CRAZYMILL™ by Mikron Tool Cool

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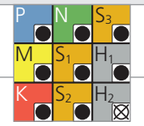
MILLING TOOLS
CRAZYMILL COOL BALL - Z4

NEW

Type M - Side-finishing

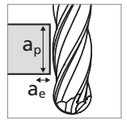
v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended



MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Inclination 0°



- $a_p = 3 \times d_1$
- $a_e = 0.02 – 0.1 \times d_1$

Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1.0 mm | .039"		1.2 mm | .047"		Ød1 1/16" 1.5 | .059"		1.8 mm | .071"		2.0 mm | .079"		3/32" 2.5 mm | .098"		1/8" 3.0 mm | .118"		5/32" 4.0 mm | .158"		3/16" 5.0 mm | .197"		7/32 – 1/4" 6.0 – 8.0 mm | .236" – .315"	
					v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	130 **425**	0.008 **.00031**	130 **425**	0.009 **.00035**	180 **591**	0.012 **.00047**	180 **591**	0.013 **.00051**	200 **656**	0.017 **.00067**	200 **656**	0.018 **.00071**	210 **688**	0.023 **.00091**	220 **722**	0.025 **.00098**	220 **722**	0.028 **.00110**	220 **722**	0.033 **.00130**
		1.0401	C15	AISI 1015																				
		1.1191	C45E/CK45	AISI 1045																				
		1.0044	S275JR	AISI 1020																				
		1.0715	11SMn30	AISI 1215																				
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	130 **425**	0.007 **.00028**	130 **425**	0.008 **.00031**	180 **591**	0.011 **.00043**	180 **591**	0.012 **.00047**	200 **656**	0.016 **.00063**	200 **656**	0.017 **.00067**	210 **688**	0.022 **.00087**	220 **722**	0.024 **.00094**	220 **722**	0.026 **.00102**	220 **722**	0.029 **.00114**
		1.7131	16MnCr5	AISI 5115																				
		1.3505	100Cr6	AISI 52100																				
		1.7225	42CrMo4	AISI 4140																				
		1.2842	90MnCrV8	AISI O2																				
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	130 **425**	0.006 **.00024**	130 **425**	0.007 **.00028**	180 **591**	0.010 **.00039**	180 **591**	0.011 **.00043**	200 **656**	0.015 **.00059**	200 **656**	0.016 **.00063**	210 **688**	0.020 **.00079**	220 **722**	0.021 **.00083**	220 **722**	0.023 **.00091**	220 **722**	0.025 **.00098**
		1.2436	X210CrW12	AISI D4/D6																				
		1.3343	HS6-5-2C	AISI M2 / UNS T11302																				
		1.3355	HS18-0-1	AISI T1 / UNS T12001																				
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	130 **425**	0.008 **.00031**	130 **425**	0.009 **.00035**	180 **591**	0.012 **.00047**	180 **591**	0.013 **.00051**	200 **656**	0.017 **.00067**	200 **656**	0.018 **.00071**	210 **688**	0.022 **.00087**	220 **722**	0.024 **.00094**	220 **722**	0.026 **.00102**	220 **722**	0.029 **.00114**
		1.4105	X6CrMoS17	AISI 430F																				
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	130 **425**	0.008 **.00031**	130 **425**	0.009 **.00035**	180 **591**	0.011 **.00043**	180 **591**	0.012 **.00047**	200 **656**	0.016 **.00063**	200 **656**	0.017 **.00067**	210 **688**	0.022 **.00087**	220 **722**	0.023 **.00091**	220 **722**	0.025 **.00098**	220 **722**	0.028 **.00110**
		1.4112	X90CrMoV18	AISI 440B																				
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	130 **425**	0.008 **.00031**	130 **425**	0.009 **.00035**	180 **591**	0.011 **.00043**	180 **591**	0.012 **.00047**	200 **656**	0.016 **.00063**	200 **656**	0.017 **.00067**	210 **688**	0.022 **.00087**	220 **722**	0.023 **.00091**	220 **722**	0.025 **.00098**	220 **722**	0.028 **.00110**
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH																				
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	130 **425**	0.006 **.00024**	130 **425**	0.007 **.00028**	180 **591**	0.008 **.00031**	180 **591**	0.009 **.00035**	200 **656**	0.015 **.00059**	200 **656**	0.016 **.00063**	210 **688**	0.020 **.00079**	220 **722**	0.022 **.00087**	220 **722**	0.024 **.00094**	220 **722**	0.026 **.00102**
		1.4435	X2CrNiMo18-14-3	AISI 316L																				
		1.4441	X2CrNiMo18-15-3	AISI 316LM																				
		1.4539	X1NiCrMoCu25-20-5	AISI 904L																				
K	Cast iron	0.6020	GG20	ASTM 30	111 **365**	0.006 **.00024**	111 **365**	0.011 **.00043**	126 **414**	0.012 **.00047**	126 **414**	0.013 **.00051**	145 **477**	0.014 **.00055**	145 **477**	0.018 **.00071**	157 **516**	0.022 **.00087**	169 **556**	0.025 **.00098**	169 **556**	0.029 **.00114**	169 **556**	0.031 **.00122**
		0.6030	GG30	ASTM 40B																				
		0.7040	GGG40	ASTM 60-40-18																				
		0.7060	GGG60	ASTM 80-60-03																				
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	130 **425**	0.009 **.00035**	130 **425**	0.010 **.00039**	180 **591**	0.013 **.00051**	180 **591**	0.014 **.00055**	200 **656**	0.018 **.00071**	200 **656**	0.020 **.00079**	210 **688**	0.029 **.00114**	220 **722**	0.030 **.00118**	220 **722**	0.033 **.00130**	220 **722**	0.036 **.00142**
		3.4365	AlZnMgCu1.5	ASTM 7075																				
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	130 **425**	0.009 **.00035**	130 **425**	0.010 **.00039**	180 **591**	0.013 **.00051**	180 **591**	0.014 **.00055**	200 **656**	0.018 **.00071**	200 **656**	0.020 **.00079**	210 **688**	0.029 **.00114**	220 **722**	0.030 **.00118**	220 **722**	0.033 **.00130**	220 **722**	0.036 **.00142**
		3.2381	GD-AlSi10Mg	UNS A03590																				
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	130 **425**	0.010 **.00039**	130 **425**	0.011 **.00043**	180 **591**	0.013 **.00051**	180 **591**	0.014 **.00055**	200 **656**	0.018 **.00071**	200 **656**	0.020 **.00079**	210 **688**	0.029 **.00114**	220 **722**	0.030 **.00118**	220 **722**	0.033 **.00130**	220 **722**	0.036 **.00142**
		2.0065	Cu-ETP / CW004A	UNS C11000																				
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	130 **425**	0.010 **.00039**	130 **425**	0.011 **.00043**	180 **591**	0.013 **.00051**	180 **591**	0.014 **.00055**	200 **656**	0.018 **.00071**	200 **656**	0.020 **.00079**	210 **688**	0.029 **.00114**	220 **722**	0.030 **.00118**	220 **722**	0.033 **.00130**	220 **722**	0.036 **.00142**
		2.0360	CuZn40 CW509L	UNS C28000																				
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	130 **425**	0.010 **.00039**	130 **425**	0.011 **.00043**	180 **591**	0.013 **.00051**	180 **591**	0.014 **.00055**	200 **656**	0.018 **.00071**	200 **656**	0.020 **.00079**	210 **688**	0.029 **.00114**	220 **722**	0.030 **.00118**	220 **722**	0.033 **.00130**	220 **722**	0.036 **.00142**
		2.1020	CuSn6	UNS C51900																				
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	130 **425**	0.009 **.00035**	130 **425**	0.010 **.00039**	180 **591**	0.013 **.00051**	180 **591**	0.014 **.00055**	200 **656**	0.018 **.00071**	200 **656**	0.020 **.00079**	210 **688**	0.029 **.00114**	220 **722**	0.030 **.00118**	220 **722**	0.033 **.00130**	220 **722**	0.036 **.00142**
		2.0960	CuAl9Mn2	UNS C63200																				
S_1	Super alloys	2.4856		Inconel 625	111 **365**	0.004 **.00016**	111 **365**	0.004 **.00016**	117 **384**	0.005 **.00020**	117 **384**	0.005 **.00020**	127 **418**	0.005 **.00020**	127 **418**	0.006 **.00024**	131 **430**	0.008 **.00031**	144 **473**	0.010 **.00039**	144 **473**	0.011 **.00043**	144 **473**	0.012 **.00047**
		2.4668		Inconel 718																				
		2.4617	NiMo28	Hastelloy B-2																				
		2.4665	NiCr22Fe18Mo	Hastelloy X																				
S_2	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	111 **365**	0.008 **.00031**	111 **365**	0.009 **.00035**	117 **384**	0.010 **.00039**	117 **384**	0.011 **.00043**	127 **418**	0.014 **.00055**	127 **418**	0.015 **.00059**	131 **430**	0.020 **.00079**	144 **473**	0.022 **.00087**	144 **473**	0.024 **.00094**	144 **473**	0.026 **.00102**
		3.7065	Gr.4	ASTM B348 / F68																				
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	111 **365**	0.008 **.00031**	111 **365**	0.009 **.00035**	117 **384**	0.010 **.00039**	117 **384**	0.011 **.00043**	127 **418**	0.014 **.00055**	127 **418**	0.015 **.00059**	131 **430**	0.020 **.00079**	144 **473**	0.022 **.00087**	144 **473**	0.024 **.00094**	144 **473**	0.026 **.00102**
		9.9367	TiAl6Nb7	ASTM F1295																				
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	130 **425**	0.004 **.00016**	130 **425**	0.004 **.00016**	162 **532**	0.005 **.00020**	162 **532**	0.005 **.00020**	182 **597**	0.005 **.00020**	182 **597**	0.006 **.00024**	192 **630**	0.008 **.00031**	203 **667**	0.010 **.00039**	203 **667**	0.011 **.00043**	203 **667**	0.012 **.00047**
			CrCoMo28	ASTM F1537																				
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1	93 **304**	0.005 **.00020**	93 **304**	0.006 **.00024**	126 **414**	0.007 **.00028**	126 **414**	0.009 **.00035**	164 **537**	0.010 **.00039**	164 **537**	0.013 **.00051**	175 **573**	0.017 **.00067**	203 **667**	0.020 **.00079**	203 **667**	0.022 **.00087**	203 **667**	0.024 **.00094**
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2																				