

DNMG 110404 NN

Machining Conditions

Material Group	Group N	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	0.20	3.0	0.11	0.23	0.40	180	330	1 to 3	0.18
			180		2.5		0.23	0.36		280		
			210		2.0		0.20	0.30		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.20	3.0	0.11	0.20	0.40	120	280	1 to 2.5	0.15
			230		2.5		0.20	0.30		250		
			280		2.5	0.09	0.18	0.24		210		
			320		2.0		0.18	0.20		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.20	2.5	0.09	0.20	0.30	70	190	0.5 to 1.5	0.13
			280		2.5		0.20	0.24		150		
			320		2.0		0.18	0.20		130		
			350		2.0		0.18	0.20		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.25	2.5	0.10	0.20	0.25	170	270	1 to 2.5	0.18
	5	316 / 316 L	230 to 270		2.0	0.09	0.18	0.20	160	210	0.5 to 1.5	0.15
	6	316 Ti 630 (F16PH)	-----		2.0	0.09	0.18	0.18	70	150	0.5 to 1.5	0.12
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.25	2.5	0.11	0.18	0.23	170	250	0.5 to 1.5	0.15
Martensitic Stainless Steel	8	410 / 420	Annealed Treated	0.25	2.5	0.11	0.18	0.23	170 120	250 190	0.5 to 1.5	0.15
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.20	3.0	0.08	0.30	0.50	170	250	1 to 3	0.18
		EN - GJL 250						0.45		230		
		EN - GJL 300						0.42		210		
Nodular Cast Iron	10	EN - GJS 400	210	0.20	3.0	0.08	0.25	0.30	120	230	0.5 to 2	0.15
		EN - GJS 600	260					0.25		190		
		EN - GJS 800	310					0.23		150		
Nickel Based Alloys	11	Inconel 625	-----	0.25	2.0	0.10	0.18	0.18	25	35	0.5 to 1.5	0.13
		Inconel 718						0.18	28	40		
		Hastello y C						0.20	40	65		
Titanium Based Alloys	12	TiAl 6 V4	-----	0.25	2.0	0.09	0.18	0.20	35	60	0.5 to 1.5	0.15
		T40					0.15	0.15	28	40	0.5 to 1.5	0.12

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

Insert designation	Super Finishing	Finishing	Semi Finishing	Roughing	Interrupted Cut
DNMG 110404 NN					
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

DNMG 110408 NN

Machining Conditions

Material Group	Group N	Material Examples*	Brinell hardness HB	d.o.c [mm]		feed [mm/rev]		A max [mm²]	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	3.5	0.21	0.45	0.90	180	330	1 to 3	0.28
			180		3.5		0.45	0.90		280		
			210		3.0		0.40	0.80		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.50	3.5	0.20	0.40	0.80	120	280	1 to 3	0.25
			230		3.0		0.40	0.80		250		
			280		3.0	0.20	0.35	0.70		210		
			320		2.5		0.35	0.70		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.50	3.0	0.18	0.40	0.80	70	190	0.5 to 2.5	0.23
			280		3.0		0.40	0.80		150		
			320		2.5		0.35	0.70		130		
			350		2.5		0.35	0.70		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.50	3.0	0.20	0.40	0.80	170	270	0.5 to 2.5	0.28
	5	316 / 316 L	230 to 270		3.0	0.18	0.35	0.70	160	210	0.5 to 2.5	0.25
	6	316 Ti 630 (F16PH)	-----		2.5	0.18	0.35	0.70	70	150	0.5 to 2.5	0.23
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.50	3.0	0.20	0.35	0.80	170	250	0.5 to 2.5	0.28
Martensitic Stainless Steel	8	410 / 420	Annealed Treated	0.50	3.0	0.20	0.35	0.80	170	250	0.5 to 2.5	0.28
									120	190		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.50	3.0	0.15	0.50	0.90	170	250	0.5 to 3	0.30
		EN - GJL 250						0.80		230		
		EN - GJL 300						0.80		210		
Nodular Cast Iron	10	EN - GJS 400	210	0.50	3.0	0.15	0.40	0.80	120	230	0.5 to 2.5	0.28
		EN - GJS 600	260					0.70		190		
		EN - GJS 800	310					0.70		150		
Nickel Based Alloys	11	Inconel 625	-----	0.50	2.5	0.20	0.35	0.70	25	35	0.5 to 2.8	0.23
		Inconel 718						0.70	28	40		
		Hastello y C						0.70	40	65		
Titanium Based Alloys	12	TiAl 6 V4	-----	0.50	2.5	0.18	0.35	0.70	35	60	0.5 to 2.5	0.23
		T40					0.32	0.70	28	40	0.5 to 2.5	0.23

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

Insert designation	Super Finishing	Finishing	Semi Finishing	Roughing	Interrupted Cut
DNMG 110408 NN					

DNMG 150404 NN

Machining Conditions

Material Group	Group N	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	0.20	3.0	0.11	0.23	0.40	180	330	1 to 3	0.18
			180		2.5		0.23	0.36		280		
			210		2.0		0.20	0.30		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.20	3.0	0.11	0.20	0.40	120	280	1 to 2.5	0.15
			230		2.5		0.20	0.30		250		
			280		2.5	0.09	0.18	0.24		210		
			320		2.0		0.18	0.20		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.20	2.5	0.09	0.20	0.30	70	190	0.5 to 1.5	0.13
			280		2.5		0.20	0.24		150		
			320		2.0		0.18	0.20		130		
			350		2.0		0.18	0.20		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.25	2.5	0.10	0.20	0.25	170	270	1 to 2.5	0.18
	5	316 / 316 L	230 to 270		2.0	0.09	0.18	0.20	160	210	0.5 to 1.5	0.15
	6	316 Ti 630 (F16PH)	-----		2.0	0.09	0.18	0.18	70	150	0.5 to 1.5	0.12
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.25	2.5	0.11	0.18	0.23	170	250	0.5 to 1.5	0.15
Martensitic Stainless Steel	8	410 / 420	Annealed Treated	0.25	2.5	0.11	0.18	0.23	170	250	0.5 to 1.5	0.15
									120	190		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.20	3.0	0.08	0.30	0.50	170	250	1 to 3	0.18
		EN - GJL 250						0.45		230		
		EN - GJL 300						0.42		210		
Nodular Cast Iron	10	EN - GJS 400	210	0.20	3.0	0.08	0.25	0.30	120	230	0.5 to 2	0.15
		EN - GJS 600	260					0.25		190		
		EN - GJS 800	310					0.23		150		
Nickel Based Alloys	11	Inconel 625	-----	0.25	2.0	0.10	0.18	0.18	25	35	0.5 to 1.5	0.13
		Inconel 718						0.18	28	40		
		Hastello y C						0.20	40	65		
Titanium Based Alloys	12	TiAl 6 V4	-----	0.25	2.0	0.09	0.18	0.20	35	60	0.5 to 1.5	0.15
		T40					0.15	0.15	28	40	0.5 to 1.5	0.12

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

Insert designation	Super Finishing	Finishing	Semi Finishing	Roughing	Interrupted Cut
DNMG 150404 NN					

DNMG 150408 NN

Machining Conditions

Material Group	Group N	Material Examples*	Brinell hardness HB	d.o.c [mm]		feed [mm/rev]		A max [mm²]	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	0.21	0.45	1.3	180	330	1.5 to 3	0.30
			180		4.0		0.45	1.2		280		
			210		4.0		0.40	1.2		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.50	5.0	0.21	0.40	1.2	120	280	1.5 to 3	0.30
			230		4.0		0.40	1.0		250		
			280		4.0	0.18	0.35	0.8		210		
			320		3.0		0.35	0.8		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.50	4.0	0.18	0.40	1.0	70	190	1.5 to 3	0.28
			280		4.0		0.40	0.8		150		
			320		3.0		0.35	0.7		130		
			350		3.0		0.35	0.7		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.50	4.0	0.20	0.40	0.8	170	270	1.5 to 3	0.28
	5	316 / 316 L	230 to 270		3.0	0.18	0.35	0.7	160	210	1.5 to 3	0.25
	6	316 Ti 630 (F16PH)	-----		3.0	0.18	0.35	0.5	70	150	1.5 to 3	0.23
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.50	4.0	0.22	0.35	0.8	170	250	1.5 to 3	0.28
Martensitic Stainless Steel	8	410 / 420	Annealed	0.50	4.0	0.22	0.35	0.8	170	250	1.5 to 3	0.28
			Treated						120	190		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.50	5.0	0.15	0.60	1.7	170	250	1.5 to 3	0.35
		EN - GJL 250						1.5		230		
		EN - GJL 300						1.5		210		
Nodular Cast Iron	10	EN - GJS 400	210	0.50	5.0	0.15	0.50	1.3	120	230	1.5 to 3	0.30
		EN - GJS 600	260					1.1		190		
		EN - GJS 800	310					1.0		150		
Nickel Based Alloys	11	Inconel 625	-----	0.50	3.0	0.20	0.35	0.6	25	35	1.5 to 3	0.28
		Inconel 718						0.6	28	40		
		Hastello y C						0.7	40	65		
Titanium Based Alloys	12	TiAl 6 V4	-----	0.50	3.0	0.18	0.35	0.7	35	60	1.5 to 3	0.30
		T40					0.30	0.5	28	40	1.5 to 3	0.28

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

Insert designation	Super Finishing	Finishing	Semi Finishing	Roughing	Interrupted Cut
DNMG 150408 NN					

Material Group	Group No	Material Examples*	Brinell hardness HB	d.o.c [mm]		feed [mm/rev]		A max [mm²]	V _c [m/min]		Optimal cutting conditions	
				min	max	min	max		min	max	d.o.c	feed
Low Carbon Steel	1	Ck 15 9SMnPb28	150 180 210	0.50	7.0 7.0 7.0	0.32	0.60 0.60 0.54	2.6 2.6 2.4	180	330 280 250	2 to 7	0.50
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14,5	180 230 280 320		7.0 6.0 5.0 5.0	0.27 0.23	0.54 0.54 0.48 0.48	2.6 2.4 2.0 1.8		280 250 210 180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220 280 320 350	0.50	7.0 6.0 5.0 5.0	0.23	0.54 0.54 0.48 0.48	2.2 2.0 1.8 1.6	70	190 150 130 100	2 to 5	0.40
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.50	7.0	0.30	0.52	1.8	170	270	2 to 5	0.40
	5	316 / 316 L	230 to 270		6.0	0.25	0.48	1.4	160	210	2 to 5	0.36
	6	316 Ti 630 (F16PH)	-----		5.0	0.23	0.46	1.0	70	150	2 to 5	0.32
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.50	7.0	0.29	0.46	1.6	170	250	2 to 5	0.35
Martensitic Stainless Steel	8	410 / 420	Annealed Treated	0.50	7.0	0.29	0.46	1.6	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	7.0	0.26	0.90	3.0 2.7 2.7	170	250 230 210	2 to 7	0.60
Nodular Cast Iron	10	EN - GJS 400 EN - GJS 600 EN - GJS 800	210 260 310	0.50	7.0	0.24	0.70	2.3 2.0 1.8	120	230 190 150		
Nickel Based Alloys	11	Inconel 625 Inconel 718 Hastello y C	-----	0.50	5.0	0.26	0.46	1.4 1.4 1.6	25 28 40	35 40 65	2 to 5	0.38
Titanium Based Alloys	12	TiAl 6 V4 T40	-----	0.50	5.0	0.23	0.46 0.39	1.6 1.2	35 28	60 40	2 to 5 2 to 5	0.38 0.32

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

