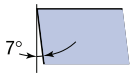
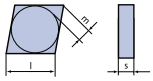
# C C M T

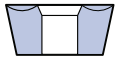

**Shape**
80° Diamond




**Clearance Angle**
7° Positive rake



**Tolerance**
d ± 0.05 m ± 0.08
s ± 0.13



**Insert Type**
Screw Down Clamping
Single Sided

| Insert designation | Grade | l | s | r | Catalog Nr. | Page |
|---|---|---|---|---|---|---|
| CCMT 060204 NN | LT 10 | 6 | 2,38 | 0,4 | T0000055 | 13 |
| CCMT 09T304 NN | LT 10 | 9 | 3,97 | 0,4 | T0000056 | 14 |
| CCMT 09T308 NN | LT 10 | 9 | 3,97 | 0,8 | T0000117 | 15 |
| CCMT 09T308 WM | LT 10 | 9 | 3,97 | 0,8 | T0000057 | 16 |
| CCMT 120404 NN | LT 10 | 12 | 4,76 | 0,4 | T0001456 | 17 |
| CCMT 120408 NN | LT 10 | 12 | 4,76 | 0,8 | T0001457 | 18 |
| CCMT 120412 NN | LT 10 | 12 | 4,76 | 1,2 | T0001776 | 19 |

NN All Purpose Chipbreaker

| Application Guide | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted Cut |
|---|---|---|---|---|---|
| CCMT 060204 NN | | | | | |
| CCMT 09T304 NN | | | | | |
| CCMT 09T308 NN | | | | | |
| CCMT 09T308 WM | | | | | |
| CCMT 120404 NN | | | | | |
| CCMT 120408 NN | | | | | |
| CCMT 120412 NN | | | | | |
| | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |

1 Not Recommended 2 Acceptable 3 Recommended 4 Excellent



80° Diamond shape inserts, with positive chip breaker geometry. Very popular and useful for Boring even of small diameters, Facing and external turning operations. Machining Recommendation Guide - Please see Pg. 8

LAMINA TECHNOLOGIES

| Material Group | Group No | Material Examples* | Brinell hardness | 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 | Ck15, Ck45 1020, 1045 | 150 | 0.10 | 2.0 | 0.08 | 0.20 | 0.36 | 180 | 350 | 1.0 | 0.18 |
| | | | 180 | | 2.0 | | 0.18 | 0.29 | | 280 | | |
| | | | 210 | | 2.0 | | 0.16 | 0.29 | | 250 | | |
| Alloy Steel | 2 | 42 CrMo 4<br>St 50-2<br>Ck60<br>1060<br>4140 | 180 | 0.10 | 2.0 | 0.08 | 0.18 | 0.29 | 120 | 280 | 1.0 | 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 | X40 CrMoV 5 1<br>H 13<br>40 NiCrMo 6<br>4340<br>S 2-10-1-8<br>HSS M42 | 220 | 0.10 | 2.0 | 0.08 | 0.16 | 0.24 | 70 | 190 | 1.0 | 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 | | |
| | | | 400 | 0.10 | 1.3 | 0.05 | 0.11 | 0.12 | 50 | 90 | 0.9 | 0.10 |
| | | | 480 | | 1.2 | | 0.09 | 0.10 | 40 | 80 | 0.7 | 0.08 |
| | | | 550 | | 1.0 | | 0.08 | 0.08 | 30 | 70 | 0.6 | 0.07 |
| Austenitic Stainless Steel | 4 | X5 CrNi 18 9<br>304 | 210 to 250 | 0.10 | 2.0 | 0.08 | 0.16 | 0.22 | 170 | 270 | 1.0 | 0.15 |
| | 5 | X2 CrNiMo 17 2 2<br>316 | 230 to 270 | | 1.8 | 0.08 | 0.14 | 0.17 | 160 | 210 | 1.0 | 0.12 |
| | 6 | X6 CrNiMoTi 17 12 2<br>316 Ti Duplex / Nitronic | ------- | | 1.5 | 0.08 | 0.13 | 0.14 | 70 | 150 | 1.0 | 0.12 |
| Ferritic Stainless Steel | 7 | X8 Cr 7<br>430 | Annealed | 0.10 | 2.0 | 0.08 | 0.16 | 0.20 | 170 | 250 | 1.0 | 0.15 |
| Martensitic Stainless Steel | 8 | X15 Cr 13<br>410 | Annealed | 0.10 | 2.0 | 0.08 | 0.16 | 0.20 | 170 | 250 | 1.0 | 0.15 |
| | | | Treated | | | | | | 120 | 190 | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.10 | 2.0 | 0.06 | 0.18 | 0.38 | 170 | 250 | 1.0 | 0.18 |
| | | GG 25 | | | | | | 0.36 | | 230 | | |
| | | GG 30 | | | | | | 0.36 | | 210 | | |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.10 | 2.0 | 0.06 | 0.16 | 0.29 | 120 | 230 | 1.0 | 0.15 |
| | | GGG 50 | 260 | | | | | 0.24 | | 190 | | |
| | | GGG 70 | 310 | | | | | 0.24 | | 150 | | |
| | | G-X260NiCr42 | 450 | 0.10 | 1.0 | 0.06 | 0.10 | 0.08 | 30 | 70 | 0.6 | 0.07 |
| Nickel Based Alloys | 11 | Inconel 625 | -------- | 0.10 | 1.5 | 0.08 | 0.14 | 0.14 | 25 | 35 | 1.0 | 0.12 |
| | | Inconel 718 | | | | | | 0.14 | 28 | 40 | | |
| | | Hastelloy C | | | | | | 0.17 | 40 | 65 | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | -------- | 0.10 | 1.5 | 0.08 | 0.14 | 0.17 | 35 | 60 | 1.0 | 0.14 |
| | | T40 | | | | | 0.13 | 0.14 | 28 | 40 | 1.0 | 0.12 |

| Insert designation | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted Cut |
|---|---|---|---|---|---|
| CCMT 060204 NN | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |

# CCMT 09T304 NN

| Material Group | Group No | Material Examples* | Brinell hardness | 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 | Ck15, Ck45<br>1020, 1045 | 150 | 0.20 | 3.0 | 0.11 | 0.23 | 0.60 | 180 | 350 | 2.0 | 0.18 |
| | | | 180 | | 2.5 | | 0.20 | 0.48 | | 280 | | |
| | | | 210 | | 2.5 | | 0.18 | 0.48 | | 250 | | |
| Alloy Steel | 2 | 42 CrMo 4<br>St 50-2<br>Ck60<br>1060<br>4140 | 180 | 0.20 | 2.5 | 0.11 | 0.20 | 0.48 | 120 | 280 | 2.0 | 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 | X40 CrMoV 5 1<br>H 13<br>40 NiCrMo 6<br>4340<br>S 2-10-1-8<br>HSS M42 | 220 | 0.20 | 2.5 | 0.09 | 0.18 | 0.40 | 70 | 190 | 2.0 | 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 | | |
| | | | 400 | 0.20 | 1.8 | 0.05 | 0.12 | 0.20 | 50 | 90 | 1.7 | 0.11 |
| | | | 480 | | 1.5 | | 0.10 | 0.17 | 40 | 80 | 1.4 | 0.09 |
| | | | 550 | | 1.4 | | 0.08 | 0.13 | 30 | 70 | 1.2 | 0.07 |
| Austenitic Stainless Steel | 4 | X5 CrNi 18 9<br>304 | 210 to 250 | 0.20 | 2.5 | 0.10 | 0.18 | 0.32 | 170 | 270 | 2.0 | 0.15 |
| | 5 | X2 CrNiMo 17 2 2<br>316 | 230 to 270 | | 2.0 | 0.09 | 0.16 | 0.24 | 160 | 210 | 2.0 | 0.12 |
| | 6 | X6 CrNiMoTi 17 12 2<br>316 Ti Duplex / Nitronic | ------- | | 2.0 | 0.09 | 0.14 | 0.20 | 70 | 150 | 2.0 | 0.12 |
| Ferritic Stainless Steel | 7 | X8 Cr 7<br>430 | Annealed | 0.20 | 2.0 | 0.11 | 0.18 | 0.28 | 170 | 250 | 2.0 | 0.15 |
| Martensitic Stainless Steel | 8 | X15 Cr 13<br>410 | Annealed | 0.20 | 2.0 | 0.11 | 0.18 | 0.28 | 170 | 250 | 2.0 | 0.12 |
| | | | Treated | | | | | | 120 | 190 | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.20 | 3.0 | 0.08 | 0.20 | 0.64 | 170 | 250 | 2.0 | 0.18 |
| | | GG 25 | | | | | | 0.60 | | 230 | | |
| | | GG 30 | | | | | | 0.60 | | 210 | | |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.20 | 2.5 | 0.08 | 0.18 | 0.48 | 120 | 230 | 2.0 | 0.15 |
| | | GGG 50 | 260 | | | | | 0.40 | | 190 | | |
| | | GGG 70 | 310 | | | | | 0.40 | | 150 | | |
| | | G-X260NiCr42 | 450 | 0.20 | 1.5 | 0.05 | 0.10 | 0.17 | 30 | 70 | 1.4 | 0.09 |
| Nickel Based Alloys | 11 | Inconel 625 | ------- | 0.20 | 2.0 | 0.10 | 0.16 | 0.24 | 25 | 35 | 2.0 | 0.12 |
| | | Inconel 718 | | | | | | 0.24 | 28 | 40 | | |
| | | Hastelloy C | | | | | | 0.28 | 40 | 65 | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | ------- | 0.20 | 2.0 | 0.09 | 0.16 | 0.28 | 35 | 60 | 2.0 | 0.14 |
| | | T40 | | | | | 0.14 | 0.24 | 28 | 40 | 2.0 | 0.12 |

| Insert designation | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted Cut |
|---|---|---|---|---|---|
| CCMT 09T304 NN | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |

| Material Group | Group No | Material Examples* | Brinell hardness | 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 | 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<br>St 50-2<br>Ck60<br>1060<br>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 | 0.18 | 0.35 | 1.2 | | 210 | | |
| | | | 320 | | 3.5 | | 0.35 | 1.0 | | 180 | | |
| High Alloy Steel | 3 | X40 CrMoV 5 1<br>H 13<br>40 NiCrMo 6<br>4340<br>S 2-10-1-8<br>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 | 0.50 | 2.5 | 0.11 | 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<br>304 | 210 to 250 | 0.50 | 5.0 | 0.20 | 0.40 | 1.0 | 170 | 270 | 3.0 | 0.35 |
| | 5 | X2 CrNiMo 17 2 2<br>316 | 230 to 270 | | 4.0 | 0.18 | 0.35 | 0.8 | 160 | 210 | 3.0 | 0.32 |
| | 6 | X6 CrNiMoTi 17 12 2<br>316 Ti Duplex / Nitronic | ------- | | 4.0 | 0.18 | 0.35 | 0.6 | 70 | 150 | 2.5 | 0.28 |
| Ferritic Stainless Steel | 7 | X8 Cr 7<br>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<br>410 | Annealed | 0.50 | 4.0 | 0.22 | 0.35 | 0.9 | 170 | 250 | 3.0 | 0.32 |
| | | | Treated | | | | | | 120 | 190 | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.50 | 5.0 | 0.15 | 0.60 | 2.0 | 170 | 250 | 3.0 | 0.35 |
| | | GG 25 | | | | | | 1.8 | | 230 | | |
| | | GG 30 | | | | | | 1.8 | | 210 | | |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.50 | 5.0 | 0.15 | 0.50 | 1.5 | 120 | 230 | 3.0 | 0.30 |
| | | GGG 50 | 260 | | | | | 1.3 | | 190 | | |
| | | GGG 70 | 310 | | | | | 1.2 | | 150 | | |
| | | G-X260NiCr42 | 450 | 0.50 | 1.7 | 0.11 | 0.25 | 0.4 | 30 | 50 | 1.0 | 0.18 |
| Nickel Based Alloys | 11 | Inconel 625 | -------- | 0.50 | 3.0 | 0.20 | 0.35 | 0.7 | 25 | 35 | 2.0 | 0.28 |
| | | Inconel 718 | | | | | | 0.7 | 28 | 40 | | |
| | | Hastelloy C | | | | | | 0.8 | 40 | 65 | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | -------- | 0.50 | 3.0 | 0.18 | 0.35 | 0.8 | 35 | 60 | 2.0 | 0.30 |
| | | T40 | | | | | 0.30 | 0.6 | 28 | 40 | 2.0 | 0.28 |

| Insert designation | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted 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

| Material Group | Group No | Material Examples* | Brinell hardness | 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 | Ck15, Ck45<br>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<br>St 50-2<br>Ck60<br>1060<br>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 | 0.18 | 0.35 | 1.2 | | 210 | | |
| | | | 320 | | 3.5 | | 0.35 | 1.0 | | 180 | | |
| High Alloy Steel | 3 | X40 CrMoV 5 1<br>H 13<br>40 NiCrMo 6<br>4340<br>S 2-10-1-8<br>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 | 0.50 | 2.5 | 0.11 | 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<br>304 | 210 to 250 | 0.50 | 5.0 | 0.20 | 0.40 | 1.0 | 170 | 270 | 3.0 | 0.35 |
| | 5 | X2 CrNiMo 17 2 2<br>316 | 230 to 270 | | 4.0 | 0.18 | 0.35 | 0.8 | 160 | 210 | 3.0 | 0.32 |
| | 6 | X6 CrNiMoTi 17 12 2<br>316 Ti Duplex / Nitronic | ------- | | 4.0 | 0.18 | 0.35 | 0.6 | 70 | 150 | 2.5 | 0.28 |
| Ferritic Stainless Steel | 7 | X8 Cr 7<br>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<br>410 | Annealed | 0.50 | 4.0 | 0.22 | 0.35 | 0.9 | 170 | 250 | 3.0 | 0.32 |
| | | | Treated | | | | | | 120 | 190 | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.50 | 5.0 | 0.15 | 0.60 | 2.0 | 170 | 250 | 3.0 | 0.35 |
| | | GG 25 | | | | | | 1.8 | | 230 | | |
| | | GG 30 | | | | | | 1.8 | | 210 | | |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.50 | 5.0 | 0.15 | 0.50 | 1.5 | 120 | 230 | 3.0 | 0.30 |
| | | GGG 50 | 260 | | | | | 1.3 | | 190 | | |
| | | GGG 70 | 310 | | | | | 1.2 | | 150 | | |
| | | G-X260NiCr42 | 450 | 0.50 | 1.7 | 0.11 | 0.25 | 0.4 | 30 | 50 | 1.0 | 0.18 |
| Nickel Based Alloys | 11 | Inconel 625 | -------- | 0.50 | 3.0 | 0.20 | 0.35 | 0.7 | 25 | 35 | 2.0 | 0.28 |
| | | Inconel 718 | | | | | | 0.7 | 28 | 40 | | |
| | | Hastelloy C | | | | | | 0.8 | 40 | 65 | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | -------- | 0.50 | 3.0 | 0.18 | 0.35 | 0.8 | 35 | 60 | 2.0 | 0.30 |
| | | T40 | | | | | 0.30 | 0.6 | 28 | 40 | 2.0 | 0.28 |

| Insert designation | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted Cut |
|---|---|---|---|---|---|
| CCMT 09T304 WM | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |

| Material Group | Group No | Material Examples* | Brinell hardness | 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 | Ck15, Ck45 1020, 1045 | 150 | 0.20 | 3.0 | 0.11 | 0.23 | 0.60 | 180 | 350 | 2.0 | 0.18 |
| | | | 180 | | 2.5 | | 0.20 | 0.48 | | 280 | | |
| | | | 210 | | 2.5 | | 0.18 | 0.48 | | 250 | | |
| Alloy Steel | 2 | 42 CrMo 4 St 50-2 Ck60 1060 4140 | 180 | 0.20 | 2.5 | 0.11 | 0.20 | 0.48 | 120 | 280 | 2.0 | 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 | X40 CrMoV 5 1 H 13 40 NiCrMo 6 4340 S 2-10-1-8 HSS M42 | 220 | 0.20 | 2.5 | 0.09 | 0.18 | 0.40 | 70 | 190 | 2.0 | 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 | | |
| | | | 400 | 0.20 | 1.8 | 0.05 | 0.12 | 0.20 | 50 | 90 | 1.7 | 0.11 |
| | | | 480 | | 1.5 | | 0.10 | 0.17 | 40 | 80 | 1.4 | 0.09 |
| | | | 550 | | 1.4 | | 0.08 | 0.13 | 30 | 70 | 1.2 | 0.07 |
| Austenitic Stainless Steel | 4 | X5 CrNi 18 9 304 | 210 to 250 | 0.20 | 2.5 | 0.10 | 0.18 | 0.32 | 170 | 270 | 2.0 | 0.15 |
| | 5 | X2 CrNiMo 17 2 2 316 | 230 to 270 | | 2.0 | 0.09 | 0.16 | 0.24 | 160 | 210 | 2.0 | 0.12 |
| | 6 | X6 CrNiMoTi 17 12 2 316 Ti Duplex / Nitronic | ------- | | 2.0 | 0.09 | 0.14 | 0.20 | 70 | 150 | 2.0 | 0.12 |
| Ferritic Stainless Steel | 7 | X8 Cr 7 430 | Annealed | 0.20 | 2.0 | 0.11 | 0.18 | 0.28 | 170 | 250 | 2.0 | 0.15 |
| Martensitic Stainless Steel | 8 | X15 Cr 13 410 | Annealed | 0.20 | 2.0 | 0.11 | 0.18 | 0.28 | 170 | 250 | 2.0 | 0.12 |
| | | | Treated | | | | | | 120 | 190 | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.20 | 3.0 | 0.08 | 0.20 | 0.64 | 170 | 250 | 2.0 | 0.18 |
| | | GG 25 | | | | | | 0.60 | | 230 | | |
| | | GG 30 | | | | | | 0.60 | | 210 | | |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.20 | 2.5 | 0.08 | 0.18 | 0.48 | 120 | 230 | 2.0 | 0.15 |
| | | GGG 50 | 260 | | | | | 0.40 | | 190 | | |
| | | GGG 70 | 310 | | | | | 0.40 | | 150 | | |
| | | G-X260NiCr42 | 450 | 0.20 | 1.5 | 0.05 | 0.10 | 0.17 | 30 | 70 | 1.4 | 0.09 |
| Nickel Based Alloys | 11 | Inconel 625 | -------- | 0.20 | 2.0 | 0.10 | 0.16 | 0.24 | 25 | 35 | 2.0 | 0.12 |
| | | Inconel 718 | | | | | | 0.24 | 28 | 40 | | |
| | | Hastelloy C | | | | | | 0.28 | 40 | 65 | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | -------- | 0.20 | 2.0 | 0.09 | 0.16 | 0.28 | 35 | 60 | 2.0 | 0.14 |
| | | T40 | | | | | 0.14 | 0.24 | 28 | 40 | 2.0 | 0.12 |

| Insert designation | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted Cut |
|---|---|---|---|---|---|
| CCMT 120404 NN | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |

# CCMT 120408 NN

| Material Group | Group No | Material Examples* | Brinell hardness | 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 | Ck15, Ck45<br>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<br>St 50-2<br>Ck60<br>1060<br>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 | 0.18 | 0.35 | 1.2 | | 210 | | |
| | | | 320 | | 3.5 | | 0.35 | 1.0 | | 180 | | |
| High Alloy Steel | 3 | X40 CrMoV 5 1<br>H 13<br>40 NiCrMo 6<br>4340<br>S 2-10-1-8<br>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 | 0.50 | 2.5 | 0.11 | 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<br>304 | 210 to 250 | 0.50 | 5.0 | 0.20 | 0.40 | 1.0 | 170 | 270 | 3.0 | 0.35 |
| | 5 | X2 CrNiMo 17 2 2<br>316 | 230 to 270 | | 4.0 | 0.18 | 0.35 | 0.8 | 160 | 210 | 3.0 | 0.32 |
| | 6 | X6 CrNiMoTi 17 12 2<br>316 Ti Duplex / Nitronic | ------- | | 4.0 | 0.18 | 0.35 | 0.6 | 70 | 150 | 2.5 | 0.28 |
| Ferritic Stainless Steel | 7 | X8 Cr 7<br>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<br>410 | Annealed | 0.50 | 4.0 | 0.22 | 0.35 | 0.9 | 170 | 250 | 3.0 | 0.32 |
| | | | Treated | | | | | | 120 | 190 | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.50 | 5.0 | 0.15 | 0.60 | 2.0 | 170 | 250 | 3.0 | 0.35 |
| | | GG 25 | | | | | | 1.8 | | 230 | | |
| | | GG 30 | | | | | | 1.8 | | 210 | | |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.50 | 5.0 | 0.15 | 0.50 | 1.5 | 120 | 230 | 3.0 | 0.30 |
| | | GGG 50 | 260 | | | | | 1.3 | | 190 | | |
| | | GGG 70 | 310 | | | | | 1.2 | | 150 | | |
| | | G-X260NiCr42 | 450 | 0.50 | 1.7 | 0.11 | 0.25 | 0.4 | 30 | 50 | 1.0 | 0.18 |
| Nickel Based Alloys | 11 | Inconel 625 | ------- | 0.50 | 3.0 | 0.20 | 0.35 | 0.7 | 25 | 35 | 2.0 | 0.28 |
| | | Inconel 718 | | | | | | 0.7 | 28 | 40 | | |
| | | Hastelloy C | | | | | | 0.8 | 40 | 65 | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | ------- | 0.50 | 3.0 | 0.18 | 0.35 | 0.8 | 35 | 60 | 2.0 | 0.30 |
| | | T40 | | | | | 0.30 | 0.6 | 28 | 40 | 2.0 | 0.28 |

| Insert designation | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted Cut |
|---|---|---|---|---|---|
| CCMT 120408 NN | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |

| Material Group | Group No | Material Examples* | Brinell hardness | 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 | 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 | 0.18 | 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 | 0.50 | 2.5 | 0.11 | 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 |
| | 5 | X2 CrNiMo 17 2 2 316 | 230 to 270 | | 4.0 | 0.18 | 0.35 | 0.8 | 160 | 210 | 3.0 | 0.32 |
| | 6 | X6 CrNiMoTi 17 12 2 316 Ti Duplex / Nitronic | ------- | | 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 | 0.50 | 4.0 | 0.22 | 0.35 | 0.9 | 170 | 250 | 3.0 | 0.32 |
| | | | Treated | | | | | | 120 | 190 | | |
| Grey Cast Iron | 9 | GG 20 | 140 to 230 | 0.50 | 5.0 | 0.15 | 0.60 | 2.0 | 170 | 250 | 3.0 | 0.35 |
| | | GG 25 | | | | | | 1.8 | | 230 | | |
| | | GG 30 | | | | | | 1.8 | | 210 | | |
| Nodular Cast Iron | 10 | GGG 40 | 210 | 0.50 | 5.0 | 0.15 | 0.50 | 1.5 | 120 | 230 | 3.0 | 0.30 |
| | | GGG 50 | 260 | | | | | 1.3 | | 190 | | |
| | | GGG 70 | 310 | | | | | 1.2 | | 150 | | |
| | | G-X260NiCr42 | 450 | 0.50 | 1.7 | 0.11 | 0.25 | 0.4 | 30 | 50 | 1.0 | 0.18 |
| Nickel Based Alloys | 11 | Inconel 625 | -------- | 0.50 | 3.0 | 0.20 | 0.35 | 0.7 | 25 | 35 | 2.0 | 0.28 |
| | | Inconel 718 | | | | | | 0.7 | 28 | 40 | | |
| | | Hastelloy C | | | | | | 0.8 | 40 | 65 | | |
| Titanium Based Alloys | 12 | TiAl 6 V4 | -------- | 0.50 | 3.0 | 0.18 | 0.35 | 0.8 | 35 | 60 | 2.0 | 0.30 |
| | | T40 | | | | | 0.30 | 0.6 | 28 | 40 | 2.0 | 0.28 |

| Insert designation | Super Finishing | Finishing | Semi Finishing | Roughing | Interrrupted Cut |
|---|---|---|---|---|---|
| CCMT 120412 NN | | | | | |
| | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |