





SYSTEM 305

 <p><b>Geometry .BA</b> ground round chip breaker</p>	<p><b>Feed rate f (IPR)</b></p> <p>↓ 0.0012 - 0.0059</p> <p>↔ 0.0008 - 0.0047 ap = 0.0039 - 0.0197 in</p>	 <p><b>Geometry .AA</b> ground flat chip breaker</p>	<p><b>Feed rate f (IPR)</b></p> <p>↓ 0.0012 - 0.0059</p> <p>↔ 0.0008 - 0.0047 ap = 0.0039 - 0.0197 in</p>	<p><b>General formulas</b></p> <p>Cutting speed (SFM) RPM x Dia. / 3.82 = SFM</p> <p>Revolutions per minute (RPM) SFM x 3.82 / Dia. = RPM</p> <p>Feed rate (IPM) IPR x RPM = IPM</p>
	<p>↓ = radial feed direction      ↔ = axial feed direction</p>			

ISO	Material	Material examples/ material number	Tensile strength (N/mm <sup>2</sup> )	Brinell hardness (HB)	Cutting speed (surface feet / min)		
					FIREX/nanoFIREX <b>F</b>	TiCN <b>C</b>	
<b>P</b>	Carbon steel	C <= 0.15 %	11SMn30+C / 1.0715 C15 / 1.0401	500 600	150 180	490-720	425-655
		C ≥ 0.15-0.45 %	S235JR (ST37-2) / 1.0037 Ck22 / 1.1151	400 600	120 180		
		C > 0.45 %	S355JO (St52-3) / 1.0553 C60 / 1.0601	600 900	180 270		
	Low-alloyed steel (alloy content ≤5%)	annealed	16MnCr5 / 1.7131 18CrNi8 / 1.5920	650 650	200 200	395-560	295-490
		heat-treatable	25CrMoV4 / 1.7218 42CrMo4V / 1.7225	900 1100	270 320		
	High-alloyed steel (alloy content >5%)	annealed	X37CrMoV5-1 / 1.2343 X153CrMoV12 / 1.2379	750 850	220 250	425-590	-
		heat-treatable	55NiCrMoV7 / 1.2714	1200	350		
	Cast steel	un-alloyed, low-alloyed	GS52 / 1.0552	600	180	425-590	-
high-alloyed		GX40CrNiSi22-10 / 1.4826	750	220	330-460	-	
<b>M</b>	Stainless steel	martensitic, ferritic, tempered	X14CrMoS17 / 1.4104 X4CrNiMo16-5-1 / 1.4418	800 1000	240 300	295-525	230-460
		austenitic, Ni > 8%	X5CrNi18-10 / 1.4301 X2CrNiMo17-12-2 / 1.4404	650	200		
		austenitic, ferritic (Duplex)	X2CrNiMoCuN25-6-3 / 1.4507 X2CrNiMoN25-7-4 / 1.4410	850	250	230-330	165-395
		Grey cast iron	low tensile strength	EN-GJL-200 (GG20) / 0.6020		180	295-490
<b>K</b>	Spheroidal graphite iron	high tensile strength	EN-GJL-400 (GG40) / 0.6040		260	230-360	-
		low tensile strength	EN-GJS-400-15 (GGG40) / 0.7040		160	295-490	230-330
	Malleable cast iron	high tensile strength	EN-GJS-700-2 (GGG70) / 0.7070		260	230-360	165-295
		low tensile strength	EN-GJMW-350-4 (GTW35) / 0.8035		125	230-460	165-330
<b>N</b>	Al-alloys	low tensile strength	EN-GJMB-550-4 (GTS55) / 0.8155		250	165-295	165-230
		high tensile strength	EN-AW-2017 (AlCuMg1) / 3.1325		60	-	1640-2625
	Al-cast-alloys	heat-treatable <12% Si	EN-AW-6082 (AlMgSi1) / 3.2315		100	-	655-1310
		non-heat-treatable <12% Si	AlSi9Cu3 / 3.2163		80	-	1640-2625
	Copper alloys	heat-treatable <12% Si	AlSi10Mg / 3.2383		100	-	655-1310
		brass, lead alloy	CuZn39Pb2 (MS58) / 2.0380	400	120	-	435-820
<b>S</b>	Heat resistant alloys, super alloys	bronze	CuSn6 / 2.1020	500	150	-	330-590
		NiFe-base, annealed	NiCr15Fe (Alloy600) / 2.4816	700		-	100-230
		NiFe-base, hardened		950		-	400-165
		NiCo-base, annealed	NiMo16Cr15W (Alloy C-276) / 2.4819	800		-	100-195
		NiCo-base, cast		1100		-	100-130
	Titanium-alloys	NiCo-base, hardened	NiCr19NbMo (Alloy718) / 2.4668	1200		-	65-100
		annealed	Ti6Al4V / 3.7164	900		-	100-165
		hardened		1200		-	65-100
<b>H</b>	Hardened steels	Heat-treatable steel			> 52 HRC	66-131	-
		Heat-treatable/case hardened steel			> 59 HRC	33-98	-
		Heat-treatable/case hardened steel			> 62 HRC	(CBN)	-

The specified values must be adapted to the machine and machining conditions.