

**55M •
55MCR**
METRIC SERIES

TOLERANCES (mm)

DC = +0,000/-0,050

DCON = h_6

RE = +0,000/-0,050

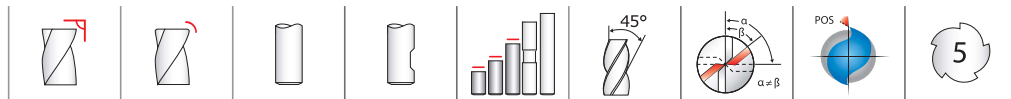
STEELS
STAINLESS STEELS
CAST IRON
HIGH TEMP ALLOYS
TITANIUM
HARDENED STEELS

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mm					EDP NO.	
CUTTING DIAMETER DC	LENGTH OF CUT APMX	OVERALL LENGTH LF	SHANK DIAMETER DCON	CORNER RADIUS RE	TI-NAMITE-A (AlTiN)	TI-NAMITE-A (AlTiN) W/FLAT
6,0	12,0	50,0	6,0	—	42606	—
6,0	12,0	50,0	6,0	0,5	42660	—
6,0	19,0	63,0	6,0	—	42607	—
6,0	19,0	63,0	6,0	0,25	42661	—
6,0	19,0	63,0	6,0	0,5	42662	—
6,0	19,0	63,0	6,0	1,0	42663	—
6,0	19,0	63,0	6,0	1,5	42664	—
6,0	25,0	75,0	6,0	—	42608	—
6,0	25,0	75,0	6,0	0,5	42665	—
8,0	12,0	50,0	8,0	—	42609	—
8,0	12,0	50,0	8,0	0,5	42666	—
8,0	20,0	63,0	8,0	—	42610	—
8,0	20,0	63,0	8,0	0,5	42667	—
8,0	20,0	63,0	8,0	1,0	42668	—
8,0	20,0	63,0	8,0	1,5	42669	—
8,0	20,0	63,0	8,0	2,0	42670	—
8,0	25,0	75,0	8,0	—	42611	—
8,0	25,0	75,0	8,0	0,5	42671	—
10,0	16,0	50,0	10,0	—	42612	—
10,0	16,0	50,0	10,0	0,5	42672	—
10,0	22,0	75,0	10,0	—	42622	42613
10,0	22,0	75,0	10,0	0,5	42673	—
10,0	22,0	75,0	10,0	1,0	42674	—
10,0	22,0	75,0	10,0	1,5	42675	—
10,0	22,0	75,0	10,0	2,0	42676	—
10,0	22,0	75,0	10,0	2,5	42677	—
10,0	38,0	100,0	10,0	—	42614	—
10,0	38,0	100,0	10,0	0,5	42678	—
12,0	19,0	63,0	12,0	—	42615	—
12,0	19,0	63,0	12,0	0,5	42679	—
12,0	25,0	75,0	12,0	—	42616	42623
12,0	25,0	75,0	12,0	0,5	42680	—

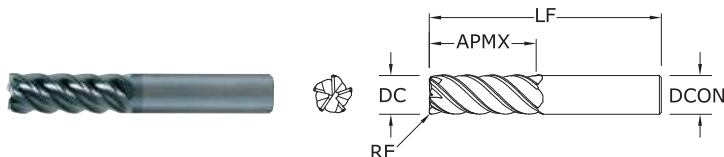
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- Unequal indexing, high helix and an ideal rake and relief combination for unmatched finishing capability
- The choice when peak finish quality is the requirement
- Enhanced corner geometry with tight tolerance corner radii
- Recommended for materials ≤ 45 HRC (≤ 420 Bhn)



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- Unequal indexing, high helix and an ideal rake and relief combination for unmatched finishing capability
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- Enhanced corner geometry with tight tolerance corner radii
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CUTTING DIAMETER DC	LENGTH OF CUT APMX	mm			EDP NO.	
		OVERALL LENGTH LF	SHANK DIAMETER DCON	CORNER RADIUS RE	Ti-NAMITE-A (AlTiN)	Ti-NAMITE-A (AlTiN) W/FLAT
12,0	25,0	75,0	12,0	1,0	42681	—
12,0	25,0	75,0	12,0	1,5	42682	—
12,0	25,0	75,0	12,0	2,0	42683	—
12,0	25,0	75,0	12,0	2,5	42684	—
12,0	25,0	75,0	12,0	3,0	42685	—
12,0	50,0	100,0	12,0	—	42617	—
12,0	50,0	100,0	12,0	0,5	42686	—
12,0	50,0	100,0	12,0	3,0	42630	—
12,0	50,0	100,0	12,0	4,0	42631	—
16,0	32,0	89,0	16,0	—	42618	42624
16,0	32,0	89,0	16,0	1,0	42687	—
16,0	32,0	89,0	16,0	1,5	42688	—
16,0	32,0	89,0	16,0	2,0	42689	—
16,0	32,0	89,0	16,0	2,5	42690	—
16,0	32,0	89,0	16,0	3,0	42691	—
16,0	32,0	89,0	16,0	4,0	42692	—
16,0	50,0	100,0	16,0	—	42626	—
16,0	50,0	100,0	16,0	2,0	42656	—
16,0	50,0	100,0	16,0	2,5	42657	—
16,0	50,0	100,0	16,0	3,0	42658	—
16,0	50,0	100,0	16,0	4,0	42659	—
16,0	50,0	100,0	16,0	5,0	42628	—
16,0	75,0	150,0	16,0	—	42619	—
16,0	75,0	150,0	16,0	1,0	42693	—
16,0	75,0	150,0	16,0	3,0	42632	—
16,0	75,0	150,0	16,0	4,0	42633	—
20,0	38,0	100,0	20,0	—	42620	42625
20,0	38,0	100,0	20,0	1,0	42694	—
20,0	38,0	100,0	20,0	1,5	42695	—
20,0	38,0	100,0	20,0	2,0	42696	—
20,0	38,0	100,0	20,0	2,5	42697	—
20,0	38,0	100,0	20,0	3,0	42698	—
20,0	38,0	100,0	20,0	4,0	42699	—
20,0	38,0	100,0	20,0	5,0	42700	—

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TOLERANCES (mm)

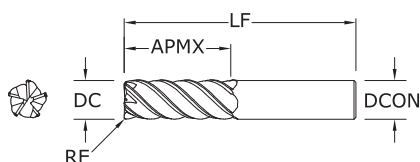
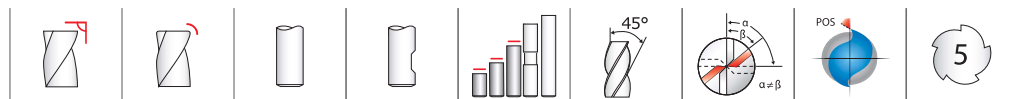
DC = $+0,000/-0,050$

DCON = h_6

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 **STAINLESS STEELS**

 **CAST IRON**

 **HIGH TEMP ALLOYS**

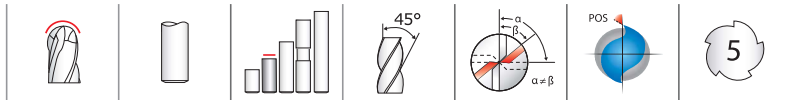
 **TITANIUM**

 **HARDENED STEELS**

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mm					EDP NO.	
CUTTING DIAMETER DC	LENGTH OF CUT APMX	OVERALL LENGTH LF	SHANK DIAMETER DCON	CORNER RADIUS RE	Ti-NAMITE-A (AlTiN)	Ti-NAMITE-A (AlTiN) W/FLAT
20,0	38,0	100,0	20,0	6,0	42648	—
20,0	50,0	100,0	20,0	—	42627	—
20,0	50,0	100,0	20,0	2,0	42649	—
20,0	50,0	100,0	20,0	2,5	42650	—
20,0	50,0	100,0	20,0	3,0	42651	—
20,0	50,0	100,0	20,0	4,0	42652	—
20,0	50,0	100,0	20,0	5,0	42653	—
20,0	50,0	100,0	20,0	6,0	42654	—
20,0	75,0	150,0	20,0	—	42621	—
20,0	75,0	150,0	20,0	1,0	42701	—
20,0	75,0	150,0	20,0	2,0	42702	—
20,0	75,0	150,0	20,0	3,0	42703	—
20,0	75,0	150,0	20,0	4,0	42704	—
20,0	75,0	150,0	20,0	5,0	42705	—
20,0	75,0	150,0	20,0	6,0	42655	—

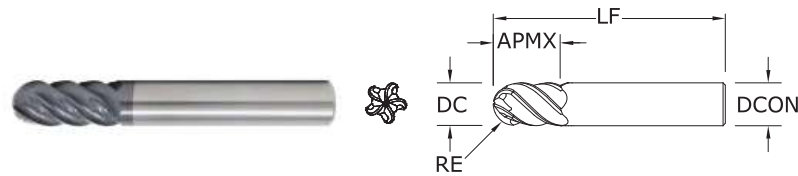
CONTINUED



55MB

METRIC SERIES

- Unequal indexing, high helix and an ideal rake and relief combination for unmatched finishing capability
- The choice when peak finish quality is the requirement
- Ball nose design ideal for finishing operations in complex workpieces
- Recommended for materials ≤ 45 HRC (≤ 420 Bhn)



mm				EDP NO.
CUTTING DIAMETER DC	LENGTH OF CUT APMX	OVERALL LENGTH LF	SHANK DIAMETER DCON	Ti-NAMITE-A (AlTiN)
6,0	13,0	57,0	6,0	42750
8,0	19,0	63,0	8,0	42751
10,0	22,0	72,0	10,0	42752
12,0	26,0	83,0	12,0	42753
16,0	32,0	92,0	16,0	42754
20,0	38,0	104,0	20,0	42755

RE = 1/2 Cutting Diameter (DC)

TOLERANCES (mm)

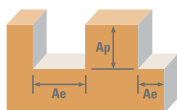
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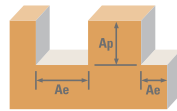


Series 55M, 55MCR, 55MB Metric		Hardness		Ae x DC		Ap x DC		Vc (m/min)		DC • mm					
										6	8	10	12	16	20
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 Bhn or ≤ 28 HRc	Profile 	≤ 0.25	≤ 1.5			117	RPM	6220	4665	3732	3110	2333	1866
								(94-141)	Fz	0.022	0.036	0.061	0.070	0.072	0.085
									Feed (mm/min)	672	846	1145	1082	836	796
		≤ 275 Bhn or ≤ 28 HRc	HSM 	≤ 0.05	≤ 2			192	RPM	10179	7634	6107	5089	3817	3054
								(154-230)	Fz	0.043	0.073	0.123	0.137	0.141	0.154
									Feed (mm/min)	2198	2769	3746	3481	2687	2345
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 375 Bhn or ≤ 40 HRc	Profile 	≤ 0.25	≤ 1.5			99	RPM	5251	3938	3151	2626	1969	1575
								(79-119)	Fz	0.017	0.028	0.045	0.053	0.054	0.064
									Feed (mm/min)	441	546	571	693	529	504
		≤ 375 Bhn or ≤ 40 HRc	HSM 	≤ 0.05	≤ 2			162	RPM	8563	6422	5138	4282	3211	2569
								(129-194)	Fz	0.034	0.055	0.091	0.103	0.105	0.128
									Feed (mm/min)	1438	1781	2329	2209	1685	1644
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 Bhn or ≤ 28 HRc	Profile 	≤ 0.25	≤ 1.5			113	RPM	5978	4484	3587	2989	2242	1793
								(90-135)	Fz	0.017	0.028	0.045	0.053	0.059	0.064
									Feed (mm/min)	502	622	813	789	660	574
		≤ 275 Bhn or ≤ 28 HRc	HSM 	≤ 0.05	≤ 2			171	RPM	9048	6786	5429	4524	3393	2714
								(137-205)	Fz	0.034	0.055	0.091	0.103	0.113	0.128
									Feed (mm/min)	1520	1882	2461	2334	1911	1737
	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 Bhn or ≤ 28 HRc	Profile 	≤ 0.25	≤ 1.5			78	RPM	4120	3090	2472	2060	1545	1236
								(62-93)	Fz	0.014	0.026	0.043	0.048	0.054	0.061
									Feed (mm/min)	297	396	527	494	415	379
		≤ 275 Bhn or ≤ 28 HRc	HSM 	≤ 0.05	≤ 2			117	RPM	6220	4665	3732	3110	2333	1866
								(94-141)	Fz	0.031	0.051	0.085	0.096	0.105	0.120
									Feed (mm/min)	970	1194	1592	1493	1224	1120
	STAINLESS STEELS (PH) 13-8 PH, 15-5 PH, 17-4 PH, Custom 450	≤ 325 Bhn or ≤ 35 HRc	Profile 	≤ 0.25	≤ 1.5			72	RPM	3797	2848	2278	1898	1424	1139
								(57-86)	Fz	0.014	0.021	0.037	0.041	0.046	0.051
									Feed (mm/min)	273	304	425	387	328	289
		≤ 325 Bhn or ≤ 35 HRc	HSM 	≤ 0.05	≤ 2			108	RPM	5736	4302	3441	2868	2151	1721
								(87-130)	Fz	0.026	0.045	0.075	0.082	0.092	0.104
									Feed (mm/min)	757	964	1285	1170	991	895

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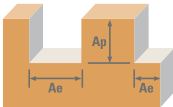
METRIC V-Carb

Series
55M, 55MCR,
55MB
Metric



55M, 55MCR, 55MB Metric		Hardness	Ae Ap		Vc (m/min)	DC • mm							
			Ae x DC	Ap x DC		6	8	10	12	16	20		
K	CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	Profile	≤ 0.25	≤ 1.5	143	RPM	7594	5695	4556	3797	2848	2278
						(115-172)	Fz	0.022	0.036	0.061	0.070	0.077	0.085
						Feed (mm/min)	820	1033	1397	1321	1093	972	
		≤ 260 Bhn or ≤ 26 HRc	HSM	≤ 0.05	≤ 2	215	RPM	11391	8543	6834	5695	4271	3417
						(172-258)	Fz	0.043	0.073	0.123	0.137	0.151	0.171
						Feed (mm/min)	2460	3099	4192	3895	3226	2916	
	CAST IRONS (HIGH ALLOY) Gray, Malleable, Ductile	≤ 260 Bhn or ≤ 26 HRc	Profile	≤ 0.25	≤ 1.5	110	RPM	5816	4362	3490	2908	2181	1745
						(88-132)	Fz	0.017	0.028	0.045	0.053	0.059	0.064
						Feed (mm/min)	489	605	791	768	642	558	
		≤ 260 Bhn or ≤ 26 HRc	HSM	≤ 0.05	≤ 2	165	RPM	8725	6544	5235	4362	3272	2617
						(132-198)	Fz	0.034	0.055	0.091	0.103	0.113	0.128
						Feed (mm/min)	1466	1815	2373	2251	1843	1675	
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy, Monel 400	≤ 300 Bhn or ≤ 32 HRc	Profile	≤ 0.25	≤ 1.5	21	RPM	1131	848	679	565	424	339
						(17-26)	Fz	0.014	0.021	0.037	0.041	0.046	0.051
						Feed (mm/min)	81	90	127	115	98	86	
		≤ 300 Bhn or ≤ 32 HRc	HSM	≤ 0.05	≤ 2	33	RPM	1729	1297	1037	864	648	519
						(26-39)	Fz	0.026	0.045	0.075	0.082	0.092	0.104
						Feed (mm/min)	228	290	387	353	299	270	
	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene	≤ 400 Bhn or ≤ 43 HRc	Profile	≤ 0.25	≤ 1.5	17	RPM	889	666	533	444	333	267
						(13-20)	Fz	0.010	0.017	0.027	0.031	0.036	0.040
						Feed (mm/min)	43	57	71	69	60	53	
		≤ 400 Bhn or ≤ 43 HRc	HSM	≤ 0.05	≤ 2	26	RPM	1373	1030	824	687	515	412
						(21-31)	Fz	0.019	0.032	0.056	0.062	0.069	0.077
						Feed (mm/min)	132	165	231	214	178	159	

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Series 55M, 55MCR, 55MB Metric				DC • mm								
	Hardness	Ae x DC	Ap x DC	Vc (m/min)		6	8	10	12	16	20	
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si ≤ 350 Bhn or ≤ 38 HRC		≤ 0.25	≤ 1.5	72	RPM	3797	2848	2278	1898	1424	1139
					(57-86)	Fz	0.014	0.026	0.043	0.048	0.054	0.061
					Feed (mm/min)	273	365	486	456	383	349	
			≤ 0.05	≤ 2	119	RPM	6301	4726	3781	3151	2363	1890
					(95-143)	Fz	0.031	0.051	0.085	0.096	0.105	0.120
					Feed (mm/min)	983	1210	1613	1512	1240	1134	
	TITANIUM ALLOYS (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al ≤ 440 Bhn or ≤ 47 HRC		≤ 0.25	≤ 1.5	26	RPM	1373	1030	824	687	515	412
					(21-31)	Fz	0.014	0.026	0.043	0.048	0.054	0.061
					Feed (mm/min)	99	132	176	165	138	126	
			≤ 0.05	≤ 2	43	RPM	2262	1696	1357	1131	848	679
					(34-51)	Fz	0.031	0.051	0.085	0.096	0.108	0.120
					Feed (mm/min)	353	434	579	543	456	407	
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2 ≤ 375 Bhn or ≤ 40 HRC		≤ 0.25	≤ 1.5	53	RPM	2827	2121	1696	1414	1060	848
					(43-64)	Fz	0.012	0.021	0.035	0.038	0.044	0.048
					Feed (mm/min)	170	226	294	271	231	204	
			≤ 0.05	≤ 2	88	RPM	4686	3514	2811	2343	1757	1406
					(71-106)	Fz	0.024	0.041	0.067	0.077	0.084	0.093
					Feed (mm/min)	562	712	937	900	742	656	

Bhn (Brinell) HRc (Rockwell C) HSM (High Speed Machining)
 $\text{rpm} = (\text{Vc} \times 1000) / (\text{DC} \times 3.14)$
 $\text{mm/min} = \text{Fz} \times 5 \times \text{rpm}$
 reduce speed and feed for materials harder than listed
 reduce feed and Ae when finish milling (.02 x DC maximum)
 reduce Ap to 1 x DC (maximum) when profile milling with long or extra long flute length tools
 feed rates listed have chip thinning adjustments included where applicable
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)