



## GX / LX / FX / SX – cutting data

Material	Strength	Material no.	Material designation	Material no.	Material designation	
<b>A</b>	General construction steel	< 800 N/mm <sup>2</sup>	1.0037	St37-2	1.0570	St52-3
	Free cutting steel	< 800 N/mm <sup>2</sup>	1.0718	9SMnPb28	1.0727	45S20
	Cementation steel, non alloyed	< 800 N/mm <sup>2</sup>	1.0401	C15	1.0481	17Mn4
	Cementation steel, alloyed	< 1000 N/mm <sup>2</sup>	1.7331	16MnCr5 (EC80)	1.7015	13Cr3 (EC60)
	Tempering steel, non alloyed	< 850 N/mm <sup>2</sup>	1.0503	C45	1.1191	Ck45
	Tempering steel, non alloyed	< 1000 N/mm <sup>2</sup>	1.0601	C60	1.1221	Ck60
	Tempering steel, alloyed	< 800 N/mm <sup>2</sup>	1.5131	50MnSi4	1.7030	28Cr4
	Tempering steel, alloyed	< 1300 N/mm <sup>2</sup>	1.5755	31NiCr14	1.7033	34Cr4
	Steel casting	< 850 N/mm <sup>2</sup>	0.9650	G-X260Cr27	1.6750	GS-20NiCrMo3 7
	Nitriding steel	< 1000 N/mm <sup>2</sup>	1.8504	34CrAl6	1.8507	34AlMo5
	Nitriding steel	< 1200 N/mm <sup>2</sup>	1.8515	31CrMo12	1.8523	39CrMoV19 3
	Roller bearing steel	< 1200 N/mm <sup>2</sup>	1.3505	100Cr6 (W3)	1.3543	X192CrMo17
	Spring steel	< 1200 N/mm <sup>2</sup>	1.5026	55Si7	1.7176	55Cr3
	Rapid steel	< 1300 N/mm <sup>2</sup>	1.3344	S 6-5-3	1.3255	S 18-1-2-5
Cold working tool steel	< 1300 N/mm <sup>2</sup>	1.2312	40CrMnMoS8 6	1.2379	X155CrVMo12 1	
Hot working tool steel	< 1300 N/mm <sup>2</sup>	1.2343	X38CrMoV 5 1	1.2767	X45NiCrMo4	
<b>R</b>	Steel and sulphured cast stainless steel	< 850 N/mm <sup>2</sup>	1.4305	X8CrNiS18 9	1.4105	X4CrMoS18
	Stainless steel, ferritic	< 750 N/mm <sup>2</sup>	1.4510	X3CrTi17	1.4528	X105CrCoMo18 2
	Stainless steel, martensitic	< 900 N/mm <sup>2</sup>	1.4034	X46Cr13	1.4116	X50CrMoV15
	Stainless steel, ferritic/martensitic	< 1100 N/mm <sup>2</sup>	1.4313	X3CrNi13-4	1.4028	X30Cr13
	Stainless steel, austenitic/ferritic	< 850 N/mm <sup>2</sup>	1.4460	X8CrNiMo27 5	1.4821	X20CrNiSi25 4
	Stainless steel, austenitic	< 750 N/mm <sup>2</sup>	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17 12 2
	Heat resistant	< 1100 N/mm <sup>2</sup>	1.4747	X80CrNiSi20	1.4876	X10NiCrAlTi32-21
<b>F</b>	Grey cast iron with lamellar graphite	100-350 N/mm <sup>2</sup>	0.6010	GG10	0.6025	GG25
	Grey cast iron with lamellar graphite	300-1000 N/mm <sup>2</sup>	0.6030	GG30	0.6045	GG45
	Spheroidal cast iron	300-500 N/mm <sup>2</sup>	0.7040	GGG40	0.7050	GGG50
	Spheroidal cast iron	550-800 N/mm <sup>2</sup>	0.7060	GGG60	0.7080	GGG80
	White malleable cast iron	350-450 N/mm <sup>2</sup>	0.8035	GTW35	0.8045	GTW45
	White malleable cast iron	500-650 N/mm <sup>2</sup>	0.8055	GTW55	0.8065	GTW65
	Black malleable cast iron	350-450 N/mm <sup>2</sup>	0.8135	GTS35	0.8145	GTS45
	Black malleable cast iron	500-700 N/mm <sup>2</sup>	0.8155	GTS55	0.8170	GTS70
<b>N</b>	Aluminium (non alloyed, low alloyed)	< 350 N/mm <sup>2</sup>	3.0255	Al99,5	3.3308	Al99,9Mg0,5
	Aluminium alloys < 0.5% Si	< 500 N/mm <sup>2</sup>	3.0515	AlMn1	3.13155	AlCuMg2
	Aluminium alloys 0.5-10% Si	< 400 N/mm <sup>2</sup>	3.2152	GD-ALSi6Cu4	3.2373	GD-ALSi9Mg
	Aluminium alloys 10-15% Si	< 400 N/mm <sup>2</sup>	3.2381	G-ALSi10Mg	3.5562	G-MgAl6
	Aluminium alloys > 15% Si	< 400 N/mm <sup>2</sup>		G-ALSi17Cu4		G-ALSi25CuNiMg
	Copper (non alloyed, low alloyed)	< 350 N/mm <sup>2</sup>	2.0060	E-Cu57	2.0090	SF-Cu
	Copper wrought alloys	< 700 N/mm <sup>2</sup>	2.0240	CuZn15	2.0265	CuZn30
	Special copper alloys	< 200 HB	2.0916	CuAl5	2.1525	CuSi3Mn
	Special copper alloys	< 300 HB	2.0978	CuAl1Ni6Fe5		
	Special copper alloys	> 300 HB	2.1247	CuBe2F125		
	Short-chipping brass, bronze, red bronze	< 600 N/mm <sup>2</sup>	2.0360	CuZn40 (Ms60)	2.0380	CuZn39Pb2 (Ms58)
	Long-chipping brass	< 600 N/mm <sup>2</sup>	2.0335	CuZn36 (Ms63)	2.1293	CuCrZr
	Thermoplastics			Delrin, Hostalen		Makrolon, Novodur
	Thermosetting plastics			Ferrozell, Bakelite		Pertinax
Fibre reinforced plastics			GFK (glass fibre reinforced)		CFK (carbon fibre reinforced)	
Magnesium and magnesium alloys	< 850 N/mm <sup>2</sup>	3.5200	M2, MgMn2	3.5612	MgAl6Zn1	
Graphite			C8000, R8500X		R8650	
Tungsten and tungsten alloys			W-NiFe (Densimet W)		W-Cu80/20	
Molybdenum and molybdenum alloys			Mo, Mo-50Re		TZC, TZM	
<b>S</b>	Pure nickel		1.3911	RNi24	1.3927	RNi8
	Nickel alloys		1.3912	Ni36 (Invar)	1.3924	Ni54
	Nickel alloys	< 850 N/mm <sup>2</sup>	2.4360	S-NiCu 30 Fe		NiCu 30 Fe
	Nickel-chromium alloys		2.4886	Sg-NiMo16Cr16W	2.4610	NiMo16Cr16Ti
	Nickel and cobalt alloys	< 1300 N/mm <sup>2</sup>	2.4632	NiCr20Co18Ti	2.4631	NiCr20TiAl
	Heat resistant alloys	< 1300 N/mm <sup>2</sup>	2.4654	NiCr20Co13Mo4Ti3Al	2.4654	NiCr19Co14Mo4Ti
	Nickel, cobalt, chromium alloys	< 1400 N/mm <sup>2</sup>		Hardox 400	1.4939	X12CrNiMo12
	Nickel and cobalt alloys	< 1300 N/mm <sup>2</sup>	2.4806	SG-NiCr20Nb, Inconel 82	2.4851	NiCr23Fe, Inconel 601
	Pure titanium	< 900 N/mm <sup>2</sup>	3.7025	Ti99,8	3.7034	Ti99,7
	Titanium alloys	< 700 N/mm <sup>2</sup>	3.7114	TiAl5Sn2	3.7174	TiAl6V6Sn2
Titanium alloys	< 1200 N/mm <sup>2</sup>	3.7164	TiAl5V4	3.7144	TiAl6SnZr4Mo2	
<b>H</b>	Tempered steel	< 45 HRc				
		46-55 HRc				
		56-60 HRc				
		61-65 HRc				
		65-70 HRc				

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		Vc HCF 1325 (m/min.)	Vc CCN 1340 (m/min.)
<b>A</b>		130-240	80-180
		150-280	120-250
		130-240	60-150
		140-220	120-200
		150-280	80-180
		130-180	60-150
		150-210	80-180
		100-160	50-120
		120-170	80-150
		120-170	50-120
		100-150	50-120
		100-150	50-120
		60-100	
		60-100	
		60-100	50-120
<b>R</b>		140-220	50-200
		140-220	50-180
		120-200	50-180
		60-100	50-80
		80-130	50-100
		80-130	50-100
<b>F</b>		60-100	50-80
		120-200	
		100-160	
		130-200	
		100-160	
		120-230	
<b>N</b>		90-180	
		120-230	
		90-180	
		100-500	
		100-500	
		100-500	
		100-300	
		100-200	
		100-300	
		100-300	
		100-300	
		100-300	
		100-300	
		100-300	
		100-500	
<b>S</b>		100-370	
		80-180	
		60-150	
		25-45	
		20-40	20-35
		15-25	20-40
		15-25	20-40
		10-20	15-25
		10-20	15-25
<b>H</b>		10-20	
		10-20	

