The Family Handyman
PROJECT PLAN

Do-it-all mobile workbench

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Shelves that hang when they're not in use (p. 61) . . .

Do-it-all mobile workbench

by David Radtke

shelves that adjust to hold bench-top tools …

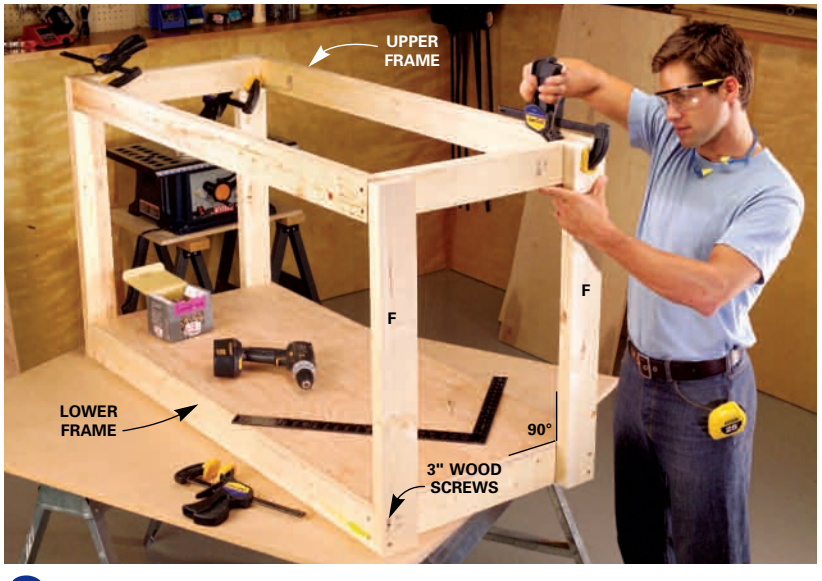
… and fold out to create a huge worktop

If you have a tight garage and your workspace has to double as a parking space, this is the bench for you. As you can see, it folds down and has plenty of tool storage. And when it's time to work on a project, it will expand into a huge worktable.

Adjustable-height shelves on the ends and sides are held in place with sturdy steel brackets that fit into special double-slotted standards. One end shelf can be used to support your portable table saw, while the main worktop area and other end shelf both serve as an outfeed table. The longer side shelves

1 **Predrill 1/8-in. holes and screw the three horizontal shelf frames together with 3-in. wood screws.**

2 **Cut the two pieces of 3/4-in. plywood (E) for the lower and middle shelves and screw them to the frames with 2-in. wood screws. Make sure the frames are perfectly square as you assemble them.**



3 **Screw the legs (F) to the bottom frame with a pair of 3-in. wood screws at each corner, then clamp and screw the upper frame flush with the top of the legs. Make sure the legs are square to the frames and then add another pair of screws to each corner. Clamp and screw the center shelf as well.**

can be adapted to fit your miter saw with additional brackets to support your workpiece as you cut. You can also set all the shelves even with the central worktop and create a huge, 4 x 8-ft. assembly table. Once you start using this bench, you'll find dozens of ways to make it work for a variety of tools and projects.

The bench frame is made from ordinary construction-grade lumber, and the horizontal shelves and worktop are made from 3/4-in. thick hardwood plywood. You can use standard pine or fir plywood, but we recommend hardwood plywood because it's less prone to warping. There's no fancy joinery to bog down this rock-solid project. It's all held together with wood screws. The 3-in. swivel casters on the bottom let you maneuver it into the tightest of garage spaces and then lock it into place when it's time to work.

Keep in mind that as strong as the adjustable bracket system is, the adjustable shelves aren't designed to withstand lots of pounding. They're great for assembly work and the steady, concentrated weight of a tool station. So if you have a lot of pounding and hammering to do, you'll have to confine this activity to the central main worktop.

The entire project will cost about $175, including the hardware, which is

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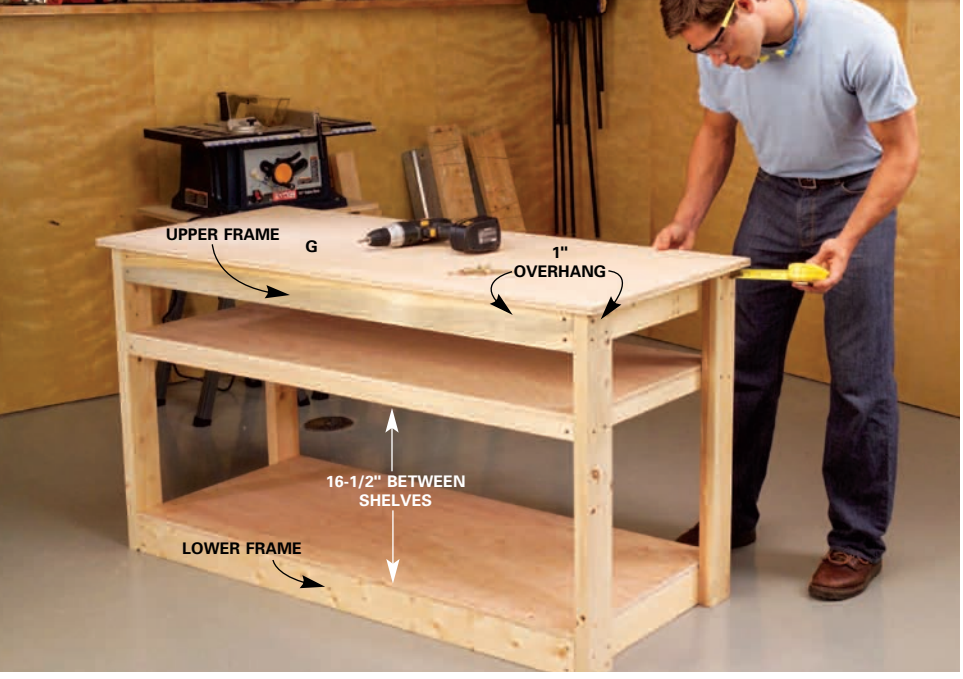
Cutting List

KEY	PCS.	SIZE & DESCRIPTION
A	4	1-1/2" x 3-1/2" x 54-1/2" shelf frame
B	4	1-1/2" x 3-1/2" x 21" shelf frame
C	2	1-1/2" x 1-1/2" x 54-1/2" center shelf frame
D	2	1-1/2" x 1-1/2" x 21" center shelf frame
E	2	3/4" x 23-15/16" x 54-1/2" lower and middle shelves
F	4	1-1/2" x 3-1/2" x 31-7/8" legs
G	1	3/4" x 26" x 59-1/2" worktop
H	2	3/4" x 26" x 18" end shelves
J	2	3/4" x 12" x 59-1/2" side shelves
K	2	1-1/2" x 3-1/2" x 54-1/2" undermount side shelf supports

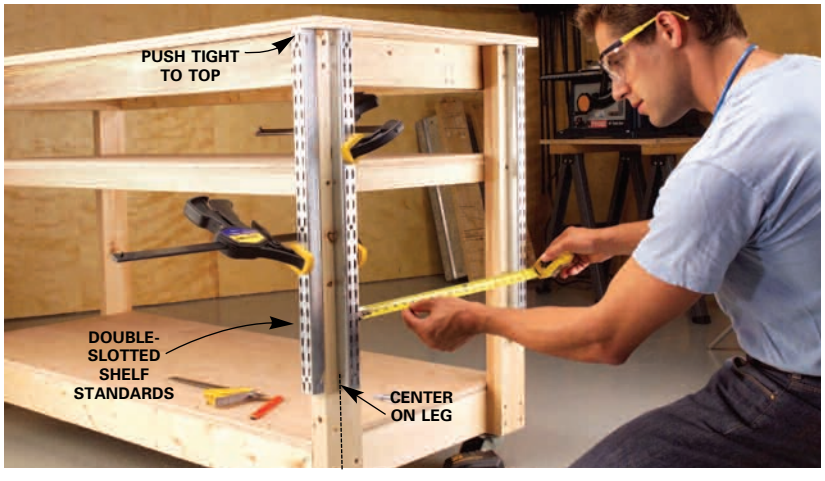
Figure A

Mobile Workbench



4 **Cut the top from a sheet of 3/4-in. plywood and screw it to the top of the legs and to the upper frame with 2-in. wood screws. Make sure to leave a 1-in. overhang at each leg corner.**

5 **Flip the bench over and screw 2x4 blocks into the corners as shown. Position your casters 1/4 in. from the outer edge and drill pilot holes for the No. 12 x 1-1/2 in. pan head screws. Drive the screws into the legs, frame and block to secure the casters.**



6 **Center the slotted standards on the faces of the 2x4s. Drive No. 10 x 2-1/2 in. screws through the holes in the standards and into the legs. Make sure the standards are parallel with each other.**

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a great value for a versatile workbench that'll give years of service. You'll also enjoy how quickly this project goes together. Once you have the materials in hand, you'll be able to complete it in less than a day.

Get it all at your home center and hardware store

It's worth your time to sift through the lumber pile to get good-looking, straight 2x4s and 2x2s. Remember, loose knots can weaken a board, so only select wood with tight knots. Make sure the plywood you select is flat. We found nice-looking 3/4-in. birch plywood at a local home center for the bargain price of $39 per sheet.

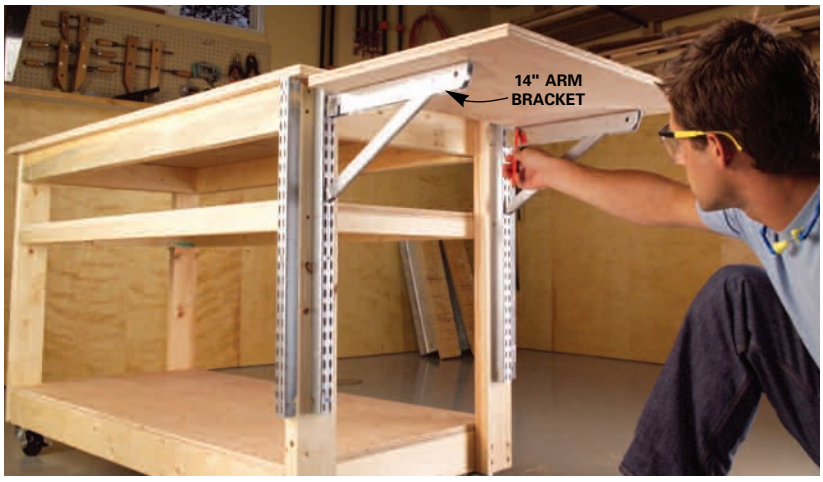
The adjustable shelf standards and bracket are available at most home centers and hardware stores. If you can't find this hardware locally, check our Buyer's Guide on p. 62.

We used a Pop riveter ($20) to attach the brackets (**Photo 11**). This useful tool is fairly inexpensive and has dozens of uses around the home. Once you get one, you'll never understand how you lived without it.

Assemble the workbench in sections

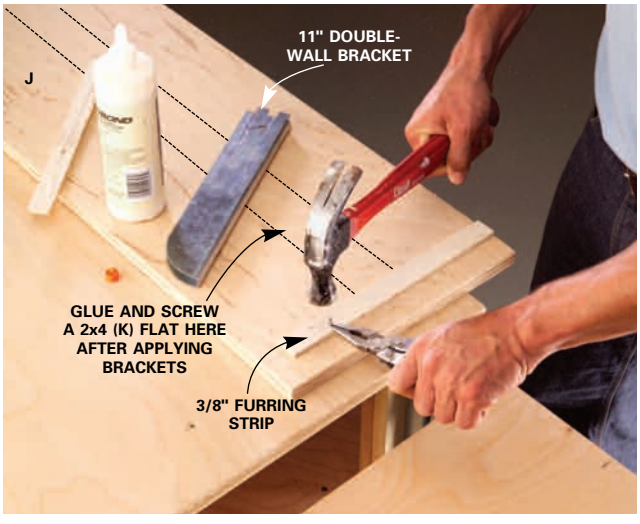
For this project, it's important to cut all your plywood and lumber pieces accurately and square so that the slotted standards and brackets align properly. Clamp a straightedge guide to your plywood to get straight cuts.

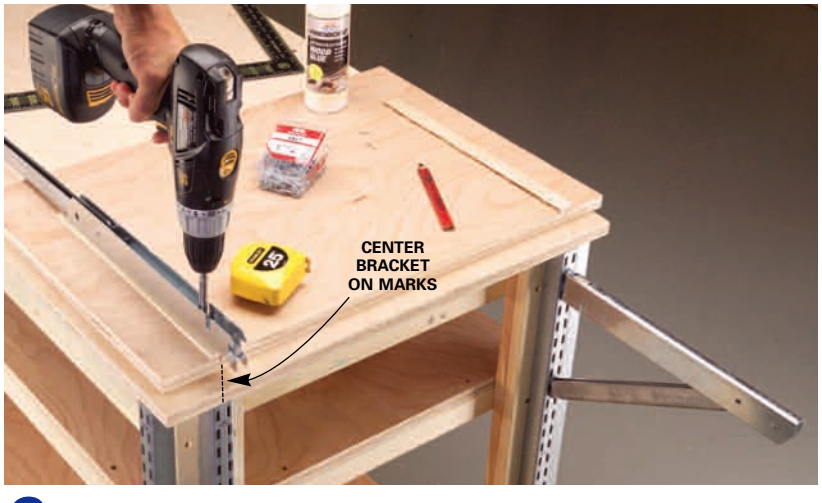
Start by building the three frames (**Photo 1**) that make up the bottom and middle shelf and the worktop. All the frames have the same length and width measurements. The bottom and the middle frames have the same size plywood. The plywood for the worktop is wider and longer to overlap the ends of the steel standards. Follow **Photos 1 – 5** for the assembly instructions for the central structure of the workbench.



7 **Push the brackets into the slots, center the shelf and then mark the bracket location on the rear of the shelf as shown. Then remove the shelf and extend the marks with a framing square.**

8 **Cut furring strips to raise the shelves just enough to be even with the main worktop. We needed 3/16-in. strips for the end shelves (H) and 3/8-in. strips for the side shelves (J).**





9 **Fasten the shelf brackets to the bottom of the shelves with No. 8 x 1-in. pan head sheet metal screws.**

Screw the standards securely to the 2x4 legs

Make sure to center the standards on the front and side faces of the 2x4 legs (**Photo 6**). Accuracy is important because it'll allow you to interchange the shelves from side to side or hang both longer shelves on one side for storage. You'll also notice a top and a bottom on each standard. Be sure to orient them perfectly and push the standard against the bottom side of the worktop before securing it. Predrill before you screw the standards into place. Measure the distance between the top and the bottom of each standard and get them exactly parallel (**Photo 6**) as you drive the screws. Snug them firmly, but without distorting the profile of the standard.

The easiest way to accurately position the brackets on the bottom of the shelves is to mount the brackets first, then set each shelf over the bracket (**Photo 7**). Mark each side of the bracket near the standard and then remove the shelf and extend those marks out to the far edge of the shelf with a framing square to make sure they stay parallel.

Before you screw the brackets to the bottom of the shelves, be sure to cut and glue furring strips to the bottom side of each shelf directly under the bracket. These strips add extra heft for the screws and build up each shelf just enough for them to lie flush with the central worktop. Apply glue and tack the strips on with small brads (**Photo 8**). Transfer the earlier marks you made onto the strips and then screw the brackets onto the shelf (**Photo 9**). Check **Figure A** for the correct mounting setbacks for the brackets.

Pop-rivet the ends of single brackets to the sides of each bracket

The secret to adapting the brackets so the shelves can hang from the workbench is to cut the hooked ends off single-wall brackets and rivet them

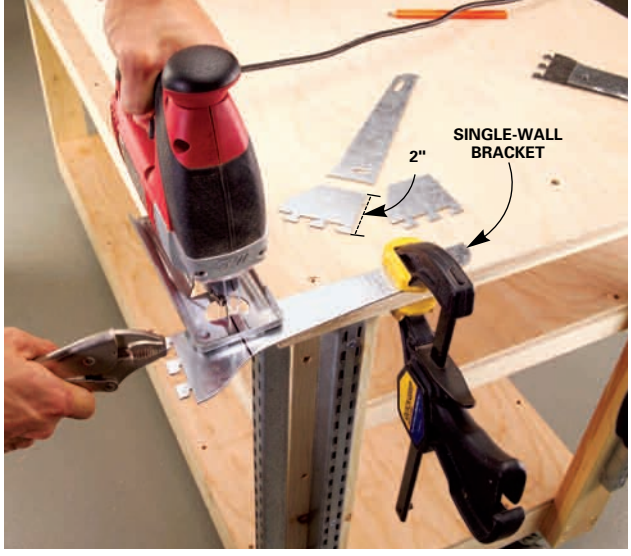
to the inside of the double-wall brackets (**Photos 10 – 12**). Install a metal-cutting blade in your jigsaw to cut the single-wall brackets as shown in **Photo 10**. File the edges to remove sharp burrs and then clamp the piece to the side of the bracket (1 in. from the end of the bracket, excluding the hook; **Photo 11**). Drill two 1/8-in. holes through both pieces and then Pop-rivet them together. Make sure you accurately position the pieces so your shelf will hang level from the standards. Remember to fasten one cutoff piece on the inside face of one bracket and the other on the outside face; otherwise, the hooks won't line up with the slots.

Once you've got the shelves and brackets ready, try them out. Make sure the hooks seat solidly in the standards and then check the shelf heights. When placed in the top slots, they should be even with the central bench top. If they're high, unscrew the bracket and plane the wood strip slightly. If they're lower than the central worktop, add some washers between the bracket and the shelf to nudge them flush.

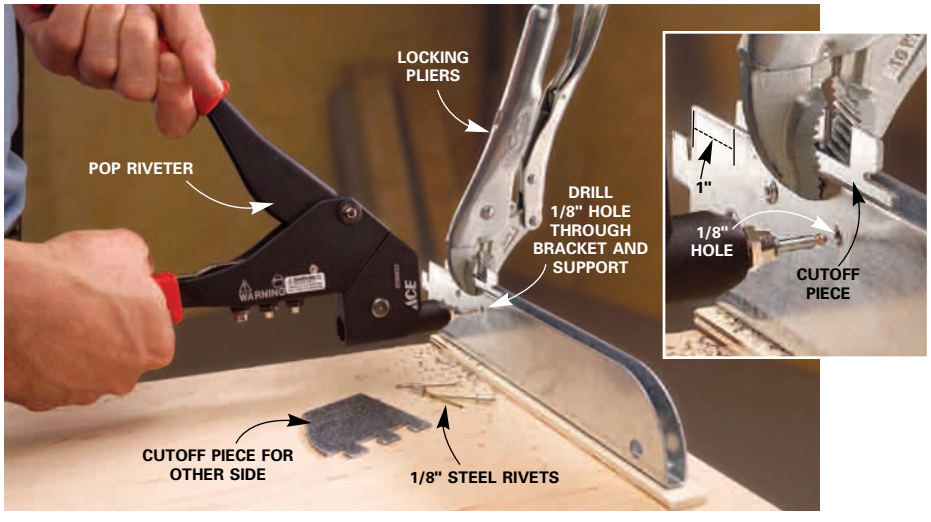
You'll find the end shelf brackets, with the support arms, a bit more stubborn to remove from the slots than the regular brackets. I found it best to hold the shelf front and give it a firm jerk upward for a clean release every time.

Adapt your tools to fit the workbench

Some tools will work best in this workbench if you cut 3/4-in. plywood bases for them (cut a hole in the bottom of the base for the table saw to release sawdust) and then clamp the base to the shelf when you're using it. You may have to cut strips and glue them to the bottom of your table saw tool base so it lines up with the top of the workbench. You may have to do the same for your router table or surface planer. We've only shown you a



10 **Cut the single-wall brackets 2 in. from the slotted edge for the side shelf (J) brackets and 1-1/2 in. for the end shelf (H) brackets. File the cut edges to remove the burrs.**



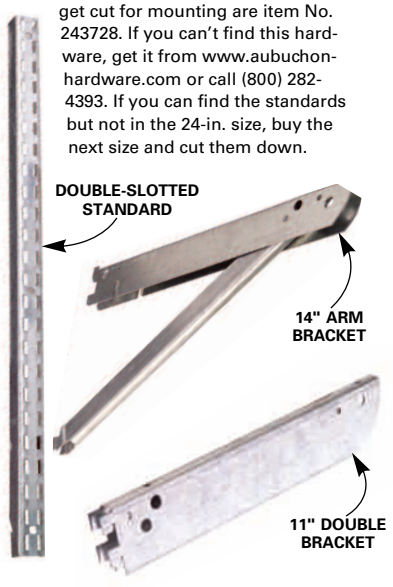
11 **Clamp the cutoff single-wall bracket to the double-wall bracket 1 in. from the slotted end of the bracket. Drill two 1/8-in. diameter holes through one side of the bracket and the cutoff bracket behind. Push the rivet into the hole and squeeze the riveting tool until the rivet snaps tight.**

12 **Test the fit of your riveted shelf hanger brackets. Finally, cut, glue and screw a 2x4 (K) between the brackets of the long wing shelves (J) to stiffen them.**

few ways to adapt tools to this bench. It's so versatile that with a little ingenuity, you can adapt it to almost any situation.

Buyer's Guide

The Fast Mount brackets we used are made by John Sterling Corp. and available at home centers. The side table 11-in. brackets are item No. 243736. The end shelf 14-in. arm brackets are item No. 243744. The single-wall shelf brackets that get cut for mounting are item No. 243728. If you can't find this hardware, get it from www.aubuchon-hardware.com or call (800) 282-4393. If you can find the standards but not in the 24-in. size, buy the next size and cut them down.



Shopping List

ITEM	QTY.
3/4" hardwood plywood (E, G, H, J)	3
2x2 x 8' pine (C, D)	2
2x4 x 8' pine (F, B)	3
2x4 x 10' pine (A, K)	3
2' long double-slotted standards	8
14" arm brackets	4
11" straight double-wall brackets	6
Single-wall brackets	8
Glue	1 pt.
2" wood screws	2 lbs.
3" wood screws	2 lbs.
No. 10 x 2-1/2" flat head screws	25
No. 12 x 1-1/2" pan head sheet metal screws	16
No. 8 x 1" pan head sheet metal screws	16
No. 8 x 3/4" pan head sheet metal screws (for miter saw work support)	4
3" swivel locking casters	4

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