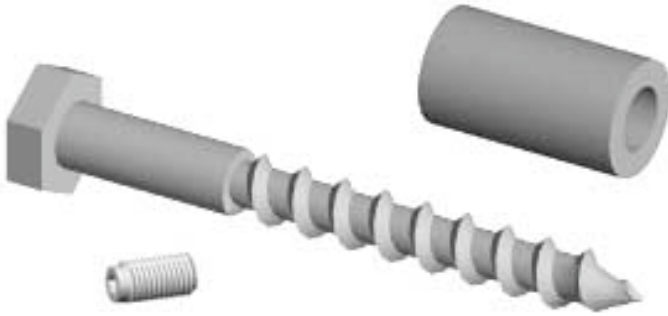


Making a Chatter tool

Based on an article by Ken Grunke of the Coulee Woodturners and Bonnie Klein
Modified by Greg Smith Detroit Area Woodturners

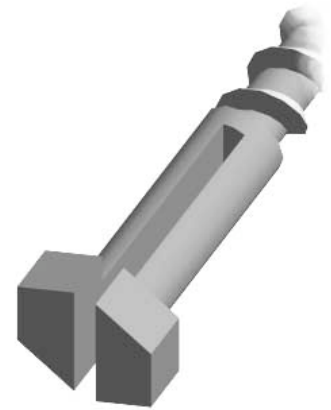


◆ Parts needed:

- ◆ Lagscrew, 3/8 in. dia., anywhere from 5 to 6 in. long
- ◆ Setscrew, 1/4-28
- ◆ A collar with a close fit on the lagscrew. I drilled out a 1/4 in. pipe nipple, and cut it to the length of the shoulder on the lagscrew, which should be about 3 to 4 in. long. – Long enough to pivot on your tool rest.

Tools needed:

- ◆ A jigsaw (sabersaw) with a metal cutting blade--16-20 tpi
- ◆ Electric hand drill, or drillpress
- ◆ centerpunch
- ◆ A threading tap and drill bit for the setscrew
- ◆ A 1/4 or 17/64 drill bit for the clearance hole in the collar
- ◆ The slot for holding the chattertool blade is cut across the points of the lagscrew's head, and as straight as you possibly can right down the center of the screw. It helps to start a guiding cut with a hacksaw and/or a triangular file, then clamp the screw horizontally in a vise for using the sabersaw. I tried a hacksaw to cut the whole slot, it just wasn't wide enough for a 1/16 in. blade.



Next, drill and tap through the shank of the lagscrew 1/4-28 (10-24 or 12-24 will be fine as well). It should be 1/4 to 5/16 in. from the bottom of the hexhead. Make sure you centerpunch the spot first. Here's a trick for getting right on, or very close to center. Lay the screw flat on a surface with the slot horizontal, a flat on the screw's hexhead will be the guide. Place a flat file on the screw's shank, and making sure the file is parallel to the surface, drag it to make just a bit of an impression on the highest spot of the shank, which should be right on center. If you didn't saw the slot right on center, choose the thicker side to drill and tap the setscrew hole in.

Making a Chatter tool

Aside from making a handle, we're almost done. Except for one thing: When tightening the setscrew on the blade, what's to keep the two halves of the screw head from spreading apart? Well, that's where the collar comes in. It doesn't have to be thick-walled pipe, in fact copper tubing will do if it fits without play on the lagscrew's shank.

But this is the part that rides on the lathe tool-rest, so steel would be better.

Use a fairly new 3/8 in. drill bit to enlarge the hole in a 1/4 in. Black pipe nipple, held in a vise. Cutting oil is recommended for this.

The clearance hole for the setscrew isn't critical, just measure, mark, and center-punch for it so the hole ends up over the setscrew when the collar is up against the head of the lag-screw. So, you can tighten the setscrew on the blade quite hard, and the collar also keeps the blade from moving side-to-side.

Now, just make yourself a nice handle, with a hole drilled to accept the lag screw. Snug it up tight against the collar, you can grind down the hex points flush with the collar if desired.

If you can't find 1/16 inch carbon steel, try a sabersaw blade--grind off the teeth and bend the end 1/2 inch back from the tip to about 10-15 degrees. I like a rounded tip, you can experiment with different shapes.



THERE ARE TWO MAIN REASONS FOR

chatter to occur: either the wood or the tool vibrates. The Chatter Tool is designed to let tool vibration create a decorative chatter; pattern. It consists of a substantial handle with a spring-steel tip mounted in the end. Pressing the tip against the spinning workpiece causes the tip to bounce along the surface, producing a chatter pattern. The character of the pattern is determined by the surface speed of the material, the pressure of the tool against the workpiece, and also how fast you move the tool across the surface.

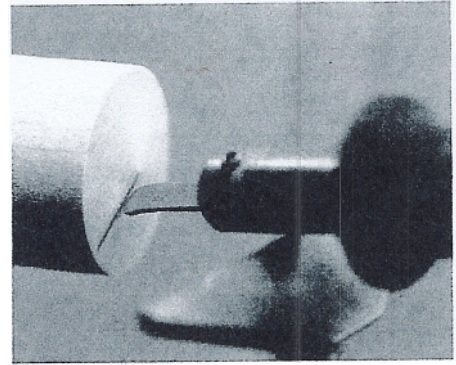
This method of chatter works best on the end grain of wood or on materials without grain, 'such as tagua nuts, bone, antler, many plastics, and soft metals. In any case, the material should be dense, with a fine, even texture; it doesn't have to be hard.

In the tip of the tool shaft is a 2- inch length of spring steel approximately 1/16 x 3/8 inch, shaped to a V-point on the end, which is bent slightly downward. After sharpening, which is seldom, Remove the burr from the tip with' a couple of strokes across the top with some 220- grit sandpaper. If the tip is too aggressive, it will tend to tear the surface of your workpiece.

Making a Chatter tool

Using the Tool

Hold the tool so the tool-rest supports the shaft about 2 inches from the work, allowing the tip to chatter without interference. If the tip is too long or too short, it will not settle easily into a chatter rhythm. Once the tip is adjusted to the proper length (approximately 1 to 1 1/4 inches), don't change it. Use a combination of speed, pressure, and tool movement to vary the patterns. It is important to listen for the chatter noise, a sort of squeal, before you move the tool or change pressure. . An easy way to describe where and how to hold the tool on the end of your workpiece is to picture this surface as a clock face and to imagine a line from the center to where 7:30 would be. If you move, the tool along this line, with the tip parallel to the line (photo left), it keeps the angle between the face of the tool and the work surface less than 80 degrees and offers the best opportunity for chatter to result.



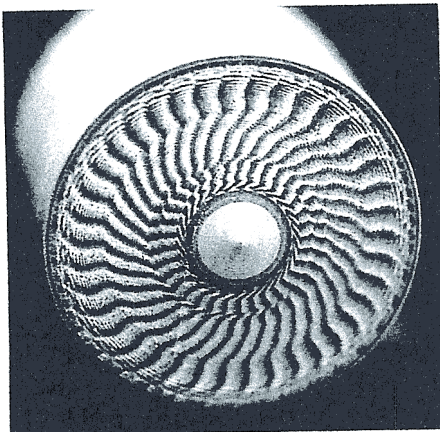
Chatter tool in Position

It is found that for a workpiece 2 inches in diameter, a range in lathe speeds from about 1,000 to 3,000 rpm will successfully result in a variety of chatter work. The faster the lathe speed, the farther the surface will travel between bounces of the chatter tool, resulting in a larger pattern. A slower speed will result in a finer, more delicate pattern.

Because the chatter is partially dependent upon the surface speed, it is more difficult to get a chatter pattern near the center of the workpiece. As the diameter increases, more pressure is needed to keep the chatter rhythm and, conversely, less pressure is needed nearer to the center or on smaller diameters. The Chatter Tool may be held briefly in one place or moved across the surface. The pattern may become distorted or eliminated if the tool is held in one place too long or if you apply chatter on top of another pattern.

Once you have become proficient at creating chatterwork, it is fun to play around with finishing possibilities. Experiment with chatter on either sanded or unsanded surfaces, then sanding or burnishing the patterns. Color with paints, stains, or colored pens under the chatter and/ or on top of the patterns. The possibilities are endless!

Below are two examples of the myriad possibilities for chatterwork enhanced by coloring with felt-tipped pens.



the pattern

