

ZD1MCR
METRIC SERIES

TOLERANCES (mm)

3–6 DIAMETER

DC = +0,000/–0,030

DCON = h_6

RE = +0,000/–0,050

>6–10 DIAMETER

DC = +0,000/–0,040

DCON = h_6

RE = +0,000/–0,050

>10–20 DIAMETER

DC = +0,000/–0,050

DCON = h_6

RE = +0,000/–0,050

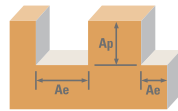
HARDENED STEELS

For patent
information visit
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mm							EDP NO.
CUTTING DIAMETER DC	LENGTH OF CUT APMX	OVERALL LENGTH LF	SHANK DIAMETER DCON	REACH LU	NECK DIAMETER DN	CORNER RADIUS RE	Ti-NAMITE-X
3,0	4,0	57,0	6,0	15,0	2,62	0,2	46560
4,0	5,0	57,0	6,0	15,0	3,61	0,3	46561
5,0	6,0	57,0	6,0	15,0	4,60	0,5	46562
6,0	7,0	57,0	6,0	15,0	5,61	1,0	46563
8,0	10,0	63,0	8,0	25,0	7,62	1,0	46564
10,0	12,0	72,0	10,0	30,0	9,60	1,0	46565
12,0	15,0	83,0	12,0	35,0	11,61	1,0	46566
16,0	20,0	92,0	16,0	45,0	15,60	1,5	46567
20,0	24,0	104,0	20,0	55,0	19,61	2,0	46568

- The original Z-Carb design with negative rake, heavy core, and higher helix for strength and shearing of hard mold & die materials
- Unequal flute spacing helps to disrupt the rhythmic pattern created by the cutting edge helping to suppress damaging harmonics
- Enhanced corner geometry with tight tolerance corner radii
- Recommended for materials 35-60HRC (327 to 654 Bhn)

Z-Carb-MD



Series ZD1MCR Metric	Hardness			Vc (m/min)	Diameter (DC) (mm)								
		Ae x DC	Ap x DC		3	6	8	10	12	16	20		
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 375 Bhn or ≤ 40 HRc	 Profile	≤ 0.4	≤ 1	123	RPM	13087	6544	4908	3926	3272	2454	1963
					(99-148)	Fz	0.012	0.029	0.049	0.061	0.072	0.083	0.112
					Feed (mm/min)	628	754	963	963	942	817	879	
		 Slot	1	≤ 0.4	98	RPM	10340	5170	3878	3102	2585	1939	1551
					(78-117)	Fz	0.012	0.029	0.049	0.061	0.072	0.083	0.112
					Feed (mm/min)	496	596	761	761	744	645	695	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	 Profile	≤ 0.4	≤ 1	64	RPM	6786	3393	2545	2036	1696	1272	1018
					(51-77)	Fz	0.010	0.024	0.041	0.051	0.060	0.068	0.093
					Feed (mm/min)	261	326	413	413	407	347	380	
		 Slot	1	≤ 0.4	52	RPM	5493	2747	2060	1648	1373	1030	824
					(41-62)	Fz	0.010	0.024	0.041	0.051	0.060	0.068	0.093
					Feed (mm/min)	211	264	334	334	330	281	308	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 655 Bhn or ≤ 60 HRc	 Profile	≤ 0.4	≤ 1	27	RPM	2908	1454	1091	872	727	545	436
					(22-33)	Fz	0.005	0.012	0.021	0.027	0.031	0.036	0.048
					Feed (mm/min)	56	70	93	93	91	79	84	
		 Slot	1	≤ 0.4	21	RPM	2262	1131	848	679	565	424	339
					(17-26)	Fz	0.005	0.012	0.021	0.027	0.031	0.036	0.048
					Feed (mm/min)	43	54	72	72	71	62	65	

Bhn (Brinell) HRc (Rockwell C)

rpm = (Vc x 1000) / (DC x 3.14)

ipm = Fz x 4 x rpm

reduce speed and feed for materials harder than listed

reduce feed and Ae when finish milling (.02 x DC maximum)

feed rates listed have chip thinning adjustments included where applicable

refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)