

# Series # 6512

| Material group   | Hardness            | SFM | Feed Rate - IPR      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
|--|---------------------|-----|----------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|--------------------|------------------------|------------------------|
|  |                     |     | 1/16 in.<br>1.590 mm | 1/8 in.<br>3.170 mm | 1/4 in.<br>6.350 mm | 3/8 in.<br>9.520 mm | 1/2 in.<br>12.700 mm | 5/8 in.<br>15.870 mm | 3/4 in.<br>19.050 mm | 1 in.<br>25.400 mm | 1 1/4 in.<br>31.750 mm | 1 1/2 in.<br>38.100 mm |
| Common structural steels                                 | ≤100 Bhn            | 330 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
|  | >100-260 Bhn        | 330 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
| Free-cutting steels                                      | ≤24 Rc              | 395 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
|  | >24-30 Rc           | 330 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
| Unalloyed heat-treatable steels                          | ≤16 Rc              | 360 | 0.003                | 0.004               | 0.006               | 0.009               | 0.010                | 0.012                |                      |                    |                        |                        |
|  | 16-24 Rc            | 330 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
|  | 24-30 Rc            | 330 | 0.003                | 0.005               | 0.008               | 0.011               | 0.012                | 0.016                |                      |                    |                        |                        |
| Alloyed heat-treatable steels                            | 24-30 Rc            | 330 | 0.003                | 0.005               | 0.008               | 0.011               | 0.012                | 0.016                |                      |                    |                        |                        |
|  | >30-38 Rc           | 330 | 0.003                | 0.004               | 0.006               | 0.009               | 0.010                | 0.012                |                      |                    |                        |                        |
| Unalloyed case hardened steels                           | ≤230 Bhn            | 330 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
| Alloyed case hardened steels                             | 24-30 Rc            | 330 | 0.003                | 0.005               | 0.008               | 0.011               | 0.012                | 0.016                |                      |                    |                        |                        |
|  | >30-38 Rc           | 330 | 0.003                | 0.004               | 0.006               | 0.009               | 0.010                | 0.012                |                      |                    |                        |                        |
| Nitriding steels   | ≥24-30 Rc           | 260 | 0.002                | 0.003               | 0.005               | 0.007               | 0.008                | 0.010                |                      |                    |                        |                        |
|  | >30-38 Rc           | 195 | 0.002                | 0.003               | 0.005               | 0.007               | 0.008                | 0.010                |                      |                    |                        |                        |
| Tool steels  | ≤24 Rc              | 295 | 0.003                | 0.004               | 0.006               | 0.009               | 0.010                | 0.012                |                      |                    |                        |                        |
|  | >24-30 Rc           | 230 | 0.002                | 0.002               | 0.004               | 0.006               | 0.006                | 0.008                |                      |                    |                        |                        |
| High speed steels  | ≥14-30 Rc           | 165 | 0.002                | 0.002               | 0.004               | 0.006               | 0.006                | 0.008                |                      |                    |                        |                        |
| Spring steels  | ≤330 Bhn            | 165 | 0.002                | 0.002               | 0.004               | 0.006               | 0.006                | 0.008                |                      |                    |                        |                        |
| Stainless steels, sulphured<br>austenitic<br>martensitic | ≤24 Rc              | 330 | 0.002                | 0.003               | 0.005               | 0.007               | 0.008                | 0.010                |                      |                    |                        |                        |
|  | ≤24 Rc              | 230 | 0.001                | 0.002               | 0.002               | 0.004               | 0.004                | 0.005                |                      |                    |                        |                        |
|  | ≤24 Rc              | 330 | 0.002                | 0.003               | 0.005               | 0.007               | 0.008                | 0.010                |                      |                    |                        |                        |
| Hardened steels  | ≤40-48 Rc           | 165 | 0.002                | 0.002               | 0.004               | 0.006               | 0.006                | 0.008                |                      |                    |                        |                        |
|  | >48-60 Rc           | 165 | 0.001                | 0.002               | 0.004               | 0.006               | 0.006                | 0.008                |                      |                    |                        |                        |
| Special alloys   | ≤38 Rc              | 100 | 0.004                | 0.002               | 0.002               | 0.004               | 0.004                | 0.005                |                      |                    |                        |                        |
| Cast iron  | ≤240 Bhn            | 425 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
|  | <300 Bhn            | 295 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
| Spheroidal graphite iron and<br>malleable cast iron      | ≤240 Bhn            | 425 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
|  | <300 Bhn            | 295 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
| Chilled cast iron  | ≤350 Bhn            | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
| Ti and Ti-alloys   | ≤24 Rc              | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
|  | >24-38 Rc           | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
| Aluminium and Al-alloys                                  | ≤120 Bhn            | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
| Al wrought alloys  | ≤150 Bhn            | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
| Al cast alloys ≤ 10 % Si<br>> 10 % Si                    | ≤200 Bhn            | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
|  | ≤200 Bhn            | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
| Magnesium alloys   | ≤150 Bhn            | •   | •                    | •                   | •                   | •                   | •                    | •                    |                      |                    |                        |                        |
| Copper, low-alloyed                                      | ≤120 Bhn            | 395 | •                    | 0.001               | 0.002               | 0.003               | 0.003                | 0.004                |                      |                    |                        |                        |
| Brass, short-chipping<br>long-chipping                   | ≤200 Bhn            | 360 | 0.004                | 0.006               | 0.010               | 0.014               | 0.016                | 0.020                |                      |                    |                        |                        |
|  | ≤200 Bhn            |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
| Bronze, short-chipping                                   | ≤200 Bhn            |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
|  | >200-260 Bhn        |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
| Bronze, long-chipping                                    | ≤24 Rc<br>>24-30 Rc |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
| Duroplastics   | -                   |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
| Thermoplastics   | -                   |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
| Reinforced plastics - Kevlar                             | -                   |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |
| Reinforced plastics - GFK / CFK                          | -                   |     |                      |                     |                     |                     |                      |                      |                      |                    |                        |                        |

Note: Pilot holes (depth >1xD) are recommended when using RT100T drills. Use a series 5514 or similar drill to drill a minimum of 1xD deep. Then enter the pilot hole with the RT100T drill at approx 300 rev/min and 500 mm/min speed, start high coolant pressure and increase RPM. Drill to hole depth without pecking.