

Jigs for the Drill Press

Increase the versatility of this basic machine
using low-cost, shopmade accessories

BY GARY ROGOWSKI

Like most power tools, the drill press won't tackle too many woodworking jobs without jigs to hold work safely and securely. I make all of my jigs out of wood and wood products such as plywood and medium-density fiberboard (MDF). I make the jigs as simple as can be and use them to handle stock of odd shapes and sizes and to bore at any angle.

The drill press is primarily designed for metalworking. Its metal stock table is too small for clamping large boards. So the first order of business is to add a larger auxiliary table made of MDF or plywood. A simple solution is to screw the auxiliary table to the stock one. Or if you prefer a table that's fast to remove, make one that can be clamped to the metal table (see the photos at right).

Every drill press needs a fence

When drilling a large hole, a bit can grab a board and turn it into a spinning weapon. Unless you enjoy getting slapped around by lumber, keep a fence clamped to your drill-press table. Even if



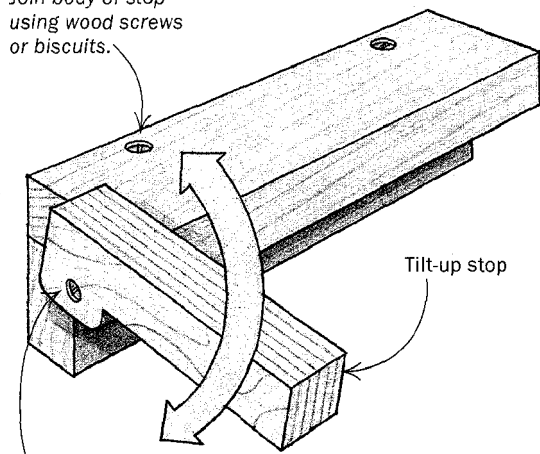
A BIGGER TABLE

To provide a larger working surface, clamp an auxiliary table made of plywood or MDF to the stock drill-press table.

REPETITIVE, ACCURATE DRILLING

Stop blocks, either hinged (left) or in the form of spacers (right), guarantee accurate results when boring multiple pieces or a series of holes.

Join body of stop using wood screws or biscuits.



No. 10 by 2-in.
wood screw



stock isn't butted right up to the fence, it still provides a measure of safety because it will stop sudden rotation of a workpiece.

A fence is a must when you need to drill multiple holes a set distance from the edge of the stock. The only critical adjustment is the distance from the center of the drill bit to the edge of the fence. Clear away chips from the edge of the fence when registering stock against it. And use a straightedge to check your fence regularly to make sure it hasn't warped.

Use stop blocks when drilling multiples—Whenever you must drill more than one of something, use stop blocks to register stock. The method is faster and more accurate than marking individual pieces. A stop block is nothing more than a piece of wood clamped to the drill-press fence. I also have a shopmade tilt-up stop that I can move out of the way, but not so far away that I misplace it (see the drawing and left photo above).

For drilling multiple holes in a workpiece, such as when drilling shelf pins for a bookshelf or cabinet, I use a series of spacers to register stock (see the right photo above). Line the spacers up along the fence, registering the first one against a stop block. Position the stock against the last spacer, drill a hole, then remove one block. Repeat. I have a stack of different-sized blocks within easy reach of my drill press.

Two ways to cut mortises on the drill press

Before I owned a plunge router, I used my drill press for mortising. A brad-point bit will do a pretty good job of establishing a neat row of holes that can be cleaned up with a chisel (see the photo at right). Use a straight fence and stops to locate both ends of the mortise. Drill the two outside holes first and then work your way down the mortise, overlapping holes a little. Leave some wood for the brad-point center to bite into; otherwise, the bit will drift.

I also made a sliding table for mortising on the drill press. The table has two parts: a movable sled, which is fitted with a pair of runners, and a base, which has grooves for the runners and is bolt-

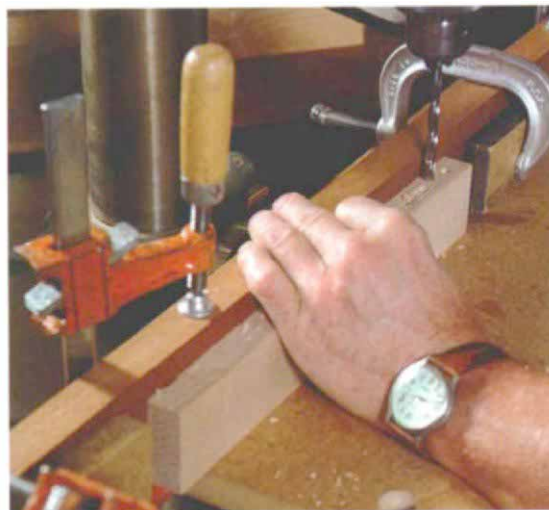
ed to the drill-press table (see the top photos and drawing on p. 74). The sled is made up of a double layer of glued-up material, thick enough to plow grooves for the runners, which are glued in place, without weakening it.

The sliding table has a fence and requires a stop block to locate the start of the mortise. I also clamp a stop block to the underside of the sled to control the length of the mortise. To use the jig, hold or clamp stock in place and use an end mill, a metalworking bit, to bore the mortise. Take light passes. If it chatters, switch to a brad-point bit, smaller in diameter than the end mill, predrill a series of holes and clean up the walls of the mortise using the end mill.

Nonsquare stock must be held firmly

Once in a while you'll need to drill stock that isn't flat or square. Bowling balls come to mind, but that's another article. Cylindrical stock can be held using a V-shaped block, which provides two-

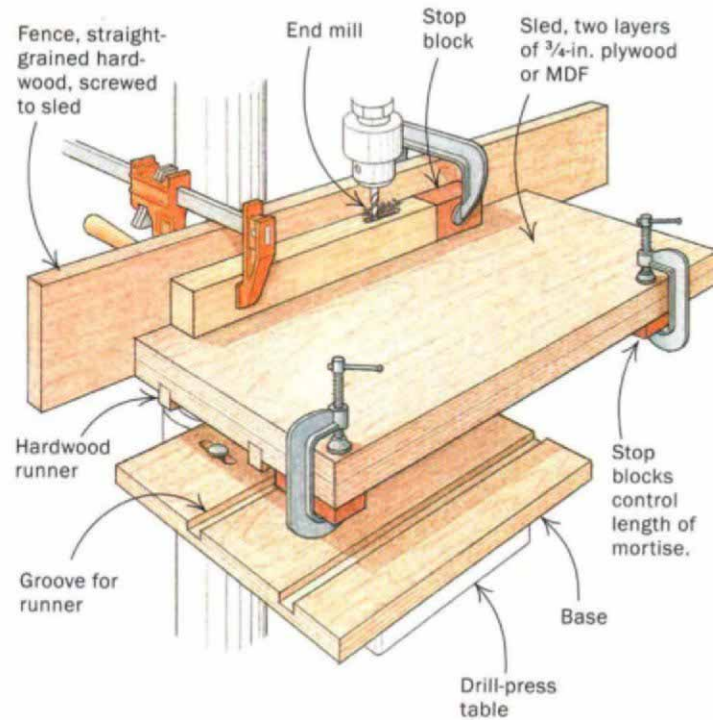
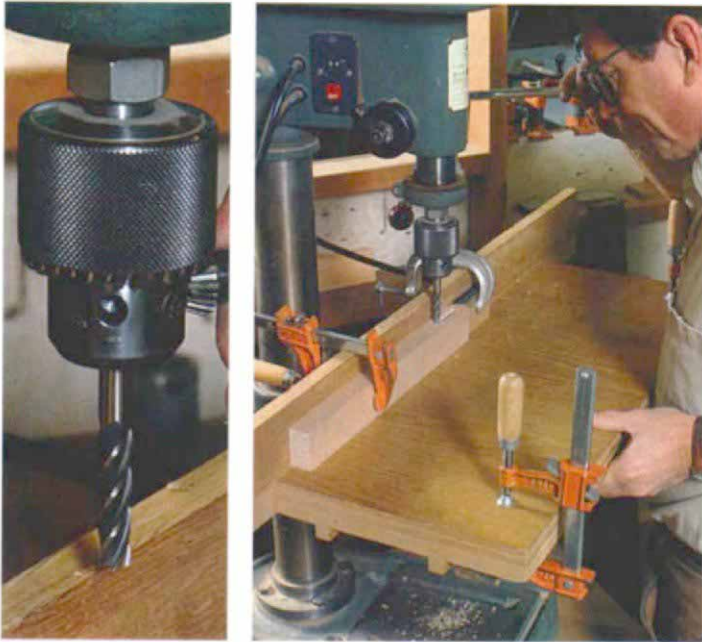
BASIC MORTISING



By trapping stock between two stop blocks, a mortise can be roughed out using a brad-point bit.

MORTISING JIG

The jig slides back and forth on runners. Using an end mill (a metalworking bit), the author takes light passes to cut a mortise.



point contact and plenty of stability (see the left photo below). To make a V-block, rip a groove on one side of a thick piece of wood, such as a 2x4, using the tablesaw with the blade tilted 45°.

For other shapes, you just have to improvise. Wooden screw clamps are good at holding oddly shaped pieces. Clamp the wood screw to the drill-press table, then clamp the stock to be drilled in the screw clamp. Err on the side of more rather than fewer clamps if you have doubts.

Tilt the stock when drilling at angles other than 90°

Most drill-press tables tilt along one axis. But I am admittedly lazy, and I don't like moving my table back and forth and retrueing it to

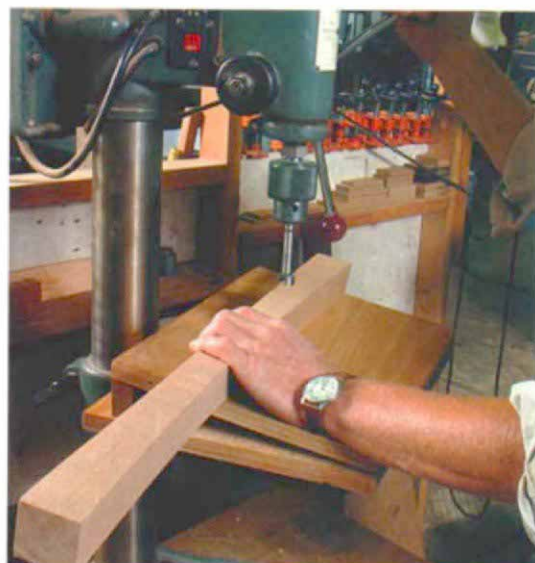
0° if I can avoid it. Plus, the angle gauges that come with most drill presses leave a lot to be desired.

I have found that the simplest way to drill angles other than 90° is to tilt the stock, not the drill-press table. The first step is to mark the desired angle onto the stock. Then place a piece of scrap wood under one end of the workpiece. You may have to move things around until the layout mark is in line with the drill bit. Use a square or triangle, if needed. Before drilling, be sure the workpiece is stable.

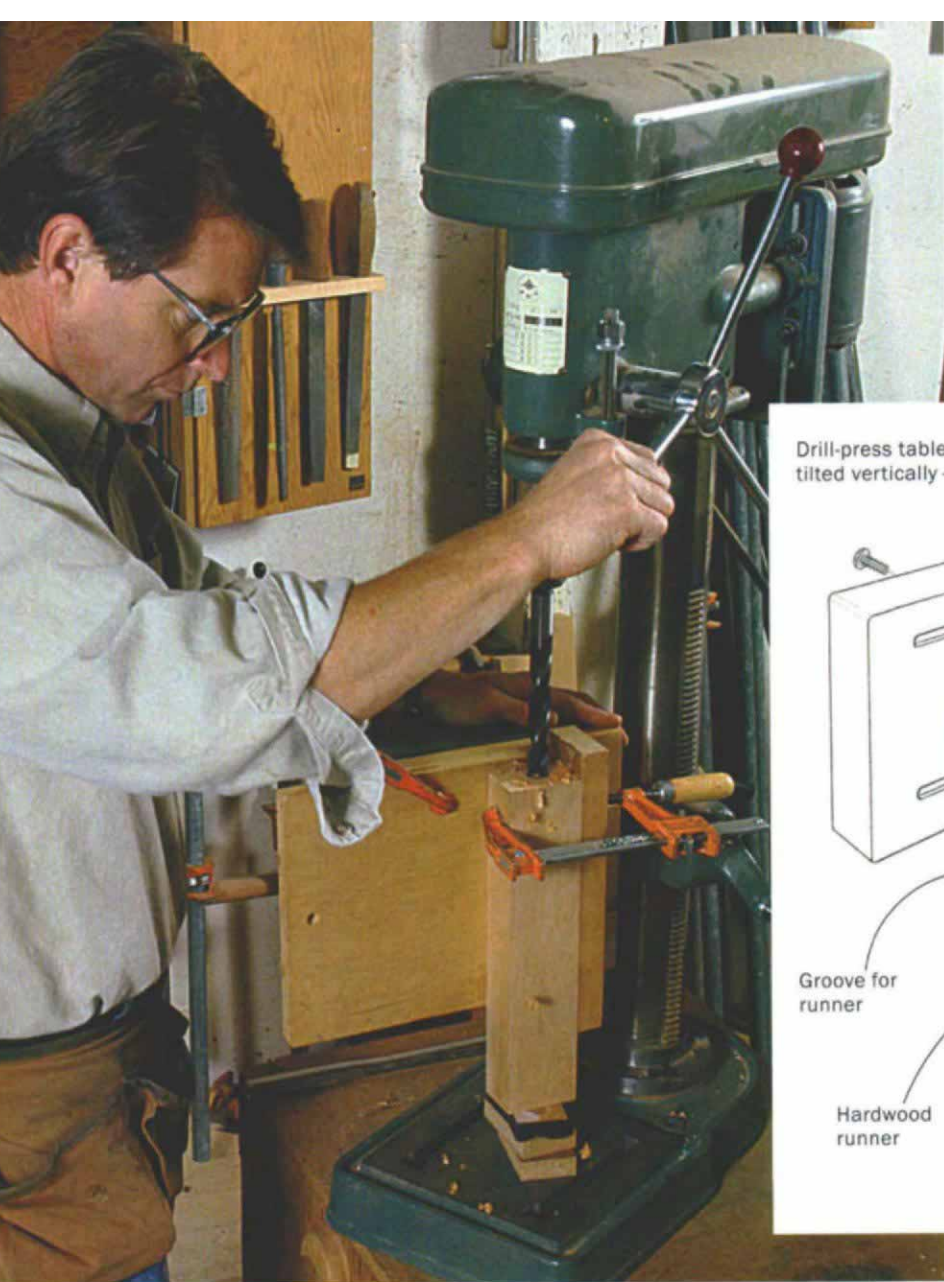
A more stable angle-drilling jig can be made by joining two pieces of plywood with a piano hinge (see the right photo below). By wedging a wood block between the two plywood pieces, you

JIGS FOR ROUND STOCK OR ANGLED WORK

The V-block can be made on a tablesaw by ripping a groove in thick scrap with the blade set at 45°.

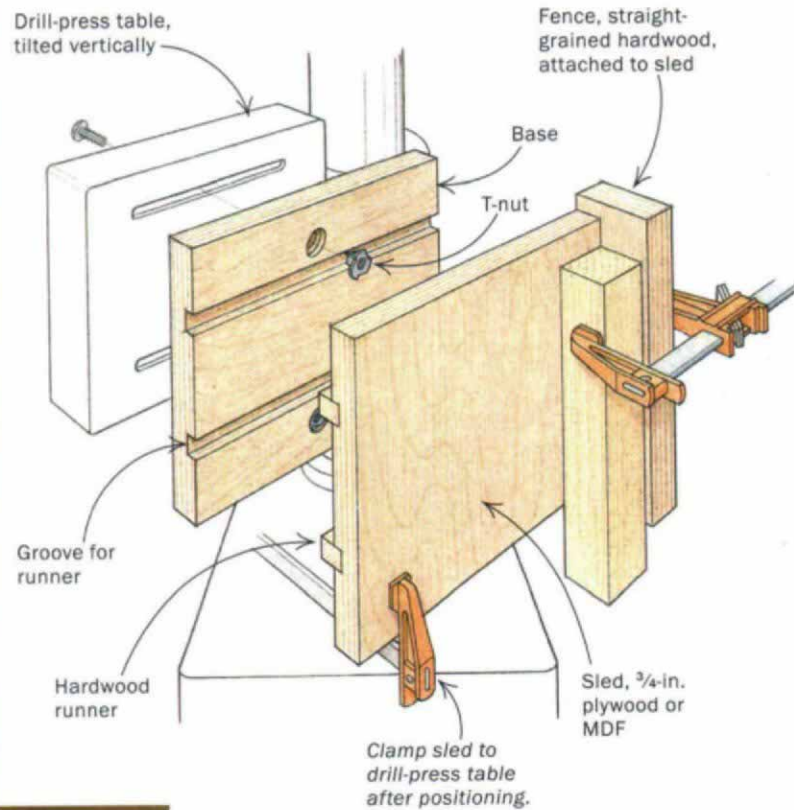


Connect two pieces of plywood with a piano hinge. Fit a wood wedge between the leaves to create the angle needed.



VERTICAL BORING JIG

For boring into end grain, an adjustable table and fence provide a solid clamping surface. Wedges may be placed between the stock and base of the drill press for additional stability.



can reach the desired angle. Or better yet, screw the block in place so that it won't creep on you.

A dedicated angle jig for drilling pocket holes—There are a lot of ways to attach a tabletop. One method is to run a screw through a pocket hole drilled on the insides of the table's aprons. I drill these pocket holes using a dedicated tilted fence on the drill press. I made the fence of solid stock and ripped one face at 15° on the tablesaw.

To drill the apron, hold or clamp it against the fence. Use a standard twist-drill bit when drilling at an angle, although a Forstner bit would also be appropriate. Feed the bit slowly to prevent it from grabbing.

Compound angles—There are two types of compound angles: equal and unequal. Equal is just that; both angles are the same. But chairs are rarely that simple. For example, a stool leg may hit the floor at an 80° angle from one side and 82° from the other side. That's an unequal compound angle.

Compound angles force me to tilt the drill-press table. That gets

me the first angle. The second angle comes by way of a piano-hinged jig. As a precaution, place layout marks on the stock and double-check them before boring away.

Use a two-part jig to drill into end grain

Drilling into long boards requires one of two things: great patience or another indispensable jig. You can simply tilt your drill-press table to 90° and maneuver the stock into position and clamp it. That usually entails a lot of fiddling.

Here's a better way. Make up a vertical two-part drilling jig (see the photo and drawing above). The jig is similar to the mortising jig in that it consists of a base and a movable sled with a fence. Stock clamped to the fence and the workpiece can be moved fore or aft and remain plumb (or at whatever angle the jig was set to).

Just like a tablesaw, the drill press can handle a lot of jobs in the workshop, but the machine demands a host of jigs before it truly performs to capacity. □

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