

| Material Group              | Group No | Material Examples*                           | Brinell hardness         | feed [mm/rev]                         |      | V <sub>c</sub> [m/min] |     |      |      |     |     |
|-----------------------------|----------|----------------------------------------------|--------------------------|---------------------------------------|------|------------------------|-----|------|------|-----|-----|
|                             |          |                                              |                          | min                                   | max  | min                    | max |      |      |     |     |
| Low Carbon Steel            | 1        | Ck 15<br>9SMnPb28                            | 150<br>180<br>210        | For Steel please use GNTX insert.     |      |                        |     |      |      |     |     |
| Alloy Steel                 | 2        | 42 CrMo 4<br>100 Cr 6<br>32 NiCrMo 14.5      | 180<br>230<br>280<br>320 |                                       |      |                        |     |      |      |     |     |
| High Alloy Steel            | 3        | X38 CrMoV 5<br>X210 CrW 12<br>X90 CrMoV 8    | 220<br>280<br>320<br>350 |                                       |      |                        |     |      |      |     |     |
| Austenitic Stainless Steel  | 4        | 303 / 304<br>304 L                           | 210 to 250               |                                       |      |                        |     | 0.03 | 0.10 | 170 | 230 |
|                             | 5        | 316 / 316 L                                  | 230 to 270               |                                       |      |                        |     | 0.03 | 0.08 | 160 | 210 |
|                             | 6        | 316 Ti<br>630 (F16PH)                        | -----                    |                                       |      |                        |     | 0.03 | 0.08 | 90  | 120 |
| Ferritic Stainless Steel    | 7        | 430 / 439 / 444                              | Annealed                 |                                       |      |                        |     | 0.03 | 0.10 | 150 | 210 |
| Martensitic Stainless Steel | 8        | 410 / 420                                    | Annealed                 | 0.30                                  | 0.10 | 60                     | 210 |      |      |     |     |
|                             |          |                                              | Treated                  |                                       |      | 90                     | 150 |      |      |     |     |
| Grey Cast Iron              | 9        | EN - GJL 200<br>EN - GJL 250<br>EN - GJL 300 | 140 to 230               | For Cast Iron please use GNTX insert. |      |                        |     |      |      |     |     |
| Nodular Cast Iron           | 10       | EN - GJS 400                                 | 210                      |                                       |      |                        |     |      |      |     |     |
|                             |          | EN - GJS 600                                 | 260                      |                                       |      |                        |     |      |      |     |     |
|                             |          | EN - GJS 800                                 | 310                      |                                       |      |                        |     |      |      |     |     |
| Nickel Based Alloys         | 11       | Inconel 625<br>Inconel 718<br>Hastelloy C    | -----                    | 0.03                                  | 0.06 | 25                     | 65  |      |      |     |     |
| Titanium Based Alloys       | 12       | TiAl 6 V4<br>T40                             | -----                    | 0.03                                  | 0.06 | 28                     | 60  |      |      |     |     |

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

Insert designation

GCTX 2002 NN

Parting



Grooving



Side Turning



Chamfering



| Material Group              | Group No | Material Examples*    | Brinell hardness  | feed [mm/rev]                         |      | V <sub>c</sub> [m/min] |     |
|-----------------------------|----------|-----------------------|-------------------|---------------------------------------|------|------------------------|-----|
|                             |          |                       |                   | min                                   | max  | min                    | max |
| Low Carbon Steel            | 1        | Ck 15<br>9SMnPb28     | 150<br>180<br>210 | for Steel please use GNTX insert.     |      |                        |     |
| Alloy Steel                 | 2        | 42 CrMo 4             | 180               |                                       |      |                        |     |
|                             |          | 100 Cr 6              | 230               |                                       |      |                        |     |
|                             |          | 32 NiCrMo 14.5        | 280               |                                       |      |                        |     |
|                             |          |                       | 320               |                                       |      |                        |     |
| High Alloy Steel            | 3        | X38 CrMoV 5           | 220               |                                       |      |                        |     |
|                             |          | X210 CrW 12           | 280               |                                       |      |                        |     |
|                             |          | X90 CrMoV 8           | 320               |                                       |      |                        |     |
|                             |          |                       | 350               |                                       |      |                        |     |
| Austenitic Stainless Steel  | 4        | 303 / 304<br>304 L    | 210 to 250        | 0.04                                  | 0.12 | 170                    | 230 |
|                             | 5        | 316 / 316 L           | 230 to 270        | 0.04                                  | 0.10 | 160                    | 210 |
|                             | 6        | 316 Ti<br>630 (F16PH) | -----             | 0.04                                  | 0.08 | 90                     | 120 |
| Ferritic Stainless Steel    | 7        | 430 / 439 / 444       | Annealed          | 0.04                                  | 0.12 | 150                    | 210 |
| Martensitic Stainless Steel | 8        | 410 / 420             | Annealed          | 0.04                                  | 0.12 | 130                    | 210 |
|                             |          |                       | Treated           |                                       |      | 90                     | 150 |
| Grey Cast Iron              | 9        | EN - GJL 200          | 140 to 230        | For Cast Iron please use GNTX insert. |      |                        |     |
|                             |          | EN - GJL 250          |                   |                                       |      |                        |     |
|                             |          | EN - GJL 300          |                   |                                       |      |                        |     |
| Nodular Cast Iron           | 10       | EN - GJS 400          | 210               |                                       |      |                        |     |
|                             |          | EN - GJS 600          | 260               |                                       |      |                        |     |
|                             |          | EN - GJS 800          | 310               |                                       |      |                        |     |
| Nickel Based Alloys         | 11       | Inconel 625           | -----             | 0.04                                  | 0.08 | 25                     | 65  |
|                             |          | Inconel 718           |                   |                                       |      |                        |     |
|                             |          | Hastelloy C           |                   |                                       |      |                        |     |
| Titanium Based Alloys       | 12       | TiAl 6 V4             | -----             | 0.04                                  | 0.08 | 28                     | 60  |
|                             |          | T40                   |                   |                                       |      |                        |     |

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

Insert designation

GCTX 3003 NN

Parting



Grooving



Side Turning



Chamfering



| Material Group              | Group No | Material Examples*    | Brinell hardness  | feed [mm/rev]                         |      | V <sub>c</sub> [m/min] |     |
|-----------------------------|----------|-----------------------|-------------------|---------------------------------------|------|------------------------|-----|
|                             |          |                       |                   | min                                   | max  | min                    | max |
| Low Carbon Steel            | 1        | Ck 15<br>9SMnPb28     | 150<br>180<br>210 | for Steel please use GNTX insert.     |      |                        |     |
| Alloy Steel                 | 2        | 42 CrMo 4             | 180               |                                       |      |                        |     |
|                             |          | 100 Cr 6              | 230               |                                       |      |                        |     |
|                             |          | 32 NiCrMo 14.5        | 280               |                                       |      |                        |     |
|                             |          |                       | 320               |                                       |      |                        |     |
| High Alloy Steel            | 3        | X38 CrMoV 5           | 220               |                                       |      |                        |     |
|                             |          | X210 CrW 12           | 280               |                                       |      |                        |     |
|                             |          | X90 CrMoV 8           | 320               |                                       |      |                        |     |
|                             |          |                       | 350               |                                       |      |                        |     |
| Austenitic Stainless Steel  | 4        | 303 / 304<br>304 L    | 210 to 250        | 0.05                                  | 0.14 | 170                    | 230 |
|                             | 5        | 316 / 316 L           | 230 to 270        | 0.05                                  | 0.12 | 160                    | 210 |
|                             | 6        | 316 Ti<br>630 (F16PH) | -----             | 0.05                                  | 0.10 | 90                     | 120 |
| Ferritic Stainless Steel    | 7        | 430 / 439 / 444       | Annealed          | 0.05                                  | 0.14 | 150                    | 210 |
| Martensitic Stainless Steel | 8        | 410 / 420             | Annealed          | 0.05                                  | 0.14 | 130                    | 210 |
|                             |          |                       | Treated           |                                       |      | 90                     | 150 |
| Grey Cast Iron              | 9        | EN - GJL 200          | 140 to 230        | For Cast Iron please use GNTX insert. |      |                        |     |
|                             |          | EN - GJL 250          |                   |                                       |      |                        |     |
|                             |          | EN - GJL 300          |                   |                                       |      |                        |     |
| Nodular Cast Iron           | 10       | EN - GJS 400          | 210               |                                       |      |                        |     |
|                             |          | EN - GJS 600          | 260               |                                       |      |                        |     |
|                             |          | EN - GJS 800          | 310               |                                       |      |                        |     |
| Nickel Based Alloys         | 11       | Inconel 625           | -----             | 0.05                                  | 0.10 | 25                     | 65  |
|                             |          | Inconel 718           |                   |                                       |      |                        |     |
|                             |          | Hastelloy C           |                   |                                       |      |                        |     |
| Titanium Based Alloys       | 12       | TiAl 6 V4             | -----             | 0.05                                  | 0.10 | 28                     | 60  |
|                             |          | T40                   |                   |                                       |      |                        |     |

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

Insert designation

GCTX 4003 NN

Parting



Grooving



Side Turning



Chamfering



# GCTX 5003 NN

## Machining Conditions

| Material Group              | Group No | Material Examples*                           | Brinell hardness         | feed [mm/rev]                         |      | V <sub>c</sub> [m/min] |     |      |      |     |     |
|-----------------------------|----------|----------------------------------------------|--------------------------|---------------------------------------|------|------------------------|-----|------|------|-----|-----|
|                             |          |                                              |                          | min                                   | max  | min                    | max |      |      |     |     |
| Low Carbon Steel            | 1        | Ck 15<br>9SMnPb28                            | 150<br>180<br>210        | For Steel please use GNTX insert.     |      |                        |     |      |      |     |     |
| Alloy Steel                 | 2        | 42 CrMo 4<br>100 Cr 6<br>32 NiCrMo 14.5      | 180<br>230<br>280<br>320 |                                       |      |                        |     |      |      |     |     |
| High Alloy Steel            | 3        | X38 CrMoV 5<br>X210 CrW 12<br>X90 CrMoV 8    | 220<br>280<br>320<br>350 |                                       |      |                        |     |      |      |     |     |
| Austenitic Stainless Steel  | 4        | 303 / 304<br>304 L                           | 210 to 250               |                                       |      |                        |     | 0.06 | 0.16 | 170 | 230 |
|                             | 5        | 316 / 316 L                                  | 230 to 270               |                                       |      |                        |     | 0.06 | 0.13 | 160 | 210 |
|                             | 6        | 316 Ti<br>630 (F16PH)                        | -----                    |                                       |      |                        |     | 0.06 | 0.12 | 90  | 120 |
| Ferritic Stainless Steel    | 7        | 430 / 439 / 444                              | Annealed                 |                                       |      |                        |     | 0.06 | 0.16 | 150 | 210 |
| Martensitic Stainless Steel | 8        | 410 / 420                                    | Annealed                 | 0.06                                  | 0.16 | 130                    | 210 |      |      |     |     |
|                             |          |                                              | Treated                  |                                       |      | 90                     | 150 |      |      |     |     |
| Grey Cast Iron              | 9        | EN - GJL 200<br>EN - GJL 250<br>EN - GJL 300 | 140 to 230               | For Cast Iron please use GNTX insert. |      |                        |     |      |      |     |     |
| Nodular Cast Iron           | 10       | EN - GJS 400                                 | 210                      |                                       |      |                        |     |      |      |     |     |
|                             |          | EN - GJS 600                                 | 260                      |                                       |      |                        |     |      |      |     |     |
|                             |          | EN - GJS 800                                 | 310                      |                                       |      |                        |     |      |      |     |     |
| Nickel Based Alloys         | 11       | Inconel 625                                  | -----                    | 0.06                                  | 0.12 | 25                     | 65  |      |      |     |     |
|                             |          | Inconel 718                                  |                          |                                       |      |                        |     |      |      |     |     |
|                             |          | Hastelloy C                                  |                          |                                       |      |                        |     |      |      |     |     |
| Titanium Based Alloys       | 12       | TiAl 6 V4                                    | -----                    | 0.06                                  | 0.12 | 28                     | 60  |      |      |     |     |
|                             |          | T40                                          |                          |                                       |      |                        |     |      |      |     |     |

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

Insert designation

GCTX 5003 NN

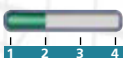
Parting



Grooving



Side Turning



Chamfering

