

F-100



SIMONDS

SIMONDS
SAW AND STEEL

DIVISION
WALLACE-MURRAY CORPORATION

Red Tang Files

The Right Files with
the Right Shape and Cut
for Every Job!

SIMONDS "RED TANG" FILES

ARE

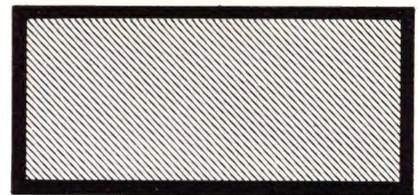
First Quality ONLY

One of the oldest and most widely used cutting tools, the file, in all its sizes and varieties, is an essential modern metal cutting and surfacing tool for production, maintenance and general work in industry, on the farm and in the home workshop.

To make a first quality Grade A file, requires skill, experience and up-to-date manufacturing facilities. Simonds Red Tang Files, famous for quality the world over, are the result of years of file-making know-how combined with the most modern production methods and machinery.

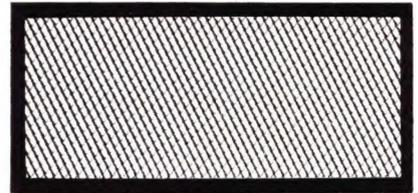
Precision cut for uniform tooth height and sharpness; scientifically heat-treated for maximum hardness and edge-holding ability; individually checked and "prover tested" for cut-ability and uniformity, Red Tang Files remove more metal with less effort, wear better and stay sharp longer.

Make this catalog your ready reference in selecting the proper file that will do a quicker, easier, more efficient filing job at less cost.



SINGLE CUT

One series of parallel, equally-spaced cuts or teeth at an angle across the face or width.



DOUBLE CUT

Two series of parallel, equally-spaced cuts crossing each other forming many small cutting points or teeth. The first series of cuts is called the over cut; the second, the up cut.

B—Bastard Cut **2**—Second Cut
C—Coarse Cut **S**—Smooth Cut
(Slightly Coarser Than Bastard)
DC—Double Cut
SC—Single Cut

AMERICAN PATTERN FILES

mill and saw files



MILL FILES

| SIZE | CUT | SIZE | CUT |
|--------------------|---------|---------------------|---------|
| 4" x 3/4" x 3/4" | B-2S* | 10" x 3/4" x 1/4" | C-B-2S* |
| 6" x 1 1/4" x 3/4" | C-B-2S* | 12" x 1 1/4" x 3/4" | C-B-2S* |
| 7" x 1 1/4" x 3/4" | B | 14" x 1 3/4" x 3/4" | C-B-2S* |
| 8" x 1 1/2" x 3/4" | C-B-2S* | 16" x 1 1/2" x 3/4" | B* |

1 ROUND EDGE* Made in 6", 8", 10" and 12" Bastard Cut Only
2 ROUND EDGES* Made in 6", 8", and 10" Bastard Cut Only

Mill Files with round edges do not taper in width. * Furnished single cut only.



SPECIAL CROSSCUT FILES

| SIZE | SIZE | SIZE |
|----------------------|----------------------|-------------------------|
| 6" x 1 1/32" x 3/64" | 7" x 1 1/16" x 1/8" | 10" x 3 1/32" x 1 1/64" |
| | 8" x 2 3/32" x 3/64" | |



BANDSAW (BLUNT) FILES

| SIZE (REG) | SIZE (SLIM) |
|--------------|--------------|
| 6" x 1 1/32" | 6" x 3/16" |
| 8" x 1 1/32" | 8" x 1 1/32" |



CANTSAW FILES

| SIZE | SIZE |
|------------------------|-------------------------|
| 6" x 1 1/32" x 1 1/64" | 8" x 1 1/16" x 3/32" |
| 7" x 3 3/64" x 1/4" | 10" x 1 3/16" x 1 1/32" |



CROSSCUT FILES

| SIZE | SIZE | SIZE |
|--------------------|----------------------|-------------------------|
| 6" x 3/16" x 7/32" | 8" x 1 1/16" x 3/32" | 10" x 1 3/16" x 2 3/64" |



REGULAR TAPER FILES

| SIZE | SIZE | SIZE |
|--------------|--------------|---------------|
| 6" x 1 1/32" | 7" x 1 1/32" | 10" x 2 3/32" |
| | 8" x 1 1/32" | |



SLIM TAPER FILES

| SIZE | SIZE | SIZE |
|------------|--------------|--------------|
| 4" x 7/32" | 6" x 1 1/32" | 8" x 1 1/32" |
| 5" x 9/32" | 7" x 1 1/32" | 10" x 3/8" |



EXTRA SLIM TAPER FILES

| SIZE | SIZE | SIZE |
|--------------|------------|--------------|
| 4" x 3/16" | 6" x 3/32" | 7" x 3/16" |
| 5" x 1 1/64" | | 8" x 1 1/32" |



DOUBLE EXTRA SLIM TAPER FILES

| SIZE | SIZE | SIZE |
|------------|------------|------------|
| 4" x 3/32" | 6" x 7/32" | 7" x 1/4" |
| 5" x 3/16" | | 8" x 3/16" |



DOUBLE ENDER FILES

| SIZE | SIZE | SIZE |
|--------------|------------|--------------|
| 6" x 1 1/64" | 8" x 3/32" | 9" x 1 1/32" |
| 7" x 7/32" | | 10" x 3/8" |



GULLET SPECIAL

SIZE
8" x 3/16"

SIZE
10" x 3/8"



DADO FILE

SIZE
10" x 3/8"



NARROW BAND SAW SPECIAL

NO. 2
SIZE
8" x 3/16"

NO. 3
SIZE
6" x 1/2"
7" x 1/2"

NO. 4 5 6
SIZE
6" x 3/8"
7" x 1/32"



SAW BIT SPECIAL

SIZE
8" x 1 1/16" x 3/32"

chain saw files



ROUND CHAIN SAW FILES

| SIZE | CUT | SIZE | CUT |
|------------|-----------|------------|-----------|
| 8" x 3/16" | SMOOTH DC | 8" x 3/32" | SMOOTH DC |
| 8" x 3/32" | SMOOTH DC | 8" x 3/16" | SMOOTH DC |
| 8" x 1/4" | SMOOTH DC | 8" x 3/8" | SMOOTH DC |



MILL CHAIN SAW FILES—2 ROUND EDGES

| SIZE | NO. | CUT |
|-------------------|------|-----|
| 8" x 5/8" x 3/32" | 3084 | SC |



BEVELED EDGE CHAIN SAW FILE

| SIZE | NO. |
|-------------------|------|
| 7" x 1/2" x 3/16" | 4680 |

machinists' files



FLAT FILES

| SIZE | CUT | SIZE | CUT |
|----------------------|---------|-------------------------|---------|
| 4" x 1 1/32" x 5/64" | B-2-S | 12" x 1 3/32" x 3/32" | C-B-2-S |
| 6" x 3/8" x 3/32" | C-B-2-S | 14" x 1 11/32" x 5/16" | C-B-2-S |
| 8" x 25/32" x 7/32" | C-B-2-S | 16" x 1 11/32" x 11/32" | B-2-S |
| 10" x 31/32" x 1/4" | C-B-2-S | 18" x 1 11/16" x 3/8" | B |



HAND FILES

| SIZE | CUT | SIZE | CUT |
|---------------------|-------|------------------------|-------|
| 6" x 5/8" x 5/32" | B-2-S | 12" x 1 5/32" x 3/32" | B-2-S |
| 8" x 25/32" x 7/32" | B-2-S | 14" x 1 11/32" x 3/16" | B-2-S |
| 10" x 31/32" x 1/4" | B-2-S | | |



PILLAR FILES

| SIZE | CUT | SIZE | CUT |
|-----------------------|-------|-----------------------|-----|
| 6" x 3/16" x 3/32" | B-2-S | 12" x 25/32" x 13/32" | B |
| 8" x 3/16" x 3/32" | B-2-S | 14" x 25/32" x 15/32" | B |
| 10" x 21/32" x 11/32" | B-2-S | | |



HALF ROUND FILES

| SIZE | CUT | SIZE | CUT |
|----------------------|---------|-------------------------|---------|
| 4" x 3/16" x 3/8" | B-2-S | 12" x 1 1/8" x 13/32" | C-B-2-S |
| 6" x 15/32" x 5/32" | C-B-2-S | 14" x 1 3/32" x 13/32" | C-B-2-S |
| 8" x 3/4" x 7/32" | C-B-2-S | 16" x 1 15/32" x 15/32" | B-S |
| 10" x 15/16" x 3/32" | C-B-2-S | | |



THREE SQUARE FILES

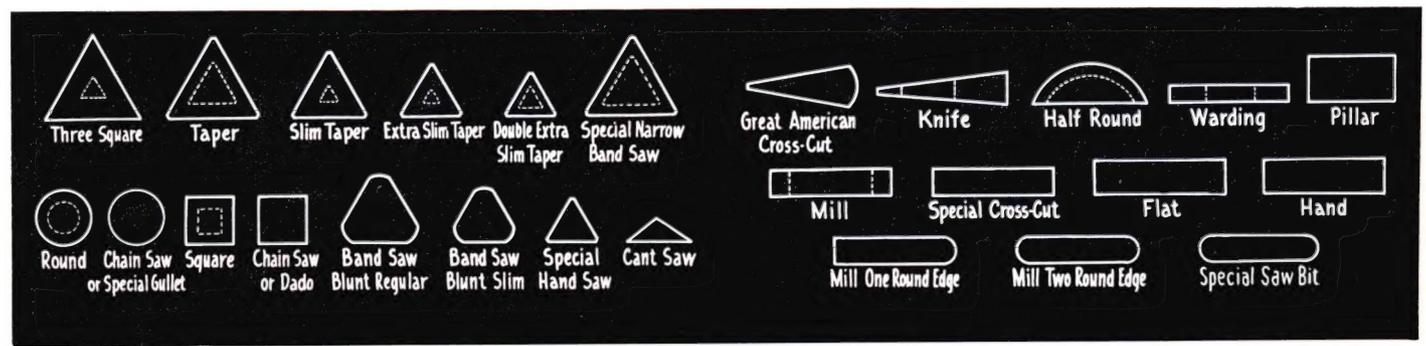
| SIZE | CUT | SIZE | CUT |
|-------------|-------|-------------|-------|
| 6" x 15/32" | B-2-S | 10" x 3/4" | B-2-S |
| 8" x 3/8" | B-2-S | 12" x 7/32" | B |



ROUND FILES

| SIZE | CUT | SIZE | CUT |
|------------|---------|------------|---------|
| 4" x 5/32" | B-2-S | 8" x 5/16" | C-B-2-S |
| 6" x 3/32" | C-B-2-S | 10" x 3/8" | C-B-2-S |
| | | 12" x 1/2" | C-B-2-S |
| | | 14" x 3/8" | C-B-2-S |
| | | 16" x 3/4" | B |

CROSS SECTIONAL VIEWS OF COMMONLY USED FILES



SIMONDS

SQUARE FILES

| SIZE | CUT | SIZE | CUT | SIZE | CUT |
|------------|---------|------------|---------|------------|---------|
| 4" x 3/32" | B-2-S | 8" x 3/16" | C-B-2-S | 14" x 5/8" | C-B-2-S |
| 6" x 7/32" | C-B-2-S | 10" x 3/8" | C-B-2-S | 16" x 3/4" | B |
| | | 12" x 1/2" | C-B-2-S | | |

WARDING FILES

| SIZE | CUT | SIZE | CUT |
|----------------------|-------|----------------------|-------|
| 4" x 1 1/32" x 3/64" | B-2-S | 8" x 2 3/32" x 3/32" | B-2-S |
| 6" x 5/8" x 3/64" | B-2-S | 10" x 1 3/16" x 1/8" | B-2-S |
| | | 12" x 1 1/4" x 3/64" | B |

KNIFE FILES

| SIZE | CUT | SIZE | CUT |
|----------------------|-------|----------------------|-------|
| 4" x 1 1/32" x 3/64" | B-2-S | 8" x 2 3/32" x 3/16" | B-2-S |
| 6" x 2 1/32" x 3/32" | B-2-S | 10" x 1 1/32" x 1/4" | B-2-S |

MULTI-KUT FILES

| FLAT SIZE | HALF ROUND SIZE | SQUARE SIZE |
|------------------------|------------------------|-------------|
| 8" x 25/32" x 7/32" | 8" x 3/4" x 7/32" | 8" x 5/16" |
| 10" x 31/32" x 1/4" | 10" x 15/16" x 9/32" | 10" x 3/8" |
| 12" x 1-5/32" x 9/32" | 12" x 1-1/8" x 11/32" | 12" x 1/2" |
| 14" x 1-11/32" x 5/16" | 14" x 1-9/32" x 13/32" | 14" x 5/8" |

special purpose files

ROTARY MOWER and GARDEN TOOL FILE

SIZE 7" x 3/4" x 1/8"

FLAT FOUNDRY FILES

HALF ROUND FOUNDRY FILES

| FLAT FOUNDRY FILES SIZE | HALF ROUND FOUNDRY FILES SIZE |
|-------------------------|-------------------------------|
| 8" x 2 3/32" x 7/32" | 8" x 3/4" x 7/32" |
| 10" x 3 1/32" x 1/4" | 10" x 1 3/16" x 9/32" |
| 12" x 1 1/32" x 3/32" | 12" x 1 1/8" x 11/32" |
| 14" x 1 11/32" x 3/16" | 14" x 1 1/32" x 13/32" |

LONG ANGLE LATHE FILES

| SIZE | SIZE | SIZE |
|----------------------|-----------------------|------------------------|
| 10" x 3 1/32" x 1/4" | 12" x 1 3/32" x 9/32" | 14" x 1 11/32" x 5/16" |

FLAT ALUMINUM

HALF ROUND ALUMINUM

ALUMINUM FILES—TYPE A

| FLAT ALUMINUM SIZE | HALF ROUND ALUMINUM SIZE |
|-----------------------|--------------------------|
| 6" x 5/8" x 5/32" | 6" x 1 1/32" x 5/32" |
| 8" x 2 3/32" x 7/32" | 8" x 3/4" x 7/32" |
| 10" x 3 1/32" x 1/4" | 10" x 1 3/16" x 9/32" |
| 12" x 1 1/32" x 3/32" | 12" x 1 1/8" x 11/32" |

FLAT LEAD FLOAT

HALF ROUND LEAD FLOAT

FLAT LEAD FLOAT SIZE

| |
|-----------------------|
| 8" x 2 3/32" x 7/32" |
| 10" x 3 1/32" x 1/4" |
| 12" x 1 5/32" x 9/32" |

HALF ROUND LEAD FLOAT SIZE

| |
|-----------------------|
| 8" x 3/4" x 7/32" |
| 10" x 1 1/16" x 9/32" |
| 12" x 1 1/8" x 11/32" |

BRASS FILES (half round only)

| SIZE |
|-----------------------|
| 8" x 3/4" x 7/32" |
| 10" x 1 1/16" x 9/32" |
| 12" x 1 1/8" x 11/32" |

DOCTOR BLADE FILES

SIZE
#381—14" x 1 3/16" x 9/32"

AUGER BIT FILES

SIZE
7" x 1 1/32" x 1/16"

CABINET FILES

| SIZE | SIZE | SIZE |
|-------------------|----------------------|----------------------|
| 8" x 7/8" x 3/16" | 10" x 1 1/8" x 7/32" | 12" x 1 3/16" x 1/4" |

FLAT WOOD FILES

HALF ROUND WOOD FILES

| FLAT WOOD FILES SIZE | HALF ROUND WOOD FILES SIZE |
|------------------------|----------------------------|
| 8" x 2 3/32" x 7/32" | 8" x 3/4" x 7/32" |
| 10" x 3 1/32" x 1/4" | 10" x 1 3/16" x 9/32" |
| 12" x 1 1/32" x 3/32" | 12" x 1 1/8" x 11/32" |
| 14" x 1 11/32" x 5/16" | 14" x 1 1/32" x 13/32" |

rasps

FLAT WOOD RASPS

HALF ROUND WOOD RASPS

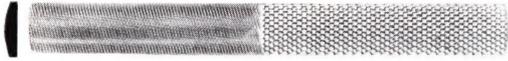
| SIZE | CUT | SIZE | CUT |
|------------------------|-----|-------------------------|-----|
| 8" x 2 3/32" x 9/32" | B | 12" x 1 3/32" x 13/32" | B |
| 10" x 3 1/32" x 11/32" | B | 14" x 1 11/32" x 15/32" | B |

| SIZE | CUT | SIZE | CUT |
|----------------------|-----|------------------------|-----|
| 6" x 1 1/32" x 1/4" | B | 12" x 1 1/32" x 7/16" | B-S |
| 8" x 2 3/32" x 5/8" | B-S | 14" x 1 11/32" x 1/2" | B-S |
| 10" x 3 1/32" x 3/8" | B-S | 16" x 1 11/32" x 9/16" | B |



CABINET RASPS

| SIZE | CUT | SIZE | CUT |
|----------------------|-----|--------------------------|-----|
| 6" x 1 1/16" x 3/16" | 2 | 12" x 1 11/32" x 1 1/32" | 2-S |
| 8" x 2 3/32" x 1/4" | 2-S | 14" x 1 9/16" x 3/8" | 2 |
| 10" x 1 1/8" x 3/32" | 2-S | | |



SHOE RASPS

| SIZE | CUT | SIZE | CUT |
|--------------------|-------------------|-------------------------|-------------------|
| 8" x 7/8" x 3/32" | ALL SPECIAL COMB. | 10" x 1 1/16" x 1 1/32" | ALL SPECIAL COMB. |
| 9" x 3/32" x 3/16" | | | |



HORSE RASPS

| PLAIN HORSE RASPS—REGULAR | | TANGED RASPS—REGULAR | | 14" TANGED "RACE TRAK" RASP | |
|--------------------------------|--|----------------------------|--|-----------------------------|--|
| SIZE | | SIZE | | SIZE | |
| 12" x 1 5/8" x 1 1/32" | | 14" x 1 3/4" x 7/16" | | 14" x 1 3/4" x 3/32" | |
| 14" x 1 1/2" x 3/8" | | 16" x 1 7/8" x 1 1/32" | | | |
| 16" x 1 23/32" x 7/8" | | | | | |
| PLAIN HORSE RASPS—SLIM PATTERN | | 18" PLAIN "RACE TRAK" RASP | | | |
| SIZE | | SIZE | | | |
| 18" x 1 1/16" x 1 1/32" | | 18" x 1 1/16" x 1 1/32" | | | |

ignition files



5" PATENTED TUNGSTEN POINT FILES (POCKET CLIP)

Clip handle fits over pocket flap for easy carrying. A necessary tool for every auto mechanic. Used for cleaning spark plugs and dressing contact points. Packed in boxes containing a dozen files. Also mounted on cards (one dozen to a card, 12 cards to carton.)



5" REGULAR TUNGSTEN POINT FILES

For cleaning distributor points and spark plugs. Also used in cleaning contact points of magnetos, switches, electric bells, etc. Packed in boxes containing one dozen files and also mounted on cards (one dozen files to a card, 12 cards to carton.)



5" VOLTAGE REGULATOR FILES No. 2470

For voltage regulators, circuit breakers, relay and other electrical contact points requiring an extra-thin file with fine cut and smooth finish, 5" over-all—3/16" wide, approximately .015" thick. Packed on counter display cards only, one dozen on card—twelve cards to a carton.



6" VOLTAGE REGULATOR RIFFLERS No. 1997

Recommended for removing pits and corrosion from contact points and also for filing them to a smooth finish. Length 6" over-all. Packed in individual tubes to prevent breakage. 1 dozen tubes per box.

file cards



FILE CARD

COMBINATION FILE CARD AND BRUSH

When file teeth are clogged with filings—slipping, scratching and inefficient cutting result. Clean your coarse file frequently with a file card (specially designed fine wire brush), and use the brush with your fine cut file. The combination file card and brush provides both card and brush, in one handy cleaning tool.

file handles



SIZES

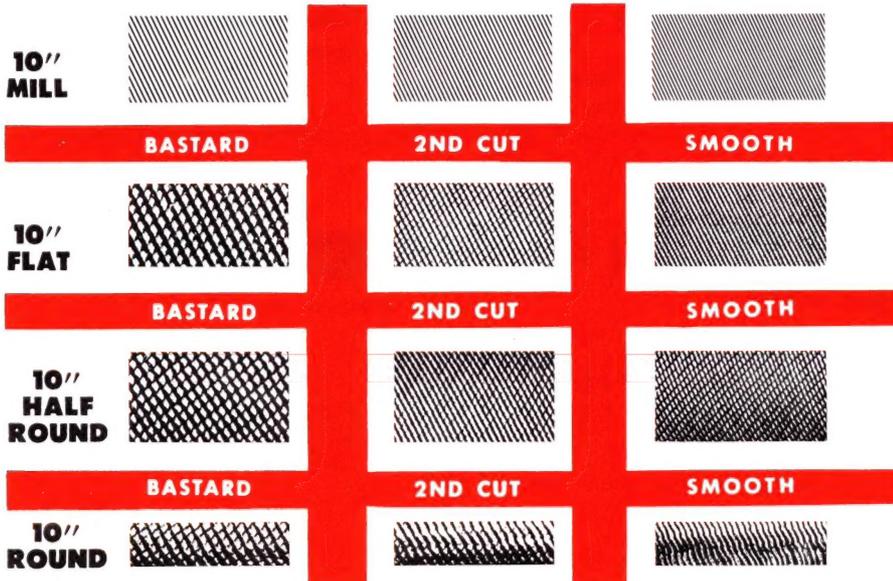
- # 104 4" for files 3" to 6"
- # 106 4 1/2" for files 4" to 8"
- # 108 5" for files 6" to 10"
- # 110 5 1/2" for files 8" to 12"
- # 112 6" for files 12" to 18"

Standard carton contains 1/4 gross of a size.

A handle should always be used on a tanged file. A properly fitted handle means quicker, better work, and makes the job easier and safer. Handles are manufactured of soft wood and readily absorb hand moisture. Long shank steel ferrule prevents splitting.

STANDARD TOOTH CUTS

The illustrations at left serve only to show a cut comparison between four various types of ten-inch files. Bear in mind that the coarse cut illustrated for any ten-inch file would not be the same degree of coarseness as that found on the same file in a six-inch length. However, the same relative difference always exists between Bastard, Second Cut and Smooth Cut for any file in any particular length.



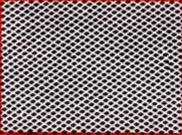
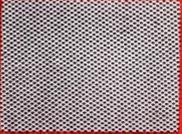
Swiss PATTERN FILES

Swiss Pattern Files are the delicate cutting instruments of precision craftsmen — jewelers, die-makers, gunsmiths, watchmakers and many others. Wherever it's necessary to finish delicate and intricate parts, Swiss Pattern Files do the job better, quicker. Swiss Pattern Files are slender. They are narrower in both width and thickness than

other type files and the tapered files have fine points. Teeth extend to the extreme edges and much finer cuts are available than on any other files. The American-Swiss Swiss Pattern Files are the finest available. This well-known brand has met the test of industrial users and the complete selection assures exactly the right file for any job.

COMPARISON OF CUTS

Cuts shown are those of a 6" file. On longer files cuts are coarser; on shorter files cuts are finer.

| | | |
|---|--|---|
|  |  |  |
| 6" No. 00 34 teeth per inch | 6" No. 0 50 teeth per inch | 6" No. 1 66 teeth per inch |
|  |  |  |
| 6" No. 2 84 teeth per inch | 6" No. 3 102 teeth per inch | 6" No. 4 120 teeth per inch |
|  | | |
| | | 6" No. 6 184 teeth per inch |



HAND FILES

| SIZE | CUT | SIZE | CUT |
|--------------------|----------------|---------------------|-----------|
| 4" x 1 1/32 x 3/64 | 0, 2, 4 | 10" x 1 1/16 x 3/32 | 00,0, 2,4 |
| 6" x 2 3/32 x 3/32 | 00,0,1,2,3,4,6 | 12" x 1 3/32 x 1/4 | 00,0,2,4 |
| 8" x 2 3/32 x 3/16 | 00,0,1,2, 4,6 | | |



PILLAR FILES

| SIZE | CUT | SIZE | CUT |
|--------------------|---------------|----------------------|--------------|
| 3" x 1/64 x 3/64 | 0,2, 4 | 8" x 3/64 x 13/64 | 00,0,1,2,3,4 |
| 4" x 2 3/64 x 3/64 | 00,0,1,2, 4,6 | 10" x 4 1/64 x 13/64 | 00,0, 2,4 |
| 6" x 1 3/32 x 3/64 | 00,0,1,2,3,4 | 12" x 5 3/64 x 13/64 | 00,0, 2 |



NARROW PILLAR FILES

| SIZE | CUT | SIZE | CUT |
|--------------------|---------------|---------------------|-------------|
| 4" x 3/32 x 3/64 | 00,0,1,2, 4,6 | 8" x 2 3/64 x 13/64 | 00,0,1,2, 4 |
| 6" x 2 3/64 x 3/64 | 00,0,1,2, 4,6 | 10" x 3 1/6 x 13/64 | 00,0, 2 |



KNIFE FILES

| SIZE | CUT | SIZE | CUT |
|--------------------|------------|--------------------|------------|
| 4" x 2 3/64 x 3/64 | 00,0,1,2,4 | 6" x 2 3/32 x 3/32 | 00,0,1,2,4 |
| | | 8" x 2 3/32 x 3/16 | 00,0,1,2 |



EXTRA NARROW PILLAR FILES

| SIZE | CUT | SIZE | CUT |
|--------------------|---------------|---------------------|-------------|
| 3" x 3/64 x 3/32 | 00,0, 2, 4 | 8" x 3/16 x 13/64 | 00,0,1,2, 4 |
| 4" x 1 1/64 x 3/64 | 00,0,1,2, 4,6 | 10" x 3 1/6 x 13/64 | 00,0, 2,4 |
| 6" x 1/4 x 3/64 | 00,0,1,2, 4,6 | | |

Additional Widths — Extra Narrow Pillar Files

| SIZE | CUT | SIZE | CUT |
|-----------------|-------------|------------------|-----------|
| 6" x 1/8 x 3/64 | 00,0,2, 4,6 | 6" x 3/16 x 3/64 | 00,0,2, 4 |



HALF-ROUND FILES

| SIZE | CUT | SIZE | CUT |
|------------------|-------------|----------------------|----------------|
| 3" x 3/32 x 3/32 | 00,0, 2, 4 | 6" x 2 3/64 x 3/64 | 00,0,1,2,3,4,6 |
| 4" x 3/8 x 3/64 | 00,0, 2,3,4 | 8" x 4 1/64 x 3/16 | 00,0,1,2,3,4 |
| 5" x 3/16 x 3/64 | 00,0, 2,3,4 | 10" x 1 3/16 x 13/64 | 00,0, 2, 4 |



CROSSING FILES

| SIZE | CUT | SIZE | CUT |
|-----------------|---------------|-------------------|-----------|
| 4" x 3/16 x 1/8 | 00,0, 2,4 | 8" x 1 3/16 x 1/4 | 00,0, 2,4 |
| 6" x 3/8 x 3/16 | 00,0, 2,3,4,6 | | |



WARDING FILES

| SIZE | CUT | SIZE | CUT |
|------------------|----------|------------------|--------|
| 3" x 1/32 x 1/32 | 00,0,2 | 8" x 2/32 x 3/32 | 00,0,2 |
| 4" x 3/16 x 3/64 | 00,0,2,4 | | |
| 6" x 1/32 x 3/64 | 00,0,2,4 | | |



EQUALLING FILES

| SIZE | CUT | SIZE | CUT |
|------------------|----------|------------------|----------|
| 3" x 3/16 x 1/16 | 2,4 | 6" x 1/32 x 3/64 | 00,0,2,4 |
| 4" x 1/32 x 3/64 | 00,0,2,4 | 8" x 3/4 x 3/64 | 00,0,2,4 |

WARDING AND EQUALLING FILES MAY BE OBTAINED IN MINIMUM QUANTITIES OF ONE DOZEN IN CERTAIN B & S GAUGES.



BARRETTE FILES

| SIZE | CUT | SIZE | CUT |
|----------|------------|-----------|------------|
| 3" x 3/4 | 00,0, 2,4 | 6" x 2/32 | 00,0,1,2,4 |
| 4" x 1/2 | 00,0,1,2,4 | 8" x 3/8 | 00,0,2,4 |



PIPPIN FILES

| SIZE | CUT | SIZE | CUT |
|------------------|--------|-----------------|--------|
| 4" x 3/32 x 1/8 | 00,0,2 | 8" x 1/2 x 3/32 | 00,0,2 |
| 6" x 1/32 x 3/32 | 00,0,2 | | |



CROCHET FILES

| SIZE | CUT | SIZE | CUT |
|-----------------|-----------|-------------------|---------|
| 4" x 3/8 x 3/32 | 00,0,2,4 | 8" x 1/16 x 3/32 | 00,0, 2 |
| 6" x 3/64 x 1/8 | 00,0, 2,4 | 10" x 1/16 x 3/16 | 00,0,2 |



SQUARE FILES

| SIZE | CUT | SIZE | CUT |
|-----------|-------------|------------|------------|
| 3" x 1/8 | 0,2, 4 | 8" x 1/64 | 00,0,1,2,4 |
| 4" x 3/64 | 00,0,1,2, 4 | 10" x 2/64 | 00,0,2 |
| 6" x 3/32 | 00,0,1,2, 4 | | |



TAPER ROUND FILES

| SIZE | CUT | SIZE | CUT |
|-----------|----------------|------------|--------------|
| 3" x 3/32 | 00,0,1,2,3,4,6 | 8" x 1/4 | 00,0,1,2,3,4 |
| 4" x 1/8 | 00,0,1,2,3,4 | 10" x 2/64 | 00,0,1,2 |
| 5" x 3/32 | 00,0, 2,3,4 | | |
| 6" x 3/16 | 00,0,1,2,3,4,6 | | |



ROUND STRAIGHT FILES

| SIZE | CUT | SIZE | CUT |
|-----------|----------|----------|----------|
| 4" x 1/8 | 00,0,2,4 | 8" x 1/4 | 00,0,2,4 |
| 6" x 3/16 | 00,0,2,4 | | |

These special sizes also carried in stock

| SIZE | CUT |
|-------------------|----------|
| 4" x 1/16 or 3/32 | 00,0,2,4 |
| 6" x 1/8 or 3/32 | 00,0,2,4 |
| 8" x 3/16 or 3/8 | 00,0,2,4 |



THREE SQUARE FILES

| SIZE | CUT | SIZE | CUT |
|-----------|-------------|-----------|------------|
| 3" x 3/32 | 0, 2,4 | 8" x 1/32 | 00,0,1,2,4 |
| 4" x 1/4 | 00,0,1,2, 4 | | |
| 6" x 1/32 | 00,0,1,2, 4 | | |



SLITTING FILES

| SIZE | CUT | SIZE | CUT |
|-----------|-----|----------|-----|
| 4" x 3/16 | 0,2 | 6" x 3/8 | 0,2 |



SCREW HEAD FILES

(With or Without Tang)

| SIZE | CUT |
|------------------|-----|
| 3" x 3/16 x 1/32 | 6 |



ROUND EDGE JOINT FILES

| SIZE | CUT | SIZE | CUT |
|--------------------------|-----|-------------------------|-----|
| 4" x 1/32 x 3/64 (Thick) | 2 | 4" x 1/32 x 3/64 (Thin) | 2 |



SQUARE EDGE JOINT FILES

| SIZE | CUT | SIZE | CUT |
|--------------------------|-----|-------------------------|-----|
| 4" x 1/32 x 3/64 (Thick) | 2 | 4" x 1/32 x 3/64 (Thin) | 2 |



DIE SINKERS' FILES

| | | | | | |
|---------------------------|---------------------------------------|-------------------------|--------------------------|-----------------------------|---------------------------------|
| | | | | | |
| Round 1/8 | Oval (1 Sharp Edge) 3/32 x 3/64 | Three Square 1/64 | Oval 3/32 x 3/64 | Knife 3/32 x 3/64 x 1/64 | Flat 1 Safe Edge 3/16 x 3/64 |
| | | | | | |
| Auriform 3/32 x 3/64 | Square 1/8 | Flat 1 5/64 x 5/64 | Half Round 1/4 x 3/32 | Crochet 3/16 x 5/64 | Lozenge 1/64 x 1/8 |
| LENGTH OVER-ALL 5 1/4" | | LENGTH OF CUT 3 1/2" | | CUTS 0,2 | |



ESCAPEMENT FILES (Square Handle Needle)

| | | | | | |
|----------------|------------|----------------|----------|------------------|------------------|
| | | | | | |
| Round | Half Round | Three Square | Crossing | Knife | Flat |
| | | | | | |
| Square | Barrette | Equaling | Slitting | Half Round Blunt | Round Edge Joint |
| SIZE 5 1/2" | | CUT 0-2-4-6 | | | |

SIZE: Length, width, thickness given in inches.

SWISS PATTERN FILES

(Cut on Downward Stroke)

3 1/4" x 1/4" BENCH FILING MACHINE FILES

| | | | | | |
|---|---|-----------------------------|--|-------------------------------|---------------------------|
| PILLAR (2 SAFE EDGES) 3/32 x 1/8 | EQUALLING (CUT SIDES AND EDGES) 3/32 x 1/8 | THREE SQUARE 7/32 | CANT (CUT 3 SIDES) 15/64 x 7/64 | LOZENGE 15/64 x 1/8 | KNIFE 1/4 x 1/8 |
| ROUND 1/4 | HALF-ROUND 1/4 x 11/64 | OVAL 5/16 x 5/32 | PIPPIN 19/64 x 5/32 | CROCHET 1/4 x 1/8 | SQUARE 3/16 |
| LENGTH OVER-ALL 3 1/4" | | LENGTH OF CUT 2 1/4" | CUTS 00, 2 | SHANK 1/4" dia. | |

(Cut on Downward Stroke)

3 1/4" x 1/8" BENCH FILING MACHINE FILES

| | | | | | |
|---|---|-----------------------------|--|--------------------------------|------------------------------|
| PILLAR (2 SAFE EDGES) 13/64 x 5/64 | EQUALLING (CUT SIDES AND EDGES) 13/64 x 5/64 | THREE SQUARE 5/32 | CANT (CUT 3 SIDES) 17/64 x 3/32 | LOZENGE 7/32 x 7/64 | KNIFE 15/64 x 3/32 |
| ROUND 3/64 | HALF-ROUND 13/64 x 3/32 | OVAL 3/16 x 7/64 | PIPPIN 7/32 x 7/64 | CROCHET 13/64 x 5/64 | SQUARE 7/64 |
| LENGTH OVER-ALL 3 1/4" | | LENGTH OF CUT 2 1/4" | CUTS 00, 2 | SHANK 1/8" dia. | |

(Cut on Upward Stroke)

5" PARALLEL MACHINE FILES

| | | | | | |
|-----------------------------|--|------------------------------|-----------------------------|-------------------------------|-------------------------------|
| ROUND 1/4 | HALF ROUND 17/64 x 1/8 | OVAL 1/4 x 5/32 | CANT 13/32 x 5/32 | PIPPIN 7/32 x 3/32 | KNIFE 3/8 x 3/32 |
| CROCHET 1/4 x 1/8 | PILLAR 2 safe edges 1/4 x 1/8 | THREE SQUARE 11/64 | SQUARE 1/4 | LOZENGE 9/32 x 5/32 | EQUALLING 1/4 x 1/8 |
| LENGTH OVER-ALL 7" | | LENGTH OF CUT 5" | CUTS 00, 2 | | |

(Cut on Downward Stroke)

8" PARALLEL MACHINE FILES

| | | | | | |
|--|---|---|---|---|--|
| ROUND 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" | SQUARE 3/16", 1/4", 5/16", 3/8", 1/2" | PILLAR (1 SAFE EDGE) 3/16" x 3/32", 1/4" x 1/8", 3/8" x 1/16", 1/2" x 1/4" | CROCHET 3/16" x 3/32", 1/4" x 1/8", 3/8" x 1/16", 1/2" x 1/4" | THREE SQUARE 3/16", 1/4", 3/8", 1/2" | HALF ROUND 3/16" x 3/32", 1/4" x 1/8", 3/8" x 1/16", 1/2" x 1/4" |
| OVAL 11/32" x 3/16" | KNIFE 15/32" x 1/8" | PIPPIN 19/64" x 5/32" | EQUALLING (CUT SIDES AND EDGES) 3/8" x 3/64" | LOZENGE (CUT 3 SIDES) 11/32" x 7/32" | CANT 11/32" x 5/32" |
| LENGTH OF CUT 6" | LENGTH OVER-ALL 8" | CUTS 00, 2 | | | |

die sinkers' rifflers

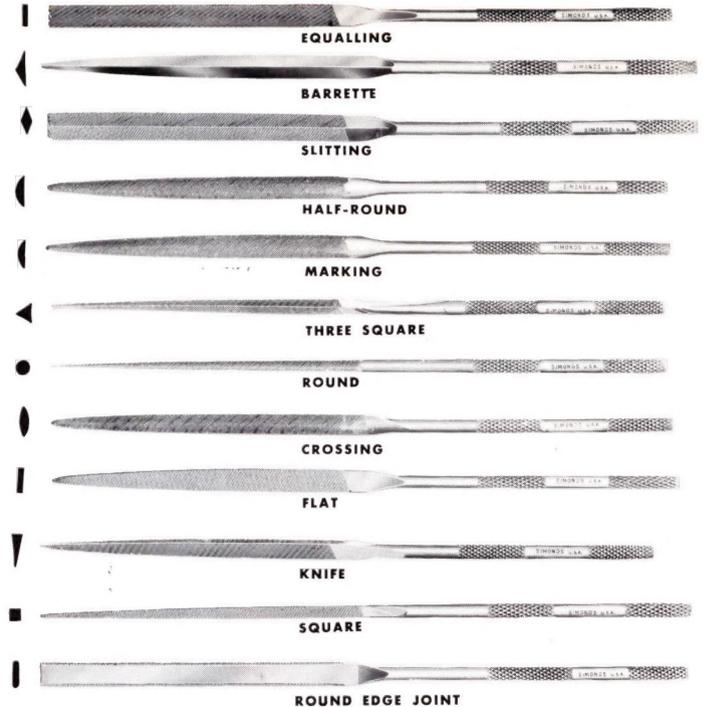


SIZE
6 1/2"

CUT
0, 2, 4

regular needle files

Round Knurled Handles



SIZE
4"
5 1/2"
6 1/4"

CUT
0, 2, 4, 6
0, 2, 4, 6
0, 2, 4, 6

Sets of 12 assorted shapes come in handy plastic kit. Also available with comfort-grip plastic handles.

silversmiths' rifflers



SIZE
7 1/2"

CUT
0, 2

SIMONDS

VIXEN®

milled curved-tooth

FILES

Rigid Tang Type

This is the standard tang design used with a regular file handle. Various shapes, lengths and cuts are furnished for specific applications.

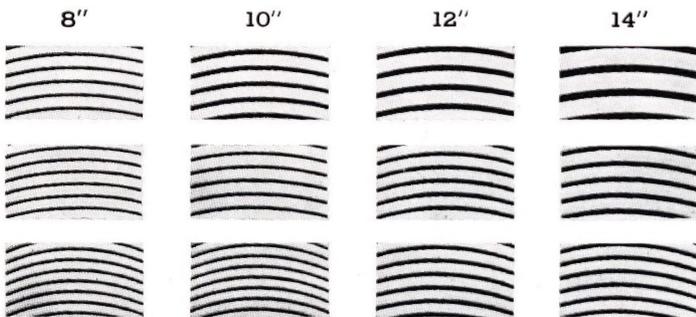
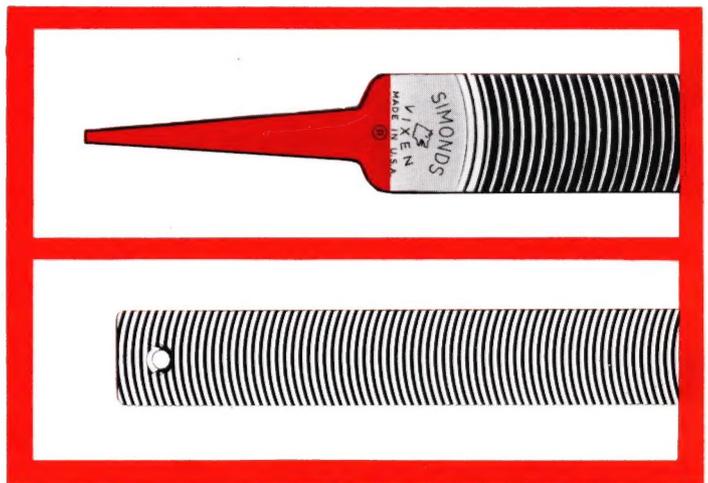
Plain Blade Type

Designed for use with special holders, this blade type file has no tang and is made either rigid or flexible. Flat Flexible Blades in 12" and 14" lengths can be flexed in hand holders for use on either concave or convex surfaces.

Purpose

Universally recognized as the most useful, efficient files ever designed for automobile body manufacture and repair, VIXEN Milled Curved-Tooth Files are also used and held in highest regard in garages, machine shops, aircraft factories, pattern shops, railroad yards and shipyards.

Made on specially designed machines, each circular cutting edge of this unique file is actually a miniature milling cutter. The cutting action produces shavings similar to those of a lathe or planer tool and the definite undercut or rake enables each tooth to not only take a real bite out of the work but readily clear itself of chips. This "self-clearing" feature results in a smooth, scratch-free finish.



Comparison of Cuts

Standard

The illustrations at left show comparative coarseness of Vixen cuts.

Fine

The actual number of teeth or circular cutting edges per inch varies with the shape or type of file, as listed below. In use, Vixen teeth cut efficiently whether working straight ahead or at an angle.

Smooth

Teeth per Inch

| Size | Flat • Flexible • Half Round Solid Half Round Shell | | | Pillar and Square | Babbitt | Flat Utility | |
|------|--|------|--------|----------------------|---------|----------------|----------------|
| | Standard | Fine | Smooth | Standard | — | Coarse Side | Smooth Side |
| 8" | 14 | 16 | 18 | 18 | 10 | 14 | 18 |
| 10" | 12 | 14 | 18 | 16 | 10 | 12 | 18 |
| 12" | 10 | 14 | 16 | 14 | 8 | 10 | 16 |
| 14" | 8 | 12 | 15 | — | 7 | 8 | 15 |

rigid tang types



VIXEN FLAT FILES WITH TANG

| SIZE | CUT |
|-----------------------|--------|
| 8" x 1 1/8" x 1 1/4" | ST F S |
| 10" x 1" x 7/32" | ST F S |
| 12" x 1 1/2" x 1 1/4" | ST F S |
| 14" x 1 1/2" x 5/8" | ST F S |



VIXEN BABBITT FILES WITH TANG

| SIZE | CUT |
|-----------------------|-----------------------|
| 8" x 1 1/8" x 1 1/4" | Coarser than Standard |
| 10" x 1" x 7/32" | Coarser than Standard |
| 12" x 1 1/2" x 1 1/4" | Coarser than Standard |
| 14" x 1 1/2" x 5/8" | Coarser than Standard |



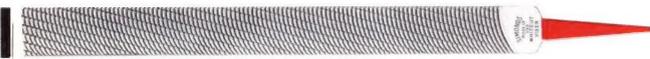
VIXEN FLAT UTILITY FILES WITH TANG

| SIZE | CUT |
|-----------------------|-------------------------|
| 8" x 1 1/8" x 1 1/4" | One side ST, one side S |
| 10" x 1" x 7/32" | One side ST, one side S |
| 12" x 1 1/2" x 1 1/4" | One side ST, one side S |
| 14" x 1 1/2" x 5/8" | One side ST, one side S |



VIXEN HALF ROUND FILES WITH TANG

| SIZE | CUT |
|-----------------------|------|
| 8" x 2 3/32" x 1 1/4" | ST F |
| 10" x 1 5/8" x 5/8" | ST F |
| 12" x 1 7/8" x 3/8" | ST F |
| 14" x 1 3/2" x 2 3/4" | ST F |



vixen whizcut

| SIZE | CUT |
|-----------------------|--------|
| 8" x 1 1/8" x 1 1/4" | ST F S |
| 10" x 1" x 7/32" | ST F S |
| 12" x 1 1/2" x 1 1/4" | ST F S |
| 14" x 1 1/2" x 5/8" | ST F S |



VIXEN PILLAR FILES

| SIZE | CUT |
|------------------------|-----|
| 8" x 1 1/2" x 1 1/4" | ST |
| 10" x 2 1/32" x 1 1/4" | ST |
| 12" x 2 5/32" x 2 3/4" | ST |



VIXEN SQUARE FILES

| SIZE | CUT |
|--------------|-----|
| 8" x 1 1/4" | ST |
| 10" x 1 1/2" | ST |
| 12" x 1 3/2" | ST |

plain type blades



VIXEN FLEXIBLE FILES

| SIZE | CUT |
|----------------------|--------|
| 8" x 2 5/32" x 5/32" | ST F |
| 10" x 1" x 5/32" | ST F |
| 12" x 1 1/2" x 3/16" | ST F S |
| 14" x 1 1/2" x 3/16" | ST F S |



VIXEN HALF ROUND SHELL FILES

| SIZE | CUT |
|---------------------|-----|
| 8" x 7/8" x 1/8" | ST |
| 10" x 1 1/8" x 1/8" | ST |
| 12" x 1 1/4" x 1/8" | ST |
| 14" x 1 1/2" x 1/8" | ST |



VIXEN HALF OVAL SHELL FILES

| SIZE | CUT |
|---------------------|-----|
| 14" x 1 1/2" x 5/8" | ST |



VIXEN NARROW FLEXIBLE FILE

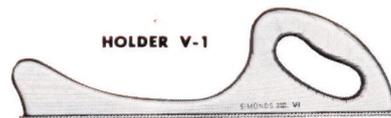
| SIZE | CUT |
|------------|-----|
| 14" x 5/8" | ST |

SPECIAL SEALED PACKAGE

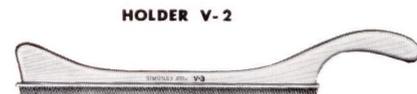
Vixen 14" Flexible and 14" Half Round Shell files are sealed with a rivet in individual envelopes at the factory for buyers' protection against imitation, inferior and resharpened files.



wood holders



HOLDER V-1



HOLDER V-2

metal holder



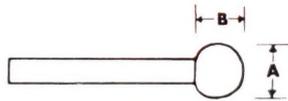
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SIMONDS

Rotary

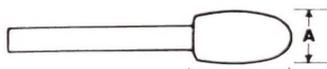
FILES and BURS

Rotary Files and Burs are power driven files widely used in tool and die shops, pattern shops, aircraft and automotive plants, machine shops, foundries, etc. for removing burrs and fins, elongating holes and slots, finishing small and intricate parts, or simply smoothing rough or hard-to-get-at surfaces. This type file is designed for use in drill presses, lathes, and electric or air operated hand tools or flexible shaft equipment.



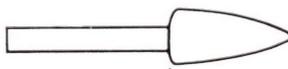
BALL SHAPE HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|-------|-------|----------|-------------------|------|------|
| H12 | HG12 | 1/8" | 1/8" | H16 | HG16 | 1/2" | 1/2" |
| H13 | HG13 | 3/16" | 3/16" | H17 | HG17 | 5/8" | 5/8" |
| H14 | HG14 | 1/4" | 1/4" | H18 | HG18 | 3/4" | 3/4" |
| H88 | HG88 | 3/8" | 3/8" | H19 | HG19 | 1" | 1" |
| H15 | HG15 | 3/8" | 3/8" | | | | |



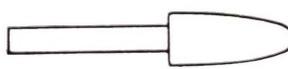
OVAL SHAPE HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|-------|--------|----------|-------------------|------|--------|
| H34 | HG34 | 3/16" | 3/16" | H37 | HG37 | 1/2" | 3/8" |
| H35 | HG35 | 1/4" | 1/2" | H38 | HG38 | 5/8" | 1" |
| H87 | HG87 | 3/8" | 5/8" | H39 | HG39 | 3/4" | 1 1/8" |
| H36 | HG36 | 3/16" | 21/32" | H40 | HG40 | 1" | 1 3/8" |



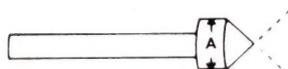
TREE SHAPE (pointed end) HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|------|----------|-------------------|--------|--------|
| H4 | HG4 | 1/4" | 3/4" | H7 | HG7 | 1/2" | 1 1/8" |
| H5 | HG5 | 3/8" | 3/4" | H8 | HG8 | 5/8" | 1" |
| H6 | HG6 | 1/2" | 3/4" | H9 | HG9 | 1 1/8" | 2" |



TREE SHAPE (radius end) HIGH-SPEED STEEL

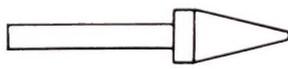
| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|--------|----------|-------------------|--------|--------|
| H28 | HG28 | 1/4" | 3/4" | H31 | HG31 | 1/2" | 1 1/8" |
| H29 | HG29 | 1/4" | 1 1/2" | H32 | HG32 | 3/8" | 1 1/4" |
| H30 | HG30 | 3/8" | 3/4" | H33 | HG33 | 1 1/8" | 2" |



CONE SHAPE (60° and 90°) HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|-----|----------|-------------------|------|-----|
| H20 | HG20 | 1/2" | 90° | H24 | HG24 | 1/2" | 60° |
| H21 | HG21 | 5/8" | 90° | H25 | HG25 | 5/8" | 60° |
| H22 | HG22 | 3/4" | 90° | H26 | HG26 | 3/4" | 60° |
| H23* | HG23* | 1"* | 90° | | | | |

*H-23 and HG-23 also available in 1 1/4", 1 1/2", 2" and 2 1/2" diameter made without point. 1 1/4" and 1 1/2" diameter have 3/8" shank, 2" diameter has 1/2" shank, 2 1/2" diameter has 3/4" shank.



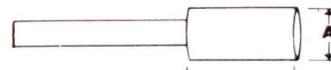
CONE SHAPE (other) HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|-------|--------|----------|-------------------|------|--------|
| H27 | HG27 | 1" | 1 3/8" | H46 | HG46 | 1/4" | 1 1/8" |
| H41 | HG41 | 1/4" | 1/2" | H47 | HG47 | 3/8" | 3/8" |
| H42 | HG42 | 1/4" | 3/4" | H48 | HG48 | 1/2" | 7/8" |
| H43 | HG43 | 1/4" | 1" | H49 | HG49 | 5/8" | 1" |
| H44 | HG44 | 3/16" | 3/4" | | | | |
| H45 | HG45 | 3/16" | 1" | | | | |



FLAME SHAPE HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|------|----------|-------------------|------|--------|
| H1 | HG1 | 5/8" | 7/8" | H2 | HG2 | 5/8" | 1 1/8" |
| | | | | H3 | HG3 | 3/4" | 1 3/4" |

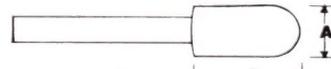


CYLINDRICAL SHAPE (flat end) HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|--------|----------|-------------------|------|--------|
| H50 † | HG50 | 1/4" | 1/2" | H56 | HG56 | 3/8" | 1 1/2" |
| H51 | HG51 | 1/4" | 1" | H57 | HG57 | 3/8" | 1 1/2" |
| H52 | HG52 | 1/4" | 1 1/2" | H58 | HG58 | 1/2" | 1 1/2" |
| H53 | HG53 | 3/8" | 1" | H93 | HG93 | 5/8" | 1" |
| H54 | HG54 | 1/2" | 1" | H94 | HG94 | 3/4" | 1 1/2" |
| H55 | HG55 | 3/4" | 3/4" | H95 | HG95 | 1" | 1" |

†(Not End Cut)

Hand Cut — Cut End unless otherwise specified.
Ground-from-Solid — Plain End unless otherwise specified.



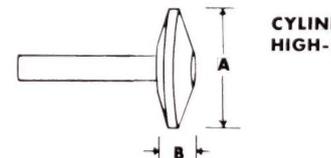
CYLINDRICAL SHAPE (ball nose) HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | E | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|--------|---|----------|-------------------|------|--------|
| H59 | HG59 | 1/8" | 1/2" | | H64 | HG64 | 1/2" | 1" |
| H60 | HG60 | 1/4" | 1" | | H65 | HG65 | 3/8" | 1" |
| H61 | HG61 | 1/4" | 1 1/2" | | H66 | HG66 | 3/8" | 1 1/4" |
| H62 | HG62 | 3/8" | 1" | | H67 | HG67 | 5/8" | 1 1/2" |
| H63 | HG63 | 3/8" | 1 1/2" | | H68 | HG68 | 1/2" | 1 1/2" |



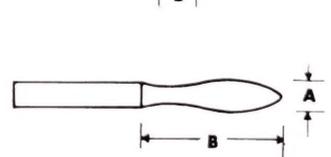
TAPERED SHAPE (radius end) HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|--------|----------|-------------------|------|--------|
| H69 | HG69 | 3/8" | 3/8" | H71 | HG71 | 3/8" | 1 1/4" |
| H70 | HG70 | 5/8" | 1 1/4" | H72 | HG72 | 5/8" | 1" |



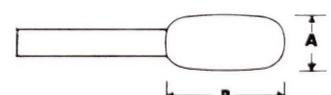
CYLINDRICAL SHAPE (double tapered) HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B |
|----------|-------------------|--------|------|
| H73 | HG73 | 1 1/8" | 3/8" |



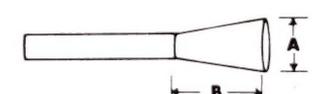
BI-SHAPE HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|--------|
| H10 | HG10 | 1/4" | 1" |
| H11 | HG11 | 5/8" | 1 1/8" |
| H97 | HG97 | 3/8" | 1 3/8" |



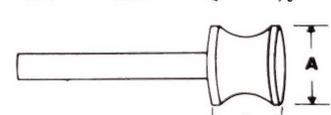
BARREL SHAPE HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|----|
| H89 | HG89 | 1/2" | 1" |



INVERTED CONE SHAPE HIGH-SPEED STEEL

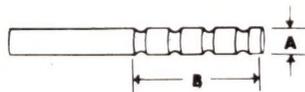
| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|------|----------|-------------------|------|------|
| H74 | HG74 | 3/4" | 5/8" | H96 | HG96 | 1/2" | 3/4" |



CONCAVE SHAPE—Type 1 HIGH-SPEED STEEL

| HAND CUT | GROUND from solid | A | B | HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|-------|----------|-------------------|--------|------|
| H75 | HG75 | 3/4" | 1/2" | H91 | HG91 | 1 1/4" | 7/8" |
| H90 | HG90 | 1" | 3/32" | | | | |

ROTARY FILES - cont'd



**CONCAVE SHAPE—Type 2
HIGH-SPEED STEEL**

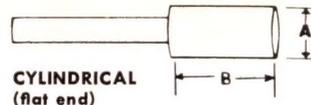
Furnished with cut end unless otherwise specified.

| HAND CUT | GROUND from solid | A | B |
|----------|-------------------|------|---------|
| H92 | HG92 | 1/4" | 1 3/16" |

RECOMMENDED OPERATING SPEEDS OF HIGH-SPEED STEEL ROTARY FILES FOR VARIOUS MATERIALS:

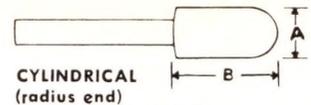
Revolutions per Minute for Various File Diameters

| | 1/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1" |
|-----------|--------|--------|-------|-------|-------|-------|-------|
| Steel | 4,000 | 2,500 | 2,000 | 1,500 | 1,350 | 1,200 | 800 |
| Cast Iron | 6,000 | 3,400 | 2,250 | 1,750 | 1,450 | 1,250 | 1,000 |
| Aluminum | 15,000 | 10,000 | 8,000 | 6,000 | 5,000 | 4,000 | 2,500 |
| Brass | | | | | | | |
| Bronze | | | | | | | |
| Magnesium | 8000 | 7000 | 6500 | 6000 | 5000 | 4500 | 4000 |



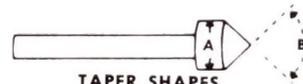
CYLINDRICAL (flat end)

| Shape "A" (Not End Cut) | Shape "AE" (End Cut) | A | B |
|-------------------------|----------------------|-------|--------|
| A-103 | AE-103 | 1/8" | 1/2" |
| A-15 | AE-15 | 3/32" | 3/8" |
| A-23 | AE-23 | 3/32" | 3/8" |
| A-105 | AE-105 | 1/4" | 5/8" |
| A-111 | AE-111 | 3/16" | 3/4" |
| A-121 | AE-121 | 3/8" | 3/4" |
| A-131 | AE-131 | 7/16" | 1" |
| A-141 | AE-141 | 1/2" | 1" |
| A-161 | AE-161 | 3/8" | 1" |
| A-182 | AE-182 | 3/4" | 1 1/2" |
| A-184 | AE-184 | 3/4" | 3/4" |
| A-185 | AE-185 | 3/4" | 1" |
| A-201 | AE-201 | 1" | 1" |



CYLINDRICAL (radius end)

| SHAPE "C" | A | B |
|-----------|-------|------|
| C-5 | 1/8" | 1/2" |
| C-7 | 3/32" | 3/8" |
| C-23 | 3/16" | 3/8" |
| C-105 | 1/4" | 5/8" |
| C-111 | 3/16" | 3/4" |
| C-121 | 3/8" | 3/4" |
| C-131 | 7/16" | 1" |
| C-141 | 1/2" | 1" |
| C-161 | 3/8" | 1" |
| C-181 | 3/4" | 1" |



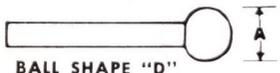
TAPER SHAPES

| SHAPE "M" | A | B | ANGLE | SHAPE "R" | A | B | ANGLE | SHAPE "T" | A | B | ANGLE |
|-----------|--------|--------|-------|-----------|--------|--------|-------|-----------|--------|--------|-------|
| M-105 | 1/4" | 3/4" | 60° | R-105 | 1/4" | 3/4" | 90° | T-105 | 1/4" | 3/4" | 82° |
| M-121 | 3/8" | 1" | 60° | R-121 | 3/8" | 1" | 90° | T-121 | 3/8" | 1" | 82° |
| M-141 | 1/2" | 1 1/2" | 60° | R-141 | 1/2" | 1 1/2" | 90° | T-141 | 1/2" | 1 1/2" | 82° |
| M-161 | 3/4" | 2" | 60° | R-161 | 3/4" | 2" | 90° | T-161 | 3/4" | 2" | 82° |
| M-181 | 1" | 2 1/2" | 60° | R-181 | 1" | 2 1/2" | 90° | T-181 | 1" | 2 1/2" | 82° |
| M-201 | 1 1/4" | 3 1/4" | 60° | R-201 | 1 1/4" | 3 1/4" | 90° | T-201 | 1 1/4" | 3 1/4" | 82° |

CARBIDE BURS

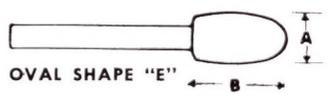
Burs 1/8" and 5/32" cutting diameter are brazed inserted type construction; burs 3/16" and 1/4" diameter are solid carbide throughout and 2" overall. All other burs have carbide heads brazed to 2" long heat treated steel shanks. Shank diameter on all burs, .2495" to .2500".

Furnished in Standard, Coarse or Fine Cuts. Also available in Dia-Mo Cut at no extra cost.



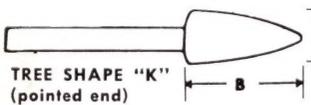
BALL SHAPE "D"

| D-103 | A | B | D-131 | A | B |
|-------|-------|------|-------|-------|--------|
| D-103 | 1/8" | 3/4" | D-131 | 3/16" | 1" |
| D-24 | 3/16" | 1/2" | D-141 | 1/2" | 1 1/2" |
| D-105 | 1/4" | 3/4" | D-161 | 5/8" | 1 1/2" |
| D-113 | 3/16" | 3/4" | D-181 | 3/4" | 1 1/2" |
| D-121 | 3/8" | 1" | D-201 | 1" | 1 1/2" |



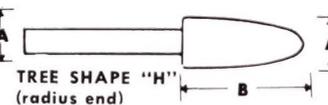
OVAL SHAPE "E"

| E-105 | A | B | E-121 | A | B |
|-------|------|------|-------|------|--------|
| E-105 | 1/4" | 3/8" | E-121 | 3/8" | 5/8" |
| E-141 | 1/2" | 7/8" | E-161 | 5/8" | 1" |
| E-181 | 3/4" | 1" | E-201 | 1" | 1 1/4" |



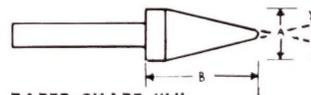
TREE SHAPE "K" (pointed end)

| K-105 | A | B | K-142 | A | B |
|-------|------|------|-------|------|--------|
| K-105 | 1/4" | 3/4" | K-142 | 1/2" | 1" |
| K-111 | 3/8" | 3/4" | K-161 | 3/8" | 1" |
| K-121 | 3/8" | 3/4" | K-182 | 3/4" | 1" |
| K-141 | 1/2" | 3/4" | K-183 | 3/4" | 1 1/2" |



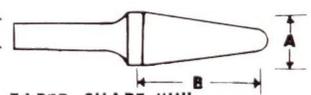
TREE SHAPE "H" (radius end)

| H-3 | A | B | H-141 | A | B |
|-------|------|------|-------|------|--------|
| H-3 | 1/8" | 1/2" | H-141 | 1/2" | 1" |
| H-105 | 1/4" | 3/4" | H-161 | 5/8" | 1" |
| H-121 | 3/8" | 3/4" | H-182 | 3/4" | 1" |
| H-131 | 3/8" | 1" | H-181 | 3/4" | 1 1/4" |
| H-145 | 1/2" | 3/4" | H-183 | 3/4" | 1 1/2" |



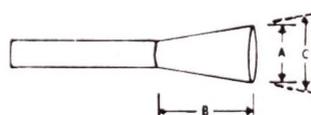
TAPER SHAPE "L"

| L-104 | A | B | C | ANGLE |
|-------|------|------|--------|-------|
| L-104 | 1/4" | 3/4" | 1 1/4" | 14° |
| L-105 | 1/4" | 1/2" | 1 1/4" | 22° |
| L-108 | 1/4" | 1" | 1 1/4" | 10° |
| L-121 | 3/8" | 5/8" | 1 1/4" | 28° |
| L-141 | 1/2" | 7/8" | 1 1/4" | 28° |
| L-161 | 3/8" | 1" | 1 1/4" | 31° |



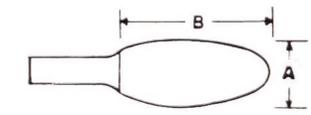
TAPER SHAPE "U" 14° included angle

| U-105 | A | B |
|-------|-------|--------|
| U-105 | 1/4" | 3/8" |
| U-111 | 3/16" | 7/8" |
| U-121 | 3/8" | 1 1/8" |
| U-141 | 1/2" | 1 1/8" |
| U-161 | 3/8" | 1 1/8" |
| U-183 | 3/4" | 1 1/2" |



INVERTED TAPER SHAPE "S"

| S-105 | A | B | C | ANGLE |
|-------|------|------|--------|-------|
| S-105 | 1/4" | 3/8" | 1 1/4" | 10° |
| S-141 | 1/2" | 1/2" | 1 1/4" | 28° |
| S-161 | 3/8" | 3/4" | 1 1/4" | 18° |
| S-181 | 3/4" | 3/8" | 1 1/4" | 30° |



FLAME SHAPE "G"

| G-111 | A | B |
|-------|-------|--------|
| G-111 | 3/16" | 3/4" |
| G-141 | 1/2" | 1 1/4" |
| G-161 | 5/8" | 1 1/8" |
| G-181 | 3/4" | 1 3/8" |

Recommended Speeds for Various Diameters - Medium Cut

| Dia. | R.P.M. | Dia. | R.P.M. | Dia. | R.P.M. | Dia. | R.P.M. |
|------|--------|------|--------|------|--------|------|--------|
| 1/8" | 45,000 | 3/8" | 29,000 | 5/8" | 23,000 | 7/8" | 19,000 |
| 1/4" | 35,000 | 1/2" | 25,000 | 3/4" | 20,000 | 1" | 18,000 |

Increase above speeds approximately 60% for stainless steel. Where "Dia-Mo" Cut burs are used reduce speeds by 1/3 to 1/2.

SOLID CARBIDE BUR SETS

| SET NO. 1 | | SET NO. 2 | | SET NO. 3 | | SET NO. 4 | | SET NO. 5 | | SET NO. 6 | |
|--|----------------|--|----------------|---|----------------|--|----------------|---|----------------|--|----------------|
| 1/8" DIA. HEADS 1/8" DIA. SHANKS 1 1/2" OVERALL LENGTH | | 1/4" DIA. HEADS 1/8" DIA. SHANKS 1" SHANK LENGTH | | 1/4" DIA. HEADS 3/16" DIA. SHANKS 1 1/4" SHANK LENGTH | | 3/16" & 1/4" DIA. HEADS 1/4" DIA. SHANKS 2" LENGTH OVERALL | | 5/32" & 3/16" DIA. HEADS 1/8" DIA. SHANKS 1 1/2" OVERALL LENGTH | | 3/16" DIA. HEADS 3/16" DIA. SHANKS 2" OVERALL LENGTH | |
| Tool No. | Length of Head | Tool No. | Length of Head | Tool No. | Length of Head | Tool No. | Length of Head | Tool No. | Length of Head | Tool No. | Length of Head |
| A-1 | 3/16" | A-51 | 1/2" | A-53 | 1/2" | A-23 | 3/8" | A-14 | 1/2" | A-22 | 5/8" |
| A-2 | 3/16" | AE-52 | 3/16" | AE-56 | 3/16" | A-105 | 5/8" | A-21 | 1/2" | C-24 | 3/8" |
| C-1 | 3/16" | C-51 | 1/2" | C-52 | 1/2" | C-23 | 3/8" | C-12 | 1/2" | D-23 | 3/16" |
| D-1 | 1/8" | D-51 | 1/4" | D-52 | 1/4" | C-105 | 3/8" | C-21 | 1/2" | E-23 | 5/32" |
| E-1 | 3/32" | E-51 | 3/8" | E-52 | 3/8" | D-24 | 3/16" | D-21 | 3/16" | H-23 | 1/2" |
| H-1 | 1/2" | H-51 | 1/2" | H-53 | 1/2" | D-105 | 1/4" | E-22 | 5/32" | K-21 | 1/2" |
| H-2 | 1/4" | K-51 | 1/2" | K-52 | 1/2" | E-105 | 3/8" | H-22 | 1/2" | L-21 | 3/8" |
| K-1 | 1/4" | L-51 | 1/2" | L-52 | 1/2" | H-105 | 3/8" | K-22 | 1/2" | M-21 | 3/16" |
| L-3 | 5/8" | S-51 | 1/4" | S-55 | 1/4" | K-105 | 5/8" | L-22 | 1/2" | P-22 | 3/8" |
| P-1 | 1/4" | | | | | L-104 | 3/4" | P-21 | 3/8" | R-21 | 3/16" |
| S-1 | 3/16" | | | | | L-105 | 1/2" | S-22 | 1/4" | S-25 | 1/4" |
| U-4 | 3/8" | | | | | S-105 | 3/8" | U-21 | 1/2" | U-22 | 1/2" |