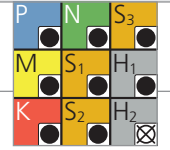


CrazyMill Cool Ball - Type C - Semi-finishing

RECOMMENDATION FOR USE

● Excellent | ● Good | ○ Acceptable | ⊗ Not recommended

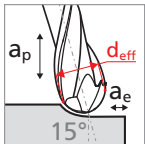


V_c [m/min] | [SFM]
 f_z [mm] | [IPT]
 d_{eff} [mm] | [inch]

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Materials group	Material	AISI/ASTM/UNS	Ød1 0.3 mm .012"		Ød1 0.4 mm .016"		Ød1 0.5 mm .020"		Ød1 0.6 mm .024"		Ød1 0.8 mm .032"		Ød1 1.0 mm .039"		Ød1 1.2 mm .047"		Ød1 1.5 .059"		Ød1 1.8 mm .071"		Ød1 2.0 mm .079"		Ød1 2.5 mm .098"		Ød1 3.0 mm .118"		Ød1 4.0 mm .158"		Ød1 6.0 mm .236"		Ød1 8.0 mm .315"																
			v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z	v_c	d_{eff}	f_z												
P	Unalloyed carbon steel Rm < 800 N/mm²	AISI 1010																																													
		AISI 1015																																													
		AISI 1045	55	0.29	0.005	73	0.39	0.007	92	0.48	0.010	100	0.60	0.012	100	0.80	0.014	140	1.00	0.015	140	1.20	0.017	200	1.50	0.024	200	1.80	0.026	220	2.00	0.034	220	2.50	0.036	240	3.00	0.040	260	4.00	0.050	260	6.00	0.050	260	8.00	0.050
		AISI 1020	180	.011	.00020	240	.015	.00028	302	.019	.00039	328	.024	.00047	328	.032	.00055	459	.039	.00059	459	.047	.00067	656	.059	.00094	656	.071	.00102	722	.079	.00134	722	.098	.00142	787	.118	.00157	853	.158	.00197	853	.236	.00197	853	.315	.00197
		AISI 1215																																													
		ASTM 3415																																													
	Low alloyed steel Rm > 900 N/mm²	AISI 5115	55	0.29	0.004	73	0.39	0.006	92	0.48	0.009	100	0.60	0.011	100	0.80	0.012	140	1.00	0.014	140	1.20	0.016	200	1.50	0.022	200	1.80	0.024	220	2.00	0.032	220	2.50	0.034	240	3.00	0.038	260	4.00	0.044	260	6.00	0.048	260	8.00	0.048
		AISI 52100	180	.011	.00016	240	.015	.00024	302	.019	.00035	328	.024	.00043	328	.032	.00047	459	.039	.00055	459	.047	.00063	656	.059	.00087	656	.071	.00094	722	.079	.00126	722	.098	.00134	787	.118	.00150	853	.158	.00173	853	.236	.00189	853	.315	.00189
		AISI 4140																																													
		AISI O2																																													
	High alloyed tool steel Rm < 1200 N/mm²	AISI D2																																													
		AISI D4/D6	55	0.29	0.004	73	0.39	0.006	92	0.48	0.008	100	0.60	0.009	100	0.80	0.011	140	1.00	0.011	140	1.20	0.013	200	1.50	0.020	200	1.80	0.022	220	2.00	0.030	220	2.50	0.032	240	3.00	0.035	260	4.00	0.044	260	6.00	0.044	260	8.00	0.044
AISI M2		180	.011	.00016	240	.015	.00024	302	.019	.00031	328	.024	.00035	328	.032	.00043	459	.039	.00043	459	.047	.00051	656	.059	.00079	656	.071	.00087	722	.079	.00118	722	.098	.00126	787	.118	.00138	853	.158	.00173	853	.236	.00173	853	.315	.00173	
M	Stainless steel ferritic	AISI 430	55	0.29	0.005	73	0.39	0.007	92	0.48	0.010	100	0.60	0.012	100	0.80	0.014	140	1.00	0.016	140	1.20	0.018	200	1.50	0.024	200	1.80	0.026	220	2.00	0.034	220	2.50	0.036	240	3.00	0.040	260	4.00	0.048	260	6.00	0.048	260	8.00	0.048
		AISI 430F	180	.011	.00020	240	.015	.00028	302	.019	.00039	328	.024	.00047	328	.032	.00055	459	.039	.00063	459	.047	.00071	656	.059	.00094	656	.071	.00102	722	.079	.00134	722	.098	.00142	787	.118	.00157	853	.158	.00189	853	.236	.00189	853	.315	.00189
		AISI 420C																																													
	Stainless steel martensitic	AISI 440B	180	.011	.00016	240	.015	.00024	302	.019	.00035	328	.024	.00039	328	.032	.00047	459	.039	.00059	459	.047	.00067	656	.059	.00087	656	.071	.00094	722	.079	.00126	722	.098	.00134	787	.118	.00142	853	.158	.00181	853	.236	.00181	853	.315	.00181
		AISI 630																																													
	Stainless steel martensitic - PH	ASTM 15-5 PH	55	0.29	0.004	73	0.39	0.006	92	0.48	0.009	100	0.60	0.010	100	0.80	0.012	140	1.00	0.015	140	1.20	0.017	200	1.50	0.022	200	1.80	0.024	220	2.00	0.032	220	2.50	0.034	240	3.00	0.036	260	4.00	0.046	260	6.00	0.046	260	8.00	0.046
		ASTM 17-4 PH	180	.011	.00016	240	.015	.00024	302	.019	.00035	328	.024	.00039	328	.032	.00047	459	.039	.00059	459	.047	.00067	656	.059	.00087	656	.071	.00094	722	.079	.00126	722	.098	.00134	787	.118	.00142	853	.158	.00181	853	.236	.00181	853	.315	.00181
	Stainless steel austenitic	AISI 304																																													
		AISI 316L	55	0.29	0.004	73	0.39	0.006	92	0.48	0.008	100	0.60	0.010	100	0.80	0.011	140	1.00	0.012	140	1.20	0.014	200	1.50	0.016	200	1.80	0.018	220	2.00	0.030	220	2.50	0.032	240	3.00	0.034	260	4.00	0.044	260	6.00	0.044	260	8.00	0.044
		AISI 316LM	180	.011	.00016	240	.015	.00024	302	.019	.00031	328	.024	.00039	328	.032	.00043	459	.039	.00047	459	.047	.00055	656	.059	.00063	656	.071	.00071	722	.079	.00118	722	.098	.00126	787	.118	.00134	853	.158	.00173	853	.236	.00173	853	.315	.00173
		AISI 904L																																													
	K	Cast iron	ASTM 30																																												
ASTM 40B			55	0.29	0.003	73	0.39	0.005	92	0.48	0.006	100	0.60	0.008	100	0.80	0.009	120	1.00	0.011	120	1.20	0.022	140	1.50	0.024	140	1.80	0.026	160	2.00	0.028	160	2.50	0.036	180	3.00	0.042	200	4.00	0.052	200	6.00	0.052	200	8.00	0.052
ASTM 60-40-18			180	.011	.00012	240	.015	.00020	302	.019	.00024	328	.024	.00030	328	.032	.00035	394	.039	.00043	394	.047	.00087	459	.059	.00094	459	.071	.00102	525	.079	.00110	525	.098	.00142	591	.118	.00165	656	.158	.00205	656	.236	.00205	656	.315	.00205
ASTM 80-60-03																																															

Semi-finishing



- $a_p = 0.25 \times d_1$
($\varnothing d_1 \leq 0.5 \text{ mm} | .020''$)
- $a_p = 0.5 \times d_1$
($\varnothing d_1 > 0.5 \text{ mm} | .020''$)
- $a_e = 0.1 \times d_1$

Machining angle = 15°

