MACHINING CONDITIONS

DNUX 150608 R11 LT 1000

T0002793

Material Group		SAPPHIRE TOOLS	Material Example	Hardness	D.O.C		Feed		Amax	Vc		Advised D.O.C	Advised Feed	Advised Vc
					min[mm]	max[mm]	min[mm/t]	max [mm/t]	[mm^2]	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	5	0.18	0.5	1.71	180	330	3	0.36	240
				190 HB	0.5	5	0.18	0.5	1.71	180	280	3	0.33	220
				250 HB	0.5	5	0.18	0.45	1.43	180	250	3	0.31	200
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	4	0.18	0.45	1.14	120	250	3	0.3	180
				280 HB	0.5	4	0.16	0.4	1.14	120	210	3	0.29	150
				180 HB	0.5	5	0.18	0.45	1.14	120	280	3	0.3	200
				350 HB	0.5	3.5	0.16	0.4	0.95	120	180	2.7	0.29	130
	High Alloyed	3	X40CrM0V5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	4	0.16	0.4	1.14	70	190	2.5	0.29	140
				280 HB	0.5	4	0.16	0.4	1.14	70	150	2.5	0.29	120
				320 HB	0.5	3	0.16	0.35	0.76	70	130	2.5	0.27	100
				350 HB	0.5	3	0.16	0.35	0.76	70	110	2.5	0.27	90
Stainless Steel	Austentic	4	304, 316, X5CrNi18-9	180 HB	0.5	5	0.18	0.4	1.14	170	270	3	0.24	190
				240 HB	0.5	5	0.18	0.4	0.95	160	220	3	0.21	170
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.5	4	0.16	0.35	0.76	80	150	2.5	0.23	100
				310 HB	0.5	4	0.16	0.35	0.76	70	140	2.5	0.23	90
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.5	5	0.16	0.4	0.67	170	250	2.5	0.19	190
				42 HRc	0.5	4	0.16	0.4	0.67	120	190	2.2	0.19	130
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N030B	150 HB	0.5	5	0.13	0.6	1.9	170	250	3	0.33	200
				200 HB	0.5	5	0.13	0.6	1.71	160	230	3	0.33	180
				250 HB	0.5	5	0.13	0.55	1.71	150	210	3	0.33	160
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.5	5	0.13	0.5	1.43	120	250	3	0.29	180
				200 HB	0.5	5	0.13	0.5	1.24	120	230	3	0.29	160
				250 HB	0.5	5	0.13	0.5	1.14	120	190	3	0.29	140
NiTi Alloy	Fe, Ni & Co Based	9	Incoloy 800	240 HB	0.5	3	0.18	0.35	0.67	30	50	2	0.27	32
			Inconel 700	250 HB	0.5	3	0.18	0.35	0.67	30	50	2	0.27	30
			Stellite 21	350 HB	0.5	3	0.18	0.35	0.67	20	40	2	0.27	28
	Ti Based	10	T40	-	0.5	3	0.18	0.35	0.67	40	60	2	0.29	45
			TiAl6V4	-	0.5	3.5	0.18	0.4	0.76	50	70	2	0.31	55
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	G-X300CrMo15	55 HRc	0.5	1.5	0.1	0.2	0.29	30	50	1	0.14	40
			Ni-Hard 2	400 HB	0.5	2	0.1	0.25	0.38	40	60	1.5	0.17	50
			X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.5	2.5	0.1	0.3	0.57	50	100	2	0.24	80
				50 HRc	0.5	2	0.1	0.25	0.38	40	90	1.5	0.19	70
				55 HRc	0.5	1.5	0.1	0.2	0.29	40	80	1	0.17	60
Aluminium	Al (>8%Si)	12	AlSi12	130 HB	0.5	6	0.18	0.6	1.71	200	400	3	0.38	280