



MODERN HOBBYIST

Modern Miter Saw Station Mk. 1



For this project, I designed a miter saw station for my shop that can be made for under \$150, but also has some optional upgrades that can transform it into an amazing addition to your shop! I've included the parts and instructions you need for the workbench as well as the optional parts for the stop block system. The width of this workbench is 23.75", which fits my Bosch axial glide miter saw, but may be too narrow for some other sliding miter saws. Please verify that this workbench will fit your saw before building.

Good luck, and have fun!
Charlie

[Click here to see the build video!](#)

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Workbench Parts List

Linear Parts List

Part	Description	Qty	Dimensions	Material
A	Right Front Brace	4	50.25" x 3-1/2" x 1-1/2"	Pine 2x4
B	Left Front Brace	4	66" x 3-1/2" x 1-1/2"	Pine 2x4
C	Inner Brace	18	20.75" x 3-1/2" x 1-1/2"	Pine 2x4
D	Leg	8	37.25" x 3-1/2" x 1-1/2"	Pine 2x4
E	Saw Front Brace	1	26.76" x 3-1/2" x 1-1/2"	Pine 2x4
F	Saw Back Brace	1	23.75" x 3-1/2" x 1-1/2"	Pine 2x4
G	Saw Side Brace	2	22.5" x 3-1/2" x 1-1/2"	Pine 2x4

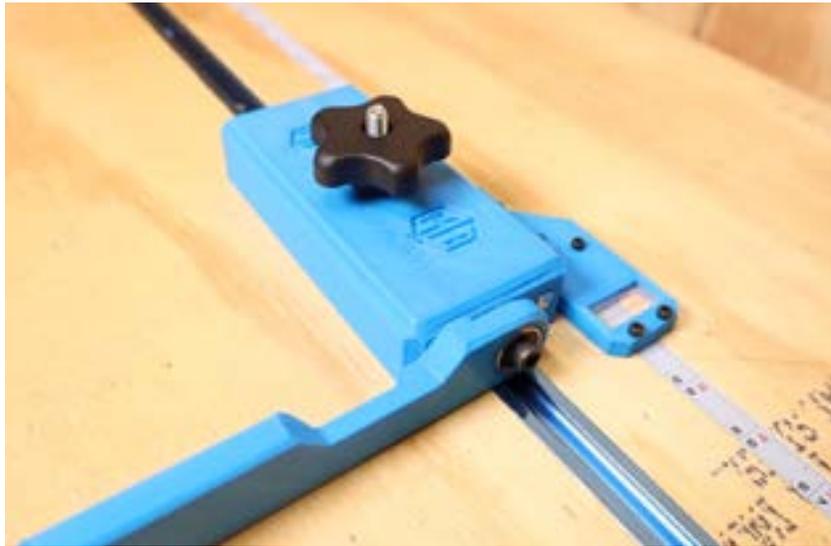
Sheet List

Part	Description	Qty	Dimensions	Material
H	Left Top	4	50.25" x 23.75"	3/4" Plywood
I	Left Bottom	4	66" x 23.75"	3/4" Plywood
J	Right Top	18	20.75" x 23.75"	3/4" Plywood
K	Right Bottom	8	37.25" x 23.75"	3/4" Plywood
L	Saw Platform	1	26.75" x 23.75"	3/4" Plywood

Hardware

Description	Qty	Dimensions	Price
3/4" Plywood Sheet	2	3/4" x 48" x 96"	Price Varies
2"x4" Stud	14	2" x 4" x 96"	\$4.35/stud
T-Track	6	24" (At Least 124" Total)	Check Amazon
Construction Screws		3"	
Other Wood Screws...		For Mounting T-Track	
		Total	

Stop Block Parts



[Download 3d Models here!](#)

Stop Block Hardware

Part	Description	Qty	Link
A	626 Bearing	4	https://amzn.to/3eaZwab
B	M6 x 30mm Bolt	2	https://www.boltdepot.com/Product-Details.aspx?product=6542
C	M5 x 15mm Bolt	4	https://www.boltdepot.com/Product-Details.aspx?product=6520
D	M3 x 6mm Bolt	8	https://www.boltdepot.com/Product-Details.aspx?product=13634
E	5mm Acrylic Sheet	1	https://amzn.to/3B2jzze
F	T-Bolt Set	1	https://amzn.to/3APTgNL
G	8mm Magnets	4	https://amzn.to/3Rf6cCc
H	M5 Heat Set Inserts	4	https://amzn.to/3QvMxxd

Cut List

Linear Cutting Plan / **Miter Saw Station**

Created by www.opticut.com

Required stocks

Stock length	Quantity
96	14
Total	14

Material	2x4's
Total parts	38
Total parts length	1,232
Used stocks total length	1,344
Total yield	91.667 %

Layout patterns

Layout details				
Repetition 1x	Stock length 96	Part length / Label	Qty	Waste
		22.5 / Saw Brace	2	Material 0.5
		26.75 / Saw Front	1	
		23.75 / Saw Back	1	
		22.5 / Saw Brace	26.75 / Saw Front	23.75 / Saw Back
Layout details				
Repetition 4x	Stock length 96	Part length / Label	Qty	Waste
		37.25 / Leg	2	Material 0.75
		20.75 / Brace	1	
		37.25 / Leg	37.25 / Leg	20.75 / Brace
Layout details				
Repetition 4x	Stock length 96	Part length / Label	Qty	Waste
		20.75 / Brace	2	Material 4.25
		50.25 / Right Front	1	
		20.75 / Brace	50.25 / Right Front	
Layout details				
Repetition 4x	Stock length 96	Part length / Label	Qty	Waste
		20.75 / Brace	1	Material 9.25
		66 / Left Front	1	
		20.75 / Brace	66 / Left Front	
Layout details				
Repetition 1x	Stock length 96	Part length / Label	Qty	Waste
		20.75 / Brace	2	Material 54.5
		20.75 / Brace	20.75 / Brace	

Required stocks

Stock dimensions	Quantity
96 x 48	2
Total	2

Material	Plywood
Total required panels	4
Total panels area	5,664.375
Used stocks total area	9,216
Total yield	61.462 %

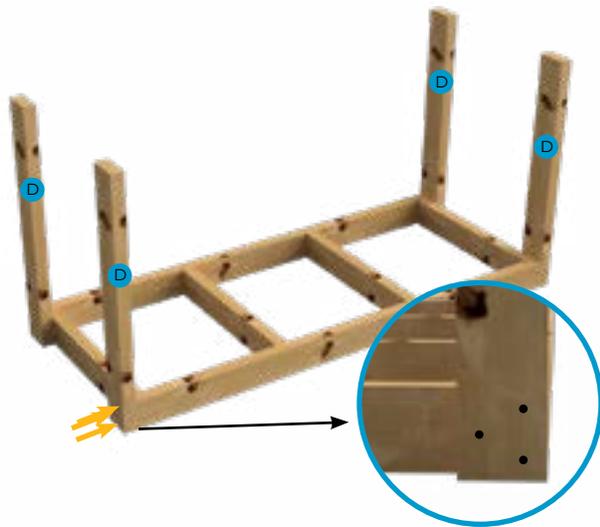
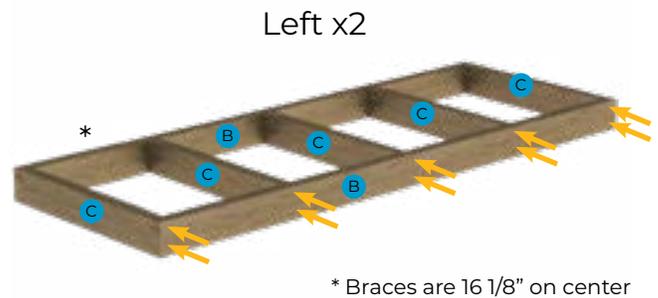
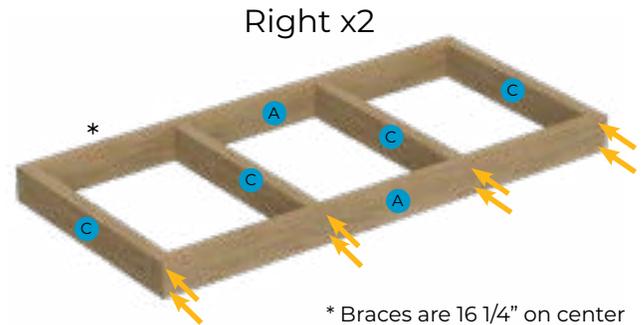
Layout patterns

Layout details	
Repetition 1x	Stock dimensions 96 x 48
Panel	Qty
66 x 23.75 / Left Bottom	1
69 x 23.75 / Left Top	1

Layout details	
Repetition 1x	Stock dimensions 96 x 48
Panel	Qty
53.25 x 23.75 / Right Top	1
50.25 x 23.75 / Right Bottom	1

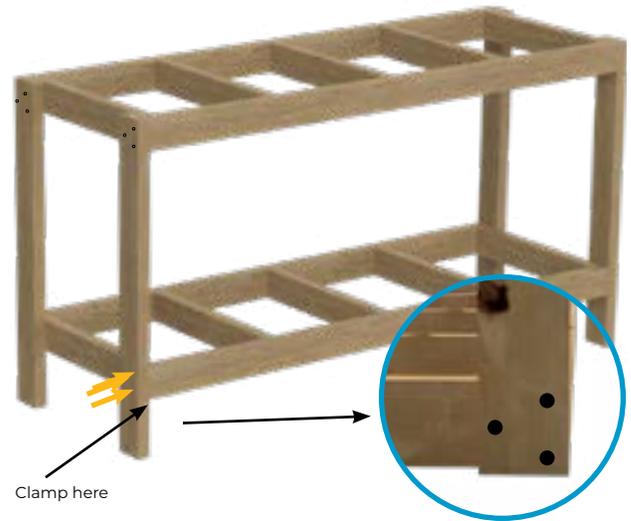
Workbench Assembly

Step 1: After cutting all the 2x4's, find a flat area to lay out the pieces for either the left or right portion of the workbench frame and attach them with screws. It is a good idea to pre-drill these holes as that will reduce the chance of the 2x4 splitting. Repeat for each side until you have 2 left frames and 2 right frames.



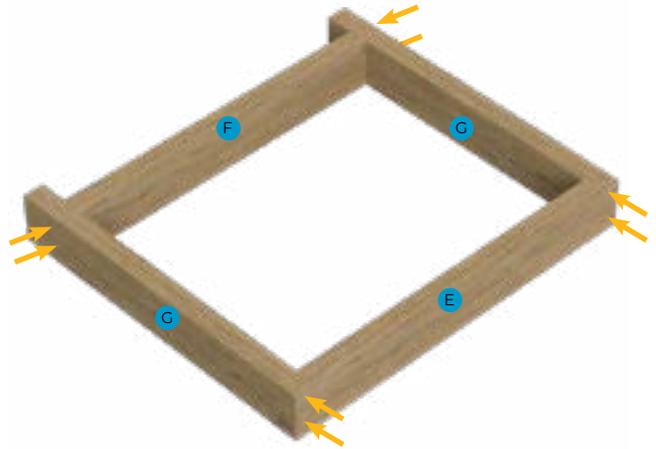
Step 2: Pick a workbench side, and choose one from from that side to be the workbench top. Flip that frame so the most flush side is face-down and attach the legs with screws as shown in the picture. Again, pre-drilling here may save you some headache from splitting. Repeat this process for the opposite side of the workbench.

Step 3: Flip the workbench right-side up, so it is standing on the legs. Mark a line on each leg 6" off the ground and clamp the remaining frame section in place before pre-drilling and screwing the frame into place. This will act as the shelf, so feel free to adjust the height of the shelf to suit your needs. Repeat this step for the opposite side of the workbench.



Step 4: After cutting the plywood down to size, attach each section to the frame by pre-drilling and mounting with wood screws. It is important to pre-drill here so the resulting work surface is flush and doesn't have screw heads protruding from it. Aim for the studs underneath, and avoid placing screws in the path of the T-Track, as you will need to route a track for that later. Repeat this process for the opposite side of the workbench.

Step 5: Assemble the saw platform using the same methods as above. This saw platform has an offset on the back brace to allow for larger dust collection hoses. My hose is only 1.5", so I didn't need it, but some hoses are larger. If you have a larger hose, this space is there so you can cut a hole in the top to allow your hose to fit.

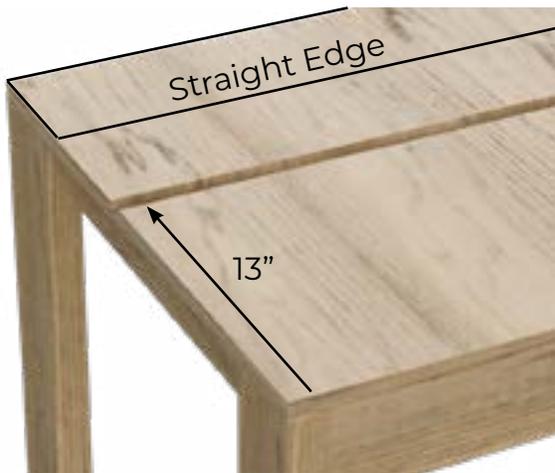


Step 6: Attach the surface to the saw platform by pre-drilling holes and joining with wood screws. Remember that the back brace is offset towards the front, so account for that when drilling in the back screw.

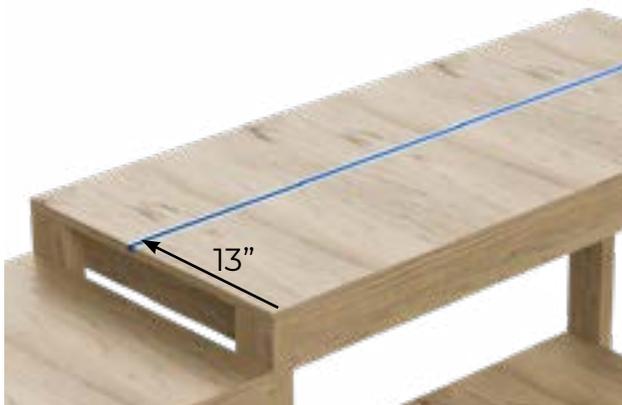
Step 7: Mount the saw platform between the left and right workbenches at the height required for your saw. I found what worked best, was to attach a clamp below the saw platform on each leg, so I could adjust each corner individually before attaching them with screws. Make sure to mount the saw platform on the low side and fine tune your saw later. I found that using playing cards to level out the saw worked incredibly well.



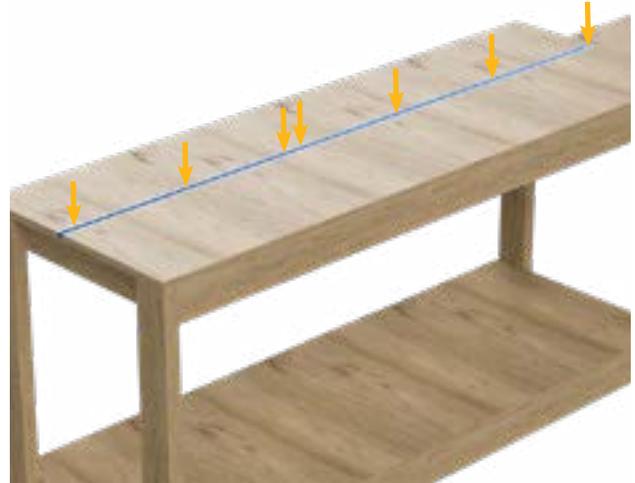
Optional Steps: Stop Block Track



Step 8: Prepare to get dusty... This step requires a router with a 3/4" flat end mill bit (1/2" would work too, but will take two passes to route the track). For my saw, I centered the track 13" back from the front of the workbench, and routed a 3/4" track 1/2" deep. The offset for your router will vary from mine, but I clamped a straightpiece of plywood to my workbench to act as a straight edge for the router.



Step 9: Insert the T-Track into the routed groove and attach it with #8 wood screws. The pieces linked in this document come in 24" sections, but can be cut to size with a miter saw, skill saw, coping saw, etc... Make sure to do any extra sanding prior to install to make sure the surface of the T-Track is flush with the workbench surface.



Step 10: Set the router depth to about 1/16", and run another groove about 2" behind the T-Track. This groove will be used to install the measuring tape that the Stop Block uses.

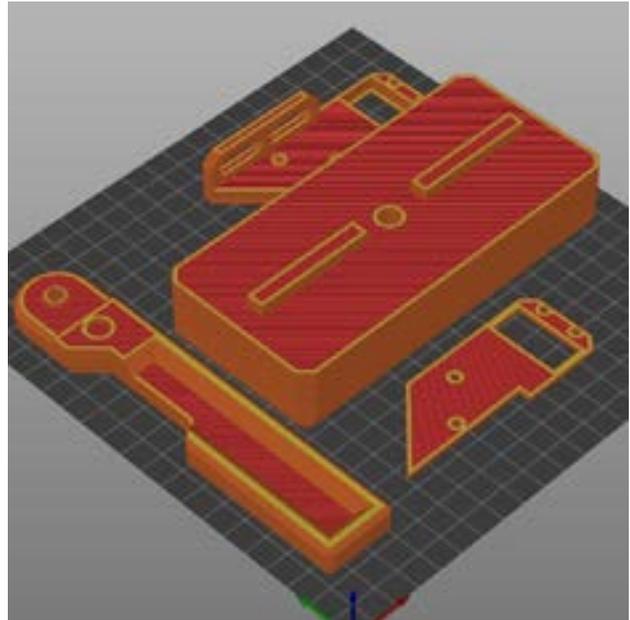
Step 11: Install the Left and Right metal measuring tapes into the shallow grooves. To do this accurately, the best method I found was to draw an arbitrary line on the workbench, set the stop block marker line on it, cut a scrap piece of wood, then measure it with a tape measure. The length of the board is the point on the metal measuring tape that you want to align with the mark. I tried other methods such as aligning the tape measure with the teeth of the blade, but this ended up being inaccurate.



Step 12: Align the metal measuring tape with the line you marked out in **Step 11**, and remove the backing on the tape to permanently mount it into the shallow groove. I used a line of super glue as well, since the sticky backing on anything always seems to fail after a bit of use.

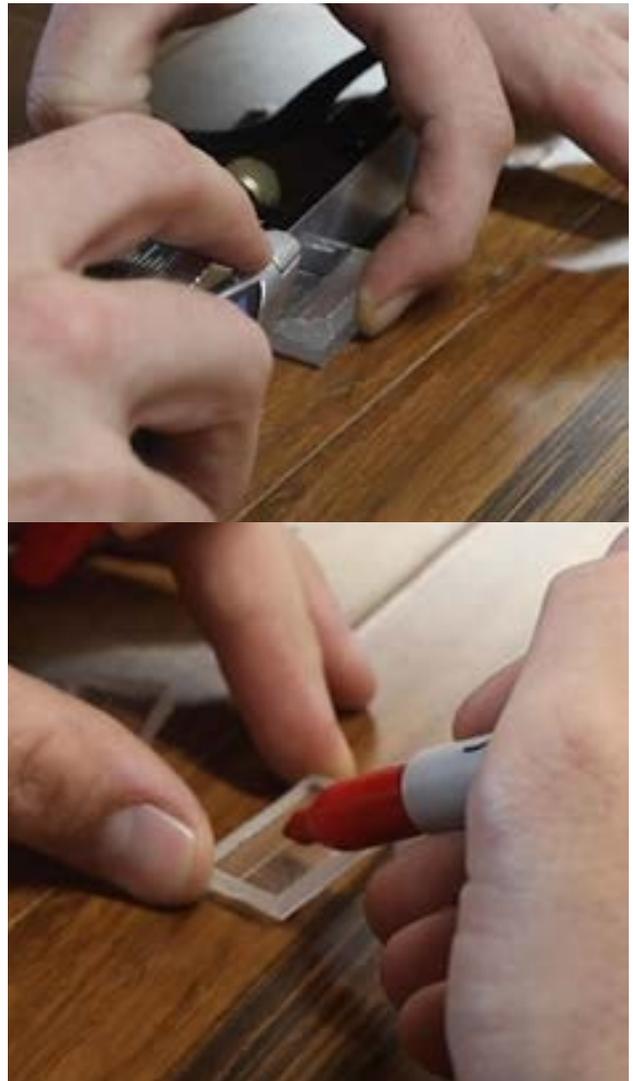
Stop Block Assembly

Step 13: There is a left and a right version of this stop block, so make sure to select all the corresponding files for the side you need and print them. I printed in PLA with 4 perimeter layers, 100% infill on the “flip stop” and 15% infill on everything else to save time. My print took about 8.5 hours and cost ~\$5 total. I found the orientation shown in the picture worked well and allowed me to print the entire stop block on a single 210mm print bed.



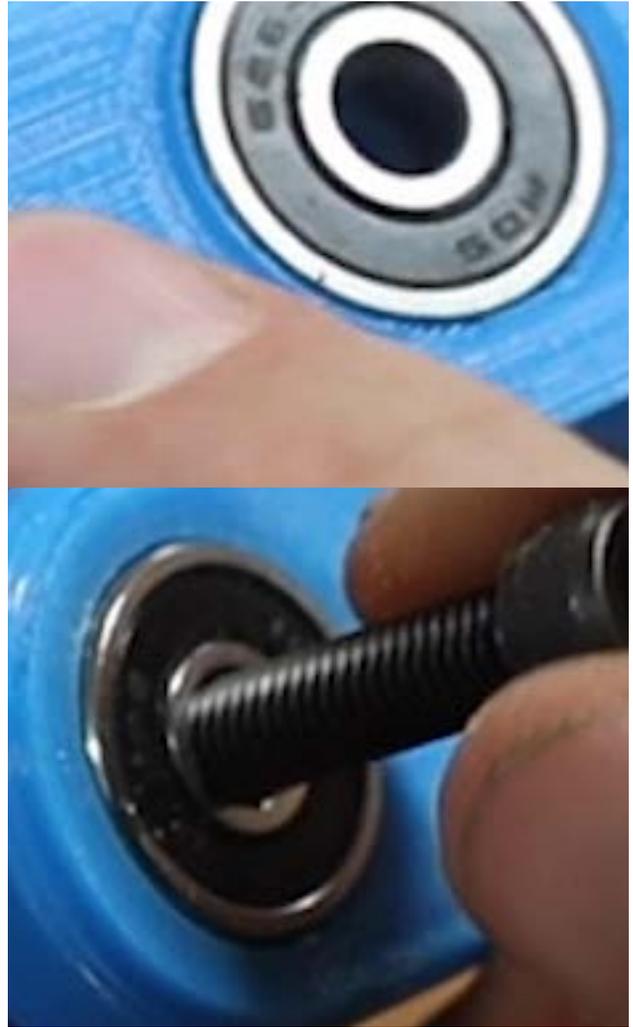
Step 14: Insert M5 heat-set inserts into the holes on the side of the stop block using a soldering iron. If you don't have heat set-inserts, an M6 bolt directly into the 3d printed part should work as well, though the holding power won't be the same.

Step 15: Cut 5mm acrylic rectangles to ~15x30mm and score the center line with a razor blade. I found a small coping saw worked well to cut the acrylic to that small of a size. Once you have scored the center line of the acrylic, take a red (or color of your choice) Sharpie and fill in the score line. Wipe away excess Sharpie with alcohol.



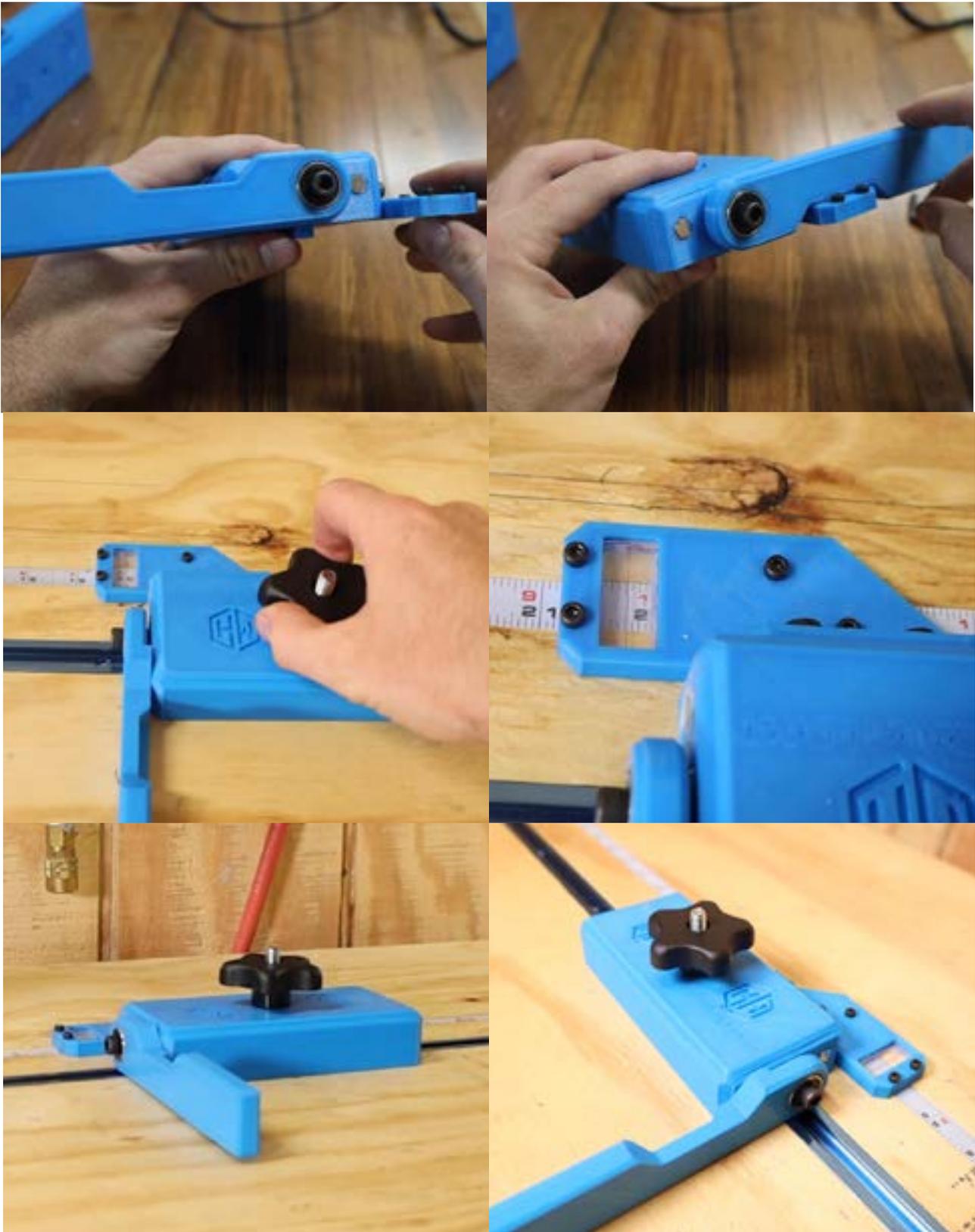
Step 16: Finish by assembling the line marking guide with M3 bolts, and repeat for the opposite stop block if necessary. Attach to the main body of the stop block with M5 bolts (if you used the heat-set inserts) and M6 bolts if you didn't.

Step 17: Install 8mm Magnets and 626 Bearing into the main body of the stop block. Use super glue on the magnet if necessary, but ideally they should press fit and stay in. Attach the flip stop with a 626 Bearing and an M6 bolt, tighten well.



Step 18: Visually align the red marker line with the edge of the flip stop. Fine-tune this alignment with a scrap piece of wood by making a cut, measuring, and adjusting the sliding gauge on the stop block until it is correct, then tighten down. Finally, secure to workbench using the T-Track bolts.

Completed Stop Block





And that's it! You now should have a super simple, but incredibly useful miter saw station that will allow you to easily make repeatable cuts. I hope you enjoyed this project and these build instructions, but if you didn't, or you found an error in them, please reach out to me either by email or on the Discord server (below). In fact, join the Discord server either way, we'd love to have you there!

Don't forget to check me out on Instagram and subscribe to the channel if you haven't already!

Thanks!
Modern Hobbyist



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Resources

Questions - If you have questions about this or other projects, join my Discord server! <https://discord.gg/R3tyHfKwaw>

Cut Lists - All the cut lists and diagrams were generated using OptiCutter with the express written consent of the creators. I am not sponsored by OptiCutter, but it truly is a great tool for creating linear and sheet cut lists, so make sure to check it out! www.opticutter.com

3D Modeling - All 3d models were created in Fusion 360 with the Free Hobbyist License. [Check Out Fusion 360](#)

Stop Block Inspiration - The initial design for the stop block was inspired by Brad from [Fix This Build That](#), where he made a similar stop block from wood and metal. Huge thanks to Brad for the inspiration and make sure to check out his channel!