



Mobile workbench with built-in table & miter saws

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sometimes i make stuff

Intro: Mobile workbench with built-in table & miter saws

I've been looking at a lot of similar workbenches for a while, trying to find the right set up that would best utilize my woodworking tools and the space I have. I was blown away when I first saw this flip-top design that implements 6 separate tools mounted on an axle of sorts: <http://www.instructables.com/id/Multi-Tool-Flip-To...>

I decided that was overkill for my needs, and probably beyond my skill set. I also saw this featured instructable which was more up my alley (and takes a good look at using half-lap joints, which I didn't): <http://www.instructables.com/id/All-in-One-Work->

Then recently I saw this post on my beloved Imgur, and I knew it was the workbench I'd been searching for: <http://imgur.com/gallery/SN9Pr>

This was the design that I followed almost exactly, making a couple adjustments to suit my needs, including the addition of power outlets.



Step 1: Tools & Materials

Material list:

2x4's: I had a bunch on hand from a demolished tool shed so I'm not positive how many I used. The base frame is exactly 6' x 3' and legs were all cut at 30°.

2x3's: again I had several on hand from a previous project. You'll see I used 2x3's in less structurally significant spots to help reduce the overall weight. They worked particularly well for supporting the miter saw since 2x4's would have been too wide.

Table top: I used an 8x4', 11/16" thick maple plywood board for my work surface, which was the most expensive part of the project at \$50. You could spend more or less on other options but this has been working great for me.

#10 x 3" T-star screws for the framing, and 2" screws for securing the table top

(4) casters. Mine were 5" in diameter, but smaller ones will save you some money.

(20) 3" lag screws for the casters and mounting the table saw.

(4) 3" carriage bolts plus washers and nuts for mounting the miter saw.

Electrical: 3 outlets, a one-gang and a two-gang box, about 5' of romex and a male plug for connecting it all to your extension cord

Scrap plywood for the bottom shelf. I used 1/2"

Tools:

Impact driver: I don't know how I ever survived without this thing. If you haven't invested in one yet, now is the time.

Miter saw for cutting the lumber; I'm assuming you have one if you want to make this table, but make sure it's one you're happy with because a replacement may have different dimensions (same for table saw). I love my sliding compound saw but it makes flipping the bugger over a little more complicated. Worth it to me, but be forewarned.

Circular saw for trimming the edges and cutting out spaces for the table saw and miter saw

Jigsaw for making the finish cuts on the cut-out spaces in the table

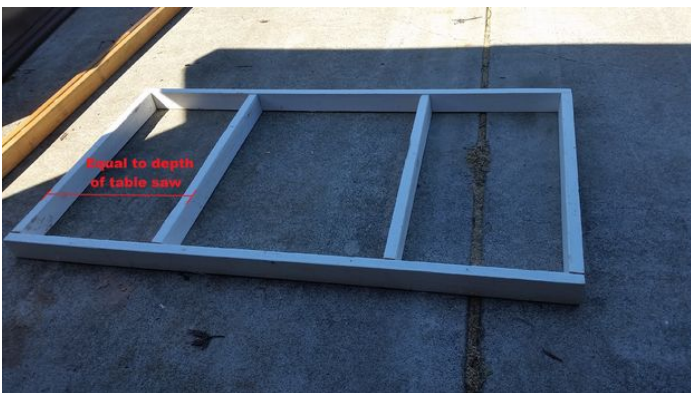
Level, c lamps, square, etc.

Step 2: Framing and table saw stand

I built mine at 6 x 3'. you could go bigger if you want more work space surrounding the table saw, but I was more concerned with mobility since I'll be pushing it outside whenever I use it. If you want to get fancy with joints, go for it; but joints worked well for me and it ended up plenty sturdy in my opinion. For the legs you could also use 4x4's but I had too many scrap 2x4's lying around that I needed to put to use. All my vertical boards (legs) were cut at 30°. That plus the plywood top and the casters puts the final work surface at about 36", which is comfy for me at 5'10". I built from the ground up since I knew I'd be making changes as I went. Make sure the spot you're working on is level (mine wasn't, I later discovered).

For the table saw support, I added 3 boards to the framing board that was set back a distance equal to the depth of my table saw's base (1st pic). I used clamps to hold the support boards in place to make sure they were level when I added screws. I trimmed down these vertical boards to get them out of the way of my table saw's fence, which clamps to the back edge of the saw. Alternatively, you could keep them 30" and connect to your table top when it's mounted.

Measure the distance from the top of your table saw work surface to its base. That will need to be the distance that the two support boards are from the top work surface of the table, and don't forget to factor in the material you're using for your table top.



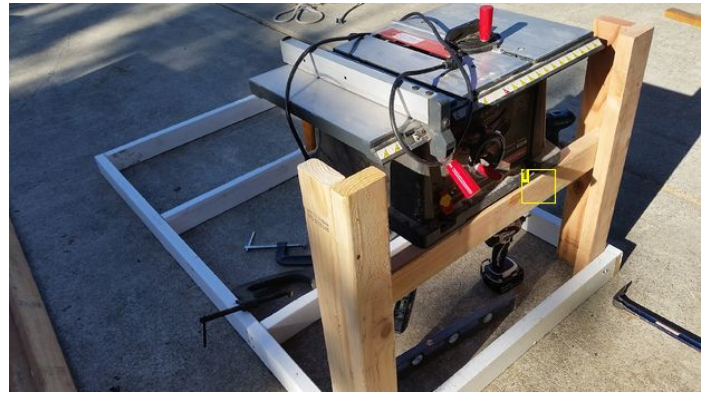
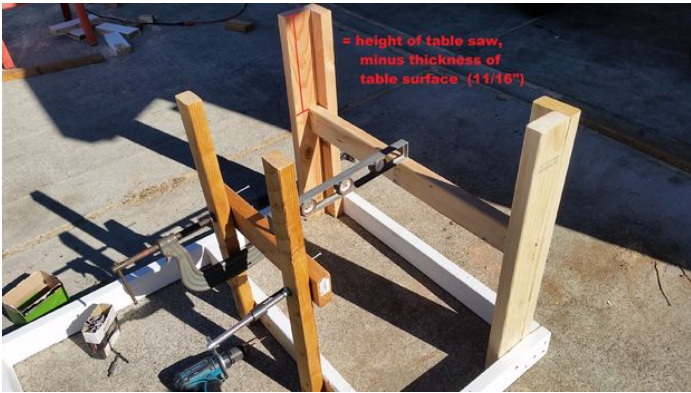


Image Notes

1. Test fit... Like a glove.



Step 3: Miter saw stand

My sliding miter saw takes up a lot of space, so I ran the support 2x3's the entire width of the bench. I'll be honest, getting these measurements right was tricky and I had to redo them a couple times. First add a 2x4 on the top, backside of the bench, taking time to keep everything square. Check for notes in the pictures if you're not sure if I used a 2x3 or 2x4 in some spots. All the legs, or vertical boards were cut the same size and then the horizontal boards were measured and cut as I went. If anything is confusing leave a comment and I'll add more notes to the pics.

The top two 2x3 supports are flush with the rest of the bench top, and the second row of 2x3's is where it gets tricky. Like the table saw support, you'll need to measure the distance from the top work surface of your miter saw to the bottom of its base. That will be the distance to mount the second row of 2x3 support boards, so that when your saw is slipped in, its work surface will be flush with the rest of the bench top. Again, factor in the thickness of your table top material. If you can't be perfect (I wasn't either), it's better to have your miter saw slightly higher than the rest of the table versus lower, in which case your work pieces will catch as you shift them around. This took me a few tries to get everything level and square(ish).

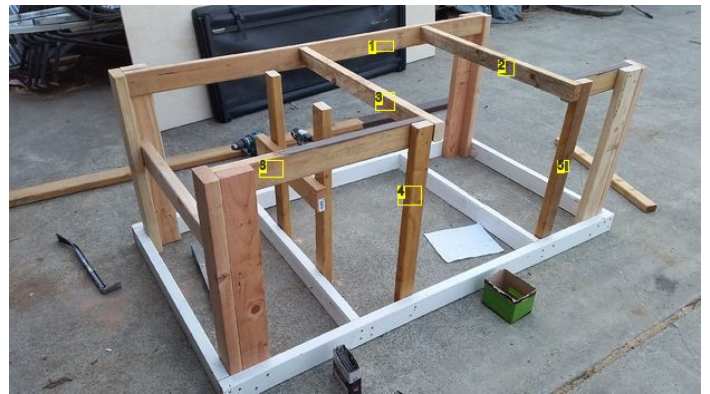


Image Notes

1. 2x4, mine was 69"
2. 2x3
3. 2x3
4. 2x3
5. 2x3
6. 2x4

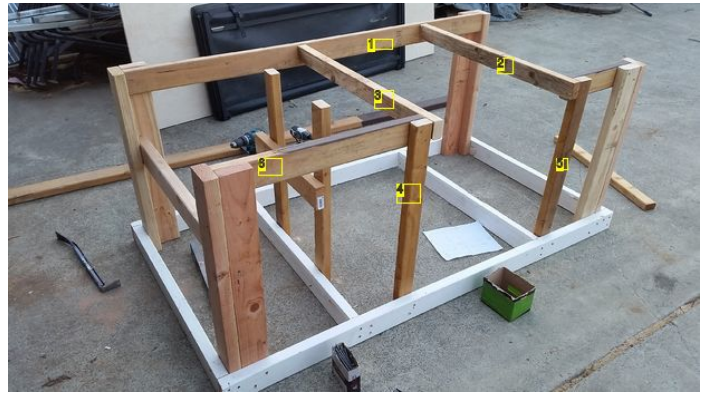




Image Notes

1. 2x3's are secured to this scrap piece only (for now)
2. using only one screw for support, and not fully screwed in since it will likely need adjusted and checked for square later





Step 4: Casters

Easiest part of the project, so grab a beer; you've earned it! I had these 5" casters on another shelving unit that didn't really need to be mobile. Never pay money for that which can be salvaged. (Craigslist is your friend). These 5" wheels are great cause I have a bit of a lip to run over, getting back into my garage and didn't want to get hung up on it. If you're buying new, choose wisely as their cost can add up. I'd say get 3" at a minimum if you won't be moving around much. At least two locking casters are a good idea if you'll be working on slopes. I used 3" lag screws that I had on hand for securing these.



Step 5: Cutting and installing the table top

Sorry I didn't get more in-progress pics for this part, I was a little aggravated that I had to use a hand planer on some of the 2x4 framing since the spot I'd built it on wasn't quite level. After that nonsense was over, I started by securing the table saw in its spot with lag screws (drill pilot holes, add washers if needed). Next I double-checked measurements for the width and depth of the table saw surface. Mine wasn't perfectly centered since I left about 4" of table overhanging on the backside vs just 2" on the front edge. After marking out the cut-out area, I proceeded with the circular saw, cutting both sides and then finishing the corners and back edge with a jigsaw. I had to cut a little farther back, leaving about a 1/2" gap behind my table saw so I could still use my fence, as well as the blade cover.

Side note: I was able to make the cut-out space for the table saw and miter saw the same width. This will allow me to keep the piece removed for the table saw, and use it for an additional tool (router, probably) in the space where the miter saw normally sits. I may end up cutting another square piece for my bench grinder as well.

With the plywood in place around the table saw, from underneath the bench I marked the outside edges of the 2x3 supports for the miter saw. If your miter saw doesn't slide then it probably won't need to be as deep as the one I cut, but make sure you'll have space to reach all knobs and adjustments on your saw when it's in place. After cutting about a foot in on the left and right sides I added clamps and a scrap 2x4 to support the front edge while finishing my cuts. As long as the support boards are square and parallel you shouldn't have any problems. But keep in mind that this piece will be upside-down when you mount your miter saw to it. Otherwise, if it's not perfectly square, it may not fit back in place when you flip it around. In other words, attach the miter saw to the under-side of the plywood piece you cut out. Once the piece is cut you'll be able to test fit it and see what I mean.

I attached the miter saw with 3" carriage bolts, washers and nuts. The heads of these bolts stick up about 1/8" when the saw is upside down, but as of yet haven't gotten in the way when I'm ripping plywood sheets on the table saw. If you're a perfectionist you could also route out a recessed area to get the heads below the work surface. Then I finished securing the table top with 2" screws and cut the excess material off with a skillsaw. If you want to avoid drilling thru the top of the table you could also use a mixture of wood glue and brackets on the underside for a cleaner look.





Step 6: Lower shelving

Things should be looking pretty good by now, and fully functional. I added one more 2x4 support to the base frame before I cut three sections of scrap 1/2" plywood for the bottom shelf. I ripped them to fit the overall depth and then took measurements for cutting around the legs. I used a jigsaw and gave myself plenty of wiggle room; it's a workbench, not a cabinet after all. I got excited and loaded it up with all my other power tools: planer, grinder, skillsaw, sawzall, compressor, sanders. It's probably too much weight for moving around frequently but I just love having everything in one spot, and it cleared up so much space in my garage!



Step 7: Electrical

An optional step, but worth it after all this effort in my opinion. I mounted 4 outlets in a 2-gang box on the front of the table, so both saws could remain plugged in with two additional outlets for other tools. When picking the location I made sure it was close enough to the miter saw that I could leave it plugged in while flipping it around. This connected to two outlets on the backside, where the power comes in via a male plug, strapped to the framing. This way I can bring an extension cord to the table wherever it ends up and then everything's powered.



Image Notes

1. this plug is connected to the lower outlet. the top outlet connects to the 2 gang box on the front of the table



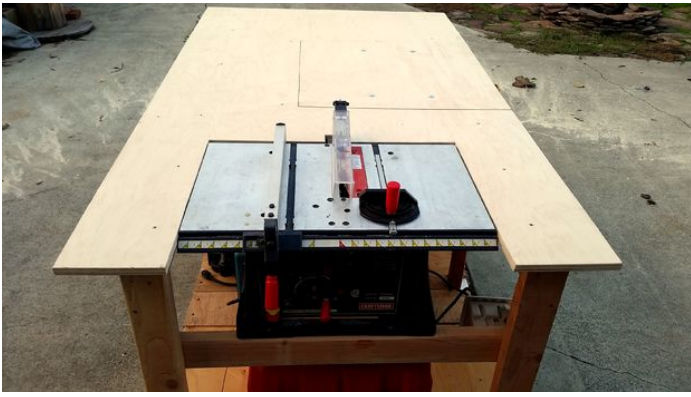
Step 8: Finito!

Thanks for reading my first instructable! Feel free to ask questions in the comments and I'll do my best to answer.

<https://www.instagram.com/craftytrev/>



<http://www.instructables.com/id/Mobile-Workbench-With-Built-in-Table-Miter-Saws/>



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