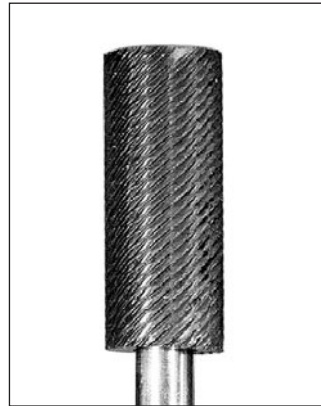


HIGH SPEED STEEL BURS



GROUND-FROM-THE-SOLID ROTARY FILES

Ground from blanks of hardened high speed steel, these files have smooth, unbroken flutes. The design is particularly well-suited for filing mild steels and ductile, stringy materials such as aluminum, brass, lead and magnesium. They can also be used on some grades of plastics. Ground cut rotary files perform best at medium speeds in flexible shaft machines and air tools. The teeth have standard helix angles of approximately 30 with C/L.



CHISEL (HAND) CUT ROTARY FILES

The skilled hand crafting required to produce these files sets them apart from the others. Even those files which are machine chiseled must be completed with hand detailing. Teeth of these high speed steel files are staggered in contrast to the smooth flutes of ground-from-the-solid files. This irregular tooth design especially suits the requirements for working on dense, tough materials, such as die steels, steel forgings and other ferrous materials. They are best suited for operation at lower speeds such as in hand flexible shaft machines, drill presses, lathes, etc. Standard chisel cut high speed steel rotary files have 18 teeth per inch.

SCALE OF CUTS FOR HSS, STANDARD CUT GROUND-FROM-THE-SOLID ROTARY FILES

| Head Diameter | | | | | | | | | | |
|----------------------------|-------|------|-------|------|------|------|------|----|--------|--|
| 1/8" | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1-1/8" | |
| Teeth To The Circumference | | | | | | | | | | |
| 10 | 12 | 15 | 18 | 20 | 25 | 25 | 25 | 30 | 30 | |

IMPORTANT NOTE ON OPERATING SPEEDS: Before using any rotary file, be certain to check the maximum recommended speed chart, since speed recommendations vary according to type of file, file diameter and material being removed or finished.

MAXIMUM RECOMMENDED SPEEDS FOR HIGH SPEED STEEL ROTARY FILES USED ON THE FOLLOWING MATERIALS:

| Diameter | MILD STEEL | CAST IRON | ALUMINUM |
|----------|---------------------|-----------|----------|
| | Maximum Speed (RPM) | | |
| 1/8" | 4,000 | 6,000 | 15,000 |
| 1/4" | 2,500 | 3,400 | 10,000 |
| 3/8" | 2,000 | 2,250 | 8,000 |
| 1/2" | 1,500 | 1,750 | 6,000 |
| 5/8" | 1,350 | 1,450 | 5,000 |
| 3/4" | 1,200 | 1,250 | 4,000 |
| 1" | 800 | 1,000 | 2,500 |

| Diameter | BRASS | BRONZE | MAGNESIUM |
|----------|---------------------|--------|-----------|
| | Maximum Speed (RPM) | | |
| 1/8" | 15,000 | 15,000 | 8,000 |
| 1/4" | 10,000 | 10,000 | 7,000 |
| 3/8" | 8,000 | 8,000 | 6,500 |
| 1/2" | 6,000 | 6,000 | 6,000 |
| 5/8" | 5,000 | 5,000 | 5,000 |
| 3/4" | 4,000 | 4,000 | 4,000 |
| 1" | 2,500 | 2,500 | 4,000 |

NOTE: Rotary files must be chucked true and to the full capacity of the machine chuck. Also, when using double cut rotary files, reduce speed by approximately 1/3 to 1/2 from that shown for standard cut.

CYLINDRICAL - Plain end



| Head Dia. (1/4" Shank) | Head Length | Overall Length | Ground Cut Standard | Chisel Cut Standard |
|------------------------|-------------|----------------|---------------------|---------------------|
| 1/8" | 1/2" | 2-1/4" | 33.026 | 33.401 |
| 3/16" | 1/2" | 2-1/4" | 33.029 | — |
| 1/4" | 1" | 2-1/4" | 33.032 | 33.407 |
| 5/16" | 1" | 2-1/4" | 33.035 | — |
| 3/8" | 1" | 2-1/4" | 33.038 | 33.410 |
| 1/2" | 1" | 2-1/4" | 33.041 | 33.413 |
| 5/8" | 1" | 2-1/4" | 33.044 | 33.416 |
| 1/4" | 1-1/2" | 2-3/4" | 33.047 | 33.419 |
| 5/16" | 1-1/2" | 2-3/4" | — | 33.422 |
| 3/8" | 1-1/2" | 2-3/4" | 33.050 | 33.425 |
| 1/2" | 1-1/2" | 2-3/4" | 33.053 | 33.428 |
| 3/4" | 3/4" | 2-1/4" | 33.056 | 33.438 |
| 1" | 1" | 2-1/4" | 33.059 | 33.441 |
| Head Dia. (1/8" Shank) | Head Length | Overall Length | Ground Cut Standard | Chisel Cut Standard |
| 1/8" | 5/8" | 1-1/2" | 33.298 | 33.640 |
| 1/4" | 1/2" | 1-1/2" | 33.301 | 33.643 |