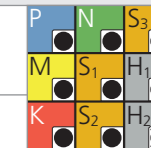


Type B - Side and trochoidal slot milling

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

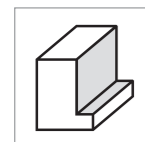
RECOMMENDATION FOR USE
● Excellent | ● Good | ○ Acceptable | ☒ Not recommended



MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

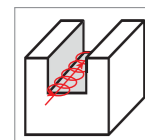
Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	1/64"		1/32"		1/16"		3/32"		1/8"		5/32-3/16-7/32-1/4"			
					v _c	f _z	v _c	f _z	v _c	f _z	v _c	f _z	v _c	f _z	v _c	f _z		
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	60 197	0.005-0.007 .00020-.00028	100 328	0.010-0.014 .00039-.00055	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
		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	60 197	0.004-0.006 .00016-.00024	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
		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	60 197	0.004-0.006 .00016-.00024	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
		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	60 197	0.005-0.007 .00020-.00028	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
		1.4105	X6CrMoS17	AISI 430F														
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C	60 197	0.004-0.006 .00016-.00024	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
		1.4112	X90CrMoV18	AISI 440B														
	Stainless steel martensitic - PH	1.4542	X5CrNiCuNb 16-4	AISI 630 / ASTM 17-4 PH	60 197	0.004-0.006 .00016-.00024	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
		1.4545	X5CrNiCuNb 15-5	ASTM 15-5 PH														
	Stainless steel austenitic	1.4301	X5CrNi 18-10	AISI 304	60 197	0.004-0.006 .00016-.00024	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
		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	0.003-0.005 .00012-.00020	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
		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	0.006-0.008 .00024-.00031	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
		3.4365	AlZnMgCu1.5	ASTM 7075														
	Aluminium alloy cast	3.2163	GD-AISI9Cu3	ASTM A380	60 197	0.006-0.008 .00024-.00031	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
		3.2381	GD-AISI10Mg	UNS A03590														
	Copper	2.004	Cu-OF / CW008A	UNS C10100	60 197	0.006-0.008 .00024-.00031	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
		2.0065	Cu-ETP / CW004A	UNS C11000														
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	60 197	0.006-0.008 .00024-.00031	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
		2.036	CuZn40 CW509L	UNS C28000														
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	60 197	0.006-0.008 .00024-.00031	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
		2.102	CuSn6	UNS C51900														
Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	60 197	0.006-0.008 .00024-.00031	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	
	2.096	CuAl9Mn2	UNS C63200															
S ₁	Super alloys	2.4856		Inconel 625	60 197	0.003-0.004 .00012-.00016	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
		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	60 197	0.004-0.006 .00016-.00024	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
		3.7065	Gr.4	ASTM B348 / F68														
S ₃	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	60 197	0.004-0.006 .00016-.00024	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
		9.9367	TiAl6Nb7	ASTM F1295														
H ₁	Hardened steel < 55 HRC	2.4964	CoCr20W15Ni	Haynes 25	60 197	0.003-0.004 .00012-.00016	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
			CrCoMo28	ASTM F1537														
H ₂	Hardened steel ≥ 55 HRC	1.2510	100MnCrMoW4	AISI O1	60 197	0.004-0.006 .00016-.00024	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
		1.2379	X153CrMoV12	AISI D2														

Side milling



■ a_p = 1 x d_i
■ a_e = 0.3 x d_i

Trochoidal Slot Milling



■ a_p = 1 x d_i
■ a_e = 0.1 x d_i

