

Dust-proof Your Contractor's Saw

A shopmade plywood back plate and simple
undermount box collect dust at the source

BY DICK McDONOUGH



Whenever I'm doing a lot of ripping and crosscutting with my saw, I generate a blizzard of airborne sawdust. So to prevent all of that sawdust from filling my shop (and lungs), I mounted a small plywood box under the saw cabinet and connected the box to my dust collector. And to prevent dust from blowing out through the wide-open back of the cabinet, I covered most of the open area with a piece of plywood.

Now when I fire up my dust collector, I'm able to collect 95% of the dust generated by the tablesaw. My shop is considerably cleaner. And so, too, is my dust mask.

In my case, the dust box is mounted to a Delta 10-in. contractor's saw. But the basic idea here is adaptable to just about any contractor-type saw.

Gaps must be filled first

Before starting on the box, I filled the gaps in the joint between the top of the cabinet and the underside of the table with 1/4-in. by 1/4-in. nonadhesive-backed weather stripping (available at hardware stores).

If you see gaps where the top of the stand meets the underside of the cabinet, fill them with 3/16-in. by 1/2-in. adhesive-backed weather stripping. After loosening the bolts that hold the saw cabinet to the stand, slip the weather stripping under the bottom edge of the cabinet, pressing the adhesive surface all along the joint line. When the cabinet is lowered onto the stripping, you end up with a nice seal.

Ramps keep dust off ledges

At the inside bottom edge of the cabinet, the sides bend in to create a horizontal sur-

face for mounting the cabinet to a stand or base. Also, some commercially made stands have a top surface with an opening in the center to let the dust fall through. In both cases, four ledges are created around the bottom of the cabinet.

Unfortunately, these ledges are a perfect place for unwanted sawdust to accumulate and become a nuisance. To solve the problem, I screwed an angled scrap of wood to each of the four ledges. These “ramps” allow the dust to fall off the ledges easily and down into the dust box.

Dust box directs dust to the hose

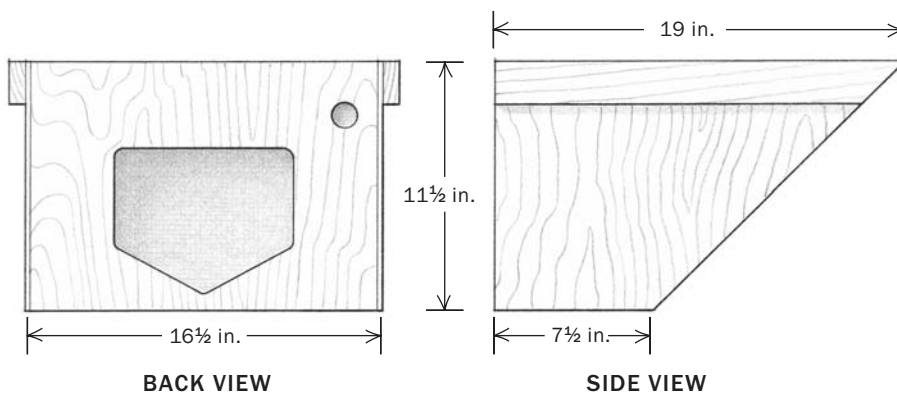
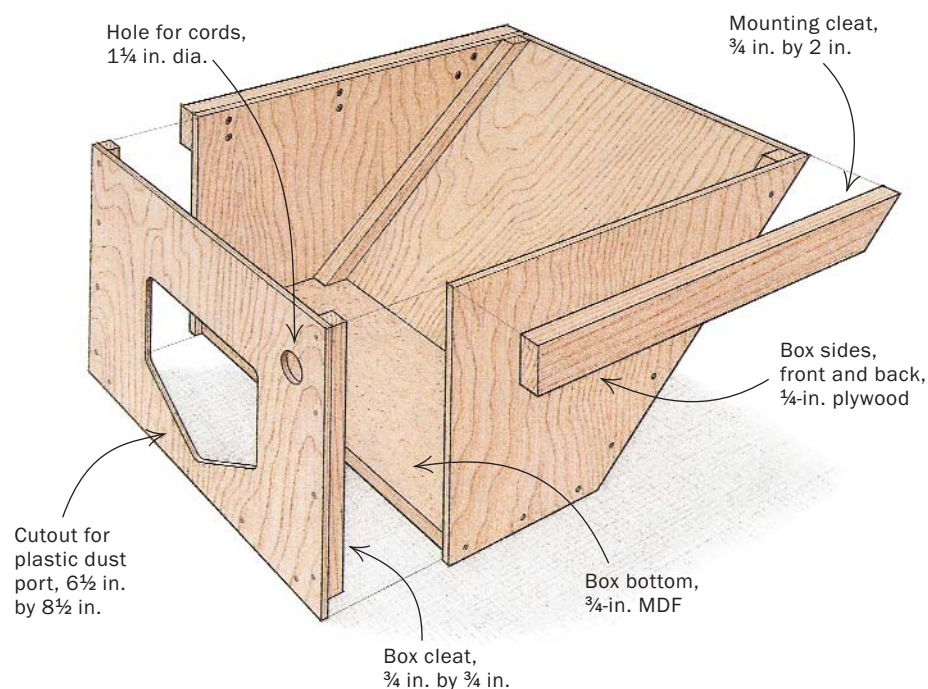
I could have connected my dust-collector hose to a port mounted directly on the bottom of the saw cabinet. But because I often remove the hose and temporarily attach it to other machines, I wanted the port to be easily accessible. So by adding a box under the saw cabinet, I was able to mount a plastic dust port (with a 4-in. outlet) that sticks straight out the back. That way I can get at the port with little effort. And to attach the hose, I just slip it onto the port and tighten an automotive hose clamp.

The box itself is mostly 1/4-in.-thick plywood, with a 3/4-in.-thick medium-density fiberboard (MDF) bottom and a few pine cleats. Tapering the sides of the box helps direct the dust into the port.

There's nothing fussy about joining the parts for the dust box. Once the opening in the back piece (for the dust port) has been cut out with a sabersaw, you just nail or screw the parts in place. Start by attaching the four box cleats. Position them flush with the edges of the front and back pieces

A SIMPLE BOX DOES THE JOB

A tapered box funnels tablesaw dust straight into a dust collector.
(Dimensions based on a Delta 10-in. contractor's saw.)



No fancy joinery required. The author uses ring-shank nails to join the dust-box parts.



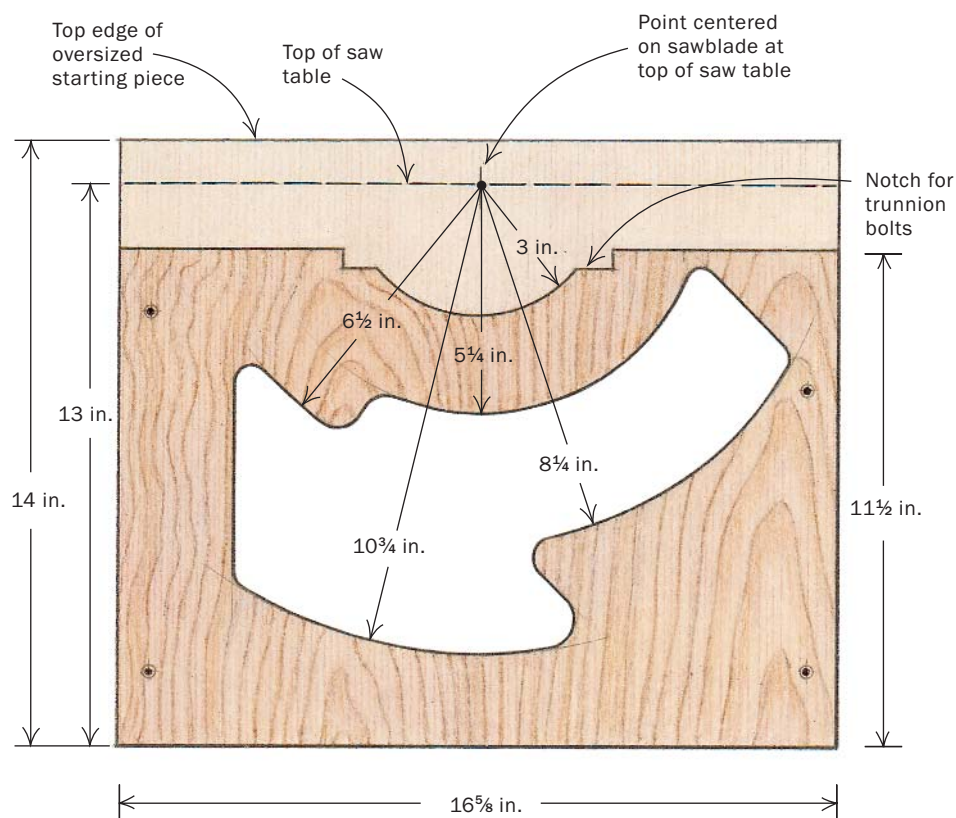
The dust port goes on back. A plastic dust port provides an easily accessible attachment point for the dust-collector hose.



Jack it up. An old scissors jack holds the dust box in place when driving home the sheet-metal screws.

A BACK PLATE IMPROVES EFFICIENCY

Mounting a plate to the back of the saw cabinet helps contain the dust.
(Dimensions based on a Delta 10-in. contractor's saw.)



and attach them with ring-shank nails. After that, cut the bottom to size and bevel its front edge to match the taper of the sides. Then nail the 1/4-in.-thick plywood sides to the bottom. To complete the box, nail through the sides and into the box cleats in the back and front.

Mounting the dust box to the stand is a pretty simple step. The mounting cleats are screwed flush with the top edge of the sides. And after drilling a 1 1/4-in.-dia. access hole for the power cords, the plastic dust port is screwed to the back. The dust port is available from Woodworker's Supply (800-645-9292; part No. 894-738). Then the mounting cleats are attached to the stand by driving sheet-metal screws through the stand and down into the cleats. On some saws you might have to screw through the sides of the cabinet into the side of each mounting cleat.

Back plate helps keep dust in the box

The dust collector works most efficiently when the back of the saw cabinet is at least partially covered. From my experience, if

the back is totally uncovered, some of the dust manages to find its way out through the slot for the handwheel or the sawblade slot in the tablesaw insert. So to help cover the open back of the cabinet, I added a back plate made of 1/4-in.-thick plywood.

The back plate mounts directly to the back of the saw. But it's not quite as simple as cutting the plywood to size and screwing it in place. Because the drive belt and motor mount extend out the back of the saw, some of the plate must be cut away.

Figuring out what portion to remove could be tricky, because the belt and motor mount must be able to move up and down when you're changing the height of the sawblade. Then, too, the belt and motor mount swing in an arc from 0° to 45°. But if you take a few minutes to do some layout, it's a pretty straightforward procedure.

Looking straight at the back of the saw, you can see the arc of travel that's followed by the belt and motor mount. This arc has a radius with a center point that aligns dead-on with the center of the sawblade and the top of the saw table. So it's a good idea to



Transfer the mark. Slip the back plate under the top of the saw to transfer the center point of the arc from the saw to the plate.

start by marking this point on the back edge of your saw.

It will be easier to lay out the opening on the back plate if you cut the plate to a height that equals the distance from the top of the stand to the top of the saw table, plus about 1 in. Don't worry about that extra material. For now, you want the top edge of the plate to extend above the table.

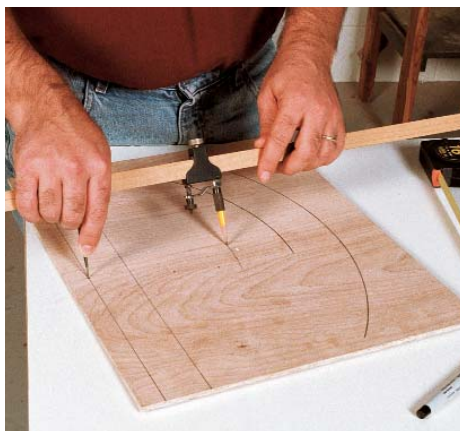
At this point, it's okay to cut the back plate to its final width. Simply measure from one side of the saw to the other and cut the plate to the measured dimension. Then draw a couple of straight lines across the plywood to represent the location of the top and bottom surfaces of the tablesaw. Now you can place the top edge of the plate against the top of the saw table and transfer the location of the center point of the arc from the table to the upper line just drawn on the plywood. Make sure the ends of the plywood are flush with the sides of the saw cabinet.

Once the arc center point has been marked on the back plate, you're ready to scribe the cutout for the belt and the motor mount. First, take measurements directly from the back of the saw. Second, transfer these points to the back plate. And third, use these points to set the compass and scribe the various arcs on the plate.

Start by marking the points for the belt. To do that, raise the blade to its highest point and measure from the center point on the back of the saw table to the top of the belt. Subtract 3/16 in. or so for clearance, and mark this point on the back plate.



Measure the belt in the raised position. Take the first measurement with the sawblade in its highest position.



Scribe the arcs. Establish the upper and lower edges of the cutout by scribing the arcs with a compass.



Cut out the opening. To achieve a nice radius, drill $\frac{3}{4}$ -in.-dia. holes in the corners before cutting out the opening with a sabersaw.

Next, lower the belt all the way to its lowest point and take another measurement. Only this time, measure the lowest point on the belt and *add* $\frac{3}{16}$ in. for clearance.

Now you can measure and mark for the motor-mount cutout. It's the same basic dance step. Measure from the center point on the back of the saw table to the top of the mount, subtracting a bit for clearance. To complete the layout, measure to the lower edge of the mount, adding the usual $\frac{3}{16}$ -in. fudge factor.

Once all of the points have been marked on the plate, simply swing a compass to draw each of the arcs.

Next, mark where these arcs start (blade at 0°) and stop (blade at 45°). With the blade at 0° , measure from the left side of the saw to get end points for the belt and motor mount. You'll want to allow for clearance here, too. Then do the same with the blade at 45° .

One more thing. On my Delta, to allow the back plate to fit tightly against the back of the cabinet, I needed to make a cutout for the back end of the trunnion. It's just a bit more measuring and scribing with the compass. I also had to make a couple of straight clearance cuts to fit around the trunnion mounting bolts.

Once all of the arcs have been scribed, the top edge of the back plate can be trimmed even with the top end of the cabinet sides.

All that's left to do is cut out the marked openings with a sabersaw. But first drill $\frac{3}{4}$ -in.-dia. holes at the corners of the open-

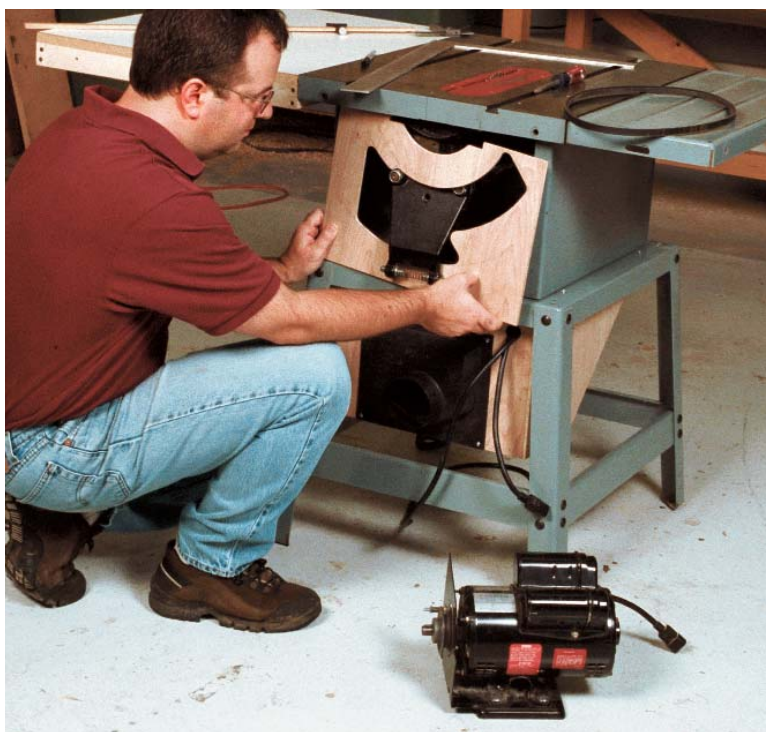
ings. That way the corners end up with a nice radius.

After that, you can slip the plate into position on the back of the cabinet. You might have to loosen the bolts that mount the saw cabinet to the base so that you can raise the cabinet enough to get the plate in place. And to be able to mount the back to some saws, it's necessary to make a couple of horizontal cuts, so you end up attaching two pieces.

Check the clearance of the cutout by raising, lowering and pivoting the blade. If

everything looks okay, go ahead and mount the plate to the back of the saw with a few sheet-metal screws. Once the back plate has been added, you can clamp the dust-collector hose to the port. Then turn on the dust collector, fire up the saw and make some cuts. You'll recognize a difference right away. More dust will be in the collector, where it belongs, than in the air you breathe. □

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Add the back plate. With the motor removed to allow for easier access, slip the plate in place and secure it with a few sheet-metal screws.