

MICROJIG[®]



**RETRO BLUETOOTH
SPEAKER PLANS**

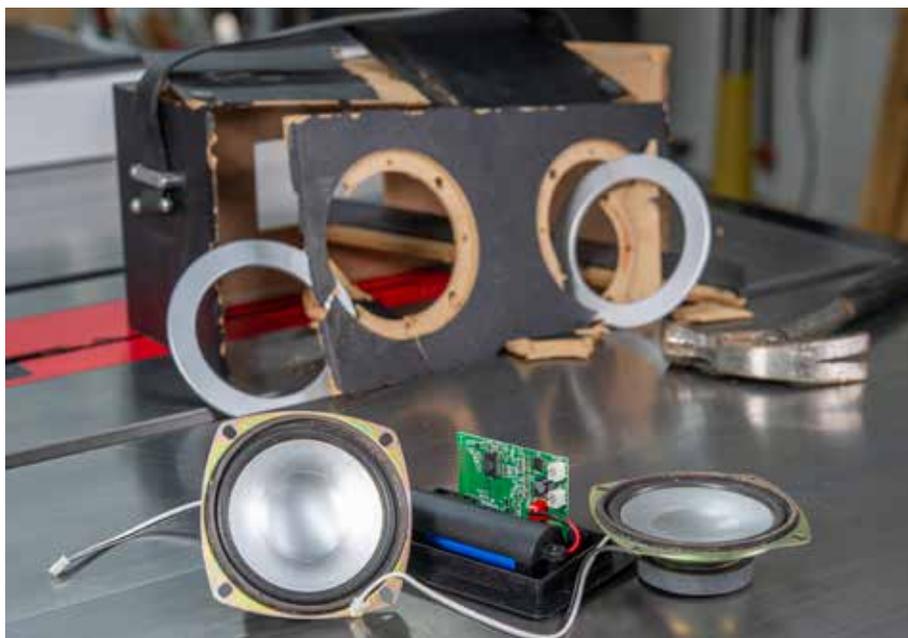
PROJECT OVERVIEW

This simple design captures the classic style of mid-century modern speakers, but with modern conveniences - portability, and Bluetooth connectivity. These plans are for the speaker enclosure only - do your research for sourcing and installing the audio components that will work best for you.

TOOLS & MATERIALS

- 60" of $\frac{3}{4}$ " stock, 6" in width
(we used walnut, use whatever you like)
- $\frac{1}{2}$ " thick MDF (9" x 5 $\frac{1}{2}$ ") and (4) $\frac{3}{4}$ " x $\frac{3}{4}$ " strips, 9" in length
- Table Saw
- Router Table
- Box joint jig
- Stacked dado blade set
(if cutting box joints on table saw)
- $\frac{1}{2}$ " diameter spiral router bit
- $\frac{1}{2}$ " diameter forstner bit
- 45 degree chamfer bit
- Hole saw or forstner bit equal in diameter to speakers
- Clamps
- Wood glue
- 1" long and $\frac{3}{4}$ " long wood screws
- Speaker grill cloth (or other fabric if desired)

TIP If you're not experienced in wiring electronics, it's easiest to disassemble an existing speaker unit and repurpose the parts. Don't be afraid to get messy.

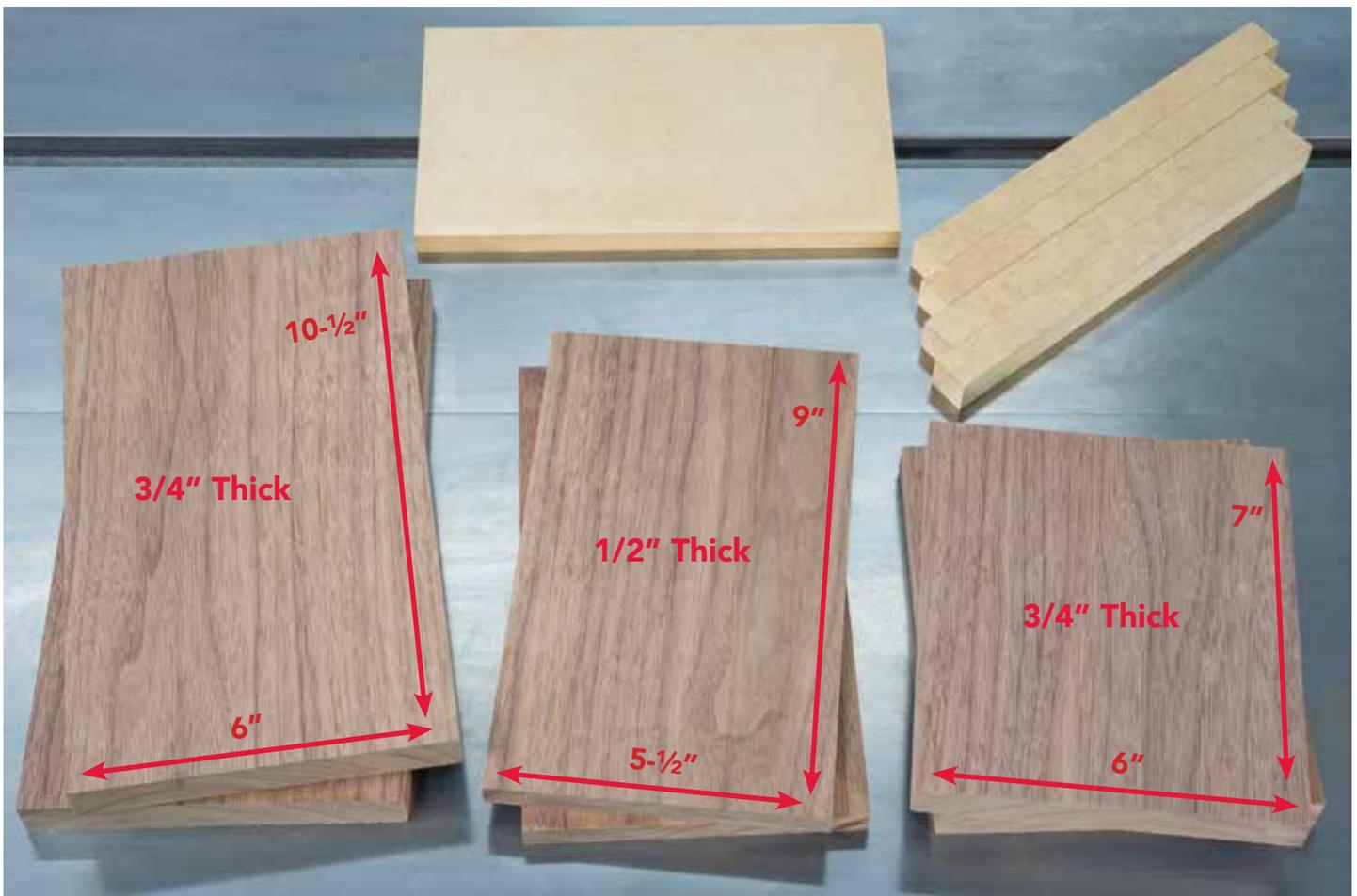


INSTRUCTIONS

STEP 1 - CUT THE STOCK TO SIZE

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

- (2) 10 1/2" L x 6"W x 3/4" thick boards
- (2) 7" L x 6"W x 3/4" thick boards
- (2) 9" L x 5 1/2"W x 1/2" thick (hardwood) boards
- (1) 8-7/8" L x 5-3/8" W x 1/2" thick MDF
- (4) 3/4" x 3/4" MDF strips, 9" Lv



INSTRUCTIONS

STEP 2 - CUT BOX JOINTS

Install dado blades on table saw (if using table saw sled). Raise blade to thickness of your material.

TIP *It's a good idea to raise your blade just slightly (no more than .020") higher than your material thickness. It's easier to sand off excess than it is to compensate for if the fingers of your joint are too short.*

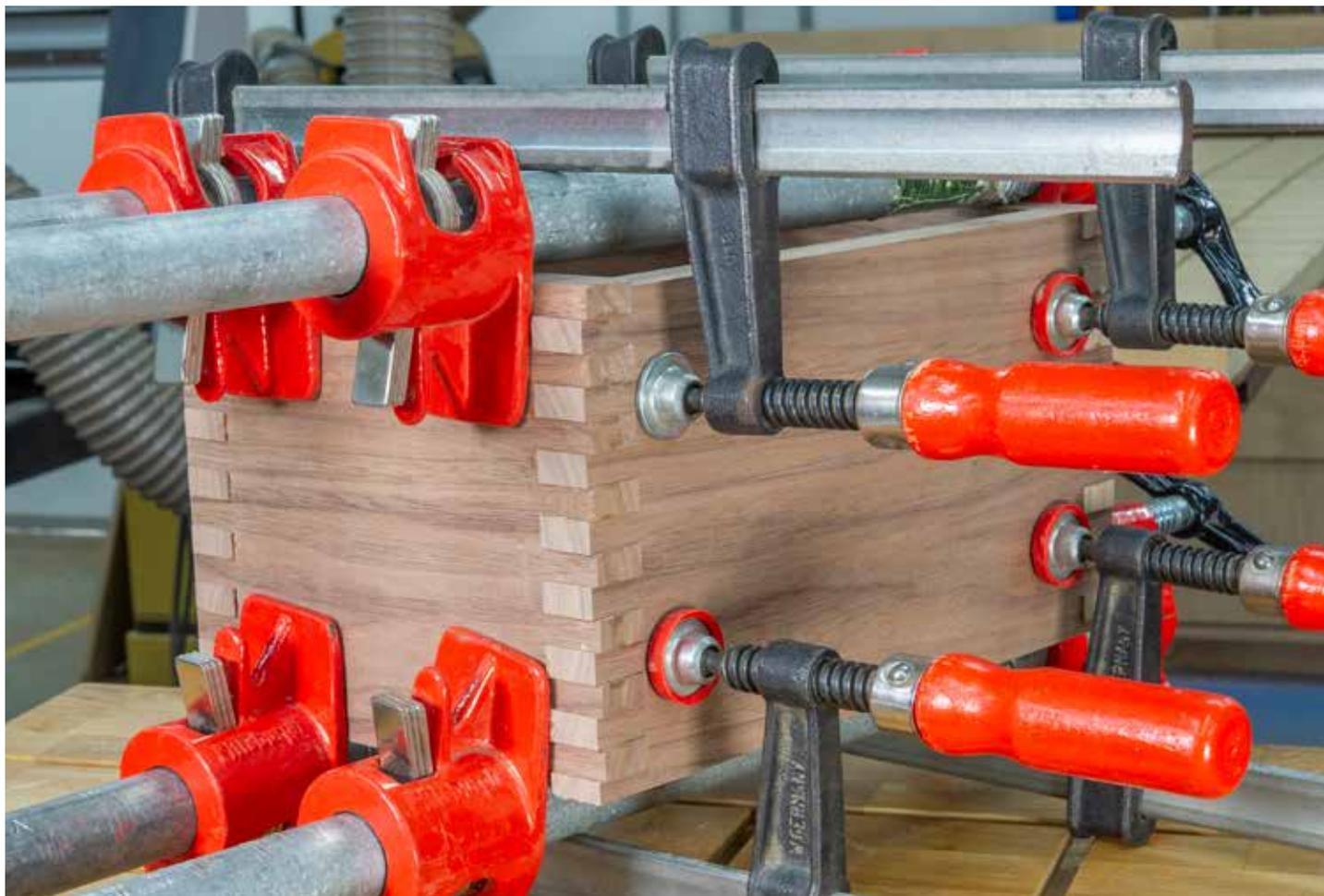
Use whatever spacing/width you like - the box joint pictured is with 3/8" spacing.



INSTRUCTIONS

STEP 3 - GLUE UP

- Glue together the four parts that make up the outside of your speaker box. Use clamps to keep the parts tight together while the glue dries. If your box joints are snug, you shouldn't need to apply too much pressure.
- Once the glue has dried, sand the joints smooth.



INSTRUCTIONS

STEP 4 - CHAMFER EDGES

- Using a 45 degree chamfer router bit, cut a 1/4" chamfer on both the inside and outside corners.



INSTRUCTIONS

STEP 5 - MARK FACE FRAME SLOTS

- This is the slotted piece that will sit in front of your speakers.
- Measure and mark the vertical center, and horizontal thirds as shown. These will be the center of your speakers once installed. The face frame slots will be based on these measurements.
- Make sure that the end points of the center slot reach the outermost edge of your speakers. You don't want the face frame to block the sound coming out.
- From the endpoints of the center slot, mark 1" up, 1" down, and 3/4" in toward the center.
- Repeat previous step from the last points you marked.
- Using a 1/2" forstner bit, drill holes through face frame at each of the slots' endpoints.



INSTRUCTIONS

STEP 6 - ROUTER TABLE SETUP

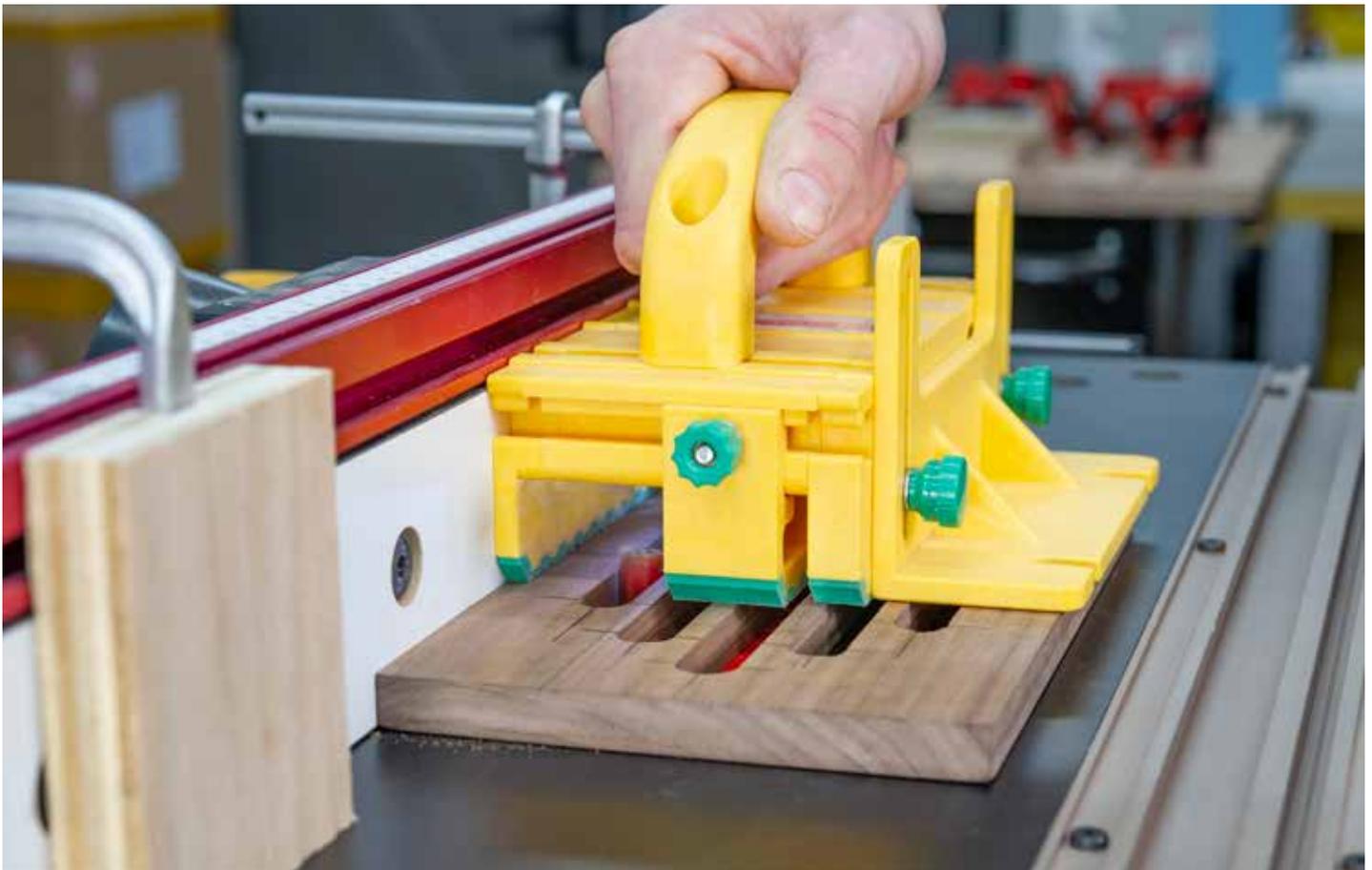
- With a 1/2" spiral bit installed on your router, raise the bit and insert it into one of the endpoints of your center slot.
- Move the fence up toward the board until it makes contact, then lock the fence in position.
- With the router bit still in the endpoint hole, clamp a stop block onto your fence, flush with the furthest edge.
- Insert bit into the other endpoint of the center slot, and clamp another stop block to the fence, flush with the furthest edge. This gives you consistent beginning and ending points when routing out the slots.



INSTRUCTIONS

STEP 7 - CUT FACE FRAME SLOTS

- Lower the router bit to cut 1/8" deep, a router the center slot between the endpoints. Flip the face frame over and route the other side.
- Repeat by raising the bit and cutting 1/8" at a time until the slot us cut completely through.
- Repeat previous steps for the remaining slots. Since the outer four slots are all an equal distance from the edges, you can also rotate the board to cut two slots without moving the fence.
- Once slots are all cut, chamfer the inside corners.



INSTRUCTIONS

STEP 8 - BEVEL FACE FRAME

- Tilt your table saw blade to 30 degrees, and set your fence to _____.
- Without moving the fence, cut all four sides of the front of the face frame.



INSTRUCTIONS

STEP 9 - GLUE MOUNTING STRIPS

- On the inside of the speaker box, glue the 3/4" x 3/4" strips to the top and bottom - 1- 1/8" in from the front, and 1/2" in from the back.



INSTRUCTIONS

STEP 10 - CUT SPEAKER HOLES IN BAFFLE BOARD

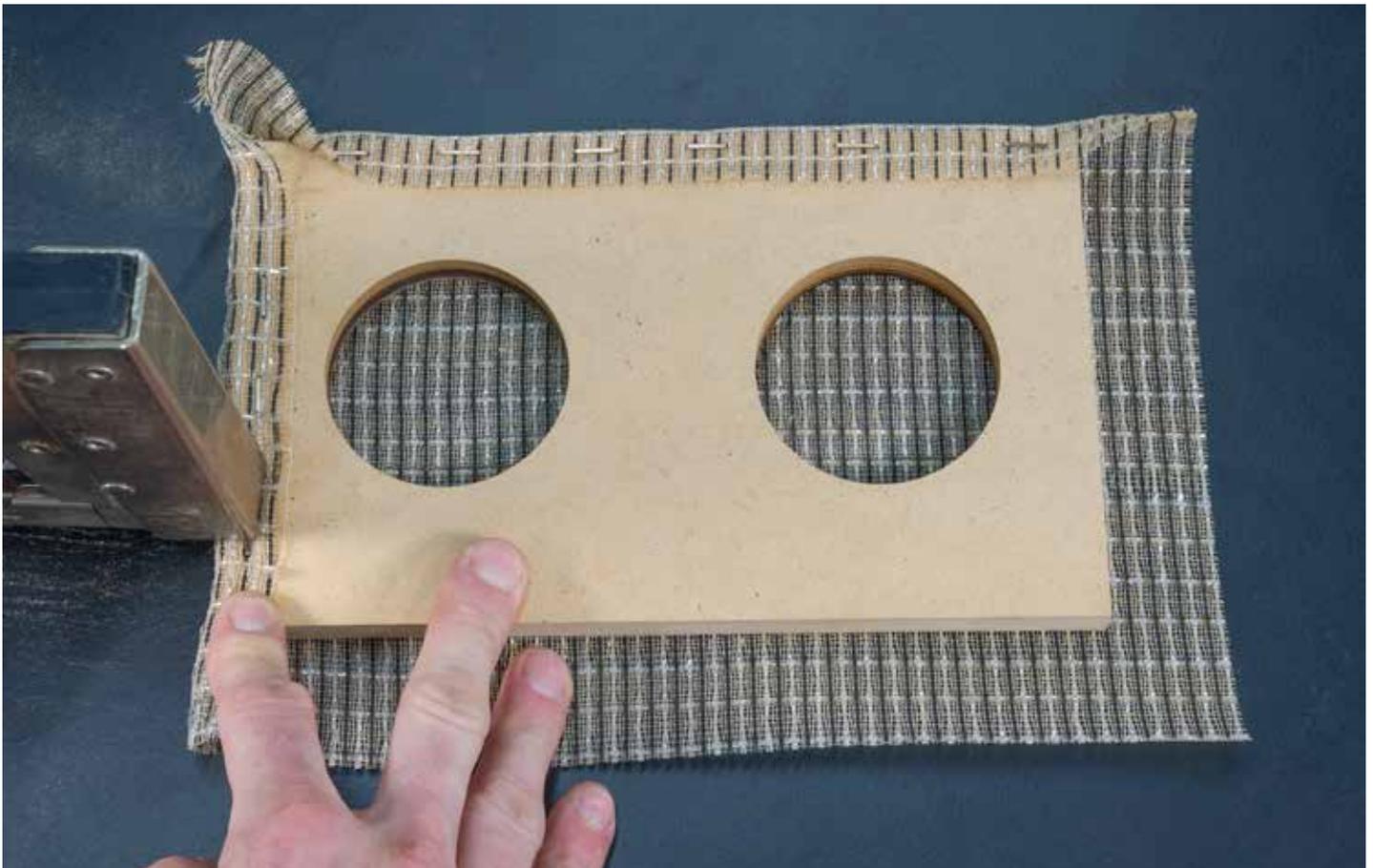
- Measure and mark the vertical center, and horizontal thirds as shown. These will be the center of your speakers once installed. They should be an equal distance from the edge and the center of your baffle board.
- Cut holes equal to the diameter of your speakers with a hole saw.



INSTRUCTIONS

STEP 11 - COVER BAFFLE BOARD WITH GRILL CLOTH

- Cut the speaker cloth of your choosing oversized, leaving 1" of extra cloth on all sides of the baffle board.
- Wrap cloth around edge and staple to the back of the baffle board.
- Cut excess cloth from corners to allow the baffle board to slide into the speaker box.



INSTRUCTIONS

STEP 11 - CONTINUED

- Once cloth is attached, screw the baffle board to the outside of the front mounting strips.



INSTRUCTIONS

STEP 12 - INSTALL SPEAKERS AND ELECTRONIC COMPONENTS

- Follow manufacturer's installation instructions if installing new parts. If repurposing parts, install components as they were in their original enclosure.



INSTRUCTIONS

STEP 13 - ATTACH FACE FRAME AND REAR PANEL

- Using wood screws, attach the face frame to the front of the baffle board with the screws coming from the inside (back of the baffle board)
- Screw rear panel to mounting strips with panhead wood screws.
- Finish with clearcoat of choice (semi-gloss lacquer recommended)



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We hope that you enjoy these project plans and learn a few new tricks to use in your shop. Share photos of your completed project with us on Facebook, Twitter and Instagram with hashtag **#worksmarter**

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Enjoy!



Woodworking is an inherently dangerous activity. Be sure to know and follow all safety guidelines that come with your power tools.

