

CrazyMill Cool Ball - Type B - Semi-finishing

RECOMMENDATION FOR USE

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

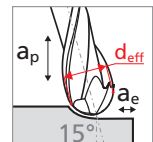
P	N	S ₃
M	S ₁	H ₁
K	S ₂	H ₂

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

MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

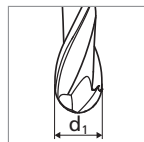
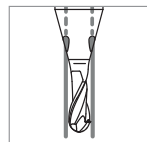
Materials group	Material	AISI/ASTM/UNS	Ød1 .012"		Ød1 .016"		Ød1 .020"		Ød1 .024"		Ød1 .032"		Ød1 .039"		Ød1 .047"		Ød1 .059"		Ød1 .071"		Ød1 .079"		Ød1 .098"		Ød1 .118"		Ød1 .158"		Ød1 .236"		Ød1 .315"																	
			v _c	d _{eff}	f _z	v _c	d _{eff}	f _z	v _c	d _{eff}	f _z	v _c	d _{eff}	f _z	v _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																
N	Aluminium alloy wrought	ASTM 6351	55	0.29	0.006	73	0.39	0.008	92	0.48	0.012	100	0.60	0.014	100	0.80	0.016	140	1.00	0.018	140	1.20	0.020	200	1.50	0.026	200	1.80	0.028	220	2.00	0.036	220	2.50	0.040	240	3.00	0.058	260	4.00	0.060	260	6.00	0.060	260	8.00	0.060	
		ASTM 7075	180	.011	.00024	240	.015	.00031	302	.019	.00047	328	.024	.00055	328	.032	.00063	459	.039	.00071	459	.047	.00079	656	.059	.00102	656	.071	.00110	722	.079	.00142	722	.098	.00157	787	.118	.00228	853	.158	.00236	853	.236	.00236	853	.315	.00236	
	Aluminium alloy cast	ASTM A380	55	0.29	0.006	73	0.39	0.008	92	0.48	0.012	100	0.60	0.014	100	0.80	0.016	140	1.00	0.018	140	1.20	0.020	200	1.50	0.026	200	1.80	0.028	220	2.00	0.036	220	2.50	0.040	240	3.00	0.058	260	4.00	0.060	260	6.00	0.060	260	8.00	0.060	
		UNS A03590	180	.011	.00024	240	.015	.00031	302	.019	.00047	328	.024	.00055	328	.032	.00063	459	.039	.00071	459	.047	.00079	656	.059	.00102	656	.071	.00110	722	.079	.00142	722	.098	.00157	787	.118	.00228	853	.158	.00236	853	.236	.00236	853	.315	.00236	
	Copper	UNS C10100	55	0.29	0.006	73	0.39	0.008	92	0.48	0.012	100	0.60	0.014	100	0.80	0.016	140	1.00	0.018	140	1.20	0.020	200	1.50	0.026	200	1.80	0.028	220	2.00	0.036	220	2.50	0.040	240	3.00	0.058	260	4.00	0.060	260	6.00	0.060	260	8.00	0.060	
		UNS C11000	180	.011	.00024	240	.015	.00031	302	.019	.00047	328	.024	.00055	328	.032	.00071	459	.039	.00079	459	.047	.00087	656	.059	.00102	656	.071	.00110	722	.079	.00142	722	.098	.00157	787	.118	.00228	853	.158	.00236	853	.236	.00236	853	.315	.00236	
	Brass lead free	UNS C27400	55	0.29	0.006	73	0.39	0.008	92	0.48	0.012	100	0.60	0.014	100	0.80	0.016	140	1.00	0.020	140	1.20	0.022	200	1.50	0.026	200	1.80	0.028	220	2.00	0.036	220	2.50	0.040	240	3.00	0.058	260	4.00	0.060	260	6.00	0.060	260	8.00	0.060	
		UNS C28000	180	.011	.00024	240	.015	.00031	302	.019	.00055	328	.024	.00063	328	.032	.00071	459	.039	.00079	459	.047	.00087	656	.059	.00102	656	.071	.00110	722	.079	.00142	722	.098	.00157	787	.118	.00228	853	.158	.00236	853	.236	.00236	853	.315	.00236	
Brass, Bronze Rm<400N/mm²	UNS C38500	55	0.29	0.006	73	0.39	0.008	92	0.48	0.012	100	0.60	0.014	100	0.80	0.016	140	1.00	0.020	140	1.20	0.022	200	1.50	0.026	200	1.80	0.028	220	2.00	0.036	220	2.50	0.040	240	3.00	0.058	260	4.00	0.060	260	6.00	0.060	260	8.00	0.060		
	UNS C51900	180	.011	.00024	240	.015	.00031	302	.019	.00055	328	.024	.00063	328	.032	.00071	459	.039	.00079	459	.047	.00087	656	.059	.00102	656	.071	.00110	722	.079	.00142	722	.098	.00157	787	.118	.00228	853	.158	.00236	853	.236	.00236	853	.315	.00236		
Bronze Rm<600N/mm²	UNS C63000	55	0.29	0.006	73	0.39	0.008	92	0.48	0.012	100	0.60	0.014	100	0.80	0.016	140	1.00	0.018	140	1.20	0.020	200	1.50	0.026	200	1.80	0.028	220	2.00	0.036	220	2.50	0.040	240	3.00	0.058	260	4.00	0.060	260	6.00	0.060	260	8.00	0.060		
	UNS C63200	180	.011	.00024	240	.015	.00031	302	.019	.00047	328	.024	.00055	328	.032	.00063	459	.039	.00071	459	.047	.00079	656	.059	.00102	656	.071	.00110	722	.079	.00142	722	.098	.00157	787	.118	.00228	853	.158	.00236	853	.236	.00236	853	.315	.00236		
S ₁	Super alloys	Inconel 625																																														
		Inconel 718	55	0.29	0.003	73	0.39	0.004	92	0.48	0.004	100	0.60	0.005	100	0.80	0.006	120	1.00	0.007	120	1.20	0.008	130	1.50	0.009	130	1.80	0.010	140	2.00	0.010	140	2.50	0.012	150	3.00	0.015	170	4.00	0.020	170	6.00	0.020	170	8.00	0.020	
		Hastelloy B-2	180	.011	.00012	240	.015	.00016	302	.019	.00016	328	.024	.00020	328	.032	.00024	394	.039	.00028	394	.047	.00031	427	.059	.00035	427	.071	.00039	459	.079	.00039	459	.098	.00047	492	.118	.00059	558	.158	.00079	558	.236	.00079	558	.315	.00079	
		Hastelloy X																																														
S ₂	Titanium pure	ASTM B348	55	0.29	0.004	73	0.39	0.004	92	0.48	0.008	100	0.60	0.009	100	0.80	0.011	120	1.00	0.016	120	1.20	0.018	130	1.50	0.020	130	1.80	0.022	140	2.00	0.028	140	2.50	0.030	150	3.00	0.040	170	4.00	0.044	170	6.00	0.044	170	8.00	0.044	
		ASTM B348	180	.011	.00016	240	.015	.00016	302	.019	.00031	328	.024	.00035	328	.032	.00043	394	.039	.00063	394	.047	.00071	427	.059	.00079	427	.071	.00087	459	.079	.00110	459	.098	.00118	492	.118	.00157	558	.158	.00173	558	.236	.00173	558	.315	.00173	
S ₃	Titanium alloys	ASTM B348	55	0.29	0.004	73	0.39	0.004	92	0.48	0.008	100	0.60	0.009	100	0.80	0.011	120	1.00	0.016	120	1.20	0.018	130	1.50	0.020	130	1.80	0.022	140	2.00	0.028	140	2.50	0.030	150	3.00	0.040	170	4.00	0.044	170	6.00	0.044	170	8.00	0.044	
		ASTM F1295	180	.011	.00016	240	.015	.00016	302	.019	.00031	328	.024	.00035	328	.032	.00043	394	.039	.00063	394	.047	.00071	427	.059	.00079	427	.071	.00087	459	.079	.00110	459	.098	.00118	492	.118	.00157	558	.158	.00173	558	.236	.00173	558	.315	.00173	
H ₁	Hardened steel < 55 HRC	AISI O1	55	0.29	0.004	73	0.39	0.006	92	0.48	0.007	80	0.60	0.008	80	0.80	0.009	100	1.00	0.010	100	1.20	0.012	140	1.50	0.014	140	1.80	0.018	180	2.00	0.020	180	2.50	0.026	200	3.00	0.033	240	4.00	0.040	240	6.00	0.040	240	8.00	0.040	
			180	.011	.00016	240	.015	.00024	302	.019	.00028	328	.024	.00031	328	.032	.00035	328	.039	.00039	328	.047	.00047	459	.059	.00055	459	.071	.00071	591	.079	.00079	591	.098	.00102	656	.118	.00130	787	.158	.00157	787	.236	.00157	787	.315	.00157	
H ₂	Hardened steel ≥ 55 HRC	AISI D2																																														

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°



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