



# MACHINING CONDITIONS

SPKN 1203 EDTR LT 3000

M0004036

| Material Group     | SAPPHIRE CUTTING TOOLS Group            | Material Example | Hardness  | D.O.C   |         | Feed      |            | Vc          |             | Advised D.O.C [mm] | Advised Feed [mm/t] | Advised Vc [m/min] |     |
|--------------------|---|------------------|---|---------|---------|-----------|------------|-------------|-------------|--------------------|---------------------|--------------------|-----|
|                    |   |                  |   | min[mm] | max[mm] | min[mm/t] | max [mm/t] | min [m/min] | max [m/min] |                    |                     |                    |     |
| Steel              | Non Alloyed                             | 1                | C35, Ck45, 1020, 1045, 1060, 28Mn6                          | 125 HB  | 0.5     | 7         | 0.18       | 0.43        | 190         | 330                | 3                   | 0.3                | 250 |
|                    |   |                  |   | 190 HB  | 0.5     | 7         | 0.18       | 0.43        | 190         | 300                | 3                   | 0.3                | 220 |
|                    |   |                  |   | 250 HB  | 0.5     | 7         | 0.18       | 0.43        | 190         | 250                | 3                   | 0.3                | 200 |
|                    | Low Alloyed                             | 2                | 42CrMo4, St50, Cr60, 4140, 4340, 100Cr6                     | 230 HB  | 0.5     | 7         | 0.15       | 0.34        | 150         | 210                | 3                   | 0.26               | 180 |
|                    |   |                  |   | 280 HB  | 0.5     | 7         | 0.15       | 0.3         | 130         | 190                | 3                   | 0.23               | 150 |
|                    |   |                  |   | 180 HB  | 0.5     | 7         | 0.15       | 0.34        | 150         | 240                | 3                   | 0.26               | 200 |
|                    |   |                  |   | 350 HB  | 0.5     | 7         | 0.15       | 0.3         | 130         | 170                | 3                   | 0.23               | 140 |
|                    | High Alloyed                            | 3                | X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19                     | 220 HB  | 0.5     | 5         | 0.12       | 0.3         | 90          | 150                | 2.3                 | 0.23               | 130 |
|                    |   |                  |   | 280 HB  | 0.5     | 5         | 0.12       | 0.3         | 90          | 130                | 2.3                 | 0.23               | 120 |
|                    |   |                  |   | 320 HB  | 0.5     | 5         | 0.12       | 0.24        | 60          | 110                | 2.3                 | 0.21               | 100 |
|                    |   |                  |   | 350 HB  | 0.5     | 5         | 0.12       | 0.24        | 60          | 90                 | 2.3                 | 0.21               | 80  |
| Cast Iron          | Grey                                    | 7                | GG20, GG40, EN-GJL-250, N030B                               | 150 HB  | 0.5     | 7         | 0.18       | 0.43        | 150         | 240                | 3                   | 0.3                | 200 |
|                    |   |                  |   | 200 HB  | 0.5     | 7         | 0.18       | 0.43        | 150         | 220                | 3                   | 0.3                | 180 |
|                    |   |                  |   | 250 HB  | 0.5     | 7         | 0.18       | 0.43        | 150         | 190                | 3                   | 0.3                | 160 |
| Cast Iron          | Malleable & Nodular                     | 8                | GGG40, GGG70, 50005   | 150 HB  | 0.5     | 7         | 0.15       | 0.38        | 100         | 200                | 3                   | 0.26               | 180 |
|                    |   |                  |   | 200 HB  | 0.5     | 7         | 0.15       | 0.38        | 100         | 180                | 3                   | 0.26               | 150 |
|                    |   |                  |   | 250 HB  | 0.5     | 7         | 0.15       | 0.38        | 100         | 150                | 3                   | 0.26               | 130 |
| Hardened Materials | Steel Chilled Cast Iron White Cast Iron | 11               | G-X300CrMo15<br>Ni-Hard 2<br>X100CrMo13, 440C, G-X260NiCr42 | 55 HRc  | 0.5     | 1.5       | 0.1        | 0.19        | 30          | 60                 | 0.8                 | 0.16               | 40  |
|                    |   |                  |   | 400 HB  | 0.5     | 2         | 0.1        | 0.24        | 40          | 80                 | 1.1                 | 0.18               | 50  |
|                    |   |                  |   | 45 HRc  | 0.5     | 2.5       | 0.1        | 0.24        | 40          | 80                 | 1.5                 | 0.18               | 60  |
|                    |   |                  |   | 50 HRc  | 0.5     | 1.8       | 0.1        | 0.22        | 40          | 70                 | 1.1                 | 0.17               | 55  |
|                    |   |                  |   | 55 HRc  | 0.5     | 1.5       | 0.1        | 0.19        | 40          | 60                 | 0.8                 | 0.16               | 50  |