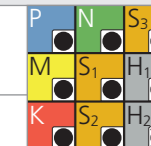


# Type C - Conventional slot milling

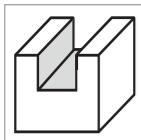
$V_c$  [m/min] | [SFM]  
 $f_z$  [mm] | [IPT]

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



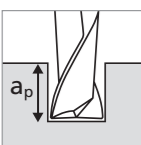
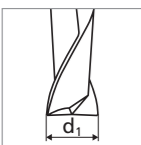
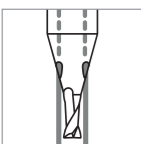
## MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

Conventional slot milling



■  $a_p = 1 \times d_1$

■  $a_p = 0.5 \times d_1$  for group S<sub>1</sub> and S<sub>3</sub>



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/mm <sup>2</sup>	1.0301	C10	AISI 1010	60   197	0.004 - 0.006 .00016 - .00024	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	0.034 .00134	260   853	0.048 .00189															
		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 <sup>2</sup>	1.7131	16MnCr5	AISI 5115	60   197	0.003 - 0.005 .00012 - .00020	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	0.032 .00126	260   853	0.046 .00181															
		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 <sup>2</sup>	1.3343	HS6-5-2C	AISI M2 / UNS T11302	60   197	0.003 - 0.005 .00012 - .00020	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	0.028 .00110	260   853	0.042 .00165																
	1.3355	HS18-0-1	AISI T1 / UNS T12001																														
	M	Stainless steel ferritic	1.4016															X6Cr17	AISI 430 / UNS S43000	60   197	0.004 - 0.006 .00016 - .00024	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	0.034 .00134	260   853	0.046 .00181
			1.4105															X6CrMoS17	AISI 430F														
			1.4034															X46Cr13	AISI 420C														
		Stainless steel martensitic	1.4112															X90CrMoV18	AISI 440B	60   197	0.003 - 0.005 .00012 - .00020	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	0.032 .00126	260   853	0.044 .00173
1.4542			X5CrNiCuNb 16-4	AISI 630 / ASTM 17-4 PH																													
1.4545			X5CrNiCuNb 15-5	ASTM 15-5 PH																													
Stainless steel martensitic - PH	1.4301	X5CrNi 18-10	AISI 304	60   197	0.003 - 0.005 .00012 - .00020	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	0.032 .00126	260   853	0.044 .00173																
	1.4435	X2CrNiMo 18-14-3	AISI 316L																														
	1.4441	X2CrNiMo 18-15-3	AISI 316LM																														
Stainless steel austenitic	1.4539	X1NiCrMoCu 25-20-5	AISI 904L	60   197	0.003 - 0.005 .00012 - .00020	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	0.030 .00118	260   853	0.042 .00165																
	K	Cast iron	0.6020															GG20	ASTM 30	60   197	0.002 - 0.004 .00008 - .00016	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	0.040 .00157	200   656	0.050 .00197
			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	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	0.052 .00205	260   853	0.050 .00197															
		3.4365	AlZnMgCu1.5	ASTM 7075																													
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	60   197	0.005 - 0.007 .00020 - .00028	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	0.050 .00197															
		3.2381	GD-AlSi10Mg	UNS A03590																													
	Copper	2.004	Cu-OF / CW008A	UNS C10100	60   197	0.005 - 0.007 .00020 - .00028	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	0.052 .00205	260   853	0.050 .00197															
		2.0065	Cu-ETP / CW004A	UNS C11000																													
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400	60   197	0.005 - 0.007 .00020 - .00028	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	0.052 .00205	260   853	0.050 .00197															
		2.036	CuZn40 CW509L	UNS C28000																													
	Brass, Bronze Rm < 400 N/mm <sup>2</sup>	2.0401	CuZn39Pb3 / CW614N	UNS C38500	60   197	0.005 - 0.007 .00020 - .00028	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	0.052 .00205	260   853	0.050 .00197															
		2.102	CuSn6	UNS C51900																													
	Bronze Rm < 600 N/mm <sup>2</sup>	2.0966	CuAl10Ni5Fe4	UNS C63000	60   197	0.005 - 0.007 .00020 - .00028	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	0.052 .00205	260   853	0.050 .00197															
		2.096	CuAl9Mn2	UNS C63200																													
S <sub>1</sub>	Super alloys	2.4856		Inconel 625	60   197	0.002 - 0.003 .00008 - .00012	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 <sub>2</sub>	Titanium pure	3.7035	Gr.2	ASTM B348 / F67	60   197	0.003 - 0.005 .00012 - .00020	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	0.030 .00118	170   558	0.040 .00157															
		3.7065	Gr.4	ASTM B348 / F68																													
S <sub>3</sub>	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136	60   197	0.003 - 0.005 .00012 - .00020	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	0.030 .00118	170   558	0.040 .00157															
		9.9367	TiAl6Nb7	ASTM F1295																													
H <sub>1</sub>	Hardened steel < 55 HRC	2.4964	CoCr20W15Ni	Haynes 25	60   197	0.002 - 0.003 .00008 - .00012	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															
			CrCoMo28	ASTM F1537																													
H <sub>2</sub>	Hardened steel ≥ 55 HRC	1.2510	100MnCrMoW4	AISI O1	60   197	0.003 - 0.005 .00012 - .00020	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	0.028 .00110	240   787	0.030 .00118															
		1.2379	X153CrMoV12	AISI D2																													