

The machinability rating is determined by measuring the weighed averages of the normal cutting speed, surface finish, and tool life for each material. Machinability rating less than 100% is more difficult to machine than B1112 and material with a value more than 100% is easier.

	Alloy	UNS	Machinability* (Surface ft/min)	Speed as a % of B1112	Hardness (Nominal, HRB)	Yield Strength (Min, ksi)
Nickel Alloys	RA330 <sup>®</sup>	N08330	35-45	24	86	30
	RA333 <sup>®</sup>	N06333	20-25	14	76-95	39
	RA 602 CA <sup>®</sup>	N06025	20	12	-	39
	600	N06600	25-35	18	85	35
	601	N06601	25-35	18	65	30
	AL-6XN <sup>®</sup>	N08367	65-75	42	90	45
	625	N06625	20	12	24 HRC	60
	617	N06617	20	12	87	49
	718 AMS 5662	N07718	20-40	18	37 HRC	70
	718 NACE / API	N07718	-		32-40 HRC	120-145
	Nickel 200/201	N02200/1	170-200	112	45-75	55
	Monel 400	N04400	60-70	39	60-80	15
	Alloy 20	N08020	65	39	94	35
	K500 Annealed	N05500	60	36		40
	K500 Aged	N05500	25	15		85
	825	N08825	25-35	18	135-165	35
	800H/AT	N08811	25-35	18	70	25
	X-750	N07750	20	12	65	123
	Waspaloy	N07001	20	12	38 HRC	120
	C-276	N10276	20	12	87	41
C-22	N06022	20	12	75-90	47	
B2 / B3	C10200	15-20	11	60-80	39	
G-30	N06030	15-20	10	90	45	
N155	R30155	15-20	11	92	57	
X	N06002	20	12	96	-	
Invar 36	K93600 K93603	30-45	25	80 max	35 (Typical)	

<b>Super Duplex</b>	ZERON® 100	S32760	30-65	29	32 HRC max	80
	ZERON® 100 FG (Fastener Grade)	S32760	-		32 HRC max	105
<b>Duplex</b>	2205	S31803, S32205	50-65	35	31 HRC max	65
<b>Lean Duplex</b>	LDX 2101®	S32101	78-106	56	31 HRC max	65
<b>Austenitic</b>	RA 253 MA®	S30815	45-60	32	91	45
<b>Stainless Steel</b>	310	S31008, S31009	70-75	44	78	30
	309	S30908	70-75	44	83	30
	321	S32100	75	45	82	30
	347	S34700	75	45	87	30
	446	S44600	75	45	85	-
	416 Annealed	S41600	170	103	27 HRC	49
	416 Hardened	S41600	80	48	28 HRC	
	304/304L	S30400, S30403	70-75	44	92	30
	316/316L	S31600, S31603	70-75	44	92	30
	Prodec® 303	S30300	100-105	62	91	30
	Prodec® 304/304L	S30400, S30403	90	55	92	30
	Prodec® 316/316L	S31600, S31603	100	61	92	30
	Nitronic 50 (XM-19)	S20910	20-35	17	96	55
	Nitronic 60	S21800	20-35	17	92	50
<b>Martensitic</b>	410 Annealed	S41000	75	45	80	45
<b>Stainless</b>	440C Annealed	S44004	50	30	29 HRC max	65
<b>Precipitation</b>	17-4 Annealed	S17400	75	45	34 HRC	-
<b>Hardenable</b>	17-4 H1150	S17400	80	48	33 HRC	125
<b>Stainless</b>	17-4 H1025	S17400	60	36	38 HRC	165
	17-4 HH1150	S17400	80	48	27 HRC	85
	15-5 Annealed	S15500	75	45	33 HRC	-
	13-8 Annealed	S13800	75	45	44 HRC	-
	A-286 (AMS 5737)	S66286	30-35	20	31 HRC	95
	A-286 (AMS 5732)	S66286	30-35	20	32 HRC	85

<b>Titanium Alloys</b>	6-4	R56400	30-40	21	-	120
	6-4 ELI	R56401	30-40	21	30-34 HRC	110
	6-4 STA	R56401	15-45	18	-	120-155
<b>Cobalt Alloys</b>	188	R30188	15	9	98	67
	Rene 41	N07041	12	7	33-40 HRC	115
	L605 (25)	R30605	15	9	97	45
<b>Carbon &amp; Low Alloy Steels</b>	B1112	AISI B1112	165	100	-	120
	12L14	AISI 12L14	325	197	84	60
	1215	AISI 1215	225	136	91	60
	1137	AISI 1137	135	82	88	55
	1018	AISI 1018	120	72	72	53
	1045	AISI 1045	75	45	84	45
	H11	T20811	75	45	56 HRC	
	4340	G43400	65	39	40-60 HRC	121

The machining speeds are for single point turning operations using high speed steel tools. This information is provided as a guide to relative machinability, higher speeds are used with carbide tooling.