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Bill Krier  
Editor  
WOOD® magazine

### **Adobe Acrobat Troubleshooting Guide**

*If you can read this page, your Acrobat program is working correctly!  
But you may still have problems or specific issues such as printing and saving your Downloadable WOOD PLAN.*

#### **My printer won't print the text correctly**

Almost all printing problems are due to not enough free system resources memory. The files are very memory intensive since they include graphics, text, and photos. Close all other programs/applications and print directly out of the Acrobat Reader program, not your Web-browser.

#### **Patterns are not printing full size**

Make sure your printer is set to print at 100% and that "print to fit" is not checked. These settings are selected in the printer setup or printer options.

#### **I can't save my file now that it's downloaded**

You must save the plan when you download the file. Download the file again, except this time try right-clicking on the red download button. A menu window will open. Select "Save target as" or "Save link as" to save the file to your hard drive. Once saved, you can open it with Adobe Acrobat Reader.

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a craftsman's  
marking tool

# Scratch Awl



Whenever a project calls for accurate layout lines and precisely marked measurements, lots of experienced woodworkers put away the pencil and reach for a scratch awl. Somehow, you just feel more like a craftsman when you pick up a scratch awl. Here's one you can build yourself. It features a sturdy shaft, a sharp point, and the handsome look of all the tools in our Collector's Edition series.

## Tools and Supplies

1/2" gouge  
1/2" skew  
1/8" parting tool

Walnut stock, 2x2x4"

Steel rod, 1/4" dia. x 6 1/2" long

Brass flare nut, 1/4"

Brass drawer pull

(For a kit containing a stainless steel rod and brass parts, see our Buying Guide.)

## Lathe speeds (rpm)

Roughing: 600-900

Filing flare nut: 600-900

Finishing, sanding: 900-1,600

Locate and mark the center on each end of a 2x2x4" walnut turning square. With a 1/8" brad-point bit mounted in a drill press, drill a pilot hole 1 1/2" deep in one end. Center-punch the other end.

Mount the block between centers with the drilled end at the headstock. Round the stock down with the gouge, and then mark lines 7/16" and 2" from the tailstock end of the block.

Turn to the shape shown on **Drawing 2**, on page 3, leaving a slightly oversized tenon. Mark the turning and the drive center with paint or a marker so you can align them to remount the turning. Now, remove the workpiece from the lathe.

## Add a bit of brass

Try to thread a 1/4" brass flare nut onto the tenon. If the nut won't screw on, return the workpiece to the lathe and shave a bit off the tenon. Test and turn a little at a time until the flare nut fits the

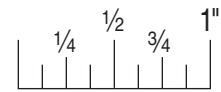
tenon snugly. Then, coat the inside of the fitting with epoxy and thread it onto the tenon.

After the epoxy cures, put the turning back on the lathe to file the wrench flats off the flare nut. (An 8- or 10-inch bastard-cut mill file does this job well.) File to a smooth contour, removing as little metal as possible—the threads that are cut on the inside of the nut make the brass thin in this area.

Grip the file firmly by the handle and the other end. Take it easy at first; the file will jump around quite a bit until the corners are rounded. Remove the file marks with progressively finer sandpaper, 100-grit through 320-grit. Copy the profile from the full-sized template, below, onto poster board, and cut it out. Now, turn the handle to final contour. The 1/2" gouge will do the job, except for the top shoulder—cut that with your parting tool.

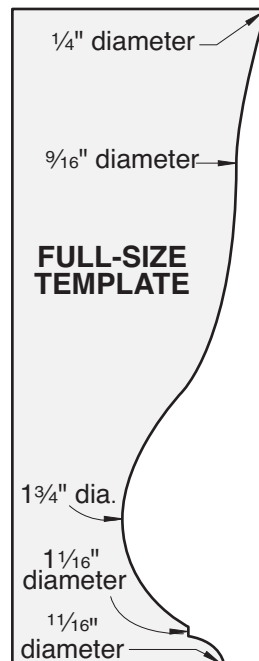
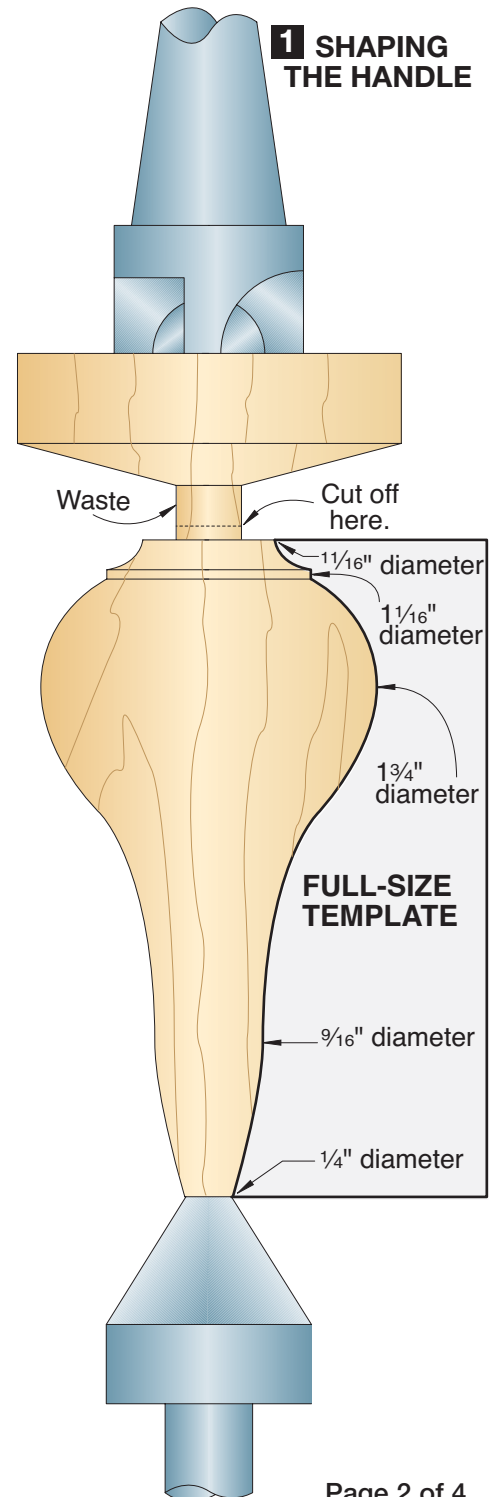
Shape the wood at the small end to match up to the brass nut, but

To ensure full-size patterns are correct size, your printer should be set to print at 100% (not fit to page). Measure full-size patterns to verify size.

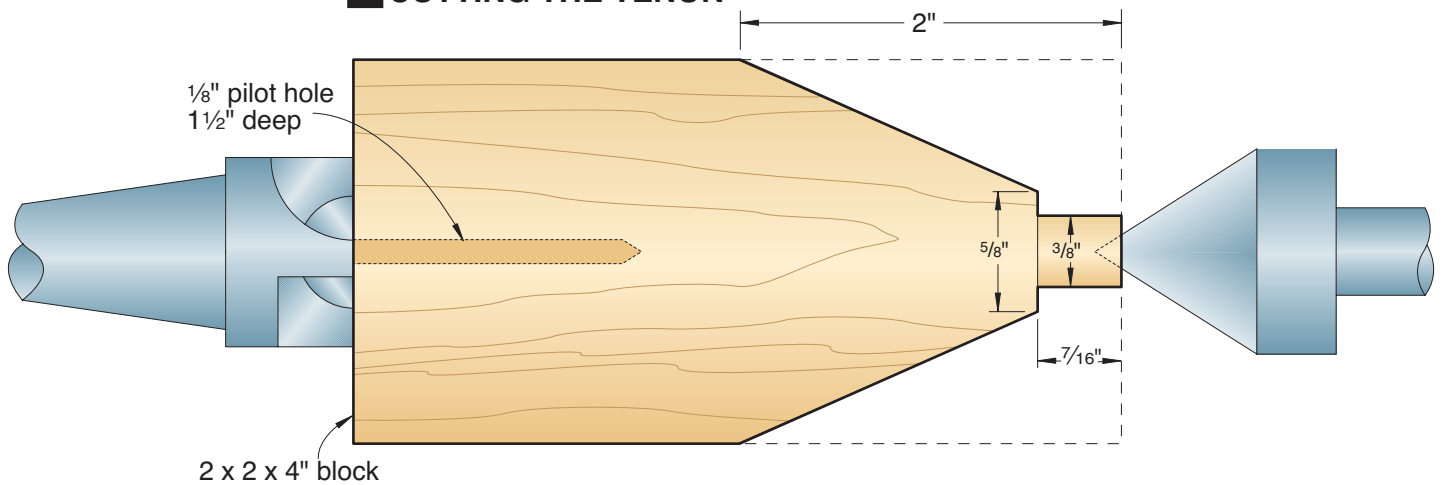


SCALE

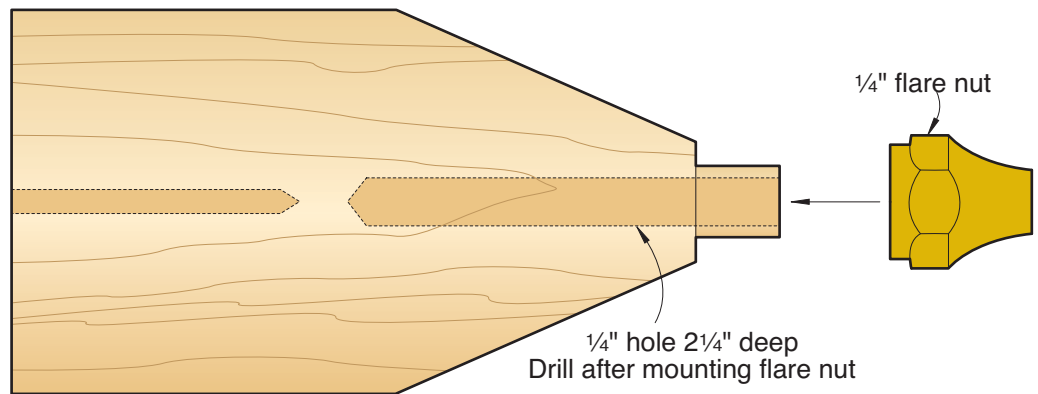
## 1 SHAPING THE HANDLE



## 2 CUTTING THE TENON



## 3 ATTACHING THE FLARE NUT



be careful not to run your gouge into the metal. When the shape is right, make a pass with your skew chisel to smooth the surface. Sand with 150-, 220-, 320-, and 400-grit sandpaper. Polish the brass with 400- and 600-grit. Remove from the lathe.

### Topping off the handle

With a 1/4" brad-point bit and a drill press, bore the shaft hole 2 1/4" deep from the brass-trimmed end. Turn the handle around, and drill a 3/8" hole 3/4" deep at the top. Cut a 3/8" dowel 5/8" long. Find and mark the center on one end, and then drill a 5/32" hole through the length of the piece.

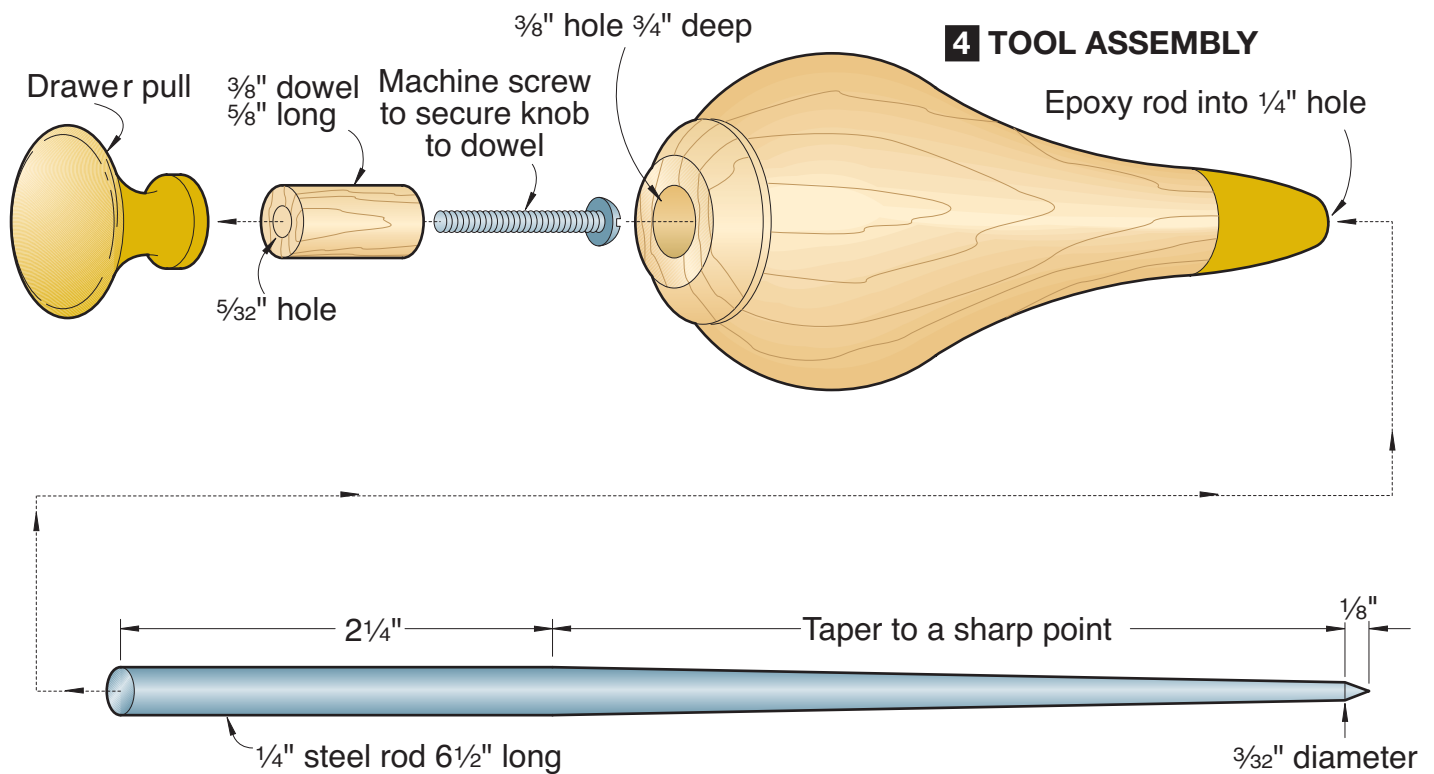
Coat the attaching screw for a

round brass drawer pull with epoxy, and push it through the hole. Apply epoxy on top of the dowel, and then thread the pull onto the screw. Then, epoxy the dowel into the handle hole.

### Getting to the point

*Note: Sparks will fly as you make the blade. To be on the safe side, clean the sawdust from your sander, and don't run your dust collector while grinding the steel rod. Cool the blade with water as needed, and wear eye protection.*

Chuck a 6 1/2" length of 1/4" steel rod into your portable electric drill. Then, turn on your stationary disc/belt sander, and bring the rotating rod against the moving



#### 4 TOOL ASSEMBLY

abrasive to taper it. Hold the drill at a slight angle to the sander and aim it so that the abrasive moves away from the rod end.

Polish the shaft with 150-through 600-grit sandpaper, and then grind the final  $1/8$ " at the tip to a sharp point by holding the drill at a steeper angle. Epoxy the finished blade into the handle.

Mask off the brass knob, brass nut, and blade, and then apply walnut stain and filler to the handle. Spray on three coats of clear lacquer, rubbing it out with

0000 steel wool and furniture wax. Finally, peel off the tape and polish the shaft, brass nut, and knob with a metal polish.

#### Buying Guide

•**Metal kit.** Brass knob, flare nut,  $1/4 \times 6\frac{1}{2}$ " stainless steel rod, kit no. CE-SCR, \$8.95 ppd. Schlabaugh & Sons, 720 14th Street, Kalona, IA 52247, 800-346-9663 or order online at: [www.schsons.com](http://www.schsons.com) <<http://www.schsons.com>>

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