

Loading the Tapered Sanding Mandrel

By Frank C. Russell

The tapered sanding mandrel is a very versatile tool to have in your arsenal of tool bits. When used properly, excellent results can be achieved while smoothing smaller variably contoured areas. Proper use depends upon proper speed and pressure applied to the surface being smoothed. Excess pressure will load the grit of the sanding taper and render the sanding surface useless. Continued excessive pressure will create heat and then discoloration of the wood surface being smoothed, as well as damage to the abrasive surface. Excessive speed creates a hazard to the operator, because the load of the abrasive to the mandrel is not balanced and high speed will cause the imbalance of the load to bend the shaft of the mandrel creating a flail with a 5 to 6 inch diameter that can cause damage or injury before the machine is stopped.

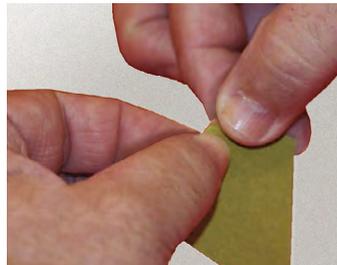
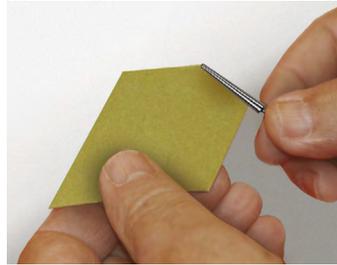
If you are right handed and therefore run your machine in the forward mode, cut and load the pattern appropriate to right handed operation.

If you are left handed and run your machine in reverse as is common for left-handed users, cut and load the pattern appropriate to left handed operation.

When cutting the abrasive cloth, the grit of the abrasive cloth should be against the bottom of the pattern with the "grit this side up" message of the pattern showing on the pattern.

See pattern sketch below. Cut a pattern out of aluminum flashing, plastic, or laminate, and mark the grit side with "grit side up" so there are no mistakes when cutting the pattern.

1. Always use cloth abrasive – paper backed abrasive doesn't mount on the mandrel as well and quickly wears out.
2. Cut pattern (with the grit the proper side up) with an old pair of scissors.
3. Slide the 90-degree corner of the pattern into the slot of the mandrel.
4. Tightly pinching the abrasive with both thumbs and forefingers, roll the pattern onto the tapered mandrel.



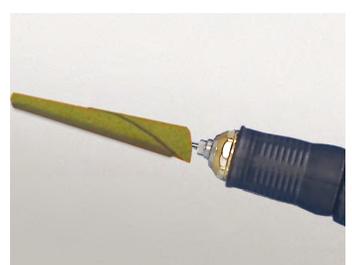
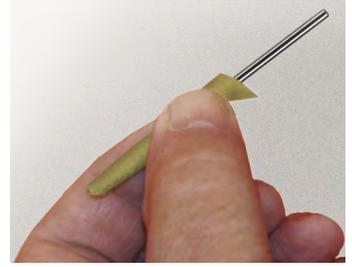
5. The long narrow point of the pattern should end up on or near the base of the roll on the mandrel body. If it doesn't, unwrap the abrasive and cock the edge in the slot (forward or backwards) slightly to bring the point back to the base of the roll on the mandrel once it is re-rolled.

6. Put a small drop of super glue under the very tip of the long point and hold until set (about 30 seconds) **Avoid letting the super glue seep out from under the abrasive cloth and stick to your fingers.**

7. Once you achieve the technique for loading the mandrel, load at least two mandrels – one with fine and one with coarse gritted cloth so you can go from coarse gritted sanding to finish sanding without having to reload a mandrel.

8. Remember to use the loaded mandrel at a slow speed. I try never to exceed **12,000 rpm. Speeds from 35,000 to 50,000 rpm can bend the shaft creating a high-speed flail, and you could be injured.**)

When using the tapered mandrel to smooth an area, light wiping "wiping" strokes seem to give optimum results. When the tip warms to a degree, the tip will actually become flexible enough to "steer" which makes it a delight to use in a small depressed area with an irregular shape that needs to be smoothed out. This bit is invaluable for smoothing individual feathers, feather groups, facial features, curls, and hair contours...I can't imagine being without it.



Right Handed Use Pattern
(Machine in Forward Rotation)
Long point

Left Handed Use Pattern
(Machine in Reverse Rotation)
Long point

