# ST-VBMT 060404L NN LT 1000

| Material Group | | Gr. N° | VDI Group | Material Examples* | Hardness | D.O.C. [mm] | | Feed [mm/rev] | | Amax [mm²] | $V_c$ [m/min] | | Optimal cutting conditions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | min | max | min | max | | min | max | D.O.C. | Feed | $V_c$ |
| Steel | Non-alloyed | 1 | 1 | C35, Ck45, 1020, 1045, 1060, 28Mn6 | 125 HB | 0.2 | 2.1 | 0.08 | 0.20 | 0.37 | 180 | 330 | 1.0 | 0.18 | 300 |
| | | | 2 | | 190 HB | | 1.8 | | 0.19 | 0.32 | | 280 | | | 260 |
| | | | 3 | | 250 HB | | 1.8 | | 0.17 | 0.30 | | 250 | | | 240 |
| | Low alloyed | 2 | 6 | 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6 | 180 HB | 0.2 | 1.8 | 0.08 | 0.17 | 0.31 | 120 | 280 | 1.0 | 0.15 | 260 |
| | | | 4,6 | | 230 HB | | 1.8 | | 0.17 | 0.30 | | 250 | | | 240 |
| | | | 5,7 | | 280 HB | | 1.4 | | 0.15 | 0.25 | | 210 | | | 200 |
| | | | 8 | | 350 HB | | 1.4 | | 0.15 | 0.22 | | 180 | | | 180 |
| | High alloyed | 3 | 10 | X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19 | 220 HB | 0.2 | 1.8 | 0.07 | 0.15 | 0.25 | 70 | 190 | 1.0 | 0.12 | 180 |
| | | | 10 | | 280 HB | | 1.8 | | 0.14 | 0.25 | | 150 | | | 140 |
| | | | 11 | | 320 HB | | 1.4 | | 0.12 | 0.20 | | 130 | | | 120 |
| | | | 11 | | 350 HB | | 1.4 | | 0.12 | 0.16 | | 110 | | | 110 |
| Stainless Steel | Austenitic | 4 | 14 | 304, 316, X5CrNi18-9 | 180 HB | 0.2 | 1.8 | 0.08 | 0.15 | 0.20 | 170 | 270 | 1.0 | 0.12 | 260 |
| | | | 14 | | 240 HB | | 1.8 | | 0.15 | 0.16 | 160 | 220 | | | 210 |
| | Duplex | 5 | 14 | X2CrNiN23-4, S31500 | 290 HB | 0.2 | 1.4 | 0.07 | 0.12 | 0.12 | 80 | 150 | 1.0 | 0.12 | 140 |
| | | | 14 | | 310 HB | | 1.4 | | 0.12 | 0.12 | 70 | 140 | | | |
| | Ferritic & Martensitic | 6 | 12 | 410, X6Cr17, 17-4 PH, 430 | 200 HB | 0.2 | 1.8 | 0.08 | 0.15 | 0.20 | 170 | 250 | 1.0 | 0.15 | 240 |
| | | | 13 | | 42 HRc | | 1.4 | | 0.14 | 0.16 | 120 | 190 | | 0.12 | 180 |
| Cast Iron | Grey | 7 | 15 | GG20, GG40, EN-GJL-250, No30B | 150 HB | 0.2 | 2.1 | 0.06 | 0.17 | 0.40 | 170 | 250 | 1.0 | 0.18 | 240 |
| | | | 15 | | 200 HB | | 2.1 | | 0.17 | 0.37 | 160 | 230 | | | 220 |
| | | | 16 | | 250 HB | | 2.1 | | 0.17 | 0.37 | 150 | 210 | | | 200 |
| | Malleable & Nodular | 8 | 17,19 | GGG40, GGG70, 50005 | 150 HB | 0.2 | 1.8 | 0.06 | 0.15 | 0.30 | 120 | 250 | 1.0 | 0.15 | 240 |
| | | | 17,19 | | 200 HB | | 1.8 | | 0.15 | 0.25 | | 230 | | | 220 |
| | | | 18,20 | | 250 HB | | 1.8 | | 0.15 | 0.25 | | 190 | | | 180 |
| High Temp.Alloys | Fe, Ni & Co based | 9 | 31,32 | Incoloy 800 | 240 HB | 0.2 | 1.4 | 0.08 | 0.13 | 0.16 | 25 | 50 | 1.0 | 0.12 | 40 |
| | | | 33 | Inconel 700 | 250 HB | | 1.4 | | 0.13 | 0.16 | 25 | 50 | | | 40 |
| | | | 34 | Stellite 21 | 350 HB | | 1.4 | | 0.13 | 0.16 | 23 | 45 | | | 35 |
| | Ti based | 10 | 36 | TiAl6V4 | - | 0.2 | 1.4 | 0.08 | 0.14 | 0.20 | 45 | 65 | 1.0 | 0.14 | 60 |
| | | | 37 | T40 | - | | 1.4 | | 0.12 | 0.16 | 35 | 60 | | 0.12 | 50 |
| Hardened Mat. | Steel | 11 | 38 | X100CrMo13, 440C, G-X260NiCr42 | 45 HRc | 0.2 | 1.3 | 0.04 | 0.10 | 0.12 | 50 | 100 | 0.8 | 0.11 | 90 |
| | | | 38 | | 50 HRc | | 1.1 | | 0.09 | 0.11 | 40 | 90 | 0.6 | 0.09 | 80 |
| | | | 38 | | 55 HRc | | 1.0 | | 0.08 | 0.08 | 40 | 80 | 0.5 | 0.07 | 70 |
| | Chilled Cast Iron | | 40 | Ni-Hard 2 | 400 HB | 0.2 | 1.1 | 0.04 | 0.10 | 0.11 | 40 | 60 | 0.6 | 0.11 | 50 |
| | White Cast Iron | | 41 | G-X300CrMo15 | 55 HRc | 0.2 | 1.0 | 0.04 | 0.08 | 0.08 | 30 | 50 | 0.5 | 0.07 | 40 |
| NF | Al (>8%Si) | 12 | 25 | AlSi12 | 130 HB | 0.2 | 2.8 | 0.08 | 0.26 | 0.43 | 200 | 400 | 1.0 | 0.20 | 350 |



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