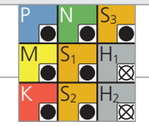
MILLING TOOLS
CRAZYMILL COOL SQUARE / CORNER RADIUS - Z4

NEW

Type N - Pre-machining

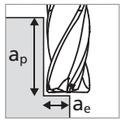
v_c [m/min]
f_z [mm]

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



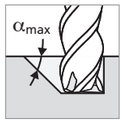
MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Pre-machining

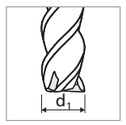


① ■ $a_p = 2 \times d_1$ ■ $a_e = 0.1 \times d_1$

② ■ $a_p = 4 \times d_1$ ■ $a_e = 0.05 \times d_1$



Note:
In case of linear ramp or helical interpolation milling reduce f_z by 35%



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	Ød1 1.0 mm v_c	1.0 mm ① f_z	1.0 mm ② f_z	1.5 mm 1/16" v_c	1.5 mm 1/16" ① f_z	1.5 mm 1/16" ② f_z	2.0 mm 3/32" v_c	2.0 mm 3/32" ① f_z	2.0 mm 3/32" ② f_z	3.0 mm 1/8" v_c	3.0 mm 1/8" ① f_z	3.0 mm 1/8" ② f_z	4.0 mm 5/32" v_c	4.0 mm 5/32" ① f_z	4.0 mm 5/32" ② f_z	5.0 mm 3/16" - 7/32" v_c	5.0 mm 3/16" - 7/32" ① f_z	5.0 mm 3/16" - 7/32" ② f_z	6.0 mm 1/4" v_c	6.0 mm 1/4" ① f_z	6.0 mm 1/4" ② f_z	8.0 mm v_c	8.0 mm ① f_z	8.0 mm ② f_z
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	140	0.011	0.008	200	0.015	0.012	220	0.024	0.017	240	0.033	0.020	260	0.034	0.025	260	0.035	0.028	260	0.046	0.029	260	0.054	0.033
		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	140	0.010	0.007	200	0.013	0.011	220	0.022	0.016	240	0.031	0.019	260	0.032	0.024	260	0.033	0.026	260	0.044	0.028	260	0.052	0.031
		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	140	0.008	0.006	200	0.011	0.010	220	0.019	0.015	240	0.028	0.018	260	0.029	0.022	260	0.030	0.024	260	0.042	0.026	260	0.050	0.029
		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	140	0.012	0.008	180	0.015	0.012	180	0.021	0.017	200	0.030	0.020	220	0.032	0.024	220	0.033	0.026	220	0.040	0.028	260	0.048	0.031
		1.4105	X6CrMoS17	AISI 430F																								
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	140	0.011	0.008	180	0.014	0.011	180	0.020	0.016	200	0.028	0.018	220	0.031	0.023	220	0.032	0.025	220	0.037	0.027	260	0.045	0.030
		1.4112	X90CrMoV18	AISI 440B																								
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb16-4	AISI 630 / ASTM 17-4 PH	140	0.011	0.008	180	0.014	0.011	180	0.020	0.016	200	0.028	0.018	220	0.031	0.023	220	0.032	0.025	220	0.037	0.027	260	0.045	0.030
		1.4545	X5CrNiCuNb15-5	ASTM 15-5 PH																								
	Stainless steel austenitic	1.4301	X5CrNi18-10	AISI 304	140	0.009	0.006	180	0.012	0.008	180	0.018	0.015	200	0.026	0.017	220	0.030	0.022	220	0.031	0.024	220	0.035	0.026	260	0.042	0.029
		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	120	0.010	0.006	160	0.014	0.012	200	0.024	0.014	220	0.032	0.021	240	0.038	0.026	240	0.042	0.029	240	0.044	0.030	240	0.052	0.034
		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	160	0.013	0.009	200	0.016	0.013	240	0.026	0.018	260	0.040	0.029	300	0.048	0.028	300	0.051	0.030	320	0.052	0.032	350	0.060	0.036
		3.4365	AlZnMgCu1.5	ASTM 7075																								
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	160	0.013	0.009	220	0.016	0.013	240	0.026	0.018	260	0.040	0.029	300	0.048	0.028	300	0.051	0.030	320	0.052	0.032	350	0.060	0.036
		3.2381	GD-AlSi10Mg	UNS A03590																								
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	160	0.013	0.010	220	0.016	0.013	240	0.026	0.018	260	0.040	0.029	300	0.048	0.028	300	0.051	0.030	320	0.052	0.032	350	0.060	0.036
		2.0065	Cu-ETP / CW004A	UNS C11000																								
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	160	0.013	0.010	220	0.016	0.013	240	0.026	0.018	260	0.040	0.029	300	0.048	0.028	300	0.051	0.030	320	0.052	0.032	350	0.060	0.036
		2.0360	CuZn40 CW509L	UNS C28000																								
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	160	0.013	0.010	220	0.016	0.013	240	0.026	0.018	260	0.040	0.029	300	0.048	0.028	300	0.051	0.030	320	0.052	0.032	350	0.060	0.036
		2.1020	CuSn6	UNS C51900																								
	Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	160	0.013	0.009	220	0.016	0.013	240	0.026	0.018	260	0.040	0.029	300	0.048	0.028	300	0.051	0.030	320	0.052	0.032	350	0.060	0.036
		2.0960	CuAl9Mn2	UNS C63200																								
S_1	Super alloys	2.4856		Inconel 625	100	0.006	0.004	100	0.008	0.005	100	0.010	0.005	100	0.014	0.008	120	0.016	0.010	120	0.018	0.011	120	0.020	0.012	120	0.025	0.013
		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	120	0.010	0.008	120	0.012	0.010	130	0.017	0.014	130	0.028	0.017	150	0.030	0.021	150	0.031	0.023	150	0.032	0.025	170	0.035	0.027
		3.7065	Gr.4	ASTM B348 / F68																								
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	120	0.010	0.008	120	0.012	0.010	130	0.017	0.014	130	0.028	0.017	150	0.030	0.021	150	0.031	0.023	150	0.032	0.025	170	0.035	0.027
		9.9367	TiAl6Nb7	ASTM F1295																								
S_3	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	100	0.006	0.004	100	0.008	0.005	100	0.010	0.005	100	0.014	0.008	120	0.016	0.010	120	0.018	0.011	120	0.020	0.012	120	0.025	0.013
			CrCoMo28	ASTM F1537																								
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1																								
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2																								