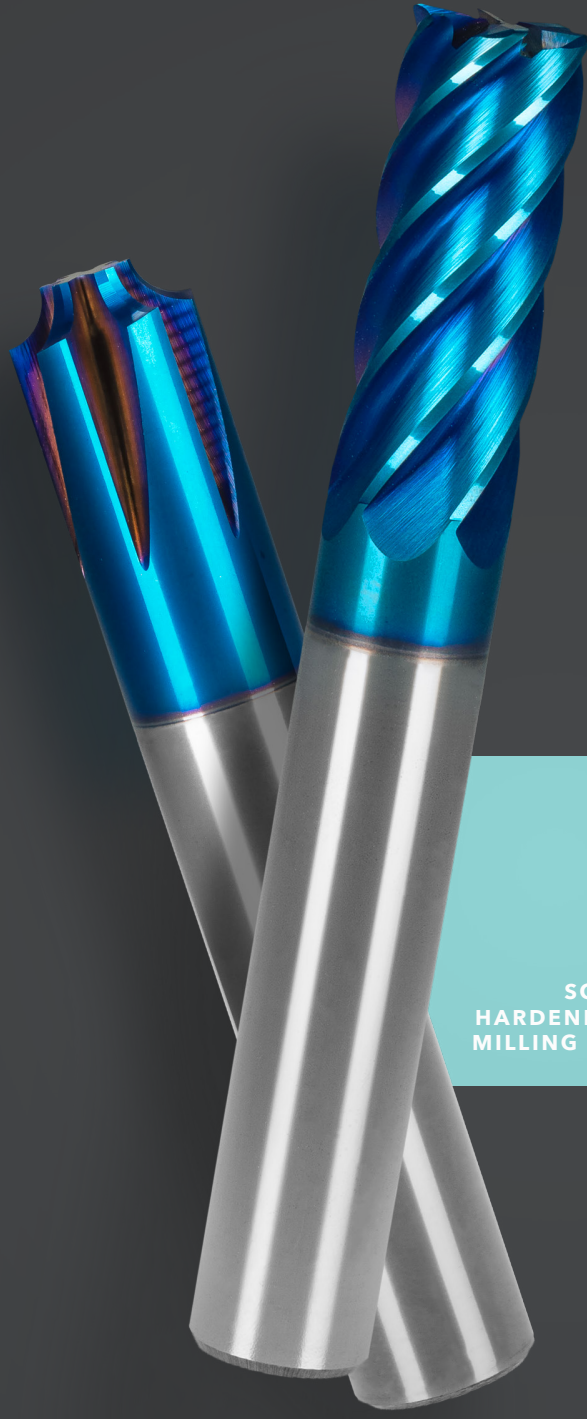


HOFMANN & VRATNY — SC MILLING CUTTERS **EN**

HARDENED STEEL



24
SC EXPERT
HARDENED STEEL
MILLING CUTTERS





3

PRODUCTION
SITES

43

YEARS OF
EXPERIENCE

120

MOTIVATED
EMPLOYEES

HARDENED STEEL

THE FAMOUS BLUE ORIGINAL.

The H&V Expert hard machining series has been specially designed and developed to meet the requirements of hardened steel. Specially selected carbide, proven geometries, coordinated edge preparation and the blue coating, which has been known for years, form the perfect synergy for safe machining of hardened steels up to 70HRC

QUALITY
PROCESS RELIABILITY
ECONOMIC EFFICIENCY

The milling cutters are suitable for steels <1400 N/mm, < 60 HRC, < 67 HRC and < 70 HRC. The extensive range of products also includes special series with unique geometry for maximum precision.



HELICAL PITCH

Extremely soft cut at up to 70 HRC.

GEOMETRY

Refined geometry for reliable chip disposal and consistently high process reliability.

MATERIAL

Solid carbide specially developed for hardened steels.

BROW

Radius and brow geometries optimized to prevent premature breakouts.

BLADES

Cutting edge preparation that has been tried and tested for decades and optimised to perfection.

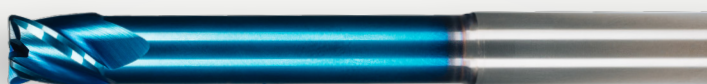
COATING

The original blue coating for hard machining, often imitated but never achieved.



H&V EXPERTS FOR HARDENED STEEL

SC TORUS CUTTERS



K202233



K202082 | K202092
K202102 | K202112



K202253

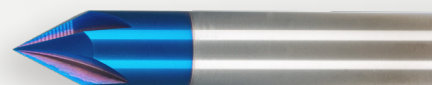


K202223



K202293 | K202303
K202307

SC CHAMFER CUTTERS



K205153 | K205154



K205163 | K205164

SC FORM CUTTERS

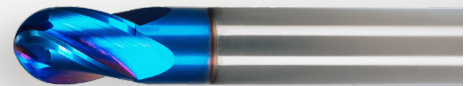


K204108

SC FULL RADIUS CUTTERS



K203206 | K203212



K203333



K203343

SC END MILL CUTTERS



K201122



K201533

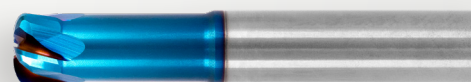


K201523

SC FACE TORUS CUTTERS



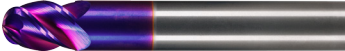
K207018



K207013

NUMBERING SYSTEM

ARTICLEGROUP

SC milling cutter				
Catalog item				
	K	2	03	388
Product group				
Product name				

MILLING CUTTERS

Articlegroup				
				
	K201673	-		16
Cutting diameter				

MILLING CUTTERS DISTINGUISHED BY LENGTH

Articlegroup				
				
	K201123	-	2	X 8
Cutting diameter				
Distinction by length of cut or length of undercut				

MILLING CUTTERS WITH ADDITIONAL DISTINGUISHING FEATURE

Articlegroup				
				
	K202223	-	8	/ 3
Cutting diameter				
Distinction by corner radius or shank diameter				

MADE IN BAVARIA

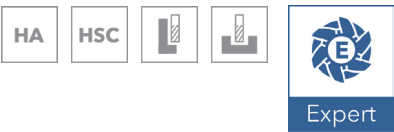
Our milling cutters are used by companies all over the world. Still they all have the same origin: Our production sites in Bavaria, Germany.

As a traditional company, we are proud of our strong connection to the region. Ever since we were founded, we have been firmly tied to our homeland, and our team works on producing the best milling cutters in the world in a familial environment. Genuine quality work, the highest-quality craftsmanship and a strong promotion and retention of our talent: This is what Made in Bavaria means to us.

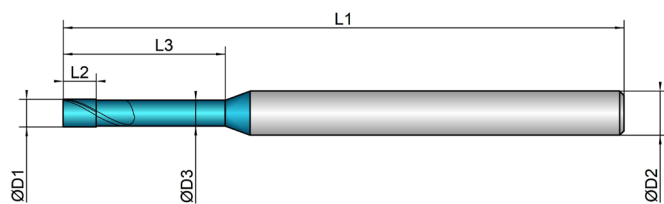


SC micro end mill cutter TiSiN HSC | K201122

Cooling	 
Tolerance	0-0,01
Coating	TiSiN- α



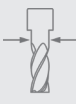
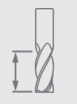
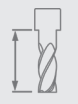
HA K201122



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		200	150	100	60	45	90			145						

	D1	D3	L2	L3	L1	D2	z	
K201122	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 °
0,2X0,5	0.2	0.18	0.3	0.5	45.0	4.0	2	30
0,2X1	0.2	0.18	0.3	1.0	45.0	4.0	2	30
0,2X1,5	0.2	0.18	0.3	1.5	45.0	4.0	2	30
0,3X1	0.3	0.28	0.4	1.0	45.0	4.0	2	30
0,3X2	0.3	0.28	0.4	2.0	45.0	4.0	2	30
0,3X3	0.3	0.28	0.4	3.0	45.0	4.0	2	30
0,3X6	0.3	0.28	0.4	6.0	45.0	4.0	2	30
0,3X9	0.3	0.28	0.4	9.0	45.0	4.0	2	30
0,4X2	0.4	0.38	0.6	2.0	45.0	4.0	2	30
0,4X3	0.4	0.38	0.6	3.0	45.0	4.0	2	30
0,4X4	0.4	0.38	0.6	4.0	45.0	4.0	2	30
0,4X5	0.4	0.38	0.6	5.0	45.0	4.0	2	30
0,4X8	0.4	0.38	0.6	8.0	45.0	4.0	2	30
0,4X12	0.4	0.38	0.6	12.0	45.0	4.0	2	30

K201122	 mm ∅	 mm ∅	 mm	 mm	 mm	 mm ∅	 #	 °
0,5X2	0.5	0.48	0.7	2.0	45.0	4.0	2	30
0,5X4	0.5	0.48	0.7	4.0	45.0	4.0	2	30
0,5X6	0.5	0.48	0.7	6.0	45.0	4.0	2	30
0,5X8	0.5	0.48	0.7	8.0	45.0	4.0	2	30
0,5X10	0.5	0.48	0.7	10.0	50.0	4.0	2	30
0,5X15	0.5	0.48	0.7	15.0	50.0	4.0	2	30
0,6X2	0.6	0.58	0.9	2.0	45.0	4.0	2	30
0,6X4	0.6	0.58	0.9	4.0	45.0	4.0	2	30
0,6X6	0.6	0.58	0.9	6.0	45.0	4.0	2	30
0,6X8	0.6	0.58	0.9	8.0	45.0	4.0	2	30
0,6X10	0.6	0.58	0.9	10.0	45.0	4.0	2	30
0,6X12	0.6	0.58	0.9	12.0	50.0	4.0	2	30
0,6X18	0.6	0.58	0.9	18.0	50.0	4.0	2	30
0,7X2	0.7	0.68	1.0	2.0	45.0	4.0	2	30
0,7X4	0.7	0.68	1.0	4.0	45.0	4.0	2	30
0,7X6	0.7	0.68	1.0	6.0	45.0	4.0	2	30
0,7X8	0.7	0.68	1.0	8.0	45.0	4.0	2	30
0,7X10	0.7	0.68	1.0	10.0	50.0	4.0	2	30
0,8X4	0.8	0.78	1.2	4.0	45.0	4.0	2	30
0,8X6	0.8	0.78	1.2	6.0	45.0	4.0	2	30
0,8X8	0.8	0.78	1.2	8.0	45.0	4.0	2	30
0,8X10	0.8	0.78	1.2	10.0	50.0	4.0	2	30
0,8X12	0.8	0.78	1.2	12.0	50.0	4.0	2	30
0,8X16	0.8	0.78	1.2	16.0	50.0	4.0	2	30
0,8X24	0.8	0.78	1.2	24.0	60.0	4.0	2	30
0,9X4	0.9	0.88	1.3	4.0	45.0	4.0	2	30
0,9X6	0.9	0.88	1.3	6.0	45.0	4.0	2	30
0,9X8	0.9	0.88	1.3	8.0	45.0	4.0	2	30
0,9X10	0.9	0.88	1.3	10.0	45.0	4.0	2	30
0,9X15	0.9	0.88	1.3	15.0	50.0	4.0	2	30

								
K201122	mm ∅	mm ∅	mm	mm	mm	mm ∅	#	°
1X4	1.0	0.95	1.5	4.0	45.0	4.0	2	30
1X6	1.0	0.95	1.5	6.0	45.0	4.0	2	30
1X8	1.0	0.95	1.5	8.0	45.0	4.0	2	30
1X10	1.0	0.95	1.5	10.0	45.0	4.0	2	30
1X12	1.0	0.95	1.5	12.0	45.0	4.0	2	30
1X14	1.0	0.95	1.5	14.0	45.0	4.0	2	30
1X16	1.0	0.95	1.5	16.0	50.0	4.0	2	30
1X20	1.0	0.95	1.5	20.0	54.0	4.0	2	30
1X25	1.0	0.95	1.5	25.0	70.0	4.0	2	30
1X30	1.0	0.95	1.5	30.0	70.0	4.0	2	30
1,2X6	1.2	1.14	1.8	6.0	45.0	4.0	2	30
1,2X8	1.2	1.14	1.8	8.0	45.0	4.0	2	30
1,2X10	1.2	1.14	1.8	10.0	45.0	4.0	2	30
1,2X12	1.2	1.14	1.8	12.0	45.0	4.0	2	30
1,2X16	1.2	1.14	1.8	16.0	50.0	4.0	2	30
1,2X20	1.2	1.14	1.8	20.0	60.0	4.0	2	30
1,4X6	1.4	1.34	2.1	6.0	45.0	4.0	2	30
1,4X8	1.4	1.34	2.1	8.0	45.0	4.0	2	30
1,4X10	1.4	1.34	2.1	10.0	45.0	4.0	2	30
1,4X12	1.4	1.34	2.1	12.0	45.0	4.0	2	30
1,4X14	1.4	1.34	2.1	14.0	45.0	4.0	2	30
1,4X16	1.4	1.34	2.1	16.0	50.0	4.0	2	30
1,4X22	1.4	1.34	2.1	22.0	54.0	4.0	2	30
1,5X6	1.5	1.44	2.3	6.0	45.0	4.0	2	30
1,5X8	1.5	1.44	2.3	8.0	45.0	4.0	2	30
1,5X10	1.5	1.44	2.3	10.0	45.0	4.0	2	30
1,5X12	1.5	1.44	2.3	12.0	45.0	4.0	2	30
1,5X14	1.5	1.44	2.3	14.0	50.0	4.0	2	30
1,5X16	1.5	1.44	2.3	16.0	50.0	4.0	2	30
1,5X18	1.5	1.44	2.3	18.0	54.0	4.0	2	30

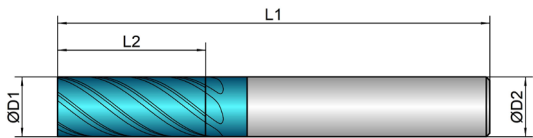
K201122	 mm ∅	 mm ∅	 mm	 mm	 mm	 mm ∅	 #	 °
1,5X20	1.5	1.44	2.3	20.0	54.0	4.0	2	30
1,5X25	1.5	1.44	2.3	25.0	70.0	4.0	2	30
1,5X30	1.5	1.44	2.3	30.0	70.0	4.0	2	30
1,5X35	1.5	1.44	2.3	35.0	70.0	4.0	2	30
1,5X40	1.5	1.44	2.3	40.0	80.0	4.0	2	30
1,5X45	1.5	1.44	2.3	45.0	80.0	4.0	2	30
1,6X6	1.6	1.51	2.4	6.0	45.0	4.0	2	30
1,6X8	1.6	1.51	2.4	8.0	45.0	4.0	2	30
1,6X10	1.6	1.51	2.4	10.0	45.0	4.0	2	30
1,6X12	1.6	1.51	2.4	12.0	45.0	4.0	2	30
1,6X14	1.6	1.51	2.4	14.0	50.0	4.0	2	30
1,6X16	1.6	1.51	2.4	16.0	50.0	4.0	2	30
1,6X18	1.6	1.51	2.4	18.0	54.0	4.0	2	30
1,6X20	1.6	1.51	2.4	20.0	54.0	4.0	2	30
1,6X26	1.6	1.51	2.4	26.0	60.0	4.0	2	30
1,8X6	1.8	1.71	2.7	6.0	45.0	4.0	2	30
1,8X8	1.8	1.71	2.7	8.0	45.0	4.0	2	30
1,8X10	1.8	1.71	2.7	10.0	45.0	4.0	2	30
1,8X12	1.8	1.71	2.7	12.0	45.0	4.0	2	30
1,8X14	1.8	1.71	2.7	14.0	50.0	4.0	2	30
1,8X16	1.8	1.71	2.7	16.0	50.0	4.0	2	30
1,8X18	1.8	1.71	2.7	18.0	54.0	4.0	2	30
1,8X20	1.8	1.71	2.7	20.0	54.0	4.0	2	30
1,8X25	1.8	1.71	2.7	25.0	60.0	4.0	2	30
2X6	2.0	1.91	3.0	6.0	45.0	4.0	2	30
2X8	2.0	1.91	3.0	8.0	45.0	4.0	2	30
2X10	2.0	1.91	3.0	10.0	45.0	4.0	2	30
2X12	2.0	1.91	3.0	12.0	45.0	4.0	2	30
2X14	2.0	1.91	3.0	14.0	50.0	4.0	2	30
2X16	2.0	1.91	3.0	16.0	50.0	4.0	2	30

K201122	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 °
2X18	2.0	1.91	3.0	18.0	54.0	4.0	2	30
2X20	2.0	1.91	3.0	20.0	54.0	4.0	2	30
2X25	2.0	1.91	3.0	25.0	60.0	4.0	2	30
2X30	2.0	1.91	3.0	30.0	70.0	4.0	2	30
2X35	2.0	1.91	3.0	35.0	80.0	4.0	2	30
2X40	2.0	1.91	3.0	40.0	90.0	4.0	2	30
2X50	2.0	1.91	3.0	50.0	100.0	4.0	2	30
2X60	2.0	1.91	3.0	60.0	110.0	4.0	2	30
2,5X8	2.5	2.41	3.7	8.0	45.0	4.0	2	30
2,5X10	2.5	2.41	3.7	10.0	45.0	4.0	2	30
2,5X12	2.5	2.41	3.7	12.0	45.0	4.0	2	30
2,5X14	2.5	2.41	3.7	14.0	50.0	4.0	2	30
2,5X16	2.5	2.41	3.7	16.0	50.0	4.0	2	30
2,5X18	2.5	2.41	3.7	18.0	54.0	4.0	2	30
2,5X20	2.5	2.41	3.7	20.0	54.0	4.0	2	30
2,5X25	2.5	2.41	3.7	25.0	60.0	4.0	2	30
2,5X30	2.5	2.41	3.7	30.0	70.0	4.0	2	30
2,5X40	2.5	2.41	3.7	40.0	90.0	4.0	2	30
2,5X50	2.5	2.41	3.7	50.0	100.0	4.0	2	30
3X8	3.0	2.92	4.5	8.0	45.0	4.0	2	30
3X12	3.0	2.92	4.5	12.0	45.0	4.0	2	30
3X16	3.0	2.92	4.5	16.0	50.0	4.0	2	30
3X20	3.0	2.92	4.5	20.0	54.0	4.0	2	30

Cooling	 
Tolerance	e8
Coating	TiSiN- α



HA K201523



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		180	175	150	105	90										

K201523	 D1 mm ø	 L2 mm	 L1 mm	 D2 mm ø	 z #	 °
2X8	2.0	8.0	58.0	6.0	4	37.5
3X12	3.0	12.0	58.0	6.0	4	37.5
4X13	4.0	13.0	58.0	6.0	4	37.5
5X15	5.0	15.0	58.0	6.0	6	37.5
6X16	6.0	16.0	58.0	6.0	6	37.5
8X22	8.0	22.0	70.0	8.0	6	37.5
10X25	10.0	25.0	73.0	10.0	6	37.5
12X28	12.0	28.0	84.0	12.0	6	37.5
14X30	14.0	30.0	84.0	14.0	6	37.5
16X36	16.0	36.0	93.0	16.0	8	37.5
18X36	18.0	36.0	93.0	18.0	10	37.5
20X41	20.0	41.0	104.0	20.0	10	37.5

SC end mill cutter long TiSiN HPC / ETC | K201533

Cooling	 
Tolerance	e8
Coating	TiSiN- α

HA

ETC

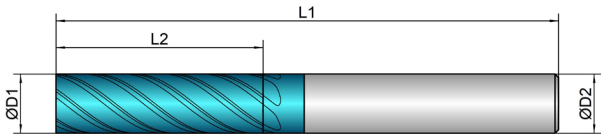
HPC











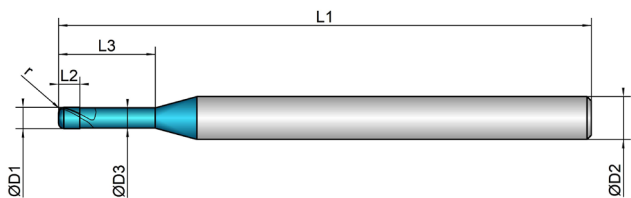
Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		180	175	150	110	40										

K201533	D1  mm Ø	L2  mm	L1  mm	D2  mm Ø	z  #	 °
6X21	6.0	21.0	65.0	6.0	6	37.5
8X28	8.0	28.0	75.0	8.0	6	37.5
10X35	10.0	35.0	85.0	10.0	6	37.5
12X45	12.0	45.0	100.0	12.0	6	37.5
14X45	14.0	45.0	100.0	14.0	6	37.5
16X50	16.0	50.0	110.0	16.0	8	37.5
16X65	16.0	65.0	125.0	16.0	8	37.5
18X54	18.0	54.0	114.0	18.0	10	37.5
20X55	20.0	55.0	126.0	20.0	10	37.5
20X70	20.0	70.0	135.0	20.0	10	37.5
20X75	20.0	75.0	135.0	20.0	10	37.5
25X75	25.0	75.0	150.0	25.0	10	37.5

Cooling	   
Tolerance	0-0,01
Coating	TiSiN- α



HA K202082



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
225	210	200	125	75	55	40	100			150						

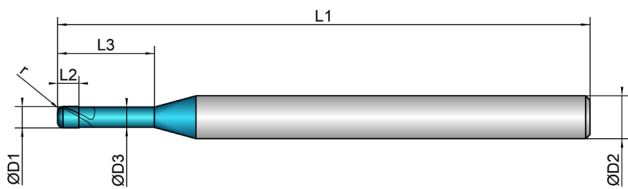
K202082	 mm Ø	 mm Ø	 mm	 mm	 mm	 mm Ø	 #	 mm	 °
0,4X1	0.4	0.38	0.4	1.0	50.0	4.0	2	0.10	30
0,4X1,5	0.4	0.38	0.4	1.5	50.0	4.0	2	0.10	30
0,4X2	0.4	0.38	0.4	2.0	50.0	4.0	2	0.10	30
0,4X3	0.4	0.38	0.4	3.0	50.0	4.0	2	0.10	30
0,4X4	0.4	0.38	0.4	4.0	50.0	4.0	2	0.10	30
0,5X1	0.5	0.48	0.5	1.0	50.0	4.0	2	0.10	30
0,5X2	0.5	0.48	0.5	2.0	50.0	4.0	2	0.10	30
0,5X3	0.5	0.48	0.5	3.0	50.0	4.0	2	0.10	30
0,5X4	0.5	0.48	0.5	4.0	50.0	4.0	2	0.10	30
0,5X5	0.5	0.48	0.5	5.0	50.0	4.0	2	0.10	30
0,5X6	0.5	0.48	0.5	6.0	50.0	4.0	2	0.10	30
0,6X2	0.6	0.58	0.6	2.0	50.0	4.0	2	0.10	30
0,6X3	0.6	0.58	0.6	3.0	50.0	4.0	2	0.10	30
0,6X4	0.6	0.58	0.6	4.0	50.0	4.0	2	0.10	30

K202082	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 mm	 °
0,6X6	0.6	0.58	0.6	6.0	50.0	4.0	2	0.10	30
0,6X8	0.6	0.58	0.6	8.0	50.0	4.0	2	0.10	30
0,7X4	0.7	0.68	0.7	4.0	50.0	4.0	2	0.10	30
0,7X6	0.7	0.68	0.7	6.0	50.0	4.0	2	0.10	30
0,8X4	0.8	0.78	0.8	4.0	50.0	4.0	2	0.10	30
0,8X6	0.8	0.78	0.8	6.0	50.0	4.0	2	0.10	30
1X2	1.0	0.95	1.0	2.0	50.0	4.0	2	0.10	30
1X4	1.0	0.95	1.0	4.0	50.0	4.0	2	0.10	30
1X6	1.0	0.95	1.0	6.0	50.0	4.0	2	0.10	30
1X8	1.0	0.95	1.0	8.0	50.0	4.0	2	0.10	30
1X10	1.0	0.95	1.0	10.0	50.0	4.0	2	0.10	30
1X12	1.0	0.95	1.0	12.0	54.0	4.0	2	0.10	30
1X16	1.0	0.95	1.0	16.0	60.0	4.0	2	0.10	30
1X20	1.0	0.95	1.0	20.0	60.0	4.0	2	0.10	30
2X4	2.0	1.91	2.0	4.0	50.0	4.0	2	0.10	30
2X6	2.0	1.91	2.0	6.0	50.0	4.0	2	0.10	30
2X8	2.0	1.91	2.0	8.0	50.0	4.0	2	0.10	30
2X10	2.0	1.91	2.0	10.0	50.0	4.0	2	0.10	30
2X12	2.0	1.91	2.0	12.0	54.0	4.0	2	0.10	30
2X16	2.0	1.91	2.0	16.0	54.0	4.0	2	0.10	30
2X20	2.0	1.91	2.0	20.0	60.0	4.0	2	0.10	30
2X26	2.0	1.91	2.0	26.0	70.0	4.0	2	0.10	30

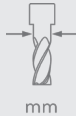
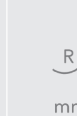
Cooling	   
Tolerance	0-0,01
Coating	TiSiN- α



HA K202092



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
225	210	200	125	75	55	40	100			150						

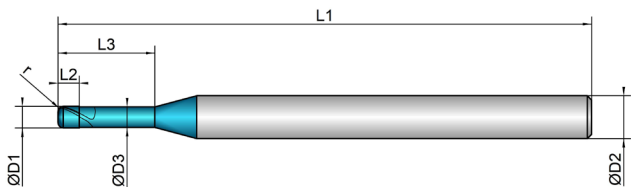
K202092	 mm Ø	 mm Ø	 mm	 mm	 mm	 mm Ø	 #	 mm	 °
0,8X4	0.8	0.78	0.8	4.0	50.0	4.0	2	0.20	30
0,8X6	0.8	0.78	0.8	6.0	50.0	4.0	2	0.20	30
1X2	1.0	0.95	1.0	2.0	50.0	4.0	2	0.20	30
1X4	1.0	0.95	1.0	4.0	50.0	4.0	2	0.20	30
1X6	1.0	0.95	1.0	6.0	50.0	4.0	2	0.20	30
1X8	1.0	0.95	1.0	8.0	50.0	4.0	2	0.20	30
1X10	1.0	0.95	1.0	10.0	50.0	4.0	2	0.20	30
1X12	1.0	0.95	1.0	12.0	54.0	4.0	2	0.20	30
1X16	1.0	0.95	1.0	16.0	60.0	4.0	2	0.20	30
1X20	1.0	0.95	1.0	20.0	60.0	4.0	2	0.20	30
1,2X6	1.2	1.14	1.2	6.0	50.0	4.0	2	0.20	30
1,2X12	1.2	1.14	1.2	12.0	54.0	4.0	2	0.20	30

K202092	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 mm	 °
1,2X20	1.2	1.14	1.2	20.0	60.0	4.0	2	0.20	30
1,5X4	1.5	1.44	1.5	4.0	50.0	4.0	2	0.20	30
1,5X6	1.5	1.44	1.5	6.0	50.0	4.0	2	0.20	30
1,5X8	1.5	1.44	1.5	8.0	50.0	4.0	2	0.20	30
1,5X10	1.5	1.44	1.5	10.0	50.0	4.0	2	0.20	30
1,5X12	1.5	1.44	1.5	12.0	54.0	4.0	2	0.20	30
1,5X16	1.5	1.44	1.5	16.0	54.0	4.0	2	0.20	30
1,5X20	1.5	1.44	1.5	20.0	60.0	4.0	2	0.20	30
2X4	2.0	1.91	2.0	4.0	50.0	4.0	2	0.20	30
2X6	2.0	1.91	2.0	6.0	50.0	4.0	2	0.20	30
2X8	2.0	1.91	2.0	8.0	50.0	4.0	2	0.20	30
2X10	2.0	1.91	2.0	10.0	50.0	4.0	2	0.20	30
2X12	2.0	1.91	2.0	12.0	54.0	4.0	2	0.20	30
2X16	2.0	1.91	2.0	16.0	54.0	4.0	2	0.20	30
2X20	2.0	1.91	2.0	20.0	60.0	4.0	2	0.20	30
2X26	2.0	1.91	2.0	26.0	70.0	4.0	2	0.20	30

Cooling	   
Tolerance	0-0,01
Coating	TiSiN- α



HA K202102



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
225	210	200	125	75	55	40	100			150						

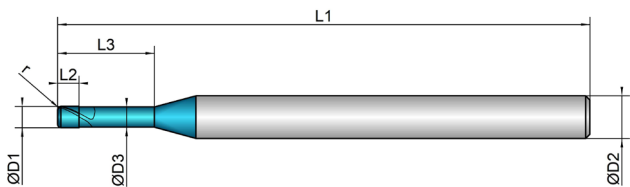
K202102	 mm Ø	 mm Ø	 mm	 mm	 mm	 mm Ø	 #	 mm	 °
1X2	1.0	0.95	1.0	2.0	50.0	4.0	2	0.30	30
1X4	1.0	0.95	1.0	4.0	50.0	4.0	2	0.30	30
1X6	1.0	0.95	1.0	6.0	50.0	4.0	2	0.30	30
1X8	1.0	0.95	1.0	8.0	50.0	4.0	2	0.30	30
1X10	1.0	0.95	1.0	10.0	50.0	4.0	2	0.30	30
1X12	1.0	0.95	1.0	12.0	54.0	4.0	2	0.30	30
1X16	1.0	0.95	1.0	16.0	60.0	4.0	2	0.30	30
1X20	1.0	0.95	1.0	20.0	60.0	4.0	2	0.30	30
1,2X6	1.2	1.14	1.2	6.0	50.0	4.0	2	0.30	30
1,2X12	1.2	1.14	1.2	12.0	54.0	4.0	2	0.30	30
1,2X20	1.2	1.14	1.2	20.0	60.0	4.0	2	0.30	30
1,5X4	1.5	1.44	1.5	4.0	50.0	4.0	2	0.30	30
1,5X6	1.5	1.44	1.5	6.0	50.0	4.0	2	0.30	30

K202102	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 mm	 °
1,5X8	1.5	1.44	1.5	8.0	50.0	4.0	2	0.30	30
1,5X10	1.5	1.44	1.5	10.0	50.0	4.0	2	0.30	30
1,5X12	1.5	1.44	1.5	12.0	54.0	4.0	2	0.30	30
1,5X16	1.5	1.44	1.5	16.0	54.0	4.0	2	0.30	30
1,5X20	1.5	1.44	1.5	20.0	60.0	4.0	2	0.30	30
2X4	2.0	1.91	2.0	4.0	50.0	4.0	2	0.30	30
2X6	2.0	1.91	2.0	6.0	50.0	4.0	2	0.30	30
2X8	2.0	1.91	2.0	8.0	50.0	4.0	2	0.30	30
2X10	2.0	1.91	2.0	10.0	50.0	4.0	2	0.30	30
2X12	2.0	1.91	2.0	12.0	54.0	4.0	2	0.30	30
2X16	2.0	1.91	2.0	16.0	54.0	4.0	2	0.30	30
2X20	2.0	1.91	2.0	20.0	60.0	4.0	2	0.30	30
2X26	2.0	1.91	2.0	26.0	70.0	4.0	2	0.30	30
2,5X10	2.5	2.41	2.5	10.0	50.0	4.0	2	0.30	30
2,5X12	2.5	2.41	2.5	12.0	60.0	4.0	2	0.30	30
2,5X30	2.5	2.41	2.5	30.0	70.0	4.0	2	0.30	30
3X10	3.0	2.92	4.5	10.0	50.0	4.0	2	0.30	30
3X12	3.0	2.92	4.5	12.0	50.0	4.0	2	0.30	30
3X30	3.0	2.92	4.5	30.0	70.0	4.0	2	0.30	30

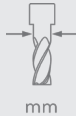
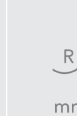
Cooling	   
Tolerance	0-0,01
Coating	TiSiN- α



HA K202112



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
225	210	200	125	75	55	40	100			150						

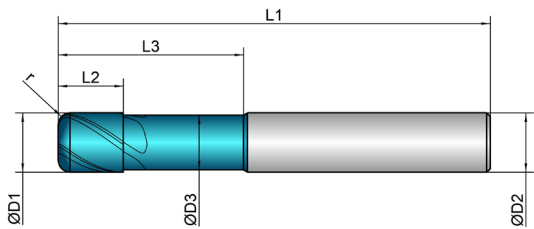
K202112	D1  mm ø	D3  mm ø	L2  mm	L3  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
1,5X4	1.5	1.44	1.5	4.0	50.0	4.0	2	0.50	30
1,5X6	1.5	1.44	1.5	6.0	50.0	4.0	2	0.50	30
1,5X8	1.5	1.44	1.5	8.0	50.0	4.0	2	0.50	30
1,5X10	1.5	1.44	1.5	10.0	50.0	4.0	2	0.50	30
1,5X12	1.5	1.44	1.5	12.0	54.0	4.0	2	0.50	30
1,5X16	1.5	1.44	1.5	16.0	54.0	4.0	2	0.50	30
1,5X20	1.5	1.44	1.5	20.0	60.0	4.0	2	0.50	30
2X4	2.0	1.91	2.0	4.0	50.0	4.0	2	0.50	30
2X6	2.0	1.91	2.0	6.0	50.0	4.0	2	0.50	30
2X8	2.0	1.91	2.0	8.0	50.0	4.0	2	0.50	30
2X10	2.0	1.91	2.0	10.0	50.0	4.0	2	0.50	30
2X12	2.0	1.91	2.0	12.0	54.0	4.0	2	0.50	30
2X16	2.0	1.91	2.0	16.0	54.0	4.0	2	0.50	30
2X20	2.0	1.91	2.0	20.0	60.0	4.0	2	0.50	30
2X26	2.0	1.91	2.0	26.0	70.0	4.0	2	0.50	30
2,5X10	2.5	2.41	2.5	10.0	50.0	4.0	2	0.50	30
2,5X12	2.5	2.41	2.5	12.0	60.0	4.0	2	0.50	30
2,5X30	2.5	2.41	2.5	30.0	70.0	4.0	2	0.50	30
3X10	3.0	2.92	4.5	10.0	50.0	4.0	2	0.50	30
3X12	3.0	2.92	4.5	12.0	50.0	4.0	2	0.50	30
3X30	3.0	2.92	4.5	30.0	70.0	4.0	2	0.50	30

Cooling	 
Tolerance	e8
Coating	TiSiN- α

HA	HSC	HPC	$\neq$			
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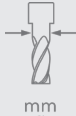


HA K202223



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		210	175	155	120	90										

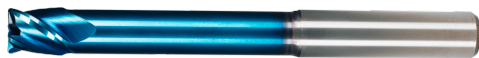
K202223	D1  mm ø	D3  mm ø	L2  mm	L3  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
1/0,1	1.0	0.85	1.5	10.0	50.0	3.0	4	0.10	35
1/0,2	1.0	0.85	1.5	10.0	50.0	3.0	4	0.20	35
2/0,2	2.0	1.8	2.5	12.0	50.0	3.0	4	0.20	35
2/0,3	2.0	1.8	2.5	12.0	50.0	3.0	4	0.30	35
2/0,5	2.0	1.8	2.5	12.0	50.0	3.0	4	0.50	35
3/0,25	3.0	2.7	4.0	14.0	50.0	3.0	4	0.25	35
3/0,3	3.0	2.7	4.0	14.0	50.0	3.0	4	0.30	35
3/0,5	3.0	2.7	4.0	14.0	50.0	3.0	4	0.50	35
3/1	3.0	2.7	4.0	14.0	50.0	3.0	4	1.00	35
4/0,2	4.0	3.7	5.0	16.0	50.0	4.0	4	0.20	35
4/0,25	4.0	3.7	5.0	16.0	50.0	4.0	4	0.25	35
4/0,4	4.0	3.7	5.0	16.0	50.0	4.0	4	0.40	35
4/0,5	4.0	3.7	5.0	16.0	50.0	4.0	4	0.50	35
4/1	4.0	3.7	5.0	16.0	50.0	4.0	4	1.00	35
5/0,25	5.0	4.6	6.0	18.0	54.0	5.0	4	0.25	35
5/0,5	5.0	4.6	6.0	18.0	54.0	5.0	4	0.50	35

K202223	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 mm	 °
5/1	5.0	4.6	6.0	18.0	54.0	5.0	4	1.00	35
6/0,25	6.0	5.5	7.0	21.0	58.0	6.0	4	0.25	35
6/0,5	6.0	5.5	7.0	21.0	58.0	6.0	4	0.50	35
6/0,8	6.0	5.5	7.0	21.0	58.0	6.0	4	0.80	35
6/1	6.0	5.5	7.0	21.0	58.0	6.0	4	1.00	35
6/1,5	6.0	5.5	7.0	21.0	58.0	6.0	4	1.50	35
6/2	6.0	5.5	7.0	21.0	58.0	6.0	4	2.00	35
8/0,25	8.0	7.4	9.0	27.0	64.0	8.0	4	0.25	35
8/0,5	8.0	7.4	9.0	27.0	64.0	8.0	4	0.50	35
8/0,8	8.0	7.4	9.0	27.0	64.0	8.0	4	0.80	35
8/1	8.0	7.4	9.0	27.0	64.0	8.0	4	1.00	35
8/1,5	8.0	7.4	9.0	27.0	64.0	8.0	4	1.50	35
8/2	8.0	7.4	9.0	27.0	64.0	8.0	4	2.00	35
8/2,5	8.0	7.4	9.0	27.0	64.0	8.0	4	2.50	35
8/3	8.0	7.4	9.0	27.0	64.0	8.0	4	3.00	35
10/0,25	10.0	9.2	11.0	32.0	73.0	10.0	4	0.25	35
10/0,5	10.0	9.2	11.0	32.0	73.0	10.0	4	0.50	35
10/0,8	10.0	9.2	11.0	32.0	73.0	10.0	4	0.80	35
10/1	10.0	9.2	11.0	32.0	73.0	10.0	4	1.00	35
10/1,5	10.0	9.2	11.0	32.0	73.0	10.0	4	1.50	35
10/2	10.0	9.2	11.0	32.0	73.0	10.0	4	2.00	35
10/3	10.0	9.2	11.0	32.0	73.0	10.0	4	3.00	35
10/3,5	10.0	9.2	11.0	32.0	73.0	10.0	4	3.50	35
12/0,5	12.0	9.2	12.0	38.0	84.0	12.0	4	0.50	35
12/1	12.0	9.2	12.0	38.0	84.0	12.0	4	1.00	35
12/1,5	12.0	9.2	12.0	38.0	84.0	12.0	4	1.50	35
12/2	12.0	9.2	12.0	38.0	84.0	12.0	4	2.00	35
12/3	12.0	9.2	12.0	38.0	84.0	12.0	4	3.00	35
16/1	16.0	15.0	16.0	44.0	93.0	16.0	4	1.00	35
16/2	16.0	15.0	16.0	44.0	93.0	16.0	4	2.00	35
16/3	16.0	15.0	16.0	44.0	93.0	16.0	4	3.00	35
20/1	20.0	18.5	20.0	55.0	104.0	20.0	4	1.00	35
20/2,5	20.0	18.5	20.0	55.0	104.0	20.0	4	2.50	35

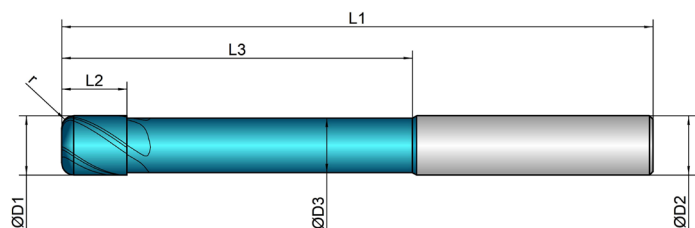
SC torus cutter long TiAlN HSC / HPC | K202233

Cooling	 
Tolerance	e8
Coating	TiSiN- α

HA	HSC	HPC	$\neq$	  
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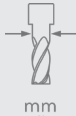
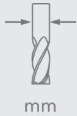


HA K202233

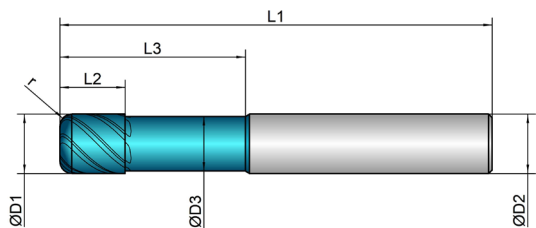


Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		210	175	155	120	90										

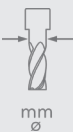
K202233	 D1 mm Ø	 D3 mm Ø	 L2 mm	 L3 mm	 L1 mm	 D2 mm Ø	 z #	 r mm	 °
1/0,1	1.0	0.85	1.5	20.0	75.0	3.0	4	0.10	35
1/0,2	1.0	0.85	1.5	20.0	75.0	3.0	4	0.20	35
2/0,2	2.0	1.8	2.5	25.0	75.0	3.0	4	0.20	35
2/0,3	2.0	1.8	2.5	25.0	75.0	3.0	4	0.30	35
2/0,5	2.0	1.8	2.5	25.0	75.0	3.0	4	0.50	35
3/0,25	3.0	2.7	4.0	32.0	75.0	3.0	4	0.25	35
3/0,3	3.0	2.7	4.0	32.0	75.0	3.0	4	0.30	35
3/0,5	3.0	2.7	4.0	32.0	75.0	3.0	4	0.50	35
3/1	3.0	2.7	4.0	32.0	75.0	3.0	4	1.00	35
4/0,2	4.0	3.7	5.0	36.0	75.0	4.0	4	0.20	35
4/0,25	4.0	3.7	5.0	36.0	75.0	4.0	4	0.25	35
4/0,4	4.0	3.7	5.0	36.0	75.0	4.0	4	0.40	35
4/0,5	4.0	3.7	5.0	36.0	75.0	4.0	4	0.50	35
4/1	4.0	3.7	5.0	36.0	75.0	4.0	4	1.00	35
5/0,25	5.0	4.6	6.0	40.0	75.0	5.0	4	0.25	35

K202233	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 mm	 °
5/0,5	5.0	4.6	6.0	40.0	75.0	5.0	4	0.50	35
5/1	5.0	4.6	6.0	40.0	75.0	5.0	4	1.00	35
6/0,25	6.0	5.5	7.0	44.0	80.0	6.0	4	0.25	35
6/0,5	6.0	5.5	7.0	44.0	80.0	6.0	4	0.50	35
6/1	6.0	5.5	7.0	44.0	80.0	6.0	4	1.00	35
6/1,5	6.0	5.5	7.0	44.0	80.0	6.0	4	1.50	35
8/0,25	8.0	7.4	9.0	54.0	100.0	8.0	4	0.25	35
8/0,5	8.0	7.4	9.0	54.0	100.0	8.0	4	0.50	35
8/0,8	8.0	7.4	9.0	54.0	100.0	8.0	4	0.80	35
8/1	8.0	7.4	9.0	54.0	100.0	8.0	4	1.00	35
8/1,5	8.0	7.4	9.0	54.0	100.0	8.0	4	1.50	35
8/2	8.0	7.4	9.0	54.0	100.0	8.0	4	2.00	35
8/3	8.0	7.4	9.0	54.0	100.0	8.0	4	3.00	35
10/0,25	10.0	9.2	11.0	60.0	100.0	10.0	4	0.25	35
10/0,5	10.0	9.2	11.0	60.0	100.0	10.0	4	0.50	35
10/0,8	10.0	9.2	11.0	60.0	100.0	10.0	4	0.80	35
10/1	10.0	9.2	11.0	60.0	100.0	10.0	4	1.00	35
10/1,5	10.0	9.2	11.0	60.0	100.0	10.0	4	1.50	35
10/2	10.0	9.2	11.0	60.0	100.0	10.0	4	2.00	35
10/3	10.0	9.2	11.0	60.0	100.0	10.0	4	3.00	35
12/0,5	12.0	11.0	12.0	75.0	120.0	12.0	4	0.50	35
12/1	12.0	11.0	12.0	75.0	120.0	12.0	4	1.00	35
12/1,5	12.0	11.0	12.0	75.0	120.0	12.0	4	1.50	35
12/2	12.0	11.0	12.0	75.0	120.0	12.0	4	2.00	35
12/3	12.0	11.0	12.0	75.0	120.0	12.0	4	3.00	35
16/1	16.0	15.0	16.0	92.0	150.0	16.0	4	1.00	35
16/2	16.0	15.0	16.0	92.0	150.0	16.0	4	2.00	35
16/3	16.0	15.0	16.0	92.0	150.0	16.0	4	3.00	35
20/1	20.0	18.5	20.0	92.0	150.0	20.0	4	1.00	35
20/2,5	20.0	18.5	20.0	92.0	150.0	20.0	4	2.50	35

Cooling	 
Tolerance	e8
Coating	TiSiN- α

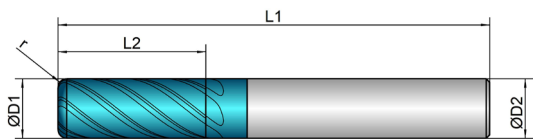
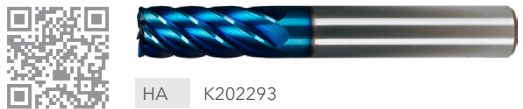


Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		205	175	160	100	65										

	D1  mm ø	D3  mm ø	L2  mm	L3  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
K202253									
3/0,3	3.0	2.7	4.0	14.0	50.0	3.0	4	0.30	45
3/0,5	3.0	2.7	4.0	14.0	50.0	3.0	4	0.50	45
3/1	3.0	2.7	4.0	14.0	50.0	3.0	4	1.00	45
4/0,4	4.0	3.7	5.0	16.0	50.0	4.0	4	0.40	45
4/0,5	4.0	3.7	5.0	16.0	50.0	4.0	4	0.50	45
4/1	4.0	3.7	5.0	16.0	50.0	4.0	4	1.00	45
5/0,5	5.0	4.6	6.0	18.0	54.0	5.0	4	0.50	45
5/1	5.0	4.6	6.0	18.0	54.0	5.0	4	1.00	45
6/0,5	6.0	5.5	7.0	21.0	58.0	6.0	6	0.50	45
6/0,8	6.0	5.5	7.0	21.0	58.0	6.0	6	0.80	45
6/1	6.0	5.5	7.0	21.0	58.0	6.0	6	1.00	45
6/1,5	6.0	5.5	7.0	21.0	58.0	6.0	6	1.50	45
8/0,5	8.0	7.4	9.0	27.0	64.0	8.0	6	0.50	45

K202253	 D1 mm ø	 D3 mm ø	 L2 mm	 L3 mm	 L1 mm	 D2 mm ø	 z #	 r mm	 °
8/0,8	8.0	7.4	9.0	27.0	64.0	8.0	6	0.80	45
8/1	8.0	7.4	9.0	27.0	64.0	8.0	6	1.00	45
8/1,5	8.0	7.4	9.0	27.0	64.0	8.0	6	1.50	45
8/2	8.0	7.4	9.0	27.0	64.0	8.0	6	2.00	45
8/3	8.0	7.4	9.0	27.0	64.0	8.0	6	3.00	45
10/0,5	10.0	9.2	11.0	32.0	73.0	10.0	6	0.50	45
10/0,8	10.0	9.2	11.0	32.0	73.0	10.0	6	0.80	45
10/1	10.0	9.2	11.0	32.0	73.0	10.0	6	1.00	45
10/1,5	10.0	9.2	11.0	32.0	73.0	10.0	6	1.50	45
10/2	10.0	9.2	11.0	32.0	73.0	10.0	6	2.00	45
10/3	10.0	9.2	11.0	32.0	73.0	10.0	6	3.00	45
12/0,5	12.0	11.0	12.0	38.0	84.0	12.0	6	0.50	45
12/1	12.0	11.0	12.0	38.0	84.0	12.0	6	1.00	45
12/1,5	12.0	11.0	12.0	38.0	84.0	12.0	6	1.50	45
12/2	12.0	11.0	12.0	38.0	84.0	12.0	6	2.00	45
12/3	12.0	11.0	12.0	38.0	84.0	12.0	6	3.00	45
16/1	16.0	15.0	16.0	44.0	93.0	16.0	6	1.00	45
16/2	16.0	15.0	16.0	44.0	93.0	16.0	6	2.00	45
16/3	16.0	15.0	16.0	44.0	93.0	16.0	6	3.00	45
20/1	20.0	18.5	20.0	50.0	104.0	20.0	6	1.00	45
20/2,5	20.0	18.5	20.0	50.0	104.0	20.0	6	2.50	45

Cooling	 
Tolerance	e8
Coating	TiSiN- α



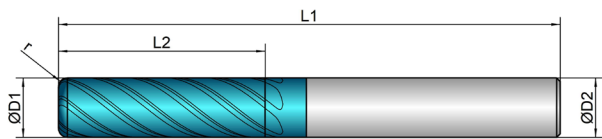
Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		180	180	150	95	70										

	D1  mm ø	L2  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
K202293							
5/0,5	5.0	15.0	58.0	6.0	6	0.50	37.5
5/1	5.0	15.0	58.0	6.0	6	1.00	37.5
6/0,5	6.0	16.0	58.0	6.0	6	0.50	37.5
6/1	6.0	16.0	58.0	6.0	6	1.00	37.5
8/0,5	8.0	22.0	70.0	8.0	6	0.50	37.5
8/1	8.0	22.0	70.0	8.0	6	1.00	37.5
10/0,5	10.0	25.0	73.0	10.0	6	0.50	37.5
10/1	10.0	25.0	73.0	10.0	6	1.00	37.5
10/1,5	10.0	25.0	73.0	10.0	6	1.50	37.5
12/0,5	12.0	28.0	84.0	12.0	6	0.50	37.5
12/1	12.0	28.0	84.0	12.0	6	1.00	37.5
12/1,5	12.0	28.0	84.0	12.0	6	1.50	37.5
14/1	14.0	30.0	84.0	14.0	6	1.00	37.5
16/1	16.0	36.0	93.0	16.0	8	1.00	37.5
16/2	16.0	36.0	93.0	16.0	8	2.00	37.5
18/1	18.0	36.0	93.0	18.0	10	1.00	37.5
20/1	20.0	41.0	104.0	20.0	10	1.00	37.5
20/2	20.0	41.0	104.0	20.0	10	2.00	37.5

Cooling	 
Tolerance	e8
Coating	TiSiN- α



HA K202303



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		160	160	130	85	60										

K202303	D1  mm ø	L2  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
6/0,5	6.0	21.0	65.0	6.0	6	0.50	37.5
6/1	6.0	21.0	65.0	6.0	6	1.00	37.5
8/0,5	8.0	28.0	75.0	8.0	6	0.50	37.5
8/1	8.0	28.0	75.0	8.0	6	1.00	37.5
10/0,5	10.0	35.0	85.0	10.0	6	0.50	37.5
10/1	10.0	35.0	85.0	10.0	6	1.00	37.5
10/1,5	10.0	35.0	85.0	10.0	6	1.50	37.5
12/0,5	12.0	45.0	100.0	12.0	6	0.50	37.5
12/1	12.0	45.0	100.0	12.0	6	1.00	37.5
12/1,5	12.0	45.0	100.0	12.0	6	1.50	37.5
14/1	14.0	45.0	100.0	14.0	6	1.00	37.5
16/1	16.0	50.0	110.0	16.0	8	1.00	37.5
16/2	16.0	50.0	110.0	16.0	8	2.00	37.5
18/1	18.0	54.0	114.0	18.0	10	1.00	37.5
20/1	20.0	55.0	126.0	20.0	10	1.00	37.5
20/2	20.0	55.0	126.0	20.0	10	2.00	37.5

SC torus cutter overlong TiSiN HPC / ETC | K202307

Cooling	 
Tolerance	e8
Coating	TiSiN- α

HA

ETC

HPC



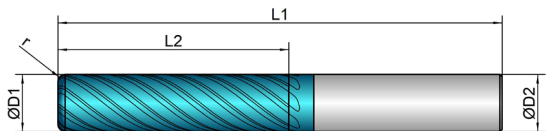








HA K202307



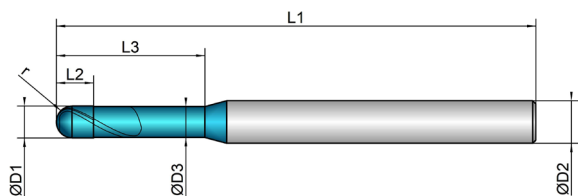
Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		160	160	130	85	60										

	D1  mm ø	L2  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
K202307							
16/1	16.0	65.0	125.0	16.0	8	1.00	37.5
16/2	16.0	65.0	125.0	16.0	8	2.00	37.5
20/1	20.0	70.0	135.0	20.0	10	1.00	37.5
20/2	20.0	70.0	135.0	20.0	10	2.00	37.5

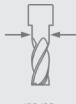
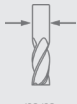
Cooling	   
Tolerance	0-0,01
Coating	TiSiN- α



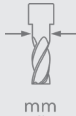
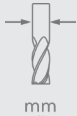
HA K203206



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
220	210	195	125	75	60	45	100			150						

K203206	D1  mm ø	D3  mm ø	L2  mm	L3  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
0,2X0,3	0.2	0.17	0.16	0.3	45.0	4.0	2	0.10	30
0,2X0,5	0.2	0.17	0.16	0.5	45.0	4.0	2	0.10	30
0,2X0,75	0.2	0.17	0.16	0.75	45.0	4.0	2	0.10	30
0,2X1	0.2	0.17	0.16	1.0	45.0	4.0	2	0.10	30
0,2X1,25	0.2	0.17	0.16	1.25	45.0	4.0	2	0.10	30
0,2X1,5	0.2	0.17	0.16	1.5	45.0	4.0	2	0.10	30
0,2X1,75	0.2	0.17	0.16	1.75	45.0	4.0	2	0.10	30
0,2X2	0.2	0.17	0.16	2.0	45.0	4.0	2	0.10	30
0,2X2,5	0.2	0.17	0.16	2.5	45.0	4.0	2	0.10	30
0,2X3	0.2	0.17	0.16	3.0	45.0	4.0	2	0.10	30
0,3X0,5	0.3	0.27	0.24	0.5	45.0	4.0	2	0.15	30
0,3X0,75	0.3	0.27	0.24	0.75	45.0	4.0	2	0.15	30
0,3X1	0.3	0.27	0.24	1.0	45.0	4.0	2	0.15	30
0,3X1,25	0.3	0.27	0.24	1.25	45.0	4.0	2	0.15	30
0,3X1,5	0.3	0.27	0.24	1.5	45.0	4.0	2	0.15	30
0,4X0,5	0.4	0.34	0.32	0.5	45.0	4.0	2	0.20	30
0,4X0,75	0.4	0.34	0.32	0.75	45.0	4.0	2	0.20	30
0,4X1	0.4	0.34	0.32	1.0	45.0	4.0	2	0.20	30
0,4X1,5	0.4	0.34	0.32	1.5	45.0	4.0	2	0.20	30

K203206	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 mm	 °
0,4X2	0.4	0.34	0.32	2.0	45.0	4.0	2	0.20	30
0,4X2,5	0.4	0.34	0.32	2.5	45.0	4.0	2	0.20	30
0,4X3	0.4	0.34	0.32	3.0	45.0	4.0	2	0.20	30
0,4X3,5	0.4	0.34	0.32	3.5	45.0	4.0	2	0.20	30
0,4X4	0.4	0.34	0.32	4.0	45.0	4.0	2	0.20	30
0,4X4,5	0.4	0.34	0.32	4.5	45.0	4.0	2	0.20	30
0,4X5	0.4	0.34	0.32	5.0	45.0	4.0	2	0.20	30
0,4X5,5	0.4	0.34	0.32	5.5	45.0	4.0	2	0.20	30
0,4X6	0.4	0.34	0.32	6.0	45.0	4.0	2	0.20	30
0,5X1	0.5	0.47	0.4	1.0	45.0	4.0	2	0.25	30
0,5X1,5	0.5	0.47	0.4	1.5	45.0	4.0	2	0.25	30
0,5X2	0.5	0.47	0.4	2.0	45.0	4.0	2	0.25	30
0,5X2,5	0.5	0.47	0.4	2.5	45.0	4.0	2	0.25	30
0,5X3	0.5	0.47	0.4	3.0	45.0	4.0	2	0.25	30
0,5X3,5	0.5	0.47	0.4	3.5	45.0	4.0	2	0.25	30
0,5X4	0.5	0.47	0.4	4.0	45.0	4.0	2	0.25	30
0,5X4,5	0.5	0.47	0.4	4.5	45.0	4.0	2	0.25	30
0,5X5	0.5	0.47	0.4	5.0	45.0	4.0	2	0.25	30
0,5X5,5	0.5	0.47	0.4	5.5	45.0	4.0	2	0.25	30
0,5X6	0.5	0.47	0.4	6.0	45.0	4.0	2	0.25	30
0,5X7	0.5	0.47	0.4	7.0	45.0	4.0	2	0.25	30
0,5X8	0.5	0.47	0.4	8.0	45.0	4.0	2	0.25	30
0,5X9	0.5	0.47	0.4	9.0	45.0	4.0	2	0.25	30
0,6X1	0.6	0.57	0.48	1.0	45.0	4.0	2	0.30	30
0,6X2	0.6	0.57	0.48	2.0	45.0	4.0	2	0.30	30
0,6X3	0.6	0.57	0.48	3.0	45.0	4.0	2	0.30	30
0,6X4	0.6	0.57	0.48	4.0	45.0	4.0	2	0.30	30
0,6X5	0.6	0.57	0.48	5.0	45.0	4.0	2	0.30	30
0,6X6	0.6	0.57	0.48	6.0	45.0	4.0	2	0.30	30
0,6X8	0.6	0.57	0.48	8.0	45.0	4.0	2	0.30	30
0,8X2	0.8	0.77	0.64	2.0	45.0	4.0	2	0.40	30
0,8X3	0.8	0.77	0.64	3.0	45.0	4.0	2	0.40	30
0,8X4	0.8	0.77	0.64	4.0	45.0	4.0	2	0.40	30
0,8X5	0.8	0.77	0.64	5.0	45.0	4.0	2	0.40	30
0,8X6	0.8	0.77	0.64	6.0	45.0	4.0	2	0.40	30
0,8X7	0.8	0.77	0.64	7.0	45.0	4.0	2	0.40	30
0,8X8	0.8	0.77	0.64	8.0	45.0	4.0	2	0.40	30
0,8X9	0.8	0.77	0.64	9.0	45.0	4.0	2	0.40	30
1X2,5	1.0	0.96	0.8	2.5	45.0	4.0	2	0.50	30
1X3	1.0	0.96	0.8	3.0	45.0	4.0	2	0.50	30

K203206	 mm ø	 mm ø	 mm	 mm	 mm	 mm ø	 #	 mm	 °
1X4	1.0	0.96	0.8	4.0	45.0	4.0	2	0.50	30
1X5	1.0	0.96	0.8	5.0	45.0	4.0	2	0.50	30
1X6	1.0	0.96	0.8	6.0	45.0	4.0	2	0.50	30
1X7	1.0	0.96	0.8	7.0	45.0	4.0	2	0.50	30
1X8	1.0	0.96	0.8	8.0	45.0	4.0	2	0.50	30
1X9	1.0	0.96	0.8	9.0	45.0	4.0	2	0.50	30
1X10	1.0	0.96	0.8	10.0	45.0	4.0	2	0.50	30
1X12	1.0	0.96	0.8	12.0	45.0	4.0	2	0.50	30
1,2X6	1.2	1.16	0.96	6.0	45.0	4.0	2	0.60	30
1,2X8	1.2	1.16	0.96	8.0	45.0	4.0	2	0.60	30
1,2X10	1.2	1.16	0.96	10.0	45.0	4.0	2	0.60	30
1,2X12	1.2	1.16	0.96	12.0	45.0	4.0	2	0.60	30
1,4X8	1.4	1.34	1.12	8.0	45.0	4.0	2	0.70	30
1,4X12	1.4	1.34	1.12	12.0	45.0	4.0	2	0.70	30
1,5X3	1.5	1.44	1.2	3.0	45.0	4.0	2	0.75	30
1,5X4	1.5	1.44	1.2	4.0	45.0	4.0	2	0.75	30
1,5X6	1.5	1.44	1.2	6.0	45.0	4.0	2	0.75	30
1,5X8	1.5	1.44	1.2	8.0	45.0	4.0	2	0.75	30
1,5X10	1.5	1.44	1.2	10.0	45.0	4.0	2	0.75	30
1,5X12	1.5	1.44	1.2	12.0	45.0	4.0	2	0.75	30
1,6X8	1.6	1.54	1.28	8.0	45.0	4.0	2	0.80	30
1,6X12	1.6	1.54	1.28	12.0	45.0	4.0	2	0.80	30
1,8X8	1.8	1.74	1.44	8.0	45.0	4.0	2	0.90	30
1,8X12	1.8	1.74	1.44	12.0	45.0	4.0	2	0.90	30
2X3	2.0	1.94	1.6	3.0	45.0	4.0	2	1.00	30
2X4	2.0	1.94	1.6	4.0	45.0	4.0	2	1.00	30
2X6	2.0	1.94	1.6	6.0	45.0	4.0	2	1.00	30
2X8	2.0	1.94	1.6	8.0	45.0	4.0	2	1.00	30
2X10	2.0	1.94	1.6	10.0	45.0	4.0	2	1.00	30
2X12	2.0	1.94	1.6	12.0	45.0	4.0	2	1.00	30
2,5X10	2.5	2.41	2.0	10.0	45.0	4.0	2	1.25	30
3X8	3.0	2.92	3.5	8.0	45.0	4.0	2	1.50	30
3X10	3.0	2.92	3.5	10.0	45.0	4.0	2	1.50	30
3X12	3.0	2.92	3.5	12.0	45.0	4.0	2	1.50	30
3X16	3.0	2.92	3.5	16.0	45.0	4.0	2	1.50	30

SC micro full radius cutter long TiSiN HSC | K203212

Cooling	
Tolerance	0-0,01
Coating	TiSiN- α

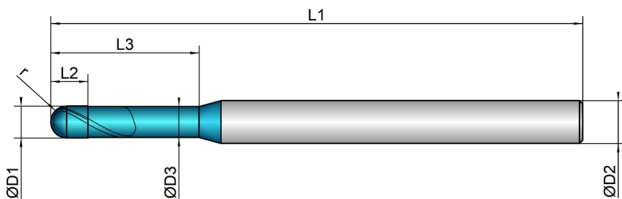
HA

HSC

Expert

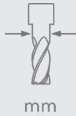
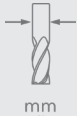


HA K203212



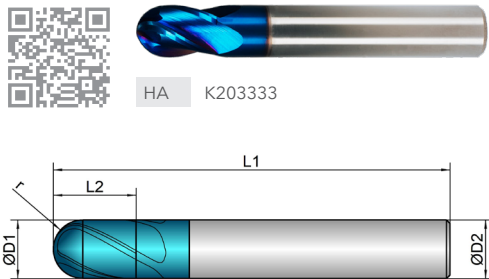
Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
220	210	195	125	75	60	45	100			150						

K203212	D1 	D3 	L2 	L3 	L1 	D2 	z 	r 	
0,3X1,75	0.3	0.27	0.24	1.75	50.0	4.0	2	0.15	30
0,3X2	0.3	0.27	0.24	2.0	50.0	4.0	2	0.15	30
0,3X2,25	0.3	0.27	0.24	2.25	50.0	4.0	2	0.15	30
0,3X2,5	0.3	0.27	0.24	2.5	50.0	4.0	2	0.15	30
0,3X2,75	0.3	0.27	0.24	2.75	50.0	4.0	2	0.15	30
0,3X3	0.3	0.27	0.24	3.0	50.0	4.0	2	0.15	30
0,3X3,5	0.3	0.27	0.24	3.5	50.0	4.0	2	0.15	30
0,3X4	0.3	0.27	0.24	4.0	50.0	4.0	2	0.15	30
0,3X4,5	0.3	0.27	0.24	4.5	50.0	4.0	2	0.15	30
0,5X10	0.5	0.47	0.4	10.0	50.0	4.0	2	0.25	30
0,6X10	0.6	0.57	0.48	10.0	50.0	4.0	2	0.30	30
0,6X12	0.6	0.57	0.48	12.0	50.0	4.0	2	0.30	30

K203212	 D1 mm ø	 D3 mm ø	 L2 mm	 L3 mm	 L1 mm	 D2 mm ø	 z #	 r mm	 °
0,8X10	0.8	0.77	0.64	10.0	50.0	4.0	2	0.40	30
1X14	1.0	0.96	0.8	14.0	50.0	4.0	2	0.50	30
1X16	1.0	0.96	0.8	16.0	50.0	4.0	2	0.50	30
1,2X14	1.2	1.16	0.96	14.0	50.0	4.0	2	0.60	30
1,2X16	1.2	1.16	0.96	16.0	50.0	4.0	2	0.60	30
1,4X16	1.4	1.34	1.12	16.0	50.0	4.0	2	0.70	30
1,5X14	1.5	1.44	1.2	14.0	50.0	4.0	2	0.75	30
1,5X16	1.5	1.44	1.2	16.0	50.0	4.0	2	0.75	30
1,6X16	1.6	1.54	1.28	16.0	50.0	4.0	2	0.80	30
1,8X16	1.8	1.74	1.44	16.0	50.0	4.0	2	0.90	30
2X14	2.0	1.94	1.6	14.0	50.0	4.0	2	1.00	30
2X16	2.0	1.94	1.6	16.0	50.0	4.0	2	1.00	30
2,5X15	2.5	2.41	2.0	15.0	50.0	4.0	2	1.25	30
3X16	3.0	2.92	3.5	16.0	50.0	4.0	2	1.50	30

SC full radius cutter short TiAlN HPC / HSC | K203333

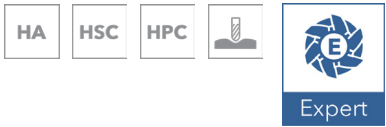
Cooling	 
Tolerance	f8
Coating	TiSiN- α



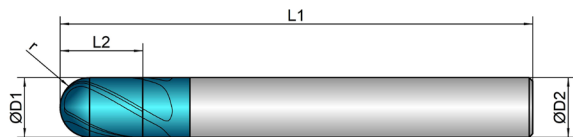
Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		200	175	155	110	85										

K203333	D1  mm ø	L2  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
2/3	2.0	4.0	50.0	3.0	4	1.00	30
2/6	2.0	4.0	54.0	6.0	4	1.00	30
2,5/6	2.5	5.0	54.0	6.0	4	1.25	30
3/3	3.0	5.0	50.0	3.0	4	1.50	30
3/6	3.0	5.0	54.0	6.0	4	1.50	30
4/4	4.0	8.0	54.0	4.0	4	2.00	30
4/6	4.0	8.0	54.0	6.0	4	2.00	30
5/5	5.0	9.0	54.0	5.0	4	2.50	30
5/6	5.0	9.0	54.0	6.0	4	2.50	30
6/6	6.0	10.0	54.0	6.0	4	3.00	30
7/8	7.0	12.0	59.0	8.0	4	3.50	30
8/8	8.0	12.0	59.0	8.0	4	4.00	30
9/10	9.0	14.0	67.0	10.0	4	4.50	30
10/10	10.0	14.0	67.0	10.0	4	5.00	30
12/12	12.0	16.0	74.0	12.0	4	6.00	30
14/14	14.0	18.0	75.0	14.0	4	7.00	30
16/16	16.0	22.0	83.0	16.0	4	8.00	30
20/20	20.0	26.0	93.0	20.0	4	10.00	30

Cooling	 
Tolerance	f8
Coating	TiSiN- α



HA K203343

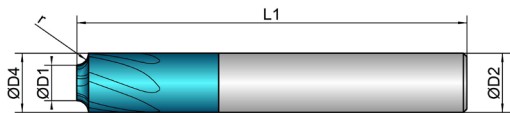


Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		200	175	155	110	85										

K203343	D1  mm ø	L2  mm	L1  mm	D2  mm ø	z  #	r  mm	 °
2/3	2.0	4.0	75.0	3.0	4	1.00	30
2/6	2.0	4.0	80.0	6.0	4	1.00	30
2,5/6	2.5	5.0	80.0	6.0	4	1.25	30
3/3	3.0	5.0	75.0	3.0	4	1.50	30
3/6	3.0	5.0	80.0	6.0	4	1.50	30
4/4	4.0	8.0	75.0	4.0	4	2.00	30
4/6	4.0	8.0	80.0	6.0	4	2.00	30
5/5	5.0	9.0	75.0	5.0	4	2.50	30
5/6	5.0	9.0	100.0	6.0	4	2.50	30
6/6	6.0	10.0	100.0	6.0	4	3.00	30
8/8	8.0	12.0	100.0	8.0	4	4.00	30
10/10	10.0	14.0	100.0	10.0	4	5.00	30
12/12	12.0	16.0	100.0	12.0	4	6.00	30
14/14	14.0	18.0	100.0	14.0	4	7.00	30
16/16	16.0	22.0	150.0	16.0	4	8.00	30
20/20	20.0	26.0	150.0	20.0	4	10.00	30

SC corner rounding cutter TiSiN | K204108

Cooling	   
Tolerance	0-0,01
Coating	TiSiN- α



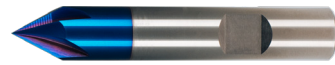
Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
			50	45	40	30	95									

	r  mm	D1  mm ø	D4  mm ø	L1  mm	D2  mm ø	z  #
K204108						
3,6/0,2	0.20	3.6	4	50.0	4.0	6
3,4/0,3	0.30	3.4	4	50.0	4.0	6
3,2/0,4	0.40	3.2	4	50.0	4.0	6
3/0,5	0.50	3	4	50.0	4.0	6
4,8/0,6	0.60	4.8	6	50.0	6.0	6
4,4/0,8	0.80	4.4	6	50.0	6.0	6
4/1	1.00	4	6	50.0	6.0	6
5/1,5	1.50	5	8	55.0	10.0	6
6/2	2.00	6	10	66.0	10.0	6
7/2,5	2.50	7	12	73.0	12.0	6
6/3	3.00	6	12	73.0	12.0	6
9/3,5	3.50	9	16	80.0	16.0	6
8/4	4.00	8	16	80.0	16.0	6
7/4,5	4.50	7	16	80.0	16.0	6
10/5	5.00	10	20	93.0	20.0	6
8/6	6.00	8	20	93.0	20.0	6
9/8	8.00	9	25	100.0	25.0	6
5/10	10.00	5	25	100.0	25.0	6

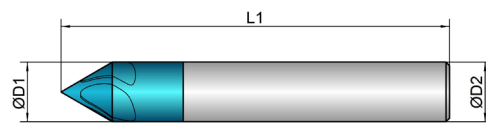
Cooling	 
Tolerance	-
Coating	TiSiN- α



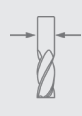
HA K205153



HB K205154



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		65	50	45	40	35										

K205153	K205154	D1  mm Ø	L1  mm	D2  mm Ø	z  #
3	-	3.0	50.0	3.0	3
4	-	4.0	50.0	4.0	4
6	6	6.0	50.0	6.0	4
8	8	8.0	59.0	8.0	4
10	10	10.0	66.0	10.0	4
12	12	12.0	73.0	12.0	4

SC deburrer 90° TiSiN | K205163 / K205164

Cooling	 
Tolerance	-
Coating	TiSiN- α

HA

HB



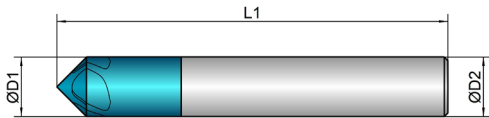

Expert



HA K205163



HB K205164



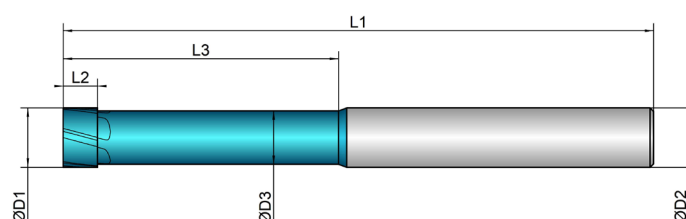
Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
		65	50	45	40	35										

K205163	K205164	D1	L1	D2	z
		 mm Ø	 mm	 mm Ø	 #
3	-	3.0	50.0	3.0	3
4	-	4.0	50.0	4.0	4
6	6	6.0	50.0	6.0	4
8	8	8.0	59.0	8.0	4
10	10	10.0	66.0	10.0	4
12	12	12.0	73.0	12.0	4

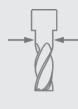
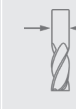
Cooling	 
Tolerance	h9
Coating	TiSiN- α



HA K207018



Steel			Hardened steel				Stainless steel (VA)	Castings	Non-ferrous materials				Inconel	Abrasive material		Titanium
< 850 N/mm	< 1100 N/mm	< 1400 N/mm	< 55 HRC	< 60 HRC	< 67 HRC	< 70 HRC			Al	Copper	Mg	Plastics		CFRP / GFRP	Graphite	
			140	100	80											

K207018	D1  mm ø	D3  mm ø	L2  mm	L3  mm	L1  mm	D2  mm ø	z  #	 mm	 mm max	 °
2	2.0	1.7	1.5	18.0	75.0	6.0	2	0.3	0.06	15
3	3.0	2.7	1.5	20.0	75.0	6.0	2	0.3	0.10	15
4	4.0	3.6	2.5	24.0	83.0	6.0	2	0.5	0.15	15
5	5.0	4.6	3.5	28.0	100.0	6.0	4	0.5	0.17	15
6	6.0	5.2	3.5	28.0	100.0	6.0	4	1.0	0.20	15
8	8.0	7.0	4.8	40.0	100.0	8.0	5	1.5	0.25	15
10	10.0	9.0	5.8	48.0	100.0	10.0	5	2.0	0.30	15
12	12.0	11.0	6.8	56.0	119.0	12.0	5	2.0	0.40	15
16	16.0	14.5	8.8	65.0	150.0	16.0	5	2.5	0.50	15

LEGEND

PROPERTIES

 Cutting diameter	 Small cutting diameter	 Large cutting diameter
 Undercut diameter	 Length of cut	 Tool bezel length
 Length of undercut	 Total length	 Shank diameter
 Number of cutting edges	 Corner radius	 Corner bezel
 Programming radius	 Maximum cutting depth	 Helical pitch

SPECIAL FEATURES

HA No Weldon	HB Weldon HB	ETC Extended Trochoidal Cutting
HSC High Speed Cutting	HPC High Performance Cutting	MTC Multi-Task Cutting
UNI Universal machining	 Engraving	 Unequal tooth pitch
 Coolant duct system	 Multipass milling	 Trimming
 Chip breaking	 Full slot	 Forward and backward deburring
 Serrated edge	 Deburring	 Corner rounding
2xD 2xD	3xD 3xD	4xD 4xD
5xD 5xD	 Dynamic helical pitch	

COOLING

 Air-cooled	 Dry	 Oil
 Water ^{max}	 Water ^{min}	

COATINGS

Our coatings are optimised in unison with the cutters' geometry by testing in both an extensive internal procedure an under the customers real applictaion conditions. The selection is perfectly matched to the respective field of application.

TiN- α	TiN Alpha	TiSiN- α	TiSiN Alpha	TiAlN- α	TiAlN Alpha
Diamond- α	Diamond Alpha	TAC- α	TAC Alpha	ZrCn- α	ZrCrN Alpha
TiCn- α	TiCN Alpha				

PRODUCT GROUPS

01	End mill cutter	02	Torus cutter	03	Full radius cutter
04	Form cutter	05	Chamfer cutter	06	Roughing cutter
07	Face torus cutter				

APPLICATION TABLE

The values given in the application table are only guidelines. These values depend largely on the individual application parameters.

ILLUSTRATIONS

All illustrated technical drawings and photographs are exemplary. Deviations from the original produduct in color and dimensions are possible.



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