

$$RPM = \frac{SFM}{DIAM. \text{ in.}} \times 3.82 \quad IPM = IPR \times RPM$$

$$\text{HOLE DEPTH in.} \times 60 = \text{Cut Time IPM} \quad \text{mm} = \text{in.} \times 25.40$$

$$\text{m/min.} = \text{SFM} \div 3.28 \quad \text{mm/rev.} = \text{IPR} \times 25.40$$

$$\text{Bar} = \text{PSI} \div 14.50 \quad \text{Liter} = \text{Gal.} \div 3.79$$

Series # 1047 / # 5243 (5xD body)

| Material group | Hardness | SFM | Feed Rate - IPR | | | | | |
|--|--------------------------------|-------------------|----------------------------|---|---|---|--|---|
| | | | ≤16.000 mm | 41/64 - 25/32 in. 16.001 - 20.000 mm | 51/64 - 31/32 in. 20.001 - 25.000 mm | 63/64 - 1 17/64 in. 25.001 - 31.500 mm | 1 1/4 - 1 9/16 in. 31.501 - 40.000 mm | 1 37/64 - 1 61/64 in. 40.001 - 50.000 mm |
| Common structural steels | ≤100 Bhn >100-260 Bhn | 315 265 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0125 | 0.0200 0.0160 | 0.0250 0.0200 |
| Free-cutting steels | ≤24 Rc >24-30 Rc | 315 265 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0200 0.0160 | 0.0250 0.0200 | 0.0315 0.0250 |
| Unalloyed heat-treatable steels | ≤16 Rc 16-24 Rc 24-30 Rc | 315 300 265 | 0.0100 0.0100 0.0080 | 0.0125 0.0125 0.0100 | 0.0160 0.0160 0.0125 | 0.0160 0.0160 0.0125 | 0.0200 0.0200 0.0160 | 0.0250 0.0250 0.0200 |
| Alloyed heat-treatable steels | 24-30 Rc >30-38 Rc | 265 215 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0250 0.0200 |
| Unalloyed case hardened steels | ≤230 Bhn | 315 | 0.0125 | 0.0160 | 0.0200 | 0.0200 | 0.0250 | 0.0315 |
| Alloyed case hardened steels | 24-30 Rc >30-38 Rc | 265 185 | 0.0100 0.0065 | 0.0125 0.0080 | 0.0160 0.0100 | 0.0160 0.0100 | 0.0200 0.0125 | 0.0250 0.0160 |
| Nitriding steels | ≥24-30 Rc >30-38 Rc | 265 185 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 |
| Tool steels | ≤24 Rc >24-30 Rc | 135 115 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 |
| High speed steels | ≥14-30 Rc | 135 | 0.0050 | 0.0065 | 0.0080 | 0.0080 | 0.0100 | 0.0125 |
| Spring steels | ≤330 Bhn | 115 | 0.0040 | 0.0050 | 0.0065 | 0.0065 | 0.0080 | 0.0100 |
| Stainless steels, sulphured austenitic martensitic | ≤24 Rc ≤24 Rc ≤24 Rc | 135 100 85 | 0.0050 0.0050 0.0050 | 0.0065 0.0065 0.0065 | 0.0080 0.0080 0.0080 | 0.0080 0.0080 0.0080 | 0.0100 0.0100 0.0100 | 0.0125 0.0125 0.0125 |
| Hardened steels | ≤40-48 Rc >48-60 Rc | 70 • | 0.0040 • | 0.0050 • | 0.0065 • | 0.0065 • | 0.0080 • | 0.0100 • |
| Special alloys | ≤38 Rc | 70 | 0.0040 | 0.0050 | 0.0065 | 0.0065 | 0.0080 | 0.0100 |
| Cast iron | ≤240 Bhn <300 Bhn | 490 360 | 0.0125 0.0125 | 0.0160 0.0160 | 0.0200 0.0200 | 0.0200 0.0200 | 0.0250 0.0250 | 0.0315 0.0315 |
| Spheroidal graphite iron and malleable cast iron | ≤240 Bhn <300 Bhn | 360 295 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0200 0.0160 | 0.0250 0.0200 | 0.0315 0.0250 |
| Chilled cast iron | ≤350 Bhn | 85 | 0.0040 | 0.0050 | 0.0065 | 0.0065 | 0.0080 | 0.0100 |
| Ti and Ti-alloys | ≤24 Rc >24-38 Rc | 100 85 | 0.0050 0.0040 | 0.0065 0.0050 | 0.0080 0.0065 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0125 0.0100 |
| Aluminium and Al-alloys | ≤120 Bhn | 660 | 0.0125 | 0.0160 | 0.0200 | 0.0200 | 0.0250 | 0.0315 |
| Al wrought alloys | ≤150 Bhn | 660 | 0.0125 | 0.0160 | 0.0200 | 0.0200 | 0.0250 | 0.0315 |
| Al cast alloys ≤ 10 % Si > 10 % Si | ≤200 Bhn ≤200 Bhn | 555 455 | 0.0125 0.0125 | 0.0160 0.0160 | 0.0200 0.0200 | 0.0200 0.0200 | 0.0250 0.0250 | 0.0315 0.0315 |
| Magnesium alloys | ≤150 Bhn | 655 | 0.0125 | 0.0160 | 0.0200 | 0.0200 | 0.0250 | 0.0315 |
| Copper, low-alloyed | ≤120 Bhn | 260 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | 0.0200 | 0.0250 |
| Brass, short-chipping long-chipping | ≤200 Bhn ≤200 Bhn | 685 455 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0200 0.0160 | 0.0250 0.0200 | 0.0315 0.0250 |
| Bronze, short-chipping | ≤200 Bhn >200-260 Bhn | 260 210 | 0.0100 0.0100 | 0.0125 0.0125 | 0.0160 0.0160 | 0.0160 0.0160 | 0.0200 0.0200 | 0.0250 0.0250 |
| Bronze, long-chipping | ≤24 Rc >24-30 Rc | 160 130 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0250 0.0200 |
| Duroplastics | - | 260 | 0.0080 | 0.0100 | 0.0125 | 0.0125 | 0.0160 | 0.0200 |
| Thermoplastics | - | 260 | 0.0080 | 0.0100 | 0.0125 | 0.0125 | 0.0160 | 0.0200 |
| Reinforced plastics - Kevlar | - | 260 | 0.0080 | 0.0100 | 0.0125 | 0.0125 | 0.0160 | 0.0200 |
| Reinforced plastics - GFK / CFK | - | 260 | 0.0080 | 0.0100 | 0.0125 | 0.0125 | 0.0160 | 0.0200 |

Series # 1047 / # 5248 (7xD body)

| Material group | Hardness | SFM | Feed Rate - IPR | | | | | |
|--|--------------------------------|-------------------|----------------------------|---|---|---|--|---|
| | | | ≤16.000 mm | 41/64 - 25/32 in. 16.001 - 20.000 mm | 51/64 - 31/32 in. 20.001 - 25.000 mm | 63/64 - 1 17/64 in. 25.001 - 31.500 mm | 1 1/4 - 1 9/16 in. 31.501 - 40.000 mm | 1 37/64 - 1 61/64 in. 40.001 - 50.000 mm |
| Common structural steels | ≤100 Bhn >100-260 Bhn | 300 265 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0200 |
| Free-cutting steels | ≤24 Rc >24-30 Rc | 300 265 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0250 0.0200 |
| Unalloyed heat-treatable steels | ≤16 Rc 16-24 Rc 24-30 Rc | 300 280 250 | 0.0080 0.0080 0.0065 | 0.0100 0.0100 0.0080 | 0.0125 0.0125 0.0100 | 0.0125 0.0125 0.0100 | 0.0160 0.0160 0.0125 | 0.0200 0.0200 0.0160 |
| Alloyed heat-treatable steels | 24-30 Rc >30-38 Rc | 250 215 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 |
| Unalloyed case hardened steels | ≤230 Bhn | 300 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | 0.0200 | 0.0250 |
| Alloyed case hardened steels | 24-30 Rc >30-38 Rc | 250 185 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 |
| Nitriding steels | ≥24-30 Rc >30-38 Rc | 265 185 | 0.0065 0.0050 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 |
| Tool steels | ≤24 Rc >24-30 Rc | 135 115 | 0.0065 0.0050 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 |
| High speed steels | ≥14-30 Rc | 135 | 0.0040 | 0.0050 | 0.0065 | 0.0065 | 0.0080 | 0.0100 |
| Spring steels | ≤330 Bhn | 115 | 0.0040 | 0.0050 | 0.0065 | 0.0065 | 0.0080 | 0.0100 |
| Stainless steels, sulphured austenitic martensitic | ≤24 Rc ≤24 Rc ≤24 Rc | 135 100 85 | 0.0040 0.0040 0.0040 | 0.0050 0.0050 0.0050 | 0.0065 0.0065 0.0065 | 0.0065 0.0065 0.0065 | 0.0080 0.0080 0.0080 | 0.0100 0.0100 0.0100 |
| Hardened steels | ≤40-48 Rc >48-60 Rc | 70 • | 0.0035 • | 0.0040 • | 0.0050 • | 0.0065 • | 0.0065 • | 0.0080 • |
| Special alloys | ≤38 Rc | 70 | 0.0035 | 0.0040 | 0.0050 | 0.0065 | 0.0065 | 0.0080 |
| Cast iron | ≤240 Bhn <300 Bhn | 490 360 | 0.0100 0.0100 | 0.0125 0.0125 | 0.0160 0.0160 | 0.0160 0.0160 | 0.0200 0.0200 | 0.0250 0.0250 |
| Spheroidal graphite iron and malleable cast iron | ≤240 Bhn <300 Bhn | 360 295 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0250 0.0200 |
| Chilled cast iron | ≤350 Bhn | 85 | 0.0040 | 0.0050 | 0.0065 | 0.0065 | 0.0080 | 0.0100 |
| Ti and Ti-alloys | ≤24 Rc >24-38 Rc | 100 85 | 0.0040 0.0035 | 0.0050 0.0040 | 0.0065 0.0050 | 0.0065 0.0065 | 0.0080 0.0065 | 0.0100 0.0080 |
| Aluminium and Al-alloys | ≤120 Bhn | 660 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | 0.0200 | 0.0250 |
| Al wrought alloys | ≤150 Bhn | 660 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | 0.0200 | 0.0250 |
| Al cast alloys ≤ 10 % Si > 10 % Si | ≤200 Bhn ≤200 Bhn | 555 455 | 0.0100 0.0100 | 0.0125 0.0125 | 0.0160 0.0160 | 0.0160 0.0160 | 0.0200 0.0200 | 0.0250 0.0250 |
| Magnesium alloys | ≤150 Bhn | 655 | 0.0100 | 0.0125 | 0.0160 | 0.0160 | 0.0200 | 0.0250 |
| Copper, low-alloyed | ≤120 Bhn | 260 | 0.0080 | 0.0100 | 0.0125 | 0.0125 | 0.0160 | 0.0200 |
| Brass, short-chipping long-chipping | ≤200 Bhn ≤200 Bhn | 685 455 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0160 0.0125 | 0.0200 0.0160 | 0.0250 0.0200 |
| Bronze, short-chipping | ≤200 Bhn >200-260 Bhn | 260 210 | 0.0080 0.0080 | 0.0100 0.0100 | 0.0125 0.0125 | 0.0125 0.0125 | 0.0160 0.0160 | 0.0200 0.0200 |
| Bronze, long-chipping | ≤24 Rc >24-30 Rc | 160 130 | 0.0080 0.0065 | 0.0100 0.0080 | 0.0125 0.0100 | 0.0125 0.0100 | 0.0160 0.0125 | 0.0200 0.0160 |
| Duroplastics | - | 260 | 0.0065 | 0.0080 | 0.0100 | 0.0100 | 0.0125 | 0.0160 |
| Thermoplastics | - | 260 | 0.0065 | 0.0080 | 0.0100 | 0.0100 | 0.0125 | 0.0160 |
| Reinforced plastics - Kevlar | - | 260 | 0.0065 | 0.0080 | 0.0100 | 0.0100 | 0.0125 | 0.0160 |
| Reinforced plastics - GFK / CFK | - | 260 | 0.0065 | 0.0080 | 0.0100 | 0.0100 | 0.0125 | 0.0160 |