

Router Table Plans



Increase the capabilities of your router with this weekend project. Features a sliding fence with EZ-Mount clamps. These clamps are simple to make and grip tightly and quickly. They make the fence easy to position for accurate cuts. The top and fence plates are made of countertop material. The frame and bit holder, are made of $\frac{3}{4}$ " stock. Either hardwood or pine works fine.

The extensive use of pocket holes makes the assembly of this project easy and intuitive. If you have never used pocket holes in your woodworking projects, you'll wonder how you ever got by without them. Pocket hole joints are extremely strong and there is no measuring. You simply drill the pocket holes in one of the work pieces to be joined, (the exact location is not critical), clamp the pieces together and insert the screws. Since the screws remain in the joint, they serve as both a dowel and a permanent clamp.

The lift out router plate allows easy access to the router and bit. Plus, there are several accessory plates available that let you use a jig saw, pocket hole jig, and spindle sander with this table. It also features a miter gauge slot. Links for the items you'll need are included in the sponsors pages, along with several router accessories.

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Please read and follow all tool manufacturers safety and operating instructions before operating equipment. Always wear eye and hearing protection.

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Introduction

Thank you for purchasing our Router Table Plans. I hope you find this router table to be a rewarding and satisfying project. For the prototype, the top and sliding sub fences were made from some old table top material I had lying around. I chose this material because it was nice and flat and wood slides easily over it. MDF (Multi-Density Fiberboard) is an excellent choice too. Whatever material you use, make sure it is flat or you won't get accurate cuts when using it.

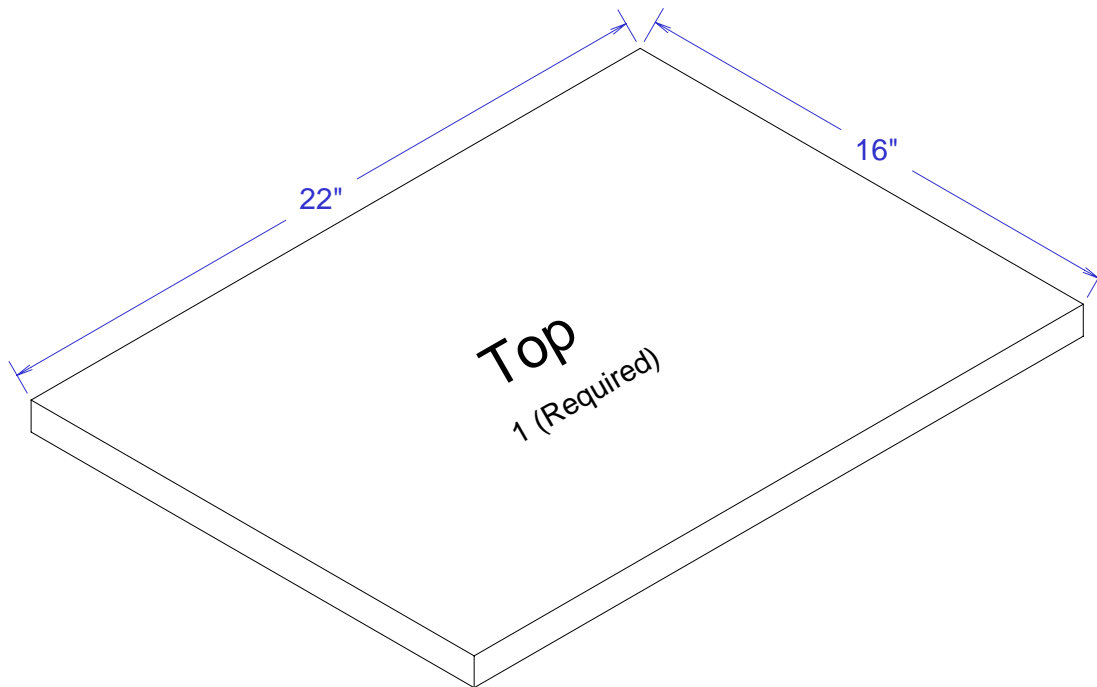
You can make the rest of the parts from any type of wood you choose. I used popular but pine would work too. You can purchase all the parts and accessories you'll need from the companies listed on the sources page.

Materials List

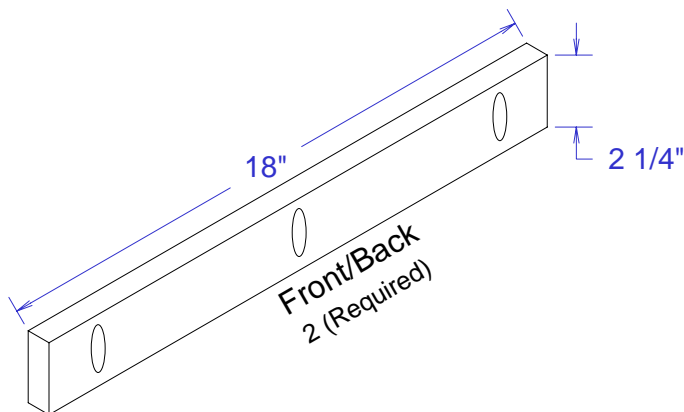
Page 1

Router Table Materials List

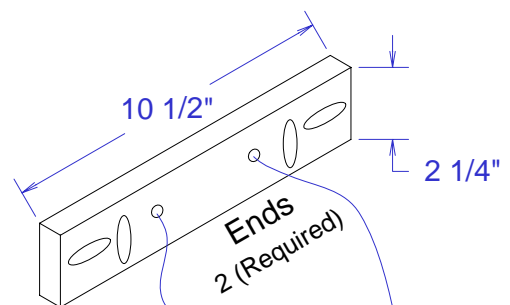
Qty	Size	Material	Item Name
1	22" X 16	1" Countertop material or MDF	Top
2	18" X 2 1/4"	3/4" Stock	Front/Back
2	10 1/2" X 2 1/4"	3/4" Stock	Ends
1	15" X 2 3/4"	3/4" Stock	Front Stiffener
2	16 1/2" X 1 1/4"	3/4" Stock	Rear Stiffener
2	16" X 3 1/2"	3/4" Stock	Feet
2	12" X 5 1/2"	3/4" Stock	Legs
1	15" X 4 1/4"	3/4" Stock	Bit Organizer Top
1	15" X 2 3/4"	3/4" Stock	Bit Organizer Bottom
2	15" X 1 1/4"	3/4" Stock	Bit Organizer Sides
1	25" X 4"	3/4" Stock	Fence Base
2	10 1/2" X 3"	3/4" Stock	Stationary Fence Faces
2	12" X 4"	1" Stock	Sliding Fence Plates
2	2 1/2" X 2 1/2"	1" Stock	Square Fence Support Blocks
2	1 1/2" X 1 1/2"	1" Stock	Beveled Fence Support Blocks
1	6" X 2 1/2"	3/4" Stock	Vacuum Box Rear
1	6" X 2 7/8"	3/4" Stock	Vacuum Box Top
2	1 1/2" X 1"	3/4" Stock	EZ-Mount Clamp Riser
2	1 1/2" X 3"	3/4" Stock	EZ-Mount Clamp Block
1	8 1/4" X 11 3/4"	1/4" Aluminum	Router Plate
1	22" by 1"	1/2" Aluminum	Miter Gauge Track
1	N/A	Plastic	Bit Safety Guard
1	48" X 3/4"	1/2" Aluminum	T-Track
			T-Track Knobs and Bolts



The top is made from 1" thick countertop material. I chose this material because I had some I saved from an old office table. It was nice and flat and showed no signs of warping. If you don't have access to 1" thick material, you can make do with 3/4" stock. But the material must be flat. You can probably find some MDF board that is stable and flat.

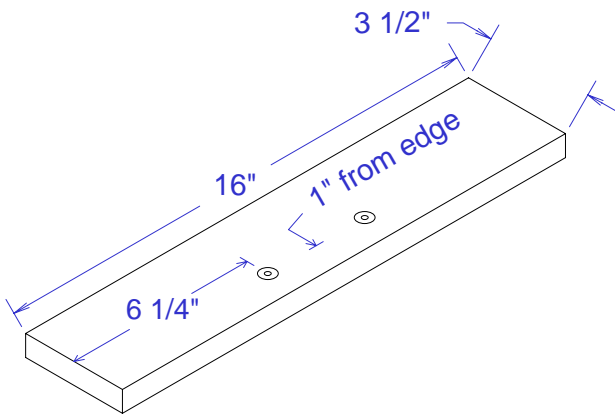
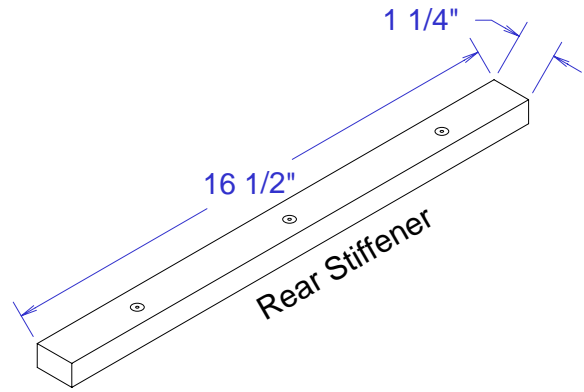
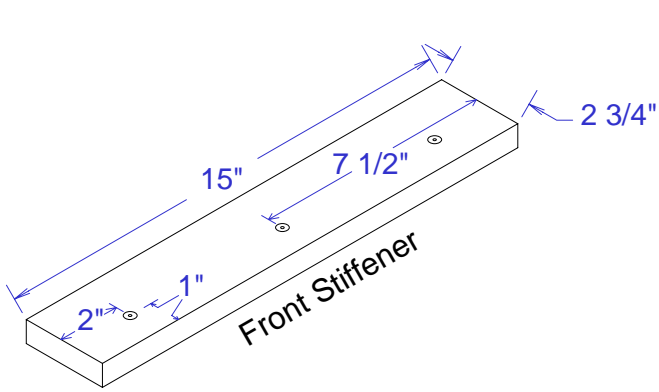


The front, back, and sides are made from 3/4" material. Drill the pocket holes as shown above. The exact location of the pocket holes is not critical.



Holes are 5/16" diameter, 3 1/2" from ends, 3 1/2" between centers, and 1 1/4" from bottom.

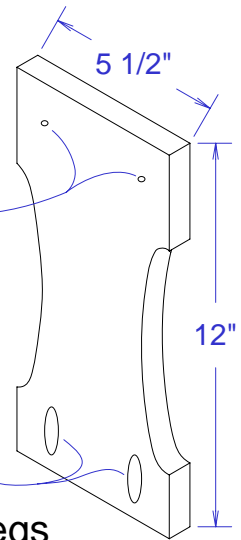
The stiffeners, legs, and feet are made from 3/4" stock.



Feet
2 (Required)

Holes are 1/4" diameter, 1" from ends, 3 1/2" between centers, and 1 1/4" from top.

Pocket Holes are 1 1/4" from edges.



Legs
2 (Required)

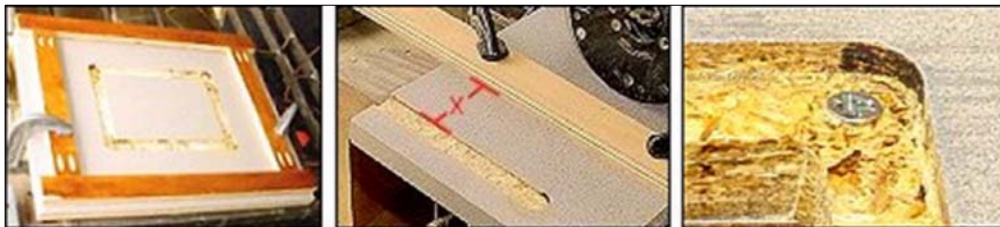
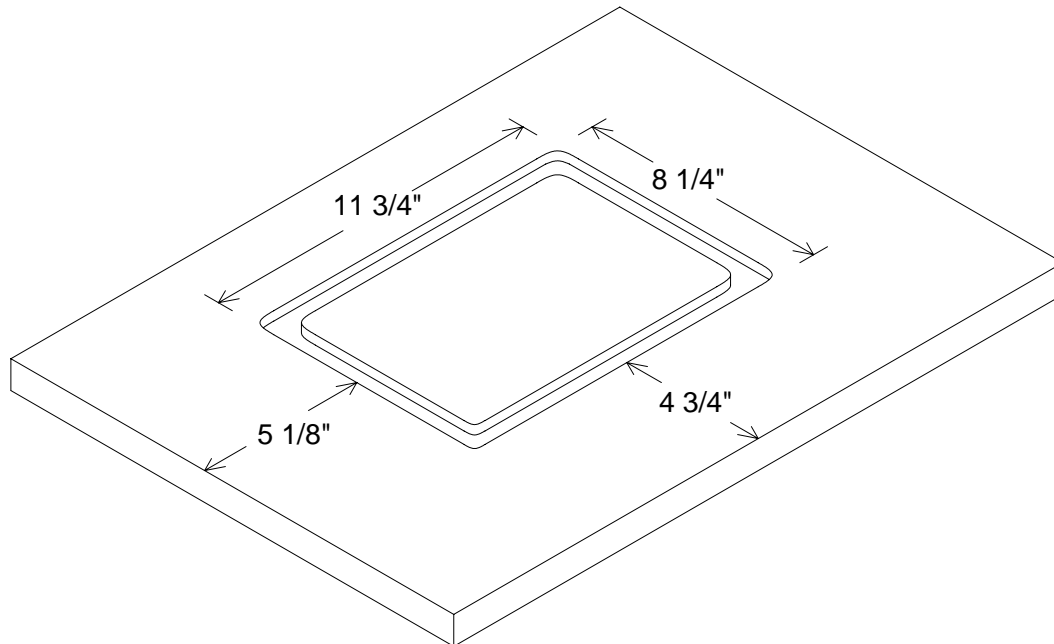


Figure 1

Figure 2

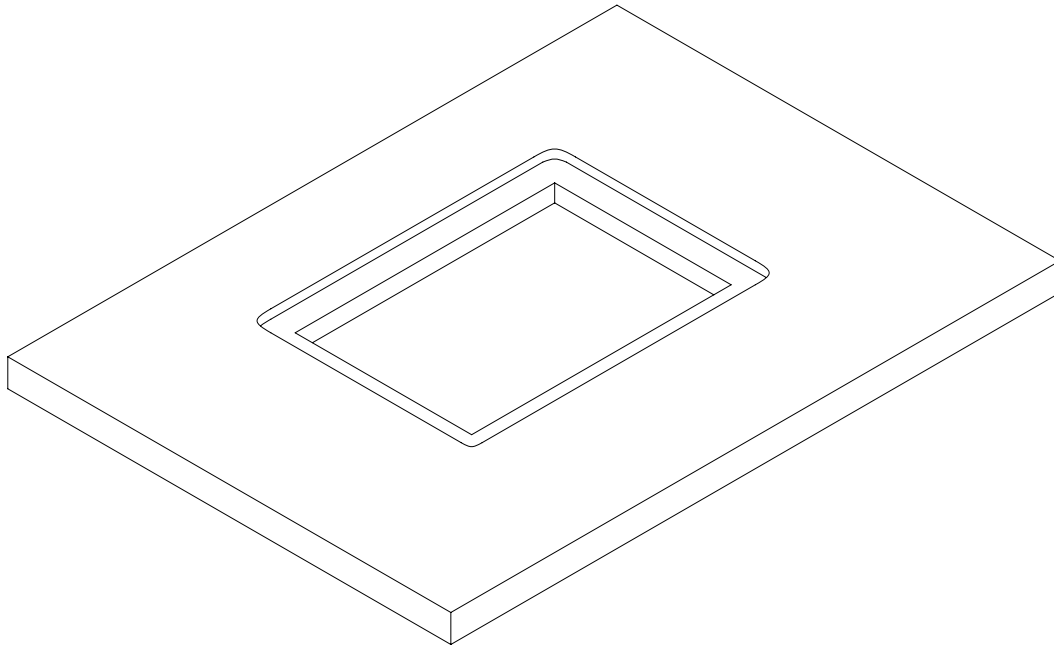
Figure 3

To cut out the recess for the router plate, make a frame to guide your router as shown in Figure 1 below. You'll need a $3/4$ " wide straight bit for this. To determine the dimensions of the frame, make a practice cut as shown in Figure 2. Measure the distance "X" from the slot to the edge guide. The height of the frame should be $8\ 1/4$ " plus two times the distance "X" and the width of the frame should be $11\ 3/4$ " plus two times distance "X". For my router, the inside dimensions of this frame turned out to be a little more than 13" by 16". But your router may be different so be sure to get the exact measurement and make your frame accordingly.

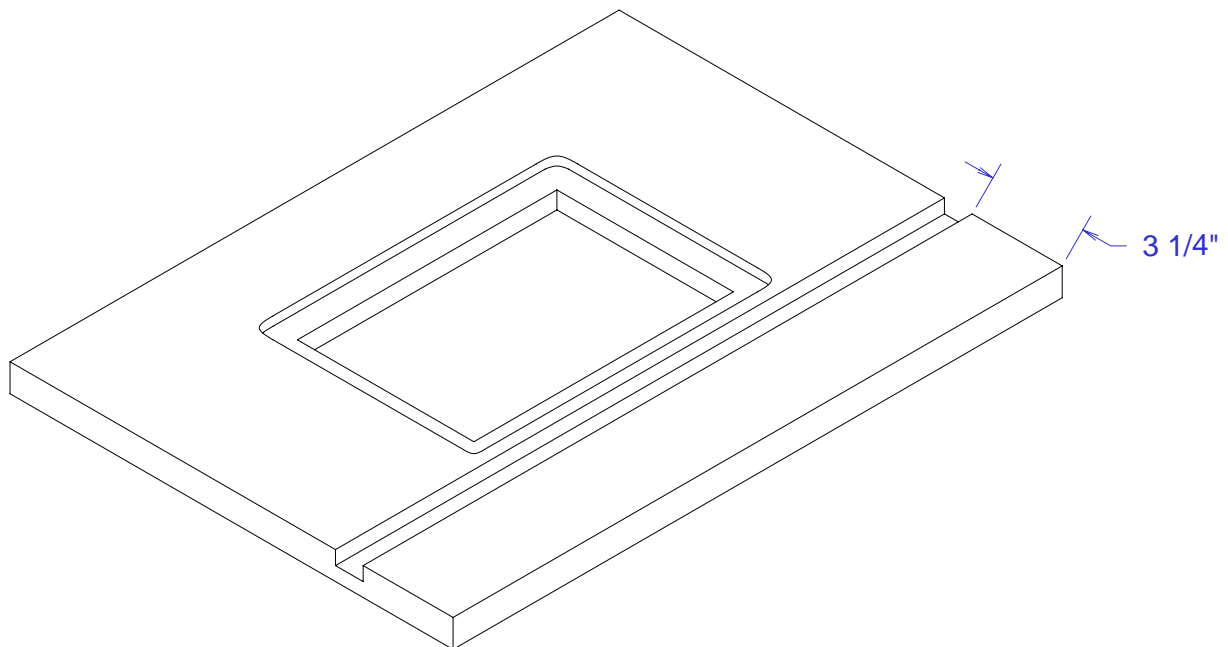
You can assemble the frame with pocket holes as shown in Figure 1. Clamp the frame to the countertop material so the cutout will be centered side to side and the front of the cutout will be $4\ 3/4$ " from the front edge of the material. This allows room for the miter gauge slot.

Set the router to cut a slot about $5/16$ " deep. (The router plate is $1/4$ " thick but you need to have the recess a little deeper so you can set it to be flush with the table surface. You do this by putting a flathead screw in each corner as shown in Figure 3. Then, you can adjust the screw height so the plate is flush with the top on all four corners. **Be sure the frame and workpiece are securely clamped to a solid work table or workbench and follow all safety precautions that came with your router. Never use power tools without safety glasses and don't wear loose clothing. Your clothing can get caught up in moving parts with any type of power tool.**

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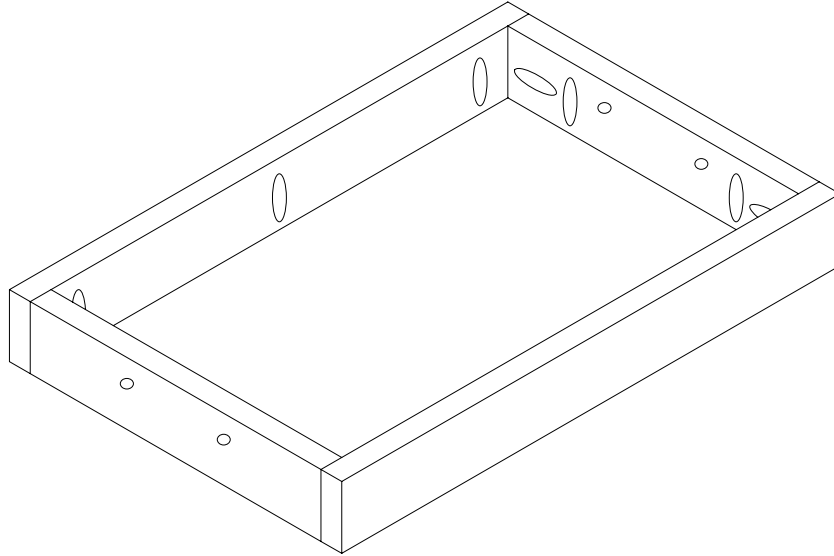
You can remove the center of the cutout with a jig saw. Try to leave as much material around the edge as possible. If your jig saw blade makes a 1/16" wide cut, the recess should have about an 11/16" wide edge around it. Wait until the stiffeners are installed before putting the corner adjustment screws in place.



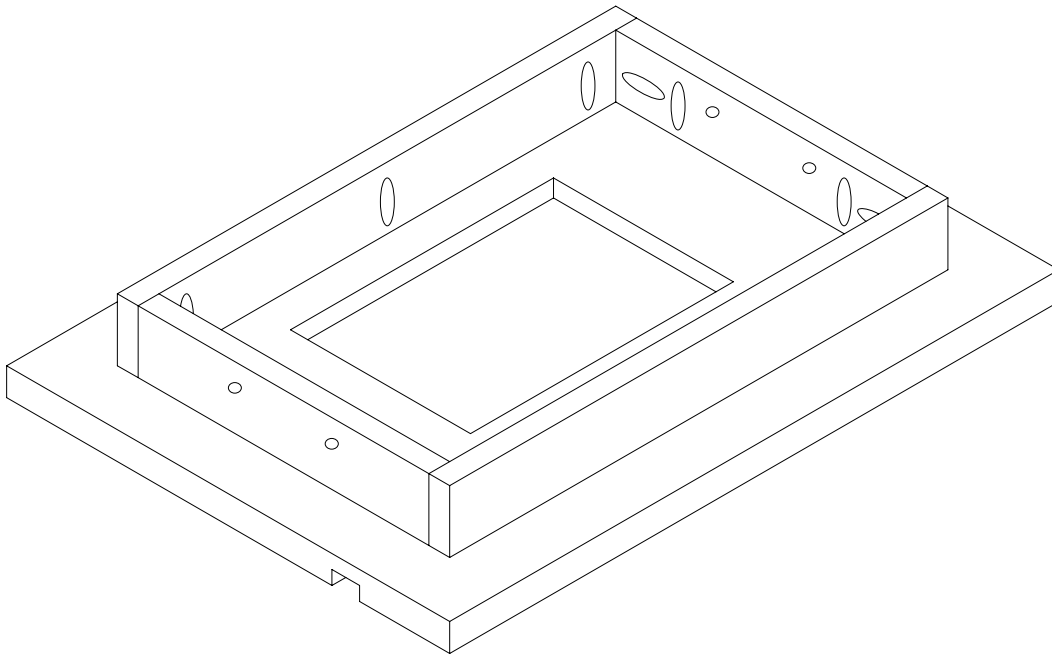
Cut a slot 1" wide by 1/2" deep and 3 1/4" from the front edge as shown above.

Assemble the Sides

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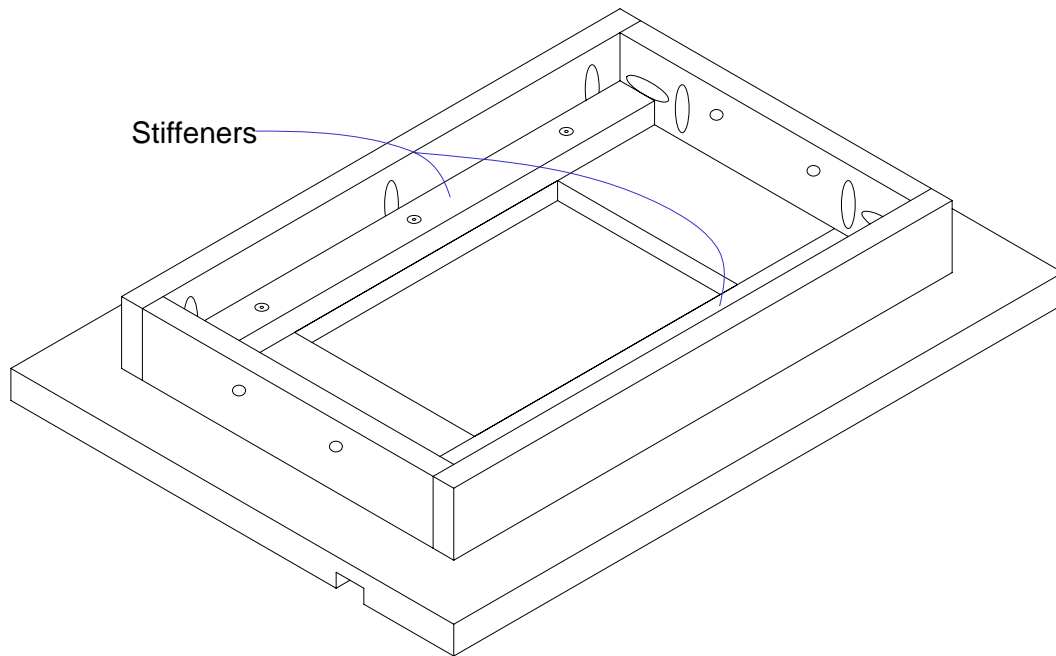
Assemble the four sides with a pocket hole screw in each corner as shown above.



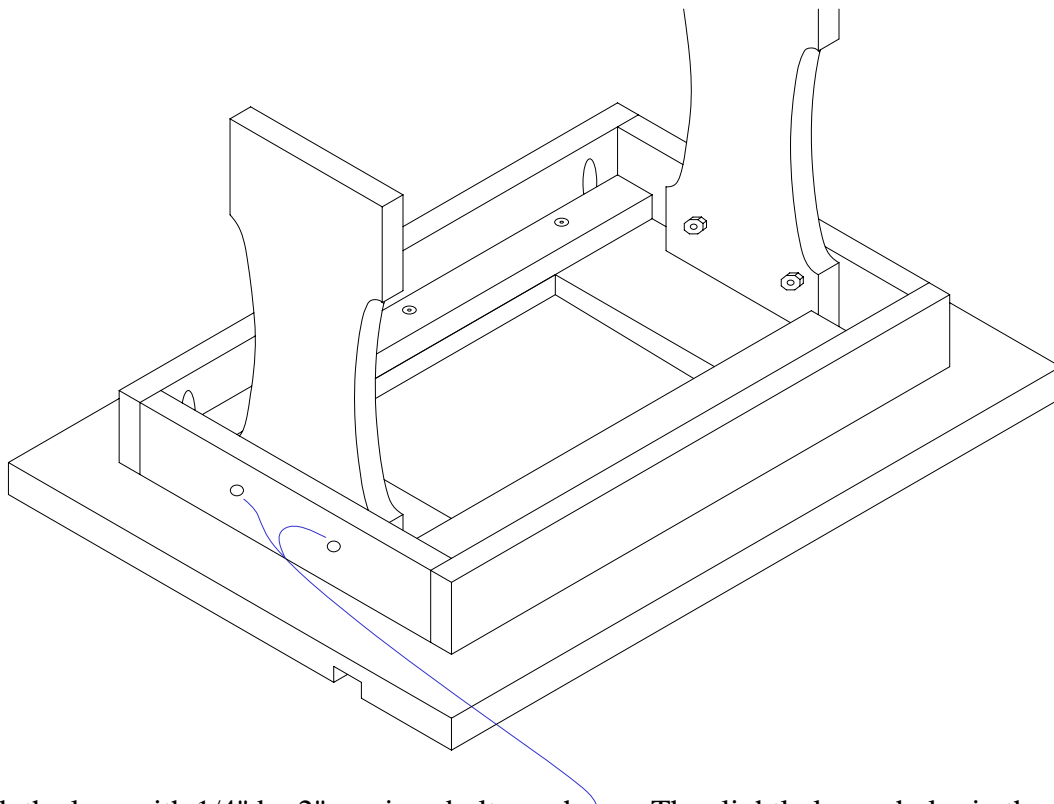
Attach the assembled sides to the underside of the top with pocket hole screws. It should be centered from front to back and side to side.

Attach the Stiffeners & Legs to the Top

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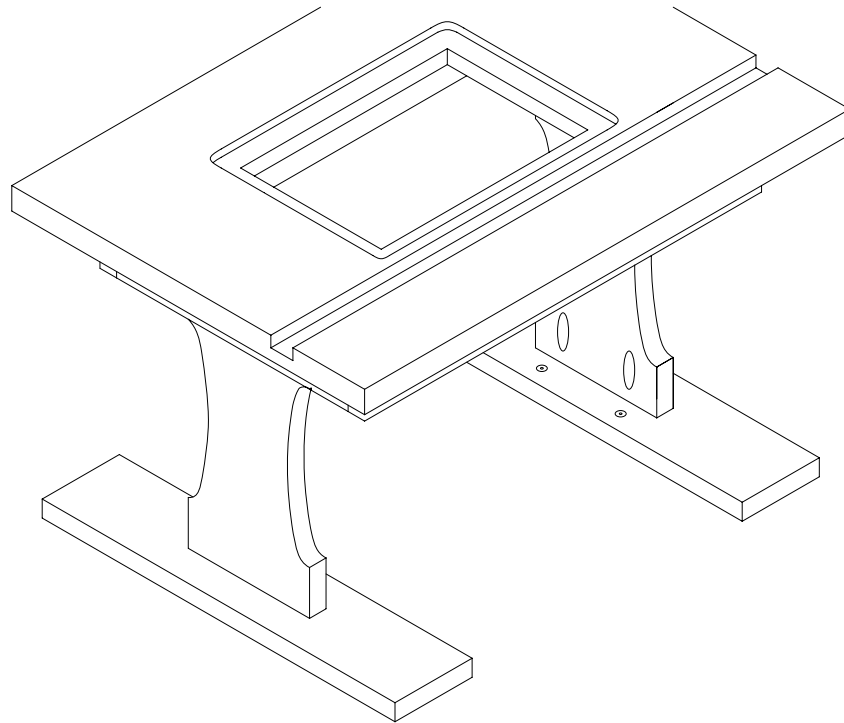
Attach the stiffeners to the underside of the top.



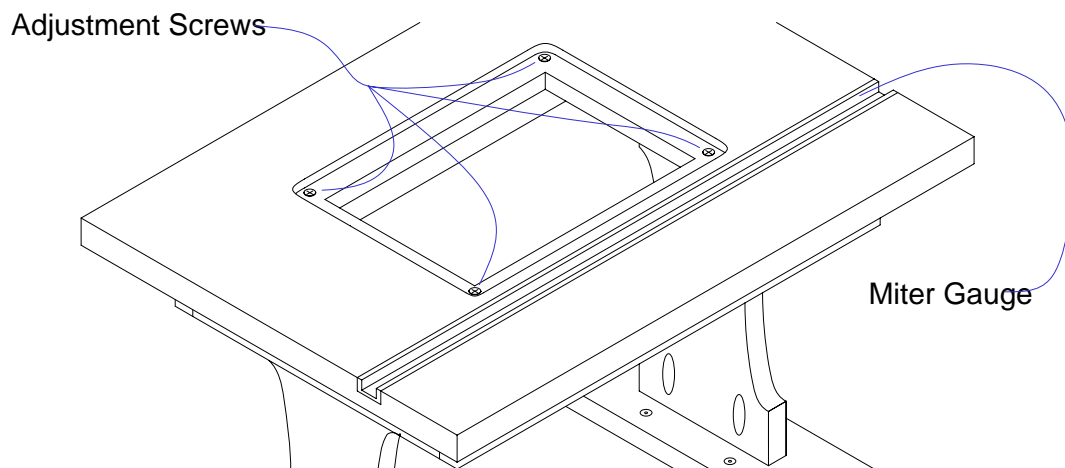
Attach the legs with 1/4" by 2" carriage bolts as shown. The slightly larger holes in the sides allow you to adjust the legs to ensure they set flat on the worktable.

Attach the Legs to the Feet

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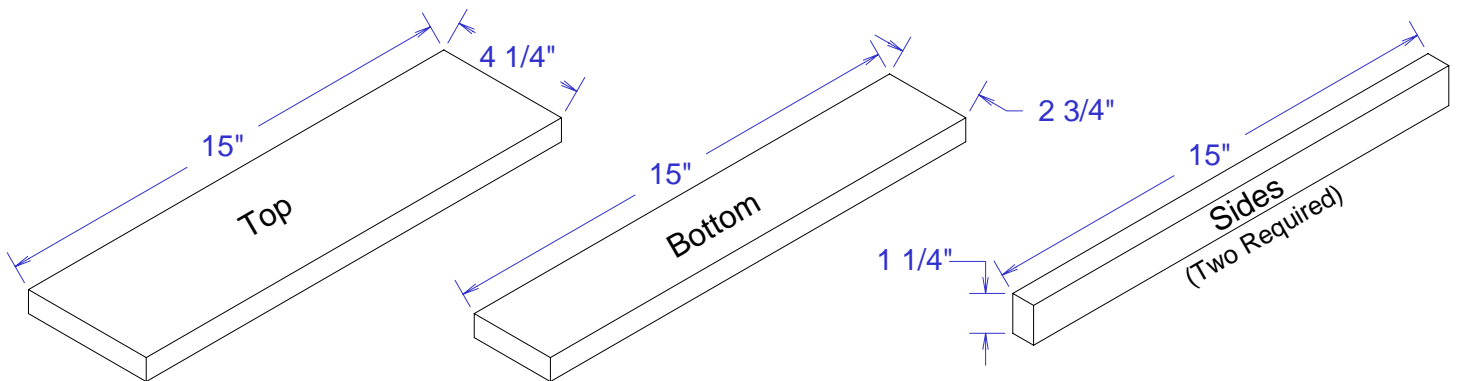
Attach the legs to the feet with pocket hole screws. The legs should be centered from side to side and end to end of the feet. If you are including the bit organizer, be sure the holes for the bit organizer are on the inside of the legs.



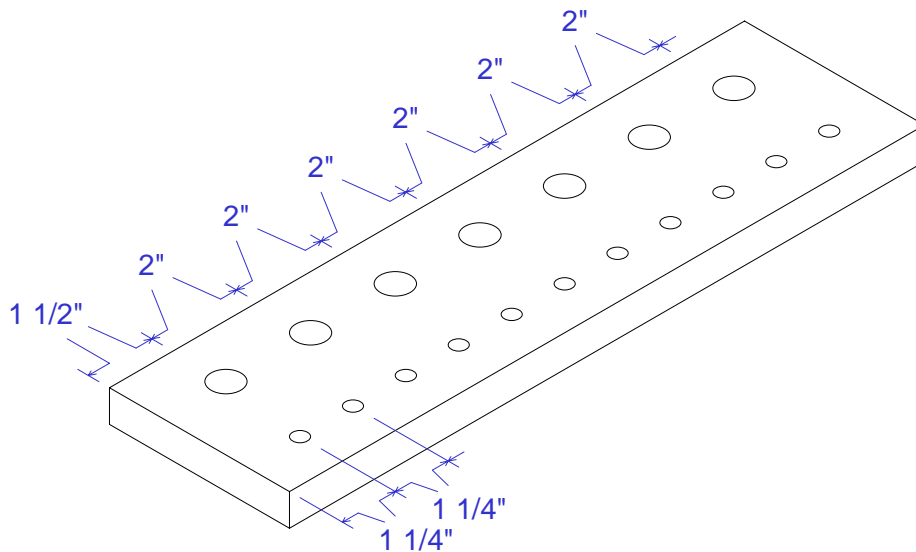
Predrill a hole in each corner of the cutout and install the adjustment screws as shown above. Adjust the screws so the router plate sits flush with the surface of the table top. Next, install the miter gauge with flathead screws as shown above. This completes the Router Table. Now, you're ready to build the fence and bit organizer.

Bit Organizer Parts

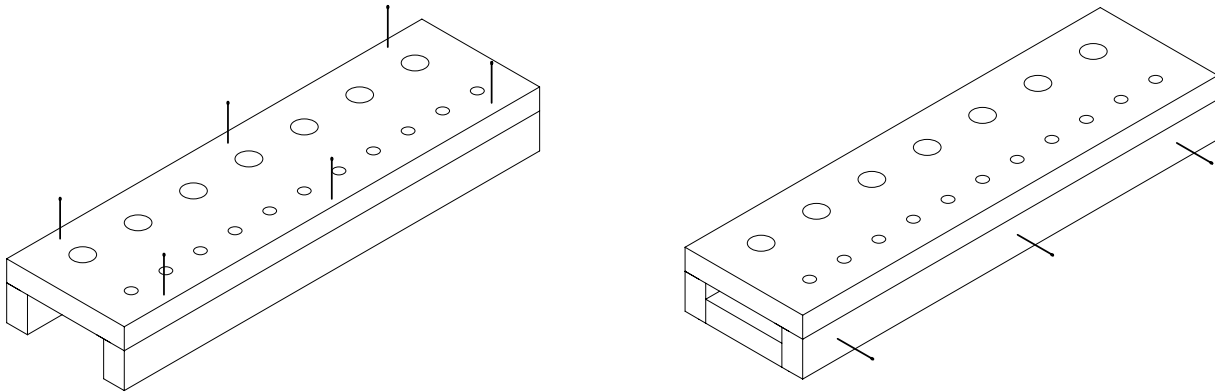
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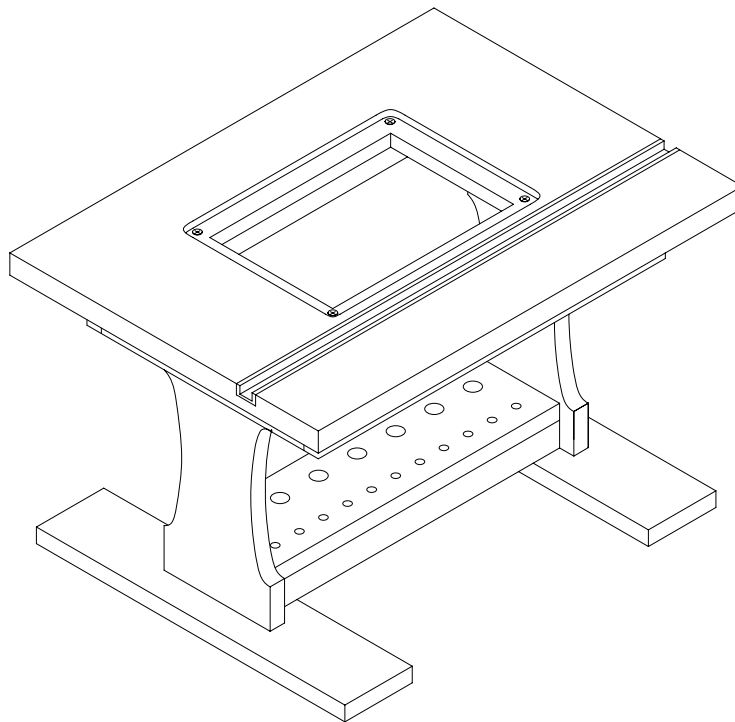
Cut the top, bottom, and 2 sides from 3/4" stock. The length should be the distance between the legs. For the prototype, this was 15".



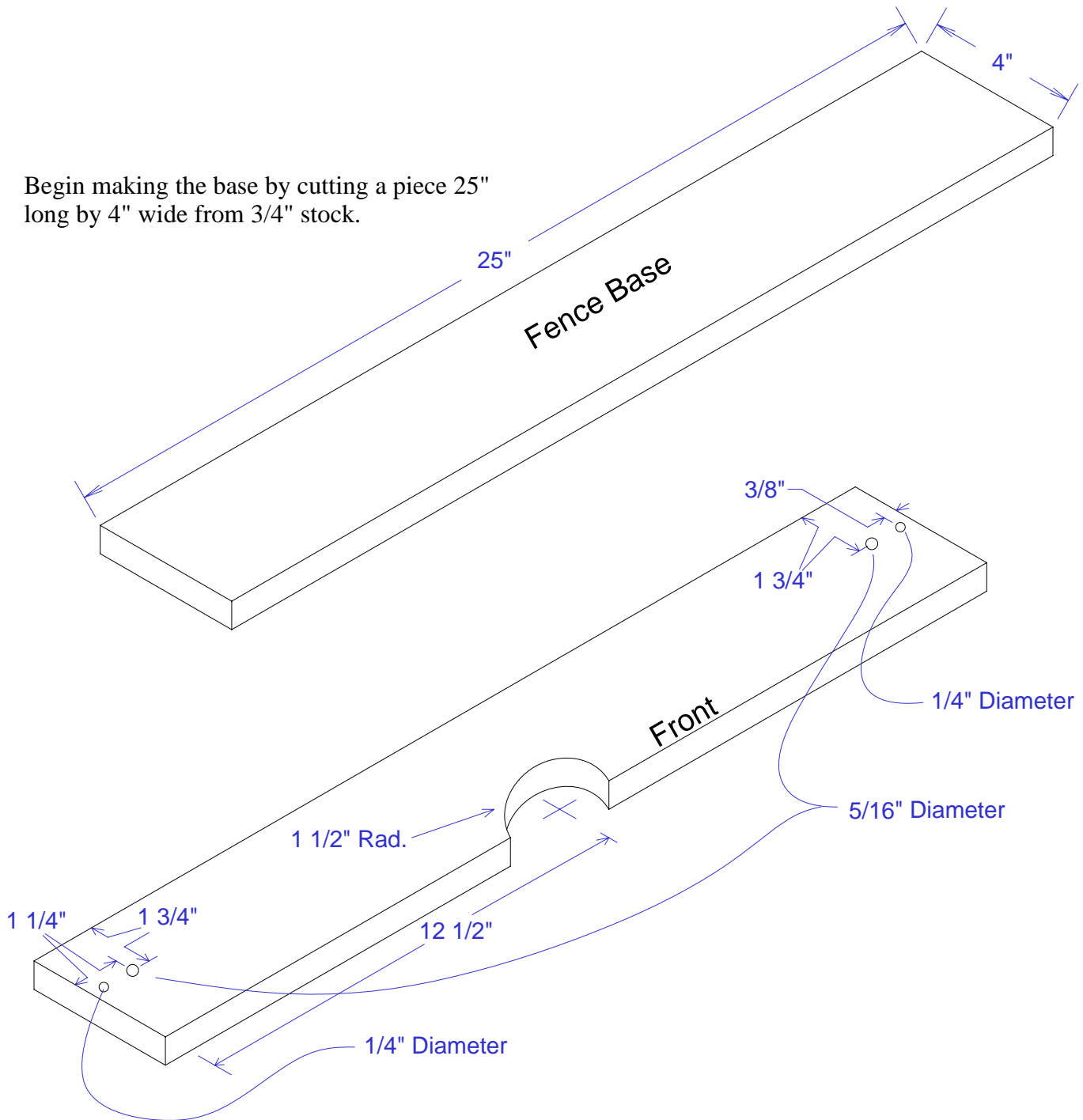
Drill seven 9/16" holes along one edge of the top as shown. Then, drill eleven 9/32" holes along the other edge as shown. This will accommodate seven bits with 1/2" shanks and eleven bits with 1/4" shanks.



Attach the top to the sides with 1 1/2" long finishing nails as shown. Then insert the bottom between the sides as shown and attach with finishing nails.



You should already have two holes in each router table foot for attaching the bit organizer. Attach the finished bit organizer to the feet using two flathead screws from the bottom of each foot. This completes the Bit Organizer. Now, you're ready to build the fence.



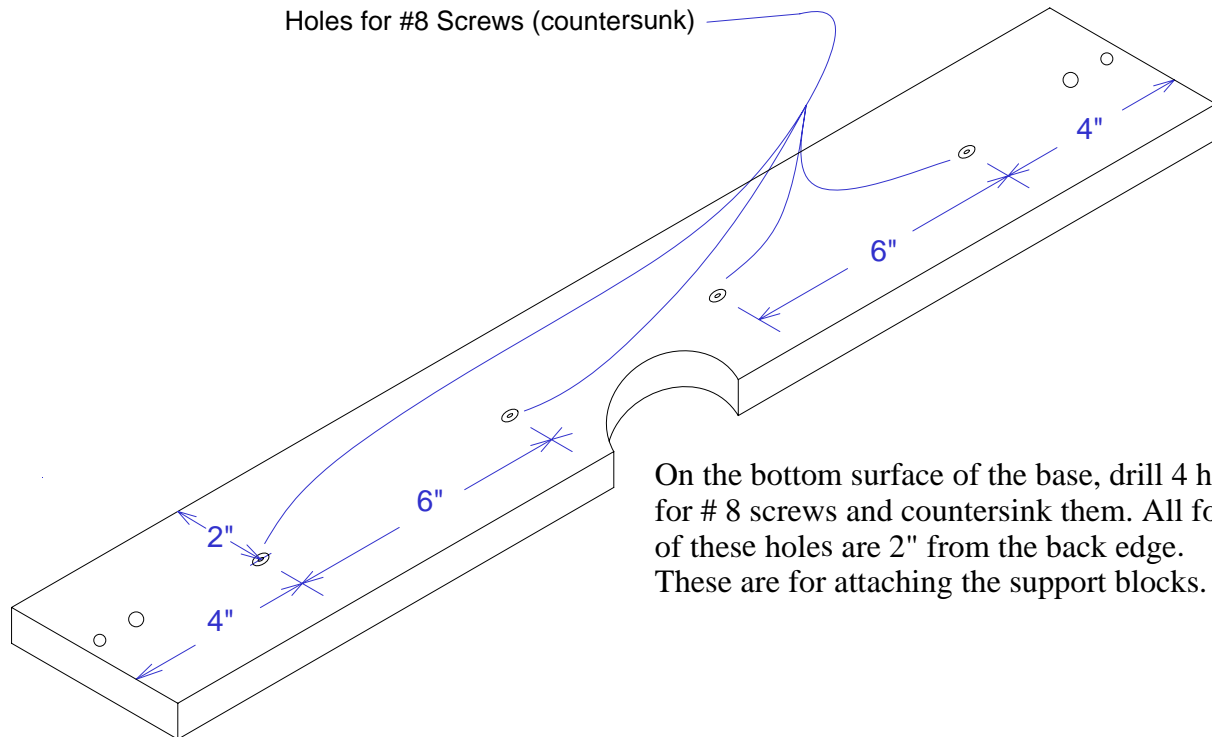
Begin making the base by cutting a piece 25" long by 4" wide from 3/4" stock.

Drill two 5/16" holes for the EZ Clamp Bolts. The 5/16" holes are 1 1/4" from each end and 1 3/4" from the rear edge.

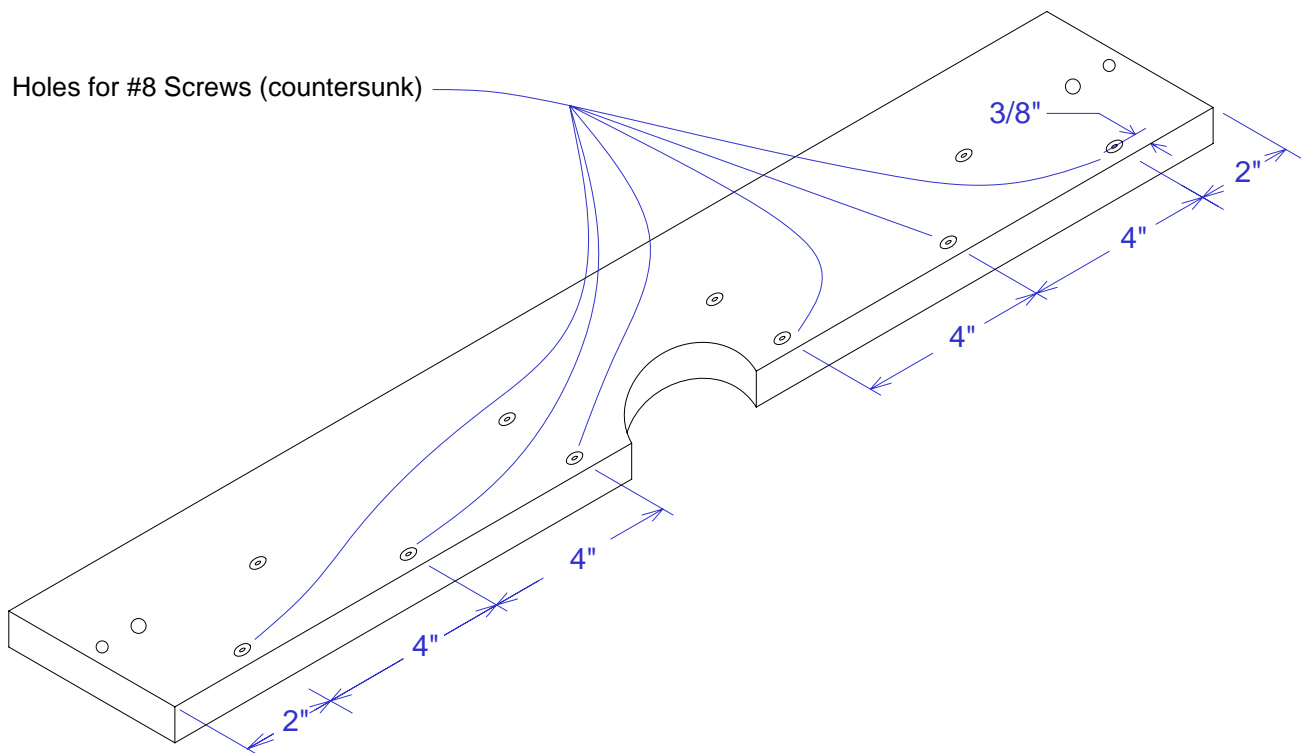
Drill two 1/4" holes 3/8" from the ends and 1 3/4" from the rear edge for the alignment dowels. **These holes for the alignment dowels are only 1/2" deep and must be drilled from the bottom surface of the base.** Also, cut a half circle with a 1 1/2" radius as shown. This provides clearance for the router bit.

Fence Drawings - (B)

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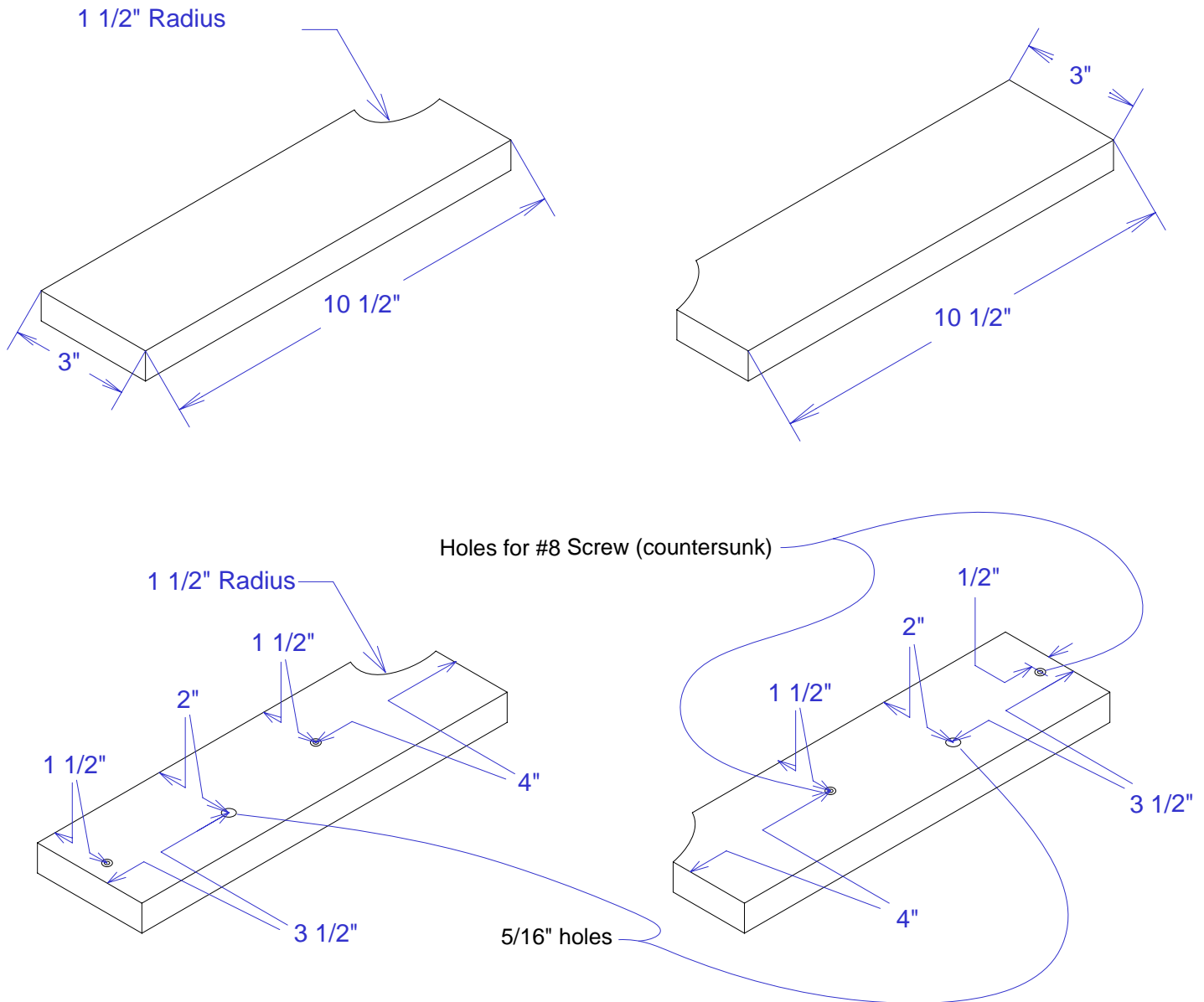


On the bottom surface of the base, drill 4 holes for # 8 screws and countersink them. All four of these holes are 2" from the back edge. These are for attaching the support blocks.



On the bottom surface, drill 6 more holes for # 8 screws and countersink them. These are for attaching the fence faces. All six of these holes are 3/8" from the front edge.

Stationary Faces Drawings

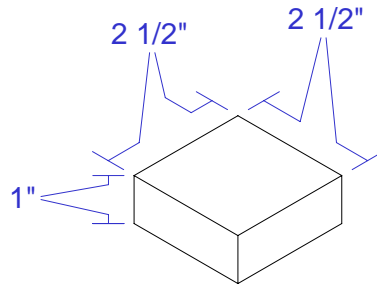


Cut two pieces of 3/4" material for the faces and drill the holes as shown. Make a curved cutout with 1 1/2" radius at the corners as shown. The two faces will be mirror images of each.

The countersunk screw holes are for attaching the faces to the support blocks. The 5/16" holes are for the T-Track Bolts. (The T-Track bolts allow you to adjust the fence for different diameter bits.) Originally, I had planned to use star knobs on the T-Track bolts but there wasn't enough clearance. I ended up using standard hex nuts and a 1/2" nut driver to tighten the nuts when needed. You'll probably find only one T-Track bolt per face is frustrating. I recommend adding an additional 5/16" hole & T-Track bolt on each face after you complete the project. Just pick a location that the nut won't interfere with other parts.

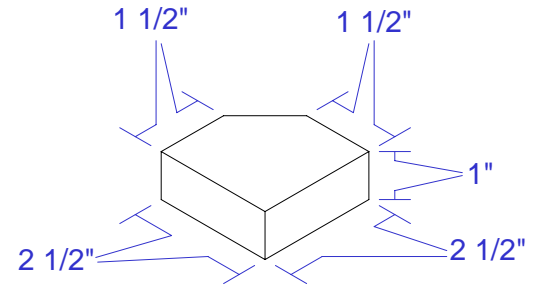
Fence Support Blocks & Sliding Fence Plates

The fence supports don't have to be made from 1" stock. If you use another thickness, you'll need to adjust the vacuum box dimensions accordingly.



Square Fence Support Block

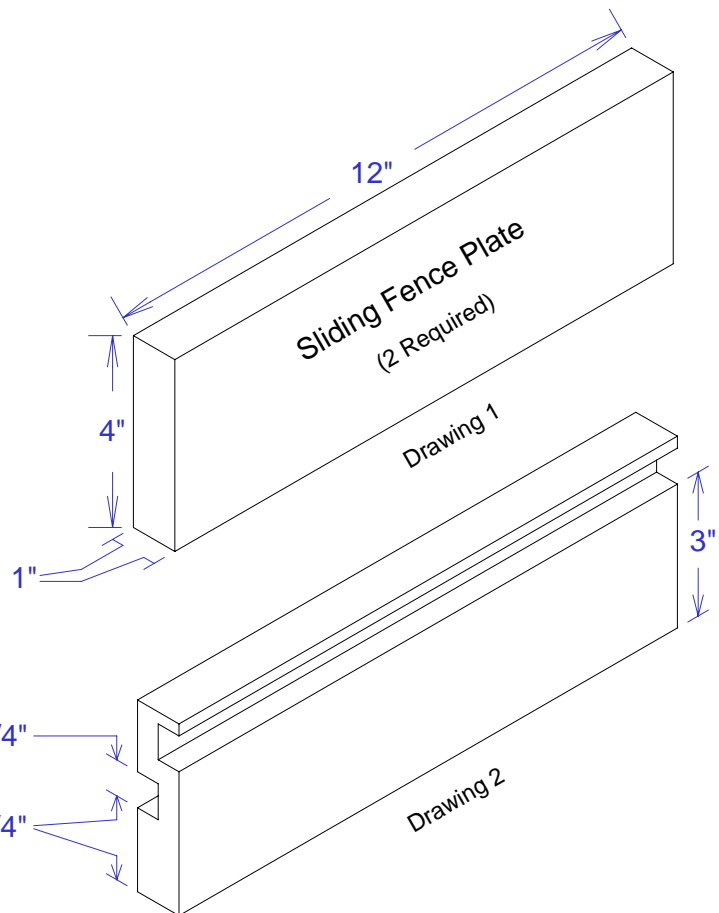
(2 Required)



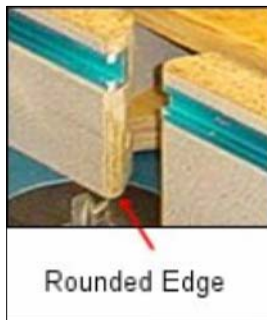
Beveled Fence Support Block

(2 Required)

Make two sliding faces 12" by 4" from 1" thick material as shown in Drawing 1. They need to be 1" thick because the T-Track slots are 1/2" deep and you need more than 1/4" thickness for the T-Track mounting screws. If you don't have a source for 1" thick stock, you can glue some 1/4" material to 3/4" material. Another choice would be to cut your own T-Track slots using a T-Track slot cutting bit in your router. Of course, you can make them without T-Track.

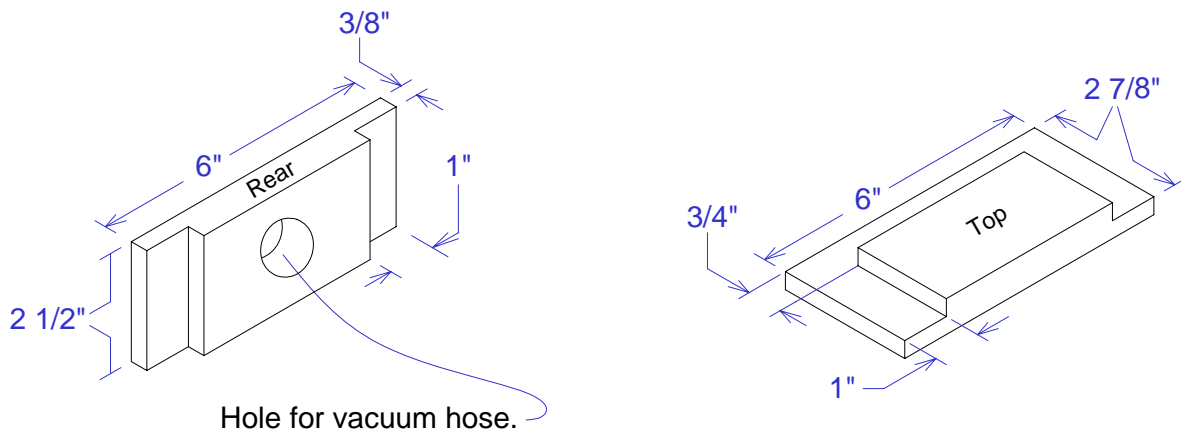


The purpose of the T-Track is for positioning stops along the fence. You can use clamps for this too, but T-Track is more convenient. Drawing 2 shows the layout for the T-Track slots.

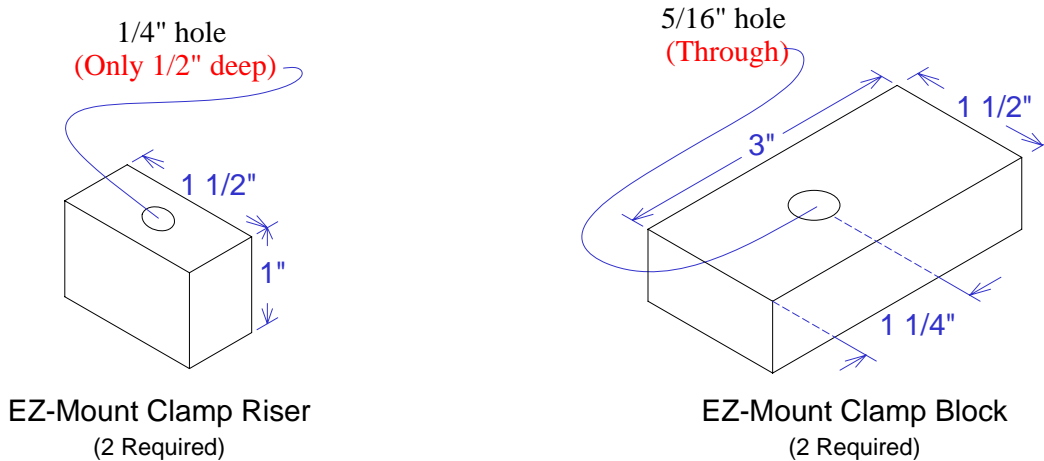


For the prototype, I used my belt sander to round the edges of the sliding faces as shown to the left. This helps keep the workpiece from hanging up on the corners.

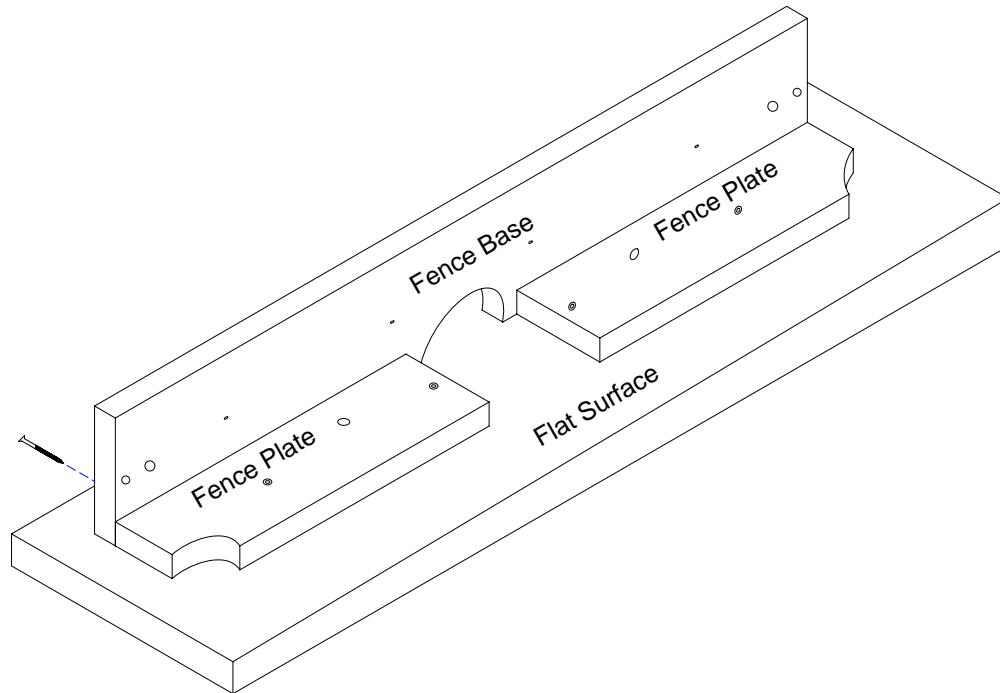
Vacuum Box & EZ-Mount Clamps



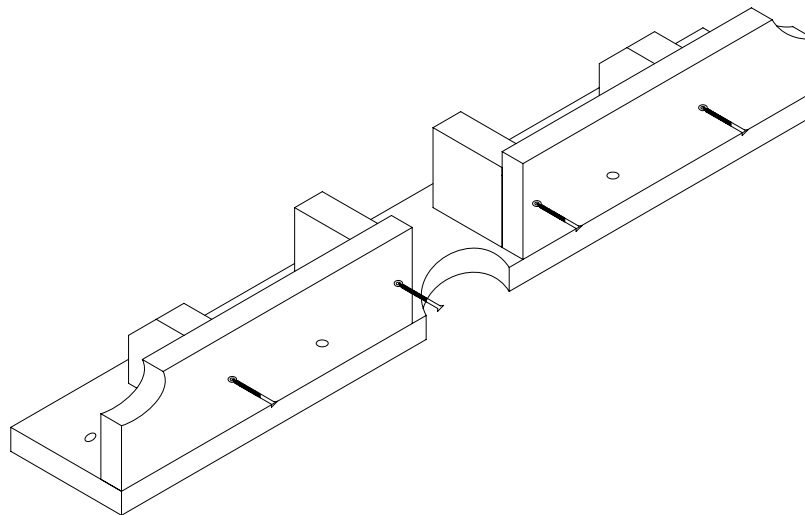
Make the rear and top pieces for the vacuum box as shown. My shop vacuum hose has a 1 1/4" diameter end so I cut a 1 1/4" hole centered in the vacuum rear piece. The size of the hole depends on you vacuum hose end.



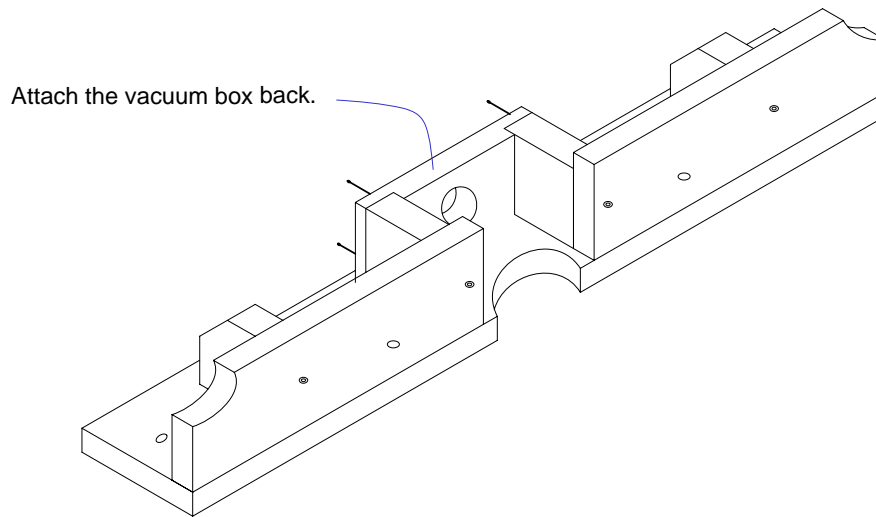
Make the pieces for the EZ-Mount Clamps from 3/4" stock. The Clamp Riser needs to be the same thickness as your top. It is shown as 1" high because my top was 1" thick. The 5/16" hole in the long piece is for the 3 1/2" by 5/16" carriage bolt that provides the clamping force. Drill this hole completely through the workpiece. The 1/4" hole in the small piece is for the alignment dowel pin. This hole is centered end to end and side to side. **Note: This dowel hole is only 1/2" deep.**



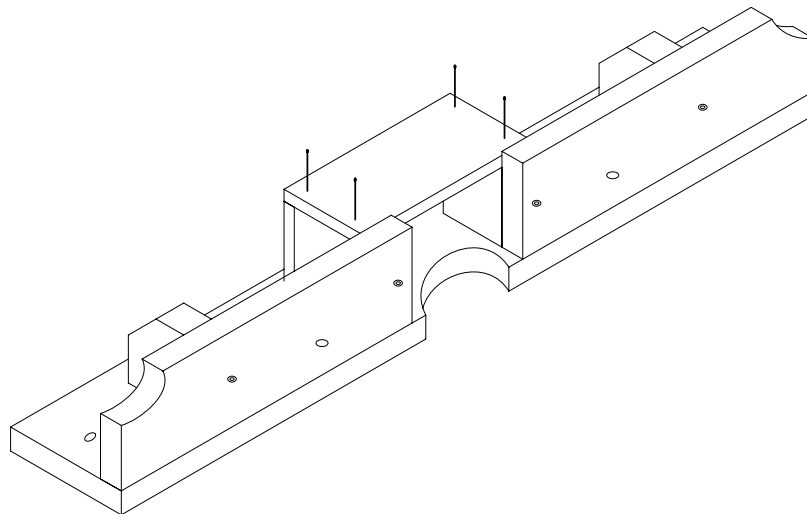
Clamp the fence base and stationary fence plates to a flat surface as shown above and secure the base to the fence plates using 1 1/2" flathead screws from the bottom. The Screw holes should have already been drilled and counter sunk on the bottom. Clamping the assembly to a flat surface assures the two stationary fence plates are parallel and in line with each other. This is necessary so the workpiece makes a smooth transition when sliding along the finished fence.



Attach the supports blocks with 1 1/2" #8 flathead screws from the bottom side of the base and the front of the stationary fence plates. Position the two middle blocks so the vacuum box back and top fit properly. Position the beveled support blocks so they are centered over the screw holes.



Apply glue to the mating surfaces and secure the vacuum box back to the rear supports with finishing nails or screws as you prefer.



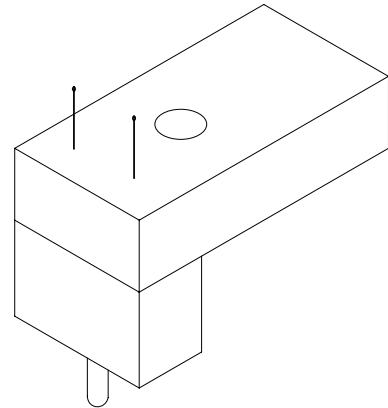
Apply glue to the mating surfaces and secure the vacuum box top to the rear supports with finishing nails or screws as you prefer.

Assemble the E-Z Mount Clamps

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Assemble the clamps with 1 1/2" finishing nails and glue as shown. I recommend predrilling the holes to prevent splitting. Make sure the dowel pin hole is on the bottom. Apply a little glue and insert the 3/4" long dowel pin.

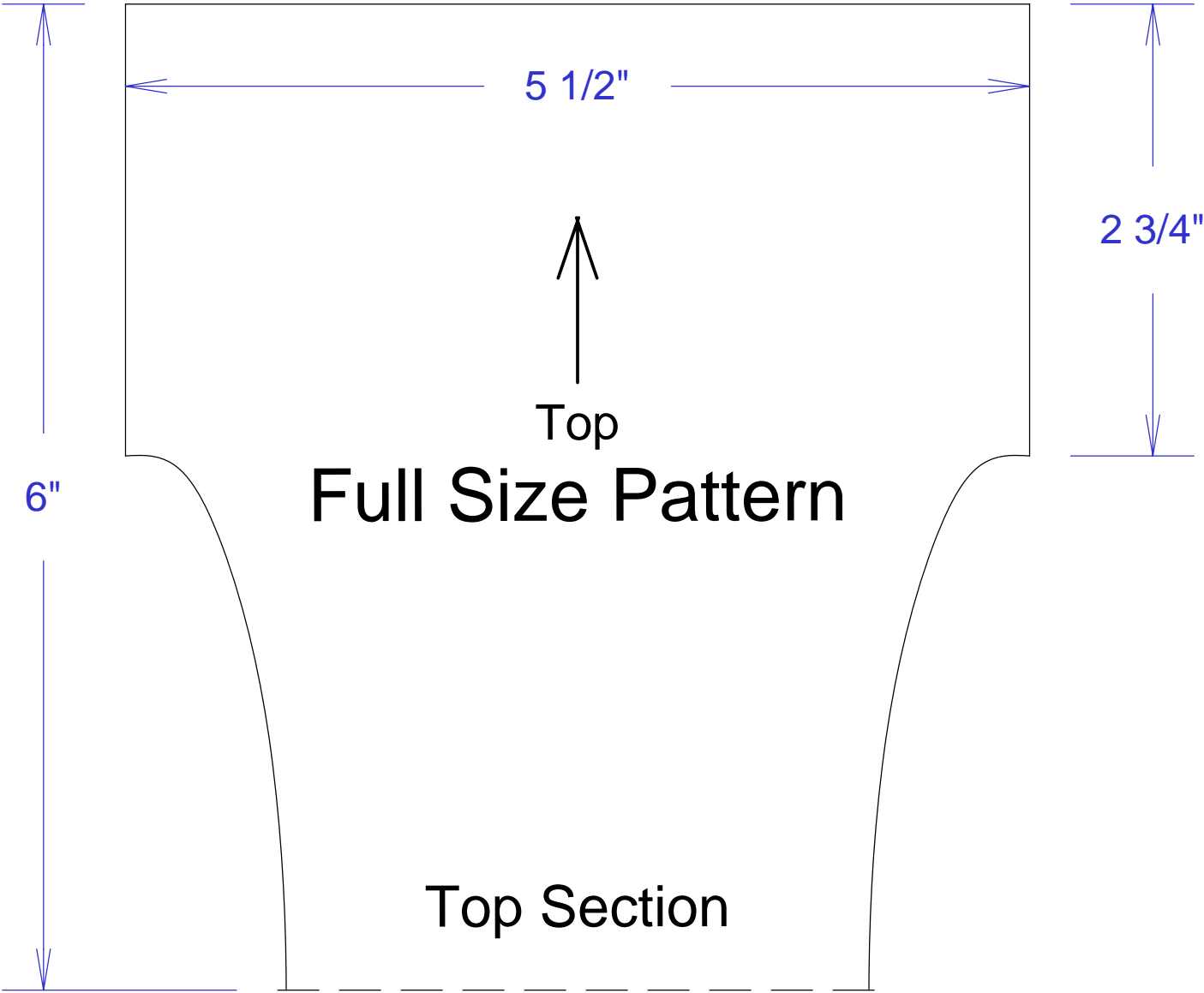
Note: The dowel pin keeps the clamp from rotating while you tighten the knob.

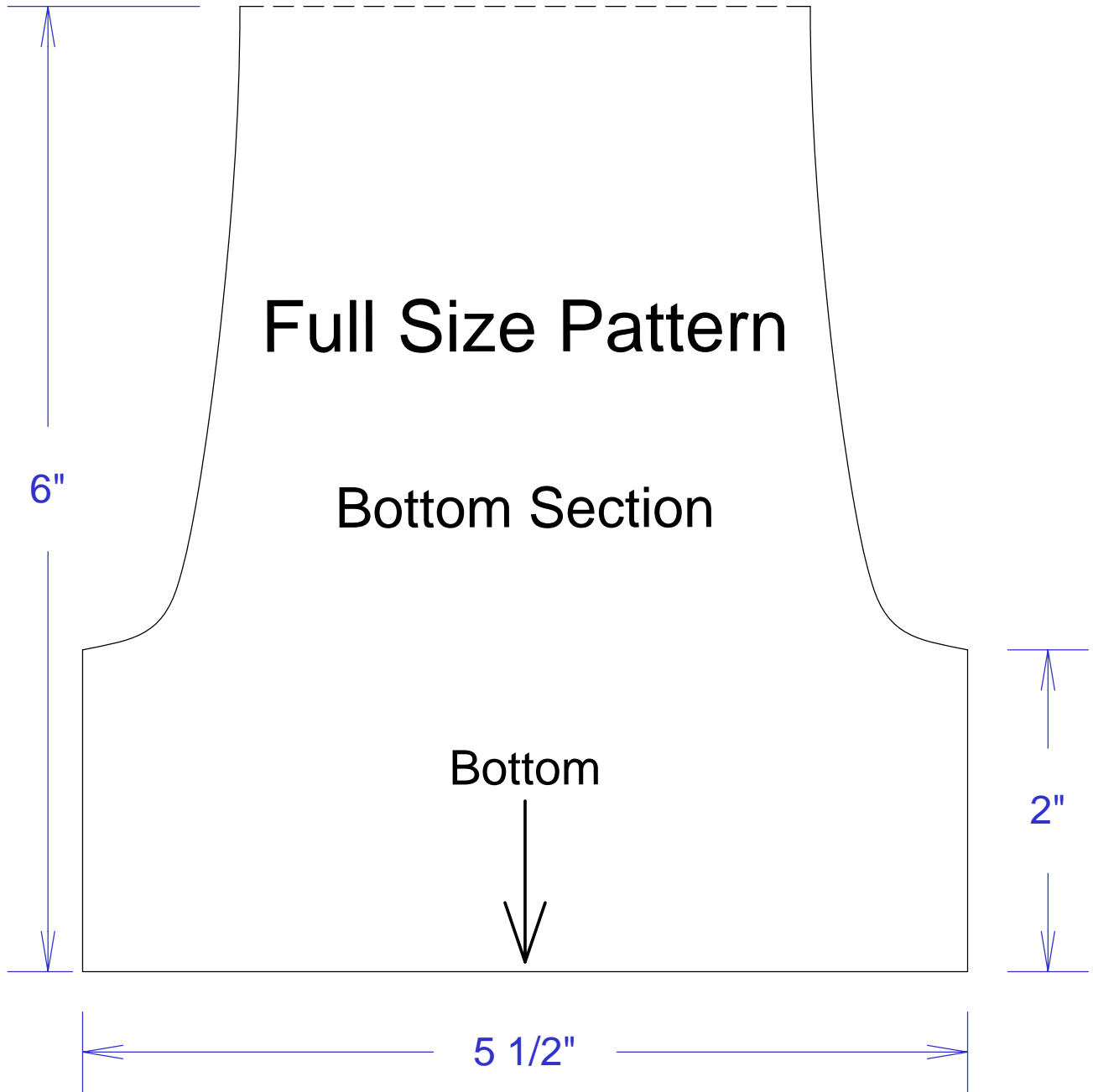


The picture shows the finished clamp and Knob. Use a 5/16" in by 3 1/2" carriage bolt, flat washer, and T-Track knob to provide the clamping force.



The above pictures show the finished router table.





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Router Table



Workbench



Dog House



Picnic Table



Octagon Table



6 Foot Bar



Corner Desk



Book Case



Mantel Clock



Redwood Planter



Wheelbarrow



Spoke Wheel



Panel Saw



Trellis



Wheelbarrow



Pocket Hole Jig



Tenoning Jig



Table Saw Sled



Drill Press Table