

# Machining Conditions

## APMT 0903 PDTR

| Material Group              | Group No. | Materials Examples                        | Brinell hardness HB | d.o.c [mm] |     | feed [mm/dent] |      | Vc [m/min] |     |
|-----------------------------|-----------|---|---------------------|------------|-----|----------------|------|------------|-----|
|                             |           |   |                     | min        | max | min            | max  | min        | max |
| Low Carbon steel            | 1         | XC 12<br>S 250 Pb                         | 150                 | 0.5        | 8.5 | 0.10           | 0.25 | 190        | 300 |
|                             |           |   | 180                 |            |     |                |      |            | 260 |
|                             |           |   | 210                 |            |     |                |      |            | 220 |
| Alloy steel                 | 2         | 42 CrMo 4<br>100 Cr 6<br>32 NiCrMo 14.5   | 180                 | 0.5        | 8.5 | 0.08           | 0.22 | 130        | 200 |
|                             |           |   | 230                 |            |     |                |      |            | 180 |
|                             |           |   | 280                 |            |     |                | 0.18 | 100        | 160 |
|                             |           |   | 320                 |            |     |                |      |            | 140 |
| High alloy steel            | 3         | X38 CrMoV 5<br>X210 CrW 12<br>X90 CrMoV 8 | 220                 | 0.5        | 7   | 0.08           | 0.18 | 90         | 130 |
|                             |           |   | 280                 |            |     |                |      |            | 110 |
|                             |           |   | 320                 |            |     |                | 0.16 | 60         | 95  |
|                             |           |   | 350                 |            |     |                |      |            | 80  |
| Austenitic Stainless Steel  | 4         | 303 / 304<br>304 L                        | Annealed            | 0.5        | 8.5 | 0.1            | 0.22 | 170        | 230 |
|                             | 5         | 316 / 316 L                               | Annealed            |            |     |                |      |            | 0.1 |
|                             | 6         | 316 Ti<br>630 (F16PH)                     | Annealed            |            | 7   | 0.08           | 0.18 | 70         | 120 |
| Ferritic Stainless Steel    | 7         | 430 / 439 /<br>444                        | Annealed            | 0.5        | 8.5 | 0.08           | 0.2  | 150        | 190 |
| Martensitic Stainless Steel | 8         | 410 / 420                                 | Annealed            | 0.5        | 8.5 | 0.08           | 0.2  | 130        | 210 |
|                             |           |   | Treated             |            |     |                |      | 90         | 150 |
| Grey Cast iron              | 9         | EN - GJL 200                              | 140 à 230           | 0.5        | 8.5 | 0.10           | 0.28 | 150        | 240 |
|                             |           | EN - GJL 250                              |                     |            |     |                |      |            | 220 |
|                             |           | EN - GJL 300                              |                     |            |     |                |      |            | 190 |
| Nodular Cast iron           | 10        | EN - GJS 400                              | 210                 | 0.5        | 8.5 | 0.10           | 0.25 | 100        | 200 |
|                             |           | EN - GJS 600                              |                     |            |     |                | 0.22 |            | 160 |
|                             |           | EN - GJS 800                              |                     |            |     |                | 0.18 |            | 130 |
| Nickel based alloys         | 11        | Inconel 625                               | -----               | 0.5        | 5   | 0.08           | 0.15 | 25         | 35  |
|                             |           | Inconel 718                               | -----               |            |     |                |      | 28         | 38  |
|                             |           | Hastelloy C                               | -----               |            |     |                |      | 40         | 65  |
| Titanium based alloys       | 12        | TiAl 6 V4                                 | -----               | 0.5        | 5   | 0.08           | 0.18 | 30         | 55  |
|                             |           | T40                                       | -----               |            |     |                | 0.15 | 22         | 35  |