MACHINING CONDITIONS

APKT 160408 PDTR LT 30

FM000022

Material Group		SAPPHIRE TOOLS	Material Example	Hardness	D.O.C		Feed		Vc		Advised D.O.C	Advised Feed	Advised Vc
					min[mm]	max[mm]	min[mm/t]	max[mm/t]	min[m/min]	max [m/min]	[mm]	[mm/t]	[m/min]
Steel	Non Alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.5	15	0.18	0.32	190	330	4	0.23	250
				190 HB	0.5	15	0.18	0.32	190	300	4	0.23	220
				250 HB	0.5	15	0.18	0.32	190	250	4	0.23	200
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	15	0.15	0.25	150	210	4	0.2	180
				280 HB	0.5	15	0.15	0.22	130	190	4	0.18	150
				180 HB	0.5	15	0.15	0.25	150	240	4	0.2	200
				350 HB	0.5	15	0.15	0.22	130	170	4	0.18	140
	High Alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	10.7	0.12	0.22	90	150	3	0.18	130
				280 HB	0.5	10.7	0.12	0.22	90	130	3	0.18	120
				320 HB	0.5	10.7	0.12	0.18	60	110	3	0.16	100
				350 HB	0.5	10.7	0.12	0.18	60	90	3	0.16	80
Stainless Steel	Austentic	4	304, 316, X5CrNi18-9	180 HB	0.5	15	0.15	0.25	190	250	4	0.2	220
				240 HB	0.5	15	0.12	0.22	160	210	4	0.2	190
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	10.7	0.12	0.18	70	130	3	0.16	100
				310 HB	0.5	10.7	0.12	0.18	70	120	3	0.16	90
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	15	0.15	0.25	150	210	4	0.2	190
				42 HRc	0.5	10.7	0.15	0.2	90	150	3	0.16	130
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N030B	150 HB	0.5	15	0.18	0.32	150	240	4	0.23	200
				200 HB	0.5	15	0.18	0.32	150	220	4	0.23	180
				250 HB	0.5	15	0.18	0.32	150	190	4	0.23	160
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	15	0.15	0.28	100	200	4	0.2	180
				200 HB	0.5	15	0.15	0.28	100	180	4	0.2	150
				250 HB	0.5	15	0.15	0.28	100	150	4	0.2	130
NiTi Alov	Fe, Ni & Co Based	9	Incoloy 800	240 HB	0.5	10.7	0.12	0.18	30	50	3	0.16	32
			Inconel 700	250 HB	0.5	10.7	0.12	0.18	30	50	3	0.16	30
			Stellite 21	350 HB	0.5	10.7	0.12	0.18	30	50	3	0.16	30
	Ti Based	10	T40	-	0.5	10.7	0.12	0.18	30	60	3	0.16	40
			TiAl6V4	-	0.5	10.7	0.12	0.2	40	70	3	0.18	55
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	G-X300CrMo15	55 HRc	0.5	1.6	0.1	0.14	30	60	1	0.12	40
			Ni-Hard 2	400 HB	0.5	4.3	0.1	0.18	40	80	1.5	0.14	50
			X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	5.4	0.1	0.18	40	80	2	0.14	60
				50 HRc	0.5	3.2	0.1	0.16	40	70	1.5	0.13	55
				55 HRc	0.5	1.6	0.1	0.14	40	60	1	0.12	50
Aluminium	Al (>8%Si)	12	AlSi12	130 HB	0.5	15	0.18	0.32	200	400	4	0.25	280