Engrave Bolt Knobs and Tools

By Les Brooks

I make my own bolt knob from 1018 steel. Engrave or checker the knobs is easy if you make the tools shown in the article. Most engraver cutters can be made from lathe bits or order from engraving suppliers. The basic graver is made from a square lathe cutter. The point is made like a diamond by grinding away at a 45 degree angle from one of the corners. The graver in these pictures is about .050 wide from the top side. The bottom heel is about .060 long so that it stays in the lines better.

Cutting the outline around the bolt needs to be short of .032 so it will not drag going in a circle. Engraving was easy after I made the correct tools and understand the angle to grind the points. The rotating engraver vise is made of 2 ½ in. square bar steel. The hammers are made of oil harding steel.

I made all of my own tools at first to save cost. You can get started for under $100 to make bolt knobs.

The Ngraver electric shaft driven hand tool is faster to use, but I can cut just as good with the hammers shown above.
I use metal checkering files to start the pattern using the template shown in the next picture. First cut an outline after you decide on how many panels you want on the knob. Use the index template and notice that they are two sizes. The small size is about 7/16 in. dia. for small knobs. I made a milling cutter the shape of a bolt knob to mill out the knob holder and to form the brass templates so they would be like the knob.
Use the guide lines to keep even checkering diamond lines cut with the files.
After the spacing is started change over to the 90 degree engraver to cut lines out to the edge of the pattern. The shaft driven NGraver is used to complete the lines with better control to the edge.
I use the EZE Lap steel to sharpen the angles and switch over to the red ruby stone to finish the tool.

30 lines to 1 in., cuter is .050 wide on a 90 degree point

Finished bolt knob will have 3 panels

This is a mini Mauser bolt knob .730 dia.

Standard 98 knob .800-.812 dia.
Ready to weld on to a bolt body after cutting to the correct length
This is my rotating vise and a base from a cheap hobby vise bought at a flea market for a few bucks. It works pretty well, but is not easy to change angles.
Two boat trailer bearings installed on a 1 in. dia. shaft to create the rotator vise and the side lock or brake controls the amount of resistance while engraving. This is my first rotating engraver vise made in 1989.

For information on engraving I recommend you join this site by Sam Alfano. [www.engraverscafe.com](http://www.engraverscafe.com) If you sign up you will be able to view pictures on the forum and others. You can learn more and he explains in detail how to do so many things which a beginner will need to learn. This is the best site on the internet for engraving. You can buy books and DVD's on engraving from his site.

Here is a few more close up shots of the sharpening tool and a guide to set the tool when it is being made ready to start sharpening gravers. I also found that with the post alignment tool is not
necessary to repeat the angles. I could just eye ball the post for the adjustments on the rear to 90° to the bottom work table and it would be very close to perfect.

This is about the actual size of the tool, but the later model is different. Look back at the sharpening tool used with the diamond and ruby plate.

This is a 2X2X4 inch square tubing with the bearings inside like the one holding the drill press vise.
This is the head with the channel iron milled out for the drill press vise and you can center the work which makes it a lot easier on some jobs.

In 1993 I was hired to teach stockmaking and checkering. The above rotating tool was originally to hold my checkering cradle. John Barraclough was teaching the NRA engravers class and saw my tool. He made up the drawing and it was posted in the tech section on Engraver’s Café by John. The summer students in his class used the drill press vise in the above tool as the beginners set up. I made up several of these for the school because someone had stolen all the engravers GRS balls. This is an inexpensive way to make a tool for about $40.

The End for now

Les Brooks