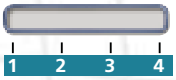
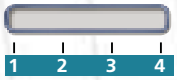
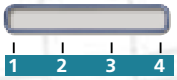
CCMT 060204 NN

Machining Conditions

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	0.10	2.0	0.08	0.20	0.36	180	350	0.2 to 1	0.18
			180		2.0		0.18	0.29		280		
			210		2.0		0.16	0.29		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.10	2.0	0.08	0.18	0.29	120	280	0.2 to 1	0.15
			230		2.0		0.18	0.24		250		
			280		1.5	0.09	0.16	0.24		210		
			320		1.5		0.14	0.19		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.10	2.0	0.08	0.16	0.24	70	190	0.2 to 1	0.12
			280		1.5		0.14	0.24		150		
			320		1.5		0.13	0.17		130		
			350		1.5		0.13	0.14		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.10	2.0	0.08	0.16	0.22	170	270	0.2 to 1	0.15
	5	316 / 316 L	230 to 270		1.8	0.08	0.14	0.17	120	210	0.2 to 1	0.12
	6	316 Ti 630 (F16PH)	---------		1.5	0.08	0.13	0.14	70	120	0.2 to 1	0.12
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.10	2.0	0.08	0.16	0.20	170	250	0.2 to 1	0.15
Martensitic Stainless Steel	8	410 / 420	Annealed	0.10	2.0	0.08	0.16	0.20	170	250	0.2 to 1	0.15
			Treated						120	210		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.10	2.0	0.06	0.18	0.38	170	280	0.2 to 1	0.18
		EN - GJL 250						0.36		250		
		EN - GJL 300						0.36		230		
Nodular Cast Iron	10	EN - GJS 400	210	0.10	2.0	0.06	0.16	0.29	120	230	0.2 to 1	0.15
		EN - GJS 600	260					0.24		190		
		EN - GJS 800	310					0.24		150		
Nickel Based Alloys	11	Inconel 625	--------	0.10	1.5	0.08	0.14	0.14	25	35	0.2 to 1	0.12
		Inconel 718						0.14	28	40		
		Hastello y C						0.17	40	65		
Titanium Based Alloys	12	TiAl 6 V4	--------	0.10	1.5	0.08	0.14	0.17	35	60	0.2 to 1	0.14
		T40					0.13	0.14	28	40	0.2 to 1	0.12

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

Insert designation	Super Finishing	Finishing	Semi Finishing	Roughing	Interrupted Cut
CCMT 060204 NN					

CCMT 09T304 NN

Machining Conditions

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	0.20	3.0	0.11	0.23	0.60	180	350	0.5 to 2	0.18
			180		2.5		0.20	0.48		280		
			210		2.5		0.18	0.48		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.20	2.5	0.11	0.20	0.48	120	280	0.5 to 1.5	0.15
			230		2.5		0.20	0.40		250		
			280		2.0	0.09	0.18	0.40		210		
			320		2.0		0.16	0.32		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.20	2.5	0.09	0.18	0.40	70	190	0.5 to 1.5	0.12
			280		2.5		0.16	0.40		150		
			320		2.0		0.14	0.28		130		
			350		2.0		0.14	0.24		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.20	2.5	0.10	0.18	0.32	170	270	0.5 to 2	0.15
	5	316 / 316 L	230 to 270		2.0	0.09	0.16	0.24	120	210	0.5 to 1.5	0.12
	6	316 Ti 630 (F16PH)	---------		2.0	0.09	0.14	0.20	70	120	0.5 to 1.5	0.12
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.20	2.0	0.11	0.18	0.28	170	250	0.5 to 1.5	0.15
Martensitic Stainless Steel	8	410 / 420	Annealed	0.20	2.0	0.11	0.18	0.28	170	250	0.5 to 1.5	0.15
			Treated						120	210		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.20	3.0	0.08	0.20	0.64	170	280	0.5 to 2	0.18
		EN - GJL 250						0.60		250		
		EN - GJL 300						0.60		230		
Nodular Cast Iron	10	EN - GJS 400	210	0.20	2.5	0.08	0.18	0.48	120	230	0.5 to 1.5	0.15
		EN - GJS 600	260					0.40		190		
		EN - GJS 800	310					0.40		150		
Nickel Based Alloys	11	Inconel 625	--------	0.20	2.0	0.10	0.16	0.24	25	35	0.5 to 1.5	0.12
		Inconel 718						0.24	28	40		
		Hastello y C						0.28	40	65		
Titanium Based Alloys	12	TiAl 6 V4	--------	0.20	2.0	0.09	0.16	0.28	35	60	0.5 to 1.5	0.14
		T40					0.14	0.24	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
CCMT 09T304 NN	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

CCMT 09T308 NN

Machining Conditions

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	0.50	5.0	0.21	0.45	1.5	180	350	1 to 2.5	0.32
			180		4.0		0.40	1.2		280		
			210		4.0		0.35	1.0		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.50	4.0	0.21	0.40	1.2	120	280	1 to 2.5	0.30
			230		4.0		0.40	1.0		250		
			280		3.0	0.18	0.35	0.8		210		
			320		3.0		0.32	0.6		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.50	4.0	0.18	0.35	1.0	70	190	1 to 2.5	0.28
			280		4.0		0.32	0.8		150		
			320		3.0		0.28	0.6		130		
			350		3.0		0.28	0.5		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.50	4.0	0.20	0.35	0.8	170	270	1 to 2.5	0.28
	5	316 / 316 L	230 to 270		3.0	0.18	0.32	0.6	120	210	1 to 2.5	0.28
	6	316 Ti 630 (F16PH)	---------		3.0	0.18	0.28	0.5	70	120	1 to 2.5	0.28
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.50	3.0	0.22	0.35	0.7	170	250	1 to 2.5	0.28
Martensitic Stainless Steel	8	410 / 420	Annealed	0.50	3.0	0.22	0.35	0.7	170	250	1 to 2.5	0.28
			Treated						120	210		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.50	5.0	0.15	0.40	1.6	170	280	1 to 3	0.32
		EN - GJL 250						1.4		250		
		EN - GJL 300						1.2		230		
Nodular Cast Iron	10	EN - GJS 400	210	0.50	4.0	0.15	0.35	1.2	120	230	1 to 2.5	0.28
		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	0.32	0.6	25	35	1 to 2.5	0.25
		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	0.32	0.7	35	60	1 to 2.5	0.25
		T40					0.28	0.6	28	40	1 to 2.5	0.22

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

Insert designation	Super Finishing	Finishing	Semi Finishing	Roughing	Interrupted Cut
CCMT 09T308 NN	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

CCMT 09T308 WM

Machining Conditions

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	0.20	3.0	0.12	0.35	0.30	180	330	0.5 to 1.5	0.18
			180		3.0		0.35	0.30		280		
			210		3.0		0.35	0.30		250		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.20	3.0	0.11	0.35	0.30	120	280	0.5 to 1.5	0.15
			230		3.0		0.35	0.30		250		
			280		3.0	0.11	0.35	0.30		210		
			320		3.0		0.35	0.30		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.20	3.0	0.09	0.32	0.30	70	190	0.5 to 1.5	0.12
			280		3.0		0.32	0.30		150		
			320		2.5		0.32	0.30		130		
			350		2.5		0.32	0.30		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	Wiper inserts are not recommended for austenitic stainless								
	5	316 / 316 L	230 to 270									
	6	316 Ti 630 (F16PH)	---------									
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.5	3.0	0.11	0.35	0.30	170	250	0.5 to 1.5	0.15
Martensitic Stainless Steel	8	410 / 420	Annealed Treated	0.5	3.0	0.11	0.35	0.30	170 120	190 250	0.5 to 1.5	0.15
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.20	5.0	0.15	0.35	0.35	170	250	0.5 to 1.5	0.18
		EN - GJL 250						0.35		230		
		EN - GJL 300						0.35		210		
Nodular Cast Iron	10	EN - GJS 400	210	0.20	4.0	0.15	0.30	0.30	120	230	0.5 to 1.5	0.15
		EN - GJS 600	260					0.30		190		
		EN - GJS 800	310					0.30		150		
Nickel Based Alloys	11	Inconel 625	--------	Wiper inserts are not recommended for exotic materials								
		Inconel 718										
		Hastello y C										
Titanium Based Alloys	12	TiAl 6 V4	--------									
		T40										

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

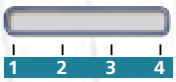
Insert designation	Super Finishing	Finishing	Semi Finishing	Roughing	Interrupted Cut
CCMT 09T308 WM	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

CCMT 120404 NN

Machining Conditions

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	0.20	3.0	0.11	0.23	0.60	180	400	0.5 to 2.0	0.18
			180		2.5		0.20	0.48		350		
			210		2.5		0.18	0.48		200		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.20	2.5	0.11	0.20	0.48	120	300	0.5 to 1.0	0.15
			230		2.5		0.20	0.40		250		
			280		2.0	0.09	0.18	0.40		210		
			320		2.0		0.16	0.32		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.20	2.5	0.09	0.18	0.40	70	190	0.5 to 1.5	0.12
			280		2.5		0.16	0.40		150		
			320		2.0		0.14	0.28		130		
			350		2.0		0.14	0.24		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.20	2.5	0.10	0.18	0.32	170	270	0.5 to 2.0	0.15
	5	316 / 316 L	230 to 270		2.0	0.09	0.16	0.24	120	210	0.5 to 1.5	0.12
	6	316 Ti 630 (F16PH)	---------	0.25	2.0	0.09	0.14	0.20	70	120	0.5 to 1.5	0.12
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.25	2.0	0.11	0.18	0.28	170	250	0.5 to 1.5	0.15
Martensitic Stainless Steel	8	410 / 420	Annealed	0.25	2.0	0.11	0.18	0.28	170	250	0.5 to 1.5	0.15
			Treated						120	210		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.20	3.0	0.08	0.20	0.64	170	280	0.5 to 1.5	0.18
		EN - GJL 250						0.60		250		
		EN - GJL 300						0.60		230		
Nodular Cast Iron	10	EN - GJS 400	210	0.20	2.5	0.08	0.18	0.48	120	230	0.5 to 2.0	0.15
		EN - GJS 600	260					0.40		190		
		EN - GJS 800	310					0.40		150		
Nickel Based Alloys	11	Inconel 625	--------	0.25	2.0	0.10	0.16	0.24	25	35	0.5 to 1.5	0.12
		Inconel 718						0.24	28	40		
		Hastello y C						0.28	40	65		
Titanium Based Alloys	12	TiAl 6 V4	--------	0.25	2.0	0.09	0.16	0.28	35	60	0.5 to 1.5	0.14
		T40					0.14	0.24	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
CCMT 120404 NN					

CCMT 120408 NN

Machining Conditions

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	0.20	3.0	0.11	0.23	0.60	180	400	0.5 to 2.0	0.18
			180		2.5		0.20	0.48		350		
			210		2.5		0.18	0.48		200		
Alloy Steel	2	42 CrMo 4 100 Cr 6 32 NiCrMo 14.5	180	0.20	2.5	0.11	0.20	0.48	120	300	0.5 to 1.0	0.15
			230		2.5		0.20	0.40		250		
			280		2.0	0.09	0.18	0.40		210		
			320		2.0		0.16	0.32		180		
High Alloy Steel	3	X38 CrMoV 5 X210 CrW 12 X90 CrMoV 8	220	0.20	2.5	0.09	0.18	0.40	70	190	0.5 to 1.5	0.12
			280		2.5		0.16	0.40		150		
			320		2.0		0.14	0.28		130		
			350		2.0		0.14	0.24		100		
Austenitic Stainless Steel	4	303 / 304 304 L	210 to 250	0.20	2.5	0.10	0.18	0.32	170	270	0.5 to 2.0	0.15
	5	316 / 316 L	230 to 270		2.0	0.09	0.16	0.24	120	210	0.5 to 1.5	0.12
	6	316 Ti 630 (F16PH)	---------	0.20	2.0	0.09	0.14	0.20	70	120	0.5 to 1.5	0.12
Ferritic Stainless Steel	7	430 / 439 / 444	Annealed	0.20	2.0	0.11	0.18	0.28	170	250	0.5 to 1.5	0.15
Martensitic Stainless Steel	8	410 / 420	Annealed	0.20	2.0	0.11	0.18	0.28	170	250	0.5 to 1.5	0.15
			Treated						120	210		
Grey Cast Iron	9	EN - GJL 200	140 to 230	0.20	3.0	0.08	0.20	0.64	170	280	0.5 to 1.5	0.18
		EN - GJL 250						0.60		250		
		EN - GJL 300						0.60		230		
Nodular Cast Iron	10	EN - GJS 400	210	0.20	2.5	0.08	0.18	0.48	120	230	0.5 to 2.0	0.15
		EN - GJS 600	260					0.40		190		
		EN - GJS 800	310					0.40		150		
Nickel Based Alloys	11	Inconel 625	--------	0.25	2.0	0.10	0.16	0.24	25	35	0.5 to 1.5	0.12
		Inconel 718						0.24	28	40		
		Hastello y C						0.28	40	65		
Titanium Based Alloys	12	TiAl 6 V4	--------	0.25	2.0	0.09	0.16	0.28	35	60	0.5 to 1.5	0.14
		T40					0.14	0.24	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
CCMT 120408 NN