MICROJIG®



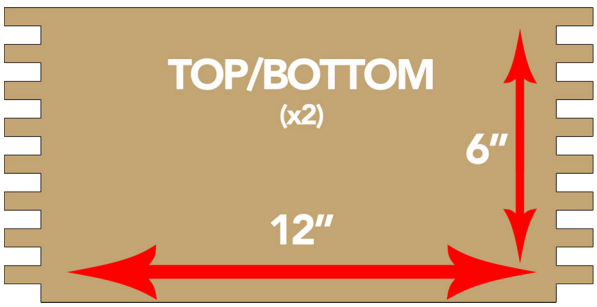
RETRO WALNUT **BLUETOOTH** SPEAKER PLANS

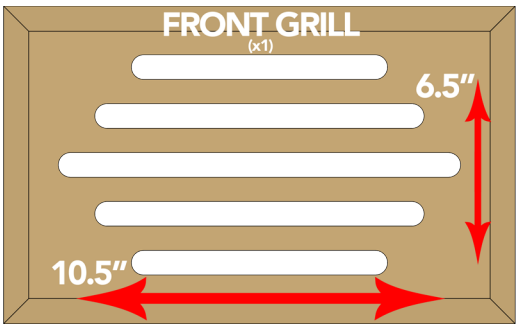
PROJECT OVERVIEW

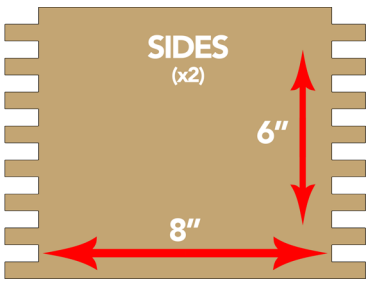
This simple project captures the classic style of mid-century modern design, but with modern conveniences, like portability and Bluetooth connectivity, using Rockler's Wireless Stereo Speaker Kit. These plans are for the speaker enclosure only. Refer to Rockler's instructions manual for troubleshooting and support for the audio components.

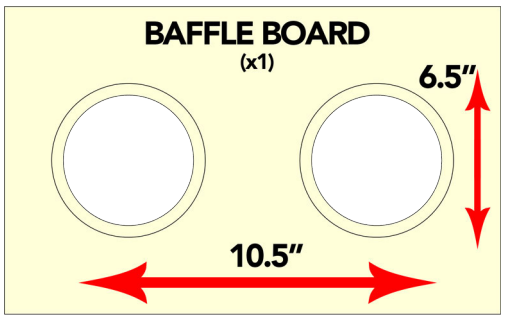
TOOLS & MATERIALS

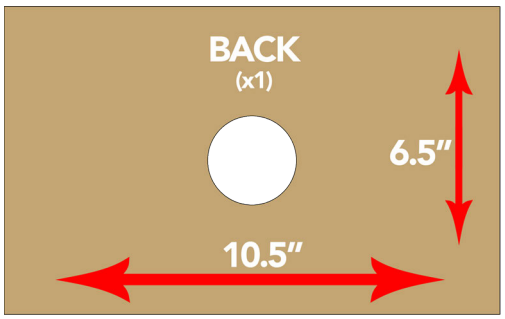
- 42" of 3/4" stock, 6" wide (your choice)
- 22" of 1/2" stock, 6-1/2" wide
- 10-1/2" of 1/2" MDF, 6-1/2" wide
- (4 pieces) 3/4" x 3/4" x 9" MDF
- Table Saw
- Router Table
- 3/8" finger joint jig
- Stacked dado blade set (for box joints on table saw)
- 1/2" diameter spiral router bit
- 1/2" diameter forstner bit
- 45° chamfer bit
- 2-3/4" hole saw or forstner bit
- 1-1/8" hole saw or forstner bit
- Clamps
- Wood glue
- 1" long and 1-1/2" long wood screws
- Speaker grill cloth (or other fabric)
- Rockler's Wireless Stereo Speaker Kit











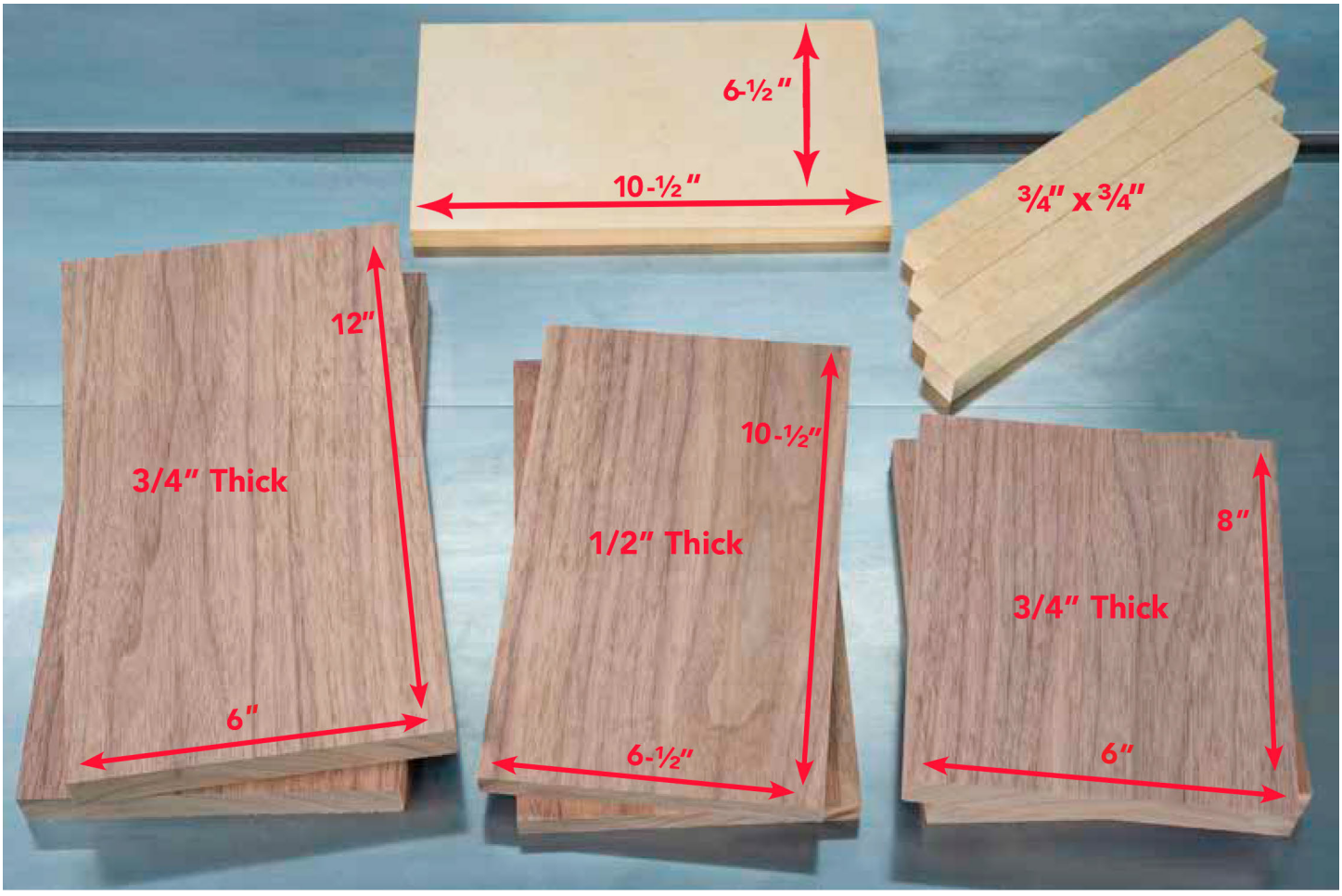
MICROJIG © 2022. ALL RIGHTS RESERVED.

PROJECT OVERVIEW

STEP 1 - CUT THE STOCK TO SIZE

Prepare all of the parts needed to complete the project.
Parts needed are as follows:

- (1 piece) 10-1/2"L x 6-1/2"W x 1/2"T MDF
- (4 pieces) 9"L x 3/4"W x 3/4"T MDF
- (2 pieces) 12"L x 6"W x 3/4"T solid wood top and bottom
- (2 pieces) 10-1/2"L x 6-1/2"W x 1/2"T solid wood front and back
- (2 pieces) 8"L x 6"W x 3/4"T solid wood sides



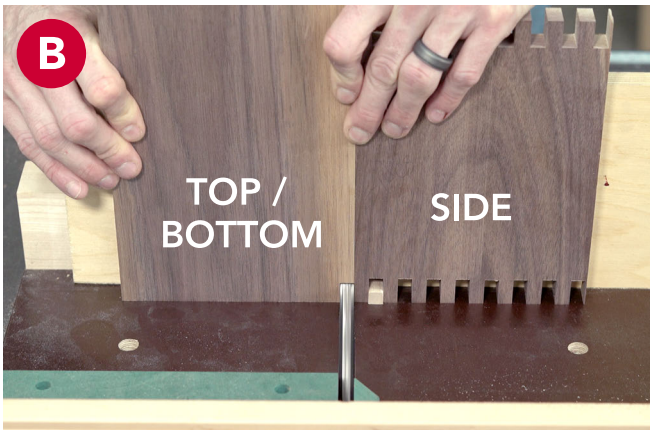
MICROJIG © 2022. ALL RIGHTS RESERVED

STEP 2 - CUT BOX JOINTS

A. Install your dado blade and set the blade height to the thickness of your material. Using your preferred 3/8" finger joint jig, set the top part on its end on the saw table, then set it snug to the left side of the index key on your finger joint jig. Next, slide this first slot over the key and make the next cut. Repeat until all of the fingers and slots on one end of the part are cut. Flip the part over and repeat for the other end, starting from the same edge.

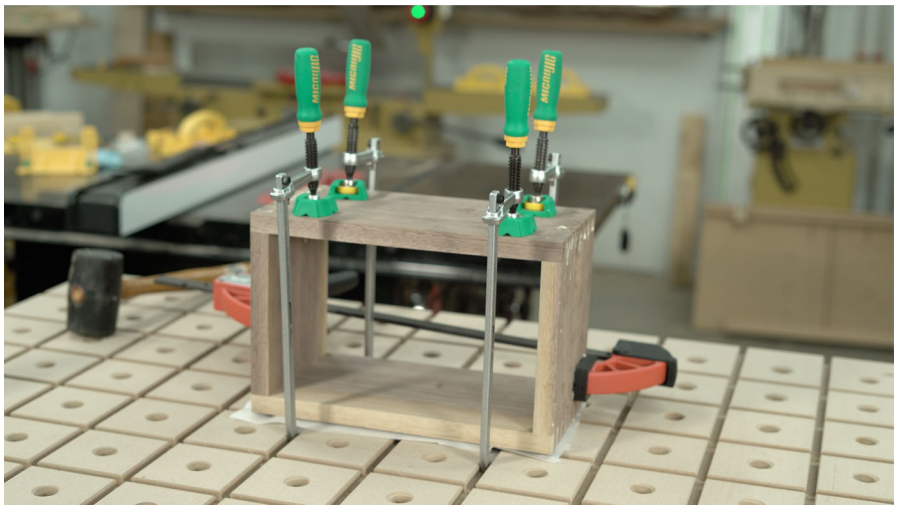
B. After cutting all the fingers on the top and bottom parts, turn one of them around and place the first slot from the starting edge over the key. The finger will act as a spacer to make the first cut on an adjacent part.





STEP 3 - GLUE UP

Before applying wood glue, it's a good idea to lay a sheet of parchment or wax paper down to protect your work surface. Apply a light coat of wood glue between all the fingers and assemble the four parts, clamping the joints tight.



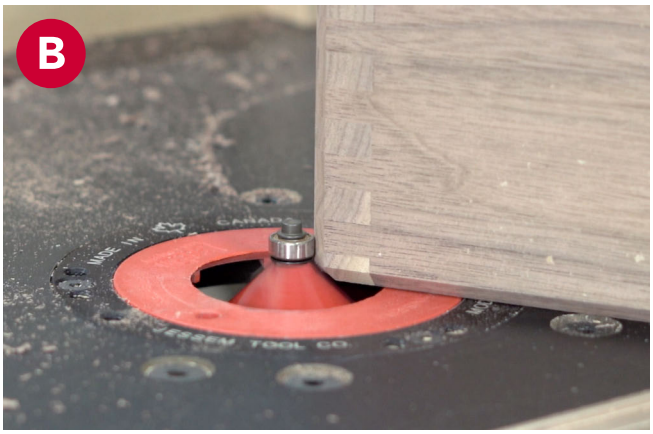
MICROJIG © 2022. ALL RIGHTS RESERVED

STEP 4 - SAND & CHAMFER

A. After the glue is dry, unclamp the assembly, scrape away excess glue if needed, and sand the joints flush. This will be critical when applying edge profiles with a router.

B. Using a 45° chamfer bit, route a 1/4" chamfer on all inside and outside edges of the box assembly.

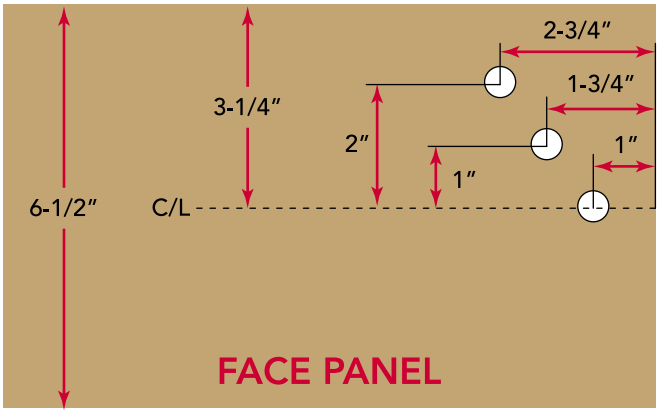


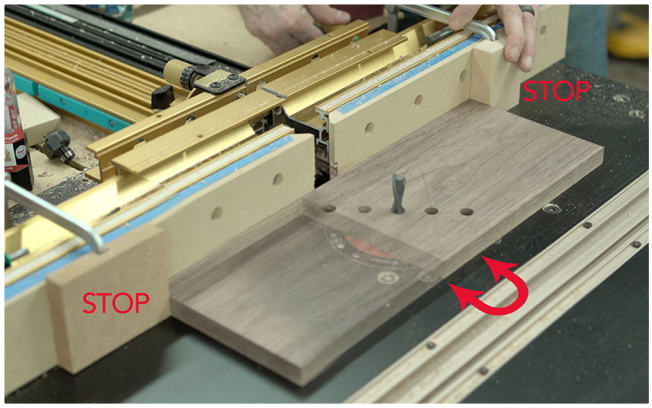


STEP 5 - FACE PANEL SLOTS

The face panel needs 3 sound slots milled into it. Mark a centerline at 3-1/4" and parallel lines 1" and 2" above the centerline. Next, mark the start point of the first slot along the centerline 1" from the edge. Mark the second and third slots 1-3/4" and 2-3/4" from the edge. Your layout should be as shown below. Finally, use a 1/2" forstner bit to drill these three start holes.

These start holes are used to set the router table for milling the sound slots. With the router unplugged and a 1/2" bit mounted, slip the starthole of the center slot over the bit, and clamp a stop block to the fence on the far side of the parts. Flip the part end from end and set a second stop block on the far side of the Face Panel. These stops will define the ends of the slot.





MICROJIG © 2022. ALL RIGHTS RESERVED

STEP 5 (CONTINUED)

A. Set the bit for a shallow cut and plug the router back in. With the bit running, hold the Face Panel above the bit with the end set against the right start block. Lower the panel onto the bit and slide it to the left until it meets the second stop block. Shut the router off and lift the part off the bit. Reset the cut depth and repeat the process taking shallow cuts until the slot is completed.

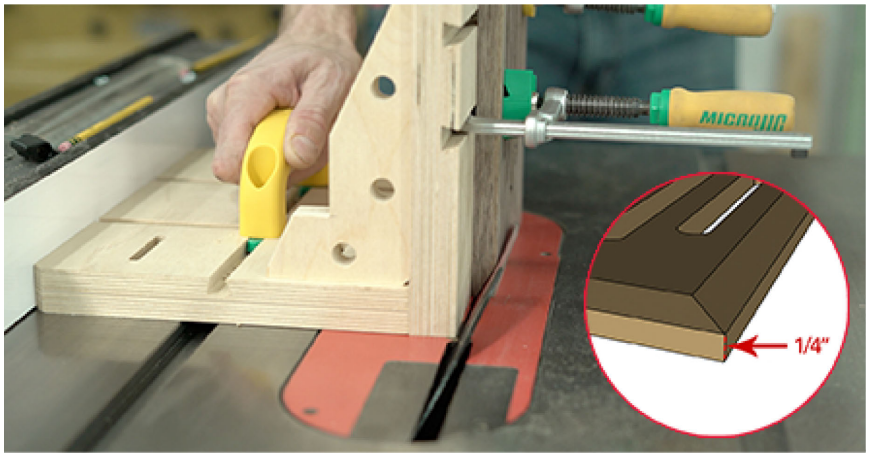
B. The outer slots are milled following the same steps, but you'll need to reset the stop blocks for each. There are two of each of these outer slots, so after the first is cut, lower the bit back down, flip the panel front to back and cut another slot using the same table setup. Using the pre-drilled start holes allows all five sound slots to be set up and cut with no measuring.





STEP 6 - BEVEL FACE FRAME

On the table saw, tilt your blade to 30°. To achieve the 60° bevel, the part will need to be cut while upright. It is strongly recommended that you use either a tall fence or tenoning jig to secure the part in an upright orientation to make the cut. Cut all four sides of the face frame, leaving 1/4" of the edge flat



MICROJIG © 2022. ALL RIGHTS RESERVED

STEP 7 - ROUNDOVER FACE FRAME SLOTS

Use a 1/8" roundover bit to route a 1/8" roundover to the slots on the front of the face frame. Sand edges and slot walls by hand to remove burns or other imperfections, if needed.



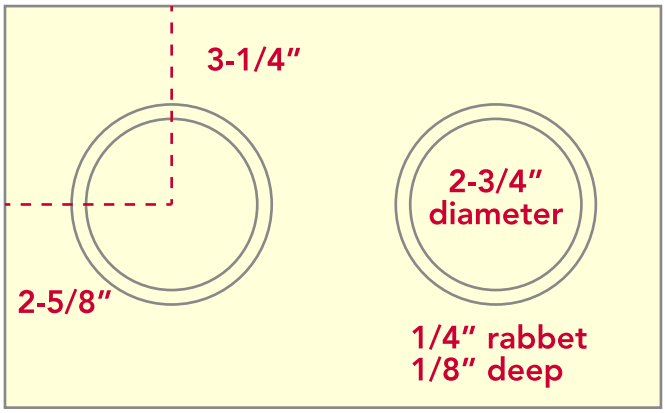


STEP 8 - BAFFLE BOARD

Per the instructions included with the Rockler Bluetooth Speaker Kit, the speakers are installed in 2-3/4" diameter holes, loaded from the front of the baffle board. Since the speakers will be covered by grill cloth and a wood face frame, they'll need to be recessed to sit behind the front of the baffle board.

Drill holes for the speakers 2-5/8" in from the side, and 3-1/4" (centered vertically), using a 2-3/4" diameter forstner bit (or hole saw).

Next, use a 1/4" rabbet bit to route 1/8" deep rabbets for each speaker hole on the front of the baffle board



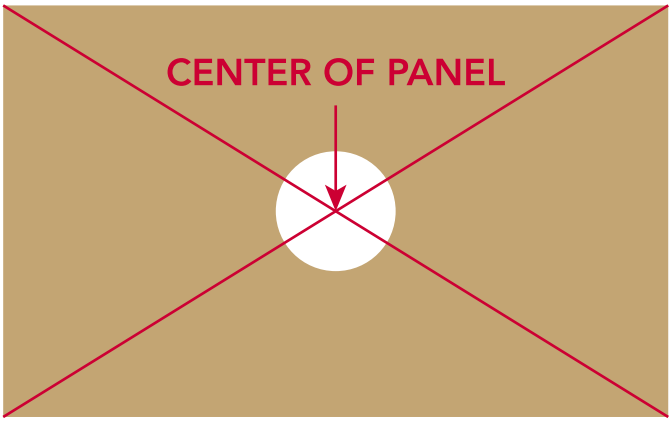




MICROJIG © 2022. ALL RIGHTS RESERVED

STEP 9 - REAR PANEL

Per the instructions included with the Rockler Bluetooth Speaker Kit, the control pod requires a 1-7/8" diameter hole for installation. With a 1-7/8" diameter forstner bit or hole saw, drill a hole through the center of the rear panel. The easiest way to find the center without measuring, is to draw two lines from corner to opposite corner. Where the two lines interect is the panel center.

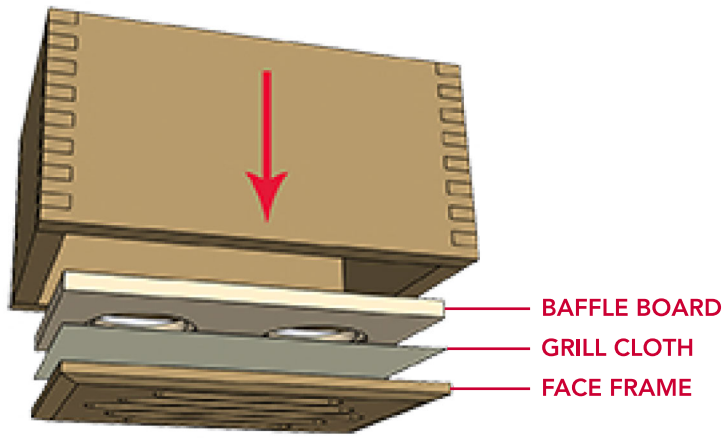




STEP 10 - INTERNAL MOUNTING BRACES

The face frame, baffle board, and rear panel are secured to braces inside the box. To properly position the braces, dry fit each part in place, on a flat surface, the way it will be assembled. The front of the face frame is even with the front edge of the box, then the grill cloth, which is attached to the baffle board behind it. Apply super glue to the 3/4"x3/4" strips, then press them to the inside of the box while contacting the back of the baffle board.

Remove face frame, grill cloth, and baffle board. Dry fit the rear panel and repeat to attach rear panel braces.





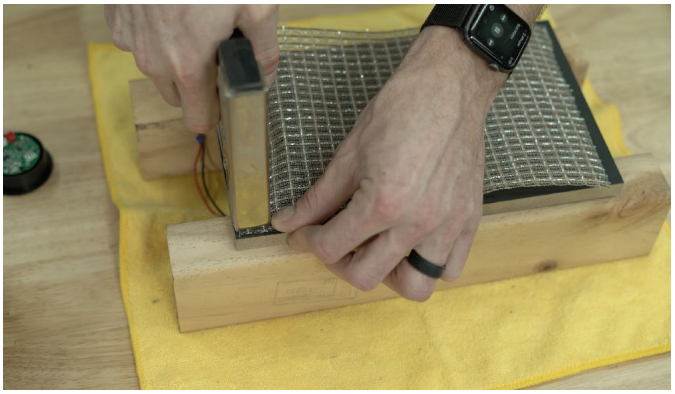
MICROJIG © 2022. ALL RIGHTS RESERVED.

STEP 11A - ASSEMBLY

Install the speakers in the baffle board from the front, then staple your desired grill cloth to the baffle board.

TIP: Spray paint the baffle board black before installing speakers so they aren't visible through the grill cloth.



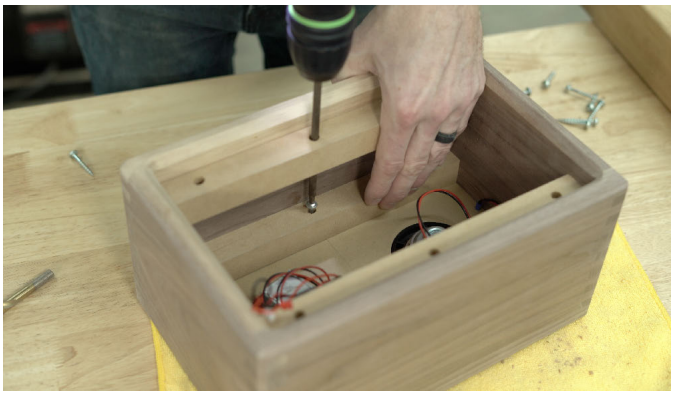


STEP 11B - ASSEMBLY CONTINUED

With the rear panel removed, drill three 1/4" diameter holes in the top and bottom braces at the back of the box-one in each corner, and one in the center. These will serve as access holes for your drill bit.

With the baffle board and face frame in place, lay the whole assembly face down, and screw the baffle board to the front internal braces with 1-1/2" long wood screws. The screws will go through the braces and baffle board, and 1/4" in to the back of the face frame.

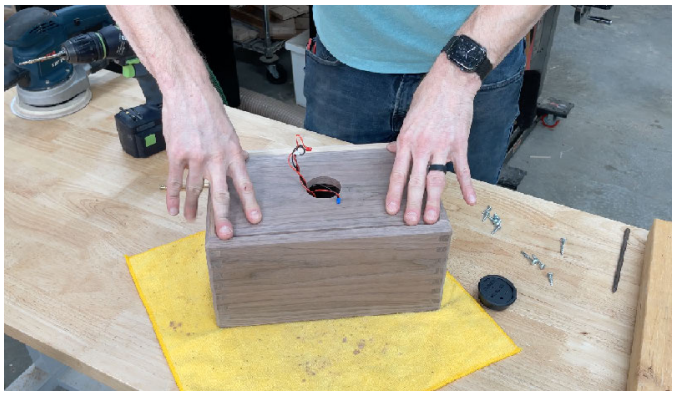


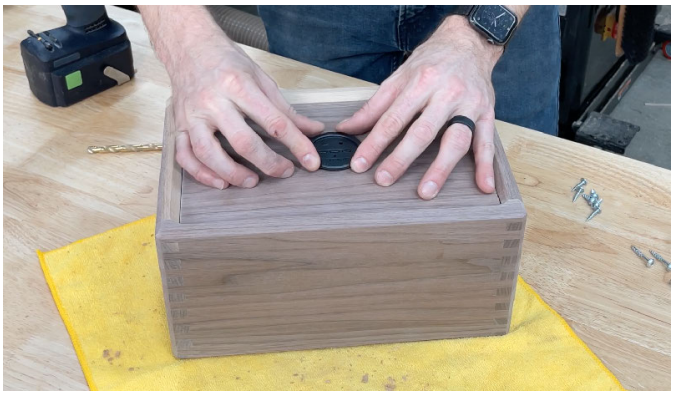


MICROJIG © 2022. ALL RIGHTS RESERVED

STEP 12 - CONNECT SPEAKERS TO CONTROL POD

Feed the speaker wires through the hole in the rear panel and press the rear panel into the box assembly until it contacts the internal braces. Reconnect the speakers to the Bluetooth control pod, then insert the control pod in the rear panel. Refer to the speaker kit instructions.

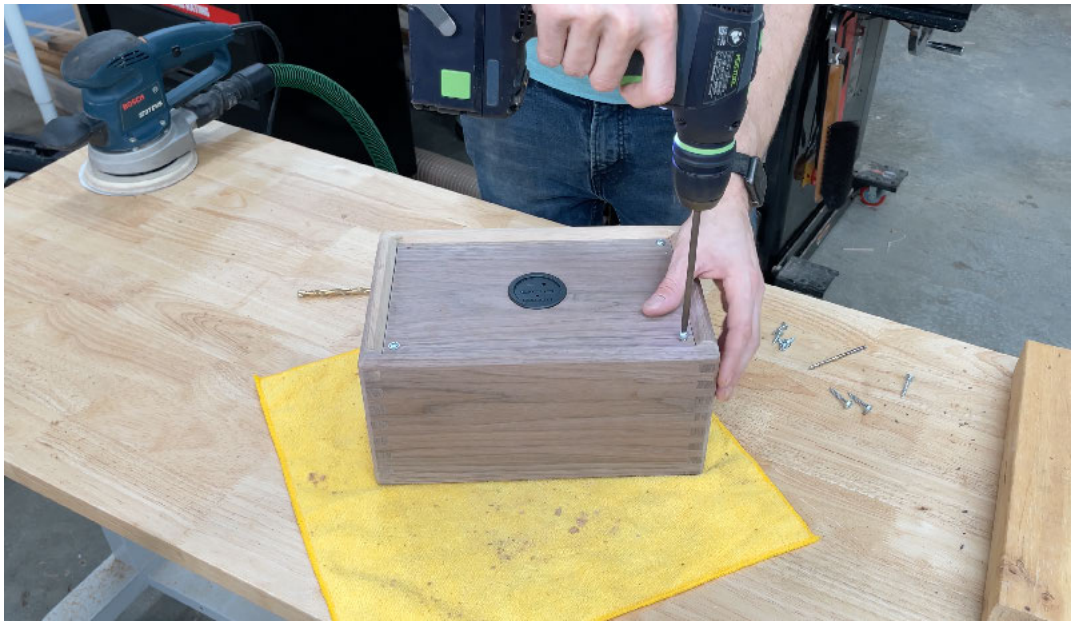




STEP 13 - SECURE REAR PANEL

Drill a pilot hole in each corner of the rear panel to avoid splitting near the edges. Make sure to use a drill bit that is slightly smaller than the diameter of whatever wood screws you are using.

Secure the rear panel to the internal braces with 1" long wood screws. Finish with your clear coat of choice.



MICROJIG © 2022. ALL RIGHTS RESERVED.