

FILES AND FILING FOR THE BLACKSMITH

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For many modern blacksmiths, small electric grinders have replaced hand files completely. This is a loss to the overall quality of the craft, because a file, properly used, can quickly attain flatter, truer surfaces than any hand grinder.

FILE CUTS

The roughness of files depends on both the length and the "cut" of the file. Longer files are manufactured with proportionately rougher cuts than their shorter cousins. Thus, a twelve inch long "second cut" file is much rougher than an eight inch long "second cut" file. Cuts, in order of roughness, are:

Dead smooth – Very fine cut for "jewelry quality" fine finishing work.

Smooth – fine cut for a "machined quality" surface.

Second cut – a medium file for a smooth "shop-quality" surface.

Bastard – a fairly rough, rapid cut for general blacksmithing use.

Rough – A very rough file for hogging over stick welds and rough surfaces.

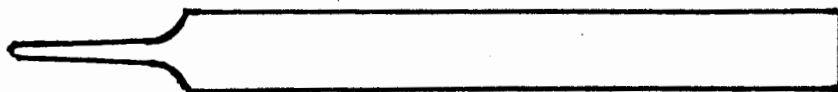
For most blacksmithing use, a bastard cut in an eight to ten inch file should suffice. For "finishing" and for highlighted areas, a "second cut" file will be useful also. Keep in mind that the "length" of a file does not include the tang.

TYPES OF FILES

Files come in a wild assortment of shapes and sizes, but a carefully chosen few will handle most blacksmithing tasks.

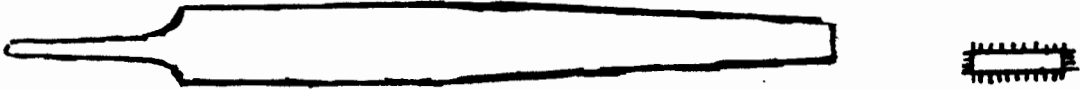
Half round files

The half round file is not half round, although it is rounded on one side and flat on the other. This is a versatile shape that quickly handles many jobs without reaching for another file.



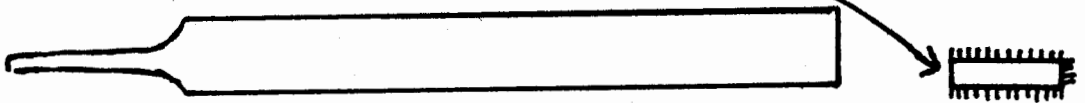
Flat Files

This is the common "hardware store" file that is available everywhere from Walmart to the auto parts store. Flat files are only flat on two sides, as they are tapered across the width. This taper makes it difficult to file cleanly into corners on frames and gates.



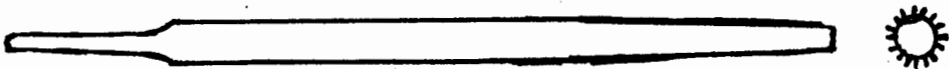
Hand Files

This is the file you will reach for when filing inside corners and slots on gates, railings, and frames. A hand file is a flat file with parallel sides. It is a very useful tool, especially when used with one guarded edge.



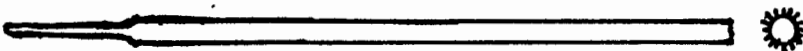
Rat Tail Files

Round files are usually tapered and are known as "rat tail" files due to their shape. The diameter of round files changes as the file length changes. The taper on rat tail files can make it difficult to file a consistent size curve in tasks such as whitesmithing a decorative edge or filing a curved-bottom slot.



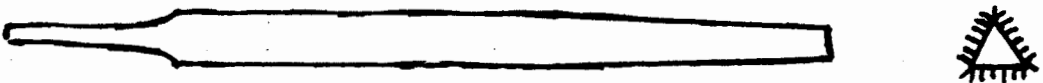
Chain Saw Files

Chain saw files are made for sharpening chain saw blades and they are sold in different sizes by the "pitch" of the chain they are intended for. The good thing about chain saw files is that they have parallel sides, which enables you to easily file a consistent curve. The bad thing is that they are only available in relatively small sizes.



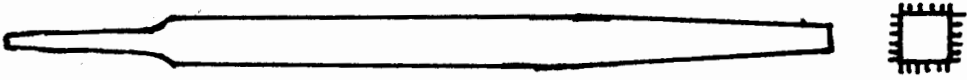
Three Square Files

Triangular files are known as "three square" files. They are good for getting into acute angle corners, such as those on stair rails or other sloped work. They are also a useful tool for making decorative edge cuts and for starting a fine, straight cut line for hacksawing or filing work that must be precise.



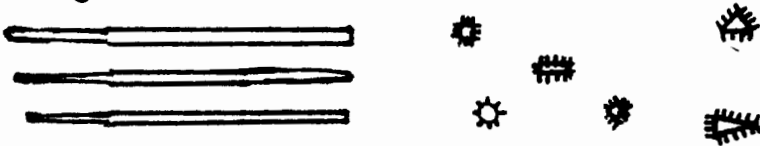
Square Files

Square files are a tapered square. You will use them in places that are too narrow for your larger hand files to fit.



Swiss Pattern Files

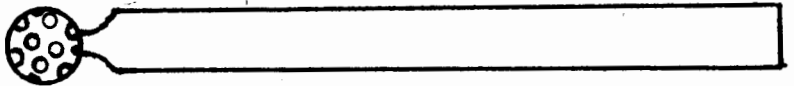
Small files are called Swiss pattern files or "jewelers files". They are usually sold in sets of assorted shapes, typically available only in fine cuts. They are good for getting in tiny corners and slots, if you are one of those guys who just cannot leave well enough alone.



OTHER CONSIDERATIONS

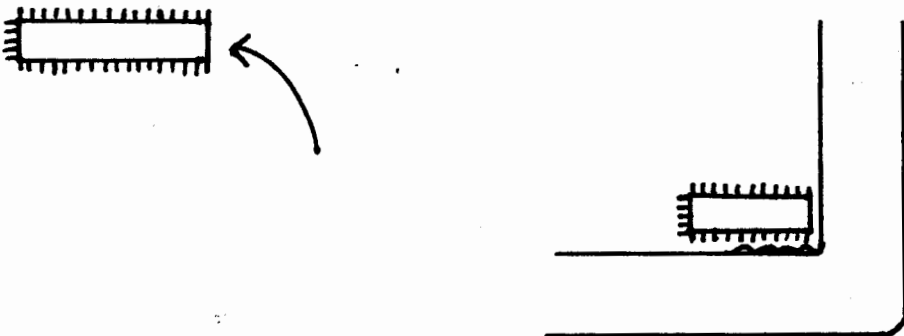
Handles

A good file deserves a handle. This enables you to get a grip on the tool and file much more rapidly and accurately. I have found that a golf ball (an otherwise useless thing) makes a fine handle and the spherical shape helps in filing at awkward angles when cleaning up frames or stair rails.



Edges

A very useful addition to many files, especially "hand" files, is a guarded edge. A guarded edge is one edge that has no teeth. Because it is smooth, it will not cut into or gouge the surface that is perpendicular to the one you are filing, especially when cleaning "inside" corners. Many hand files will come with a guarded edge. You can easily add a guarded edge to any file by grinding off the teeth on one edge with a belt sander. Do not be afraid to modify your files to suit the job you are doing.



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Storage

Do not pile your files in a drawer or toss them into a tool box. They are very hard and will dull each other if thrown in a heap. Take the time to make a simple file rack and your files will work harder for you. A sharp file is a happy file.



Proper Filing Technique

Proper technique will make your filing much faster, easier, and more accurate. Chuck your work up in a vise, or clamp it down. Keep your filing surface close to the vise jaws to avoid "chattering" or vibration of the work. Get comfortable. Try to file at "elbow level", if possible. This will make it much easier to maintain a long, level stroke. Stand with your feet spread and weight balanced and file from the shoulder, taking care to avoid "rocking" the stroke, especially at the beginning and end. Just as in sawing, a long stroke gives better results than short, choppy strokes. Keep your knees slightly flexed and your hips loose and you will develop a rhythm, just as you do when hammering at the anvil. Put the force into the forward stroke and let the file return lightly across the work, like when using a handsaw. As you practice your technique, you will become faster and more accurate, and you will be smiling from the satisfaction of carrying on a fine blacksmithing tradition.