Machining Data for MULTI-MASTER Groove Milling Heads

ISO	Material		Condition	Tensile Strength [Kspi]	Hardness HB	Material No.	MM-TS Speed V (SFM)	MM-TS Feed [Inch/Tooth] Fz (min)	MM-TS Feed [Inch/Tooth] Fz (max)	MM-GRIT K-TYPE Speed V (SFM)	MM-GRIT K-TYPE Feed [Inch/Tooth] Fz (min)	MM-GRIT K-TYPE Feed [Inch/Tooth] Fz (max)	Speed V (SFM)	Feed [Inch/Tooth] Fz (min)	Feed [Inch/Tooth] Fz (max)
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	61	125	1	360 - 460	.0031	.0079	360 - 520	.0020	.0059			
		>= 0.25 %C	Annealed	94	190	2	330 - 390	.0031	.0071	330 - 490	.0020	.0059			
		< 0.55 %C	Quenched and tempered	123	250	3	230 - 330	.0031	.0059	260 - 330	.0020	.0059			
		>= 0.55 %C	Annealed	109	220	4	230 - 330	.0031	.0059	260 - 330	.0020	.0059			
			Quenched and tempered	145	300	5	200 - 260	.0031	.0059	200 - 260	.0020	.0059			
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	87	200	6	330 - 390	.0031	.0059	360 - 490	.0020	.0059			
			Quenched and tempered	135	275	7	300 - 390	.0031	.0059	330 - 390	.0020	.0059			
				145	300	8	260 - 360	.0031	.0059	230 - 360	.0020	.0059			
				174	350	9	230 - 330	.0020	.0047	230 - 330	.0020	.0059			
	High alloyed steel, cast steel, and tool steel		Annealed	99	200	10	200 - 260	.0020	.0071	200 - 260	.0020	.0059			
			Quenched and tempered	160	325	11	180 - 230	.0031	.0059	180 - 230	.0020	.0059			
	Stainless steel		Ferritic/martensitic	99	200	12	330 - 430	.0024	.0047	330 - 430	.0012	.0059	330 - 430	.0012	.0039
			Martensitic	119	240	13	330 - 390	.0031	.0059	330 - 430	.0012	.0059	330 - 430	.0012	.0039
M	Stainless steel		Austenitic	87	180	14	260 - 390	.0020	.0039	300 - 390	.0012	.0047	300 - 390	.0012	.0039
K	Grey cast iron (GG)		Ferritic/pearlitic		180	15	330 - 460	.0039	.0079	-	-	-	-	-	-
			Pearlitic		260	16	260 - 330	.0039	.0059	-	-	-	-	-	-
	Cast iron nodular (GGG)		Ferritic		160	17	520 - 720	.0039	.0079	520 - 720	.0012	.0047	-	-	-
			Pearlitic		250	18	390 - 660	.0039	.0059	390 - 660	.0012	.0047	-	-	-
	Malleable cast iron		Ferritic		130	19	590 - 820	.0039	.0079	590 - 820	.0012	.0059	-	-	-
			Pearlitic		230	20							-	-	-
N	Aluminum-wrought alloy		Not cureable		60	21	2620 - 3940	.0039	.0079	-	-	-	2620 - 3940	.0020	.0059
			Cured		100	22	2620 - 3940	.0039	.0079	-	-	-	2620 - 3940	.0020	.0059
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23	-	-	-	-	-	-	1970 - 3280	.0020	.0059
			Cured		90	24	-	-	-	-	-	-	1640 - 3280	.0020	.0059
		>12% Si	High temperature		130	25	-	-	-	-	-	-	660 - 1310	.0020	.0059
	Copper alloys	>1% Pb	Free cutting		110	26	-	-	-	-	-	-	-	-	-
			Brass		90	27	-	-	-	-	-	-	-	-	-
			Electrolitic copper		100	28	-	-	-	-	-	-	-	-	-
	Non metallic		Duroplastics, fiber plastics			29	-	-	-	-	-	-	-	-	-
			Hard rubber			30	-	-	-	-	-	-	-	-	-
S	High temp. alloys	Fe based	Annealed		200	31	-	-	-	100 - 130	.0008	.0047	-	-	-
			Cured		280	32	80 - 110	.0020	.0047	80 - 130	.0008	.0047	-	-	-
		Ni or Co based	Annealed		250	33	80 - 110	.0020	.0047	80 - 130	-	-	-	.0004	.0047
			Cured		350	34	80 - 110	.0020	.0047	80 - 130	-	-	-	.0004	.0047
			Cast		320	35	130 - 200	.0020	.0047	80 - 130	-	-	-	.0004	.0047
	Titanium Ti alloys			58		36	130 - 200	.0020	.0047	130 - 200	-	-	-	.0020	.0047
			Alpha+beta alloys cured	152		37	130 - 200	.0020	.0039	130 - 200	-	-	-	.0020	.0039
H	Hardened steel		Hardened		55 HRC	38									
			Hardened		60 HRC	39									
	Chilled cast iron		Cast		400	40									
	Cast iron		Hardened		55 HRC	41									