

Questions & Answers

Drilling and driving screws into MDF

Q When working with MDF, I find that woodscrews can split the workpiece or cause a noticeable bulge. How can I prevent this?

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A The shank of a typical woodscrew is shaped like a wedge. So the problem is that unless the shank hole and pilot hole are drilled just right, the screw can split the workpiece (left drawing below). But I've found that simply

switching to a different fastener and using a simple, three-step drilling technique can help make the entire process virtually foolproof.

SHEET METAL SCREWS. Instead of traditional woodscrews, I like to use sheet metal screws (see right drawing below). Since the whole shank is straight, it isn't as likely to split the MDF.

Note: For extra holding power, I use screws that are $\frac{1}{2}$ " to $\frac{3}{4}$ " longer than I would typically use for joining solid wood or plywood.

DRILLING THE SHANK HOLE. For the sheet metal screws to securely fasten the parts together, you'll need to size the shank and pilot holes accurately. The key to drilling the shank hole is to size it so the screw pulls the top piece

down tightly to the bottom piece.

To do this, I find a bit that's slightly larger than the outside diameter of the threads. This way, the screw will just slip through the hole.

A COUNTERSINK. Another problem that you'll find in driving screws into MDF is that fibers from the lower piece tend to lift up and prevent the two parts from pulling together, as shown in the left drawing below.

To solve this problem, I drill a small countersink where the shank exits the top workpiece before drilling the pilot hole, as you can see in the right drawing. The countersink provides clearance for the raised fibers without affecting the fit of the two parts.

THE PILOT HOLE.

At this point, you're ready to drill the pilot hole. The pilot hole should be the same as the inner diameter of the screw threads. This makes it easy to drive the screw, and still gives the threads plenty of bite in the workpiece.

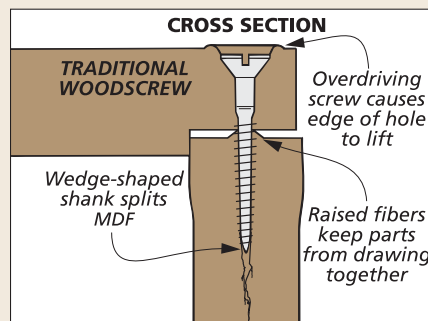
How deep should the pilot hole be? I like to drill it just past where the tip of the screw will end up. This way, I don't have to worry about the screw splitting the MDF deep in the hole and creating a bulge in the side of the piece. **W**

Do you have any questions for us?

If you have a question related to woodworking techniques, tools, finishing, or hardware, we'd like to hear from you.

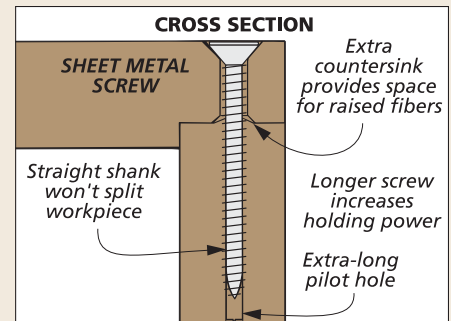
Just write down your question and mail it to us: Woodsmith, Q&A, 2200 Grand Avenue, Des Moines, Iowa 50312. Or you can email us the question at: woodsmith@woodsmith.com.

Please include your full name, address, and daytime telephone number in case we have questions.



PROBLEMS

- Woodscrew splits MDF near edges causing bulges on face of workpiece.
- Shallow countersinks and overdriving screw "lifts" edge of hole.
- MDF fibers pull away from bottom workpiece and prevent the parts from joining together tightly.



SOLUTIONS

- Sheet metal screws and properly-sized shank and pilot holes prevent splitting and bulging of workpiece.
- Longer screws provide extra holding power in MDF.
- Countersinks at both ends of shank hole allow screw to pull joint together.



hardware & supplies

Sources



ROUTER BITS

The router bits featured in the article starting on page 10 were all purchased at the *Woodsmith Store*. The lock miter bit that I tried out is made by *Freud* (#99-035). The box joint bit (#53610), the adjustable finger joint bit (#55392), and the glue joint bit (#55388) are all from *Amana*. All the bits have a 1/2"-dia. shank.

POCKET HOLE JIGS

There are a number of pocket hole jigs on the market. Some are pretty simple and inexpensive, while others offer you quite a few bells and whistles.

The jig that I like to use in the shop is made by the *Kreg Tool Company*. Their line of pocket hole jigs ranges from basic to commercial sized. *Kreg* pocket hole jigs, screws and accessories are carried by the *Woodsmith Store*. Other sources are listed in the margin column at right.

CRAFTSMAN TABLE

Building the tile-top Tile-Top table shown on page 16 won't take long and neither will rounding up the supplies. I suggest that you start by finding some ceramic tile that appeals to you. A home improvement store or one that specializes in tile will have a good selection.

The only other items needed are the figure-8 fasteners (#21650), available from *Rockler*, and a handful of screws.

CLASSIC BOOKCASE

Besides being easy to build, the classic bookcase on page 24 doesn't take a lot of hardware. Other than a handful of screws, the only other hardware necessary are some leveler blocks (#31210) and a package of spoon-style shelf support pins (#22765).

If you plan on making several bookcases and connecting them, there are a couple of other items you'll need. The first is some 1 1/8"-long connector bolts (#31831). Then, to go along with these, you'll need some matching cap nuts (#31815). All these supplies came from *Rockler*. They're also available from the *Woodsmith Store*.

TOOL CABINET & CHEST

For such a large project, the tool cabinet on page 34 doesn't really require much in the way of hard-to-find hardware. The common items (screws and washers) can be found at any good hardware or home improvement store. I ordered all of the other supplies I needed from *Rockler* and the *Woodsmith Store*.

First, you'll need seven pairs of 18"-long *Accuride* full-extension drawer slides in black (#89690). To install the doors, I purchased a nice pair of 2" bright brass butt hinges (#25767). And a couple of versatile brass ball catches (#28613) will keep the doors closed. Finally, you'll need to purchase some 1 1/4"-dia. bright brass knobs (#35485) to install on the doors and drawers.

If you decide to put your cabinet on wheels, the 5"-dia. red locking swivel casters (#31845) that I used came from *Rockler*.

To build the small tool chest, I only had to purchase a few screws and some 1"-dia. bright brass knobs (#35477).

OIL & WAX FINISH

Another great feature of the finishing technique shown on page 46 is that all the materials are easy to come by. You can find everything at a hardware store. **W**

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WOODSMITH PROJECT SUPPLIES

We now feature hardware from *Rockler* in many of our new project kits. To order, please use our toll-free order line, see below. It's open Monday through Friday, from 8 AM to 5 PM Central Time. Before calling, please have your VISA, MasterCard, Discover, or American Express card ready.

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Call us at 1-800-444-7527 or online at www.woodsmith.com

MAIL ORDER SOURCES

Similar project supplies may be ordered from the following companies:

Rockler
800-279-4441
rockler.com

Brass Ball Catches, Brass Knobs, Cap Nuts, Connector Bolts, Drawer Slides, Face Frame Clamp, Figure-8 Fasteners, Hinges, Leveler Blocks, Pocket Hole Jigs and Screws, Right Angle Clamp, Shelf Support Pins

Woodsmith Store
800-444-7527

Amana Router Bits, Cap Nuts, Connector Bolts, Drawer Slides, Face Frame Clamp, Figure-8 Fasteners, Hinges, Kreg Pocket Hole Jigs, Leveler Blocks, Pocket Hole Screws, Right Angle Clamp, Shelf Support Pins

Amana Tool
800-445-0077
amanatool.com
Router Bits

Woodworker's Supply
800-645-9292
woodworker.com

Brass Knobs, Drawer Slides, Keller Dovetail Jigs, Tabletop Fasteners, Router Bits

Kreg Tool Company
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Face Frame Clamp, Pocket Hole Jigs and Screws, Right Angle Clamp

Woodcraft
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