

Material Group	Group No	Material Examples*	Brinell hardness	d.o.c [mm]		feed [mm/rev]		A max [mm <sup>2</sup> ]	V <sub>c</sub> [m/min]		Optimal cutting conditions				
				min	max	min	max		min	max	d.o.c	feed			
Low Carbon Steel	1	Ck15, Ck45 1020, 1045	150	0.50	5.0	0.21	0.45	1.8	180	350	3.0	0.35			
			180		5.0		0.45			1.8			300		
			210		4.0		0.40			1.5			250		
Alloy Steel	2	42 CrMo 4 St 50-2 Ck60 1060 4140	180	0.50	5.0	0.21	0.40	1.2	120	280	3.0	0.30			
			230		4.0		0.40			1.2			250		
			280		4.0	0.35	1.2	210							
			320		3.5	0.35	1.0	180							
High Alloy Steel	3	X40 CrMoV 5 1 H 13 40 NiCrMo 6 4340 S 2-10-1-8 HSS M42	220	0.50	4.0	0.18	0.40	1.2	70	190	2.5	0.28			
			280		4.0		0.40			1.2			150		
			320		3.0		0.35			0.8			130		
			350		3.0		0.35			0.8			100		
			400	2.5	0.30	0.6	50	90		2.0			0.25		
			480	2.0	0.25	0.4	40	80		1.7			0.20		
			550	1.7	0.20	0.3	30	70		1.0			0.18		
Austenitic Stainless Steel	4	X5 CrNi 18 9 304	210 to 250	0.50	5.0	0.20	0.40	1.0	170	270	3.0	0.35			
			230 to 270		4.0	0.18	0.35		0.8	160			210	3.0	0.32
			-----		4.0	0.18	0.35		0.6	70			150	2.5	0.28
Ferritic Stainless Steel	7	X8 Cr 7 430	Annealed	0.50	4.0	0.22	0.35	0.9	170	250	3.0	0.32			
Martensitic Stainless Steel	8	X15 Cr 13 410	Annealed Treated	0.50	4.0	0.22	0.35	0.9	170 120	250 190	3.0	0.32			
Grey Cast Iron	9	GG 20 GG 25 GG 30	140 to 230	0.50	5.0	0.15	0.60	2.0	170	250	3.0	0.35			
			1.8					230							
			1.8					210							
Nodular Cast Iron	10	GGG 40 GGG 50 GGG 70 G-X260NiCr42	210	0.50	5.0	0.15	0.50	1.5	120	230	3.0	0.30			
			260					1.3		190					
			310					1.2		150					
			450					0.4		30			50	1.0	0.18
Nickel Based Alloys	11	Inconel 625 Inconel 718 Hastelloy C	-----	0.50	3.0	0.20	0.35	0.7	25	35	2.0	0.28			
			0.7					28		40					
			0.8					40		65					
Titanium Based Alloys	12	TiAl 6 V4 T40	-----	0.50	3.0	0.18	0.35	35	60	2.0	0.30				
			0.30				0.6		28			40	2.0	0.28	

Insert designation    Super Finishing    Finishing    Semi Finishing    Roughing    Interrupted Cut

TNMP 160408 NN



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