# Series # 501

| Material group | Hardness | SFM | Feed Rate - IPR | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1/16 in. 1.590 mm | 1/8 in. 3.170 mm | 1/4 in. 6.350 mm | 3/8 in. 9.520 mm | 1/2 in. 12.700 mm | 5/8 in. 15.870 mm | 3/4 in. 19.050 mm | 1 in. 25.400 mm | 1 1/4 in. 31.750 mm | 1 1/2 in. 38.100 mm |
| Common structural steels | ≤100 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| | >100-260 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Free-cutting steels | ≤24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >24-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Unalloyed heat-treatable steels | ≤16 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | 16-24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | 24-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Alloyed heat-treatable steels | 24-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >30-38 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Unalloyed case hardened steels | ≤230 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Alloyed case hardened steels | 24-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >30-38 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Nitriding steels | ≥24-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >30-38 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Tool steels | ≤24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >24-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| High speed steels | ≥14-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Spring steels | ≤330 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Stainless steels, sulphured | ≤24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| austenitic | ≤24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| martensitic | ≤24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Hardened steels | ≤40-48 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >48-60 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Special alloys | ≤38 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Cast iron | ≤240 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| | <300 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Spheroidal graphite iron and malleable cast iron | ≤240 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| | <300 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Chilled cast iron | ≤350 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Ti and Ti-alloys | ≤24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >24-38 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Aluminium and Al-alloys | ≤120 Bhn | 225 | 0.0020 | 0.0065 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | • | • | • | • |
| Al wrought alloys | ≤150 Bhn | 225 | 0.0020 | 0.0065 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | • | • | • | • |
| Al cast alloys ≤ 10 % Si | ≤200 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| > 10 % Si | ≤200 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Magnesium alloys | ≤150 Bhn | 225 | 0.0017 | 0.0050 | 0.0080 | 0.0100 | 0.0125 | 0.0125 | • | • | • | • |
| Copper, low-alloyed | ≤120 Bhn | 130 | 0.0020 | 0.0065 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | • | • | • | • |
| Brass, short-chipping | ≤200 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| long-chipping | ≤200 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Bronze, short-chipping | ≤200 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| | >200-260 Bhn | • | • | • | • | • | • | • | • | • | • | • |
| Bronze, long-chipping | ≤24 Rc | • | • | • | • | • | • | • | • | • | • | • |
| | >24-30 Rc | • | • | • | • | • | • | • | • | • | • | • |
| Duroplastics | – | • | • | • | • | • | • | • | • | • | • | • |
| Thermoplastics | – | 70 | 0.0015 | 0.0040 | 0.0065 | 0.0080 | 0.0100 | 0.0100 | • | • | • | • |
| Reinforced plastics - Kevlar | – | • | • | • | • | • | • | • | • | • | • | • |
| Reinforced plastics - GFK / CFK | – | • | • | • | • | • | • | • | • | • | • | • |