

Filing & Scoring

Files

It's easy to think of a file as a simple tool that rounds off sharp edges, but in skilled hands, files can do much more. Skill consists of using the correct file, proper stroke, and stable grip. See the Tools chapter for information on the files themselves.

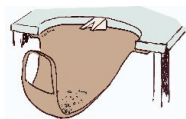


Stroke

All files cut on the push stroke, away from the handle. Files cut in proportion to the force behind them. Place your index finger on the top face of the file to improve control and increase leverage. A downward force is only as good as the upward support beneath it, which is why the bench pin is so important. To extend the life of the tool, lift up slightly on the return pass.

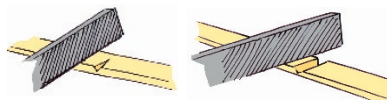
Sweeps

Filings of precious metals are caught so they can be sent to a refiner or remelted in the studio. Traditionally, leather aprons were attached to the underside of the bench, a system that guarantees almost total capture. More common now is the watchmaker's variation, in which a drawer is pulled out to catch filings as needed.



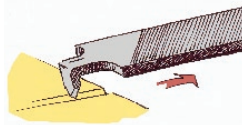
Scoring a Narrow Band

Use a square to scribe a perpendicular line, then file a notch with a triangular file. Repeat this file stroke, tilting the workpiece a few degrees further with each pass. Turn the workpiece around and repeat the process from the other side. Switch to a square needle file and refine the groove to a uniform depth. Bend with fingers, check against a square, flux, and solder.



Scoring a Wide Panel

Use a square against this edge to scribe a clear line. Clamp the metal onto a workbench with C-clamps and protective pads, and at the same time, clamp a straight piece of wood or steel beside the marked line to guide the tool. Set a sharp scoring tool against the fence and pull it firmly toward yourself. Continue until a raised line is visible on the reverse side of the sheet.



Anticlastic Raising

Terminology

The word synclastic describes a form in which the dominant curves both move in the same direction. When the two dominant axes curve in opposite directions, the result is known as an anticlastic form. A bowl is a synclastic form and a saddle is an anticlastic form.



Sinusoidal Stakes

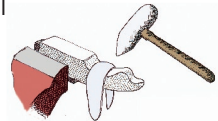
A flat sinusoidal stake can be made of hardwood or plastic. A metal variety is made by bending a tapered steel rod. All curves should be smooth, uniform, and symmetrical.



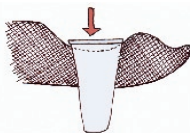
1. Cut a graceful form and file the edges smooth. Shapes do not need to be symmetrical but this is recommended in early learning exercises. Trace the pattern for future reference.



2. Bend the annealed sheet into an even curve and lay it over the stake while holding the legs together. Strike the metal with a smooth crosspeen hammer or mallet to begin the curve.



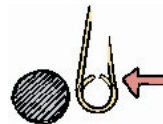
3. Move along the edge, starting in the center and moving outward, left and right. Reverse the metal and repeat on the opposite edge.



4. Continue on the long axis to gradually roll the form upward. Use gentle overlapping blows, stopping as needed to manually twist the piece back to symmetry.



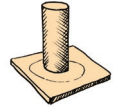
5. Stop when the form is oval in cross-section. Anneal and dry. Hold the form beside a curved stake like an anvil horn or a ring mandrel gripped in a vise. Tap on the edge directly opposite from the point of contact, rolling the form and advancing along that point.



Barrel Clasps

Barrel Clasp

1. Make two tubes that fit together. Cut two equal lengths of the larger diameter and solder a cap onto each.
2. To center the smaller tube onto the end of the larger tube, use dividers to mark a centerpoint and scribe a circle slightly larger than the outer tube. Drill a hole in the center of this sheet, solder the tube in the hole, then cut on the scribed line to make a cap for the larger tube.
3. Wrap wire around the smaller diameter tube to make threads. Cut off two sections, one that is about three-fourths of a loop and one that is about one and a half turns. Slide the longer coil into the larger tube and solder it in position. Solder the smaller length onto the smaller (inner) tube.
4. Make two eyelets to attach the clasp to a chain. Draw a bead on the end of two lengths of wire, feed each through the clasp units, and form a loop. Solder them closed.



J-Clasp

In this versatile necklace clasp, a piston slides into a sleeve, rotates, and is pushed outward to lock into the hook section of the slot. Though shown in a simple version, this clasp can be embellished.

1. Make or buy a length of tube and a rod that fits smoothly into it. Cap the outer tube and attach a loop. This can be fixed or free to rotate.
2. Drill a hole at what will be the end of a J-shaped loop and saw to this. File the edges to make them smooth and parallel.



3. Solder a wire (same size as the slot) on the tip of the rod at a right angle. Attach a loop to the opposite end of the rod.



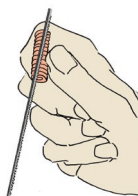
4. Make a spring from thin, hard-drawn brass wire, a little smaller than the inside diameter of the tube and force it all the way into the tube. The spring pushes the tongue outward, and locks the peg into the end of the slot.



Chainmaking Basics

Making Jump Rings

Wrap a wire around a rod of the chosen size keeping each coil tight to the one before it. Some handy mandrels are nails, dowels, wire, and knitting needles. Slide the coil off and cut it with a jeweler's saw or separating disk.



Assembly Sequence

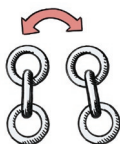
1. Make as many rings as you think will be needed. Solder half the rings closed.



2. Thread a pair of closed rings onto an open ring. Close it and solder the joint. Pick soldering is the most efficient method.



3. Connect two of the three-piece units with a new ring and solder it.

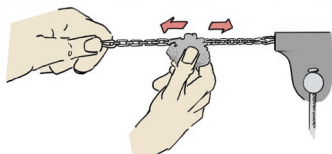


4. Continue joining units of 7, 15, 31, etc. until the chain is the desired length. Pickle only after the assembly is complete.



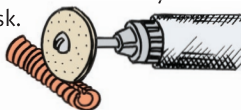
Polishing Chains

Never polish chains on the buffing wheel! (Unless you have an oversupply of fingers...) Instead, pull the chain taut, and rub it with steel wool, Scotch-Brite, a scratchbrush, or a polishing cloth. Use wire or string at each end to allow access to the full length of the chain.



Cutting with a Separating Disk

To cut rings made of thin wire with a separating disk, wrap tape over the coil then cut through tape and wire at the same time. The tape holds the wires steady for the cutting disk.



Should this ring be soldered?

Unsoldered jump rings can look messy and weaken a chain. Sometimes the proper question is "What ratio of wire to ring do I need to provide sufficient strength?" When you won't be soldering them, make jump rings from work-hardened wire.