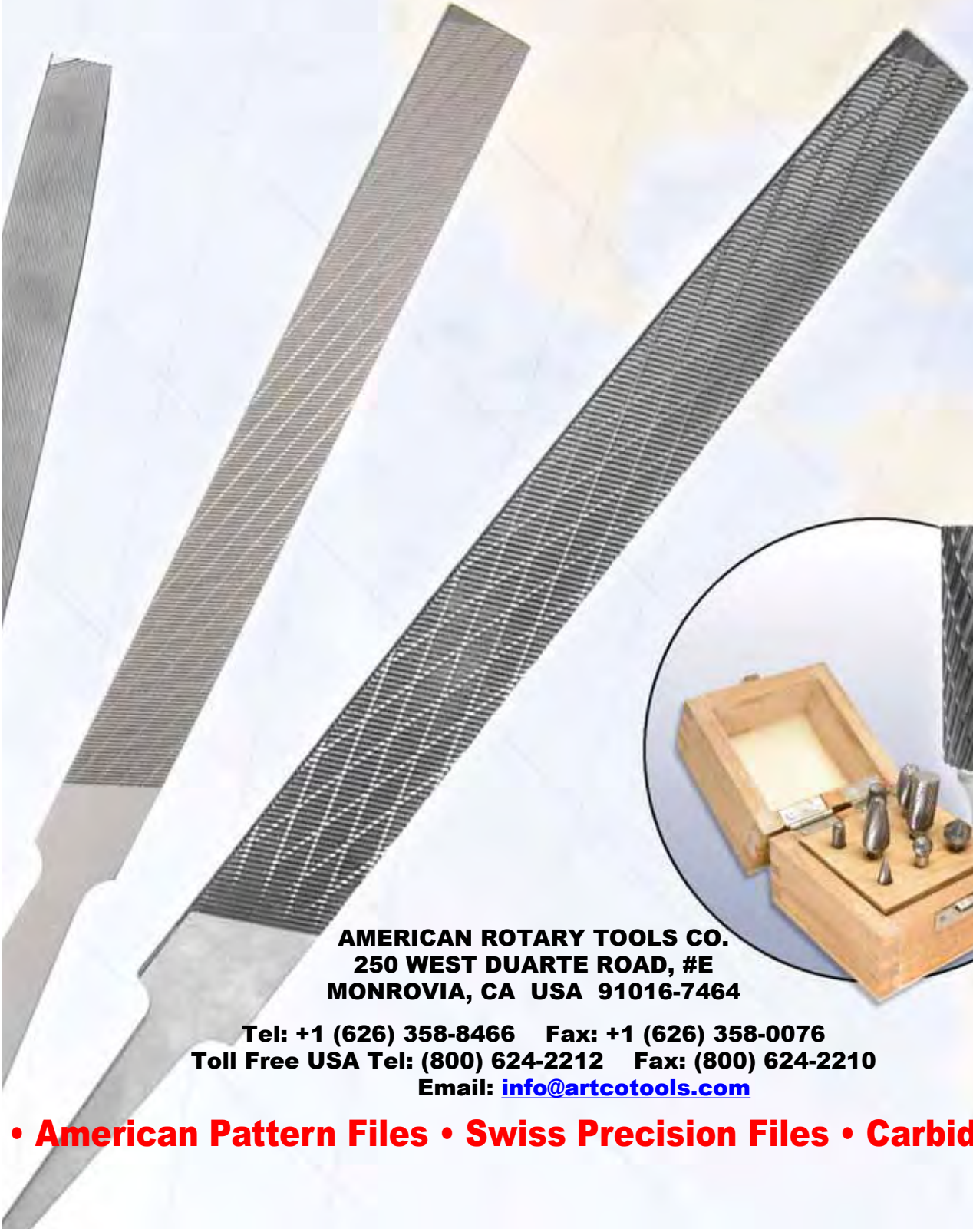
• American Pattern Files • Swiss Precision Files • Carbide Rotary Files

GROBET USA™

The World Leader of Swiss & American Pattern Files



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• American Pattern Files • Swiss Precision Files • Carbide Rotary Files

Growing to serve you better!

Our 40,000 square-foot state-of-the-art production plant in Cheyenne, WY is allowing us to meet the increased demand for our products and will accommodate the further expansion of our product design & manufacturing capabilities.

Welcome to the **GROBET USA**™ File Catalog.

We have a proud heritage of over 137 years in the design, production and distribution of precision tools for professional technicians and craftsmen.

GROBET USA™ maintains state-of-the-art production facilities in the US and Switzerland, as well as a global network of suppliers to provide an offering of more than 18,000 products used by:

- Jewelers
- Lapidaries
- Machinists / Metal Workers
- Dental Laboratory Technicians
- Manufacturers
- Hobbyists & Model Makers

GROBET USA™ products are available worldwide through our international network of authorized distributors.

GROBET USA®

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Some hints on using swiss hand files

Hand filing, as one of man's oldest ways of working metal, requires a high degree of manual skill. In a sense, filing is an art that can be learned only by long and patient practice. In fact, it takes longer to teach a person to do a filing job than it does to run a lathe, miller or planer and do a good job. It has been said that a pioneer automobile manufacturer, as a test for job-hunting toolmakers, gave each applicant a few files and a piece of steel and set him to work filing a perfect cube. While there may be no truth in the story, it does point up to the fact that hand filing is an important industrial skill from the die shop to the production line.

Correct method of holding a file for working thin stock. Several teeth should always contact work.

For draw filing, the file is held as shown and alternately pulled and pushed over the work.

Today, a craftsman is recognized by his ability to use a file correctly and efficiently. The touch of a file in the proper place can make all the difference in the world in fitting a critical joint. The skill or "feel" that the man with a file acquires from long experience comes from conforming to the correct procedures.

First of all, he must select the right file for the job. This is done according to the type of metal to be filed, the amount of material to be removed and the size and contour the piece to be worked. Once the selection of the proper files has been made, the following basic principles should be observed:

The work piece must be properly supported at the correct working height.

The file must be held correctly with the cutting stroke properly guided.

The proper pressure must be applied during the cutting stroke.

The file must be clean.

For normal filing, the hands are placed on the file as illustrated for maximum pressure and average stock removal.

Heavy stock removal requires a change in the position of the left hand, as shown.

One of the prime causes of defective filing is the tendency of the novice to rock the file with a seesaw motion. This produces a convex rather than a flat, level surface. The reason for this is the attempt to remove too much material with each stoke. A lighter, more even pressure on the file usually corrects this.

Most material to be filed is generally held in a bench vise or work fixture. When used, it is placed so the top of the work piece is usually level with the worker's elbow when the arm is bent.

This practice is followed when average precision filing is to be done. When rapid removal of material or rough, heavy filing is to be done, the work is usually set at a lower level and a coarser cut file used. However, when the work is small and delicate and the filing is done by the motion of the hand or the hand and arm alone, the work is held at a level that permits closer scrutiny and enables a fine cut file or riffler to be guided more accurately. To keep the work piece from being marred, the jaws of the vise should be covered with pieces of soft metal, wood, plastic or leather.

In general there are four basic types of filing operations, straight filing, draw-filing, lathe filing and fine precision filing. As lathe filing is an application for American pattern or long angle lathe files, it will not be discussed here. In straight filing, the file is pushed straight across the work while in draw filing the file is held at each end and under even pressure it is guided back and forth over the work in much the same manner as a spokeshave is used on wood. During this operation, the file is held perpendicular to the direct of motion. A word of caution, do not use a file that does not have a handle in place over the tang to protect the hand from possible injury.

From straight and draw-filing, the operator should stand comfortably with feet well apart so as to obtain a free swing from the shoulders, avoiding any separate wrist or elbow movement. The illustrations on these pages will show the proper hand positions for straight and draw-filing. The finishing and smoothing of metal in various narrow grooves and depressions of tools, dies, molds, jigs and fixtures calls for precision filing at its best. Small rifflers, used here, are held in much the same manner as a pen or pencil. In using larger sizes, the riffler is held in the hand with the index finger on the safe side to exert the proper cutting pressure. When necessary, on very fine and delicate work, the left hand is used to control the direction and in some cases the stroke of the riffler. With the large range of shapes, sizes and cuts now available in Grobet-Swiss precision files and rifflers, logic and experience will suggest the contour and profile most suited for the job.

For precision filing the tip is held by the thumb and index finger of the left hand for maximum control.

For flat filing the thumb and fingers of the left hand are stretched far apart for an even pressure.

In filing, "feel" is an important part of the operation. Too much or too little pressure can cause damage to the teeth of a Swiss precision file. Only enough pressure should be applied on a file during its forward motion to keep it cutting throughout its entire stroke. "Feel" will vary with the metal being worked and only through constant practice can this be attained.

Too little pressure on the cutting stroke, especially when working with tool and chrome alloy steels, will quickly dull the teeth of the file. Too much pressure will result in

To preserve the sharpness of the teeth and to increase life the file should be raised on the return stroke.

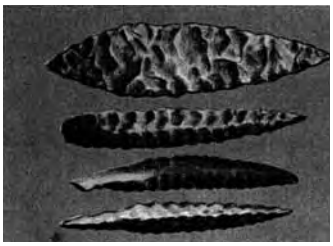
excess metal being removed and causing the teeth of the file to become pinned. Proper cleaning of files with a file card and chalk will help keep the finish of the work smooth and free of scratches. The chalk will also help keep chips from building up in the teeth of the file. Chalk and a wire brush can be used to remove oil or grease from a file.

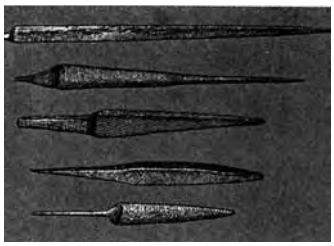
Just as important as proper use in prolonging its life, is the proper care of a file. Files should be kept mounted on a rack or with their tangs placed in a row of holes drilled into a block of wood. Don't just toss them into a drawer or in a pile on the back of a bench. If you do, you will damage their fine, keen-cutting teeth. And, keep your files in a dry atmosphere to avoid the possibility of rust. If a file becomes rusty, the teeth crumble away into a fine dust.

No file should be used without a handle. These handles must be mounted on the tangs properly. Never hammer or pound the point of a file to seat the tang in a handle. After the right size handle is selected, slip it over the tang and gently force the file into the hole as far as possible. Then either tap the handle on the bench or holding the handle, tap it with a mallet until the file is firmly secured.

File-making... one of man's oldest arts

The spade of the archeologists has turned up evidence that some primitive form of file may well have been the very first kind of cutting tool invented by man. It is quite likely that Stone Age man used a crude rasp even before he devised a rudimentary knife and a rough ax. Flint rasps are familiar finds in Stone Age diggings.





The earliest knives and axes probably came into being because man already had a tool with which to sharpen them - his crude file. These essential tools of early man, knives, and axes show the marks of sharpening. Their edges have been abraded with a harder, rough stone - the ancestor of all files.

The oldest known metallic file in existence today was

un-earthed by an archeological expedition from the University of Pennsylvania on the Island of Crete in the Mediterranean. This file, which is now on exhibit in the museum at Candia, is believed to be some 3,400 years old. It has a rounded back and is very similar to a modern chisel cut half round file. The file measures approximately $3\frac{1}{2}$" long, 3/8" wide and 7/32" thick.

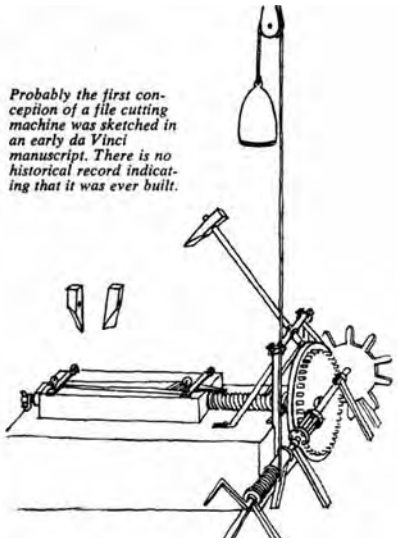
The early Egyptians used files and rasps made of copper and bronze during the period 3200 to 1800 B.C. The University of Pennsylvania has a fine example of one of these files. It came from the Ramesseum that was built during the 13th Century B.C. for the God Ammon by Rameses the 2nd.

The Celts had iron files as early as 666 B.C. and iron files were popular tools among the Romans during the Gallo-Roman period. References to metallic files are found in Latin writings as early as the First Century B.C.

And even at so early a date, these files were probably crossed double-cut - very similar to present day files. It is known that the Romans also used a single-cut file. They even made a distinction between the file used for wood - scobina - and the file used for metal - *lima*. Not all of those files were flat. Examples exist of half-round and of square Roman files, types still in common use. Roman files, however, were usually cut only on one side, were no more than a half-inch wide, and were crude by comparison to later hand-made files from France and eventually Switzerland where the art became highly developed.

The regularity of the cut in a file was early recognized as a mark of excellence - of how well the file performed. The hand worker made his file by striking a hammer upon a chisel that was moved at each stroke in exactly the same manner and over exactly the same distance. The continuous and regular repetition of one particular operation in itself first suggested the idea of performing the work mechanically and automatically.

As early as 1490, this idea struck the great sculptor, painter, scientist, and engineer Leonardo da Vinci. In his notebooks he sketched the first file-



Probably the first conception of a file cutting machine was sketched in an early da Vinci manuscript. There is no historical record indicating that it was ever built.

cutting machine. Just who was the first man to use a machine for cutting files remains a matter of conjecture. It may have been the French master locksmith Mathurin Jousse, who described a file-cutting machine in a book he published in 1627. Other sources say the first machine to actually cut files was made by another Frenchman, Chopitel, also a master locksmith, in 1750. After this date, there are records of a number of file-cutting machines.

These early machines produced files that were satisfactory so far as most file-users of that day were concerned. However, most skilled artisans - such as the watchmakers, the silversmiths and the die-makers - continued to cut their own files by hand. Not only did they often require special shapes for their files, but they were precision workmen, craftsman who demanded a finer degree of accuracy in the files they used than those made by these early machines could provide. Furthermore, they wanted each of their files to have an identical cut.

It was not until F.L. Grobet - a toolmaker who founded a company called Grobet Freres n Vallorbe, Switzerland, in 1812 - put the making of Swiss files on a production basis that files attained true precision and uniformity. He designed and built the first precision file-

cutting machine in 1836. The types and cuts introduced by Grobet became standards for the industry because each file was uniform with the next, made to a degree of preciseness unknown until then.

The original Grobet precision file cutting machine.

Over the centuries, the metals from which files have been made also have undergone improvement. Mild steel replaced the bronze and iron of the first metallic files. Various makers introduced secret processes to carburize the file teeth making them harder than the base metal from which the file was made. Carbon steels, inherently harder than the original mild steels, brought annealing into use. This process softens the steel more for tooth-cutting and tends to produce a more uniform internal structure in the metal. The finished file is then heat treated to harden the cutting surfaces. Today, tool steels are being relaced by chrome steels and other special alloys for files as these precision tools are now called upon to work alloys that are increasingly difficult to machine and shape to ever-closer tolerances.

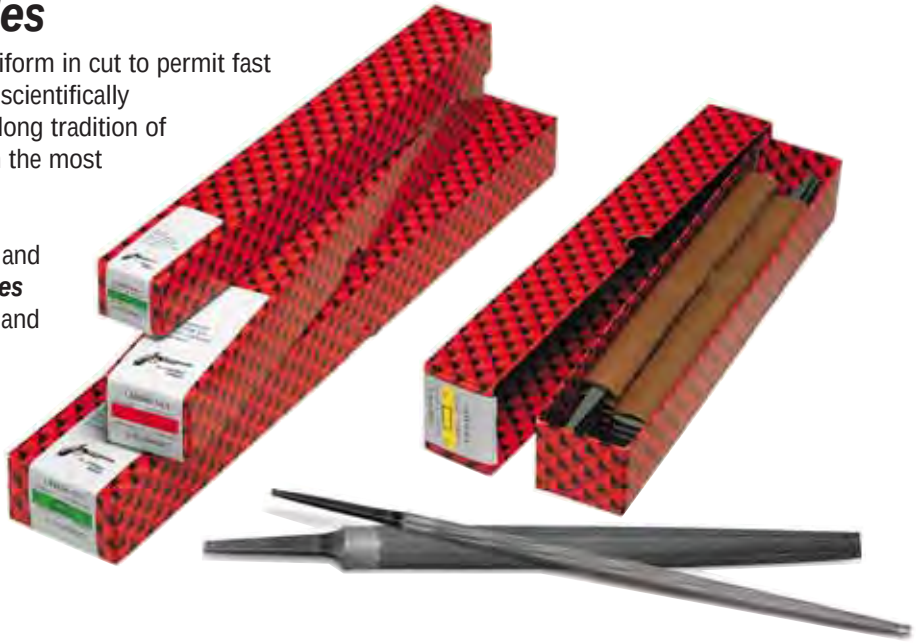
It is only natural, as technological improvements were made in industry, that the file makers' art and engineering skill was called upon to keep pace. This was not only with metalurgical advances but also with the demands for new forms if files to meet the needs of improved industry practices. Production line manufacturing called for mechanized filing and brought about the development of filing machines.

In fact, the ever-closer tolerances demanded in the tooling for automated production and in the complex molds used by the expanding plastics industry require the finest products of the precision file maker's craftsmanship. Yet, outside the toolroom, new die-casting processes in the aerospace, and automotive industries still require precision hand filing in the production line to finish parts with close tolerances.

The art of file-making may be as old as the caveman's crude flint rasp, but it is as modern as the intricate mold for a computer component being precisely finished with a Swiss precision die-maker's riffler.

American Pattern Files

Grobet American Pattern Files are uniform in cut to permit fast metal removal. Extremely durable and scientifically balanced, each file is the product of a long tradition of superior craftsmanship combined with the most advanced technology.
Every file is heat-treated to exacting standards to provide top performance and long life. ***Grobet American Pattern Files*** are unsurpassed in accuracy of shape and size.



Swiss American Pattern S-Files

Grobet Swiss American Pattern S-Files - renowned range of Engineer's files, includes various types of tools: workshop files, files for sharpening, rasps and milled files. The distinguishing marks are:
- quality in hardness and regularity
- efficient bite to the edges
- long life
- careful execution

Recommended for both professional and home use, these tools have an exceptional filing capacity. In certain cases they can be used for the sharpening of heavy duty tools.

The variety of shapes with cuts provides a wide range of application for non-professionals and professionals working hard and soft materials such as wood. In every circumstance they achieve excellent results on the surface that has been filed. High quality, from Switzerland, the world leader for files.

COMPARABLE CUT DESIGNATIONS FOR SWISS PRECISION AND AMERICAN PATTERN FILES

SWISS	No. 00	No. 0	No. 2
AMERICAN PATTERN	Bastard	Second Cut	Smooth Cut

There is no equivalent in American Pattern Files for Swiss cuts numbered from No. 4 to No. 8.

ALL PURPOSE FILE

For the homeowner, home craftsman, boat builder and mechanic. Half-round shape. Has file section and rasp section on both flat side and half-round side. ***Both sides of file section are double cut – Both sides of rasp section are rasp cut.***

Length	Width	GROBET SWISS Thickness	Bastard Cut
8"	7/8"	1/4"	**32.502S**

ALUMINUM TYPE A, FLAT

The Aluminum Flat file is effective in eliminating clogging due to its special tooth construction. It was developed for use on soft material, such as aluminum. This double cut file tapers in thickness and width. ***Double cut top and bottom – Both edges are single cut.***

Length	Width	GROBET Thickness	Bastard Cut
6"	5/8"	5/32"	**32.260**
8"	25/32"	7/32"	**32.261**
10"	31/32"	1/4"	**32.262**
12"	1-5/32"	9/32"	**32.263**

ALUMINUM TYPE A, HALF-ROUND

The Aluminum Half-Round file eliminates chip clogging. This file was designed for soft materials, such as aluminum. The Half-Round file allows modification of concave surfaces and holes. This tapered file is rounded on one side and flat on the other. ***Double cut on both sides.***

Length	Width	GROBET Thickness	Bastard Cut
6"	19/32"	5/32"	**32.265**
8"	3/4"	7/32"	**32.266**
10"	15/16"	9/32"	**32.267**
12"	1-1/8"	11/32"	**32.268**

CHAIN SAW, ROUND

Used for sharpening all sizes of chain saw teeth, this file maintains the proper tooth shape throughout extensive use. The chain saw file user will experience a fast, smooth cutting action creating an excellent finish. ***Double cut.***

Length	Diameter	GROBET Smooth Cut	GROBET SWISS Smooth Cut
8"	13/64"	**32.278**	**32.278S**
8"	3/16"	**32.279**	**32.279S**
8"	5/32"	**32.280**	**32.280S**
8"	7/32"	**32.281**	**32.281S**
8"	1/4"	**32.282**	—

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

CONTACT POINT

The contact point file is used for cleaning engine distributor points, contact points of magnets, switches, electric bell, etc. and spark plugs. ***Single cut top and bottom – Both edges are safe.***

Length	GROBET No.
5"	**32.500**

FARMER'S OWN FILE

General pupose file with rectangular shape. ***One side double cut – One side single cut – One edge single cut – One edge is safe.***

		GROBET		GROBET SWISS
Length	Width	Thickness	Bastard Cut	Second Cut
8"	31/32"	3/16"	**32.498**	**32.498S**
10"	31/32"	3/16"	**32.499**	**32.499S**

FLAT

The Flat file is most often used by machinists, machinery builders and repair personnel when rapid material removal is required. This double cut file is tapered in width and thickness. ***Double cut top and bottom – Both edges are single cut.***

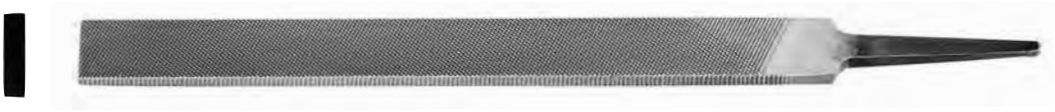
			GROBET			GROBET SWISS		
Length	Width	Thickness	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
4"	15/32"	5/64"	**32.288**	**32.295**	**32.302**	**32.288S**	**32.295S**	**32.302S**
6"	5/8"	5/32"	**32.289**	**32.296**	**32.303**	**32.289S**	**32.296S**	**32.303S**
8"	25/32"	7/32"	**32.290**	**32.297**	**32.304**	**32.290S**	**32.297S**	**32.304S**
10"	31/32"	1/4"	**32.291**	**32.298**	**32.305**	**32.291S**	**32.298S**	**32.305S**
12"	15/32"	9/32"	**32.292**	**32.299**	**32.306**	**32.292S**	**32.299S**	**32.306S**
14"	111/32"	5/16"	**32.293**	**32.300**	**32.307**	—	**32.300S**	—

HALF-ROUND

Half-Round files are popular with foundries and machinists. Material removal is rapid with this file while leaving a smooth finish. Used for filing concave, convex and flat surfaces as well as rounding out holes. This file is rounded on one side and flat on the other. ***Double cut on both sides.***

			GROBET			GROBET SWISS		
Length	Width	Thickness	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
4"	7/16"	1/8"	**32.309**	**32.317**	**32.324**	**32.309S**	**32.317S**	**32.324S**
6"	19/32"	5/32"	**32.310**	**32.318**	**32.325**	**32.310S**	**32.318S**	**32.325S**
8"	3/4"	7/32"	**32.311**	**32.319**	**32.326**	**32.311S**	**32.319S**	**32.326S**
10"	15/16"	9/32"	**32.312**	**32.320**	**32.327**	**32.312S**	**32.320S**	**32.327S**
12"	1-1/8"	11/32"	**32.313**	**32.321**	**32.328**	**32.313S**	**32.321S**	**32.328S**
14"	19/32"	13/32"	**32.314**	**32.322**	**32.329**	**32.314S**	**32.322S**	**32.329S**

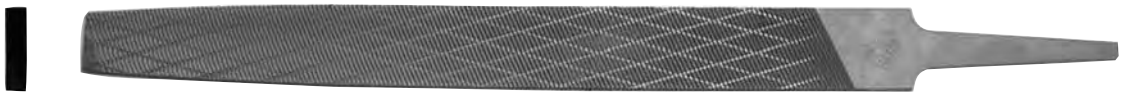
Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.



HAND

The Hand file is used primarily for rapid metal removal on sharp corners, shoulders and flat surfaces. This double cut file is similar to the Flat file without the taper. The Hand file offers one safe edge which reduces damage to the workpiece when filing up to a corner. ***Double cut top and bottom – One edge single cut – One edge is safe.***

			GROBET			GROBET SWISS		
Length	Width	Thickness	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
6"	5/8"	5/32"	**32.331**	**32.336**	**32.341**	**32.331S**	**32.336S**	**32.341S**
8"	25/32"	7/32"	**32.332**	**32.337**	**32.342**	**32.332S**	**32.337S**	**32.342S**
10"	31/32"	1/4"	**32.333**	**32.338**	**32.343**	**32.333S**	**32.338S**	**32.343S**
12"	1-5/32"	9/32"	**32.334**	**32.339**	**32.344**	**32.334S**	**32.339S**	**32.344S**



HIGH SPEED CHIPBREAKER

This tapered file features two sets of chipbreakers, forming a diamond pattern. The High Speed chipbreaker reduces chip clogging and generates a smooth finish. The coarse teeth remove metal quickly. This file can also be used on cast iron, bronze, brass and plastics. ***Diamond Pattern cut top and bottom – Both edges are single cut.***

		GROBET	
Length	Width	Thickness	Bastard Cut
8"	25/32"	7/32"	**32.345**
10"	31/32"	1/4"	**32.346**
12"	1-5/32"	9/32"	**32.347**

KNIFE

The Knife file is the file of choice by tool and die makers for filing keyways, slots and acute angles. ***Both sides are double cut – top edge is safe – knife edge is single cut.***

			GROBET			GROBET SWISS		
Length	Width	Thickness	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
4"	15/32"	7/64"	**32.349**	**32.354**	**32.359**	**32.349S**	**32.354S**	**32.359S**
6"	21/32"	5/32"	**32.350**	**32.355**	**32.360**	**32.350S**	**32.355S**	**32.360S**
8"	27/32"	3/16"	**32.351**	**32.356**	**32.361**	**32.351S**	**32.356S**	**32.361S**
10"	1-1/32"	1/4"	**32.352**	**32.357**	**32.362**	**32.352S**	**32.357S**	—

LONG ANGLE LATHE

Primarily for lathe work, the Long Angle Lathe file can be used for bench filing of brass, bronze and aluminum. The teeth were designed with a long angle which provides for free cutting, rapid filing. ***Single cut top and bottom – Both edges are safe.***

		GROBET	
Length	Width	Thickness	Bastard Cut
10"	31/32"	1/4"	**32.364**
12"	1-5/32"	9/32"	**32.365**
14"	1-11/32"	5/16"	**32.366**

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

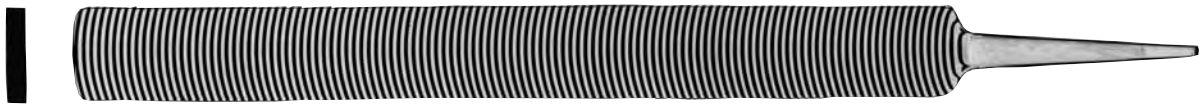
MILL

Where a smooth finish is desired, a Mill file is the file of choice. The Mill file has many applications such as sharpening saws and tools, finishing metal, lathe work, draw filing as well as general shop use. ***All sides are single cut.***

			GROBET			GROBET SWISS		
Length	*Width*	*Thickness*	*Bastard Cut*	*Second Cut*	*Smooth Cut*	*Bastard Cut*	*Second Cut*	*Smooth Cut*
4"	7/16"	5/64"	***32.368***	***32.378***	***32.384***	***32.368S***	***32.378S***	***32.384S***
6"	19/32"	7/64"	***32.369***	***32.379***	***32.385***	***32.369S***	***32.379S***	***32.385S***
8"	25/32"	9/64"	***32.370***	***32.380***	***32.386***	***32.370S***	***32.380S***	***32.386S***
10"	31/32"	11/64"	***32.371***	***32.381***	***32.387***	***32.371S***	***32.381S***	***32.387S***
12"	1-5/32"	7/32"	***32.372***	***32.382***	***32.388***	***32.372S***	***32.382S***	***32.388S***
14"	1-5/16"	1/4"	***32.373***	***32.383***	***32.389***	***32.373S***	***32.383S***	***32.389S***
8"	2 Round Edges		***32.376***	—	—	—	—	—
10"	2 Round Edges		***32.377***	—	—	—	—	—

MILLED CURVED TOOTH FILES

Designed for automotive and aircraft manufacturers, these efficient files are known for their fast cutting action and longer life. The sharp edges are also popular with machinists, foundries, railroad and ship yards.



FLAT WITH TANG

Designed for use on aluminum, brass, copper, steel and hard rubber. Essential when fast filing is required.

		GROBET	
Length	*Width*	*Thickness*	*No.*
10"	1"	7/32"	***32.48201***
12"	1-5/32"	17/64"	***32.48301***
14"	1-11/32"	5/16"	***32.48401***

FLEXIBLE WITHOUT TANG

When working with sheet metal, this is the file of choice. A holder is required when using this file. This file was designed for outward, inward and flat use as teeth are present on both sides of the file.

		GROBET	
Length	*Width*	*Thickness*	*No.*
10"	1"	5/32"	***32.49001***
12"	1-5/32"	3/16"	***32.49101***
14"	1-11/32"	3/16"	***32.49201***

PIPE-LINER

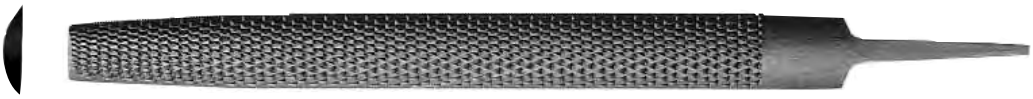
This file is used to file weld beads and scale off pipeline. ***Double cut on both sides.***

		GROBET	
Length	*Width*	*Thickness*	*No.*
14"	1-9/32"	13/32"	***32.497***

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

RASP

When working with plywood, plastics, wallboard or other soft materials, rasps are the file of choice for cabinet makers and woodworkers. The teeth of a rasp are uniform and individually formed.



HALF-ROUND RASP

Rasp cut on top and bottom – Both edges are single cut.

		GROBET		GROBET SWISS	
Length	Diameter	Bastard Cut	Second Cut	Bastard Cut	Second Cut
8"	5/16"	**32.503**	**32.507**	**32.503S**	**32.507S**
10"	3/8"	**32.504**	**32.508**	**32.504S**	**32.508S**
12"	1/2"	**32.505**	**32.509**	**32.505S**	**32.509S**
14"	5/8"	**32.506**		**32.506S**	

ROUND RASP

Rasp cut.

		GROBET SWISS
Length	Diameter	Bastard Cut
8"	5/16"	**32.50301S**
10"	3/8"	**32.50401S**

ROUND

When holes need enlarging and corners rounding, a round file is the solution. This file tapers making it adaptable to a variety of hole sizes.

Double cut.

		GROBET			GROBET SWISS		
Length	Diameter	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
4"	5/32"	**32.395**	**32.402**	**32.408**	**32.395S**	**32.402S**	**32.408S**
6"	7/32"	**32.396**	**32.403**	**32.409**	**32.396S**	**32.403S**	**32.409S**
8"	5/16"	**32.397**	**32.404**	**32.410**	**32.397S**	**32.404S**	**32.410S**
10"	3/8"	**32.398**	**32.405**	**32.411**	**32.398S**	**32.405S**	**32.411S**
12"	1/2"	**32.399**	**32.406**	**32.412**	**32.399S**	**32.406S**	**32.412S**
14"	5/8"	—	—	—	**32.400S**	—	—

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

SQUARE

This double cut file is used when filing slots, grooves, keyways, inside corners and square holes. Tapered toward the point, all four sides are equal filing surfaces. ***Double cut on all four sides.***

		GROBET			GROBET SWISS		
Length	Diameter	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
4"	5/32"	**32.414**	**32.421**	**32.427**	**32.414S**	**32.421S**	**32.427S**
6"	7/32"	**32.415**	**32.422**	**32.428**	**32.415S**	**32.422S**	**32.428S**
8"	5/16"	**32.416**	**32.423**	**32.429**	**32.416S**	**32.423S**	**32.429S**
10"	3/8"	**32.417**	**32.424**	**32.430**	**32.417S**	**32.424S**	**32.430S**
12"	1/2"	**32.418**	—	—	**32.418S**	**32.425S**	—
14"	5/8"	**32.419**	—	—	—	—	—

TAPER SAW, SINGLE CUT

The Taper Saw file is a triangular, single cut file designed for filing a variety of saws with 60 degree angled teeth. Tapered toward a point, this file has cut edges for filing gullets between saw teeth. Taper saw files are available in a number of widths: regular, slim, extra slim and double extra slim. ***Single cut on all three sides.***

REGULAR TAPER

		GROBET	GROBET SWISS
Length	Width	No.	No.
4"	5/16"	—	**32.431S**
5"	5/16"	—	**32.432S**
6"	15/32"	**32.433**	**32.433S**
7"	17/32"	**32.434**	**32.434S**
8"	19/32"	**32.435**	**32.435S**
10"	23/32"	**32.436**	—

SLIM TAPER

		GROBET	GROBET SWISS
Length	Width	No.	No.
4"	7/32"	**32.438**	**32.438S**
5"	9/32"	**32.439**	**32.439S**
6"	11/32"	**32.440**	**32.440S**
7"	13/32"	**32.441**	**32.441S**
8"	15/32"	**32.442**	**32.442S**
10"	5/8"	**32.443**	—

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

EXTRA SLIM TAPER

		GROBET	GROBET SWISS
Length	Width	No.	No.
4"	3/16"	**32.445**	**32.445S**
5"	15/64"	**32.446**	**32.446S**
6"	9/32"	**32.447**	**32.447S**
7"	5/16"	**32.448**	**32.448S**
8"	13/32"	**32.449**	**32.449S**

DOUBLE EXTRA SLIM

		GROBET	GROBET SWISS
Length	Width	No.	No.
4"	—	**32.450**	**32.450S**
5"	3/16"	**32.451**	**32.451S**
6"	7/32"	**32.452**	**32.452S**
7"	1/4"	**32.453**	**32.453S**
8"	5/16"	**32.454**	**32.454S**

THREE - SQUARE

The Three Square file is the file of choice by machinists when filing angles more acute than 90 degrees, for cleaning out corners and filing taps and cutters. This triangular file is tapered to the point. This file can get into corners other files cannot. ***Double cut on all three sides.***

		GROBET			GROBET SWISS		
Length	Width	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
4"	—	**32.455**	**32.45501**	**32.45502**	**32.455S**	**32.45501S**	**32.45502S**
6"	15/32"	**32.456**	**32.460**	**32.464**	**32.456S**	**32.460S**	**32.464S**
8"	5/8"	**32.457**	**32.461**	**32.465**	**32.457S**	**32.461S**	**32.465S**
10"	3/4"	**32.458**	**32.462**	**32.466**	**32.458S**	**32.462S**	**32.466S**
12"	—	**32.459**	**32.463**	**32.467**	**32.459S**	**32.463S**	—

WARDING

A popular file with locksmiths, the Warding file was designed for filing or repairing “wards” in locks and keys. As the Warding file is thin, it is also suited for any application where the space is too narrow for other files to fit. This file tapers toward the end. ***Double cut top and bottom – Both edges are single cut.***

			GROBET			GROBET SWISS		
Length	Width	Thickness	Bastard Cut	Second Cut	Smooth Cut	Bastard Cut	Second Cut	Smooth Cut
4"	15/32"	3/64"	**32.468**	**32.473**	**32.477**	**32.468S**	**32.473S**	**32.477S**
6"	5/8"	5/64"	**32.469**	**32.474**	**32.478**	**32.469S**	**32.474S**	**32.478S**
8"	25/32"	3/32"	**32.470**	**32.475**	**32.479**	**32.470S**	**32.475S**	**32.479S**

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

Black Oxide Files

Black Oxide Files are a good choice for harsh environments. The files are treated with a black oxide coating to give them a longer life. The coating helps to resist rust and loading.

FLAT

The Flat file is most often used by machinists, machinery builders and repair personnel when rapid material removal is required. This double cut file is tapered in width and thickness. ***Double cut top and bottom – Both edges are single cut.***

Length	Width	Thickness	Bastard Cut	Smooth Cut
6"	5/8"	5/32"	***32.25289***	***32.25303***
8"	25/32"	7/32"	***32.25290***	***32.25304***
10"	31/32"	1/4"	***32.25291***	***32.25305***
12"	1-5/32"	9/32"	***32.25292***	***32.25306***
14"	1-11/32"	5/16"	***32.25293***	***32.25307***

HALF-ROUND

Half-Round files are popular with foundries and machinists. Material removal is rapid with this file while leaving a smooth finish. Used for filing concave, convex and flat surfaces as well as rounding out holes. This file is rounded on one side and flat on the other. ***Double cut on both sides.***

Length	Width	Thickness	Bastard Cut	Smooth Cut
6"	19/32"	5/32"	***32.25310***	***32.25325***
8"	3/4"	7/32"	***32.25311***	***32.25326***
10"	15/16"	9/32"	***32.25312***	***32.25327***
12"	1-1/8"	11/32"	***32.25313***	***32.25308***
14"	1-9/32"	13/32"	***32.25314***	***32.25309***

KNIFE

The Knife file is the file of choice by tool and die makers for filing keyways, slots and acute angles. ***Both sides are double cut – top edge is safe – knife edge is single cut.***

Length	Width	Thickness	Bastard Cut
6"	21/32"	5/32"	***32.25350***
8"	27/32"	3/16"	***32.25351***
10"	1-1/32"	1/4"	***32.25352***

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

MILL

Where a smooth finish is desired, a Mill file is the file of choice. The Mill file has many applications such as sharpening saws and tools, finishing metal, lathe work, draw filing as well as general shop use. ***All sides are single cut.***

Length	Width	Thickness	Bastard Cut	Smooth Cut
6"	19/32"	7/64"	***32.25369***	***32.25385***
8"	25/32"	9/64"	***32.25370***	***32.25386***
10"	31/32"	11/64"	***32.25371***	***32.25387***
12"	1-5/32"	7/32"	***32.25372***	***32.25388***
14"	1-5/16"	1/4"	***32.25373***	***32.25389***

ROUND

When holes need enlarging and corners rounding, a round file is the solution. This file tapers making it adaptable to a variety of hole sizes. ***Double cut.***

Length	Diameter	Bastard Cut	Smooth Cut
6"	7/32"	***32.25396***	***32.25409***
8"	5/16"	***32.25397***	***32.25410***
10"	3/8"	***32.25398***	***32.25411***
12"	1/2"	***32.25399***	***32.25412***

TAPER SAW, SINGLE CUT

The Taper Saw file is a triangular, single cut file designed for filing a variety of saws with 60 degree angled teeth. Tapered toward a point, this file has cut edges for filing gullets between saw teeth. Taper saw files are available in a number of widths: regular, slim, extra slim and double extra slim. ***Single cut on all three sides.***

REGULAR TAPER

Length	Width	No.
6"	15/32"	***32.25433***

SLIM TAPER

Length	Width	No.
6"	11/32"	***32.25440***

THREE - SQUARE

The Three Square file is the file of choice by machinists when filing angles more acute than 90 degrees, for cleaning out corners and filing taps and cutters. This triangular file is tapered to the point. This file can get into corners other files cannot. ***Double cut on all three sides.***

Length	Width	Bastard Cut
6"	15/32"	***32.25456***
8"	5/8"	***32.25457***

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

Laminate Files

Laminate Files are designed specifically for maximum performance on laminates. Good for edge finishing other plastics. Laminate files save time, effort and money by cutting faster, easier and lasts longer then ordinary files.

MILL

Where a smooth finish is desired, a Mill file is the file of choice.

Length	Width	Thickness	No.
8"	25/32"	9/64"	**32.39008**
10"	31/32"	11/64"	**32.39010**

RAPID

Length	Width	Thickness	No.
8"	25/32"	9/64"	**32.39080**
10"	31/32"	11/64"	**32.39100**

ALL PURPOSE

Length	Width	Thickness	No.
10"	1-1/32"	1/4"	**32.39110**

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

Grobet Swiss Precision Files

The world's standard for quality and performance!

Grobet Swiss Precision Files are manufactured to precise production standards, using a combination of machine cutting and hand craftsmanship to produce the most accurate, best cutting and longest-lasting files in the world. They are made of the finest heat-tempered, chrome alloy steel and have the "right" feel, action and balance desired by all true craftsmen. ***Grobet Swiss Precision Files*** deliver superior performance on all metals. Simply the best you can buy. Grobet Swiss Precision Files are measured in length from the point where the teeth begin to the end of the file. *The handle section (tang) is not considered in the file length.*

Guide to Selecting Swiss Precision Files

As shown in the File Finder chart, each configuration calls for a different type of file. There is more to file selection than shape alone. The cut selected is equally important. Determination of cut depends on the type and form of material to be worked, amount of material to be removed and the finish desired. For example, rapid removal of stock often indicates a No. 00 cut, while working on narrow surfaces would suggest a No. 2 cut and final finishing operations might take a fine cut such as No. 4. In the final analysis, file selection cannot be reduced to a formula or table but will be based to a great degree on experience and common sense. Whatever type, shape, size or cut may be required, one thing is certain: there is a Grobet Swiss precision file that meets the specifications. And the accuracy and finish delivered by these files will clearly show why craftsmen have made Grobet Swiss the leader in precision files for so many years.

File Finder

Basic Application	***Type of File Recommended***
Flat surfaces	Hand
Flat surfaces-slots	Pillar
Curved surfaces-corners-holes	Half-Round
Curved surfaces-junctures of curved and flat surfaces-corners-holes	Crossing
Corners-holes-edges	Three-Square
Slots-wedge-shaped openings	Knife
Corners-slots	Slitting
Slots	Warding
Corners-slots	Equalling
Edges, joints	Joint
Flat surfaces-corners-keyways dovetail ways-gear teeth-deburring	Barrette
Rounded inside corners-holes	Round
Corners-holes	Square
Rounded corners-slots-flat surfaces-junctures between curved and flat surfaces	Crochet
Rounded corners-holes-"V" slots	Pippin
Roughening surfaces for hand grips	Checkering
Slots	Screwhead

Scale of Cuts

The scale of cuts for Swiss precision files as well as the basic shapes were developed by Grobet, dating back to the founding of Grobet Freres in 1812. Additions and refinements have been made to meet the changing requirements of modern technologies. Here is the scale of cuts for Grobet Swiss precision files.

Teeth per inch (upcut)	***30***	***41***	***51***	***64***	***79***	***97***	***117***	***142***	***173***	***213***	***295***
Files 10" and over in length	00	0	1	2	3	4		6			
Files 4" to 8" in length		00	0	1	2	3	4		6		
Files 3" in length			00	0	1	2	3	4		6	8
Escapement Files			0		2	3	4		6		
Needle Files 4" to 7-3/4"			0		2	3	4		6		
Regular Rifflers			0		2	3	4		6		

BARRETTE

Tapered in width and thickness, coming to a point. Only flat side is cut, providing safe edge and top. ***Double cut.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
3"	75	23/64"	9.1	3/32"	2.4	—	**31.021**	—	—	—
4"	100	1/2"	12.7	1/8"	3.2	**31.022**	**31.023**	**31.024**	**31.025**	**31.026**
6"	150	23/32"	18.3	5/32"	4.0	**31.027**	**31.028**	**31.029**	**31.030**	**31.031**
8"	200	7/8"	22.2	13/64"	5.2	—	**31.032**	—	**31.033**	—

BARRETTE-HOT DIE

Same as regular Barrette files except with ground backs, widely used in making and repairing extrusion dies. ***Double cut.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00
3"	75	3/8"	9.5	3/32"	2.4	**31.017**
4"	100	1/2"	12.7	1/8"	3.2	**31.018**

CHECKERING

Parallel in width and gently tapered in thickness. Overcut is parallel to file edges and upcut is 90º to overcut. Useful for putting serrations on knife edges and to obtain a checkered design similar to a gun hand grip. ***Double cut top and bottom – Both edges are safe.***

HAND CHECKERING

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2
6"	150	3/4"	19.1	5/32"	4.0	**31.035**	**31.036**	**31.037**	**31.038**
Lines per inch/cm						20/8	30/12	40/16	50/20

PILLAR CHECKERING

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
6"	150	1/2"	12.7	11/64"	4.4	**31.040**	**31.041**	**31.042**	**31.043**	**31.045**
Lines per inch/cm						20/8	30/12	40/16	50/20	75/30

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

CROCHET

Tapered in width and gradually tapered in thickness. Used in filing junctions between a flat and curved surface. Useful in developing slots with rounded edges. ***Double cut top and bottom – Both edges are single cut.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 2
4"	100	5/15"	7.9	3/32"	2.4	—	**31.047**	**31.048**
6"	150	13/32"	10.3	9/64"	3.6	**31.049**	**31.050**	**31.051**
8"	200	15/32"	11.9	11/64"	4.4	**31.052**	**31.053**	**31.054**

CROSSING

Half-round on two sides, with one side having a larger radius than the other. Tapered in width and thickness. Cut and usable to the point. Used primarily for filing interior curved surfaces. The double radius makes possible the filing at the junction of two curved surfaces or a straight and a curved surface. ***Double cut on both sides.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 2
4"	100	15/32"	11.9	9/64"	3.6	**31.056**	**31.057**	**31.058**
6"	150	19/32"	15.1	3/16"	4.5	**31.059**	**31.060**	**31.061**
8"	200	13/16"	20.6	15/64"	6.0	**31.062**	**31.063**	—

EQUALLING

Parallel in width and thickness. Used primarily for filing slots and corners. ***Double cut top and bottom – Both edges are single cut.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 2	Cut 4
4"	100	13/32"	10.3	5/64"	2.0	—	**31.065**	**31.066**	**31.067**
6"	150	1/2"	12.7	7/64"	2.8	**31.068**	**31.069**	**31.070**	**31.071**
8"	200	21/32"	16.7	1/8"	3.2	**31.072**	**31.073**	**31.074**	—

Equalling-Special Thickness

Length (in)	Length (mm)	Width (in)	Width (mm)	Approx. Thickness (in)	Approx. Thickness (mm)	Stubs Iron Wire Gauge No.	Cut 0	Cut 2	Cut 4
4"	100	13/32"	10.3	.047"	1.25	18	**31.076**	**31.077**	—
4"	100	13/32"	10.3	.035"	0.91	20	—	**31.080**	**31.081**
4"	100	13/32"	10.3	.031"	0.81	21	**31.082**	**31.083**	—
4"	100	13/32"	10.3	.028"	0.71	22	—	**31.084**	**31.085**
4"	100	13/32"	10.3	.022"	0.56	24	—	**31.086**	**31.087**
4"	100	13/32"	10.3	.018"	0.46	26	—	**31.088**	—
4"	100	13/32"	10.3	.014"	0.38	28	—	**31.090**	**31.091**
6"	150	1/2"	12.7	.083"	2.05	14	**31.092**	**31.093**	—
6"	150	1/2"	12.7	.065"	1.65	16	**31.094**	**31.095**	—
6"	150	1/2"	12.7	.047"	1.25	18	**31.096**	**31.097**	—

HALF-ROUND

Tapered in width and thickness, coming to a point. ***Double cut on both sides.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
3"	75	5/16"	7.9	3/32"	2.5	—	—	—	**31.100**	—	—	—
4"	100	15/32"	11.9	9/64"	3.6	**31.102**	**31.103**	—	**31.104**	**31.106**	**31.107**	—
5"	125	33/64"	13.1	5/32"	4.0	—	—	—	**31.108**	—	—	—
6"	150	19/32"	15.1	3/16"	4.8	**31.111**	**31.112**	**31.113**	**31.114**	**31.115**	**31.116**	**31.117**
8"	200	13/16"	20.6	15/64"	6.0	**31.118**	**31.119**	**31.120**	**31.121**	—	**31.122**	—
10"	250	1"	25.4	19/64"	7.5	**31.123**	**31.124**	—	**31.125**	—	—	—

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

HALF-ROUND RING

Tapered in width and thickness, coming to a point. Narrower than regular half-round and, therefore, useful for filing inside of rings.
Double cut on both sides.

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4
6"	150	15/32"	11.9	9/64"	3.6	**31.127**	**31.128**	**31.129**	**31.130**	**31.131**	**31.132**

ECONOMY HALF-ROUND RING

Made in Switzerland with a built in handle.

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 0
6"	150	7/16"	11.1	1/8"	3.2	**33.814**

HAND

Parallel in width and tapered in thickness. ***Double cut top and bottom – One edge single cut – One edge is safe.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness mm	Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
4"	100	17/32"	13.5	1/8"	3.2	—	**31.140**	—	**31.141**	—	**31.142**	—
6"	150	3/4"	19.1	5.32"	4.0	**31.143**	**31.144**	**31.145**	**31.146**	**31.147**	**31.148**	**31.149**
8"	200	29/32"	22.0	3/16"	4.8	**31.150**	**31.151**	**31.152**	**31.153**	—	**31.154**	—
10"	250	1"	25.4	1/4"	6.4	**31.155**	**31.156**	—	**31.157**	—	—	—
12"	300	1-3/16"	30.0	5.16"	7.9	**31.158**	**31.159**	—	—	—	—	—

JOINT ROUND EDGE

Parallel in width and thickness, with rounded edges, these files are cut on the edges only. Length is 4" (100 mm). ***Cut is number 2 – Single Cut.***

No.	31.161	31.162	31.163	31.164	31.165	31.166	31.167	31.168	31.169
Approx. thickness-inch	.059"	.047"	.039"	035"	.032"	.028"	.024"	.020"	.016"
Approx. thickness-mm	1.5	1.2	1.0	.9	.8	.7	.6	.5	.4
Stubs iron wire gauge	17	18	19	20	21	22	23	25	27

(This file is too thin to use with plastic handles.)

KNIFE

Tapered in width and thickness, with the knife edge having the same thickness from point to shoulder. The included angle of the sharp edge is approximately 10°. Generally used to file in a slot or wedge shaped opening. Curved knife edge allows for easily filing in restricted areas.
Double cut on both sides – Top edge is safe – Knife edge is single cut.

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
4"	100	15/32"	11.9	1/8"	3.2	**31.174**	**31.175**	**31.176**	**31.177**	**31.178**
6"	150	23/32"	18.3	5/32"	4.0	**31.179**	**31.180**	**31.181**	**31.182**	**31.183**
8"	200	7/8"	22.2	13/64"	5.2	**31.184**	**31.185**	**31.186**	**31.187**	—

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

PILLAR FILES

These files are parallel in width and tapered in thickness to make possible perfectly flat filing. ***Double cut top and bottom – Both edges are safe***.

EXTRA NARROW PILLAR

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 4	Cut 6
3"	75	1/8"	3.2	5/64"	2.0	—	—	—	**31.200**	—	—
4"	100	5/32"	4.0	5/64"	2.0	**31.201**	**31.202**	—	**31.204**	**31.205**	—
6"	150	13/64"	5.2	1/8"	3.2	**31.206**	**31.207**	**31.208**	**31.209**	**31.210**	**31.211**
8"	200	9/32"	7.1	9/64"	3.6	**31.212**	**31.213**	**31.214**	**31.215**	**31.216**	—
10"	250	11/32"	8.7	11/64"	4.4	**31.217**	—	—	—	—	—

NARROW PILLAR

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 4	Cut 6
4"	100	3/16"	4.8	3/32"	2.5	**31.219**	**31.220**	**31.221**	**31.222**	**31.223**	—
6"	150	1/4"	6.4	9/64"	3.6	**31.224**	**31.225**	**31.226**	**31.227**	**31.228**	**31.229**
8"	200	11/32"	8.7	11/64"	4.4	**31.230**	**31.231**	**31.232**	**31.233**	—	—
10"	250	25/64"	9.9	3/16"	4.8	**31.234**	**31.235**	—	—	—	—

DEMI-NARROW PILLAR

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2
6"	150	3/8"	9.5	5/32"	4.0	—	**31.192**	**31.193**	**31.194**

REGULAR PILLAR

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
4"	100	3/8"	9.5	1/8"	3.2	**31.237**	**31.238**	**31.239**	**31.240**	—	**31.241**	—
6"	150	1/2"	12.7	11/64"	4.4	**31.243**	**31.244**	**31.245**	**31.246**	**31.247**	**31.248**	**31.249**
8"	200	19/32"	15.1	13/64"	5.2	**31.251**	**31.252**	**31.253**	**31.254**	**31.255**	**31.256**	—
10"	250	23/32"	18.3	15/64"	6.0	**31.257**	**31.258**	—	**31.259**	—	—	—
12"	300	25/32"	19.8	9/32"	7.1	**31.260**	**31.261**	—	—	—	—	—

PIPPIN

Tapered in width and thickness. Combines the cross-sections of the round file, with the crossing file, along with the edge of a knife file. For finishing the junction of two different curved surfaces and for opening slots when a "V" shape is required. ***Double cut on both sides – Top and bottom edge are single cut.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 2	Cut 4
6"	150	25/64"	9.9	9/64"	3.6	—	**31.267**	**31.268**	**31.269**
8"	200	15/32"	11.9	11/64"	4.4	—	**31.271**	**31.272**	—

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

ROUND

Gradually tapered and cut and workable to the point. Used where it is necessary to enlarge a hole or round off a radius. ***Double cut***.

Length (in)	Length (mm)	Diameter (in)	Diameter (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 3	Cut 4	Cut 6
3"	75	3/32"	2.4	—	***31.275**	***31.276**	***31.277**	—	—	—
4"	100	5/32"	4.0	***31.279**	***31.280**	***31.281**	***31.282**	—	***31.283**	—
5"	125	13/64"	5.2	—	—	—	***31.286**	—	—	—
6"	150	1/4"	6.4	***31.287**	***31.288**	***31.289**	***31.290**	***31.291**	***31.292**	***31.293**
8"	200	5/16"	7.9	***31.294**	***31.295**	***31.296**	***31.297**	—	***31.298**	—
10"	250	13/32"	10.3	***31.299**	***31.300**	—	***31.302**	—	—	—

**Indicates blunt end*

ROUND PARALLEL

Cut over the entire surface (does not taper to point). ***Double cut***.

Length (in)	Length (mm)	Diameter (in)	Diameter (mm)	Cut 00	Cut 0	Cut 2
4"	100	1/16"	1.6	—	***31.304**	***31.305**
4"	100	1/8"	3.2	—	***31.307**	—
6"	150	3/32"	2.4	—	***31.311**	***31.312**
6"	150	1/8"	3.2	—	***31.315**	***31.316**
6"	150	5/32"	4.0	***31.318**	***31.319**	***31.320**
6"	150	3/16"	4.8	***31.321**	***31.322**	***31.323**
6"	150	1/4"	6.4	—	—	***31.326**

SCREWHEAD with TANG

Used for filing slots in small screws. Available in thicknesses ranging from No. 1 (thickest) to No. 8 (thinnest). ***Single cut on both edges – Both sides are safe.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness 1 (.032") (.80 mm)	Thickness 2 (.028") (.70 mm)	Thickness 3 (.024") (.60 mm)	Thickness 4 (.022") (.55 mm)	Thickness 6 (.018") (.45 mm)	Thickness 8 (.014") (.35mm)
3"	75	25/64"	9.9	—	***31.332**	***31.333**	***31.334**	***31.335**	***31.336**
4"	100	15/32"	11.9	***31.337**	***31.338**	—	***31.339**	—	—

UNIVERSAL PIVOT FILE/BURNISHER

Swiss-made. These regular burnishers are polished and have slightly rounded corners. 7⅛" (18 cm) length.

No. ***31.01710*** Right

No. ***31.01720*** Left

SLITTING

Parallel in width with identical contour on top and bottom. Thinner than knife files and used for filing slots. ***Double cut top and bottom – Both edges are single cut.***

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 0	Cut 2
6"	150	19/32"	15.1	1/8"	3.2	***31.342**	***31.343**

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

SQUARE

A general purpose file, cut and usable to the point. Gradually tapered. ***Double cut on all four sides***.

Length (in)	Length (mm)	Diameter (in)	Diameter (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
4"	100	5/32"	4.0	***31.345**	***31.346**	—	***31.348**	—
6"	150	15/64"	6.0	***31.349**	***31.350**	***31.351**	***31.352**	***31.353**
8"	200	5/16"	7.9	***31.354**	***31.355**	—	***31.356**	—
10"	250	13/32"	10.3	***31.357**	—	—	--	—

**Indicates blunt end*

THREE-SQUARE

Gradually tapered, cut and workable to the point. ***Double cut on all three sides***.

Length (in)	Length (mm)	Diameter (in)	Diameter (mm)	Cut 00	Cut 0	Cut 1	Cut 2	Cut 4
4"	100	9/32"	7.1	***31.366**	***31.367**	***31.368**	***31.369**	***31.370**
6"	150	3/8"	9.5	***31.371**	***31.372**	***31.373**	***31.374**	***31.375**
8"	200	1/2"	12.7	***31.376**	***31.377**	***31.378**	***31.379**	—

THREE-SQUARE SLIM

Same as three-square, except thinner, for working in smaller areas. ***Double cut on all three sides***.

Length (in)	Length (mm)	Width (in)	Width (mm)	Cut 0	Cut 2
6"	150	5/16"	7.9	***31.381**	***31.382**

Use plastic file handles: size 4.

VUL-CRYLIC

Double-end vulcanite file with open, coarse teeth for filing plastics, waxes and soft materials. One end is coarser than the other.
Double cut on both sides.

Length (in)	Length (mm)	Width (in)	Width (mm)	No.
7"	175	1/2"	12.7	***31.385**
8"	200	35/64"	14	***31.384**

WARDING

Parallel in thickness and tapered in width. Useful for removal of burs. ***Double cut top and bottom – Both edges are single cut***.

Length (in)	Length (mm)	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 0	Cut 2	Cut 4
3"	75	23/64"	9.1	1/32"	0.8	—	***31.387**	***31.388**	—
4"	100	1/2"	12.7	3/64"	1.2	***31.389**	***31.390**	***31.391**	***31.392**
6"	150	5/8"	15.9	5/64"	2.0	***31.393**	***31.394**	***31.395**	***31.396**
8"	200	7/8"	22.2	7/64"	2.8	***31.397**	***31.398**	***31.399**	—

Warding-Special Thickness

No.	Length (in)	Length (mm)	Width (in)	Width (mm)	Approx. Thickness (in)	Approx. Thickness (mm)	Stubs Iron Wire Gauge	Cut No.
***31.401**	3"	75	23/64"	9.1	.025"	0.61	23	0
***31.402**	4"	100	1/2"	12.7	.032"	0.81	21	0
***31.403**	6"	150	5/8"	15.9	.065"	1.65	16	0
***31.405**	6"	150	5/8"	15.9	.049"	1.25	18	2
***31.406**	6"	150	5/8"	15.9	.042"	1.02	19	0
***31.407**	6"	150	5/8"	15.9	.042"	1.02	19	2

(This file is too thin to use with plastic handles.)

Note: See pages 39 -41 for our complete file handle line, including charts on plastic file handles.

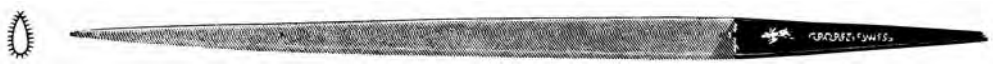
GROBET USA

DIE SINKERS' FILES

Overall length: 5-1/4" (133 mm). Length of cut: 3-1/2" (89 mm).

AURIFORM

Cut 0	Cut 2
31.420	31.421



CROCHET

Cut 0	Cut 2
31.422	31.423

FLAT

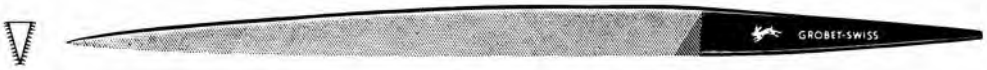
Cut 0	Cut 2
31.424	31.425

HALF-ROUND

Cut 0	Cut 2
31.426	31.427

KNIFE

Cut 0	Cut 2
31.428	31.429



LOZENGE

Cut 0	Cut 2
31.430	31.431

OVAL

Cut 0	Cut 2
31.432	31.433

PIPPIN

Cut 0	Cut 2
31.434	31.435

ROUND

Cut 0	Cut 2
31.436	31.437

SQUARE

Cut 0	Cut 2
31.438	31.439

THREE-SQUARE

Cut 0	Cut 2
31.440	31.441

WARDING

Cut 0	Cut 2
31.442	31.443

ASSORTED SET OF 12

Cut 0	Cut 2
31.445	31.446

GROBET SWISS NEEDLE FILES

Precision files, for exacting work, especially under magnification. Made of the highest quality steel, machined and finished for precision shape, accuracy and balance. With round, knurled handles or plastic handles as noted.

- Length 4" (10 cm) has cut portion of 1-3/4" (44 mm)
- Length 5-1/2" (14 cm) has cut portion of 2-1/2" (64 mm)
- Length 6-1/4" (16 cm) has cut portion of 3" (6 mm)
- Length 7-3/4" (20 cm) has cut portion of 4-1/8" (105 mm)

Knurled Handle

Plastic Handle

BARRETTE

Overall Length (in)	(cm)	KNURLED HANDLES Cut 00	Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	—	**31.450**	**31.451**	**31.452**	—	**30.450**	**30.451**	—
5-1/2"	14	—	**31.453**	**31.454**	**31.456**	—	**30.453**	**30.454**	**30.456**
6-1/4"	16	**31.458**	**31.459**	**31.461**	**31.463**	**31.464**	**30.459**	**30.461**	**30.463**
7-3/4"	20	—	**31.466**	**31.468**	**31.470**	**31.471**			

BARRETTE, GROUND BACK

Widely used in making and repairing extrusion dies.

Overall Length (in)	(mm)	Cut 0
5-1/2"	140	**31.693**
6-1/4"	159	**31.694**

CROCHET

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4
4"	10	**31.474**	**31.475**	—
5-1/2"	14	**31.477**	**31.478**	**31.479**
6-1/4"	16	**31.480**	**31.481**	**31.482**

CROSSING

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	**31.484**	**31.485**	—	—	**30.484**	**30.485**	—
5-1/2"	14	**31.487**	**31.488**	**31.489**	—	**30.487**	**30.488**	**30.489**
6-1/4"	16	**31.490**	**31.491**	**31.492**	**31.493**	**30.490**	**30.491**	**30.492**
7-3/4"	20	**31.494**	**31.495**	**31.496**	—			

EQUALLING

Overall Length (in)	(cm)	KNURLED HANDLES Cut 00	Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	—	**31.498**	**31.499**	**31.500**	—	**30.498**	**30.499**	—
5-1/2"	14	—	**31.501**	**31.502**	**31.503**	—	**30.501**	**30.502**	**30.503**
6-1/4"	16	**31.505**	**31.506**	**31.508**	**31.510**	**31.511**	**30.506**	**30.508**	**30.510**
7-1/4"	20	—	**31.512**	**31.513**	**31.514**	—			

GROBET USA

HALF-ROUND

Overall Length (in)	(cm)	KNURLED HANDLES Cut 00	Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	—	**31.516**	**31.517**	—	—	**30.516**	**30.517**	—
5-1/2"	14	—	**31.519**	**31.520**	**31.522**	—	**30.519**	**30.520**	**30.522**
6-1/4"	16	**31.524**	**31.525**	**31.527**	**31.529**	**31.530**	**30.525**	**30.527**	**30.529**
7-3/4"	20	—	**31.531**	**31.533**	**31.535**	—			

JOINT ROUND EDGE

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	**31.537**	**31.538**	**31.539**	—	**30.537**	**30.538**	—
5-1/2"	14	**31.540**	**31.541**	**31.542**	—	**30.540**	**30.541**	—
6-1/4"	16	**31.543**	**31.544**	**31.545**	**31.546**	**30.543**	—	**30.545**

PILLAR ROUND EDGE

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4
6-1/4"	16	**31.547**	**31.548**	**31.549**

KNIFE

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	**31.551**	**31.552**	—	—	**30.551**	**30.552**	—
5-1/2"	14	**31.554**	**31.555**	**31.556**	—	—	—	**30.556**
6-1/4"	16	**31.558**	**31.559**	**31.561**	**31.562**	**30.558**	**30.559**	**30.561**
7-3/4"	20	**31.563**	**31.564**	**31.565**	—			

MARKING

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	**31.567**	**31.568**	**31.569**	—	—	**30.568**	—
5-1/2"	14	**31.570**	**31.571**	**31.572**	—	—	—	**30.572**
6-1/4"	16	**31.573**	**31.574**	**31.575**	**31.576**	**30.573**	**30.574**	—

OVAL

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4
6-1/4"	16	**31.578**	**31.579**	**31.580**

ROUND

Overall Length (in)	(cm)	KNURLED HANDLES Cut 00	Price	Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	—		**31.582**	**31.583**	**31.584**	—	**30.582**	**30.583**	—
5-1/2"	14	—		**31.585**	**31.586**	**31.588**	—	**30.585**	**30.586**	**30.588**
6-1/4"	16	**31.590**		**31.591**	**31.593**	**31.595**	**31.596**	**30.591**	**30.593**	**30.595**
7-3/4"	20	—		**31.597**	**31.598**	**31.599**	—			

SLITTING

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4	Price	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	**31.601**	**31.602**	—		—	—	**30.602**	—
5-1/2"	14	**31.604**	**31.605**	**31.606**		—	**30.604**	**30.605**	**30.606**
6-1/4"	16	**31.607**	**31.608**	**31.609**		**31.610**	—	—	—

SQUARE

Overall Length (in)	(cm)	KNURLED HANDLES Cut 00	Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	—	**31.612**	**31.613**	—	—	**30.612**	**30.613**	—
5-1/2"	14	—	**31.615**	**31.616**	**31.617**	—	**30.615**	**30.616**	**30.617**
6-1/4"	16	**31.619**	**31.620**	**31.622**	**31.624**	**31.625**	—	**30.622**	**30.624**
7-3/4"	20	—	**31.626**	**31.627**	**31.628**	—			

THREE SQUARE

Overall Length (in)	(cm)	KNURLED HANDLES Cut 00	Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	—	**31.630**	**31.631**	—	—	**30.630**	**30.631**	—
5-1/2"	14	—	**31.633**	**31.634**	**31.636**	—	**30.633**	**30.634**	**30.636**
6-1/4"	16	**31.637**	**31.638**	**31.640**	**31.642**	**31.643**	**30.638**	**30.640**	**30.642**
7-3/4"	20	—	**31.645**	**31.647**	**31.649**	**31.650**			

WARDING

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4	Cut 6	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	**31.656**	**31.657**	**31.658**	—	**30.656**	**30.657**	—
5-1/2"	14	**31.659**	**31.660**	**31.661**	—	—	—	**30.661**
6-1/4"	16	**31.663**	**31.664**	**31.666**	**31.667**	**30.663**	**30.664**	**30.666**
7-3/4"	20	**31.668**	**31.669**	**31.670**	—			

SETS of 12 ASSORTED GROBET NEEDLE FILES

The 4" (10 cm), 5-1/2" (14 cm) and 6-1/4"(16 cm) sets consist of one each barrette, crossing, equalling, half-round, joint round edge, knife, marking, round, slitting, square, three-square, and warding. The 7-3/4" (20 cm) sets consists of two each half-round, round and three-square and one each barrette, crossing, equalling, knife, square and warding.

Overall Length (in)	(cm)	KNURLED HANDLES Cut 0	Cut 2	Cut 4	Cut 6
4"	10	**31.672**	**31.673**	—	—
5-1/2"	14	**31.675**	**31.676**	**31.677**	—
6-1/4"	16	**31.679**	**31.680**	**31.681**	**31.682**
7-3/4"	20	**31.683**	**31.684**	—	—

Overall Length (in)	(cm)	PLASTIC HANDLES Cut 0	Cut 2	Cut 4
4"	10	**30.672**	**30.673**	—
5-1/2"	14	**30.675**	**30.676**	**30.677**
6-1/4"	16	**30.679**	**30.680**	**30.681**

VALTITAN NEEDLE & HAND FILES

"The File with the Yellow Tang"

For platinum, stainless steel, exotic plastics, and other hard to file materials. The hardest surface known – Rockwell hardness 72HRc. Better performance on hard-to-file surfaces. Little or no clogging; a simple knock is enough to remove the chips. Highly resistant to corrosion. Longer life than standard files. Made in Switzerland.

VALTITAN NEEDLE FILES

	Cut 00	Cut 0	Cut 2
BARRETTE	***30.100V***	***30.101V***	***30.102V***

	Cut 00	Cut 0	Cut 2
EQUALLING	***30.103V***	***30.104V***	***30.105V***

	Cut 00	Cut 0	Cut 2
HALF-ROUND	***30.106V***	***30.107V***	***30.108V***

	Cut 00	Cut 0	Cut 2
ROUND	***30.118V***	***30.119V***	***30.120V***

	Cut 00	Cut 0	Cut 2
SQUARE	***30.115V***	***30.116V***	***30.117V***

	Cut 00	Cut 0	Cut 2
THREE-SQUARE	***30.112V***	***30.113V***	***30.114V***

	Cut 00	Cut 0	Cut 2
WARDING	***30.109V***	***30.110V***	***30.111V***

SET of SIX "YELLOW TANG" FILES (ALL BUT WARDING)	Cut 00	Cut 0	Cut 2
	30.121V	***30.122V***	***30.123V***

VALTITAN PRECISION FILES

BARRETTE	Length	Cut 00	Cut 0	Cut 2
	6"	—	***30.201V***	***30.202V***

HALF ROUND	Length	Cut 00	Cut 0	Cut 2
	6"	—	***30.231V***	***30.232V***
	8"	—	—	***30.235V***

HALF ROUND SLIM	Length	Cut 00	Cut 0	Cut 2
	6"	—	***30.241V***	***30.242V***

HAND	Length	Cut 00	Cut 0	Cut 2
	6"	***30.210V***	***30.211V***	***30.212V***
	8"	***30.213V***	***30.214V***	***30.215V***

PILLAR	Length	Cut 00	Cut 0	Cut 2
	6"	—	***30.221V***	***30.222V***

ROUND	Length	Cut 00	Cut 0	Cut 2
	6"	—	****30.251V***	***30.252V***
	8"	—	****30.254V***	***30.255V***

**Indicates blunt cut*

SQUARE	Length	Cut 00	Cut 0	Cut 2
	6"	—	****30.271V***	***30.272V***

**Indicates blunt cut*

THREE-SQUARE	Length	Cut 00	Cut 0	Cut 2
	6"	—	***30.261V***	***30.262V***
	8"	—	***30.264V***	***30.265V***

GROBET ESCAPEMENT FILES

Also known as square handled needle files, these precision files are available in most of the needle file shapes. Overall length is 5-1/2" (14 cm), length of cut is 1-9/16" to 2-9/16" (39.7 to 65.1 mm) depending upon shape.

BARRETTE	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.700	31.701	31.703	31.704	31.705

CROSSING	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.714	31.715	31.716	—

BARRETTE, PARALLEL	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.708	31.709	31.710	—

EQUALLING	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.720	31.721	31.722	—

HALF-ROUND	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.724	31.725	31.727	31.728	31.729

KNIFE	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.731	31.732	31.733	—

PILLAR	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.737	31.738	31.739	—

ROUND	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.742	31.743	31.745	31.746	31.747

ROUNDING OFF	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.750	31.751	31.752	—

SQUARE	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.754	31.755	31.756	31.757	31.758

THREE-SQUARE	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	31.760	31.761	31.762	31.763	31.764

THREE-SQUARE SLIM AND SHORT	Cut 0	Cut 2	Cut 4	Cut 6	Cut 8
	—	31.766	31.767	31.768	—

SETS of 12 ASSORTED GROBET ESCAPEMENT FILES

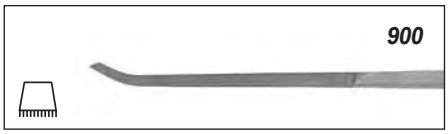
Contains 12 assorted files .
Pillar shape not included in sets.

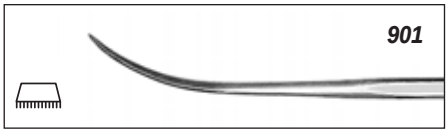
Cut	No.
2	31.770
4	31.771
6	31.772

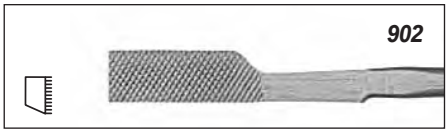
GROBET DIE SINKERS' RIFFLERS

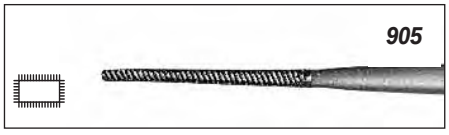
A comprehensive selection of precision rifflers. All are double-ended and 6" (152 mm) long.

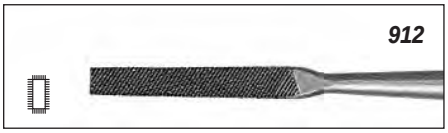
Style No.	Cut 0	Cut 2	Cut 4
900	31.835	31.836	31.837
901	31.838	31.839	31.840
902	31.842	31.843	---
905	31.846	31.847	31.848
911	31.850	31.851	31.852
912	31.854	31.855	31.856
913	31.858	31.859	31.860
914	31.862	31.863	31.864
915	31.865	31.866	31.867
916	32.017	32.018	---
917	31.869	31.870	---
918	31.872	31.873	---
919	31.876	31.877	31.878
920	31.879	31.880	---
930	31.882	31.883	---
931	31.885	31.886	31.887
940	31.888	31.889	31.890
941	31.892	31.893	31.894
942	31.896	31.897	31.898
943	32.033	32.034	---
950	31.900	---	---
951	31.903	31.904	31.905
952	31.906	31.907	31.908
953	31.910	31.911	---
954	31.914	31.915	31.916
955	31.917	31.918	31.919

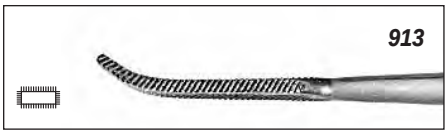


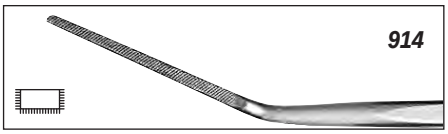


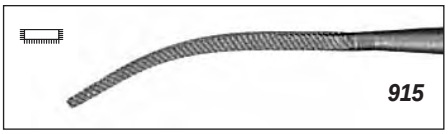


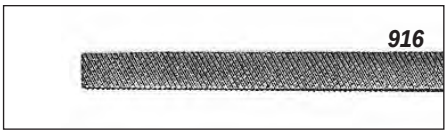


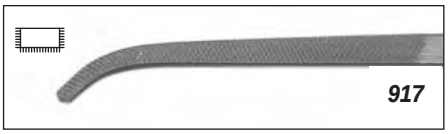


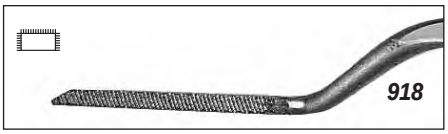


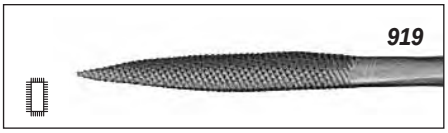


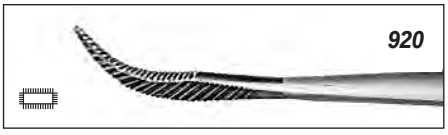


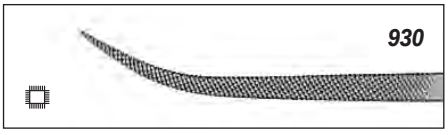


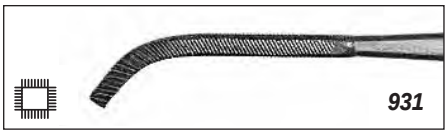


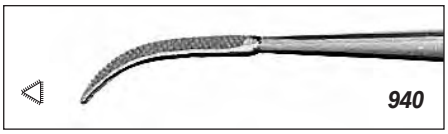


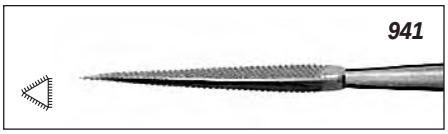


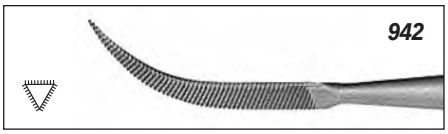


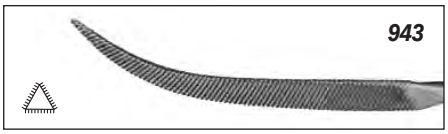


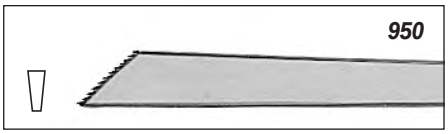


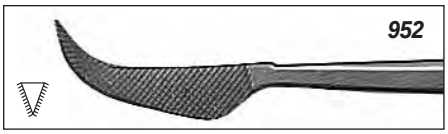


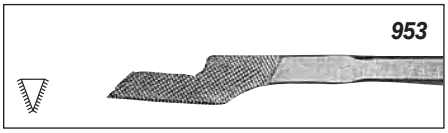


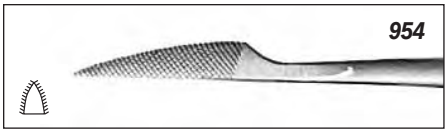


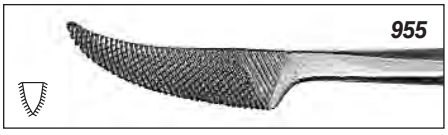




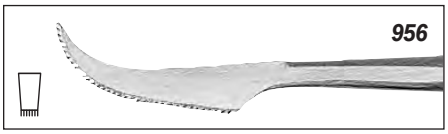


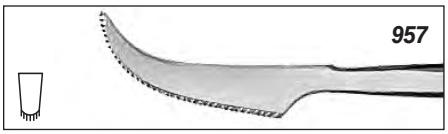


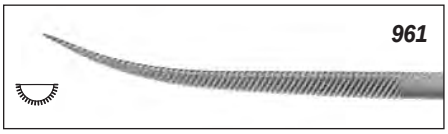


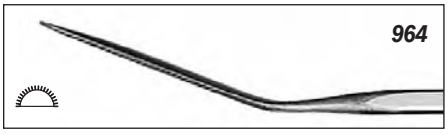


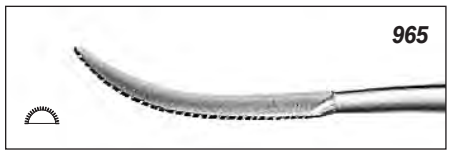
Style No.	Cut 0	Cut 2	Cut 4
956	31.921	31.922	31.923
957	31.925	31.926	31.927
958	31.929	31.930	31.931
961	31.932	31.933	31.934
962	31.936	31.937	--
963	31.939	31.940	31.941
964	31.943	31.944	31.945
965	31.946	31.947	31.948
970	31.950	31.951	31.952
971	31.954	31.955	31.956
972	31.957	31.958	31.959
973	31.961	31.962	31.963
974	31.965	31.966	31.967
975	31.969	31.970	31.971
980	32.019	32.027	32.02702
981	31.972	31.973	31.974
982	31.976	31.977	31.978
983	31.979	31.980	31.981
984	31.983	31.984	31.985
985	31.986	31.987	31.988
986	31.990	31.991	31.992
987	31.994	31.995	31.996
988	31.997	31.998	31.999
990	--	32.002	--
995	32.007	32.008	--
996	32.010	32.011	32.012
997	--	32.015	--

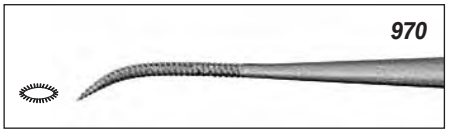


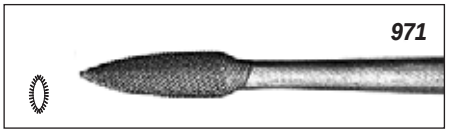


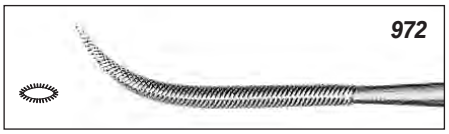


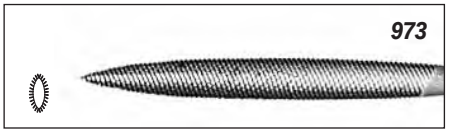


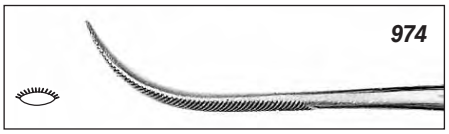


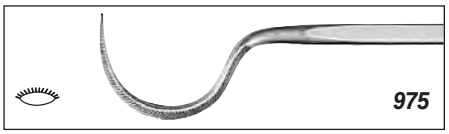


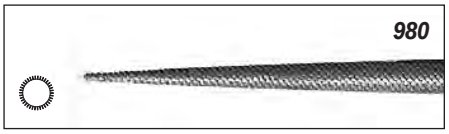


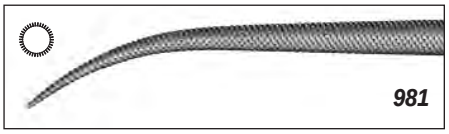


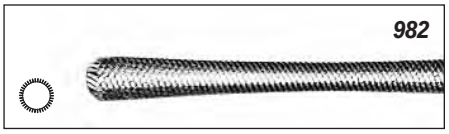


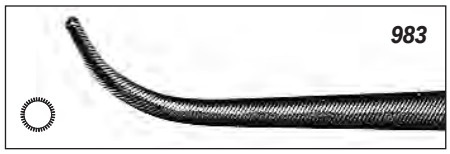


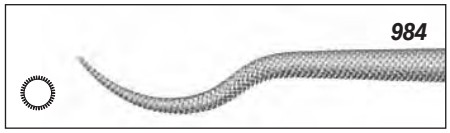


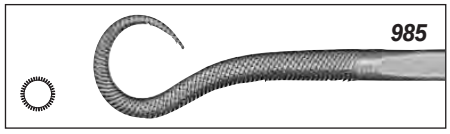


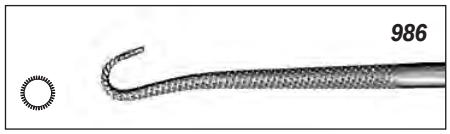


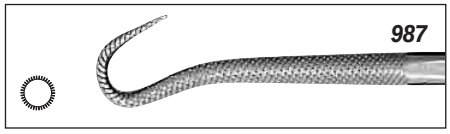


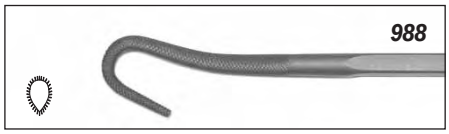


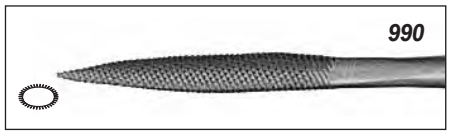


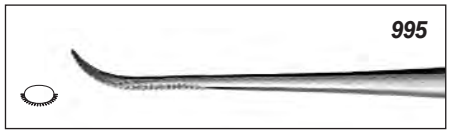


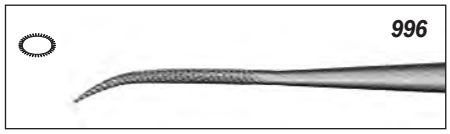


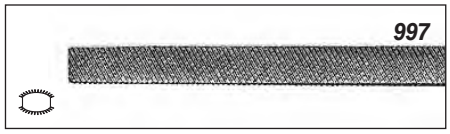












SETS OF DIE SINKERS' RIFFLERS

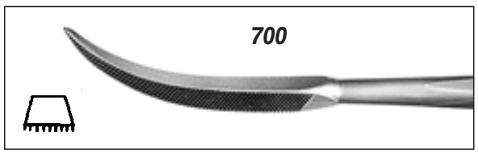
Contain the most widely used shapes from above.

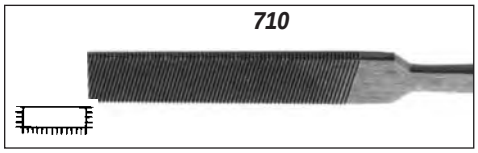
Peices In Set	Cut 0	Cut 2	Cut 4
3	32.062-0	32.062-2	32.062-4
6	32.063-0	32.063-2	32.063-4
12	32.020	32.021	32.022
18	--	32.025	32.026
24	--	32.029	--

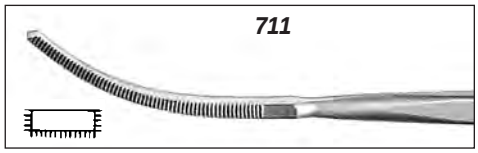
GROBET SILVERSMITHS' RIFFLERS

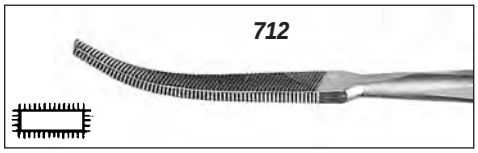
For removing metal and smoothing in tight places. All are double-ended and 7" (17.8 cm) overall.

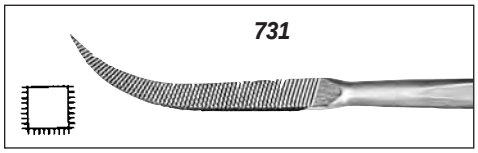
Style Nos.	Cut 0	Cut 2
700	**31.790**	**31.791**
701	**31.792**	---
710	**31.830**	**31.834**
711	**31.794**	**31.795**
712	**31.796**	**31.797**
713	**31.798**	**31.799**
731	**31.800**	**31.801**
732	**31.802**	**31.803**
741	**31.804**	**31.805**
750	**31.806**	**31.807**
761	**31.808**	**31.809**
762	**31.810**	**31.811**
763	**31.812**	**31.813**
764	**31.814**	**31.815**
771	**31.816**	**31.817**
781	**31.818**	**31.819**
782	**31.820**	**31.821**
783	**31.822**	**31.823**
790	**31.824**	**31.825**
795	**31.826**	**31.827**
796	**31.828**	**31.829**

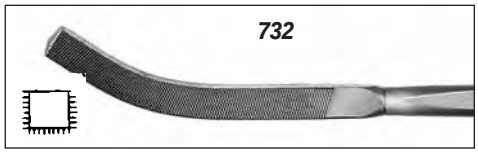


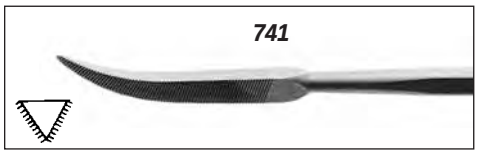


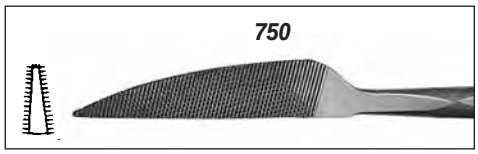


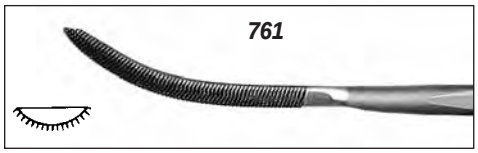


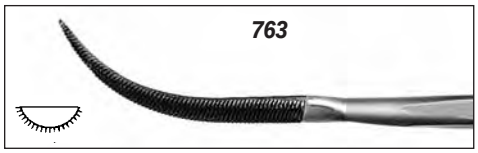


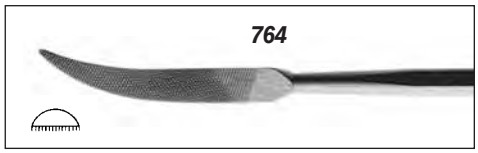


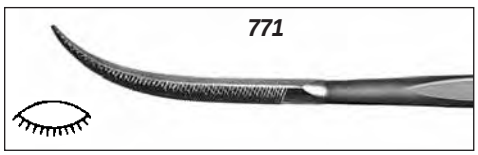


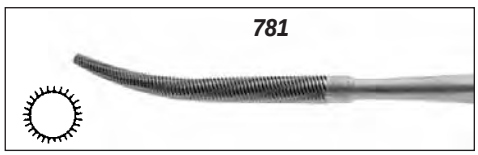


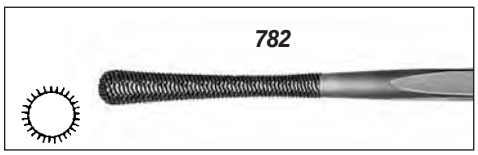


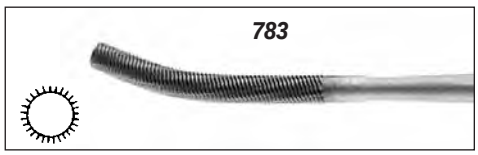


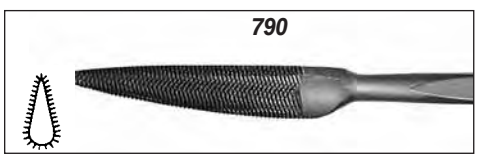


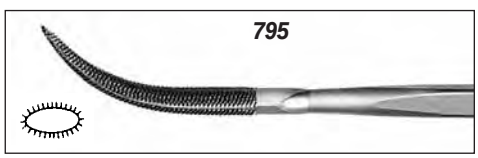


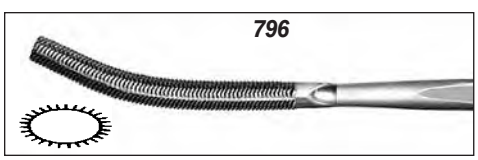












SETS of 12 ASSORTED SILVERSMITHS' RIFFLERS

Contain 12 popular riffler shapes from above, in the cut indicated.

No. ***31.831*** Cut 0
No. ***31.832*** Cut 2

GROBET TOOL MAKERS' RIFFLERS

This group of 12" (305 mm) tool makers' rifflers rounds out the most complete line of Swiss precision rifflers available to industry anywhere. They are made of chrome-alloy steel for long, efficient life and corrosion resistance. They are contoured to make difficult-to-reach areas readily accessible and are well balanced to facilitate delicate finishing work. All supplied in cut 0. Sold individually.

32.075

32.077

32.079

32.081

32.083

32.085

32.087

32.091

32.093

ASSORTED SET of 10 RIFFLERS
32.097

1

1 MASCOT® NEEDLE FILES

Swiss-made, single-cut files do not clog as easily as double-cut. Overall length 5-1/2" (14 cm). Smooth cut only. Sold individually.

No.	Shape
33.860	Equalling
33.861	Flat
33.862	Half-Round
33.863	Round
33.864	Square
33.865	Three-Square

SET of MASCOT NEEDLE FILES

Set of six contains equalling, flat, half-round, round, square, and three-square styles in a plastic pouch.
No. **33.867**

2

2 SWISS NEEDLE FILES

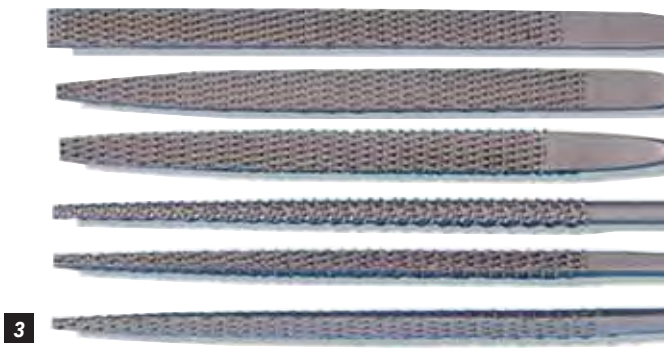
Well-made, yet economical, Swiss needle files are made of chrome alloy steel. Overall length is 5-1/2" (14 cm), with the cut portion 3" (7.6 cm). Sold by the dozen.

Shape	Medium	Fine
Barrette	**33.880**	**33.881**
Crossing	**33.882**	**33.883**
Equalling	**33.884**	**33.885**
Half-Round	**33.886**	**33.887**
Knife	**33.890**	**33.891**
Square	**33.898**	—
Round	**33.894**	**33.895**
Three-Square	**33.900**	**33.901**
Warding	**33.902**	**33.903**

SETS of SWISS NEEDLE FILES

Assorted shapes in a plastic pouch.

Cut	Set of 6	Set of 12
Medium	**33.906**	**33.908**
Fine	**33.907**	**33.909**



3

3 SWISS WAX FILES

Excellent for shaping waxes and other materials, such as wood and plastic. Wide-tooth style does not clog as easily as conventional file. Overall length 5-1/2" (14 cm).

No.	Shape
33.915	Equalling
33.916	Flat
33.917	Half-Round
33.918	Round
33.919	Square
33.920	Three-Square

SET of SWISS WAX FILES

All six shapes listed above in a plastic pouch.
No. **33.922**

4

4 MASCOT® 6 PC UTILITY FILE SET

This handy utility set consists of six American Pattern file shapes: square, half-round, three-square, round, flat, and warding. File cut lengths are approximately 4" (10 cm) with an overall length of 7" (17 cm). Each file has a smooth wooden handle and the set comes in a hanging pouch.
No. **32.510**

1 ***HABILIS™ FILES***

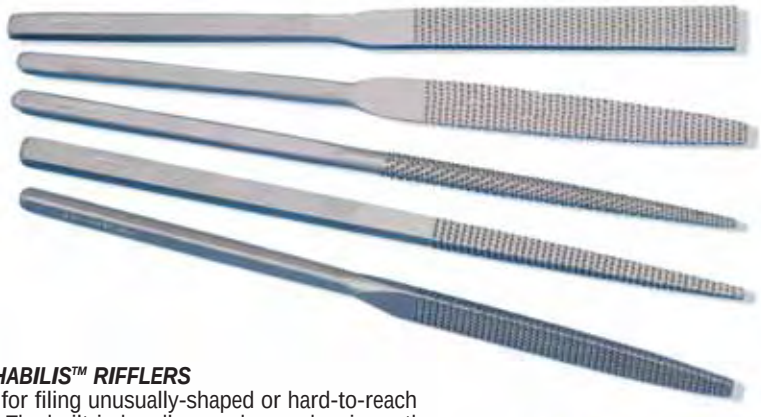
Habilis files offer the craftsman something different; precision files designed for those "in-between" jobs, too big for needle files and requiring finer control than a larger, heavier file can deliver. The distinctive design includes a built-in handle, so there's no separate handle to buy and they're shaped for easy handling and balanced for efficient cutting. These strong, durable files are ideal for a variety of uses. Length of cut is 4" (10 cm) and the overall length is 8-1/2" (22 cm). Sold individually or in sets as listed.

Shape	Width (in)	Width (mm)	Thickness (in)	Thickness (mm)	Cut 00	Cut 1
Hand	3/8"	9.5	1/8"	3.2	***33.820***	***33.821***
Half-Round	15/32"	11.9	9/64"	3.6	***33.822***	***33.823***
Round	1/4"	6.4	—	—	***33.824***	***33.825***
Square	1/4"	6.4	—	—	***33.826***	***33.827***
Three-Square	3/8"	9.5	—	—	***33.828***	***33.829***

SET of HABILIS™ FILES

Five files, one of each shape, in sturdy vinyl pouch.
No. ***33.831*** Cut 00
No. ***33.832*** Cut 1

1



2

2 ***HABILIS™ RASPS***

For cutting wood, fiberglass, plastics or soft metals. The comfortable-to-use, conveniently-sized Habilis style is now available in five shapes. The built-in handle and balanced feel will help you work faster, with better control. Offered individually in the most popular shapes or as a set of all five.
No. ***33.834*** Hand
No. ***33.835*** Half-Round
No. ***33.836*** Round
No. ***33.837*** Square
No. ***33.838*** Three-Square

SET of FIVE HABILIS™ RASPS

No. ***33.840***

3 ***HABILIS™ RIFFLERS***

Ideal for filing unusually-shaped or hard-to-reach areas.The built-in handles can be used as is, or the specially designed plastic handle (No. 33.848) can be used when a heavier grip is required. Supplied in six individual shapes, five curved and one straight, or as a set of all six plus the plastic handle.
No. ***33.842*** Hand
No. ***33.843*** Half-Round
No. ***33.844*** Round
No. ***33.845*** Square
No. ***33.846*** Three-Square
No. ***33.847*** Knife

SET of SIX with HANDLE

No. ***33.850***

3

4

4 ***HANDLE for HABILIS RIFFLERS***

No. ***33.848***

1 DIAMOND NEEDLE FILES

Engineered to deliver performance unequaled by any other file, for use on ultra-hard materials. Carbide, hardened steel, exotic metals, ceramics, and glass are no match for these precision files. Excellent material removal is the result of a unique process which bonds the 2-1/2" (64 mm) long diamond surface. Available in fine grit (220) Mascot® Brand or coarse grit (126) Grobet USA™ Brand. Sets of 5 contain one each of equalling, half-round, round, square and three-square. Overall length is 5-1/2" (14 cm). Sold individually or in sets as listed.

	Fine Grit (220)	Coarse Grit (126)
Barrette	**33.958**	**33.980**
Crossing	**33.959**	**33.984**
Equalling	**33.961**	**33.971**
Half-Round	**33.962**	**33.972**
Round	**33.963**	**33.973**
Square	**33.964**	**33.974**
Three-Square	**33.965**	**33.975**
Crochet	**33.966**	**33.976**
Warding	**33.967**	**33.977**
Knife	**33.968**	**33.978**
Pippin	**33.969**	—

SET of FIVE in VINYL POUCH

Contains 5 assorted files listed above.
No. **33.960** Fine grit
No. **33.970** Coarse grit

2 DIAMOND ESCAPEMENT FILES

These square handle files have an overall length of 5-1/2" (14 cm). Their diamond surface is 1-9/16" to 2-9/16" (40 to 65 mm), according to shape. Used in fine watchmaking, in finishing fine castings, and other delicate work. 126 grit. Sold individually.
No. **33.951** Half-Round
No. **33.952** Crossing
No. **33.953** Three-Square
No. **33.954** Equalling
No. **33.955** Square
No. **33.956** Round

SET of SIX in VINYL POUCH

Contains one of each 6 files listed above.
No. **33.957**

3 HABILIS™ DIAMOND FILES

Excellent for filing large areas of different materials as well as hard plastics, fiberglass, graphite, and epoxy. Can also be used for marble shaping applications. In spite of the heavy-duty applications, these diamond files have a very high resistance to wear. Overall length is 8-1/2" (22 cm), and diamond surface is 4" (10 cm). 126 grit. Sold individually.
No. **33.873** Three-Square
No. **33.874** Square
No. **33.875** Round
No. **33.876** Half-Round
No. **33.877** Hand

SET of FIVE in VINYL POUCH

Contains one of each 5 files listed above.
No. **33.852**

4 DIAMOND RIFFLERS

For easy access to hard to reach places. Double-ended with diamond coating on both ends. Overall length is 6" (15 cm). 126 grit. Sold individually.
No. **33.991** Style 15
No. **33.992** Style 18
No. **33.993** Style 20
No. **33.994** Style 22
No. **33.995** Style 16

SET of FIVE in VINYL POUCH

Contains one of each 5 files listed above.
No. **33.996**

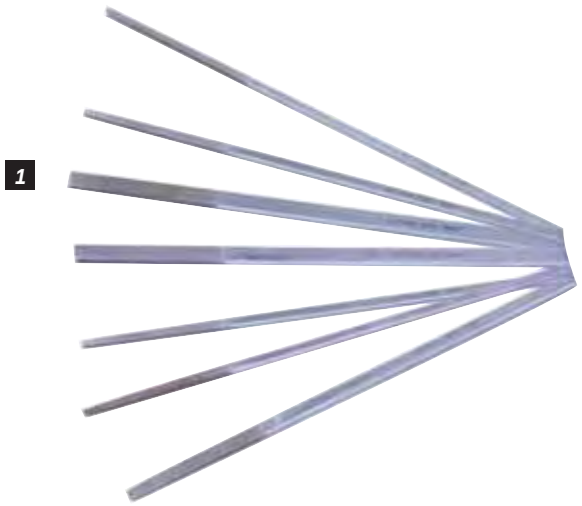
1 GROBET USA™ TAPERED DIAMOND FILES

These tapered files are used in filing inside slots and grooves, where access with straight files is impossible. They were specially designed for use in the aluminum extruders industry and in the plastic mold industry. Overall length 6-5/8" (170 mm). Grits as shown. Sold individually.

		Width		Taper	
No.	Grit	(in)	(mm)	(in)	(mm)
33.940	140	5/32"	4.0	5/64"	2.0
33.941	200	5/32"	4.0	5/64"	2.0
33.942	200	5/32"	4.0	5/64"	2.0
33.943	325	5/32"	4.0	5/64"	2.0
33.944	200	1/4"	6.4	3/32"	2.4
33.945	200	5/16"	7.9	5/64"	2.0
33.946	325	5/16"	7.9	5/64"	2.0

SET of TEN

Contains pairs of Nos. 33.940, 33.941, & 33.944 and one each of Nos. 33.942, 33.943, 33.945, & 33.946.
No. ***33.947***



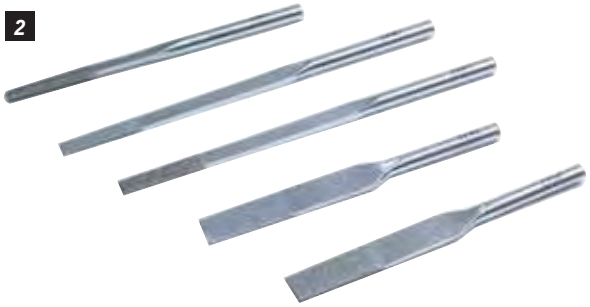
2 GROBET USA™ DIAMOND HAND/MACHINE FILES

These tapered files are used in filing inside slots and grooves, where access with parallel files is impossible. They can be used by hand or in any reciprocating machine, and were specially designed for the aluminum extruders industry as well as the plastic mold industry. The diamond coating is 5/8" (15.9 mm). Grits and overall length as shown.

		Width		Taper	
No.	Grit	(in)	(mm)	(in)	(mm)
33.929	325	1/8"	3.2	1/16"	1.6
33.930	200	1/8"	3.2	1/16"	1.6
33.931	600	1/8"	3.2	1/16"	1.6
33.932	325	1/8"	3.2	1/16"	1.6
33.933	200	1/8"	3.2	1/16"	1.6
33.934	600	1/8"	3.2	3/64"	1.2
33.935	325	1/8"	3.2	3/64"	1.2
33.936	600	1/8"	3.2	3/64"	1.2
33.937	325	1/8"	3.2	3/64"	1.2
33.938	200	1/8"	3.2	3/64"	1.2

SET of TEN

Contains one of each 10 files listed above.
No. ***33.939***



3 GROBET USA™ "WIDE-BODY" DIAMOND FILE KITS with HANDLE

These very wide, extra thin files were manufactured to make full contact between the file surface and the workpiece. These unique files are widely used in the plastic molds and in the aluminum extruders industries. The two different file sizes are available in four grits, and thicknesses range between 1/64" (0.4 mm) with grit D30, to 3/64" (1.2 mm) with grit D126. Files are available individually and in three separate kits, as shown below. All files fit into the specially designed handle, No. 33.1005.

	Grit Area			
No.	(in)	(mm)	Grit	Thickness
33.985	5/8" x 5/8"	16 x 16	600	0.4 mm
33.986	5/8" x 5/8"	16 x 16	325	0.5 mm
33.987	5/8" x 5/8"	16 x 16	200	1.0 mm
33.988	5/8" x 5/8"	16 x 16	140	1.2 mm
33.989	1" x 1"	25 x 25	600	0.4 mm
33.990	1" x 1"	25 x 25	325	0.5 mm
33.1000	1" x 1"	25 x 25	200	1.0 mm
33.1001	1" x 1"	25 x 25	140	1.2 mm

No. ***33.1005*** Handle
No. ***33.1006*** Wrench (included in all kits below)

Kits:

No. ***33.1002*** Includes one each handle No. 33.1005, wrench 33.1006 and file Nos. 33.985, 33.986, 33.989 and 33.990

No. ***33.1003*** Includes one each handle No. 33.1005, wrench 33.1006 and file Nos. 33.987, 33.988, 33.1000 and 33.1001

No. ***33.1004*** Includes one each handle No. 33.1005, wrench 33.1006 and file Nos. 33.989, 33.990, 33.1000 and 33.1001

5 PIECE SETS *AMERICAN PATTERN FILE SETS*

- Uniform cut for fast metal removal
- Extremely durable
- Unsurpassed in accuracy of shape and cut
- Best results on steel, cast iron, wood and thermoplastics

Each Set Includes:

Round, Half Round, Mill Taper, 3 Square and Flat Taper

Bastard Cut 8"	*Second Cut 8"*
No. 32.520	***No. 32.521***
Bastard Cut 10"	***Second Cut 10"***
No. 32.522	***No. 32.523***

5 PIECE SETS *SWISS AMERICAN PATTERN S-FILE SETS*

Recommended for both professional and home use, these tools have an exceptional filing capacity. In certain cases they can be used for the sharpening of heavy duty tools.

- The quality in hardness and regularity
- The efficient bite to the edges
- Long life

All files are 8 inches long and come pre-assembled with red plastic handle

No.***32.535S***

Each Set Includes:

Round Bastard Cut No. 32.397S, Half Round Bastard Cut No. 32.311S, Mill Taper Second Cut No. 32.380S, Flat Taper Bastard Cut No. 32.290S, 3 Square Second Cut No. 32.461S

6 PIECE SETS *6-PIECE SWISS NEEDLE FILE SET*

- Swiss made
- 5-1/2" (14 cm)
- Has cut portion of 2-1/2" (64 mm)
- Convenient vinyl storage pouch
- Rubber coated plastic handles
- Competitive price

Precision files, for exacting work, especially under magnification. Made of the highest quality steel, machined and finished for precision shape, accuracy and balance.

No.***31.674H***

Each Set Includes:

One each Half Round, Round, Three-square, Square, Hand and Warding files.

FILE HANDLE SIZE RECOMMENDED

SWISS PRECISION FILES

File Length	4"	6"	8"	10"	12"	14"
Type/Shape						
Barrette	3	4	5	–	–	–
Checkering	–	4	–	–	–	–
Crochet	3	4	5	–	–	–
Crossing	2	4	5	–	–	–
Equalling	2	3	4	–	–	–
Half-Round	3	4	5	6	–	–
Hand	3	4	5	6	7	–
Knife	3	4	5	6	7	7
Pillar	3	4	4	6	6	–
Pippin	3	4	5	–	–	–
Round	1	3	4	5	–	–
Round Parallel: 3/16" (4.8 mm)	–	2	3	–	–	–
Round Parallel: 1/4" (6.4 mm)	–	2	3	–	–	–
Round Parallel: 1/8" (3.2 mm)	1	1	–	–	–	–
Round Parallel: 5/32" (4.0 mm)	1	1	–	–	–	–
Round Parallel: 3/8" (9.5 mm)	–	–	4	–	–	–
Slitting	2	4	–	–	–	–
Square	2	3	4	5	6	–
Three-Square	2	4	4	5	6	–
Warding	2	4	5	6	7	–

AMERICAN PATTERN FILES

File Length	4"	5"	6"	7"	8"	10"	12"	14"	16"
Type/Shape									
Aluminum Type A Flat	–	–	4	–	5	5	6	–	–
Aluminum Type A, Half-Round	–	–	4	–	5	6	7	–	–
Cabinet Rasp, Half-Round	–	–	–	–	5	5/6	6	–	–
Cant Saw	–	–	4	–	5	5	–	–	–
Chain Saw Round 5/32" (4.0 mm), 3/16" (4.8 mm) dia.	–	–	–	–	2	–	–	–	–
Chain Saw Rnd 13/64" (5.2 mm) dia.	–	–	–	–	3	–	–	–	–
Cross Cut	–	–	–	–	5	6	–	–	–
Flat	3	–	4	–	5	6	6	7	8
Half- Round	3	–	4	–	5	6	7	7	7
Hand	–	–	4	–	5	5/6	7	–	–
High Speed Chipbreaker	–	–	–	–	5	6	7	–	–
Knife	3	–	4	–	4/5	5/6	–	–	–
Long Angle Lathe	–	–	–	–	–	5/6	6	7/8	–
Mill	3	–	4	–	5	5/6	6/7	7	8
Pillar	–	–	4	–	5	–	–	–	–
Pipe-Liner	–	–	–	–	–	–	–	7	–
Round	1	–	3	–	4	4	5	6	–
Square	1/2	–	3/4	–	4	4/5	5/6	6/7	–
Taper, Regular	–	–	4	4	5	5/6	–	–	–
Taper, Slim	1	2	3	3/4	4	5	–	–	–
Taper, Extra Slim	1	2	2	2/3	3	–	–	–	–
Taper, Double Extra Slim	–	1	1	–	3	–	–	–	–
Three Square	–	–	4	–	5	6	–	–	–
Warding	3	–	4	–	5	5	–	–	–
Milled Curved Tooth, Flat	–	–	–	–	5	5	6	7	–
Milled Curved Tooth, Flat Utility	–	–	–	–	5	6	–	–	–
Half Round Solid	–	–	–	–	5	6	7	–	–

FILE HANDLES

1 ***BLUE PLASTIC FILE HANDLES/METAL GRIPPING INSERT***

Unbreakable plastic, with textured surface for a non-slip grip. Specially shaped to fit the hand for working comfort even over long periods. Hole at top permits convenient hang-up storage. Tang-gripping insert is tempered metal, with two threaded sections of different diameters. This assures proper alignment and positive hold for files, and also allows handle to be reused. Simply unscrew the file in use and insert a new one. Refer to separate charts below for Swiss Precision, American Pattern files.

No.	File Handle Size	No.	File Handle Size
37.781	1	**37.785**	5
37.782	2	**37.786**	6
37.783	3	**37.787**	7
37.784	4		

2 ***BLUE PLASTIC FILE HANDLES/PLASTIC GRIPPING INSERT***

Unbreakable plastic, with textured surface for non-slip grip and specially shaped to fit the hand for working comfort even over long periods. Hole at top permits convenient hang-up storage near work bench. Has plastic gripping insert.

No.	(mm)	File Handle Size
37.815	4	
37.816	6	
37.817	8	
37.818	10	

3 ***PLASTIC FILE HANDLES for GROBET SWISS AMERICAN PATTERN FILES***

Unbreakable plastic, bright handles with textured surface for a non-slip grip. Ergonomically designed to fit the hand for comfort.

	Length		Length	
No.	(in)	(mm)	(in)	(mm)
37.810S	3-19/32"	90	4"	100
37.811S	3-19/32"	90	4"-6"	100-150
37.812S	4-5/16"	110	6"-12"	150-300
37.813S	4-5/16"	110	12"-14"	300-350

4 ***BLACK PLASTIC FILE HANDLES/PLASTIC GRIPPING INSERT***

Unbreakable plastic, with textured surface for non-slip grip and specially shaped to fit the hand for working comfort even over long periods. Hole at top permits convenient hang-up storage near work bench. Has five plastic gripping inserts.
No. ***37.850***

5 ***RED PLASTIC FILE HANDLES/PLASTIC GRIPPING INSERT***

Unbreakable plastic, with textured surface for non-slip grip and specially shaped to fit the hand for working comfort even over long periods. Has five plastic gripping inserts.
No. ***37.855***

6 ***ADJUSTABLE FLEXIBLE FILE HOLDER***

Holder can easily be adjusted for curving file outward or inward. Holder can be used with either 12" or 14" files.
No. ***37.840***

1 ***WOOD FILE HANDLES***
With natural finish. Wound wire ferrule provides extra strength to prevent splitting. Select handle to fit files 2" to 20" (5.1 to 51 cm).
No. ***37.791*** 2"-4" (5-10 cm)
No. ***37.792*** 4"-6" (10-15 cm)
No. ***37.793*** 6"-10" (15-25 cm)
No. ***37.794*** 10"-14" (25-35 cm)
No. ***37.795*** 4"-16" (35-40 cm)
No. ***37.796*** 16"-20" (40-50 cm)

2 ***LUTZ WOOD FILE HANDLES***
Sturdy, force-fit type of handle.
No. ***37.801*** 3"-6" (10-15 cm)
No. ***37.802*** 6"-8" (15-25 cm)
No. ***37.803*** 8"-12" (25-35 cm)
No. ***37.804*** 14"-16" (35-40 cm)

3 ***SKROO-ZON WOOD FILE HANDLES***
Steel die inside wood handle cuts its own thread on file tang. For 6" (152 mm) files only.
No. ***37.820***

4 ***FILE and BURNISHER HANDLE***
Hardwood handle with metal ferrule. Overall length 3-3/4" (95.3 mm), 1/2" (12.7 mm) diameter.
No. ***37.822***

5 ***NEEDLE FILE HANDLE***
Precision chuck in smooth wooden handle holds 5-1/2" (14 cm) and 6-1/4" (16 cm) needle files securely.
No. ***37.830***

6 ***NEEDLE FILE STAND***
Attractive metal stand conveniently holds and displays up to 12 needle files in 4" (10 cm), 5-1/2" (14 cm), or 6-1/4" (16 cm) lengths. Free-standing on workbench, hanging on a peg, or snapped closed for carrying, this stand keeps your frequently used files visible and handy at all times. (Files not included.)
No. ***31.685***

7 ***FILE CLEANER with BRUSH***
Steel wire bristles mounted on wood handle with handy brush on reverse side. Overall length 10" (25 cm).
No. ***33.979***

8 ***FILE CLEANER***
Steel wire bristles mounted on wood handle, for removing particles clogging teeth of file. Overall length 10" (25 cm).
No. ***33.981***

AURIFORM FILE A die sinkers' file having a cross section that combines 1/2 of a pippin file with 1/2 of a crossing file.

BACK In a half round, barrette, cant or files of similar cross section this is the convex side.

BARRETTE FILE Cut on wide flat face and safe on sides and back. Tapered in width and thickness.

BLANK A steel forging from which a file is made. The basic shape of a file before teeth are cut or etched.

CANT FILE Triangular in cross section with one side wider than the other two. Cut on three sides and tapered.

CHECKERING FILE Rectangular in cross section and parallel in width and thickness. Teeth cut at 90° angle with edge. Safe on edges.

CHISEL CUT A method of cutting teeth into the surface of an annealed file blank by striking it with a series of repeated blows as the blank is moved beneath a chisel at a uniform speed. In the cutting operation, the chisel is placed obliquely to the length and is inclined to the surface of the file. This is done either by hand or machine. Generally used to produce files of No. 2 cut and coarser.

CROCHET FILE Rectangular in cross section with rounded edges. Cut on both faces and edges. Tapered in length and slightly tapered in thickness.

CROSSING FILE Oval cross section with same radium as half round files on one side and other side curved to a larger radius. Cut on both sides. Tapered in width and thickness.

CUT The number of teeth per inch, the degree of coarseness of a file's teeth, from No. 00 to No. 8 in Swiss precision files. Also used to describe the type of file such as single cut or double cut, etc.

DIE MAKERS' RIFFLERS Various cross sectional shapes. Teeth cut on a small area of each end leaving a long middle portion as a handle. The cut ends are of various designs. Length is overall. Originally designed and hand forged by die makers for their specific purposes now a generic term for this particular group of rifflers.

DIE SINKERS' FILES A group of files of various cross sections designed for use by die sinkers and tool makers. Tapered in width.

DIE SINKERS' RIFFLERS See Die Makers' Rifflers. This group of rifflers has smaller cross sectional shapes.

DOUBLE CUT The arrangement of file teeth formed by two series of cuts. The first is the overcut which is followed by the upcut at an angle to the overcut.

EDGE The narrow cross section or side of a file.

EQUALLING FILE Thin rectangular cross section, parallel in width and thickness and cut on both faces and edges.

ESCAPEMENT FILE Also called Square Handled Files. A group of files of various cross sectioned shapes with a length of cut varying from 3/4 to 2-1/2" and long square handles. Widely used by jewelers, watch makers, die makers, and fine mechanics.

ETCHED CUT A method of cutting teeth into the surface of a file blank by drawing an etching tool, under sustained pressure, obliquely across an annealed file blank in a series of cuts. This may be done either by hand or machine. This method of cutting is used where it is necessary to retain the true cross section of a file. Generally used to manufacture files finer than a No. 2 cut.

FACE The working surface of a file upon which teeth are cut.

FILING BLOCK A block of wood, soft metal or other material used to protect the material being filed from damage from the jaws of a vise or other holding device. It may contain a series of grooves to hold work securely.

FLAT FILE Also called a Warding File. A form of escapement or square handled needle file. Parallel in thickness. Cut on four sides, tapered in width.

HANDLE A wood for plastic piece that is placed over that tang of a file to protect the hand of the user.

HALF ROUND FILE A cross section that is flat on one side and has a radius not half circle on the other side. Cut on both sides. Width and thickness taper.

HALF ROUND SLIM FILE Also called Ring Files. Same as half round except thinner in width.

HEEL The end of the file at a location where the body ends and the taper leading into the tang begins. Also called the shoulder.

JOINT FILE, ROUND EDGE Rectangular cross section with rounded edges. Cut on edges only. Parallel in width and thickness.

JOINT FILE, SQUARE EDGE Rectangular cross section. Cut on edges only. Parallel in thickness and width.

KNIFE FILE Knife shaped, cross section that is tapered in width and thickness. Edge has same thickness from point to shoulder.

LENGTH OF CUT The length of a file measured between the shoulder or heel and the point.

LOZENGE FILE Diamond shaped cross section parallel in width and thickness.

NEEDLE FILE, SQUARE HANDLED Also called an Escapement File. A group of files of various cross sectional shapes with a length of cut varying between 3/4 and 2-1/2" and long square handle.

NEEDLE FILE, ROUND HANDLED A group of files of various cross sections with a knurled round handle. Knurling gives the file a positive, non-slip grip for precision filing.

OVAL FILE An oval cross section tapering in width and thickness.

OVERCUT The first of a series of cuts in a double cut file. Its function is to act as a chip breaker. The second or upcut is made over this cut.

PARALLEL ROUND FILE A round cross section parallel in width.

PILLAR FILE A rectangular cross section with thickness greater relative to width, than in other types. Cut on face or flat sides only. Parallel in width, tapered in thickness. Also demi-narrow, narrow and extra narrow widths.

PIN OR PINNING The tendency of small particles of materials to file or clog the gullets between the teeth of a file. When the teeth become clogged the file causes scratches on the work. When this occurs, the file is pinned.

PIPPIN FILE A section that combines the cross section of a round file with that of an equalling file. Tapered in thickness and width.

POINT The front end of a file as contrasted with the tang end.

POINTED BACK BARRETTE FILE A triangular cross section with one side wider than the other two sides but on wide or face side only tapered in width and length.

RASP CUT A cut used on wood rifflers that is made by a punch raising a series of individual cutting teeth.

RIFFLERS From the German riefeln, to channel, chaufer, flute or groove. Originally used and hand forged by die sinkers, die makers, silversmiths and other skilled artisans in shapes and cross sections appropriate to their work. Teeth are cut on small areas on each end that can be shaped like everything from trowels to button hooks. A long middle portion serves as a handle.

RING FILE Also called a Half Round Slim File.

ROUND FILE Round in cross section tapered in width.

ROUNDING OFF FILE An escapement or square handle needle file half round in cross section. Cut on flat side. Parallel in width.

SAFE The side or edge of a file that has no teeth cut in it so as not to mar a work surface that does not require filing.

SCREW HEAD FILE A narrow diamond shaped section with short bevels to form sharp edges. Cut on beveled edges, safe on flat sides. Parallel in width and thickness.

SECTION The cross section or end view of a file if it were cut squarely at the place of greatest width and thickness from the tang.

SILVERSMITH'S RIFFLERS A group of various cross sectioned shapes originally designed for use by silversmiths. Teeth are cut on small areas of each and leaving a long middle portion as a handle. The cut ends are of varied designs.

SINGLE CUT The tooth formed on a file by a single series of cuts.

SLITTING FILE A flat diamond shaped cross section. Cut on all sides. Parallel in width and thickness.

SQUARE FILE Square in cross section. Cut on all sides. Tapered.

SWISS PATTERN FILES Files made to the same shape and cut as the files originated by F. L. Grobet in Switzerland over 150 years ago. Made in cuts from No. 00 to No. 6.

SWISS PRECISION FILES The original Grobet-Swiss files made in hundreds of sizes and shapes and in cuts from No. 00 to No. 8. Made to more exacting measurements and much finer cuts than American Pattern files.

TANG The part of the file that tapers from the shoulder that is intended to be fitted with a handle.

THREE SQUARE FILES Equilaterally triangular in cross section. Cut on all sides with sharp corners. Tapered.

TOOL MAKERS' RIFFLERS Various cross sectional shapes with teeth cut on a small area at each end leaving a long middle portion as a handle. The cut ends are of various designs to meet the needs of tool makers.

UPCUT The second series of teeth cut in double cut files made over the first series of cuts called the overcut. This cut is made of an angle to the overcut.

WARDING FILE A rectangular cross section with teeth cut on all sides up to 4" in length and on 3 sides with one safe edge on files 6" and longer. Tapered width, parallel in thickness.

GROBET BEAR BURS

These double cut burs were designed to substantially cut manufacturers production costs. The design and cut removes more material per hour, engineered for heavy duty applications, more durable due to the depth of the teeth, more resistant to chipping, wider teeth makes longer chips so it breaks up easier, and the profile of the teeth are less prone to filling up with chips.

CYLINDER PLAIN

Head Dia.	Head Length	Overall Length	Shank	SCTI	Bear Cut
1/4"	5/8"	2"	1/4"	SA1	**32.546SY**
3/8"	3/4"	2-1/2"	1/4"	SA3	**32.552SY**
7/16"	1"	2-3/4"	1/4"	SA4	**32.55320SY**
1/2"	1"	2-3/4"	1/4"	SA5	**32.555SY**
5/8"	1"	2-3/4"	1/4"	SA6	**32.558SY**

CYLINDER RADIUS

Head Dia.	Head Length	Overall Length	Shank	SCTI	Bear Cut
3/8"	3/4"	2-1/2"	1/4"	SC3	**32.618SY**
7/16"	1"	2-3/4"	1/4"	SC4	**32.61912SY**
1/2"	1"	2-3/4"	1/4"	SC5	**32.621SY**
5/8"	1"	2-3/4"	1/4"	SC6	**32.624SY**

CONE POINTED

Head Dia.	Head Length	Overall Length	Angle	Shank	SCTI	Bear Cut
3/8"	3/4"	2-1/2"	28°	1/4"	SM4	**32.747SY**
1/2"	1"	2-3/4"	28°	1/4"	SM5	**32.750SY**
5/8"	1-1/8"	2-7/8"	31°	1/4"	SM6	**32.753SY**

OVAL

Head Dia.	Head Length	Overall Length	Shank	SCTI	Bear Cut
3/8"	19/32"	2-11/32"	1/4"	SE3	**32.663SY**
1/2"	7/8"	2-5/8"	1/4"	SE5	**32.666SY**
5/8"	1"	2-3/4"	1/4"	SE6	**32.669SY**

CONE RADIUS

Head Dia.	Head Length	Overall Length	Shank	SCTI	Bear Cut
3/8"	1-1/16"	2-13/16"	1/4"	SL3	**32.726SY**
1/2"	1-1/8"	2-7/8"	1/4"	SL4	**32.729SY**
5/8"	1-3/16"	2-15/16"	1/4"	SL5	**32.73002SY**
5/8"	1-5/16"	3-1/16"	1/4"	SL6	**32.732SY**

1/4" SHANK GROBET BEAR BURS
Consists of eight 1/4" shank rotary files in a wood box: 32.693SY, 32.726SY, 32.621SY, 32.555SY, 32.708SY, 32.705SY, 32.729SY, 32.666SY. Wood case measures 3-3/16" x 3-3/16" x 3-3/8".
No. 32.931SY

TREE RADIUS

Head Dia. (1/4" Shank)	Head Length	Overall Length	Shank	SCTI	Bear Cut
3/8"	3/4"	2-1/2"	1/4"	SF3	**32.705SY**
7/16"	1"	2-3/4"	1/4"	SF4	**32.70602SY**
1/2"	3/4"	2-1/2"	1/4"	SF13	**32.70610SY**
1/2"	1"	2-3/4"	1/4"	SF5	**32.708SY**
5/8"	1"	2-3/4"	1/4"	SF6	**32.711SY**

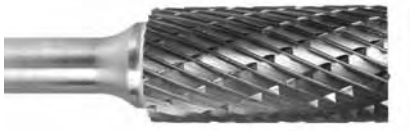
TREE POINTED

Head Dia.	Head Length	Overall Length	Shank	SCTI	Bear Cut
3/8"	3/4"	2-1/2"	1/4"	SG3	**32.687SY**
1/2"	3/4"	2-1/2"	1/4"	SG13	**32.690SY**
1/2"	1"	2-3/4"	1/4"	SG5	**32.693SY**
5/8"	1"	2-3/4"	1/4"	SG6	**32.696SY**

BALL

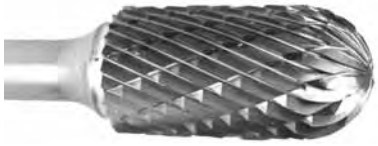
Head Dia.	Head Length	Overall Length	Shank	SCTI	Bear Cut
3/8"	5/16"	2-1/16"	1/4"	SD3	**32.645SY**
7/16"	3/8"	2-1/8"	1/4"	SD4	**32.64602SY**
1/2"	7/16"	2-3/16"	1/4"	SD5	**32.648SY**
5/8"	9/16"	2-5/16"	1/4"	SD6	**32.651SY**

CYLINDRICAL - Plain end



Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/8"	1/2"	2"	1/4"	SA11	**32.540**	**32.541**
1/8"	5/8"	2"	1/4"	SA12	**32.54102**	**32.54103**
5/32"	5/8"	2"	1/4"	SA13	**32.54110**	**32.54111**
3/16"	5/8"	2"	1/4"	SA14	**32.543**	**32.544**
1/4"	5/8"	2"	1/4"	SA1	**32.546**	**32.547**
1/4"	1"	2"	1/4"	SA1L	**32.54702**	**32.54703**
5/16"	3/4"	2-1/2"	1/4"	SA2	**32.549**	**32.550**
3/8"	3/4"	2-1/2"	1/4"	SA3	**32.552**	**32.553**
3/8"	1"	2-3/4"	1/4"	SA3L	**32.55302**	**32.55303**
3/8"	1-1/2"	3-1/4"	1/4"	SA3X	**32.55310**	**32.55311**
7/16"	1"	2-3/4"	1/4"	SA4	**32.55320**	**32.55321**
1/2"	1"	2-3/4"	1/4"	SA5	**32.555**	**32.556**
5/8"	1"	2-3/4"	1/4"	SA6	**32.558**	**32.559**
3/4"	1/2"	2-1/4"	1/4"	SA15	**32.55902**	**32.55903**
3/4"	3/4"	2-1/2"	1/4"	SA16	**32.561**	**32.562**
3/4"	1"	2-3/4"	1/4"	SA7	**32.564**	**32.565**
7/8"	1"	2-3/4"	1/4"	SA8	**32.56502**	**32.56503**
1"	1"	2-3/4"	1/4"	SA9	**32.567**	**32.568**

CYLINDRICAL - Radius end



Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/8"	1/2"	2"	1/4"	SC11	**32.606**	**32.607**
1/8"	5/8"	2"	1/4"	SC12	**32.60702**	**32.60703**
5/32"	5/8"	2"	1/4"	SC13	**32.60710**	**32.60711**
3/16"	5/8"	2"	1/4"	SC14	**32.609**	**32.610**
1/4"	5/8"	2"	1/4"	SC1	**32.612**	**32.613**
1/4"	1"	2"	1/4"	SC1L	**32.61302**	**32.61303**
5/16"	3/4"	2-1/2"	1/4"	SC2	**32.615**	**32.616**
3/8"	3/4"	2-1/2"	1/4"	SC3	**32.618**	**32.619**
3/8"	1"	2-3/4"	1/4"	SC3L	**32.61902**	**32.61903**
3/8"	1-1/2"	3-1/4"	1/4"	SC3X	**32.61910**	**32.61911**
7/16"	1"	2-3/4"	1/4"	SC4	**32.61912**	**32.61913**
1/2"	1"	2-3/4"	1/4"	SC5	**32.621**	**32.622**
5/8"	1"	2-3/4"	1/4"	SC6	**32.624**	**32.625**
3/4"	1/2"	2-1/4"	1/4"	SC15	**32.62502**	**32.62503**
3/4"	3/4"	2-1/2"	1/4"	SC16	**32.62510**	**32.62511**
3/4"	1"	2-3/4"	1/4"	SC7	**32.627**	**32.628**
1"	1"	2-3/4"	1/4"	SC9	**32.62802**	**32.62803**

CYLINDRICAL - End cut

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/8"	1/2"	2"	1/4"	SB11	**32.573**	**32.574**
1/8"	5/8"	2"	1/4"	SB12	**32.57402**	**32.57403**
5/32"	5/8"	2"	1/4"	SB13	**32.57410**	**32.57411**
3/16"	5/8"	2"	1/4"	SB14	**32.576**	**32.577**
1/4"	5/8"	2"	1/4"	SB1	**32.579**	**32.580**
1/4"	1"	2"	1/4"	SB1L	**32.58002**	**32.58003**
5/16"	3/4"	2-1/2"	1/4"	SB2	**32.582**	**32.583**
3/8"	3/4"	2-1/2"	1/4"	SB3	**32.585**	**32.586**
3/8"	1"	2-3/4"	1/4"	SB3L	**32.58602**	**32.58603**
3/8"	1-1/2"	3-1/4"	1/4"	SB3X	**32.58611**	**32.58612**
7/16"	1"	2-3/4"	1/4"	SB4	**32.58621**	**32.58622**
1/2"	1"	2-3/4"	1/4"	SB5	**32.588**	**32.589**
5/8"	1"	2-3/4"	1/4"	SB6	**32.591**	**32.592**
3/4"	1/2"	2-1/4"	1/4"	SB15	**32.59202**	**32.59203**
3/4"	3/4"	2-1/2"	1/4"	SB16	**32.594**	**32.595**
3/4"	1"	2-3/4"	1/4"	SB7	**32.597**	**32.598**
7/8"	1"	2-3/4"	1/4"	SB8	**32.59802**	**32.59803**
1"	1"	2-3/4"	1/4"	SB9	**32.600**	**32.601**

BALL

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/8"	1/8"	2"	1/4"	SD11	**32.633**	**32.634**
3/16"	1/4"	2"	1/4"	SD14	**32.636**	**32.637**
1/4"	7/32"	2"	1/4"	SD1	**32.639**	**32.640**
5/16"	5/16"	2-1/16"	1/4"	SD2	**32.642**	**32.644**
3/8"	5/16"	2-1/16"	1/4"	SD3	**32.645**	**32.646**
7/16"	3/8"	2-1/8"	1/4"	SD4	**32.64602**	**32.64603**
1/2"	7/16"	2-3/16"	1/4"	SD5	**32.648**	**32.649**
5/8"	9/16"	2-5/16"	1/4"	SD6	**32.651**	**32.652**
3/4"	11/16"	2-7/16"	1/4"	SD7	**32.654**	**32.655**
1"	15/16"	2-11/16"	1/4"	SD9	**32.65502**	**32.65503**

OVAL

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
3/16"	5/16"	2"	1/4"	SE11	**32.65902**	**32.65903**
1/4"	3/8"	2"	1/4"	SE1	**32.660**	**32.661**
3/8"	19/32"	2-11/32"	1/4"	SE3	**32.663**	**32.664**
1/2"	7/8"	2-5/8"	1/4"	SE5	**32.666**	**32.667**
5/8"	1"	2-3/4"	1/4"	SE6	**32.669**	**32.670**
3/4"	1"	2-3/4"	1/4"	SE7	**32.67002**	**32.67003**

CONE - Radius nose 14° taper

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	2"	1/4"	SL1	***32.720***	***32.721***
5/16"	7/8"	2-5/8"	1/4"	SL2	***32.723***	***32.724***
3/8"	1-1/16"	2-13/16"	1/4"	SL3	***32.726***	***32.727***
1/2"	1-1/8"	2-7/8"	1/4"	SL4	***32.729***	***32.730***
5/8"	1-3/16"	2-15/16"	1/4"	SL5	***32.73002***	***32.73003***
5/8"	1-5/16"	3-1/16"	1/4"	SL6	***32.732***	***32.733***
3/4"	1-1/2"	3-1/4"	1/4"	SL7	***32.73302***	***32.73303***

CONE

Head Dia.	Head Length	Overall Length	Angle	Shank	SCTI	Standard	Double Cut
1/4"	1/2"	2"	22°	1/4"	SM1	***32.738***	***32.739***
1/4"	3/4"	2"	14°	1/4"	SM2	***32.741***	***32.742***
1/4"	1"	2"	12°	1/4"	SM3	***32.744***	***32.745***
3/8"	3/4"	2-1/2"	28°	1/4"	SM4	***32.747***	***32.748***
1/2"	1"	2-3/4"	28°	1/4"	SM5	***32.750***	***32.751***
5/8"	1-1/8"	2-7/8"	31°	1/4"	SM6	***32.753***	***32.754***

INVERTED CONE - End cut

Head Dia.	Head Length	Overall Length	Angle	Shank	SCTI	Standard	Double Cut
1/4"	1/4"	2"	10°	1/4"	SN1	***32.768***	***32.769***
1/2"	1/2"	2-1/2"	14°	1/4"	SN4	***32.771***	***32.772***

INVERTED CONE - Plain end

Head Dia.	Head Length	Overall Length	Angle	Shank	SCTI	Standard	Double Cut
1/4"	1/4"	2"	10°	1/4"	SN1	***32.759***	***32.760***
3/8"	3/8"	2-1/8"	13°	1/4"	SN2	***32.761***	***32.76102***
1/2"	1/2"	2-1/2"	14°	1/4"	SN4	***32.762***	***32.763***
5/8"	3/4"	2-1/2"	18°	1/4"	SN6	***32.76302***	***32.76303***
3/4"	5/8"	2-5/8"	30°	1/4"	SN7	***32.76310***	***32.76311***

TREE RADIUS

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/4"	1/2"	2"	1/4"	SF11	***32.70102***	***32.70103***
1/4"	5/8"	2"	1/4"	SF1	***32.702***	***32.703***
3/8"	3/4"	2-1/2"	1/4"	SF3	***32.705***	***32.706***
7/16"	1"	2-3/4"	1/4"	SF4	***32.70602***	***32.70603***
1/2"	3/4"	2-1/2"	1/4"	SF13	***32.70610***	***32.70611***
1/2"	1"	2-3/4"	1/4"	SF5	***32.708***	***32.709***
5/8"	1"	2-3/4"	1/4"	SF6	***32.711***	***32.712***
3/4"	1"	2-3/4"	1/4"	SF7	***32.71202***	***32.71203***
3/4"	1-1/4"	3"	1/4"	SF14	***32.714***	***32.715***
3/4"	1-1/2"	3-1/4"	1/4"	SF15	***32.71502***	***32.71503***

TREE POINTED

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	2"	1/4"	SG1	***32.684***	***32.685***
5/16"	3/4"	2-1/2"	1/4"	SG2	***32.68502***	***32.68503***
3/8"	3/4"	2-1/2"	1/4"	SG3	***32.687***	***32.688***
1/2"	3/4"	2-1/2"	1/4"	SG13	***32.690***	***32.691***
1/2"	1"	2-3/4"	1/4"	SG5	***32.693***	***32.694***
5/8"	1"	2-3/4"	1/4"	SG6	***32.696***	***32.697***
3/4"	1"	2-3/4"	1/4"	SG7	***32.69702***	***32.69703***
3/4"	1-1/2"	3-1/4"	1/4"	SG15	***32.69710***	***32.69711***

FLAME

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	2"	1/4"	SH1	***32.673***	***32.674***
5/16"	3/4"	2-1/2"	1/4"	SH2	***32.675***	***32.676***
1/2"	1-1/4"	3"	1/4"	SH5	***32.678***	***32.679***
5/8"	1-7/16"	3-3/16"	1/4"	SH6	***32.67902***	***32.67903***
3/4"	1-5/8"	3-3/8"	1/4"	SH7	***32.67910***	***32.67911***

DEBURRING 60°

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/4"	3/16"	2"	1/4"	SJ1	**32.777**	**32.778**
3/8"	5/16"	2-1/16"	1/4"	SJ3	**32.780**	**32.781**
1/2"	7/16"	2-3/16"	1/4"	SJ5	**32.783**	**32.784**
5/8"	9/16"	2-5/16"	1/4"	SJ6	**32.78402**	**32.78403**
3/4"	11/16"	2-7/16"	1/4"	SJ7	**32.78410**	**32.78411**
1"	15/16"	2-11/16"	1/4"	SJ9	**32.78420**	**32.78421**

DEBURRING 90°

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard	Double Cut
1/4"	1/8"	2"	1/4"	SK1	**32.789**	**32.790**
3/8"	3/16"	1-15/16"	1/4"	SK3	**32.792**	**32.793**
1/2"	1/4"	2"	1/4"	SK5	**32.795**	**32.796**
5/8"	5/16"	2-1/16"	1/4"	SK6	**32.798**	**32.799**
3/4"	3/8"	2-1/8"	1/4"	SK7	**32.801**	**32.802**
1"	1/2"	2-1/4"	1/4"	SK9	**32.804**	**32.805**

1/4" SHANK CARBIDE BUR
Consists of five double cut 1/4" shank rotary files in a plastic case: 32.586, 32.619, 32.622, 32.706, 32.709.
Plastic case measures 2-3/4" x 3-1/8" x 1-5/16".
No. 32.950

1/4" SHANK GROBET BEAR BURS
Consists of five 1/4" shank rotary files in a plastic case: 32.555SY, 32.621SY, 32.666SY, 32.708SY, 32.729SY.
Plastic case measures 2-3/4" x 3-1/8" x 1-5/16".
No. 32.951SY

CARBIDE SETS

1/4" SHANK - No. 32.924
Consists of eight standard cut 1/4" shank rotary files in a wood box: 32.555, 32.612, 32.618, 32.645, 32.666, 32.684, 32.708, 32.795. Wood case measures 3-3/16" x 3-3/16" x 3-3/8".

1/4" SHANK - No. 32.925
Consists of eight double cut 1/4" shank rotary files in a wood box: 32.556, 32.613, 32.619, 32.646, 32.667, 32.685, 32.709, 32.796. Wood case measures 3-3/16" x 3-3/16" x 3-3/8".

1/8" SHANK - No. 32.926 - Consists of twelve standard cut 1/8" shank rotary files in a wood box: 32.835, 32.838, 32.847, 32.850, 32.856, 32.859, 32.883, 32.895, 32.898, 32.904, 32.907, 32.910. Wood case measures 3-5/8" x 2-5/8" x 2-1/8".

1/8" SHANK - No. 32.929 - Consists of twelve double cut 1/8" shank rotary files in a wood box: 32.836, 32.839, 32.848, 32.851, 32.857, 32.860, 32.884, 32.896, 32.899, 32.905, 32.908, 32.911. Wood case measures 3-5/8" x 2-5/8" x 2-1/8".

ALUMNA CUT

For use on aluminum, magnesium, soft steel and non-ferrous materials such as hard plastic, rubber and wood. Provides easy chip flow and faster stock removal with little or no clogging.

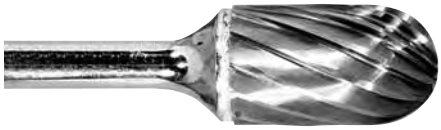
CYLINDRICAL - Plain end

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard
1/4"	5/8"	2"	1/4"	SA-1NF	**32.95002**
3/8"	3/4"	2-1/2"	1/4"	SA-3NF	**32.95011**
1/2"	1"	2-3/4"	1/4"	SA-5NF	**32.95017**
5/8"	1"	2-3/4"	1/4"	SA-6NF	**32.95020**
3/4"	1"	2-3/4"	1/4"	SA-7NF	**32.95023**

OVAL

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard
3/8"	5/8"	2-11/32"	1/4"	SE-3NF	**32.95411**
1/2"	7/8"	2-5/8"	1/4"	SE-5NF	**32.95417**
5/8"	1"	2-3/4"	1/4"	SE-6NF	**32.95420**
3/4"	1"	2-3/4"	1/4"	SE-7NF	**32.95423**

CYLINDRICAL - Radius end



Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard
1/4"	5/8"	2"	1/4"	SC-1NF	**32.95102**
3/8"	3/4"	2-1/2"	1/4"	SC-3NF	**32.95111**
1/2"	1"	2-3/4"	1/4"	SC-5NF	**32.95117**
5/8"	1"	2-3/4"	1/4"	SC-6NF	**32.95120**
3/4"	1"	2-3/4"	1/4"	SC-7NF	**32.95123**

TREE RADIUS

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard
1/4"	3/4"	2"	1/4"	SF-1NF	**32.95705**
3/8"	3/4"	2-1/2"	1/4"	SF-3NF	**32.95711**
1/2"	1"	2-3/4"	1/4"	SF-5NF	**32.95717**
5/8"	1"	2-3/4"	1/4"	SF-6NF	**32.95720**
3/4"	1-1/4"	3"	1/4"	SF-14NF	**32.95744**

BALL

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard
1/4"	7/32"	2"	1/4"	SD-1NF	**32.95305**
3/8"	5/16"	2-1/16"	1/4"	SD-3NF	**32.95311**
1/2"	7/16"	2-3/16"	1/4"	SD-5NF	**32.95317**
5/8"	9/16"	2-5/16"	1/4"	SD-6NF	**32.95320**
3/4"	11/16"	2-7/16"	1/4"	SD-7NF	**32.95323**

CONE - Radius nose 14° taper

Head Dia.	Head Length	Overall Length	Shank	SCTI	Standard
3/8"	1-1/16"	2-13/16"	1/4"	SL-3NF	**32.95811**
1/2"	1-1/8"	2-7/8"	1/4"	SL-4NF	**32.95814**
5/8"	1-3/16"	2-15/16"	1/4"	SL-5NF	**32.95817**
5/8"	1-5/16"	3-1/16"	1/4"	SL-6NF	**32.95820**
3/4"	1-1/2"	3-1/4"	1/4"	SL-7NF	**32.95823**

CYLINDRICAL
Plain end

CYLINDRICAL
End cut

CYLINDRICAL
Double end

CYLINDRICAL
Radius end

FLAME

BALL

OVAL

CYLINDRICAL - Plain end

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/16"	1/4"	1-1/2"	3/32"	SA61	***32.80902***	***32.80903***
5/64"	5/16"	1-1/2"	3/32"	SA62	***32.810***	***32.811***
3/32"	3/8"	1-1/2"	3/32"	SA63	***32.814***	***32.815***

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/16"	1/4"	1-1/2"	1/8"	SA41	***32.81502***	***32.81503***
3/32"	1/2"	1-1/2"	1/8"	SA42	***32.832***	***32.833***
1/8"	1/2"	1-1/2"	1/8"	SA43	***32.835***	***32.836***
1/4"	1/2"	2"	1/8"	SA51	***32.838***	***32.839***

CYLINDRICAL - End cut

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	9/16"	1-1/2"	1/8"	SB43	***32.83902***	***32.83903***
1/4"	3/16"	2"	1/8"	SB51	***32.83910***	***32.83911***

CYLINDRICAL - Double end

Head Dia.	*Overall Length*	*Shank*	*SCTI*	*Standard*
1/8"	2"	1/8"	SBECO	***32.841***

CYLINDRICAL - Radius end

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	3/8"	1-1/2"	3/32"	SC61	***32.817***	***32.818***

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/2"	1-1/2"	1/8"	SC41	***32.844***	***32.845***
1/8"	1/2"	1-1/2"	1/8"	SC42	***32.847***	***32.848***
1/4"	1/2"	2"	1/8"	SC51	***32.850***	***32.851***

FLAME

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	1/4"	1-1/2"	1/8"	SH41	***32.868***	***32.869***

BALL

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/8"	1-1/2"	3/32"	SD61	***32.820***	***32.821***

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/8"	1-1/2"	1/8"	SD41	***32.853***	***32.854***
1/8"	1/8"	1-1/2"	1/8"	SD42	***32.856***	***32.857***
3/16"	3/16"	1-11/16"	1/8"	SD53	***32.858***	***32.861***
1/4"	1/4"	1-3/4"	1/8"	SD51	***32.859***	***32.860***

OVAL

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/8"	1-1/2"	3/32"	SE61	***32.86102***	***32.86103***

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	7/32"	1-1/2"	1/8"	SE41	***32.862***	***32.863***
1/4"	3/8"	1-7/8"	1/8"	SE51	***32.865***	***32.866***

DEBURRING
Double end

TREE POINTED

TREE RADIUS

INVERTED CONE
Plain end

CONE
Radius end

CONE

DEBURRING - Double end

Head Dia.	*Head Length*	*Overall Length*	*Angle*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	3/32"	1-1/2"	60°	1/8"	SJ42	***32.871***	***32.872***
1/8"	1/16"	1-1/2"	90°	1/8"	SK42	***32.874***	***32.875***

TREE POINTED

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/4"	1-1/2"	3/32"	SG61	***32.87902***	***31.87903***

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	1/4"	1-1/2"	1/8"	SG41	***32.880***	***32.881***
1/8"	5/16"	1-1/2"	1/8"	SG42	***32.88102***	***32.88103***
1/8"	3/8"	1-1/2"	1/8"	SG43	***32.883***	***32.884***
1/8"	1/2"	1-1/2"	1/8"	SG44	***32.88402***	***32.88403***
1/4"	1/2"	2"	1/8"	SG51	***32.886***	***32.887***

TREE RADIUS

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/4"	1-1/2"	3/32"	SF61	***32.88802***	***32.88803***

Head Dia.	*Head Length*	*Overall Length*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	1/4"	1-1/2"	1/8"	SF41	***32.889***	***32.890***
1/8"	1/2"	1-1/2"	1/8"	SF42	***32.892***	***32.893***
1/4"	1/2"	2"	1/8"	SF51	***32.895***	***32.896***

INVERTED CONE - Plain end

Head Dia.	*Head Length*	*Overall Length*	*Angle*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/8"	1-1/2"	10°	3/32"	SN61	***32.823***	***32.824***

Head Dia.	*Head Length*	*Overall Length*	*Angle*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	1/8"	1-1/2"	10°	1/8"	SN41	***32.901***	***32.902***
1/8"	1/8"	1-1/2"	14°	1/8"	SN42	***32.904***	***32.905***
1/4"	1/4"	1-3/4"	10°	1/8"	SN51	***32.907***	***32.908***

CONE - Radius end

Head Dia.	*Head Length*	*Overall Length*	*Angle*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	3/8"	1-1/2"	6°	1/8"	SL41	***32.89702***	***32.89703***
1/8"	1/2"	1-1/2"	7°	1/8"	SL42	***32.898***	***32.899***

CONE

Head Dia.	*Head Length*	*Overall Length*	*Angle*	*Shank*	*SCTI*	*Standard*	*Double Cut*
3/32"	5/16"	1-1/2"	10°	3/32"	SM61	***32.826***	***32.827***

Head Dia.	*Head Length*	*Overall Length*	*Angle*	*Shank*	*SCTI*	*Standard*	*Double Cut*
1/8"	3/8"	1-1/2"	14°	1/8"	SM41	***32.913***	***32.914***
1/8"	1/2"	1-1/2"	12°	1/8"	SM42	***32.916***	***32.917***
1/8"	5/8"	1-1/2"	9°	1/8"	SM43	***32.919***	***32.920***
1/4"	1/2"	2"	22°	1/8"	SM51	***32.910***	***32.911***

GROBET USA

6" EXTENDED SHANKS

CYLINDRICAL - Plain end

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	1/4"	SA1L6	**32.93522**	**32.93523**
3/8"	3/4"	1/4"	SA3L6	**32.93537**	**32.93538**
1/2"	1"	1/4"	SA5L6	**32.93557**	**32.93558**

FLAME

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
5/16"	3/4"	1/4"	SH2L6	**32.94007**	**32.94008**
1/2"	1-1/4"	1/4"	SH5L6	**32.94012**	**32.94013**

CYLINDRICAL - Radius End

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	1/4"	SC1L6	**32.93722**	**32.93723**
3/8"	3/4"	1/4"	SC3L6	**32.93737**	**32.93738**
1/2"	1"	1/4"	SC5L6	**32.93757**	**32.93758**

TREE POINTED

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	1/4"	SG1L6	**32.94102**	**32.94103**
3/8"	3/4"	1/4"	SG3L6	**32.94112**	**32.94113**
1/2"	1"	1/4"	SG5L6	**32.94122**	**32.94123**

BALL

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
1/4"	7/32"	1/4"	SD1L6	**32.93812**	**32.93813**
3/8"	5/16"	1/4"	SD3L6	**32.93822**	**32.93823**
1/2"	7/16"	1/4"	SD5L6	**32.93832**	**32.93833**

TREE RADIUS

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	1/4"	SF1L6	**32.94207**	**32.94208**
3/8"	3/4"	1/4"	SF3L6	**32.94212**	**32.94213**
1/2"	1"	1/4"	SF5L6	**32.94227**	**32.94228**

OVAL

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
1/4"	3/8"	1/4"	SE1L6	**32.93907**	**32.93908**
3/8"	19/32"	1/4"	SE3L6	**32.93912**	**32.93913**
1/2"	7/8"	1/4"	SE5L6	**32.93917**	**32.93918**

CONE - Radius nose 14° taper

Head Dia.	Head Length	Shank	SCTI	Standard	Double Cut
1/4"	5/8"	1/4"	SL1L6	**32.94302**	**32.94303**
3/8"	1-1/16"	1/4"	SL3L6	**32.94312**	**32.94313**
1/2"	1-1/8"	1/4"	SL4L6	**32.94317**	**32.94318**

Note: *All above burs with 1/4" diameter shanks and 1/4" diameter heads (solid carbide) are 6" overall.*

TERMS OF BUSINESS

Design and Manufacture

The descriptions and pictured representations in this catalog resemble the actual product as closely as possible. However, because of continuing efforts to improve our merchandise, changes are unavoidable and designs & specifications will sometimes vary. If tolerances or dimensions are critical, please mention this on your order.

Warning: All products in this catalog are to be used according to directions, industry standards and governmental regulations such as the Occupational Safety and Health Act, Federal Hazardous Substance Act and the Environmental Protection Agency regulations.

Those who are not knowledgeable in the proper usage of hazardous materials as well as electrical, high-speed, grinding, and/or high-temperature equipment should NOT purchase these products as non-compliance with safety regulations can be dangerous to health and property.

Keep all products out of the reach of children.

Prices

Prices are subject to change without notice. Price lists are published periodically and the latest price list will be sent upon request. You may also request quotations before shipment by submitting a list of the items you wish to order.

Shipments

In the absence of special instructions on "how to ship", we will use our best judgement in forwarding merchandise. We will comply with your instructions insofar as DOT, ICC and other applicable government regulations permit. Hazardous materials are subject to strict government regulations and additional charges may be incurred.

Returns

All products in this catalog should be free of defects in material and workmanship and perform the work for which they were designed. If, upon examination or first use, a product is found to be defective, contact us with the details. Items which have been abused or used for work for which they were not intended will not be replaced or credited. No merchandise may be returned without written authorization to do so.

General

The products in this catalog were selected for use by technicians and craftsmen working in professional repair and maintenance shops, laboratories, and manufacturing facilities. Some of the products, particularly solutions and compounds, may be considered hazardous if used, stored, or disposed of in an improper manner. These products are intended for professionals and Federal law prohibits the use of some of them in the home. Possession of this catalog does not constitute a right to purchase and identification may be required to ascertain whether a buyer is qualified as a professional.

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