How to build support wings for your miter saw

With easy to follow step-by-step instructions, you will be able to cut, assemble, and finish your very own support wings for your miter saw station.

Plan set preview:
- 14 pages
- 40 pictures
- Material list, cut list, and assembly instructions
- Material, hardware, and other supply sourcing
Introduction:

Having a dedicated miter saw station is a real efficiency booster in the shop. In the past, when I didn’t have a miter saw station, I would have to pull out my saw, measure, make the cut, often times make another cut, and then put the saw away. With a dedicated miter saw station, the saw is always out and ready to be used.

There are commercially made systems and setups but some lack certain features that really make a miter saw station unique. Some of these features can include: storage, stop block systems, and being able to buy the exact size unit for available space.

I have had three shop built miter saw stations and I loved every single one of them. Every time I would move into a new space or decide to scrap the last one and build a new one, I would take what I liked and didn’t like about the last version and implement them in the next one. Each version would get better and better.

My last miter saw station I had the saw recessed. In this plan we are going to build the support wings for a miter saw station that has the saw on the same surface as the wings.
Introduction continued:

This set of plans is going to give walk you through building the 8 foot support wing using my measurements for my needs. These needs include the miter saw station itself and the actual saw used (Festool Kapex). The first step in the plans includes a calculation to determine the measurements needed.

All the measurements can be modified to fit your miter saw station and the saw that you own.

I used 1/2 MDF as I had left overs from the miter saw station top and a few extra sheets on hand. Using 3/4” MDF would eliminate the need for a few steps.

KREG PRECISION TRAK AND STOP SYSTEM NOTE:

The homemade fence was built using my design. Kreg offers another support wing and fence option within their directions.

Power Tool Safety:

Make sure to read the directions that come with your power tools and use any and all safety features on your power tools. Safety features may have been removed for video purposes.
Material List:

<table>
<thead>
<tr>
<th>Product</th>
<th>Quantity</th>
<th>Reason needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>4’ x 8’ x 1/2” MDF</td>
<td>X</td>
<td>Support wing structure, fence structure, and drawer structure</td>
</tr>
<tr>
<td>4’ x 8’ x 3/4” MDF</td>
<td>1</td>
<td>Fence system to mount the Kreg Trak and Stop System</td>
</tr>
<tr>
<td>Wood Glue</td>
<td>1 bottle</td>
<td>Glue the MDF structures together</td>
</tr>
<tr>
<td>1 5/8” Dry Wall Screws</td>
<td>Approx. 50</td>
<td>Screw the MDF structures together</td>
</tr>
<tr>
<td>18 Gauge brad nails</td>
<td>Approx. 200</td>
<td>Nail the MDF structures together</td>
</tr>
<tr>
<td>Kreg Precisions Trak and Stop System</td>
<td>1-2 Kits</td>
<td>Used on the fence system.</td>
</tr>
<tr>
<td>Drawer pulls/handles</td>
<td>Approx. 6</td>
<td>Used to open the drawers.</td>
</tr>
<tr>
<td>Star knobs with threaded posts</td>
<td>4</td>
<td>Used to secure the fence to the support wing</td>
</tr>
<tr>
<td>Threaded inserts</td>
<td>4</td>
<td>Used to secure the fence to the support wing</td>
</tr>
</tbody>
</table>

Product Links:

Kreg Precision Trak and Stop Kit - [http://amzn.to/29UCi9v](http://amzn.to/29UCi9v)

Ultra Hardware Cabinet Handle/Pull 10 Count - [http://amzn.to/29ryPgj](http://amzn.to/29ryPgj)

Oneida Dust Deputy - [http://amzn.to/29nehzX](http://amzn.to/29nehzX)

5/16” Diameter 2” Length Threaded Star Knob - [http://amzn.to/29o5sFN](http://amzn.to/29o5sFN)

iVac Automated Vacuum Switch - [http://amzn.to/29AiP9G](http://amzn.to/29AiP9G)

<table>
<thead>
<tr>
<th>Part</th>
<th>Quantity</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>1</td>
<td>96” x 22 1/2”</td>
</tr>
<tr>
<td>Vertical Supports (doubling to make 1” thick)</td>
<td>10</td>
<td>3 3/4” wide x 22 1/2” long x 1/2” thick</td>
</tr>
</tbody>
</table>
### Left Fence System Cut List:

<table>
<thead>
<tr>
<th>Part</th>
<th>Quantity</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical Face</td>
<td>1</td>
<td>8’ long x 2 1/4” tall x 3/4” thick</td>
</tr>
<tr>
<td>Horizontal</td>
<td>1</td>
<td>8” long x 3 3/4” wide x 3/4” thick</td>
</tr>
</tbody>
</table>

### Left Wing Drawer Cut List:

<table>
<thead>
<tr>
<th>Part</th>
<th>Quantity</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sides</td>
<td>8</td>
<td>21 3/8” long x 3 1/16” wide x 3/4” thick</td>
</tr>
<tr>
<td>Front/Back</td>
<td>4</td>
<td>21 1/8” long x 3 1/16” wide x 3/4” thick</td>
</tr>
<tr>
<td>False Front</td>
<td>4</td>
<td>22 3/4” long x 3 5/8” wide x 1/2” thick</td>
</tr>
<tr>
<td>Bottom</td>
<td>4</td>
<td>22 3/4” wide x 21 21 7/8” long x 1/2” thick</td>
</tr>
</tbody>
</table>

Drawer dimensions allow for 1/8” fit allowance.
### Right Fence System Cut List:

<table>
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### Right Wing Drawer Cut List:

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<td>2</td>
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Drawer dimensions allow for 1/8” fit allowance
Step 1: DETERMINING YOUR MEASUREMENTS

Steps to use the calculation to determine the measurements of your support wings:

- Place your miter saw on a flat surface. Measure from the surface to surface of your saw (where you place your material). This measurement is your \textit{TOTAL HEIGHT}.

- Next decide what the thickness of your material you will be using (IE. 1/2”, 3/4”, 1”, etc.). This will be your \textit{MATERIAL THICKNESS}.

- The vertical supports that hold your support wing’s top up is called \textit{VERTICAL SUPPORT}.

\[
\text{TOTAL HEIGHT} - \text{MATERIAL THICKNESS} = \text{VERTICAL SUPPORT}
\]

\textbf{EXAMPLE DIMENSIONS:}

Surface to saw surface is 5 inches. \textit{TOTAL HEIGHT} = 5 inches.

Material thickness is 34”. \textit{MATERIAL THICKNESS} = 3/4”

5 inches - 3/4” = 4 1/4” is my \textit{VERTICAL SUPPORT}

\textbf{MY DIMENSIONS:}

The distance between the surface to my saw surface (\textit{TOTAL HEIGHT}) was 4 1/4”. I was using 1/2” thick material.

4 1/4” - 1/2” = 3 3/4” for my \textit{VERTICAL SUPPORT}
Step 2: Cutting your MDF parts to size

After you have determined the dimensions of the parts you need, use whatever tools/equipment you have at hand to cut your MDF parts to size.

I used my table saw and miter saw to complete this step.

TIP: When cutting your sheet material to size. Add an extra half and inch when cutting the first part. Flip it and cut your part to exact size. This will clean up the factory edge.
Step 3: Glue two vertical supports together

If you are using 1/2” material like I am, you are going to want to glue two vertical supports together to make a more substantial vertical support. If you use 3/4” material, you can get away with a single vertical support. Adjust your cut list as necessary.

Apply yellow wood glue to one vertical support and spread with a roller or brush.

A little glue goes along way. As you place the second vertical support on top, rub them back and forth. This is called rubbing the joint as it promotes solid adhesion and gets any air out. Removing the air will help prevent the two pieces from slipping.

Now we need to secure these two boards temporarily to hold them together until the glue dries. You can use clamps, nails, screws, or even a heavy object. I used an 18 gauge brad nailer with 3/4” brad nails. I start with aligning one corner, driving a nail, then move to the opposite corner and drive another nail. This will promote both pieces being flush to one another. A better approach would be cutting these parts a bit oversized and then going back to the table saw and cutting them to the exact size. I was confident in my abilities to get them flush and you should be too!

TIP: Keep you fingers away from the nail gun when firing. Sometimes a nail will have a defect and not drive where it is suppose to. We only have 10 fingers, make sure you go home with all of them!
Step 4: Layout the top for the vertical supports

If you are following this plan exactly, you will have 5 supports. One on each end and three in the middle. I have saved you from doing the math but if you are curious on how I evenly distributed them here is how I did it.

The total span BETWEEN the outside vertical supports is 94”. Each vertical support is 1” (doubled up 1/2” MDF) and we have three (3) vertical supports in between the outside vertical supports. We need to add the thickness of the inside vertical supports, which is 3”, and subtract from the inside span (94”). That total is now 91”. We take 91” and divide the number of vertical supports PLUS 1. This will give us 4 gaps between the supports that are 22 3/4”.

TIP: Measuring can lead to errors. After all, we are humans! Instead of measuring the 22 3/4” each time, cut a scrap board to this dimension and place in in between each board to get the exact spacing.
Step 5: Attaching the vertical supports to the top

With the top layout math completed and marked on the top itself, we can now go ahead and secure the vertical supports to the top. Again, you can use clamps, nails, screws, or even a heavy object. I used an 18 gauge brad nailer with 3/4” brad nails to take the vertical supports to the top and then came back and screwed the top to the vertical supports using 3 screws per joint.

Apply yellow wood glue to the vertical support and alight to the edge (if it is one of the two ends) or to the layout mark (if it is one of the three middle supports).

Once in place, apply clamps, weight, or drive a few brad nails to temporarily secure it in place. Give the glue an hour or so to set-up and then drive a few screws to add a little more structure to the joint.

TIP: Make sure the screw heads are flush or a little below the surface. I always place them 1/32” or 1/16” below the surface just to be safe. I don’t want my material to get scratched if they happen to unscrew a bit.
Step 5: Attaching the support wing to your bench surface

With the support wing completed, you can now make preparations for attaching it to your bench surface. Make sure your surface that you will be mounting it to is flat, level, and clear of any debris that could mess up the connection or flatness.

I used a small brush to clean the debris and feel for anything on the surface that needed to be scraped away.

Place the support wings on the surface and mark each side of the vertical support.

Using a large square, extend the marks to the end of the support wing. Then use a drill to drill three (3) holes per support wing on the surface of the table. This will make it super easy to locate where to drill and attach the support wing from the bottom.

After the holes are drilled, replace the support wing on the surface. Using the holes, drill a pilot hole in the support wing (from under the table) and then drive a screw at each hole. The support wing is now attached to your surface.
Step 6: Build the fence system

I used Kreg’s Precision Trak and Stop System. It can be found online and in some local woodworking shops. I will give brief instruction on how to build the fence system that I came up with. You can consult the product directions for an additional design.

I start by ripping 3/4” MDF to size at the table saw. You can use a circular saw as well but a table saw will give you a straighter cut.

Next, I head to the drill press and drill the mounting holes for the Kreg Precision Trak and Stop System. Drilling these holes can develop a bur on the exiting side of the hole. Use a counter sink bit to deburr the hole.

With the hardware prepped, we can now clamp them to the 3/4” MDF vertical part we ripped at the table saw earlier. You want to clamp them to the board so they stay firmly in place and not shift on you when driving your mounting screw.

Next, clamp the horizontal part to the vertical part. Predrill, countersink, and drive screws to secure them together. You can you glue if you would like.
Step 5: Drill holes in fence and mount the threaded insert

Not only do we need a way to secure the fence to the support wing, but we need a solution that will allow a little adjusting to align it to our saw. We will drill an oversized hole in the fence and then installing a threaded insert into the miter saw station surface.

We will connect the fence to the surface using a star knob with a threaded post that matches the threaded insert.

Mark a line 1 3/4” from the back edge of the fence and drill four (4) holes along the length of the fence using a bit that is 1/4” larger in diameter than your threaded rod on the star knob. This 1/4” will allow us to manipulate the fence to align it to our saw.

Place the fence in place and using the same bit, insert the bit into the hole and twist it to make a reference mark on the surface. Remove the fence and drill a hole that is required to drive in your threaded insert at each reference mark.

Drive the threaded inserts using the star knobs as handles.

Replace the fence on the surface and using a washer and the start knob, secure the fence to the support wing through the threaded inserts.
Step 5: Enjoy your ultimate miter saw station!

With the support wing built and the fence installed, you can now make repeatable cuts that are extremely accurate. No more measuring, cutting, measuring, cutting again. You can now take your measurement, move the stop block on the Kreg Precision Trak and Stop System and make your cut. Perfect results every single time.
Support Wing Sheet Good Layout:

<table>
<thead>
<tr>
<th>RWS Top Plywood</th>
<th>LWS Top Plywood</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWS Drawer Bottom Plywood</td>
<td></td>
</tr>
<tr>
<td>LWS Drawer Bottom Plywood</td>
<td></td>
</tr>
</tbody>
</table>

Project: Miter Saw Bench
Cutting Diagram - Sheets
Efficiency = 68.63%
Total used for layout: 56.0 bd.ft.
Support Wing Sheet Good Layout:

48" × 96", 1/2" generoic 16.0 bd.f. (28.6 kg/m³)
Support Wing Sheet Good Layout:

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>RWS Side Plywood</td>
<td>RWS Side Plywood</td>
<td>RWS Side Plywood</td>
<td>RWS Side Plywood</td>
<td>RWS Side Plywood</td>
<td>RWS Front/Back Plywood</td>
<td>RWS Front/Back Plywood</td>
<td>RWS Front/Back Plywood</td>
<td>RWS Front/Back Plywood</td>
<td>RWS Front/Back Plywood</td>
</tr>
</tbody>
</table>

48" x 96", 3/4" genroc 24.0 bd ft. (34.39#)
Left Wing Support and Drawer Pictures
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Right Wing Support and Drawer Pictures
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