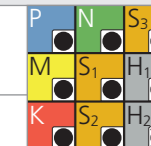


Type C - Side and trochoidal slot milling

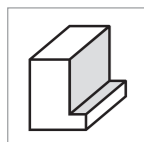
v_c [m/min]
 f_z [mm]

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



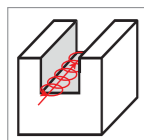
MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Side milling

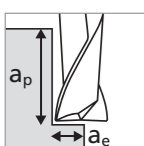
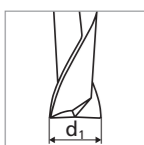
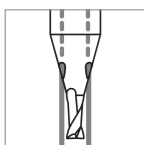


- $a_p = 1 \times d_1$
- $a_e = 0.3 \times d_1$

Trochoidal Slot Milling



- $a_p = 1 \times d_1$
- $a_e = 0.1 \times d_1$



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	0.3 mm–0.4 mm 1/64"		0.5 mm–0.8 mm 1/32"		1.0 mm–1.2 mm		1.5 mm–1.8 mm 1/16"		2.0 mm–2.5 mm 3/32"		3.0 mm 1/8"		4.0 mm–6.0 mm 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	v_c	f_z															
P	Unalloyed carbon steel Rm < 800 N/mm ²	1.0301	C10	AISI 1010	60	0.005 – 0.007	100	0.010 – 0.014	140	0.015 – 0.017	200	0.024 – 0.026	220	0.034 – 0.036	240	0.040	280	0.050															
		1.0401	C15	AISI 1015																													
		1.1191	C45E/CK45	AISI 1045																													
		1.0044	S275JR	AISI 1020																													
		1.0715	11SMn30	AISI 1215																													
		1.5752	15NiCr13	ASTM 3415 / AISI 3310																													
	Low alloyed steel Rm > 900 N/mm ²	1.7131	16MnCr5	AISI 5115	60	0.004 – 0.006	100	0.009 – 0.012	140	0.014 – 0.016	200	0.022 – 0.024	220	0.032 – 0.034	240	0.038	280	0.048															
		1.3505	100Cr6	AISI 52100																													
		1.7225	42CrMo4	AISI 4140																													
		1.2842	90MnCrV8	AISI O2																													
		1.2379	X153CrMoV12	AISI D2																													
		1.2436	X210CrW12	AISI D4/D6																													
High alloyed tool steel Rm < 1200 N/mm ²	1.3343	HS6-5-2C	AISI M2 / UNS T11302	60	0.004 – 0.006	100	0.008 – 0.011	140	0.011 – 0.013	200	0.020 – 0.022	220	0.030 – 0.032	240	0.035	280	0.044																
	1.3355	HS18-0-1	AISI T1 / UNS T12001																														
	M	Stainless steel ferritic	1.4016															X6Cr17	AISI 430 / UNS S43000	60	0.005 – 0.007	100	0.010 – 0.014	140	0.016 – 0.018	200	0.024 – 0.026	220	0.034 – 0.036	240	0.040	280	0.048
			1.4105															X6CrMoS17	AISI 430F														
			1.4034															X46Cr13	AISI 420C														
		Stainless steel martensitic	1.4112															X90CrMoV18	AISI 440B														
1.4542			X5CrNiCuNb 16-4	AISI 630 / ASTM 17-4 PH																													
1.4545			X5CrNiCuNb 15-5	ASTM 15-5 PH																													
Stainless steel austenitic	1.4301	X5CrNi 18-10	AISI 304	60	0.004 – 0.006	100	0.008 – 0.011	140	0.012 – 0.014	200	0.016 – 0.018	220	0.030 – 0.032	240	0.034	280	0.044																
	1.4435	X2CrNiMo 18-14-3	AISI 316L																														
	1.4441	X2CrNiMo 18-15-3	AISI 316LM																														
K	Cast iron	0.6020	GG20	ASTM 30	60	0.003 – 0.005	100	0.006 – 0.009	120	0.011 – 0.022	140	0.024 – 0.026	160	0.028 – 0.036	180	0.042	200	0.052															
		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	0.006 – 0.008	100	0.012 – 0.016	140	0.018 – 0.020	200	0.026 – 0.028	220	0.036 – 0.040	240	0.058	280	0.055															
		3.4365	AlZnMgCu1.5	ASTM 7075																													
	Aluminium alloy cast	3.2163	GD-AISI9Cu3	ASTM A380															60	0.006 – 0.008	100	0.012 – 0.016	140	0.018 – 0.020	200	0.026 – 0.028	220	0.036 – 0.040	240	0.058	280	0.055	
		3.2381	GD-AISI10Mg	UNS A03590																													
	Copper	2.004	Cu-OF / CW008A	UNS C10100															60	0.006 – 0.008	100	0.014 – 0.018	140	0.020 – 0.022	200	0.026 – 0.028	220	0.036 – 0.040	240	0.058	280	0.055	
		2.0065	Cu-ETP / CW004A	UNS C11000																													
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400															60	0.006 – 0.008	100	0.014 – 0.018	140	0.020 – 0.022	200	0.026 – 0.028	220	0.036 – 0.040	240	0.058	280	0.055	
		2.036	CuZn40 CW509L	UNS C28000																													
	Brass, Bronze Rm < 400 N/mm ²	2.0401	CuZn39Pb3 / CW614N	UNS C38500															60	0.006 – 0.008	100	0.014 – 0.018	140	0.020 – 0.022	200	0.026 – 0.028	220	0.036 – 0.040	240	0.058	280	0.055	
		2.102	CuSn6	UNS C51900																													
	Bronze Rm < 600 N/mm ²	2.0966	CuAl10Ni5Fe4	UNS C63000															60	0.006 – 0.008	100	0.012 – 0.016	140	0.018 – 0.020	200	0.026 – 0.028	220	0.036 – 0.040	240	0.058	280	0.055	
		2.096	CuAl9Mn2	UNS C63200																													
S ₁	Super alloys	2.4856		Inconel 625	60	0.003 – 0.004	100	0.004 – 0.006	120	0.007 – 0.008	130	0.009 – 0.010	140	0.010 – 0.012	150	0.015	170	0.020															
		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	0.004 – 0.006	100	0.008 – 0.011	120	0.016 – 0.018	130	0.020 – 0.022	140	0.028 – 0.030	150	0.034	170	0.042															
		3.7065	Gr.4	ASTM B348 / F68																													
S ₃	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	60	0.004 – 0.006	100	0.008 – 0.011	120	0.016 – 0.018	130	0.020 – 0.022	140	0.028 – 0.030	150	0.034	170	0.042															
		9.9367	TiAl6Nb7	ASTM F1295																													
H ₁	Hardened steel < 55 HRC	2.4964	CoCr20W15Ni	Haynes 25	60	0.003 – 0.004	100	0.004 – 0.006	140	0.007 – 0.008	180	0.009 – 0.010	200	0.010 – 0.012	220	0.015	240	0.020															
			CrCoMo28	ASTM F1537																													
H ₂	Hardened steel ≥ 55 HRC	1.2510	100MnCrMoW4	AISI O1	60	0.004 – 0.006	80	0.007 – 0.009	100	0.010 – 0.012	140	0.014 – 0.018	180	0.020 – 0.026	200	0.030	240	0.032															
		1.2379	X153CrMoV12	AISI D2																													