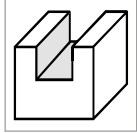
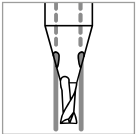
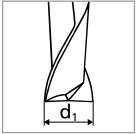
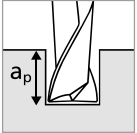




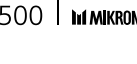


CrazyMill Cool Square / Corner radius - Type B - 3 x d

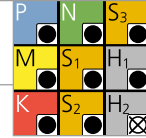
MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

	Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	Ød1	
						0.3-0.4 mm .012"-.016"	
						v_c	f_z
<p>Conventional slot milling</p>  <p>■ $a_p = 1 \times d_1$</p> <p>■ $a_p = 0.5 \times d_1$ for group S₁ and S₃</p>	P	Unalloyed carbon steel Rm < 800 N/mm ²	1.0301	C10	AISI 1010	60 197	0.004 - 0.006 .00016 - .00024
			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/mm ²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	60 197	0.003 - 0.005 .00012 - .00020
			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/mm ²	1.2379	X153CrMoV12	AISI D2	60 197	0.003 - 0.005 .00012 - .00020
			1.2436	X210CrW12	AISI D4/D6		
1.3343	H56-5-2C		AISI M2 / UNS T11302				
1.3355	H518-0-1		AISI T1 / UNS T12001				
	M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	60 197	0.004 - 0.006 .00016 - .00024
			1.4105	X6CrMoS17	AISI 430F		
		Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	60 197	0.003 - 0.005 .00012 - .00020
			1.4112	X90CrMoV18	AISI 440B		
		Stainless steel martensitic - PH	1.4542	X5CrNiCuNb 16-4	AISI 630 / ASTM 17-4 PH	60 197	0.003 - 0.005 .00012 - .00020
			1.4545	X5CrNiCuNb 15-5	ASTM 15-5 PH		
		Stainless steel austenitic	1.4301	X5CrNi 18-10	AISI 304	60 197	0.003 - 0.005 .00012 - .00020
			1.4435	X2CrNiMo 18-14-3	AISI 316L		
1.4441	X2CrNiMo 18-15-3		AISI 316LM				
1.4539	X1NiCrMoCu 25-20-5	AISI 904L					
	K	Cast iron	0.6020	GG20	ASTM 30	60 197	0.002 - 0.004 .00008 - .00016
			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	60 197	0.005 - 0.007 .00020 - .00028
			3.4365	AlZnMgCu1.5	ASTM 7075		
		Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	60 197	0.005 - 0.007 .00020 - .00028
			3.2381	GD-AlSi10Mg	UNS A03590		
		Copper	2.004	Cu-OF / CW008A	UNS C10100	60 197	0.005 - 0.007 .00020 - .00028
			2.0065	Cu-ETP / CW004A	UNS C11000		
		Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	60 197	0.005 - 0.007 .00020 - .00028
			2.036	CuZn40 CW509L	UNS C28000		
		Brass, Bronze Rm < 400 N/mm ²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	60 197	0.005 - 0.007 .00020 - .00028
			2.102	CuSn6	UNS C51900		
Bronze Rm < 600 N/mm ²	2.0966	CuAl10Ni5Fe4	UNS C63000	60 197	0.005 - 0.007 .00020 - .00028		
	2.096	CuAl9Mn2	UNS C63200				
	S₁	Super alloys	2.4856		Inconel 625	60 197	0.002 - 0.003 .00008 - .00012
			2.4668		Inconel 718		
			2.4617	NiMo28	Hastelloy B-2		
			2.4665	NiCr22Fe18Mo	Hastelloy X		
	S₂	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	60 197	0.003 - 0.005 .00012 - .00020
			3.7065	Gr.4	ASTM B348 / F68		
	S₃	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	60 197	0.003 - 0.005 .00012 - .00020
			9.9367	TiAl6Nb7	ASTM F1295		
	S₃	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25	60 197	0.002 - 0.003 .00008 - .00012
				CrCoMo28	ASTM F1537		
	H₁ H₂	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1	60 197	0.003 - 0.005 .00012 - .00020
			1.2379	X153CrMoV12	AISI D2		

V_c [m/min] | [SFM]
f_z [mm] | [IPT]

RECOMMENDATION FOR USE

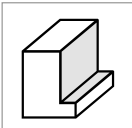
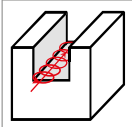
● Excellent | ● Good | ○ Acceptable | ⊗ Not recommended



Ød1 0.5–0.8 mm .020"–.032"		Ød1 1.0–1.2 mm .039"–.047"		Ød1 1.5–1.8 mm .059"–.071"		Ød1 2.0–2.5 mm .079"–.098"		Ød1 3.0 mm .118"		Ød1 4.0–6.0 mm .158"–.236"	
V _c	f _z	V _c	f _z	V _c	f _z	V _c	f _z	V _c	f _z	V _c	f _z
100 328	0.008 – 0.012 .00031 – .00047	140 459	0.013 – 0.015 .00051 – .00059	180 591	0.022 – 0.024 .00087 – .00094	200 656	0.030 – 0.032 .00118 – .00126	220 722	0.044 .00173	260 853	0.048 .00189
100 328	0.007 – 0.010 .00028 – .00039	140 459	0.012 – 0.014 .00047 – .00055	180 591	0.020 – 0.022 .00079 – .00087	200 656	0.028 – 0.030 .00110 – .00118	220 722	0.042 .00165	260 853	0.046 .00181
100 328	0.006 – 0.009 .00024 – .00035	140 459	0.009 – 0.011 .00035 – .00043	180 591	0.018 – 0.020 .00071 – .00079	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.038 .00150	260 853	0.040 .00157
100 328	0.008 – 0.012 .00031 – .00047	140 459	0.014 – 0.016 .00055 – .00063	180 591	0.022 – 0.024 .00087 – .00094	200 656	0.030 – 0.032 .00118 – .00126	220 722	0.042 .00165	260 853	0.046 .00181
100 328	0.007 – 0.010 .00028 – .00039	140 459	0.013 – 0.015 .00051 – .00059	180 591	0.020 – 0.022 .00079 – .00087	200 656	0.028 – 0.030 .00110 – .00118	220 722	0.040 .00157	260 853	0.044 .00173
100 328	0.007 – 0.010 .00028 – .00039	140 459	0.013 – 0.015 .00051 – .00059	180 591	0.020 – 0.022 .00079 – .00087	200 656	0.028 – 0.030 .00110 – .00118	220 722	0.040 .00157	260 853	0.044 .00173
100 328	0.006 – 0.009 .00024 – .00035	140 459	0.010 – 0.012 .00039 – .00047	180 591	0.016 – 0.018 .00063 – .00071	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.038 .00150	260 853	0.042 .00165
100 328	0.005 – 0.008 .00020 – .00031	120 394	0.010 – 0.020 .00039 – .00079	140 459	0.022 – 0.025 .00087 – .00098	160 525	0.026 – 0.035 .00102 – .00138	180 591	0.038 – 0.045 .00150 – .00177	200 656	0.048 – 0.052 .00189 – .00205
100 328	0.010 – 0.014 .00039 – .00055	140 459	0.015 – 0.017 .00059 – .00067	180 591	0.024 – 0.026 .00094 – .00102	200 656	0.032 – 0.034 .00126 – .00134	220 722	0.050 .00197	260 853	0.055 .00217
100 328	0.010 – 0.014 .00039 – .00055	140 459	0.015 – 0.017 .00059 – .00067	180 591	0.024 – 0.026 .00094 – .00102	200 656	0.032 – 0.034 .00126 – .00134	220 722	0.048 .00189	260 853	0.053 .00209
100 328	0.012 – 0.016 .00047 – .00063	140 459	0.018 – 0.020 .00071 – .00079	180 591	0.024 – 0.026 .00094 – .00102	200 656	0.032 – 0.034 .00126 – .00134	220 722	0.050 .00197	260 853	0.055 .00217
100 328	0.012 – 0.016 .00047 – .00063	140 459	0.018 – 0.020 .00071 – .00079	180 591	0.024 – 0.026 .00094 – .00102	200 656	0.032 – 0.034 .00126 – .00134	220 722	0.050 .00197	260 853	0.055 .00217
100 328	0.012 – 0.016 .00047 – .00063	140 459	0.018 – 0.020 .00071 – .00079	180 591	0.024 – 0.026 .00094 – .00102	200 656	0.032 – 0.034 .00126 – .00134	220 722	0.050 .00197	260 853	0.055 .00217
100 328	0.010 – 0.014 .00039 – .00055	140 459	0.016 – 0.018 .00063 – .00071	180 591	0.024 – 0.026 .00094 – .00102	200 656	0.032 – 0.034 .00126 – .00134	220 722	0.050 .00197	260 853	0.055 .00217
100 328	0.004 – 0.006 .00016 – .00024	120 394	0.007 – 0.008 .00028 – .00031	130 427	0.009 – 0.010 .00035 – .00039	140 459	0.010 – 0.012 .00039 – .00047	150 492	0.015 .00059	170 558	0.020 .00079
100 328	0.006 – 0.009 .00024 – .00035	120 394	0.014 – 0.016 .00055 – .00063	130 427	0.018 – 0.020 .00071 – .00079	140 459	0.026 – 0.028 .00102 – .00110	150 492	0.040 .00157	170 558	0.042 .00165
100 328	0.006 – 0.009 .00024 – .00035	120 394	0.014 – 0.016 .00055 – .00063	130 427	0.018 – 0.020 .00071 – .00079	140 459	0.026 – 0.028 .00102 – .00110	150 492	0.040 .00157	170 558	0.042 .00165
100 328	0.004 – 0.006 .00016 – .00024	140 459	0.007 – 0.008 .00028 – .00031	160 525	0.009 – 0.010 .00035 – .00039	180 591	0.010 – 0.012 .00039 – .00047	200 656	0.015 .00059	220 722	0.020 .00079
80 262	0.006 – 0.007 .00024 – .00028	100 328	0.008 – 0.010 .00031 – .00039	140 459	0.012 – 0.016 .00047 – .00063	180 591	0.018 – 0.024 .00071 – .00094	200 656	0.030 .00118	240 787	0.035 .00138

CrazyMill Cool Square / Corner radius - Type B - 3 x d

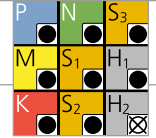
MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

	Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	Ød1	
						0.3–0.4 mm .012" – .016"	
						v_c	f_z
Side milling  <ul style="list-style-type: none"> ■ $a_p = 1 \times d_1$ ■ $a_p = 0.5 \times d_1$ for group S₁ and S₃ ■ $a_p = 0.3 \times d_1$ 	P	Unalloyed carbon steel Rm < 800 N/mm ²	1.0301	C10	AISI 1010	60 197	0.005–0.007 .00020–.00028
			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/mm ²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	60 197	0.004–0.006 .00016–.00024
			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/mm ²	1.2379	X153CrMoV12	AISI D2	60 197	0.004–0.006 .00016–.00024
			1.2436	X210CrW12	AISI D4/D6		
1.3343	H56-5-2C		AISI M2 / UNS T11302				
1.3355	H518-0-1		AISI T1 / UNS T12001				
Trochoidal Slot Milling  <ul style="list-style-type: none"> ■ $a_p = 1 \times d_1$ ■ $a_p = 0.5 \times d_1$ for group S₁ and S₃ ■ $a_p = 0.3 \times d_1$ 	M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000	60 197	0.005–0.007 .00020–.00028
			1.4105	X6CrMoS17	AISI 430F		
			1.4034	X46Cr13	AISI 420C		
		Stainless steel martensitic	1.4112	X90CrMoV18	AISI 440B	60 197	0.004–0.006 .00016–.00024
			1.4542	X5CrNiCuNb 16-4	AISI 630 / ASTM 17-4 PH		
		Stainless steel martensitic – PH	1.4545	X5CrNiCuNb 15-5	ASTM 15-5 PH	60 197	0.004–0.006 .00016–.00024
			1.4301	X5CrNi 18-10	AISI 304		
		Stainless steel austenitic	1.4435	X2CrNiMo 18-14-3	AISI 316L	60 197	0.004–0.006 .00016–.00024
			1.4441	X2CrNiMo 18-15-3	AISI 316LM		
1.4539	X1NiCrMoCu 25-20-5		AISI 904L				
K Cast iron	0.6020	GG20	ASTM 30	60 197	0.003–0.005 .00012–.00020		
	0.6030	GG30	ASTM 40B				
	0.7040	GGG40	ASTM 60-40-18				
	0.7060	GGG60	ASTM 80-60-03				
N Aluminium alloy wrought Aluminium alloy cast Copper Brass lead free Brass, Bronze Rm < 400 N/mm ² Bronze Rm < 600 N/mm ²	3.2315	AlMgSi1	ASTM 6351	60 197	0.006–0.008 .00024–.00031		
	3.4365	AlZnMgCu1.5	ASTM 7075				
	3.2163	GD-AlSi9Cu3	ASTM A380	60 197	0.006–0.008 .00024–.00031		
	3.2381	GD-AlSi10Mg	UNS A03590				
	Copper	2.004	Cu-OF / CW008A	UNS C10100	60 197	0.006–0.008 .00024–.00031	
		2.0065	Cu-ETP / CW004A	UNS C11000			
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	60 197	0.006–0.008 .00024–.00031	
		2.036	CuZn40 CW509L	UNS C28000			
	Brass, Bronze Rm < 400 N/mm ²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	60 197	0.006–0.008 .00024–.00031	
		2.102	CuSn6	UNS C51900			
	Bronze Rm < 600 N/mm ²	2.0966	CuAl10Ni5Fe4	UNS C63000	60 197	0.006–0.008 .00024–.00031	
		2.096	CuAl9Mn2	UNS C63200			
S₁ Super alloys	2.4856		Inconel 625	60 197	0.003–0.004 .00012–.00016		
	2.4668		Inconel 718				
	2.4617	NiMo28	Hastelloy B-2				
	2.4665	NiCr22Fe18Mo	Hastelloy X				
S₂ Titanium pure	3.7035	Gr.2	ASTM B348 / F67	60 197	0.004–0.006 .00016–.00024		
	3.7065	Gr.4	ASTM B348 / F68				
S₃ Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	60 197	0.004–0.006 .00016–.00024		
	9.9367	TiAl6Nb7	ASTM F1295				
H₁ H₂ Hardened steel < 55 HRC Hardened steel ≥ 55 HRC	2.4964	CoCr20W15Ni	Haynes 25	60 197	0.003–0.004 .00012–.00016		
		CrCoMo28	ASTM F1537				
	1.2510	100MnCrMoW4	AISI O1	60 197	0.004–0.006 .00016–.00024		
	1.2379	X153CrMoV12	AISI D2				

V_c [m/min] | [SFM]
f_z [mm] | [IPT]

RECOMMENDATION FOR USE

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



Ød1 0.5–0.8 mm .020"–.032"		Ød1 1.0–1.2 mm .039"–.047"		Ød1 1.5–1.8 mm .059"–.071"		Ød1 2.0–2.5 mm .079"–.098"		Ød1 3.0 mm .118"		Ød1 4.0–6.0 mm .158"–.236"	
V _c	f _z	V _c	f _z	V _c	f _z	V _c	f _z	V _c	f _z	V _c	f _z
100 328	0.010 – 0.014 .00039 – .00055	140 459	0.015 – 0.017 .00059 – .00067	200 656	0.024 – 0.026 .00094 – .00102	220 722	0.034 – 0.036 .00134 – .00142	240 787	0.046 .00181	280 919	0.050 .00197
100 328	0.009 – 0.012 .00035 – .00047	140 459	0.014 – 0.016 .00055 – .00063	200 656	0.022 – 0.024 .00087 – .00094	220 722	0.032 – 0.034 .00126 – .00134	240 787	0.044 .00173	280 919	0.048 .00189
100 328	0.008 – 0.011 .00031 – .00043	140 459	0.011 – 0.013 .00043 – .00051	200 656	0.020 – 0.022 .00079 – .00087	220 722	0.030 – 0.032 .00118 – .00126	240 787	0.040 .00157	280 919	0.042 .00165
100 328	0.010 – 0.014 .00039 – .00055	140 459	0.016 – 0.018 .00063 – .00071	200 656	0.024 – 0.026 .00094 – .00102	220 722	0.034 – 0.036 .00134 – .00142	240 787	0.044 .00173	280 919	0.048 .00189
100 328	0.009 – 0.012 .00035 – .00047	140 459	0.015 – 0.017 .00059 – .00067	200 656	0.022 – 0.024 .00087 – .00094	220 722	0.032 – 0.034 .00126 – .00134	240 787	0.044 .00173	280 919	0.046 .00181
100 328	0.009 – 0.012 .00035 – .00047	140 459	0.015 – 0.017 .00059 – .00067	200 656	0.022 – 0.024 .00087 – .00094	220 722	0.032 – 0.034 .00126 – .00134	240 787	0.044 .00173	280 919	0.046 .00181
100 328	0.008 – 0.011 .00031 – .00043	140 459	0.012 – 0.014 .00047 – .00055	200 656	0.016 – 0.018 .00063 – .00071	220 722	0.030 – 0.032 .00118 – .00126	240 787	0.040 .00157	280 919	0.044 .00173
100 328	0.006 – 0.009 .00024 – .00035	120 394	0.011 – 0.022 .00043 – .00087	140 459	0.024 – 0.026 .00094 – .00102	160 525	0.028 – 0.036 .00110 – .00142	180 591	0.040 – 0.047 .00157 – .00185	200 656	0.050 – 0.054 .00197 – .00213
100 328	0.012 – 0.016 .00047 – .00063	140 459	0.018 – 0.020 .00071 – .00079	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.036 – 0.040 .00142 – .00157	240 787	0.058 .00228	280 919	0.060 .00236
100 328	0.012 – 0.016 .00047 – .00063	140 459	0.018 – 0.020 .00071 – .00079	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.036 – 0.040 .00142 – .00157	240 787	0.058 .00228	280 919	0.060 .00236
100 328	0.014 – 0.018 .00055 – .00071	140 459	0.020 – 0.022 .00079 – .00087	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.036 – 0.040 .00142 – .00157	240 787	0.058 .00228	280 919	0.060 .00236
100 328	0.014 – 0.018 .00055 – .00071	140 459	0.020 – 0.022 .00079 – .00087	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.036 – 0.040 .00142 – .00157	240 787	0.058 .00228	280 919	0.060 .00236
100 328	0.014 – 0.018 .00055 – .00071	140 459	0.020 – 0.022 .00079 – .00087	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.036 – 0.040 .00142 – .00157	240 787	0.058 .00228	280 919	0.060 .00236
100 328	0.012 – 0.016 .00047 – .00063	140 459	0.018 – 0.020 .00071 – .00079	200 656	0.026 – 0.028 .00102 – .00110	220 722	0.036 – 0.040 .00142 – .00157	240 787	0.058 .00228	280 919	0.060 .00236
100 328	0.004 – 0.006 .00016 – .00024	120 394	0.007 – 0.008 .00028 – .00031	130 427	0.009 – 0.010 .00035 – .00039	140 459	0.010 – 0.012 .00039 – .00047	150 492	0.015 .00059	170 558	0.020 .00079
100 328	0.008 – 0.011 .00031 – .00043	120 394	0.016 – 0.018 .00063 – .00071	130 427	0.020 – 0.022 .00079 – .00087	140 459	0.028 – 0.030 .00110 – .00118	150 492	0.040 .00157	170 558	0.044 .00173
100 328	0.008 – 0.011 .00031 – .00043	120 394	0.016 – 0.018 .00063 – .00071	130 427	0.020 – 0.022 .00079 – .00087	140 459	0.028 – 0.030 .00110 – .00118	150 492	0.040 .00157	170 558	0.044 .00173
100 328	0.004 – 0.006 .00016 – .00024	140 459	0.007 – 0.008 .00028 – .00031	180 591	0.009 – 0.010 .00035 – .00039	200 656	0.010 – 0.012 .00039 – .00047	220 722	0.015 .00059	240 787	0.020 .00079
80 262	0.007 – 0.009 .00028 – .00035	100 328	0.010 – 0.012 .00039 – .00047	140 459	0.014 – 0.018 .00055 – .00071	180 591	0.020 – 0.026 .00079 – .00102	200 656	0.033 .00130	240 787	0.040 .00157