Helpful Hints for using the RFT-37 degree flaring tool

Note: Results not guaranteed, but these examples should greatly improve your chances for a great job at flaring Seamless Stainless Steel Tubing, like MIL-T-8504 or MIL-T-8808. *The actual specification for Single Flares can be found in specification MS33584*, or its superseding version as applicable. ***None of these examples are for Double Flares.***

To Purchase RFT-37 Flaring Tool, Click Here ***For RFT-37 Technical Info, Click Here***

Step One: The Rough Cut Stainless Tubing needs to be cleaned up.

When working with Seamless Stainless Steel Aircraft Tubing, DO NOT use a conventional tube cutter, (sharp little rolling blade opposed by two little barrel rollers). It would pinch down the diameter and "work harden" the material very quickly.

Step Two:

Placing the Rough Cut Tube in the flaring tools clamp bar, NOTICE that you will trim the rough end off from this side with a hacksaw.

Step Three:

Also notice that the bar face that the hacksaw will be gliding against is clamped tightly in the vise with the side that does not have the recess for the flare, facing toward you. This is just being used as a convenient and accurate tubing clamp.

Step Four:

Preferably using a 32 teeth per inch (or more) Bi-Metallic hacksaw blade, start cutting using light pressure and smooth even strokes. Keep the blade flat and up against the Flaring Tool Bar. The bar is made of very hard high quality steel and should not be adversely affected.

Step Five:

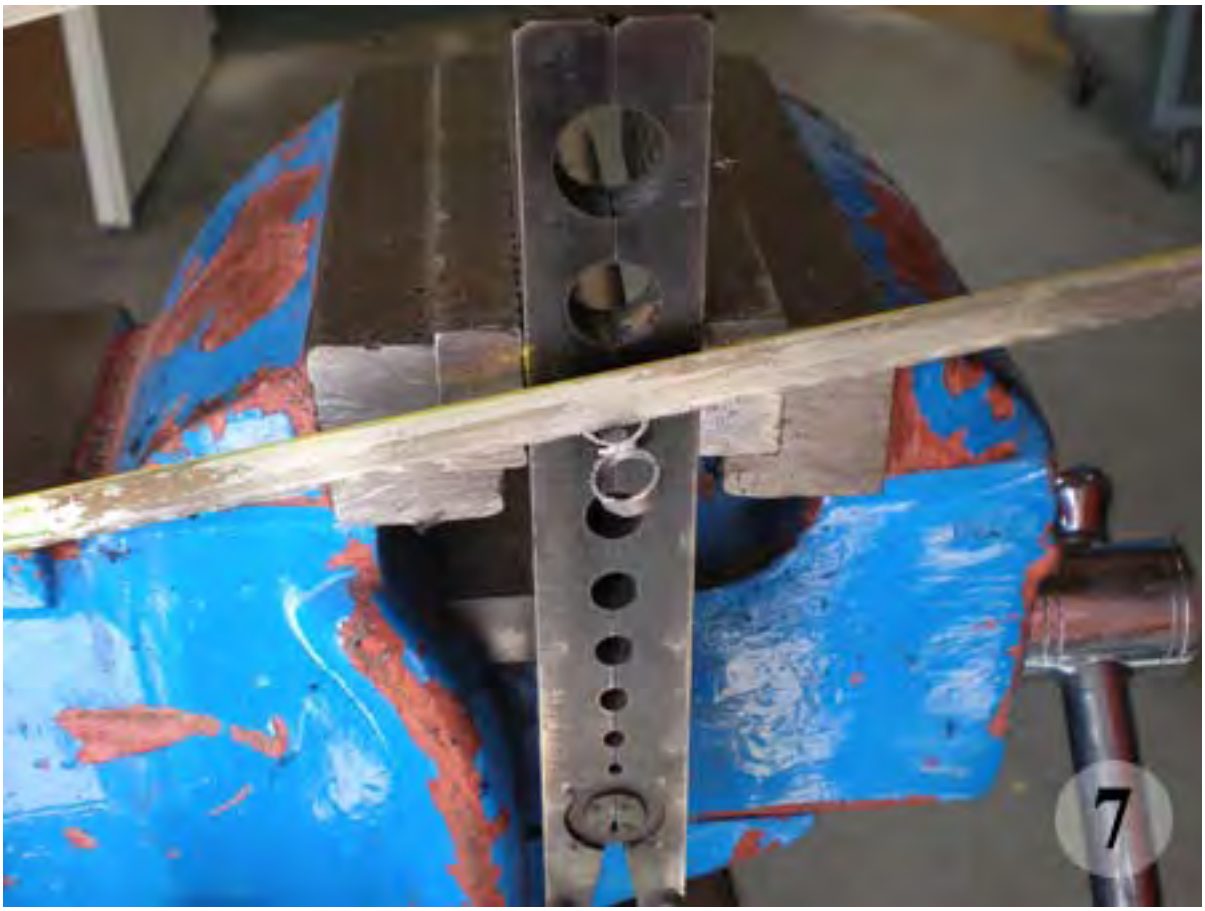
Once you get going it will be a little easier and will cut the fastest though the middle. Remember to not exert too much pressure on the tubing, this is even more important with the thinner walled tube as rough handling could make it out of round.

Step Six:

Finish the cut using as little pressure as you can, so the tubing cut will be finished without leaving a tang of metal on your tube. If there is a little tang left on after the cut it can be filed away during the later steps.

Step Seven:

This picture shows the last stroke as the tubing end has been cut clean, if there is a little tang left on after the cut it can be filed away.



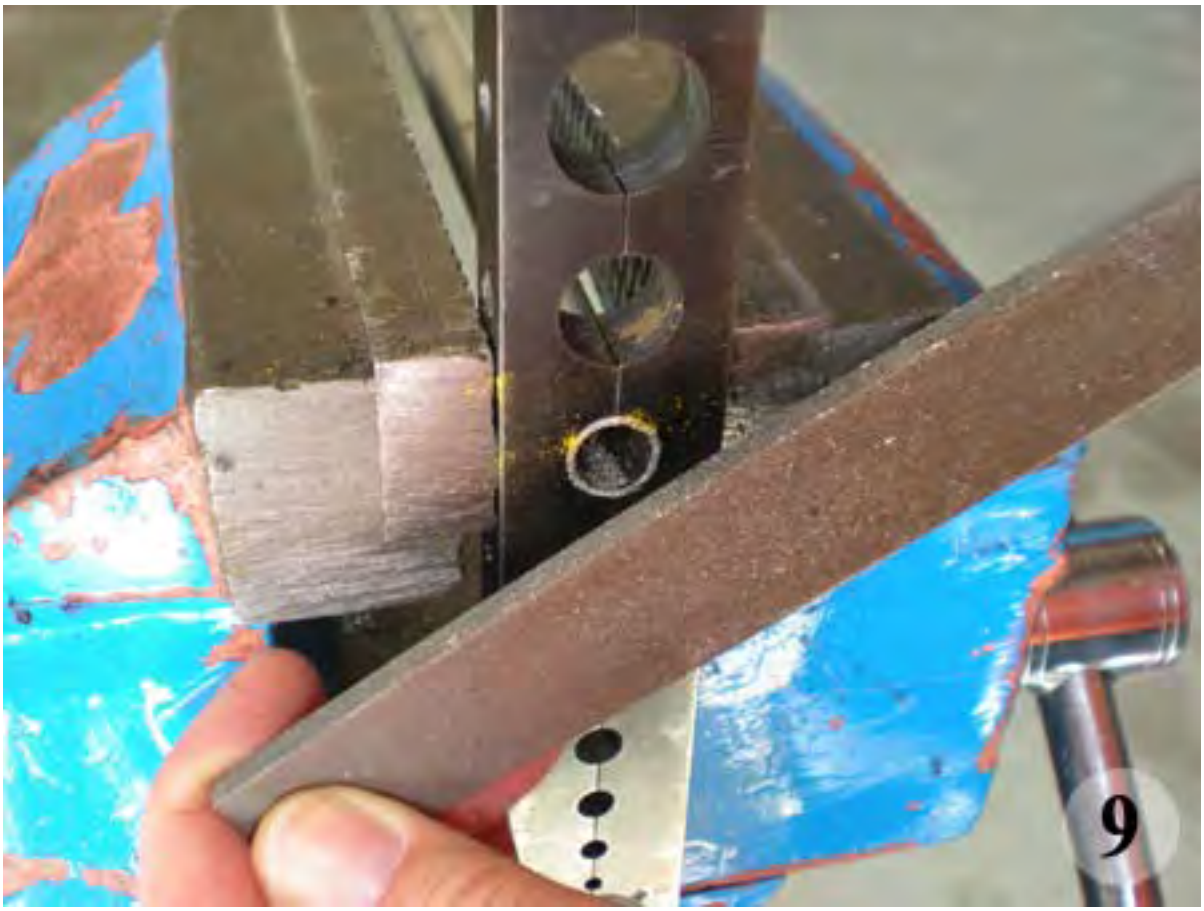
Step Eight:

Example of 1/2" x .035 wall Stainless MT8808 tubing, just cut and still in the Flare Tool bar.

Good job, No Tang!

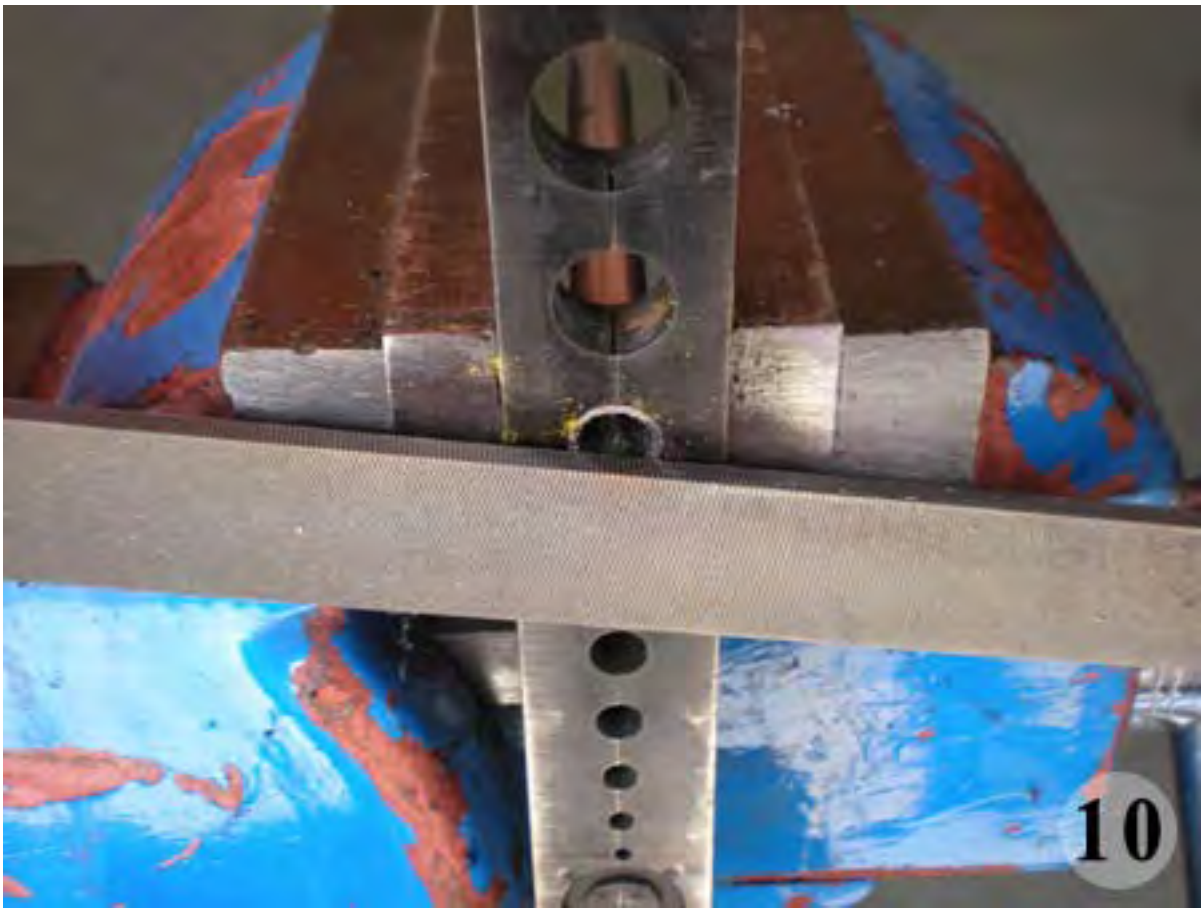
Step Nine:

Gently glide the file over the tube end, it will be sticking up a few thousandths of an inch once it has been cut. Keep the file as parallel to the bar as possible. With these Rigid flaring tools, the file just glides over the bar, the only real resistance is the file smoothing the end of the tubing.



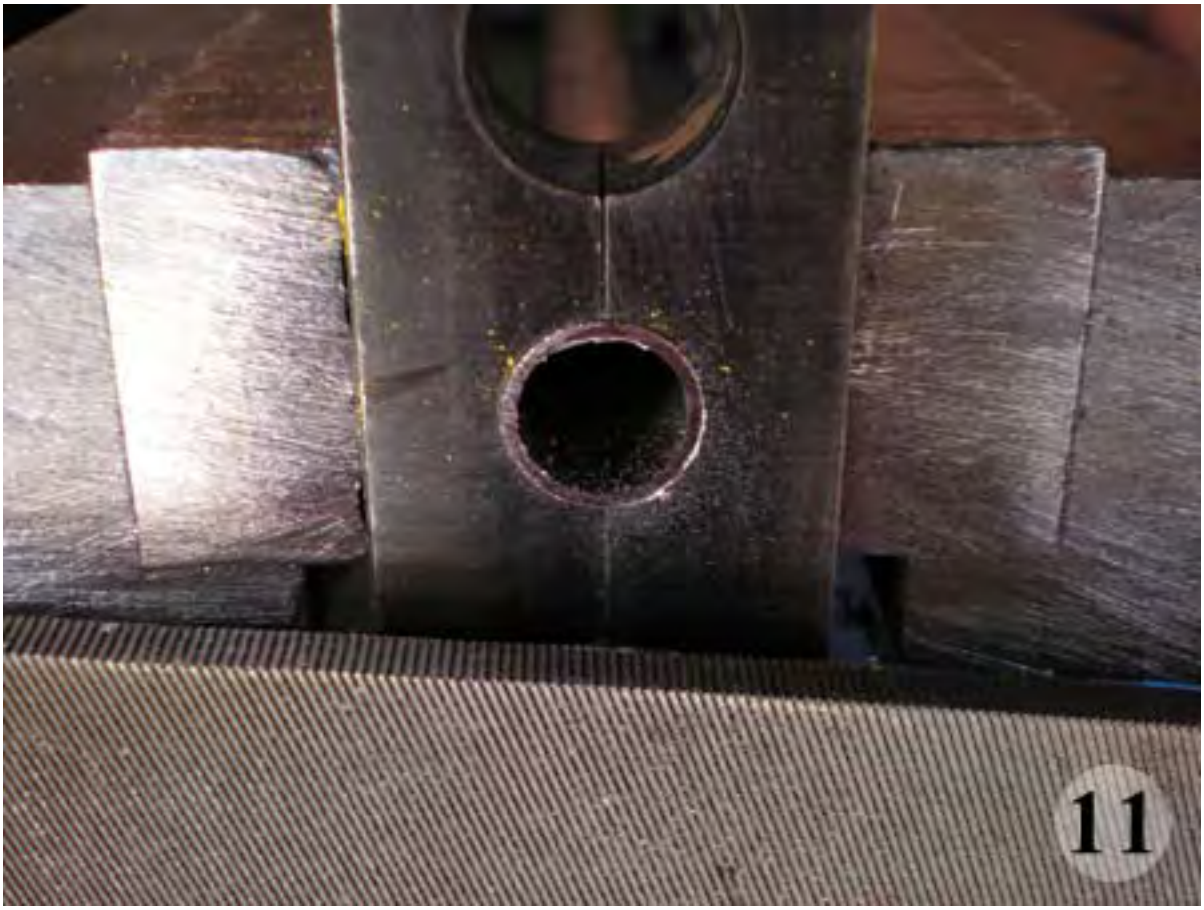
Step Ten:

Keep working at it. You will actually feel more resistance, as the tube end has more contact with the file as it gets flatter and more uniform.



Step Eleven:

Cut off, but not fully cleaned up



Step Twelve:

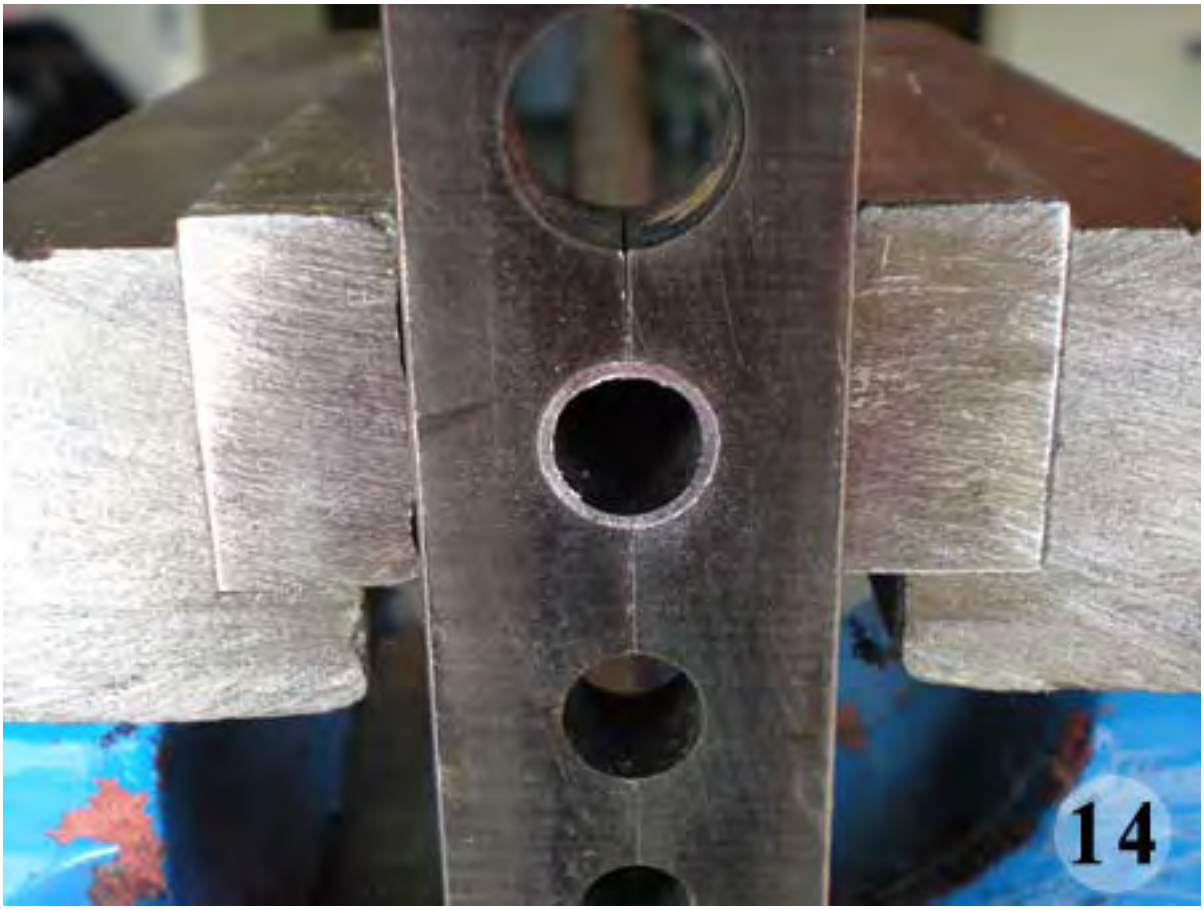
Finish the filing by getting the file as flat on the bar as possible and put pressure on there when it is very flat. With this Mill File, I am actually cross cutting by only putting pressure on the file while keepng the file level and cutting on the down stroke. This keeps the file flat against the bar and makes the final cleanup cuts smoother than the standard stroke of the file.

Step Thirteen:

The end of the tube looks like it should, flat, square and smooth.

Step Fourteen:

You can see that the tubing is flat and true, it also has no distortion from excessive cutting forces. **It still needs to be De-burred and cleaned.**

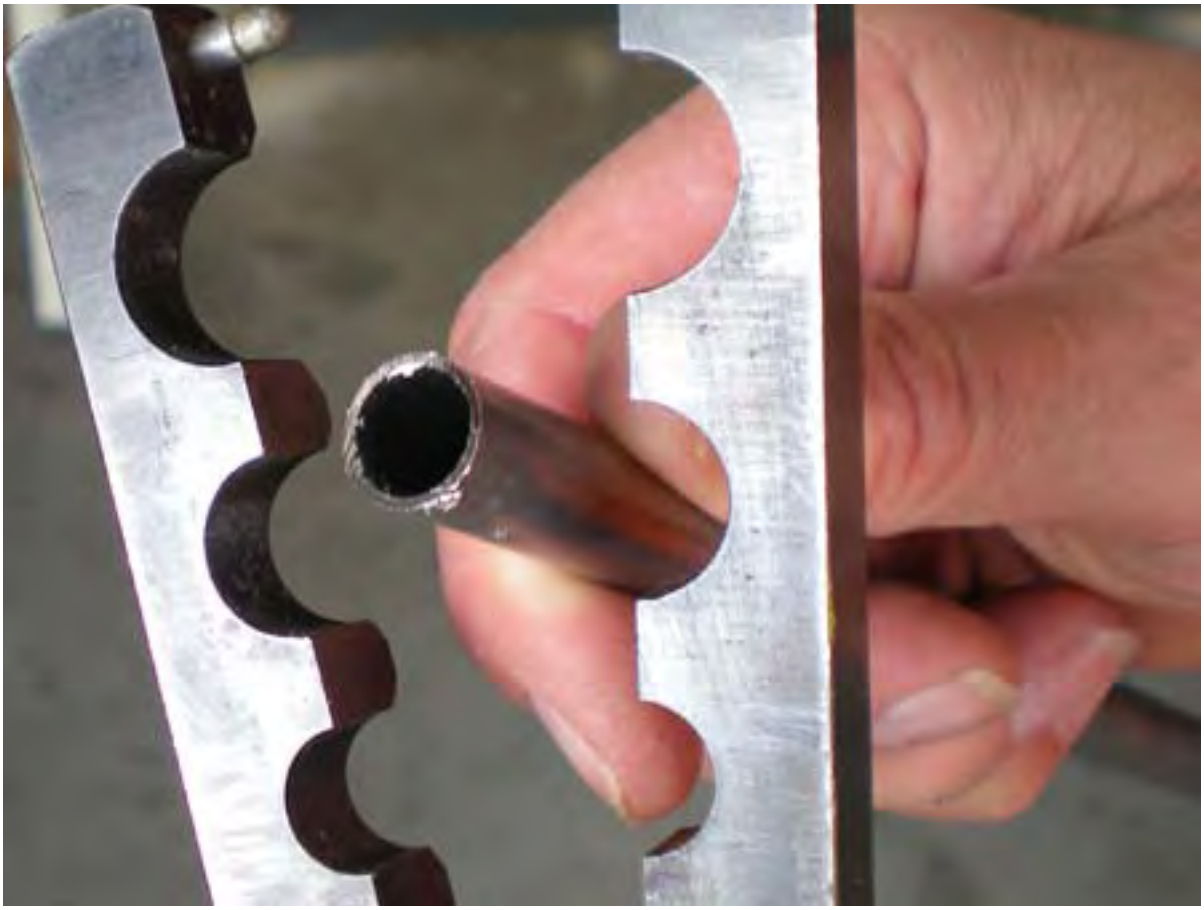


Step Fifteen:

Remove the Flare Tool bar and the tube at the same time.

Step Sixteen:

Notice that even though it is square, it does not look so clean and smooth, don't worry, it will soon be!



Step Seventeen:

Hold the file from the end opposite of the handle; with the tube at roughly a 30 degree angle from the flat and the side of the file, then stabilize the tube with your thumb leaving only the very edge of the tube end in contact with just a few teeth of the file, cutting the outside burrs off smoothly,while rotating the tube against your thumb and the file.This should succesfully "break" and smooth the oustide edge of the tube.

Step Eighteen:

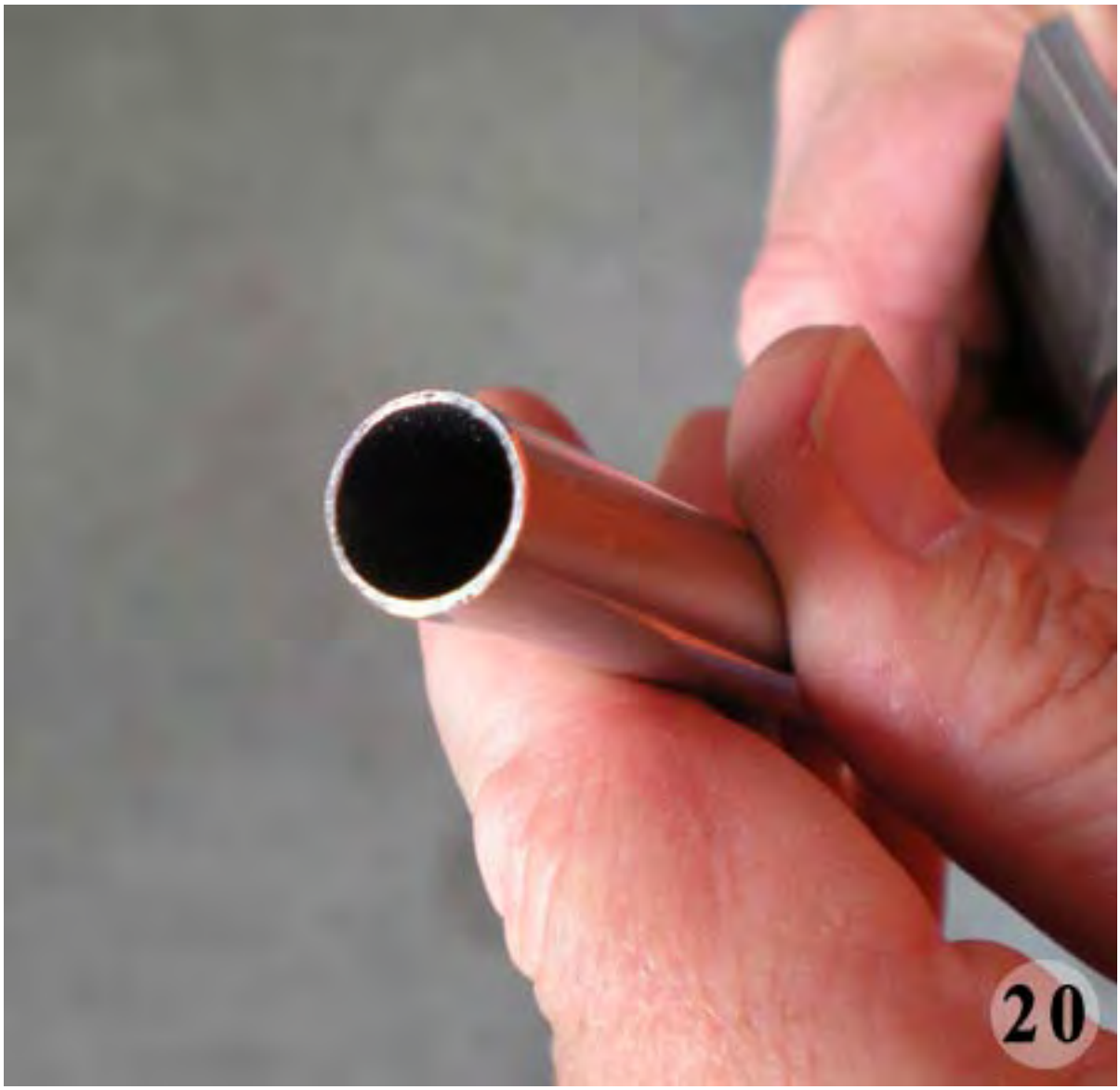
Do not file the side walls of the tubing, the goal is to smooth and slightly chamfer the oustide edge that was just cut in the previous steps.

Step Nineteen:

he smooth corner end of the file is harder than the tubing but it is not very sharp. If you prefer you could use a de-burr tool that may be more suitable, but when you rotate the inside of the tube against the corner end of the file, it should deburr the tube end quite well.

Step Twenty:

It's a beautiful thing, but wait there's more!



Step Twenty-One:

The **RFT-37** is my preferred flaring tool. I prefer it for it's constistant flaring capabilities. There are more compact models, and others of various designs, but the RFT-37 is what I usually use for all types of plumbing tubing. The only drawback I can think of, is its size when you are working in close quarters. If you need a smaller tool you may have to resort to another model, such as the Parker Rollo Flair.

Step Twenty-Two:

Once the tubing end has been dressed up, we are ready to flare it. The first step is to make sure the tubing and the tool are clean and ready to go.

Step Twenty-Three:

Clamp the tube in the block by hand to the desired height in the Flare well so that once flared you will have the desired outside diameter of the flare (Dimension "A" from specification MS33584 or superseding document) This may take some practice. If the outer edge of the flare is a little oversize, you can carefully file the outside and then smooth the edges again.

Step Twenty-Four:

With the tubing in place, and the Flaring Tool Head on the block, align the centering pin into the correct place and tighten it down. You will not be able to overtighten it with your hand unless you are "showing off".

Step Twenty-Five:

You may put it in the vise or hold it in your hand. I had a vise and it made it a little easier.

Step Twenty-Six:

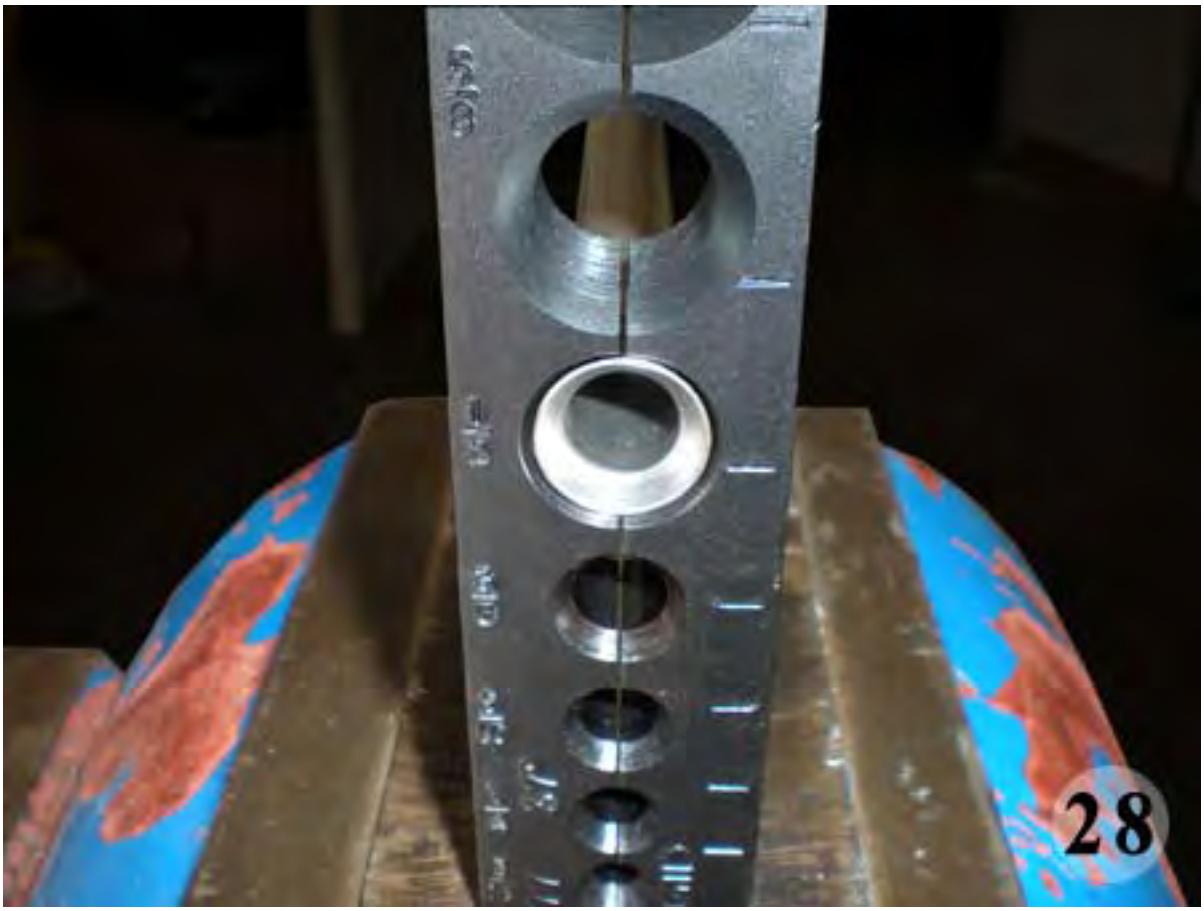
Notice the Flaring Cone is eccentric. (off center). It has 2 bearings, one under the cone, and another set of roller bearings surrounding the shaft, these work together to produce very consistant high quality flares with minimum hand effort.

Step Twenty-Seven:

Notice the gap between the Handle and the Jack Screw. This tool also has a calibrated release clutch that does a good job to prevent over flaring. The amazing part is that it works just as well on materials that are very soft as well as the harder ones.

Step Twenty-Eight:

With the Jack Screw turned in until the clutch released, the Flaring Cone can just rotate until you have a very smooth and consistant Flare. This is showing the finished product just after removing the Flaring Cone & Hand Assembly.



Step Twenty-Nine:

A closer look at a 1/2" x .028 wall tube, flared to specifications and looking good!

Now before you forget, clean the tubing inside and out.

The thing you do not want to have happen,
is sealing up contaminants in any plumbing systems.

Step Thirty:

A good job done, so..... "Give us a Hand"

To Purchase RFT-37 Flaring Tool, Click Here

For RFT-37 Technical Info, Click Here