

Bench Deadman

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There are few clamping jobs that are more difficult than trying to secure something big so that you can work on its edge. Mortising a large door for a hinge is a common situation. Cleaning up the long edge of a board you just hand sawed is another.

These problems are quickly and easily solved with \$10 and by taking a lesson from 18th-century joiners. A common feature on older benches is what's called a sliding deadman. This contraption works with your face vise to support work that is long, wide or both long and wide. I adapted mine from a sketch of a deadman by Graham Blackburn that was featured in his excellent book "Traditional Woodworking Handtools" (The Lyons Press.) This particular version is sized to fit our "\$175 Workbench" from the February 2001 issue, though you can easily cut the rails and the sliding deadman to fit your bench.

After you determine the proper dimensions for all your parts, begin by cutting your pieces to rough size. Cut a 3/8"-deep x 9/16" wide groove in the center of a long edge of each rail. Use a dado stack in your table saw, a straight bit in your router or a plough plane to cut the groove. Before you cut the curves on the deadman itself, bore the 5/8" wide groove in the center of a long edge of each rail. Use a dado stack in your table saw, a straight bit in your router or a plough plane to cut the groove.

Before you cut the curves on the deadman itself, bore the 5/8" diameter holes through the part for the ledge. I bored two staggered rows of holes; each hole is 2" down from the one above it. The topmost hole is located so that when the ledge is in place in the deadman, it lines up with the rails on my face vise. Cut the 1/2"-long x 1/2"-thick tenons on both ends of the deadman. The tenons are slightly thinner than the width of the grooves they ride in. Now cut the deadman to shape. The long edges are curved in 7/8" so they are easy to grasp when the deadman is resting

drawing. Then I chopped out the waste with a chisel. If you like, you can whittle or sand the edges of the opening to give them an attractive chamfer.

To locate the bolt holes in the ends of the stretchers, I made a thin-plywood (you could use cardboard) template cut to the same dimensions as the cross section of a stretcher, in this case about 1-1/2-in. by 5-1/2-in. The template is used to mark the center for each 3/8-in.-dia. bolt hole, and then these holes are drilled through until they intersect with the cross holes. A spade bit in a portable electric drill works fine in endgrain, although I prefer to use a modified auger bit in a hand brace. To modify the bit, I just filed the spurs off, and it chewed right through endgrain. I tried to drill accurately by checking that the bit was parallel to the face and edge of the stretcher, and stopping and rechecking frequently. Because the hole is much larger than the bolt, dead accuracy isn't necessary; as I've said, this joint is very forgiving.

If you plan to disassemble and assemble the bench often, you might want to add an alignment dowel on the end of each stretcher. This short, 1/2-in.-dia. Dowel keeps the stretcher aligned during assembly and mates to a slightly oversized hole in the leg.

Next, mark and cut out the relief area on each stretcher end, leaving two 1-in.-long contact areas. A 1/4-in.-deep relief is all you need, but if you'd like to add a decorative touch, you can cut a fancy shape; just avoid cutting too near the cross hole or you'll risk splitting the joint when you tighten the bolt. I cut out the relief area on a bandsaw, but you could use a sabersaw or chop out the waste by hand with a chisel.

Use the same template described above to mark the positions of the bolt holes on the legs. Each pair of legs is laid out differently, so be sure to mark carefully. If you choose to countersink the bolt heads, drill the countersunk holes first. A 1-in.-dia. hole matches the diameter of washers normally used with 3/8-in. bolts. Drill the bolt holes oversized— 5/8-in. holes for the 3/8-in. bolts—as you did on the stretcher ends earlier.

Assemble the bench frame by first bolting together the legs and end stretchers, and then joining them with the side stretchers. The joints will seem loose and sloppy when first assembled; simply position and tighten them using two washers under each nut. You might need to retighten the joints after they've settled for a few days.

Fitting the benchtop

For my benchtop, I glued up some 1-1/2-in.-thick maple I had lying around. An easier (although more expensive) alternative is to buy a length of ready-made butcher-block countertop, available from many building-supply stores, home centers and lumber dealers. Bolt the top to the frame through a batten glued to the inside faces of the end stretchers (see the drawing). Bore three 3/8-in. holes in each batten, and then fasten the top with 3/8-in. lag bolts and washers. While the battens keep the top flat, the oversized holes allow the solid-wood top to move with changes in humidity. If you want to add a shelf under your workbench, screw battens to the underside of some 3/4-in.-thick shelf boards; then drop the shelf in place, as shown.