



Catalogue

Solid carbide milling cutters



TCE Tools Invests in your future!

Since 1978, TCE has supplied tools to the aluminium extrusion industry in more than 50 countries.

TCE guarantees quality, fast delivery and good service.

With the development of its own measuring tools for aluminium extrusion moulds, TCE is unique in the world.

In this new catalogue, you will find a range of solid carbide milling cutters that meets the demands of both traditional machine construction and mould making.

We are at your service!

Team TCE Tools

In this catalogue, we have put together as complete a range as possible of tools for the machining industry, both for machine construction and for mould makers.

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Materials overview – DIN standardisation

Group	Description	Tensile strength (N/mm ²)	Hardness (HB)	Hardness (HRC)	Material number
P 0	General structural steel	<530	<125	-	
P 1	Low alloy steel	<530	<125	-	C15, Ck22, ST37-2, S235JR, 9SmNPb28, GS38
P 2	Medium alloyed steel	>530	<220	<25	ST52, S355JR, C35, GS60, Cf53
P 3	Alloy steel	600-850	<330	<35	16MnCr5, Ck45, 21CrMoV5-7, 38SMn28
P 4	Alloy steel	850-1400	340-450	35-48	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P 5	High alloy steel	600-900	<330	<35	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P 6	Tool steel	900-1350	350-450	35-48	X102CrMo17, G-X120Cr29
M 1	Austenitic stainless steel	<600	130-220	-	X5CrNi 18 10, X2CrNiMo 17 13 2, G-X25CrNiSi 18 9, X15CrNiSi 20 12
M 2	Martensitic stainless steel	600-800	150-230	<25	X2CrNiMo 13 4, X5NiCr 32 21, X5CrNiNb 18 10, G-X15CrNi 25-20
M 3	Duplex stainless steel	<800	135-275	<30	X8CrNiMo27 5, X2CrNiMoN22 5 3, X20CrNiSi25 4, G-X40CrNiSi27 4
K 1	Cast iron GG	125-500	120-290	<32	GG15, GG25, GG40, GTW40
K 2	Cast iron GGG 40	<600	130-260	<28	GGG40, GTS35
K 3	Cast iron GGG70	<600	180-350	<43	GGG60, GTW55, GTS65
N 1	Aluminium unalloyed				AlMg1, Al99.5, AlCuMg1, AlCuBiPb, AlMgSi1, ALMgSiPb
N 2	Aluminium with low Si content (<12%)				GAISiCu4, GDAISi10Mg
N 3	Aluminium with high Si content (>12%)				G-AlSiCu4, GDAISi10Mg
N 4	Copper and bronze types				CuZn40, Ms60, G-CuSn5ZnPb, CuZn37, CuSi3Mn
N 5	Nylon - Plastics, Rubber				
N 6	Carbon, Graphite				CFK, GFK
N 7	MMC - Composite				Metal Matrix Composites
S 1	Heat-resistant materials, iron base	500-1200	160-260	25-48	X1NiCrMoCu32 28 7, X12NiCrSi36 16, X5NiCrAlTi31 20, X40CoCrNi20 20
S 2	Heat-resistant materials, Cobalt base	1000-1450	250-450	25-48	Haynes®188, Stellite®6,21,31
S 3	Heat-resistant materials, nickel base	600-1700	160-450	<48	INCONEL®690, INCONEL 625, Hastelloy®, Nimonic®75
S 4	Titanium and Titanium alloys	900-1600	300-400	33-48	Ti1, TiAl5Sn2, TiAl6V4, TiAl4Mo4Sn2
H 1	Hardened materials			44-48	GX260NiCr42, GX330NiCr42, GX300CrNi952, GX300CrMo153, Hardox®400
H 2	Hardened materials			48-55	
H 3	Hardened materials			56-60	
H 4	Hardened materials			>60	

P	Steel	●	○	K	Cast iron	●	○	S	Heat-resistant materials	●	○
M	Stainless steel	●	○	N	NE materials	●	○	H	Hardened materials	●	○

● Very suitable

○ Is possible

Cutting values

TYPE: 4ESV – 4ESVR – 4ESVRC – 3RVS – 4RVS

Material types	Hardness Brinell HB	Tensile strength [N/mm ²]	Cutting speed V _c [m/min]	Diameter in mm / Feed per tooth in mm								
				ø3 Fz	ø4 Fz	ø5 Fz	ø6 Fz	ø8 Fz	ø10 Fz	ø12 Fz	ø16 Fz	ø20 Fz
General structural steel	100-150	360-510	210	0.020	0.025	0.032	0.038	0.045	0.058	0.070	0.100	0.120
	130-200	490-660	200	0.015	0.018	0.025	0.033	0.040	0.050	0.058	0.073	0.095
Steel, low carbon	145	500	170	0.020	0.020	0.027	0.033	0.040	0.050	0.060	0.080	0.100
	210	700	150	0.015	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080
Free-cutting steel	100-160	490-740	210	0.020	0.025	0.032	0.038	0.045	0.058	0.070	0.100	0.120
	140-220	380-570	190	0.020	0.025	0.032	0.038	0.045	0.058	0.070	0.100	0.120
Alloyed case-hardening steel	200-240	650-800	160	0.020	0.020	0.027	0.033	0.040	0.050	0.060	0.080	0.100
	300-350	1000-1200	130	0.015	0.018	0.020	0.025	0.030	0.040	0.050	0.060	0.080
	320-380	1100-1300	120	0.012	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080
Nitriding steel	280	980	150	0.012	0.020	0.027	0.033	0.040	0.050	0.060	0.080	0.100
	360	1230	130	0.012	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080
Tool steel	250	HB=250]	120	0.015	0.020	0.027	0.033	0.040	0.050	0.060	0.080	0.100
	270-400	930-1350	120	0.015	0.020	0.027	0.033	0.040	0.050	0.060	0.080	0.100
Stainless steel, austenitic	140-200	500-700	100	0.010	0.012	0.016	0.021	0.025	0.032	0.040	0.050	0.070
	140-200	500-700	90	0.010	0.012	0.016	0.021	0.025	0.032	0.040	0.050	0.070
Stainless steel, martensitic	250	900	90	0.010	0.012	0.016	0.021	0.025	0.032	0.040	0.050	0.070
	350	1100	60	0.010	0.012	0.016	0.021	0.025	0.032	0.040	0.050	0.070
Duplex	140-210	500-730	60	0.010	0.012	0.016	0.021	0.025	0.032	0.040	0.050	0.070
Super-Duplex	140-210	500-730	40	0.010	0.012	0.016	0.021	0.025	0.032	0.040	0.050	0.070
Titanium and titanium alloys	100-150	390- 540	70	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.080
	260-320	900-1100	40	0.010	0.012	0.016	0.021	0.025	0.032	0.040	0.050	0.070
Superalloys – Invar	140	490	100	0.005	0.013	0.018	0.025	0.030	0.033	0.050	0.050	0.055
Superalloys – Monel 400	150	550	60	0.005	0.013	0.018	0.025	0.030	0.033	0.050	0.050	0.055
Superalloys – Inconel 625	180	620	40	0.005	0.013	0.018	0.025	0.030	0.033	0.050	0.050	0.055
Superalloys – Inconel 718	250	850	25	0.005	0.013	0.018	0.025	0.030	0.033	0.050	0.050	0.055
Superalloys – Inconel 738	250	850	20	0.005	0.013	0.018	0.025	0.030	0.033	0.050	0.050	0.055
Cast iron – GG	<100	150	160	0.015	0.025	0.032	0.038	0.045	0.058	0.070	0.100	0.120
Cast iron – GGG 40	110	400	150	0.015	0.020	0.027	0.033	0.040	0.050	0.060	0.080	0.100
Cast iron – GGG 70	210	700	130	0.015	0.020	0.027	0.033	0.040	0.050	0.060	0.080	0.100
Copper	<100	220	220	0.010	0.025	0.032	0.038	0.045	0.058	0.070	0.100	0.120
Brass – Aluminium bronze	120-140	440- 510	250	0.010	0.025	0.032	0.038	0.045	0.058	0.070	0.100	0.120

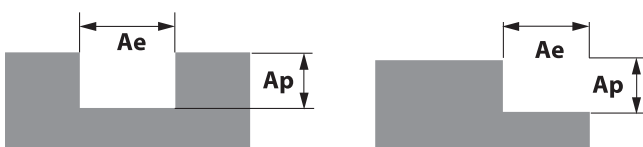
Correction factor (F_x) on feed per tooth (F_z) depending on the applications below :

Ap (mm)	1 x D	1 x D	1 x D	1.5 x D	Steel	Ap max = 1.5 x D
Ae (mm)	0.5 x D	0.8 x D	1 x D	1 x D	Stainless steel and superalloys	Ap max = 1.0 x D
F _x	1.3	1.1	1.0	0.8		

For slot milling cutters with full milling width (A_e = 1 x D) in ...

For milling with 5xD lengths please use the following values :

	A _e	Ap
Application 1	0.1 x D	1.5 x D
Application 2	0.25 x D	1 x D



Cutting speeds

TYPE: 4ESV – 4ESVR – 4ESVRC – 3RVS – 4RVS

V _c	20 [m/min]		30 [m/min]		40 [m/min]		50 [m/min]		60 [m/min]		70 [m/min]			
Diameter [mm]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]		
ø1.5-2	4240	85	6360	127	8480	170	10600	212	12720	254	14840	297		
ø3	2120	85	3180	127	4240	170	5300	212	6360	254	7420	297		
ø4	1590	64	2385	95	3180	127	3975	159	4770	191	5565	223		
ø5	1272	92	1908	137	2544	183	3180	229	3816	275	4452	321		
ø6	1060	106 – 170	1590	159 – 254	2120	212 – 339	2650	265 – 424	3180	318 – 509	3710	371 – 594		
ø8	795	95 – 169	1193	143 – 253	1590	191 – 337	1988	239 – 421	2385	286 – 506	2783	334 – 590		
ø10	636	84 – 168	954	126 – 252	1272	168 – 336	1590	210 – 420	1908	252 – 504	2226	294 – 588		
ø12	530	106 – 170	795	159 – 254	1060	212 – 339	1325	265 – 424	1590	318 – 509	1855	371 – 594		
ø14	454	91 – 145	681	136 – 218	909	182 – 291	1136	227 – 363	1363	273 – 436	1590	318 – 509		
ø16	398	80 – 135	596	119 – 203	795	159 – 270	994	199 – 338	1193	239 – 405	1391	278 – 473		
ø18	353	71 – 120	530	106 – 180	707	141 – 240	883	177 – 300	1060	212 – 360	1237	247 – 420		
ø20	318	70 – 114	477	105 – 172	636	140 – 229	795	175 – 286	954	210 – 343	1113	245 – 401		
ø25	254	61 – 132	382	92 – 198	509	122 – 265	636	153 – 331	763	183 – 397	890	214 – 463		
ø1.5-2	4240	170	6360	254	8480	339	600	424	12720	509	14840	594		
ø3	2120	170	3180	254	4240	339	5300	424	6360	509	7420	594		
ø4	1590	127	2385	191	3180	254	3975	318	4770	382	5565	445		
ø5	1272	153	1908	229	2544	305	3180	382	3816	458	4452	534		
ø6	1060	140 – 212	1590	210 – 318	2120	280 – 424	2650	424 – 530	3180	509 – 636	3710	594 – 742		
ø8	795	127 – 191	1193	191 – 286	1590	254 – 382	1988	358 – 477	2385	429 – 572	2783	501 – 668		
ø10	636	135 – 193	954	202 – 290	1272	270 – 387	1590	318 – 509	1908	382 – 580	2226	445 – 677		
ø12	530	106 – 191	795	191 – 286	1060	254 – 382	1325	318 – 477	1590	382 – 572	1855	445 – 668		
ø14	454	91 – 164	681	164 – 245	909	218 – 327	1136	273 – 409	1363	327 – 491	1590	382 – 572		
ø16	398	95 – 159	596	143 – 239	795	175 – 318	994	302 – 398	1193	363 – 477	1391	423 – 557		
ø18	353	85 – 141	530	127 – 212	707	155 – 283	883	269 – 353	1060	322 – 424	1237	376 – 495		
ø20	318	76 – 146	477	105 – 219	636	193 – 293	795	286 – 366	954	343 – 439	1113	401 – 512		
ø25	254	81 – 132	382	134 – 198	509	163 – 265	636	254 – 331	763	305 – 397	890	356 – 463		
Material type					Duplex / exotic stainless steel / Titanium									
									Standard stainless steel					
	Heat-resistant materials													

80 [m/min]		90 [m/min]		100 [m/min]		110 [m/min]		120 [m/min]		130 [m/min]		140 [m/min]		150 [m/min]	
n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]	n [rpm]	f [mm/min]
16960	339	19080	382	21200	424	23320	466	25440	509	27560	551	29680	594	31800	636
8480	339	9540	382	10600	424	11660	466	12720	509	13780	551	14840	594	15900	636
6360	254	7155	286	7950	318	8745	350	9540	382	10335	413	11130	445	11925	477
5088	366	5724	412	6360	458	6996	504	7632	550	8268	595	8904	641	9540	687
4240	424 - 678	4770	477 - 763	5300	530 - 848	5830	583 - 933	6360	636 - 1018	6890	689 - 1102	7420	742 - 1187	7950	795 - 1272
3180	382 - 674	3578	429 - 758	3975	477 - 843	4373	525 - 927	4770	572 - 1011	5168	620 - 1096	5565	668 - 1180	5963	716 - 1264
2544	336 - 672	2862	378 - 756	3180	420 - 840	3498	462 - 923	3816	504 - 1007	4134	546 - 1091	4452	588 - 1175	4770	630 - 1259
2120	424 - 678	2385	477 - 763	2650	530 - 848	2915	583 - 933	3180	636 - 1018	3445	689 - 1102	3710	742 - 1187	3975	795 - 1272
1817	363 - 581	2044	409 - 654	2271	454 - 727	2499	500 - 800	2726	545 - 872	2953	591 - 945	3180	636 - 1018	3407	681 - 1090
1590	318 - 541	1789	358 - 608	1988	398 - 676	2186	437 - 743	2385	477 - 811	2584	517 - 878	2783	557 - 946	2981	596 - 1014
1413	283 - 481	1590	318 - 541	1767	353 - 601	1943	389 - 661	2120	424 - 721	2297	459 - 781	2473	495 - 841	2650	530 - 901
1272	280 - 458	1431	315 - 515	1590	350 - 572	1749	385 - 630	1908	420 - 687	2067	455 - 744	2226	490 - 801	2385	525 - 859
1018	244 - 529	1145	275 - 595	1272	305 - 661	1399	336 - 728	1526	366 - 794	1654	397 - 860	1781	427 - 926	1908	458 - 992
16960	678	19080	763	21200	848	23320	933	25440	1018	27560	1102	29680	1187	31800	1272
8480	678	9540	763	10600	848	11660	933	12720	1018	13780	1102	14840	1187	15900	1272
6360	509	7155	572	7950	636	8745	700	9540	763	10335	827	11130	890	11925	954
5088	611	5724	687	6360	763	6996	840	7632	916	8268	992	8904	1068	9540	1145
4240	678 - 848	4770	763 - 954	5300	848 - 1060	5830	933 - 1166	6360	1018 - 1272	6890	1102 - 1378	7420	1187 - 1484	7950	1272 - 1590
3180	572 - 763	3578	644 - 859	3975	716 - 954	4373	787 - 1049	4770	859 - 1145	5168	930 - 1240	5565	1002 - 1336	5963	1073 - 1431
2544	509 - 773	2862	572 - 870	3180	636 - 967	3498	700 - 1063	3816	763 - 1160	4134	827 - 1257	4452	890 - 1353	4770	954 - 1450
2120	509 - 763	2385	572 - 859	2650	636 - 954	2915	700 - 1049	3180	763 - 1145	3445	827 - 1240	3710	890 - 1336	3975	954 - 1431
1817	436 - 654	2044	491 - 736	2271	545 - 818	2499	600 - 899	2726	654 - 981	2953	709 - 1063	3180	763 - 1145	3407	818 - 1227
1590	483 - 636	1789	544 - 716	1988	604 - 795	2186	665 - 875	2385	725 - 954	2584	785 - 1034	2783	846 - 1113	2981	906 - 1193
1413	430 - 565	1590	483 - 636	1767	537 - 707	1943	591 - 777	2120	644 - 848	2297	698 - 919	2473	752 - 989	2650	806 - 1060
1272	458 - 585	1431	515 - 658	1590	572 - 731	1749	630 - 805	1908	687 - 878	2067	744 - 951	2226	801 - 1024	2385	859 - 1097
1018	407 - 529	1145	458 - 595	1272	509 - 661	1399	560 - 728	1526	611 - 794	1654	661 - 860	1781	712 - 926	1908	763 - 992

Structural and free-cutting steel

Alloyed (case-hardening) steel

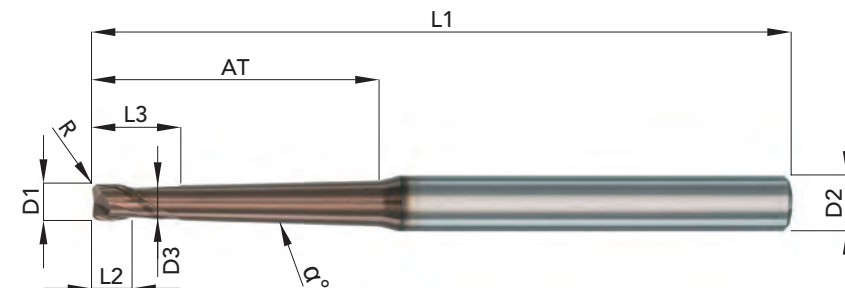
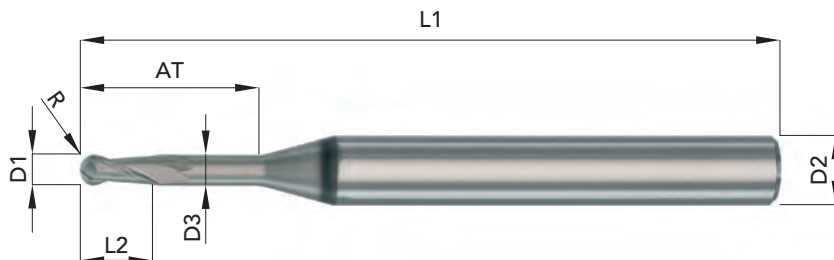
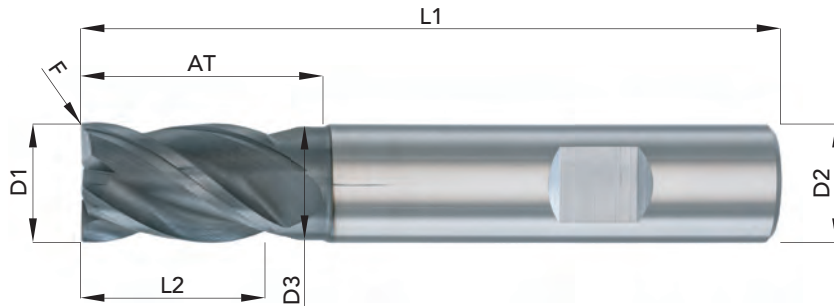
Tool / nitriding steel

Stainless steel 303

Cast iron

Designation – dimensions

We use fixed designations for all our tools:



- D1** Diameter of the milling cutter (cutting part)
- D2:** Diameter of the shank (insert)
- D3:** Diameter behind the cutting edge (neck diameter)
- L1:** The overall length
- L2:** The cutting edge length
- L3:** The length of the neck
- AT:** The working depth
- R/F:** The radius or the phase on the milling cutter
- α :** The tapered (single) angle, especially for mould construction
- Z:** The number of cutters (teeth)

4ESV – 3xD

P	M	K	N	S	H
●	○	○			

Features:

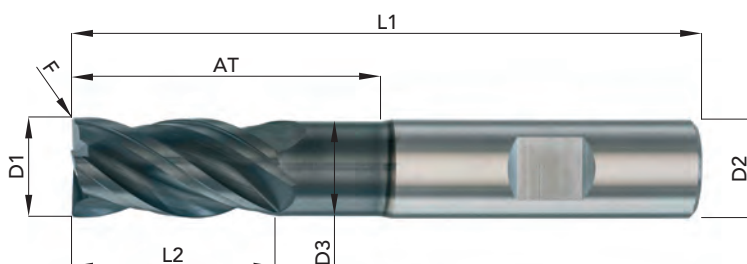
Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x cutting diameter, standard version.

For cutting at high speeds, preferably on stable machines.

Available with both weldon and cylindrical shank.

Z 4
HM M-020
Coating C-020



Most universal milling cutter 3xD

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: weldon												
11231001	4ESV-030-010-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	0,10	4	-
11231002	4ESV-040-010-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	0,10	4	-
11231003	4ESV-050-010-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	0,10	4	-
11231004	4ESV-060-010-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,10	4	-
11231005	4ESV-080-015-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,15	4	-
11231006	4ESV-100-020-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,20	4	-
11231007	4ESV-120-025-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,25	4	-
11231008	4ESV-140-025-042-090-000-14	14,0	14	13,50	90	28,0	42,0	42,0	0,0	0,25	4	-
11231009	4ESV-160-030-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	0,30	4	-
11231010	4ESV-180-030-054-105-000-18	18,0	18	17,30	105	36,0	54,0	54,0	0,0	0,30	4	-
11231011	4ESV-200-035-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	0,35	4	-
Shank: cylindrical												
11231012	4ESVC-030-010-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	0,10	4	-
11231013	4ESVC-040-010-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	0,10	4	-
11231014	4ESVC-050-010-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	0,10	4	-
11231015	4ESVC-060-010-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,10	4	-
11231016	4ESVC-080-015-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,15	4	-
11231017	4ESVC-100-020-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,20	4	-
11231018	4ESVC-120-025-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,25	4	-
11231019	4ESVC-160-030-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	0,30	4	-

Subject to technical modifications

4ESV – 2xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 2 x milling diameter, short version.

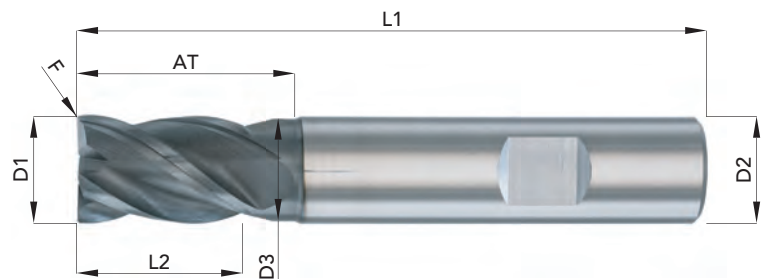
For cutting at high speeds, preferably on stable machines.

Available with both weldon and cylindrical shank.

Z 4
HM M-020
Coating C-020



Short version 2xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: weldon												
11231020	4ESV-030-010-006-051-000-06	3,0	6	2,90	51	4,5	6,0	6,0	0,0	0,10	4	-
11231021	4ESV-040-010-008-051-000-06	4,0	6	3,80	51	6,0	8,0	8,0	0,0	0,10	4	-
11231022	4ESV-050-010-010-051-000-06	5,0	6	4,80	51	7,5	10,0	10,0	0,0	0,10	4	-
11231023	4ESV-060-010-012-051-000-06	6,0	6	5,60	51	9,0	12,0	12,0	0,0	0,10	4	-
11231024	4ESV-080-015-016-059-000-08	8,0	8	7,60	59	12,0	16,0	16,0	0,0	0,15	4	-
11231025	4ESV-100-020-020-067-000-10	10,0	10	9,50	67	15,0	20,0	20,0	0,0	0,20	4	-
11231026	4ESV-120-025-024-074-000-12	12,0	12	11,50	74	18,0	24,0	24,0	0,0	0,25	4	-
11231027	4ESV-140-025-028-080-000-14	14,0	14	13,50	80	21,0	28,0	28,0	0,0	0,25	4	-
11231028	4ESV-160-030-032-093-000-16	16,0	16	15,30	93	24,0	32,0	32,0	0,0	0,30	4	-
11231029	4ESV-180-030-036-093-000-18	18,0	18	17,30	93	27,0	36,0	36,0	0,0	0,30	4	-
11231030	4ESV-200-035-040-100-000-20	20,0	20	19,30	100	30,0	40,0	40,0	0,0	0,35	4	-
Shank: cylindrical												
11231031	4ESVC-030-010-006-051-000-06	3,0	6	2,90	51	4,5	6,0	6,0	0,0	0,10	4	-
11231032	4ESVC-040-010-008-051-000-06	4,0	6	3,80	51	6,0	8,0	8,0	0,0	0,10	4	-
11231033	4ESVC-050-010-010-051-000-06	5,0	6	4,80	51	7,5	10,0	10,0	0,0	0,10	4	-
11231034	4ESVC-060-010-012-051-000-06	6,0	6	5,60	51	9,0	12,0	12,0	0,0	0,10	4	-
11231035	4ESVC-080-015-016-059-000-08	8,0	8	7,60	59	12,0	16,0	16,0	0,0	0,15	4	-
11231036	4ESVC-100-020-020-067-000-10	10,0	10	9,50	67	15,0	20,0	20,0	0,0	0,20	4	-
11231037	4ESVC-120-025-024-074-000-12	12,0	12	11,50	74	18,0	24,0	24,0	0,0	0,25	4	-
11231038	4ESVC-160-030-032-093-000-16	16,0	16	15,30	93	24,0	32,0	32,0	0,0	0,30	4	-

Subject to technical modifications

4ESV – 5xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 5 x milling diameter, long version.

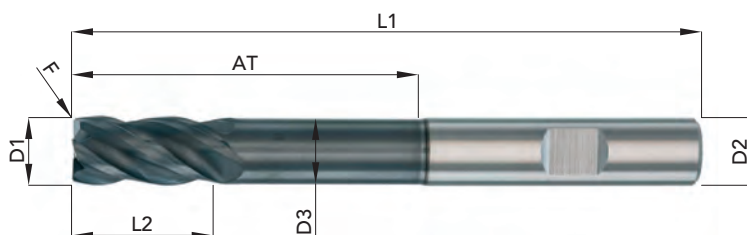
For cutting at high speeds, preferably on stable machines.

Available with weldon shank.

Z 4
HM M-020
Coating C-020



Long version 5xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: weldon												
11231039	4ESV-060-010-030-070-000-06	6,0	6	5,60	70	12,0	30,0	30,0	0,0	0,10	4	-
11231040	4ESV-080-015-040-080-000-08	8,0	8	7,60	80	16,0	40,0	40,0	0,0	0,15	4	-
11231041	4ESV-100-020-050-090-000-10	10,0	10	9,50	90	20,0	50,0	50,0	0,0	0,20	4	-
11231042	4ESV-120-025-060-110-000-12	12,0	12	11,50	110	24,0	60,0	60,0	0,0	0,25	4	-
11231043	4ESV-160-030-080-130-000-16	16,0	16	15,30	130	32,0	80,0	80,0	0,0	0,30	4	-
11231044	4ESV-200-035-100-150-000-20	20,0	20	19,30	150	40,0	100,0	100,0	0,0	0,35	4	-

Subject to technical modifications

4ESVR – 3xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x milling diameter, with corner radius.

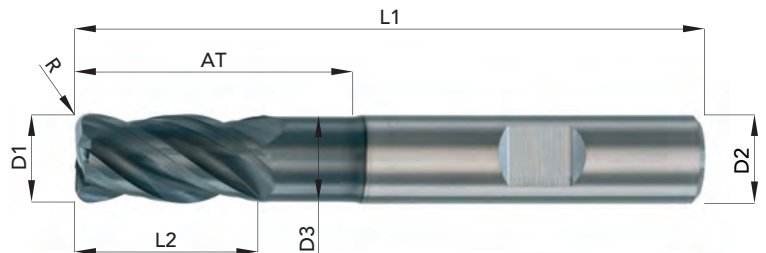
For cutting at high speeds, preferably on stable machines.

Available with both **weldon** and cylindrical shank.

Z 4
HM M-020
Coating C-020



With corner radius 3xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: weldon												
11231045	4ESVR-030-025-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	0,25	4	-
11231046	4ESVR-030-050-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	0,50	4	-
11231047	4ESVR-030-100-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	1,00	4	-
11231048	4ESVR-040-025-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	0,25	4	-
11231049	4ESVR-040-050-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	0,50	4	-
11231050	4ESVR-040-100-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	1,00	4	-
11231051	4ESVR-040-150-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	1,50	4	-
11231052	4ESVR-050-025-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	0,25	4	-
11231053	4ESVR-050-050-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	0,50	4	-
11231054	4ESVR-050-100-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	1,00	4	-
11231055	4ESVR-060-025-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,25	4	-
11231056	4ESVR-060-050-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,50	4	-
11231057	4ESVR-060-080-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,80	4	-
11231058	4ESVR-060-100-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	1,00	4	-
11231059	4ESVR-060-150-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	1,50	4	-
11231060	4ESVR-060-200-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	2,00	4	-

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4ESVR – 3xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x milling diameter, with corner radius.

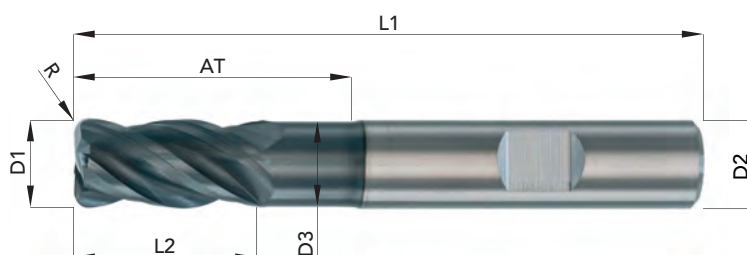
For cutting at high speeds, preferably on stable machines.

Available with both **weldon** and cylindrical shank.

Z 4
HM M-020
Coating C-020



3xD with corner radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: weldon												
11231061	4ESVR-080-025-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,25	4	-
11231062	4ESVR-080-050-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,50	4	-
11231063	4ESVR-080-080-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,80	4	-
11231064	4ESVR-080-100-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	1,00	4	-
11231065	4ESVR-080-150-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	1,50	4	-
11231066	4ESVR-080-200-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	2,00	4	-
11231067	4ESVR-080-300-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	3,00	4	-
11231068	4ESVR-100-025-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,25	4	-
11231069	4ESVR-100-050-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,50	4	-
11231070	4ESVR-100-080-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,80	4	-
11231071	4ESVR-100-100-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	1,00	4	-
11231072	4ESVR-100-125-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	1,25	4	-
11231073	4ESVR-100-150-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	1,50	4	-
11231074	4ESVR-100-200-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	2,00	4	-
11231075	4ESVR-100-250-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	2,50	4	-
11231076	4ESVR-100-300-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	3,00	4	-

Continued on next page

4ESVR – 3xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x milling diameter, with corner radius.

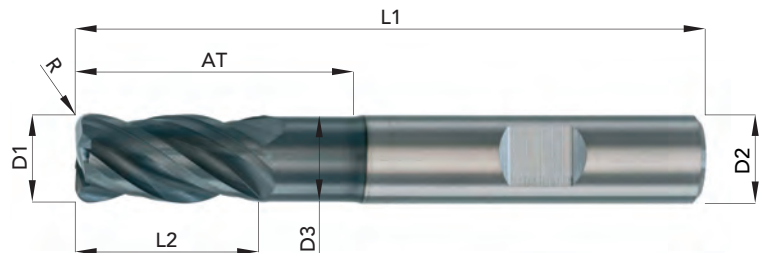
For cutting at high speeds, preferably on stable machines.

Available with both **weldon** and cylindrical shank.

Z 4
HM M-020
Coating C-020



With corner radius 3xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: weldon												
11231077	4ESVR-120-025-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,25	4	-
11231078	4ESVR-120-050-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,50	4	-
11231079	4ESVR-120-080-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,80	4	-
11231080	4ESVR-120-100-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	1,00	4	-
11231081	4ESVR-120-125-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	1,25	4	-
11231082	4ESVR-120-150-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	1,50	4	-
11231083	4ESVR-120-200-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	2,00	4	-
11231084	4ESVR-120-250-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	2,50	4	-
11231085	4ESVR-120-300-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	3,00	4	-
11231086	4ESVR-120-350-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	3,50	4	-
11231087	4ESVR-120-400-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	4,00	4	-
11231088	4ESVR-120-500-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	5,00	4	-
11231089	4ESVR-160-050-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	0,50	4	-
11231090	4ESVR-160-080-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	0,80	4	-
11231091	4ESVR-160-100-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	1,00	4	-
11231092	4ESVR-160-150-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	1,50	4	-
11231093	4ESVR-160-200-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	2,00	4	-
11231094	4ESVR-160-250-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	2,50	4	-
11231095	4ESVR-160-300-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	3,00	4	-
11231096	4ESVR-160-350-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	3,50	4	-
11231097	4ESVR-160-400-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	4,00	4	-
11231098	4ESVR-160-500-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	5,00	4	-

Continued on next page

4ESVR – 3xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x milling diameter, with corner radius.

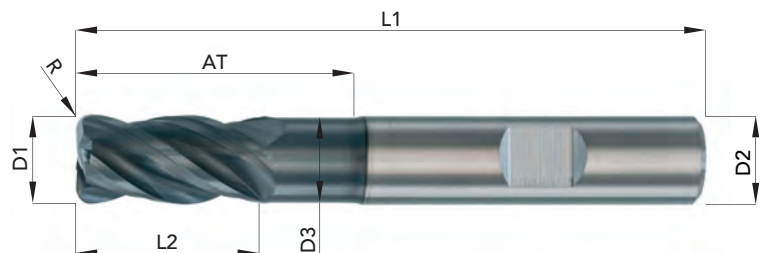
For cutting at high speeds, preferably on stable machines.

Available with both **weldon** and cylindrical shank.

Z 4
HM M-020
Coating C-020



With corner radius 3xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: weldon												
11231099	4ESVR-200-050-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	0,50	4	-
11231100	4ESVR-200-080-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	0,80	4	-
11231101	4ESVR-200-100-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	1,00	4	-
11231102	4ESVR-200-150-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	1,50	4	-
11231103	4ESVR-200-200-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	2,00	4	-
11231104	4ESVR-200-250-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	2,50	4	-
11231105	4ESVR-200-300-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	3,00	4	-
11231106	4ESVR-200-350-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	3,50	4	-
11231107	4ESVR-200-400-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	4,00	4	-
11231108	4ESVR-200-450-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	4,50	4	-
11231109	4ESVR-200-500-060-125-000-20	20,0	20	19,30	125	40,0	60,0	60,0	0,0	5,00	4	-

Subject to technical modifications

4ESVRC – 3xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x milling diameter, with corner radius.

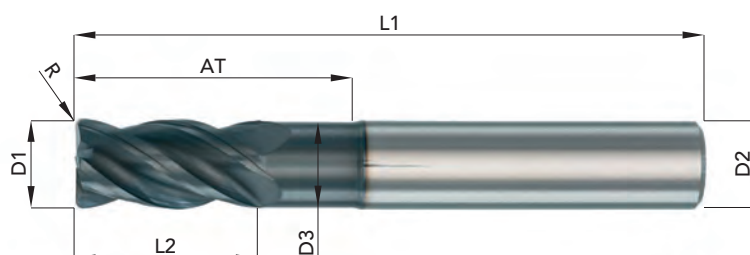
For cutting at high speeds, preferably on stable machines.

Available with both **weldon** and **cylindrical shank**.

Z 4
HM M-020
Coating C-020



With corner radius 3xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical												
11231110	4ESVRC-030-025-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	0,25	4	-
11231111	4ESVRC-030-050-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	0,50	4	-
11231112	4ESVRC-030-100-009-051-000-06	3,0	6	2,90	51	6,0	9,0	9,0	0,0	1,00	4	-
11231113	4ESVRC-040-025-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	0,25	4	-
11231114	4ESVRC-040-050-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	0,50	4	-
11231115	4ESVRC-040-100-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	1,00	4	-
11231116	4ESVRC-040-150-012-051-000-06	4,0	6	3,80	51	8,0	12,0	12,0	0,0	1,50	4	-
11231117	4ESVRC-050-025-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	0,25	4	-
11231118	4ESVRC-050-050-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	0,50	4	-
11231119	4ESVRC-050-100-015-051-000-06	5,0	6	4,80	51	10,0	15,0	15,0	0,0	1,00	4	-
11231120	4ESVRC-060-025-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,25	4	-
11231121	4ESVRC-060-050-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,50	4	-
11231122	4ESVRC-060-080-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	0,80	4	-
11231123	4ESVRC-060-100-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	1,00	4	-
11231124	4ESVRC-060-150-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	1,50	4	-
11231125	4ESVRC-060-200-018-060-000-06	6,0	6	5,60	60	12,0	18,0	18,0	0,0	2,00	4	-

Continued on next page

4ESVRC – 3xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x milling diameter, with corner radius.

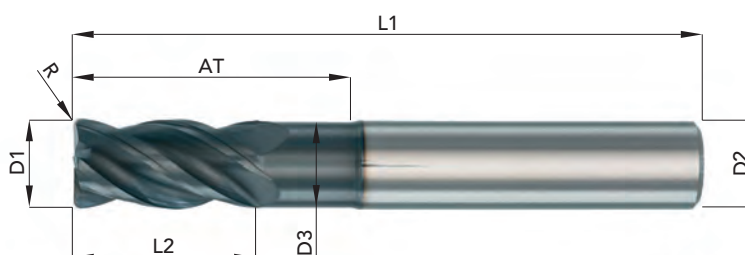
For cutting at high speeds, preferably on stable machines.

Available with both **weldon** and **cylindrical shank**.

Z 4
HM M-020
Coating C-020



With corner radius 3xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical												
11231126	4ESVRC-080-025-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,25	4	-
11231127	4ESVRC-080-050-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,50	4	-
11231128	4ESVRC-080-080-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	0,80	4	-
11231129	4ESVRC-080-100-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	1,00	4	-
11231130	4ESVRC-080-150-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	1,50	4	-
11231131	4ESVRC-080-200-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	2,00	4	-
11231132	4ESVRC-080-300-024-064-000-08	8,0	8	7,60	64	16,0	24,0	24,0	0,0	3,00	4	-
11231133	4ESVRC-100-025-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,25	4	-
11231134	4ESVRC-100-050-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,50	4	-
11231135	4ESVRC-100-080-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	0,80	4	-
11231136	4ESVRC-100-100-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	1,00	4	-
11231137	4ESVRC-100-125-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	1,25	4	-
11231138	4ESVRC-100-150-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	1,50	4	-
11231139	4ESVRC-100-200-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	2,00	4	-
11231140	4ESVRC-100-250-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	2,50	4	-
11231141	4ESVRC-100-300-030-075-000-10	10,0	10	9,50	75	20,0	30,0	30,0	0,0	3,00	4	-

Continued on next page

4ESVRC – 3xD

P	M	K	N	S	H
●	○	○			

Features:

Vhm universal milling cutter with variable helix angles.

Neck ground to 3 x milling diameter, with corner radius.

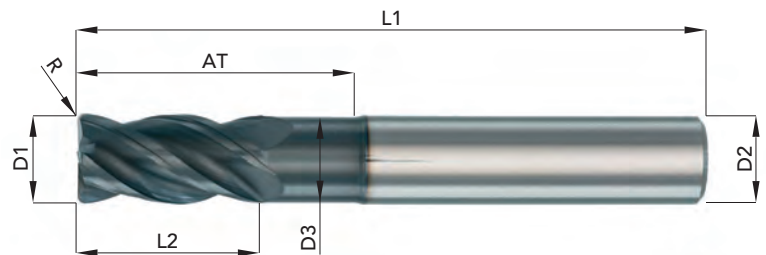
For cutting at high speeds, preferably on stable machines.

Available with both **weldon** and **cylindrical shank**.

Z 4
HM M-020
Coating C-020



With corner radius 3xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical												
11231142	4ESVRC-120-025-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,25	4	-
11231143	4ESVRC-120-050-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,50	4	-
11231144	4ESVRC-120-080-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	0,80	4	-
11231145	4ESVRC-120-100-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	1,00	4	-
11231146	4ESVRC-120-125-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	1,25	4	-
11231147	4ESVRC-120-150-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	1,50	4	-
11231148	4ESVRC-120-200-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	2,00	4	-
11231149	4ESVRC-120-250-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	2,50	4	-
11231150	4ESVRC-120-300-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	3,00	4	-
11231151	4ESVRC-120-350-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	3,50	4	-
11231152	4ESVRC-120-400-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	4,00	4	-
11231153	4ESVRC-120-500-036-084-000-12	12,0	12	11,50	84	24,0	36,0	36,0	0,0	5,00	4	-
11231154	4ESVRC-160-050-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	0,50	4	-
11231155	4ESVRC-160-080-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	0,80	4	-
11231156	4ESVRC-160-100-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	1,00	4	-
11231157	4ESVRC-160-150-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	1,50	4	-
11231158	4ESVRC-160-200-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	2,00	4	-
11231159	4ESVRC-160-250-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	2,50	4	-
11231160	4ESVRC-160-300-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	3,00	4	-
11231161	4ESVRC-160-350-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	3,50	4	-
11231162	4ESVRC-160-400-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	4,00	4	-
11231163	4ESVRC-160-500-048-100-000-16	16,0	16	15,30	100	32,0	48,0	48,0	0,0	5,00	4	-

Subject to technical modifications

P	M	K	N	S	H
●	○	○			

Features:

Universal milling cutter, Z=3.

The problem solver for most standard and non-hardened steel.

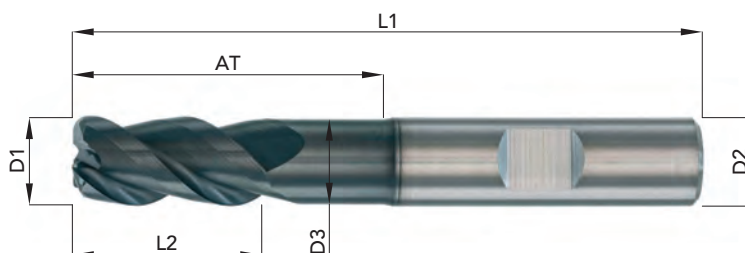
Can also be used in poor conditions due to very strong tooth shape.

Preferably clamp in weldon chucks.

Z 3
HM M-140
Coating C-020



Universal milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: weldon												
11231164	3ESV-030-000-010-058-000-06	3,0	6	2,90	58	10,0	13,0	13,0	0,0	0,00	3	-
11231165	3ESV-035-000-010-058-000-06	3,5	6	3,30	58	10,0	13,0	13,0	0,0	0,00	3	-
11231166	3ESV-040-000-010-058-000-06	4,0	6	3,80	58	10,0	13,0	13,0	0,0	0,00	3	-
11231167	3ESV-045-000-010-058-000-06	4,5	6	4,30	58	10,0	13,0	13,0	0,0	0,00	3	-
11231168	3ESV-050-000-010-058-000-06	5,0	6	4,80	58	10,0	13,0	13,0	0,0	0,00	3	-
11231169	3ESV-055-000-010-058-000-06	5,5	6	5,30	58	10,0	13,0	13,0	0,0	0,00	3	-
11231170	3ESV-060-000-015-058-000-06	6,0	6	-	58	15,0	-	15,0	0,0	0,00	3	-
11231171	3ESV-060-000-020-058-000-06	6,0	6	5,60	58	15,0	20,0	20,0	0,0	0,00	3	-
11231172	3ESV-060-000-025-058-000-06	6,0	6	5,60	58	15,0	25,0	25,0	0,0	0,00	3	-
11231173	3ESV-070-000-017-064-000-08	7,0	8	6,60	64	17,0	21,0	21,0	0,0	0,00	3	-
11231174	3ESV-080-000-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	0,00	3	-
11231175	3ESV-080-000-026-064-000-08	8,0	8	7,60	64	17,0	26,0	26,0	0,0	0,00	3	-
11231176	3ESV-080-000-030-064-000-08	8,0	8	7,60	64	17,0	30,0	30,0	0,0	0,00	3	-
11231177	3ESV-090-000-020-073-000-10	9,0	10	8,60	73	20,0	24,0	24,0	0,0	0,00	3	-

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P	M	K	N	S	H
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Features:

Universal milling cutter, Z=3.

The problem solver for most standard and non-hardened steel.

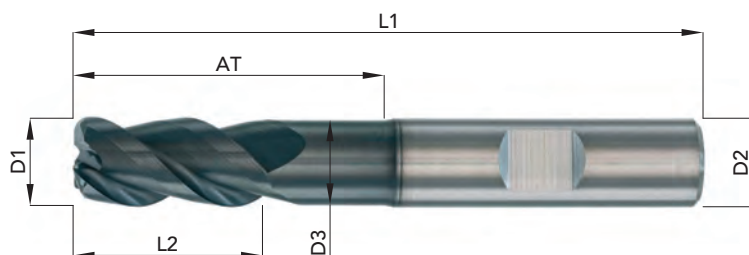
Can also be used in poor conditions due to very strong tooth shape.

Preferably clamp in weldon chucks.

Z 3
HM M-140
Coating C-020



Universal milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: weldon												
11231178	3ESV-095-000-022-073-000-10	9,5	10	9,10	73	22,0	24,0	24,0	0,0	0,00	3	-
11231179	3ESV-100-000-022-073-000-10	10,0	10	-	73	22,0	-	22,0	0,0	0,00	3	-
11231180	3ESV-100-000-035-073-000-10	10,0	10	9,50	73	22,0	35,0	35,0	0,0	0,00	3	-
11231181	3ESV-110-000-025-084-000-12	11,0	12	10,50	84	25,0	27,0	27,0	0,0	0,00	3	-
11231182	3ESV-120-000-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	0,00	3	-
11231183	3ESV-120-000-035-084-000-12	12,0	12	11,50	84	25,0	35,0	35,0	0,0	0,00	3	-
11231184	3ESV-120-000-038-084-000-12	12,0	12	11,50	84	25,0	38,0	38,0	0,0	0,00	3	-
11231185	3ESV-140-000-028-090-000-14	14,0	14	-	90	28,0	-	28,0	0,0	0,00	3	-
11231186	3ESV-160-000-032-093-000-16	16,0	16	-	93	32,0	-	32,0	0,0	0,00	3	-
11231187	3ESV-200-000-040-105-000-20	20,0	20	-	105	40,0	-	40,0	-	0,00	3	-
11231188	3ESV-200-000-060-125-000-20	20,0	20	-	125	60,0	-	60,0	-	0,00	3	-

Subject to technical modifications

3ESVR

P	M	K	N	S	H
●	○	○			

Features:

Universal milling cutter, Z=3 with corner radius.

The problem solver for most standard and non-hardened steel.

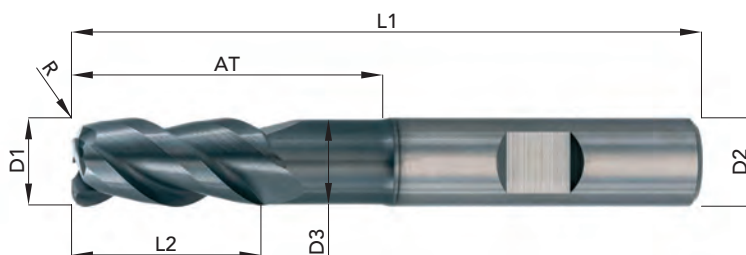
Can also be used in poor conditions due to very strong tooth shape.

Preferably clamp in weldon chucks.

Z 3
HM M-140
Coating C-020



Universal milling cutter with corner radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: weldon												
11231189	3ESVR-030-050-010-058-000-06	3,0	6	2,90	58	10,0	13,0	13,0	0,0	0,50	3	-
11231190	3ESVR-035-100-010-058-000-06	3,5	6	3,30	58	10,0	13,0	13,0	0,0	1,00	3	-
11231191	3ESVR-060-100-015-058-000-06	6,0	6	-	58	15,0	-	15,0	0,0	1,00	3	-
11231192	3ESVR-060-100-025-058-000-06	6,0	6	5,60	58	15,0	25,0	25,0	0,0	1,00	3	-
11231193	3ESVR-060-200-015-058-000-06	6,0	6	-	58	15,0	-	15,0	0,0	2,00	3	-
11231194	3ESVR-060-200-025-058-000-06	6,0	6	5,60	58	15,0	25,0	25,0	0,0	2,00	3	-
11231195	3ESVR-080-100-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	1,00	3	-
11231196	3ESVR-080-100-030-064-000-08	8,0	8	7,60	64	17,0	30,0	30,0	0,0	1,00	3	-
11231197	3ESVR-080-200-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	2,00	3	-
11231198	3ESVR-080-200-030-064-000-08	8,0	8	7,60	64	17,0	30,0	30,0	0,0	2,00	3	-
11231199	3ESVR-080-300-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	3,00	3	-
11231200	3ESVR-080-300-030-064-000-08	8,0	8	7,60	64	17,0	30,0	30,0	0,0	3,00	3	-
11231201	3ESVR-100-100-022-073-000-10	10,0	10	-	73	22,0	-	22,0	0,0	1,00	3	-
11231202	3ESVR-100-100-035-073-000-10	10,0	10	9,50	73	22,0	35,0	35,0	0,0	1,00	3	-
11231203	3ESVR-100-200-022-073-000-10	10,0	10	-	73	22,0	-	22,0	0,0	2,00	3	-
11231204	3ESVR-100-200-035-073-000-10	10,0	10	9,50	73	22,0	35,0	35,0	0,0	2,00	3	-
11231205	3ESVR-100-300-022-073-000-10	10,0	10	-	73	22,0	-	22,0	0,0	3,00	3	-
11231206	3ESVR-100-300-035-073-000-10	10,0	10	9,50	73	22,0	35,0	35,0	0,0	3,00	3	-

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3ESVR

P	M	K	N	S	H
●	○	○			

Features:

Universal milling cutter, Z=3 with corner radius.

The problem solver for most standard and non-hardened steel.

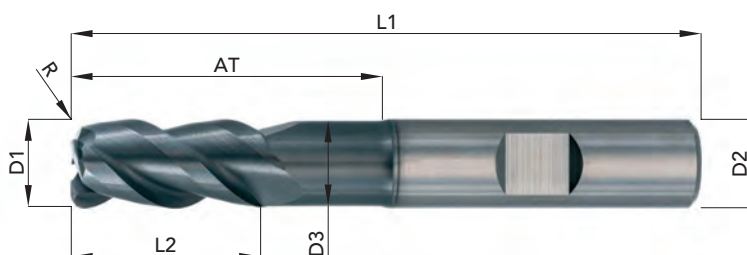
Can also be used in poor conditions due to very strong tooth shape.

Preferably clamp in weldon chucks.

Z 3
HM M-140
Coating C-020



Universal milling cutter with corner radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: weldon												
11231207	3ESVR-120-100-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	1,00	3	-
11231208	3ESVR-120-100-035-084-000-12	12,0	12	11,50	84	25,0	35,0	35,0	0,0	1,00	3	-
11231209	3ESVR-120-100-040-084-000-12	12,0	12	11,50	84	25,0	40,0	40,0	0,0	1,00	3	-
11231210	3ESVR-120-200-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	2,00	3	-
11231211	3ESVR-120-200-035-084-000-12	12,0	12	11,50	84	25,0	35,0	35,0	0,0	2,00	3	-
11231212	3ESVR-120-200-040-084-000-12	12,0	12	11,50	84	25,0	40,0	40,0	0,0	2,00	3	-
11231213	3ESVR-120-300-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	3,00	3	-
11231214	3ESVR-120-300-035-084-000-12	12,0	12	11,50	84	25,0	35,0	35,0	0,0	3,00	3	-
11231215	3ESVR-120-300-040-084-000-12	12,0	12	11,50	84	25,0	40,0	40,0	0,0	3,00	3	-
11231216	3ESVR-160-100-032-093-000-16	16,0	16	-	93	32,0	-	32,0	0,0	1,00	3	-
11231217	3ESVR-160-200-032-093-000-16	16,0	16	-	93	32,0	-	32,0	0,0	2,00	3	-
11231218	3ESVR-160-300-032-093-000-16	16,0	16	-	93	32,0	-	32,0	0,0	3,00	3	-
11231219	3ESVR-200-100-038-105-000-20	20,0	20	-	105	38,0	-	38,0	0,0	1,00	3	-
11231220	3ESVR-200-200-038-105-000-20	20,0	20	-	105	38,0	-	38,0	0,0	2,00	3	-
11231221	3ESVR-200-300-038-105-000-20	20,0	20	-	105	38,0	-	38,0	0,0	3,00	3	-

Subject to technical modifications

HF-UNI

P	M	K	N	S	H
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Features:

Vhm **roughing milling cutter** with variable helix angles.

Ground neck for greater working depth.

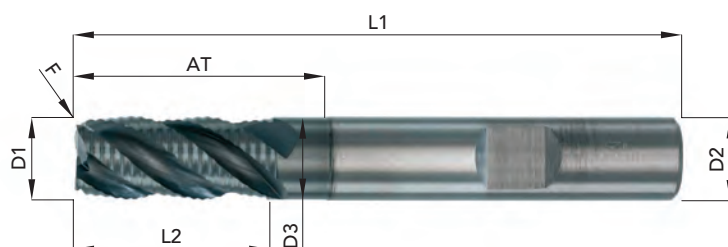
Very suitable for steel and cast iron.

Available with both weldon and cylindrical shank.

Z 4
HM **M-020**
Coating **C-020**



Universal roughing milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: weldon												
11231222	HF445-060-010-020-057-000-06	6,0	6	5,80	57	13,0	20,0	20,0	0,0	0,10	4	-
11231223	HF445-080-020-026-064-000-08	8,0	8	7,80	64	20,0	26,0	26,0	0,0	0,20	4	-
11231224	HF445-100-020-030-072-000-10	10,0	10	9,80	72	22,0	30,0	30,0	0,0	0,20	4	-
11231225	HF445-120-020-036-083-000-12	12,0	12	11,80	83	26,0	36,0	36,0	0,0	0,20	4	-
11231226	HF445-140-020-036-083-000-14	14,0	14	13,70	83	26,0	36,0	36,0	0,0	0,20	4	-
11231227	HF445-160-030-042-092-000-16	16,0	16	15,70	92	32,0	42,0	42,0	0,0	0,30	4	-
11231228	HF445-200-040-050-104-000-20	20,0	20	19,70	104	38,0	50,0	50,0	0,0	0,40	4	-
Shank: cylindrical												
11231229	HF444-060-010-020-057-000-06	6,0	6	5,80	57	13,0	20,0	20,0	0,0	0,10	4	-
11231230	HF444-080-020-026-064-000-08	8,0	8	7,80	64	20,0	26,0	26,0	0,0	0,20	4	-
11231231	HF444-100-020-030-072-000-10	10,0	10	9,80	72	22,0	30,0	30,0	0,0	0,20	4	-
11231232	HF444-120-020-036-083-000-12	12,0	12	11,80	83	26,0	36,0	36,0	0,0	0,20	4	-
11231233	HF444-140-020-036-083-000-14	14,0	14	13,70	83	26,0	36,0	36,0	0,0	0,20	4	-
11231234	HF444-160-030-042-092-000-16	16,0	16	15,70	92	32,0	42,0	42,0	0,0	0,30	4	-
11231235	HF444-200-040-050-104-000-20	20,0	20	19,70	104	38,0	50,0	50,0	0,0	0,40	4	-

Subject to technical modifications

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Features:

Special milling cutter for mould and model making.

Short cutting edge, Z=4, fine helix.

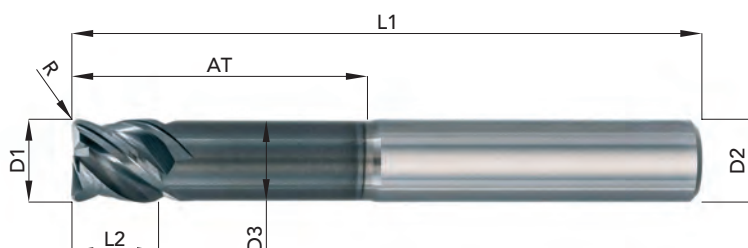
Ground neck for achieving greater milling depth.

Very suitable for the precise pre-milling and finishing of straight walls.

Z 4
HM M-020
Coating C-160



Shank-end mill with radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231236	KAN-030-010-012-060-000-06	3,0	6	2,80	60	6,0	12,0	12,0	0,0	0,10	4	-
11231237	KAN-030-010-020-060-000-06	3,0	6	2,80	60	6,0	20,0	20,0	0,0	0,10	4	-
11231238	KAN-030-010-025-060-000-06	3,0	6	2,80	60	6,0	25,0	25,0	0,0	0,10	4	-
11231239	KAN-040-010-020-060-000-06	4,0	6	3,80	60	6,0	20,0	20,0	0,0	0,10	4	-
11231240	KAN-040-010-025-060-000-06	4,0	6	3,80	60	6,0	25,0	25,0	0,0	0,10	4	-
11231241	KAN-040-050-020-060-000-06	4,0	6	3,80	60	6,0	20,0	20,0	0,0	0,50	4	-
11231242	KAN-040-100-020-060-000-06	4,0	6	3,80	60	6,0	20,0	20,0	0,0	1,00	4	-
11231243	KAN-040-100-030-080-000-06	4,0	6	3,80	80	6,0	30,0	30,0	0,0	1,00	4	-
11231244	KAN-050-010-025-060-000-06	5,0	6	4,80	30	8,0	25,0	25,0	0,0	0,10	4	-
11231245	KAN-050-050-020-060-000-06	5,0	6	4,80	30	5,0	20,0	20,0	0,0	0,50	4	-
11231246	KAN-060-010-020-060-000-06	6,0	6	5,80	30	8,0	20,0	20,0	0,0	0,10	4	-
11231247	KAN-060-010-025-060-000-06	6,0	6	5,80	30	8,0	25,0	25,0	0,0	0,10	4	-
11231248	KAN-060-050-020-060-000-06	6,0	6	5,80	30	8,0	20,0	20,0	0,0	0,50	4	-
11231249	KAN-060-100-020-060-000-06	6,0	6	5,80	30	8,0	20,0	20,0	0,0	1,00	4	-
11231250	KAN-060-200-020-060-000-06	6,0	6	5,80	30	8,0	20,0	20,0	0,0	2,00	4	-

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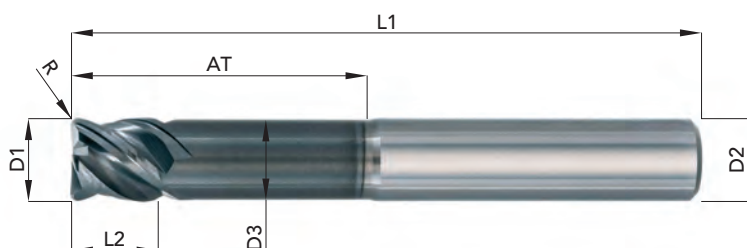
Features:

Special milling cutter for mould and model making.
 Short cutting edge, Z=4, fine helix.
 Ground neck for achieving greater milling depth.
 Very suitable for the precise pre-milling and finishing of straight walls.

Z 4
 HM M-020
 Coating C-160



Shank-end mill with radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231251	KAN-080-050-035-064-000-08	8,0	8	7,80	64	10,0	35,0	35,0	0,0	0,50	4	-
11231252	KAN-080-100-035-064-000-08	8,0	8	7,80	64	10,0	35,0	35,0	0,0	1,00	4	-
11231253	KAN-080-150-035-064-000-08	8,0	8	7,80	64	10,0	35,0	35,0	0,0	1,50	4	-
11231254	KAN-080-200-035-064-000-08	8,0	8	7,80	64	10,0	35,0	35,0	0,0	2,00	4	-
11231255	KAN-100-050-035-075-000-10	10,0	10	9,80	75	10,0	35,0	35,0	0,0	0,50	4	-
11231256	KAN-100-100-035-075-000-10	10,0	10	9,80	75	10,0	35,0	35,0	0,0	1,00	4	-
11231257	KAN-120-050-045-100-000-12	12,0	12	11,80	100	12,0	45,0	45,0	0,0	0,50	4	-
11231258	KAN-120-100-045-100-000-12	12,0	12	11,80	100	12,0	45,0	45,0	0,0	1,00	4	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Special milling cutter for mould and model making, long model.

Short cutting edge, Z=4, fine helix.

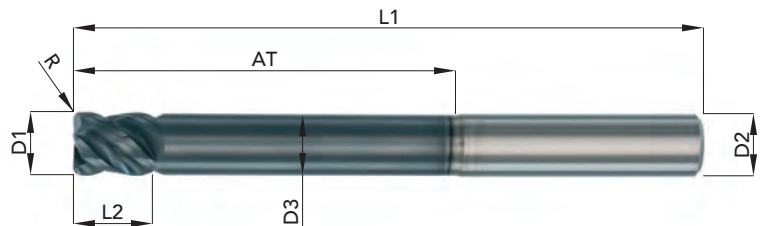
Ground neck for achieving large milling depths.

Very suitable for the precise pre-milling and finishing of straight walls.

Z 4
HM M-020
Coating C-020



Long shank-end mill with radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231259	LKAN-035-010-025-060-000-06	3,5	6	3,30	60	6,0	25,0	25,0	0,0	0,10	4	-
11231260	LKAN-035-010-035-070-000-06	3,5	6	3,30	70	6,0	35,0	35,0	0,0	0,10	4	-
11231261	LKAN-060-150-025-100-000-06	6,0	6	5,80	100	8,0	25,0	25,0	0,0	1,50	4	-
11231262	LKAN-060-150-040-075-000-06	6,0	6	5,80	75	8,0	40,0	40,0	0,0	1,50	4	-
11231263	LKAN-080-050-050-100-000-08	8,0	8	7,80	100	10,0	50,0	50,0	0,0	0,50	4	-
11231264	LKAN-080-100-050-100-000-08	8,0	8	7,80	100	10,0	50,0	50,0	0,0	1,00	4	-
11231265	LKAN-080-200-025-100-000-08	8,0	8	7,80	100	10,0	25,0	25,0	0,0	2,00	4	-
11231266	LKAN-100-050-040-085-000-10	10,0	10	9,70	85	12,0	40,0	40,0	0,0	0,50	4	-
11231267	LKAN-100-050-050-100-000-10	10,0	10	9,70	100	12,0	50,0	50,0	0,0	0,50	4	-
11231268	LKAN-100-050-060-100-000-10	10,0	10	9,70	100	12,0	60,0	60,0	0,0	0,50	4	-
11231269	LKAN-100-100-040-085-000-10	10,0	10	9,70	85	12,0	40,0	40,0	0,0	1,00	4	-
11231270	LKAN-100-100-050-120-000-10	10,0	10	9,70	120	12,0	50,0	50,0	0,0	1,00	4	-
11231271	LKAN-100-100-060-100-000-10	10,0	10	9,70	100	12,0	60,0	60,0	0,0	1,00	4	-
11231272	LKAN-100-100-082-150-000-10	10,0	10	9,70	150	12,0	82,0	82,0	0,0	1,00	4	-
11231273	LKAN-100-100-105-150-000-10	10,0	10	9,70	150	12,0	105,0	105,0	0,0	1,00	4	-

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Features:

Special milling cutter for mould and model making, long model.

Short cutting edge, Z=4, fine helix.

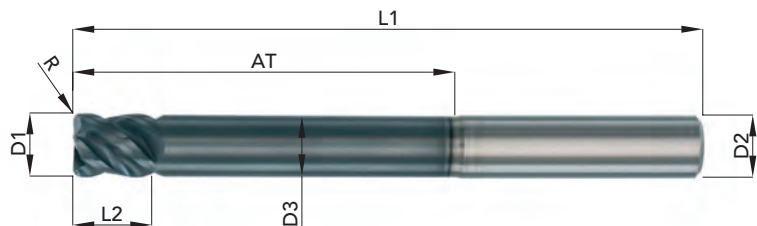
Ground neck for achieving large milling depths.

Very suitable for the precise pre-milling and finishing of straight walls.

Z 4
HM M-020
Coating C-020



Long shank-end mill with radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231274	LKAN-120-050-060-120-000-12	12,0	12	11,70	120	14,0	60,0	60,0	0,0	0,50	4	-
11231275	LKAN-120-050-082-150-000-12	12,0	12	11,70	150	14,0	82,0	82,0	0,0	0,50	4	-
11231276	LKAN-120-100-060-120-000-12	12,0	12	11,70	120	14,0	60,0	60,0	0,0	1,00	4	-
11231277	LKAN-120-100-082-125-000-12	12,0	12	11,70	125	14,0	82,0	82,0	0,0	1,00	4	-
11231278	LKAN-120-100-082-150-000-12	12,0	12	11,70	150	14,0	82,0	82,0	0,0	1,00	4	-
11231279	LKAN-120-100-105-150-000-12	12,0	12	11,70	150	14,0	105,0	105,0	0,0	1,00	4	-
11231280	LKAN-160-050-050-100-000-16	16,0	16	15,70	100	16,0	50,0	50,0	0,0	0,50	4	-
11231281	LKAN-160-100-050-100-000-16	16,0	16	15,70	100	16,0	50,0	50,0	0,0	1,00	4	-
11231282	LKAN-160-100-080-130-000-16	16,0	16	15,70	130	24,0	80,0	80,0	0,0	1,00	4	-
11231283	LKAN-160-100-100-150-000-16	16,0	16	15,70	150	40,0	100,0	100,0	0,0	1,00	4	-
11231284	LKAN-200-100-100-150-000-20	20,0	20	19,50	150	30,0	100,0	100,0	0,0	1,00	4	-
11231285	LKAN-200-100-105-150-000-20	20,0	20	19,50	150	50,0	105,0	105,0	0,0	1,00	4	-
11231286	LKAN-250-100-100-150-000-25	25,0	25	24,50	150	60,0	100,0	100,0	0,0	1,00	4	-
11231287	LKAN-250-100-115-180-000-25	25,0	25	24,50	180	105,0	115,0	115,0	0,0	1,00	4	-
11231288	LKAN-250-100-125-180-000-25	25,0	25	24,50	180	70,0	125,0	125,0	0,0	1,00	4	-
11231289	LKAN-250-100-160-220-000-25	25,0	25	24,50	220	80,0	160,0	160,0	0,0	1,00	4	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Shank-end mill with very stable cutting edges.

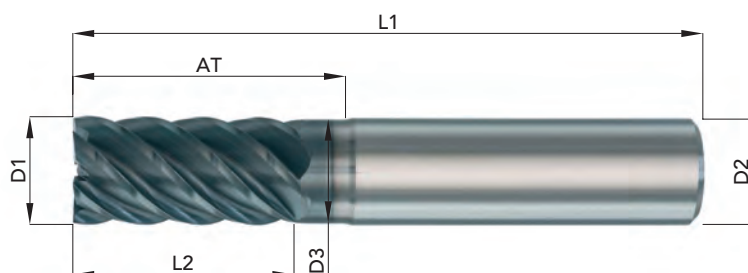
Due to its special tooth shape, this type is very suitable for finishing straight edges in steel up to 54 HRC.

Shank is cylindrical (fit h5).

Z 4 - 5 - 6
HM **M-040**
Coating **C-020**



Shank-end mill for finishing



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11231290	SSF-030-000-006-051-000-06	3,0	6	2,85	51	6,0	7,5	7,5	0,0	0,00	4	-
11231291	SSF-030-000-009-051-000-06	3,0	6	2,85	51	9,0	10,5	10,5	0,0	0,00	4	-
11231292	SSF-040-000-008-051-000-06	4,0	6	3,85	51	8,0	10,0	10,0	0,0	0,00	4	-
11231293	SSF-040-000-012-051-000-06	4,0	6	3,85	51	12,0	14,0	14,0	0,0	0,00	4	-
11231294	SSF-050-000-010-060-000-06	5,0	6	4,80	60	10,0	12,5	12,5	0,0	0,00	4	-
11231295	SSF-050-000-015-060-000-06	5,0	6	4,80	60	15,0	17,5	17,5	0,0	0,00	4	-
11231296	SSF-060-000-012-060-000-06	6,0	6	5,80	60	12,0	15,0	15,0	0,0	0,00	5	-
11231297	SSF-060-000-018-060-000-06	6,0	6	5,80	60	18,0	21,0	21,0	0,0	0,00	4	-
11231298	SSF-080-000-016-064-000-08	8,0	8	7,70	64	16,0	20,0	20,0	0,0	0,00	5	-
11231299	SSF-080-000-024-070-000-08	8,0	8	7,70	70	24,0	28,0	28,0	0,0	0,00	4	-
11231300	SSF-100-000-020-075-000-10	10,0	10	9,65	75	20,0	25,0	25,0	0,0	0,00	5	-
11231301	SSF-100-000-030-080-000-10	10,0	10	9,65	80	30,0	35,0	35,0	0,0	0,00	4	-
11231302	SSF-120-000-024-084-000-12	12,0	12	11,60	84	24,0	30,0	30,0	0,0	0,00	5	-
11231303	SSF-120-000-036-090-000-12	12,0	12	11,60	90	36,0	42,0	42,0	0,0	0,00	4	-

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Features:

Shank-end mill with very stable cutting edges.

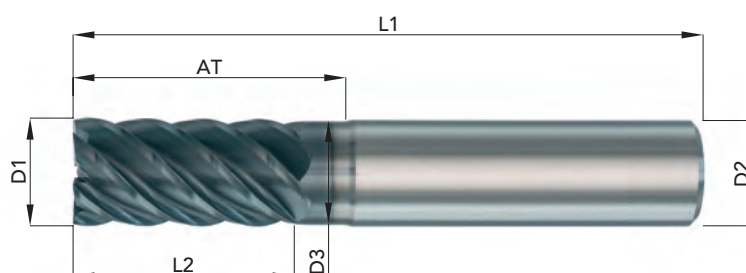
Due to its special tooth shape, this type is very suitable for finishing straight edges in steel up to 54 HRC.

Shank is cylindrical (fit h5).

Z 4 - 5 - 6
HM M-040
Coating C-020



Shank-end mill for finishing



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11231304	SSF-160-000-032-093-000-16	16,0	16	15,55	93	32,0	40,0	40,0	0,0	0,00	6	-
11231305	SSF-160-000-048-100-000-16	16,0	16	15,55	100	48,0	56,0	56,0	0,0	0,00	5	-
11231306	SSF-200-000-040-100-000-20	20,0	20	19,50	100	40,0	50,0	50,0	0,0	0,00	6	-
11231307	SSF-200-000-060-125-000-20	20,0	20	19,50	125	60,0	70,0	70,0	0,0	0,00	5	-
11231308	SSF-200-000-080-150-000-20	20,0	20	19,50	150	80,0	110,0	110,0	0,0	0,00	5	-
11231309	SSF-250-000-060-125-000-25	25,0	25	24,50	125	60,0	70,0	70,0	0,0	0,00	6	-
11231310	SSF-250-000-090-150-000-25	25,0	25	24,50	150	90,0	100,0	100,0	0,0	0,00	6	-

Subject to technical modifications

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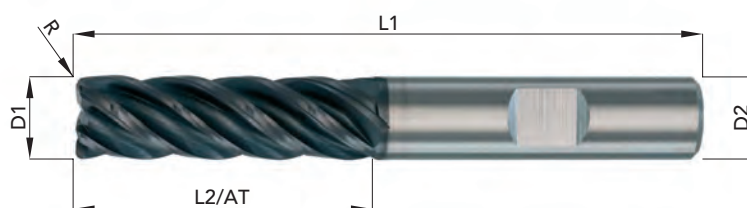
Features:

Vhm shank-end mill, Z=5, with corner radius.

Special geometry for trochoidal milling.

High feed per tooth is achievable through the special, strong core geometry. Not suitable for milling grooves in solid material.

Z 5
HM M-020
Coating C-160

**Trochoidal milling cutter**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: weldon												
11231311	RDF-060-025-014-058-000-06	6,0	6	-	58	14,0	-	14,0	0,0	0,25	5	-
11231312	RDF-060-025-020-060-000-06	6,0	6	-	60	20,0	-	20,0	0,0	0,25	5	-
11231313	RDF-060-050-014-058-000-06	6,0	6	-	58	14,0	-	14,0	0,0	0,50	5	-
11231314	RDF-060-050-020-060-000-06	6,0	6	-	60	20,0	-	20,0	0,0	0,50	5	-
11231315	RDF-080-025-019-064-000-08	8,0	8	-	64	19,0	-	19,0	0,0	0,25	5	-
11231316	RDF-080-025-026-064-000-08	8,0	8	-	64	26,0	-	26,0	0,0	0,25	5	-
11231317	RDF-080-050-019-064-000-08	8,0	8	-	64	19,0	-	19,0	0,0	0,50	5	-
11231318	RDF-080-050-026-064-000-08	8,0	8	-	64	26,0	-	26,0	0,0	0,50	5	-
11231319	RDF-100-050-024-073-000-10	10,0	10	-	73	24,0	-	24,0	0,0	0,50	5	-
11231320	RDF-100-050-032-075-000-10	10,0	10	-	75	32,0	-	32,0	0,0	0,50	5	-
11231321	RDF-100-100-024-073-000-10	10,0	10	-	73	24,0	-	24,0	0,0	1,00	5	-
11231322	RDF-100-100-032-075-000-10	10,0	10	-	75	32,0	-	32,0	0,0	1,00	5	-
11231323	RDF-120-050-030-084-000-12	12,0	12	-	84	30,0	-	30,0	0,0	0,50	5	-
11231324	RDF-120-050-043-090-000-12	12,0	12	-	90	43,0	-	43,0	0,0	0,50	5	-
11231325	RDF-120-100-030-084-000-12	12,0	12	-	84	30,0	-	30,0	0,0	1,00	5	-
11231326	RDF-120-100-043-090-000-12	12,0	12	-	90	43,0	-	43,0	0,0	1,00	5	-
11231327	RDF-160-100-040-093-000-16	16,0	16	-	93	40,0	-	40,0	0,0	1,00	5	-
11231328	RDF-160-100-052-110-000-16	16,0	16	-	110	52,0	-	52,0	0,0	1,00	5	-

Subject to technical modifications

4SFB

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Features:

Full-radius milling cutter, Z=4.

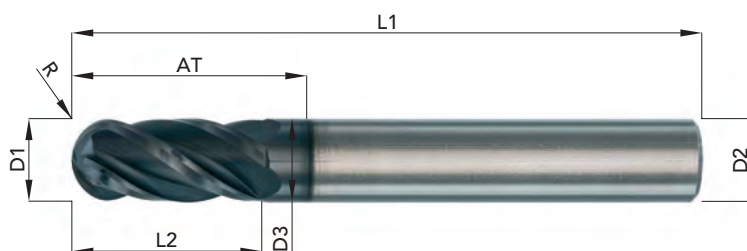
Centre cut with 2 long and 2 short cutting edges.

Very light cutting due to special S-shape in the radius section.

Z 4
HM M-010
Coating C-160



Full-radius milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical												
11231329	4SFB-030-150-010-051-000-04	3,0	4	2,85	51	8,0	10,0	10,0	0,0	1,50	4	-
11231330	4SFB-040-200-010-051-000-04	4,0	4	-	51	10,0	-	10,0	0,0	2,00	4	-
11231331	4SFB-050-250-015-060-000-06	5,0	6	4,80	60	12,0	15,0	15,0	0,0	2,50	4	-
11231332	4SFB-060-300-015-060-000-06	6,0	6	-	60	15,0	-	15,0	0,0	3,00	4	-
11231333	4SFB-080-400-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	4,00	4	-
11231334	4SFB-100-500-022-075-000-10	10,0	10	-	75	22,0	-	22,0	0,0	5,00	4	-
11231335	4SFB-120-600-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	6,00	4	-

Subject to technical modifications

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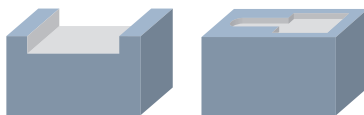
Features:

Mini shank-end mill, Z=2, without radius or phase, **sharp corners**.

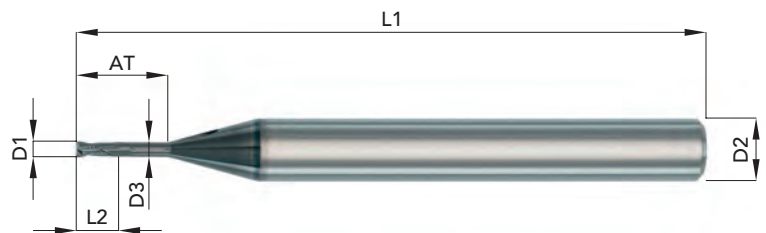
With cylindrically ground neck.

Only use for very light milling work due to the lack of corner radius which can cause faster wear.

Z 2
HM M-040
Coating C-160



Sharp milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11231336	SZA-005-000-003-060-000-04	0,5	4	0,47	60	0,37	3,0	3,0	0,0	0,00	2	-
11231337	SZA-005-000-005-060-000-04	0,5	4	0,47	60	0,37	5,0	5,0	0,0	0,00	2	-
11231338	SZA-006-000-003-060-000-04	0,6	4	0,55	60	0,45	3,0	3,0	0,0	0,00	2	-
11231339	SZA-006-000-006-060-000-04	0,6	4	0,55	60	0,45	6,0	6,0	0,0	0,00	2	-
11231340	SZA-008-000-004-060-000-04	0,8	4	0,75	60	0,60	4,0	4,0	0,0	0,00	2	-
11231341	SZA-008-000-008-060-000-04	0,8	4	0,75	60	0,60	8,0	8,0	0,0	0,00	2	-
11231342	SZA-008-000-012-060-000-04	0,8	4	0,75	60	0,60	12,0	12,0	0,0	0,00	2	-
11231343	SZA-010-000-006-060-000-04	1,0	4	0,95	60	0,75	6,0	6,0	0,0	0,00	2	-
11231344	SZA-010-000-008-060-000-04	1,0	4	0,95	60	0,75	8,0	8,0	0,0	0,00	2	-
11231345	SZA-010-000-010-060-000-04	1,0	4	0,95	60	0,75	10,0	10,0	0,0	0,00	2	-
11231346	SZA-010-000-012-060-000-04	1,0	4	0,95	60	0,75	12,0	12,0	0,0	0,00	2	-
11231347	SZA-015-000-007-060-000-04	1,5	4	1,40	60	1,12	7,0	7,0	0,0	0,00	2	-
11231348	SZA-015-000-010-060-000-04	1,5	4	1,40	60	1,12	10,0	10,0	0,0	0,00	2	-
11231349	SZA-015-000-013-060-000-04	1,5	4	1,40	60	1,12	13,0	13,0	0,0	0,00	2	-
11231350	SZA-015-000-017-060-000-04	1,5	4	1,40	60	1,12	17,0	17,0	0,0	0,00	2	-
11231351	SZA-020-000-008-060-000-04	2,0	4	1,90	60	2,00	8,0	8,0	0,0	0,00	2	-
11231352	SZA-020-000-012-060-000-04	2,0	4	1,90	60	2,00	12,0	12,0	0,0	0,00	2	-
11231353	SZA-020-000-016-060-000-04	2,0	4	1,90	60	2,00	16,0	16,0	0,0	0,00	2	-
11231354	SZA-020-000-020-060-000-04	2,0	4	1,90	60	2,00	20,0	20,0	0,0	0,00	2	-

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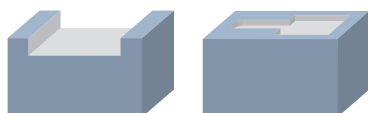
Features:

Mini shank-end mill, Z=2, without radius or phase, **sharp corners**.

With cylindrically ground neck.

Only use for very light milling work due to the lack of corner radius, which can cause faster wear.

Z 2
HM M-040
Coating C-160



Sharp milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	αα°	F	Z	I
11231355	SZA-005-000-003-060-000-06	0,5	6	0,47	60	0,37	3,0	3,0	0,0	0,00	2	V
11231356	SZA-005-000-005-060-000-06	0,5	6	0,47	60	0,37	5,0	5,0	0,0	0,00	2	V
11231357	SZA-005-000-008-060-000-06	0,5	6	0,47	60	0,37	8,0	8,0	0,0	0,00	2	V
11231358	SZA-010-000-002-051-000-06	1,0	6	0,95	51	0,75	3,5	3,5	0,0	0,00	2	-
11231359	SZA-010-000-005-060-000-06	1,0	6	0,95	60	0,75	5,0	5,0	0,0	0,00	2	V
11231360	SZA-010-000-010-060-000-06	1,0	6	0,95	60	0,75	10,0	10,0	0,0	0,00	2	V
11231361	SZA-010-000-015-060-000-06	1,0	6	0,95	60	0,75	15,0	15,0	0,0	0,00	2	V
11231362	SZA-015-000-004-051-000-06	1,5	6	1,40	51	1,12	5,0	4,0	0,0	0,00	2	-
11231363	SZA-015-000-008-060-000-06	1,5	6	1,40	60	1,12	8,0	8,0	0,0	0,00	2	V
11231364	SZA-015-000-015-060-000-06	1,5	6	1,40	60	1,12	15,0	15,0	0,0	0,00	2	V
11231365	SZA-015-000-023-060-000-06	1,5	6	1,40	60	1,12	23,0	23,0	0,0	0,00	2	V
11231366	SZA-020-000-006-051-000-06	2,0	6	1,90	51	2,00	7,5	6,0	0,0	0,00	2	-
11231367	SZA-020-000-010-060-000-06	2,0	6	1,90	60	2,00	10,0	10,0	0,0	0,00	2	-
11231368	SZA-020-000-020-060-000-06	2,0	6	1,90	60	2,00	20,0	20,0	0,0	0,00	2	-
11231369	SZA-020-000-030-060-000-06	2,0	6	1,90	60	2,00	30,0	30,0	0,0	0,00	2	-

Subject to technical modifications

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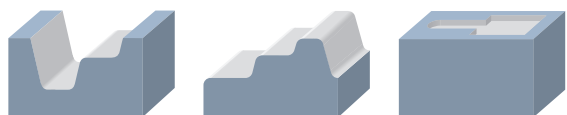
Features:

Toric milling cutter, Z=2, with corner radius.

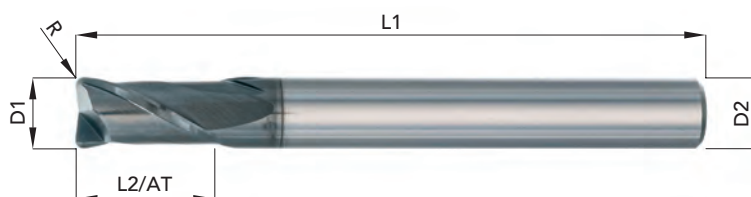
Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231370	TZ-060-025-012-060-000-06	6,0	6	-	60	12,0	-	12,0	0,0	0,25	2	-
11231371	TZ-060-025-012-070-000-06	6,0	6	-	70	12,0	-	12,0	0,0	0,25	2	-
11231372	TZ-060-050-012-060-000-06	6,0	6	-	60	12,0	-	12,0	0,0	0,50	2	-
11231373	TZ-060-050-012-070-000-06	6,0	6	-	70	12,0	-	12,0	0,0	0,50	2	-
11231374	TZ-060-050-012-100-000-06	6,0	6	-	100	12,0	-	12,0	0,0	0,50	2	-
11231375	TZ-060-100-012-060-000-06	6,0	6	-	60	12,0	-	12,0	0,0	1,00	2	-
11231376	TZ-060-100-012-070-000-06	6,0	6	-	70	12,0	-	12,0	0,0	1,00	2	-
11231377	TZ-060-100-012-100-000-06	6,0	6	-	100	12,0	-	12,0	0,0	1,00	2	-
11231378	TZ-060-200-012-070-000-06	6,0	6	-	70	12,0	-	12,0	0,0	2,00	2	-
11231379	TZ-060-200-012-100-000-06	6,0	6	-	100	12,0	-	12,0	0,0	2,00	2	-
11231380	TZ-080-050-014-070-000-08	8,0	8	-	70	14,0	-	14,0	0,0	0,50	2	-
11231381	TZ-080-050-014-100-000-08	8,0	8	-	100	14,0	-	14,0	0,0	0,50	2	-
11231382	TZ-080-100-014-070-000-08	8,0	8	-	70	14,0	-	14,0	0,0	1,00	2	-
11231383	TZ-080-100-014-100-000-08	8,0	8	-	100	14,0	-	14,0	0,0	1,00	2	-
11231384	TZ-080-150-014-070-000-08	8,0	8	-	70	14,0	-	14,0	0,0	1,50	2	-
11231385	TZ-080-150-014-100-000-08	8,0	8	-	100	14,0	-	14,0	0,0	1,50	2	-
11231386	TZ-080-200-014-070-000-08	8,0	8	-	70	14,0	-	14,0	0,0	2,00	2	-
11231387	TZ-080-200-014-100-000-08	8,0	8	-	100	14,0	-	14,0	0,0	2,00	2	-

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Features:

Toric milling cutter, Z=2, with corner radius.

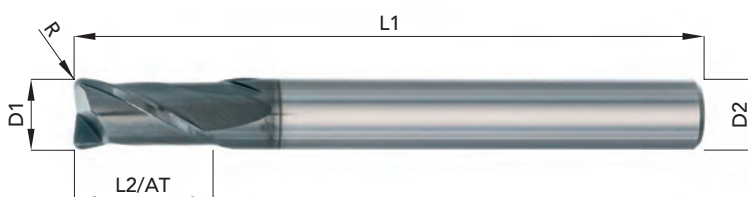
Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231388	TZ-100-050-016-075-000-10	10,0	10	-	75	16,0	-	16,0	0,0	0,50	2	-
11231389	TZ-100-050-016-100-000-10	10,0	10	-	100	16,0	-	16,0	0,0	0,50	2	-
11231390	TZ-100-100-016-075-000-10	10,0	10	-	75	16,0	-	16,0	0,0	1,00	2	-
11231391	TZ-100-100-016-100-000-10	10,0	10	-	100	16,0	-	16,0	0,0	1,00	2	-
11231392	TZ-100-150-016-075-000-10	10,0	10	-	75	16,0	-	16,0	0,0	1,50	2	-
11231393	TZ-100-150-016-100-000-10	10,0	10	-	100	16,0	-	16,0	0,0	1,50	2	-
11231394	TZ-100-200-016-075-000-10	10,0	10	-	75	16,0	-	16,0	0,0	2,00	2	-
11231395	TZ-100-200-016-100-000-10	10,0	10	-	100	16,0	-	16,0	0,0	2,00	2	-
11231396	TZ-120-050-018-084-000-12	12,0	12	-	84	18,0	-	18,0	0,0	0,50	2	-
11231397	TZ-120-050-018-120-000-12	12,0	12	-	120	18,0	-	18,0	0,0	0,50	2	-
11231398	TZ-120-100-018-084-000-12	12,0	12	-	84	18,0	-	18,0	0,0	1,00	2	-
11231399	TZ-120-100-018-120-000-12	12,0	12	-	120	18,0	-	18,0	0,0	1,00	2	-
11231400	TZ-120-200-018-084-000-12	12,0	12	-	84	18,0	-	18,0	0,0	2,00	2	-
11231401	TZ-120-200-018-120-000-12	12,0	12	-	120	18,0	-	18,0	0,0	2,00	2	-
11231402	TZ-120-300-018-084-000-12	12,0	12	-	84	18,0	-	18,0	0,0	3,00	2	-
11231403	TZ-120-300-018-120-000-12	12,0	12	-	120	18,0	-	18,0	0,0	3,00	2	-
11231404	TZ-120-400-018-084-000-12	12,0	12	-	84	18,0	-	18,0	0,0	4,00	2	-
11231405	TZ-120-400-018-100-000-12	12,0	12	-	100	18,0	-	18,0	0,0	4,00	2	-
11231406	TZ-120-400-018-120-000-12	12,0	12	-	120	18,0	-	18,0	0,0	4,00	2	-
11231407	TZ-120-400-018-150-000-12	12,0	12	-	150	18,0	-	18,0	0,0	4,00	2	-

Subject to technical modifications

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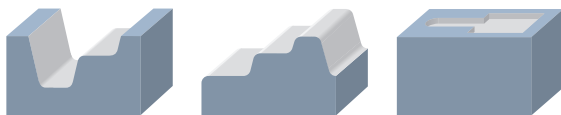
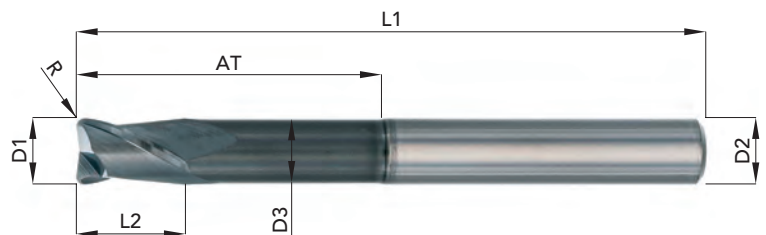
Features:

Toric milling cutter, Z=2, with corner radius and **ground neck**.

Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160

**Toric milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231408	TZA-004-005-002-060-000-06	0,4	6	0,38	60	0,30	2,0	2,0	0,0	0,05	2	V
11231409	TZA-004-005-004-060-000-06	0,4	6	0,38	60	0,30	4,0	4,0	0,0	0,05	2	V
11231410	TZA-005-010-002-060-000-06	0,5	6	0,48	60	0,37	2,0	2,0	0,0	0,10	2	V
11231411	TZA-006-006-003-060-000-06	0,6	6	0,58	60	0,45	3,0	3,0	0,0	0,06	2	-
11231412	TZA-006-010-003-060-000-06	0,6	6	0,58	60	0,45	6,0	3,0	0,0	0,10	2	V
11231413	TZA-006-006-006-060-000-06	0,6	6	0,58	60	0,45	6,0	6,0	0,0	0,06	2	-
11231414	TZA-006-010-006-060-000-06	0,6	6	0,58	60	0,45	3,0	6,0	0,0	0,10	2	V
11231415	TZA-007-010-003-060-000-06	0,7	6	0,68	60	0,52	4,0	3,0	0,0	0,10	2	V
11231416	TZA-008-010-004-060-000-06	0,8	6	0,78	60	0,60	4,0	4,0	0,0	0,10	2	V
11231417	TZA-009-010-0045-060-000-06	0,9	6	0,88	60	0,67	4,5	4,5	0,0	0,10	2	V
11231418	TZA-010-010-0015-060-000-06	1,0	6	0,97	60	0,75	1,5	1,5	0,0	0,10	2	V
11231419	TZA-010-020-0015-060-000-06	1,0	6	0,97	60	0,75	1,5	1,5	0,0	0,20	2	V
11231420	TZA-010-025-0015-060-000-06	1,0	6	0,97	60	0,75	1,5	1,5	0,0	0,25	2	V
11231421	TZA-010-015-005-060-000-06	1,0	6	0,97	60	0,75	5,0	5,0	0,0	0,15	2	V
11231422	TZA-010-010-006-060-000-06	1,0	6	0,97	60	0,75	6,0	6,0	0,0	0,10	2	V
11231423	TZA-010-020-008-060-000-06	1,0	6	0,97	60	0,75	8,0	8,0	0,0	0,20	2	V

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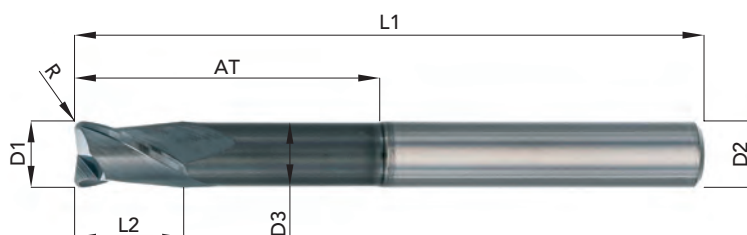
Features:

Toric milling cutter, Z=2, with corner radius and ground neck.

Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160

**Toric milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	αα°	R	Z	I
11231424	TZA-010-010-010-060-000-06	1,0	6	0,97	60	0,75	10,0	10,0	0,0	0,10	2	V
11231425	TZA-010-015-010-060-000-06	1,0	6	0,97	60	0,75	10,0	10,0	0,0	0,15	2	V
11231426	TZA-010-010-015-060-000-06	1,0	6	0,97	60	0,75	15,0	15,0	0,0	0,10	2	V
11231427	TZA-010-020-020-060-000-06	1,0	6	0,97	60	0,75	20,0	20,0	0,0	0,20	2	V
11231428	TZA-012-010-010-060-000-06	1,2	6	1,17	60	0,90	10,0	10,0	0,0	0,10	2	V
11231429	TZA-015-025-0025-060-000-06	1,5	6	1,47	60	1,13	2,5	2,5	0,0	0,25	2	V
11231430	TZA-015-050-0025-060-000-06	1,5	6	1,47	60	1,13	2,5	2,5	0,0	0,50	2	V
11231431	TZA-015-015-010-060-000-06	1,5	6	1,47	60	1,13	10,0	10,0	0,0	0,15	2	V
11231432	TZA-015-020-010-060-000-06	1,5	6	1,47	60	1,13	10,0	10,0	0,0	0,20	2	V
11231433	TZA-015-025-010-060-000-06	1,5	6	1,47	60	1,13	10,0	10,0	0,0	0,25	2	V
11231434	TZA-015-015-015-060-000-06	1,5	6	1,47	60	1,13	15,0	15,0	0,0	0,15	2	V
11231435	TZA-015-025-015-060-000-06	1,5	6	1,47	60	1,13	15,0	15,0	0,0	0,25	2	V
11231436	TZA-020-020-005-060-000-06	2,0	6	1,90	60	2,0	5,0	5,0	0,0	0,20	2	-
11231437	TZA-020-025-005-060-000-06	2,0	6	1,90	60	2,0	5,0	5,0	0,0	0,25	2	-
11231438	TZA-020-025-004-060-000-06	2,0	6	1,90	60	2,0	4,0	4,0	0,0	0,25	2	-
11231439	TZA-020-040-004-060-000-06	2,0	6	1,90	60	2,0	4,0	4,0	0,0	0,40	2	-
11231440	TZA-020-050-004-060-000-06	2,0	6	1,90	60	2,0	4,0	4,0	0,0	0,50	2	-
11231441	TZA-020-020-008-060-000-06	2,0	6	1,90	60	2,0	8,0	8,0	0,0	0,20	2	-

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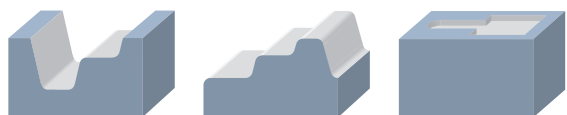
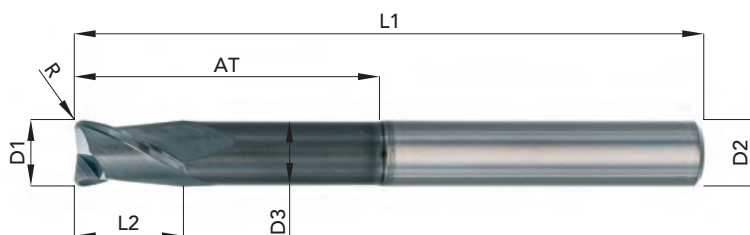
Features:

Toric milling cutter, Z=2, with corner radius and ground neck.

Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160

**Toric milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231442	TZA-020-010-010-060-000-06	2,0	6	1,90	60	2,0	10,0	10,0	0,0	0,10	2	-
11231443	TZA-020-020-010-060-000-06	2,0	6	1,90	60	2,0	10,0	10,0	0,0	0,20	2	-
11231444	TZA-020-050-010-060-000-06	2,0	6	1,90	60	2,0	10,0	10,0	0,0	0,50	2	-
11231445	TZA-020-020-012-060-000-06	2,0	6	1,90	60	2,0	12,0	12,0	0,0	0,20	2	-
11231446	TZA-020-025-015-060-000-06	2,0	6	1,90	60	2,0	15,0	15,0	0,0	0,25	2	-
11231447	TZA-020-050-015-060-000-06	2,0	6	1,90	60	2,0	15,0	15,0	0,0	0,50	2	-
11231448	TZA-020-020-016-060-000-06	2,0	6	1,90	60	2,0	16,0	16,0	0,0	0,20	2	-
11231449	TZA-020-020-020-060-000-06	2,0	6	1,90	60	2,0	20,0	20,0	0,0	0,20	2	-
11231450	TZA-020-025-020-060-000-06	2,0	6	1,90	60	2,0	20,0	20,0	0,0	0,25	2	-
11231451	TZA-020-050-020-060-000-06	2,0	6	1,90	60	2,0	20,0	20,0	0,0	0,50	2	-
11231452	TZA-020-020-025-060-000-06	2,0	6	1,90	60	2,0	25,0	25,0	0,0	0,20	2	-
11231453	TZA-020-020-030-070-000-06	2,0	6	1,90	70	2,0	30,0	30,0	0,0	0,20	2	-
11231454	TZA-025-025-004-060-000-06	2,5	6	2,35	60	2,5	4,0	4,0	0,0	0,25	2	-
11231455	TZA-025-040-004-060-000-06	2,5	6	2,35	60	2,5	4,0	4,0	0,0	0,40	2	-
11231456	TZA-025-050-004-060-000-06	2,5	6	2,35	60	2,5	4,0	4,0	0,0	0,50	2	-
11231457	TZA-025-100-004-060-000-06	2,5	6	2,35	60	2,5	4,0	4,0	0,0	1,00	2	-
11231458	TZA-025-020-010-060-000-06	2,5	6	2,35	60	2,5	10,0	10,0	0,0	0,20	2	-
11231459	TZA-025-050-011-060-000-06	2,5	6	2,35	60	2,5	11,0	11,0	0,0	0,50	2	-

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Features:

Toric milling cutter, Z=2, with corner radius and ground neck.

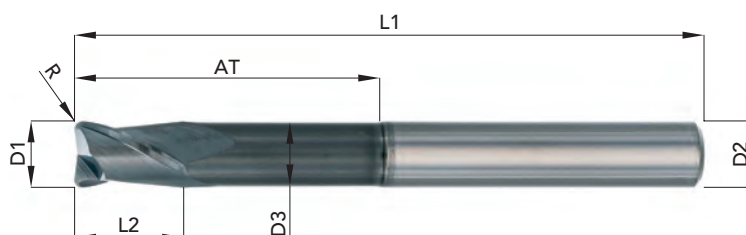
Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231460	TZA-030-025-005-060-000-06	3,0	6	2,85	60	3,0	5,0	5,0	0,0	0,25	2	-
11231461	TZA-030-050-005-060-000-06	3,0	6	2,85	60	3,0	5,0	5,0	0,0	0,50	2	-
11231462	TZA-030-050-010-060-000-06	3,0	6	2,85	60	3,0	10,0	10,0	0,0	0,50	2	-
11231463	TZA-030-100-010-060-000-06	3,0	6	2,85	60	3,0	10,0	10,0	0,0	1,00	2	-
11231464	TZA-030-020-012-060-000-06	3,0	6	2,85	60	3,0	12,0	12,0	0,0	0,20	2	-
11231465	TZA-030-030-012-060-000-06	3,0	6	2,85	60	3,0	12,0	12,0	0,0	0,30	2	-
11231466	TZA-030-050-015-060-000-06	3,0	6	2,85	60	3,0	15,0	15,0	0,0	0,50	2	-
11231467	TZA-030-020-020-060-000-06	3,0	6	2,85	60	3,0	20,0	20,0	0,0	0,20	2	-
11231468	TZA-030-025-020-060-000-06	3,0	6	2,85	60	3,0	20,0	20,0	0,0	0,25	2	-
11231469	TZA-030-050-020-060-000-06	3,0	6	2,85	60	3,0	20,0	20,0	0,0	0,50	2	-
11231470	TZA-030-050-025-070-000-06	3,0	6	2,85	70	3,0	25,0	25,0	0,0	0,50	2	-
11231471	TZA-030-020-030-070-000-06	3,0	6	2,85	70	3,0	30,0	30,0	0,0	0,20	2	-
11231472	TZA-030-050-030-070-000-06	3,0	6	2,85	70	3,0	30,0	30,0	0,0	0,50	2	-
11231473	TZA-030-050-035-070-000-06	3,0	6	2,85	70	3,0	35,0	35,0	0,0	0,50	2	-
11231474	TZA-030-050-040-070-000-06	3,0	6	2,85	70	3,0	40,0	40,0	0,0	0,50	2	-
11231475	TZA-040-025-006-060-000-06	4,0	6	3,85	60	4,0	6,0	6,0	0,0	0,25	2	-
11231476	TZA-040-040-006-060-000-06	4,0	6	3,85	60	4,0	6,0	6,0	0,0	0,40	2	-
11231477	TZA-040-050-006-060-000-06	4,0	6	3,85	60	4,0	6,0	6,0	0,0	0,50	2	-
11231478	TZA-040-100-006-060-000-06	4,0	6	3,85	60	4,0	6,0	6,0	0,0	1,00	2	-
11231479	TZA-040-100-012-060-000-06	4,0	6	3,85	60	4,0	12,0	12,0	0,0	1,00	2	-

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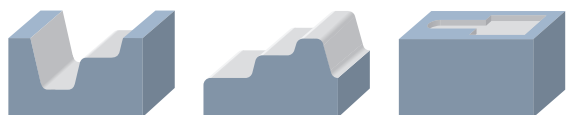
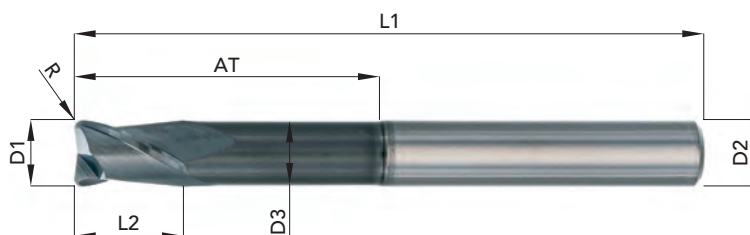
Features:

Toric milling cutter, Z=2, with corner radius and ground neck.

Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160

**Toric milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231480	TZA-040-050-015-060-000-06	4,0	6	3,85	60	4,0	15,0	15,0	0,0	0,50	2	-
11231481	TZA-040-100-015-060-000-06	4,0	6	3,85	60	4,0	15,0	15,0	0,0	1,00	2	-
11231482	TZA-040-150-015-060-000-06	4,0	6	3,85	60	4,0	15,0	15,0	0,0	1,50	2	-
11231483	TZA-040-050-020-060-000-06	4,0	6	3,85	60	4,0	20,0	20,0	0,0	0,50	2	-
11231484	TZA-040-100-020-060-000-06	4,0	6	3,85	60	4,0	20,0	20,0	0,0	1,00	2	-
11231485	TZA-040-050-025-060-000-06	4,0	6	3,85	60	4,0	25,0	25,0	0,0	0,50	2	V
11231486	TZA-040-100-025-060-000-06	4,0	6	3,85	60	4,0	25,0	25,0	0,0	1,00	2	-
11231487	TZA-040-050-030-070-000-06	4,0	6	3,85	70	4,0	30,0	30,0	0,0	0,50	2	-
11231488	TZA-040-100-030-070-000-06	4,0	6	3,85	70	4,0	30,0	30,0	0,0	1,00	2	-
11231489	TZA-040-100-040-070-000-06	4,0	6	3,85	70	4,0	40,0	40,0	0,0	1,00	2	-
11231490	TZA-050-050-020-060-000-06	5,0	6	4,80	60	5,0	20,0	20,0	0,0	0,50	2	-
11231491	TZA-050-200-020-060-000-06	5,0	6	4,80	60	5,0	20,0	20,0	0,0	2,00	2	-
11231492	TZA-050-050-025-060-000-06	5,0	6	4,80	60	5,0	25,0	25,0	0,0	0,50	2	V
11231493	TZA-050-050-040-070-000-06	5,0	6	4,80	70	5,0	40,0	40,0	0,0	0,50	2	-
11231494	TZA-050-100-040-070-000-06	5,0	6	4,80	70	5,0	40,0	40,0	0,0	1,00	2	-
11231495	TZA-060-100-020-060-000-06	6,0	6	5,80	60	9,0	20,0	20,0	0,0	1,00	2	V
11231496	TZA-060-200-020-060-000-06	6,0	6	5,80	60	9,0	20,0	20,0	0,0	2,00	2	-
11231497	TZA-060-050-025-070-000-06	6,0	6	5,80	70	9,0	25,0	25,0	0,0	0,50	2	-
11231498	TZA-060-100-030-060-000-06	6,0	6	5,80	75	9,0	30,0	30,0	0,0	1,00	2	-

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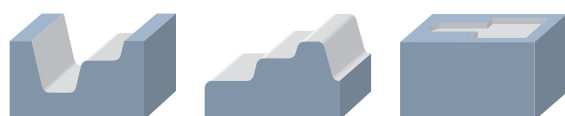
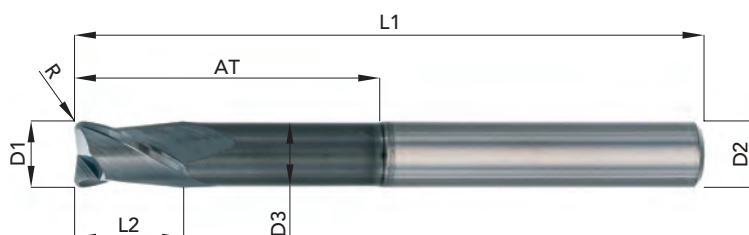
Features:

Toric milling cutter, Z=2, with corner radius and ground neck.

Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160

**Toric milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231499	TZA-060-025-040-075-000-06	6,0	6	5,80	75	9,0	40,0	40,0	0,0	0,25	2	-
11231500	TZA-060-100-040-075-000-06	6,0	6	5,80	75	9,0	40,0	40,0	0,0	1,00	2	-
11231501	TZA-060-150-040-075-000-06	6,0	6	5,80	75	9,0	40,0	40,0	0,0	1,50	2	-
11231502	TZA-060-200-040-075-000-06	6,0	6	5,80	75	9,0	40,0	40,0	0,0	2,00	2	-
11231503	TZA-080-050-020-070-000-08	8,0	8	7,70	70	12,0	20,0	20,0	0,0	0,50	2	-
11231504	TZA-080-050-020-100-000-08	8,0	8	7,70	100	12,0	20,0	20,0	0,0	0,50	2	-
11231505	TZA-080-200-025-070-000-08	8,0	8	7,70	70	12,0	25,0	25,0	0,0	2,00	2	-
11231506	TZA-080-100-035-075-000-08	8,0	8	7,70	75	12,0	35,0	35,0	0,0	1,00	2	-
11231507	TZA-080-200-035-075-000-08	8,0	8	7,70	75	12,0	35,0	35,0	0,0	2,00	2	-
11231508	TZA-080-025-040-075-000-08	8,0	8	7,70	75	12,0	40,0	40,0	0,0	0,25	2	-
11231509	TZA-080-050-040-075-000-08	8,0	8	7,70	75	12,0	40,0	40,0	0,0	0,50	2	-
11231510	TZA-080-100-040-075-000-08	8,0	8	7,70	75	12,0	40,0	40,0	0,0	1,00	2	V
11231511	TZA-080-050-055-100-000-08	8,0	8	7,70	100	12,0	55,0	55,0	0,0	0,50	2	-
11231512	TZA-080-150-055-100-000-08	8,0	8	7,70	100	12,0	55,0	55,0	0,0	1,50	2	-
11231513	TZA-080-200-055-100-000-08	8,0	8	7,70	100	12,0	55,0	55,0	0,0	2,00	2	-
11231514	TZA-100-100-030-120-000-10	10,0	10	9,65	120	15,0	30,0	30,0	0,0	1,00	2	-
11231515	TZA-100-300-030-075-000-10	10,0	10	9,65	75	15,0	30,0	30,0	0,0	3,00	2	-
11231516	TZA-100-050-055-100-000-10	10,0	10	9,65	100	15,0	55,0	55,0	0,0	0,50	2	-

Subject to technical modifications

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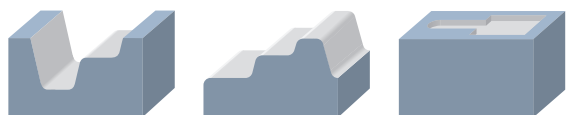
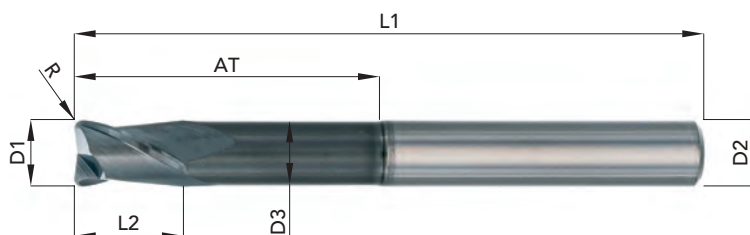
Features:

Toric milling cutter, Z=2, with corner radius and **ground neck**.

Very suitable for 2D and 3D milling in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160

**Toric milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11231517	TZA-005-010-002-060-000-04	0,5	4	0,48	60	0,38	2,0	2,0	0,0	0,10	2	-
11231518	TZA-010-010-005-060-000-04	1,0	4	0,97	60	0,75	5,0	5,0	0,0	0,10	2	-
11231519	TZA-010-020-008-060-000-04	1,0	4	0,97	60	0,75	8,0	8,0	0,0	0,20	2	-
11231520	TZA-010-010-010-060-000-04	1,0	4	0,97	60	0,75	10,0	10,0	0,0	0,10	2	-
11231521	TZA-010-010-015-060-000-04	1,0	4	0,97	60	0,75	15,0	15,0	0,0	0,10	2	-
11231522	TZA-015-015-015-060-000-04	1,5	4	1,47	60	1,13	15,0	15,0	0,0	0,15	2	-
11231523	TZA-015-015-023-060-000-04	1,5	4	1,47	60	1,13	23,0	23,0	0,0	0,15	2	-
11231524	TZA-020-020-008-060-000-04	2,0	4	1,90	60	2,00	8,0	8,0	0,0	0,20	2	-
11231525	TZA-020-020-010-060-000-04	2,0	4	1,90	60	2,00	10,0	10,0	0,0	0,20	2	-
11231526	TZA-020-050-010-060-000-04	2,0	4	1,90	60	2,00	10,0	10,0	0,0	0,50	2	-
11231527	TZA-020-020-012-060-000-04	2,0	4	1,90	60	2,00	12,0	12,0	0,0	0,20	2	-
11231528	TZA-020-020-020-060-000-04	2,0	4	1,90	60	2,00	20,0	20,0	0,0	0,20	2	-
11231529	TZA-020-020-030-060-000-04	2,0	4	1,90	60	2,00	30,0	30,0	0,0	0,20	2	-
11231530	TZA-040-100-020-060-000-04	4,0	4	3,85	60	4,00	20,0	20,0	0,0	1,00	2	-
11231531	TZA-040-100-030-070-000-04	4,0	4	3,85	70	4,00	30,0	30,0	0,0	1,00	2	-
11231532	TZA-040-100-040-080-000-04	4,0	4	3,85	80	4,00	40,0	40,0	0,0	1,00	2	-

Subject to technical modifications

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Features:

Toric milling cutter, Z=2, with corner radius and conically ground neck.

Very suitable for milling moulds with discharge angle.

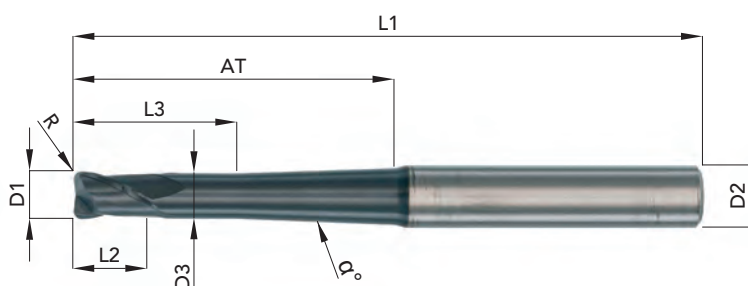
High accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter, conically ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231533	T-004-010-020-051-051-06	0,4	6	0,37	51	0,30	2,0	20,0	5,1	0,10	2	-
11231534	T-006-010-020-051-051-06	0,6	6	0,55	51	0,45	2,0	20,0	5,1	0,10	2	-
11231535	T-008-010-005-060-004-06	0,8	6	0,75	60	0,60	4,0	5,0	0,4	0,10	2	V
11231536	T-008-010-008-060-004-06	0,8	6	0,75	60	0,60	4,0	8,0	0,4	0,10	2	V
11231537	T-008-010-011-060-004-06	0,8	6	0,75	60	0,60	4,0	11,0	0,4	0,10	2	V
11231538	T-010-015-005-060-004-06	1,0	6	0,95	60	0,75	4,0	5,0	0,4	0,15	2	V
11231539	T-010-015-005-060-009-06	1,0	6	0,95	60	0,75	4,0	5,0	0,9	0,15	2	V
11231540	T-010-015-008-060-004-06	1,0	6	0,95	60	0,75	4,0	8,0	0,4	0,15	2	V
11231541	T-010-015-010-060-004-06	1,0	6	0,95	60	0,75	4,0	10,0	0,4	0,15	2	V
11231542	T-010-015-010-060-009-06	1,0	6	0,95	60	0,75	4,0	10,0	0,9	0,15	2	V
11231543	T-010-015-015-060-004-06	1,0	6	0,95	60	0,75	4,0	15,0	0,4	0,15	2	V
11231544	T-010-015-015-060-009-06	1,0	6	0,95	60	0,75	4,0	15,0	0,9	0,15	2	V
11231545	T-010-015-025-070-015-06	1,0	6	0,95	70	0,75	4,0	25,0	1,5	0,15	2	-
11231546	T-012-010-020-060-042-06	1,2	6	1,10	60	0,90	4,0	20,0	4,2	0,10	2	V
11231547	T-015-025-008-060-015-06	1,5	6	1,40	60	1,13	4,0	8,0	1,5	0,25	2	V
11231548	T-015-025-026-060-015-06	1,5	6	1,40	60	1,13	4,0	26,0	1,5	0,25	2	V
11231549	T-015-050-016-060-015-06	1,5	6	1,40	60	1,13	4,0	16,0	1,5	0,50	2	-
11231550	T-017-050-016-060-015-06	1,7	6	1,60	60	1,70	4,0	16,0	1,5	0,50	2	V

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P	M	K	N	S	H
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Features:

Toric milling cutter, Z=2, with corner radius and **conically ground neck**.

Very suitable for milling moulds with discharge angle.

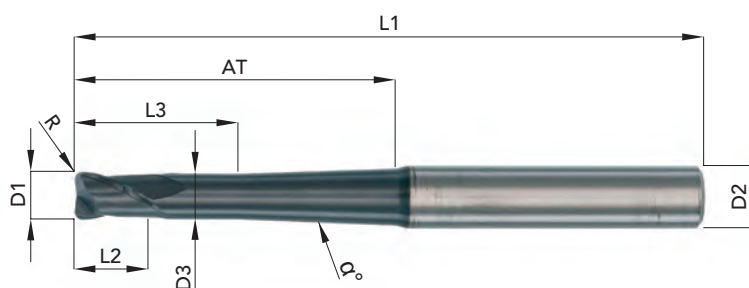
High accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter, conically ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231551	T-020-030-067-100-014-06	2,0	6	1,90	100	2,0	10,0	67,0	1,4	0,30	2	-
11231552	T-020-050-020-060-004-06	2,0	6	1,90	60	2,0	6,0	20,0	0,4	0,50	2	-
11231553	T-020-050-020-060-009-06	2,0	6	1,90	60	2,0	6,0	20,0	0,9	0,50	2	-
11231554	T-020-050-020-060-059-06	2,0	6	1,90	60	2,0	6,0	20,0	5,9	0,50	2	-
11231555	T-020-050-025-070-004-06	2,0	6	1,90	70	2,0	6,0	25,0	0,4	0,50	2	-
11231556	T-020-050-025-070-009-06	2,0	6	1,90	70	2,0	6,0	25,0	0,9	0,50	2	-
11231557	T-020-050-025-070-015-06	2,0	6	1,90	70	2,0	6,0	25,0	1,5	0,50	2	-
11231558	T-020-050-027-060-042-06	2,0	6	1,90	60	2,0	6,0	27,0	4,2	0,50	2	-
11231559	T-020-050-032-070-015-06	2,0	6	1,90	70	2,0	6,0	32,0	1,5	0,50	2	-
11231560	T-020-050-043-075-025-06	2,0	6	1,90	75	2,0	6,0	43,0	2,5	0,50	2	-
11231561	T-020-050-060-100-015-06	2,0	6	1,90	100	2,0	6,0	60,0	1,5	0,50	2	-
11231562	T-020-075-022-060-025-06	2,0	6	1,90	60	2,0	6,0	22,0	2,5	0,75	2	-
11231563	T-025-050-013-060-015-06	2,5	6	2,35	60	2,5	8,0	13,0	1,5	0,50	2	-
11231564	T-025-050-016-060-015-06	2,5	6	2,35	60	2,5	8,0	16,0	1,5	0,50	2	-
11231565	T-025-050-025-070-015-06	2,5	6	2,35	70	2,5	8,0	25,0	1,5	0,50	2	-
11231566	T-025-050-035-080-015-06	2,5	6	2,35	80	2,5	8,0	35,0	1,5	0,50	2	-
11231567	T-025-100-025-070-015-06	2,5	6	2,35	70	2,5	8,0	25,0	1,5	1,00	2	-
11231568	T-025-100-035-080-015-06	2,5	6	2,35	80	2,5	8,0	35,0	1,5	1,00	2	-
11231569	T-030-010-040-075-009-06	3,0	6	2,85	75	3,0	8,0	40,0	0,9	0,10	2	-
11231570	T-030-010-050-100-009-06	3,0	6	2,85	100	3,0	8,0	50,0	0,9	0,10	2	-

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P	M	K	N	S	H
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Features:

Toric milling cutter, Z=2, with corner radius and conically ground neck.

Very suitable for milling moulds with discharge angle.

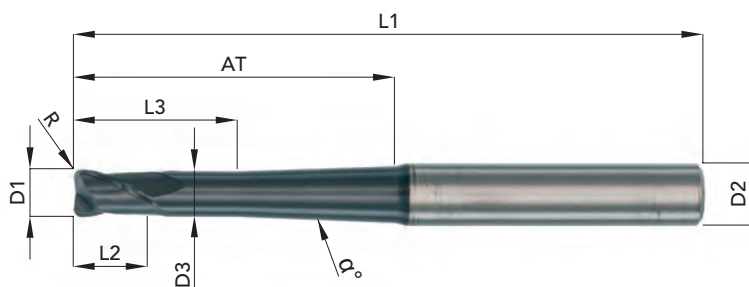
High accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter, conically ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231571	T-030-025-090-150-010-08	3,0	8	2,85	150	3,0	8,0	90,0	1,0	0,25	2	-
11231572	T-030-050-030-075-015-06	3,0	6	2,85	75	3,0	8,0	30,0	1,5	0,50	2	-
11231573	T-030-050-035-075-010-06	3,0	6	2,85	75	3,0	8,0	35,0	0,5	0,50	2	-
11231574	T-030-050-040-075-010-06	3,0	6	2,85	75	3,0	8,0	40,0	0,5	0,50	2	-
11231575	T-030-050-045-100-015-06	3,0	6	2,85	100	3,0	8,0	45,0	0,5	0,50	2	-
11231576	T-030-050-060-100-015-08	3,0	8	2,85	100	3,0	8,0	60,0	0,5	0,50	2	-
11231577	T-030-050-075-120-004-06	3,0	6	2,85	120	3,0	8,0	75,0	0,5	0,50	2	-
11231578	T-030-100-030-075-009-06	3,0	6	2,85	75	3,0	8,0	30,0	1,0	1,00	2	-
11231579	T-030-100-040-075-010-06	3,0	6	2,85	75	3,0	8,0	40,0	1,0	1,00	2	-
11231580	T-030-100-060-100-009-06	3,0	6	2,85	100	3,0	8,0	60,0	1,0	1,00	2	-
11231581	T-040-050-030-075-010-06	4,0	6	3,85	75	4,0	8,0	30,0	1,0	0,50	2	-
11231582	T-040-050-030-075-012-06	4,0	6	3,85	75	4,0	8,0	30,0	1,2	0,50	2	-
11231583	T-040-050-030-075-015-06	4,0	6	3,85	75	4,0	8,0	30,0	1,5	0,50	2	-
11231584	T-040-050-040-080-009-06	4,0	6	3,85	80	4,0	8,0	40,0	0,9	0,50	2	-
11231585	T-040-050-040-100-014-06	4,0	6	3,85	100	4,0	15,0	40,0	1,4	0,50	2	-
11231586	T-040-050-040-085-015-08	4,0	8	3,85	85	4,0	8,0	40,0	1,5	0,50	2	-
11231587	T-040-050-060-100-015-08	4,0	8	3,85	100	4,0	8,0	60,0	1,5	0,50	2	-
11231588	T-040-050-075-120-010-08	4,0	8	3,85	120	4,0	8,0	75,0	1,0	0,50	2	-
11231589	T-040-050-090-150-010-08	4,0	8	3,85	150	4,0	8,0	90,0	1,0	0,50	2	-
11231590	T-040-100-040-080-009-06	4,0	6	3,85	80	4,0	20,0	40,0	0,9	1,00	2	-
11231591	T-040-100-040-100-014-06	4,0	6	3,85	100	4,0	15,0	40,0	1,4	1,00	2	-

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P	M	K	N	S	H
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Features:

Toric milling cutter, Z=2, with corner radius and **conically ground neck**.

Very suitable for milling moulds with discharge angle.

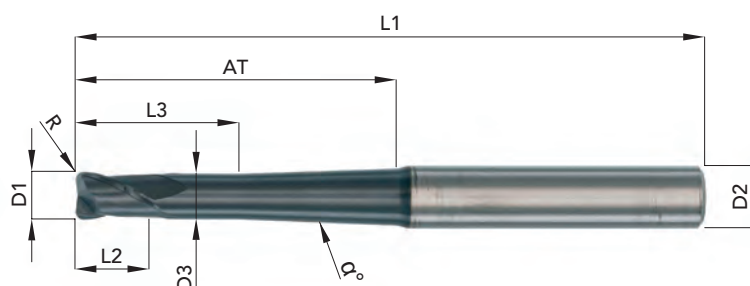
High accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter, conically ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231592	T-040-100-040-080-015-06	4,0	6	3,85	80	4,0	20,0	40,0	1,5	1,00	2	-
11231593	T-040-100-060-120-009-08	4,0	8	3,85	120	4,0	20,0	60,0	0,9	1,00	2	-
11231594	T-040-100-060-120-015-08	4,0	8	3,85	120	4,0	20,0	60,0	1,5	1,00	2	-
11231595	T-040-150-040-080-015-06	4,0	6	3,85	80	4,0	20,0	40,0	1,5	1,50	2	-
11231596	T-050-050-030-070-015-08	5,0	8	4,80	70	5,0	10,0	30,0	1,5	0,50	2	-
11231597	T-050-050-040-100-015-08	5,0	8	4,80	100	5,0	10,0	40,0	1,5	0,50	2	-
11231598	T-050-050-060-120-015-08	5,0	8	4,80	120	5,0	10,0	60,0	1,5	0,50	2	-
11231599	T-050-100-045-100-006-06	5,0	6	4,80	100	5,0	10,0	45,0	0,6	1,00	2	-
11231600	T-060-050-040-080-009-08	6,0	8	5,80	80	9,0	20,0	40,0	0,9	0,50	2	-
11231601	T-060-050-040-080-015-08	6,0	8	5,80	80	9,0	20,0	40,0	1,5	0,50	2	-
11231602	T-060-050-065-120-009-08	6,0	8	5,80	120	9,0	20,0	65,0	0,9	0,50	2	-
11231603	T-060-050-075-120-013-10	6,0	10	5,80	120	9,0	15,0	75,0	1,3	0,50	2	-
11231604	T-060-100-030-080-009-10	6,0	10	5,80	80	9,0	20,0	30,0	0,9	1,00	2	-
11231605	T-060-100-040-080-009-08	6,0	8	5,80	80	9,0	20,0	40,0	0,9	1,00	2	-
11231606	T-060-100-040-080-015-08	6,0	8	5,80	80	9,0	20,0	40,0	1,5	1,00	2	-
11231607	T-060-100-050-100-012-08	6,0	8	5,80	100	9,0	20,0	50,0	1,2	1,00	2	-
11231608	T-060-100-060-100-009-08	6,0	8	5,80	100	9,0	20,0	60,0	0,9	1,00	2	-
11231609	T-060-100-075-120-009-10	6,0	10	5,80	120	9,0	20,0	75,0	0,9	1,00	2	-
11231610	T-060-100-075-120-013-10	6,0	10	5,80	120	9,0	20,0	75,0	1,3	1,00	2	-

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P	M	K	N	S	H
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Features:

Toric milling cutter, Z=2, with corner radius and conically ground neck.

Very suitable for milling moulds with discharge angle.

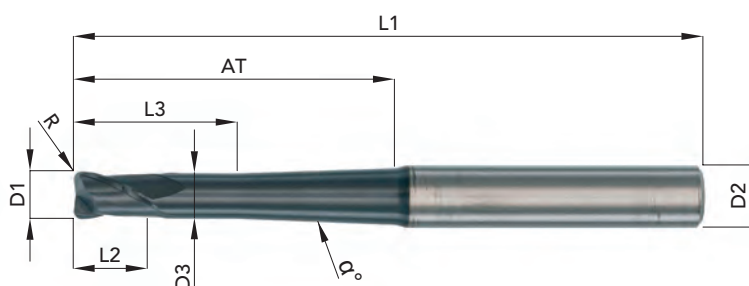
High accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-040
Coating C-160



Toric milling cutter, conically ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231611	T-060-100-085-150-010-10	6,0	10	5,80	150	9,0	15,0	85,0	1,0	1,00	2	-
11231612	T-060-100-110-165-010-12	6,0	12	5,80	165	9,0	12,0	110,0	1,0	1,00	2	-
11231613	T-060-200-040-080-015-08	6,0	8	5,80	80	9,0	20,0	40,0	1,5	2,00	2	-
11231614	T-060-200-050-100-012-08	6,0	8	5,80	100	9,0	20,0	50,0	1,2	2,00	2	-
11231615	T-060-200-075-120-004-08	6,0	8	5,80	120	9,0	20,0	75,0	0,4	2,00	2	-
11231616	T-060-250-040-080-015-08	6,0	8	5,80	80	9,0	20,0	40,0	1,5	2,50	2	-
11231617	T-080-050-065-120-009-10	8,0	10	7,70	120	12,0	15,0	65,0	0,9	0,50	2	-
11231618	T-080-100-050-100-011-10	8,0	10	7,70	100	12,0	20,0	50,0	1,1	1,00	2	-
11231619	T-080-100-065-120-009-10	8,0	10	7,70	120	12,0	15,0	65,0	0,9	1,00	2	-
11231620	T-080-100-090-150-010-12	8,0	12	7,70	150	12,0	15,0	90,0	1,0	1,00	2	-
11231621	T-080-100-120-175-010-12	8,0	12	7,70	175	12,0	15,0	120,0	1,0	1,00	2	-
11231622	T-080-200-050-100-009-10	8,0	10	7,70	100	12,0	15,0	50,0	0,9	2,00	2	-
11231623	T-080-200-050-100-015-10	8,0	10	7,70	100	12,0	20,0	50,0	1,5	2,00	2	-
11231624	T-080-200-065-120-009-10	8,0	10	7,70	120	12,0	15,0	65,0	0,9	2,00	2	-
11231625	T-100-100-070-120-008-12	10,0	12	9,65	120	15,0	30,0	70,0	0,8	1,00	2	-
11231626	T-100-100-100-150-009-16	10,0	16	9,65	150	15,0	30,0	100,0	0,9	1,00	2	-
11231627	T-100-200-065-120-009-12	10,0	12	9,65	120	15,0	30,0	65,0	0,9	2,00	2	-
11231628	T-100-300-065-120-009-12	10,0	12	9,65	120	15,0	30,0	65,0	0,9	3,00	2	-
11231629	T-100-300-100-150-009-16	10,0	16	9,65	150	15,0	30,0	100,0	0,9	3,00	2	-

Subject to technical modifications

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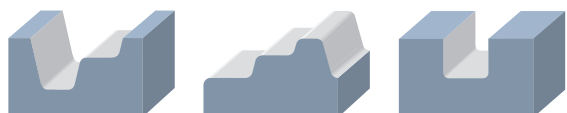
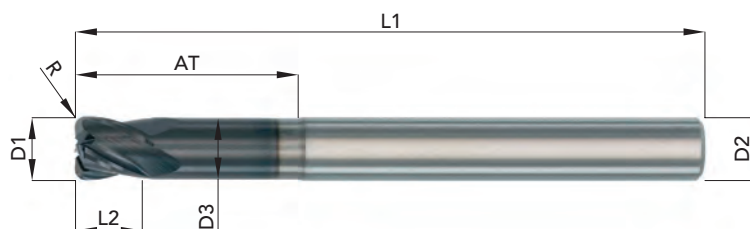
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.

Very suitable for milling deep shapes in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160

**Toric milling cutter, Z=4, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231630	FZ-008-010-004-060-000-06	0,8	6	0,75	60	1,2	4,0	4,0	0,0	0,10	4	V
11231631	FZ-008-010-008-060-000-06	0,8	6	0,75	60	1,2	8,0	8,0	0,0	0,10	4	V
11231632	FZ-008-010-012-060-000-06	0,8	6	0,75	60	1,2	12,0	12,0	0,0	0,10	4	V
11231633	FZ-010-015-005-060-000-06	1,0	6	0,95	60	1,5	5,0	5,0	0,0	0,15	4	V
11231634	FZ-010-015-008-060-000-06	1,0	6	0,95	60	1,5	8,0	8,0	0,0	0,15	4	V
11231635	FZ-012-020-006-060-000-06	1,2	6	1,10	60	1,8	6,0	6,0	0,0	0,20	4	V
11231636	FZ-012-020-010-060-000-06	1,2	6	1,10	60	1,8	10,0	10,0	0,0	0,20	4	V
11231637	FZ-012-020-015-060-000-06	1,2	6	1,10	60	1,8	15,0	15,0	0,0	0,25	4	V
11231638	FZ-015-025-006-060-000-06	1,5	6	1,40	60	2,3	6,0	6,0	0,0	0,25	4	V
11231639	FZ-015-025-010-060-000-06	1,5	6	1,40	60	2,3	10,0	10,0	0,0	0,25	4	V
11231640	FZ-015-025-015-060-000-06	1,5	6	1,40	60	2,3	15,0	15,0	0,0	0,25	4	V
11231641	FZ-015-025-020-060-000-06	1,5	6	1,40	60	2,3	20,0	20,0	0,0	0,25	4	V
11231642	FZ-015-030-006-060-000-06	1,5	6	1,40	60	2,3	6,0	6,0	0,0	0,30	4	V
11231643	FZ-015-050-006-060-000-06	1,5	6	1,40	60	2,3	6,0	6,0	0,0	0,50	4	V
11231644	FZ-020-025-010-060-000-06	2,0	6	1,90	60	3,0	10,0	10,0	0,0	0,25	4	-
11231645	FZ-020-025-015-060-000-06	2,0	6	1,90	60	3,0	15,0	15,0	0,0	0,25	4	-
11231646	FZ-020-025-020-060-000-06	2,0	6	1,90	60	3,0	20,0	20,0	0,0	0,25	4	-
11231647	FZ-025-040-010-060-000-06	2,5	6	2,35	60	3,8	10,0	10,0	0,0	0,40	4	-

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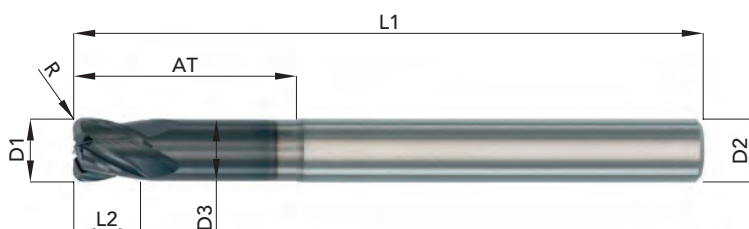
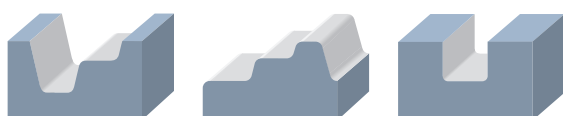
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.

Very suitable for milling deep shapes in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter, Z=4, ground

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231648	FZ-030-025-010-060-000-06	3,0	6	2,85	60	4,5	10,0	10,0	0,0	0,25	4	-
11231649	FZ-030-025-015-060-000-06	3,0	6	2,85	60	4,5	15,0	15,0	0,0	0,25	4	-
11231650	FZ-030-025-020-060-000-06	3,0	6	2,85	60	4,5	20,0	20,0	0,0	0,25	4	-
11231651	FZ-030-025-030-070-000-06	3,0	6	2,85	70	4,5	30,0	30,0	0,0	0,25	4	-
11231652	FZ-030-050-015-060-000-06	3,0	6	2,85	60	4,5	15,0	15,0	0,0	0,50	4	-
11231653	FZ-030-050-016-060-000-06	3,0	6	2,85	60	4,5	16,0	16,0	0,0	0,50	4	-
11231654	FZ-030-050-020-060-000-06	3,0	6	2,85	60	4,5	20,0	20,0	0,0	0,50	4	-
11231655	FZ-030-050-025-070-000-06	3,0	6	2,85	70	4,5	25,0	25,0	0,0	0,50	4	-
11231656	FZ-030-050-030-070-000-06	3,0	6	2,85	70	4,5	30,0	30,0	0,0	0,50	4	-
11231657	FZ-030-100-020-060-000-06	3,0	6	2,85	60	4,5	20,0	20,0	0,0	1,00	4	-
11231658	FZ-040-025-015-060-000-06	4,0	6	3,85	60	6,0	15,0	15,0	0,0	0,25	4	-
11231659	FZ-040-025-020-060-000-06	4,0	6	3,85	60	6,0	20,0	20,0	0,0	0,25	4	-
11231660	FZ-040-025-030-070-000-06	4,0	6	3,85	70	6,0	30,0	30,0	0,0	0,25	4	-
11231661	FZ-040-025-046-080-000-06	4,0	6	3,85	80	6,0	46,0	46,0	0,0	0,25	4	-
11231662	FZ-040-040-016-060-000-06	4,0	6	3,85	60	6,0	16,0	16,0	0,0	0,40	4	-
11231663	FZ-040-040-024-070-000-06	4,0	6	3,85	70	6,0	24,0	24,0	0,0	0,40	4	-
11231664	FZ-040-050-024-070-000-06	4,0	6	3,85	70	6,0	24,0	24,0	0,0	0,50	4	-
11231665	FZ-040-050-030-070-000-06	4,0	6	3,85	70	6,0	30,0	30,0	0,0	0,50	4	-
11231666	FZ-040-050-050-100-000-06	4,0	6	3,85	100	6,0	50,0	50,0	0,0	0,50	4	-
11231667	FZ-040-100-016-060-000-06	4,0	6	3,85	60	6,0	16,0	16,0	0,0	1,00	4	-
11231668	FZ-040-100-028-070-000-06	4,0	6	3,85	70	6,0	28,0	28,0	0,0	1,00	4	-
11231669	FZ-040-100-032-070-000-06	4,0	6	3,85	70	6,0	32,0	32,0	0,0	1,00	4	-

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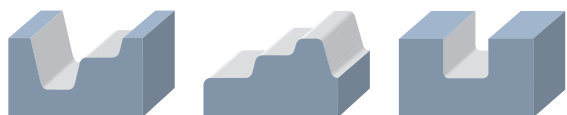
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.

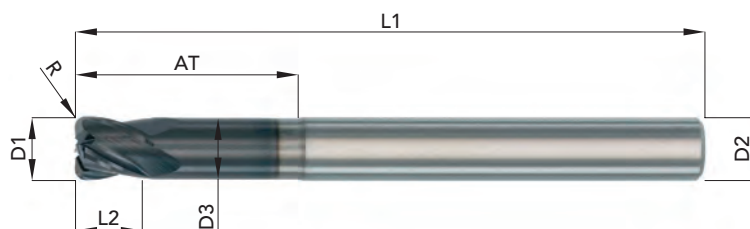
Very suitable for milling deep shapes in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter, Z=4, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231670	FZ-050-025-020-060-000-06	5,0	6	4,80	60	6,0	20,0	20,0	0,0	0,25	4	-
11231671	FZ-050-025-040-070-000-06	5,0	6	4,80	70	6,0	40,0	40,0	0,0	0,25	4	-
11231672	FZ-050-050-040-070-000-06	5,0	6	4,80	70	6,0	40,0	40,0	0,0	0,50	4	-
11231673	FZ-050-100-020-060-000-06	5,0	6	4,80	60	6,0	20,0	20,0	0,0	1,00	4	-
11231674	FZ-060-025-020-060-000-06	6,0	6	5,80	60	6,0	20,0	20,0	0,0	0,25	4	-
11231675	FZ-060-025-030-060-000-06	6,0	6	5,80	60	6,0	30,0	30,0	0,0	0,25	4	-
11231676	FZ-060-025-040-075-000-06	6,0	6	5,80	75	6,0	40,0	40,0	0,0	0,25	4	-
11231677	FZ-060-025-070-120-000-06	6,0	6	5,80	120	6,0	70,0	70,0	0,0	0,25	4	-
11231678	FZ-060-050-020-060-000-06	6,0	6	5,80	60	6,0	20,0	20,0	0,0	0,50	4	-
11231679	FZ-060-050-030-060-000-06	6,0	6	5,80	60	6,0	30,0	30,0	0,0	0,50	4	-
11231680	FZ-060-050-040-075-000-06	6,0	6	5,80	75	6,0	40,0	40,0	0,0	0,50	4	-
11231681	FZ-060-080-020-060-000-06	6,0	6	5,80	60	6,0	20,0	20,0	0,0	0,80	4	-
11231682	FZ-060-100-020-060-000-06	6,0	6	5,80	60	6,0	20,0	20,0	0,0	1,00	4	-
11231683	FZ-060-100-030-060-000-06	6,0	6	5,80	60	6,0	30,0	30,0	0,0	1,00	4	-
11231684	FZ-060-100-040-075-000-06	6,0	6	5,80	75	6,0	40,0	40,0	0,0	1,00	4	-
11231685	FZ-060-150-040-075-000-06	6,0	6	5,80	75	6,0	40,0	40,0	0,0	1,50	4	-
11231686	FZ-060-200-040-075-000-06	6,0	6	5,80	75	6,0	40,0	40,0	0,0	2,00	4	-

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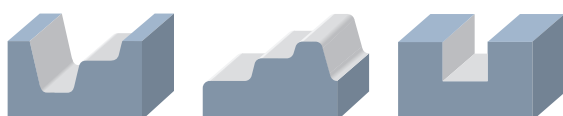
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.

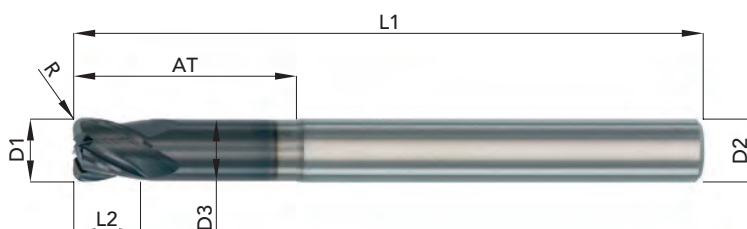
Very suitable for h deep shapes in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter, Z=4, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231687	FZ-080-020-040-070-000-08	8,0	8	7,70	70	8,0	40,0	40,0	0,0	0,20	4	-
11231688	FZ-080-025-035-070-000-08	8,0	8	7,70	70	8,0	35,0	35,0	0,0	0,25	4	-
11231689	FZ-080-025-055-100-000-08	8,0	8	7,70	100	8,0	55,0	55,0	0,0	0,25	4	-
11231690	FZ-080-050-035-070-000-08	8,0	8	7,70	70	8,0	35,0	35,0	0,0	0,50	4	-
11231691	FZ-080-050-055-100-000-08	8,0	8	7,70	100	8,0	55,0	55,0	0,0	0,50	4	-
11231692	FZ-080-100-025-059-000-08	8,0	8	7,70	59	8,0	25,0	25,0	0,0	1,00	4	-
11231693	FZ-080-100-035-070-000-08	8,0	8	7,70	70	8,0	35,0	35,0	0,0	1,00	4	-
11231694	FZ-080-100-055-100-000-08	8,0	8	7,70	100	8,0	55,0	55,0	0,0	1,00	4	-
11231695	FZ-080-200-040-070-000-08	8,0	8	7,70	70	8,0	40,0	40,0	0,0	2,00	4	-
11231696	FZ-080-200-055-100-000-08	8,0	8	7,70	100	8,0	55,0	55,0	0,0	2,00	4	-
11231697	FZ-100-025-035-075-000-10	10,0	10	9,80	75	10,0	35,0	35,0	0,0	0,25	4	-
11231698	FZ-100-050-035-075-000-10	10,0	10	9,80	75	10,0	35,0	35,0	0,0	0,50	4	-
11231699	FZ-100-050-055-100-000-10	10,0	10	9,80	100	10,0	55,0	55,0	0,0	0,50	4	-
11231700	FZ-100-100-035-075-000-10	10,0	10	9,80	75	10,0	35,0	35,0	0,0	1,00	4	-
11231701	FZ-100-100-055-100-000-10	10,0	10	9,80	100	10,0	55,0	55,0	0,0	1,00	4	-
11231702	FZ-100-150-055-100-000-10	10,0	10	9,80	100	10,0	55,0	55,0	0,0	1,50	4	-
11231703	FZ-100-200-035-075-000-10	10,0	10	9,80	75	10,0	35,0	35,0	0,0	2,00	4	-
11231704	FZ-100-200-055-100-000-10	10,0	10	9,80	100	10,0	55,0	55,0	0,0	2,00	4	-
11231705	FZ-120-025-045-100-000-12	12,0	12	11,60	100	12,0	45,0	45,0	0,0	0,25	4	-
11231706	FZ-120-025-055-100-000-12	12,0	12	11,60	100	12,0	55,0	55,0	0,0	0,25	4	-
11231707	FZ-120-050-045-100-000-12	12,0	12	11,60	100	12,0	45,0	45,0	0,0	0,50	4	-

Subject to technical modifications

P	M	K	N	S	H
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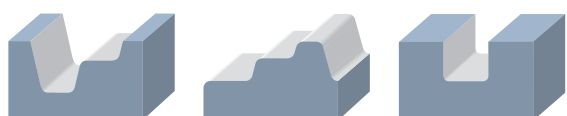
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.

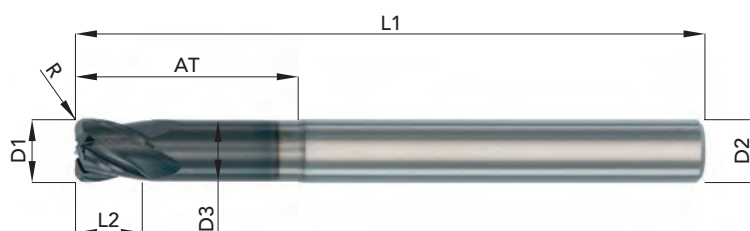
Very suitable for milling deep shapes in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter, Z=4, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11231708	FZ-020-020-004-060-000-04	2,0	4	1,90	60	2,0	4,0	4,0	0,0	0,20	4	-
11231709	FZ-020-020-008-060-000-04	2,0	4	1,90	60	2,0	8,0	8,0	0,0	0,20	4	-
11231710	FZ-020-020-010-060-000-04	2,0	4	1,90	60	2,0	10,0	10,0	0,0	0,20	4	-
11231711	FZ-020-020-012-060-000-04	2,0	4	1,90	60	2,0	12,0	12,0	0,0	0,20	4	-
11231712	FZ-020-020-016-060-000-04	2,0	4	1,90	60	2,0	16,0	16,0	0,0	0,20	4	-
11231713	FZ-020-020-020-060-000-04	2,0	4	1,90	60	2,0	20,0	20,0	0,0	0,20	4	-
11231714	FZ-030-030-006-060-000-04	3,0	4	2,85	60	3,0	6,0	6,0	0,0	0,30	4	-
11231715	FZ-030-030-009-060-000-04	3,0	4	2,85	60	3,0	9,0	9,0	0,0	0,30	4	-
11231716	FZ-030-030-012-060-000-04	3,0	4	2,85	60	3,0	12,0	12,0	0,0	0,30	4	-
11231717	FZ-030-030-015-060-000-04	3,0	4	2,85	60	3,0	15,0	15,0	0,0	0,30	4	-
11231718	FZ-030-030-018-060-000-04	3,0	4	2,85	60	3,0	18,0	18,0	0,0	0,30	4	-
11231719	FZ-030-030-024-070-000-04	3,0	4	2,85	70	3,0	24,0	24,0	0,0	0,30	4	-
11231720	FZ-030-030-030-070-000-04	3,0	4	2,85	70	3,0	30,0	30,0	0,0	0,30	4	-
11231721	FZ-030-050-016-060-000-04	3,0	4	2,85	60	3,0	16,0	16,0	0,0	0,50	4	-
11231722	FZ-040-040-008-060-000-04	4,0	4	3,85	60	4,0	8,0	8,0	0,0	0,40	4	-
11231723	FZ-040-040-012-060-000-04	4,0	4	3,85	60	4,0	12,0	12,0	0,0	0,40	4	-
11231724	FZ-040-040-016-060-000-04	4,0	4	3,85	60	4,0	16,0	16,0	0,0	0,40	4	-
11231725	FZ-040-040-024-070-000-04	4,0	4	3,85	70	4,0	24,0	24,0	0,0	0,40	4	-
11231726	FZ-040-040-032-070-000-04	4,0	4	3,85	70	4,0	32,0	32,0	0,0	0,40	4	-
11231727	FZ-040-040-040-070-000-04	4,0	4	3,85	70	4,0	40,0	40,0	0,0	0,40	4	-
11231728	FZ-040-100-020-060-000-04	4,0	4	3,85	60	4,0	20,0	20,0	0,0	1,00	4	-

Subject to technical modifications

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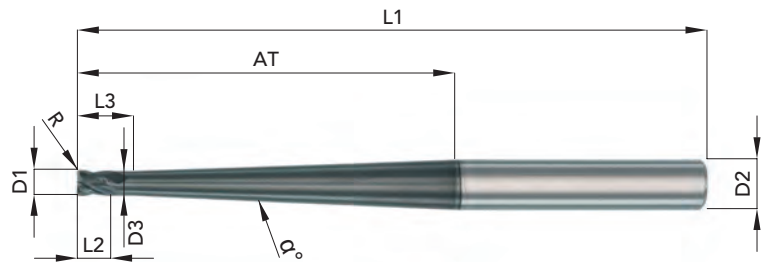
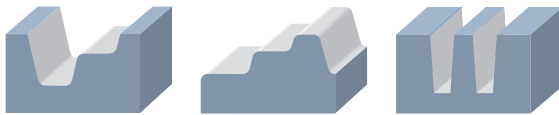
Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

Very suitable for milling deep shapes with discharge angle in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter Z=4 tapered neck

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231729	F-008-010-005-060-004-06	0,8	6	0,75	60	1,2	3,0	5,0	0,4	0,10	4	V
11231730	F-008-010-005-060-009-06	0,8	6	0,75	60	1,2	3,0	5,0	0,9	0,10	4	V
11231731	F-008-010-008-060-004-06	0,8	6	0,75	60	1,2	3,0	8,0	0,4	0,10	4	V
11231732	F-008-010-008-060-009-06	0,8	6	0,75	60	1,2	3,0	8,0	0,9	0,10	4	V
11231733	F-008-010-012-060-004-06	0,8	6	0,75	60	1,2	3,0	12,0	0,4	0,10	4	V
11231734	F-008-010-012-060-009-06	0,8	6	0,75	60	1,2	3,0	12,0	0,9	0,10	4	V
11231735	F-010-015-008-060-004-06	1,0	6	0,95	60	1,5	4,0	8,0	0,4	0,15	4	V
11231736	F-010-015-008-060-009-06	1,0	6	0,95	60	1,5	4,0	8,0	0,9	0,15	4	V
11231737	F-010-015-012-060-004-06	1,0	6	0,95	60	1,5	4,0	12,0	0,4	0,15	4	V
11231738	F-010-015-012-060-009-06	1,0	6	0,95	60	1,5	4,0	12,0	0,9	0,15	4	V
11231739	F-010-015-015-060-004-06	1,0	6	0,95	60	1,5	4,0	15,0	0,4	0,15	4	V
11231740	F-010-015-015-060-009-06	1,0	6	0,95	60	1,5	4,0	15,0	0,9	0,15	4	V
11231741	F-012-020-010-060-004-06	1,2	6	1,10	60	2,0	4,0	10,0	0,4	0,20	4	V
11231742	F-012-020-010-060-009-06	1,2	6	1,10	60	2,0	4,0	10,0	0,9	0,20	4	V
11231743	F-012-020-015-060-004-06	1,2	6	1,10	60	2,0	4,0	15,0	0,4	0,00	4	V
11231744	F-012-020-015-060-009-06	1,2	6	1,10	60	2,0	4,0	15,0	0,9	0,20	4	V
11231745	F-012-020-020-060-004-06	1,2	6	1,10	60	2,0	4,0	20,0	0,4	0,20	4	V
11231746	F-012-020-020-060-009-06	1,2	6	1,10	60	2,0	4,0	20,0	0,9	0,20	4	V
11231747	F-012-020-025-060-004-06	1,2	6	1,10	60	2,0	4,0	25,0	0,4	0,20	4	V
11231748	F-012-020-025-060-009-06	1,2	6	1,10	60	2,0	4,0	25,0	0,9	0,20	4	V

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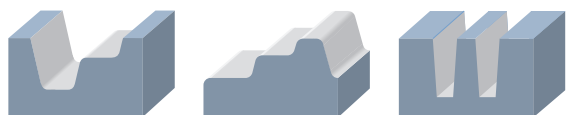
Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

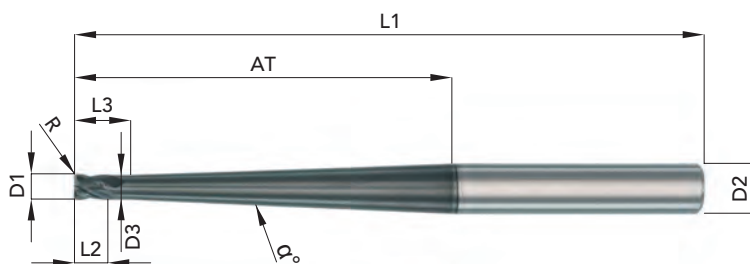
Very suitable for milling deep shapes with discharge angle in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter Z=4 tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231749	F-014-025-010-060-004-06	1,4	6	1,30	60	2,0	4,0	10,0	0,4	0,25	4	V
11231750	F-014-025-010-060-009-06	1,4	6	1,30	60	2,0	4,0	10,0	0,9	0,25	4	V
11231751	F-014-025-015-060-004-06	1,4	6	1,30	60	2,0	4,0	15,0	0,4	0,25	4	V
11231752	F-014-025-015-060-009-06	1,4	6	1,30	60	2,0	4,0	15,0	0,9	0,25	4	V
11231753	F-014-025-020-060-004-06	1,4	6	1,30	60	2,0	4,0	20,0	0,4	0,25	4	V
11231754	F-014-025-020-060-009-06	1,4	6	1,30	60	2,0	4,0	20,0	0,9	0,25	4	V
11231755	F-014-025-025-060-004-06	1,4	6	1,30	60	2,0	4,0	25,0	0,4	0,25	4	V
11231756	F-014-025-025-060-009-06	1,4	6	1,30	60	2,0	4,0	25,0	0,9	0,25	4	V
11231757	F-015-015-060-100-009-06	1,5	6	1,40	100	3,0	5,0	60,0	0,9	0,15	4	-
11231758	F-015-025-008-060-004-06	1,5	6	1,40	60	3,0	5,0	8,0	0,4	0,25	4	V
11231759	F-015-025-008-060-009-06	1,5	6	1,40	60	3,0	5,0	8,0	0,9	0,25	4	V
11231760	F-015-025-010-060-004-06	1,5	6	1,40	60	3,0	5,0	10,0	0,4	0,25	4	V
11231761	F-015-025-010-060-009-06	1,5	6	1,40	60	3,0	5,0	10,0	0,9	0,25	4	V
11231762	F-015-025-015-060-004-06	1,5	6	1,40	60	3,0	5,0	15,0	0,4	0,25	4	V
11231763	F-015-025-015-060-009-06	1,5	6	1,40	60	3,0	5,0	15,0	0,9	0,25	4	V
11231764	F-015-025-020-060-004-06	1,5	6	1,40	60	3,0	5,0	20,0	0,4	0,25	4	V
11231765	F-015-025-020-060-009-06	1,5	6	1,40	60	3,0	5,0	20,0	0,9	0,25	4	V
11231766	F-015-025-026-070-004-06	1,5	6	1,40	70	3,0	5,0	26,0	0,4	0,25	4	-
11231767	F-015-025-026-070-009-06	1,5	6	1,40	70	3,0	5,0	26,0	0,9	0,25	4	-
11231768	F-015-025-030-075-004-06	1,5	6	1,40	75	3,0	5,0	30,0	0,4	0,25	4	-
11231769	F-015-025-030-075-009-06	1,5	6	1,40	75	3,0	5,0	30,0	0,9	0,25	4	-

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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

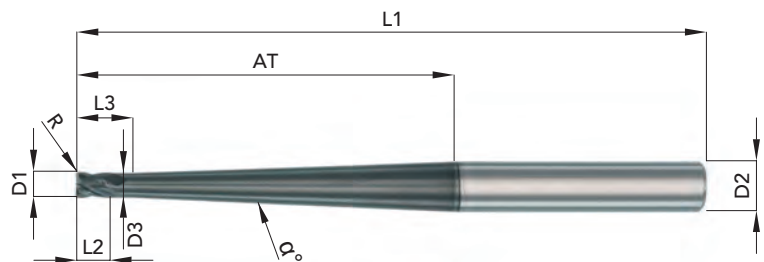
Very suitable for milling deep shapes with discharge angle in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter Z=4 tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231770	F-015-025-030-075-015-06	1,5	6	1,40	75	3,0	5,0	30,0	1,5	0,25	4	-
11231771	F-015-025-035-080-004-06	1,5	6	1,40	80	3,0	5,0	35,0	0,4	0,25	4	-
11231772	F-015-025-035-080-009-06	1,5	6	1,40	80	3,0	5,0	35,0	0,9	0,25	4	-
11231773	F-015-025-050-100-010-06	1,5	6	1,40	100	3,0	5,0	50,0	1,0	0,25	4	-
11231774	F-015-025-050-100-015-06	1,5	6	1,40	100	3,0	5,0	50,0	1,5	0,25	4	-
11231775	F-015-025-050-100-030-06	1,5	6	1,40	100	3,0	5,0	50,0	3,0	0,25	4	-
11231776	F-017-025-012-060-004-06	1,7	6	1,60	60	3,0	5,0	12,0	0,4	0,25	4	V
11231777	F-017-025-012-060-009-06	1,7	6	1,60	60	3,0	5,0	12,0	0,9	0,25	4	V
11231778	F-017-025-017-060-004-06	1,7	6	1,60	60	3,0	5,0	17,0	0,4	0,25	4	V
11231779	F-017-025-017-060-009-06	1,7	6	1,60	60	3,0	5,0	17,0	0,9	0,25	4	V
11231780	F-017-025-022-060-004-06	1,7	6	1,60	60	3,0	5,0	22,0	0,4	0,25	4	V
11231781	F-017-025-022-060-009-06	1,7	6	1,60	60	3,0	5,0	22,0	0,9	0,25	4	V
11231782	F-017-025-028-070-004-06	1,7	6	1,60	70	3,0	5,0	28,0	0,4	0,25	4	-
11231783	F-017-025-028-070-009-06	1,7	6	1,60	70	3,0	5,0	28,0	0,9	0,25	4	-
11231784	F-017-040-015-060-004-06	1,7	6	1,60	60	3,0	5,0	15,0	0,4	0,40	4	V
11231785	F-017-040-015-060-013-06	1,7	6	1,60	60	3,0	5,0	15,0	1,3	0,40	4	V
11231786	F-017-050-015-060-004-06	1,7	6	1,60	60	3,0	5,0	15,0	0,4	0,50	4	-
11231787	F-019-020-050-100-009-06	1,9	6	1,80	100	3,0	6,0	50,0	0,9	0,20	4	-
11231788	F-019-020-070-120-009-06	1,9	6	1,80	120	3,0	6,0	70,0	0,9	0,20	4	-

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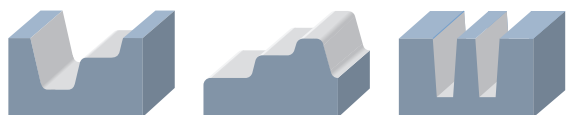
Features:

Toric milling cutter, Z=4, with corner radius and **conically ground neck**.

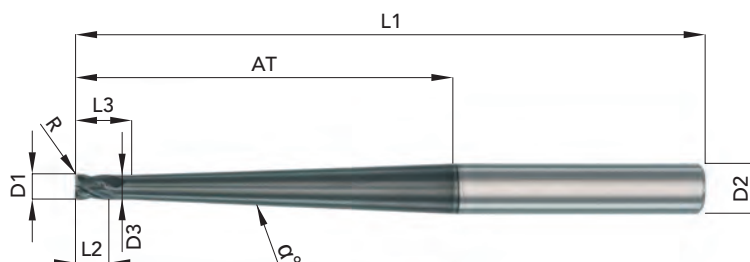
Very suitable for milling deep shapes with discharge angle in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter Z=4 tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231789	F-019-025-015-060-004-06	1,9	6	1,80	60	3,0	6,0	15,0	0,4	0,25	4	-
11231790	F-019-025-015-060-009-06	1,9	6	1,80	60	3,0	6,0	15,0	0,9	0,25	4	-
11231791	F-019-025-025-060-004-06	1,9	6	1,80	60	3,0	6,0	25,0	0,4	0,25	4	-
11231792	F-019-025-025-060-009-06	1,9	6	1,80	60	3,0	6,0	25,0	0,9	0,25	4	-
11231793	F-019-025-035-080-004-06	1,9	6	1,80	80	3,0	6,0	35,0	0,4	0,25	4	-
11231794	F-019-025-035-080-009-06	1,9	6	1,80	80	3,0	6,0	35,0	0,9	0,25	4	-
11231795	F-019-040-015-060-009-06	1,9	6	1,80	60	3,0	6,0	15,0	0,9	0,40	4	-
11231796	F-020-030-020-060-004-06	2,0	6	1,90	60	3,0	6,0	20,0	0,4	0,30	4	-
11231797	F-020-030-020-060-009-06	2,0	6	1,90	60	3,0	6,0	20,0	0,9	0,30	4	-
11231798	F-020-030-030-070-004-06	2,0	6	1,90	70	3,0	6,0	30,0	0,4	0,30	4	-
11231799	F-020-030-030-070-009-06	2,0	6	1,90	70	3,0	6,0	30,0	0,9	0,30	4	-
11231800	F-020-030-040-080-004-06	2,0	6	1,90	80	3,0	6,0	40,0	0,4	0,30	4	-
11231801	F-020-030-040-080-009-06	2,0	6	1,90	80	3,0	6,0	40,0	0,9	0,30	4	-
11231802	F-025-025-015-060-004-06	2,5	6	2,35	60	4,0	7,0	15,0	0,4	0,25	4	-
11231803	F-025-025-015-060-009-06	2,5	6	2,35	60	4,0	7,0	15,0	0,9	0,25	4	-
11231804	F-025-025-015-060-015-06	2,5	6	2,35	60	4,0	7,0	15,0	1,5	0,25	4	-
11231805	F-025-025-030-075-004-06	2,5	6	2,35	75	4,0	7,0	30,0	0,4	0,25	4	-
11231806	F-025-025-030-075-009-06	2,5	6	2,35	75	4,0	7,0	30,0	0,9	0,25	4	-
11231807	F-025-025-030-075-015-06	2,5	6	2,35	75	4,0	7,0	30,0	1,5	0,25	4	-

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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

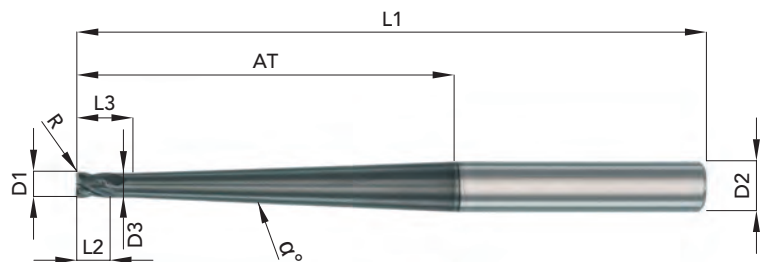
Very suitable for milling deep shapes with discharge angle in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter Z=4 tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231808	F-025-025-040-080-009-06	2,5	6	2,35	80	4,0	7,0	40,0	0,9	0,25	4	-
11231809	F-025-025-040-080-015-06	2,5	6	2,35	80	4,0	7,0	40,0	1,5	0,25	4	-
11231810	F-025-025-050-100-015-06	2,5	6	2,35	100	4,0	7,0	50,0	1,5	0,25	4	-
11231811	F-025-040-015-060-009-06	2,5	6	2,35	60	4,0	7,0	15,0	0,9	0,40	4	-
11231812	F-025-040-030-075-009-06	2,5	6	2,35	75	4,0	7,0	30,0	0,9	0,40	4	-
11231813	F-025-040-030-075-015-06	2,5	6	2,35	75	4,0	7,0	30,0	1,5	0,40	4	-
11231814	F-025-040-040-075-009-06	2,5	6	2,35	75	4,0	7,0	40,0	0,9	0,40	4	-
11231815	F-025-040-055-100-012-06	2,5	6	2,35	100	4,0	7,0	55,0	1,2	0,40	4	-
11231816	F-025-040-050-100-015-06	2,5	6	2,35	100	4,0	7,0	50,0	1,5	0,40	4	-
11231817	F-030-025-030-075-009-06	3,0	6	2,85	75	4,0	7,0	30,0	0,9	0,25	4	-
11231818	F-030-040-030-075-004-06	3,0	6	2,85	75	4,0	7,0	30,0	0,4	0,40	4	-
11231819	F-030-040-030-075-009-06	3,0	6	2,85	75	4,0	7,0	30,0	0,9	0,40	4	-
11231820	F-030-040-040-080-009-06	3,0	6	2,85	80	4,0	7,0	40,0	0,9	0,40	4	-
11231821	F-030-040-050-100-004-06	3,0	6	2,85	100	4,0	7,0	50,0	0,4	0,40	4	-
11231822	F-030-040-050-100-009-06	3,0	6	2,85	100	4,0	7,0	50,0	0,9	0,40	4	-
11231823	F-030-040-055-100-015-06	3,0	6	2,85	100	4,0	7,0	55,0	1,5	0,40	4	-
11231824	F-030-040-070-120-009-06	3,0	6	2,85	120	4,0	7,0	70,0	0,9	0,40	4	-
11231825	F-040-040-035-080-004-06	4,0	6	3,85	80	5,0	8,0	35,0	0,4	0,40	4	-
11231826	F-040-040-035-080-009-06	4,0	6	3,85	80	5,0	8,0	35,0	0,9	0,40	4	-

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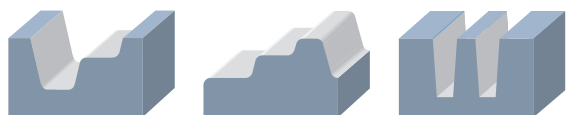
Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

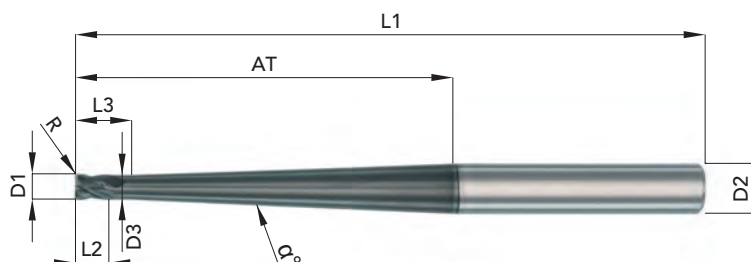
Very suitable for milling deep shapes with discharge angle in mould construction due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-160



Toric milling cutter Z=4 tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231827	F-040-040-050-100-004-06	4,0	6	3,85	100	5,0	8,0	50,0	0,4	0,40	4	-
11231828	F-040-040-050-100-009-08	4,0	8	3,85	100	5,0	8,0	50,0	0,9	0,40	4	-
11231829	F-040-040-055-100-015-08	4,0	8	3,85	100	5,0	8,0	55,0	1,5	0,40	4	-
11231830	F-040-040-065-120-004-06	4,0	6	3,85	120	5,0	8,0	65,0	0,4	0,40	4	-
11231831	F-040-040-065-120-009-08	4,0	8	3,85	120	5,0	8,0	65,0	0,9	0,40	4	-
11231832	F-040-040-065-120-015-08	4,0	8	3,85	120	5,0	8,0	65,0	1,5	0,40	4	-
11231833	F-060-050-070-120-004-10	6,0	10	5,80	120	6,0	15,0	70,0	0,4	0,50	4	-
11231834	F-060-050-065-120-009-10	6,0	10	5,80	120	6,0	15,0	65,0	0,9	0,50	4	-
11231835	F-060-050-065-120-015-10	6,0	10	5,80	120	6,0	15,0	65,0	1,5	0,50	4	-
11231836	F-060-100-040-080-009-08	6,0	8	5,80	80	6,0	15,0	40,0	0,9	1,00	4	-
11231837	F-060-100-065-120-009-10	6,0	10	5,80	120	6,0	15,0	65,0	0,9	1,00	4	-
11231838	F-060-100-065-120-015-10	6,0	10	5,80	120	6,0	15,0	65,0	1,5	1,00	4	-
11231839	F-080-100-062-100-009-10	8,0	10	7,70	100	8,0	20,0	62,0	0,9	1,00	4	-
11231840	F-080-100-070-150-009-10	8,0	10	7,70	150	8,0	20,0	70,0	0,9	1,00	4	-
11231841	F-080-100-070-150-015-12	8,0	12	7,70	150	8,0	20,0	70,0	1,5	1,00	4	-
11231842	F-080-200-070-125-010-10	8,0	10	7,70	125	8,0	20,0	70,0	1,0	2,00	4	-
11231843	F-100-100-060-100-009-12	10,0	12	9,65	100	10,0	20,0	60,0	0,9	1,00	4	-
11231844	F-100-100-070-150-004-12	10,0	12	9,65	150	10,0	20,0	70,0	0,4	1,00	4	-
11231845	F-100-100-070-150-008-12	10,0	12	9,65	150	10,0	20,0	70,0	0,8	1,00	4	-
11231846	F-120-100-070-150-015-16	12,0	16	11,60	150	12,0	24,0	70,0	1,5	1,00	4	-
11231847	F-120-100-070-170-016-16	12,0	16	11,60	170	12,0	24,0	70,0	1,6	1,00	4	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

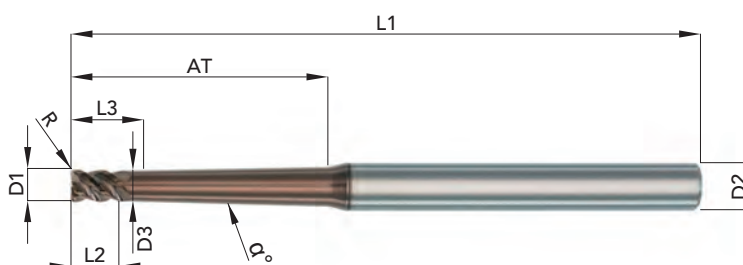
Very suitable for milling **with high feed per tooth** of deep shapes with discharge angle in mould making due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231848	PSM-010-015-005-060-004-04	1,0	4	0,95	60	1,0	2,0	5,0	0,4	0,15	4	-
11231849	PSM-010-015-005-060-009-04	1,0	4	0,95	60	1,0	2,0	5,0	0,9	0,15	4	-
11231850	PSM-010-015-010-060-004-04	1,0	4	0,95	60	1,0	2,0	10,0	0,4	0,15	4	-
11231851	PSM-010-015-010-060-009-04	1,0	4	0,95	60	1,0	2,0	10,0	0,9	0,15	4	-
11231852	PSM-010-015-015-060-004-04	1,0	4	0,95	60	1,0	2,0	15,0	0,4	0,15	4	-
11231853	PSM-010-015-015-060-009-04	1,0	4	0,95	60	1,0	2,0	15,0	0,9	0,15	4	-
11231854	PSM-010-015-020-060-004-04	1,0	4	0,95	60	1,0	2,0	20,0	0,4	0,15	4	-
11231855	PSM-010-015-020-060-009-04	1,0	4	0,95	60	1,0	2,0	20,0	0,9	0,15	4	-
11231856	PSM-012-020-006-060-004-04	1,2	4	1,10	60	1,5	2,5	6,0	0,4	0,20	4	-
11231857	PSM-012-020-006-060-009-04	1,2	4	1,10	60	1,5	2,5	6,0	0,9	0,20	4	-
11231858	PSM-012-020-012-060-004-04	1,2	4	1,10	60	1,5	2,5	12,0	0,4	0,20	4	-
11231859	PSM-012-020-012-060-009-04	1,2	4	1,10	60	1,5	2,5	12,0	0,9	0,20	4	-
11231860	PSM-012-020-018-060-004-04	1,2	4	1,10	60	1,5	2,5	18,0	0,4	0,20	4	-
11231861	PSM-012-020-018-060-009-04	1,2	4	1,10	60	1,5	2,5	18,0	0,9	0,20	4	-
11231862	PSM-012-020-024-060-004-04	1,2	4	1,10	60	1,5	2,5	24,0	0,4	0,20	4	-
11231863	PSM-012-020-024-060-009-04	1,2	4	1,10	60	1,5	2,5	24,0	0,9	0,20	4	-
11231864	PSM-015-025-008-060-004-04	1,5	4	1,40	60	2,0	3,0	8,0	0,4	0,25	4	-
11231865	PSM-015-025-008-060-009-04	1,5	4	1,40	60	2,0	3,0	8,0	0,9	0,25	4	-
11231866	PSM-015-025-015-060-004-04	1,5	4	1,40	60	2,0	3,0	15,0	0,4	0,25	4	-
11231867	PSM-015-025-015-060-009-04	1,5	4	1,40	60	2,0	3,0	15,0	0,9	0,25	4	-

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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

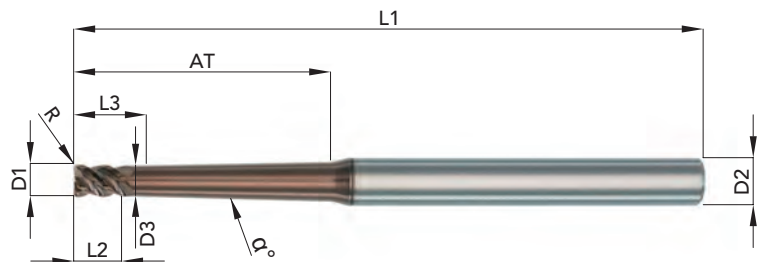
Very suitable for milling **with high feed per tooth** of deep shapes with discharge angle in mould making due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231868	PSM-015-025-023-060-004-04	1,5	4	1,40	60	2,0	3,0	23,0	0,4	0,25	4	-
11231869	PSM-015-025-023-060-009-04	1,5	4	1,40	60	2,0	3,0	23,0	0,9	0,25	4	-
11231870	PSM-015-025-030-060-004-04	1,5	4	1,40	60	2,0	3,0	30,0	0,4	0,25	4	-
11231871	PSM-015-025-030-060-009-04	1,5	4	1,40	60	2,0	3,0	30,0	0,9	0,25	4	-
11231872	PSM-020-025-010-060-004-06	2,0	6	1,90	60	3,0	4,0	10,0	0,4	0,25	4	-
11231873	PSM-020-025-010-060-009-06	2,0	6	1,90	60	3,0	4,0	10,0	0,9	0,25	4	-
11231874	PSM-020-025-016-060-004-06	2,0	6	1,90	60	3,0	4,0	16,0	0,4	0,25	4	-
11231875	PSM-020-025-016-060-009-06	2,0	6	1,90	60	3,0	4,0	16,0	0,9	0,25	4	-
11231876	PSM-020-025-020-060-004-06	2,0	6	1,90	60	3,0	4,0	20,0	0,4	0,25	4	-
11231877	PSM-020-025-020-060-009-06	2,0	6	1,90	60	3,0	4,0	20,0	0,9	0,25	4	-
11231878	PSM-020-025-030-070-004-06	2,0	6	1,90	70	3,0	4,0	30,0	0,4	0,25	4	-
11231879	PSM-020-025-030-070-009-06	2,0	6	1,90	70	3,0	4,0	30,0	0,9	0,25	4	-
11231880	PSM-020-025-040-080-004-06	2,0	6	1,90	80	3,0	4,0	40,0	0,4	0,25	4	-
11231881	PSM-020-025-040-080-009-06	2,0	6	1,90	80	3,0	4,0	40,0	0,9	0,25	4	-
11231882	PSM-020-025-050-100-004-06	2,0	6	1,90	100	3,0	4,0	50,0	0,4	0,25	4	-
11231883	PSM-020-025-050-100-009-06	2,0	6	1,90	100	3,0	4,0	50,0	0,9	0,25	4	-
11231884	PSM-020-050-010-060-004-06	2,0	6	1,90	60	3,0	4,0	10,0	0,4	0,50	4	-
11231885	PSM-020-050-010-060-009-06	2,0	6	1,90	60	3,0	4,0	10,0	0,9	0,50	4	-
11231886	PSM-020-050-016-060-004-06	2,0	6	1,90	60	3,0	4,0	16,0	0,4	0,50	4	-
11231887	PSM-020-050-016-060-009-06	2,0	6	1,90	60	3,0	4,0	16,0	0,9	0,50	4	-

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P	M	K	N	S	H
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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

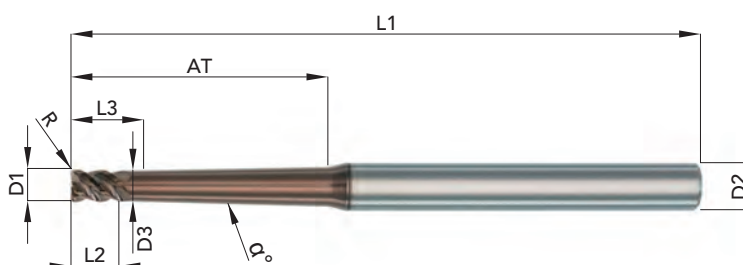
Very suitable for milling **with high feed per tooth** of deep shapes with discharge angle in mould making due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231889	PSM-020-050-020-060-004-06	2,0	6	1,90	60	3,0	4,0	20,0	0,4	0,50	4	-
11231890	PSM-020-050-020-060-009-06	2,0	6	1,90	60	3,0	4,0	20,0	0,9	0,50	4	-
11231891	PSM-020-050-030-070-004-06	2,0	6	1,90	70	3,0	4,0	30,0	0,4	0,50	4	-
11231892	PSM-020-050-030-070-009-06	2,0	6	1,90	70	3,0	4,0	30,0	0,9	0,50	4	-
11231893	PSM-020-050-040-080-004-06	2,0	6	1,90	80	3,0	4,0	40,0	0,4	0,50	4	-
11231894	PSM-020-050-040-080-009-06	2,0	6	1,90	80	3,0	4,0	40,0	0,9	0,50	4	-
11231895	PSM-020-050-050-100-004-06	2,0	6	1,90	100	3,0	4,0	50,0	0,4	0,50	4	-
11231896	PSM-020-050-050-100-009-06	2,0	6	1,90	100	3,0	4,0	50,0	0,9	0,50	4	-
11231897	PSM-025-025-010-060-004-06	2,5	6	2,40	60	3,0	4,0	10,0	0,4	0,25	4	-
11231898	PSM-025-025-010-060-009-06	2,5	6	2,40	60	3,0	4,0	10,0	0,9	0,25	4	-
11231899	PSM-025-025-016-060-004-06	2,5	6	2,40	60	3,0	4,0	16,0	0,4	0,25	4	-
11231900	PSM-025-025-016-060-009-06	2,5	6	2,40	60	3,0	4,0	16,0	0,9	0,25	4	-
11231901	PSM-025-025-023-060-004-06	2,5	6	2,40	60	3,0	4,0	23,0	0,4	0,25	4	-
11231902	PSM-025-025-023-060-009-06	2,5	6	2,40	60	3,0	4,0	23,0	0,9	0,25	4	-
11231903	PSM-025-025-030-070-004-06	2,5	6	2,40	70	3,0	4,0	30,0	0,4	0,25	4	-
11231904	PSM-025-025-030-070-009-06	2,5	6	2,40	70	3,0	4,0	30,0	0,9	0,25	4	-
11231905	PSM-025-025-036-070-004-06	2,5	6	2,40	70	3,0	4,0	30,0	0,4	0,25	4	-
11231906	PSM-025-025-036-070-009-06	2,5	6	2,40	70	3,0	4,0	30,0	0,9	0,25	4	-
11231907	PSM-025-025-040-080-004-06	2,5	6	2,40	80	3,0	4,0	40,0	0,4	0,25	4	-
11231908	PSM-025-025-040-080-009-06	2,5	6	2,40	80	3,0	4,0	40,0	0,9	0,25	4	-
11231909	PSM-025-025-050-100-004-06	2,5	6	2,40	100	3,0	4,0	50,0	0,4	0,25	4	-
11231910	PSM-025-025-050-100-009-06	2,5	6	2,40	100	3,0	4,0	50,0	0,9	0,25	4	-

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P	M	K	N	S	H
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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

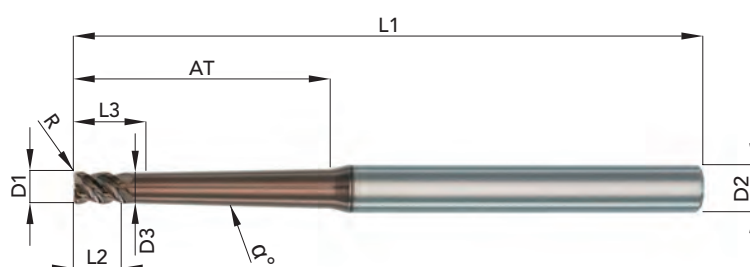
Very suitable for milling **with high feed per tooth** of deep shapes with discharge angle in mould making due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231911	PSM-025-050-010-060-004-06	2,5	6	2,40	60	3,0	4,0	10,0	0,4	0,50	4	-
11231912	PSM-025-050-010-060-009-06	2,5	6	2,40	60	3,0	4,0	10,0	0,9	0,50	4	-
11231913	PSM-025-050-016-060-004-06	2,5	6	2,40	60	3,0	4,0	16,0	0,4	0,50	4	-
11231914	PSM-025-050-016-060-009-06	2,5	6	2,40	60	3,0	4,0	16,0	0,9	0,50	4	-
11231915	PSM-025-050-023-060-004-06	2,5	6	2,40	60	3,0	4,0	23,0	0,4	0,50	4	-
11231916	PSM-025-050-023-060-009-06	2,5	6	2,40	60	3,0	4,0	23,0	0,9	0,50	4	-
11231917	PSM-025-050-030-070-004-06	2,5	6	2,40	70	3,0	4,0	30,0	0,4	0,50	4	-
11231918	PSM-025-050-030-070-009-06	2,5	6	2,40	70	3,0	4,0	30,0	0,9	0,50	4	-
11231919	PSM-025-050-036-070-004-06	2,5	6	2,40	70	3,0	4,0	30,0	0,4	0,50	4	-
11231920	PSM-025-050-036-070-009-06	2,5	6	2,40	70	3,0	4,0	30,0	0,9	0,50	4	-
11231921	PSM-025-050-040-080-004-06	2,5	6	2,40	80	3,0	4,0	40,0	0,4	0,50	4	-
11231922	PSM-025-050-040-080-009-06	2,5	6	2,40	80	3,0	4,0	40,0	0,9	0,50	4	-
11231923	PSM-025-050-050-100-004-06	2,5	6	2,40	100	3,0	4,0	50,0	0,4	0,50	4	-
11231924	PSM-025-050-050-100-009-06	2,5	6	2,40	100	3,0	4,0	50,0	0,9	0,50	4	-

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P	M	K	N	S	H
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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

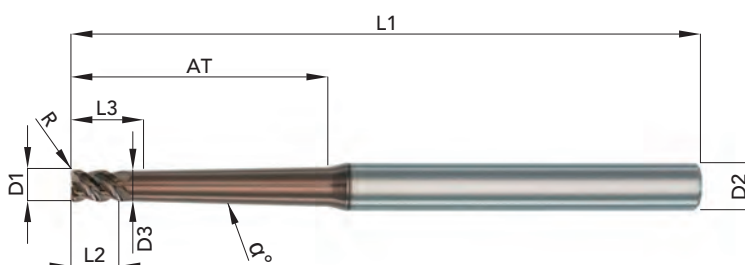
Very suitable for milling **with high feed per tooth** of deep shapes with discharge angle in mould making due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231925	PSM-030-040-018-060-004-06	3,0	6	2,85	60	4,5	5,5	18,0	0,4	0,40	4	-
11231926	PSM-030-040-018-060-009-06	3,0	6	2,85	60	4,5	5,5	18,0	0,9	0,40	4	-
11231927	PSM-030-040-024-060-004-06	3,0	6	2,85	60	4,5	5,5	24,0	0,4	0,40	4	-
11231928	PSM-030-040-024-060-009-06	3,0	6	2,85	60	4,5	5,5	24,0	0,9	0,40	4	-
11231929	PSM-030-040-030-075-004-06	3,0	6	2,85	75	4,5	5,5	30,0	0,4	0,40	4	-
11231930	PSM-030-040-030-075-009-06	3,0	6	2,85	75	4,5	5,5	30,0	0,9	0,40	4	-
11231931	PSM-030-040-040-075-004-06	3,0	6	2,85	75	4,5	5,5	40,0	0,4	0,40	4	-
11231932	PSM-030-040-040-075-009-06	3,0	6	2,85	75	4,5	5,5	40,0	0,9	0,40	4	-
11231933	PSM-030-040-050-100-004-06	3,0	6	2,85	100	4,5	5,5	50,0	0,4	0,40	4	-
11231934	PSM-030-040-050-100-009-06	3,0	6	2,85	100	4,5	5,5	50,0	0,9	0,40	4	-
11231935	PSM-030-080-018-060-004-06	3,0	6	2,85	60	4,5	5,5	18,0	0,4	0,80	4	-
11231936	PSM-030-080-018-060-009-06	3,0	6	2,85	60	4,5	5,5	18,0	0,9	0,80	4	-
11231937	PSM-030-080-024-060-004-06	3,0	6	2,85	60	4,5	5,5	24,0	0,4	0,80	4	-
11231938	PSM-030-080-024-060-009-06	3,0	6	2,85	60	4,5	5,5	24,0	0,9	0,80	4	-
11231939	PSM-030-080-030-075-004-06	3,0	6	2,85	75	4,5	5,5	30,0	0,4	0,80	4	-
11231940	PSM-030-080-030-075-009-06	3,0	6	2,85	75	4,5	5,5	30,0	0,9	0,80	4	-
11231941	PSM-030-080-040-075-004-06	3,0	6	2,85	75	4,5	5,5	40,0	0,4	0,80	4	-
11231942	PSM-030-080-040-075-009-06	3,0	6	2,85	75	4,5	5,5	40,0	0,9	0,80	4	-
11231943	PSM-030-080-050-100-004-06	3,0	6	2,85	100	4,5	5,5	50,0	0,4	0,80	4	-
11231944	PSM-030-080-050-100-009-06	3,0	6	2,85	100	4,5	5,5	50,0	0,9	0,80	4	-

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Features:

Toric milling cutter, Z=4, with corner radius and conically ground neck.

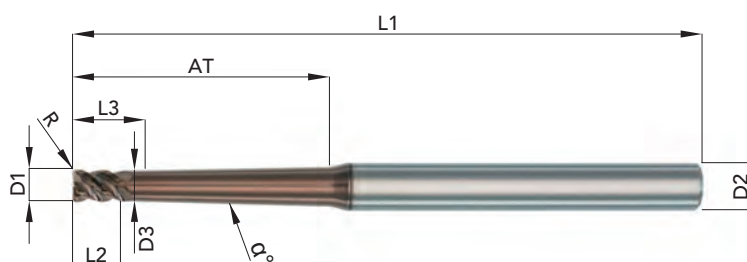
Very suitable for milling **with high feed per tooth** of deep shapes with discharge angle in mould making due to high accuracy of form and runout.

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231945	PSM-040-040-020-060-004-06	4,0	6	3,85	60	6,0	7,0	20,0	0,4	0,40	4	-
11231946	PSM-040-040-020-060-009-06	4,0	6	3,85	60	6,0	7,0	20,0	0,9	0,40	4	-
11231947	PSM-040-040-028-070-004-06	4,0	6	3,85	70	6,0	7,0	28,0	0,4	0,40	4	-
11231948	PSM-040-040-028-070-009-06	4,0	6	3,85	70	6,0	7,0	28,0	0,9	0,40	4	-
11231949	PSM-040-040-032-080-004-06	4,0	6	3,85	80	6,0	7,0	32,0	0,4	0,40	4	-
11231950	PSM-040-040-032-080-009-06	4,0	6	3,85	80	6,0	7,0	32,0	0,9	0,40	4	-
11231951	PSM-040-040-040-080-004-06	4,0	6	3,85	80	6,0	7,0	40,0	0,4	0,40	4	-
11231952	PSM-040-040-040-080-009-06	4,0	6	3,85	80	6,0	7,0	40,0	0,9	0,40	4	-
11231953	PSM-040-040-052-100-004-06	4,0	6	3,85	100	6,0	7,0	52,0	0,4	0,40	4	-
11231954	PSM-040-040-052-100-009-06	4,0	6	3,85	100	6,0	7,0	52,0	0,9	0,40	4	-
11231955	PSM-040-100-020-060-004-06	4,0	6	3,85	60	6,0	7,0	20,0	0,4	1,00	4	-
11231956	PSM-040-100-020-060-009-06	4,0	6	3,85	60	6,0	7,0	20,0	0,9	1,00	4	-
11231957	PSM-040-100-028-070-004-06	4,0	6	3,85	70	6,0	7,0	28,0	0,4	1,00	4	-
11231958	PSM-040-100-028-070-009-06	4,0	6	3,85	70	6,0	7,0	28,0	0,9	1,00	4	-
11231959	PSM-040-100-032-080-004-06	4,0	6	3,85	80	6,0	7,0	32,0	0,4	1,00	4	-
11231960	PSM-040-100-032-080-009-06	4,0	6	3,85	80	6,0	7,0	32,0	0,9	1,00	4	-
11231961	PSM-040-100-040-080-004-06	4,0	6	3,85	80	6,0	7,0	40,0	0,4	1,00	4	-
11231962	PSM-040-100-040-080-009-06	4,0	6	3,85	80	6,0	7,0	40,0	0,9	1,00	4	-
11231963	PSM-040-100-052-100-004-06	4,0	6	3,85	100	6,0	7,0	52,0	0,4	1,00	4	-
11231964	PSM-040-100-052-100-009-06	4,0	6	3,85	100	6,0	7,0	52,0	0,9	1,00	4	-

Subject to technical modifications

P	M	K	N	S	H
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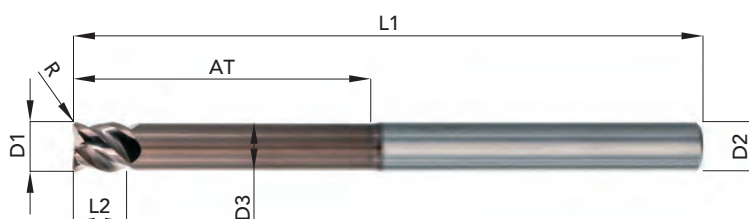
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.
Very suitable for milling **with high feed per tooth** of deep shapes in mould construction due to high accuracy of form and runout.
The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231965	PSMZ-010-015-004-051-000-04	1,0	4	0,95	51	1,0	4,0	4,0	0,0	0,15	4	-
11231966	PSMZ-010-015-005-051-000-04	1,0	4	0,95	51	1,0	5,0	5,0	0,0	0,15	4	-
11231967	PSMZ-010-015-006-051-000-04	1,0	4	0,95	51	1,0	6,0	6,0	0,0	0,15	4	-
11231968	PSMZ-010-015-008-051-000-04	1,0	4	0,95	51	1,0	8,0	8,0	0,0	0,15	4	-
11231969	PSMZ-010-015-010-051-000-04	1,0	4	0,95	51	1,0	10,0	10,0	0,0	0,15	4	-
11231970	PSMZ-010-015-012-051-000-04	1,0	4	0,95	51	1,0	12,0	12,0	0,0	0,15	4	-
11231971	PSMZ-010-015-015-051-000-04	1,0	4	0,95	51	1,0	15,0	15,0	0,0	0,15	4	-
11231972	PSMZ-012-020-004-051-000-04	1,2	4	1,10	51	1,2	4,0	4,0	0,0	0,20	4	-
11231973	PSMZ-012-020-005-051-000-04	1,2	4	1,10	51	1,2	5,0	5,0	0,0	0,20	4	-
11231974	PSMZ-012-020-006-051-000-04	1,2	4	1,10	51	1,2	6,0	6,0	0,0	0,20	4	-
11231975	PSMZ-012-020-008-051-000-04	1,2	4	1,10	51	1,2	8,0	8,0	0,0	0,20	4	-
11231976	PSMZ-012-020-010-051-000-04	1,2	4	1,10	51	1,2	10,0	10,0	0,0	0,20	4	-
11231977	PSMZ-012-020-012-051-000-04	1,2	4	1,10	51	1,2	12,0	12,0	0,0	0,20	4	-
11231978	PSMZ-012-020-015-051-000-04	1,2	4	1,10	51	1,2	15,0	15,0	0,0	0,20	4	-
11231979	PSMZ-015-025-005-051-000-04	1,5	4	1,40	51	1,5	5,0	5,0	0,0	0,25	4	-
11231980	PSMZ-015-025-007-051-000-04	1,5	4	1,40	51	1,5	7,0	7,0	0,0	0,25	4	-
11231981	PSMZ-015-025-010-051-000-04	1,5	4	1,40	51	1,5	10,0	10,0	0,0	0,25	4	-
11231982	PSMZ-015-025-012-051-000-04	1,5	4	1,40	51	1,5	12,0	12,0	0,0	0,25	4	-
11231983	PSMZ-015-025-015-051-000-04	1,5	4	1,40	51	1,5	15,0	15,0	0,0	0,25	4	-
11231984	PSMZ-015-025-018-051-000-04	1,5	4	1,40	51	1,5	18,0	18,0	0,0	0,25	4	-

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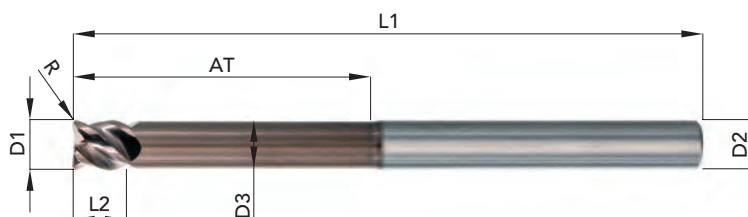
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.
Very suitable for milling **with high feed per tooth** of deep shapes in mould construction due to high accuracy of form and runout.
The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11231985	PSMZ-020-025-006-060-000-04	2,0	4	1,90	60	2,0	6,0	6,0	0,0	0,25	4	-
11231986	PSMZ-020-025-008-060-000-04	2,0	4	1,90	60	2,0	8,0	8,0	0,0	0,25	4	-
11231987	PSMZ-020-025-010-060-000-04	2,0	4	1,90	60	2,0	10,0	10,0	0,0	0,25	4	-
11231988	PSMZ-020-025-012-060-000-04	2,0	4	1,90	60	2,0	12,0	12,0	0,0	0,25	4	-
11231989	PSMZ-020-025-015-060-000-04	2,0	4	1,90	60	2,0	15,0	15,0	0,0	0,25	4	-
11231990	PSMZ-020-025-018-060-000-04	2,0	4	1,90	60	2,0	18,0	18,0	0,0	0,25	4	-
11231991	PSMZ-020-025-020-060-000-04	2,0	4	1,90	60	2,0	20,0	20,0	0,0	0,25	4	-
11231992	PSMZ-020-025-022-060-000-04	2,0	4	1,90	60	2,0	22,0	22,0	0,0	0,25	4	-
11231993	PSMZ-020-025-025-060-000-04	2,0	4	1,90	60	2,0	25,0	25,0	0,0	0,25	4	-
11231994	PSMZ-025-050-006-060-000-04	2,5	4	2,35	60	2,5	6,0	6,0	0,0	0,50	4	-
11231995	PSMZ-025-050-008-060-000-04	2,5	4	2,35	60	2,5	8,0	8,0	0,0	0,50	4	-
11231996	PSMZ-025-050-010-060-000-04	2,5	4	2,35	60	2,5	10,0	10,0	0,0	0,50	4	-
11231997	PSMZ-025-050-012-060-000-04	2,5	4	2,35	60	2,5	12,0	12,0	0,0	0,50	4	-
11231998	PSMZ-025-050-015-060-000-04	2,5	4	2,35	60	2,5	15,0	15,0	0,0	0,50	4	-
11231999	PSMZ-025-050-018-060-000-04	2,5	4	2,35	60	2,5	18,0	18,0	0,0	0,50	4	-
11232000	PSMZ-025-050-020-060-000-04	2,5	4	2,35	60	2,5	20,0	20,0	0,0	0,50	4	-
11232001	PSMZ-025-050-022-060-000-04	2,5	4	2,35	60	2,5	22,0	22,0	0,0	0,50	4	-
11232002	PSMZ-025-050-025-060-000-04	2,5	4	2,35	60	2,5	25,0	25,0	0,0	0,50	4	-

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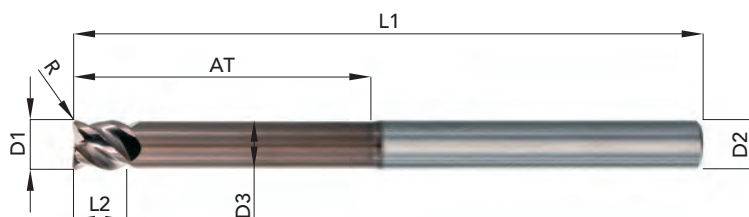
Features:

Toric milling cutter, Z=4, with corner radius and cylindrically ground neck.
Very suitable for milling **with high feed per tooth** of deep shapes in mould construction due to high accuracy of form and runout.
The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 4
HM M-040
Coating C-180



PSM = Power Slot Milling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232003	PSMZ-030-050-008-060-000-06	3,0	6	2,85	60	3,0	8,0	8,0	0,0	0,50	4	-
11232004	PSMZ-030-050-010-060-000-06	3,0	6	2,85	60	3,0	10,0	10,0	0,0	0,50	4	-
11232005	PSMZ-030-050-015-060-000-06	3,0	6	2,85	60	3,0	15,0	15,0	0,0	0,50	4	-
11232006	PSMZ-030-050-020-060-000-06	3,0	6	2,85	60	3,0	20,0	20,0	0,0	0,50	4	-
11232007	PSMZ-030-050-025-060-000-06	3,0	6	2,85	60	3,0	25,0	25,0	0,0	0,50	4	-
11232008	PSMZ-040-050-012-060-000-06	4,0	6	3,85	60	4,0	12,0	12,0	0,0	0,50	4	-
11232009	PSMZ-040-050-016-060-000-06	4,0	6	3,85	60	4,0	16,0	16,0	0,0	0,50	4	-
11232010	PSMZ-040-050-020-060-000-06	4,0	6	3,85	60	4,0	20,0	20,0	0,0	0,50	4	-
11232011	PSMZ-040-050-024-060-000-06	4,0	6	3,85	60	4,0	24,0	24,0	0,0	0,50	4	-
11232012	PSMZ-040-050-028-070-000-06	4,0	6	3,85	70	4,0	28,0	28,0	0,0	0,50	4	-
11232013	PSMZ-040-050-032-070-000-06	4,0	6	3,85	70	4,0	32,0	32,0	0,0	0,50	4	-
11232014	PSMZ-040-050-036-070-000-06	4,0	6	3,85	70	4,0	36,0	36,0	0,0	0,50	4	-
11232015	PSMZ-040-050-040-070-000-06	4,0	6	3,85	70	4,0	40,0	40,0	0,0	0,50	4	-
11232016	PSMZ-060-100-015-060-000-06	6,0	6	5,80	60	6,0	15,0	15,0	0,0	1,00	4	-
11232017	PSMZ-060-100-020-060-000-06	6,0	6	5,80	60	6,0	20,0	20,0	0,0	1,00	4	-
11232018	PSMZ-060-100-025-060-000-06	6,0	6	5,80	60	6,0	25,0	25,0	0,0	1,00	4	-
11232019	PSMZ-060-100-030-075-000-06	6,0	6	5,80	75	6,0	30,0	30,0	0,0	1,00	4	-
11232020	PSMZ-060-100-035-075-000-06	6,0	6	5,80	75	6,0	35,0	35,0	0,0	1,00	4	-
11232021	PSMZ-060-100-040-075-000-06	6,0	6	5,80	75	6,0	40,0	40,0	0,0	1,00	4	-

Subject to technical modifications

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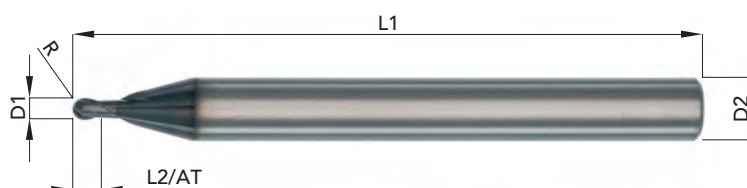
Features:

Stable, standard ball milling cutter, Z=2.

Very suitable for copy milling in steel up to 58 HRC.

High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160

**Full-radius milling cutter, short model**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232022	KZ-010-050-025-060-000-06	1,0	6	0,97	60	0,75	2,5	2,5	0,0	0,50	2	V
11232023	KZ-015-075-030-060-000-06	1,5	6	1,47	60	1,15	3,0	3,0	0,0	0,75	2	V
11232024	KZ-018-090-030-060-000-06	1,8	6	1,70	60	1,80	3,0	3,0	0,0	0,90	2	-
11232025	KZ-020-100-035-060-000-06	2,0	6	1,90	60	2,00	3,5	3,5	0,0	1,00	2	-
11232026	KZ-020-100-035-075-000-06	2,0	6	1,90	75	2,00	3,5	3,5	0,0	1,00	2	-
11232027	KZ-025-125-040-060-000-06	2,5	6	2,35	60	2,50	4,0	4,0	0,0	1,25	2	-
11232028	KZ-030-150-050-060-000-06	3,0	6	2,85	60	3,00	5,0	5,0	0,0	1,50	2	-
11232029	KZ-030-150-050-075-000-06	3,0	6	2,85	75	3,00	5,0	5,0	0,0	1,50	2	-
11232030	KZ-035-175-060-060-000-06	3,5	6	3,35	60	3,50	6,0	6,0	0,0	1,75	2	-
11232031	KZ-040-200-070-060-000-06	4,0	6	3,85	60	4,00	7,0	7,0	0,0	2,00	2	-
11232032	KZ-040-200-070-075-000-06	4,0	6	3,85	75	4,00	7,0	7,0	0,0	2,00	2	-
11232033	KZ-050-250-080-060-000-06	5,0	6	4,80	60	5,00	8,0	8,0	0,0	2,50	2	-
11232034	KZ-050-250-080-075-000-06	5,0	6	4,80	75	5,00	8,0	8,0	0,0	2,50	2	-

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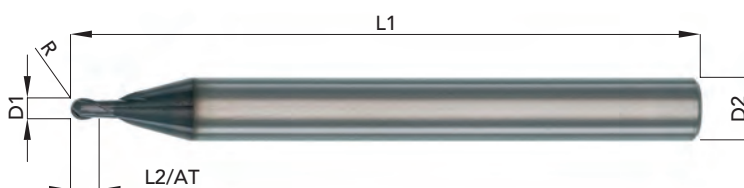
Features:

Stable, standard ball milling cutter, Z=2.

Very suitable for copy milling in steel up to 58 HRC.

High accuracy ($R = \pm 0.005$ mm).

Z 2
 HM M-040
 Coating C-160

**Full-radius milling cutter, short model**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232035	KZ-060-300-100-060-000-06	6,0	6	-	60	10,0	-	10,0	0,0	3,00	2	-
11232036	KZ-060-300-100-075-000-06	6,0	6	-	75	10,0	-	10,0	0,0	3,00	2	-
11232037	KZ-060-300-100-100-000-06	6,0	6	-	100	10,0	-	10,0	0,0	3,00	2	-
11232038	KZ-080-400-120-059-000-08	8,0	8	-	59	12,0	-	12,0	0,0	4,00	2	-
11232039	KZ-080-400-120-080-000-08	8,0	8	-	80	12,0	-	12,0	0,0	4,00	2	-
11232040	KZ-080-400-120-100-000-08	8,0	8	-	100	12,0	-	12,0	0,0	4,00	2	-
11232041	KZ-080-400-120-120-000-08	8,0	8	-	120	12,0	-	12,0	0,0	4,00	2	-
11232042	KZ-100-500-180-075-000-10	10,0	10	-	75	18,0	-	18,0	0,0	5,00	2	-
11232043	KZ-100-500-180-100-000-10	10,0	10	-	100	18,0	-	18,0	0,0	5,00	2	-
11232044	KZ-100-500-180-120-000-10	10,0	10	-	120	18,0	-	18,0	0,0	5,00	2	-
11232045	KZ-100-500-180-150-000-10	10,0	10	-	150	18,0	-	18,0	0,0	5,00	2	-
11232046	KZ-120-600-200-084-000-12	12,0	12	-	84	20,0	-	20,0	0,0	6,00	2	-
11232047	KZ-120-600-200-100-000-12	12,0	12	-	100	20,0	-	20,0	0,0	6,00	2	-
11232048	KZ-120-600-200-120-000-12	12,0	12	-	120	20,0	-	20,0	0,0	6,00	2	-
11232049	KZ-120-600-200-150-000-12	12,0	12	-	150	20,0	-	20,0	0,0	6,00	2	-
11232050	KZ-160-800-260-100-000-16	16,0	16	-	100	26,0	-	26,0	0,0	8,00	2	-

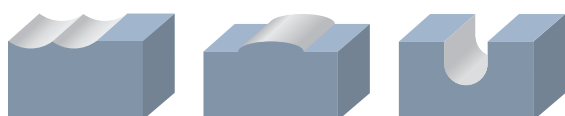
Subject to technical modifications

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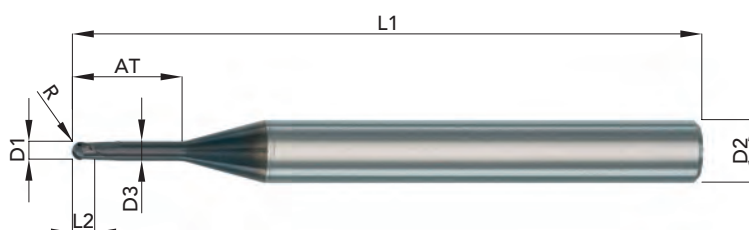
Features:

Stable, standard mini ball milling cutter, Z=2.
 With cylindrically ground neck for large milling depths.
 Very suitable for copy milling in steel up to 58 HRC.
 High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160



Mini full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 6 mm												
11232051	MK-003-015-002-060-000-06	0,3	6	0,28	60	0,23	2,0	2,0	0,0	0,15	2	V
11232052	MK-003-015-003-060-000-06	0,3	6	0,28	60	0,23	3,0	3,0	0,0	0,15	2	V
11232053	MK-003-015-005-060-000-06	0,3	6	0,28	60	0,23	5,0	5,0	0,0	0,15	2	V
11232054	MK-004-020-002-060-000-06	0,4	6	0,38	60	0,30	2,0	2,0	0,0	0,20	2	V
11232055	MK-004-020-004-060-000-06	0,4	6	0,38	60	0,30	4,0	4,0	0,0	0,20	2	V
11232056	MK-004-020-006-060-000-06	0,4	6	0,38	60	0,30	6,0	6,0	0,0	0,20	2	V
11232057	MK-005-025-002-060-000-06	0,5	6	0,48	60	0,38	2,0	2,0	0,0	0,25	2	V
11232058	MK-005-025-005-060-000-06	0,5	6	0,48	60	0,38	5,0	5,0	0,0	0,25	2	V
11232059	MK-005-025-007-060-000-06	0,5	6	0,48	60	0,38	7,0	7,0	0,0	0,25	2	V
11232060	MK-006-030-003-060-000-06	0,6	6	0,58	60	0,45	3,0	3,0	0,0	0,30	2	V
11232061	MK-006-030-006-060-000-06	0,6	6	0,58	60	0,45	6,0	6,0	0,0	0,30	2	V
11232062	MK-006-030-009-060-000-06	0,6	6	0,58	60	0,45	9,0	9,0	0,0	0,30	2	V
11232063	MK-006-030-012-060-000-06	0,6	6	0,58	60	0,45	12,0	12,0	0,0	0,30	2	V
11232064	MK-008-040-002-060-000-06	0,8	6	0,78	60	0,60	2,00	2,0	0,0	0,40	2	V
11232065	MK-008-040-004-060-000-06	0,8	6	0,78	60	0,60	4,00	4,0	0,0	0,40	2	V
11232066	MK-008-040-005-060-000-06	0,8	6	0,78	60	0,60	5,00	5,0	0,0	0,40	2	V
11232067	MK-008-040-008-060-000-06	0,8	6	0,78	60	0,60	8,00	8,0	0,0	0,40	2	V
11232068	MK-008-040-010-060-000-06	0,8	6	0,78	60	0,60	10,00	10,0	0,0	0,40	2	V
11232069	MK-008-040-012-060-000-06	0,8	6	0,78	60	0,60	12,00	12,0	0,0	0,40	2	V

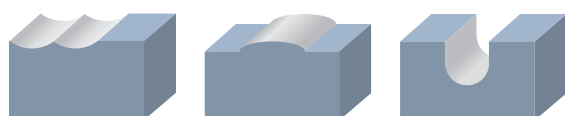
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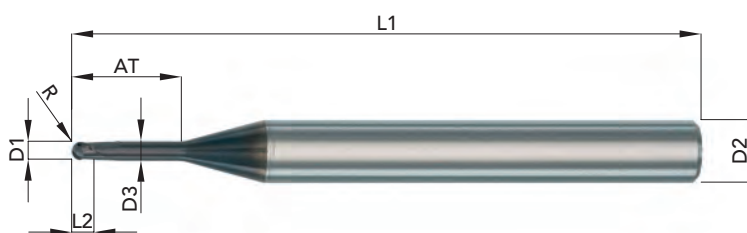
Features:

Stable, standard mini ball milling cutter, Z=2.
 With cylindrically ground neck for large milling depths.
 Very suitable for copy milling in steel up to 58 HRC.
 High accuracy ($R = \pm 0.005$ mm).

Z 2
HM **M-040**
Coating **C-160**



Mini full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 6 mm												
11232070	MK-010-050-005-060-000-06	1,0	6	0,97	60	0,75	5,0	5,0	0,0	0,50	2	V
11232071	MK-010-050-006-060-000-06	1,0	6	0,97	60	0,75	6,0	6,0	0,0	0,50	2	V
11232072	MK-010-050-008-060-000-06	1,0	6	0,97	60	0,75	8,0	8,0	0,0	0,50	2	V
11232073	MK-010-050-010-060-000-06	1,0	6	0,97	60	0,75	10,0	10,0	0,0	0,50	2	V
11232074	MK-010-050-012-060-000-06	1,0	6	0,97	60	0,75	12,0	12,0	0,0	0,50	2	V
11232075	MK-010-050-015-060-000-06	1,0	6	0,97	60	0,75	15,0	15,0	0,0	0,50	2	V
11232076	MK-010-050-018-060-000-06	1,0	6	0,97	60	0,75	18,0	18,0	0,0	0,50	2	V
11232077	MK-010-050-021-060-000-06	1,0	6	0,97	60	0,75	21,0	21,0	0,0	0,50	2	V
11232078	MK-015-075-008-060-000-06	1,5	6	1,47	60	1,13	8,0	8,0	0,0	0,75	2	V
11232079	MK-015-075-010-060-000-06	1,5	6	1,47	60	1,13	10,0	10,0	0,0	0,75	2	V
11232080	MK-015-075-012-060-000-06	1,5	6	1,47	60	1,13	12,0	12,0	0,0	0,75	2	V
11232081	MK-015-075-015-060-000-06	1,5	6	1,47	60	1,13	15,0	15,0	0,0	0,75	2	V
11232082	MK-015-075-020-060-000-06	1,5	6	1,47	60	1,13	20,0	20,0	0,0	0,75	2	V
11232083	MK-015-075-025-060-000-06	1,5	6	1,47	60	1,13	25,0	25,0	0,0	0,75	2	V
11232084	MK-020-100-006-060-000-06	2,0	6	1,90	60	2,0	6,0	6,0	0,0	1,00	2	-
11232085	MK-020-100-010-060-000-06	2,0	6	1,90	60	2,0	10,0	10,0	0,0	1,00	2	-
11232086	MK-020-100-012-060-000-06	2,0	6	1,90	60	2,0	12,0	12,0	0,0	1,00	2	-
11232087	MK-020-100-015-060-000-06	2,0	6	1,90	60	2,0	15,0	15,0	0,0	1,00	2	-
11232088	MK-020-100-020-060-000-06	2,0	6	1,90	60	2,0	20,0	20,0	0,0	1,00	2	-
11232089	MK-020-100-025-060-000-06	2,0	6	1,90	60	2,0	25,0	25,0	0,0	1,00	2	-
11232090	MK-020-100-030-075-000-06	2,0	6	1,90	75	2,0	30,0	30,0	0,0	1,00	2	-

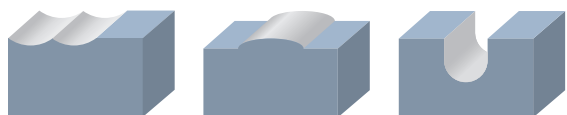
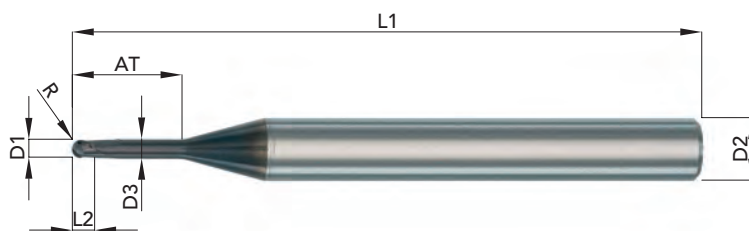
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Features:

Stable, standard mini ball milling cutter, Z=2.
 With cylindrically ground neck for large milling depths.
 Very suitable for copy milling in steel up to 58 HRC.
 High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160

**Mini full-radius milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 6 mm												
11232091	MK-030-150-010-060-000-06	3,0	6	2,85	60	3,0	10,0	10,0	0,0	1,50	2	-
11232092	MK-030-150-012-060-000-06	3,0	6	2,85	60	3,0	12,0	12,0	0,0	1,50	2	-
11232093	MK-030-150-015-060-000-06	3,0	6	2,85	60	3,0	15,0	15,0	0,0	1,50	2	-
11232094	MK-030-150-021-060-000-06	3,0	6	2,85	60	3,0	21,0	21,0	0,0	1,50	2	-
11232095	MK-030-150-027-075-000-06	3,0	6	2,85	75	3,0	27,0	27,0	0,0	1,50	2	-
11232096	MK-030-150-030-075-000-06	3,0	6	2,85	75	3,0	30,0	30,0	0,0	1,50	2	-
11232097	MK-030-150-033-075-000-06	3,0	6	2,85	75	3,0	33,0	33,0	0,0	1,50	2	-
11232098	MK-030-150-038-075-000-06	3,0	6	2,85	75	3,0	38,0	38,0	0,0	1,50	2	-
11232099	MK-040-200-010-060-000-06	4,0	6	3,85	60	4,0	10,0	10,0	0,0	2,00	2	-
11232100	MK-040-200-015-060-000-06	4,0	6	3,85	60	4,0	15,0	15,0	0,0	2,00	2	-
11232101	MK-040-200-016-060-000-06	4,0	6	3,85	60	4,0	16,0	16,0	0,0	2,00	2	-
11232102	MK-040-200-020-060-000-06	4,0	6	3,85	60	4,0	20,0	20,0	0,0	2,00	2	-
11232103	MK-040-200-022-060-000-06	4,0	6	3,85	60	4,0	22,0	22,0	0,0	2,00	2	-
11232104	MK-040-200-025-060-000-06	4,0	6	3,85	60	4,0	25,0	25,0	0,0	2,00	2	-
11232105	MK-040-200-025-070-000-06	4,0	6	3,85	70	4,0	25,0	25,0	0,0	2,00	2	-
11232106	MK-040-200-028-075-000-06	4,0	6	3,85	75	4,0	28,0	28,0	0,0	2,00	2	-
11232107	MK-040-200-034-075-000-06	4,0	6	3,85	75	4,0	34,0	34,0	0,0	2,00	2	-
11232108	MK-040-200-040-080-000-06	4,0	6	3,85	80	4,0	40,0	40,0	0,0	2,00	2	-

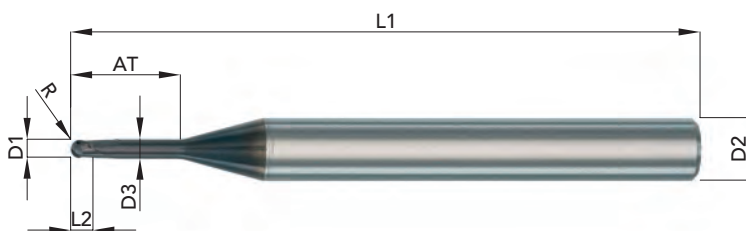
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Features:

Stable, standard mini ball milling cutter, Z=2.
 With cylindrically ground neck for large milling depths.
 Very suitable for copy milling in steel up to 58 HRC.
 High accuracy ($R = \pm 0.005$ mm).

Z 2
HM **M-040**
Coating **C-160**

**Mini full-radius milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 6 mm												
11232109	MK-050-250-015-060-000-06	5,0	6	4,80	60	5,0	15,0	15,0	0,0	2,50	2	-
11232110	MK-050-250-016-060-000-06	5,0	6	4,80	60	5,0	16,0	16,0	0,0	2,50	2	-
11232111	MK-050-250-020-060-000-06	5,0	6	4,80	60	5,0	20,0	20,0	0,0	2,50	2	-
11232112	MK-050-250-025-060-000-06	5,0	6	4,80	60	5,0	25,0	25,0	0,0	2,50	2	-
11232113	MK-060-300-020-060-000-06	6,0	6	5,80	60	9,0	20,0	20,0	0,0	3,00	2	-
11232114	MK-060-300-025-060-000-06	6,0	6	5,80	60	9,0	25,0	25,0	0,0	3,00	2	-

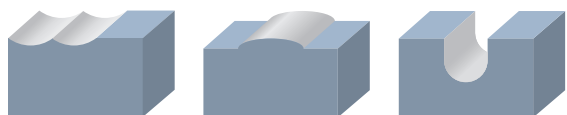
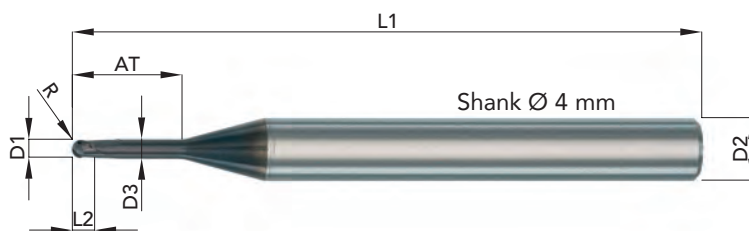
Subject to technical modifications

P	M	K	N	S	H
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Features:

Stable, standard mini ball milling cutter, Z=2.
 With cylindrically ground neck for large milling depths.
 Very suitable for copy milling in steel up to 58 HRC.
 High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160

**Mini full-radius milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11232115	MK-003-015-002-050-000-04	0,3	4	0,28	50	0,23	2,0	2,0	0,0	0,15	2	-
11232116	MK-003-015-003-050-000-04	0,3	4	0,28	50	0,23	3,0	3,0	0,0	0,15	2	-
11232117	MK-003-015-005-050-000-04	0,3	4	0,28	50	0,23	5,0	5,0	0,0	0,15	2	-
11232118	MK-004-020-002-050-000-04	0,4	4	0,38	50	0,30	2,0	2,0	0,0	0,20	2	-
11232119	MK-004-020-004-050-000-04	0,4	4	0,38	50	0,30	4,0	4,0	0,0	0,20	2	-
11232120	MK-004-020-006-050-000-04	0,4	4	0,38	50	0,30	6,0	6,0	0,0	0,20	2	-
11232121	MK-005-025-002-050-000-04	0,5	4	0,48	50	0,38	2,0	2,0	0,0	0,25	2	-
11232122	MK-005-025-003-050-000-04	0,5	4	0,48	50	0,38	3,0	3,0	0,0	0,25	2	-
11232123	MK-005-025-005-050-000-04	0,5	4	0,48	50	0,38	5,0	5,0	0,0	0,25	2	-
11232124	MK-005-025-007-050-000-04	0,5	4	0,48	50	0,38	7,0	7,0	0,0	0,25	2	-
11232125	MK-006-030-003-050-000-04	0,6	4	0,58	50	0,45	3,0	3,0	0,0	0,30	2	-
11232126	MK-006-030-006-050-000-04	0,6	4	0,58	50	0,45	6,0	6,0	0,0	0,30	2	-
11232127	MK-006-030-009-050-000-04	0,6	4	0,58	50	0,45	9,0	9,0	0,0	0,30	2	-
11232128	MK-008-040-004-050-000-04	0,8	4	0,78	50	0,60	4,0	4,0	0,0	0,40	2	-
11232129	MK-008-040-006-050-000-04	0,8	4	0,78	50	0,60	6,0	6,0	0,0	0,40	2	-
11232130	MK-008-040-008-050-000-04	0,8	4	0,78	50	0,60	8,0	8,0	0,0	0,40	2	-
11232131	MK-008-040-012-050-000-04	0,8	4	0,78	50	0,60	12,0	12,0	0,0	0,40	2	-

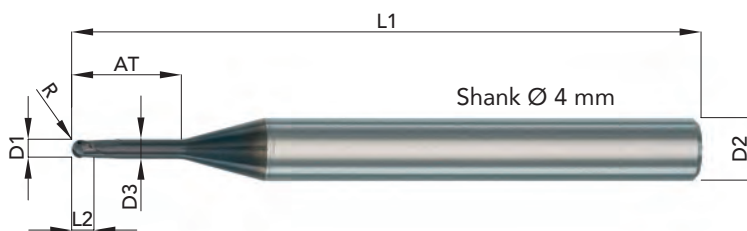
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Features:

Stable, standard mini ball milling cutter, Z=2.
 With cylindrically ground neck for large milling depths.
 Very suitable for copy milling in steel up to 58 HRC.
 High accuracy (R = ± 0.005 mm).

Z 2
HM M-040
Coating C-160

**Mini full-radius milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11232132	MK-010-050-002-050-000-04	1,0	4	0,97	50	0,75	2,0	2,0	0,0	0,50	2	-
11232133	MK-010-050-003-050-000-04	1,0	4	0,97	50	0,75	3,0	3,0	0,0	0,50	2	-
11232134	MK-010-050-004-050-000-04	1,0	4	0,97	50	0,75	4,0	4,0	0,0	0,50	2	-
11232135	MK-010-050-005-050-000-04	1,0	4	0,97	50	0,75	5,0	5,0	0,0	0,50	2	-
11232136	MK-010-050-006-050-000-04	1,0	4	0,97	50	0,75	6,0	6,0	0,0	0,50	2	-
11232137	MK-010-050-008-050-000-04	1,0	4	0,97	50	0,75	8,0	8,0	0,0	0,50	2	-
11232138	MK-010-050-010-050-000-04	1,0	4	0,97	50	0,75	10,0	10,0	0,0	0,50	2	-
11232139	MK-010-050-012-050-000-04	1,0	4	0,97	50	0,75	12,0	12,0	0,0	0,50	2	-
11232140	MK-010-050-015-050-000-04	1,0	4	0,97	50	0,75	15,0	15,0	0,0	0,50	2	-
11232141	MK-010-050-018-050-000-04	1,0	4	0,97	50	0,75	18,0	18,0	0,0	0,50	2	-
11232142	MK-010-050-021-050-000-04	1,0	4	0,97	50	0,75	21,0	21,0	0,0	0,50	2	-
11232143	MK-012-060-003-050-000-04	1,2	4	1,17	50	0,90	3,0	3,0	0,0	0,60	2	-
11232144	MK-015-075-002-050-000-04	1,5	4	1,47	50	1,13	2,0	2,0	0,0	0,75	2	-
11232145	MK-015-075-006-050-000-04	1,5	4	1,47	50	1,13	6,0	6,0	0,0	0,75	2	-
11232146	MK-015-075-008-050-000-04	1,5	4	1,47	50	1,13	8,0	8,0	0,0	0,75	2	-
11232147	MK-015-075-010-050-000-04	1,5	4	1,47	50	1,13	10,0	10,0	0,0	0,75	2	-
11232148	MK-015-075-012-050-000-04	1,5	4	1,47	50	1,13	12,0	12,0	0,0	0,75	2	-
11232149	MK-015-075-015-050-000-04	1,5	4	1,47	50	1,13	15,0	15,0	0,0	0,75	2	-
11232150	MK-015-075-016-050-000-04	1,5	4	1,47	50	1,13	16,0	16,0	0,0	0,75	2	-
11232151	MK-015-075-020-050-000-04	1,5	4	1,47	50	1,13	20,0	20,0	0,0	0,75	2	-

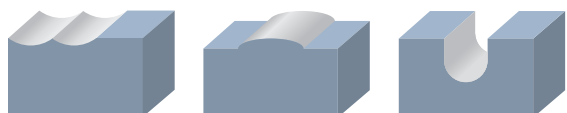
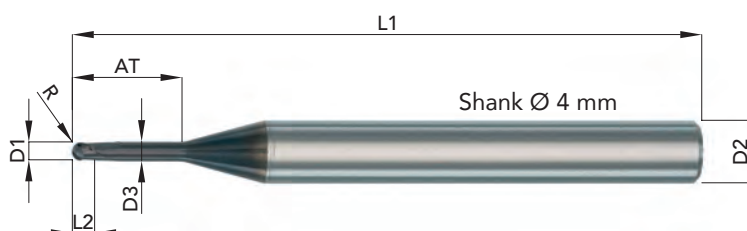
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Features:

Stable, standard mini ball milling cutter, Z=2.
 With cylindrically ground neck for large milling depths.
 Very suitable for copy milling in steel up to 58 HRC.
 High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160

**Mini full-radius milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11232152	MK-020-100-006-050-000-04	2,0	4	1,90	50	2,0	6,0	6,0	0,0	1,00	2	-
11232153	MK-020-100-008-050-000-04	2,0	4	1,90	50	2,0	8,0	8,0	0,0	1,00	2	-
11232154	MK-020-100-010-050-000-04	2,0	4	1,90	50	2,0	10,0	10,0	0,0	1,00	2	-
11232155	MK-020-100-012-050-000-04	2,0	4	1,90	50	2,0	12,0	12,0	0,0	1,00	2	-
11232156	MK-020-100-016-050-000-04	2,0	4	1,90	50	2,0	16,0	16,0	0,0	1,00	2	-
11232157	MK-020-100-020-050-000-04	2,0	4	1,90	50	2,0	20,0	20,0	0,0	1,00	2	-
11232158	MK-020-100-025-060-000-04	2,0	4	1,90	60	2,0	25,0	25,0	0,0	1,00	2	-
11232159	MK-020-100-030-070-000-04	2,0	4	1,90	70	2,0	30,0	30,0	0,0	1,00	2	-
11232160	MK-020-100-035-075-000-04	2,0	4	1,90	75	2,0	35,0	35,0	0,0	1,00	2	-
11232161	MK-030-150-010-050-000-04	3,0	4	2,85	50	3,0	10,0	10,0	0,0	1,50	2	-
11232162	MK-030-150-012-050-000-04	3,0	4	2,85	50	3,0	12,0	12,0	0,0	1,50	2	-
11232163	MK-030-150-015-050-000-04	3,0	4	2,85	50	3,0	15,0	15,0	0,0	1,50	2	-
11232164	MK-030-150-021-050-000-04	3,0	4	2,85	50	3,0	21,0	21,0	0,0	1,50	2	-
11232165	MK-030-150-027-070-000-04	3,0	4	2,85	70	3,0	27,0	27,0	0,0	1,50	2	-
11232166	MK-030-150-033-070-000-04	3,0	4	2,85	70	3,0	33,0	33,0	0,0	1,50	2	-
11232167	MK-030-150-038-075-000-04	3,0	4	2,85	75	3,0	38,0	38,0	0,0	1,50	2	-
11232168	MK-040-200-010-060-000-04	4,0	4	3,85	60	4,0	10,0	10,0	0,0	2,00	2	-
11232169	MK-040-200-016-060-000-04	4,0	4	3,85	60	4,0	16,0	16,0	0,0	2,00	2	-
11232170	MK-040-200-022-060-000-04	4,0	4	3,85	60	4,0	22,0	22,0	0,0	2,00	2	-
11232171	MK-040-200-028-070-000-04	4,0	4	3,85	70	4,0	28,0	28,0	0,0	2,00	2	-
11232172	MK-040-200-034-070-000-04	4,0	4	3,85	70	4,0	34,0	34,0	0,0	2,00	2	-
11232173	MK-040-200-040-070-000-04	4,0	4	3,85	70	4,0	40,0	40,0	0,0	2,00	2	-

Subject to technical modifications

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Features:

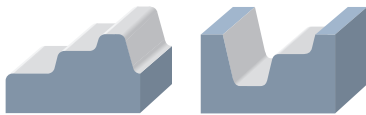
Conically ground ball milling cutter, Z=2.

Stable transition to the shank and therefore very high flexural strength.

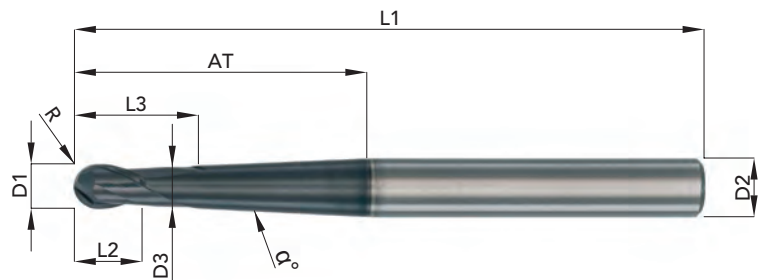
Very suitable in mould construction due to the conical discharge angle.

High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232174	K-010-050-010-060-009-06	1,0	6	0,97	60	0,75	4,0	10,0	0,9	0,50	2	V
11232175	K-010-050-010-060-025-06	1,0	6	0,97	60	0,75	4,0	10,0	2,5	0,50	2	V
11232176	K-010-050-015-060-004-06	1,0	6	0,97	60	0,75	4,0	15,0	0,4	0,50	2	V
11232177	K-010-050-015-060-009-06	1,0	6	0,97	60	0,75	4,0	15,0	0,9	0,50	2	V
11232178	K-010-050-020-060-009-06	1,0	6	0,97	60	0,75	4,0	20,0	0,9	0,50	2	V
11232179	K-010-050-030-075-015-06	1,0	6	0,97	75	0,75	4,0	30,0	1,5	0,50	2	-
11232180	K-010-050-039-075-037-06	1,0	6	0,97	75	0,75	4,0	39,0	3,7	0,50	2	-
11232181	K-015-075-015-060-004-06	1,5	6	1,47	60	1,13	4,0	15,0	0,4	0,75	2	V
11232182	K-015-075-015-060-009-06	1,5	6	1,47	60	1,13	4,0	15,0	0,9	0,75	2	V
11232183	K-015-075-020-060-004-06	1,5	6	1,47	60	1,13	4,0	20,0	0,4	0,75	2	V
11232184	K-015-075-020-060-009-06	1,5	6	1,47	60	1,13	4,0	20,0	0,9	0,75	2	V
11232185	K-015-075-025-060-030-06	1,5	6	1,47	60	1,13	4,0	25,0	0,3	0,75	2	V
11232186	K-015-075-030-075-015-06	1,5	6	1,47	75	1,13	4,0	30,0	1,5	0,75	2	-
11232187	K-015-075-050-100-030-08	1,5	8	1,47	100	1,13	4,0	50,0	0,3	0,75	2	-
11232188	K-020-100-015-060-009-06	2,0	6	1,90	60	2,00	6,0	15,0	0,9	1,00	2	-
11232189	K-020-100-018-060-015-06	2,0	6	1,90	60	2,00	6,0	18,0	1,5	1,00	2	-
11232190	K-020-100-020-060-004-06	2,0	6	1,90	60	2,00	6,0	20,0	0,4	1,00	2	-
11232191	K-020-100-020-060-009-06	2,0	6	1,90	60	2,00	6,0	20,0	0,9	1,00	2	-
11232192	K-020-100-025-070-004-06	2,0	6	1,90	70	2,00	6,0	25,0	0,4	1,00	2	-
11232193	K-020-100-025-070-009-06	2,0	6	1,90	70	2,00	6,0	25,0	0,9	1,00	2	-

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Features:

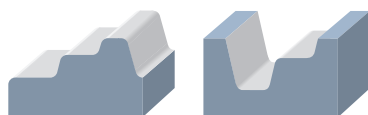
Conically ground ball milling cutter, Z=2.

Stable transition to the shank and therefore very high flexural strength.

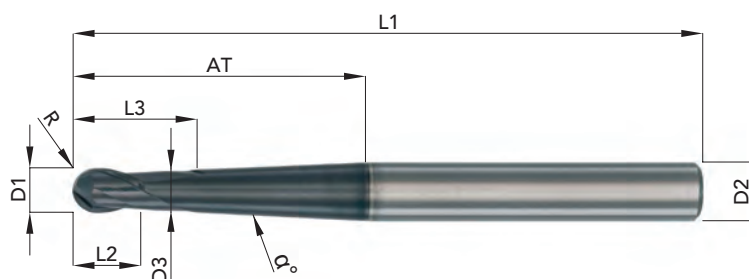
Very suitable in mould construction due to the conical discharge angle.

High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232194	K-020-100-025-075-015-06	2,0	6	1,90	75	2,0	6,0	25,0	1,5	1,00	2	-
11232195	K-020-100-032-075-015-06	2,0	6	1,90	75	2,0	6,0	32,0	1,5	1,00	2	-
11232196	K-020-100-035-075-009-06	2,0	6	1,90	75	2,0	6,0	35,0	0,9	1,00	2	-
11232197	K-020-100-045-085-009-06	2,0	6	1,90	85	2,0	6,0	45,0	0,9	1,00	2	-
11232198	K-020-100-045-085-014-06	2,0	6	1,90	85	2,0	6,0	45,0	1,4	1,00	2	-
11232199	K-020-100-060-100-009-06	2,0	6	1,90	100	2,0	6,0	60,0	0,9	1,00	2	-
11232200	K-020-100-060-100-014-06	2,0	6	1,90	100	2,0	6,0	60,0	1,4	1,00	2	-
11232201	K-025-125-025-075-009-06	2,5	6	2,35	75	2,5	6,0	25,0	0,9	1,25	2	-
11232202	K-025-125-025-075-015-06	2,5	6	2,35	75	2,5	6,0	25,0	1,5	1,25	2	-
11232203	K-025-125-035-075-009-06	2,5	6	2,35	75	2,5	6,0	35,0	0,9	1,25	2	-
11232204	K-025-125-035-075-015-06	2,5	6	2,35	75	2,5	6,0	35,0	1,5	1,25	2	-
11232205	K-025-125-040-075-009-06	2,5	6	2,35	75	2,5	6,0	40,0	0,9	1,25	2	-
11232206	K-025-125-040-075-015-06	2,5	6	2,35	75	2,5	6,0	40,0	1,5	1,25	2	-
11232207	K-030-150-023-060-020-06	3,0	6	2,85	60	3,0	6,0	23,0	2,0	1,50	2	-
11232208	K-030-150-025-075-010-06	3,0	6	2,85	75	3,0	6,0	25,0	1,0	1,50	2	-
11232209	K-030-150-030-075-009-06	3,0	6	2,85	75	3,0	6,0	30,0	0,9	1,50	2	-
11232210	K-030-150-030-075-015-06	3,0	6	2,85	75	3,0	6,0	30,0	1,5	1,50	2	-
11232211	K-030-150-040-080-009-06	3,0	6	2,85	80	3,0	6,0	40,0	0,9	1,50	2	-
11232212	K-030-150-040-085-015-06	3,0	6	2,85	85	3,0	6,0	40,0	1,5	1,50	2	-
11232213	K-030-150-040-075-022-06	3,0	6	2,85	75	3,0	6,0	40,0	2,2	1,50	2	-

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Features:

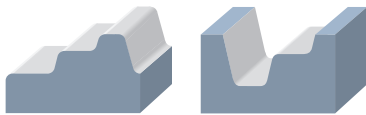
Conically ground ball milling cutter, Z=2.

Stable transition to the shank and therefore very high flexural strength.

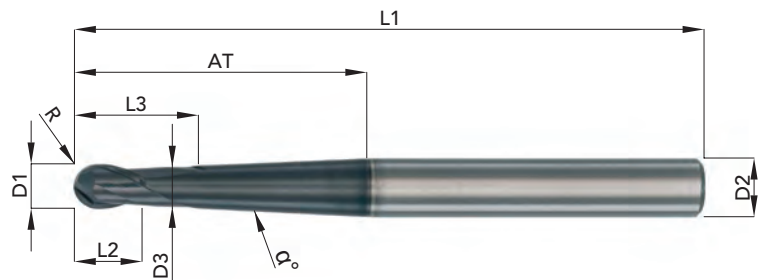
Very suitable in mould construction due to the conical discharge angle.

High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232214	K-030-150-050-100-010-08	3,0	8	2,85	100	3,0	6,0	50,0	1,0	1,50	2	-
11232215	K-030-150-050-100-015-08	3,0	8	2,85	100	3,0	6,0	50,0	1,5	1,50	2	-
11232216	K-030-150-063-100-009-06	3,0	6	2,85	100	3,0	6,0	63,0	0,9	1,50	2	-
11232217	K-030-150-063-100-014-06	3,0	6	2,85	100	3,0	6,0	63,0	1,4	1,50	2	-
11232218	K-030-150-065-100-009-06	3,0	6	2,85	100	3,0	6,0	65,0	0,9	1,50	2	-
11232219	K-040-200-020-070-010-06	4,0	6	3,85	70	4,0	12,0	20,0	1,0	2,00	2	-
11232220	K-040-200-020-090-030-06	4,0	6	3,85	90	4,0	12,0	20,0	3,0	2,00	2	-
11232221	K-040-200-024-070-024-06	4,0	6	3,85	70	4,0	12,0	24,0	2,4	2,00	2	-
11232222	K-040-200-030-075-010-06	4,0	6	3,85	75	4,0	12,0	30,0	1,0	2,00	2	-
11232223	K-040-200-030-075-015-06	4,0	6	3,85	75	4,0	12,0	30,0	1,5	2,00	2	-
11232224	K-040-200-040-085-009-06	4,0	6	3,85	85	4,0	12,0	40,0	0,9	2,00	2	-
11232225	K-040-200-040-100-014-06	4,0	6	3,85	100	4,0	12,0	40,0	1,4	2,00	2	-
11232226	K-040-200-040-085-015-06	4,0	6	3,85	85	4,0	12,0	40,0	1,5	2,00	2	-
11232227	K-040-200-040-090-015-06	4,0	6	3,85	90	4,0	12,0	40,0	1,5	2,00	2	-
11232228	K-040-200-045-100-025-08	4,0	8	3,85	100	4,0	12,0	45,0	2,5	2,00	2	-
11232229	K-040-200-050-100-015-08	4,0	8	3,85	100	4,0	12,0	50,0	1,5	2,00	2	-
11232230	K-040-200-060-120-015-08	4,0	8	3,85	120	4,0	12,0	60,0	1,5	2,00	2	-
11232231	K-040-200-065-100-009-06	4,0	6	3,85	100	4,0	12,0	65,0	0,9	2,00	2	-

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P	M	K	N	S	H
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Features:

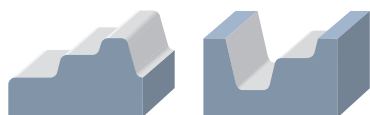
Conically ground ball milling cutter, Z=2.

Stable transition to the shank and therefore very high flexural strength.

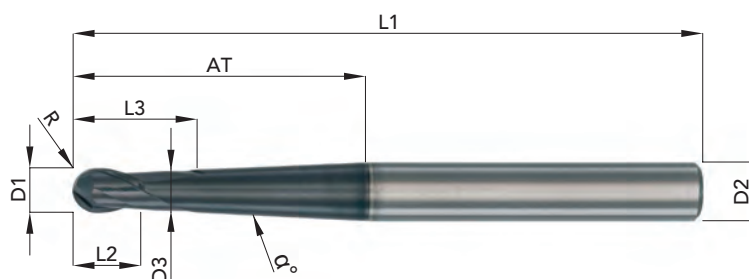
Very suitable in mould construction due to the conical discharge angle.

High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232232	K-050-250-040-100-007-06	5,0	6	4,80	100	5,0	10,0	40,0	0,7	2,50	2	-
11232233	K-050-250-040-075-015-08	5,0	8	4,80	75	5,0	15,0	40,0	1,5	2,50	2	-
11232234	K-050-250-040-100-021-08	5,0	8	4,80	100	5,0	15,0	40,0	2,1	2,50	2	-
11232235	K-050-250-060-110-015-08	5,0	8	4,80	110	5,0	10,0	60,0	1,5	2,50	2	-
11232236	K-050-250-060-120-015-08	5,0	8	4,80	120	5,0	15,0	60,0	1,5	2,50	2	-
11232237	K-060-300-020-100-030-08	6,0	8	5,80	100	9,0	12,0	20,0	3,0	3,00	2	-
11232238	K-060-300-030-100-057-12	6,0	12	5,80	100	9,0	12,0	30,0	5,7	3,00	2	-
11232239	K-060-300-040-085-009-08	6,0	8	5,80	85	9,0	16,0	40,0	0,9	3,00	2	-
11232240	K-060-300-040-085-015-08	6,0	8	5,80	85	9,0	16,0	40,0	1,5	3,00	2	-
11232241	K-060-300-045-100-025-10	6,0	10	5,80	100	9,0	16,0	45,0	2,5	3,00	2	-
11232242	K-060-300-050-090-004-08	6,0	8	5,80	90	9,0	16,0	50,0	0,4	3,00	2	-
11232243	K-060-300-050-090-009-08	6,0	8	5,80	90	9,0	16,0	50,0	0,9	3,00	2	-
11232244	K-060-300-060-100-010-08	6,0	8	5,80	100	9,0	25,0	60,0	1,0	3,00	2	-
11232245	K-060-300-064-100-009-08	6,0	8	5,80	100	9,0	16,0	64,0	0,9	3,00	2	-
11232246	K-060-300-065-120-010-08	6,0	8	5,80	120	9,0	16,0	65,0	1,0	3,00	2	-
11232247	K-060-300-065-120-015-10	6,0	10	5,80	120	9,0	25,0	65,0	1,5	3,00	2	-

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P	M	K	N	S	H
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Features:

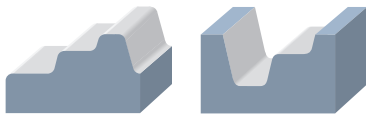
Conically ground ball milling cutter, Z=2.

Stable transition to the shank and therefore very high flexural strength.

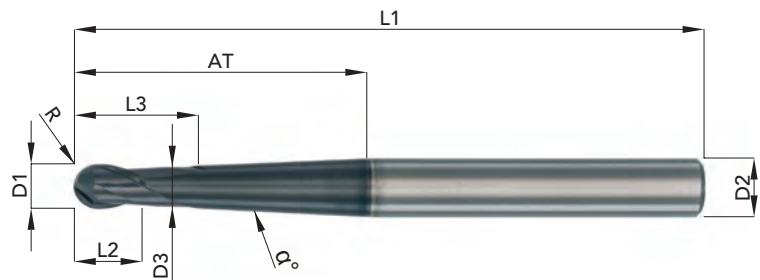
Very suitable in mould construction due to the conical discharge angle.

High accuracy ($R = \pm 0.005$ mm).

Z 2
HM M-040
Coating C-160



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232248	K-080-400-020-100-030-10	8,0	10	7,70	100	10,0	14,0	20,0	3,0	4,00	2	-
11232249	K-080-400-030-100-009-12	8,0	12	7,70	100	10,0	15,0	30,0	0,9	4,00	2	-
11232250	K-080-400-040-100-015-10	8,0	10	7,70	100	10,0	14,0	40,0	1,5	4,00	2	-
11232251	K-080-400-050-100-004-10	8,0	10	7,70	100	8,0	15,0	50,0	0,4	4,00	2	-
11232252	K-080-400-055-110-021-12	8,0	12	7,70	110	10,0	30,0	55,0	2,1	4,00	2	-
11232253	K-080-400-060-100-009-10	8,0	10	7,70	100	10,0	15,0	60,0	0,9	4,00	2	-
11232254	K-080-400-060-120-009-10	8,0	10	7,70	120	10,0	20,0	60,0	0,9	4,00	2	-
11232255	K-080-400-070-110-009-10	8,0	10	7,70	110	10,0	10,0	70,0	0,9	4,00	2	-
11232256	K-100-500-020-110-030-12	10,0	12	9,65	110	12,0	12,0	20,0	3,0	5,00	2	-
11232257	K-100-500-040-130-015-12	10,0	12	9,65	130	12,0	12,0	40,0	1,5	5,00	2	-
11232258	K-100-500-060-100-004-12	10,0	12	9,65	100	12,0	12,0	50,0	0,4	5,00	2	-
11232259	K-100-500-060-100-009-12	10,0	12	9,65	100	12,0	12,0	60,0	0,9	5,00	2	-
11232260	K-100-500-060-130-009-12	10,0	12	9,65	130	12,0	12,0	60,0	0,9	5,00	2	-
11232261	K-100-500-062-110-009-12	10,0	12	9,65	110	20,0	20,0	62,0	0,9	5,00	2	-
11232262	K-100-500-090-150-019-16	10,0	16	9,65	150	20,0	20,0	90,0	1,9	5,00	2	-
11232263	K-100-500-110-155-015-16	10,0	16	9,65	155	15,0	15,0	110,0	1,5	5,00	2	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Special milling cutter, **cylindrically ground, with radius** for pre-milling contours.

Very suitable for steel up to 54 HRC.

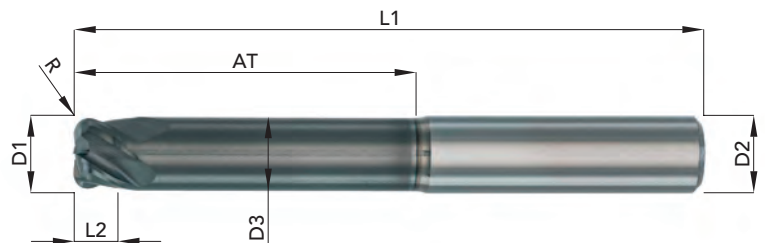
Milling cutter with **uneven distribution** to counteract vibration, even at high feed per tooth.

High-precision version **with cooling through the shank**.

Z 4
HM M-050
Coating C-160



Radius milling cutter with internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232264	SGT-040-100-012-060-000-06	4,0	6	3,60	60	2	12,0	12,0	0,0	1,00	4	V
11232265	SGT-040-100-016-060-000-06	4,0	6	3,60	60	2	16,0	16,0	0,0	1,00	4	V
11232266	SGT-060-100-018-060-000-06	6,0	6	5,60	60	3	18,0	18,0	0,0	1,00	4	V
11232267	SGT-060-150-018-060-000-06	6,0	6	5,60	60	3	18,0	18,0	0,0	1,50	4	V
11232268	SGT-060-150-018-110-000-06	6,0	6	5,60	110	3	18,0	18,0	0,0	1,50	4	V
11232269	SGT-080-100-024-065-000-08	8,0	8	7,60	65	4	24,0	24,0	0,0	1,00	4	V
11232270	SGT-080-200-024-065-000-08	8,0	8	7,60	65	4	24,0	24,0	0,0	2,00	4	V
11232271	SGT-080-200-035-065-000-08	8,0	8	7,60	65	4	35,0	35,0	0,0	2,00	4	V
11232272	SGT-080-300-024-065-000-08	8,0	8	7,60	65	4	24,0	24,0	0,0	3,00	4	V
11232273	SGT-100-100-030-085-000-10	10,0	10	9,60	85	5	30,0	30,0	0,0	1,00	4	V
11232274	SGT-100-200-030-085-000-10	10,0	10	9,60	85	5	30,0	30,0	0,0	2,00	4	V
11232275	SGT-100-200-030-110-000-10	10,0	10	9,60	110	5	30,0	30,0	0,0	2,00	4	V
11232276	SGT-120-200-040-100-000-12	12,0	12	11,60	100	6	40,0	40,0	0,0	2,00	4	V
11232277	SGT-120-300-040-100-000-12	12,0	12	11,60	100	6	40,0	40,0	0,0	3,00	4	V
11232278	SGT-120-350-055-100-000-12	12,0	12	11,60	100	6	55,0	55,0	0,0	3,50	4	V

Subject to technical modifications

P	M	K	N	S	H
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Features:

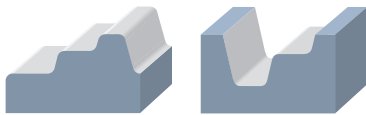
Special milling cutter, conically **ground, with radius** for pre-milling contours.

Very suitable for steel up to 54 HRC.

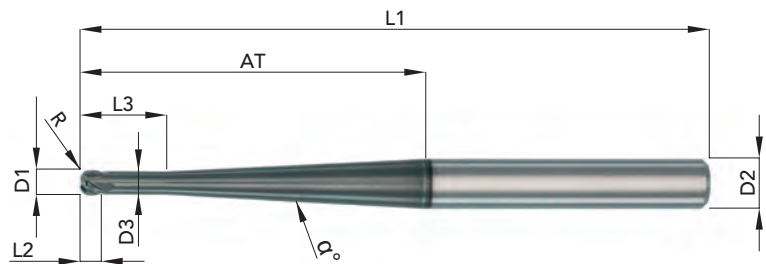
Cutter with uneven distribution to counteract vibration, even at high feed per tooth.

High-precision version **with cooling through the shank**.

Z 4
HM **M-050**
Coating **C-160**



Radius milling cutter with internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232279	SGTK-020-050-006/020-060-057-06	2,0	6	1,90	60	2,0	6,0	20,0	5,7	0,50	4	V
11232280	SGTK-020-050-010/020-060-057-06	2,0	6	1,90	60	2,0	10,0	20,0	5,7	0,50	4	V
11232281	SGTK-030-080-009/020-060-043-06	3,0	6	2,80	60	2,0	9,0	20,0	4,3	0,80	4	V
11232282	SGTK-030-100-009/020-060-043-06	3,0	6	2,80	60	2,0	9,0	20,0	4,3	1,00	4	V
11232283	SGTK-030-100-009-070-120-016-08	3,0	8	2,80	120	2,0	9,0	70,0	1,6	1,00	4	V
11232284	SGTK-030-100-010/040-075-012-06	3,0	6	2,80	75	2,0	10,0	40,0	1,2	1,00	4	V
11232285	SGTK-030-100-010/040-075-022-06	3,0	6	2,80	75	2,0	10,0	40,0	2,2	1,00	4	V
11232286	SGTK-040-100-012/040-075-015-06	4,0	6	3,60	75	2,0	12,0	40,0	1,5	1,00	4	V

Subject to technical modifications

P	M	K	N	S	H
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Features:

Special milling cutter, **cylindrically ground**, with radius for pre-milling contours.

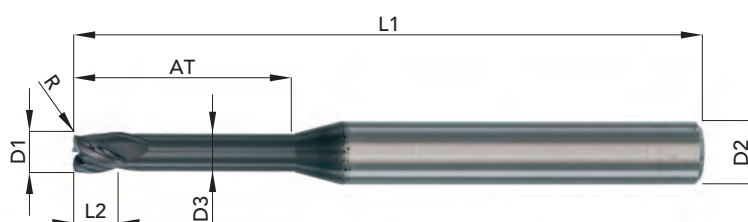
Thanks to its positive geometry it is very suitable for **soft and tough** materials.

High-precision version **with cooling through the shank**.

Z 3
HM M-050
Coating C-160



Radius milling cutter with internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232287	PL-040-028-010-060-000-06	4,0	6	3,60	60	4,0	10,0	10,0	0,0	0,28	3	V
11232288	PL-040-028-020-060-000-06	4,0	6	3,60	60	4,0	20,0	20,0	0,0	0,28	3	V
11232289	PL-050-035-025-060-000-06	5,0	6	4,60	60	6,0	25,0	25,0	0,0	0,35	3	V
11232290	PL-050-035-040-080-000-06	5,0	6	4,60	80	6,0	40,0	40,0	0,0	0,35	3	V
11232291	PL-060-042-015-060-000-06	6,00	6	5,60	60	6,0	15,0	15,0	0,0	0,42	3	V
11232292	PL-060-042-025-060-000-06	6,00	6	5,60	60	6,0	25,0	25,0	0,0	0,42	3	V
11232293	PL-060-042-040-060-000-06	6,00	6	5,60	60	6,0	40,0	40,0	0,0	0,42	3	V
11232294	PL-060-042-040-075-000-06	6,00	6	5,60	75	6,0	40,0	40,0	0,0	0,42	3	V
11232295	PL-060-042-060-100-000-06	6,00	6	5,60	100	6,0	60,0	60,0	0,0	0,42	3	V
11232296	PL-080-056-030-065-000-08	8,00	8	7,60	65	8,0	30,0	30,0	0,0	0,56	3	V
11232297	PL-080-056-060-100-000-08	8,00	8	7,60	100	8,0	60,0	60,0	0,0	0,56	3	V
11232298	PL-100-070-040-075-000-10	10,00	10	9,60	75	8,0	40,0	40,0	0,0	0,70	3	V
11232299	PL-100-070-040-100-000-10	10,00	10	9,60	100	8,0	40,0	40,0	0,0	0,70	3	V
11232300	PL-120-084-050-100-000-12	12,00	12	11,60	100	8,0	50,0	50,0	0,0	0,84	3	V
11232301	PL-120-084-050-125-000-12	12,00	12	11,60	125	8,0	50,0	50,0	0,0	0,84	3	V

Subject to technical modifications

P	M	K	N	S	H
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Features:

Special milling cutter, **conically ground, with radius** for pre-milling contours.

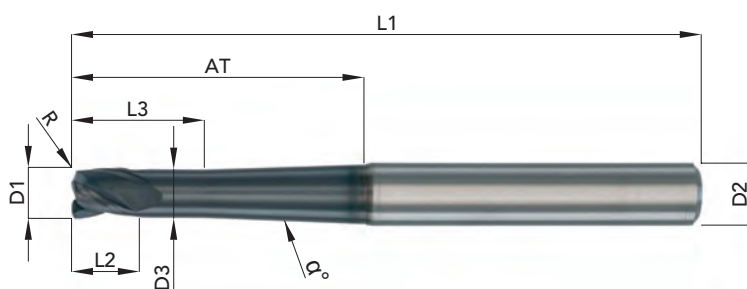
Thanks to its positive geometry it is very suitable for **soft and tough materials**.

High-precision version **with cooling through the shank**.

Z 3
HM M-050
Coating C-160



Radius milling cutter with internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232302	PLK-040-028-012/040-080-009-06	4,0	6	3,60	80	4,0	12,0	40,0	0,9	0,28	3	V
11232303	PLK-040-028-012/065-100-009-06	4,0	6	3,60	100	4,0	12,0	65,0	0,9	0,28	3	V
11232304	PLK-060-042-020/040-085-009-08	6,0	8	5,60	85	6,0	20,0	40,0	0,9	0,42	3	V
11232305	PLK-060-042-020-065-100-009-08	6,0	8	5,60	100	6,0	20,0	65,0	0,9	0,42	3	V
11232306	PLK-060-042-020/065-120-015-10	6,0	10	5,60	120	6,0	20,0	65,0	1,5	0,42	3	V
11232307	PLK-080-056-020/045-100-009-10	8,0	10	7,60	100	8,0	20,0	45,0	0,9	0,56	3	V
11232308	PLK-080-056-020/065-120-009-10	8,0	10	7,60	120	8,0	20,0	65,0	0,9	0,56	3	V

Subject to technical modifications

P	M	K	N	S	H
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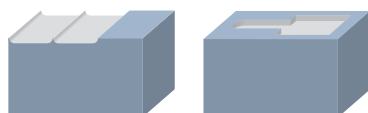
Features:

Special milling cutter, **cylindrically ground, with radius** for pre-milling contours.

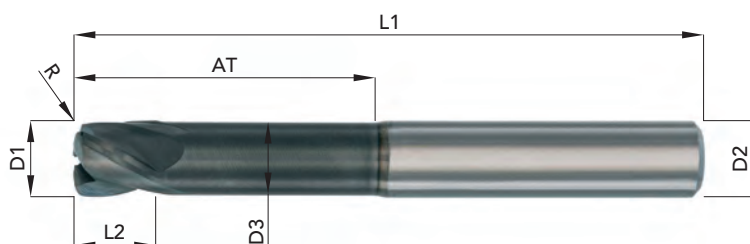
Flat curved geometry makes it very suitable for various types of tool steel.

High-precision version **with cooling through the shank**.

Z 3
HM M-050
Coating C-160



Radius milling cutter with internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232309	VS-060-066-025-060-000-06	6,0	6	5,60	60	6,0	25,0	25,0	0,0	0,66	3	V
11232310	VS-080-088-030-065-000-08	8,0	8	7,60	65	8,0	30,0	30,0	0,0	0,88	3	V
11232311	VS-100-110-040-075-000-10	10,0	10	9,60	75	8,0	40,0	40,0	0,0	1,10	3	V
11232312	VS-120-110-040-080-000-12	12,0	12	11,60	80	8,0	40,0	40,0	0,0	1,10	3	V
11232313	VS-120-110-060-100-000-12	12,0	12	11,60	100	8,0	60,0	60,0	0,0	1,10	3	V

Subject to technical modifications

4HQC

P	M	K	N	S	H
○		○			●

Features:

Shank-end mill for contouring and finishing hardened steel up to 65 HRC.

Milling cutter, Z=4, stable, thick core, anti-vibration.

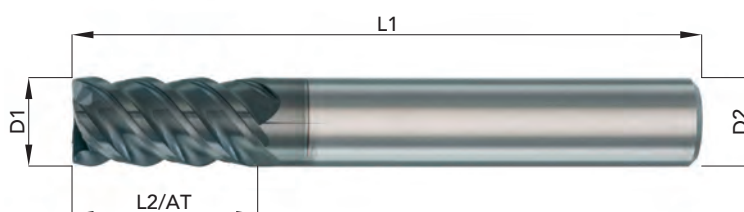
Because of its stability, it is very suitable for accurate and perpendicular milling.

The angle on the milling cutter is reinforced.

Z 4
HM M-010
Coating C-010



Shank-end mill for finishing



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232314	4HQC-030-005-009-060-000-06	3,0	6	2,85	60	7,0	9,0	9,0	0,0	0,05	4	-
11232315	4HQC-030-005-012-060-000-06	3,0	6	2,85	60	10,0	12,0	12,0	0,0	0,05	4	-
11232316	4HQC-040-005-010-060-000-06	4,0	6	3,85	60	8,0	10,0	10,0	0,0	0,05	4	-
11232317	4HQC-040-005-015-060-000-06	4,0	6	3,85	60	13,0	15,0	15,0	0,0	0,05	4	-
11232318	4HQC-060-010-016-060-000-06	6,0	6	-	60	16,0	-	16,0	0,0	0,10	4	-
11232319	4HQC-060-010-026-070-000-06	6,0	6	-	70	26,0	-	26,0	0,0	0,10	4	-
11232320	4HQC-080-010-016-064-000-08	8,0	8	-	64	16,0	-	16,0	0,0	0,10	4	-
11232321	4HQC-080-010-025-064-000-08	8,0	8	-	64	25,0	-	25,0	0,0	0,10	4	-
11232322	4HQC-080-010-036-080-000-08	8,0	8	-	80	36,0	-	36,0	0,0	0,10	4	-
11232323	4HQC-100-010-020-075-000-10	10,0	10	-	75	20,0	-	20,0	0,0	0,10	4	-
11232324	4HQC-100-010-025-085-000-10	10,0	10	-	85	25,0	-	25,0	0,0	0,10	4	-
11232325	4HQC-100-010-046-100-000-10	10,0	10	-	100	46,0	-	46,0	0,0	0,10	4	-
11232326	4HQC-120-010-024-084-000-10	12,0	12	-	84	24,0	-	24,0	0,0	0,10	4	-
11232327	4HQC-120-010-042-100-000-12	12,0	12	-	100	42,0	-	42,0	0,0	0,10	4	-
11232328	4HQC-120-010-056-120-000-12	12,0	12	-	120	56,0	-	56,0	0,0	0,10	4	-

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Features:

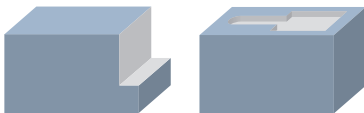
Shank-end mill for contouring and finishing hardened steel up to 65 HRC.

Cutter, Z=4, stable, thick core, anti-vibration.

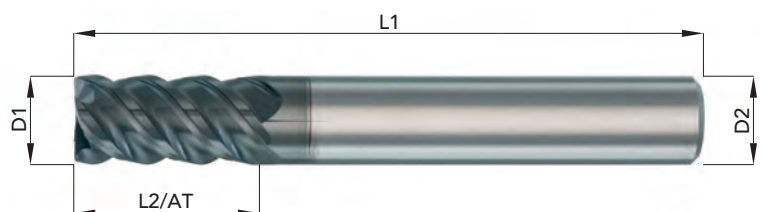
Because of its stability, it is very suitable for accurate and perpendicular milling.

The angle on the milling cutter is reinforced.

Z 4
HM M-010
Coating C-010



Shank-end mill for finishing



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232329	4HQC-160-010-048-100-000-16	16,0	16	-	100	48,0	-	48,0	0,0	0,10	4	-
11232330	4HQC-160-010-066-130-000-16	16,0	16	-	130	66,0	-	66,0	0,0	0,10	4	-
11232331	4HQC-200-010-045-100-000-20	20,0	20	-	100	45,0	-	45,0	0,0	0,10	4	-
11232332	4HQC-200-010-060-125-000-20	20,0	20	-	125	60,0	-	60,0	0,0	0,10	4	-
11232333	4HQC-200-010-080-150-000-20	20,0	20	-	150	80,0	-	80,0	0,0	0,10	4	-

Subject to technical modifications

4HQCR

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Features:

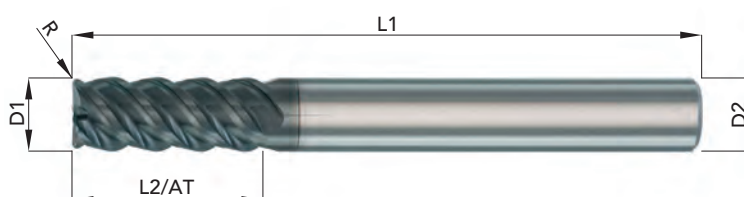
Shank-end mill for contouring and finishing hardened steel up to 65 HRC. Milling cutter, Z=4, **corner radius** and a stable, thick core against vibration. Because of its stability, it is very suitable for accurate and perpendicular milling.

The corner radius on the cutter is reinforced.

Z 4
HM M-010
Coating C-010



Radius shank-end mill for finishing



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232334	4HQCR-030-005-009-060-000-06	3,0	6	2,85	60	7,0	9,0	9,0	0,0	0,05	4	-
11232335	4HQCR-030-005-012-060-000-06	3,0	6	2,85	60	10,0	12,0	12,0	0,0	0,05	4	-
11232336	4HQCR-030-030-009-060-000-06	3,0	6	2,85	60	7,0	9,0	9,0	0,0	0,30	4	-
11232337	4HQCR-030-030-012-060-000-06	3,0	6	2,85	60	10,0	12,0	12,0	0,0	0,30	4	-
11232338	4HQCR-030-050-009-060-000-06	3,0	6	2,85	60	7,0	9,0	9,0	0,0	0,50	4	-
11232339	4HQCR-030-050-012-060-000-06	3,0	6	2,85	60	10,0	12,0	12,0	0,0	0,50	4	-
11232340	4HQCR-040-005-010-060-000-06	4,0	6	3,85	60	8,0	10,0	10,0	0,0	0,05	4	-
11232341	4HQCR-040-005-015-060-000-06	4,0	6	3,85	60	13,0	15,0	15,0	0,0	0,05	4	-
11232342	4HQCR-040-030-010-060-000-06	4,0	6	3,85	60	8,0	10,0	10,0	0,0	0,30	4	-
11232343	4HQCR-040-030-015-060-000-06	4,0	6	3,85	60	13,0	15,0	15,0	0,0	0,30	4	-
11232344	4HQCR-040-050-010-060-000-06	4,0	6	3,85	60	8,0	10,0	10,0	0,0	0,50	4	-
11232345	4HQCR-040-050-015-060-000-06	4,0	6	3,85	60	13,0	15,0	15,0	0,0	0,50	4	-
11232346	4HQCR-060-005-016-060-000-06	6,0	6	-	60	16,0	16,0	16,0	0,0	0,05	4	-
11232347	4HQCR-060-005-026-070-000-06	6,0	6	-	70	26,0	26,0	26,0	0,0	0,05	4	-
11232348	4HQCR-060-030-016-060-000-06	6,0	6	-	60	16,0	16,0	16,0	0,0	0,30	4	-
11232349	4HQCR-060-030-026-070-000-06	6,0	6	-	70	26,0	26,0	26,0	0,0	0,30	4	-
11232350	4HQCR-060-050-016-060-000-06	6,0	6	-	60	16,0	16,0	16,0	0,0	0,50	4	-
11232351	4HQCR-060-050-026-070-000-06	6,0	6	-	70	26,0	26,0	26,0	0,0	0,50	4	-

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4HQCR

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Features:

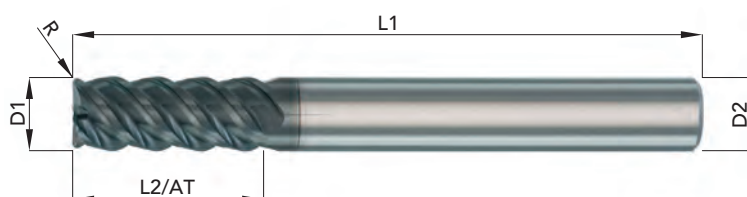
Shank-end mill for contouring and finishing hardened steel up to 65 HRC. Milling cutter, Z=4, **corner radius** and a stable, thick core against vibration. Because of its stability, it is very suitable for accurate and perpendicular milling.

The corner radius on the milling cutter is reinforced.

Z 4
HM M-010
Coating C-010



Radius shank-end mill for finishing



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232352	4HQCR-080-005-016-064-000-08	8,0	8	-	64	16,0	16,0	16,0	0,0	0,05	4	-
11232353	4HQCR-080-005-025-064-000-08	8,0	8	-	64	25,0	25,0	25,0	0,0	0,05	4	-
11232354	4HQCR-080-005-036-080-000-08	8,0	8	-	80	36,0	36,0	36,0	0,0	0,05	4	-
11232355	4HQCR-080-030-016-064-000-08	8,0	8	-	64	16,0	16,0	16,0	0,0	0,30	4	-
11232356	4HQCR-080-030-025-064-000-08	8,0	8	-	64	25,0	25,0	25,0	0,0	0,30	4	-
11232357	4HQCR-080-030-036-080-000-08	8,0	8	-	80	36,0	36,0	36,0	0,0	0,30	4	-
11232358	4HQCR-080-050-016-064-000-08	8,0	8	-	64	16,0	16,0	16,0	0,0	0,50	4	-
11232359	4HQCR-080-050-025-064-000-08	8,0	8	-	64	25,0	25,0	25,0	0,0	0,50	4	-
11232360	4HQCR-080-050-036-080-000-08	8,0	8	-	80	36,0	36,0	36,0	0,0	0,50	4	-
11232361	4HQCR-100-050-020-075-000-10	10,0	10	-	75	20,0	20,0	20,0	0,0	0,50	4	-
11232362	4HQCR-100-050-025-085-000-10	10,0	10	-	85	25,0	25,0	25,0	0,0	0,50	4	-
11232363	4HQCR-100-050-046-100-000-10	10,0	10	-	100	46,0	46,0	46,0	0,0	0,50	4	-
11232364	4HQCR-100-100-020-075-000-10	10,0	10	-	75	20,0	20,0	20,0	0,0	1,00	4	-
11232365	4HQCR-100-100-025-085-000-10	10,0	10	-	85	25,0	25,0	25,0	0,0	1,00	4	-
11232366	4HQCR-100-100-046-100-000-10	10,0	10	-	100	46,0	46,0	46,0	0,0	1,00	4	-
11232367	4HQCR-120-050-024-084-000-12	12,0	12	-	84	24,0	24,0	24,0	0,0	0,50	4	-
11232368	4HQCR-120-050-042-100-000-12	12,0	12	-	100	42,0	42,0	42,0	0,0	0,50	4	-
11232369	4HQCR-120-050-056-120-000-12	12,0	12	-	120	56,0	56,0	56,0	0,0	0,50	4	-
11232370	4HQCR-120-100-024-084-000-12	12,0	12	-	84	24,0	24,0	24,0	0,0	1,00	4	-
11232371	4HQCR-120-100-042-100-000-12	12,0	12	-	100	42,0	42,0	42,0	0,0	1,00	4	-
11232372	4HQCR-120-100-056-120-000-12	12,0	12	-	120	56,0	56,0	56,0	0,0	1,00	4	-

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4HQCR

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Features:

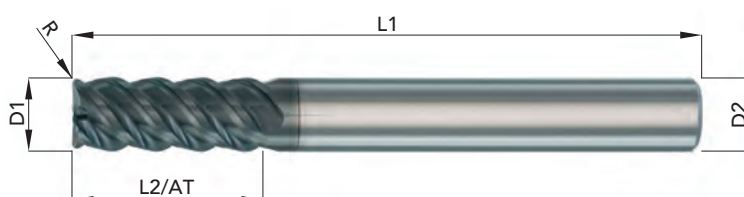
Shank-end mill for contouring and finishing hardened steel up to 65 HRC. Milling cutter, Z=4, **corner radius** and a stable, thick core against vibration. Because of its stability, it is very suitable for accurate and perpendicular milling.

The corner radius on the milling cutter is reinforced.

Z 4
HM M-010
Coating C-010



Radius shank-end mill for finishing



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232373	4HQCR-160-050-048-100-000-16	16,0	16	-	100	48,0	48,0	48,0	0,0	0,50	4	-
11232374	4HQCR-160-050-066-130-000-16	16,0	16	-	130	66,0	66,0	66,0	0,0	0,50	4	-
11232375	4HQCR-160-100-048-100-000-16	16,0	16	-	100	48,0	48,0	48,0	0,0	1,00	4	-
11232376	4HQCR-160-100-066-130-000-16	16,0	16	-	130	66,0	66,0	66,0	0,0	1,00	4	-
11232377	4HQCR-200-050-045-100-000-20	20,0	20	-	100	45,0	45,0	45,0	0,0	0,50	4	-
11232378	4HQCR-200-050-060-125-000-20	20,0	20	-	125	60,0	60,0	60,0	0,0	0,50	4	-
11232379	4HQCR-200-050-080-150-000-20	20,0	20	-	150	80,0	80,0	80,0	0,0	0,50	4	-
11232380	4HQCR-200-100-045-100-000-20	20,0	20	-	100	45,0	45,0	45,0	0,0	1,00	4	-
11232381	4HQCR-200-100-060-125-000-20	20,0	20	-	125	60,0	60,0	60,0	0,0	1,00	4	-
11232382	4HQCR-200-100-080-150-000-20	20,0	20	-	150	80,0	80,0	80,0	0,0	1,00	4	-

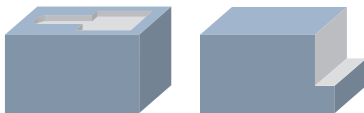
Subject to technical modifications

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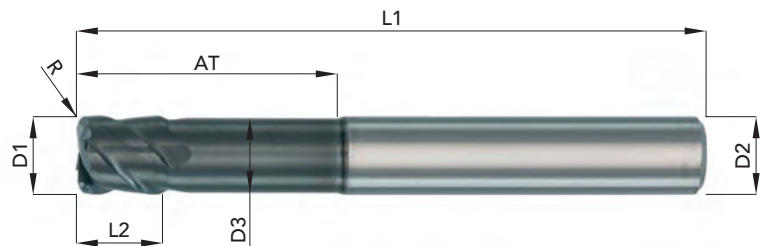
Features:

Milling cutter, Z=4, for 2D and 3D milling in hardened steel.
Stable due to strong core and short cutting length.
With strong helical rise and corner radius.
(For pre-milling, please use type HGT)

Z 4
HM M-010
Coating C-010



End milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232383	HMTA-030-010-012-060-000-06	3,0	6	2,80	60	3,0	12,0	12,0	0,0	0,10	4	-
11232384	HMTA-030-025-015-060-000-06	3,0	6	2,80	60	3,0	15,0	15,0	0,0	0,25	4	-
11232385	HMTA-035-030-012-060-000-06	3,5	6	3,30	60	3,0	12,0	12,0	0,0	0,30	4	-
11232386	HMTA-035-050-012-060-000-06	3,5	6	3,30	60	3,0	12,0	12,0	0,0	0,50	4	-
11232387	HMTA-040-010-015-060-000-06	4,0	6	3,60	60	4,0	15,0	15,0	0,0	0,10	4	-
11232388	HMTA-040-030-015-060-000-06	4,0	6	3,60	60	4,0	15,0	15,0	0,0	0,30	4	-
11232389	HMTA-040-050-015-060-000-06	4,0	6	3,60	60	4,0	15,0	15,0	0,0	0,50	4	-
11232390	HMTA-040-100-015-060-000-06	4,0	6	3,60	60	4,0	15,0	15,0	0,0	1,00	4	-
11232391	HMTA-050-010-015-060-000-06	5,0	6	4,60	60	4,0	15,0	15,0	0,0	0,10	4	-
11232392	HMTA-050-030-015-060-000-06	5,0	6	4,60	60	4,0	15,0	15,0	0,0	0,30	4	-
11232393	HMTA-050-050-015-060-000-06	5,0	6	4,60	60	4,0	15,0	15,0	0,0	0,50	4	-
11232394	HMTA-060-010-018-060-000-06	6,0	6	5,60	60	5,0	18,0	18,0	0,0	0,10	4	-
11232395	HMTA-060-030-018-060-000-06	6,0	6	5,60	60	5,0	18,0	18,0	0,0	0,30	4	-
11232396	HMTA-060-050-018-060-000-06	6,0	6	5,60	60	5,0	18,0	18,0	0,0	0,50	4	-
11232397	HMTA-060-050-030-060-000-06	6,0	6	5,60	60	5,0	30,0	30,0	0,0	0,50	4	-
11232398	HMTA-060-100-018-060-000-06	6,0	6	5,60	60	5,0	18,0	18,0	0,0	1,00	4	-

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HMTA

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Features:

Milling cutter, Z=4, for 2D and 3D milling in hardened steel.

Stable due to strong core and short cutting length.

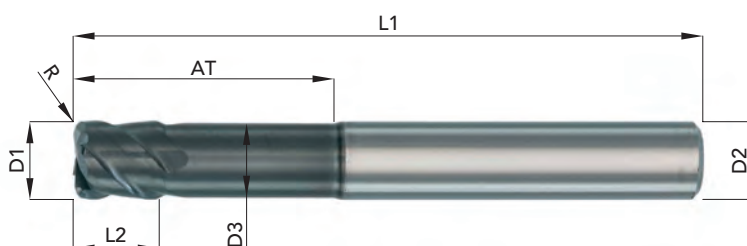
With strong helical rise and corner radius.

(For pre-milling, please use type HGT)

Z 4
HM M-010
Coating C-010



End milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232399	HMTA-080-050-026-064-000-08	8,0	8	7,60	64	8,0	26,0	26,0	0,0	0,50	4	-
11232400	HMTA-080-100-026-064-000-08	8,0	8	7,60	64	8,0	26,0	26,0	0,0	1,00	4	-
11232401	HMTA-100-050-030-075-000-10	10,0	10	9,60	75	8,0	30,0	30,0	0,0	0,50	4	-
11232402	HMTA-100-100-030-075-000-10	10,0	10	9,60	75	8,0	30,0	30,0	0,0	1,00	4	-
11232403	HMTA-120-050-040-084-000-12	12,0	12	11,60	84	10,0	40,0	40,0	0,0	0,50	6	-
11232404	HMTA-120-100-030-100-000-12	12,0	12	11,60	100	10,0	30,0	30,0	0,0	1,00	6	-
11232405	HMTA-120-100-040-084-000-12	12,0	12	11,60	84	10,0	40,0	40,0	0,0	1,00	6	-
11232406	HMTA-120-100-040-100-000-12	12,0	12	11,60	100	10,0	40,0	40,0	0,0	1,00	6	-

Subject to technical modifications

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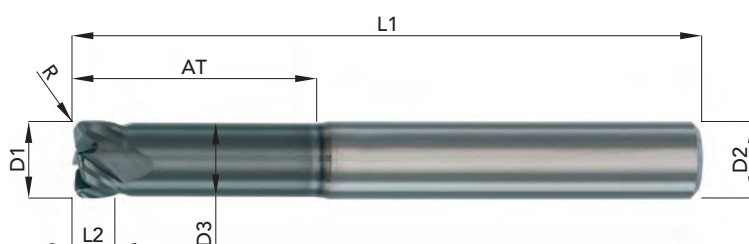
Features:

Milling cutter, Z=4, for 2D and 3D **pre-milling** in hardened steel.
 Stable due to strong core and short cutting length.
 Equipped with uneven distribution to counteract vibration.
 Milling cutter with high precision and **cooling through the shank**.

Z 4
HM M-050
Coating C-010



Radius milling cutter with internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232407	HGT-040-040-016-060-000-06	4,0	6	3,60	60	2,0	16,0	16,0	0,0	0,40	4	V
11232408	HGT-040-050-012-060-000-06	4,0	6	3,60	60	2,0	12,0	12,0	0,0	0,50	4	V
11232409	HGT-040-050-016-060-000-06	4,0	6	3,60	60	2,0	16,0	16,0	0,0	0,50	4	V
11232410	HGT-040-050-020-060-000-06	4,0	6	3,60	60	2,0	20,0	20,0	0,0	0,50	4	V
11232411	HGT-040-100-012-060-000-06	4,0	6	3,60	60	2,0	12,0	12,0	0,0	1,00	4	V
11232412	HGT-040-100-016-060-000-06	4,0	6	3,60	60	2,0	16,0	16,0	0,0	1,00	4	V
11232413	HGT-050-050-016-060-000-06	5,0	6	4,60	60	3,0	16,0	16,0	0,0	0,50	4	V
11232414	HGT-050-100-015-060-000-06	5,0	6	4,60	60	3,0	15,0	15,0	0,0	1,00	4	V
11232415	HGT-050-100-016-060-000-06	5,0	6	4,60	60	3,0	16,0	16,0	0,0	1,00	4	V
11232416	HGT-060-050-018-060-000-06	6,0	6	5,60	60	3,0	18,0	18,0	0,0	0,50	4	V
11232417	HGT-060-100-018-060-000-06	6,0	6	5,60	60	3,0	18,0	18,0	0,0	1,00	4	V
11232418	HGT-060-100-024-075-000-06	6,0	6	5,60	75	3,0	24,0	24,0	0,0	1,00	4	V
11232419	HGT-060-150-018-060-000-06	6,0	6	5,60	60	3,0	18,0	18,0	0,0	1,50	4	V
11232420	HGT-060-150-024-075-000-06	6,0	6	5,60	75	3,0	24,0	24,0	0,0	1,50	4	V
11232421	HGT-060-150-030-090-000-06	6,0	6	5,60	90	3,0	30,0	30,0	0,0	1,50	4	V
11232422	HGT-060-150-040-090-000-06	6,0	6	5,60	90	3,0	40,0	40,0	0,0	1,50	4	V
11232423	HGT-060-200-018-060-000-06	6,0	6	5,60	60	4,0	18,0	18,0	0,0	2,00	4	V

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Features:

Milling cutter, Z=4, for 2D and 3D **pre-milling** in hardened steel.

Stable due to strong core and short cutting length.

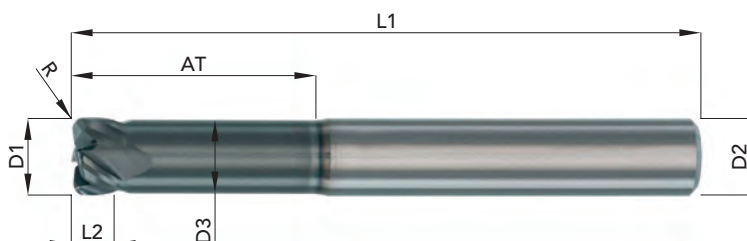
Equipped with uneven distribution to counteract vibration.

Milling cutter with high precision and **cooling through the shank**.

Z 4
HM M-050
Coating C-010



Radius milling cutter with internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232424	HGT-080-050-024-065-000-08	8,0	8	7,60	65	4,0	24,0	24,0	0,0	0,50	4	V
11232425	HGT-080-100-024-065-000-08	8,0	8	7,60	65	4,0	24,0	24,0	0,0	1,00	4	V
11232426	HGT-080-200-024-065-000-08	8,0	8	7,60	65	4,0	24,0	24,0	0,0	2,00	4	V
11232427	HGT-080-100-056-100-000-08	8,0	8	7,60	100	4,0	56,0	56,0	0,0	1,00	4	V
11232428	HGT-080-200-040-090-000-08	8,0	8	7,60	90	4,0	40,0	40,0	0,0	2,00	4	V
11232429	HGT-080-200-065-120-000-08	8,0	8	7,60	120	4,0	65,0	65,0	0,0	2,00	4	V
11232430	HGT-100-050-030-085-000-10	10,0	10	9,60	85	5,0	30,0	30,0	0,0	0,50	4	V
11232431	HGT-100-100-030-085-000-10	10,0	10	9,60	85	5,0	30,0	30,0	0,0	1,00	4	V
11232432	HGT-100-200-030-085-000-10	10,0	10	9,60	85	5,0	30,0	30,0	0,0	2,00	4	V
11232433	HGT-100-300-030-085-000-10	10,0	10	9,60	85	5,0	30,0	30,0	0,0	3,00	4	V
11232434	HGT-120-100-030-075-000-12	12,0	12	11,60	75	6,0	30,0	30,0	0,0	1,00	4	V
11232435	HGT-120-100-035-080-000-12	12,0	12	11,60	80	6,0	35,0	35,0	0,0	1,00	4	V
11232436	HGT-120-150-040-080-000-12	12,0	12	11,60	80	6,0	40,0	40,0	0,0	1,50	4	V
11232437	HGT-120-200-060-100-000-12	12,0	12	11,60	100	6,0	60,0	60,0	0,0	2,00	4	V
11232438	HGT-120-300-040-100-000-12	12,0	12	11,60	100	6,0	40,0	40,0	0,0	3,00	4	V

Subject to technical modifications

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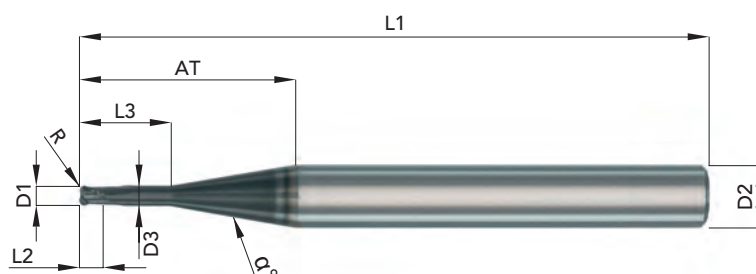
Features:

Toric milling cutter, Z=2, with **conically** ground neck (special angle, see α° in the table).

Very stable due to special conical angle, high flexural strength.

Radius is stable and this cutter is very suitable for various types of hard steel.

Z 2
HM M-010
Coating C-010

**Toric milling cutter tapered neck**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232439	HT-006-010-015-051-011-06	0,6	6	0,55	51	0,45	1,5	15,0	1,1	0,10	2	-
11232440	HT-010-020-020-051-072-06	1,0	6	0,95	51	0,75	5,0	20,0	7,2	0,20	2	-
11232441	HT-015-030-020-058-065-06	1,5	6	1,40	58	1,13	6,0	20,0	6,5	0,30	2	-
11232442	HT-015-050-020-058-065-06	1,5	6	1,40	58	1,13	6,0	20,0	6,5	0,50	2	-
11232443	HT-017-030-020-058-062-06	1,7	6	1,60	58	1,70	7,0	20,0	6,2	0,30	2	-
11232444	HT-017-050-020-058-062-06	1,7	6	1,60	58	1,70	7,0	20,0	6,2	0,50	2	-
11232445	HT-020-050-020-058-058-06	2,0	6	1,90	58	2,00	8,0	20,0	5,8	0,50	2	-
11232446	HT-025-050-020-058-050-06	2,5	6	2,35	58	2,50	9,0	20,0	5,0	0,50	2	-
11232447	HT-030-050-020-058-044-06	3,0	6	2,85	58	3,00	10,0	20,0	4,4	0,50	2	-

Subject to technical modifications

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Features:

Toric milling cutter, Z=2, with **conically** ground neck (special angle, see α° in the table).

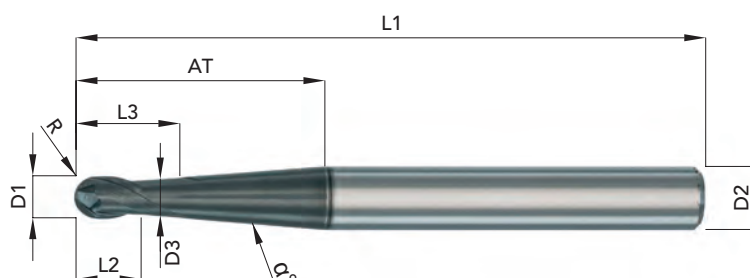
Very stable due to special conical angle, high flexural strength.

Radius is stable and this cutter is very suitable for various types of hard steel.

Z 2
HM M-010
Coating C-010



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232448	HK-010-050-014-051-061-04	1,0	4	0,95	51	0,75	3,0	14,0	6,1	0,50	2	-
11232449	HK-015-075-015-051-047-04	1,5	4	1,40	51	1,13	4,0	15,0	4,7	0,75	2	-
11232450	HK-008-040-013-058-022-06	0,8	6	0,75	58	0,60	2,0	13,0	2,2	0,40	2	-
11232451	HK-010-050-005-058-009-06	1,0	6	0,95	58	0,75	2,5	5,0	0,9	0,50	2	-
11232452	HK-010-050-010-058-009-06	1,0	6	0,95	58	0,75	2,5	10,0	0,9	0,50	2	-
11232453	HK-010-050-013-058-103-06	1,0	6	0,95	58	0,75	2,5	13,8	10,3	0,50	2	-
11232454	HK-015-075-017-058-075-06	1,5	6	1,40	58	1,13	4,3	17,0	7,5	0,75	2	-
11232455	HK-020-100-016-058-070-06	2,0	6	1,90	58	2,00	5,0	16,3	7,0	1,00	2	-
11232456	HK-025-125-016-058-062-06	2,5	6	2,35	58	2,50	6,3	16,2	6,2	1,25	2	-
11232457	HK-030-150-016-058-054-06	3,0	6	2,85	58	3,00	7,5	16,0	5,4	1,50	2	-
11232458	HK-035-175-015-058-045-06	3,5	6	3,35	58	3,50	8,8	15,8	4,5	1,75	2	-
11232459	HK-040-200-015-058-037-06	4,0	6	3,85	58	4,00	10,0	15,7	3,7	2,00	2	-
11232460	HK-050-250-015-058-019-06	5,0	6	4,80	58	5,00	12,5	15,3	1,9	2,50	2	-

Subject to technical modifications

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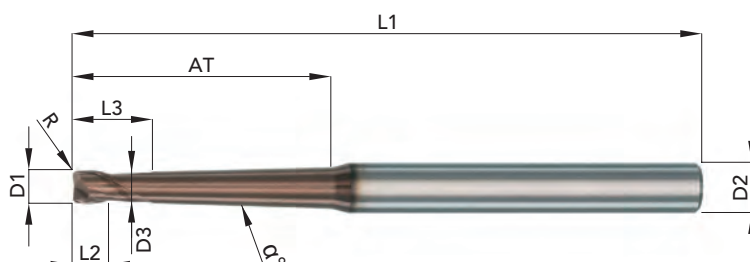
Features:

Toric milling cutter, Z=2, with corner radius and conically ground neck.
 Very suitable for milling (hard) moulds up to **70 HRC** with discharge angle.
 High accuracy of form and runout. **Specially developed coating.**
 The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
 HM M-010
 Coating C-180



Toric milling cutter tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232461	SHT-020-050-020-060-009-06	2,0	6	1,90	60	2,0	6,0	20,0	0,9	0,50	2	-
11232462	SHT-020-050-025-070-009-06	2,0	6	1,90	70	2,0	6,0	25,0	0,9	0,50	2	-
11232463	SHT-020-050-032-070-014-06	2,0	6	1,90	70	2,0	6,0	32,0	1,4	0,50	2	-
11232464	SHT-025-050-035-080-014-06	2,5	6	2,35	80	2,5	8,0	35,0	1,4	0,50	2	-
11232465	SHT-030-050-035-075-009-06	3,0	6	2,85	75	3,0	8,0	35,0	0,9	0,50	2	-
11232466	SHT-030-050-040-075-009-06	3,0	6	2,85	75	3,0	8,0	40,0	0,9	0,50	2	-
11232467	SHT-030-050-045-100-014-06	3,0	6	2,85	100	3,0	8,0	45,0	1,4	0,50	2	-
11232468	SHT-030-050-060-100-014-08	3,0	8	2,85	100	3,0	8,0	60,0	1,4	0,50	2	-
11232469	SHT-030-100-040-075-009-06	3,0	6	2,85	75	3,0	8,0	40,0	0,9	1,00	2	-
11232470	SHT-040-050-040-080-009-06	4,0	6	3,85	80	4,0	10,0	40,0	0,9	0,50	2	-
11232471	SHT-040-050-060-100-014-08	4,0	8	3,85	100	4,0	10,0	60,0	1,4	0,50	2	-
11232472	SHT-040-050-075-120-009-08	4,0	8	3,85	120	4,0	10,0	75,0	0,9	0,50	2	-
11232473	SHT-040-100-040-080-009-06	4,0	6	3,85	80	4,0	10,0	40,0	0,9	1,00	2	-
11232474	SHT-040-100-040-080-014-06	4,0	6	3,85	80	4,0	10,0	40,0	1,4	1,00	2	-
11232475	SHT-040-100-060-120-009-08	4,0	8	3,85	120	4,0	10,0	60,0	0,9	1,00	2	-
11232476	SHT-040-150-040-080-014-06	4,0	6	3,85	80	4,0	10,0	40,0	1,4	1,50	2	-

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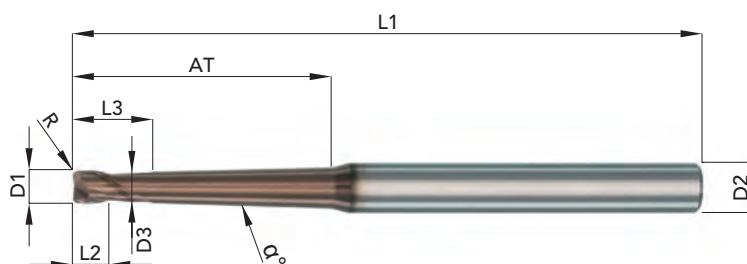
Features:

Toric milling cutter, Z=2, with corner radius and **conically ground neck**.
 Very suitable for milling (hard) moulds up to **70 HRC** with discharge angle.
 High accuracy of form and runout. **Specially developed coating**.
 The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
 HM M-010
 Coating C-180



Toric milling cutter tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232477	SHT-060-050-040-080-009-08	6,0	8	5,80	80	8,0	15,0	40,0	0,9	0,50	2	-
11232478	SHT-060-100-040-080-009-08	6,0	8	5,80	80	8,0	15,0	40,0	0,9	1,00	2	-
11232479	SHT-060-100-050-100-012-08	6,0	8	5,80	100	8,0	15,0	50,0	1,2	1,00	2	-
11232480	SHT-060-100-060-100-009-08	6,0	8	5,80	100	8,0	15,0	60,0	0,9	1,00	2	-
11232481	SHT-080-100-050-100-014-10	8,0	10	7,70	100	8,0	20,0	50,0	1,4	1,00	2	-
11232482	SHT-080-100-050-100-014-10	8,0	10	7,70	100	8,0	20,0	50,0	1,4	1,00	2	-
11232483	SHT-080-100-065-120-009-10	8,0	10	7,70	120	8,0	20,0	65,0	0,9	1,00	2	-
11232484	SHT-080-200-065-120-009-10	8,0	10	7,70	120	8,0	20,0	65,0	0,9	2,00	2	-
11232485	SHT-100-100-070-120-008-12	10,0	12	9,65	120	10,0	30,0	70,0	0,8	1,00	2	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Toric milling cutter, Z=2, with corner radius and cylindrically ground neck.

Very suitable for milling (hard) moulds up to **70 HRC**.

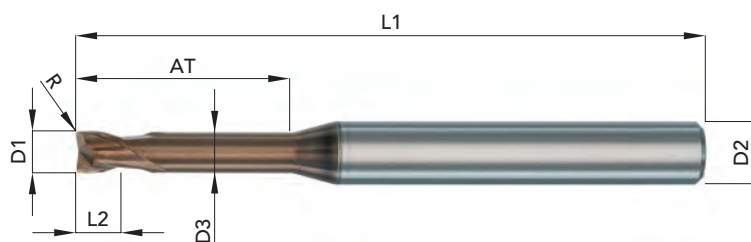
High accuracy of form and runout. **Specially developed coating.**

The radius is very stable. Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-010
Coating C-180



Toric milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232486	SHTZA-010-010-006-060-000-06	1,0	6	0,95	60	0,75	6,0	6,0	0,0	0,10	2	-
11232487	SHTZA-015-015-010-060-000-06	1,5	6	1,40	60	1,13	10,0	10,0	0,0	0,15	2	-
11232488	SHTZA-020-020-008-060-000-06	2,0	6	1,90	60	2,0	8,0	8,0	0,0	0,20	2	-
11232489	SHTZA-020-020-010-060-000-06	2,0	6	1,90	60	2,0	10,0	10,0	0,0	0,20	2	-
11232490	SHTZA-020-050-010-060-000-06	2,0	6	1,90	60	2,0	10,0	10,0	0,0	0,50	2	-
11232491	SHTZA-020-050-015-060-000-06	2,0	6	1,90	60	2,0	15,0	15,0	0,0	0,50	2	-
11232492	SHTZA-030-050-010-060-000-06	3,0	6	2,85	60	3,0	10,0	10,0	0,0	0,50	2	-
11232493	SHTZA-030-050-015-060-000-06	3,0	6	2,85	60	3,0	15,0	15,0	0,0	0,50	2	-
11232494	SHTZA-040-050-015-060-000-06	4,0	6	3,85	60	4,0	15,0	15,0	0,0	0,50	2	-
11232495	SHTZA-040-050-020-060-000-06	4,0	6	3,85	60	4,0	20,0	20,0	0,0	0,50	2	-
11232496	SHTZA-040-100-015-060-000-06	4,0	6	3,85	60	4,0	15,0	15,0	0,0	1,00	2	-
11232497	SHTZA-040-100-020-060-000-06	4,0	6	3,85	60	4,0	20,0	20,0	0,0	1,00	2	-
11232498	SHTZA-060-100-020-060-000-06	6,0	6	5,80	60	6,0	20,0	20,0	0,0	1,00	2	-
11232499	SHTZA-060-100-040-075-000-06	6,0	6	5,80	75	6,0	40,0	40,0	0,0	1,00	2	-
11232500	SHTZA-060-200-020-060-000-06	6,0	6	5,80	60	6,0	20,0	20,0	0,0	2,00	2	-
11232501	SHTZA-080-100-040-075-000-08	8,0	8	7,70	75	8,0	40,0	40,0	0,0	1,00	2	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Ball milling cutter, Z=2.

Very suitable for copy milling in hardened materials up to 70 HRC.

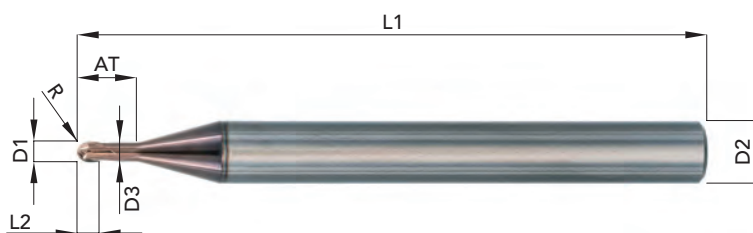
High accuracy of form and runout. **Specially developed coating.**

Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-010
Coating C-180



Full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232502	SHKZ-006-030-002-060-000-06	0,6	6	0,55	60	0,45	2,0	2,0	0,0	0,30	2	-
11232503	SHKZ-006-030-003-060-000-06	0,6	6	0,55	60	0,45	3,0	3,0	0,0	0,30	2	-
11232504	SHKZ-006-030-005-060-000-06	0,6	6	0,55	60	0,45	5,0	5,0	0,0	0,30	2	-
11232505	SHKZ-008-040-002-060-000-06	0,8	6	0,75	60	0,60	2,0	2,0	0,0	0,40	2	-
11232506	SHKZ-008-040-003-060-000-06	0,8	6	0,75	60	0,60	3,0	3,0	0,0	0,40	2	-
11232507	SHKZ-008-040-004-060-000-06	0,8	6	0,75	60	0,60	4,0	4,0	0,0	0,40	2	-
11232508	SHKZ-008-040-006-060-000-06	0,8	6	0,75	60	0,60	6,0	6,0	0,0	0,40	2	-
11232509	SHKZ-010-050-003-060-000-06	1,0	6	0,95	60	0,75	3,0	3,0	0,0	0,50	2	-
11232510	SHKZ-010-050-004-060-000-06	1,0	6	0,95	60	0,75	4,0	4,0	0,0	0,50	2	-
11232511	SHKZ-010-050-005-060-000-06	1,0	6	0,95	60	0,75	5,0	5,0	0,0	0,50	2	-
11232512	SHKZ-010-050-006-060-000-06	1,0	6	0,95	60	0,75	6,0	6,0	0,0	0,50	2	-
11232513	SHKZ-010-050-007-060-000-06	1,0	6	0,95	60	0,75	7,0	7,0	0,0	0,50	2	-
11232514	SHKZ-010-050-008-060-000-06	1,0	6	0,95	60	0,75	8,0	8,0	0,0	0,50	2	-
11232515	SHKZ-010-050-010-060-000-06	1,0	6	0,95	60	0,75	10,0	10,0	0,0	0,50	2	-
11232516	SHKZ-010-050-012-060-000-06	1,0	6	0,95	60	0,75	12,0	12,0	0,0	0,50	2	-
11232517	SHKZ-010-050-015-060-000-06	1,0	6	0,95	60	0,75	15,0	15,0	0,0	0,50	2	-

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Features:

Ball milling cutter, Z=2.

Very suitable for copy milling in hardened materials up to **70 HRC**.

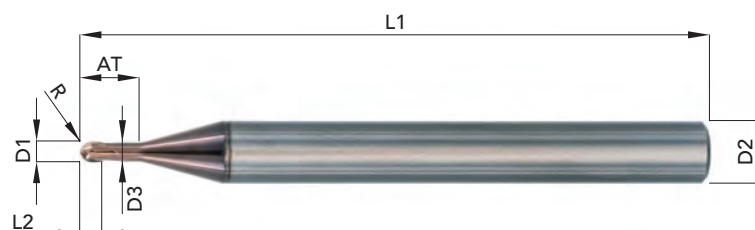
High accuracy of form and runout. **Specially developed coating.**

Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-010
Coating C-180



Full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232518	SHKZ-015-075-005-060-000-06	1,5	6	1,40	60	1,13	5,0	5,0	0,0	0,75	2	-
11232519	SHKZ-015-075-008-060-000-06	1,5	6	1,40	60	1,13	8,0	8,0	0,0	0,75	2	-
11232520	SHKZ-015-075-010-060-000-06	1,5	6	1,40	60	1,13	10,0	10,0	0,0	0,75	2	-
11232521	SHKZ-015-075-011-060-000-06	1,5	6	1,40	60	1,13	11,0	11,0	0,0	0,75	2	-
11232522	SHKZ-015-075-012-060-000-06	1,5	6	1,40	60	1,13	12,0	12,0	0,0	0,75	2	-
11232523	SHKZ-015-075-015-060-000-06	1,5	6	1,40	60	1,13	15,0	15,0	0,0	0,75	2	-
11232524	SHKZ-015-075-020-060-000-06	1,5	6	1,40	60	1,13	20,0	20,0	0,0	0,75	2	-
11232525	SHKZ-020-100-005-060-000-06	2,0	6	1,90	60	2,0	5,0	5,0	0,0	1,00	2	-
11232526	SHKZ-020-100-006-060-000-06	2,0	6	1,90	60	2,0	6,0	6,0	0,0	1,00	2	-
11232527	SHKZ-020-100-010-060-000-06	2,0	6	1,90	60	2,0	10,0	10,0	0,0	1,00	2	-
11232528	SHKZ-020-100-012-060-000-06	2,0	6	1,90	60	2,0	12,0	12,0	0,0	1,00	2	-
11232529	SHKZ-020-100-014-060-000-06	2,0	6	1,90	60	2,0	14,0	14,0	0,0	1,00	2	-
11232530	SHKZ-020-100-015-060-000-06	2,0	6	1,90	60	2,0	15,0	15,0	0,0	1,00	2	-
11232531	SHKZ-020-100-020-060-000-06	2,0	6	1,90	60	2,0	20,0	20,0	0,0	1,00	2	-
11232532	SHKZ-020-100-025-060-000-06	2,0	6	1,90	60	2,0	25,0	25,0	0,0	1,00	2	-
11232533	SHKZ-025-125-008-060-000-06	2,5	6	2,35	60	2,5	8,0	8,0	0,0	1,25	2	-
11232534	SHKZ-025-125-013-060-000-06	2,5	6	2,35	60	2,5	13,0	13,0	0,0	1,25	2	-
11232535	SHKZ-025-125-018-060-000-06	2,5	6	2,35	60	2,5	18,0	18,0	0,0	1,25	2	-
11232536	SHKZ-025-125-025-060-000-06	2,5	6	2,35	60	2,5	25,0	25,0	0,0	1,25	2	-

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Features:

Ball milling cutter, Z=2.

Very suitable for copy milling in hardened materials up to **70 HRC**.

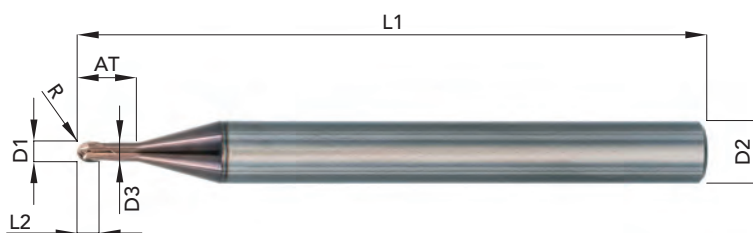
High accuracy of form and runout. **Specially developed coating.**

Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-010
Coating C-180



Full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232537	SHKZ-030-150-006-060-000-06	3,0	6	2,85	60	3,0	6,0	6,0	0,0	1,50	2	-
11232538	SHKZ-030-150-009-060-000-06	3,0	6	2,85	60	3,0	9,0	9,0	0,0	1,50	2	-
11232539	SHKZ-030-150-010-060-000-06	3,0	6	2,85	60	3,0	10,0	10,0	0,0	1,50	2	-
11232540	SHKZ-030-150-012-060-000-06	3,0	6	2,85	60	3,0	12,0	12,0	0,0	1,50	2	-
11232541	SHKZ-030-150-015-060-000-06	3,0	6	2,85	60	3,0	15,0	15,0	0,0	1,50	2	-
11232542	SHKZ-030-150-018-060-000-06	3,0	6	2,85	60	3,0	18,0	18,0	0,0	1,50	2	-
11232543	SHKZ-030-150-021-060-000-06	3,0	6	2,85	60	3,0	21,0	21,0	0,0	1,50	2	-
11232544	SHKZ-030-150-027-070-000-06	3,0	6	2,85	70	3,0	27,0	27,0	0,0	1,50	2	-
11232545	SHKZ-030-150-030-070-000-06	3,0	6	2,85	70	3,0	30,0	30,0	0,0	1,50	2	-
11232546	SHKZ-040-200-010-060-000-06	4,0	6	3,85	60	4,0	10,0	10,0	0,0	2,00	2	-
11232547	SHKZ-040-200-012-060-000-06	4,0	6	3,85	60	4,0	12,0	12,0	0,0	2,00	2	-
11232548	SHKZ-040-200-016-060-000-06	4,0	6	3,85	60	4,0	16,0	16,0	0,0	2,00	2	-
11232549	SHKZ-040-200-020-060-000-06	4,0	6	3,85	60	4,0	20,0	20,0	0,0	2,00	2	-
11232550	SHKZ-040-200-028-070-000-06	4,0	6	3,85	70	4,0	28,0	28,0	0,0	2,00	2	-
11232551	SHKZ-040-200-032-070-000-06	4,0	6	3,85	70	4,0	32,0	32,0	0,0	2,00	2	-
11232552	SHKZ-040-200-036-070-000-06	4,0	6	3,85	70	4,0	36,0	36,0	0,0	2,00	2	-
11232553	SHKZ-050-250-015-060-000-06	5,0	6	4,80	60	5,0	15,0	15,0	0,0	2,50	2	-
11232554	SHKZ-050-250-020-060-000-06	5,0	6	4,80	60	5,0	20,0	20,0	0,0	2,50	2	-
11232555	SHKZ-050-250-025-060-000-06	5,0	6	4,80	60	5,0	25,0	25,0	0,0	2,50	2	-
11232556	SHKZ-050-250-030-070-000-06	5,0	6	4,80	70	5,0	30,0	30,0	0,0	2,50	2	-
11232557	SHKZ-050-250-035-070-000-06	5,0	6	4,80	70	5,0	35,0	35,0	0,0	2,50	2	-

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Features:

Ball milling cutter, Z=2.

Very suitable for copy milling in hardened materials up to **70 HRC**.

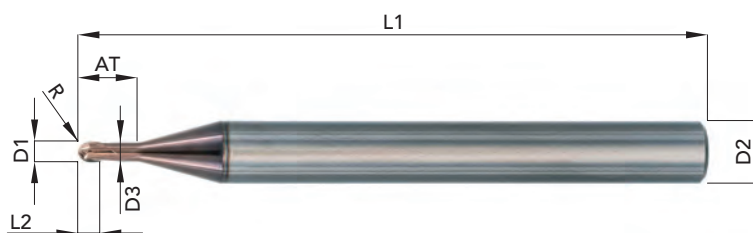
High accuracy of form and runout. **Specially developed coating.**

Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-010
Coating C-180



Full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232558	SHKZ-060-300-009-060-000-06	6,0	6	-	60	9,0	-	9,0	0,0	3,00	2	-
11232559	SHKZ-060-300-009-075-000-06	6,0	6	-	75	9,0	-	9,0	0,0	3,00	2	-
11232560	SHKZ-060-300-009-100-000-06	6,0	6	-	100	9,0	-	9,0	0,0	3,00	2	-
11232561	SHKZ-080-400-012-064-000-08	8,0	8	-	64	12,0	-	12,0	0,0	4,00	2	-
11232562	SHKZ-080-400-012-100-000-08	8,0	8	-	100	12,0	-	12,0	0,0	4,00	2	-
11232563	SHKZ-100-500-015-073-000-10	10,0	10	-	73	15,0	-	15,0	0,0	5,00	2	-
11232564	SHKZ-100-500-015-100-000-10	10,0	10	-	100	15,0	-	15,0	0,0	5,00	2	-
18077	SHKZ-120-600-020-074-000-12	12,0	12	-	74	20,0	-	20,0	0,0	6,00	2	-
18078	SHKZ-120-600-020-100-000-12	12,0	12	-	100	20,0	-	20,0	0,0	6,00	2	-

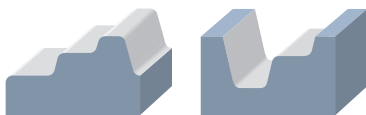
Subject to technical modifications

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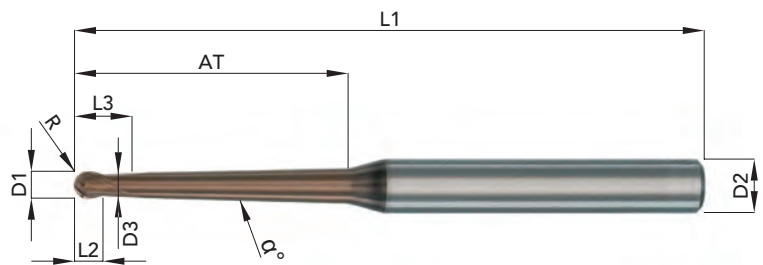
Features:

Ball milling cutter, Z=2, tapering towards the shank for discharge.
 Very suitable for copy milling in hardened materials up to **70 HRC**.
 High accuracy of form and runout. **Specially developed coating**.
 Preferably clamp in shrink fit or hydraulic chuck.

Z 2
 HM M-010
 Coating C-180



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232567	SHK-010-050-010-060-004-06	1,0	6	0,95	60	0,75	3,0	10,0	0,4	0,50	2	-
11232568	SHK-010-050-010-060-009-06	1,0	6	0,95	60	0,75	3,0	10,0	0,9	0,50	2	-
11232569	SHK-010-050-010-060-014-06	1,0	6	0,95	60	0,75	3,0	10,0	1,4	0,50	2	-
11232570	SHK-010-050-015-060-004-06	1,0	6	0,95	60	0,75	3,0	15,0	0,4	0,50	2	-
11232571	SHK-010-050-015-060-009-06	1,0	6	0,95	60	0,75	3,0	15,0	0,9	0,50	2	-
11232572	SHK-010-050-015-060-014-06	1,0	6	0,95	60	0,75	3,0	15,0	1,4	0,50	2	-
11232573	SHK-010-050-020-060-004-06	1,0	6	0,95	60	0,75	3,0	20,0	0,4	0,50	2	-
11232574	SHK-010-050-020-060-009-06	1,0	6	0,95	60	0,75	3,0	20,0	0,9	0,50	2	-
11232575	SHK-010-050-020-060-014-06	1,0	6	0,95	60	0,75	3,0	20,0	1,4	0,50	2	-
11232576	SHK-010-050-025-070-004-06	1,0	6	0,95	70	0,75	3,0	25,0	0,4	0,50	2	-
11232577	SHK-010-050-025-070-009-06	1,0	6	0,95	70	0,75	3,0	25,0	0,9	0,50	2	-
11232578	SHK-010-050-025-070-014-06	1,0	6	0,95	70	0,75	3,0	25,0	1,4	0,50	2	-
11232579	SHK-010-050-030-070-004-06	1,0	6	0,95	70	0,75	3,0	30,0	0,4	0,50	2	-
11232580	SHK-010-050-030-070-009-06	1,0	6	0,95	70	0,75	3,0	30,0	0,9	0,50	2	-
11232581	SHK-010-050-030-070-014-06	1,0	6	0,95	70	0,75	3,0	30,0	1,4	0,50	2	-
11232582	SHK-010-050-035-075-004-06	1,0	6	0,95	75	0,75	3,0	35,0	0,4	0,50	2	-
11232583	SHK-010-050-035-075-009-06	1,0	6	0,95	75	0,75	3,0	35,0	0,9	0,50	2	-
11232584	SHK-010-050-035-075-014-06	1,0	6	0,95	75	0,75	3,0	35,0	1,4	0,50	2	-
11232585	SHK-020-100-015-060-004-06	2,0	6	1,90	60	2,0	6,0	15,0	0,4	1,00	2	-
11232586	SHK-020-100-015-060-009-06	2,0	6	1,90	60	2,0	6,0	15,0	0,9	1,00	2	-
11232587	SHK-020-100-015-060-014-06	2,0	6	1,90	60	2,0	6,0	15,0	1,4	1,00	2	-

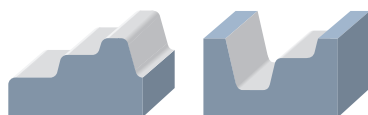
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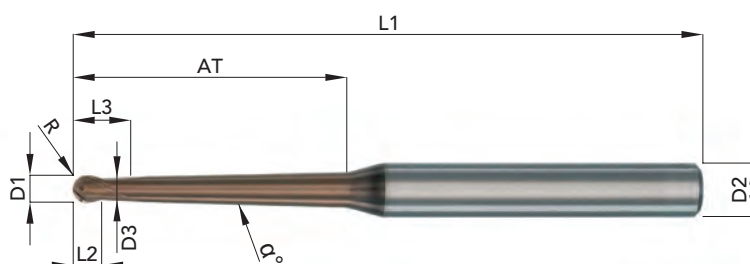
Features:

Ball milling cutter, Z=2, tapering towards the shank for discharge.
Very suitable for copy milling in hardened materials up to **70 HRC**.
High accuracy of form and runout. **Specially developed coating**.
Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-010
Coating C-180



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232588	SHK-020-100-020-060-004-06	2,0	6	1,90	60	2,0	6,0	20,0	0,4	1,00	2	-
11232589	SHK-020-100-020-060-009-06	2,0	6	1,90	60	2,0	6,0	20,0	0,9	1,00	2	-
11232590	SHK-020-100-020-060-014-06	2,0	6	1,90	60	2,0	6,0	20,0	1,4	1,00	2	-
11232591	SHK-020-100-025-070-004-06	2,0	6	1,90	70	2,0	6,0	25,0	0,4	1,00	2	-
11232592	SHK-020-100-025-070-009-06	2,0	6	1,90	70	2,0	6,0	25,0	0,9	1,00	2	-
11232593	SHK-020-100-025-070-014-06	2,0	6	1,90	70	2,0	6,0	25,0	1,4	1,00	2	-
11232594	SHK-020-100-030-070-004-06	2,0	6	1,90	70	2,0	6,0	30,0	0,4	1,00	2	-
11232595	SHK-020-100-030-070-009-06	2,0	6	1,90	70	2,0	6,0	30,0	0,9	1,00	2	-
11232596	SHK-020-100-030-070-014-06	2,0	6	1,90	70	2,0	6,0	30,0	1,4	1,00	2	-
11232597	SHK-020-100-035-075-004-06	2,0	6	1,90	75	2,0	6,0	35,0	0,4	1,00	2	-
11232598	SHK-020-100-035-075-009-06	2,0	6	1,90	75	2,0	6,0	35,0	0,9	1,00	2	-
11232599	SHK-020-100-035-075-014-06	2,0	6	1,90	75	2,0	6,0	35,0	1,4	1,00	2	-
11232600	SHK-030-150-015-060-004-06	3,0	6	2,85	60	3,0	7,5	15,0	0,4	1,50	2	-
11232601	SHK-030-150-015-060-009-06	3,0	6	2,85	60	3,0	7,5	15,0	0,9	1,50	2	-
11232602	SHK-030-150-015-060-014-06	3,0	6	2,85	60	3,0	7,5	15,0	1,4	1,50	2	-
11232603	SHK-030-150-020-060-004-06	3,0	6	2,85	60	3,0	7,5	20,0	0,4	1,50	2	-
11232604	SHK-030-150-020-060-009-06	3,0	6	2,85	60	3,0	7,5	20,0	0,9	1,50	2	-
11232605	SHK-030-150-020-060-014-06	3,0	6	2,85	60	3,0	7,5	20,0	1,4	1,50	2	-
11232606	SHK-030-150-025-070-004-06	3,0	6	2,85	70	3,0	7,5	25,0	0,4	1,50	2	-
11232607	SHK-030-150-025-070-009-06	3,0	6	2,85	70	3,0	7,5	25,0	0,9	1,50	2	-
11232608	SHK-030-150-025-070-014-06	3,0	6	2,85	70	3,0	7,5	25,0	1,4	1,50	2	-

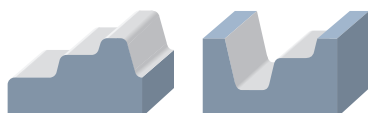
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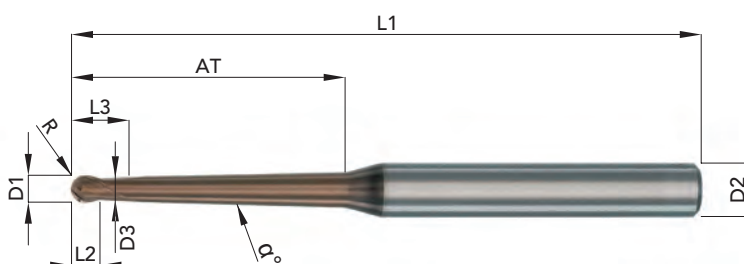
Features:

Ball milling cutter, Z=2, tapering towards the shank for discharge.
 Very suitable for copy milling in hardened materials up to **70 HRC**.
 High accuracy of form and runout. **Specially developed coating**.
 Preferably clamp in shrink fit or hydraulic chuck.

Z 2
 HM M-010
 Coating C-180



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232609	SHK-030-150-030-070-004-06	3,0	6	2,85	70	3,0	7,5	30,0	0,4	1,50	2	-
11232610	SHK-030-150-030-070-009-06	3,0	6	2,85	70	3,0	7,5	30,0	0,9	1,50	2	-
11232611	SHK-030-150-030-070-014-06	3,0	6	2,85	70	3,0	7,5	30,0	1,4	1,50	2	-
11232612	SHK-030-150-035-075-004-06	3,0	6	2,85	75	3,0	7,5	35,0	0,4	1,50	2	-
11232613	SHK-030-150-035-075-009-06	3,0	6	2,85	75	3,0	7,5	35,0	0,9	1,50	2	-
11232614	SHK-030-150-035-075-014-06	3,0	6	2,85	75	3,0	7,5	35,0	1,4	1,50	2	-
11232615	SHK-030-150-040-080-004-06	3,0	6	2,85	80	3,0	7,5	40,0	0,4	1,50	2	-
11232616	SHK-030-150-040-080-009-06	3,0	6	2,85	80	3,0	7,5	40,0	0,9	1,50	2	-
11232617	SHK-030-150-040-080-014-06	3,0	6	2,85	80	3,0	7,5	40,0	1,4	1,50	2	-
11232618	SHK-040-200-020-060-004-06	4,0	6	3,85	60	4,0	10,0	20,0	0,4	2,00	2	-
11232619	SHK-040-200-020-060-009-06	4,0	6	3,85	60	4,0	10,0	20,0	0,9	2,00	2	-
11232620	SHK-040-200-020-060-014-06	4,0	6	3,85	60	4,0	10,0	20,0	1,4	2,00	2	-
11232621	SHK-040-200-025-070-004-06	4,0	6	3,85	70	4,0	10,0	25,0	0,4	2,00	2	-
11232622	SHK-040-200-025-070-009-06	4,0	6	3,85	70	4,0	10,0	25,0	0,9	2,00	2	-
11232623	SHK-040-200-025-070-014-06	4,0	6	3,85	70	4,0	10,0	25,0	1,4	2,00	2	-
11232624	SHK-040-200-030-070-004-06	4,0	6	3,85	70	4,0	10,0	30,0	0,4	2,00	2	-
11232625	SHK-040-200-030-070-009-06	4,0	6	3,85	70	4,0	10,0	30,0	0,9	2,00	2	-
11232626	SHK-040-200-030-070-014-06	4,0	6	3,85	70	4,0	10,0	30,0	1,4	2,00	2	-
11232627	SHK-040-200-035-075-004-06	4,0	6	3,85	75	4,0	10,0	35,0	0,4	2,00	2	-
11232628	SHK-040-200-035-075-009-06	4,0	6	3,85	75	4,0	10,0	35,0	0,9	2,00	2	-
11232629	SHK-040-200-035-075-014-06	4,0	6	3,85	75	4,0	10,0	35,0	1,4	2,00	2	-

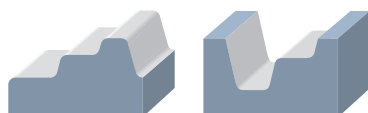
Subject to technical modifications

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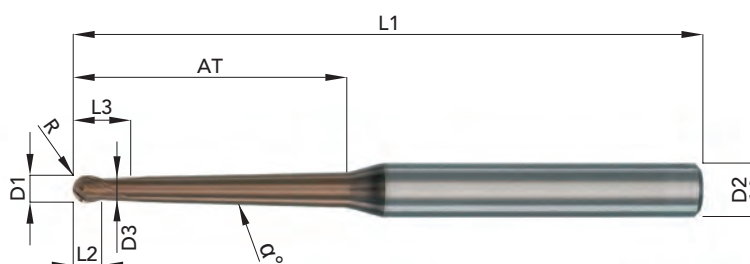
Features:

Ball milling cutter, Z=2, tapering towards the shank for discharge.
Very suitable for copy milling in hardened materials up to **70 HRC**.
High accuracy of form and runout. **Specially developed coating**.
Preferably clamp in shrink fit or hydraulic chuck.

Z 2
HM M-010
Coating C-180



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232630	SHK-040-200-040-080-004-06	4,0	6	3,85	80	4,0	10,0	40,0	0,4	2,00	2	-
11232631	SHK-040-200-040-080-009-06	4,0	6	3,85	80	4,0	10,0	40,0	0,9	2,00	2	-
11232632	SHK-040-200-040-080-014-08	4,0	8	3,85	80	4,0	10,0	40,0	1,4	2,00	2	-
11232633	SHK-040-200-050-090-004-06	4,0	6	3,85	90	4,0	10,0	50,0	0,4	2,00	2	-
11232634	SHK-040-200-050-090-009-06	4,0	6	3,85	90	4,0	10,0	50,0	0,9	2,00	2	-
11232635	SHK-040-200-050-090-014-08	4,0	8	3,85	90	4,0	10,0	50,0	1,4	2,00	2	-
11232636	SHK-040-200-065-100-004-06	4,0	6	3,85	100	4,0	10,0	65,0	0,4	2,00	2	-
11232637	SHK-040-200-065-100-009-06	4,0	6	3,85	100	4,0	10,0	65,0	0,9	2,00	2	-
11232638	SHK-040-200-065-100-014-08	4,0	8	3,85	100	4,0	10,0	65,0	1,4	2,00	2	-
11232639	SHK-060-300-030-080-004-08	6,0	8	5,80	80	9,0	15,0	30,0	0,4	3,00	2	-
11232640	SHK-060-300-030-080-009-08	6,0	8	5,80	80	9,0	15,0	30,0	0,9	3,00	2	-
11232641	SHK-060-300-030-080-014-08	6,0	8	5,80	80	9,0	15,0	30,0	1,4	3,00	2	-
11232642	SHK-060-300-040-085-004-08	6,0	8	5,80	85	9,0	15,0	40,0	0,4	3,00	2	-
11232643	SHK-060-300-040-085-009-08	6,0	8	5,80	85	9,0	15,0	40,0	0,9	3,00	2	-
11232644	SHK-060-300-040-085-014-08	6,0	8	5,80	85	9,0	15,0	40,0	1,4	3,00	2	-
11232645	SHK-060-300-050-090-004-08	6,0	8	5,80	90	9,0	15,0	50,0	0,4	3,00	2	-
11232646	SHK-060-300-050-090-009-08	6,0	8	5,80	90	9,0	15,0	50,0	0,9	3,00	2	-
11232647	SHK-060-300-050-090-014-10	6,0	10	5,80	90	9,0	15,0	50,0	1,4	3,00	2	-
11232648	SHK-060-300-065-100-004-08	6,0	8	5,80	100	9,0	15,0	65,0	0,4	3,00	2	-
11232649	SHK-060-300-065-100-009-08	6,0	8	5,80	100	9,0	15,0	65,0	0,9	3,00	2	-
11232650	SHK-060-300-065-100-014-10	6,0	10	5,80	100	9,0	15,0	65,0	1,4	3,00	2	-
11232651	SHK-060-300-065-120-014-10	6,0	10	5,80	120	9,0	25,0	65,0	1,4	3,00	2	-

Subject to technical modifications

MSHKZ

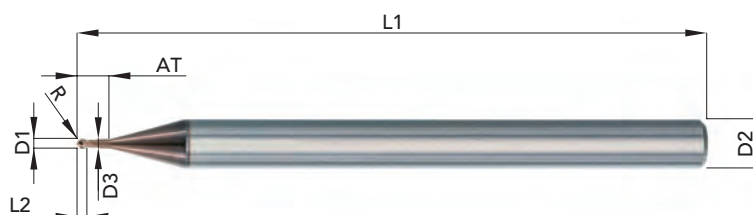
P	M	K	N	S	H
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Features:

Mini ball milling cutter, Z=2, shank diameter 4h4 (ultra-precise).
 Very suitable for copy milling in hardened materials up to **70 HRC**.
 High accuracy of form and runout. **Specially developed coating**.
 Preferably clamp in shrink fit or hydraulic chuck.

Z 2
 HM M-010
 Coating C-185

Mini full-radius milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232652	MSHKZ-002-010-0004-051-000-04	0,2	4	0,18	51	0,15	0,4	0,4	0,0	0,10	2	-
11232653	MSHKZ-002-010-0006-051-000-04	0,2	4	0,18	51	0,15	0,6	0,6	0,0	0,10	2	-
11232654	MSHKZ-003-015-0006-051-000-04	0,3	4	0,28	51	0,23	0,6	0,6	0,0	0,15	2	-
11232655	MSHKZ-003-015-0009-051-000-04	0,3	4	0,28	51	0,23	0,9	0,9	0,0	0,15	2	-
11232656	MSHKZ-004-020-0008-051-000-04	0,4	4	0,38	51	0,30	0,8	0,8	0,0	0,20	2	-
11232657	MSHKZ-004-020-0012-051-000-04	0,4	4	0,38	51	0,30	1,2	1,2	0,0	0,20	2	-
11232658	MSHKZ-005-025-010-051-000-04	0,5	4	0,48	51	0,38	1,0	1,0	0,0	0,25	2	-
11232659	MSHKZ-005-025-015-051-000-04	0,5	4	0,48	51	0,38	1,5	1,5	0,0	0,25	2	-
11232660	MSHKZ-006-030-018-051-000-04	0,6	4	0,58	51	0,45	1,8	1,8	0,0	0,30	2	-
11232661	MSHKZ-006-030-030-051-000-04	0,6	4	0,58	51	0,45	3,0	3,0	0,0	0,30	2	-
11232662	MSHKZ-008-040-024-051-000-04	0,8	4	0,78	51	0,60	2,4	2,4	0,0	0,40	2	-
11232663	MSHKZ-008-040-040-051-000-04	0,8	4	0,78	51	0,60	4,0	4,0	0,0	0,40	2	-
11232664	MSHKZ-010-050-030-051-000-04	1,0	4	0,97	51	0,75	3,0	3,0	0,0	0,50	2	-
11232665	MSHKZ-010-050-050-051-000-04	1,0	4	0,97	51	0,75	5,0	5,0	0,0	0,50	2	-
11232666	MSHKZ-015-075-045-051-000-04	1,5	4	1,47	51	1,13	4,5	4,5	0,0	0,75	2	-
11232667	MSHKZ-015-075-075-051-000-04	1,5	4	1,47	51	1,13	7,5	7,5	0,0	0,75	2	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

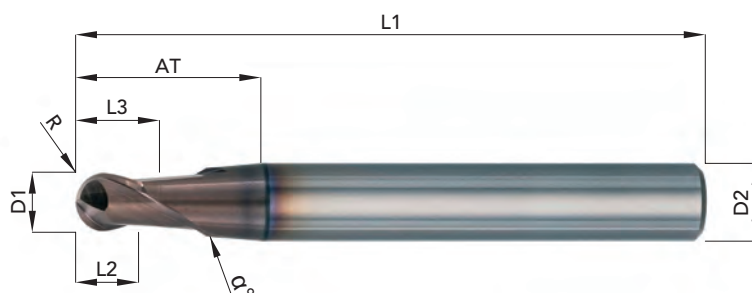
Ball milling cutter, Z=2, with conically ground neck (special angle, see α° in table).

Very stable due to special conical corner, very high flexural strength. **Special coating.**

Radius is very precise and this milling cutter is very suitable for precision turning of

Z 2
HM M-010
Coating C-180

Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232668	SK-010-050-020-060-040-06	1,0	6	1,00	60	0,75	2,5	20,0	4,0	0,50	2	-
11232669	SK-020-100-020-060-040-06	2,0	6	2,00	60	2,00	4,0	20,0	4,0	1,00	2	-
11232670	SK-030-150-020-064-040-08	3,0	8	3,00	64	3,00	6,0	20,0	4,0	1,50	2	-
11232671	SK-040-200-020-064-040-08	4,0	8	4,00	64	4,00	6,5	20,0	4,0	2,00	2	-
11232672	SK-050-250-022-064-040-08	5,0	8	5,00	64	5,00	8,0	22,0	4,0	2,50	2	-
11232673	SK-060-300-019-064-030-08	6,0	8	6,00	64	6,00	8,0	19,0	3,0	3,00	2	-
11232674	SK-080-400-019-075-030-10	8,0	10	8,00	75	7,00	10,0	19,0	3,0	4,00	2	-
11232675	SK-100-500-029-084-020-12	10,0	12	10,00	84	8,00	12,0	29,0	2,0	5,00	2	-

Subject to technical modifications

P	M	K	N	S	H
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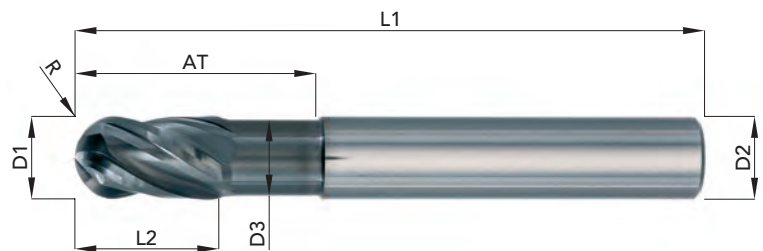
Features:

Special ball milling cutter, Z=4, **cutting edges down to the centre**.
 Very suitable for copy milling/finishing of hardened steel up to 65 HRC.
 With ground neck, however, clamp as short as possible.

Z 4
 HM M-010
 Coating C-010



Full-radius milling cutter Z=4 to centre



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232676	4KZ-030-150-012-060-000-06	3,0	6	2,70	60	4,0	12,0	12,0	0,0	1,50	4	-
11232677	4KZ-040-200-012-060-000-06	4,0	6	3,70	60	5,0	12,0	12,0	0,0	2,00	4	-
11232678	4KZ-040-200-020-060-000-06	4,0	6	3,70	60	5,0	20,0	20,0	0,0	2,00	4	-
11232679	4KZ-060-300-020-060-000-06	6,0	6	5,60	60	10,0	20,0	20,0	0,0	3,00	4	-
11232680	4KZ-060-300-030-080-000-06	6,0	6	5,60	80	10,0	30,0	30,0	0,0	3,00	4	-
11232681	4KZ-080-400-026-075-000-08	8,0	8	7,40	75	12,0	26,0	26,0	0,0	4,00	4	-
11232682	4KZ-080-400-040-100-000-08	8,0	8	7,40	100	12,0	40,0	40,0	0,0	4,00	4	-
11232683	4KZ-100-500-028-075-000-10	10,0	10	9,20	75	16,0	28,0	28,0	0,0	5,00	4	-
11232684	4KZ-100-500-040-100-000-10	10,0	10	9,20	100	16,0	40,0	40,0	0,0	5,00	4	-
11232685	4KZ-100-500-080-120-000-10	10,0	10	9,20	120	16,0	80,0	80,0	0,0	5,00	4	-
11232686	4KZ-120-600-030-100-000-12	12,0	12	11,00	100	16,0	30,0	30,0	0,0	6,00	4	-
11232687	4KZ-120-600-030-120-000-12	12,0	12	11,00	120	16,0	30,0	30,0	0,0	6,00	4	-
11232688	4KZ-160-800-032-100-000-16	16,0	16	15,00	100	18,0	32,0	32,0	0,0	8,00	4	-

Subject to technical modifications

3RVS

P	M	K	N	S	H
○	●	○			●

Features:

Vhm milling cutter, Z=3, for machining various types of stainless steel.

Suitable for milling grooves as well as for lateral machining

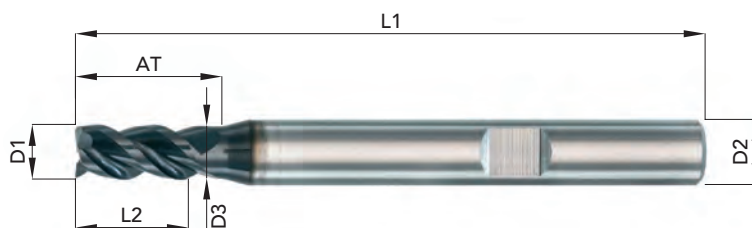
Special carbide and special coating to prevent material sticking.

Preferably clamp in a weldon chuck or chuck with high clamping force.

Z 3
HM M-140
Coating C-030



Universal milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232689	3RVS-030-000-010-058-000-06	3,00	6	2,90	58	10	13	10	0,0	0,00	3	-
11232690	3RVS-040-000-010-058-000-06	4,00	6	3,80	58	10	13	10	0,0	0,00	3	-
11232691	3RVS-050-000-010-058-000-06	5,00	6	4,80	58	10	13	10	0,0	0,00	3	-
11232692	3RVS-060-000-015-058-000-06	6,00	6	-	58	15	-	15	0,0	0,00	3	-
11232693	3RVS-080-000-017-064-000-08	8,00	8	-	64	17	-	17	0,0	0,00	3	-
11232694	3RVS-100-000-022-073-000-10	10,00	10	-	73	22	-	22	0,0	0,00	3	-
11232695	3RVS-120-000-025-084-000-12	12,00	12	-	84	25	-	25	0,0	0,00	3	-
11232696	3RVS-140-000-028-090-000-14	14,00	14	-	90	28	-	28	0,0	0,00	3	-
11232697	3RVS-160-000-032-093-000-16	16,00	16	-	93	32	-	32	0,0	0,00	3	-
11232698	3RVS-200-000-040-105-000-20	20,00	20	-	105	40	-	40	0,0	0,00	3	-

Subject to technical modifications

4RVS

P	M	K	N	S	H
○	●	○			●

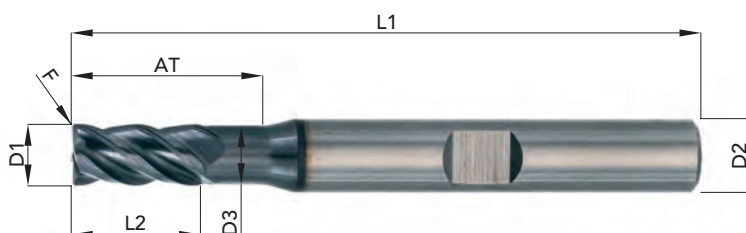
Features:

Vhm milling cutter, Z=4, for machining various types of stainless steel.
Suitable for milling grooves as well as for lateral machining.
Special carbide and special coating to prevent material sticking.
Preferably clamp in a weldon chuck or chuck with high clamping force.

Z 4
HM M-140
Coating C-030



Universal milling cutter 3xD



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232699	4RVS-030-015-009-051-000-06	3	6	2,9	51	6,0	9	9	0,0	0,15	4	-
11232700	4RVS-040-015-012-051-000-06	4	6	3,8	51	8,0	12	12	0,0	0,15	4	-
11232701	4RVS-050-015-015-051-000-06	5	6	4,8	51	10,0	15	15	0,0	0,15	4	-
11232702	4RVS-060-025-018-058-000-06	6	6	5,6	58	12,0	18	18	0,0	0,25	4	-
11232703	4RVS-080-030-024-064-000-08	8	8	7,6	64	16,0	24	24	0,0	0,30	4	-
11232704	4RVS-100-040-030-073-000-10	10	10	9,5	73	20,0	30	30	0,0	0,40	4	-
11232705	4RVS-120-050-036-084-000-12	12	12	11,5	84	24,0	36	36	0,0	0,50	4	-
11232706	4RVS-160-050-048-100-000-16	16	16	15,3	100	32,0	48	48	0,0	0,50	4	-
11232707	4RVS-200-060-060-125-000-20	20	20	19,2	125	40,0	60	60	0,0	0,60	4	-

Subject to technical modifications

HARVI II – KCPM15

P	M	K	N	S	H
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Features:

Vhm milling cutter, Z=5, for machining various types of steel and stainless steel

With corner radius.

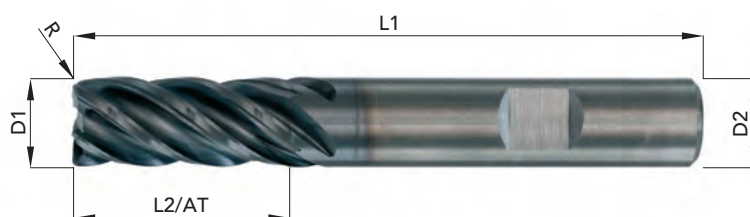
Milling up to 1xD slots in stainless steel.

Also suitable for ramping down milling (up to 3°).

Z 5
HM **M-140**
Coating **C-030**



Universal milling cutter Z=5



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232708	UCDE0400B5ARA.KCPM15	4,0	6	-	55	11,0	-	11,0	0,0	0,25	5	-
11232709	UCDE0500B5ARA.KCPM15	5,0	6	-	57	13,0	-	13,0	0,0	0,25	5	-
11232710	UCDE0600B5ARA.KCPM15	6,0	6	-	57	13,0	-	13,0	0,0	0,40	5	-
11232711	UCDE0800B5ARA.KCPM15	8,0	8	-	63	19,0	-	19,0	0,0	0,50	5	-
11232712	UCDE1000B5ARA.KCPM15	10,0	10	-	72	22,0	-	22,0	0,0	0,50	5	-
11232713	UCDE1200B5ARA.KCPM15	12,0	12	-	83	26,0	-	26,0	0,0	0,75	5	-
11232714	UCDE1600B5ARA.KCPM15	16,0	16	-	92	32,0	-	32,0	0,0	0,75	5	-
11232715	UCDE2000B5ARA.KCPM15	20,0	20	-	104	38,0	-	38,0	0,0	0,75	5	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Specially developed milling cutter, **Z=4**, for machining **heat-resistant materials**.

Milling cutters for (pre-milling): **chromium-nickel alloys**.

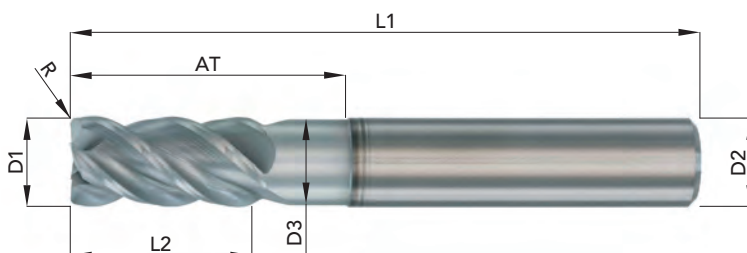
Cutter is very positively ground, cutting lightly and with **corner radius**.

Chip chamber, cutting edges and coating developed for fast chip removal.

Z 4
HM M-140
Coating C-215



Universal milling cutter for CrNi



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Version 2xD												
11232716	4IHT2D-060-020-012-051-000-06	6	6	5,60	51	9	12	12	0,0	0,20	4	-
11232717	4IHT2D-080-030-016-059-000-08	8	8	7,60	59	12	16	16	0,0	0,30	4	-
11232718	4IHT2D-100-050-020-067-000-10	10	10	9,50	67	15	20	20	0,0	0,50	4	-
11232719	4IHT2D-120-050-024-074-000-12	12	12	11,50	74	18	24	24	0,0	0,50	4	-
11232720	4IHT2D-160-100-032-083-000-16	16	16	15,30	83	24	32	32	0,0	1,00	4	-
Version 3xD												
11232721	4IHT3D-030-020-009-051-000-06	3	6	2,90	51	6	9	9	0,0	0,20	4	-
11232722	4IHT3D-040-020-012-051-000-06	4	6	3,80	51	8	12	12	0,0	0,20	4	-
11232723	4IHT3D-050-020-015-051-000-06	5	6	4,80	51	10	15	15	0,0	0,20	4	-
11232724	4IHT3D-060-020-018-058-000-06	6	6	5,60	58	12	18	18	0,0	0,20	4	-
11232725	4IHT3D-080-030-024-064-000-08	8	8	7,60	64	16	24	24	0,0	0,30	4	-
11232726	4IHT3D-100-050-030-073-000-10	10	10	9,50	73	20	30	30	0,0	0,50	4	-
11232727	4IHT3D-120-050-036-084-000-12	12	12	11,50	84	24	36	36	0,0	0,50	4	-
11232728	4IHT3D-160-100-048-100-000-16	16	16	15,30	100	32	48	48	0,0	1,00	4	-
Version 4xD												
11232729	4IHT4D-080-030-032-080-000-08	8	8	7,60	80	18	32	32	0,0	0,30	4	-
11232730	4IHT4D-100-050-040-085-000-10	10	10	9,50	85	22	40	40	0,0	0,50	4	-
11232731	4IHT4D-120-050-048-100-000-12	12	12	11,50	100	26	48	48	0,0	0,50	4	-
11232732	4IHT4D-160-100-064-125-000-16	16	16	15,30	125	34	64	64	0,0	1,00	4	-

Subject to technical modifications

HARVI II – KC643M

P	M	K	N	S	H
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Features:

Specially developed milling cutter, **Z=5**, for machining **heat-resistant materials**.

For milling and finishing of: **chromium-nickel alloys**.

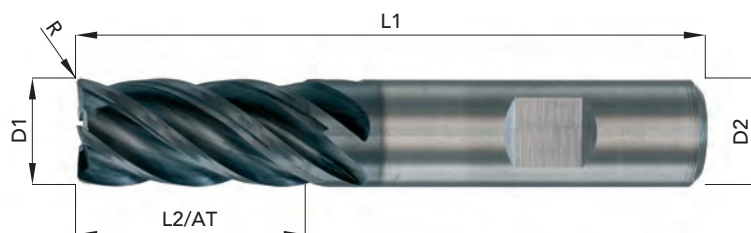
Cutter is very positively ground, cutting lightly and with **corner radius**.

Chip chamber, cutting edges and coating developed for fast chip removal.

Z 5
HM **M-140**
Coating **C-030**



Universal milling cutter for CrNi



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232733	UCDE0400B5ARA.KC643M	4,0	6	-	55	11,0	-	11,0	0,0	0,25	5	-
11232734	UCDE0500B5ARA.KC643M	5,0	6	-	57	13,0	-	13,0	0,0	0,25	5	-
11232735	UCDE0600B5ARA.KC643M	6,0	6	-	57	13,0	-	13,0	0,0	0,40	5	-
11232736	UCDE0800B5ARA.KC643M	8,0	8	-	63	19,0	-	19,0	0,0	0,50	5	-
11232737	UCDE1000B5ARA.KC643M	10,0	10	-	72	22,0	-	22,0	0,0	0,50	5	-
11232738	UCDE1200B5ARA.KC643M	12,0	12	-	83	26,0	-	26,0	0,0	0,75	5	-
11232739	UCDE1600B5ARA.KC643M	16,0	16	-	92	32,0	-	32,0	0,0	0,75	5	-
11232740	UCDE2000B5ARA.KC643M	20,0	20	-	104	38,0	-	38,0	0,0	0,75	5	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

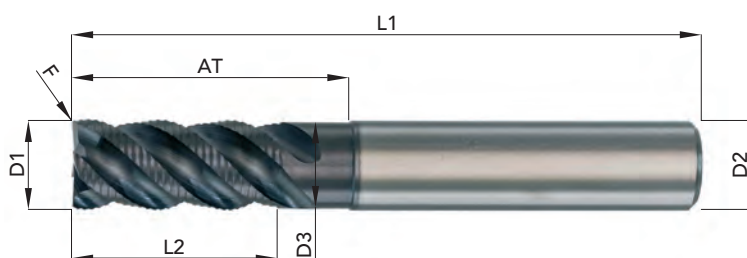
Vhm roughing milling cutter with strong helix angle (45°).

Ground neck for greater working depth.

Very suitable for (pre-)milling of chromium-nickel alloys and superalloys.

Available as standard with cylindrical shank (weldon on request).

Z 4 - 5 - 6
HM **M-140**
Coating **C-030**

**Roughing milling cutter for CrNi**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: cylindrical												
11232741	MEF902-060-015-020-057-000-06	6,0	6	5,50	57	16,0	20,0	20,0	0,0	0,15	4	-
11232742	MEF902-080-020-026-063-000-08	8,0	8	7,50	63	16,0	26,0	26,0	0,0	0,20	4	-
11232743	MEF902-100-020-031-072-000-10	10,0	10	9,50	72	22,0	31,0	31,0	0,0	0,20	4	-
11232744	MEF902-120-020-037-083-000-12	12,0	12	11,50	83	26,0	37,0	37,0	0,0	0,20	4	-
11232745	MEF902-160-020-051-092-000-16	16,0	16	15,50	92	32,0	51,0	51,0	0,0	0,20	5	-
11232746	MEF902-200-020-059-104-000-20	20,0	20	19,20	104	38,0	59,0	59,0	0,0	0,20	6	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Vhm milling cutter, Z=3, for machining aluminium.

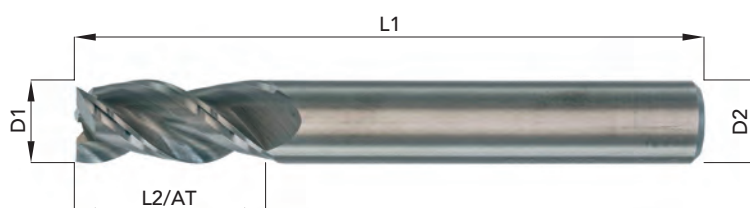
TVA stands for **Vibration-free Aluminium** machining.

Special cutting edge ensures vibration-free and smooth milling in aluminium. Suitable for milling with high feed per tooth and table feed per minute.

Z 3
HM M-040
Coating C-000



TVA = Vibration Free Aluminium



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232747	TVA-060-000-015-051-000-06	6,0	6	-	51	15,0	-	15,0	0,0	0,00	3	-
11232748	TVA-060-000-020-060-000-06	6,0	6	-	60	20,0	-	20,0	0,0	0,00	3	-
11232749	TVA-080-000-017-059-000-08	8,0	8	-	59	17,0	-	17,0	0,0	0,00	3	-
11232750	TVA-080-000-025-064-000-08	8,0	8	-	64	25,0	-	25,0	0,0	0,00	3	-
11232751	TVA-100-000-022-073-000-10	10,0	10	-	73	22,0	-	22,0	0,0	0,00	3	-
11232752	TVA-100-000-032-080-000-10	10,0	10	-	80	32,0	-	32,0	0,0	0,00	3	-
11232753	TVA-120-000-025-080-000-12	12,0	12	-	80	25,0	-	25,0	0,0	0,00	3	-
11232754	TVA-120-000-038-100-000-12	12,0	12	-	100	38,0	-	38,0	0,0	0,00	3	-
11232755	TVA-160-000-035-093-000-16	16,0	16	-	93	35,0	-	35,0	0,0	0,00	3	-
11232756	TVA-160-000-050-100-000-16	16,0	16	-	100	50,0	-	50,0	0,0	0,00	3	-
11232757	TVA-200-000-042-100-000-20	20,0	20	-	100	42,0	-	42,0	0,0	0,00	3	-
11232758	TVA-200-000-060-125-000-20	20,0	20	-	125	60,0	-	60,0	0,0	0,00	3	-

Subject to technical modifications

P	M	K	N	S	H
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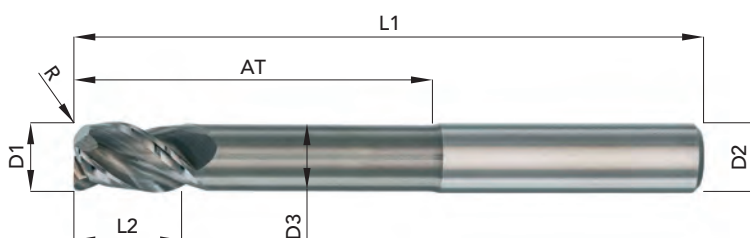
Features:

Vhm milling cutter, Z=3, with corner radius for machining aluminium.

TVAR is the Dutch acronym for **Vibration-Free Aluminium Radius** machining. Special cutting edge ensures vibration-free and smooth milling in aluminium. Suitable for milling with high feed per tooth and table feed per minute.



Z 3
HM M-040
Coating C-000



TVAR = Vibration-Free Aluminium Radius

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232759	TVAR-040-020-016-051-000-06	4,0	6	3,70	51	10,0	16,0	16,0	0,0	0,20	3	-
11232760	TVAR-040-020-020-060-000-06	4,0	6	3,70	60	6,0	20,0	20,0	0,0	0,20	3	-
11232761	TVAR-050-020-020-060-000-06	5,0	6	4,70	60	12,0	20,0	20,0	0,0	0,20	3	-
11232762	TVAR-050-020-025-065-000-06	5,0	6	4,70	65	8,0	25,0	25,0	0,0	0,20	3	-
11232763	TVAR-060-020-024-060-000-06	6,0	6	5,70	60	16,0	24,0	24,0	0,0	0,20	3	-
11232764	TVAR-060-020-030-065-000-06	6,0	6	5,70	65	9,0	30,0	30,0	0,0	0,20	3	-
11232765	TVAR-060-100-020-060-000-06	6,0	6	5,70	65	20,0	20,0	20,0	0,0	1,00	3	-
11232766	TVAR-080-020-032-070-000-08	8,0	8	7,60	70	20,0	32,0	32,0	0,0	0,20	3	-
11232767	TVAR-080-020-040-075-000-08	8,0	8	7,60	75	12,0	40,0	40,0	0,0	0,20	3	-
11232768	TVAR-080-050-032-070-000-08	8,0	8	7,60	70	20,0	32,0	32,0	0,0	0,50	3	-
11232769	TVAR-080-050-040-075-000-08	8,0	8	7,60	75	12,0	40,0	40,0	0,0	0,50	3	-
11232770	TVAR-080-080-032-070-000-08	8,0	8	7,60	70	20,0	32,0	32,0	0,0	0,80	3	-
11232771	TVAR-080-080-040-075-000-08	8,0	8	7,60	75	12,0	40,0	40,0	0,0	0,80	3	-
11232772	TVAR-080-100-032-070-000-08	8,0	8	7,60	70	20,0	32,0	32,0	0,0	1,00	3	-
11232773	TVAR-080-100-040-075-000-08	8,0	8	7,60	75	12,0	40,0	40,0	0,0	1,00	3	-
11232774	TVAR-080-160-032-070-000-08	8,0	8	7,60	70	20,0	32,0	32,0	0,0	1,60	3	-
11232775	TVAR-080-160-040-075-000-08	8,0	8	7,60	75	12,0	40,0	40,0	0,0	1,60	3	-
11232776	TVAR-080-200-032-070-000-08	8,0	8	7,60	70	20,0	32,0	32,0	0,0	2,00	3	-
11232777	TVAR-080-200-040-075-000-08	8,0	8	7,60	75	12,0	40,0	40,0	0,0	2,00	3	-
11232778	TVAR-080-320-032-070-000-08	8,0	8	7,60	70	20,0	32,0	32,0	0,0	3,20	3	-
11232779	TVAR-080-320-040-075-000-08	8,0	8	7,60	75	12,0	40,0	40,0	0,0	3,20	3	-

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Features:

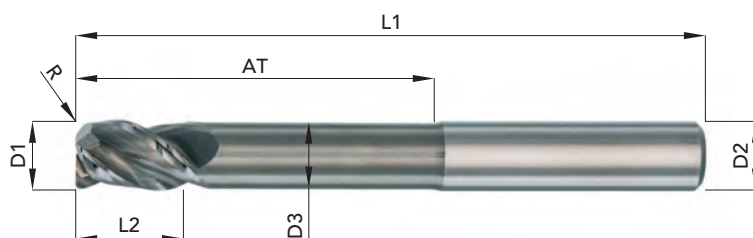
Vhm milling cutter, Z=3, with corner radius for machining aluminium.

TVAR is the Dutch acronym for **Vibration-Free Aluminium Radius** machining. Special cutting edge ensures vibration-free and smooth milling in aluminium. Suitable for milling with high feed per tooth and table feed per minute.



**TVAR = Vibration-Free
Aluminium Radius**

Z 3
HM M-040
Coating C-000



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232780	TVAR-100-020-040-080-000-10	10,0	10	9,50	80	22,0	40,0	40,0	0,0	0,20	3	-
11232781	TVAR-100-020-050-090-000-10	10,0	10	9,50	90	15,0	50,0	50,0	0,0	0,20	3	-
11232782	TVAR-100-050-040-080-000-10	10,0	10	9,50	90	22,0	40,0	40,0	0,0	0,50	3	-
11232783	TVAR-100-050-050-090-000-10	10,0	10	9,50	90	15,0	50,0	50,0	0,0	0,50	3	-
11232784	TVAR-100-080-040-080-000-10	10,0	10	9,50	80	22,0	40,0	40,0	0,0	0,80	3	-
11232785	TVAR-100-080-050-090-000-10	10,0	10	9,50	90	15,0	50,0	50,0	0,0	0,80	3	-
11232786	TVAR-100-100-032-080-000-10	10,0	10	9,50	80	32,0	32,0	32,0	0,0	0,80	3	-
11232787	TVAR-100-100-040-080-000-10	10,0	10	9,50	80	22,0	40,0	40,0	0,0	1,00	3	-
11232788	TVAR-100-100-050-090-000-10	10,0	10	9,50	90	15,0	50,0	50,0	0,0	1,00	3	-
11232789	TVAR-100-160-040-080-000-10	10,0	10	9,50	80	22,0	40,0	40,0	0,0	1,60	3	-
11232790	TVAR-100-160-050-090-000-10	10,0	10	9,50	90	15,0	50,0	50,0	0,0	1,60	3	-
11232791	TVAR-100-200-040-080-000-10	10,0	10	9,50	80	22,0	40,0	40,0	0,0	2,00	3	-
11232792	TVAR-100-200-050-090-000-10	10,0	10	9,50	90	15,0	50,0	50,0	0,0	2,00	3	-
11232793	TVAR-100-320-040-080-000-10	10,0	10	9,50	80	22,0	40,0	40,0	0,0	3,20	3	-
11232794	TVAR-100-320-050-090-000-10	10,0	10	9,50	90	15,0	50,0	50,0	0,0	3,20	3	-
11232795	TVAR-120-020-048-090-000-12	12,0	12	11,30	90	26,0	48,0	48,0	0,0	0,20	3	-
11232796	TVAR-120-020-060-100-000-12	12,0	12	11,30	100	18,0	60,0	60,0	0,0	0,20	3	-
11232797	TVAR-120-050-048-090-000-12	12,0	12	11,30	90	26,0	48,0	48,0	0,0	0,50	3	-
11232798	TVAR-120-050-060-100-000-12	12,0	12	11,30	100	18,0	60,0	60,0	0,0	0,50	3	-
11232799	TVAR-120-080-048-090-000-12	12,0	12	11,30	90	26,0	48,0	48,0	0,0	0,80	3	-
11232800	TVAR-120-080-060-100-000-12	12,0	12	11,30	100	18,0	60,0	60,0	0,0	0,80	3	-

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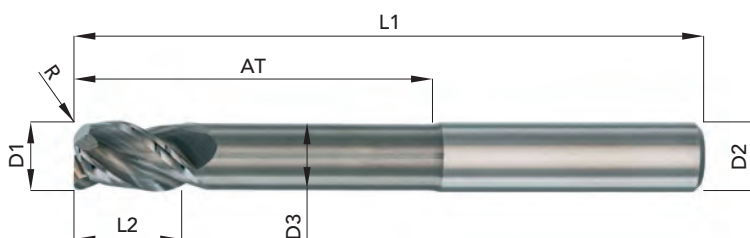
Features:

Vhm milling cutter, Z=3, with corner radius for machining aluminium.

TVAR is the Dutch acronym for **Vibration-Free Aluminium Radius** machining. Special cutting edge ensures vibration-free and smooth milling in aluminium. Suitable for milling with high feed per tooth and table feed per minute.



Z 3
HM M-040
Coating C-000



TVAR = Vibration-Free Aluminium Radius

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232801	TVAR-120-100-048-090-000-12	12,0	12	11,30	90	26,0	48,0	48,0	0,0	1,00	3	-
11232802	TVAR-120-100-060-100-000-12	12,0	12	11,30	100	18,0	60,0	60,0	0,0	1,00	3	-
11232803	TVAR-120-200-048-090-000-12	12,0	12	11,30	90	26,0	48,0	48,0	0,0	2,00	3	-
11232804	TVAR-120-200-060-100-000-12	12,0	12	11,30	100	18,0	60,0	60,0	0,0	2,00	3	-
11232805	TVAR-120-320-048-090-000-12	12,0	12	11,30	90	26,0	48,0	48,0	0,0	3,20	3	-
11232806	TVAR-120-320-060-100-000-12	12,0	12	11,30	100	18,0	60,0	60,0	0,0	3,20	3	-
11232807	TVAR-160-020-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	0,20	3	-
11232808	TVAR-160-020-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	0,20	3	-
11232809	TVAR-160-050-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	0,50	3	-
11232810	TVAR-160-050-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	0,50	3	-
11232811	TVAR-160-080-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	0,80	3	-
11232812	TVAR-160-080-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	0,80	3	-
11232813	TVAR-160-100-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	1,00	3	-
11232814	TVAR-160-100-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	1,00	3	-
11232815	TVAR-160-160-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	1,60	3	-
11232816	TVAR-160-160-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	1,60	3	-
11232817	TVAR-160-200-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	2,00	3	-
11232818	TVAR-160-200-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	2,00	3	-
11232819	TVAR-160-320-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	3,20	3	-
11232820	TVAR-160-320-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	3,20	3	-
11232821	TVAR-160-320-092-130-000-16	16,0	16	15,20	130	25,0	92,0	92,0	0,0	3,20	3	-
11232822	TVAR-160-400-064-110-000-16	16,0	16	15,20	110	35,0	64,0	64,0	0,0	4,00	3	-
11232823	TVAR-160-400-080-130-000-16	16,0	16	15,20	130	25,0	80,0	80,0	0,0	4,00	3	-

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Features:

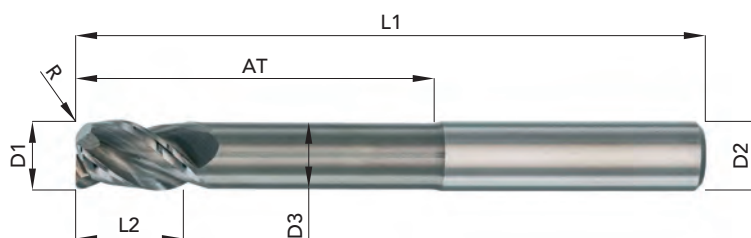
Vhm milling cutter, Z=3, **with corner radius** for machining aluminium.

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Z 3
HM M-040
Coating C-000



**TVAR = Vibration-Free
Aluminium Radius**



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11232824	TVAR-200-020-080-130-000-20	20,0	20	19,00	130	45,0	80,0	80,0	0,0	0,20	3	-
11232825	TVAR-200-020-100-160-000-20	20,0	20	19,00	160	32,0	100,0	100,0	0,0	0,20	3	-
11232826	TVAR-200-080-080-130-000-20	20,0	20	19,00	130	45,0	80,0	80,0	0,0	0,80	3	-
11232827	TVAR-200-080-100-160-000-20	20,0	20	19,00	160	32,0	100,0	100,0	0,0	0,80	3	-
11232828	TVAR-200-160-080-130-000-20	20,0	20	19,00	130	45,0	80,0	80,0	0,0	1,60	3	-
11232829	TVAR-200-160-100-160-000-20	20,0	20	19,00	160	32,0	100,0	100,0	0,0	1,60	3	-
11232830	TVAR-200-200-060-100-000-20	20,0	20	19,00	100	25,0	60,0	60,0	0,0	2,00	3	-
11232831	TVAR-200-200-080-130-000-20	20,0	20	19,00	130	45,0	80,0	80,0	0,0	2,00	3	-
11232832	TVAR-200-200-100-160-000-20	20,0	20	19,00	160	32,0	100,0	100,0	0,0	2,00	3	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Vhm milling cutter for high-alloy aluminium.

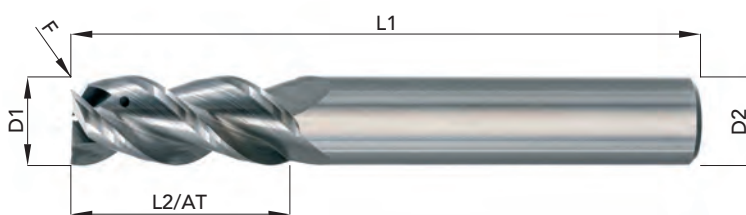
Available as double- and triple-angle cutter.

Attention: **with internal cooling exiting at the front of the cutting edges.** Suitable for milling with high feed per tooth and table feed per minute.

Z 2 - 3
HM **M-040**
Coating **C-000**



With internal cooling



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Z=2												
11232833	2CHPC-060-010-020-058-000-06	6,0	6	-	58	20,0	20,0	20,0	0,0	0,10	2	V
11232834	2CHPC-080-010-025-064-000-08	8,0	8	-	64	25,0	25,0	25,0	0,0	0,10	2	V
11232835	2CHPC-100-020-026-073-000-10	10,0	10	-	73	26,0	26,0	26,0	0,0	0,20	2	V
11232836	2CHPC-120-020-028-084-000-12	12,0	12	-	84	28,0	28,0	28,0	0,0	0,20	2	V
Z=3												
11232837	3CHPC-060-010-020-058-000-06	6,0	6	-	58	20,0	20,0	20,0	0,0	0,10	3	V
11232838	3CHPC-080-010-025-064-000-08	8,0	8	-	64	25,0	25,0	25,0	0,0	0,10	3	V
11232839	3CHPC-100-020-026-073-000-10	10,0	10	-	73	26,0	26,0	26,0	0,0	0,20	3	V
11232840	3CHPC-120-020-028-084-000-12	12,0	12	-	84	28,0	28,0	28,0	0,0	0,20	3	V
11232841	3CHPC-140-020-032-084-000-14	14,0	14	-	84	32,0	32,0	32,0	0,0	0,20	3	V
11232842	3CHPC-160-020-035-093-000-16	16,0	16	-	93	35,0	35,0	35,0	0,0	0,20	3	V
11232843	3CHPC-200-020-042-105-000-20	20,0	20	-	105	42,0	42,0	42,0	0,0	0,20	3	V

Subject to technical modifications

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Features:

Vhm milling cutter, Z=1, for milling aluminium.

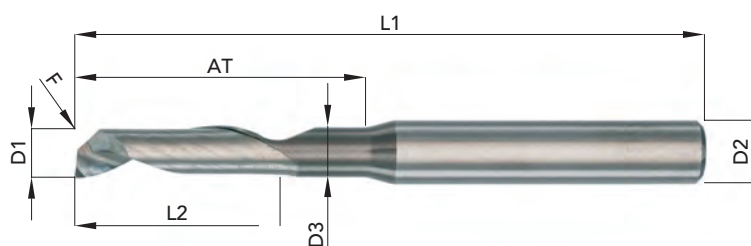
Very suitable for copying and profiling in thin-walled materials.

Also suitable for plastic and HPL boards.

Z 1
HM M-040
Coating C-000



Single-angle milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232844	ALUZ1-010-010-006-051-000-06	1,0	6	0,90	51	6,0	8,0	8,0	0,0	0,10	1	-
11232845	ALUZ1-020-010-008-051-000-06	2,0	6	1,85	51	8,0	10,0	10,0	0,0	0,10	1	-
11232846	ALUZ1-030-015-012-051-000-06	3,0	6	2,70	51	12,0	14,0	14,0	0,0	0,15	1	-
11232847	ALUZ1-040-015-015-060-000-06	4,0	6	3,70	60	15,0	17,0	17,0	0,0	0,15	1	-
11232848	ALUZ1-050-020-017-060-000-06	5,0	6	4,70	60	17,0	19,0	19,0	0,0	0,20	1	-
11232849	ALUZ1-050-020-027-060-000-06	5,0	6	4,70	60	17,0	27,0	27,0	0,0	0,20	1	-
11232850	ALUZ1-060-020-020-060-000-06	6,0	6	-	60	20,0	-	20,0	0,0	0,20	1	-
11232851	ALUZ1-060-020-024-075-000-08	6,0	8	5,70	60	20,0	24,0	24,0	0,0	0,20	1	-
11232852	ALUZ1-070-020-040-075-000-08	7,0	8	6,50	75	22,0	40,0	40,0	0,0	0,20	1	-
11232853	ALUZ1-080-020-022-064-000-08	8,0	8	-	64	22,0	-	22,0	0,0	0,20	1	-
11232854	ALUZ1-100-020-025-075-000-10	10,0	10	-	75	25,0	-	25,0	0,0	0,20	1	-
11232855	ALUZ1-120-020-030-080-000-12	12,0	12	-	80	30,0	-	30,0	0,0	0,20	1	-

Subject to technical modifications

ALUC2

P	M	K	N	S	H
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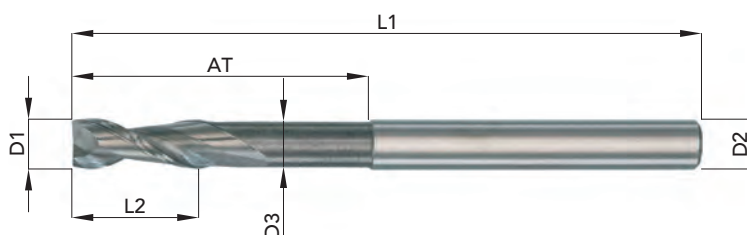
Features:

Standard milling cutter, Z=2.
For aluminium, plastic and HPL boards.
Cylindrical shank.

Z 2
HM M-040
Coating C-000



Double-angle milling cutter for aluminium



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232856	ALUC2-010-000-005-060-000-06	1,0	6	0,90	60	5,0	6,0	6,0	0,0	0,00	2	-
11232857	ALUC2-020-000-008-060-000-06	2,0	6	1,85	60	8,0	9,0	9,0	0,0	0,00	2	-
11232858	ALUC2-030-000-010-060-000-06	3,0	6	2,70	60	10,0	12,0	12,0	0,0	0,00	2	-
11232859	ALUC2-040-000-010-060-000-06	4,0	6	3,70	60	10,0	12,0	12,0	0,0	0,00	2	-
11232860	ALUC2-060-000-015-060-000-06	6,0	6	-	60	15,0	-	15,0	0,0	0,00	2	-
11232861	ALUC2-080-000-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	0,00	2	-
11232862	ALUC2-100-000-022-075-000-10	10,0	10	-	75	22,0	-	22,0	0,0	0,00	2	-
11232863	ALUC2-100-000-060-100-000-10	10,0	10	-	100	22,0	60,0	60,0	0,0	0,00	2	-
11232864	ALUC2-120-000-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	0,00	2	-
11232865	ALUC2-120-000-070-120-000-12	12,0	12	-	120	25,0	70,0	70,0	0,0	0,00	2	-
11232866	ALUC2-120-000-100-150-000-12	12,0	12	-	150	25,0	100,0	100,0	0,0	0,00	2	-

Subject to technical modifications

ALUW2

P	M	K	N	S	H
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Features:

Standard milling cutter, Z=2.

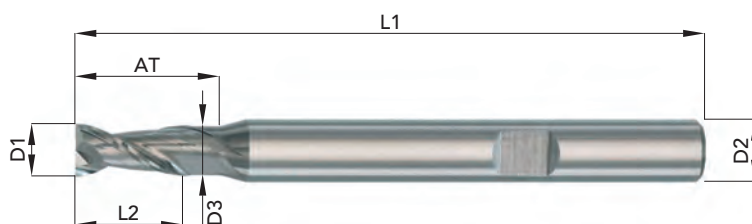
For aluminium, plastic and HPL boards.

Weldon shank.

Z 2
HM M-040
Coating C-000



Double-angle milling cutter for aluminium



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232867	ALUW2-030-000-010-060-000-06	3,0	6	2,70	60	10,0	13,0	13,0	0,0	0,00	2	-
11232868	ALUW2-040-000-010-060-000-06	4,0	6	3,70	60	10,0	13,0	13,0	0,0	0,00	2	-
11232869	ALUW2-050-000-010-060-000-06	5,0	6	4,70	60	10,0	13,0	13,0	0,0	0,00	2	-
11232870	ALUW2-060-000-015-060-000-06	6,0	6	-	60	15,0	-	15,0	0,0	0,00	2	-
11232871	ALUW2-080-000-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	0,00	2	-
11232872	ALUW2-080-000-030-064-000-08	8,0	8	7,50	64	17,0	30,0	30,0	0,0	0,00	2	-
11232873	ALUW2-100-000-022-075-000-10	10,0	10	-	75	22,0	-	22,0	0,0	0,00	2	-
11232874	ALUW2-100-000-030-075-000-10	10,0	10	9,50	75	22,0	30,0	30,0	0,0	0,00	2	-
11232875	ALUW2-120-000-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	0,00	2	-
11232876	ALUW2-120-000-030-084-000-12	12,0	12	11,50	84	25,0	30,0	30,0	0,0	0,00	2	-
11232877	ALUW2-160-000-032-100-000-16	16,0	16	-	100	32,0	-	32,0	0,0	0,00	2	-
11232878	ALUW2-160-000-040-100-000-16	16,0	16	15,50	100	32,0	40,0	40,0	0,0	0,00	2	-

Subject to technical modifications

MDCSA2

P	M	K	N	S	H
			●		

Features:

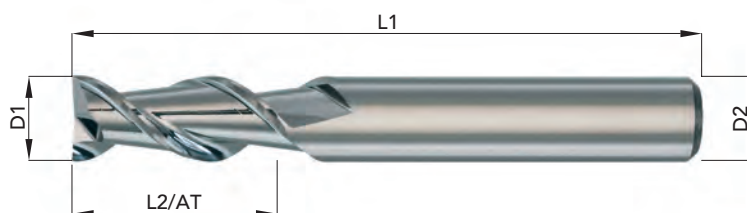
Milling cutter, Z=2, for aluminium, plastic and HPL board.
Cylindrical shank.

Polished version.

Z 2
HM M-040
Coating C-000



Double-angle cutter with polished chip chambers



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232879	MDCSA2-010-000-003-040-000-04	1,0	4	-	40	3,0	-	3,0	0,0	0,00	2	-
11232880	MDCSA2-020-000-006-040-000-04	2,0	4	-	40	6,0	-	6,5	0,0	0,00	2	-
11232881	MDCSA2-030-000-008-057-000-06	3,0	6	-	57	8,0	-	8,0	0,0	0,00	2	-
11232882	MDCSA2-040-000-011-057-000-06	4,0	6	-	57	11,0	-	11,0	0,0	0,00	2	-
11232883	MDCSA2-050-000-013-057-000-06	5,0	6	-	57	13,0	-	13,0	0,0	0,00	2	-
11232884	MDCSA2-060-000-013-057-000-06	6,0	6	-	57	13,0	-	13,0	0,0	0,00	2	-
11232885	MDCSA2-080-000-019-063-000-08	8,0	8	-	63	19,0	-	19,0	0,0	0,00	2	-
11232886	MDCSA2-100-000-022-072-000-10	10,0	10	-	72	22,0	-	22,0	0,0	0,00	2	-
11232887	MDCSA2-120-000-026-083-000-12	12,0	12	-	83	26,0	-	26,0	0,0	0,00	2	-
11232888	MDCSA2-160-000-032-092-000-16	16,0	16	-	92	32,0	-	32,0	0,0	0,00	2	-
11232889	MDCSA2-200-000-038-104-000-20	20,0	20	-	104	38,0	-	38,0	0,0	0,00	2	-

Subject to technical modifications

ALUC3

P	M	K	N	S	H
			●	○	

Features:

Standard milling cutter, Z=3.

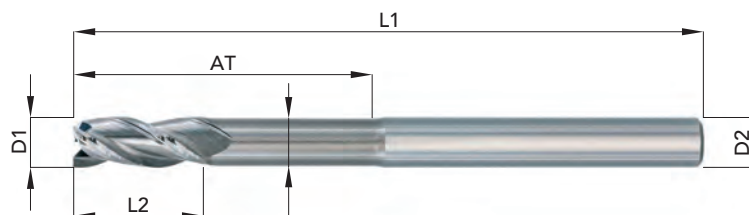
For aluminium, plastic and HPL boards.

Cylindrical shank.

Z 3
HM M-040
Coating C-000



Triple-angle milling cutter for aluminium



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232890	ALUC3-010-000-005-060-000-06	1,0	6	0,90	60	5,0	6,0	6,0	0,0	0,00	3	-
11232891	ALUC3-020-000-008-060-000-06	2,0	6	1,85	60	8,0	9,0	9,0	0,0	0,00	3	-
11232892	ALUC3-030-000-010-060-000-06	3,0	6	2,70	60	10,0	12,0	12,0	0,0	0,00	3	-
11232893	ALUC3-040-000-010-060-000-06	4,0	6	3,70	60	10,0	12,0	12,0	0,0	0,00	3	-
11232894	ALUC3-050-000-012-060-000-06	5,0	6	4,70	60	10,0	12,0	12,0	0,0	0,00	3	-
11232895	ALUC3-060-000-015-060-000-06	6,0	6	-	60	15,0	-	15,0	0,0	0,00	3	-
11232896	ALUC3-080-000-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	0,00	3	-
11232897	ALUC3-100-000-022-075-000-10	10,0	10	-	75	22,0	-	22,0	0,0	0,00	3	-
11232898	ALUC3-120-000-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	0,00	3	-
11232899	ALUC3-160-000-032-100-000-16	16,0	16	-	100	32,0	-	32,0	0,0	0,00	3	-
11232900	ALUC3-200-000-038-100-000-20	20,0	20	-	100	38,0	-	38,0	0,0	0,00	3	-

Subject to technical modifications

ALUW3

P	M	K	N	S	H
			●	○	

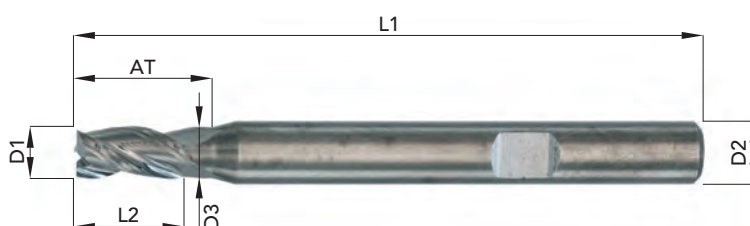
Features:

Standard milling cutter, Z=3.
For aluminium, plastic and HPL boards.
Weldon shank.

Z 3
HM M-040
Coating C-000



Triple-angle milling cutter for aluminium



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232901	ALUW3-030-000-010-060-000-06	3,0	6	2,70	60	10,0	13,0	13,0	0,0	0,00	3	-
11232902	ALUW3-040-000-010-060-000-06	4,0	6	3,70	60	10,0	13,0	13,0	0,0	0,00	3	-
11232903	ALUW3-050-000-010-060-000-06	5,0	6	4,70	60	10,0	13,0	13,0	0,0	0,00	3	-
11232904	ALUW3-060-000-015-060-000-06	6,0	6	-	60	15,0	-	15,0	0,0	0,00	3	-
11232905	ALUW3-080-000-017-064-000-08	8,0	8	-	64	17,0	-	17,0	0,0	0,00	3	-
11232906	ALUW3-080-000-030-064-000-08	8,0	8	7,50	64	17,0	30,0	30,0	0,0	0,00	3	-
11232907	ALUW3-100-000-022-075-000-10	10,0	10	-	75	22,0	-	22,0	0,0	0,00	3	-
11232908	ALUW3-100-000-030-075-000-10	10,0	10	9,50	75	22,0	30,0	30,0	0,0	0,00	3	-
11232909	ALUW3-120-000-025-084-000-12	12,0	12	-	84	25,0	-	25,0	0,0	0,00	3	-
11232910	ALUW3-120-000-030-084-000-12	12,0	12	11,50	84	25,0	30,0	30,0	0,0	0,00	3	-
11232911	ALUW3-160-000-032-100-000-16	16,0	16	-	100	32,0	-	32,0	0,0	0,00	3	-
11232912	ALUW3-160-000-040-100-000-16	16,0	16	15,50	100	32,0	40,0	40,0	0,0	0,00	3	-
11232913	ALUW3-200-000-038-100-000-20	20,0	20	-	100	38,0	-	38,0	0,0	0,00	3	-

Subject to technical modifications

MDCSA3

P	M	K	N	S	H
			●		

Features:

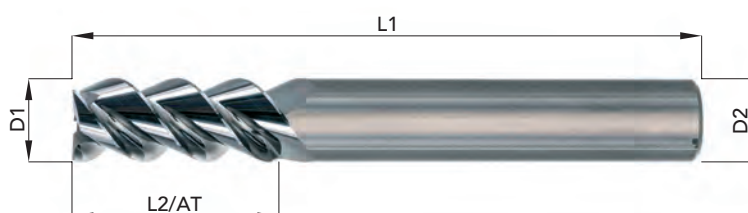
Milling cutter, Z=3, for aluminium, plastic and HPL board.
Cylindrical shank.

Polished version.

Z 3
HM M-040
Coating C-000



**Triple-angle milling cutter,
polished chip chambers**



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11232914	MDCSA3-010-000-003-040-000-04	1,0	4	-	50	3,0	-	3,0	0,0	0,00	3	-
11232915	MDCSA3-020-000-006-040-000-04	2,0	4	-	50	6,0	-	6,0	0,0	0,00	3	-
11232916	MDCSA3-030-000-008-057-000-06	3,0	4	-	50	8,0	-	8,0	0,0	0,00	3	-
11232917	MDCSA3-040-000-011-057-000-06	4,0	4	-	50	11,0	-	11,0	0,0	0,00	3	-
11232918	MDCSA3-050-000-013-057-000-06	5,0	6	-	50	13,0	-	13,0	0,0	0,00	3	-
11232919	MDCSA3-060-000-013-057-000-06	6,0	6	-	50	15,0	-	15,0	0,0	0,00	3	-
11232920	MDCSA3-080-000-019-063-000-08	8,0	8	-	60	20,0	-	20,0	0,0	0,00	3	-
11232921	MDCSA3-100-000-022-072-000-10	10,0	10	-	75	25,0	-	25,0	0,0	0,00	3	-
11232922	MDCSA3-120-000-026-083-000-12	12,0	12	-	75	30,0	-	30,0	0,0	0,00	3	-
11232923	MDCSA3-160-000-032-092-000-16	16,0	16	-	100	40,0	-	40,0	0,0	0,00	3	-
11232924	MDCSA3-200-000-038-104-000-20	20,0	20	-	100	40,0	-	40,0	0,0	0,00	3	-

Subject to technical modifications

MDA3

P	M	K	N	S	H
			●		

Features:

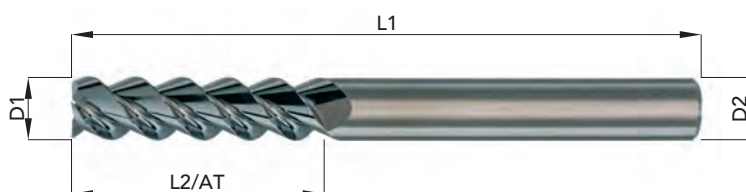
Milling cutter, Z=3, for aluminium, plastic and HPL board.
Cylindrical shank.

Polished version, long model.

Z 3
HM M-040
Coating C-000



**Triple-angle milling cutter,
polished chip chambers**



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Long model L												
11232925	MDA310-030-000-012-075-000-06	3,0	6	-	75	12,0	-	12,0	0,0	0,00	3	-
11232926	MDA310-040-000-012-075-000-06	4,0	6	-	75	16,0	-	16,0	0,0	0,00	3	-
11232927	MDA310-050-000-012-075-000-06	5,0	6	-	75	20,0	-	20,0	0,0	0,00	3	-
11232928	MDA310-060-000-012-075-000-06	6,0	6	-	75	25,0	-	25,0	0,0	0,00	3	-
Long model XL												
11232929	MDA311-030-000-015-100-000-06	3,0	6	-	100	15,0	-	15,0	0,0	0,00	3	-
11232930	MDA311-030-000-015-100-000-06	4,0	6	-	100	20,0	-	20,0	0,0	0,00	3	-
11232931	MDA311-030-000-015-100-000-06	5,0	6	-	100	25,0	-	25,0	0,0	0,00	3	-
11232932	MDA311-030-000-015-100-000-06	6,0	6	-	100	30,0	-	30,0	0,0	0,00	3	-
11232933	MDA311-030-000-015-100-000-06	8,0	8	-	100	35,0	-	35,0	0,0	0,00	3	-
11232934	MDA311-030-000-015-100-000-06	10,0	10	-	100	40,0	-	40,0	0,0	0,00	3	-
11232935	MDA311-030-000-015-100-000-06	12,0	12	-	100	45,0	-	45,0	0,0	0,00	3	-
Long model XXL												
11232936	MDA312-080-000-040-150-000-08	8,0	8	-	150	40,0	-	40,0	0,0	0,00	3	-
11232937	MDA312-100-000-050-150-000-10	10,0	10	-	150	50,0	-	50,0	0,0	0,00	3	-
11232938	MDA312-120-000-050-150-000-12	12,0	12	-	150	50,0	-	50,0	0,0	0,00	3	-
11232939	MDA312-160-000-070-150-000-16	16,0	16	-	150	70,0	-	70,0	0,0	0,00	3	-
11232940	MDA312-200-000-080-150-000-20	20,0	20	-	150	80,0	-	80,0	0,0	0,00	3	-

Subject to technical modifications

P	M	K	N	S	H
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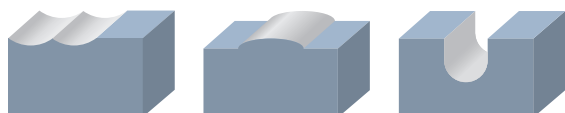
Features:

Mini ball milling cutter, Z=2.

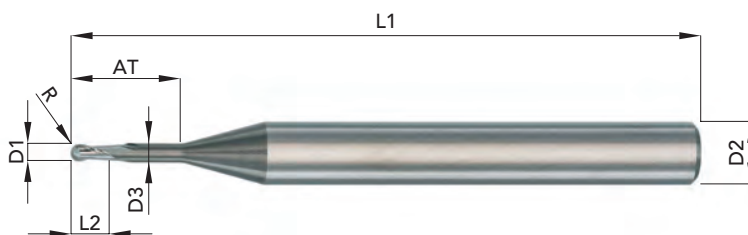
Cylindrically ground.

Uncoated, very suitable for NE materials.

Z 2
HM M-040
Coating C-000



Mini full-radius milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11232941	MKNE-003-015-002-060-000-04	0,3	4	0,25	60	0,5	2,0	2,0	0,0	0,15	2	-
11232942	MKNE-003-015-003-060-000-04	0,3	4	0,25	60	0,5	3,0	3,0	0,0	0,15	2	-
11232943	MKNE-003-015-005-060-000-04	0,3	4	0,25	60	0,5	5,0	5,0	0,0	0,15	2	-
11232944	MKNE-004-020-002-060-000-04	0,4	4	0,35	60	0,6	2,0	2,0	0,0	0,20	2	-
11232945	MKNE-004-020-004-060-000-04	0,4	4	0,35	60	0,6	4,0	4,0	0,0	0,20	2	-
11232946	MKNE-004-020-006-060-000-04	0,4	4	0,35	60	0,6	6,0	6,0	0,0	0,20	2	-
11232947	MKNE-005-025-002-060-000-04	0,5	4	0,45	60	0,8	2,0	2,0	0,0	0,25	2	-
11232948	MKNE-005-025-005-060-000-04	0,5	4	0,45	60	0,8	5,0	5,0	0,0	0,25	2	-
11232949	MKNE-005-025-007-060-000-04	0,5	4	0,45	60	0,8	7,0	7,0	0,0	0,25	2	-
11232950	MKNE-005-025-010-060-000-04	0,5	4	0,45	60	0,8	10,0	10,0	0,0	0,25	2	-
11232951	MKNE-006-030-003-060-000-04	0,6	4	0,55	60	0,9	3,0	3,0	0,0	0,30	2	-
11232952	MKNE-006-030-006-060-000-04	0,6	4	0,55	60	0,9	6,0	6,0	0,0	0,30	2	-
11232953	MKNE-006-030-009-060-000-04	0,6	4	0,55	60	0,9	9,0	9,0	0,0	0,30	2	-
11232954	MKNE-006-030-012-060-000-04	0,6	4	0,55	60	0,9	12,0	12,0	0,0	0,30	2	-
11232955	MKNE-008-040-003-060-000-04	0,8	4	0,75	60	1,2	3,0	3,0	0,0	0,40	2	-
11232956	MKNE-008-040-006-060-000-04	0,8	4	0,75	60	1,2	6,0	6,0	0,0	0,40	2	-
11232957	MKNE-008-040-009-060-000-04	0,8	4	0,75	60	1,2	9,0	9,0	0,0	0,40	2	-
11232958	MKNE-008-040-012-060-000-04	0,8	4	0,75	60	1,2	12,0	12,0	0,0	0,40	2	-

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Features:

Mini ball milling cutter, Z=2.

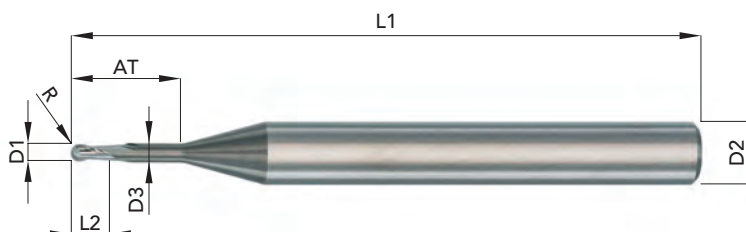
Cylindrically ground.

Uncoated, very suitable for NE materials.

Z 2
HM M-040
Coating C-000



Mini full-radius milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11232959	MKNE-010-050-003-060-000-04	1,0	4	0,90	60	1,5	3,0	3,0	0,0	0,50	2	-
11232960	MKNE-010-050-005-060-000-04	1,0	4	0,90	60	1,5	5,0	5,0	0,0	0,50	2	-
11232961	MKNE-010-050-007-060-000-04	1,0	4	0,90	60	1,5	7,0	7,0	0,0	0,50	2	-
11232962	MKNE-010-050-008-060-000-04	1,0	4	0,90	60	1,5	8,0	8,0	0,0	0,50	2	-
11232963	MKNE-010-050-010-060-000-04	1,0	4	0,90	60	1,5	10,0	10,0	0,0	0,50	2	-
11232964	MKNE-010-050-011-060-000-04	1,0	4	0,90	60	1,5	11,0	11,0	0,0	0,50	2	-
11232965	MKNE-010-050-015-060-000-04	1,0	4	0,90	60	1,5	15,0	15,0	0,0	0,50	2	-
11232966	MKNE-015-075-005-060-000-04	1,5	4	1,40	60	2,3	5,0	5,0	0,0	0,75	2	-
11232967	MKNE-015-075-008-060-000-04	1,5	4	1,40	60	2,3	8,0	8,0	0,0	0,75	2	-
11232968	MKNE-015-075-012-060-000-04	1,5	4	1,40	60	2,3	12,0	12,0	0,0	0,75	2	-
11232969	MKNE-015-075-016-060-000-04	1,5	4	1,40	60	2,3	16,0	16,0	0,0	0,75	2	-
11232970	MKNE-015-075-019-060-000-04	1,5	4	1,40	60	2,3	19,0	19,0	0,0	0,75	2	-
11232971	MKNE-015-075-023-060-000-04	1,5	4	1,40	60	2,3	23,0	23,0	0,0	0,75	2	-
11232972	MKNE-020-100-005-060-000-04	2,0	4	1,85	60	3,0	5,0	5,0	0,0	1,00	2	-
11232973	MKNE-020-100-010-060-000-04	2,0	4	1,85	60	3,0	10,0	10,0	0,0	1,00	2	-
11232974	MKNE-020-100-012-060-000-04	2,0	4	1,85	60	3,0	12,0	12,0	0,0	1,00	2	-
11232975	MKNE-020-100-015-060-000-04	2,0	4	1,85	60	3,0	15,0	15,0	0,0	1,00	2	-
11232976	MKNE-020-100-016-060-000-04	2,0	4	1,85	60	3,0	16,0	16,0	0,0	1,00	2	-
11232977	MKNE-020-100-020-060-000-04	2,0	4	1,85	60	3,0	20,0	20,0	0,0	1,00	2	-
11232978	MKNE-020-100-025-070-000-04	2,0	4	1,85	70	3,0	25,0	25,0	0,0	1,00	2	-
11232979	MKNE-020-100-030-070-000-04	2,0	4	1,85	70	3,0	30,0	30,0	0,0	1,00	2	-
11232980	MKNE-020-100-035-070-000-04	2,0	4	1,85	70	3,0	35,0	35,0	0,0	1,00	2	-

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Features:

Mini ball milling cutter, Z-2.

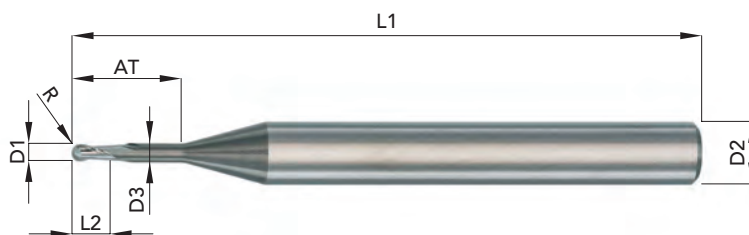
Cylindrically ground.

Uncoated, very suitable for NE materials.

Z 2
HM M-040
Coating C-000



Mini full-radius milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11232981	MKNE-030-150-010-060-000-04	3,0	4	2,70	60	4,5	10,0	10,0	0,0	1,50	2	-
11232982	MKNE-030-150-015-060-000-04	3,0	4	2,70	60	4,5	15,0	15,0	0,0	1,50	2	-
11232983	MKNE-030-150-024-070-000-04	3,0	4	2,70	70	4,5	24,0	24,0	0,0	1,50	2	-
11232984	MKNE-040-200-016-060-000-04	4,0	4	3,70	60	6,0	16,0	16,0	0,0	2,00	2	-
11232985	MKNE-040-200-024-070-000-04	4,0	4	3,70	70	6,0	24,0	24,0	0,0	2,00	2	-
11232986	MKNE-040-200-030-070-000-04	4,0	4	3,70	70	6,0	30,0	30,0	0,0	2,00	2	-
11232987	MKNE-040-200-036-070-000-04	4,0	4	3,70	70	6,0	36,0	36,0	0,0	2,00	2	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Mini toric radius milling cutter, Z=2.

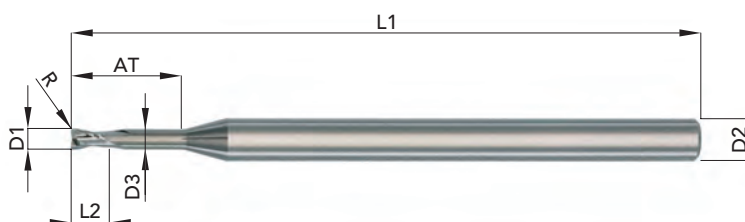
Cylindrically ground.

Uncoated, very suitable for NE materials.

Z 2
HM M-040
Coating C-000



Mini toric milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11232988	MTNE-004-004-002-060-000-04	0,4	4	0,35	60	0,6	2,0	2,0	0,0	0,04	2	-
11232989	MTNE-004-004-004-060-000-04	0,4	4	0,35	60	0,6	4,0	4,0	0,0	0,04	2	-
11232990	MTNE-004-004-006-060-000-04	0,4	4	0,35	60	0,6	6,0	6,0	0,0	0,04	2	-
11232991	MTNE-006-006-003-060-000-04	0,6	4	0,55	60	0,9	3,0	3,0	0,0	0,06	2	-
11232992	MTNE-006-006-006-060-000-04	0,6	4	0,55	60	0,9	6,0	6,0	0,0	0,06	2	-
11232993	MTNE-006-006-009-060-000-04	0,6	4	0,55	60	0,9	9,0	9,0	0,0	0,06	2	-
11232994	MTNE-008-008-006-060-000-04	0,8	4	0,75	60	1,2	6,0	6,0	0,0	0,08	2	-
11232995	MTNE-008-008-010-060-000-04	0,8	4	0,75	60	1,2	10,0	10,0	0,0	0,08	2	-
11232996	MTNE-010-010-005-060-000-04	1,0	4	0,90	60	1,5	5,0	5,0	0,0	0,10	2	-
11232997	MTNE-010-010-007-060-000-04	1,0	4	0,90	60	1,5	7,0	7,0	0,0	0,10	2	-
11232998	MTNE-010-010-010-060-000-04	1,0	4	0,90	60	1,5	10,0	10,0	0,0	0,10	2	-
11232999	MTNE-010-010-012-060-000-04	1,0	4	0,90	60	1,5	12,0	12,0	0,0	0,10	2	-
11233000	MTNE-010-010-015-060-000-04	1,0	4	0,90	60	1,5	15,0	15,0	0,0	0,10	2	-
11233001	MTNE-015-015-008-060-000-04	1,5	4	1,40	60	2,3	8,0	8,0	0,0	0,15	2	-
11233002	MTNE-015-015-012-060-000-04	1,5	4	1,40	60	2,3	12,0	12,0	0,0	0,15	2	-
11233003	MTNE-015-015-015-060-000-04	1,5	4	1,40	60	2,3	15,0	15,0	0,0	0,15	2	-
11233004	MTNE-015-015-016-060-000-04	1,5	4	1,40	60	2,3	16,0	16,0	0,0	0,15	2	-
11233005	MTNE-015-015-023-060-000-04	1,5	4	1,40	60	2,3	23,0	23,0	0,0	0,15	2	-

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Features:

Mini toric radius milling cutter, Z=2.

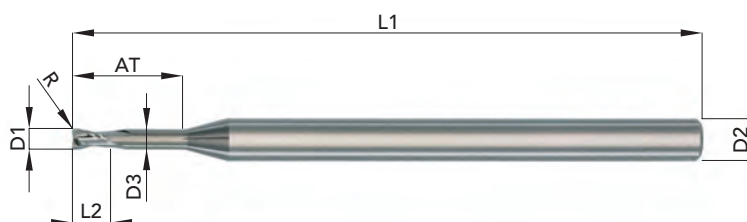
Cylindrically ground.

Uncoated, very suitable for NE materials.

Z 2
HM M-040
Coating C-000



Mini toric milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11233006	MTNE-020-020-005-060-000-04	2,0	4	1,85	60	3,0	5,0	5,0	0,0	0,20	2	-
11233007	MTNE-020-020-010-060-000-04	2,0	4	1,85	60	3,0	10,0	10,0	0,0	0,20	2	-
11233008	MTNE-020-020-015-060-000-04	2,0	4	1,85	60	3,0	15,0	15,0	0,0	0,20	2	-
11233009	MTNE-020-020-020-060-000-04	2,0	4	1,85	60	3,0	20,0	20,0	0,0	0,20	2	-
11233010	MTNE-020-020-030-075-000-04	2,0	4	1,85	75	3,0	30,0	30,0	0,0	0,20	2	-
11233011	MTNE-030-020-020-060-000-04	3,0	4	2,70	60	4,5	20,0	20,0	0,0	0,20	2	-
11233012	MTNE-030-030-015-060-000-04	3,0	4	2,70	60	4,5	15,0	15,0	0,0	0,30	2	-
11233013	MTNE-030-030-021-060-000-04	3,0	4	2,70	60	4,5	21,0	21,0	0,0	0,30	2	-
11233014	MTNE-030-030-027-075-000-04	3,0	4	2,70	75	4,5	27,0	27,0	0,0	0,30	2	-
11233015	MTNE-030-030-030-075-000-04	3,0	4	2,70	75	4,5	30,0	30,0	0,0	0,30	2	-
11233016	MTNE-040-020-012-060-000-04	4,0	4	3,70	60	6,0	12,0	12,0	0,0	0,20	2	-
11233017	MTNE-040-020-024-060-000-04	4,0	4	3,70	60	6,0	24,0	24,0	0,0	0,20	2	-
11233018	MTNE-040-040-016-060-000-04	4,0	4	3,70	60	6,0	16,0	16,0	0,0	0,40	2	-
11233019	MTNE-040-040-024-060-000-04	4,0	4	3,70	60	6,0	24,0	24,0	0,0	0,40	2	-
11233020	MTNE-040-040-032-075-000-04	4,0	4	3,70	75	6,0	32,0	32,0	0,0	0,40	2	-
11233021	MTNE-040-040-038-075-000-04	4,0	4	3,70	75	6,0	38,0	38,0	0,0	0,40	2	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

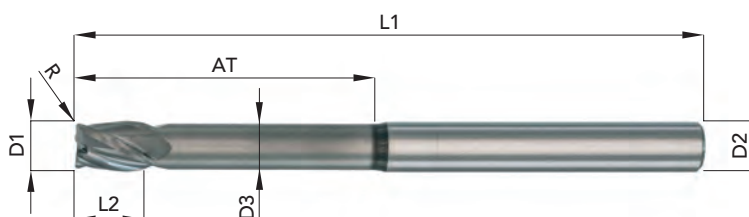
Toric milling cutter with corner radius for aluminium and copper machining.

Cylindrically ground neck for deep machining.

From Ø 3 mm with special coating to prevent material sticking.

Available as 3- and 4-angle cutter.

Z 3 - 4
HM **M-040**
Coating **C-040**

**Edge radius milling cutter, ground**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Z=3												
11233022	3CZ-030-020-020-060-000-06	3,0	6	2,70	60	5,0	20,0	20,0	0,0	0,20	3	-
11233023	3CZ-040-025-020-060-000-06	4,0	6	3,70	60	6,0	20,0	20,0	0,0	0,25	3	-
11233024	3CZ-040-025-025-060-000-06	4,0	6	3,70	60	6,0	25,0	25,0	0,0	0,25	3	-
11233025	3CZ-040-050-028-060-000-06	4,0	6	3,70	60	6,0	28,0	28,0	0,0	0,50	3	-
11233026	3CZ-050-050-020-060-000-06	5,0	6	4,70	60	6,0	20,0	20,0	0,0	0,50	3	-
11233027	3CZ-060-025-032-060-000-06	6,0	6	5,70	60	8,0	32,0	32,0	0,0	0,25	3	-
11233028	3CZ-060-050-032-060-000-06	6,0	6	5,50	60	8,0	32,0	32,0	0,0	0,50	3	-
11233029	3CZ-080-100-030-064-000-08	8,0	8	7,50	64	10,0	30,0	30,0	0,0	1,00	3	-
Z=4												
11233030	4CZ-060-050-020-060-000-06	6,0	6	5,50	60	8,0	20,0	20,0	0,0	0,50	4	-
11233031	4CZ-060-050-035-075-000-06	6,0	6	5,50	75	8,0	35,0	35,0	0,0	0,50	4	-
11233032	4CZ-060-100-035-075-000-06	6,0	6	5,50	75	8,0	35,0	35,0	0,0	1,00	4	-
11233033	4CZ-080-050-035-075-000-08	8,0	8	7,50	75	10,0	35,0	35,0	0,0	0,50	4	-
11233034	4CZ-080-100-035-075-000-08	8,0	8	7,50	75	10,0	35,0	35,0	0,0	1,00	4	-
11233035	4CZ-100-050-035-075-000-10	10,0	10	9,30	75	12,0	35,0	35,0	0,0	0,50	4	-
11233036	4CZ-100-100-035-075-000-10	10,0	10	9,30	75	12,0	35,0	35,0	0,0	1,00	4	-
11233037	4CZ-120-020-045-084-000-12	12,0	12	11,30	84	15,0	45,0	45,0	0,0	0,20	4	-
11233038	4CZ-120-100-042-100-000-12	12,0	12	11,30	100	15,0	42,0	42,0	0,0	1,00	4	-
11233039	4CZ-160-100-095-150-000-16	16,0	16	15,30	150	24,0	95,0	95,0	0,0	1,00	4	-

Subject to technical modifications

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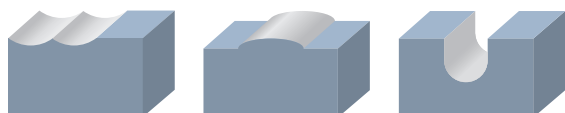
Features:

Ball milling cutter, Z=2, for aluminium and other NE materials.

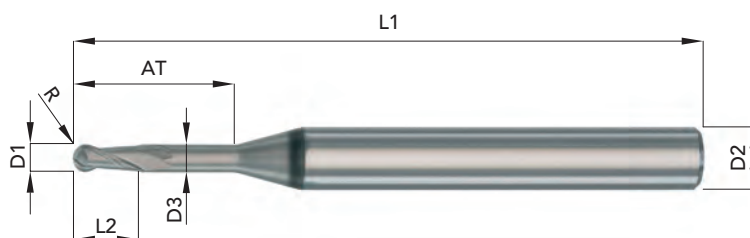
Cylindrically ground neck.

From Ø 3 mm with special coating to prevent material sticking.

Z 2
HM M-040
Coating C-040
(>Ø 2.5mm)



Full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233040	CKZ-008-040-010-060-000-06	0,8	6	0,75	60	1,0	10,0	10,0	0,0	0,40	2	-
11233041	CKZ-010-050-010-060-000-06	1,0	6	0,90	60	2,0	10,0	10,0	0,0	0,50	2	-
11233042	CKZ-018-090-003-040-000-06	1,8	6	1,70	40	3,0	3,0	3,0	0,0	0,90	2	-
11233043	CKZ-020-100-010-060-000-06	2,0	6	1,85	60	4,0	10,0	10,0	0,0	1,00	2	-
11233044	CKZ-030-150-009-075-000-06	3,0	6	2,70	75	6,0	9,0	9,0	0,0	1,50	2	-
11233045	CKZ-030-150-010-060-000-06	3,0	6	2,70	60	6,0	10,0	10,0	0,0	1,50	2	-
11233046	CKZ-030-150-015-060-000-06	3,0	6	2,70	60	6,0	15,0	15,0	0,0	1,50	2	-
11233047	CKZ-030-150-020-060-000-06	3,0	6	2,70	60	6,0	20,0	20,0	0,0	1,50	2	-
11233048	CKZ-030-150-025-075-000-06	3,0	6	2,70	75	6,0	25,0	25,0	0,0	1,50	2	-
11233049	CKZ-040-200-012-075-000-06	4,0	6	3,70	75	8,0	12,0	12,0	0,0	2,00	2	-
11233050	CKZ-040-200-015-060-000-06	4,0	6	3,70	60	8,0	15,0	15,0	0,0	2,00	2	-
11233051	CKZ-040-200-025-060-000-06	4,0	6	3,70	60	8,0	25,0	25,0	0,0	2,00	2	-
11233052	CKZ-040-200-025-075-000-06	4,0	6	3,70	75	8,0	25,0	25,0	0,0	2,00	2	-

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Features:

Ball milling cutter, Z=2, for aluminium and other NE materials.

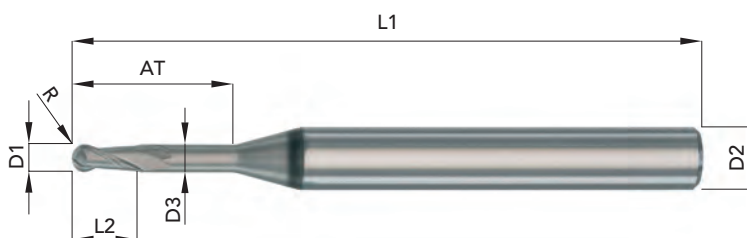
Cylindrically ground neck.

From Ø 3 mm with special coating to prevent material sticking.

Z 2
HM M-040
Coating C-040



Full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233053	CKZ-050-250-015-060-000-06	5,0	6	4,70	60	8,0	15,0	15,0	0,0	2,50	2	-
11233054	CKZ-050-250-015-080-000-06	5,0	6	4,70	80	10,0	15,0	15,0	0,0	2,50	2	-
11233055	CKZ-050-250-025-060-000-06	5,0	6	4,70	60	10,0	25,0	25,0	0,0	2,50	2	-
11233056	CKZ-050-250-025-075-000-06	5,0	6	4,70	75	10,0	25,0	25,0	0,0	2,50	2	-
11233057	CKZ-060-300-015-060-000-06	6,0	6	5,50	60	12,0	15,0	15,0	0,0	3,00	2	-
11233058	CKZ-060-300-020-080-000-06	6,0	6	5,50	80	12,0	20,0	20,0	0,0	3,00	2	-
11233059	CKZ-060-300-030-080-000-06	6,0	6	5,50	80	12,0	30,0	30,0	0,0	3,00	2	-
11233060	CKZ-080-400-020-064-000-08	8,0	8	7,50	64	16,0	20,0	20,0	0,0	4,00	2	-
11233061	CKZ-080-400-026-090-000-08	8,0	8	7,50	90	16,0	26,0	26,0	0,0	4,00	2	-
11233062	CKZ-080-400-040-080-000-08	8,0	8	7,50	80	16,0	40,0	40,0	0,0	4,00	2	-
11233063	CKZ-100-500-025-075-000-10	10,0	10	9,30	75	20,0	25,0	25,0	0,0	5,00	2	-
11233064	CKZ-100-500-031-100-000-10	10,0	10	9,30	100	20,0	31,0	31,0	0,0	5,00	2	-
11233065	CKZ-100-500-045-100-000-10	10,0	10	9,30	100	20,0	45,0	45,0	0,0	5,00	2	-
11233066	CKZ-100-500-050-150-000-10	10,0	10	9,30	150	20,0	50,0	50,0	0,0	5,00	2	-
11233067	CKZ-120-600-030-100-000-12	12,0	12	11,30	100	24,0	30,0	30,0	0,0	6,00	2	-
11233068	CKZ-120-600-037-120-000-12	12,0	12	11,30	120	24,0	37,0	37,0	0,0	6,00	2	-
11233069	CKZ-120-600-090-150-000-12	12,0	12	11,30	150	24,0	90,0	90,0	0,0	6,00	2	-

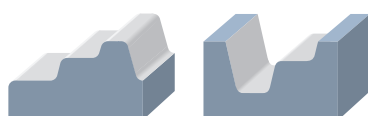
Subject to technical modifications

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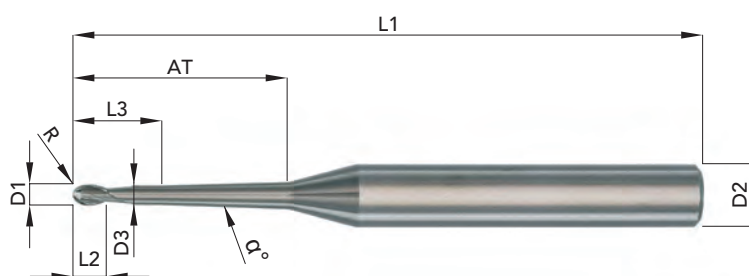
Features:

Ball milling cutter, Z=2, for aluminium and other NE materials.
Conically ground neck for milling parts with discharge.
From Ø 3 mm with special coating to prevent material sticking.

Z 2
HM M-040
Coating C-040
(>Ø 2.5mm)



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233070	CK-010-050-012-060-010-06	1,0	6	0,90	60	9,0	4,0	12,0	1,0	0,50	2	-
11233071	CK-010-050-022-070-008-06	1,0	6	0,90	70	9,0	4,0	22,0	0,8	0,50	2	-
11233072	CK-010-050-033-080-008-06	1,0	6	0,90	80	9,0	4,0	33,0	0,8	0,50	2	-
11233073	CK-015-075-025-060-006-06	1,5	6	1,40	60	9,0	7,0	25,0	0,6	0,75	2	-
11233074	CK-015-075-040-075-006-06	1,5	6	1,40	75	9,0	7,0	40,0	0,6	0,75	2	-
11233075	CK-015-075-060-100-009-06	1,5	6	1,40	100	9,0	7,0	60,0	0,9	0,75	2	-
11233076	CK-020-100-020-060-009-06	2,0	6	1,90	60	9,0	8,0	20,0	0,9	1,00	2	-
11233077	CK-020-100-030-070-009-06	2,0	6	1,90	70	4,0	8,0	30,0	0,9	1,00	2	-
11233078	CK-020-100-040-080-009-06	2,0	6	1,90	80	9,0	8,0	40,0	0,9	1,00	2	-
11233079	CK-030-150-040-085-009-06	3,0	6	2,90	85	4,0	20,0	40,0	0,9	1,50	2	-
11233080	CK-030-150-045-080-009-06	3,0	6	2,90	80	4,0	12,0	45,0	0,9	1,50	2	-
11233081	CK-030-150-080-120-009-06	3,0	6	2,90	120	9,0	20,0	80,0	0,9	1,50	2	-
11233082	CK-040-200-040-080-009-06	4,0	6	3,80	80	9,0	20,0	40,0	0,9	2,00	2	-
11233083	CK-040-200-040-100-015-06	4,0	6	3,80	100	9,0	20,0	40,0	1,5	2,00	2	-
11233084	CK-040-200-064-100-009-06	4,0	6	3,80	100	9,0	20,0	64,0	0,9	2,00	2	-
11233085	CK-040-200-064-120-009-06	4,0	6	3,80	120	9,0	20,0	64,0	0,9	2,00	2	-

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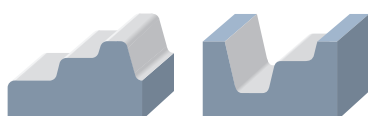
Features:

Ball milling cutter, Z=2, for aluminium and other NE materials.

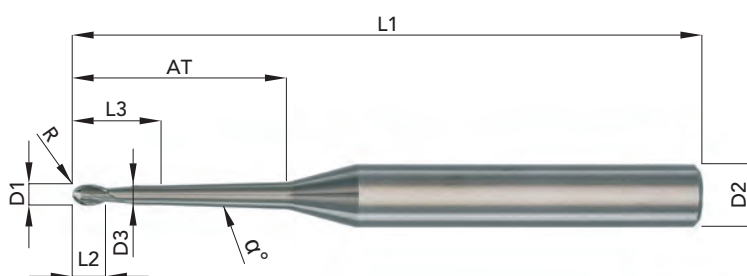
Conically ground neck for milling parts with discharge.

From Ø 3 mm with special coating to prevent material sticking.

Z 2
HM M-040
Coating C-040



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233086	CK-060-300-040-080-009-08	6,0	8	5,80	80	8,0	15,0	40,0	0,9	3,00	2	-
11233087	CK-060-300-064-100-009-08	6,0	8	5,80	100	8,0	20,0	64,0	0,9	3,00	2	-
11233088	CK-060-300-070-120-008-08	6,0	8	5,80	120	8,0	20,0	70,0	0,8	3,00	2	-
11233089	CK-060-300-090-150-006-08	6,0	8	5,80	150	8,0	20,0	90,0	0,6	3,00	2	-
11233090	CK-080-400-062-100-009-10	8,0	10	7,80	100	10,0	20,0	62,0	0,9	4,00	2	-
11233091	CK-080-400-080-120-009-10	8,0	10	7,80	120	10,0	25,0	80,0	0,9	4,00	2	-
11233092	CK-080-400-090-150-006-10	8,0	10	7,80	150	10,0	20,0	90,0	0,6	4,00	2	-
11233093	CK-100-500-065-100-009-12	10,0	12	9,70	100	12,0	20,0	65,0	0,9	5,00	2	-
11233094	CK-100-500-070-120-008-12	10,0	12	9,70	120	10,0	30,0	70,0	0,8	5,00	2	-
11233095	CK-100-500-090-150-006-12	10,0	12	9,70	150	10,0	30,0	90,0	0,6	5,00	2	-

Subject to technical modifications

P	M	K	N	S	H
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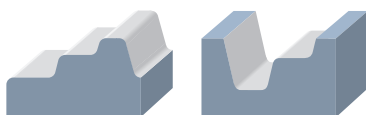
Features:

Toric radius milling cutter, Z=2, for aluminium and other NE materials.

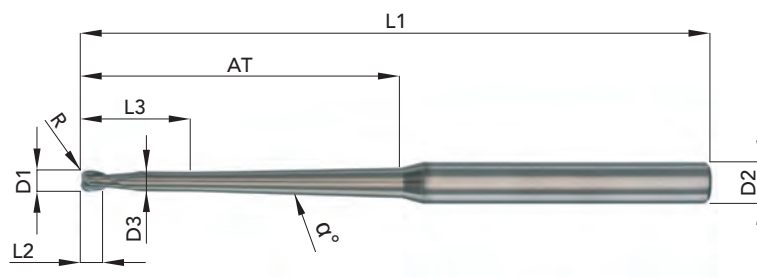
Conically ground neck for milling parts with discharge.

From Ø 3 mm with special coating to prevent material sticking.

Z 2
HM M-040
Coating C-040
(>Ø 2.5mm)



Toric milling cutter tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233096	CT-010-010-008-060-004-06	1,0	6	0,90	60	2,0	6,0	8,0	0,4	0,10	2	-
11233097	CT-010-010-015-060-009-06	1,0	6	0,90	60	2,0	6,0	15,0	0,9	0,10	2	-
11233098	CT-010-010-016-060-004-06	1,0	6	0,90	60	9,0	6,0	16,0	0,4	0,10	2	-
11233099	CT-010-010-020-060-004-06	1,0	6	0,90	60	2,0	6,0	20,0	0,4	0,10	2	-
11233100	CT-010-010-020-060-009-06	1,0	6	0,90	60	2,0	6,0	20,0	0,9	0,10	2	-
11233101	CT-010-010-025-075-004-06	1,0	6	0,90	75	2,0	6,0	25,0	0,4	0,10	2	-
11233102	CT-010-010-025-075-009-06	1,0	6	0,90	75	2,0	6,0	25,0	0,9	0,10	2	-
11233103	CT-010-010-030-075-004-06	1,0	6	0,90	75	2,0	6,0	30,0	0,4	0,10	2	-
11233104	CT-010-010-030-075-009-06	1,0	6	0,90	75	2,0	6,0	30,0	0,9	0,10	2	-
11233105	CT-012-010-015-060-004-06	1,2	6	1,10	60	3,0	6,0	15,0	0,4	0,10	2	-
11233106	CT-012-010-030-070-004-06	1,2	6	1,10	70	3,0	6,0	30,0	0,4	0,10	2	-
11233107	CT-012-010-033-070-009-06	1,2	6	1,10	70	3,0	6,0	33,0	0,9	0,10	2	-
11233108	CT-012-010-038-070-009-06	1,2	6	1,10	70	3,0	6,0	38,0	0,9	0,10	2	-
11233109	CT-030-020-080-120-009-06	3,0	6	2,90	120	4,0	10,0	80,0	0,9	0,20	2	-
11233110	CT-030-030-045-080-009-06	3,0	6	2,90	80	4,0	10,0	45,0	0,9	0,30	2	-
11233111	CT-030-050-040-085-009-06	3,0	6	2,90	85	2,0	12,0	40,0	0,9	0,50	2	-

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P	M	K	N	S	H
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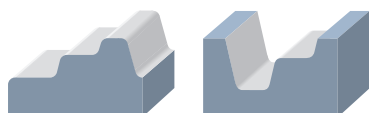
Features:

Toric radius milling cutter, Z=2, for aluminium and other NE materials.

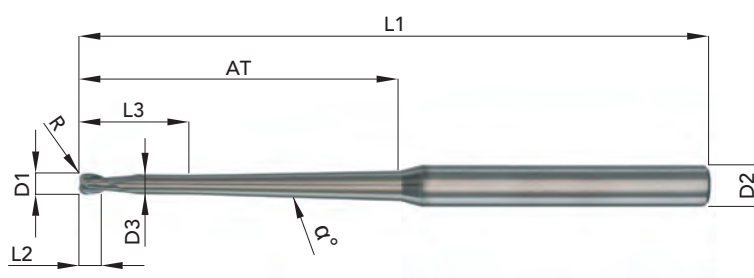
Conically ground neck for milling parts with discharge.

From Ø 3 mm with special coating to prevent material sticking.

Z 2
HM M-040
Coating C-040



Toric milling cutter tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233112	CT-040-050-040-080-015-06	4,0	6	3,80	80	9,0	20,0	40,0	1,5	0,50	2	-
11233113	CT-040-100-040-080-009-06	4,0	6	3,80	80	6,0	20,0	40,0	0,9	1,00	2	-
11233114	CT-040-100-040-080-015-06	4,0	6	3,80	80	9,0	20,0	40,0	1,5	1,00	2	-
11233115	CT-040-100-040-100-015-06	4,0	6	3,80	100	9,0	20,0	40,0	1,5	1,00	2	-
11233116	CT-040-100-060-120-009-08	4,0	8	3,80	120	4,0	20,0	60,0	0,9	1,00	2	-
11233117	CT-060-050-060-100-009-08	6,0	8	5,80	100	12,0	40,0	60,0	0,9	0,50	2	-
11233118	CT-060-050-085-120-009-10	6,0	10	5,80	120	15,0	40,0	85,0	0,9	0,50	2	-
11233119	CT-060-100-060-100-009-08	6,0	8	5,80	100	12,0	20,0	60,0	0,9	1,00	2	-
11233120	CT-060-100-065-120-009-08	6,0	8	5,80	120	12,0	20,0	65,0	0,9	1,00	2	-
11233121	CT-060-200-060-120-009-08	6,0	8	5,80	120	12,0	25,0	60,0	0,9	2,00	2	-
11233122	CT-060-200-065-100-009-08	6,0	8	5,80	100	12,0	25,0	65,0	0,9	2,00	2	-
11233123	CT-080-100-070-120-008-10	8,0	10	7,80	120	10,0	20,0	70,0	0,8	1,00	2	-
11233124	CT-080-200-070-120-008-10	8,0	10	7,80	120	10,0	20,0	70,0	0,8	2,00	2	-
11233125	CT-080-300-070-120-009-12	8,0	12	7,80	120	10,0	20,0	70,0	0,9	3,00	2	-
11233126	CT-100-300-100-150-009-16	10,0	16	9,70	150	10,0	20,0	100,0	0,9	3,00	2	-
11233127	CT-100-400-070-120-008-12	10,0	12	9,70	120	10,0	20,0	70,0	0,8	4,00	2	-

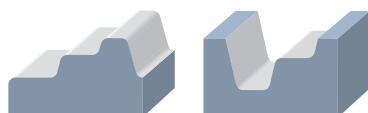
Subject to technical modifications

P	M	K	N	S	H
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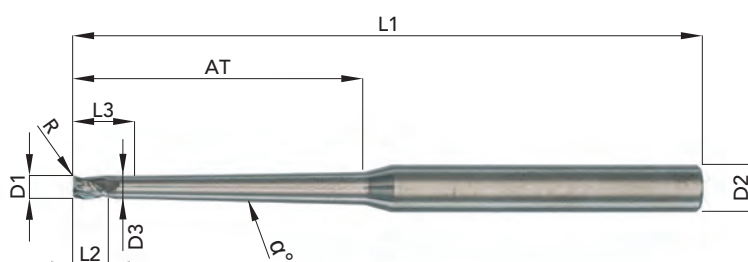
Features:

Toric radius milling cutter, Z=3, for aluminium and other NE materials.
Conically ground neck for milling and finishing of parts with discharge.

Z 3
HM M-040
Coating C-040
(>Ø 2.5mm)



Toric milling cutter Z=3 tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233128	CF-015-010-020-060-004-06	1,5	6	1,40	60	2,0	8,0	20,0	0,4	0,10	3	-
11233129	CF-015-010-025-060-004-06	1,5	6	1,40	60	2,0	8,0	25,0	0,4	0,10	3	-
11233130	CF-015-010-025-075-009-06	1,5	6	1,40	75	2,0	8,0	25,0	0,9	0,10	3	-
11233131	CF-015-010-030-075-004-06	1,5	6	1,40	75	2,0	8,0	30,0	0,4	0,10	3	-
11233132	CF-015-010-035-080-009-06	1,5	6	1,40	80	2,0	8,0	35,0	0,9	0,10	3	-
11233133	CF-015-010-040-085-004-06	1,5	6	1,40	85	2,0	8,0	40,0	0,4	0,10	3	-
11233134	CF-015-010-055-100-009-06	1,5	6	1,40	100	2,0	8,0	55,0	0,9	0,10	3	-
11233135	CF-015-010-075-120-009-06	1,5	6	1,40	120	2,0	8,0	75,0	0,9	0,10	3	-
11233136	CF-015-020-053-100-005-06	1,5	6	1,40	100	2,0	8,0	53,0	0,5	0,20	3	-
11233137	CF-020-010-025-060-009-06	2,0	6	1,90	60	3,0	8,0	25,0	0,9	0,10	3	-
11233138	CF-020-010-040-080-004-06	2,0	6	1,90	80	3,0	8,0	40,0	0,4	0,10	3	-
11233139	CF-020-010-040-100-009-06	2,0	6	1,90	100	3,0	8,0	40,0	0,9	0,10	3	-
11233140	CF-020-010-055-100-004-06	2,0	6	1,90	100	3,0	8,0	55,0	0,4	0,10	3	-
11233141	CF-020-010-055-120-009-06	2,0	6	1,90	120	3,0	8,0	55,0	0,9	0,10	3	-
11233142	CF-020-010-070-120-004-06	2,0	6	1,90	120	3,0	8,0	70,0	0,4	0,10	3	-
11233143	CF-020-050-070-120-004-06	2,0	6	1,90	120	3,0	8,0	70,0	0,4	0,50	3	-
11233144	CF-030-010-040-075-004-06	3,0	6	2,90	75	4,0	8,0	40,0	0,4	0,10	3	-
11233145	CF-030-010-055-100-004-06	3,0	6	2,90	100	4,0	8,0	55,0	0,4	0,10	3	-
11233146	CF-030-010-070-120-004-06	3,0	6	2,90	120	4,0	8,0	70,0	0,4	0,10	3	-
11233147	CF-030-020-028-060-009-06	3,0	6	2,90	60	4,0	8,0	28,0	0,9	0,20	3	-
11233148	CF-030-020-031-080-009-06	3,0	6	2,90	80	4,0	8,0	31,0	0,9	0,20	3	-
11233149	CF-030-020-037-080-009-06	3,0	6	2,90	80	4,0	8,0	37,0	0,9	0,20	3	-

Subject to technical modifications

P	M	K	N	S	H
			●	○	

Features:

Specially developed radius milling cutter, **Z=3**, for machining **copper**.

Very suitable for milling of **electrodes** for sinker EDM.

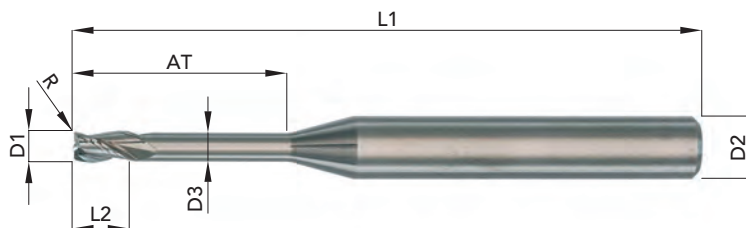
It has sharp cutting edges and the radius is also positively ground.

From Ø 3 mm with special coating for copper machining.

Z 3
HM M-040
Coating C-200
 (>Ø 2.5mm)



Toric milling cutter, Z=3, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233150	3CUR-010-010-003-060-000-06	1,00	6	0,90	60	1,50	3	3	0,0	0,10	3	-
11233151	3CUR-010-010-004-060-000-06	1,00	6	0,90	60	1,50	4	4	0,0	0,10	3	-
11233152	3CUR-010-010-005-060-000-06	1,00	6	0,90	60	1,50	5	5	0,0	0,10	3	-
11233153	3CUR-010-010-007-060-000-06	1,00	6	0,90	60	1,50	7	7	0,0	0,10	3	-
11233154	3CUR-015-010-005-060-000-06	1,50	6	1,40	60	2,30	5	5	0,0	0,10	3	-
11233155	3CUR-015-010-006-060-000-06	1,50	6	1,40	60	2,30	6	6	0,0	0,10	3	-
11233156	3CUR-015-010-008-060-000-06	1,50	6	1,40	60	2,30	8	8	0,0	0,10	3	-
11233157	3CUR-015-010-011-060-000-06	1,50	6	1,40	60	2,30	11	11	0,0	0,10	3	-
11233158	3CUR-020-020-006-060-000-06	2,00	6	1,85	60	3,00	6	6	0,0	0,20	3	-
11233159	3CUR-020-020-008-060-000-06	2,00	6	1,85	60	3,00	8	8	0,0	0,20	3	-
11233160	3CUR-020-020-010-060-000-06	2,00	6	1,85	60	3,00	10	10	0,0	0,20	3	-
11233161	3CUR-020-020-014-060-000-06	2,00	6	1,85	60	3,00	14	14	0,0	0,20	3	-
11233162	3CUR-030-020-009-060-000-06	3,00	6	2,70	60	4,50	9	9	0,0	0,20	3	-
11233163	3CUR-030-020-012-060-000-06	3,00	6	2,70	60	4,50	12	12	0,0	0,20	3	-
11233164	3CUR-030-020-015-060-000-06	3,00	6	2,70	60	4,50	15	15	0,0	0,20	3	-
11233165	3CUR-030-020-021-060-000-06	3,00	6	2,70	60	4,50	21	21	0,0	0,20	3	-

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P	M	K	N	S	H
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Features:

Specially developed radius milling cutter, **Z=3**, for machining **copper**.

Very suitable for milling **electrodes** for sinker EDM.

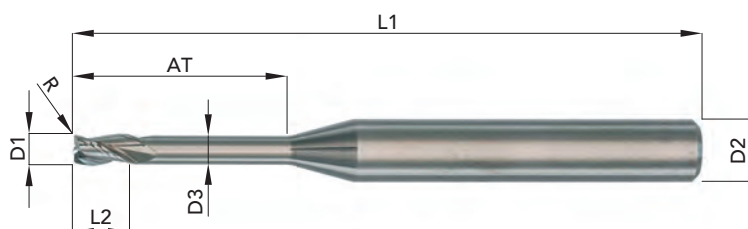
It has sharp cutting edges and the radius is also positively ground.

From Ø 3 mm with special coating for copper machining.

Z 3
HM M-040
Coating C-200



Toric milling cutter, Z=3, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233166	3CUR-040-025-012-060-000-06	4,00	6	3,70	60	6,00	12	12	0,0	0,25	3	-
11233167	3CUR-040-025-016-060-000-06	4,00	6	3,70	60	6,00	16	16	0,0	0,25	3	-
11233168	3CUR-040-025-020-060-000-06	4,00	6	3,70	60	6,00	20	20	0,0	0,25	3	-
11233169	3CUR-040-025-028-060-000-06	4,00	6	3,70	60	6,00	28	28	0,0	0,25	3	-
11233170	3CUR-040-050-012-060-000-06	4,00	6	3,70	60	6,00	12	12	0,0	0,50	3	-
11233171	3CUR-040-050-016-060-000-06	4,00	6	3,70	60	6,00	16	16	0,0	0,50	3	-
11233172	3CUR-040-050-020-060-000-06	4,00	6	3,70	60	6,00	20	20	0,0	0,50	3	-
11233173	3CUR-040-050-028-060-000-06	4,00	6	3,70	60	6,00	28	28	0,0	0,50	3	-
11233174	3CUR-060-025-018-060-000-06	6,00	6	5,50	60	9,00	18	18	0,0	0,25	3	-
11233175	3CUR-060-025-024-060-000-06	6,00	6	5,50	60	9,00	24	24	0,0	0,25	3	-
11233176	3CUR-060-025-030-060-000-06	6,00	6	5,50	60	9,00	30	30	0,0	0,25	3	-
11233177	3CUR-060-025-042-070-000-06	6,00	6	5,50	70	9,00	42	42	0,0	0,25	3	-
11233178	3CUR-060-050-018-060-000-06	6,00	6	5,50	60	9,00	18	18	0,0	0,50	3	-
11233179	3CUR-060-050-024-060-000-06	6,00	6	5,50	60	9,00	24	24	0,0	0,50	3	-
11233180	3CUR-060-050-030-060-000-06	6,00	6	5,50	60	9,00	30	30	0,0	0,50	3	-
11233181	3CUR-060-050-042-070-000-06	6,00	6	5,50	70	9,00	42	42	0,0	0,50	3	-
11233182	3CUR-080-050-024-070-000-08	8,00	8	7,50	70	12,00	24	24	0,0	0,50	3	-
11233183	3CUR-080-050-032-070-000-08	8,00	8	7,50	70	12,00	32	32	0,0	0,50	3	-
11233184	3CUR-080-050-040-080-000-08	8,00	8	7,50	80	12,00	40	40	0,0	0,50	3	-
11233185	3CUR-080-100-024-070-000-08	8,00	8	7,50	70	12,00	24	24	0,0	1,00	3	-
11233186	3CUR-080-100-032-070-000-08	8,00	8	7,50	70	12,00	32	32	0,0	1,00	3	-
11233187	3CUR-080-100-040-080-000-08	8,00	8	7,50	80	12,00	40	40	0,0	1,00	3	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Specially developed radius milling cutter, **Z=4**, for machining **copper**.

Very suitable for milling **electrodes** for sinker EDM.

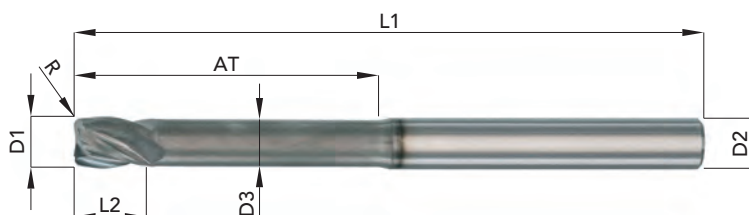
It has sharp cutting edges and the radius is also positively ground.

From Ø 3 mm with special coating for copper machining.

Z 4
HM M-040
Coating C-200



Toric milling cutter, Z=4, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233188	4CUR-060-025-018-060-000-06	6,00	6	5,50	60	9,00	18	18	0,0	0,25	4	-
11233189	4CUR-060-025-024-060-000-06	6,00	6	5,50	60	9,00	24	24	0,0	0,25	4	-
11233190	4CUR-060-025-030-060-000-06	6,00	6	5,50	60	9,00	30	30	0,0	0,25	4	-
11233191	4CUR-060-025-042-070-000-06	6,00	6	5,50	70	9,00	42	42	0,0	0,25	4	-
11233192	4CUR-060-050-018-060-000-06	6,00	6	5,50	60	9,00	18	18	0,0	0,50	4	-
11233193	4CUR-060-050-024-060-000-06	6,00	6	5,50	60	9,00	24	24	0,0	0,50	4	-
11233194	4CUR-060-050-030-060-000-06	6,00	6	5,50	60	9,00	30	30	0,0	0,50	4	-
11233195	4CUR-060-050-042-070-000-06	6,00	6	5,50	70	9,00	42	42	0,0	0,50	4	-
11233196	4CUR-080-050-024-070-000-08	8,00	8	7,50	70	12,00	24	24	0,0	0,50	4	-
11233197	4CUR-080-050-032-070-000-08	8,00	8	7,50	70	12,00	32	32	0,0	0,50	4	-
11233198	4CUR-080-050-040-080-000-08	8,00	8	7,50	80	12,00	40	40	0,0	0,50	4	-
11233199	4CUR-080-100-024-070-000-08	8,00	8	7,50	70	12,00	24	24	0,0	1,00	4	-
11233200	4CUR-080-100-032-070-000-08	8,00	8	7,50	70	12,00	32	32	0,0	1,00	4	-
11233201	4CUR-080-100-040-080-000-08	8,00	8	7,50	80	12,00	40	40	0,0	1,00	4	-
11233202	4CUR-100-020-030-080-000-10	10,00	10	9,30	80	15,00	30	30	0,0	0,20	4	-
11233203	4CUR-100-020-040-080-000-10	10,00	10	9,30	80	15,00	40	40	0,0	0,20	4	-
11233204	4CUR-100-050-030-080-000-10	10,00	10	9,30	80	15,00	30	30	0,0	0,50	4	-
11233205	4CUR-100-050-040-080-000-10	10,00	10	9,30	80	15,00	40	40	0,0	0,50	4	-
11233206	4CUR-100-100-030-080-000-10	10,00	10	9,30	80	15,00	30	30	0,0	1,00	4	-
11233207	4CUR-100-100-040-080-000-10	10,00	10	9,30	80	15,00	40	40	0,0	1,00	4	-

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P	M	K	N	S	H
			●	○	

Features:

Specially developed radius milling cutter, **Z=4**, for machining **copper**.

Very suitable for milling **electrodes** for sinker EDM.

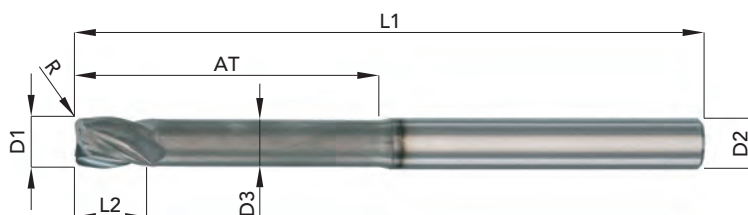
It has sharp cutting edges and the radius is also positively ground.

From Ø 3 mm with special coating for copper machining.

Z 4
HM M-040
Coating C-200



Toric milling cutter, Z=4, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233208	4CUR-120-020-030-084-000-10	12,00	12	11,30	84	18,00	30	30	0,0	0,20	4	-
11233209	4CUR-120-020-040-084-000-10	12,00	12	11,30	84	18,00	40	40	0,0	0,20	4	-
11233210	4CUR-120-050-030-084-000-10	12,00	12	11,30	84	18,00	30	30	0,0	0,50	4	-
11233211	4CUR-120-050-040-084-000-10	12,00	12	11,30	84	18,00	40	40	0,0	0,50	4	-
11233212	4CUR-120-100-030-084-000-10	12,00	12	11,30	84	18,00	30	30	0,0	1,00	4	-
11233213	4CUR-120-100-040-084-000-10	12,00	12	11,30	84	18,00	40	40	0,0	1,00	4	-

Subject to technical modifications

P	M	K	N	S	H
			●	○	

Features:

Specially developed ball milling cutter, **Z=2**, for machining **copper**.

Very suitable for milling **electrodes** for sinker EDM.

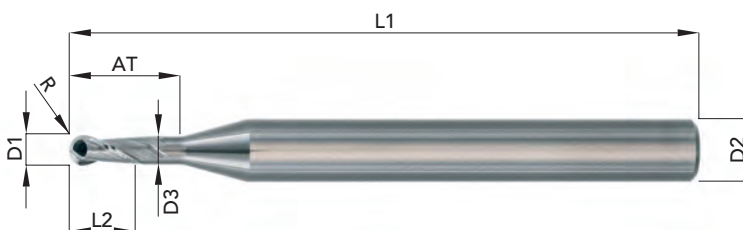
It has sharp cutting edges and the radius is also positively ground.

From Ø 3 mm with special coating for copper machining.

Z 2
HM M-040
Coating C-200
 (>Ø 2.5mm)



Full-radius milling cutter, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233214	2CUKZ-010-050-005-060-000-06	1,00	6	0,90	60	1,00	5	5	0,0	0,50	2	-
11233215	2CUKZ-015-075-008-060-000-06	1,50	6	1,40	60	1,50	8	8	0,0	0,75	2	-
11233216	2CUKZ-020-100-010-060-000-06	2,00	6	1,85	60	2,00	10	10	0,0	1,00	2	-
11233217	2CUKZ-030-150-010-060-000-06	3,00	6	2,70	60	3,00	10	10	0,0	1,50	2	-
11233218	2CUKZ-040-200-012-060-000-06	4,00	6	3,70	60	4,00	12	12	0,0	2,00	2	-
11233219	2CUKZ-060-300-015-060-000-06	6,00	6	5,50	60	6,00	15	15	0,0	3,00	2	-
11233220	2CUKZ-080-400-020-064-000-08	8,00	8	7,50	64	8,00	20	20	0,0	4,00	2	-
11233221	2CUKZ-080-400-035-075-000-08	8,00	8	7,50	75	8,00	35	35	0,0	4,00	2	-
11233222	2CUKZ-100-500-025-075-000-10	10,00	10	9,30	75	10,00	25	25	0,0	10,00	2	-
11233223	2CUKZ-100-500-040-100-000-10	10,00	10	9,30	100	10,00	40	40	0,0	10,00	2	-
11233224	2CUKZ-120-600-030-084-000-10	12,00	12	11,30	84	12,00	30	30	0,0	12,00	2	-
11233225	2CUKZ-120-600-050-120-000-10	12,00	12	11,30	120	12,00	50	50	0,0	12,00	2	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

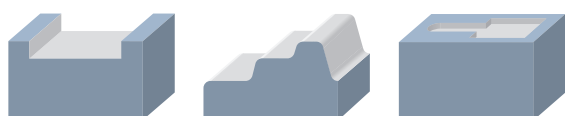
Small shank-end mill.

Sharp cutting edges, so **no phase or radius**.

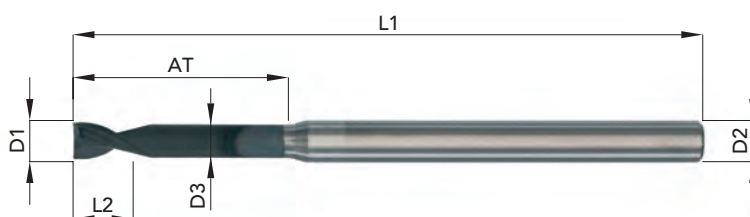
Diamond-coated.

For milling graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Sharp milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
Shank: cylindrical 4 mm												
11233226	DS-010-000-010-000-060-04	1,00	4	0,94	60	2	10	10	0,0	0,00	2	-
11233227	DS-015-000-012-000-060-04	1,50	4	1,40	60	3	12	12	0,0	0,00	2	-
11233228	DS-020-000-020-000-060-04	2,00	4	1,90	60	4	20	20	0,0	0,00	2	-
11233229	DS-040-000-025-000-050-04	4,00	4	3,70	50	11	25	25	0,0	0,00	2	-
11233230	DS-040-000-030-000-070-04	4,00	4	3,70	70	5	30	30	0,0	0,00	2	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

Toric radius milling cutter, Z=2.

Cylindrically ground neck.

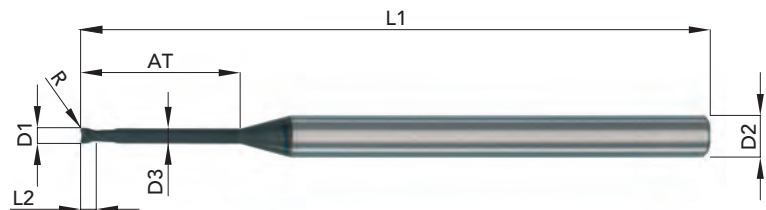
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Toric milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11233231	2DT-005-010-004-060-000-04	0,50	4	0,46	60	0,38	4	4	0,0	0,10	2	-
11233232	2DT-006-010-004-060-000-04	0,60	4	0,54	60	0,45	4	4	0,0	0,10	2	-
11233233	2DT-006-010-007-060-000-04	0,60	4	0,54	60	0,45	7	7	0,0	0,10	2	-
11233234	2DT-008-010-007-060-000-04	0,80	4	0,74	60	0,60	7	7	0,0	0,10	2	-
11233235	2DT-008-010-010-060-000-04	0,80	4	0,74	60	0,60	10	10	0,0	0,10	2	-
11233236	2DT-010-010-005-060-000-04	1,00	4	0,94	60	0,75	5	5	0,0	0,10	2	-
11233237	2DT-010-010-010-060-000-04	1,00	4	0,94	60	0,75	10	10	0,0	0,10	2	-
11233238	2DT-010-010-015-060-000-04	1,00	4	0,94	60	0,75	15	15	0,0	0,10	2	-
11233239	2DT-010-020-005-060-000-04	1,00	4	0,94	60	0,75	5	5	0,0	0,20	2	-
11233240	2DT-010-020-010-060-000-04	1,00	4	0,94	60	0,75	10	10	0,0	0,20	2	-
11233241	2DT-015-015-008-060-000-04	1,50	4	1,40	60	1,13	8	8	0,0	0,15	2	-
11233242	2DT-015-015-015-060-000-04	1,50	4	1,40	60	1,13	15	15	0,0	0,15	2	-
11233243	2DT-015-015-023-060-000-04	1,50	4	1,40	60	1,13	23	23	0,0	0,15	2	-
11233244	2DT-020-020-010-060-000-04	2,00	4	1,90	60	1,50	10	10	0,0	0,20	2	-
11233245	2DT-020-020-015-060-000-04	2,00	4	1,90	60	1,50	15	15	0,0	0,20	2	-
11233246	2DT-020-020-020-060-000-04	2,00	4	1,90	60	1,50	20	20	0,0	0,20	2	-
11233247	2DT-020-020-025-060-000-04	2,00	4	1,90	60	1,50	25	25	0,0	0,20	2	-
11233248	2DT-020-020-030-070-000-04	2,00	4	1,90	70	1,50	30	30	0,0	0,20	2	-

Continued on next page

P	M	K	N	S	H
			●		

Features:

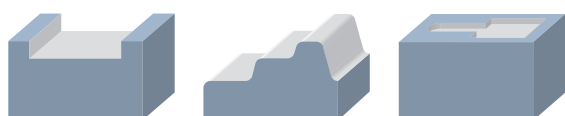
Toric radius milling cutter, Z=2.

Cylindrically ground neck.

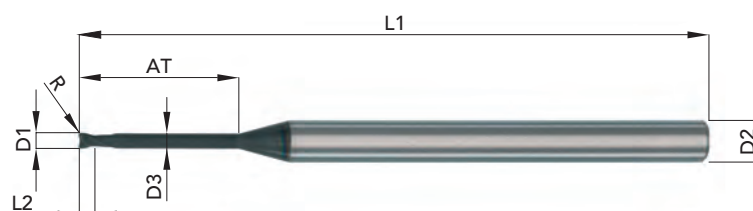
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Toric milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11233249	2DT-020-050-010-060-000-04	2,00	4	1,90	60	2,0	10	10	0,0	0,50	2	-
11233250	2DT-020-050-015-060-000-04	2,00	4	1,90	60	2,0	15	15	0,0	0,50	2	-
11233251	2DT-020-050-020-060-000-04	2,00	4	1,90	60	2,0	20	20	0,0	0,50	2	-
11233252	2DT-020-050-030-070-000-04	2,00	4	1,90	70	2,0	30	30	0,0	0,50	2	-
11233253	2DT-030-020-015-060-000-04	3,00	4	2,80	60	3,0	15	15	0,0	0,20	2	-
11233254	2DT-030-020-021-060-000-04	3,00	4	2,80	60	3,0	21	21	0,0	0,20	2	-
11233255	2DT-030-030-015-060-000-04	3,00	4	2,80	60	3,0	15	15	0,0	0,30	2	-
11233256	2DT-030-030-021-060-000-04	3,00	4	2,80	60	3,0	21	21	0,0	0,30	2	-
11233257	2DT-030-030-027-070-000-04	3,00	4	2,80	70	3,0	27	27	0,0	0,30	2	-
11233258	2DT-030-050-015-060-000-04	3,00	4	2,80	60	3,0	15	15	0,0	0,50	2	-
11233259	2DT-030-050-021-060-000-04	3,00	4	2,80	60	3,0	21	21	0,0	0,50	2	-
11233260	2DT-030-050-027-070-000-04	3,00	4	2,80	70	3,0	27	27	0,0	0,50	2	-
11233261	2DT-040-020-024-060-000-04	4,00	4	3,70	60	4,0	24	24	0,0	0,20	2	-
11233262	2DT-040-020-025-060-000-04	4,00	4	3,70	60	4,0	25	25	0,0	0,20	2	-
11233263	2DT-040-020-040-075-000-04	4,00	4	3,70	75	4,0	40	40	0,0	0,20	2	-
11233264	2DT-040-030-025-060-000-04	4,00	4	3,70	60	4,0	25	25	0,0	0,30	2	-
11233265	2DT-040-040-016-060-000-04	4,00	4	3,70	60	4,0	16	16	0,0	0,40	2	-
11233266	2DT-040-040-024-060-000-04	4,00	4	3,70	60	4,0	24	24	0,0	0,40	2	-
11233267	2DT-040-040-032-075-000-04	4,00	4	3,70	75	4,0	32	32	0,0	0,40	2	-
11233268	2DT-040-040-040-075-000-04	4,00	4	3,70	75	4,0	40	40	0,0	0,40	2	-

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P	M	K	N	S	H
			●		

Features:

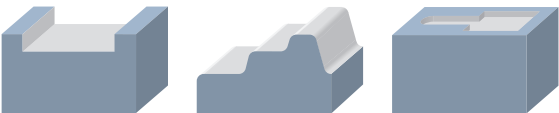
Toric radius milling cutter, Z=2.

Cylindrically ground neck.

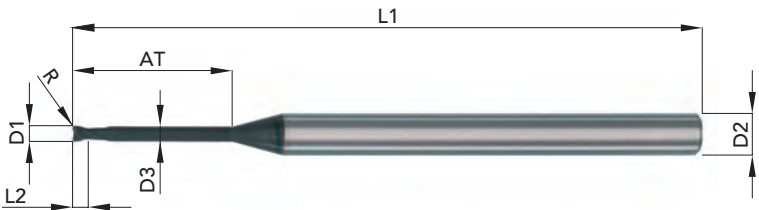
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Toric milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11233269	2DT-040-050-026-060-000-04	4,00	4	3,70	60	4,0	26	26	0,0	0,50	2	-
11233270	2DT-040-050-032-070-000-04	4,00	4	3,70	70	4,0	32	32	0,0	0,50	2	-
11233271	2DT-040-100-016-060-000-04	4,00	4	3,70	60	4,0	16	16	0,0	1,00	2	-
11233272	2DT-040-100-024-060-000-04	4,00	4	3,70	60	4,0	24	24	0,0	1,00	2	-
11233273	2DT-040-100-032-070-000-04	4,00	4	3,70	70	4,0	32	32	0,0	1,00	2	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

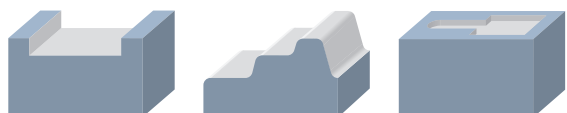
Toric radius milling cutter, Z=2.

Cylindrically ground neck.

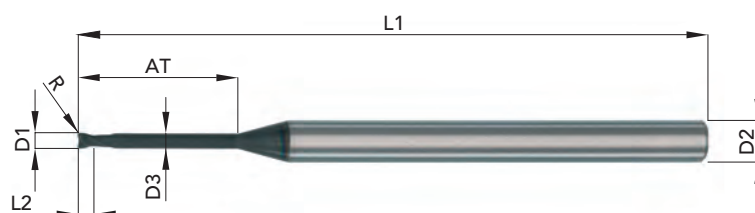
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Toric milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 6 mm												
11233274	2DT-010-010-010-060-000-06	1,00	6	0,94	60	0,75	10	10	0,0	0,10	2	-
11233275	2DT-015-015-008-060-000-06	1,50	6	1,40	60	1,13	8	8	0,0	0,15	2	-
11233276	2DT-020-020-010-060-000-06	2,00	6	1,90	60	2,00	10	10	0,0	0,20	2	-
11233277	2DT-020-050-020-060-000-06	2,00	6	1,90	60	2,00	20	20	0,0	0,50	2	-
11233278	2DT-030-030-015-060-000-06	3,00	6	2,80	60	3,00	15	15	0,0	0,30	2	-
11233279	2DT-030-050-030-070-000-06	3,00	6	2,80	70	3,00	30	30	0,0	0,50	2	-
11233280	2DT-040-050-040-075-000-06	4,00	6	3,70	75	4,00	40	40	0,0	0,50	2	-
11233281	2DT-060-030-036-075-000-06	6,00	6	5,60	75	10,00	36	36	0,0	0,30	2	-
11233282	2DT-060-030-048-100-000-06	6,00	6	5,60	100	10,00	48	48	0,0	0,30	2	-
11233283	2DT-060-050-024-060-000-06	6,00	6	5,60	60	10,00	24	24	0,0	0,50	2	-
11233284	2DT-060-050-036-075-000-06	6,00	6	5,60	75	10,00	36	36	0,0	0,50	2	-
11233285	2DT-060-050-048-100-000-06	6,00	6	5,60	100	10,00	48	48	0,0	0,50	2	-
11233286	2DT-060-100-024-060-000-06	6,00	6	5,60	60	10,00	24	24	0,0	1,00	2	-
11233287	2DT-060-100-036-075-000-06	6,00	6	5,60	75	10,00	36	36	0,0	1,00	2	-
11233288	2DT-060-100-048-100-000-06	6,00	6	5,60	100	10,00	48	48	0,0	1,00	2	-
11233289	2DT-060-100-060-100-000-06	6,00	6	5,60	100	10,00	60	60	0,0	1,00	2	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

Toric radius milling cutter, Z=3.

Cylindrically ground neck.

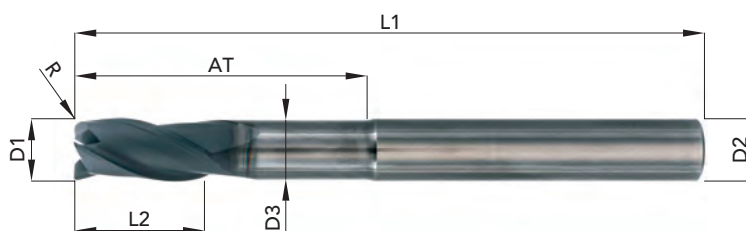
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 3
HM M-070
Coating C-050



Toric milling cutter, Z=3, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233290	3DT-080-050-032-070-000-08	8,00	8	7,50	70	16	32	32	0,0	0,50	3	-
11233291	3DT-080-050-048-100-000-08	8,00	8	7,50	100	16	48	48	0,0	0,50	3	-
11233292	3DT-080-050-064-120-000-08	8,00	8	7,50	120	16	64	64	0,0	0,50	3	-
11233293	3DT-080-050-080-150-000-08	8,00	8	7,50	150	16	80	80	0,0	0,50	3	-
11233294	3DT-080-100-032-070-000-08	8,00	8	7,50	70	16	32	32	0,0	1,00	3	-
11233295	3DT-080-100-048-100-000-08	8,00	8	7,50	100	16	48	48	0,0	1,00	3	-
11233296	3DT-080-100-064-120-000-08	8,00	8	7,50	120	16	64	64	0,0	1,00	3	-
11233297	3DT-080-100-070-100-000-08	8,00	8	7,50	100	16	70	70	0,0	1,00	3	-
11233298	3DT-080-100-080-150-000-08	8,00	8	7,50	150	16	80	80	0,0	1,00	3	-
11233299	3DT-100-050-030-075-000-10	10,00	10	9,50	75	20	30	30	0,0	0,50	3	-
11233300	3DT-100-050-045-100-000-10	10,00	10	9,50	100	20	45	45	0,0	0,50	3	-
11233301	3DT-100-050-060-150-000-10	10,00	10	9,50	150	20	60	60	0,0	0,50	3	-
11233302	3DT-100-100-030-075-000-10	10,00	10	9,50	75	20	30	30	0,0	1,00	3	-
11233303	3DT-100-100-045-100-000-10	10,00	10	9,50	100	20	45	45	0,0	1,00	3	-
11233304	3DT-100-100-080-150-000-10	10,00	10	9,50	150	20	80	80	0,0	1,00	3	-
11233305	3DT-120-050-048-100-000-12	12,00	12	11,40	100	24	48	48	0,0	0,50	3	-
11233306	3DT-120-100-036-080-000-12	12,00	12	11,40	80	24	36	36	0,0	1,00	3	-
11233307	3DT-120-100-048-100-000-12	12,00	12	11,40	100	24	48	48	0,0	1,00	3	-
11233308	3DT-120-100-060-120-000-12	12,00	12	11,40	120	24	60	60	0,0	1,00	3	-
11233309	3DT-120-100-060-150-000-12	12,00	12	11,40	150	24	60	60	0,0	1,00	3	-
11233310	3DT-120-100-110-150-000-12	12,00	12	11,40	150	24	110	110	0,0	1,00	3	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

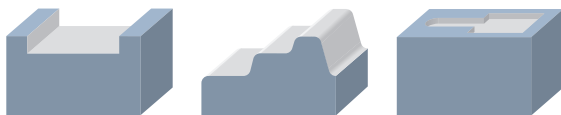
Toric radius milling cutter, Z=4.

Cylindrically ground neck.

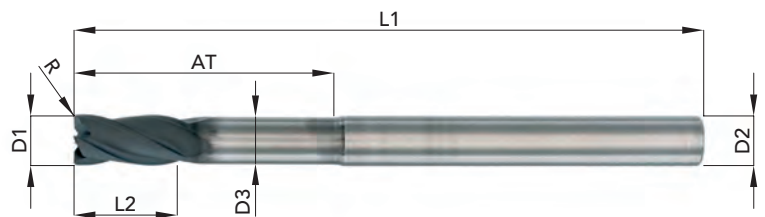
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 4
HM M-070
Coating C-050



Toric milling cutter, Z=4, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233311	4DT-040-040-020-100-000-04	4,00	4	3,70	100	4	20	20	0,0	0,40	4	-
11233312	4DT-060-050-030-100-000-06	6,00	6	5,60	100	10	30	30	0,0	0,50	4	-
11233313	4DT-060-100-030-100-000-06	6,00	6	5,60	100	10	30	30	0,0	1,00	4	-
11233314	4DT-080-050-040-100-000-08	8,00	8	7,50	100	16	40	40	0,0	0,50	4	-
11233315	4DT-080-100-048-100-000-08	8,00	8	7,50	100	16	48	48	0,0	1,00	4	-
11233316	4DT-080-100-050-100-000-08	8,00	8	7,50	100	16	50	50	0,0	1,00	4	-
11233317	4DT-100-050-050-100-000-10	10,00	10	9,50	100	20	50	50	0,0	0,50	4	-
11233318	4DT-100-050-076-100-000-10	10,00	10	9,50	100	20	76	76	0,0	0,50	4	-
11233319	4DT-100-100-050-100-000-10	10,00	10	9,50	100	20	50	50	0,0	1,00	4	-
11233320	4DT-120-050-060-120-000-12	12,00	12	11,40	120	24	60	60	0,0	0,50	4	-
11233321	4DT-120-050-090-120-000-12	12,00	12	11,40	120	24	90	90	0,0	0,50	4	-
11233322	4DT-120-100-060-120-000-12	12,00	12	11,40	120	24	60	60	0,0	1,00	4	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

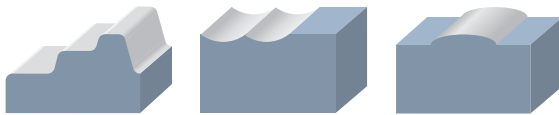
Ball milling cutter, Z=2.

Cylindrically ground neck.

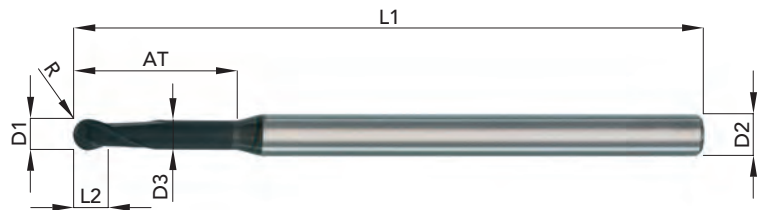
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Full-radius milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11233323	2DK-003-015-002-060-000-04	0,30	4	0,26	60	0,23	2	2	0,0	0,15	2	-
11233324	2DK-003-015-003-060-000-04	0,30	4	0,26	60	0,23	3	3	0,0	0,15	2	-
11233325	2DK-003-015-005-060-000-04	0,30	4	0,26	60	0,23	5	5	0,0	0,15	2	-
11233326	2DK-004-020-002-060-000-04	0,40	4	0,36	60	0,30	2	2	0,0	0,20	2	-
11233327	2DK-004-020-004-060-000-04	0,40	4	0,36	60	0,30	4	4	0,0	0,20	2	-
11233328	2DK-004-020-006-060-000-04	0,40	4	0,36	60	0,30	6	6	0,0	0,20	2	-
11233329	2DK-005-025-003-060-000-04	0,50	4	0,46	60	0,38	3	3	0,0	0,25	2	-
11233330	2DK-005-025-005-060-000-04	0,50	4	0,46	60	0,38	5	5	0,0	0,25	2	-
11233331	2DK-005-025-008-060-000-04	0,50	4	0,46	60	0,38	8	8	0,0	0,25	2	-
11233332	2DK-005-025-010-060-000-04	0,50	4	0,46	60	0,38	10	10	0,0	0,25	2	-
11233333	2DK-006-030-003-060-000-04	0,60	4	0,54	60	0,40	3	3	0,0	0,30	2	-
11233334	2DK-006-030-006-060-000-04	0,60	4	0,54	60	0,40	6	6	0,0	0,30	2	-
11233335	2DK-006-030-009-060-000-04	0,60	4	0,54	60	0,40	9	9	0,0	0,30	2	-
11233336	2DK-006-030-012-060-000-04	0,60	4	0,54	60	0,40	12	12	0,0	0,30	2	-

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P	M	K	N	S	H
			●		

Features:

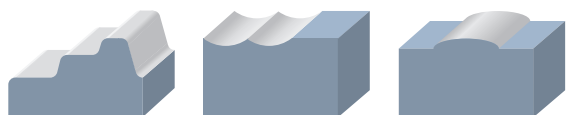
Ball milling cutter, **Z=2**.

Cylindrically ground neck.

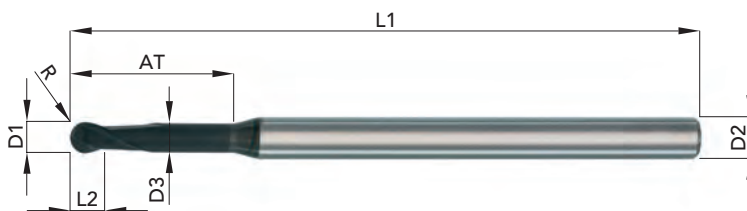
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Full-radius milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11233337	2DK-007-035-004-060-000-04	0,70	4	0,64	60	0,53	4	4	0,0	0,35	2	-
11233338	2DK-007-035-007-060-000-04	0,70	4	0,64	60	0,53	7	7	0,0	0,35	2	-
11233339	2DK-007-035-011-060-000-04	0,70	4	0,64	60	0,53	11	11	0,0	0,35	2	-
11233340	2DK-008-040-003-060-000-04	0,80	4	0,74	60	0,60	3	3	0,0	0,40	2	-
11233341	2DK-008-040-006-060-000-04	0,80	4	0,74	60	0,60	6	6	0,0	0,40	2	-
11233342	2DK-008-040-009-060-000-04	0,80	4	0,74	60	0,60	9	9	0,0	0,40	2	-
11233343	2DK-008-040-012-060-000-04	0,80	4	0,74	60	0,60	12	12	0,0	0,40	2	-
11233344	2DK-009-045-005-060-000-04	0,90	4	0,84	60	0,68	5	5	0,0	0,45	2	-
11233345	2DK-009-045-009-060-000-04	0,90	4	0,84	60	0,68	9	9	0,0	0,45	2	-
11233346	2DK-009-045-014-060-000-04	0,90	4	0,84	60	0,68	14	14	0,0	0,45	2	-
11233347	2DK-010-050-015-045-000-03	1,00	3	0,94	45	0,75	15	15	0,0	0,50	2	-
11233348	2DK-010-050-003-060-000-04	1,00	4	0,94	60	0,75	3	3	0,0	0,50	2	-
11233349	2DK-010-050-005-060-000-04	1,00	4	0,94	60	0,75	5	5	0,0	0,50	2	-
11233350	2DK-010-050-008-060-000-04	1,00	4	0,94	60	0,75	8	8	0,0	0,50	2	-
11233351	2DK-010-050-011-060-000-04	1,00	4	0,94	60	0,75	11	11	0,0	0,50	2	-
11233352	2DK-010-050-015-060-000-04	1,00	4	0,94	60	0,75	15	15	0,0	0,50	2	-
11233353	2DK-010-050-020-060-000-04	1,00	4	0,94	60	0,75	20	20	0,0	0,50	2	-

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P	M	K	N	S	H
			●		

Features:

Ball milling cutter, **Z=2**.

Cylindrically ground neck.

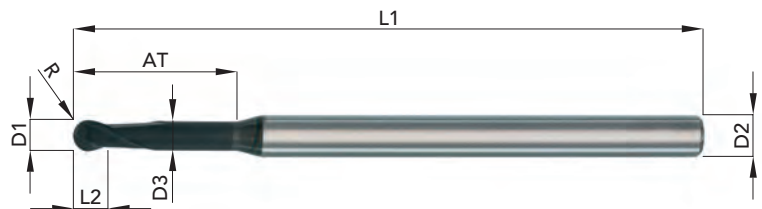
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Full-radius milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Shank: cylindrical 4 mm												
11233354	2DK-015-075-005-060-000-04	1,50	4	1,40	60	1,13	5	5	0,0	0,75	2	-
11233355	2DK-015-075-008-060-000-04	1,50	4	1,40	60	1,13	8	8	0,0	0,75	2	-
11233356	2DK-015-075-012-060-000-04	1,50	4	1,40	60	1,13	12	12	0,0	0,75	2	-
11233357	2DK-015-075-015-060-000-04	1,50	4	1,40	60	1,13	15	15	0,0	0,75	2	-
11233358	2DK-015-075-019-060-000-04	1,50	4	1,40	60	1,13	19	19	0,0	0,75	2	-
11233359	2DK-015-075-023-060-000-04	1,50	4	1,40	60	1,13	23	23	0,0	0,75	2	-
11233360	2DK-020-100-005-060-000-04	2,00	4	1,90	60	2,00	5	5	0,0	1,00	2	-
11233361	2DK-020-100-010-060-000-04	2,00	4	1,90	60	2,00	10	10	0,0	1,00	2	-
11233362	2DK-020-100-015-060-000-04	2,00	4	1,90	60	2,00	15	15	0,0	1,00	2	-
11233363	2DK-020-100-020-060-000-04	2,00	4	1,90	60	2,00	20	20	0,0	1,00	2	-
11233364	2DK-020-100-025-070-000-04	2,00	4	1,90	70	2,00	25	25	0,0	1,00	2	-
11233365	2DK-020-100-035-070-000-04	2,00	4	1,90	70	2,00	35	35	0,0	1,00	2	-
11233366	2DK-030-150-010-060-000-04	3,00	4	2,80	60	3,00	10	10	0,0	1,50	2	-
11233367	2DK-030-150-015-060-000-04	3,00	4	2,80	60	3,00	15	15	0,0	1,50	2	-
11233368	2DK-030-150-024-070-000-04	3,00	4	2,80	70	3,00	24	24	0,0	1,50	2	-
11233369	2DK-030-150-030-070-000-04	3,00	4	2,80	70	3,00	30	30	0,0	1,50	2	-
11233370	2DK-040-200-016-060-000-04	4,00	4	3,70	60	4,00	16	16	0,0	2,00	2	-
11233371	2DK-040-200-020-060-000-04	4,00	4	3,70	70	4,00	20	20	0,0	2,00	2	-
11233372	2DK-040-200-024-070-000-04	4,00	4	3,70	70	4,00	24	24	0,0	2,00	2	-
11233373	2DK-040-200-030-070-000-04	4,00	4	3,70	70	4,00	30	30	0,0	2,00	2	-
11233374	2DK-040-200-036-070-000-04	4,00	4	3,70	70	4,00	36	36	0,0	2,00	2	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

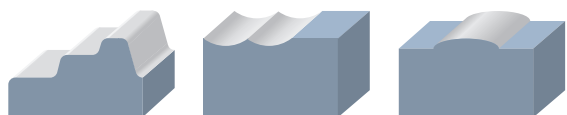
Ball milling cutter, **Z=2**.

Cylindrically ground neck.

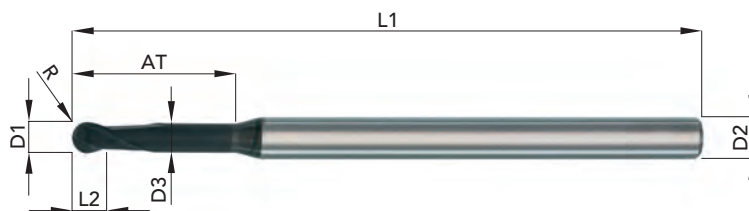
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Full-radius milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233375	2DK-005-025-002-060-000-06	0,50	6	0,46	60	0,38	2,5	2,5	0,0	0,25	2	-
11233376	2DK-005-025-005-060-000-06	0,50	6	0,46	60	0,38	5	5	0,0	0,25	2	-
11233377	2DK-005-025-007-060-000-06	0,50	6	0,46	60	0,38	7,5	7,5	0,0	0,25	2	-
11233378	2DK-008-040-006-060-000-06	0,80	6	0,76	60	0,60	6	6	0,0	0,40	2	-
11233379	2DK-010-050-005-060-000-06	1,00	6	0,94	60	0,75	5	5	0,0	0,50	2	-
11233380	2DK-010-050-010-060-000-06	1,00	6	0,94	60	0,75	10	10	0,0	0,50	2	-
11233381	2DK-010-050-015-060-000-06	1,00	6	0,94	60	0,75	15	15	0,0	0,50	2	-
11233382	2DK-015-075-007-060-000-06	1,50	6	1,40	60	1,13	7,5	7,5	0,0	0,75	2	-
11233383	2DK-015-075-010-060-000-06	1,50	6	1,40	60	1,13	10	10	0,0	0,75	2	-
11233384	2DK-015-075-015-060-000-06	1,50	6	1,40	60	1,13	15	15	0,0	0,75	2	-
11233385	2DK-015-075-022-060-000-06	1,50	6	1,40	60	1,13	22,5	22,5	0,0	0,75	2	-
11233386	2DK-015-075-025-060-000-06	1,50	6	1,40	60	1,13	25	25	0,0	0,75	2	-
11233387	2DK-020-100-010-060-000-06	2,00	6	1,90	60	2,00	10	10	0,0	1,00	2	-
11233388	2DK-020-100-015-060-000-06	2,00	6	1,90	60	2,00	15	15	0,0	1,00	2	-
11233389	2DK-020-100-020-060-000-06	2,00	6	1,90	60	2,00	20	20	0,0	1,00	2	-
11233390	2DK-020-100-025-060-000-06	2,00	6	1,90	60	2,00	25	25	0,0	1,00	2	-
11233391	2DK-020-100-030-070-000-06	2,00	6	1,90	70	2,00	30	30	0,0	1,00	2	-

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P	M	K	N	S	H
			●		

Features:

Ball milling cutter, **Z=2**.

Cylindrically ground neck.

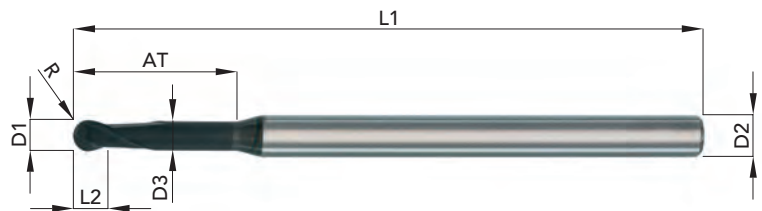
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Full-radius milling cutter, Z=2, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233392	2DK-040-200-020-060-000-06	4,00	6	3,70	60	4,0	20	20	0,0	2,00	2	-
11233393	2DK-040-200-032-070-000-06	4,00	6	3,70	70	4,0	32	32	0,0	2,00	2	-
11233394	2DK-040-200-040-080-000-06	4,00	6	3,70	80	4,0	40	40	0,0	2,00	2	-
11233395	2DK-040-200-060-100-000-06	4,00	6	3,70	100	4,0	60	60	0,0	2,00	2	-
11233396	2DK-050-250-015-060-000-06	5,00	6	4,60	60	5,0	15	15	0,0	2,50	2	-
11233397	2DK-050-250-020-060-000-06	5,00	6	4,60	60	5,0	20	20	0,0	2,50	2	-
11233398	2DK-050-250-030-075-000-06	5,00	6	4,60	75	5,0	30	30	0,0	2,50	2	-
11233399	2DK-050-250-045-100-000-06	5,00	6	4,60	100	5,0	45	45	0,0	2,50	2	-
11233400	2DK-080-400-060-115-000-08	8,00	8	7,50	115	8,0	60	60	0,0	4,00	2	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

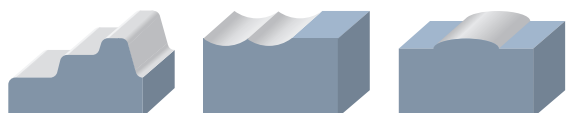
Ball milling cutter, **Z=3**.

Cylindrically ground neck.

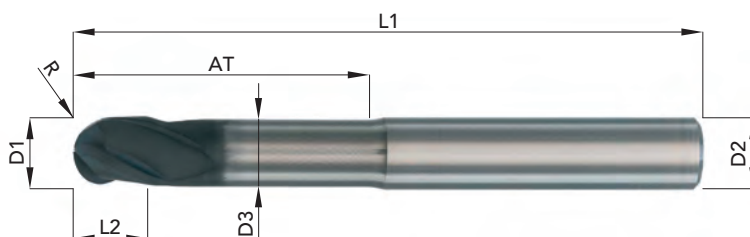
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 3
HM M-070
Coating C-050



Full-radius milling cutter, Z=3, ground



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233401	3DK-060-300-018-060-000-06	6,00	6	5,60	60	6,0	18	18	0,0	3,00	3	-
11233402	3DK-060-300-024-060-000-06	6,00	6	5,60	60	6,0	24	24	0,0	3,00	3	-
11233403	3DK-060-300-036-075-000-06	6,00	6	5,60	75	6,0	36	36	0,0	3,00	3	-
11233404	3DK-060-300-045-100-000-06	6,00	6	5,60	100	6,0	45	45	0,0	3,00	3	-
11233405	3DK-060-300-075-100-000-06	6,00	6	5,60	100	6,0	75	75	0,0	3,00	3	-
11233406	3DK-080-400-024-070-000-08	8,00	8	7,50	70	8,0	24	24	0,0	4,00	3	-
11233407	3DK-080-400-032-070-000-08	8,00	8	7,50	70	8,0	32	32	0,0	4,00	3	-
11233408	3DK-080-400-048-100-000-08	8,00	8	7,50	100	8,0	48	48	0,0	4,00	3	-
11233409	3DK-080-400-100-150-000-08	8,00	8	7,50	150	8,0	100	100	0,0	4,00	3	-
11233410	3DK-100-500-030-075-000-10	10,00	10	9,50	75	10,0	30	30	0,0	5,00	3	-
11233411	3DK-100-500-040-100-000-10	10,00	10	9,50	100	10,0	40	40	0,0	5,00	3	-
11233412	3DK-100-500-060-100-000-10	10,00	10	9,50	100	10,0	60	60	0,0	5,00	3	-
11233413	3DK-100-500-090-150-000-10	10,00	10	9,50	150	10,0	90	90	0,0	5,00	3	-
11233414	3DK-120-600-036-080-000-12	12,00	12	11,40	80	12,0	36	36	0,0	6,00	3	-
11233415	3DK-120-600-048-100-000-12	12,00	12	11,40	100	12,0	48	48	0,0	6,00	3	-
11233416	3DK-120-600-072-120-000-12	12,00	12	11,40	120	12,0	72	72	0,0	6,00	3	-
11233417	3DK-120-600-100-150-000-12	12,00	12	11,40	150	12,0	100	100	0,0	6,00	3	-

Subject to technical modifications

P	M	K	N	S	H
			●		

Features:

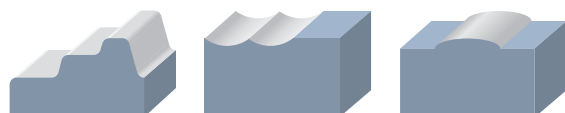
Ball milling cutter, **Z=2**.

Conically ground neck.

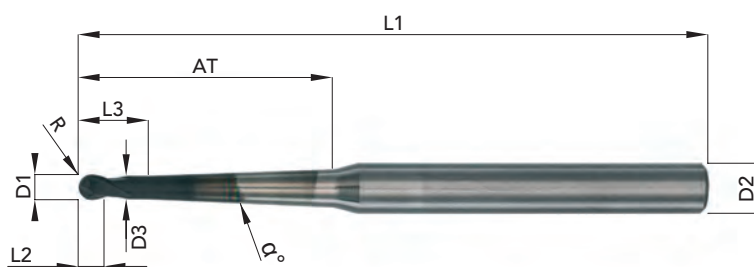
High accuracy, both radius and runout.

Diamond-coated for machining graphite and other abrasive materials.

Z 2
HM M-070
Coating C-050



Full-radius milling cutter with tapered neck



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233418	DKK-040-200-050-080-009-06	4,00	6	3,70	80	4,0	8	50	0,9	2,00	2	-
11233419	DKK-040-200-060-100-009-08	4,00	8	3,70	100	4,0	10	60	0,9	2,00	2	-
11233420	DKK-040-200-070-100-009-06	4,00	6	3,70	100	4,0	8	70	0,9	2,00	2	-
11233421	DKK-040-200-070-110-005-06	4,00	6	3,70	110	4,0	8	70	0,5	2,00	2	-
11233422	DKK-050-250-060-100-005-08	5,00	8	4,60	100	5,0	10	60	0,5	2,50	2	-
11233423	DKK-050-250-060-100-009-08	5,00	8	4,60	100	5,0	10	60	0,9	2,50	2	-
11233424	DKK-050-250-080-110-009-08	5,00	8	4,60	110	5,0	10	80	0,9	2,50	2	-
11233425	DKK-050-250-080-120-005-08	5,00	8	4,60	120	5,0	10	80	0,5	2,50	2	-
11233426	DKK-060-300-060-100-009-08	6,00	8	5,60	100	6,0	15	60	0,9	3,00	2	-
11233427	DKK-060-300-075-120-005-08	6,00	8	5,60	120	6,0	15	75	0,5	3,00	2	-
11233428	DKK-060-300-090-120-009-08	6,00	8	5,60	120	6,0	15	90	0,9	3,00	2	-
11233429	DKK-060-300-100-135-0025-08	6,00	8	5,60	135	6,0	25	100	0,25	3,00	2	-
11233430	DKK-060-300-100-130-005-08	6,00	8	5,60	130	6,0	25	100	0,5	3,00	2	-
11233431	DKK-060-300-120-175-005-10	6,00	10	5,60	175	6,0	12	120	0,5	3,00	2	-
11233432	DKK-060-300-120-175-009-10	6,00	10	5,60	175	6,0	12	120	0,9	3,00	2	-
11233433	DKK-060-300-140-170-004-08	6,00	8	5,60	170	6,0	25	140	0,4	3,00	2	-
11233434	DKK-080-400-060-100-009-10	8,00	10	7,50	100	8,0	20	60	0,9	4,00	2	-
11233435	DKK-080-400-090-130-004-10	8,00	10	7,50	130	8,0	15	90	0,4	4,00	2	-
11233436	DKK-080-400-100-130-009-12	8,00	12	7,50	130	8,0	20	100	0,9	4,00	2	-
11233437	DKK-080-400-120-165-004-10	8,00	10	7,50	165	8,0	15	120	0,4	4,00	2	-

Subject to technical modifications

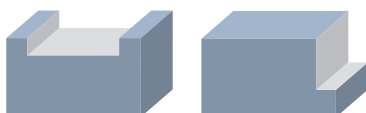
P	M	K	N	S	H
			●		

Features:

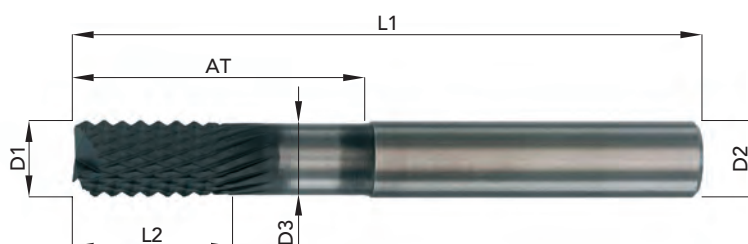
Diamond-coated rasp milling cutter, Z=3, specially designed for pre-milling graphite and other abrasive materials.

Contour finely serrated, but very positively ground, cutting lightly.

Z 3 (special)
HM **M-070**
Coating **C-050**



Rasp milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233438	DRSP-060-000-035-070-000-06	6,00	6	5,60	70	18	35	35	0,0	0,00	3	-
11233439	DRSP-080-000-030-060-000-08	8,00	8	7,60	60	12	30	30	0,0	0,00	3	-
11233440	DRSP-080-000-052-085-000-08	8,00	8	7,60	85	20	52	52	0,0	0,00	3	-
11233441	DRSP-100-000-060-100-000-10	10,00	10	9,50	100	40	60	60	0,0	0,00	3	-
11233442	DRSP-120-000-060-100-000-12	12,00	12	11,50	100	40	60	60	0,0	0,00	3	-
11233443	DRSP-160-000-045-080-000-16	16,00	16	15,50	80	20	45	45	0,0	0,00	3	-
11233444	DRSP-160-000-060-100-000-16	16,00	16	15,50	100	40	60	60	0,0	0,00	3	-

Subject to technical modifications

P	M	K	N	S	H
			●		

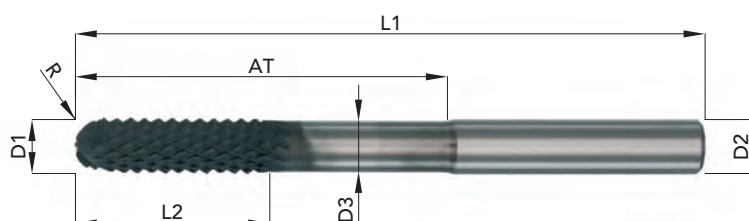
Features:

Diamond-coated rasp milling cutter, Z=3, specially designed for pre-milling graphite and other abrasive materials.

Contour finely serrated, but very positively ground, cutting lightly.

Z 3 (special)
HM **M-070**
Coating **C-050**

Full-radius rasp milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233445	DSRPR-040-200-028-060-000-06	4,00	6	3,70	60	15	28	28	0,0	2,00	3	-
11233446	DSRPR-060-300-040-070-000-06	6,00	6	5,60	70	20	40	40	0,0	3,00	3	-
11233447	DSRPR-080-400-055-085-000-08	8,00	8	-	85	55	-	55	0,0	4,00	3	-
11233448	DSRPR-100-500-045-120-000-10	10,00	10	-	120	45	-	45	0,0	5,00	3	-
11233449	DSRPR-100-500-060-100-000-10	10,00	10	-	100	60	-	60	0,0	5,00	3	-
11233450	DSRPR-120-600-060-100-000-12	12,00	12	11,50	100	40	60	60	0,0	6,00	3	-
11233451	DSRPR-160-800-060-100-000-16	16,00	16	15,50	100	40	60	60	0,0	8,00	3	-

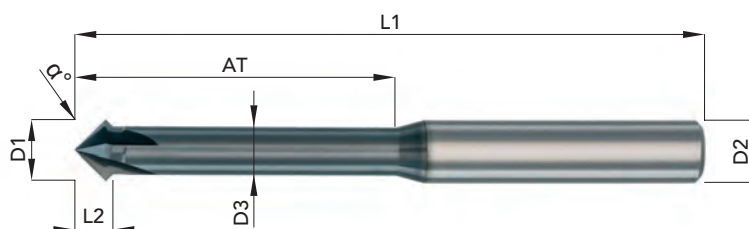
Subject to technical modifications

P	M	K	N	S	H
●	○	●	○		

Features:

Forward and reverse countersink for deburring holes.
Both the front and the shank side cut.

Z 4
HM **M-040**
Coating **C-160**

**Forward and reverse sinker**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11233452	VTZ-058-000-025-075-450-06	5,8	6	3,60	75	4,0	25,0	25,0	90,0	0,00	4	-
11233453	VTZ-058-000-050-100-450-06	5,8	6	3,60	100	4,0	50,0	50,0	90,0	0,00	4	-
11233454	VTZ-078-000-025-075-450-08	7,8	8	5,60	75	5,0	25,0	25,0	90,0	0,00	4	-
11233455	VTZ-078-000-050-100-450-08	7,8	8	5,60	100	5,0	50,0	50,0	90,0	0,00	4	-
11233456	VTZ-098-000-025-075-450-10	9,8	10	7,60	75	6,0	25,0	25,0	90,0	0,00	4	-
11233457	VTZ-098-000-050-100-450-10	9,8	10	7,60	100	6,0	50,0	50,0	90,0	0,00	4	-

Subject to technical modifications

P	M	K	N	S	H
●	●	●	○	○	○

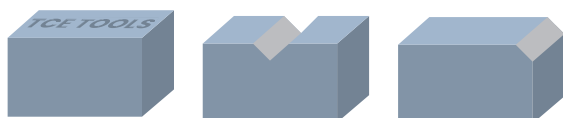
Features:

GK: Engraving Ball cutter with small radius and tapered angle.

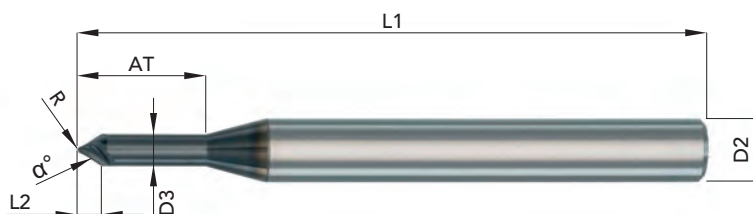
These cutters are designed for inscribing texts and the like on moulds and other workpieces.

Can also be used as a small slot milling cutter or bevel milling cutter.

Z 2
HM **M-040**
Coating **C-030**



Engraving cutter with nose radius



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233458	GK-002-010-012-060-150-06	0,2	6	3,00	60	5,3	12,0	5,3	15,0	0,10	2	-
11233459	GK-002-010-012-060-300-06	0,2	6	3,00	60	2,5	12,0	2,5	30,0	0,10	2	-
11233460	GK-002-010-012-060-450-06	0,2	6	3,00	60	1,5	12,0	1,5	45,0	0,10	2	-
11233461	GK-003-015-012-060-100-06	0,3	6	3,00	60	7,8	12,0	7,8	10,0	0,15	2	-
11233462	GK-003-015-012-060-150-06	0,3	6	3,00	60	5,2	12,0	5,2	15,0	0,15	2	-
11233463	GK-003-015-012-060-300-06	0,3	6	3,00	60	2,5	12,0	2,5	30,0	0,15	2	-
11233464	GK-005-025-012-060-150-06	0,5	6	3,00	60	4,9	12,0	4,9	15,0	0,25	2	-
11233465	GK-005-025-012-060-300-06	0,5	6	3,00	60	2,4	12,0	2,4	30,0	0,25	2	-
11233466	GK-006-030-012-060-100-06	0,6	6	3,00	60	7,1	12,0	7,1	10,0	0,30	2	-
11233467	GK-006-030-012-060-150-06	0,6	6	3,00	60	4,7	12,0	4,7	15,0	0,30	2	-
11233468	GK-006-030-012-060-200-06	0,6	6	3,00	60	3,5	12,0	3,5	20,0	0,30	2	-
11233469	GK-006-030-012-060-300-06	0,6	6	3,00	60	2,3	12,0	2,3	30,0	0,30	2	-
11233470	GK-010-050-012-060-150-06	1,0	6	4,00	60	6,0	12,0	6,0	15,0	0,50	2	-
11233471	GK-010-050-012-060-225-06	1,0	6	4,00	60	4,0	12,0	4,0	22,5	0,50	2	-
11233472	GK-010-050-012-060-300-06	1,0	6	4,00	60	3,0	12,0	3,0	30,0	0,50	2	-
11233473	GK-010-050-012-060-450-06	1,0	6	4,00	60	1,8	12,0	1,8	45,0	0,50	2	-

Subject to technical modifications

P	M	K	N	S	H
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Features:

Phase milling cutter for chamfering workpieces.

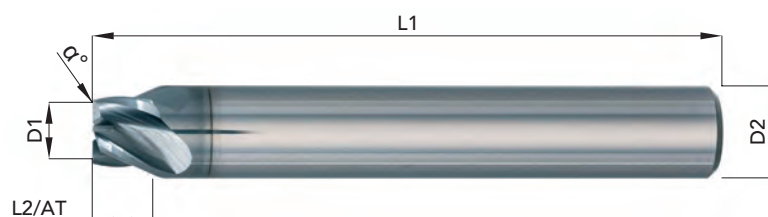
Available with several angles: 45, 30 and 15 degrees.

Can be used in many types of steel.

Z 3 - 4
HM **M-040**
Coating **C-020**



Phase milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11233474	FF-040-000-001-051-450-06	4,00	6	-	51	1,0	-	1,0	45,0	0,00	3	-
11233475	FF-040-000-002-059-450-08	4,00	8	-	59	2,0	-	2,0	45,0	0,00	3	-
11233476	FF-040-000-003-067-450-10	4,00	10	-	67	3,0	-	3,0	45,0	0,00	3	-
11233477	FF-040-000-004-074-450-12	4,00	12	-	74	4,0	-	4,0	45,0	0,00	3	-
11233478	FF-060-000-005-083-450-16	6,00	16	-	83	5,0	-	5,0	45,0	0,00	3	-
11233479	FF-060-000-007-100-450-20	6,00	20	-	100	7,0	-	7,0	45,0	0,00	3	-
11233480	FF-037-000-002-051-300-06	3,70	6	-	51	2,0	-	2,0	30,0	0,00	4	-
11233481	FF-045-000-003-059-300-08	4,50	8	-	59	3,0	-	3,0	30,0	0,00	4	-
11233482	FF-054-000-004-067-300-10	5,40	10	-	67	4,0	-	4,0	30,0	0,00	4	-
11233483	FF-050-000-006-074-300-12	5,00	12	-	74	6,0	-	6,0	30,0	0,00	4	-
11233484	FF-056-000-009-083-300-16	5,60	16	-	83	9,0	-	9,0	30,0	0,00	4	-
11233485	FF-062-000-012-100-300-20	6,15	20	-	100	12,0	-	12,0	30,0	0,00	4	-
11233486	FF-044-000-003-051-150-06	4,40	6	-	51	3,0	-	3,0	15,0	0,00	4	-
11233487	FF-059-000-004-059-150-08	5,85	8	-	59	4,0	-	4,0	15,0	0,00	4	-
11233488	FF-068-000-006-067-150-10	6,80	10	-	67	6,0	-	6,0	15,0	0,00	4	-
11233489	FF-077-000-008-074-150-12	7,70	12	-	74	8,0	-	8,0	15,0	0,00	4	-
11233490	FF-107-000-010-083-150-16	10,65	16	-	83	10,0	-	10,0	15,0	0,00	4	-
11233491	FF-120-000-015-100-150-20	12,00	20	-	100	15,0	-	15,0	15,0	0,00	4	-

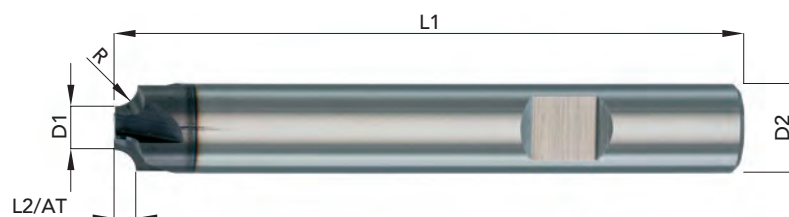
Subject to technical modifications

P	M	K	N	S	H
●	○	●	○		

Features:

Quarter-circle milling cutter for rounding off workpieces.
Can be used in many types of steel.

Z 4
HM M-040
Coating C-020

**Corner rounding cutter**

Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233492	VK-070-005-005-064-000-08	7,0	8	-	64	0,5	-	0,5	0,0	0,50	4	-
11233493	VK-060-010-010-064-000-08	6,0	8	-	64	1,0	-	1,0	0,0	1,00	4	-
11233494	VK-070-015-015-070-000-10	7,0	10	-	70	1,5	-	1,5	0,0	1,50	4	-
11233495	VK-060-020-020-070-000-10	6,0	10	-	70	2,0	-	2,0	0,0	2,00	4	-
11233496	VK-050-025-025-070-000-10	5,0	10	-	70	2,5	-	2,5	0,0	2,50	4	-
11233497	VK-060-030-030-070-000-12	6,0	12	-	70	3,0	-	3,0	0,0	3,00	4	-
11233498	VK-050-035-035-070-000-12	5,0	12	-	70	3,5	-	3,5	0,0	3,50	4	-
11233499	VK-080-040-040-075-000-16	8,0	16	-	75	4,0	-	4,0	0,0	4,00	4	-
11233500	VK-070-045-045-075-000-16	7,0	16	-	75	4,5	-	4,5	0,0	4,50	4	-
11233501	VK-060-050-050-075-000-16	6,0	16	-	75	5,0	-	5,0	0,0	5,00	4	-
11233502	VK-090-055-055-075-000-20	9,0	20	-	75	5,5	-	5,5	0,0	5,50	4	-
11233503	VK-080-060-060-075-000-20	8,0	20	-	75	6,0	-	6,0	0,0	6,00	4	-

Subject to technical modifications

P	M	K	N	S	H
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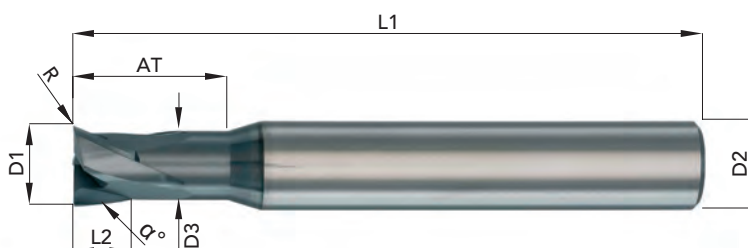
Features:

Dovetail milling cutter: A-conical cutter for O-rings and anti-discharge angles.

Z 3 - 4
HM **M-040**
Coating **C-020**



Anti-discharge milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
11233504	DSF-120-000-008-084-001-12	12,0	12	-	84	8,0	15,0	8,0	-1.0	0,00	3	-
11233505	DSF-120-000-008-084-002-12	12,0	12	-	84	8,0	15,0	8,0	-2.0	0,00	3	-
11233506	DSF-120-000-008-084-003-12	12,0	12	-	84	8,0	15,0	8,0	-3.0	0,00	3	-
11233507	DSF-120-000-008-084-004-12	12,0	12	-	84	8,0	15,0	8,0	-4.0	0,00	3	-
11233508	DSF-120-000-008-084-005-12	12,0	12	-	84	8,0	15,0	8,0	-5.0	0,00	3	-
11233509	DSF-160-000-008-093-006-16	16,0	16	-	93	8,0	15,0	8,0	-6.0	0,00	4	-
11233510	DSF-160-000-008-093-007-16	16,0	16	-	93	8,0	15,0	8,0	-7.0	0,00	4	-
11233511	DSF-160-000-008-093-008-16	16,0	16	-	93	8,0	15,0	8,0	-8.0	0,00	4	-
11233512	DSF-160-000-008-093-009-16	16,0	16	-	93	8,0	15,0	8,0	-9.0	0,00	4	-
11233513	DSF-160-000-008-093-010-16	16,0	16	-	93	8,0	15,0	8,0	-10.0	0,00	4	-
11233514	DSF-160-000-008-093-015-16	16,0	16	-	93	8,0	15,0	8,0	-15.0	0,00	4	-
11233515	DSF-200-000-008-100-020-20	20,0	20	-	100	8,0	15,0	8,0	-20.0	0,00	4	-
11233516	DSF-200-000-008-100-025-20	20,0	20	-	100	8,0	15,0	8,0	-25.0	0,00	4	-
11233517	DSF-200-000-008-100-030-20	20,0	20	-	100	8,0	15,0	8,0	-30.0	0,00	4	-
11233518	DSF-200-000-005-100-045-20	20,0	20	-	100	5,0	15,0	5,0	-45.0	0,00	4	-

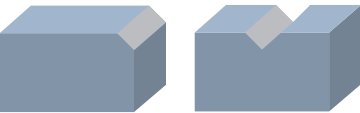
Subject to technical modifications

P	M	K	N	S	H
●	○	●	○		

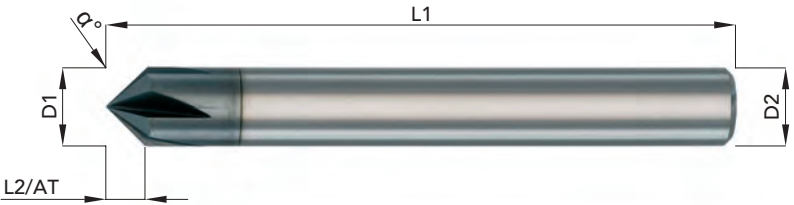
Features:

Milling cutter for chamfering workpieces and engraving texts.
Available as standard with single angle 15, 20, 30 and 45 degrees.
Sharp up to the point.

Z 4
HM **M-040**
Coating **C-020**



Engraving cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	F	Z	I
11233519	GRAV-000-000-011-060-150-06	0,0	6	-	60	11,0	-	11,0	15,0	0,00	4	-
11233520	GRAV-000-000-009-060-200-06	0,0	6	-	60	9,0	-	9,0	20,0	0,00	4	-
11233521	GRAV-000-000-006-060-300-06	0,0	6	-	60	6,0	-	6,0	30,0	0,00	4	-
11233522	GRAV-000-000-003-060-450-06	0,0	6	-	60	3,0	-	3,0	45,0	0,00	4	-

Subject to technical modifications

P	M	K	N	S	H
●	○	○	○	○	○

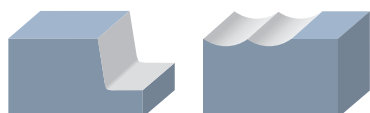
Features:

Vhm conical milling cutter with full radius, wide application range.

For milling blades and impeller.

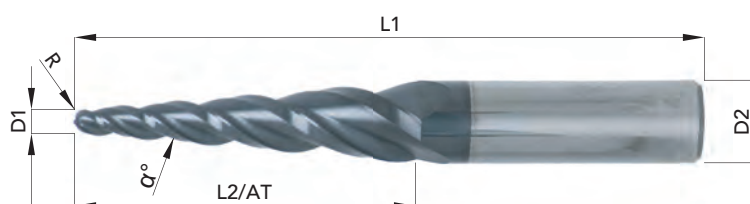
Triple-angle cutter, centre-cutting with smooth transition from radius to flank.

Other dimensions available on request.



Z 3
HM M-040
Coating C-025

Conical radius milling cutter



Order code	Description	D1	D2	D3	L1	L2	L3	AT	α°	R	Z	I
Single angle: 10 degrees												
11233523	CON10-020-100-023-075-010-10	2,0	10	-	75	23,0	-	23,0	10,0	1,00	3	-
11233524	CON10-025-125-023-075-010-10	2,5	10	-	75	23,0	-	23,0	10,0	1,25	3	-
11233525	CON10-032-160-026-084-010-12	3,2	12	-	84	26,0	-	26,0	10,0	1,60	3	-
11233526	CON10-040-200-024-084-010-12	4,0	12	-	84	24,0	-	24,0	10,0	2,00	3	-
Single angle: 5 degrees												
11233527	CON5-050-250-028-075-005-10	5,0	10	-	75	28,0	-	28,0	5,0	2,50	3	-
11233528	CON5-050-250-060-120-005-16	5,0	16	-	120	60,0	-	60,0	5,0	2,50	3	-
11233529	CON5-060-300-035-084-005-12	6,0	12	-	84	35,0	-	35,0	5,0	3,00	3	-
11233530	CON5-060-300-055-120-005-16	6,0	16	-	120	55,0	-	55,0	5,0	3,00	3	-
11233531	CON5-070-350-028-084-005-12	7,0	12	-	84	28,0	-	28,0	5,0	3,50	3	-
11233532	CON5-080-400-045-110-005-16	8,0	16	-	110	45,0	-	45,0	5,0	4,00	3	-
11233533	CON5-080-400-065-125-005-20	8,0	20	-	125	65,0	-	65,0	5,0	4,00	3	-
11233534	CON5-090-450-065-125-005-20	9,0	20	-	125	65,0	-	65,0	5,0	4,50	3	-
11233535	CON5-100-500-040-100-005-16	10,0	16	-	100	40,0	-	40,0	5,0	5,00	3	-
11233536	CON5-120-600-028-100-005-16	12,0	16	-	100	28,0	-	28,0	5,0	6,00	3	-
11233537	CON5-120-600-045-100-005-20	12,0	20	-	100	45,0	-	45,0	5,0	6,00	3	-

Subject to technical modifications

Notes

Notes





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Kennedylaan 14 - 5466 AA VEGHEL

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Vrijdag van 08:30 tot 16:00 uur

Milling cutters for general machining of steel up to 56 HRC

Milling cutters for hardened steel

Milling cutters for stainless steel

Milling cutters for chromium-nickel alloys

Milling cutters for aluminium, plastic and copper and graphite processing

Various special milling cutters