

Do It Yourself

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Workbench: Assembling the Legs and Base

From "[Woodworking](#)"

episode DIW-205 -- [More Projects](#) »

Once the rails and legs are made and joined together by the mortise-and-tenon system, it's time to assemble the base of the table.

Note: This workbench originally appeared in *Workbench Magazine*. Complete plans to build this workbench can be purchased at www.workbenchplans.com.

Materials:

Drill

3/8" spur bit

Masking tape

Wooden peg

Hammer

Scrap wood

Wood glue

3/8" drill bit with extender

1 1/4" Forstner bit

Bolt, washer and nut

Wrench



Mortise-and-tenon joints give the workbench legs added strength and stability.



Figure A



Figure B

1. Begin joining the mortise-and-tenon system at the top. Place drill bit alongside the mortise opening to choose the correct bit. (**Tip:** A piece of masking tape can be wrapped around the drill bit to indicate the correct depth.)
2. Position drill bit in the center of the joint and drill through the front of the leg's surface, through the mortise opening, and into the back of the leg -- but not through the back surface (**figure A**).
3. Fit tenon into the mortise opening. Use hammer to tap a drill bit into the hole to mark drilling position on the tenon's surface.

4. Remove tenon and place on a piece of scrap wood. Drill a hole about 1/32" behind the marked position (**figure B**).
5. Apply glue to both sides of the tenon where it will meet the mortise and slide into the mortise opening. Then hammer a wooden peg (which has been whittled on one end) through the holes in the mortise and tenon (**figure C**). Use a piece of scrap wood to protect the wood as peg is driven into the hole. Drive peg into the hole until it's flush with the surface and remove excess glue. Trim and sand the peg if needed.
6. Repeat for all legs and use bar clamps to secure the base as it dries (**figure D**).
7. Cut stretchers to fit the distance between the legs. Dry-fit one top stretcher just behind the front legs, and another just behind the back set of legs. A long bolt, washer and nut will be used to hold the stretcher in place.
8. Drill a 3/8" hole -- slightly deeper than the length of the bolt -- through the rail and into the stretcher (**figure E**).
9. Use drill and Forstner bit to drill a round 1-1/4" hole into the stretcher (**figure F**) so that it intersects with the bolt's path, just beyond the end of the bolt. Measure carefully before drilling.
10. Add bolt to the hole in the end of the rail (**figure G**). Add a washer and bolt through the 1-1/4" hole in the stretcher and use wrench to tighten.
11. Repeat process to secure the ends of both stretchers.



Figure C



Figure D



Figure E



Figure F



Figure G

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RESOURCES:

Workbench Vise

Model: Record 52 ED

Record Tools

Website: recordtools.com

Setting Up Shop: The Practical Guide to Designing and Building Your Dream Shop

Model: 1561585556

Author: Sandor Nagyszalanczy

Making Workbenches : Planning, Building, Outfitting

Model: 0806905352

Author: Sam Allen

The Workbench Book

Model: 1561582700

Author: Scott Landis

The Small Wood Shop (The Best of Fine Woodworking)

Model: 1561580619

Author: Helen Albert (Editor)

Workbench Magazine

How-to magazine featuring a wide variety of woodworking projects.

Workbench Magazine

Website: www.workbenchmagazine.com

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