

General Guide for Cutting Speeds and Feeds for Drills

The following information is a general guide. Specific jobs may need to be modified because of varying job conditions, such as coolant, equipment and job requirements.

Guide for Drill Feeds

Drill feeds are governed by the size of the drill and also the material to be drilled.

The lower feeds should be used when drilling relatively hard materials such as alloy steels. The higher feeds should be used when drilling relatively soft materials such as aluminum and brass.

These feeds are based on the peripheral speed of a drill.

| Drill Dia. | Feed per Rev. | Drill Dia. | Feed per Rev. |
|-------------|---------------|------------|----------------|
| Under 1/8" | .001" - .002" | Under 3 mm | .025 - .05 mm |
| 1/8" - 1/4" | .002" - .004" | 3 - 6 mm | .05 - .100 mm |
| 1/4" - 1/2" | .004" - .007" | 6 - 13 mm | .100 - .180 mm |
| 1/2" - 1" | .007" - .015" | 13 - 25 mm | .180 - .370 mm |
| Over 1" | .015" - .025" | Over 25 mm | .370 - .630 mm |

Guide for Pheripheral Speeds

| Material | Feet/Minute | | Meters/Minute | |
|-----------------|--------------|-----------|---------------|-----------|
| | Carbon Drill | HSS Drill | Carbon Drill | HSS Drill |
| Machinery Steel | 30 | 80 | 9 | 24 |
| Cast Iron | 35 | 100 | 10.5 | 30 |
| Brass | 60 | 200 | 18 | 60 |
| Alloy Steel | - | 50 | - | 15 |

| Drill Dia. | | PERIPHERAL SPEEDS – FEET PER MINUTE (METERS PER MINUTE) | | | | | |
|------------|-------|---|---------|---------|---------|----------|----------|
| | | 30 (9) | 50 (15) | 60 (18) | 80 (24) | 100 (30) | 200 (60) |
| Inches | mm | REVOLUTIONS PER MINUTE | | | | | |
| 1/8 | 3 mm | 917 | 1528 | 1833 | 2445 | 3056 | 6112 |
| 1/4 | 6 mm | 458 | 764 | 917 | 1222 | 1528 | 3056 |
| 1/2 | 13 mm | 229 | 382 | 458 | 611 | 764 | 1528 |
| 1 | 25 mm | 115 | 191 | 229 | 306 | 382 | 764 |
| 1 1/2 | 38 mm | 76 | 127 | 153 | 204 | 255 | 509 |
| 2 | 50 mm | 57 | 96 | 115 | 153 | 191 | 382 |
| 3 | 75 mm | 38 | 64 | 76 | 102 | 127 | 255 |