Woodsmith PLANS

Miter Saw Station

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This no-nonsense workstation offers all the needed features in a compact, mobile design.

Over the years, we've featured a number of different miter saw stations, some of them taking up an entire wall. The one shown here hits what I consider a sweet spot in terms of size and features. The drop-down wings on either side of the cabinet open out to provide over eight feet of workpiece support. Below the saw is a compartment for a dedicated shop vacuum. And the whole thing is mounted on casters, so it can easily be tucked away when not in use.

START WITH THE CASE. With the exception of a couple of parts, this miter saw station is built entirely out of ¾" plywood. The case is an open, plywood box. To build it, I started by cutting the panels for the sides, back, and bottom to size, according to the dimensions shown in the main drawing on the next page.

The case panels are joined using tongue and groove construction. I cut all these joints at the table saw, but you could use a router if you prefer.

▲ With the wings folded down, the miter saw station can easily be rolled across the shop and stored out of the way, until it's needed again.

I started by cutting ¼"-wide dadoes near the bottom edge of the side and back panels, as shown in detail 'a.'

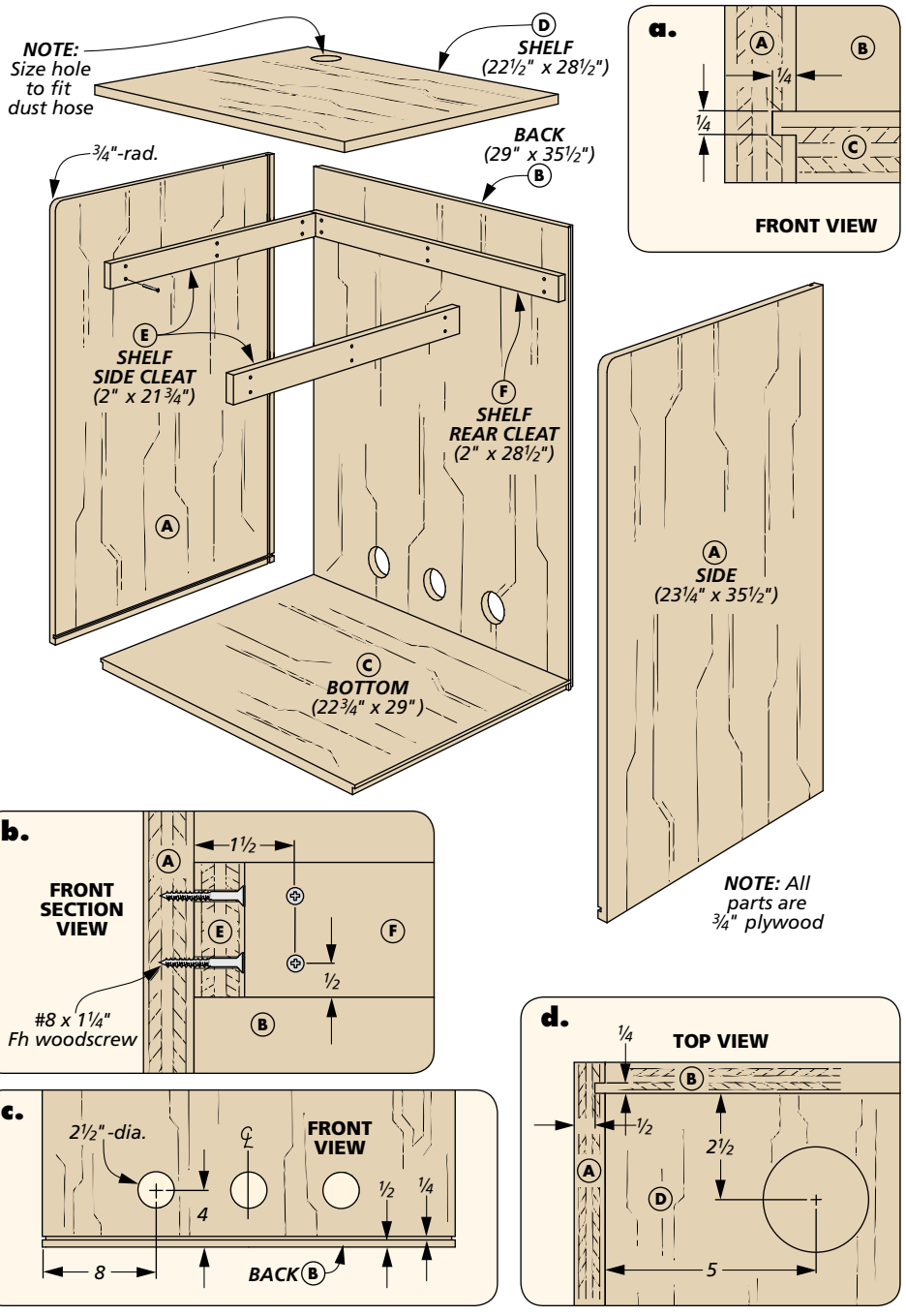
Using the same setup, cut a groove along the inside back edge of the two side panels. With that done, you can turn your attention to making the matching tongues on the bottom and back panels.

Burying a dado blade in an auxiliary rip fence allows you to dial in a precise length for the tongues. The tongue thickness is controlled by raising or lowering the blade.

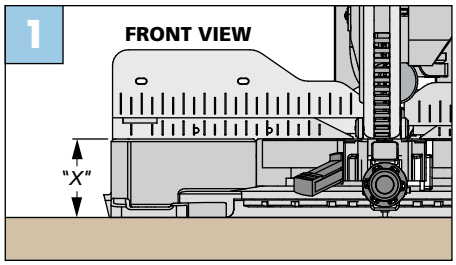
Before gluing up the case, there are a couple of details to take care of. First, I radiused the upper front corners of the side panels. Then I drilled a series of holes in the back panel, as shown in detail 'c.' These holes allow for airflow when using a shop vacuum for dust collection.

ADD A SHELF. Once the case is glued up, you can add a shelf. The shelf is nothing more than a piece of plywood sized to fit in the case. It's supported by three cleats that are screwed to the sides and back of the case.

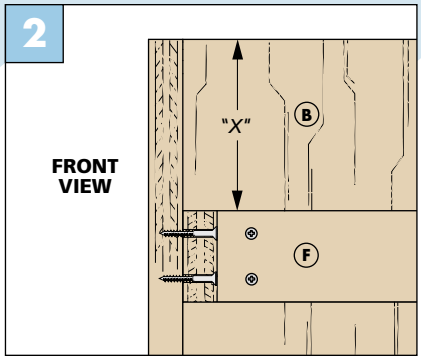
The location of the shelf within the case will depend on the height of the table of your miter saw. The box below will help you determine where to position the cleats and shelf so that your miter saw ends up at the same height as the extension wings that you'll be adding next.

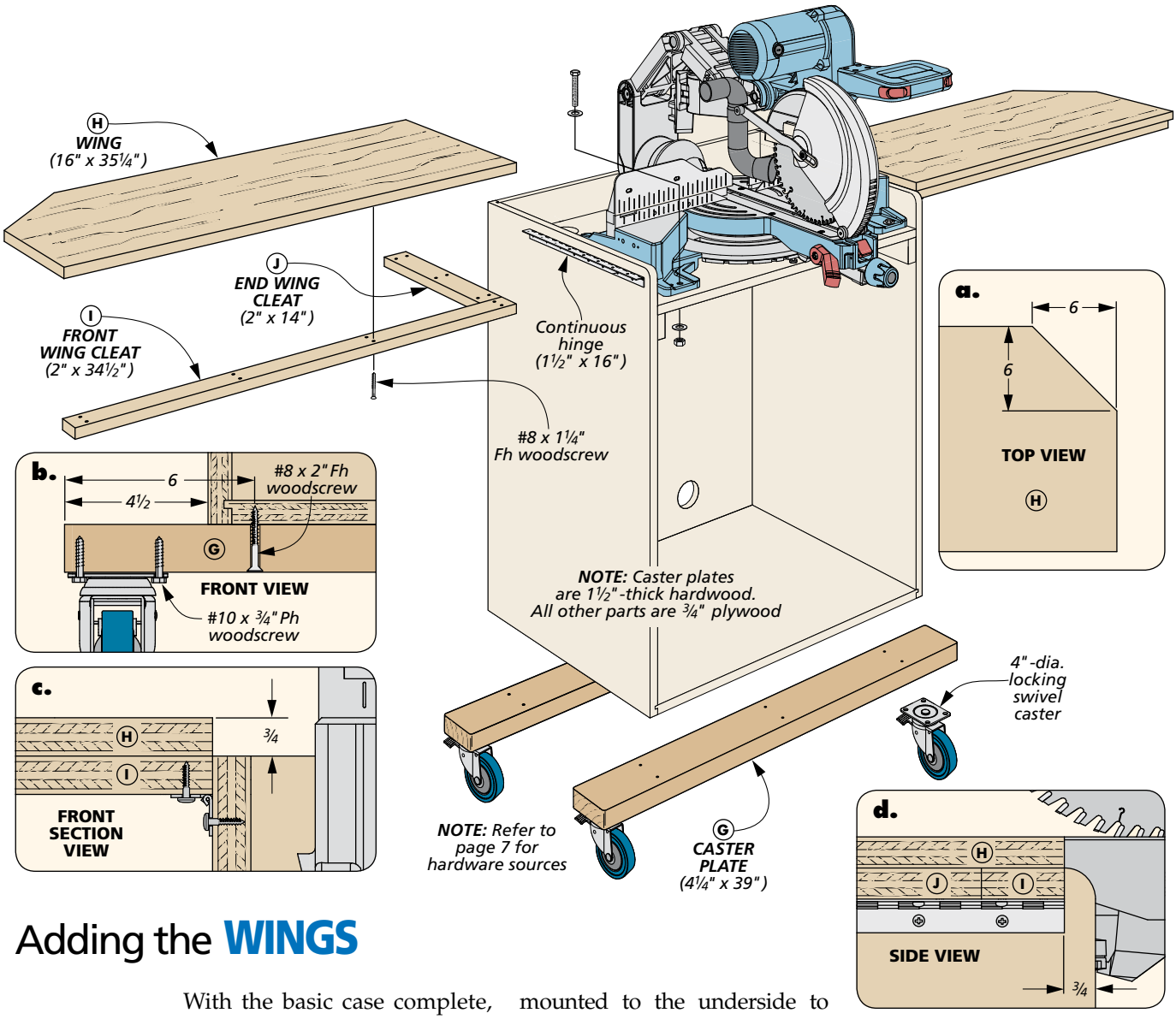


CLEAT POSITION



Mounting Your Miter Saw. In order to position the cleats for the shelf, start by placing your miter saw on a flat surface and measure the distance to the working surface of the saw, as shown in Figure 1. Then, use this measurement to position the cleats on the case (Figure 2).





Adding the **WINGS**

With the basic case complete, the next step is to add the drop-down wings. Before getting started on those, however, I decided to add some casters to the case. This makes it a little easier to move the station around as you're adding the wings.

As you can see in the drawing above, the locking swivel casters are mounted to a pair of caster plates. These are simply a couple pieces of 1½"-thick hardwood. (Or you could make them out of two layers of plywood).

After the casters are mounted, the plates are screwed directly to the bottom of the case (detail 'b'). They're flush at the front and back, and centered from side to side.

WINGS. The drop-down wings are made up of a single layer of plywood with a couple of cleats mounted to the underside to add some stiffness. As you can see in detail 'a' above, the outer back corner of each wing is mitered to relieve the sharp corner. Then the cleats are screwed to the bottom of the wing, flush with the end and front edge.

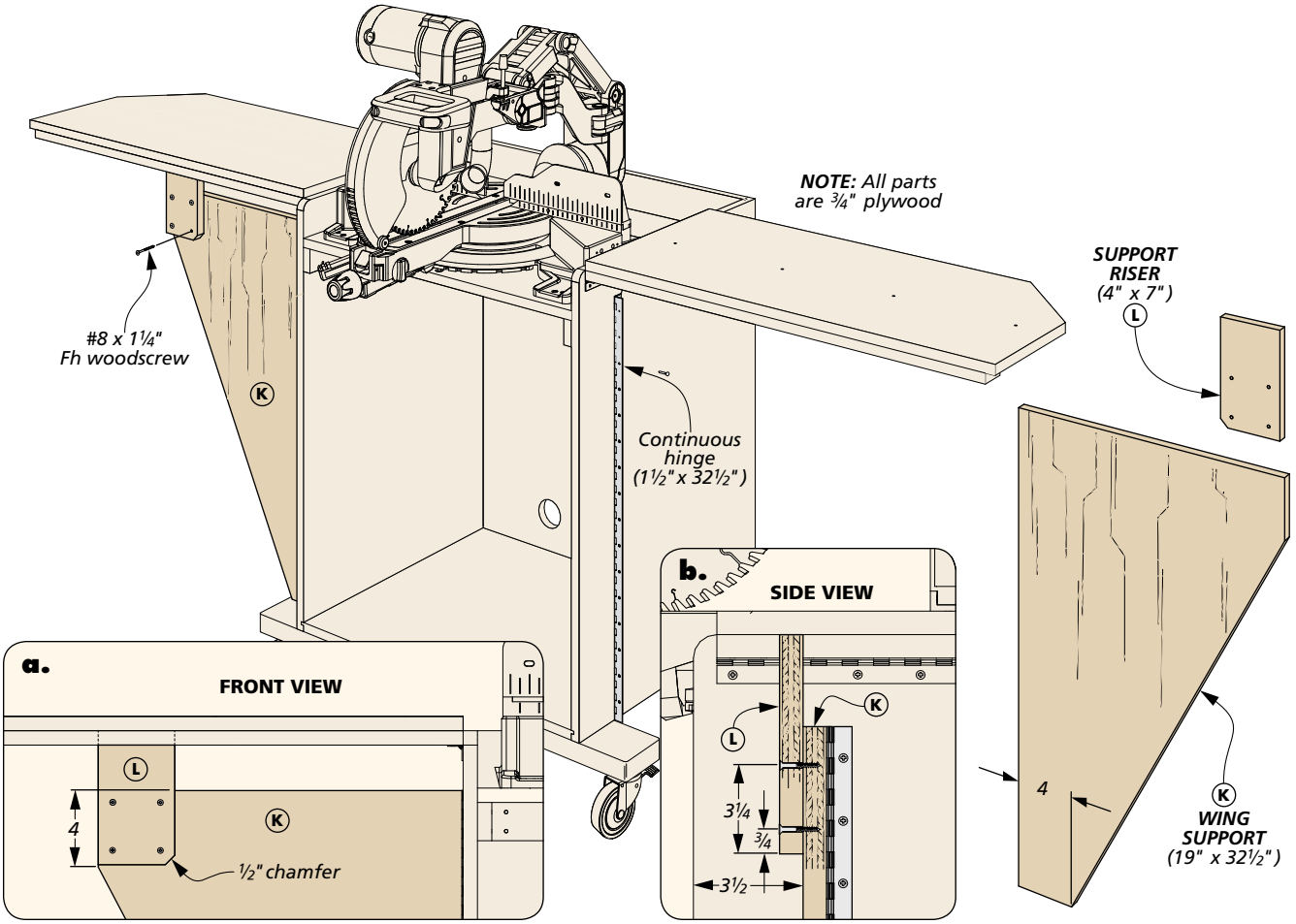
MOUNTING THE WINGS. The wings are attached to the sides of the case with continuous hinges. I found it easiest to mount the hinges to the wings first and then to the case. As you can see in details 'c' and 'd,' the goal here is to position the wings so they are flush with the table of the miter saw and set back ¾" from the front edge of the case.

Attaching the wings to the case is probably the trickiest part of this project. The task is much easier if you have a helper to hold each wing as you drive the screws that attach the hinges.

If you're flying solo, you can clamp a long, straight 2x6 to your miter saw so that it overhangs each side, as shown in Figure 1 in the box on the next page. Then clamp the wing to the 2x6 to hold it in position while you screw the hinge to the side of the case.

HINGED WING SUPPORTS

In order to hold the wings up, I added a couple of wing supports, as shown in the main drawing on the next page. These work similar to the supports on a drop-leaf table. You simply lift up the wing and then swing the support out to prop up the wing.



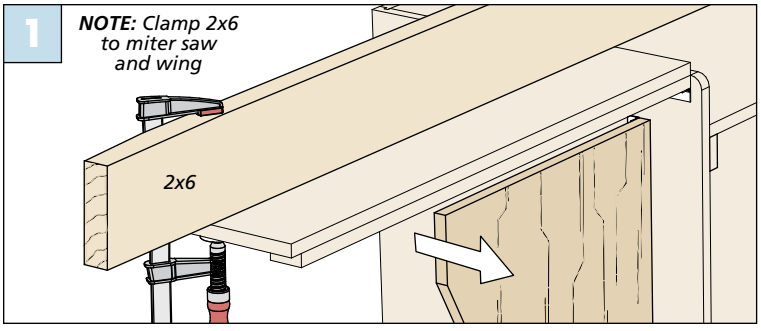
The supports are made up of two pieces — a support panel and a small riser. The support panels are cut to overall size first. Then to keep the weight down, I cut a large taper on one edge at the band saw.

The risers are cut to size next and drilled for mounting screws. Note the chamfer on the lower inside corner (detail 'a').

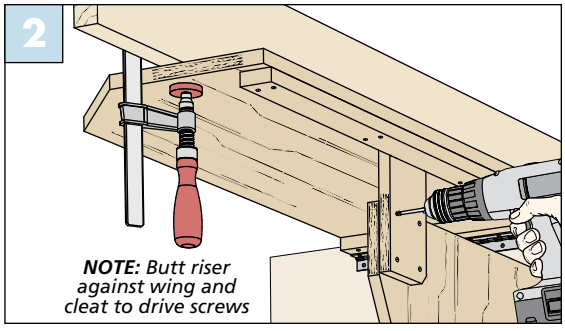
ATTACHING THE SUPPORTS. Like the wings, the supports are attached with continuous hinges. The goal here is to position the supports so that when they are swung open 90°, the riser will hit the back edge of the cleat on the wing, as shown in detail 'b' above. (The risers are not attached at this point.) The end of the support should be flush with the lower edge of the case.

Once the supports are hinged to the case, you can screw the risers in place. Figure 2 in the box below shows this being done.

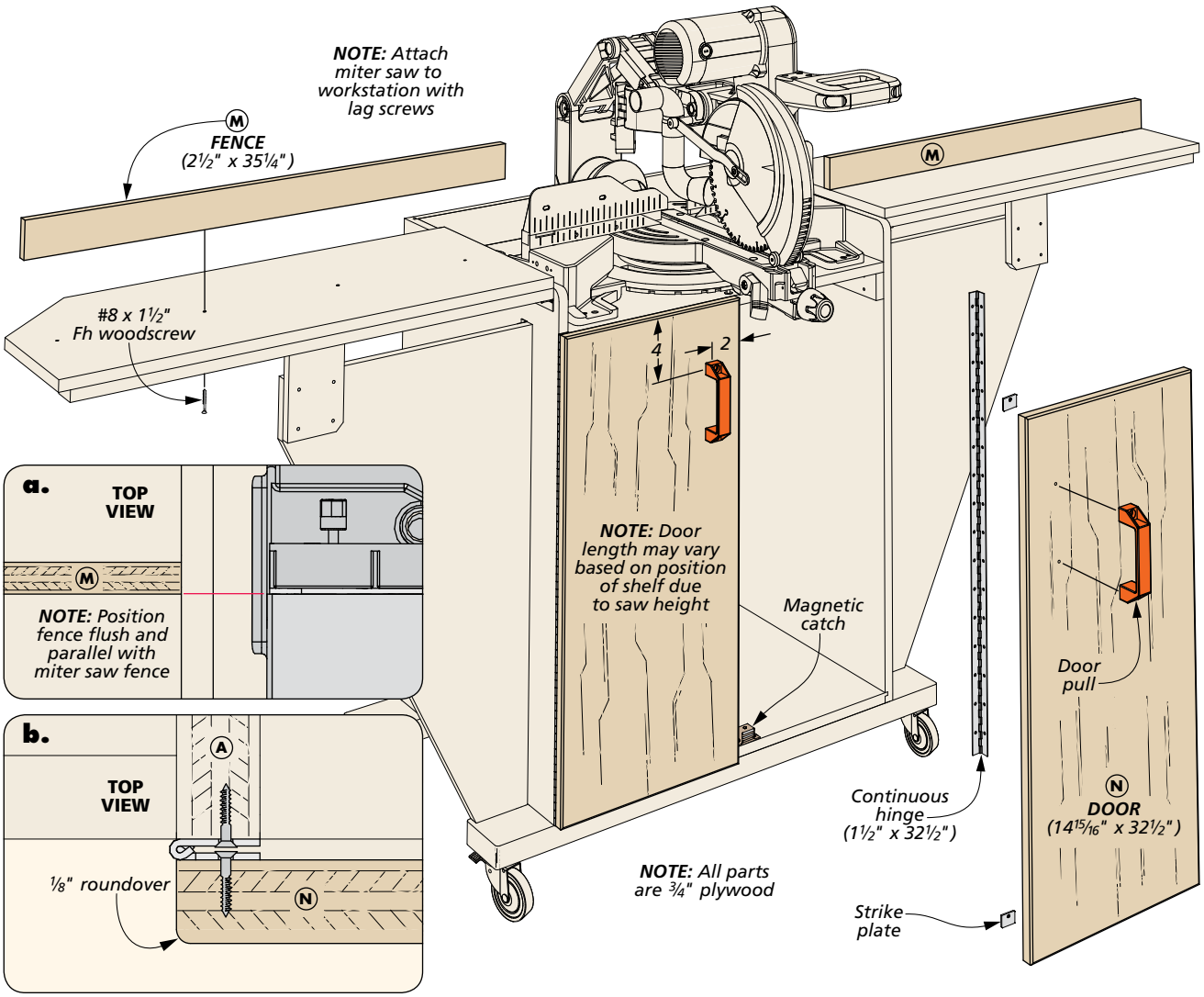
ATTACHING THE SUPPORTS



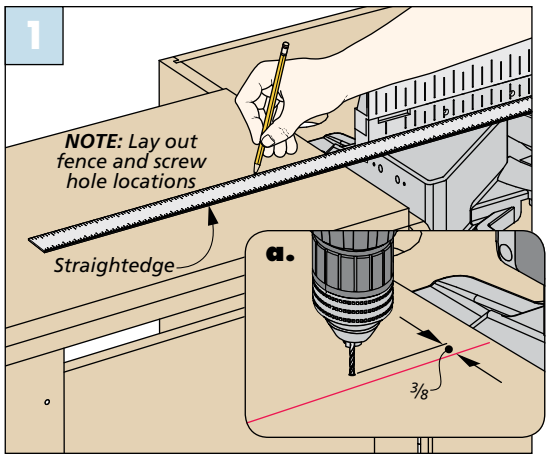
Mounting the Supports. To hold the wings up while mounting the supports, clamp a long, straight 2x6 across the miter saw. Then clamp the wings to the 2x6 and screw the support hinges to the case.



Risers. Position the riser so it contacts the bottom of the wing and butts up against the back edge of the cleat. Then screw it in place to the support.



FENCE ALIGN



Aligning the Fences. Place a straightedge against the fence of your miter saw to lay out the locations of the fences and the screw holes.

Completing the STATION

At this point, there are only a couple of finishing touches left to complete the miter saw station — a pair of fences for the wings and a pair of doors for the case. I started with the fences.

As you can see in the drawing above, the fences really couldn't be any simpler. Each one is just a strip of plywood that is screwed directly to the wing.

With the fences cut to size, the next step is to lay out the mounting holes on the wings. Start by attaching your miter saw securely to the cabinet with lag screws. Next, use a straightedge and rule to mark out the locations for the fences and corresponding screw holes, just as you see in the box at left.

After drilling and countersinking the screw holes, the fences can be clamped to the wings and then screwed in place. Again, you'll want to use a straightedge as you're positioning the fences to make sure that they're perfectly aligned with your saw.

ADDING THE DOORS. Not wanting to break with tradition, the doors for the miter saw station are also just two simple plywood panels. But I need to mention something about their length. The doors are sized so that they end up flush with the top of the shelf and the bottom of the case.

Depending on where you located the shelf for your particular miter saw, you may have to make the doors slightly shorter or longer than the dimensions given in the main drawing.

Once you've determined the length for your doors and cut them to size, you can rout a roundover on the front edges. Then mount the doors to the front of the case with continuous hinges, (detail 'b' on previous page).

DOOR HARDWARE. The final steps to complete the doors are to add a pair of pulls and a set of magnetic catches at the top and bottom of each door. These will prevent the doors from swinging open as you roll the station around your shop.

FINISH. I finished the project with two coats of spray lacquer. You'll have to remove the miter saw in order to apply the finish, so just make sure to align the saw with the fences when you bolt it back down.

The last step, should you choose to do so, is to mount a shop vacuum inside the cabinet. A vacuum may not capture all the dust from the saw, but it helps a great deal.

The cabinet enclosure helps to keep the noise from the shop vacuum down. (But unfortunately, it doesn't do anything for the noise from the saw itself.)

I really like the simple functionality of this miter saw station. While it may not have a ton of bells and whistles, I think you'll find that it's a practical addition to any shop.

▲ The compartment below the saw is large enough to house a shop vacuum. The hose for the vacuum passes through the hole in the shelf to connect to the saw.

▲ With the wings folded down, the swivel casters allow you to easily maneuver the miter saw station into a corner of your shop, until the next time you need it.

Materials, Supplies & Cutting Diagram

A	Sides (2)	¾ ply. - 23¼ x 35½
B	Back (1)	¾ ply. - 29 x 35½
C	Bottom (1)	¾ ply. - 22¾ x 29
D	Shelf (1)	¾ ply. - 22½ x 28½
E	Side Shelf Cleats (2)	¾ ply. - 2 x 21¾
F	Rear Shelf Cleat (1)	¾ ply. - 2 x 28½
G	Caster Plates (2)	1½ x 4¼ - 39
H	Wings (2)	¾ ply. - 16 x 35¼
I	Front Wing Cleats (2)	¾ ply. - 2 x 34½
J	End Wing Cleats (2)	¾ ply. - 2 x 14
K	Wing Supports (2)	¾ ply. - 19 x 32½
L	Support Risers (2)	¾ ply. - 4 x 7
M	Fences (2)	¾ ply. - 2½ x 35¼
N	Doors (2)	¾ ply. - 14 15/16 x 32½

- (54) #8 x 1¼" Fh Woodscrews
- (12) #8 x 1½" Fh Woodscrews
- (12) #8 x 2" Fh Woodscrews
- (16) #10 x ¾" Ph woodscrews
- (4) 4"-dia. Locking Swivel Casters
- (5) 1½" x 36" Continuous Hinges
- (2) Pull Handles w/Screws
- (4) Magnetic Latches w/Screws

1½"x 4½"- 84" Hard Maple (3.9 Bd. Ft.)

ALSO NEEDED: *Three 48" x 96" sheets of ¾" birch plywood*

MAIL ORDER SOURCES

Lee Valley
800-871-8158
leevalley.com

McMaster-Carr
630-833-0300
mcmaster.com

Rockler
800-279-4441
rockler.com

Project Sources

- **Lee Valley**
  4" Casters 00K2141
- **McMaster-Carr**
  Pull Handles 1078A33
- **Rockler**
  Continuous Hinges 30085
  Magnetic Catches 26559

Manufacturers and retailers will periodically redesign or discontinue some of their items. So you'll want to gather all the hardware, supplies, and tools you need before you get started. It's easy to adjust dimensions or drill different-sized holes to suit your hardware.