

Drill-Press Table with Dust

Tearout-free drilling
on a self-cleaning
surface

BY MIKE
GULDENSTERN

A few years ago, after years of working wood without dust collection, I finally hooked up all my stationary machines to a dust collector—all except my drill press. I searched online but couldn't find products or articles that addressed drill press dust collection. I'd seen some plastic fittings that people use on the end of their 4-in. flex hose to try to catch some chips, but that didn't seem like a great solution.

I decided to make my own drill-press table, one with a built-in dust box below the work surface. I designed it with two slots through the work surface, so chips get sucked down into the dust box and out the dust-collection hose. When I drill narrower workpieces, the chips go right down

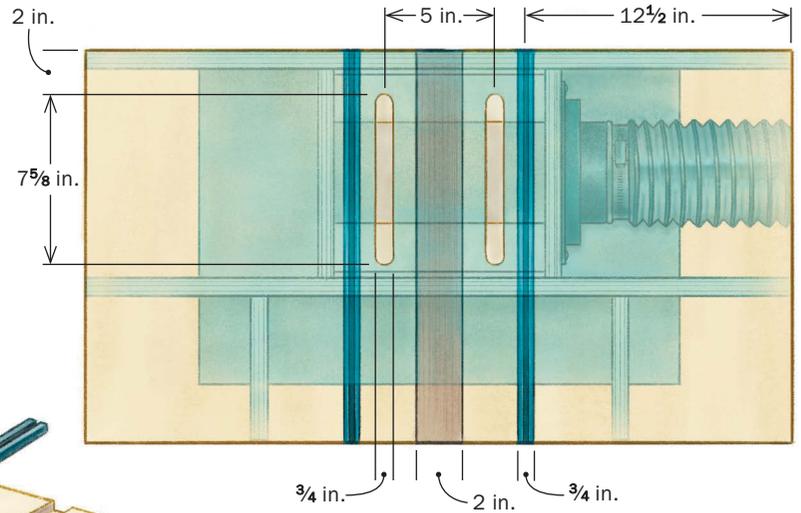


Clean drilling. When you're drilling narrow boards, chips disappear down a pair of slots in the surface as you work. When drilling larger sheets that cover the dust slots, like the one at left, the suction acts like a clamp, helping hold the board in place. When drilling is finished, tip up the board and the chips go down the slots.

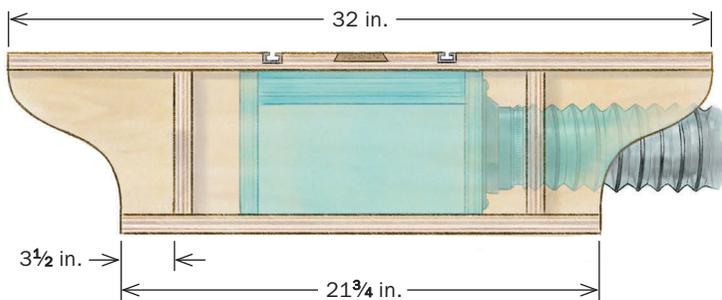
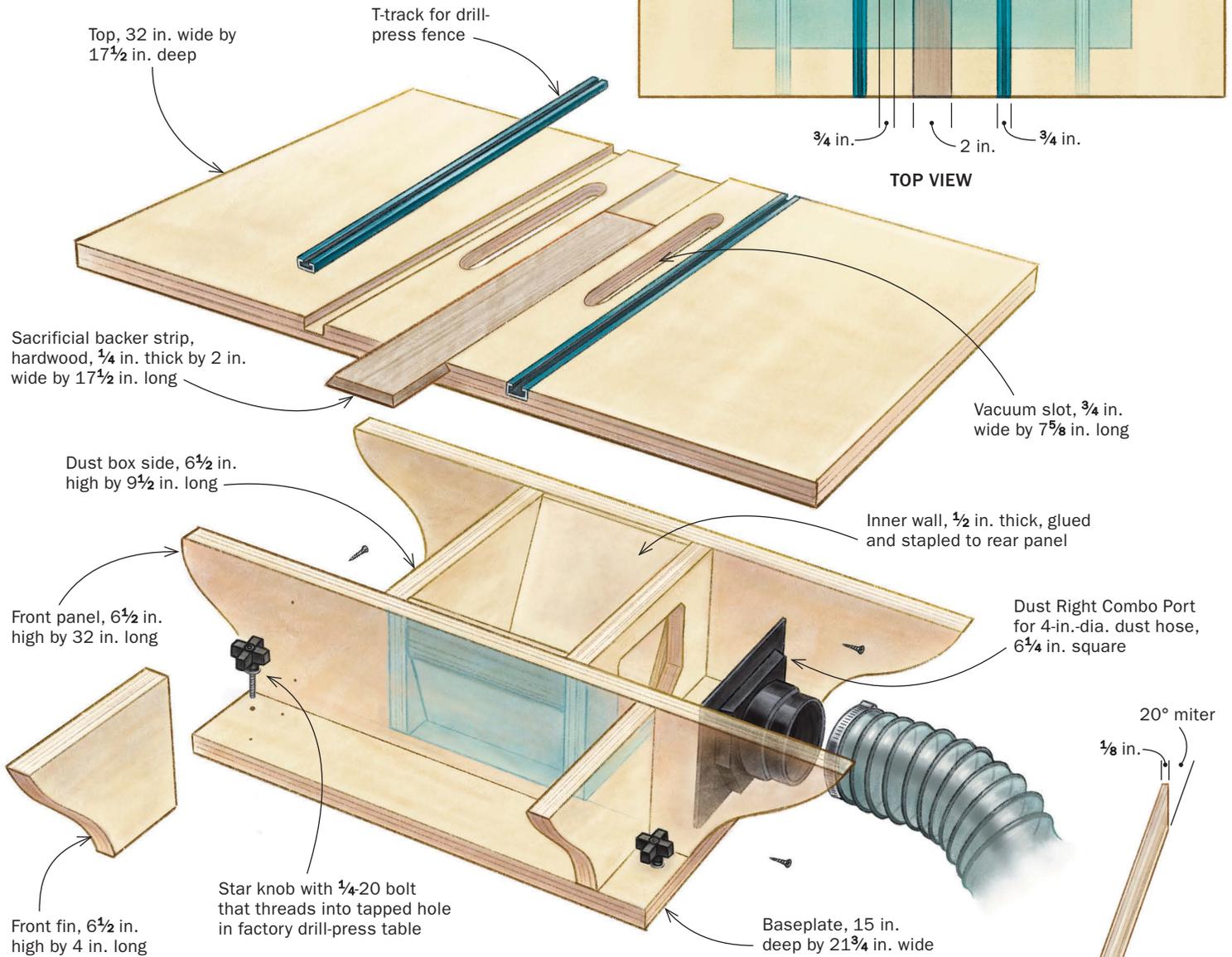
Collection

DRILL-PRESS TABLE

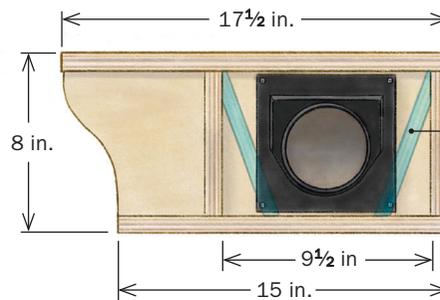
All parts 3/4-in. plywood, except where noted.



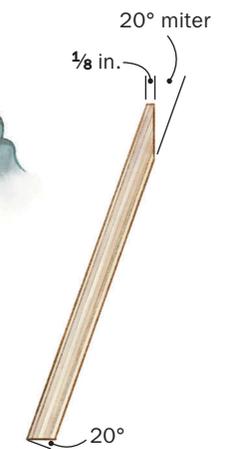
TOP VIEW



FRONT VIEW



SIDE VIEW



ANGLED WALL IMPROVES AIRFLOW

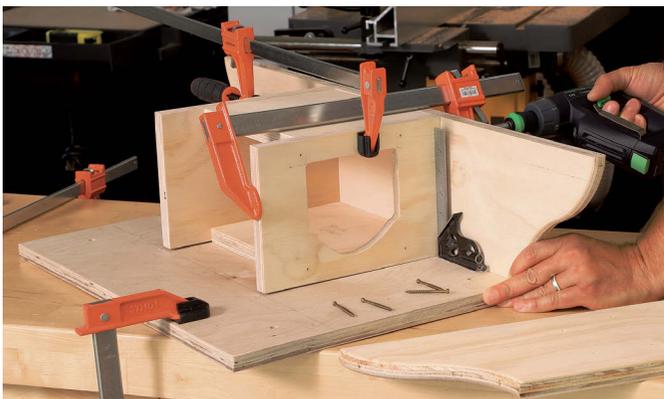
ASSEMBLE THE BASE



Glued and screwed. Guldenstern built the drill-press table from plywood and assembled it with glue and 2-in. star-drive trim-head screws.



Dust opening. Before cutting the sides of the dust box to length, he creates a window in one of them where the dust-collection port will be attached.



Build the dust box. After screwing in one side of the dust box, Guldenstern uses spacers and clamps to hold the other one in position as he screws into it through the back of the fixture.

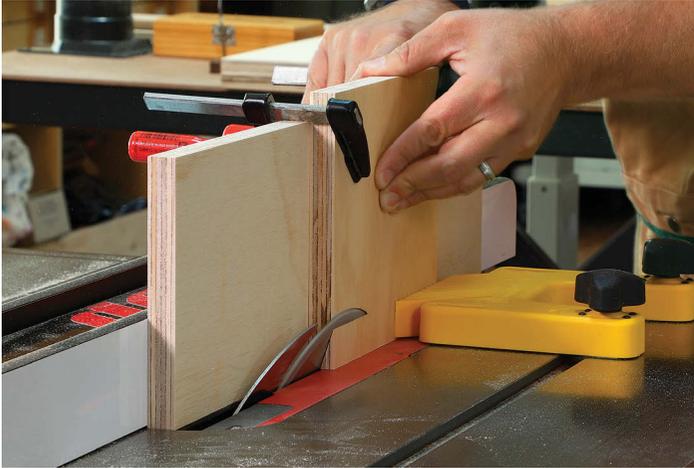


Put the bottom on the top. Once the dust box sides and the front fins are screwed in place, Guldenstern screws through the bottom to firm up the fixture.

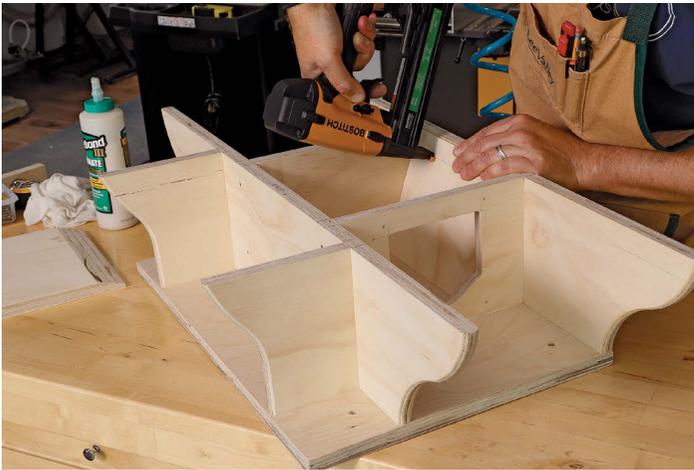
the slots as I'm drilling. When I drill plywood and other large pieces that cover the slots, the vacuum force acts like a clamp, helping hold the workpiece in place while I drill. (It was a happy accident—I wish I could say I intended it.) In that case the chips stay on the panel, and when I'm done drilling I just slide the workpiece out from under the bit, tilt it up, and the mess disappears down the slots.

As I thought about my drilling process, I remembered that I almost always have a sacrificial backer board beneath the workpiece to ensure a clean, splinter-free exit on the holes I bore. That works well, but I realized that on my new table the backer board would cover the vacuum slots. To address that issue, I decided to build a narrow sacrificial backer strip into the top of my new table. I cut a shallow dove-

REFINE THE AIRFLOW



Angled walls funnel the airflow. Using $\frac{1}{2}$ -in. plywood, Guldenstern makes a pair of angled inner walls for the dust box. He miters the top edge at the tablesaw with the workpiece held vertically and clamped to a longer, thicker board for stability. He cuts the bottom edge with the workpiece flat to produce the complementary angle.

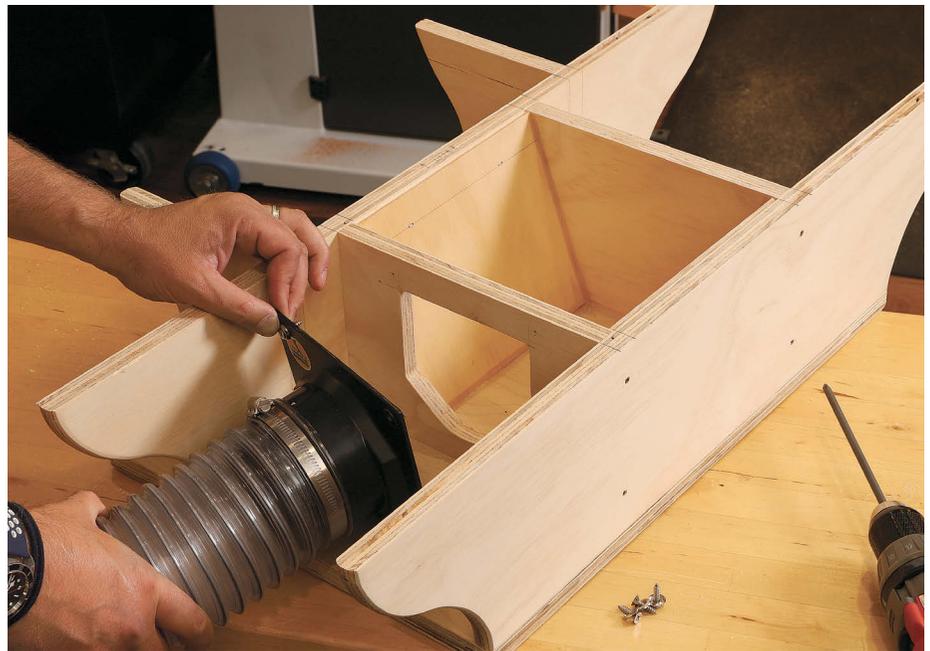


Tack on the inner walls. Glue and staples hold the angled inner walls in place. Caulking the corners minimizes air leakage.

tailed keyway down the center of the top from front to back, and I fitted it with a dovetailed hardwood strip. Now when one section of the backer strip has been drilled too many times, I slide the strip partway in or out—or pull it out and turn it end for end—to present a fresh section.

In addition to cutting the vacuum slots and the dovetailed keyway in the top, I dadoed it for T-tracks to accept my drill-press fence.

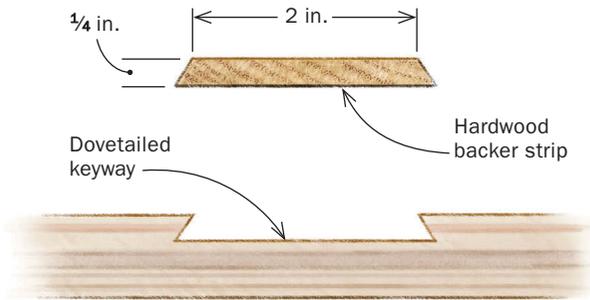
I built the table very simply: just glued and screwed, butt-joined plywood. But I was careful to make the dust box as efficient as possible. In my work running a commercial HVAC testing and balancing company, I've learned a lot about airflow over the years. The bottom line is that air performs a lot like water: It likes to conserve momentum and navigate smooth transitions. It doesn't like 90° turns. So I rounded over the vacuum slots top and



Installing the port. Space will be tight once the top is on, so Guldenstern clamps the hose to the port and screws the port to the dust box before attaching the fixture's top.

MACHINE AND ATTACH THE TOP

SACRIFICIAL STRIP FOR CLEAN EXITS



A trio of dados. At the tablesaw, use a dado set to cut a pair of deep dados for the fence track and a shallower one for the dovetailed sacrificial backer strip. After cutting the center dado roughly to width, Guldenstern will angle its edges with a dovetail bit at the router table.



Dust slot sequence. Guldenstern cuts the dust slots by drilling at the ends with a Forstner bit, then connecting the two holes with a jigsaw. Afterward, to make the slots more aerodynamic, he routs a roundover on their edges, doing so on both faces of the top.



Dry assembly. He screws on the top without glue so he'll be able to remove it in the future to access the dust box and dust hose if need be.

ADD THE SACRIFICIAL STRIP AND T-TRACK

bottom to enhance suction and chip flow; I also rounded over the interior edges of the duct opening in the dust box. And I added angled interior walls to the dust box, converting it from a cube to something of a funnel shape, helping guide the airflow and avoiding dead spaces within the box.

I made the top of the table larger than the typical drill-press table, which makes it much nicer to work on. I built the dust box just large enough to accommodate the port for my 4-in. dust hose. And I made the baseplate of the table the same size as the factory table on my drill press. Not wanting to have to deal with clamping the new table in place, I drilled and tapped the factory table and attached my table with four 1/4-20 bolts with star knobs. If I ever need extra height for drilling, I can remove my table in a few minutes. □

Mike Guldenstern works wood in Newburyport, Mass.



The sacrificial strip. After milling the sacrificial strip to thickness, rip it on the tablesaw with the blade tilted to the dovetail angle. Be sure the fit permits it to slide easily into place. When one section has been drilled into repeatedly, slide it forward or backward—or turn it end for end—to present a fresh surface.



Finishing up. Guldenstern screws in tracks for the fence that came with his drill press. Before using the jig, he'll apply a wipe-on satin poly finish.