KNEW CONCEPTS PRECISION SAW GUIDE
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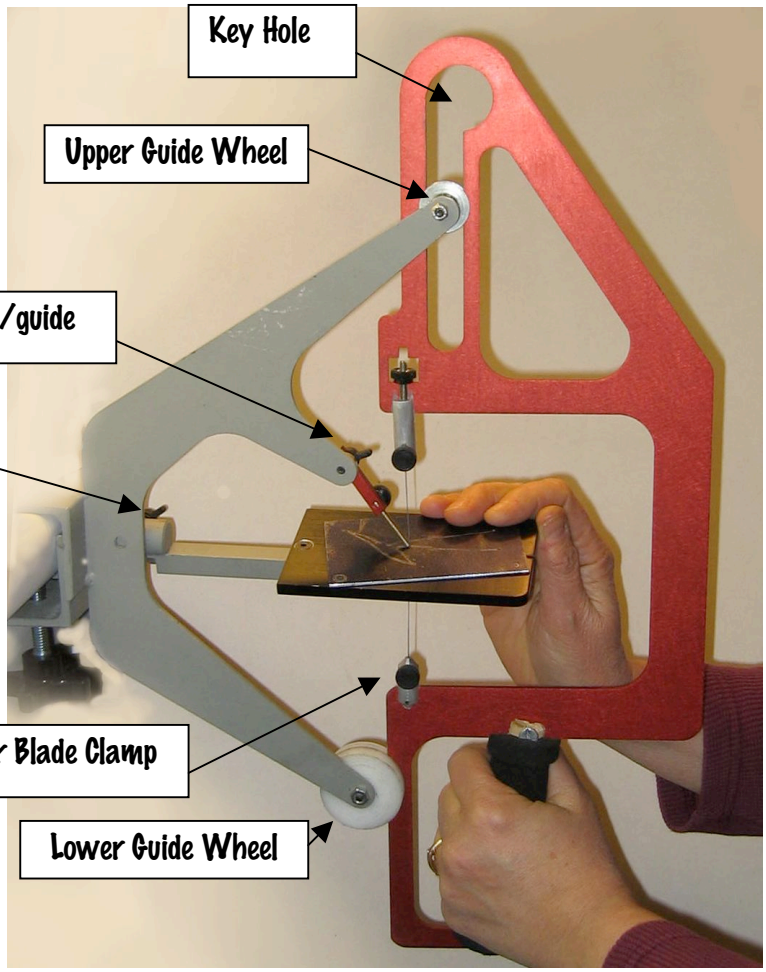
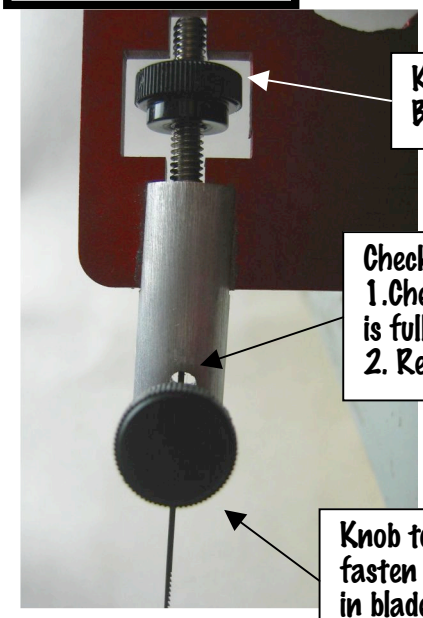
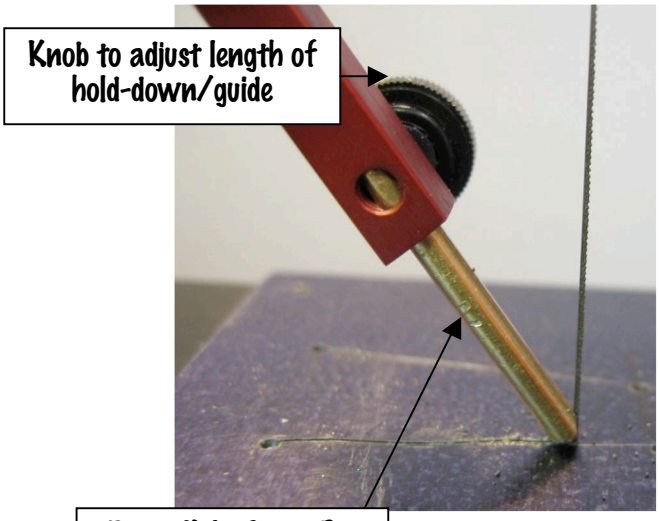
Instructions by Cynthia Eid



Upper Blade Clamp





SAFETY
Working with metal and tools is potentially hazardous. It is the metalsmith's responsibility to *use common sense, and appropriate safety precautions*. The authors and manufacturer specifically disclaim any responsibility or liability for damages or injury as a result of any activity undertaken in conjunction with the information presented in these notes. Safety glasses should be worn at all times during metalsmithing activities. During sawing, for instance, a saw blade can break, and lodge in an unprotected eye.

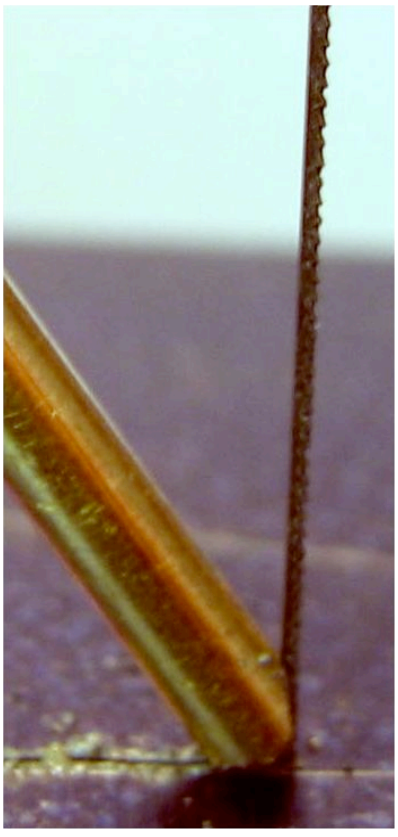
SET A SAW BLADE IN THE SAW FRAME
-Loosen all three the knobs of the saw frame. Turn the tensioning knob until it is near the top of the bolt.
-Insert a blade into the small hole of each clamp, and tighten the clamp screw.
-If you wish, you can check that the end of the blade is fully inserted by looking into the cross-hole.
Adjust The Saw Blade Tension -
Turn the tensioning knob until all slack is removed, and then tighten until the preferred tension is achieved..
-One way to check the tension of the saw blade is to flick the blade with a fingernail, and listen for a high "ping" sound.

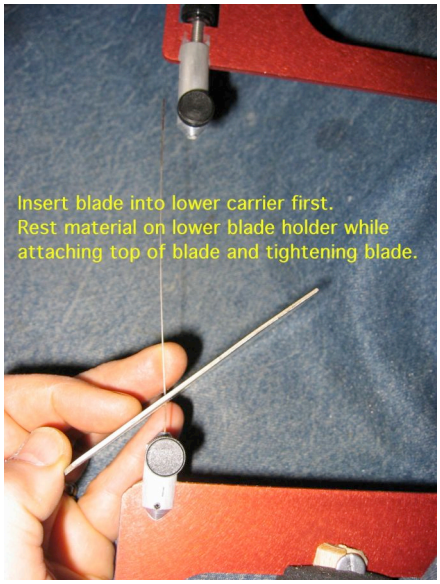
SAW BLADES
- Any size, type, and brand of jewelers' saw blade can be used, including spiral saw blades.
- Our current finding is that Pike Platinum blades are the toughest, breaking the least often when sawing at an angle for a blanking die.

ADJUST THE ANGLE OF THE BENCH PIN TO THE SAW FRAME
The bench pin can be used at a right angle to the saw blade for making silhouette (matrix) dies, or at an angle for cutting blanking dies.
-To set up the bench pin square to the saw, loosen the bench-pin knob and hold the bottom of the square angle guide so that it is snug against both the bench-pin and the side of the saw guide. Tighten the bench-pin knob.
-To set the bench pin to an angle, loosen the bench-pin knob, and set the saw into the frame. Hold the bottom of the angle guide against the bench pin, and align the saw blade with the line indicating the angle desired.

USING THE SAW WITH THE PRECISION SAW GUIDE
The Precision Saw Guide may be used with the saw blade facing either forward, or towards the artist.

Advantages of sawing with the blade facing the artist include:
- It allows us to use the hold down pin as a blade guide additionally.
- We can truly see where the saw blade is cutting, rather than needing to look around the sawblade.
- Use of the brass pin as blade-guide minimizes bending of the saw blade during cutting, keeping the saw angle true. This makes for more accurate blanking dies.
- **When cutting a blanking die, be aware that if you saw with the blade facing you, it works well to follow the directions for a person with the opposite hand.**
  For instance, if you are right handed, slant the bench pin and saw in the direction that is recommended for left handed people. An excellent guide to sawing a blanking die, as well as other hydraulic forming information, can be found in Susan Kingsley's book,
  Hydraulic Die Forming for Jewelers and Metalsmiths.

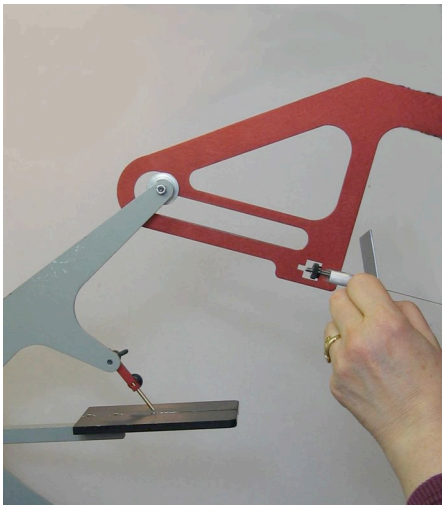


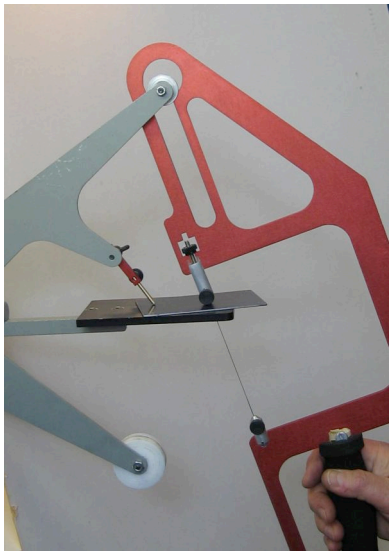


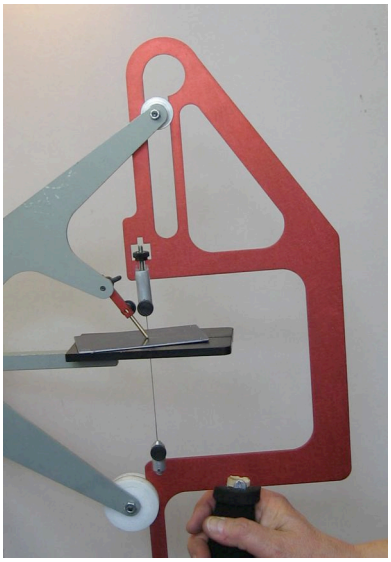
INSERTING SAW BLADE FOR PIERCING

- Mark the pattern onto the metal---the more accurately the line is drawn, the more accurately one is able to saw.
- Drill a hole. I like to put the hole in a corner. Not only does the drilled hole make it easier to turn that corner when sawing, but a rounded corner, made by drilling, is less prone to stress and cracking than a sharply pointed corner that has vertical grooves from sawing or filing. The vertical grooves can become cracks or splits. Therefore, it can be a good idea to drill a hole at every corner.
- Fasten a sawblade into the lower blade clamp.
- Insert the material to be pierced. Slide the metal to the bottom of the blade so that it rests on the lower blade clamp.
- Turn the tensioning knob until it is near the top of the bolt, so that the top blade carrier is low, and insert the saw blade into the upper blade clamp. (It is necessar to bend the blade in order to insert it—good blades are not damaged by bending.)
- Tighten the blade by turning the blade tensioning knob.
- Lubricate the blade.

CONNECTING SAW FRAME WITH THE PRECISION SAW GUIDE







- Rest metal against upper blade carrier (helps avoid breaking the saw blade)
- Insert the upper roller into the key hole of the saw frame
- Rotate the saw frame forward until the lower part of the saw frame rests inside the groove in the lower roller, while simultaneously sliding the blade through the slot of the bench pin.

SAWING, USING THE PRECISION SAW GUIDE

- Long, even up and down strokes cut more quickly, smoothly, and evenly than short, quick saw strokes
- Remember that the saw stays in place, pressing forward against the rollers, while the metal is moved, being brought TO the saw blade.

Let the sawblade do the work---Pushing hard and/or hurrying to saw quickly tend to break blades and jam blades, rather than helping to saw. Slow and steady "wins the race".

ZEN AND THE ART OF SAWING

- It can be helpful to think of yourself as the saw's motor, and enjoy the rhythm of sawing at a steady, even pace.
- A positive attitude can be very helpful to successful sawing. It seems as if the metal and tools respond to the positive energy, just as a pet senses a positive approach.

MORE TIPS FOR SAWING

- Turning Corners
  - A good time to make sure the blade is lubricated
  - Rotate the sawblade in place, making sure not to have any forward pressure. If anything, press on the back of the blade a bit.
- Removing Saw Dust
  Blowing the shavings away from the saw line can lead to hyperventilation. A student of Susan Kingsley's had the idea of taping a brush to a finger-tip, so that it is handy while sawing.

RECOMMENDATIONS FOR BECOMING COMFORTABLE USING THE SAW GUIDE

1. Whether your primary goal for use of this saw is for making blanking dies or silhouette dies, it can be a good idea to become accustomed to the saw by first sawing silhouette dies----saw simple shape(s) in non-ferrous metal with the bench pin horizontal to make a face plate. Saw this first die with the blade facing forward, if that is the customary way to saw for you.
2. Then, saw another silhouette out of brass or nickel sheet. This time, mount the blade in the saw frame so that it is facing towards you. Though it feels odd at first, it is nice to be able to see *exactly* where the blade is cutting! Practice with the bench pin horizontal and the blade facing you until it feels pretty natural.
3. Then saw1/4" thick plastic --with the bench-pin still horizontal. Use a plastic that does not melt and freeze onto the blade during sawing---the acrylic sold by Bonny Doon through Rio Grande is reliably good.
4. For the first blanking die, use 20 or 18 gauge nickel silver, and use a #0 or #1 saw blade. Nickel silver is tough enough to make a blanking die that will cut a dozen or more pieces.
5. Progress to sawing a blanking die in steel. Remember that a tool steel blanking die can cut metal that is up to the same thickness, so start with 1mm or thinner steel with a #0 or 1 saw blade. Though thick dies cut with thin saw blades last longest, it is a good idea to cut the first dies out of thinner steel with coarser blades.
6. Finally, progress to sawing thicker dies with thinner blades.