8	26	48	11.3	12	48	0	90	3	-	06927	TVAR-120-080-048-090-000-12
12	1	18	60	11.3	12	60	0	100	3	-	06930	TVAR-120-100-060-100-000-12
12	1	26	48	11.35	12	48	0	90	3	-	06929	TVAR-120-100-048-090-000-12
12	2	18	60	11.3	12	60	0	100	3	-	06932	TVAR-120-200-060-100-000-12
12	2	26	48	11.3	12	48	0	90	3	-	06931	TVAR-120-200-048-090-000-12
12	3.2	18	60	11.3	12	60	0	100	3	-	06934	TVAR-120-320-060-100-000-12
12	3.2	26	48	11.3	12	48	0	90	3	-	06933	TVAR-120-320-048-090-000-12
16	0.2	25	80	15.2	16	80	0	130	3	-	06938	TVAR-160-020-080-130-000-16
16	0.2	35	64	15.36	16	64	0	110	3	-	06937	TVAR-160-020-064-110-000-16
16	0.5	25	80	15.2	16	80	0	130	3	-	20039	TVAR-160-050-080-130-000-16
16	0.5	35	64	15.2	16	64	0	110	3	-	20038	TVAR-160-050-064-110-000-16
16	0.8	25	80	15.2	16	80	0	130	3	-	06940	TVAR-160-080-080-130-000-16
16	0.8	35	64	15.2	16	64	0	110	3	-	06939	TVAR-160-080-064-110-000-16
16	1	25	80	15.2	16	80	0	130	3	-	20041	TVAR-160-100-080-130-000-16
16	1	35	64	15.2	16	64	0	110	3	-	20040	TVAR-160-100-064-110-000-16
16	1.6	25	80	15.2	16	80	0	130	3	-	06942	TVAR-160-160-080-130-000-16
16	1.6	35	64	15.2	16	64	0	110	3	-	06941	TVAR-160-160-064-110-000-16
16	2	25	80	15.2	16	80	0	130	3	-	06944	TVAR-160-200-080-130-000-16
16	2	35	64	15.2	16	64	0	110	3	-	06943	TVAR-160-200-064-110-000-16
16	3.2	25	80	15.2	16	80	0	130	3	-	06946	TVAR-160-320-080-130-000-16
16	3.2	25	92	15.2	16	92	0	130	3	-	11037	TVAR-160-320-092-130-000-16
16	3.2	35	64	15.2	16	64	0	110	3	-	06945	TVAR-160-320-064-110-000-16
16	4	25	80	15.2	16	80	0	130	3	-	06948	TVAR-160-400-080-130-000-16
16	4	35	64	15.2	16	64	0	110	3	-	06947	TVAR-160-400-064-110-000-16
20	0.8	45	80	19.05	20	80	0	130	3	-	06953	TVAR-200-080-080-130-000-20
20	2	25	60	19	20	60	0	100	3	-	10892	TVAR-200-200-060-100-000-20
20	4	45	80	19	20	80	0	130	3	-	06961	TVAR-200-400-080-130-000-20

*Technical changes reserved.

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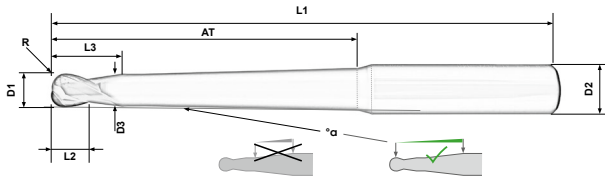
[ct] ▼+▼▼▼

Torus cutter with two flutes, conically strengthened.
The cutting geometry is designed for maximum process reliabilty even under bad conditions.

+ high process reliabilty
+ creates very plain surfaces
+ conically strengthened
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 02550 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	25478	917	80	0.03	0.60	0.018

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.7	0.1	1	3	0.6	6	11	0.4	60	2	-	06226	CT-007-010-011-060-004-06
1	0.1	1.5	6	0.9	6	16	0.4	60	2	-	00250	CT-010-010-016-060-004-06
1	0.1	2	6	0.9	6	8	0.4	60	2	-	02672	CT-010-010-008-060-004-06
1	0.1	2	6	0.9	6	15	0.9	60	2	-	02551	CT-010-010-015-060-009-06
1	0.1	2	6	0.9	6	20	0.4	60	2	-	02548	CT-010-010-020-060-004-06
1	0.1	2	6	0.9	6	20	0.9	60	2	-	02552	CT-010-010-020-060-009-06
1	0.1	2	6	0.9	6	25	0.4	75	2	-	02549	CT-010-010-025-075-004-06
1	0.1	2	6	0.9	6	25	0.9	75	2	-	02553	CT-010-010-025-075-009-06
1	0.1	2	6	0.9	6	30	0.4	75	2	-	02550	CT-010-010-030-075-004-06
1	0.1	2	6	0.9	6	30	0.9	75	2	-	02554	CT-010-010-030-075-009-06
1.2	0.1	3	6	1.1	6	15	0.4	60	2	-	02674	CT-012-010-015-060-004-06
1.2	0.1	3	6	1.1	6	30	0.4	70	2	-	02675	CT-012-010-030-070-004-06
1.2	0.1	3	6	1.1	6	33	0.9	70	2	-	06164	CT-012-010-033-070-009-06
1.2	0.1	3	6	1.1	6	38	0.9	70	2	-	06165	CT-012-010-038-070-009-06
3	0.2	4	10	2.9	6	80	0.9	120	2	-	00896	CT-030-020-080-120-009-06
3	0.3	4	10	2.9	6	45	0.9	80	2	-	17255	CT-030-030-045-080-009-06
3	0.5	2	12	2.9	6	40	0.9	85	2	-	12016	CT-030-050-040-085-009-06
4	0.5	6	20	3.8	6	40	1.5	80	2	-	00792	CT-040-050-040-080-015-06
4	1	4	20	3.8	8	60	0.9	120	2	-	11934	CT-040-100-060-120-009-08
4	1	6	20	3.8	6	40	1.5	100	2	-	00298	CT-040-100-040-100-015-06
4	1	6	20	3.8	6	40	1.47	80	2	-	00791	CT-040-100-040-080-015-06
4	1	6	20	3.8	6	40	0.9	80	2	-	11946	CT-040-100-040-080-009-06
6	0.5	9	40	5.8	8	60	0.9	100	2	-	02679	CT-060-050-060-100-009-08
6	0.5	9	40	5.8	10	85	0.9	120	2	-	02680	CT-060-050-085-120-009-10
6	1	9	20	5.8	8	60	0.9	100	2	-	04422	CT-060-100-060-100-009-08
6	1	9	20	5.8	8	65	0.9	120	2	-	00795	CT-060-100-065-120-009-08
6	2	9	25	5.8	8	60	0.9	120	2	-	00301	CT-060-200-060-120-009-08
6	2	9	25	5.8	8	65	0.9	100	2	-	10011	CT-060-200-065-100-009-08
8	1	10	20	7.8	10	70	0.8	120	2	-	00789	CT-080-100-070-120-008-10
8	2	10	20	7.8	10	70	0.8	120	2	-	00790	CT-080-200-070-120-008-10
8	3	10	20	7.8	12	70	0.9	120	2	-	01289	CT-080-300-070-120-009-12
10	3	10	20	9.7	16	100	0.9	150	2	-	07986	CT-100-300-100-150-009-16
10	4	10	20	9.7	12	70	0.8	120	2	-	01290	CT-100-400-070-120-008-12

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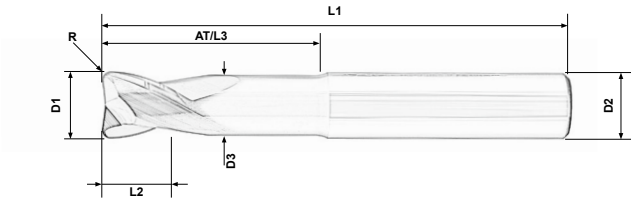
[ctz] ▼+▼▼▼

Torus cutter with two flutes, cylindrically stepped.
The cutting geometry is designed for maximum process reliabilty even under bad conditions.

+ high process reliabilty
+ creates very plain surfaces
+ cylindrically stepped
+ great overhangs



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 08810 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	23 885	3 822	300	0.40	2.10	0.08

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	0.2	3	15	1.85	6	15	0	57	2	-	07797	CTZA-020-020-015-057-000-06
2	0.2	3	16	1.92	6	16	0	57	2	-	03529	CTZA-020-020-016-057-000-06
2	0.5	3	15	1.85	6	15	0	57	2	-	07798	CTZA-020-050-015-057-000-06
3	0.5	4	9	2.88	6	9	0	57	2	-	05617	CTZA-030-050-009-057-000-06
3	0.5	4	18	2.73	6	18	0	57	2	-	07799	CTZA-030-050-018-057-000-06
4	0.3	5	15	3.7	6	15	0	57	2	-	09754	CTZA-040-030-015-057-000-06
4	0.5	5	12	3.73	6	12	0	57	2	-	05618	CTZA-040-050-012-057-000-06
4	0.5	5	20	3.73	6	20	0	57	2	-	08810	CTZA-040-050-020-057-000-06
4	1	5	25	3.73	6	25	0	57	2	-	07800	CTZA-040-100-025-057-000-06
5	0.3	6	20	4.7	6	20	0	57	2	-	10126	CTZA-050-030-020-057-000-06
5	0.5	6	15	4.7	6	15	0	57	2	-	05619	CTZA-050-050-015-057-000-06
5	0.5	6	20	4.7	6	20	0	57	2	-	10129	CTZA-050-050-020-057-000-06
6	0.3	7	30	5.54	6	30	0	70	2	-	10127	CTZA-060-030-030-070-000-06
6	0.5	7	25	5.5	6	25	0	57	2	-	07217	CTZA-060-050-025-057-000-06
6	0.5	7	30	5.54	6	30	0	70	2	-	10128	CTZA-060-050-030-070-000-06
6	1	7	20	5.5	6	20	0	57	2	-	05620	CTZA-060-100-020-057-000-06
6	1	7	33	5.5	6	33	0	70	2	-	05851	CTZA-060-100-033-070-000-06
8	1	9	26	7.5	8	26	0	64	2	-	05621	CTZA-080-100-026-064-000-08
8	1	9	43	7.54	8	43	0	80	2	-	05852	CTZA-080-100-043-080-000-08
8	2	9	30	7.5	8	30	0	80	2	-	09908	CTZA-080-200-030-080-000-08
10	1.5	11	31	9.3	10	31	0	73	2	-	05622	CTZA-100-150-031-073-000-10
10	1.5	11	43	9.3	10	43	0	85	2	-	05853	CTZA-100-150-043-085-000-10
10	2	11	40	9.3	10	40	0	85	2	-	09909	CTZA-100-200-040-085-000-10
12	1	13	65	11.3	12	65	0	100	2	-	02681	CTZA-120-100-065-100-000-12
12	1	13	90	11.3	12	90	0	120	2	-	02682	CTZA-120-100-090-120-000-12
12	1.5	13	37	11.3	12	37	0	84	2	-	05623	CTZA-120-150-037-084-000-12
12	1.5	13	55	11.3	12	55	0	100	2	-	05854	CTZA-120-150-055-100-000-12
12	1.5	13	80	11.35	12	80	0	120	2	-	11026	CTZA-120-150-080-120-000-12
12	2	13	40	11.3	12	40	0	84	2	-	09910	CTZA-120-200-040-084-000-12
12	3	13	60	11.3	12	60	0	100	2	-	07995	CTZA-120-300-060-100-000-12
16	2	17	43	15.3	16	43	0	93	2	-	05624	CTZA-160-200-043-093-000-16
16	2	17	66	15.3	16	66	0	115	2	-	05855	CTZA-160-200-066-115-000-16

*Technical changes reserved.

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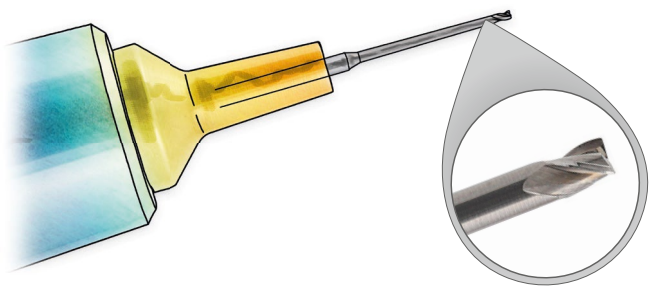
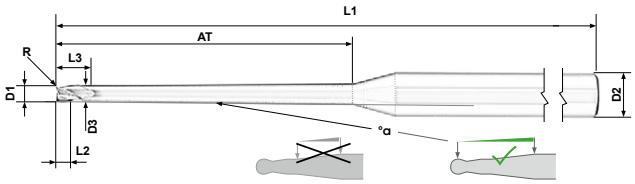


[cf] ▼+▼▼▼

Torus cutter with three flutes, conically strenghtened.
This tool is suitable for milling ribs in NE metal with high feed rates at low infeeds.

+ high process reliability
+ roughing and finishing
+ conically strenghtened
+ very great overhangs



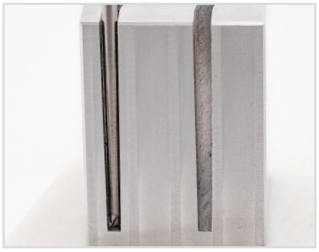
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 01390 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	10616	1 274	80	0.06	1.70	0.04

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1.2	0.1	2	8	1.1	6	19	0.9	75	3	-	06120	CF-012-010-019-075-009-06
1.2	0.1	2	8	1.1	6	25	0.9	75	3	-	06121	CF-012-010-025-075-009-06
1.5	0.1	2	8	1.4	6	20	0.4	60	3	-	02555	CF-015-010-020-060-004-06
1.5	0.1	2	8	1.4	6	25	0.4	60	3	-	02556	CF-015-010-025-060-004-06
1.5	0.1	2	8	1.4	6	25	0.9	75	3	-	02559	CF-015-010-025-075-009-06
1.5	0.1	2	8	1.4	6	30	0.4	75	3	-	02557	CF-015-010-030-075-004-06
1.5	0.1	2	8	1.4	6	35	0.9	80	3	-	02560	CF-015-010-035-080-009-06
1.5	0.1	2	8	1.4	6	40	0.4	85	3	-	02558	CF-015-010-040-085-004-06
1.5	0.1	2	8	1.4	6	55	0.9	100	3	-	02561	CF-015-010-055-100-009-06
1.5	0.1	2	8	1.4	6	75	0.9	120	3	-	02562	CF-015-010-075-120-009-06
1.5	0.2	2	8	1.4	6	53	0.5	100	3	-	06782	CF-015-020-053-100-005-06
1.8	0.1	2	8	1.7	6	30	0.9	75	3	-	01460	CF-018-010-030-075-009-06
1.8	0.1	2	8	1.7	6	50	0.9	100	3	-	01479	CF-018-010-050-100-009-06
2	0.1	3	8	1.9	6	25	0.9	60	3	-	00258	CF-020-010-025-060-009-06
2	0.1	3	8	1.9	6	40	0.9	100	3	-	00281	CF-020-010-040-100-009-06
2	0.1	3	8	1.9	6	40	0.4	80	3	-	01387	CF-020-010-040-080-004-06
2	0.1	3	8	1.9	6	55	0.9	120	3	-	00282	CF-020-010-055-120-009-06
2	0.1	3	8	1.9	6	55	0.4	100	3	-	01388	CF-020-010-055-100-004-06
2	0.1	3	8	1.9	6	70	0.4	120	3	-	01389	CF-020-010-070-120-004-06
2	0.5	3	8	1.9	6	70	0.4	120	3	-	01534	CF-020-050-070-120-004-06
2.4	0.1	3	8	2.3	6	40	0.4	80	3	-	01390	CF-024-010-040-080-004-06
2.4	0.1	3	8	2.3	6	55	0.4	100	3	-	01391	CF-024-010-055-100-004-06
2.4	0.1	3	8	2.3	6	70	0.4	120	3	-	01392	CF-024-010-070-120-004-06
2.5	0.3	3	8	2.4	6	30	1.4	75	3	-	09835	CF-025-030-030-075-014-06
3	0.1	4	8	2.9	6	40	0.4	75	3	-	01440	CF-030-010-040-075-004-06
3	0.1	4	8	2.9	6	55	0.4	100	3	-	01442	CF-030-010-055-100-004-06
3	0.1	4	8	2.9	6	70	0.4	120	3	-	01443	CF-030-010-070-120-004-06
3	0.2	4	8	2.9	6	28	0.9	60	3	-	07989	CF-030-020-028-060-009-06
3	0.2	4	8	2.9	6	31	0.9	80	3	-	08603	CF-030-020-031-080-009-06
3	0.2	4	8	2.9	6	37	0.9	80	3	-	08602	CF-030-020-037-080-009-06



*Technical changes reserved.

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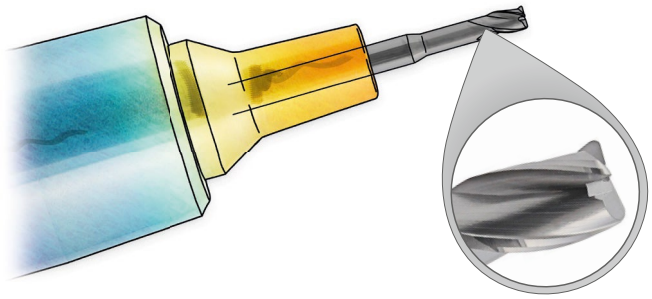
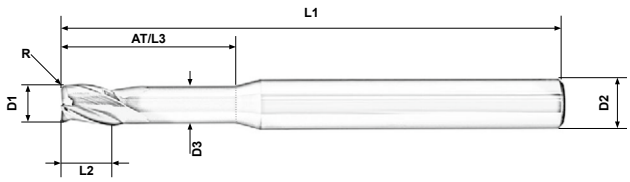


[3cz]

Universally usable end mill with corner radius and short cutting edge for machining NE metals. Optimized for universal wall and pocket machining.

+ short cutting edge, no chip clamping
+ roughing and finishing
+ wall and ground machining
+ 2-D and 3-D machining



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 01303 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	19108	3898	300	0.087	0.00	0.068

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	+/-	+/-	-	-	-	+	+/-	+	-	-

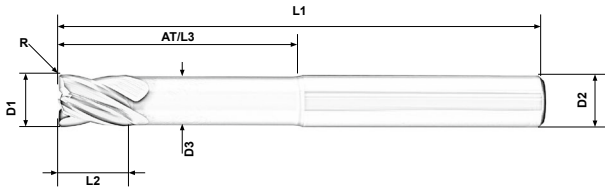
D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	0.2	5	20	2.7	6	20	0	60	3	-	06475	3CZ-030-020-020-060-000-06
4	0.25	6	20	3.73	6	20	0	60	3	-	00595	3CZ-040-025-020-060-000-06
4	0.25	6	25	3.7	6	25	0	60	3	-	10307	3CZ-040-025-025-060-000-06
4	0.5	6	28	3.7	6	28	0	60	3	-	06476	3CZ-040-050-028-060-000-06
5	0.5	6	20	4.7	6	20	0	60	3	-	01303	3CZ-050-050-020-060-000-06
6	0.25	8	32	5.7	6	32	0	60	3	-	06477	3CZ-060-025-032-060-000-06
6	0.5	8	32	5.5	6	32	0	60	3	-	06478	3CZ-060-050-032-060-000-06
8	1	10	30	7.54	8	30	0	64	3	-	03658	3CZ-080-100-030-064-000-08

„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics

[4cz]

Universally usable end mill with corner radius and short cutting edge for machining NE metals. Optimized for universal wall and pocket machining.

+ short cutting edge, no chip clamping
+ roughing and finishing
+ wall and ground machining
+ 2-D and 3-D machining



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 00728 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	9554	5274	300	0.185	0.00	0.138

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	+/-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0.5	8	20	5.5	6	20	0	60	4	-	16403	4CZ-060-050-020-060-000-06
6	0.5	8	35	5.5	6	35	0	75	4	-	00596	4CZ-060-050-035-075-000-06
6	1	8	35	5.5	6	35	0	75	4	-	04540	4CZ-060-100-035-075-000-06
8	0.5	10	35	7.54	8	35	0	75	4	-	06482	4CZ-080-050-035-075-000-08
8	1	10	35	7.5	8	35	0	75	4	-	00624	4CZ-080-100-035-075-000-08
10	0.5	12	35	9.3	10	35	0	75	4	-	00728	4CZ-100-050-035-075-000-10
10	1	12	35	9.3	10	35	0	75	4	-	00625	4CZ-100-100-035-075-000-10
12	1	15	42	11.3	12	42	0	100	4	-	04541	4CZ-120-100-042-100-000-12
16	1	24	95	15.3	16	95	0	150	4	-	00801	4CZ-160-100-095-150-000-16

*Technical changes reserved.

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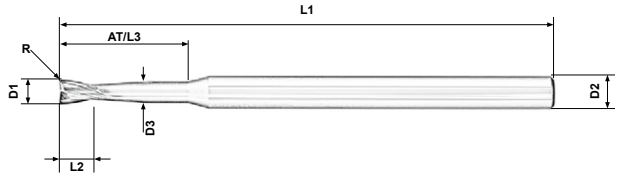
[mtne]

Universally usable torus cutter with two flutes, cylindrically stepped, for machining NE metal. The cutting geometry is suitable for conventional HSC machining.

+ low concentricity tolerances
+ cylindrically stepped
+ stable cutting edge of the corner radius



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 03626 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Cu	28662	688	90	0.025	0.60	0.012

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.4	0.04	0.6	2	0.35	4	2	0	60	2	-	10690	MTNE-004-004-002-060-000-04
0.4	0.04	0.6	4	0.35	4	4	0	60	2	-	10691	MTNE-004-004-004-060-000-04
0.4	0.04	0.6	6	0.35	4	6	0	60	2	-	10692	MTNE-004-004-006-060-000-04
0.6	0.06	0.9	3	0.55	4	3	0	60	2	-	10693	MTNE-006-006-003-060-000-04
0.6	0.06	0.9	6	0.55	4	6	0	60	2	-	10694	MTNE-006-006-006-060-000-04
0.6	0.06	0.9	9	0.55	4	9	0	60	2	-	10695	MTNE-006-006-009-060-000-04
0.8	0.08	1.2	6	0.7	4	6	0	60	2	-	15832	MTNE-008-008-006-060-000-04
0.8	0.08	1.2	10	0.75	4	10	0	60	2	-	15833	MTNE-008-008-010-060-000-04
1	0.1	1.5	5	0.9	4	5	0	60	2	-	03624	MTNE-010-010-005-060-000-04
1	0.1	1.5	7	0.9	4	7	0	60	2	-	10334	MTNE-010-010-007-060-000-04
1	0.1	1.5	10	0.9	4	10	0	60	2	-	03625	MTNE-010-010-010-060-000-04
1	0.1	1.5	12	0.9	4	12	0	60	2	-	10688	MTNE-010-010-012-060-000-04
1	0.1	1.5	15	0.9	4	15	0	60	2	-	03626	MTNE-010-010-015-060-000-04
1.2	0.2	1.8	6	1.1	4	6	0	60	2	-	04539	MTNE-012-020-006-060-000-04
1.2	0.2	1.8	10	1.1	4	10	0	60	2	-	06696	MTNE-012-020-010-060-000-04
1.5	0.15	2.3	8	1.35	4	8	0	60	2	-	03627	MTNE-015-015-008-060-000-04
1.5	0.15	2.3	12	1.4	4	12	0	60	2	-	10335	MTNE-015-015-012-060-000-04
1.5	0.15	2.3	15	1.4	4	15	0	60	2	-	03628	MTNE-015-015-015-060-000-04
1.5	0.15	2.3	16	1.4	4	16	0	60	2	-	10687	MTNE-015-015-016-060-000-04
1.5	0.15	2.3	23	1.4	4	23	0	60	2	-	03629	MTNE-015-015-023-060-000-04

*Technical changes reserved.

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[mtne]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	+/-	-	-	-	+	+/-	+	-	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	0.2	3	5	1.85	4	5	0	60	2	-	06697	MTNE-020-020-005-060-000-04
2	0.2	3	10	1.85	4	10	0	60	2	-	03630	MTNE-020-020-010-060-000-04
2	0.2	3	15	1.85	4	15	0	60	2	-	03632	MTNE-020-020-015-060-000-04
2	0.2	3	20	1.85	4	20	0	60	2	-	03634	MTNE-020-020-020-060-000-04
2	0.2	3	30	1.85	4	30	0	75	2	-	03636	MTNE-020-020-030-075-000-04
3	0.2	4.5	20	2.7	4	20	0	60	2	-	07057	MTNE-030-020-020-060-000-04
3	0.3	4.5	15	2.7	4	15	0	60	2	-	03638	MTNE-030-030-015-060-000-04
3	0.3	4.5	21	2.7	4	21	0	60	2	-	03640	MTNE-030-030-021-060-000-04
3	0.3	4.5	27	2.7	4	27	0	75	2	-	03642	MTNE-030-030-027-075-000-04
3	0.3	4.5	30	2.7	4	30	0	75	2	-	04342	MTNE-030-030-030-075-000-04
4	0.2	6	12	3.7	4	12	0	60	2	-	17078	MTNE-040-020-012-060-000-04
4	0.2	6	24	3.7	4	24	0	60	2	-	07058	MTNE-040-020-024-060-000-04
4	0.4	6	16	3.7	4	16	0	60	2	-	03645	MTNE-040-040-016-060-000-04
4	0.4	6	24	3.7	4	24	0	60	2	-	03648	MTNE-040-040-024-060-000-04
4	0.4	6	32	3.7	4	32	0	75	2	-	03650	MTNE-040-040-032-075-000-04
4	0.4	6	38	3.7	4	38	0	75	2	-	04343	MTNE-040-040-038-075-000-04
6	0.5	8	36	5.7	6	36	0	75	2	-	04585	MTNE-060-050-036-075-000-06

*Technical changes reserved.

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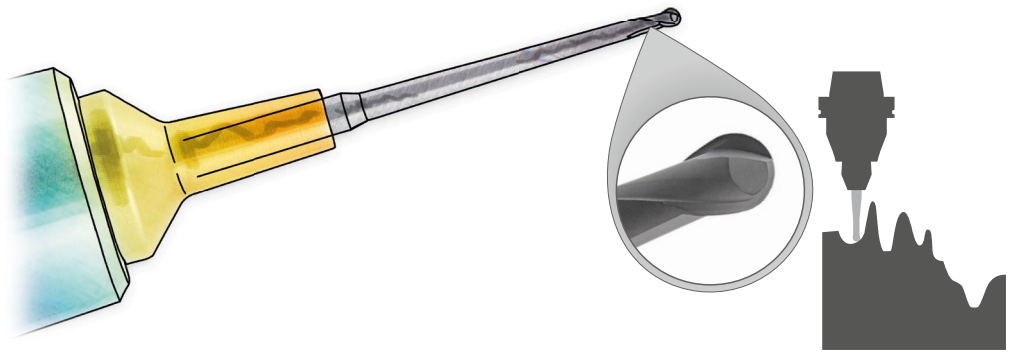
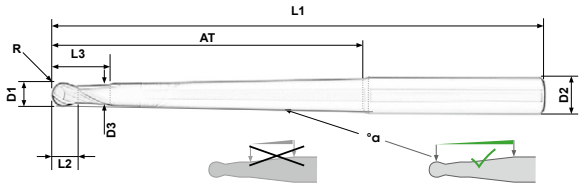


[dkk] ▼+▼▼▼

Conical ballnose cutter with two flutes. The diamond coating allows the machining of graphite. The tools are very precise and have an excellent concentricity.

+ for great overhang length
+ roughing and finishing



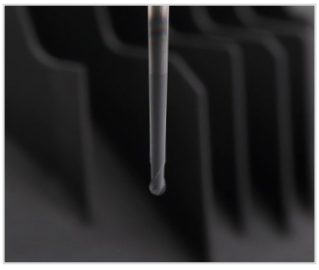
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 10295 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	8493	1767	160	0.157	0.00	0.104

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	0.75	4	0.97	6	10	0.4	60	2	-	06784	DKK-010-050-010-060-004-06
1	0.5	0.75	4	0.97	6	15	0.4	60	2	-	06785	DKK-010-050-015-060-004-06
1.5	0.75	1.5	6	1.47	6	50	0.5	90	2	-	11495	DKK-015-075-050-090-005-06
2	1	2	6	1.9	6	35	0.4	70	2	-	06786	DKK-020-100-035-070-004-06
2	1	2	6	1.9	6	35	0.9	80	2	-	06800	DKK-020-100-035-080-009-06
2	1	2	6	1.9	6	50	0.4	100	2	-	06801	DKK-020-100-050-100-004-06
2	1	2	6	1.9	6	50	0.9	80	2	-	10286	DKK-020-100-050-080-009-06
2	1	2	6	1.9	6	70	0.9	100	2	-	10287	DKK-020-100-070-100-009-06
2	1	2	6	1.9	6	75	0.45	120	2	-	07493	DKK-020-100-075-120-0045-06
3	1.5	3	8	2.8	6	40	0.9	80	2	-	06799	DKK-030-150-040-080-009-06
3	1.5	3	4	2.8	6	50	0.9	80	2	-	10288	DKK-030-150-050-080-009-06
3	1.5	3	4	2.8	6	58	0.5	100	2	-	11235	DKK-030-150-058-100-005-06
3	1.5	3	8	2.8	6	70	0.9	100	2	-	10289	DKK-030-150-070-100-009-06
3	1.5	3	4	2.8	6	70	0.5	120	2	-	11424	DKK-030-150-070-120-005-06
3	1.5	3	5.5	2.8	6	80	0.9	110	2	-	10750	DKK-030-150-080-110-009-06
3	1.5	3	12	2.8	6	100	0.85	130	2	-	10751	DKK-030-150-100-130-0085-06
3	1.5	3	12	2.8	6	100	0.25	135	2	-	10987	DKK-030-150-100-135-0025-06
4	2	4	8	3.7	6	50	0.9	80	2	-	10290	DKK-040-200-050-080-009-06
4	2	4	10	3.7	8	60	0.9	100	2	-	06798	DKK-040-200-060-100-009-08
4	2	4	8	3.7	6	70	0.9	100	2	-	10291	DKK-040-200-070-100-009-06



*Technical changes reserved.

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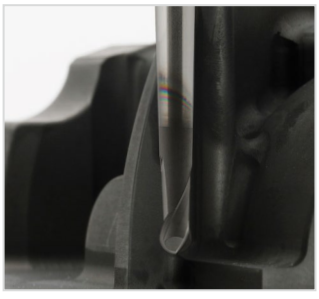
[dkk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	2	4	8	3.7	6	70	0.5	110	2	-	11425	DKK-040-200-070-110-005-06
5	2.5	5	10	4.6	8	60	0.9	100	2	-	10292	DKK-050-250-060-100-009-08
5	2.5	5	10	4.6	8	60	0.5	100	2	-	11497	DKK-050-250-060-100-005-08
5	2.5	5	10	4.6	8	80	0.9	110	2	-	10293	DKK-050-250-080-110-009-08
5	2.5	5	10	4.6	8	80	0.5	120	2	-	11498	DKK-050-250-080-120-005-08
6	3	6	15	5.6	8	60	0.9	100	2	-	10294	DKK-060-300-060-100-009-08
6	3	6	15	5.6	8	75	0.5	120	2	-	11325	DKK-060-300-075-120-005-08
6	3	6	15	5.6	8	90	0.65	120	2	-	10295	DKK-060-300-090-120-006-08
6	3	6	25	5.6	8	100	0.5	130	2	-	10752	DKK-060-300-100-130-005-08
6	3	6	25	5.6	8	100	0.25	135	2	-	10988	DKK-060-300-100-135-0025-08
6	3	6	12	5.6	10	120	0.9	175	2	-	06797	DKK-060-300-120-175-009-10
6	3	6	12	5.6	10	120	0.5	175	2	-	11327	DKK-060-300-120-175-005-10
6	3	6	25	5.6	8	140	0.4	170	2	-	10753	DKK-060-300-140-170-004-08
7	3.5	7	30	6.5	10	100	0.9	130	2	-	10754	DKK-070-350-100-130-009-10
8	4	8	20	7.5	10	60	0.9	100	2	-	10297	DKK-080-400-060-100-009-10
8	4	8	15	7.5	10	90	0.4	130	2	-	07199	DKK-080-400-090-130-004-10
8	4	8	20	7.5	12	100	0.9	130	2	-	10296	DKK-080-400-100-130-009-12
8	4	8	15	7.5	10	120	0.4	165	2	-	07200	DKK-080-400-120-165-004-10



*Technical changes reserved.

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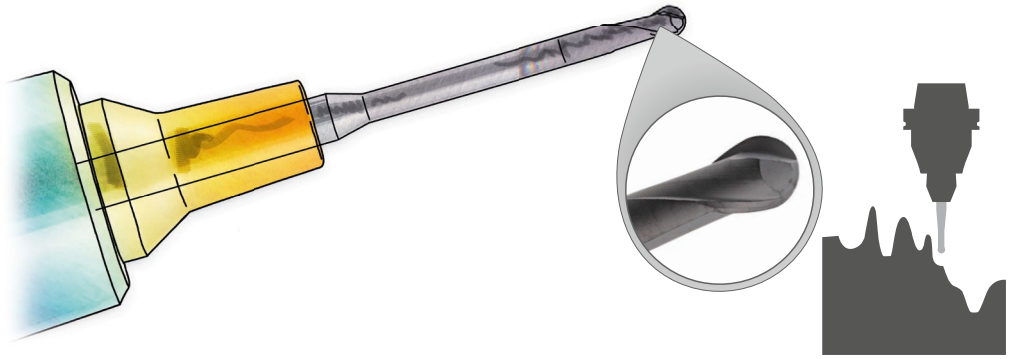
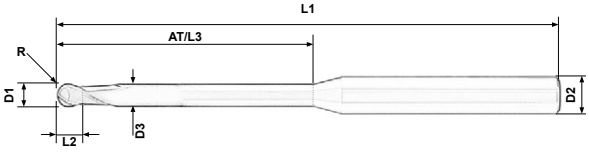


[2dk]

▼ + ▼▼▼

Cylindrically stepped ballnose cutter with two flutes.
The diamond coating allows the machining of graphite.
The tools are very precise and have an excellent concentricity.

+ for great overhang length
+ roughing and finishing



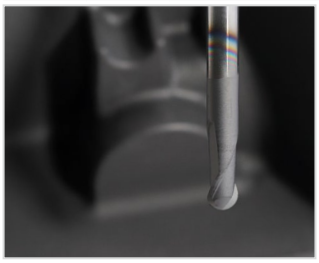
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 01206 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	31 847	2675	200	0.15	0.00	0.042

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.3	0.15	0.25	2	0.28	4	2	0	60	2	-	02848	2DK-003-015-002-060-000-04
0.3	0.15	0.25	3	0.27	4	3	0	60	2	-	02849	2DK-003-015-003-060-000-04
0.3	0.15	0.25	5	0.27	4	5	0	60	2	-	02850	2DK-003-015-005-060-000-04
0.4	0.2	0.3	2	0.38	4	2	0	60	2	-	02851	2DK-004-020-002-060-000-04
0.4	0.2	0.3	4	0.36	4	4	0	60	2	-	02852	2DK-004-020-004-060-000-04
0.4	0.2	0.3	6	0.36	4	6	0	60	2	-	02853	2DK-004-020-006-060-000-04
0.5	0.25	0.4	2.5	0.48	6	2.5	0	60	2	-	11707	2DK-005-025-002-060-000-06
0.5	0.25	0.4	3	0.48	4	3	0	60	2	-	02854	2DK-005-025-003-060-000-04
0.5	0.25	0.4	5	0.45	4	5	0	60	2	-	02855	2DK-005-025-005-060-000-04
0.5	0.25	0.4	5	0.45	6	5	0	60	2	-	11708	2DK-005-025-005-060-000-06
0.5	0.25	0.4	7.5	0.45	6	7.5	0	60	2	-	11709	2DK-005-025-007-060-000-06
0.5	0.25	0.4	8	0.45	4	8	0	60	2	-	02856	2DK-005-025-008-060-000-04
0.5	0.25	0.4	10	0.47	4	10	0	60	2	-	02857	2DK-005-025-010-060-000-04
0.6	0.3	0.45	3	0.58	4	3	0	60	2	-	02858	2DK-006-030-003-060-000-04
0.6	0.3	0.45	6	0.55	4	6	0	60	2	-	02859	2DK-006-030-006-060-000-04
0.6	0.3	0.45	9	0.55	4	9	0	60	2	-	02860	2DK-006-030-009-060-000-04
0.6	0.3	0.45	12	0.54	4	12	0	60	2	-	02861	2DK-006-030-012-060-000-04
0.7	0.35	0.55	4	0.68	4	4	0	60	2	-	02862	2DK-007-035-004-060-000-04
0.7	0.35	0.55	7	0.64	4	7	0	60	2	-	02863	2DK-007-035-007-060-000-04
0.7	0.35	0.55	11	0.64	4	11	0	60	2	-	02864	2DK-007-035-011-060-000-04
0.8	0.4	0.6	3	0.75	4	3	0	60	2	-	02865	2DK-008-040-003-060-000-04
0.8	0.4	0.6	6	0.75	4	6	0	60	2	-	02866	2DK-008-040-006-060-000-04
0.8	0.4	0.6	6	0.78	6	6	0	60	2	-	09696	2DK-008-040-006-060-000-06
0.8	0.4	0.6	9	0.72	4	9	0	60	2	-	02867	2DK-008-040-009-060-000-04
0.8	0.4	0.6	12	0.72	4	12	0	60	2	-	02868	2DK-008-040-012-060-000-04
0.9	0.45	0.7	5	0.88	4	5	0	60	2	-	02869	2DK-009-045-005-060-000-04
0.9	0.45	0.7	9	0.81	4	9	0	60	2	-	02870	2DK-009-045-009-060-000-04
0.9	0.45	0.7	14	0.81	4	14	0	60	2	-	02871	2DK-009-045-014-060-000-04
1	0.5	0.75	3	0.95	4	3	0	60	2	-	02872	2DK-010-050-003-060-000-04
1	0.5	0.75	5	0.97	4	5	0	60	2	-	02873	2DK-010-050-005-060-000-04



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[2dk]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
1	0.5	0.75	5	0.97	6	5	0	60	2	-	11710	2DK-010-050-005-060-000-06
1	0.5	0.75	8	0.97	4	8	0	60	2	-	02874	2DK-010-050-008-060-000-04
1	0.5	0.75	10	0.9	6	10	0	60	2	-	01204	2DK-010-050-010-060-000-06
1	0.5	0.75	11	0.9	4	11	0	60	2	-	02875	2DK-010-050-011-060-000-04
1	0.5	0.75	15	0.9	4	15	0	60	2	-	02876	2DK-010-050-015-060-000-04
1	0.5	0.75	15	0.9	6	15	0	60	2	-	09697	2DK-010-050-015-060-000-06
1	0.5	0.75	20	0.9	4	20	0	60	2	-	03726	2DK-010-050-020-060-000-04
1.5	0.75	1.15	5	1.43	4	5	0	60	2	-	02877	2DK-015-075-005-060-000-04
1.5	0.75	1.15	7.5	1.47	6	7.5	0	60	2	-	11711	2DK-015-075-007-060-000-06
1.5	0.75	1.15	8	1.43	4	8	0	60	2	-	02878	2DK-015-075-008-060-000-04
1.5	0.75	1.15	10	1.47	6	10	0	60	2	-	09698	2DK-015-075-010-060-000-06
1.5	0.75	1.15	12	1.43	4	12	0	60	2	-	02879	2DK-015-075-012-060-000-04
1.5	0.75	1.15	15	1.4	6	15	0	60	2	-	01203	2DK-015-075-015-060-000-06
1.5	0.75	1.15	15	1.4	4	15	0	60	2	-	02880	2DK-015-075-015-060-000-04
1.5	0.75	1.15	19	1.4	4	19	0	60	2	-	02881	2DK-015-075-019-060-000-04
1.5	0.75	1.15	22.5	1.4	6	22.5	0	60	2	-	11712	2DK-015-075-022-060-000-06
1.5	0.75	1.15	23	1.4	4	23	0	60	2	-	02882	2DK-015-075-023-060-000-04
1.5	0.75	1.15	25	1.4	6	25	0	60	2	-	01195	2DK-015-075-025-060-000-06
2	1	2	5	1.93	4	5	0	60	2	-	02883	2DK-020-100-005-060-000-04
2	1	2	10	1.9	6	10	0	60	2	-	01205	2DK-020-100-010-060-000-06
2	1	2	10	1.93	4	10	0	60	2	-	02884	2DK-020-100-010-060-000-04
2	1	2	15	1.93	4	15	0	60	2	-	02885	2DK-020-100-015-060-000-04
2	1	2	15	1.9	6	15	0	60	2	-	09699	2DK-020-100-015-060-000-06
2	1	2	20	1.9	6	20	0	60	2	-	01206	2DK-020-100-020-060-000-06
2	1	2	20	1.93	4	20	0	60	2	-	02886	2DK-020-100-020-060-000-04
2	1	2	25	1.93	4	25	0	70	2	-	02887	2DK-020-100-025-070-000-04
2	1	2	25	1.9	6	25	0	60	2	-	11713	2DK-020-100-025-060-000-06
2	1	2	30	1.9	6	30	0	70	2	-	01207	2DK-020-100-030-070-000-06
2	1	2	35	1.9	4	35	0	70	2	-	02977	2DK-020-100-035-070-000-04
3	1.5	3	10	2.8	4	10	0	60	2	-	02888	2DK-030-150-010-060-000-04
3	1.5	3	10	2.83	6	10	0	60	2	-	09700	2DK-030-150-010-060-000-06
3	1.5	3	15	2.83	4	15	0	60	2	-	02889	2DK-030-150-015-060-000-04
3	1.5	3	15	2.8	6	15	0	60	2	-	11714	2DK-030-150-015-060-000-06
3	1.5	3	21	2.83	6	21	0	60	2	-	01208	2DK-030-150-021-060-000-06
3	1.5	3	24	2.83	4	24	0	70	2	-	02890	2DK-030-150-024-070-000-04
3	1.5	3	30	2.83	6	30	0	70	2	-	01209	2DK-030-150-030-070-000-06
3	1.5	3	30	2.8	4	30	0	70	2	-	02891	2DK-030-150-030-070-000-04
3	1.5	3	30	2.83	6	30	0	80	2	-	07831	2DK-030-150-030-080-000-06
3	1.5	3	40	2.8	6	40	0	80	2	-	01210	2DK-030-150-040-080-000-06
4	2	4	16	3.74	4	16	0	60	2	-	02892	2DK-040-200-016-060-000-04
4	2	4	20	3.74	6	20	0	60	2	-	01211	2DK-040-200-020-060-000-06
4	2	4	20	3.74	4	20	0	70	2	-	09992	2DK-040-200-020-070-000-04
4	2	4	24	3.74	4	24	0	70	2	-	02893	2DK-040-200-024-070-000-04
4	2	4	30	3.74	4	30	0	70	2	-	02894	2DK-040-200-030-070-000-04
4	2	4	32	3.7	6	32	0	70	2	-	11715	2DK-040-200-032-070-000-06
4	2	4	36	3.74	4	36	0	70	2	-	02895	2DK-040-200-036-070-000-04
4	2	4	40	3.74	6	40	0	80	2	-	01212	2DK-040-200-040-080-000-06
4	2	4	60	3.7	6	60	0	100	2	-	11716	2DK-040-200-060-100-000-06
5	2.5	5	15	4.6	6	15	0	60	2	-	02896	2DK-050-250-015-060-000-06
5	2.5	5	20	4.6	6	20	0	60	2	-	02897	2DK-050-250-020-060-000-06
5	2.5	5	30	4.6	6	30	0	75	2	-	02898	2DK-050-250-030-075-000-06
5	2.5	5	45	4.6	6	45	0	100	2	-	02978	2DK-050-250-045-100-000-06
8	4	8	60	7.55	8	60	0	115	2	-	06558	2DK-080-400-060-115-000-08

*Technical changes reserved.

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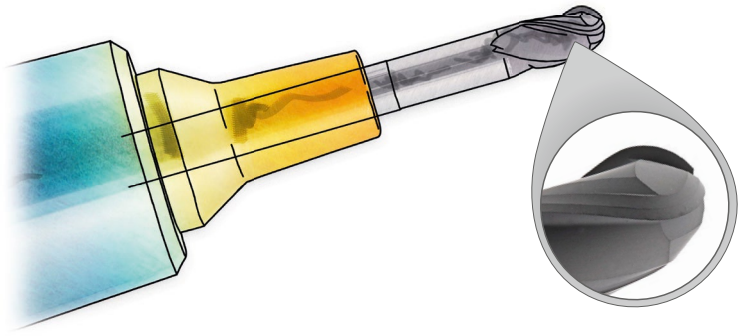
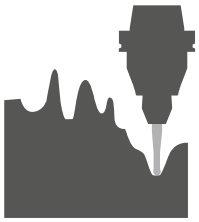
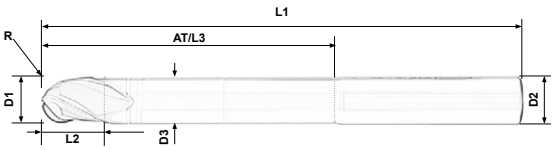




[3dk] ▼+▼▼▼

Cylindrically stepped ballnose cutter with three flutes. The diamond coating allows the machining of graphite. The tools are very precise and have an excellent concentricity.

+ for great overhang lengths
+ roughing and finishing



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 02906 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	17 994	4 858	565	0.80	0.00	0.09

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	3	6	18	5.64	6	18	0	60	3	-	02899	3DK-060-300-018-060-000-06
6	3	6	24	5.6	6	24	0	60	3	-	02900	3DK-060-300-024-060-000-06
6	3	6	36	5.6	6	36	0	75	3	-	02901	3DK-060-300-036-075-000-06
6	3	6	45	5.6	6	45	0	100	3	-	02974	3DK-060-300-045-100-000-06
6	3	6	75	5.6	6	75	0	100	3	-	05627	3DK-060-300-075-100-000-06
8	4	8	24	7.5	8	24	0	70	3	-	02902	3DK-080-400-024-070-000-08
8	4	8	32	7.5	8	32	0	70	3	-	02903	3DK-080-400-032-070-000-08
8	4	8	48	7.55	8	48	0	100	3	-	02904	3DK-080-400-048-100-000-08
8	4	8	100	7.5	8	100	0	150	3	-	02979	3DK-080-400-100-150-000-08
10	5	10	30	9.5	10	30	0	75	3	-	02905	3DK-100-500-030-075-000-10
10	5	10	40	9.5	10	40	0	100	3	-	02906	3DK-100-500-040-100-000-10
10	5	10	60	9.5	10	60	0	100	3	-	02907	3DK-100-500-060-100-000-10
10	5	10	90	9.5	10	90	0	150	3	-	02975	3DK-100-500-090-150-000-10
12	6	12	36	11.4	12	36	0	80	3	-	02908	3DK-120-600-036-080-000-12
12	6	12	48	11.4	12	48	0	100	3	-	02909	3DK-120-600-048-100-000-12
12	6	12	72	11.4	12	72	0	120	3	-	02910	3DK-120-600-072-120-000-12
12	6	12	100	11.4	12	100	0	150	3	-	02976	3DK-120-600-100-150-000-12

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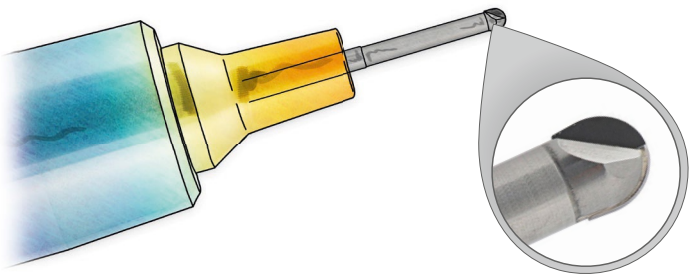
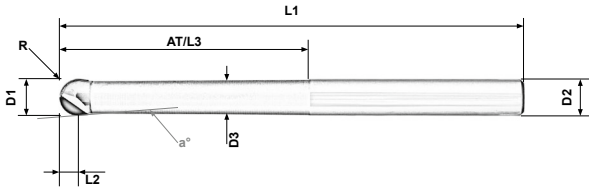


[1pkdk] & [2pkdk]

Polycristalline diamond (PKD) is particularly suitable for machining NE materials. Wear is considerably lower than at conventional cutting materials. A continuous wear process leads to plane surfaces with less steps, especially at running times > 10 h.

+ high cutting speeds towards carbide (factor 2.0 - 3.0)
+ low tool tolerances enable a precise milling at long tool life
+ NE metals, CFK materials and graphites



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 10115 ▽▽▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
GRAPH	21 656	5197	340	0.40	0.00	0.12

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
3	1.5	3.5	25	2.9	6	25	-3	60	1	-	10200	1PKDK-030-150-025-060-000-06
4	2	2	30	3.9	6	30	0	75	2	-	10116	2PKDK-040-200-030-075-000-06
5	2.5	2.5	40	4.8	6	40	0	75	2	-	10115	2PKDK-050-250-040-075-000-06
6	3	3	40	5.8	6	40	0	75	2	-	11278	2PKDK-060-300-040-075-000-06

*Technical changes reserved.

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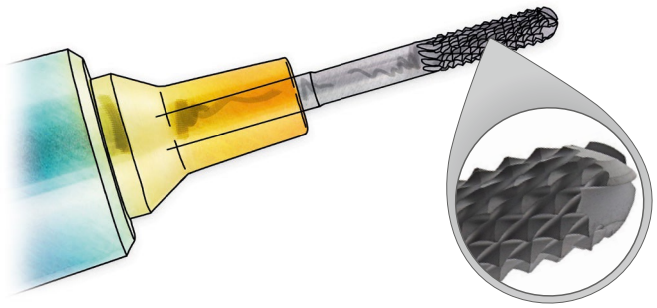
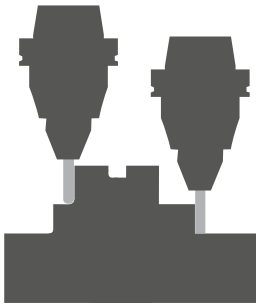
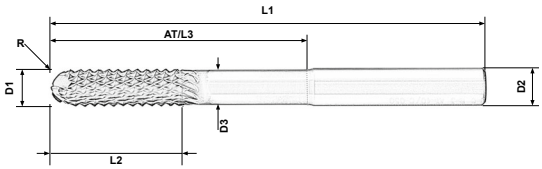




[drsp]

Diamond-coated cutter for roughing graphite.
TSC® carbide roughing rasping cutter, available as ballnose cutter and end mill, cylindrical stepped neck.
Smooth and calm cut due to three flutes.

+ great infeed
+ low cutting forces
+ low vibrations, suitable for full cut
+ TSC® roughing



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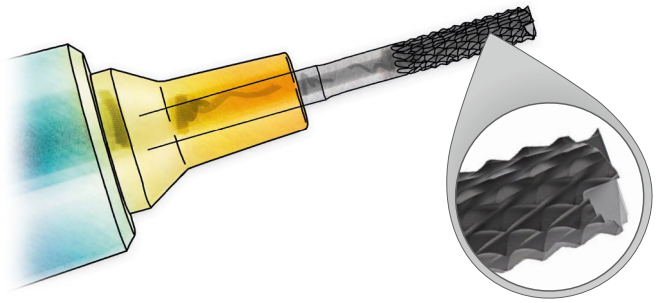
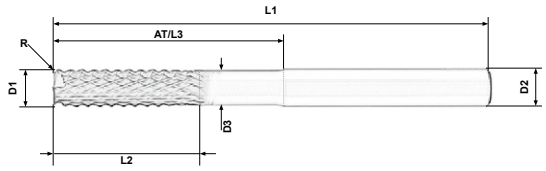
Exemplary Cutting Data for Code 17585 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	21 205	12087	799	10.00	0.00	0.19

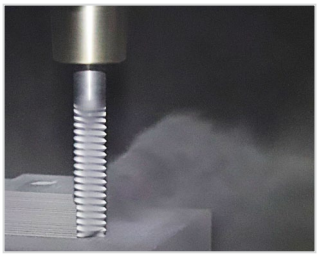
<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	2	15	28	3.7	6	28	0	60	3	-	17540	DRSPR-040-200-028-060-000-06
6	3	20	40	5.6	6	40	0	70	3	-	17541	DRSPR-060-300-040-070-000-06





D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
6	0	18	35	5.6	6	35	0	70	3	-	17538	DRSP-060-000-035-070-000-06
8	0	12	30	7.6	8	30	0	65	3	-	17534	DRSP-080-000-030-065-000-08
8	0	20	52	7.6	8	52	0	85	3	-	17539	DRSP-080-000-052-085-000-08
10	0	40	60	9.5	10	60	0	100	3	-	17537	DRSP-100-000-060-100-000-10
12	0	40	60	11.5	12	60	0	100	3	-	17585	DRSP-120-000-060-100-000-12
16	0	20	45	15.5	16	45	0	80	3	-	17586	DRSP-160-000-045-080-000-16
16	0	40	60	15.5	16	60	0	100	3	-	17536	DRSP-160-000-060-100-000-16



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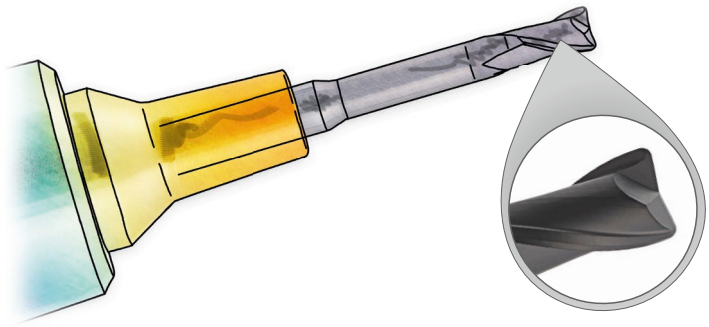
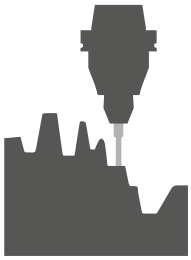
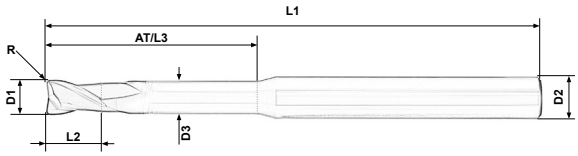




[2dt]

Cylindrically stepped torus cutter with two flutes. The diamond coating allows the machining of graphite. The tools are very precise and have an excellent concentricity.

+ for great overhang lengths
+ roughing and finishing



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 11591 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	19904	5812	250	0.25	0.00	0.146

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
0.5	0.1	0.4	4	0.48	4	4	0	60	2	-	04559	2DT-005-010-004-060-000-04
0.6	0.1	0.45	4	0.58	4	4	0	60	2	-	04578	2DT-006-010-004-060-000-04
0.6	0.1	0.45	7	0.55	4	7	0	60	2	-	04579	2DT-006-010-007-060-000-04
0.8	0.1	0.6	7	0.78	4	7	0	60	2	-	07049	2DT-008-010-007-060-000-04
0.8	0.1	0.6	10	0.72	4	10	0	60	2	-	20066	2DT-008-010-010-060-000-04
1	0.1	0.75	5	0.95	4	5	0	60	2	-	02911	2DT-010-010-005-060-000-04
1	0.1	0.75	10	0.95	4	10	0	60	2	-	02912	2DT-010-010-010-060-000-04
1	0.1	0.75	10	0.9	6	10	0	60	2	-	09702	2DT-010-010-010-060-000-06
1	0.1	0.75	15	0.95	4	15	0	60	2	-	02913	2DT-010-010-015-060-000-04
1	0.2	0.75	5	0.97	4	5	0	60	2	-	10140	2DT-010-020-005-060-000-04
1	0.2	0.75	10	0.95	4	10	0	60	2	-	10141	2DT-010-020-010-060-000-04
1.2	0.1	0.9	10	1.17	4	10	0	60	2	-	07050	2DT-012-010-010-060-000-04
1.2	0.1	0.9	15	1.1	4	15	0	60	2	-	07051	2DT-012-010-015-060-000-04
1.5	0.15	1.15	8	1.43	4	8	0	60	2	-	02914	2DT-015-015-008-060-000-04
1.5	0.15	1.15	8	1.47	6	8	0	60	2	-	09703	2DT-015-015-008-060-000-06
1.5	0.15	1.15	15	1.4	4	15	0	60	2	-	02915	2DT-015-015-015-060-000-04
1.5	0.15	1.15	23	1.4	4	23	0	60	2	-	02916	2DT-015-015-023-060-000-04
2	0.1	2	25	1.9	4	25	0	60	2	-	04597	2DT-020-010-025-060-000-04
2	0.2	2	10	1.93	4	10	0	60	2	-	02917	2DT-020-020-010-060-000-04
2	0.2	2	10	1.9	6	10	0	60	2	-	09704	2DT-020-020-010-060-000-06
2	0.2	2	15	1.93	4	15	0	60	2	-	02919	2DT-020-020-015-060-000-04
2	0.2	2	20	1.93	4	20	0	60	2	-	02921	2DT-020-020-020-060-000-04
2	0.2	2	25	1.9	4	25	0	60	2	-	07052	2DT-020-020-025-060-000-04
2	0.2	2	30	1.9	4	30	0	70	2	-	02923	2DT-020-020-030-070-000-04
2	0.5	2	10	1.9	4	10	0	60	2	-	02918	2DT-020-050-010-060-000-04
2	0.5	2	15	1.93	4	15	0	60	2	-	02920	2DT-020-050-015-060-000-04
2	0.5	2	20	1.93	4	20	0	60	2	-	02922	2DT-020-050-020-060-000-04
2	0.5	2	20	1.93	6	20	0	60	2	-	06770	2DT-020-050-020-060-000-06

*Technical changes reserved.

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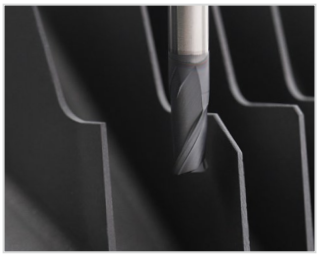
[2dt]

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
2	0.5	2	30	1.9	4	30	0	70	2	-	02924	2DT-020-050-030-070-000-04
3	0.2	3	15	2.83	4	15	0	60	2	-	07053	2DT-030-020-015-060-000-04
3	0.2	3	21	2.83	4	21	0	60	2	-	07054	2DT-030-020-021-060-000-04
3	0.3	3	15	2.83	4	15	0	60	2	-	02925	2DT-030-030-015-060-000-04
3	0.3	3	15	2.8	6	15	0	60	2	-	09705	2DT-030-030-015-060-000-06
3	0.3	3	21	2.8	4	21	0	60	2	-	02927	2DT-030-030-021-060-000-04
3	0.3	3	27	2.83	4	27	0	70	2	-	02929	2DT-030-030-027-070-000-04
3	0.5	3	15	2.8	4	15	0	60	2	-	02926	2DT-030-050-015-060-000-04
3	0.5	3	21	2.83	4	21	0	60	2	-	02928	2DT-030-050-021-060-000-04
3	0.5	3	27	2.8	4	27	0	70	2	-	02930	2DT-030-050-027-070-000-04
3	0.5	3	30	2.83	6	30	0	70	2	-	06769	2DT-030-050-030-070-000-06
4	0.2	4	24	3.7	4	24	0	60	2	-	04558	2DT-040-020-024-060-000-04
4	0.2	4	25	3.74	4	25	0	60	2	-	07055	2DT-040-020-025-060-000-04
4	0.2	4	40	3.7	4	40	0	75	2	-	07463	2DT-040-020-040-075-000-04
4	0.3	4	25	3.74	4	25	0	60	2	-	11591	2DT-040-030-025-060-000-04
4	0.4	4	16	3.7	4	16	0	60	2	-	02931	2DT-040-040-016-060-000-04
4	0.4	4	24	3.7	4	24	0	60	2	-	02933	2DT-040-040-024-060-000-04
4	0.4	4	32	3.7	4	32	0	75	2	-	02935	2DT-040-040-032-075-000-04
4	0.4	4	40	3.7	4	40	0	75	2	-	07056	2DT-040-040-040-075-000-04
4	0.5	4	26	3.7	4	26	0	60	2	-	08738	2DT-040-050-026-060-000-04
4	0.5	4	32	3.74	4	32	0	70	2	-	04441	2DT-040-050-032-070-000-04
4	0.5	4	40	3.7	6	40	0	75	2	-	06771	2DT-040-050-040-075-000-06
4	1	4	16	3.7	4	16	0	60	2	-	02932	2DT-040-100-016-060-000-04
4	1	4	24	3.7	4	24	0	60	2	-	02934	2DT-040-100-024-060-000-04
4	1	4	32	3.7	4	32	0	70	2	-	02936	2DT-040-100-032-070-000-04
5	0.5	5	20	4.6	6	20	0	60	2	-	02937	2DT-050-050-020-060-000-06
5	0.5	5	30	4.6	6	30	0	70	2	-	09706	2DT-050-050-030-070-000-06
5	0.5	5	40	4.6	6	40	0	100	2	-	02939	2DT-050-050-040-100-000-06
5	1	5	30	4.6	6	30	0	70	2	-	20073	2DT-050-100-030-070-000-06
5	1	5	40	4.6	6	40	0	100	2	-	02940	2DT-050-100-040-100-000-06
6	0.3	10	36	5.6	6	36	0	75	2	-	03325	2DT-060-030-036-075-000-06
6	0.3	10	48	5.6	6	48	0	100	2	-	04440	2DT-060-030-048-100-000-06
6	0.5	10	24	5.64	6	24	0	60	2	-	02941	2DT-060-050-024-060-000-06
6	0.5	10	36	5.6	6	36	0	75	2	-	02943	2DT-060-050-036-075-000-06
6	0.5	10	48	5.64	6	48	0	100	2	-	02945	2DT-060-050-048-100-000-06
6	1	10	24	5.6	6	24	0	60	2	-	02942	2DT-060-100-024-060-000-06
6	1	10	36	5.6	6	36	0	75	2	-	02944	2DT-060-100-036-075-000-06
6	1	10	48	5.6	6	48	0	100	2	-	02946	2DT-060-100-048-100-000-06
6	1	10	60	5.6	6	60	0	100	2	-	06775	2DT-060-100-060-100-000-06



*Technical changes reserved.

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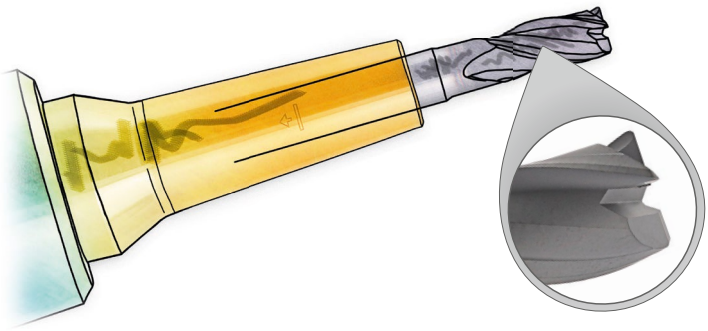
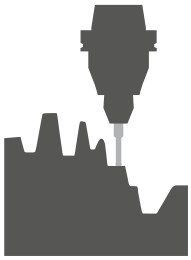
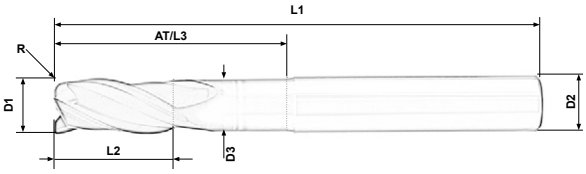




[3dt]

Cylindrically stepped torus cutter with three flutes. The diamond coating allows the machining of graphite. The tools are very precise and have an excellent concentricity.

+ high accuracy of diameter
+ roughing and finishing



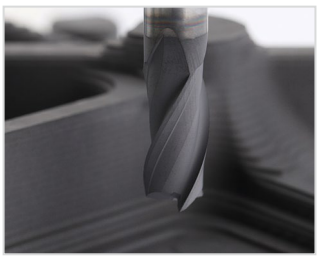
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 02960 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	18577	6688	700	0.85	0.00	0.12

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GJV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
8	0.5	16	32	7.55	8	32	0	70	3	-	02947	3DT-080-050-032-070-000-08
8	0.5	16	48	7.55	8	48	0	100	3	-	02949	3DT-080-050-048-100-000-08
8	0.5	16	64	7.5	8	64	0	120	3	-	02951	3DT-080-050-064-120-000-08
8	0.5	16	80	7.5	8	80	0	150	3	-	02953	3DT-080-050-080-150-000-08
8	1	16	32	7.5	8	32	0	70	3	-	02948	3DT-080-100-032-070-000-08
8	1	16	48	7.5	8	48	0	100	3	-	02950	3DT-080-100-048-100-000-08
8	1	16	48	7.5	8	50	0	75	3	-	23269	3DT-080-100-050-075-000-08
8	1	16	64	7.5	8	64	0	120	3	-	02952	3DT-080-100-064-120-000-08
8	1	16	70	7.5	8	70	0	100	3	-	06777	3DT-080-100-070-100-000-08
8	1	16	80	7.5	8	80	0	150	3	-	02954	3DT-080-100-080-150-000-08
10	0.5	20	30	9.5	10	30	0	75	3	-	02955	3DT-100-050-030-075-000-10
10	0.5	20	45	9.5	10	45	0	100	3	-	20074	3DT-100-050-045-100-000-10
10	0.5	20	60	9.5	10	60	0	150	3	-	02957	3DT-100-050-060-150-000-10
10	1	20	30	9.5	10	30	0	75	3	-	02956	3DT-100-100-030-075-000-10
10	1	20	45	9.55	10	45	0	100	3	-	20075	3DT-100-100-045-100-000-10
10	1	20	80	9.55	10	80	0	150	3	-	02958	3DT-100-100-080-150-000-10
12	0.5	24	48	11.4	12	48	0	100	3	-	02973	3DT-120-050-048-100-000-12
12	1	24	36	11.4	12	36	0	80	3	-	02959	3DT-120-100-036-080-000-12
12	1	24	48	11.4	12	48	0	100	3	-	02960	3DT-120-100-048-100-000-12
12	1	24	60	11.4	12	60	0	120	3	-	02961	3DT-120-100-060-120-000-12
12	1	24	60	11.46	12	60	0	150	3	-	02962	3DT-120-100-060-150-000-12
12	1	24	110	11.4	12	110	0	150	3	-	07089	3DT-120-100-110-150-000-12



*Technical changes reserved.

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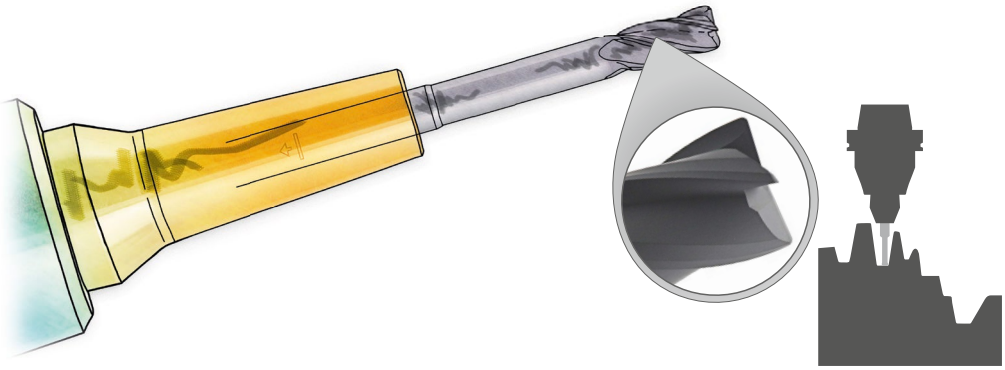
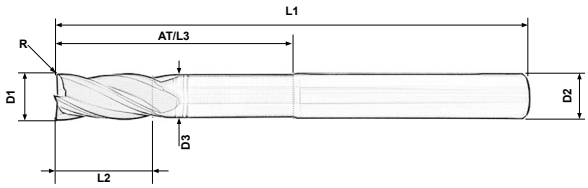


[4dt]

Cylindrically stepped torus cutter with four flutes. The diamond coating allows the machining of graphite. The tools are very precise and have an excellent concentricity.

+ for great overhang lengths
+ roughing and finishing



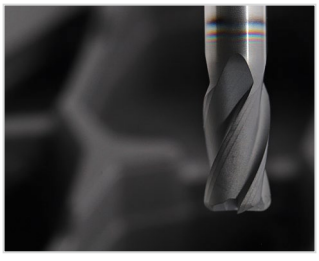
You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 11174 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	19108	6115	600	0.70	0.00	0.08

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+/-

D1	R	L2	L3	D3	D2	AT	°a	L1	z	IKZ	Code	Article number
4	0.4	5	20	3.7	4	20	0	100	4	-	02963	4DT-040-040-020-100-000-04
6	0.5	10	30	5.6	6	30	0	100	4	-	02964	4DT-060-050-030-100-000-06
6	1	10	30	5.8	6	30	0	100	4	-	02965	4DT-060-100-030-100-000-06
8	0.5	16	40	7.5	8	40	0	100	4	-	02966	4DT-080-050-040-100-000-08
8	1	16	40	7.5	8	40	0	100	4	-	02967	4DT-080-100-040-100-000-08
8	1	16	50	7.5	8	50	0	100	4	-	17794	4DT-080-100-050-100-000-08
10	0.5	20	50	9.5	10	50	0	100	4	-	02968	4DT-100-050-050-100-000-10
10	0.5	20	76	9.55	10	76	0	100	4	-	11174	4DT-100-050-076-100-000-10
10	1	20	50	9.46	10	50	0	100	4	-	02969	4DT-100-100-050-100-000-10
12	0.5	24	60	11.4	12	60	0	120	4	-	02970	4DT-120-050-060-120-000-12
12	0.5	24	90	11.4	12	90	0	120	4	-	11175	4DT-120-050-090-120-000-12
12	1	24	60	11.46	12	60	0	120	4	-	02971	4DT-120-100-060-120-000-12



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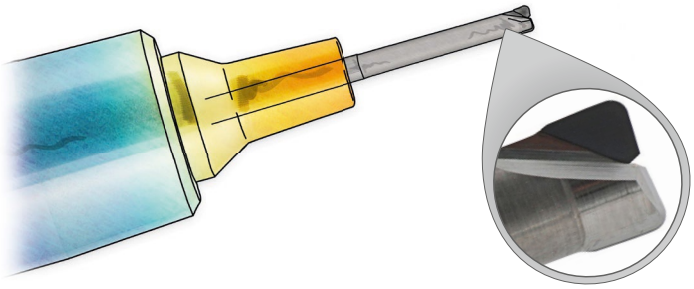
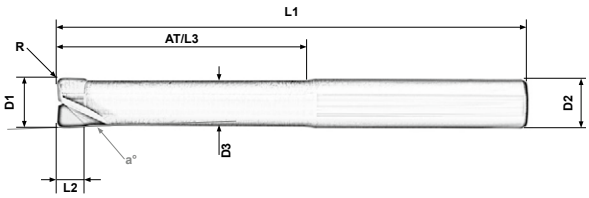


[1pkdt] & [2pkdt]

Polycristalline diamond (PKD) is particularly suitable for machining NE materials. Wear is considerably lower than at conventional cutting materials. A continuous wear process leads to plane surfaces with less steps, especially at running times > 10 h.

+ high cutting speeds towards carbide (factor 2.0 - 3.0)
+ low tool tolerances enable a precise milling at long tool life
+ NE metals, CFK materials and graphites



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 01011 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	18577	3567	350	0.089	0.00	0.096

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+

D1	R	L2	L3	D3	D2	AT	°a	L1	z	KZ	Code	Article number
1	0.2	60	5	0.97	4	5	0	60	2	-	24361	2PKDT-010-020-050-060-000-04
2	0.2	1.5	15	1.8	6	15	0	60	1	-	11277	1PKDT-020-020-015-060-000-06
3	0.2	2	25	2.9	6	25	-3	60	1	-	10114	1PKDT-030-020-025-060-000-06
3	0.3	2	25	2.8	6	25	0	60	1	-	03935	1PKDT-030-030-025-060-000-06
3	0.5	3.4	25	2.9	6	25	-3	60	1	-	03936	1PKDT-030-050-025-060-000-06
4	0.3	75	30	3.9	6	30	-3	75	2	-	03937	2PKDT-040-030-030-075-000-06
4	0.5	75	30	3.9	6	30	-3	75	2	-	03938	2PKDT-040-050-030-075-000-06
4	1	75	30	3.9	6	30	-3	75	2	-	05151	2PKDT-040-100-030-075-000-06
6	0.3	75	40	5.8	6	40	-3	75	2	-	03522	2PKDT-060-030-040-075-000-06
6	0.5	75	40	5.8	6	40	-3	75	2	-	01011	2PKDT-060-050-040-075-000-06
6	1	75	40	5.8	6	40	-3	75	2	-	03523	2PKDT-060-100-040-075-000-06
8	0.5	100	60	7	8	60	0	100	2	-	01041	2PKDT-080-050-060-100-000-08
8	0.5	75	30	7.8	8	30	-3	75	2	-	06594	2PKDT-080-050-030-075-000-08
8	1	100	60	7.8	8	60	-3	100	2	-	01012	2PKDT-080-100-060-100-000-08
8	1	75	30	7.8	8	30	-3	75	2	-	06593	2PKDT-080-100-030-075-000-08
10	0.5	120	60	9.8	10	60	-3	120	2	-	03524	2PKDT-100-050-060-120-000-10
10	1	120	60	9.8	10	60	-3	120	2	-	03525	2PKDT-100-100-060-120-000-10
12	1	130	95	11.7	12	95	-3	130	2	-	03939	2PKDT-120-100-095-130-000-12
12	1	100	65	11.7	12	65	-3	100	2	-	05964	2PKDT-120-100-065-100-000-12

*Technical changes reserved.

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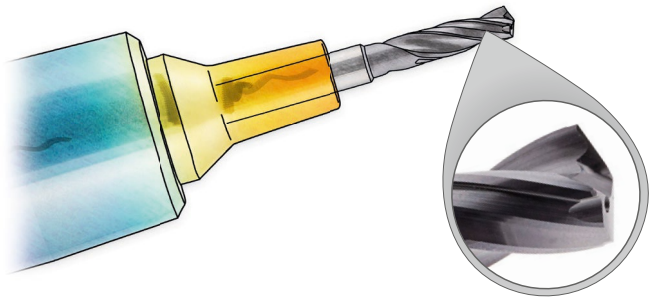
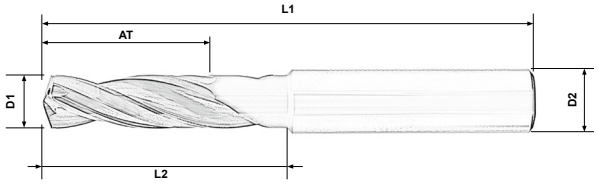
„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics



Drill reamer H7 3×D

3×D VHM drill reamer are suitable for dowel hole drills in materials up to 65 HRC. It enables the drilling and simultaneous rubbing in H7-quality at excellent positioning accuracy. Areas of application are hardened matrices and die stamps.

+ drilling and rubbing (H7) in one process
+ for hardened materials, e.g. 1.2379, 58 + 2 HRC
+ excellent positioning accuracy



You can find all available tools and information online at: iklick.aura.tools

Exemplary Cutting Data for Code 18082 ▽

Material	n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	796	80	25	30.00	0.00	0.05

<65 HRC	<58 HRC	<56 HRC	<52 HRC	<48 HRC	1.400N	1.000N	Steel	CrNi	Titan	INC	GG	GjV	ALU	AlSi	Cu	GRAPH	GFK
+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-

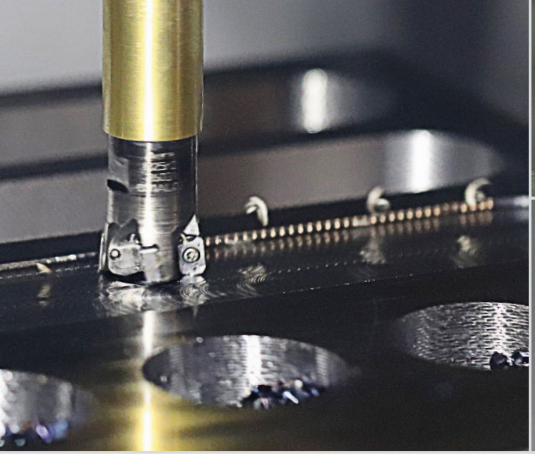
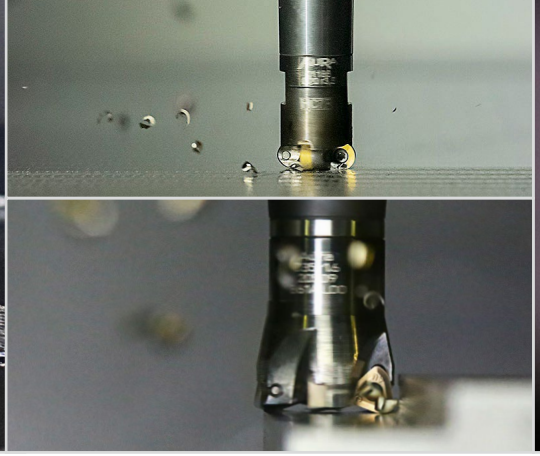
D1	R	L2	L3	D3	D2	AT	-a	L1	z	IKZ	Code	Article number
6.01	0	29	29	-	8	18	-	65	2	IKZ	18166	BRH 3xD-6,01-18-65/8
6.02	0	29	29	-	8	18	-	65	2	IKZ	18167	BRH 3xD-6,02-18-65/8
8.01	0	35	35	-	10	24	-	78	2	IKZ	17876	BRH 3xD-8,01-24-78/10
8.02	0	35	35	-	10	24	-	78	2	IKZ	17877	BRH 3xD-8,02-24-78/10
10.00	0	44	44	-	10	30	-	87	2	IKZ	18082	BRH 3xD-10,00-30-87/10
10.01	0	44	44	-	12	30	-	91	2	IKZ	17878	BRH 3xD-10,01-30-91/12
10.02	0	44	44	-	12	30	-	91	2	IKZ	17879	BRH 3xD-10,02-30-91/12
12.01	0	52	52	-	14	36	-	99	2	IKZ	17880	BRH 3xD-12,01-36-99/14
12.02	0	52	52	-	14	36	-	99	2	IKZ	17881	BRH 3xD-12,02-36-99/14

*Technical changes reserved.

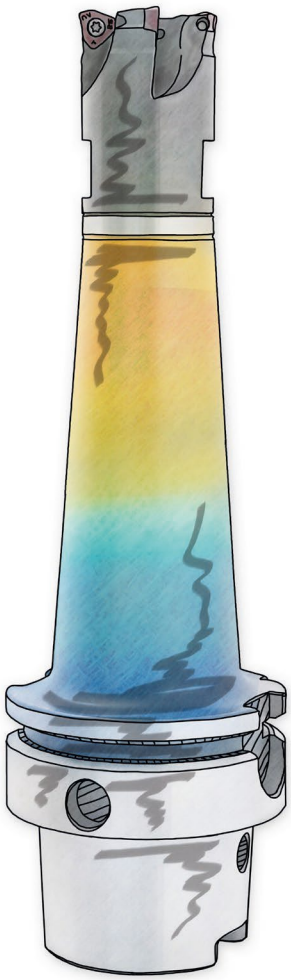
„xy" HRC = Machining of hardened materials possible up to the declared value; 1.400N = Materials like 1.2714HH; 1.000N = materials like 1.2311, 1.2379; steel = materials like 1.1730; CrNi = Nickel-chromium alloys; Titan = Titanium alloys; INC = Nickel-base alloys; GG = Casting alloys; GjV = Alloyed cast steels; ALU = Aluminium alloys; AlSi = Aluminium-silicon alloys; Cu = Copper; GRAPH = Graphite; GFK = Glass fiber reinforced plastics

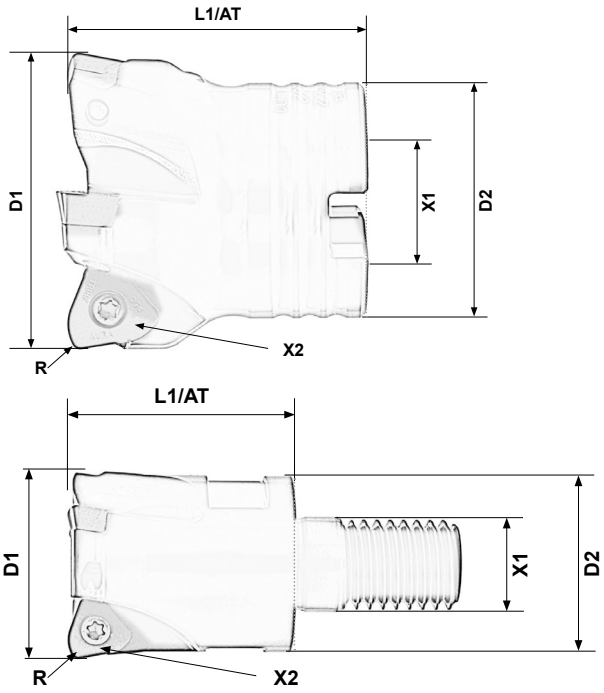





Modular tools





D1 = Cutter diameter
R = Radius (indexable insert)
D2 = Shank diameter
X1 = Interface to the holder
AT = Working depth
L1 = Total length
Z = Number of teeth
X2 = Type of indexable insert

Article number = Z D1 R - X1 - L1 - X2

Number of teeth
Cutter diameter
Radius
Interface to the holder
Total length
Type of indexable insert

▼ Roughing

▼▼▼ Finishing

▼ + ▼▼▼ Roughing and finishing

Geometry of the indexable insert

Internal cooling supply Yes No

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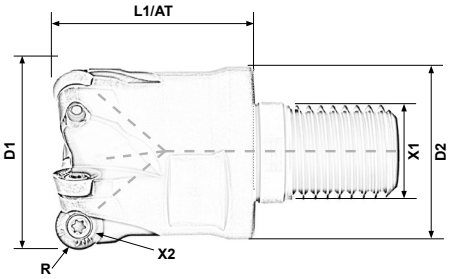
You will find our general terms and conditions at
http://aura-tools.de/downloads/aura-agb.pdf

AURA® ESR

Modular screw-in milling cutters for ISO round indexable inserts. Universally usable for roughing and finishing. The corner radius to be programmed results of the choosen indexable insert.

+ unequal division
+ roughing and finishing
+ internal cooling supply
+ hardened and sanded mating surface



Exemplary Cutting Data for Code 03885 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000 N	NANO	5305	9549	200	0.38	4.90	0.60

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
10	2.5	2	20	9.8	M6	SF05	03883	21025-M6-020-RD05	03889	03891
12	2.5	3	20	9.8	M6	SF05	03884	31225-M6-020-RD05	03889	03891
12	2.5	3	23	11.5	M7	SF05	03885	31225-M7-023-RD05	03889	03891

SF05
R=2.5 mm
M=0.7 Nm

R	X2	Roughing/Finishing	Code	Article number	
2.5	SF05	▽+▽▽▽	03887	F05NA	NANO

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
15	3.5	2	23	13.5	M8	SF07	02438	21535-M8-023-RD07-238	01363	01366
15	3.5	3	23	13.5	M8	SF07	00601	31535-M8-023-RD07-238	01363	01366
16	3.5	3	23	15.4	M10k	SF07	02656	31635-M10k-023-RD07-238	01363	01366
20	3.5	4	28	18	M10	SF07	01186	42035-M10-028-RD07-238	01363	01366

SF07
R=3.5 mm
M=0.9 Nm

R	X2	Roughing/Finishing	Code	Article number	
3.5	SF07	▽+▽▽▽	24540	F07P25C	P25C
3.5	SF07	▽	10086	S07NA	NANO
3.5	SF07	▽+▽▽▽	02665	F07NA	NANO
3.5	SF07	▽▽▽	03266	F0703	K03
3.5	SF07	▽▽▽	27078	F0703S	K03S
3.5	SF07	▽+▽▽▽	26094	F07AL	AL
3.5	SF07	▽+▽▽▽	02127	F07DI	DIA

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
12	3.5	2	23	11.5	M7	SF07199	03882	21235-M7-023-RD07-199	03890	01366
13	3.5	2	23	12.5	M8K	SF07199	03162	21335-M8k-023-RD07-199	03890	01366
15	3.5	3	28	13.5	M8	SF07199	03880	31535-M8-028-RD07-199	03890	01366
20	3.5	4	28	18	M10	SF07199	03881	42035-M10-028-RD07-199	03890	01366

SF07199
R=3.5mm
M=0.9Nm

R	X2	Roughing/Finishing	Code	Article number	
3.5	SF07199	▽	05848	S07NA.1	NANO
3.5	SF07199	▽+▽▽▽	03886	F07NA.1	NANO
3.5	SF07199	▽+▽▽▽	26093	F07AL.1	AL

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	4	2	23	15.4	M10k	SF08	02805	21640-M10k-023-RD08	03929	02395
16	4	2	23	13.5	M8	SF08	07137	21640-M8-023-RD08	03929	02395
20	4	3	25	18	M10	SF08	02806	32040-M10-025-RD08	03929	02395
25	4	4	29	21	M12	SF08	02807	42540-M12-029-RD08	03929	02395
32	4	5	33	29	M16	SF08	02808	53240-M16-033-RD08	03929	02395

SF08
R=4mm
M=1.7Nm

R	X2	Roughing/Finishing	Code	Article number	
4	SF08	▽	17186	S08P25U	P25U
4	SF08	▽	04954	S0840	P40
4	SF08	▽	29326	S08P50	P50
4	SF08	▽	11823	SH08M50	M50
4	SF08	▽	17237	SH08INC35	INC35
4	SF08	▽	29330	S08NA	NANO
4	SF08	▽+▽▽▽	03732	F08NA	NANO
4	SF08	▽	11845	S0810G	K10G
4	SF08	▽+▽▽▽	17056	F08AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
20	5	2	30	18	M10	SF10	03166	22050-M10-030-RD10	01364	01367
25	5	3	35	21	M12	SF10	01497	32550-M12-035-RD10	01364	01367
30	5	4	43	29	M16	SF10	01498	43050-M16-043-RD10	01364	01367
35	5	4	43	29	M16	SF10	01569	43550-M16-043-RD10	01364	01367
35	5	5	43	29	M16	SF10	01499	53550-M16-043-RD10	01364	01367
42	5	5	42	29	M16	SF10	01292	54250-M16-042-RD10	01364	01367

SF10
R=5mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
5	SF10	▽	15801	S10P25U	P25U
5	SF10	▽	24541	S10P25C	P25C
5	SF10	▽	01062	S1040	P40
5	SF10	▽	09793	S10P50	P50
5	SF10	▽	10361	SH10M50	M50
5	SF10	▽	17238	SH10INC35	INC35
5	SF10	▽	03942	S10NA	NANO
5	SF10	▽+▽▽▽	02817	F10NA	NANO
5	SF10	▽▽▽	01351	F1003	K03
5	SF10	▽	07536	S1010G	K10G
5	SF10	▽+▽▽▽	17057	F10AL	AL

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
24	6	2	35	21	M12	SF12	03169	22460-M12-035-RD12	01364	01367
35	6	3	43	29	M16	SF12	01500	33560-M16-043-RD12	01364	01367
35	6	4	43	29	M16	SF12	02123	43560-M16-043-RD12	01364	01367
42	6	4	42	29	M16	SF12	00606	44260-M16-042-RD12	01364	01367

SF12
R=6mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
6	SF12	▽	15802	S12P25U	P25U
6	SF12	▽	26595	S12P25C	P25C
6	SF12	▽	01063	S1240	P40
6	SF12	▽	29327	S12P50	P50
6	SF12	▽	10362	SH12M50	M50
6	SF12	▽	17240	SH16INC35	INC35
6	SF12	▽	03943	S12NA	NANO
6	SF12	▽+▽▽▽	03659	F12NA	NANO
6	SF12	▽▽▽	01350	F1203	K03
6	SF12	▽	07297	S1210G	K10G
6	SF12	▽+▽▽▽	17058	F12AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
32	8	2	42	29	M16	SF16	01664	23280-M16-042-RD16	01365	01368
35	8	3	42	29	M16	SF16	01225	33580-M16-042-RD16	01365	01368

SF16
R=8mm
M=5.5Nm

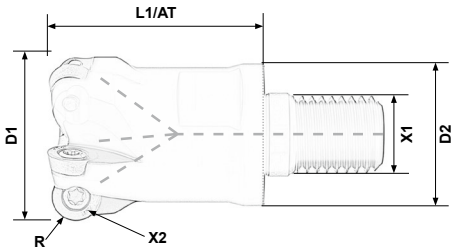
R	X2	Roughing/Finishing	Code	Article number	
8	SF16	▽	16391	S16P25U	P25U
8	SF16	▽	01064	S1640	P40
8	SF16	▽	10360	S16P50	P50
8	SF16	▽	09991	SH16M50	M50
8	SF16	▽	17240	SH16INC35	INC35
8	SF16	▽	03888	S16NA	NANO
8	SF16	▽▽▽	01280	F1603	K03
8	SF16	▽	07861	S1610G	K10G
8	SF16	▽	02816	S1610	K10
8	SF16	▽+▽▽▽	26091	F16AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR 5°

Modular screw-in milling cutters for ISO round indexable inserts in 5° positive installation position. Universally usable for roughing and finishing. The corner radius to be programmed results of the choosen indexable insert.

+ unequal division
+ roughing and finishing
+ internal cooling supply
+ hardened and sanded mating surface



Exemplary Cutting Data for Code 10624 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25C	3183	7003	200	0.40	10.40	0.55

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
20	3.5	4	28	18	M10	SF07	10624	42035-M10-028-RD07-238-5°	01363	01366

SF07
R=3.5mm
M=0.9Nm

R	X2	Roughing/Finishing	Code	Article number	
3.5	SF07	▽+▽▽▽	24540	F07P25C	P25C
3.5	SF07	▽	10086	S07NA	NANO
3.5	SF07	▽+▽▽▽	02665	F07NA	NANO
3.5	SF07	▽▽▽	03266	F0703	K03
3.5	SF07	▽▽▽	27078	F0703S	K03S
3.5	SF07	▽+▽▽▽	26094	F07AL	AL
3.5	SF07	▽+▽▽▽	02127	F07DI	DIA

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
20	4	3	25	18	M10	SF08	10623	32040-M10-025-RD08-5°	03929	02395

SF08
R=4mm
M=1.7Nm

R	X2	Roughing/Finishing	Code	Article number	
4	SF08	▽	17186	S08P25U	P25U
4	SF08	▽	04954	S0840	P40
4	SF08	▽	29326	S08P50	P50
4	SF08	▽	11823	SH08M50	M50
4	SF08	▽	17237	SH08INC35	INC35
4	SF08	▽	29330	S08NA	NANO
4	SF08	▽+▽▽▽	03732	F08NA	NANO
4	SF08	▽	11845	S0810G	K10G
4	SF08	▽+▽▽▽	17056	F08AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR 5°

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
25	5	3	35	21	M12	SF10	10625	32550-M12-035-RD10-5°	01364	01367
35	5	5	43	29	M16	SF10	10626	53550-M16-043-RD10-5°	01364	01367
42	5	5	42	29	M16	SF10	10627	54250-M16-042-RD10-5°	01364	01367

SF10
R=5mm
M=3.4Nm

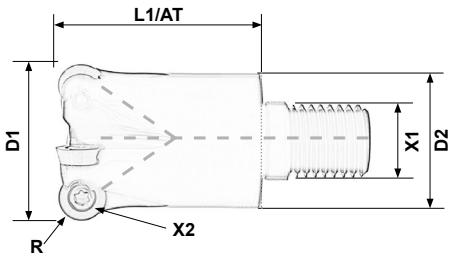
R	X2	Roughing/Finishing	Code	Article number	
5	SF10	▽	15801	S10P25U	P25U
5	SF10	▽	24541	S10P25C	P25C
5	SF10	▽	01062	S1040	P40
5	SF10	▽	09793	S10P50	P50
5	SF10	▽	10361	SH10M50	M50
5	SF10	▽	17238	SH10INC35	INC35
5	SF10	▽	03942	S10NA	NANO
5	SF10	▽+▽▽▽	02817	F10NA	NANO
5	SF10	▽▽▽	01351	F1003	K03
5	SF10	▽	07536	S1010G	K10G
5	SF10	▽+▽▽▽	17057	F10AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR HQC

Modular screw-in milling cutters for ISO round indexable inserts made of tempered tool steel. Universally usable for roughing and finishing. The corner radius to be programmed results of the choosen indexable insert.

+ unequal division
+ roughing and finishing
+ internal cooling supply
+ hardened and sanded mating surface



Exemplary Cutting Data for Code 20580 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000 N	P25C	4 244	6 366	200	0.30	7.20	0.50

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
12	3	2	23	11.5	M7	SF06	20577	21230-M7-023-RD06-HQC	20596	03891
13	3	2	23	12.5	M8K	SF06	20578	21330-M8k-023-RD06-HQC	22460	01366
14	3	2	23	13.5	M8	SF06	20579	21430-M8-023-RD06-HQC	22460	01366
15	3	3	23	13.5	M8	SF06	20580	31530-M8-023-RD06-HQC	22460	01366
16	3	3	23	15.4	M10k	SF06	20581	31630-M10k-023-RD06-HQC	22460	01366
20	3	4	28	18	M10	SF06	20582	42030-M10-028-RD06-HQC	22460	01366
25	3	5	35	23	M12	SF06	20583	52530-M12-035-RD06-HQC	22460	01366
30	3	6	43	29	M16	SF06	20584	63030-M16-043-RD06-HQC	22460	01366
35	3	7	43	29	M16	SF06	20585	73530-M16-043-RD06-HQC	22460	01366

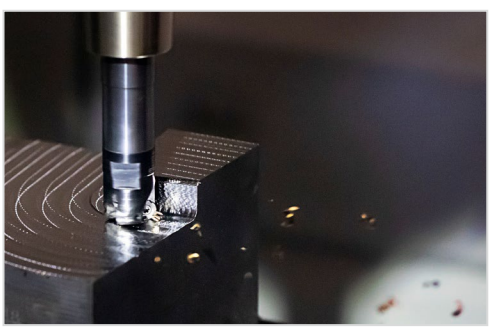
SF06
R=3 mm
M=0.7 Nm

R	X2	Roughing/Finishing	Code	Article number	
3	SF06	▽+▽▽▽	24539	F06P25C	P25C
3	SF06	▽+▽▽▽	20595	F06NA	NANO
3	SF06	▽▽▽	22312	F0603	K03
3	SF06	▽▽▽	26973	F0603S	K03S
3	SF06	▽▽▽	22104	F06CER	CER

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
25	3.5	5	35	21	M12	SF07	20609	52535-M12-035-RD07-238 HQC	01363	01366
30	3.5	5	43	29	M16	SF07	20455	53035-M16-043-RD07-238 HQC	01363	01366
35	3.5	6	43	29	M16	SF07	20554	63535-M16-043-RD07-238 HQC	01363	01366

SF07
R=3.5 mm
M=0.9 Nm

R	X2	Roughing/Finishing	Code	Article number	
3.5	SF07	▽+▽▽▽	24540	F07P25C	P25C
3.5	SF07	▽	10086	S07NA	NANO
3.5	SF07	▽+▽▽▽	02665	F07NA	NANO
3.5	SF07	▽▽▽	03266	F0703	K03
3.5	SF07	▽▽▽	27078	F0703S	K03S
3.5	SF07	▽+▽▽▽	26094	F07AL	AL
3.5	SF07	▽+▽▽▽	02127	F07DI	DIA



*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR HQC

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
25	4	4	29	23	M12	SF08	07246	42540-M12-029-RD08-HQC	03929	02395
35	4	5	43	29	M16	SF08	05142	53540-M16-043-RD08-HQC	03929	02395

SF08
R=4mm
M=1.7Nm

R	X2	Roughing/Finishing	Code	Article number	
4	SF08	▽	17186	S08P25U	P25U
4	SF08	▽	04954	S0840	P40
4	SF08	▽	29326	S08P50	P50
4	SF08	▽	11823	SH08M50	M50
4	SF08	▽	17237	SH08INC35	INC35
4	SF08	▽	29330	S08NA	NANO
4	SF08	▽+▽▽▽	03732	F08NA	NANO
4	SF08	▽	11845	S0810G	K10G
4	SF08	▽+▽▽▽	17056	F08AL	AL

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
25	5	3	35	21	M12	SF10	06009	32550-M12-035-RD10-HQC	01364	01367
35	5	5	43	29	M16	SF10	04482	53550-M16-043-RD10-HQC	01364	01367
42	5	5	43	29	M16	SF10	05141	54250-M16-043-RD10-HQC	01364	01367

SF10
R=5mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
5	SF10	▽	15801	S10P25U	P25U
5	SF10	▽	24541	S10P25C	P25C
5	SF10	▽	01062	S1040	P40
5	SF10	▽	09793	S10P50	P50
5	SF10	▽	10361	SH10M50	M50
5	SF10	▽	17238	SH10INC35	INC35
5	SF10	▽	03942	S10NA	NANO
5	SF10	▽+▽▽▽	02817	F10NA	NANO
5	SF10	▽▽▽	01351	F1003	K03
5	SF10	▽	07536	S1010G	K10G
5	SF10	▽+▽▽▽	17057	F10AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ESR HQC

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
35*	6	3	43	29	M16	SF12	09900	33560-M16-043-RD12-5°-HQC	01364	01367
42	6	4	43	38	M16G	SF12	06818	44260-M16G-043-RD12-HQC	01364	01367

* for ISO round indexable inserts
in 5° positive installation position

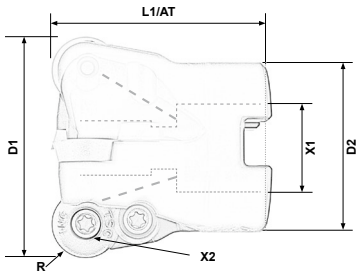
SF12
R=6mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
6	SF12	▽	15802	S12P25U	P25U
6	SF12	▽	26595	S12P25C	P25C
6	SF12	▽	01063	S1240	P40
6	SF12	▽	29327	S12P50	P50
6	SF12	▽	10362	SH12M50	M50
6	SF12	▽	17240	SH16INC35	INC35
6	SF12	▽	03943	S12NA	NANO
6	SF12	▽+▽▽▽	03659	F12NA	NANO
6	SF12	▽▽▽	01350	F1203	K03
6	SF12	▽	07297	S1210G	K10G
6	SF12	▽+▽▽▽	17058	F12AL	AL

AURA® ASR

Shell mill for ISO round indexable inserts.Universally usable for roughing and finishing. The corner radius to be programmed results of the choosen indexable insert.

+ unequal division
+ roughing and finishing
+ internal cooling supply
+ hardened and sanded mating surface



Exemplary Cutting Data for Code 02427 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25U	772	2778	160	2.00	43.20	0.60

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	5	6	50	40	AST22	SF10	01694	65250-AST22-050-RD10	01364	01367
52	5	7	50	40	AST22	SF10	01464	75250-AST22-050-RD10	01364	01367

SF10
R=5mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
5	SF10	▽	15801	S10P25U	P25U
5	SF10	▽	24541	S10P25C	P25C
5	SF10	▽	01062	S1040	P40
5	SF10	▽	09793	S10P50	P50
5	SF10	▽	10361	SH10M50	M50
5	SF10	▽	17238	SH10INC35	INC35
5	SF10	▽	03942	S10NA	NANO
5	SF10	▽+▽▽▽	02817	F10NA	NANO
5	SF10	▽▽▽	01351	F1003	K03
5	SF10	▽	07536	S1010G	K10G
5	SF10	▽+▽▽▽	17057	F10AL	AL

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	6	5	50	40	AST22	SF12	00608	55260-AST22-050-RD12	01364	01367
66	6	6	50	48	AST27	SF12	02427	66660-AST27-050-RD12	01364	01367
80	6	7	50	60	AST27	SF12	02296	78060-AST27-050-RD12	01364	01367

SF12
R=6mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
6	SF12	▽	15802	S12P25U	P25U
6	SF12	▽	26595	S12P25C	P25C
6	SF12	▽	01063	S1240	P40
6	SF12	▽	29327	S12P50	P50
6	SF12	▽	10362	SH12M50	M50
6	SF12	▽	17240	SH16INC35	INC35
6	SF12	▽	03943	S12NA	NANO
6	SF12	▽+▽▽▽	03659	F12NA	NANO
6	SF12	▽▽▽	01350	F1203	K03
6	SF12	▽	07297	S1210G	K10G
6	SF12	▽+▽▽▽	17058	F12AL	AL

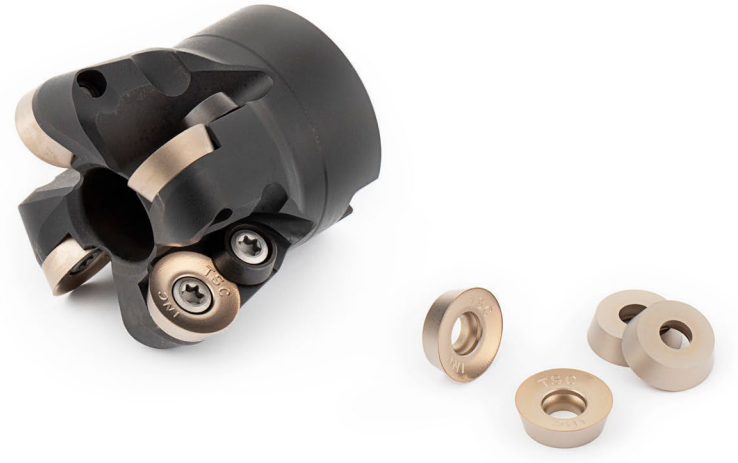
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ASR

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	8	4	50	40	AST22	SF16	00609	45280-AST22-050-RD16	01365	01368
66	8	5	50	48	AST27	SF16	00610	56680-AST27-050-RD16	01365	01368
80	8	5	52	63	AST27	SF16	01406	58080-AST27-052-RD16	01365	01368
80	8	6	52	63	AST27	SF16	00611	68080-AST27-052-RD16	01365	01368
100	8	7	52	70	AST32	SF16	01385	710080-AST32-052-RD16	01365	01368
125	8	8	50	90	AST40	SF16	01386	812580-AST40-050-RD16	01365	01368

SF16
R=8mm
M=5.5Nm

R	X2	Roughing/Finishing	Code	Article number	
8	SF16	▽	16391	S16P25U	P25U
8	SF16	▽	01064	S1640	P40
8	SF16	▽	10360	S16P50	P50
8	SF16	▽	09991	SH16M50	M50
8	SF16	▽	17240	SH16INC35	INC35
8	SF16	▽	03888	S16NA	NANO
8	SF16	▽▽▽	01280	F1603	K03
8	SF16	▽	07861	S1610G	K10G
8	SF16	▽	02816	S1610	K10
8	SF16	▽+▽▽▽	26091	F16AL	AL

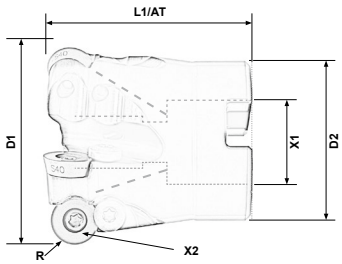


*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ASR 5°

Shell mill for ISO round indexable inserts in 5° positive installation position. Universally usable for roughing and finishing. The corner radius to be programmed results of the choosen indexable insert.

+ unequal division
+ roughing and finishing
+ internal cooling supply
+ hardened and sanded mating surface



Exemplary Cutting Data for Code 10630 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25U	772	3087	160	3.00	40.00	0.80

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	6	5	50	40	AST22	SF12	10629	55260-AST22-050-RD12-5°	01364	01367

SF12
R=6mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
6	SF12	▽	15802	S12P25U	P25U
6	SF12	▽	26595	S12P25C	P25C
6	SF12	▽	01063	S1240	P40
6	SF12	▽	29327	S12P50	P50
6	SF12	▽	10362	SH12M50	M50
6	SF12	▽	17240	SH16INC35	INC35
6	SF12	▽	03943	S12NA	NANO
6	SF12	▽+▽▽▽	03659	F12NA	NANO
6	SF12	▽▽▽	01350	F1203	K03
6	SF12	▽	07297	S1210G	K10G
6	SF12	▽+▽▽▽	17058	F12AL	AL

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	8	4	50	40	AST22	SF16	10628	45280-AST22-050-RD16-5°	01365	01368
66	8	5	50	48	AST27	SF16	10630	56680-AST27-050-RD16-5°	01365	01368
80	8	6	50	63	AST27	SF16	10631	68080-AST27-050-RD16-5°	01365	01368

SF16
R=8mm
M=5.5Nm

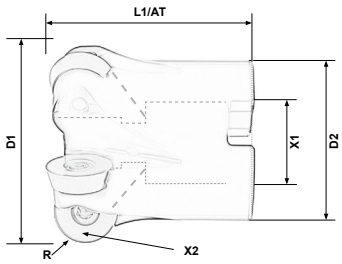
R	X2	Roughing/Finishing	Code	Article number	
8	SF16	▽	16391	S16P25U	P25U
8	SF16	▽	01064	S1640	P40
8	SF16	▽	10360	S16P50	P50
8	SF16	▽	09991	SH16M50	M50
8	SF16	▽	17240	SH16INC35	INC35
8	SF16	▽	03888	S16NA	NANO
8	SF16	▽▽▽	01280	F1603	K03
8	SF16	▽	07861	S1610G	K10G
8	SF16	▽	02816	S1610	K10
8	SF16	▽+▽▽▽	26091	F16AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ASR HQC

Shell mill for ISO round indexable inserts made of tempered tool steel. Universally usable for roughing and finishing. The corner radius to be programmed results of the choosen indexable insert.

+ unequal division
+ roughing and finishing
+ internal cooling supply
+ hardened and sanded mating surface



Exemplary Cutting Data for Code 05917 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25C	965	3472	200	1.50	43.20	0.60

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	6	5	50	40	AST22	SF12	04996	55260-AST22-050-RD12-HQC	01364	01367
66	6	6	50	48	AST27	SF12	05917	66660-AST27-050-RD12-HQC	01364	01367

SF12
R=6mm
M=3.4Nm

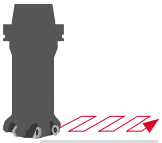
R	X2	Roughing/Finishing	Code	Article number	
6	SF12	▽	15802	S12P25U	P25U
6	SF12	▽	26595	S12P25C	P25C
6	SF12	▽	01063	S1240	P40
6	SF12	▽	29327	S12P50	P50
6	SF12	▽	10362	SH12M50	M50
6	SF12	▽	17240	SH16INC35	INC35
6	SF12	▽	03943	S12NA	NANO
6	SF12	▽+▽▽▽	03659	F12NA	NANO
6	SF12	▽▽▽	01350	F1203	K03
6	SF12	▽	07297	S1210G	K10G
6	SF12	▽+▽▽▽	17058	F12AL	AL

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	8	5	50	40	AST22	SF16	04483	55280-AST22-050-RD16-HQC	01365	01368

SF16
R=8mm
M=5.5Nm

R	X2	Roughing/Finishing	Code	Article number	
8	SF16	▽	16391	S16P25U	P25U
8	SF16	▽	01064	S1640	P40
8	SF16	▽	10360	S16P50	P50
8	SF16	▽	09991	SH16M50	M50
8	SF16	▽	17240	SH16INC35	INC35
8	SF16	▽	03888	S16NA	NANO
8	SF16	▽▽▽	01280	F1603	K03
8	SF16	▽	07861	S1610G	K10G
8	SF16	▽	02816	S1610	K10
8	SF16	▽+▽▽▽	26091	F16AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

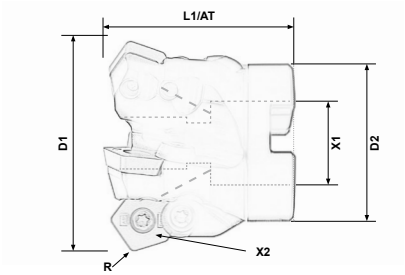


AURA® Frästechnik GmbH

AURA® AS 5K16

Shell mill for pentagonal indexable insert made of tempered tool steel. Universally usable for roughing on stable machines.
The corner radius to be programmed is 7 mm. The tools cut smoothly and they are very suitable for face milling and contour milling at ap 3-6 mm.

+ unequal division
+ roughing with great ap
+ internal cooling supply
+ face milling and contour milling
+ five-edged indesable insert



Exemplary Cutting Data for Code 06841 ▽

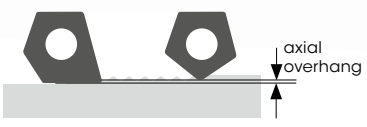
Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	K10G	509	2139	160	3.00	68.80	0.60

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	7	4	55	40	AST16	5K16	06840	45270-AST16-055-5K16	01365	01368
66	7	5	55	48	AST27	5K16	06619	56670-AST27-055-5K16	01365	01368
80	7	6	55	60	AST27	5K16	06885	68070-AST27-055-5K16	01365	01368
100	7	7	55	70	AST32	5K16	06841	710070-AST32-055-5K16	01365	01368
125	7	8	55	70	AST40	5K16	06856	812570-AST40-055-5K16	01365	01368
160	7	9	55	120	AST40	5K16	06761	916070-AST40-055-5K16	01365	01368
180	7	11	55	160	AST60	5K16	07860	1118070-AST60-055-5K16-FL	01365	01368
200	7	12	55	160	AST60	5K16	06778	1220070-AST60-055-5K16-FL	01365	01368
250	7	15	55	160	AST60	5K16	07189	1525070-AST60-055-5K16-FL	01365	01368
315	7	15	55	160	AST60	5K16	10513	1531570-AST60-055-5K16-FL	01365	01368

5K16
R=7mm
M=5Nm

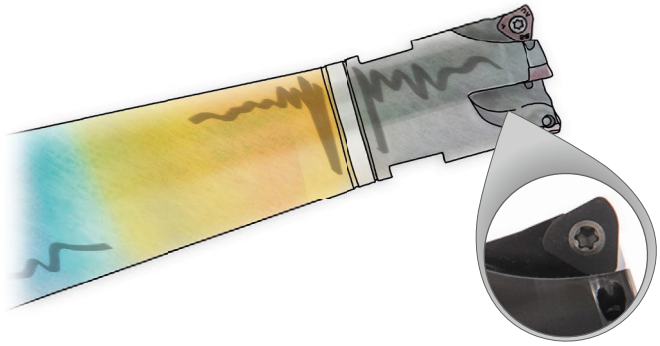
R	X2	Roughing/Finishing	Code	Article number	
7	5K16	▽	09877	5K16P25	P25
7	5K16	▽	21282	5K16P25U	P25U
7	5K16	▽	07028	5K16P40	P40
7	5K16	▽	08711	5K16P50	P50
7	5K16	▽	08712	5K16M40	M40
7	5K16	▽	07002	5K16K10G	K10G
7	5K16	▽▽▽	26333	5K16PM40-BSS	PM40



* This indexable insert was designed for finishing planar surfaces and can be used at all AS-5K16 holders. A high surface quality is efficiently fullfilled thanks to its special wiper geometry. The universally usable substrate „PM40" guarantees another scope of application, which ranges to general tool steel to coast materials to stainless steels.

+ wiper geometry to create even surfaces without steps at short processing times
+ usable with five-edged indexable inserts or individually
+ axial overhang towards five-edged indexable insert: 0,08 mm
+ wet and dry machining possible
+ finishing and pre-finishing of mould plates at mould and die production
+ universally usable, e.g. tool steels up to 40 HRC, cast, stainless steels and superalloys

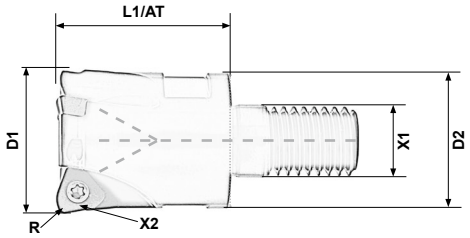
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



AURA® TRIHF11

HSC milling head with metrical thread for great working depth. Very smooth cut and low radial cutting powers for a safe work process. Usable at great working depths, even on cylindrical walls.

+ high feed rates
+ reduction of vibration
+ internal cooling supply
+ great overhangs



Exemplary Cutting Data for Code 11128 ▽

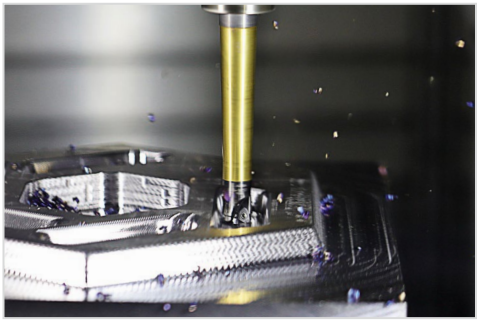
Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25U	1698	6791	160	0.50	22.24	1.00

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	1.1	2	23	15.4	M10k	TRI11	11105	21611-M10k-023-TRI11	03929	02395
20	1.1	3	25	18	M10	TRI11	11125	32011-M10-025-TRI11	03929	02395
25	1.1	3	29	23	M12	TRI11	11126	32511-M12-029-TRI11	03929	02395
25	1.1	4	29	21	M12	TRI11	31971	42511-M12-029-TRI11	03929	02395
30	1.1	4	43	29	M16	TRI11	11128	43011-M16-043-TRI11	03929	02395
30	1.1	5	43	29	M16	TRI11	31972	53011-M16-043-TRI11	03929	02395
32	1.1	3	43	29	M16	TRI11	12243	33211-M16-043-TRI11	03929	02395
32	1.1	5	43	29	M16	TRI11	31973	53211-M16-043-TRI11	03929	02395
35	1.1	5	43	29	M16	TRI11	11129	53511-M16-043-TRI11	03929	02395
35	1.1	6	43	29	M16	TRI11	31974	63511-M16-043-TRI11	03929	02395
42	1.1	5	43	29	M16	TRI11	11130	54211-M16-043-TRI11	03929	02395
42	1.1	6	43	38	M16G	TRI11	11432	64211-M16G-043-TRI11	03929	02395
42	1.1	7	43	29	M16	TRI11	31975	74211-M16-043-TRI11	03929	02395

Tri11
R = 1.1 mm
M = 1.7 Nm

R	X2	Roughing/Finishing	Code	Article number	
1.1	Tri11	▽	17250	Tri11P25U	P25U
1.1	Tri11	▽	10880	Tri11P50	P50
1.1	Tri11	▽	17870	Tri11INC35	INC35
1.1	Tri11	▽	11500	Tri11NA	NANO
1.1	Tri11	▽	11121	Tri11K10G	K10G

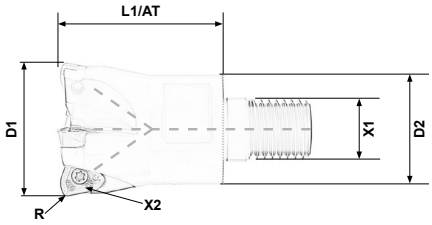


*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® TRIHF16

HSC milling head with metrical thread for great working depth. Very smooth cut and low radial cutting powers for a safe work process. Usable at great working depths, even on cylindrical walls.

+ high feed rates
+ reduction of vibration
+ internal cooling supply
+ great overhangs



Exemplary Cutting Data for Code 20508 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25U	1 213	6 063	160	0.80	31.04	1.00

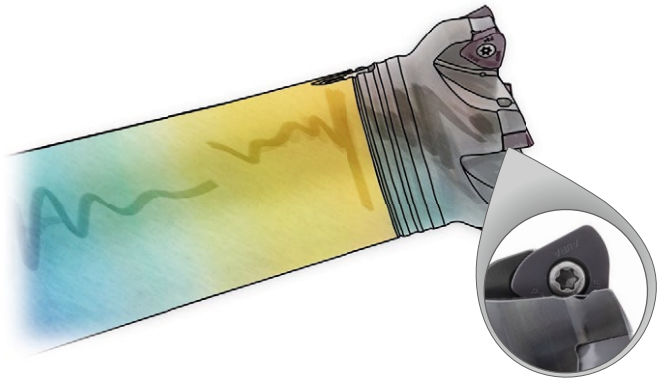
You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
30	1.6	3	43	29	M16	TRI16	20510	33016-M16-043-TRI16	04002	02396
35	1.6	4	43	29	M16	TRI16	20509	43516-M16-043-TRI16	04002	02396
42	1.6	5	43	29	M16	TRI16	20508	54216-M16-043-TRI16	04002	02396
52	1.6	6	50	40	AST22	TRI16	20506	65216-AST22-050-TRI16	04002	02396
52	1.6	5	50	40	AST22	TRI16	20507	55216-AST22-050-TRI16	04002	02396

Tri16
R=1.6mm
M=1.7Nm

R	X2	Roughing/Finishing	Code	Article number	
1.6	Tri16	▽	20485	Tri16P25U	P25U
1.6	Tri16	▽	29367	Tri16P50	P50
1.6	Tri16	▽	19537	Tri16INC35	INC35
1.6	Tri16	▽	20484	Tri16NA	NANO

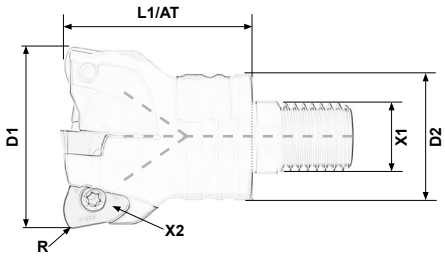
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



AURA® TRIHF22

HSC milling head for great working depth. Very smooth cut and low radial cutting powers for a safe work process. Usable at great working depths, even on cylindrical walls.

+ high feed rates
+ reduction of vibration
+ internal cooling supply
+ great overhangs

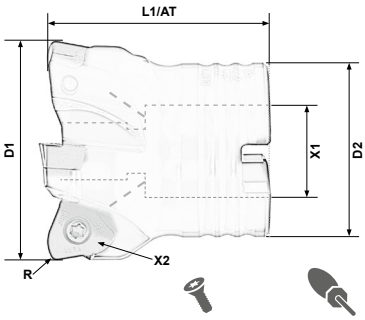


Exemplary Cutting Data for Code 10862 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25U	979	4897	160	1.00	38.08	1.00

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
35	2.2	3	43	29	M16	TRI22	11603	33522-M16-043-TRI22	10869	1367
42	2.2	4	43	29	M16	TRI22	10860	44222-M16-043-TRI22	10869	1367

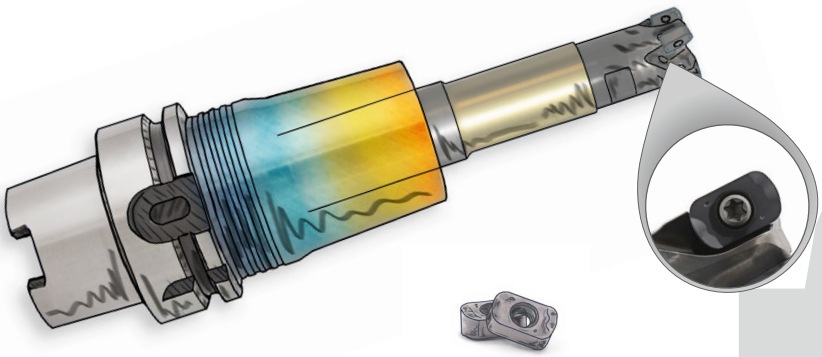


D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
52	2.2	5	50	40	AST22	TRI22	10862	55222-AST22-050-TRI22	10869	1367
66	2.2	5	50	48	AST27	TRI22	10863	56622-AST27-050-TRI22	10869	1367
80	2.2	6	50	60	AST27	TRI22	10864	68022-AST27-050-TRI22	10869	1367
100	2.2	7	50	70	AST32	TRI22	11412	710022-AST32-050-TRI22	10869	1367

Tri22
R=2.2mm
M=5.5Nm

R	X2	Roughing/Finishing	Code	Article number	
2.2	Tri22	▽	17251	Tri22P25U	P25U
2.2	Tri22	▽	10867	Tri22P50	P50
2.2	Tri22	▽	29371	Tri22NA	NANO
2.2	Tri22	▽	11122	Tri22K10G	K10G

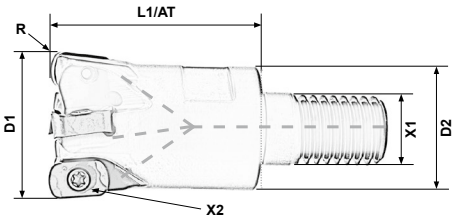
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



[dhf] Double-High-Feed

The double-high-feed [**dhf**] was developed for high feed machining with high productivity. It enables roughing and pre-roughing with a high metal removal rate. We recommand a stable and powerful machine for the use of [**dhf**] as well as moderate operating conditions.

+ helical and linear entrance and ramping
+ two universal grades, e.g. low alloyed, untempered and unhardened steels, general tool steel and hardened steels < 52 HRC
+ low radial forces
+ face and contour milling



Exemplary Cutting Data for Code 26033 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25U	1 850	7 401	186	0.80	23.80	0.80

You can find all available tools and information online at: iklick.aura.tools

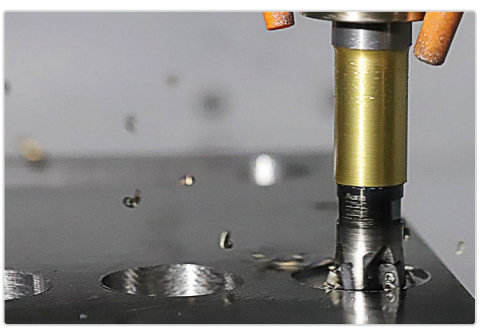
D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
20	2	3	30	18	M10	DHF10	26030	32020-M10-030-DHF10	31078	02395
25	2	4	35	21	M12	DHF10	26031	42520-M12-035-DHF10	31078	02395
32	2	5	43	29	M16	DHF10	26033	53220-M16-043-DHF10	31078	02395
35	2	5	43	29	M16	DHF10	26034	53520-M16-043-DHF10	31078	02395
30	2	5	43	29	M16	DHF10	28984	53020-M16-043-DHF10	31078	02395
42	2	6	43	29	M16	DHF10	26036	64220-M16-043-DHF10	31078	02395
42	2	6	43	35	AST16	DHF10	30187	64220-AST16-043-DHF10	31078	02395
52	2	7	50	40	AST22	DHF10	30188	75220-AST22-050-DHF10	31078	02395

DHF10
R=2mm
M=1.3Nm

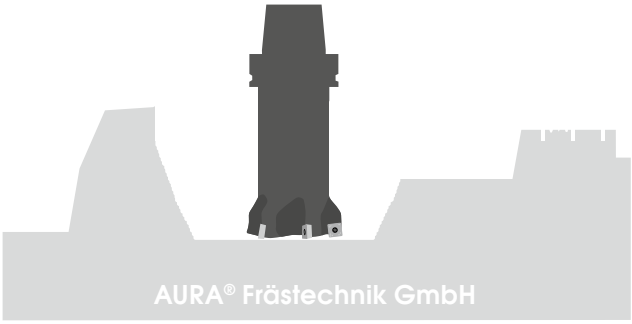
Radius	X2	Roughing/Finishing	Code	Article number	
2	DHF10	▽	26958	DHF10P25U	P25U
2	DHF10	▽	27958	DHF10K10	K10

By releasing the indexable insert the tool doesn't tend to radial pressure, as it is at round plates e.g.

Low residual material of 0,222 mm at a programmed radius of 2 mm.



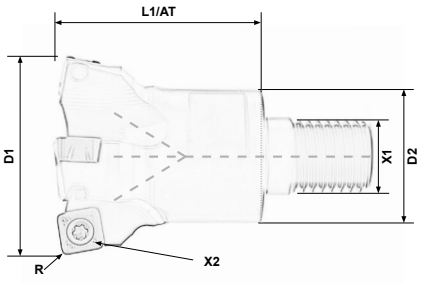
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



[phf] Power-High-Feed

Modular screw-in milling cutter or shell mill for high feed indexable inserts with four flutes in positive installation position. Roughing with great removal rates in a stable system.

+ unequal division
+ feed rate per flute up to 2 mm / rotation
+ internal cooling supply
+ no chip clamping beetween component wall and carrier



Exemplary Cutting Data for Code 21670 ▽

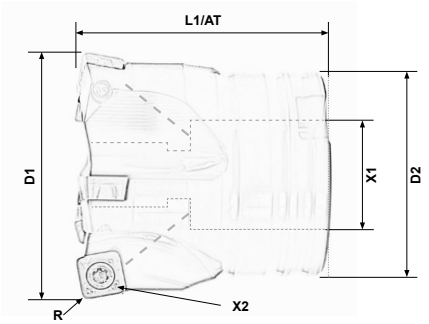
Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25U	1 288	6184	170	1.00	30.08	1.20

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
35	2.2	3	43	29	M16	PHF09	23578	33520-M16-043-PHF09	21677	22497
42	2.2	4	43	29	M16	PHF09	21670	44220-M16-043-PHF09	21677	22497
40	2.2	4	35	32	AST16	PHF09	24094	44020-AST16-035-PHF09	21677	22497
52	2.2	5	50	40	AST22	PHF09	21671	55220-AST22-050-PHF09	21677	22497
66	2.2	6	50	48	AST27	PHF09	21672	66620-AST27-050-PHF09	21677	22497

PHF09
R=2.2mm
M=3Nm

R	X2	Roughing/Finishing	Code	Article number	
2.2	PHF09	▽	22295	PHF09P25U	P25U
2.2	PHF09	▽	23350	PHF09P50	P50
2.2	PHF09	▽	21745	PHF09K15	K15



D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
66	3.1	5	50	48	AST27	PHF14	21673	56630-AST27-050-PHF14	21678	22498
80	3.1	6	50	60	AST27	PHF14	21674	68030-AST27-050-PHF14	21678	22498
100	3.1	6	52	70	AST32	PHF14	21675	610030-AST32-052-PHF14	21678	22498

PHF14
R=3.1mm
M=5Nm

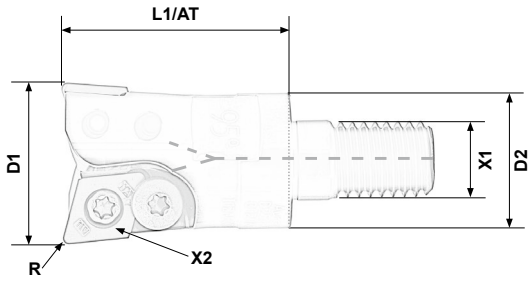
R	X2	Roughing/Finishing	Code	Article number	
3.1	PHF14	▽	22296	PHF14P25U	P25U
3.1	PHF14	▽	21746	PHF14K15	K15

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® EST

Modular screw-in milling cutter for rhombic indexable inserts.
Universally usable for roughing (low a_p) and finishing.
a) 90° released version, for simple square shoulder milling
- this version is unsuitable for multipass milling at vertical walls
b) 95° axial released, to avoid vibrations
- for great overhangs/ high vertical walls
- milling with low vibration

+ low axial and radial cutting pressure
+ roughing (low a_p) and finishing
+ internal cooling supply
+ perfect for overhangs > 5×D



Exemplary Cutting Data for Code 02437 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	NANO	2546	3056	200	0.20	16.10	0.60

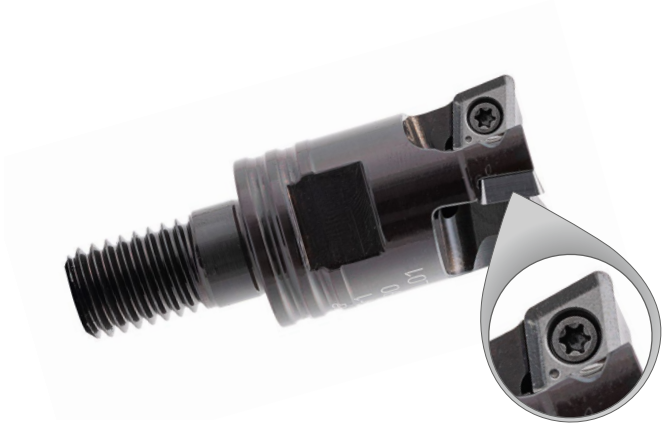
You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2		Code	Article number	Code	Code
25	1	2	35	21	M12	R10	a) 90°	02437	2251090-M12-035-RB10	01364	01367
35	1	3	43	29	M16	R10		02405	3351090-M16-043-RB10	01364	01367
25	1	2	35	21	M12	R10	b) 95°	01296	22510-M12-035-RB10	01364	01367
35	1	3	43	29	M16	R10		01297	33510-M16-043-RB10	01364	01367
42	1	4	43	29	M16	R10		01298	44210-M16-043-RB10	01364	01367

R10
R=1mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
1	R10	▽	01375	R1025	P25
1	R10	▽	01274	R1040	P40
1	R10	▽+▽▽▽	03793	R10NA	NANO
1	R10	▽▽▽	01275	R1003	K03
1	R10	▽+▽▽▽	01193	R1010	K10
1	R10	▽+▽▽▽	26096	R10AL	AL
1	R10	▽+▽▽▽	06990	R10DI	DIA

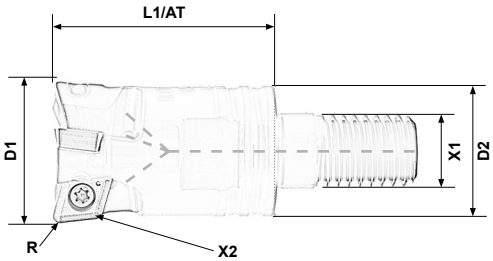
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



AURA® EST HQC

Modular screw-in milling cutter for rhombic indexable inserts.
Universally usable for roughing (low a_p) and finishing.
a) 90° released version, for simple square shoulder milling
- this version is unsuitable for multipass milling at vertical walls
b) 95° axial released, to avoid vibrations
- for great overhangs/ high vertical walls
- milling with low vibration

+ low axial and radial cutting pressure
+ roughing (low a_p) and finishing
+ internal cooling supply
+ perfect for overhangs > 5×D



Exemplary Cutting Data for Code 20491 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	NANO	2546	4584	200	0.20	16.10	0.60

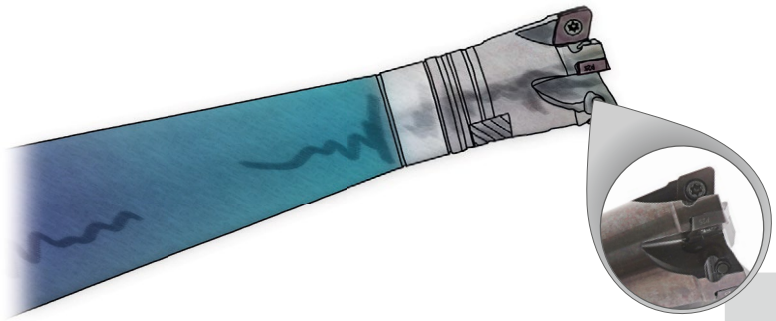
You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2		Code	Article number	Code	Code
15	1	2	23	13.5	M8	R06	a) 90°	20983	2151090-M8-023-RB06-HQC	01363	01366
20	1	3	30	18	M10	R06		20489	3201090-M10-030-RB06-HQC	01363	01366
25	1	3	35	21	M12	R06		20491	3251090-M12-035-RB06-HQC	01363	01366
16	1	2	23	13.5	M8	R06	b) 95°	17096	21610-M8-023-RB06 HQC	01363	01366
16	1	2	23	15.4	M10k	R06		20487	21610-M10k-023-RB06-HQC	01363	01366
20	1	3	30	18	M10	R06		20490	32010-M10-030-RB06-HQC	01363	01366
25	1	3	35	21	M12	R06		20495	32510-M12-035-RB06 HQC	01363	01366

R06
R=1mm
M=0.9Nm

R	X2	Roughing/Finishing	Code	Article number	
1	R06	▽	01373	R0625	P25
1	R06	▽	01374	R0640	P40
1	R06	▽+▽▽▽	03792	R06NA	NANO
1	R06	▽▽▽	01372	R0603	K03
1	R06	▽+▽▽▽	01239	R0610	K10
1	R06	▽+▽▽▽	26095	R06AL	AL
1	R06	▽+▽▽▽	03872	R06DI	DIA

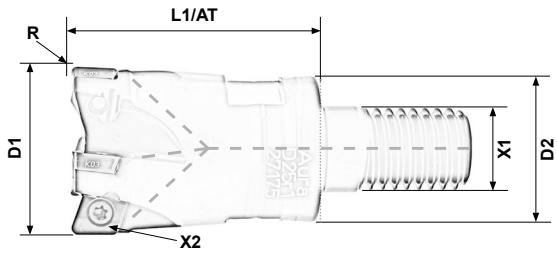
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



[ZS] Plunge-pull-milling system for finishing

This modular plunge-pull-milling system for finishing was designed for economical and efficient finishing of vertical walls. The system allows the compliance of paralell tolerances in mould frames or sliding contact surfaces. Also the milling strategy is qualified for sectors with demoulding or mounting surfaces as the feed direction follows the direction of movement.

+ edit vertical walls perpendicular
+ low cutting forces
+ shorter processing times towards conventional multipass milling
+ hugh cutting speeds possible



Exemplary Cutting Data for Code 27174 ▽▽▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<58 HRC	NANO	1 989	1 910	125	0.20	0.12	0.24

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	1	3	23	15.4	M10k	R06	27173	3161091-M10k-023-RB06-HQC	01363	01366
20	1	4	30	18	M10	R06	27174	4201091-M10-030-RB06-HQC	01363	01366
25	1	5	35	21	M12	R06	27175	5251091-M12-035-RB06-HQC	01363	01366
35	1	7	43	29	M16	R06	27176	7351091-M16-043-RB06-HQC	01363	01366

R06
R=1 mm
M=0.9 Nm

R	X2	Roughing/Finishing	Code	Article number	
1	R06	▽▽▽	03792	R06NA	NANO

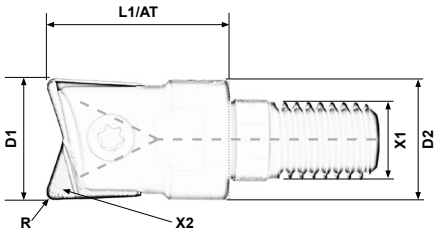
For optical distinction to current EST-HQC straps this system is designed with two circumferential notchs at the strap area.

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® ET

Modular screw-in milling cutter for one-piece torical indexable inserts. Universally usable for roughing and finishing. Outstandingly suitable for finishing without steps due to its axial and radial finishing geometry.

+ low axial and radial cutting pressure
+ roughing and finishing
+ internal cooling supply
+ perfect for overhangs > 5×D



Exemplary Cutting Data for Code 02232 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	NANO	1 989	796	75	0.20	5.00	0.20

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
10	-	2	20	9.8	M6	T10	01506	ET-10-M6-020	02114	02395

T10
M=2 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
10	1	T10	▽+▽▽▽	03839	T1010NA	NANO
10	1	T10	▽+▽▽▽	02432	T1010DIA	DIA

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
12	-	2	20	11.5	M7	T12	01507	ET-12-M7-020	02115	02396
12	-	2	20	10	M6	T12	02232	ET-12-M6-020	02115	02396

T12
M=3 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
12	1	T12	▽+▽▽▽	03838	T1210NA	NANO
12	2	T12	▽+▽▽▽	04699	T1220NA	NANO
12	1	T12	▽+▽▽▽	02433	T1210DIA	DIA

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	-	2	23	15.4	M10k	T16	01509	ET-16-M10k-023	02116	01367

T16
M=4.5 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
16	1	T16	▽+▽▽▽	03837	T1610NA	NANO
16	2	T16	▽+▽▽▽	03836	T1620NA	NANO
16	1	T16	▽+▽▽▽	03831	T1610DIA	DIA

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
20	-	2	28	18	M10	T20	02233	ET-20-M10-028	02117	01368

T20
M=7.5 Nm

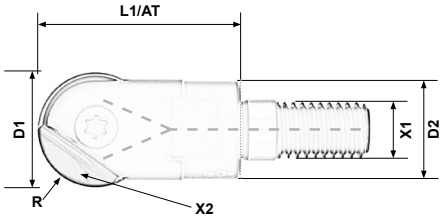
D1	R	X2	Roughing/Finishing	Code	Article number	
20	1.6	T20	▽+▽▽▽	12140	T2016NA	NANO

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® EK

Modular screw-in milling cutter one-piece radius indexable inserts. Universally usable for roughing and finishing.

+ roughing and finishing
+ internal cooling supply
+ change accuracy ±0.015 mm



Exemplary Cutting Data for Code 03981 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
<65 HRC	NANO	19989	796	75	0.36	0.00	0.20

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
10	5	2	23	9.8	M6	K10	02108	EK-10-M6-023	02114	02395

K10 R=5 M=2 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
10	5	K10	▽+▽▽▽	03983	D10NA	NANO

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
12	6	2	23	9.8	M6	K12	07427	EK-12-M6-023	02115	02396
12	6	2	23	11.5	M7	K12	03981	EK-12-M7-023	02115	02396
12	6	2	23	13	M8	K12	07430	EK-12-M8-023	02115	02396

K12 R=6 M=3 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
12	6	K12	▽+▽▽▽	03984	D12NA	NANO

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	8	2	28	13.6	M8	K16	03820	EK-16-M8-028	02116	01367
16	8	2	28	15.4	M10k	K16	03982	EK-16-M10k-028	02116	01367

K16 R=8 M=4.5 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
16	8	K16	▽+▽▽▽	03985	D16NA	NANO

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
20	10	2	28	18	M10	K20	03317	EK-20-M10-028	02117	01368

K20 R=10 M=7.5 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
20	10	K20	▽+▽▽▽	03986	D20NA	NANO

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
32	16	2	49	26	M16	K32	10175	EK-32-M16-049	12377	12380

K32 R=16 M=4 Nm

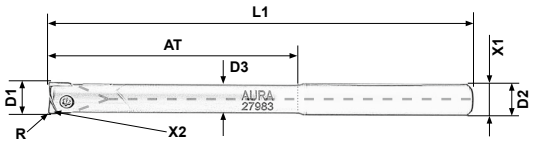
D1	R	X2	Roughing/Finishing	Code	Article number	
32	16	K32	▽+▽▽▽	10180	D32NA	NANO

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

[v-et-sc]

Carbide shank with high rigidity.
The AURA® V-seat system guarantees a high precision and repeatability at changing the indexable insert. You can machine all graphite grades, e.g. roughing and finishing in 2-D and 3-D as well as post-processing of residual material.

+ predestined for thin ribbed electrodes
+ circumference released for machining with low vibration
+ difficult L/D relations are practicable > 10×D
+ modular version for high flexibility
+ configurate and export tools in our iKlick



Exemplary Cutting Data for Code 27980 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	DIA	27 852	11 141	700	1.00	6.00	0.20

You can find all available tools and information online at: iklick.aura.tools

D1	AT	z	D2	D3	L1	X1	X2	Code	Article number	Code	Code
6	41	2	6	5.6	80	S6	T06-VA	27657	ET-06-SC-041-080-06-VA	30069	01366
6	41	2	8	5.6	80	S8	T06-VA	27659	ET-06-SC-041-080-08-VA	30069	01366
6	61	2	6	5.6	100	S6	T06-VA	27658	ET-06-SC-061-100-06-VA	30069	01366
6	61	2	8	5.6	100	S8	T06-VA	27660	ET-06-SC-061-100-08-VA	30069	01366
6	101	2	8	5.6	140	S8	T06-VA	27661	ET-06-SC-101-140-08-040-VA	30069	01366

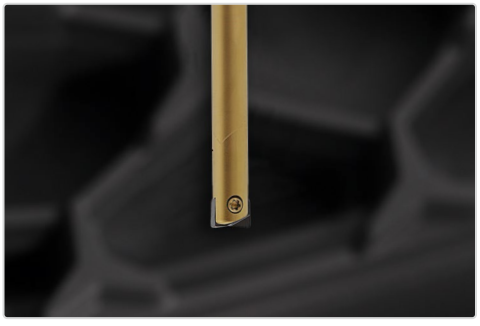
T06-VA
R=0.5/1 mm
M=0.9 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
6	0.5	T06-VA	▽+▽▽▽	29155	T0605DIA-VA	DIA
6	1	T06-VA	▽+▽▽▽	29156	T0610DIA-VA	DIA

D1	AT	z	D2	D3	L1	X1	X2	Code	Article number	Code	Code
8	41	2	10	7.2	85	S10	T08-VA	27980	ET-08-SC-041-085-10-VA	24805	01366
8	41	2	8	7.2	85	S8	T08-VA	27982	ET-08-SC-041-085-08-VA	24805	01366
8	61	2	10	7.2	105	S10	T08-VA	27981	ET-08-SC-061-105-10-VA	24805	01366
8	61	2	8	7.2	105	S8	T08-VA	27983	ET-08-SC-061-105-08-VA	24805	01366
8	101	2	8	7.2	140	S08	T08-VA	27662	ET-08-SC-101-140-08-VA	24805	01366
8	101	2	10	7.2	145	S10	T08-VA	27665	ET-08-SC-101-145-10-VA	24805	01366
8	101	2	10	7.2	145	S10	T08-VA	27666	ET-08-SC-101-145-10-040-VA	24805	01366

T08-VA
R=0.5/1 mm
M=0.9 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
8	0.5	T08-VA	▽+▽▽▽	29158	T0805DIA-VA	DIA
8	1	T08-VA	▽+▽▽▽	29159	T0810DIA-VA	DIA

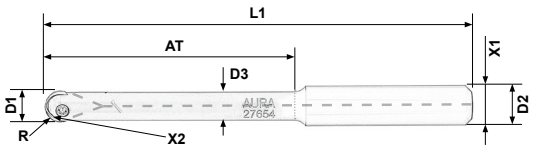


*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

[v-ek-sc]

Carbide shank with high rigidity.
The AURA® V-seat system guarantees a high precision and repeatability at changing the indexable insert. You can machine all graphite grades, e.g. roughing and finishing in 2-D and 3-D as well as post-processing of residual material.

+ predestined for thin ribbed electrodes
+ circumference released for machining with low vibration
+ difficult L/D relations are practicable > 10×D
+ modular version for high flexibility
+ configurate and export tools in our iKlick

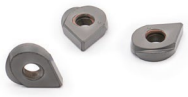


Exemplary Cutting Data for Code 27650 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
Graphit	DIA	21 884	4 377	550	0.60	0.00	0.10

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT	D2	D3	L1	X1	X2	Code	Article number	Code	Code
6	3	2	41	8	5.6	80	S8	K06-VA	27647	EK-06-SC-041-080-08-VA	30069	01366
6	3	2	41	6	5.6	80	S6	K06-VA	27645	EK-06-SC-041-080-06-VA	30069	01366
6	3	2	61	6	5.6	100	S6	K06-VA	27646	EK-06-SC-061-100-06-VA	30069	01366
6	3	2	61	8	5.6	100	S8	K06-VA	27648	EK-06-SC-061-100-08-VA	30069	01366
6	3	2	101	8	5.6	140	S8	K06-VA	27649	EK-06-SC-101-140-08-040-VA	30069	01366



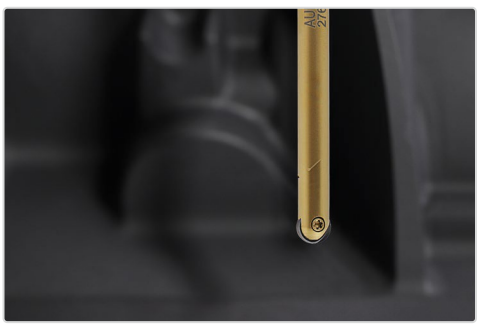
K06-VA
R=3mm
M=0.9Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
6	3	K06-VA	▽+▽▽▽	29157	D06DIA-VA	DIA

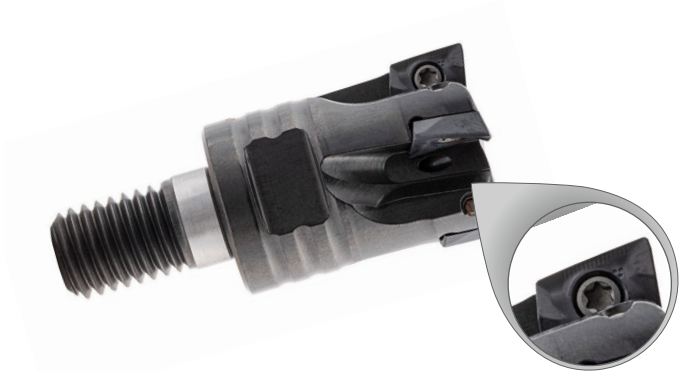
D1	R	z	AT	D2	D3	L1	X1	X2	Code	Article number	Code	Code
8	4	2	41	8	7.2	85	S8	K08-VA	27650	EK-08-SC-041-085-08-VA	24805	01366
8	4	2	41	10	7.2	85	S10	K08-VA	27653	EK-08-SC-041-085-10-VA	24805	01366
8	4	2	61	8	7.2	105	S8	K08-VA	27651	EK-08-SC-061-105-08-VA	24805	01366
8	4	2	61	10	7.2	105	S10	K08-VA	27654	EK-08-SC-061-105-10-VA	24805	01366
8	4	2	101	8	7.2	140	S8	K08-VA	27652	EK-08-SC-101-140-08-VA	24805	01366
8	4	2	101	10	7.2	145	S10	K08-VA	27655	EK-08-SC-101-145-10-VA	24805	01366
8	4	2	101	10	7.2	145	S10	K08-VA	27656	EK-08-SC-101-145-10-040-VA	24805	01366

K08-VA
R=4mm
M=0.9Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
8	4	K08-VA	▽+▽▽▽	29160	D08DIA-VA	DIA



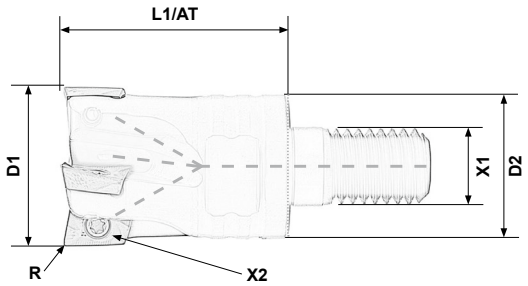
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



AURA® ES AOMX

Modular screw-in miling cutter for AMOX indexable inserts with different corner radii. Universally usable for roughing and pre finishing. The corner radius to be programmed results of the choosen indexable insert.

+ good plunging behavior
+ roughing and pre finishing
+ internal cooling supply
+ wear resisting substrates



Exemplary Cutting Data for Code 06021 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	AL	6366	7639	500	3.00	18.72	0.30

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	0.8	2	30	14.5	M8	MS08	06189	21608-M8-030-AOMX	25618	02395
20	0.8	3	30	18	M10	MS08	06219	32008-M10-030-AOMX	06803	02395
25	0.8	3	35	22.6	M12	MS08	09763	32508-M12-035-AOMX	06803	02395
25	0.8	4	35	22.6	M12	MS08	06021	42508-M12-035-AOMX	06803	02395
32	0.8	5	40	29.4	M16	MS08	07014	53208-M16-040-AOMX	06803	02395
40	0.8	6	40	29.4	M16	MS08	07015	64008-M16-040-AOMX	06803	02395

MS08

M=1.5Nm

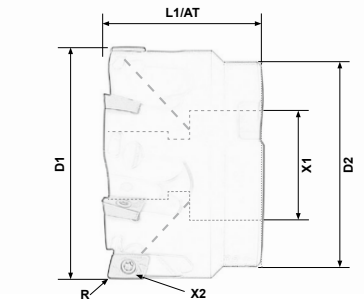
R	X2	Roughing/Finishing	Code	Article number	
0.4	MS08	▽+▽▽▽	07016	AOMX0425	P25
0.4	MS08	▽+▽▽▽	07019	AOMX04M40	M40
0.8	MS08	▽+▽▽▽	06022	AOMX0825	P25
0.8	MS08	▽+▽▽▽	06765	AOMX08M40	M40
0.8	MS08	▽+▽▽▽	26640	AOCX08AL	AL
1.6	MS08	▽+▽▽▽	07017	AOMX1625	P25
1.6	MS08	▽+▽▽▽	11460	AOMX16M40	M40
3.2	MS08	▽+▽▽▽	07018	AOMX3225	P25
3.2	MS08	▽+▽▽▽	07486	AOMX32M40	M40

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

AURA® AST AOMX

Shell mill for AMOX indexable inserts with different corner radii. Universally usable for roughing and pre finishing. The corner radius to be programmed results of the choosen indexable insert.

+ good plunging behavior
+ roughing and pre finishing
+ internal cooling supply
+ wear resisting substrates



Exemplary Cutting Data for Code 07130 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	AL	3979	7162	500	3.00	30.72	0.30

You can find all available tools and information online at: iklick.aura.tools

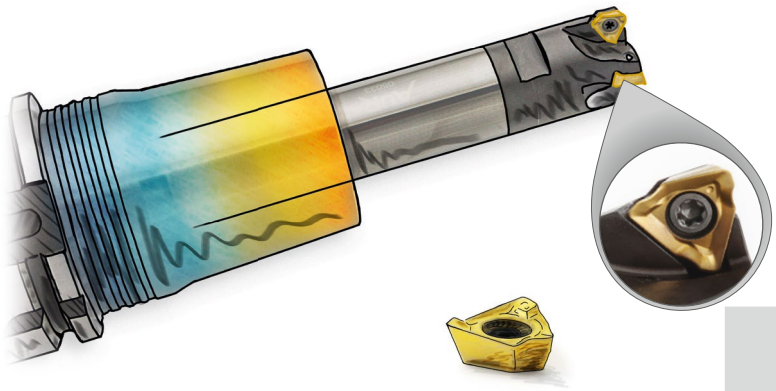
D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
32	0.8	5	32	30	AST16	MS08	08713	53208-AST16-032-AOMX	06803	02395
40	0.8	6	40	38	AST22	MS08	07130	64008-AST22-040-AOMX	06803	02395
50	0.8	7	40	48	AST22	MS08	07485	65008-AST22-040-AOMX	06803	02395
63	0.8	7	40	55	AST22	MS08	07157	76308-AST22-040-AOMX	06803	02395

MS08

M=1.5Nm

R	X2	Roughing/Finishing	Code	Article number	
0.4	MS08	▽+▽▽▽	07016	AOMX0425	P25
0.4	MS08	▽+▽▽▽	07019	AOMX04M40	M40
0.8	MS08	▽+▽▽▽	06022	AOMX0825	P25
0.8	MS08	▽+▽▽▽	06765	AOMX08M40	M40
0.8	MS08	▽+▽▽▽	26640	AOCX08AL	AL
1.6	MS08	▽+▽▽▽	07017	AOMX1625	P25
1.6	MS08	▽+▽▽▽	11460	AOMX16M40	M40
3.2	MS08	▽+▽▽▽	07018	AOMX3225	P25
3.2	MS08	▽+▽▽▽	07486	AOMX32M40	M40

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

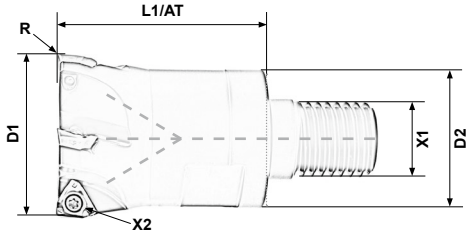


AURA® Frästechnik GmbH

[msf] Mirror-Surface-Finish

The tool system [**msf**] with three flutes creates excellent, extremly smooth plane surfaces without steps. It displaces the use of solid carbide tools at finishing 2D-surfaces.

+ good repeat accuracy, even at interrupted cuts
+ very economic due to short processes
+ universally usable due to two high-performing substrates
+ safe machining at interrupted cuts



Exemplary Cutting Data for Code 21690 ▽▽▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
1000N	P25	2653	1272	250	0.10	11.60	0.12

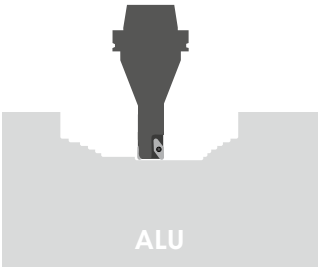
You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	0.5	2	23	15.4	M10k	MSF07	21687	21605-M10k-023-MSF	01363	01366
20	0.5	3	28	18	M10	MSF07	21688	32005-M10-028-MSF	01363	01366
25	0.5	4	35	23	M12	MSF07	21689	42505-M12-035-MSF	01363	01366
30	0.5	4	43	29	M16	MSF07	21690	43005-M16-043-MSF	01363	01366
35	0.5	5	43	29	M16	MSF07	21691	53505-M16-043-MSF	01363	01366
42	0.5	6	43	29	M16	MSF07	21692	64205-M16-042-MSF	01363	01366

MSF07
R=0,5mm
M=0.9Nm

Radius	X2	Roughing/Finishing	Code	Article number	
0.5	MSF07	▽+▽▽▽	23497	MSF07P25	P25
0.5	MSF07	▽▽▽	23498	MSF07K05	K05

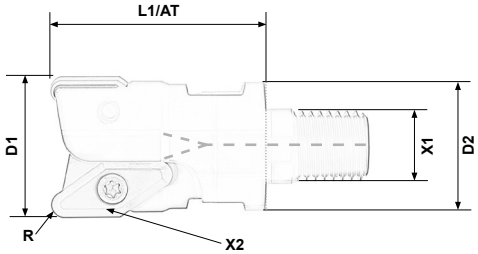
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



AURA® EAL

Moduar screw-in milling cutter for V-shaped indexable inserts. Universally usable for roughing and finishing in aluminium alloys. Ideal for steep plunging due to the axial separated installation position of the indexable insert.

+ low axial cutting pressure
+ roughing and finishing
+ internal cooling supply
+ very good chip removal

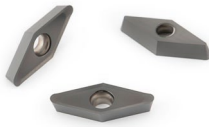


Exemplary Cutting Data for Code 11700 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	AL	5305	26526	700	1.00	32.00	1.00

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
16	1	2	36	13.5	M8	VCGT1	06720	21610-M8-036-VDGT1	01363	01366
20	1	2	36	18	M10	VCGT1	06217	22010-M10-036-VDGT1	01363	01366
25	1	3	41	21	M12	VCGT1	01253	32510-M12-041-VDGT1	01363	01366
42	1	5	45	34	M16	VCGT1	11700	54210-M16-045-VDGT1	01363	01366



VCGT1
R=1 mm
M=0.9 Nm

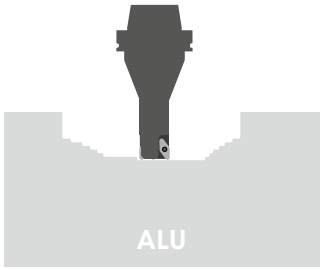
R	X2	Roughing/Finishing	Code	Article number	
1	VCGT1	▽+▽▽▽	32243	VDGT1110AL	AL
1	VCGT1	▽+▽▽▽	32244	VDGT1110AS	AS

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
32	3	2	48	29	M16	VCGT3	00069	23230-M16-048-VCGT3	01365	01368
42	3	3	48	34	M16	VCGT3	00072	34230-M16-048-VCGT3	01365	01368

VCGT3
R=3 mm
M=5.5 Nm

R	X2	Roughing/Finishing	Code	Article number	
3	VCGT3	▽+▽▽▽	32279	VCGT2230AL	AL
3	VCGT3	▽+▽▽▽	32280	VCGT2230AS	AS

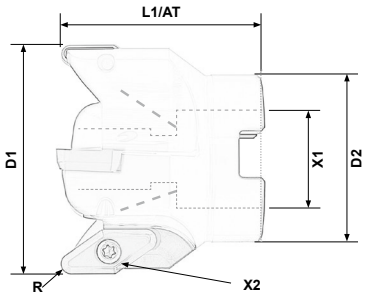
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.



AURA® AAL

Shell mill for V-shaped indexable inserts. Universally usable for roughing and finishing in aluminium alloys. Ideal for steep plunging due to the axial separated installation position of the indexable insert.

+ low axial cutting pressure
+ roughing and finishing
+ internal cooling supply
+ very good chip removal



Exemplary Cutting Data for Code 00803 ▽

Material		n (1/min)	v_f (mm/min)	v_c (m/min)	a_p (mm)	a_e (mm)	f_z (mm)
ALU	AL	2785	11141	700	3.00	59.20	1.00

You can find all available tools and information online at: iklick.aura.tools

D1	R	z	AT/L1	D2	X1	X2	Code	Article number	Code	Code
42	3	3	57	35	AST16	VCGT3	10971	34230-AST16-057-VCGT3	01365	01368
52	3	3	57	40	AST22	VCGT3	00006	35230-AST22-057-VCGT3	01365	01368
66	3	4	57	48	AST27	VCGT3	00007	46630-AST27-057-VCGT3	01365	01368
80	3	4	57	60	AST27	VCGT3	00803	48030-AST27-057-VCGT3	01365	01368

VCGT3
R=3 mm
M=5.5 Nm

R	X2	Roughing/Finishing	Code	Article number	
3	VCGT3	▽+▽▽▽	32279	VCGT2230AL	AL
3	VCGT3	▽+▽▽▽	32280	VCGT2230AS	AS

Screws for indexable inserts and clamp rings

You can find the corresponding screws and screwdrivers to the screw-in milling cutter and shell mills at the product page with modular tools.

A general overview can be find here:

You can find all available tools and information online at: **iklick.aura.tools**

Code	Article number	Drive (X2)	Description
01363	KS-R35-M2.5	TX7	Torx clamp srew for indexable insert
01364	KS-R50/R60-M3.5	TX15	Torx clamp srew for indexable insert
01365	KS-R80-M4.5	TX20	Torx clamp srew for indexable insert
03697	KS-R6 - Zusatzklemmung	TX15	Torx clamp srew for indexable insert
03890	KS-R35-M2.5-K	TX7	Torx clamp srew for indexable insert
03929	KS-R40-M2.5	TX8	Torx clamp srew for indexable insert
04002	KS-R1.3-M3	TX10	Torx clamp srew for indexable insert
05019	KS-5K13-M5	IP20	Torx clamp srew for indexable insert
20596	KS-R30-M2.2	TX6	Torx clamp srew for indexable insert
22460	KS-R30-M2.2-L	TX7	Torx clamp srew for indexable insert
31078	KS-DHF10-M2.5	TX8	Torx clamp srew for indexable insert DHF
10869	KS-T22-M4	TX15	Torx clamp srew for indexable insert TriHF 22
12377	KPS-R160-M8	TX15	Torx clamp srew for indexable insert TriHF 22
11162	KS-THV10	TX15	Torx clamp srew for indexable insert ETHV
11164	KS-THV12	TX20	Torx clamp srew for indexable insert ETHV
20602	KS-TK-V-16	TX20	Torx clamp srew for indexable insert ETHV
20603	KS-TK-V-20	TX20	Torx clamp srew for indexable insert ETHV
20604	KS-TK-V-25	TX20	Torx clamp srew for indexable insert ETHV
20605	KS-TK-V-32	TX30	Torx clamp srew for indexable insert ETHV
24805	KS-THV08	TX7	Torx clamp srew for indexable insert ETHV
21677	KS-PHF09	IP15	Torx clamp srew for indexable insert PHF
21678	KS-PHF14	IP20	Torx clamp srew for indexable insert PHF
03889	KS-R25-M2.0	TX6	Torx clamp srew for indexable insert
02113	KPS-R40-M2.5	TX7	Torx clamp srew for indexable insert
02114	KPS-R50-M3	TX8	Torx clamp srew for indexable insert
02115	KPS-R60-M3.5	TX10	Torx clamp srew for indexable insert
02116	KPS-R80-M4	TX15	Torx clamp srew for indexable insert
02117	KPS-R10-M5	TX20	Torx clamp srew for indexable insert
06803	KS-R0.8-MS 2.5-001/T8	TX8	Torx clamp srew for indexable insert
25618	KS-R0.8-MS 2.5-002/T8	TX8	Torx clamp srew for indexable insert
01418	KS-Klemmring D16	-	Clamp ring/ holder for indexable insert D16 and 5K16


01364


02115


03889


10869


20602


21678


01418

Screwdriver and accessories

You can find the corresponding screws and screwdrivers to the screw-in milling cutter and shell mills at the product page with modular tools.

A general overview can be find here:

You can find all available tools and information online at: **iklick.aura.tools**

Code	Article number	Drive (X2)	Description
10250	DMS-Griff-0,4-1,0-Nm	DMS-01	Torx DM screwdriver - handle 0,4 - 8 Nm
10251	DMS-Griff-0,5-2,0-Nm	DMS-01	Torx DM screwdriver - handle 0,4 - 8 Nm
10252	DMS-Griff-2,0-7,0-Nm	DMS-01	Torx DM screwdriver - handle 0,4 - 8 Nm
10253	DMS-Klinge-T4-0,25Nm	TX4	Torx DM screwdriver - interchangeable blade
10254	DMS-Klinge-T5-0,4Nm	TX5	Torx DM screwdriver - interchangeable blade
10255	DMS-Klinge-T6-0,6Nm	TX6	Torx DM screwdriver - interchangeable blade
10256	DMS-Klinge-T7-0,9Nm	TX7	Torx DM screwdriver - interchangeable blade
10257	DMS-Klinge-T8-1,3Nm	TX8	Torx DM screwdriver - interchangeable blade
10258	DMS-Klinge-T9-2,5Nm	TX9	Torx DM screwdriver - interchangeable blade
10259	DMS-Klinge-T10-3,8Nm	TX10	Torx DM screwdriver - interchangeable blade
10260	DMS-Klinge-T15-5,5Nm	TX15	Torx DM screwdriver - interchangeable blade
10261	DMS-Klinge-T20-8,0Nm	TX20	Torx DM screwdriver - interchangeable blade
10262	DMS-Klinge-T25-8,0Nm	TX25	Torx DM screwdriver - interchangeable blade
10263	DMS-TGriff-5,0-14,0-Nm	DMS-02	Torx DM cross handle 5 - 14 Nm
10264	DMS-T-Klinge-T15-6,0Nm	TX15	Torx DM screwdriver - interchangeable blade QG
10265	DMS-T-Klinge-T20-10,0Nm	TX20	Torx DM screwdriver - interchangeable blade QG
10266	DMS-T-Klinge-T25-15,0Nm	TX25	Torx DM screwdriver - interchangeable blade QG
10267	DMS-T-Klinge-T27-15,0Nm	TX27	Torx DM screwdriver - interchangeable blade QG
11361	DMS-T-Klinge-SW6-15,0Nm	SW6	Torx DM screwdriver - interchangeable blade QG
01366	TX-R35-07	TX7	Torx key
01367	TX-R50-15	TX15	Torx key
01368	TX-R80-20	TX20	Torx key
02395	TX-R40-08	TX8	Torx key
02396	TX-10	TX10	Torx key…
03891	TX-R25/30-06	TX6	Torx key
12380	TX-R160-30	TX20	Torx key
20699	TX-PG-09	TX9	Torx key
22497	TX-IP-R22-15	TX15	Torx key
22498	TX-IP-R31-20	TX20	Torx key
24381	TX-IP-D25-25IP	TX25IP	Torx key

Overview torques

Interface indexable insert (X1)

X1	torques M (Nm)
T06-VA	0.9
T08-VA	0.9
K06-VA	0.9
K08-VA	0.9
T10-V	3
T12-V	5.5
T16-V	5.5
T20-V	4
T25-V	4
DHF10	1.3
TRI11	1.7
TRI16	1.7
TRI22	5.5
MSF07	0.9
R06	0.9
R10	3.4
SF05	0.7
SF06	0.7
SF07	0.9
SF07199	0.9
SF08	1.7
SF10	3.4
SF12	3.4
SF16	5.5
PHF09	3
PHF14	5
5K16	5.5
MS08	1.5
VCGT1	0.9
VCGT3	5.5
T10	2
T12	3
T14	4.5
T16	4.5
T20	7.5
K10	2
K12	3
K16	4.5
K20	7.5
K32	4

Interface thread (X2)

Modular screw-in milling cutter

X2	torques M (Nm)
M6	8
M7	11
M8	15
M10	30
M12	40
M16	60

Size torx key

Size torx	Indexable Insert	Thread	torques M (Nm)
T6	SF05	M 2.0	0.70
T7	SF07	M 2.5	0.90
T8	SF08	M 2.5	1.70
T15	SF10	M 3.0	3.40
T15	SF12	M 3.5	3.80
T20	SF16 + 5-kant	M 4.5	5.50
T10	Tri16	M 3.0	3.00
T8	ET / EK 10	M 3	2.00
T10	ET / EK 12	M 3.5	3.00
T15	ET 14	M 4	4.50
T15	ET / EK 16	M 4	5.00
T20	ET / EK 20	M 5	7.50
T15		M 4	4.50
T20		M 5	5.50

AURA® indexable inserts guideline

The AURA® indexable inserts are designed for a process reliable machining. This is realized by strong and unfailing cutting materials who minimizes the damage potential in case of failure. This performance is called „emergency running characteristics" at AURA®.

AURA® Name	ISO Name	Tolerance	Application
S 10NA	RDMW	±0,050 mm	roughing machining
F 10NA	RDHW	±0,013 mm	finishing machining pre-finishing machining

Categorization

The AURA® portfolio of indexable inserts is devided in two areas. They differ in production-related tolerances and application.

While the S-indexable inserts have an edge roudness or protective chamfer, the F-indexable inserts are designed sharp, whereby they are usable for HSC milling (reduced axial depth of cut and increased spindle speed).

Additionally AURA® offers milling heads with especially low tolerances (for modular systems). They are classified as HQC (High Quality Cutting) and are recommended for the usage with F-indexable inserts for pre-finishing and finishing machining.

Also the HQC-cutter bodies have a higher strength against mechanical influences and are less vulnerable against deformation and wear.

Code	Article number	
07536	S1010G	K10G
07297	S1210G	K10G
07861	S1610G	K10G
01062	S1040	P40
01063	S1240	P40
15801	S10P25U	P25U
15802	S12P25U	P25U
09793	S10P50	P50
15802	S12P25U	P25U

Code	Article number	
20595	F06NA	NANO
02665	F07NA	NANO
03886	F07NA.1	NANO
03732	F08NA	NANO
03942	S10NA	NANO
03943	S12NA	NANO
03888	S16NA	NANO

HSC NANO

Cutting materials

Name	Materials	Characteristics
P25	Untempered cold work steels and hot work steels	Cutting material for roughing, usable at ambient conditions
P25U	Untempered cold work steels and hot work steels	Universal cutting material, usable at unfavourable conditions
P25C	Untempered cold work steels and hot work steels	High-performance cutting material, usable at ideal consitions
P40	Constructional steels, unhardened tool steels, stainless steels	Docile and robust cutting material
P50	Constructional steels, unhardened tool steels, stainless steels, particularly adverse machining conditions	Very robust cutting material; for interrupted cuts, bad clamping situations and large overhangs
M40	Constructional steels, unhardened tool steels, stainless steels	Docile and robust cutting material
M50	Constructional steels, unhardened tool steels, stainless steels	Positive chip angle; for dry machining and for using emulsion
INC35	Stainless steels, duplex steels, superalloys	Positive chip angle; for dry machining and for using emulsion
NANO	General to hardened tool steels	Universal cutting material for roughing and finishing
K03 K03S	General to hardened tool steels	Universal cutting material for finishing
K10G	Die steels, cast, weld metal	Robust cutting material for roughing
K15	General to hardened tool steels	Universal cutting material for roughing and finishing, for HSC machining
Cermet	ductile graphite iron, steels with low carbon content, ferritic steels	Usable when build-up edge is a problem
AL	aluminium, non-ferrous metals	Positive chip angle
DIA	Graphite	Universal cutting material for roughing and finishing

*Technical modifications reserved.

Recommended cutting data

Roughing

The subsequent guideline is based on the following conditions:

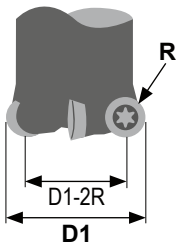
- roughing
- maximal overhang length 3×D
- maxmial radial infeed 80% of the flat part of the tool*

$$a_e = 0.80 \times (D1 - 2 \times R)$$

Example: D25R5

$$a_e = 0.80 \times (25\ mm - 2 \times 5\ mm) = 12\ mm$$

- synchronous running



For greater overhang lengths a_p, as well as rotational speed n and v_c have to be reduced.
Per 1×D a reduction of 20% can be applied.

unalloyed, low-alloyed and high-alloyed steels up to 1100 N/mm²

	Conditions	Cutting Material	Cutting Data
1.1730 1.2738 1.2311 1.2767 1.2312 1.2842 1.2343 1.2714 1.2344 1.7225 1.2367 Toolox33	Stable machines with great axle-moments	P25U	$v_c \approx 130 - 170\ m/min$ $a_p \approx 10\% - 20\% \times R$ $f_z \approx 4\% - 6\% \times R$
	HSC machines	K10G	$v_c \approx 160 - 220\ m/min$ $a_p \approx 5\% - 15\% \times R$ $f_z \approx 5\% - 7\% \times R$
	Little HSC machines (mamimum tool diameter 12 mm)	NANO	$v_c \approx 250\ m/min$ $a_p \approx 5\% - 15\% \times R$ $f_z \approx 6\% - 8\% \times R$

unalloyed, low-alloyed and high-alloyed steels from 1100 N/mm² - 1400 N/mm²

	Conditions	Cutting Material	Cutting Data
1.2738HH 1.2714+QT 1.2367 hardened and tempered 1.7225+QT 1.2343 hardened and tempered Toolox44	Stable machines with great axle-moments	K10G	$v_c \approx 130 - 170\ m/min$ $a_p \approx 10\% - 20\% \times R$ $f_z \approx 4\% - 6\% \times R$
	HSC machines	K10G	$v_c \approx 160 - 220\ m/min$ $a_p \approx 5\% - 15\% \times R$ $f_z \approx 5\% - 7\% \times R$
	Little HSC machines (mamimum tool diameter 12 mm)	NANO	$v_c \approx 220 - 300\ m/min$ $a_p \approx 5\% - 15\% \times R$ $f_z \approx 6\% - 8\% \times R$

unalloyed, low-alloyed and high-alloyed steels from 1400 N/mm² - 2050 N/mm²

	Conditions	Cutting Material	Cutting Data
1.2316 1.2379 1.2343 1.2767 1.2344 Dievar 1.2083 TQ1 1.2085 HTCS	All machines	NANO	$v_c \approx 80 - 160\ m/min$ $a_p \approx 7{,}5\% - 12{,}5\% \times R$ $f_z \approx 5\% - 7\% \times R$

unalloyed, low-alloyed and high-alloyed steels from 56 HRC to 65 HRC

	Conditions	Cutting Material	Cutting Data
1.2379 1.2842 1.2436 PM-Steels High speed steels	All machines	NANO	$v_c \approx 60 - 120\ m/min$ $a_p \approx 7{,}5\% - 12{,}5\% \times R$ $f_z \approx 5\% - 6\% \times R$

resistant to corrosion and stainless steels / unhardened

	Conditions	Cutting Material	Cutting Data
1.4016 1.4021 / 1.2083 1.4313 1.4542 1.4301 1.4305 1.4571 1.2316 1.2085	All machines, high vibrations, strong interrupted cut	INC35	$v_c \approx 140 - 180\ m/min$ $a_p \approx 10\% - 15\% \times R$ $f_z \approx 4\% - 6\% \times R$
		M50	

Duplex steels (lean, standard, super)

	Conditions	Cutting Material	Cutting Data
1.4162 1.4410 1.4362 1.4501 1.4462 1.4404 1.4507	All machines	INC35	$v_c \approx 50 - 90\ m/min$ $a_p \approx 10\% - 15\% \times R$ $f_z \approx 4\% - 6\% \times R$

Cast iron materials

	Conditions	Cutting Material	Cutting Data
GG and GGG	Stable machines with great axle-moments	K10G	$v_c \approx 180 - 220\ m/min$ $a_p \approx 20\% - 50\% \times R$ $f_z \approx 5\% - 10\% \times R$
	HSC machines	K10G	$v_c \approx 180 - 220\ m/min$ $a_p \approx 10\% - 15\% \times R$ $f_z \approx 5\% - 10\% \times R$
		NANO	
	Little HSC machines (mamimum tool diameter 12 mm)	NANO	$v_c \approx 250 - 300\ m/min$ $a_p \approx 5\% - 10\% \times R$ $f_z \approx 5\% - 10\% \times R$

Titanium alloys

	Conditions	Cutting Material	Cutting Data
3.7025 (Grade 1) 3.7035 (Grade 2) 3.7055 (Grade 3) 3.7065 (Grade 4) 3.7165 (Grade 5) 3.7115 (Grade 6)	All machines	INC35	$v_c \approx 45 - 60\ m/min$ $a_p \approx 10\% - 15\% \times R$ $f_z \approx 4\% - 6\% \times R$

Nickel-base alloys

	Conditions	Cutting Material	Cutting Data
2.4668 2.4816	All machines	INC35	$v_c \approx 25 - 40\ m/min$ $a_p \approx 10\% - 15\% \times R$ $f_z \approx 4\% - 6\% \times R$
	All machines	M50	$v_c \approx 25 - 40\ m/min$ $a_p \approx 10\% - 15\% \times R$ $f_z \approx 4\% - 6\% \times R$

Chromium-cobalt hard alloys and filler metals for fill welding of forging dies

	Conditions	Cutting Material	Cutting Data
Deloro Stellite Capilla...	All machines	INC35	Recommendation by application engineer

Finishing

unalloyed, low-alloyed and high-alloyed steels from 1200 N/mm² - 1600 N/mm²

	Conditions	Cutting Material	Cutting Data
1.2311 1.2312 1.2738	All machines	K03	$v_c \approx 220\ m/min$ $a_p \approx 10\% - 20\% \times R$ $f_z \approx 3\% - 5\% \times R$
		K03S	

Nodular cast iron, steels with low carbon content and ferritic steels from 500 N/mm² to 1000 N/mm²

		Conditions	Cutting Material	Cutting Data
1.4003 1.4016 1.4521 1.1730	1.2311 1.2312 GGG-40	All machines	Cermet	$v_c \approx 200 - 300\ m/min$ $a_p \approx 3\% - 5\% \times R$ $f_z \approx 2\% - 3\% \times R$

General steels to high strength steels

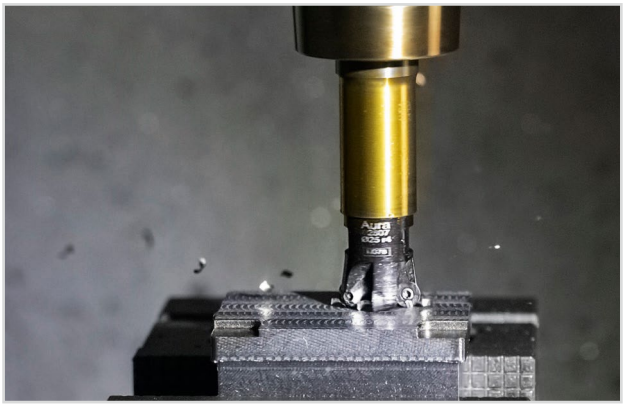
	Conditions	Härtebereich	Cutting Material	Cutting Data
exemplary 1.2379	All machines	48 HRC – 56 HRC	NANO	$v_c \approx 220\ m/min$ $a_p \approx 12{,}5\% - 20\% \times R$ $f_z \approx 2\% - 3\% \times R$
			K03	$v_c \approx 190\ m/min$ $a_p \approx 12{,}5\% - 20\% \times R$ $f_z \approx 2\% - 3\% \times R$
			K03S	
	All machines	56 HRC – 60 HRC	NANO	$v_c \approx 160\ m/min$ $a_p \approx 12{,}5\% - 20\% \times R$ $f_z \approx 2\% - 3\% \times R$
			K03	$v_c \approx 130\ m/min$ $a_p \approx 12{,}5\% - 20\% \times R$ $f_z \approx 2\% - 3\% \times R$
			K03S	
	All machines	60 HRC – 65 HRC	NANO	$v_c \approx 130\ m/min$ $a_p \approx 12{,}5\% - 20\% \times R$ $f_z \approx 2\% - 3\% \times R$
			K03	$v_c \approx 100\ m/min$ $a_p \approx 12{,}5\% - 20\% \times R$ $f_z \approx 2\% - 3\% \times R$
			K03S	

Coolant

The AURA® indexable inserts are indicated for the application of the following coolants:

Material	Coolant
Stainless steels with > 15% Chrom/Nickel	emulsion > 10%
Titanic materials	emulsion > 10%
Aluminium	emulsion < 8%
Copper	emulsion < 8%
Steel, cast, graphite	inner/outer air supply

Technical advice



This overview is not substitute for expert advice and should support you at selecting the right cutting material. Avoid expensive attempts at your own expense and use the skills and experiences of our employees, who have access to extensive knowledge and internal studies. If you are faced with a complexe challenge the AURA® technical team will support you at the trainingcentre or the milling laboratory and use your challenge to continuously develop their products.

Overview indexable inserts

SF05
R=2.5mm
M=0.7Nm

R	X2	Roughing/Finishing	Code	Article number	
2.5	SF05	▽+▽▽▽	03887	F05NA	NANO

SF06
R=3mm
M=0.7Nm

R	X2	Roughing/Finishing	Code	Article number	
3	SF06	▽+▽▽▽	24539	F06P25C	P25C
3	SF06	▽+▽▽▽	20595	F06NA	NANO
3	SF06	▽▽▽	22312	F0603	K03
3	SF06	▽▽▽	26973	F0603S	K03S
3	SF06	▽▽▽	22104	F06CER	CER

SF07
R=3.5mm
M=0.9Nm

R	X2	Roughing/Finishing	Code	Article number	
3.5	SF07	▽+▽▽▽	24540	F07P25C	P25C
3.5	SF07	▽	10086	S07NA	NANO
3.5	SF07	▽+▽▽▽	02665	F07NA	NANO
3.5	SF07	▽▽▽	03266	F0703	K03
3.5	SF07	▽▽▽	27078	F0703S	K03S
3.5	SF07	▽+▽▽▽	26094	F07AL	AL
3.5	SF07	▽+▽▽▽	02127	F07DI	DIA

SF07199
R=3.5mm
M=0.9Nm

R	X2	Roughing/Finishing	Code	Article number	
3.5	SF07199	▽	05848	S07NA.1	NANO
3.5	SF07199	▽+▽▽▽	03886	F07NA.1	NANO
3.5	SF07199	▽+▽▽▽	26093	F07AL.1	AL

SF08
R=4mm
M=1.7Nm

R	X2	Roughing/Finishing	Code	Article number	
4	SF08	▽	17186	S08P25U	P25U
4	SF08	▽	04954	S0840	P40
4	SF08	▽	29326	S08P50	P50
4	SF08	▽	11823	SH08M50	M50
4	SF08	▽	17237	SH08INC35	INC35
4	SF08	▽	29330	S08NA	NANO
4	SF08	▽+▽▽▽	03732	F08NA	NANO
4	SF08	▽	11845	S0810G	K10G
4	SF08	▽+▽▽▽	17056	F08AL	AL

SF10
R=5mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
5	SF10	▽	15801	S10P25U	P25U
5	SF10	▽	24541	S10P25C	P25C
5	SF10	▽	01062	S1040	P40
5	SF10	▽	09793	S10P50	P50
5	SF10	▽	10361	SH10M50	M50
5	SF10	▽	17238	SH10INC35	INC35
5	SF10	▽	03942	S10NA	NANO
5	SF10	▽+▽▽▽	02817	F10NA	NANO
5	SF10	▽▽▽	01351	F1003	K03
5	SF10	▽	07536	S1010G	K10G
5	SF10	▽+▽▽▽	17057	F10AL	AL

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

SF12
R=6mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
6	SF12	▽	15802	S12P25U	P25U
6	SF12	▽	26595	S12P25C	P25C
6	SF12	▽	01063	S1240	P40
6	SF12	▽	29327	S12P50	P50
6	SF12	▽	10362	SH12M50	M50
6	SF12	▽	17240	SH16INC35	INC35
6	SF12	▽	03943	S12NA	NANO
6	SF12	▽+▽▽▽	03659	F12NA	NANO
6	SF12	▽▽▽	01350	F1203	K03
6	SF12	▽	07297	S1210G	K10G
6	SF12	▽+▽▽▽	17058	F12AL	AL

SF16
R=8mm
M=5.5Nm

R	X2	Roughing/Finishing	Code	Article number	
8	SF16	▽	16391	S16P25U	P25U
8	SF16	▽	01064	S1640	P40
8	SF16	▽	10360	S16P50	P50
8	SF16	▽	09991	SH16M50	M50
8	SF16	▽	17240	SH16INC35	INC35
8	SF16	▽	03888	S16NA	NANO
8	SF16	▽▽▽	01280	F1603	K03
8	SF16	▽	07861	S1610G	K10G
8	SF16	▽	02816	S1610	K10
8	SF16	▽+▽▽▽	26091	F16AL	AL

PHF09
R=2.2mm
M=3Nm

R	X2	Roughing/Finishing	Code	Article number	
2.2	PHF09	▽	22295	PHF09P25U	P25U
2.2	PHF09	▽	23350	PHF09P50	P50
2.2	PHF09	▽	21745	PHF09K15	K15

PHF14
R=3.1mm
M=5Nm

R	X2	Roughing/Finishing	Code	Article number	
3.1	PHF14	▽	22296	PHF14P25U	P25U
3.1	PHF14	▽	21746	PHF14K15	K15

MSF07
R=0.5mm
M=0.9Nm

Radius	X2	Roughing/Finishing	Code	Article number	
0.5	MSF07	▽+▽▽▽	23497	MSF07P25	P25
0.5	MSF07	▽+▽▽▽	23498	MSF07K05	K05

DHF10
R=2mm
M=1.3Nm

Radius	X2	Roughing/Finishing	Code	Article number	
2	DHF10	▽	26958	DHF10P25U	P25U
2	DHF10	▽	27958	DHF10K10	K10

Tri11
R=1.1mm
M=1.7Nm

R	X2	Roughing/Finishing	Code	Article number	
1.1	Tri11	▽	17250	Tri11P25U	P25U
1.1	Tri11	▽	10880	Tri11P50	P50
1.1	Tri11	▽	17870	Tri11INC35	INC35
1.1	Tri11	▽	11500	Tri11NA	NANO
1.1	Tri11	▽	11121	Tri11K10G	K10G

Tri16
R=1.6mm
M=1.7Nm

R	X2	Roughing/Finishing	Code	Article number	
1.6	Tri16	▽	20485	Tri16P25U	P25U
1.6	Tri16	▽	29367	Tri16P50	P50
1.6	Tri16	▽	19537	Tri16INC35	INC35
1.6	Tri16	▽	20484	Tri16NA	NANO

Tri22
R=2.2mm
M=5.5Nm

R	X2	Roughing/Finishing	Code	Article number	
2.2	Tri22	▽	17251	Tri22P25U	P25U
2.2	Tri22	▽	10867	Tri22P50	P50
2.2	Tri22	▽	29371	Tri22NA	NANO
2.2	Tri22	▽	11122	Tri22K10G	K10G

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

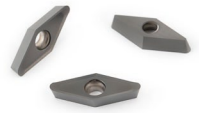
5K16
R=7mm
M=5Nm

R	X2	Roughing/Finishing	Code	Article number	
7	5K16	▽	09877	5K16P25	P25
7	5K16	▽	21282	5K16P25U	P25U
7	5K16	▽	07028	5K16P40	P40
7	5K16	▽	08711	5K16P50	P50
7	5K16	▽	08712	5K16M40	M40
7	5K16	▽	07002	5K16K10G	K10G
7	5K16	▽▽▽	26333	5K16PM40-BSS	PM40

MS08

M=1.5Nm

R	X2	Roughing/Finishing	Code	Article number	
0.4	MS08	▽+▽▽▽	07016	AOMX0425	P25
0.4	MS08	▽+▽▽▽	07019	AOMX04M40	M40
0.8	MS08	▽+▽▽▽	06022	AOMX0825	P25
0.8	MS08	▽+▽▽▽	06765	AOMX08M40	M40
0.8	MS08	▽+▽▽▽	26640	AOCX08AL	AL
1.6	MS08	▽+▽▽▽	07017	AOMX1625	P25
1.6	MS08	▽+▽▽▽	11460	AOMX16M40	M40
3.2	MS08	▽+▽▽▽	07018	AOMX3225	P25
3.2	MS08	▽+▽▽▽	07486	AOMX32M40	M40



VCGT1
R=1mm
M=0.9Nm

R	X2	Roughing/Finishing	Code	Article number	
1	VCGT1	▽+▽▽▽	32243	VDGT1110AL	AL
1	VCGT1	▽+▽▽▽	32244	VDGT1110AS	AS

VCGT3
R=3mm
M=5.5Nm

R	X2	Roughing/Finishing	Code	Article number	
3	VCGT3	▽+▽▽▽	32279	VCGT2230AL	AL
3	VCGT3	▽+▽▽▽	32280	VCGT2230AS	AS

R06
R=1mm
M=0.9Nm

R	X2	Roughing/Finishing	Code	Article number	
1	R06	▽	01373	R0625	P25
1	R06	▽	01374	R0640	P40
1	R06	▽+▽▽▽	03792	R06NA	NANO
1	R06	▽▽▽	01372	R0603	K03
1	R06	▽+▽▽▽	01239	R0610	K10
1	R06	▽+▽▽▽	26095	R06AL	AL
1	R06	▽+▽▽▽	03872	R06DI	DIA

R10
R=1mm
M=3.4Nm

R	X2	Roughing/Finishing	Code	Article number	
1	R10	▽	01375	R1025	P25
1	R10	▽	01274	R1040	P40
1	R10	▽+▽▽▽	03793	R10NA	NANO
1	R10	▽▽▽	01275	R1003	K03
1	R10	▽+▽▽▽	01193	R1010	K10
1	R10	▽+▽▽▽	26096	R10AL	AL
1	R10	▽+▽▽▽	06990	R10DI	DIA

*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

T10
M=2Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
10	1	T10	▽+▽▽▽	03839	T1010NA	NANO
10	1	T10	▽+▽▽▽	02432	T1010DIA	DIA

T12
M=3Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
12	1	T12	▽+▽▽▽	03838	T1210NA	NANO
12	2	T12	▽+▽▽▽	04699	T1220NA	NANO
12	1	T12	▽+▽▽▽	02433	T1210DIA	DIA

T16
M=4.5Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
16	1	T16	▽+▽▽▽	03837	T1610NA	NANO
16	2	T16	▽+▽▽▽	03836	T1620NA	NANO
16	1	T16	▽+▽▽▽	03831	T1610DIA	DIA

T20
M=7.5Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
20	1.6	T20	▽+▽▽▽	12140	T2016NA	NANO

K10
R=5
M=2Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
10	5	K10	▽+▽▽▽	03983	D10NA	NANO

K12
R=6
M=3Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
12	6	K12	▽+▽▽▽	03984	D12NA	NANO

K16
R=8
M=4.5Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
16	8	K16	▽+▽▽▽	03985	D16NA	NANO

K20
R=10
M=7.5Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
20	10	K20	▽+▽▽▽	03986	D20NA	NANO

K32
R=16
M=4Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
32	16	K32	▽+▽▽▽	10180	D32NA	NANO

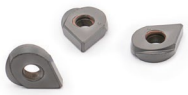
*Technical modifications reserved. Torque specifications based on the indexable inserts on page 166.

T06-VA
R=0.5/1 mm
M=0.9 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
6	0,5	T06-VA	▽+▽▽▽	29155	T0605DIA-VA	DIA
6	1	T06-VA	▽+▽▽▽	29156	T0610DIA-VA	DIA

T08-VA
R=0.5/1 mm
M=0.9 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
8	0,5	T08-VA	▽+▽▽▽	29158	T0805DIA-VA	DIA
8	1	T08-VA	▽+▽▽▽	29159	T0810DIA-VA	DIA



K06-VA
R=3 mm
M=0.9 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
6	3	K06-VA	▽+▽▽▽	29157	D06DIA-VA	DIA

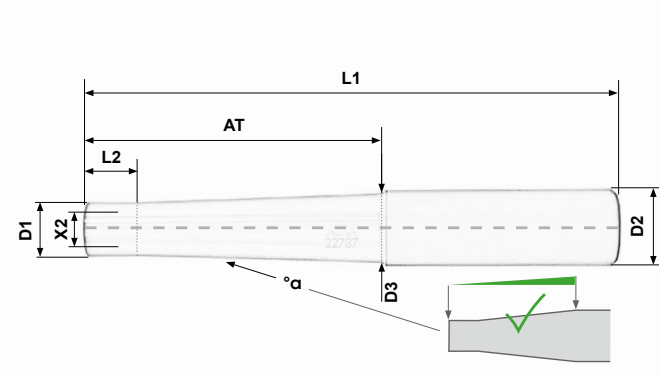
K08-VA
R=4 mm
M=0.9 Nm

D1	R	X2	Roughing/Finishing	Code	Article number	
8	4	K08-VA	▽+▽▽▽	29160	D08DIA-VA	DIA

VLK NG Extensions

Conical VHM extensions with sintered threads and internal cooling supply. System and precision bore precision ground.

+ sintered thread
+ clamping area rough grounded and thus better holding force
+ polished and coated working length, no chip adhesion
+ smooth shift from shaft to radius
+ vibration-reducing



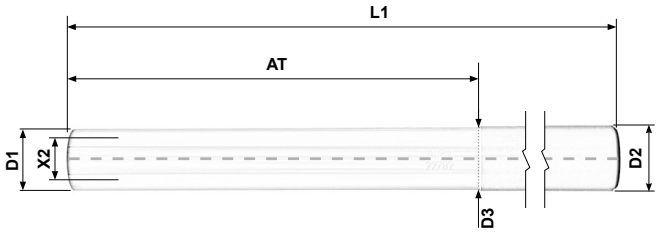
You can find all available tools and information online at: **iklick.aura.tools**

D1	X2	L2	D3	D2	AT	°a	L1	Code	Article number
9.8	M6	0	11.5	12	40	1.22	85	24101	VLK-06-040-085-10-12-NG
9.8	M6	0	11.27	12	60	0.7	104	24102	VLK-06-060-104-07-12-NG
9.8	M6	0	11.45	12	80	0.59	125	24103	VLK-06-080-125-08-12-NG
11.4	M7	0	24.67	25	200	1.9	256	22794	VLK-07-200-256-19-25-NG
11.4	M7	10	13.9	16	40	1.79	88	22785	VLK-07-040-088-09-16-NG
11.4	M7	10	14.61	16	60	1.53	108	22787	VLK-07-060-108-09-16-NG
11.4	M7	13	15.2	16	80	1.36	128	22789	VLK-07-080-128-09-16-NG
11.5	M7	0	14.84	16	40	2.39	88	22786	VLK-07-040-088-15-16-NG
11.5	M7	0	16	16	60	2.15	108	22788	VLK-07-060-108-15-16-NG
11.5	M7	0	15.5	16	100	1.15	150	22790	VLK-07-100-150-10-16-NG
11.5	M7	0	16	16	100	1.29	150	22791	VLK-07-100-150-09-16-NG
11.5	M7	0	17.06	20	80	1.99	130	22792	VLK-07-080-130-15-20-NG
12.5	M8K	10	14.9	16	40	1.72	88	22795	VLK-08-040-088-09-16-k-NG
12.5	M8K	10	15.6	16	60	1.67	108	22796	VLK-08-060-108-09-16-k-NG
12.5	M8K	13	15.91	16	80	1.22	128	22797	VLK-08-080-128-09-16-k-NG
13.6	M8	0	15.42	16	40	1.3	88	24104	VLK-08-040-088-13-16-NG
13.6	M8	0	15.5	16	60	0.9	108	24105	VLK-08-060-108-09-16-NG
13.6	M8	0	15.42	16	80	0.65	128	24106	VLK-08-080-128-07-16-NG
13.6	M8	0	15.49	16	100	0.54	148	24107	VLK-08-100-148-05-16-NG
13.6	M8	0	15.48	16	120	0.45	168	24108	VLK-08-120-168-05-16-NG
15.4	M10k	0	19.5	20	80	1.5	130	22800	VLK-10-080-130-15-20-k-NG
15.4	M10k	0	19.42	20	120	0.96	170	22803	VLK-10-120-170-10-20-k-NG
15.4	M10k	0	19.5	20	150	0.78	200	22804	VLK-10-150-200-08-20-k-NG
15.4	M10k	0	28.67	32	200	1.9	260	22805	VLK-10-200-260-19-32-k-NG
15.4	M10k	10	17.9	20	40	1.79	90	22798	VLK-10-040-090-09-20-k-NG
15.4	M10k	10	18.61	20	60	1.53	110	22799	VLK-10-060-110-09-20-k-NG
15.4	M10k	10	19.2	20	80	1.36	130	22801	VLK-10-080-130-10-20-k-NG
15.4	M10k	0	19.5	20	100	1.17	150	22802	VLK-10-100-150-09-20-k-NG
18	M10	0	19.4	20	40	1	90	24109	VLK-10-040-090-10-20-NG
18	M10	0	19.47	20	60	0.71	110	24110	VLK-10-060-110-07-20-NG
18	M10	0	19.4	20	80	0.5	130	24111	VLK-10-080-130-05-20-NG
18	M10	0	19.5	20	100	0.43	150	24113	VLK-10-100-150-03-20-NG
18	M10	0	19.51	20	120	0.36	170	24115	VLK-10-120-170-02-20-NG
18	M10	0	31,27	32	200	1,9	260	30084	VLK-10-200-260-19-32-NG
21	M12	0	24.49	25	125	0.8	181	24116	VLK-12-125-181-08-25-NG
21	M12	0	24.4	25	150	0.65	206	24117	VLK-12-150-206-07-25-NG
21	M12	0	24.36	25	175	0.55	231	24118	VLK-12-175-231-06-25-NG
29	M16	0	31.44	32	100	0.7	160	24119	VLK-16-100-160-07-32-NG
29	M16	0	31.41	32	150	0.46	210	24120	VLK-16-150-210-05-32-NG
29	M16	0	31.44	32	200	0.35	260	24121	VLK-16-200-260-04-32-NG

VLZ NG Extensions

Cylindrical VHM extensions with sintered threads and internal cooling supply. System and precision bore precision ground.

+ sintered thread
+ clamping area rough grounded and thus better holding force
+ polished and coated working length, no chip adhesion
+ smooth shift from shaft to radius
+ vibration-reducing



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D1	X2	D3	D2	AT	°a	L1	Code	Article number
9.8	M6	9.8	12	20	0	65	24122	VLZ-06-020-065-12-NG
9.8	M6	9.8	10	31	0	80	24123	VLZ-06-031-080-10-NG
9.8	M6	9.8	12	40	0	85	24124	VLZ-06-040-085-12-NG
9.8	M6	9.8	12	60	0	105	24125	VLZ-06-060-105-12-NG
9.8	M6	9.8	12	80	0	125	24126	VLZ-06-080-125-12-NG
10.8	M6	10.8	12	100	0	150	24127	VLZ-06-100-150-12-NG
11.5	M7	11.5	12	20	0	65	22770	VLZ-07-020-065-12-NG
11.5	M7	11.5	12	40	0	85	22771	VLZ-07-040-085-12-NG
11.5	M7	11.4	12	60	0	105	22772	VLZ-07-060-105-12-NG
11.5	M7	11.5	12	80	0	125	22773	VLZ-07-080-125-12-NG
12.5	M8K	12.5	16	20	0	68	22774	VLZ-08-020-068-16-k-NG
12.5	M8K	12.5	16	40	0	88	22775	VLZ-08-040-088-16-k-NG
12.5	M8K	12.5	16	60	0	108	22776	VLZ-08-060-108-16-k-NG
12.5	M8K	12.5	16	80	0	128	24132	VLZ-08-080-128-16-k-NG
13.6	M8	13.6	16	40	0	88	24129	VLZ-08-040-088-16-NG
13.6	M8	13.6	16	60	0	108	24130	VLZ-08-060-108-16-NG
13.6	M8	13.6	16	80	0	128	24131	VLZ-08-080-128-16-NG
13.6	M8	13.6	16	100	0	148	24133	VLZ-08-100-148-16-NG
14	M8	14	16	20	0	68	24128	VLZ-08-020-068-16-NG
14.4	M8	14.4	16	135	0	200	24134	VLZ-08-135-200-16-NG
15.4	M10k	15.4	16	20	0	70	22778	VLZ-10-020-070-16-k-NG
15.4	M10k	15.4	16	40	0	90	22779	VLZ-10-040-090-16-k-NG
15.4	M10k	15.4	16	60	0	110	22780	VLZ-10-060-110-16-k-NG
15.4	M10k	15.4	16	80	0	130	22781	VLZ-10-080-130-16-k-NG
15.4	M10k	15.4	16	100	0	150	22782	VLZ-10-100-150-16-k-NG
15.4	M10k	15.4	16	120	0	170	22783	VLZ-10-120-170-16-k-NG
15.4	M10k	15.4	20	100	0	150	22784	VLZ-10-100-150-20-k-NG
18	M10	18	20	40	0	200	24135	VLZ-10-040-200-20-NG
18	M10	18	20	135	0	200	24136	VLZ-10-135-200-20-NG
22.5	M12	22.5	25	157	0	250	24140	VLZ-12-157-250-25-NG
22.5	M12	22.5	25	207	0	300	24141	VLZ-12-207-300-25-NG
23	M12	23	25	40	0	97	24137	VLZ-12-040-097-25-NG
23	M12	23	25	75	0	131	24138	VLZ-12-075-131-25-NG
23	M12	23	25	100	0	156	24139	VLZ-12-100-156-25-NG
28.6	M16	28.6	32	50	0	300	24142	VLZ-16-050-300-32-NG

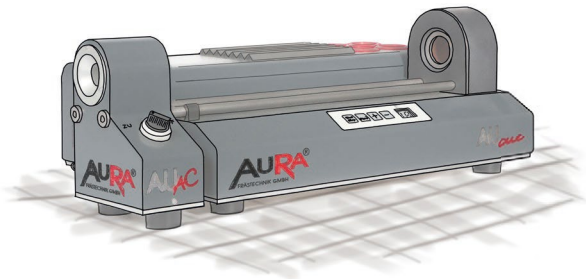


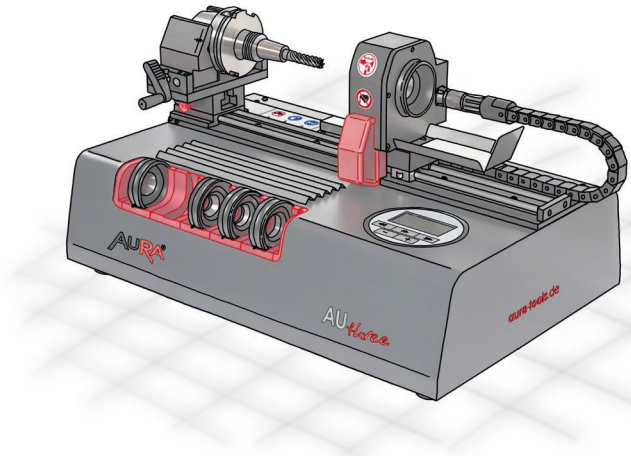




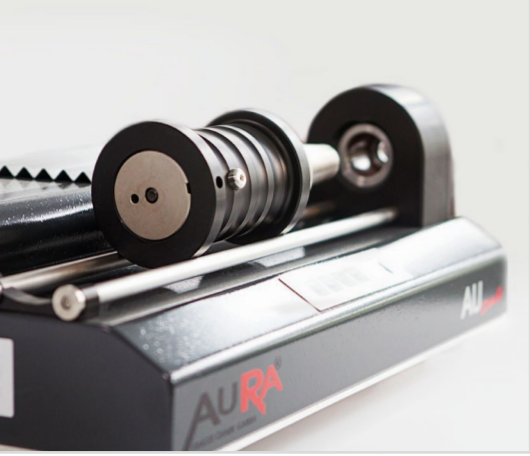


Shrinking





tools. simply. different.



AU one Inductive Shrink fit Unit

Universal shrink fit unit for workshop oriented tool changes.
AU one is designed for slim, thin-walled and extremly short shrink chucks. Standard chucks up to D 16 mm can be shrunk as well. The chuck is gently heated by the adjustable generator. Even at little chucks the system turns off process-safe before overheating. Suitable for HM shanks.

+ D 3-16 mm
+ heat-protective gloves inclusive
+ tool ejector inclusive

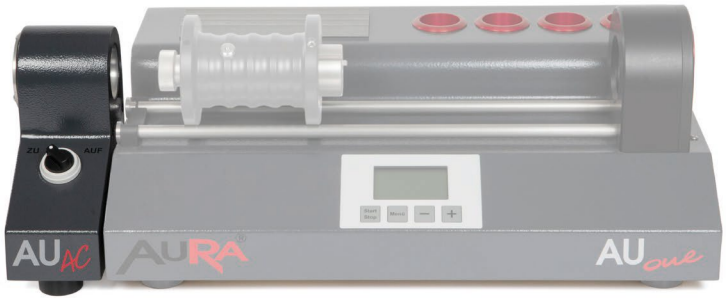
Code	Article number	Description
17518	AU one - Induktivschrumpfgerät	horizontal inductive shrinking unit

AU AC Air Cooler

The Air Cooler is connected to **AU one**. After warming up the shrink chuck the tool holder is rotated and the chuck is pushed into the nozzle sleeve. Then the valve is opened. The shrink chuck is cooled fast and effective by the vertical air flow. After 1-3 minutes the outer contour is cooled lukewarm. Connection Festo KS4, 1/2"

+ suitable for **AU one** shrinking unit

Code	Article number	Description
17663	AU-AC Luftkühler	for cooling the hot shrink holder



*Technical changes reserved.


AUone Accessories

Adapter enables the centrical fixing of shrinking holding fixtures and ejects the tools destroyed


adapter fixture

Code	Article number	Description
06066	HSK25 / AU one	tool holder HSK25 A/E with length stop and ejector pin
06067	HSK32 / AU one	tool holder HSK32 A/E with length stop and ejector pin
06068	HSK40 / AU one	tool holder HSK40 A/E with length stop and ejector pin
06070	HSK50 / AU one	tool holder HSK50 A/E with length stop and ejector pin
06071	HSK63A / AU one	tool holder HSK63 A/E with length stop and ejector pin
06072	SK30 / AU one	tool holder SK30/BT30 with length stop and ejector pin
06073	SK40 + BT40 / AU one	tool holder SK40/BT40 with length stop and ejector pin
09977	HSK63F / AU one	tool holder HSK63F with length stop and ejector pin

Ferrite shield rings for inductive micro shrinking unit **AU one**. These shield rings enable the exact positioning of the shrinking holding fixture and the schrinking of HSS and steel tool shanks.


shield rings (ferrite discs)

Code	Article number	Description
11262	AU one - Ferritscheibe-D3-5 - Disc 1	AU one shield ring
11231	AU one - Ferritscheibe-D6-8 - Disc 2	AU one shield ring
10876	AU one - Ferritscheibe-D10-12 - Disc 3	AU one shield ring
10539	AU one - Ferritscheibe-D14-16 - Disc 4	AU one shield ring
10562	AU one - Ferritscheibe-D18-20	AU one shield ring

AU three

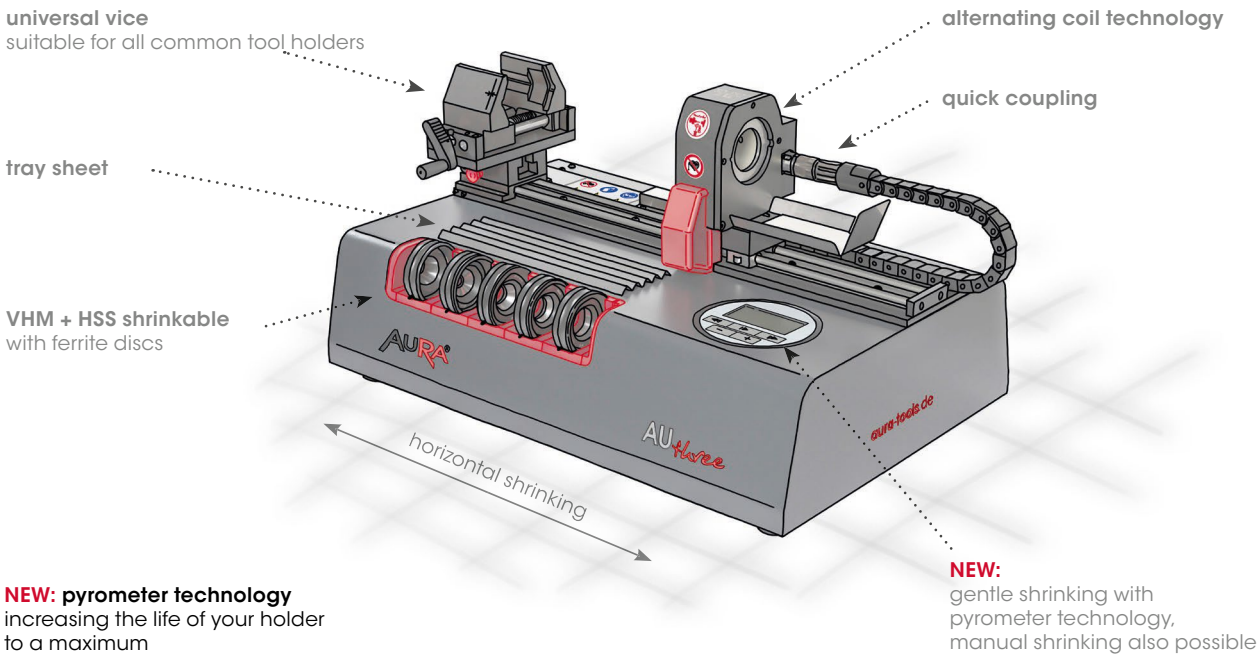
Horizontal alternating coil shrinking unit for shrink fit chuck made of steel and stainless steel. An optionl pyrometer technology enables the temperature monitoring at the holder and turns the unit off after reaching a temperature limit.

+ D 3 - 32 mm
+ heat-protective gloves inclusive
+ tool ejector inclusiver

Code	Article number	Description
31271	AU three-Induktionsschrumpfgerät	horizontal alternating coil shrinking unit with pyrometer technology, table device, w 700 × d 470 × h 387 mm, ca. 35 kg

AU three Induction shrinking unit

combination device for tool holders made of steel and stainless steel D 3 - 32 mm
gentle shrinking thanks to temperature monitoring with pyrometer technology



NEW: pyrometer technology
increasing the life of your holder to a maximum

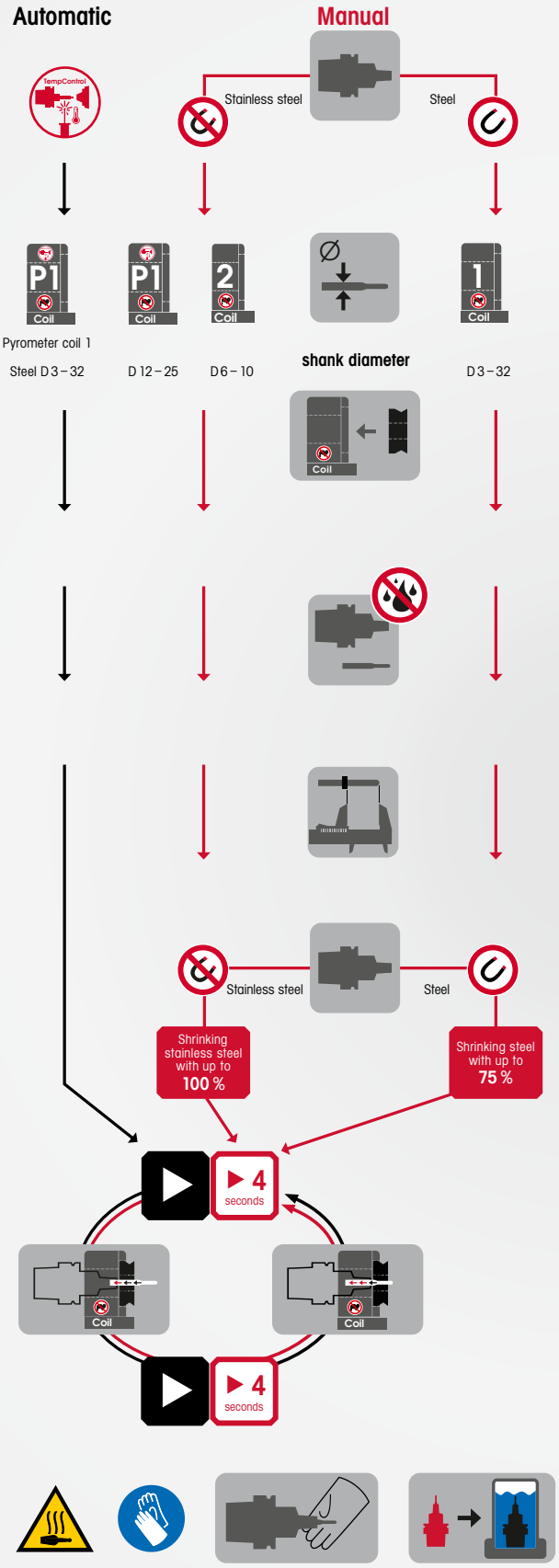
NEW:
gentle shrinking with pyrometer technology, manual shrinking also possible

*Technical changes reserved.

AU three

Induction Shrinking Unit for steel and stainless shrink fit tool holders D 3 – 32 mm

Routine for smooth shrinking



differ shrink-fit tool holder magnetic or not?

Choose coil

Choose ferrite disk for coil and for shank diameter

Milling tool shaft and holder **100 % free** of grease

Adjust length

Manual:
Stainless steel: max. 100 %

Steel: max. 75 %

Shrinking period
manual up to 4 sec.

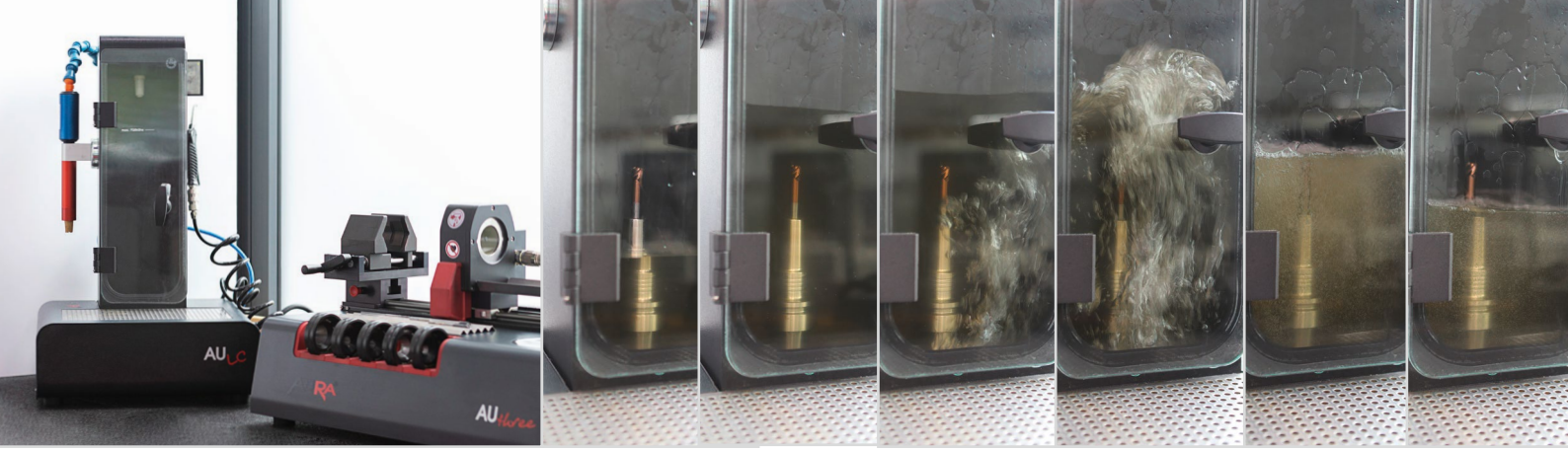
Repeat until the opening is sufficient

Cooling

Extensions and accessories

Description	Code-Nr.
Tool holder AU three HSK25	32072
Tool holder AU three HSK32	32073
Tool holder AU three HSK40	32074
Tool holder AU three HSK50	32075
Tool holder AU three HSK63	32076
Tool holder AU three HSK100	32077
Tool holder AU three SK30/BT30	32078
Tool holder AU three SK40/BT40	32079
Tool holder AU three SK50/BT50	32080
Universal tightener (Clamping range D 12 – 100 mm)	31272
Collet holder for tool holder HSK40	19669
Collet holder for tool holder HSK50	19670
Collet holder for tool holder HSK63A	19672
Collet holder for tool holder HSK100	19673
Coil 1 for steel D 3 – 32 mm + stainless steel D 12 – 25 mm	29479
Coil 2 for stainless steel holders D 6 – 10 mm	29481
Pyrometer Coil 1 for steel D 3 – 32 mm + stainless steel D 12 – 25 mm	29480
Coil 1, ferrit interchangeable disk steel D 3 – 5 mm	18247
Coil 1, ferrit interchangeable disk steel D 6 – 12 mm	18248
Coil 1, ferrit interchangeable disk steel D 14 – 20 mm	18249
Coil 1, ferrit interchangeable disk steel D 25 mm	18250
Coil 1, ferrit interchangeable disk steel D 32 mm	18251
Coil 1, ferrit changeable disk stainless steel D 12 mm	18087
Coil 1, ferrit changeable disk stainless steel D 16 mm	18088
Coil 1, ferrit changeable disk stainless steel D 20 mm	18089
Coil 2, ferrit changeable disk stainless steel D 3 mm	29482
Coil 2, ferrit changeable disk stainless steel D 4 mm	29483
Coil 2, ferrit changeable disk stainless steel D 6 mm	18090
Coil 2, ferrit changeable disk stainless steel D 8 mm	18091
Coil 2, ferrit changeable disk stainless steel D 10 mm	18092
Brush set D 3, 4, 6 mm	12667
Handhold and rubber mounted points for each size D 3, 4, 6, 8, 10	16190
Aerosol spray, volume 500 ml Special cleaner for shrink fit holding fixtures	20497
Stopper set „spiral spring": D 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	12614
Stopper set „spiral spring": D 3, 4, 5, 6, 8, 10, 12, 16, 20, 25	12616
Stopper type „leaf spring" shank D 3	12636
Stopper type „leaf spring" shank D 4	12638
Stopper type „leaf spring" shank D 6	12640
Stopper type „leaf spring" shank D 8	12642
Stopper type „leaf spring" shank D 10	12644
Stopper type „leaf spring" shank D 12	12646
Stopper type „leaf spring" shank D 16	12647
Stopper type „leaf spring" shank D 20	12648
Stopper type „leaf spring" shank D 25	12649
Gripper for stopper type „leaf spring"	12617
Length setting unit for fine adjustment of tool length	16247
Pair of safety KEVLAR gloves, size 10	20496
AU-LC, Liquid cooler, all-purpose, with automatic control	20671
Coolant package: 1000 ml	01740

*Technical changes reserved.



AU LC Liquid Cooler

The automated solution: AURA® LC for contour- independent and fast cooling, cleaning and preserving the heated shrink fit chucks. Manual handling, very easy operation. Workshop-friendly. The tool holder is automatically scrubbed after cooling.

+ incl. 1l coolant
+ incl. centering sleeve D 20/SK50
+ maintenance unit AU-MU optional - for the supply with filtered air with optimal operating pressure (6 bar)

Code	Article number	Description
20671	AU-LC Flüssigkeitskühler ES	Universally usable liquid cooler with automatic electric control, incl. 1l cooling liquid concentrate, max. filling level 350 mm, h 700 x w 412 x d 462 mm

















eBox®

electronic tool store

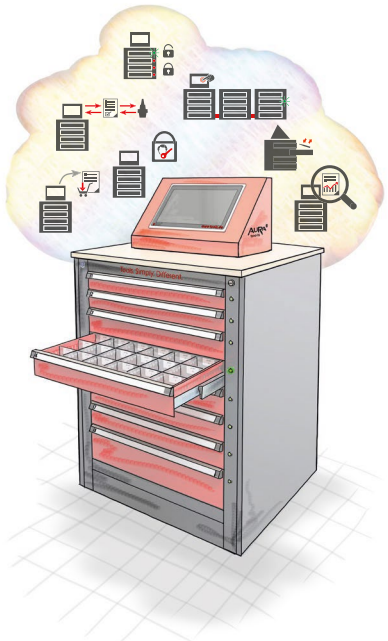
drawers

consumption analysis

automatic inventory and order

access rights

digital data management



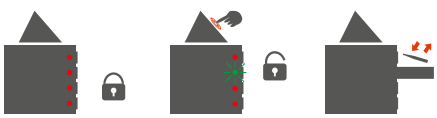
Construction forms

single

master-slave

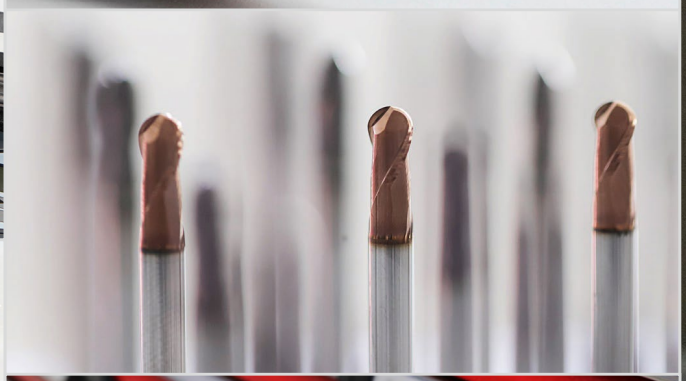
master-passiv

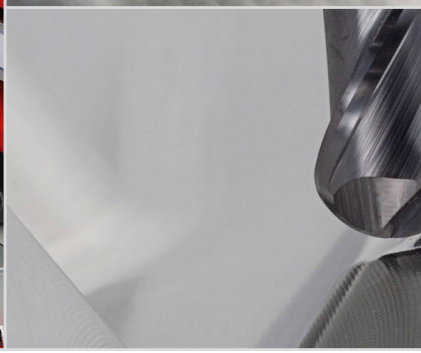
Filling process and removal process



- dimensions (h×w×d) 100(+display)×82×71 cm
- number of drawers 8/10
- either big or little drawers
- flexible compartment layout
- max. load 200 kg per drawer
- optional flap system with 24/32/40 flaps
- optional eBox version with spiral technology





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