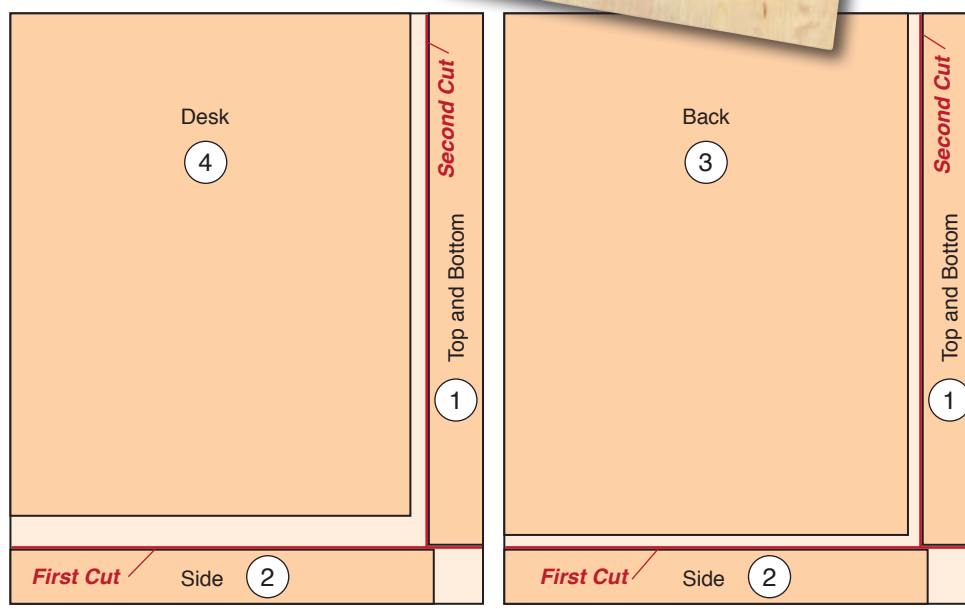
Folding Shop Desk

By Jeff Jacobson

One problem with small shops is that there's never enough fl or space. The same often goes for counter space. This fold-down desk project provides a simple, sturdy solution.

Panel Cutting Diagram
(Top View)



No matter how much I continue to dream about having a dedicated shop space, the fact of the matter is, I do my woodworking in a cramped garage that also stores two cars. So for me, every bit of usable, horizontal work space counts!

This shop desk project came about when I ran across Rockler's Folding Shelf Brackets on *rockler.com* recently. They close by squeezing a release latch on the upper leg and lowering them. It didn't take much daydreaming or time in SketchUp for me to create the plans that now give me the occasional desk space I need. I'm finding it to be a useful landing pad for my laptop when I'm watching a how-to video online. It's also a handy place to spread out project plans or to stage small parts and tools as I work. And then, when I'm done using the desk, I can fold it down and out of the way until the next time I need it. But, while my desk is out in the garage, the range of alternative uses for it is truly wide open, so don't limit your options to just woodworking (see *sidebar*, page 35).

Parting Out a Pair of Panels

I ordered a couple of 24" x 30" Baltic birch panels from Rockler, which will provide just enough material for all the desk components if you cut them carefully. The *Panel Cutting Diagram* above shows the sequence of steps to harvest the parts efficientl . Start by crosscutting a 2¾"-wide strip off of one end of each panel for the two side pieces of the desk's case. Then turn the panels longways and rip a second strip to the same width for the case's top and bottom. Trim down what's left of the panels to form the desk surface, and crosscut the top, bottom and side strips to their final lengths, according to the *Material List* on page 33. Leave the back panel slightly large for now.

If you haven't worked with Baltic birch before, be advised that the surface veneer can splinter if you use a dull or dirty blade. Use your best blade, just to play it safe.

Crosscut a 2¾"-wide strip off the end of each panel first, following the* Plywood Cutting Diagram*, above. These become the sides of the case. Then rip a long strip for the case's top and bottom pieces.

Plow 3/8" dadoes across one face of each of the case's side pieces on both ends. Locate these dadoes 3/8" in from the part ends. Back up the cuts with a larger scrap piece to guide these narrow workpieces past the bit; it will also help minimize tearout when the bit exits the cuts.

Using the same bit and fence settings, cut a groove along the length of the case's top and bottom pieces. These will house the rabbets of the back panel. Make sure to keep the workpieces pressed down firmly against the router table to ensure that the groove depths remain consistent

Reset the fence so the bit's full 3/8" diameter is exposed. With the grooves of the top and bottom workpieces facing up, mill a rabbet on both ends of the parts. Test these cuts on a scrap of the same thickness first, so you can adjust the rabbet proportions accordingl .

Adding Corner Joinery

When you study the *Exploded View* drawing on the next page, you'll see that the top, bottom and sides of the desk's case interlock at the corners with rabbet-and-dado joints — they're easy to machine and very strong. The case's back panel has rabbets along its wide ends that fit into g ooves in the top and bottom pieces to lock it in place.

I opted to cut the corner joints at my router table using a 3/8"-dia. straight bit. If you decide to do the same (you could also cut the joinery with a dado blade at the table saw, if you prefer), raise the bit to 3/8" and lock your router table fence 3/8" away from it.

Plow a dado across the end of each side piece and into the same face of the parts. Because these side pieces are so narrow, be sure to back up the cuts with a scrap piece to prevent the workpieces from skewing away from the fence as you push them over the bit. A backup piece will also prevent the plywood from blowing out along the back edge as the router bit exits the cut.

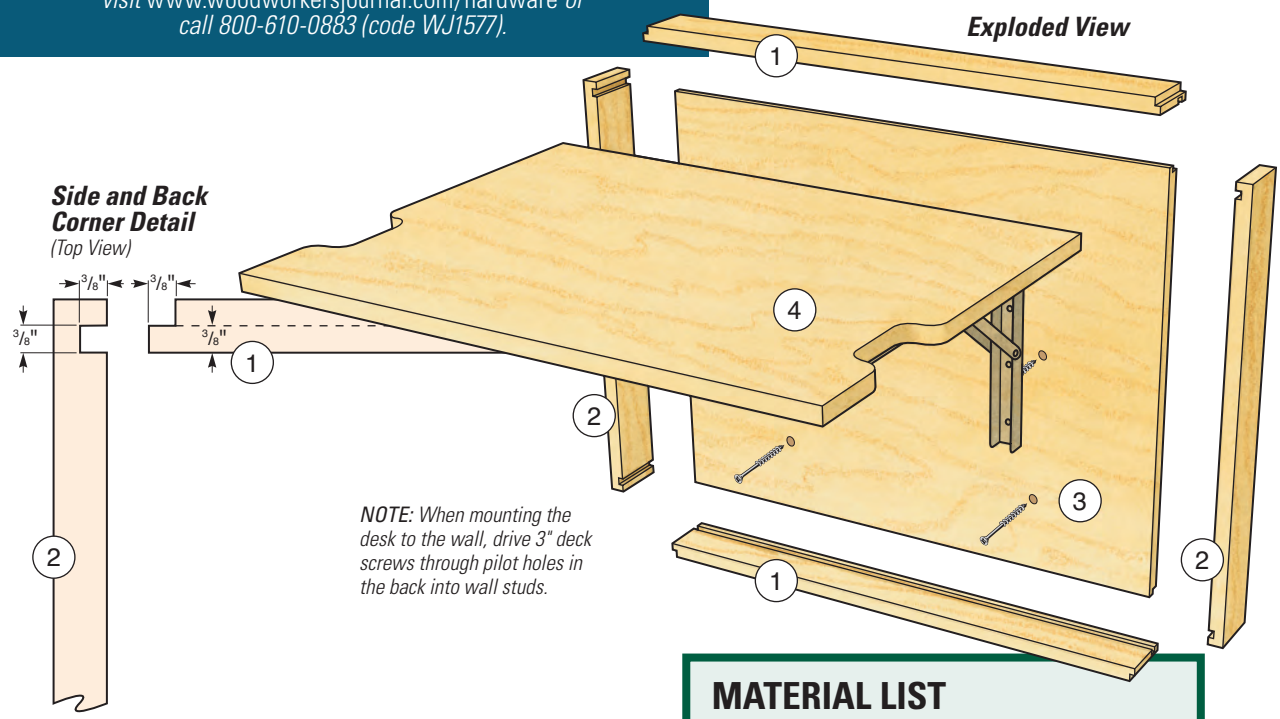
Once those dadoes are milled, it's time to rout a 3/8" x 3/8" groove into the top and bottom pieces of the case. These grooves are inset 3/8" from the part edges, so your router table is already set to go from the previous dado cuts. Plow a groove into each part, keeping the workpieces pressed tightly against the fence and pushed down fi m-ly so the grooves will have a consistent depth all along their length.

The top and bottom pieces require rabbets on their ends to fit the dadoes you first cut on the side pieces. He e's where the router table fence needs to be adjusted and, quite possibly, your bit height, too. Shift the fence forward so the bit has a full 3/8" exposure but no more. Make a test cut on some scrap of the same thickness as your plywood, and see if the test rabbet fits the case's side dadoes. If the joint is too tight, raise

Folding Desk Hard-to-Find Hardware

Folding Shelf Bracket, 16" (2) #65806 ..... $34.99 ea.
3/4" Baltic Birch Plywood, 24"W X 30"L, 2-pk (1) #68236 ..... $39.99 pk.

To purchase these and other products online, visit www.woodworkersjournal.com/hardware *or call 800-610-0883 (code WJ1577).*



MATERIAL LIST

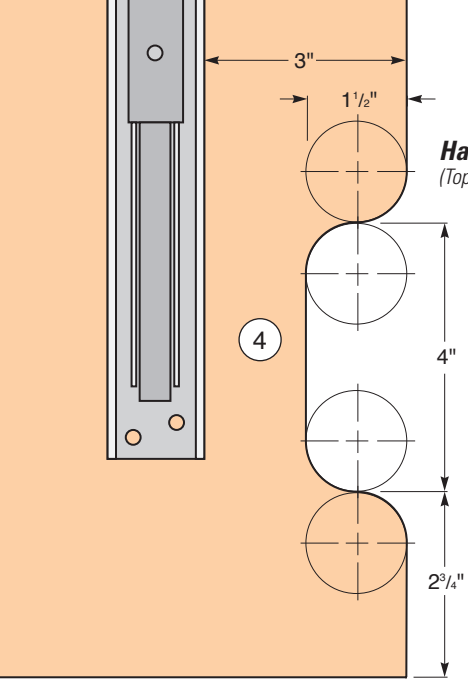
	T x W x L
1 Top and Bottom (2)	3/4" x 2¾" x 27"
2 Sides (2)	3/4" x 2¾" x 21⅜"
3 Back (1)	3/4" x 20⅝" x 26¼"
4 Desk (1)	3/4" x 18⅞" x 26⅛"

the bit a tad. If it's loose, lower the bit instead. Once that's dialed in, mill the rabbets on the top and bottom pieces. Again, back up these cuts with a scrap that stabilizes them and prevents blowout.

Dry-fit the co ner joints, and take an inside measurement of the frame's width and height to verify the final dimensions of the back panel. Cut the panel to size, then head back to the router table to mill a rabbet along its top and bottom ends using the same router table settings. When that's done, carry out

Cut rabbets into the wide edges of the back panel to fit the grooves of the case's top and bottom pieces. But be sure to first trim this panel so it will fi the actual opening of your case when dry assembled.

Final-sand all the parts of the desk's case, then glue and clamp the pieces together. If you plan to paint the project, 120-grit sandpaper is sufficient. For a clear finish, sand up to 180-grit instead



Handle Cutouts
(Top View)

Laying out the handle cutouts is really just a matter of joining pairs of 1½"-dia. circles on each end of the shape: a quarter of one circle's circumference forms the outer curve of the cutout, and one quarter of the adjacent circle forms the inner curve. Make these handle cutouts at least 4" wide or as needed to suit your hand size.

another dry assembly of all the parts. If the joints close well and the back fits its grooves properly, give the pieces a final sanding to 120-grit (for painting) or 180-grit (for a clear finish) and glue and clamp the case together.

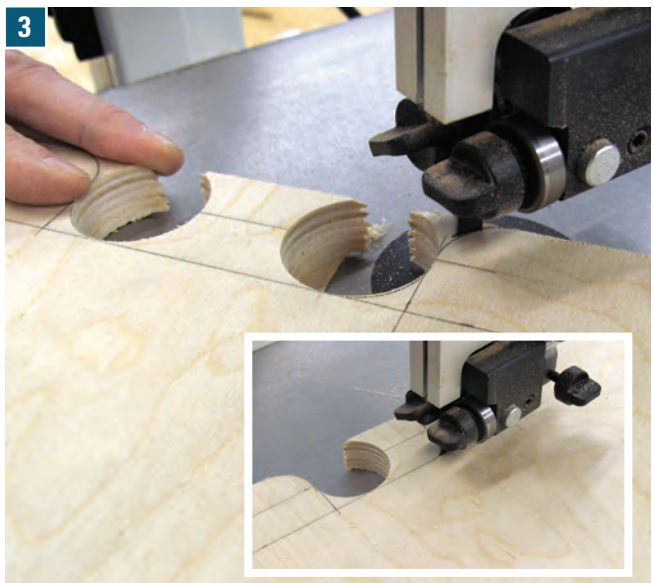
Forming Handle Cutouts

Two cutouts along the edges of the desk surface enable you to simply reach in and lift up to lock the desk into place for use. Lay out these handles 2¾" in from the front edge of the desk surface, using the *Drawing* at left and photo 1, below, as your guides.

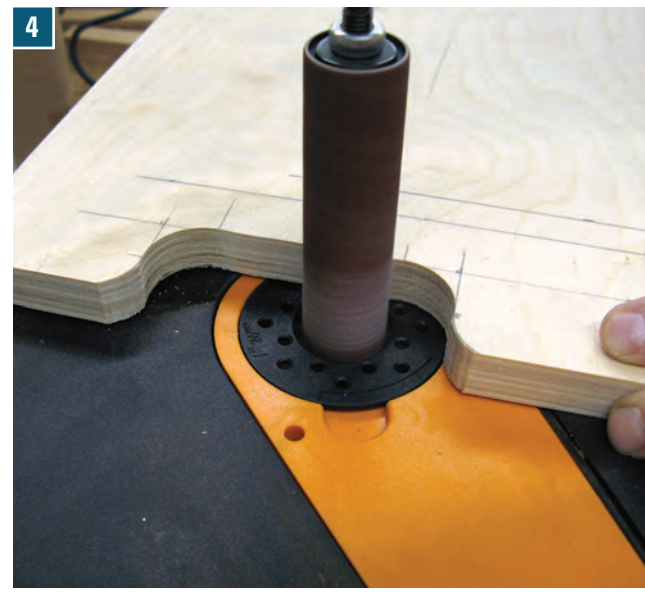
I cut the handles to shape, starting at my drill press with a 1½"-dia. Forstner bit, to form the two inside curves (see

With a compass set to a 3/4" radius, draw pairs of opposite-facing arcs to form the "S"-curves of the handle cutouts on the desktop panel. The centerpoints for scribing these arcs are 3/4" in from the ends of the panel.

Bore the inside curves of each handle with a 1½"-dia. Forstner bit at the drill press. Since the bit intersects the ends of the panel, use a scrap spacer between the panel and the fence to protect the fence from the bit.



Trim the handles' outer curves to shape at the band saw or with a jigsaw. Then, remove the inner waste piece (inset) to form the rough handle cutout.



Shape and smooth the handle cutouts using a spindle sander or with sanding drums on a drill press. In lieu of either of these options, you could also wrap sandpaper around a 3/4" dowel and sand them by hand.

photo 2). Once those were bored, I trimmed the outside curves and removed the inner waste piece at my band saw (see photo 3). Then, I fi ed up my benchtop spindle sander and gave the cutouts a final sanding to blend and smooth the curves (see photo 4).

Mounting the Brackets

Attaching the shelf brackets to the back of the case isn't hard, but what's critical here is that these brackets are exactly parallel to one another and to the sides of the case. If they aren't, they can bind when they are closed. I first positioned the wider (release latch) legs of the brackets 3" in from the narrow ends of the desktop and attached them to it with short screws driven into pilot holes. Then, with the brackets opened, I set the desktop into the case, pushed it up against the case top and adjusted it side to side for even clearance. I drew layout lines to mark the brackets' narrower leg locations and attached the legs to the back with more screws. Test the up-and-down action of the desk, and make any adjustments to the brackets until they articulate smoothly. With that done, remove them so you can prime and paint the wooden parts. Or topcoat them with your favorite clear finish.

Carefully lay out locations for the shelf brackets on the case back and desktop panel. What's most important here is that the brackets are parallel, so their mechanisms will raise and lower without binding. Attach the hardware with screws driven into pilot holes.

When the paint or finish dries, install the hardware. Now, call a buddy over to help you mount this project to a wall. Of course, the right approach is to anchor the back to two wall studs, so locate their spacing with a pair of parallel layout lines on the inside face of the case back. Have your helper hold the project in place on the wall so you can lift the desk surface up and decide on a working height that's most comfortable for you. Mark six installation screw locations on your stud layout lines in the case. Drill pilot holes, and drive 3" deck screws into the wall to mount the desk. Then, put this handy desk to work!

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Think Outside the Shop for Other Uses

There's no reason why a practical, space-saving project like this needs to be pigeonholed to a shop setting! If you add one of these folding desks to your garden shed, you'll have a work surface for amending potting soil in a planter, changing the chainsaw spark plug or whatever task can be made easier by working at standing height. Same goes for the laundry room: a prop-up counter could serve as a place to set the iron while it cools or to fold socks. If the hunting shack is short on counter space, here could be a place to refill the lantern, dismantle a hand gun for cleaning or sort your tackle box lures. And don't overlook the ways you could customize the design further: the shallow space behind the desk could store a clipboard and drawing pad, your measuring and marking tools or a rack of chisels. Add a groove or a simple pencil tray along the front edge of the desk, and you'll never have pencils rolling off. For even more durability, cover the desktop with a scrap of plastic laminate so it won't absorb stains or other chemicals while you're mixing or pouring them. And an additional point of note: these brackets have three locking positions from partially to fully raised (see photos, right). Here's a project with many possibilities!