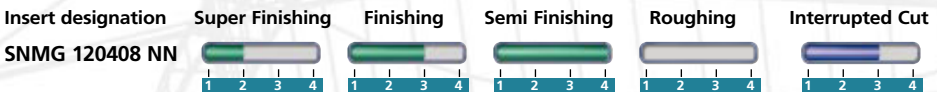


SNMG 120408 NN

Machining Conditions

Material Group	Group No	Material Examples*	Brinell hardness HB	d.o.c [mm]		feed [mm/rev]		A max [mm ²]	V _c [m/min]		Optimal cutting conditions		
				min	max	min	max		min	max	d.o.c	feed	
Low Carbon Steel	1	Ck15 9SMnPb28	150	0.50	5.0	0.21	0.54	1.8	180	330	1.5 to 3	0.35	
			180		5.0		0.54			1.8			280
			210		4.0		0.48			1.5			250
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.50	5.0	0.21	0.48	1.5	120	280	1.5 to 3	0.30	
			230		4.0		0.48			1.2			250
			280		4.0	0.18	0.42	1.2		210			
			320		3.5	0.42	1.0	180					
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.50	4.0	0.18	0.48	1.2	70	190	1.5 to 3	0.28	
			280		4.0		0.48			1.2			150
			320		3.0		0.42			0.8			130
			350		3.0		0.42			0.8			100
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.50	5.0	0.20	0.40	1.0	170	270	1.5 to 3	0.35	
	5	316 / 316 L	230 to 270		4.0	0.18	0.35		0.8	160	210	1.5 to 3	0.32
	6	316 Ti 630 (F16PH)	-----		4.0	0.18	0.35		0.6	70	150	1.5 to 3	0.28
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.50	4.0	0.22	0.35	0.9	170	250	1.5 to 3	0.32	
Martensitic Stainless Steel	8	410 / 420	Annealed Treated	0.50	4.0	0.22	0.35	0.9	170 120	250 190	1.5 to 3	0.32	
Grey Cast Iron	9	EN - GJL 200 EN - GJL 250 EN - GJL 300	140 to 230	0.50	5.0	0.15	0.72	2.0 1.8 1.8	170	250 230 210	1.5 to 3	0.35	
Nodular Cast Iron	10	EN - GJS 400 EN - GJS 600 EN - GJS 800	210 260 310	0.50	5.0	0.15	0.60	1.5 1.3 1.2	120	230 190 150	1.5 to 3	0.30	
Nickel Based Alloys	11	Inconel 625 Inconel 718 Hastello y C	-----	0.50	3.0	0.20	0.42	0.7 0.7 0.8	25 28 40	35 40 65	1.5 to 3	0.28	
Titanium Based Alloys	12	TiAl 6 V4	-----	0.50	3.0	0.18	0.42	0.8	35	60	1.5 to 3	0.30	
		T40	-----				0.36		0.6	28	40	1.5 to 3	0.28

*For all material types and standards, see pages 240 to 245.



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Machining Conditions

Material Group	Group No	Material Examples*	Brinell hardness HB	d.o.c [mm]		feed [mm/rev]		A max [mm ²]	V _c [m/min]		Optimal cutting conditions					
				min	max	min	max		min	max	d.o.c	feed				
Low Carbon Steel	1	Ck 15 9SMnPb28	150	0.50	5.0	0.27	0.80	3.1	180	330	2 to 5	0.50				
			180		5.0		0.80	3.1		280						
			210		5.0		0.72	2.6		250						
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.50	5.0	0.27	0.72	2.6	120	280	2 to 5	0.45				
			230		5.0		0.72	2.0		250						
			280		5.0	0.63	2.0	210								
			320		4.0	0.63	1.7	180								
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.50	5.0	0.23	0.72	2.0	70	190	2 to 5	0.40				
			280		5.0		0.72	2.0		150						
			320		4.0		0.63	1.4		130						
			350		4.0		0.63	1.4		100						
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.50	5.0	0.26	0.52	1.7	170	270	2 to 5	0.45				
			230 to 270		5.0		0.23	0.46		1.4			160	210	2 to 5	0.38
			316 Ti 630 (F16PH)		-----		5.0	0.23		0.46			1.0	70	150	2 to 5
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.50	5.0	0.29	0.46	1.5	170	250	2 to 5	0.35				
Martensitic Stainless Steel	8	410 / 420	Annealed Treated	0.50	5.0	0.29	0.46	1.5	170 120	250 190	2 to 5	0.35				
Grey Cast Iron	9	EN - GJL 200 EN - GJL 250 EN - GJL 300	140 to 230	0.50	5.0	0.20	1.10	3.0	170	250	2 to 5	0.60				
			2.7					230								
			2.7					210								
Nodular Cast Iron	10	EN - GJS 400 EN - GJS 600 EN - GJS 800	210	0.50	5.0	0.20	0.85	2.3	120	230	2 to 5	0.50				
			260					2.0		190						
			310					1.8		150						
Nickel Based Alloys	11	Inconel 625 Inconel 718 Hastello y C	-----	0.50	5.0	0.26	0.46	1.4	25	35	2 to 5	0.38				
			1.4					28		40						
			1.6					40		65						
Titanium Based Alloys	12	TiAl 6 V4 T40	-----	0.50	5.0	0.23	0.46	35	60	2 to 5	0.38					
			0.39				1.2		28			40	2 to 5	0.32		

*For all material types and standards, see pages 240 to 245.

