

Marking Gauge Plan of Procedure*

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Materials

Head	1 – 1 1/8" x 1 7/8" x 2 7/8" hardwood* (see Notes)
Beam	1 – 5/8" x 5/8" x 8" hardwood (see Notes)
Wedge	1 – 1/4" x 1/2" x 3 1/8" hardwood (see Notes)
Pin	1 – 5/64" drill bit (dull or broken is fine, 3/32" will also work)

Notes: Leave all parts a little oversize in thickness and width so they can be planed to size. Leave the head and wedge at least 8" long in order to hold the parts for layout and joinery. Leave the beam about 9" long so the end can be used to back up the mortise during cutting. A relatively hard wood works best – cherry or beech is great; walnut will work but it will be difficult to see layout lines. Maple is too hard. Oak too open-grained, but it will work.

Procedure

1. Plane the faces and edges of the head square and to final dimension. Then, lay out the mortises on the end of the stock. Make sure the beam mortise is marked on both faces, and the wedge mortise is on both edges.
2. Drill out the beam mortise hole on a drill press with a 1/2" bit. Drill from both sides to ensure you don't get tearout.
3. Cut out the remainder of the material with a chisel. Make sure the mortise sides are flat or slightly undercut, and square to the faces.
4. Plane the beam to fit in the mortise with little play from side to side. Some play up and down is okay; the wedge will take care of that.
5. Back at the drill press with a 3/16" bit, drill out the mortise for the wedge. When drilling, install the beam into the head, with just the very end of the beam in the mortise to back up the cut. You will cut into the beam, but if you left it long you can cut off the damaged portion later. Drill from both sides about halfway through, keeping in mind that the mortise is wedge-shaped.
6. Cut out the remainder of the mortise material with a 1/4" chisel. Install the end of the beam in the mortise while chiseling to minimize tearout. Make sure the mortise sides, especially the angled surface for the wedge, are straight and flat.
7. Cut the beam to the final length. Sand lightly to remove sharp edges.
8. Plane the wedge stock to thickness and plane one edge flat and square. Lay out the wedge angle on the end of the stock, *without* the rounded bump at the end. Note that the 1/4" dimension in the article should be closer to 9/32". Cut the angle and tweak as necessary to get a good fit. You may find that your mortise needs some final tweaking also.
9. Once the wedge angle is determined, lay out the wedge again, but this time include the rounded bump on the stock. Cut the bump and wedge profile with a coping saw but don't cut the part to length yet. File or chisel the wedge and bump to shape, then check the fit in the head with the beam installed. Tweak as necessary.
10. When the wedge fits correctly, cut it to length and file the end round per the drawing.
11. Lay out and cut the rounded profile on the end of the head, then use a rasp and/or file to finish the profile. Cut the head to length, and then lay out and cut/plane the chamfer to size.
12. Drill the hole for the pin (with a sharp bit). Grind the end of the pin per the article, cut/grind to length, and install. It should be a tight fit. If not, wet the hole with water, allow it to dry, and try again. If that doesn't work, use CA glue.
13. Lightly sand any sharp edges and you're done.

*This procedure supplements the December 2006 Popular Woodworking article, "Mystery of the Marking Gauge" by Dean Jansa. See the [article](#) for part dimensions.