

The XF410

Super-size your big output appetite with this speaker featuring four ten-inch drivers.



PHOTO 1: The XF410.

The cross-firing XF210 guitar cab (*aX* 12/08) has garnered some rave reviews, some of which you can view at <http://billfitzmaurice.com/phpBB2/viewforum.php?f=24>. But while a 2 × 10 should have plenty of output, there are those who aren't satisfied with less than total overkill. For them, the XF410 (Photo 1) is loaded with four tens.

Drivers come in many varieties, but by far the overwhelming choice of most manufacturers, and thus most players, is Eminence. To choose one that suits

your needs, go to www.eminence.com. You can get Eminence drivers, and the other hardware for your build, from www.speakerhardware.com.

CUT-OUTS

The cab is made entirely from ½" plywood. Baltic birch is nice, but any void-free grade of plywood of at least five plies is adequate for the job. Secure the joints with drywall or cabinet screws, or a pneumatic brad nailer. The joints in the cab must be airtight, so you should use a polyurethane-based adhesive, which expands when curing to fill any gaps. Polyurethane construction adhesive, such as PL Premium, applied

with a caulking gun, works great and is inexpensive. Urethane woodworking glues are fine as well, but can be very expensive.

All measurements provided are somewhat approximate, being influenced by the actual thickness of the materials used and by the accuracy of your construction. You may pre-cut the parts slightly oversize for manageability, trimming as required to actual finished size as you install them. Always measure directly on the cabinet where each piece is to be installed to verify the true size required.

Start by cutting out the bottom (Figs. 1 and 2). The first diagram shows the

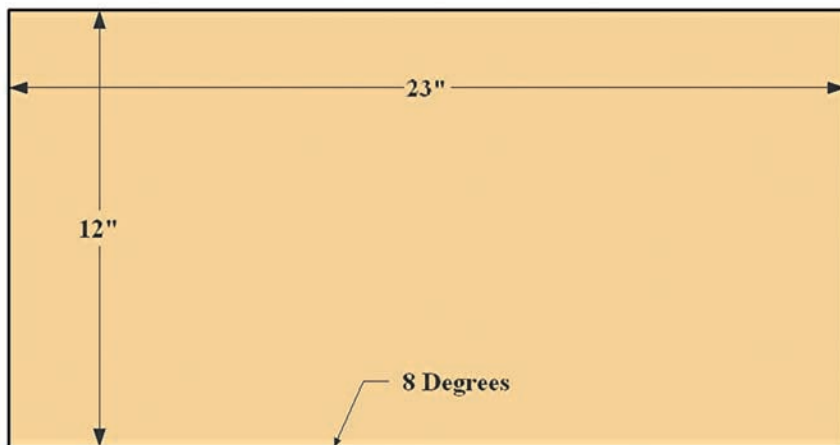


FIGURE 1: Outside bottom.

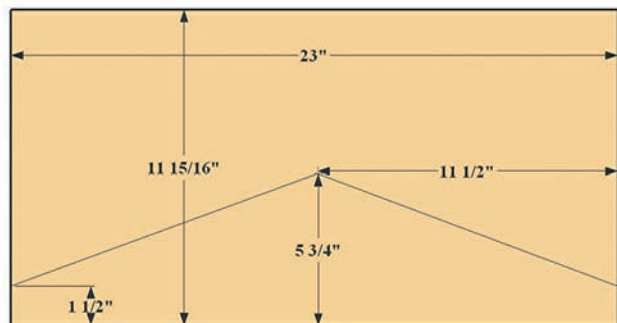


FIGURE 2: Inside bottom.

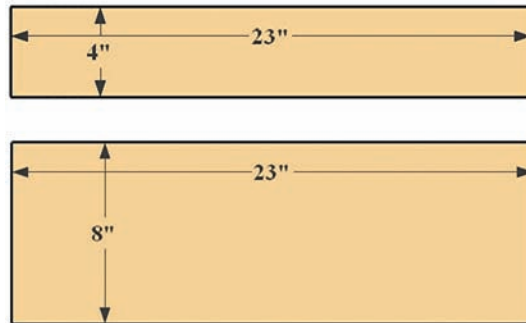


FIGURE 3: Cutting upper and lower back pieces.

underneath/outside view; the front edge is cut back at an 8° angle. The second diagram shows the inside view, with reference lines drawn at the joints of the baffle half leading edges. Cut the upper and lower back pieces (Fig. 3). Use these back parts in an open back or convertible cab. If you're building a sealed cab with no removable section, cut the back as a single piece measuring 23" × 23". Cut two sides (Fig. 4).

Cut the mirror-imaged baffle halves in four steps, with the basic blanks first (Fig. 5), and then the top and bottom edges at an 8° angle, both angles facing the same direction, forming the back tilt. As soon as you cut them out, label the two baffle halves left and right, front and back face, top and bottom. Draw lines on the baffle halves per Fig. 6, cutting them with the blade at a 20° angle, so that the front faces are narrower than the rear faces on the cut line. Draw lines per Fig. 7 and cut at a 20° angle, this time with the blade tilted so that the front faces of the baffle halves end up wider than the rear faces.

Draw lines and mark two points per

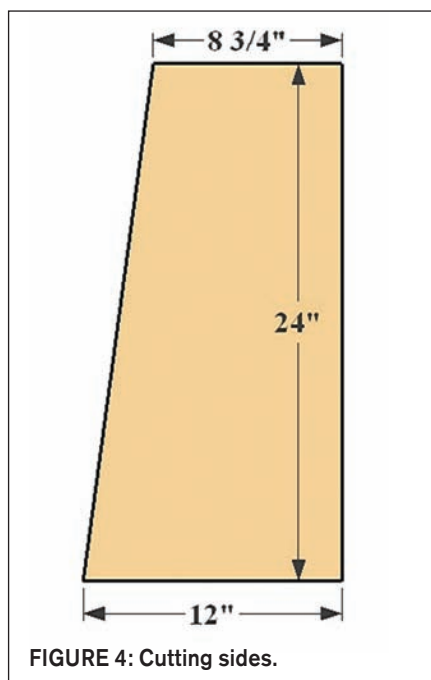


FIGURE 4: Cutting sides.

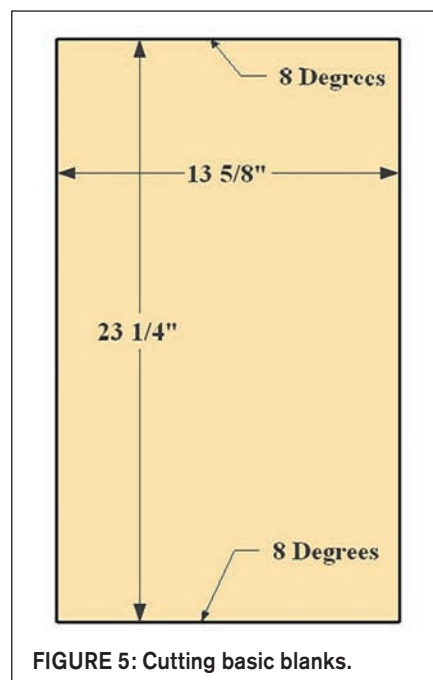


FIGURE 5: Cutting basic blanks.

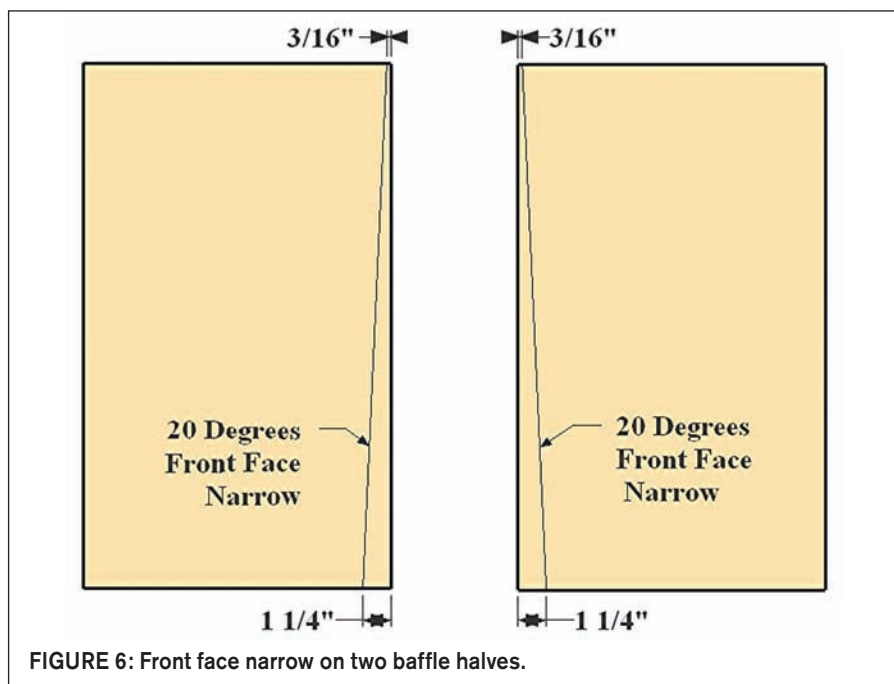


FIGURE 6: Front face narrow on two baffle halves.

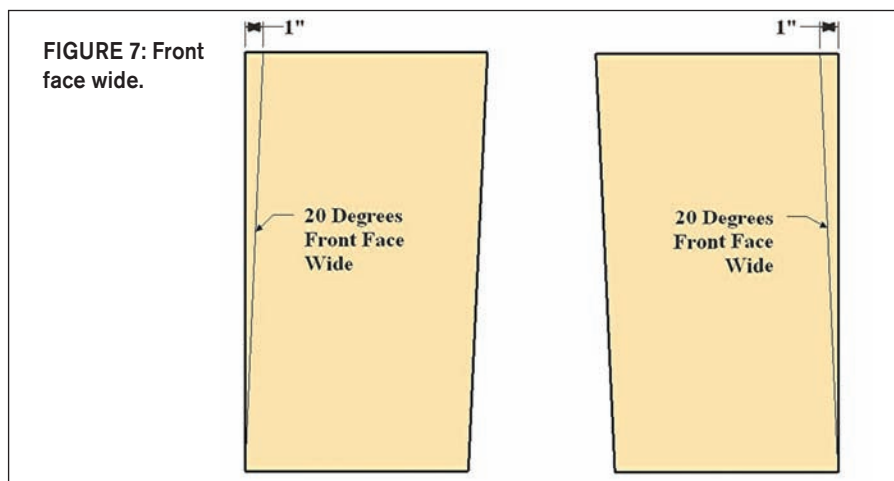


FIGURE 7: Front face wide.

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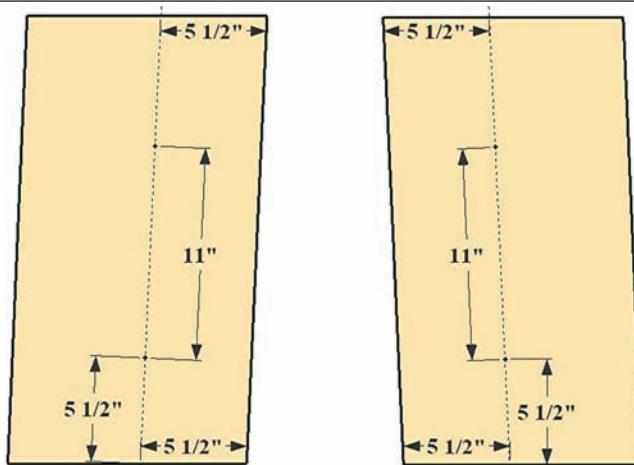
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Fig. 8. The points are centers for the driver holes which you must cut. The driver holes are sized according to the driver specification sheets. Most tens will have about a 9" hole. Mount the drivers to the baffles from the front and attach them with either screws or bolts and T-nuts. Insert a driver through each mounting hole, marking through the frame the locations for pilots. Remove the driver and drill the pilots. Repeat with the other baffle half. Install T-nuts from the rear of the baffle, pulling them through with a bolt driven by hand.

FIGURE 8:
Measuring for
driver holes.



ASSEMBLY

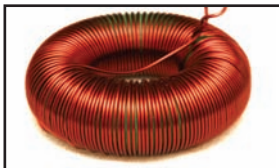
Cut three assembly jigs. The first is an approximately 18" long piece of plywood, the end view shown in **Fig. 9**. The other two jigs are identical, both cut from plywood per **Fig. 10**. Attach one side to the bottom, with the side overlapping the outer edge of the bottom.

To fasten, hold the two pieces in alignment with a 2 × 2 caul and clamps (**Fig. 11**). Clamp assembly jig 1 flush to the leading edge of the side, with the angled edge matching where the baffle half will mate to the side. Attach the first baffle half, holding it tight to the jig while driving fasteners through the side (**Fig. 12**). Line up the baffle half with the reference line on the bottom while driving fasteners through the bottom. If the baffle halves are warped, cut an 8° edge on a 2 × 2 caul and clamp or screw it to the reference line, then clamp or screw the baffle half to it to pull the warp out before fastening the joint to the bottom.

Screw assembly jigs 2 and 3 to the first baffle half, near the top and bottom. Attach the second baffle half to the assembly, screwing it to the jigs (**Fig. 13**). Place wax paper or polyethylene between the jigs and the baffle halves so that they won't be glued together. Install the lower back, or a one-piece back for a sealed cab, with a caul and clamps holding the parts secure (**Fig. 14**). Install the upper back, using another caul and clamps to hold everything secure while fastening (**Fig. 15**). Cut the top, per **Figs. 16 and 17**. Install the top, then remove the guideboards. Install the second side.

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Specifications:

HF Power Output: 30Wrms

LF Power Output: 80Wrms

THD: 0.03%

S/N ratio @ rated W: 90db

Input sensitivity: 1V

Input impedance: 22Kohms

4th order X-over: 2KHz AP-016A

2.7KHz AP-016B

3.5KHz AP-016C

Weight: 2.6Kgs (5.7lbs)

Dimensions W x H x D:

W: 137mm (5.4")

H: 218mm (8.6")

D: 81mm (3.2")

Cut-Out W x H:

W: 108mm (4.25")

H: 190mm (7.5")

AC Voltage: 115V / 230V

MAKE YOUR SPEAKERS ACTIVE!

For a convertible cab that you can use either sealed or open back, install inch wide flanges around the sides and top of the back opening (**Fig. 18**). Omit these for an open back. Cut a 1" to 1.5" hole in the upper back, offset to one side. Back that hole on the inside with a piece of thin plywood as a jack mounting plate.

For a convertible box, cut a back door (**Fig. 19**) and door flange. The flange is a 1½" wide strip attached to the bottom of the door, sized wide enough to just fit between the flanges on the cabinet sides (**Fig. 20**). When in place on the cab, the flange goes inside

the lower cabinet back, while a pair of latches clamp the door tight at the top. You may use surface-mounted "butterfly" style latches, or inlaid latches for protection.

You may use individual round grilles over each driver. If you prefer a full grille, cut two grille backer sides and one each top and bottom (**Figs. 21 and 22**). The backer sides install tightly to the baffle/side joints, with the backer top and bottom connecting them across the top and bottom (**Fig. 23**). Cut the sides at 8° on both ends, to match the angle of the baffles, as is one edge on the top and bottom. Cut three grille

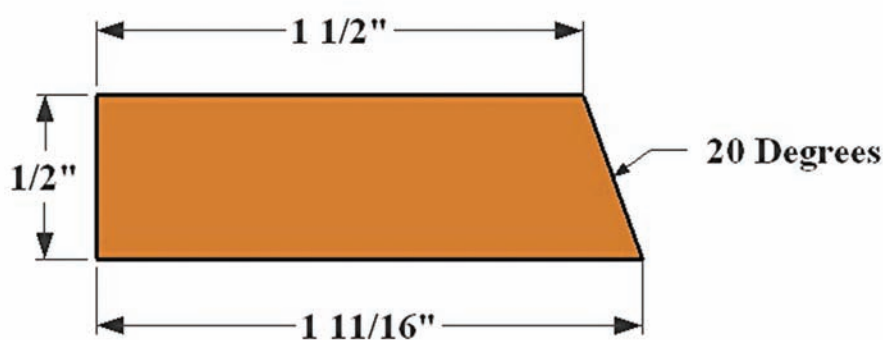


FIGURE 9: Assembly jig 1.

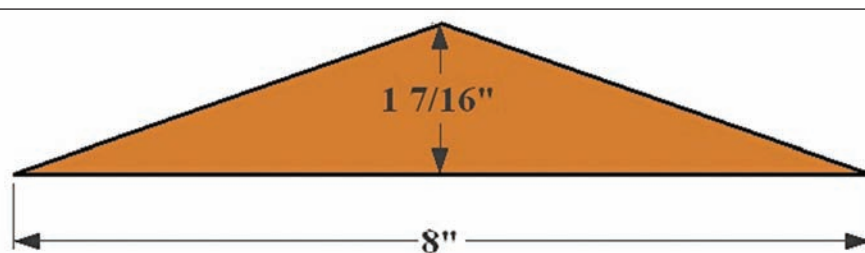


FIGURE 10: Dimensions for assembly jigs 2 and 3.

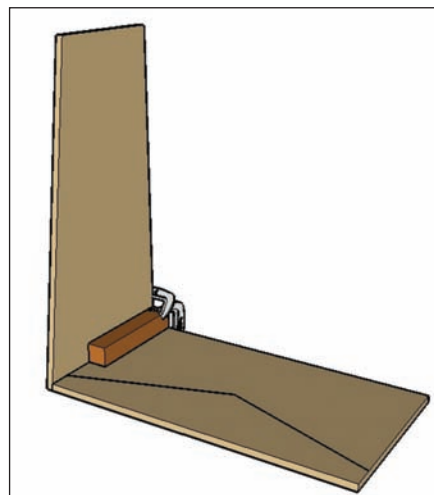


FIGURE 11: Clamping assembly jig.

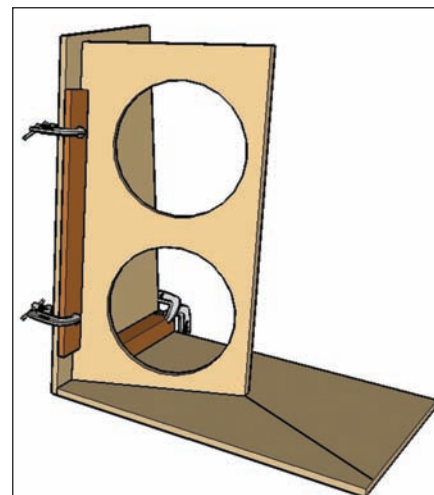


FIGURE 12: Attaching first baffle half.

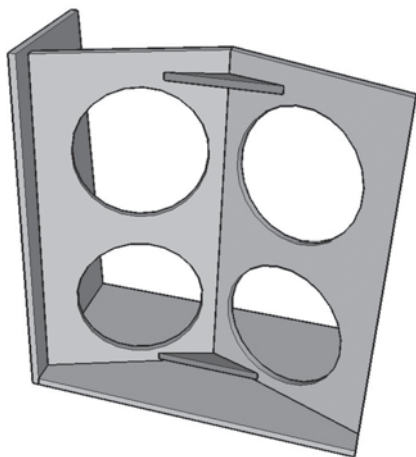


FIGURE 13: Screwing second baffle half to the jigs.

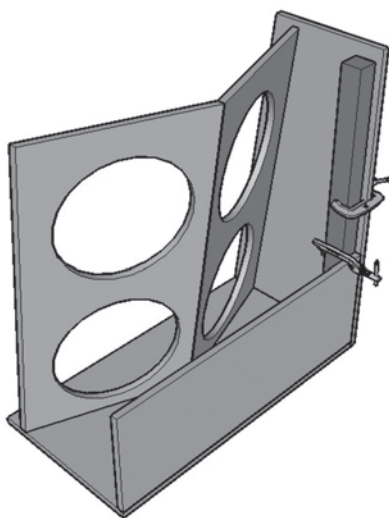


FIGURE 14: Installing lower back, holding parts secure.

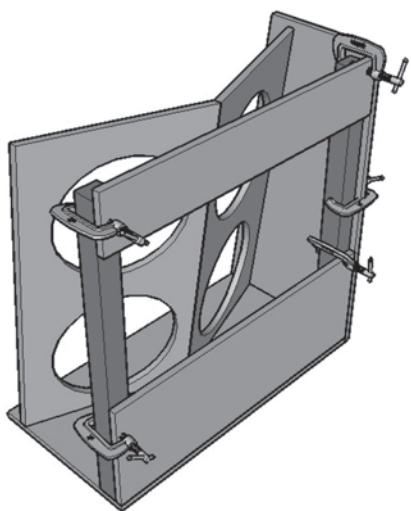


FIGURE 15: Fastening.

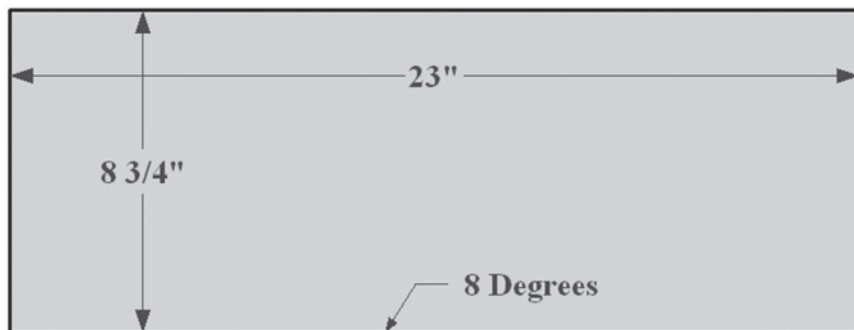


FIGURE 16: Cutting the top.

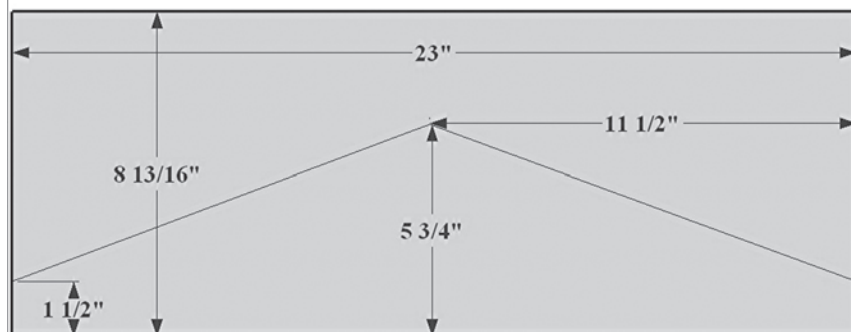
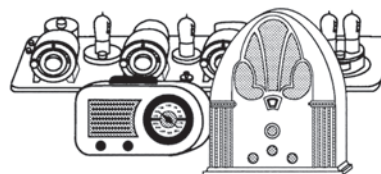


FIGURE 17: Dimensions for top cut.

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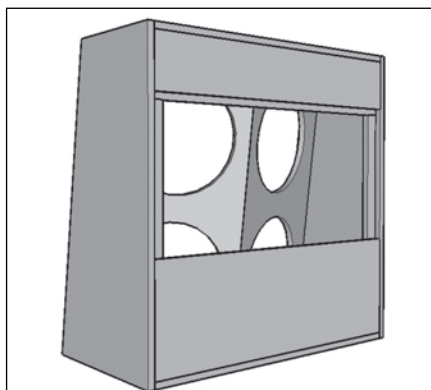


FIGURE 18: Installing flanges around the sides and top of the back opening.

frame verticals and two grille frame top/bottom (**Figs. 24** and **25**). Assemble them (**Fig. 26**), ensuring the top and bottom angles face the right way to fit onto the cabinet. You can assemble the grille with glue only, clamped until it sets, but a biscuit jointer is the ideal tool for this job.

FINISHING UP

Apply a finish. Carpet is a durable option, while Tolex or tweed offers a vintage look. For a modern touch use DuraTex, which you can roll or spray on, and is also available from www.

FIGURE 19: Cutting a back door.

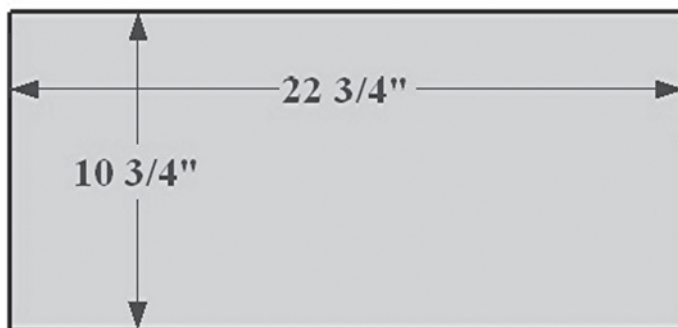


FIGURE 20: Positioning the door flange.

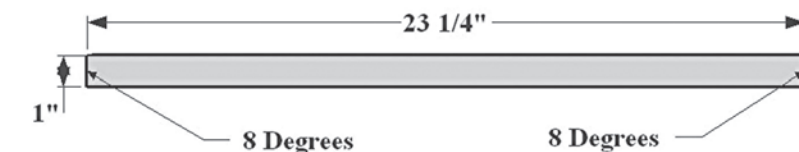
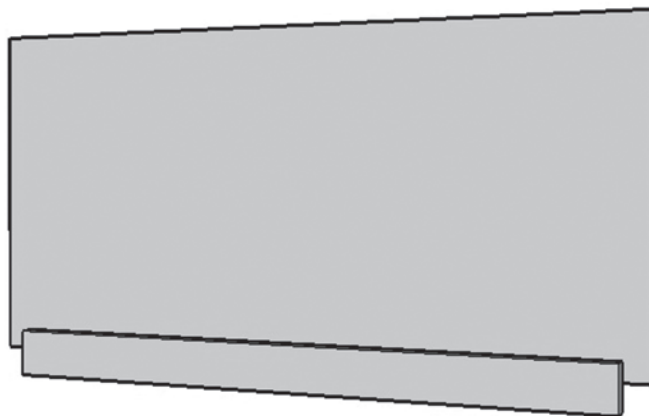


FIGURE 21: Backer sides on top.

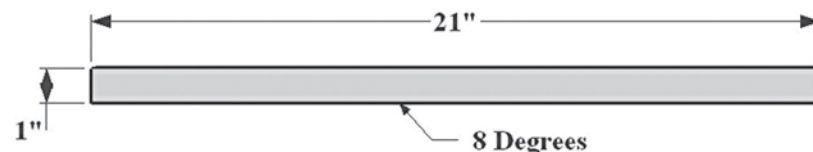


FIGURE 22: Backer sides on bottom.

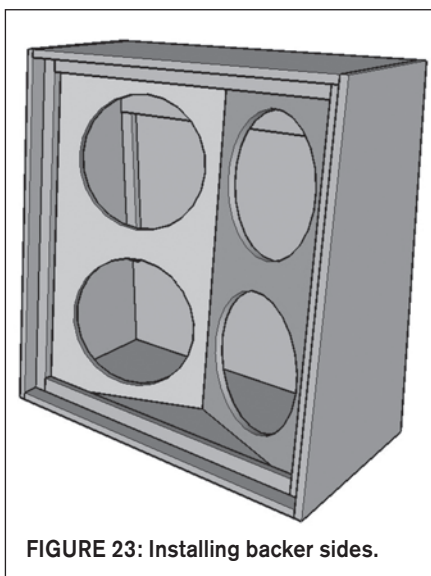


FIGURE 23: Installing backer sides.

speakerplans.com. Attach grille cloth to the grille. Use foam speaker gasket tape on the convertible back flanges for an airtight rattle-free fit. Fully line the inside of the cabinet with a 1" to 1½" thick acoustic foam or open-celled polyurethane mattress-topper foam, secured with staples or adhesive. Install handles and protective corners as desired. Install grille-securing hardware to the grille and backers, or use screws with finish washers driven through the grille face. Install the jack. Wire the drivers to the jack. For impedance equal to one driver's impedance, wire them series/parallel; for impedance equal to one-quarter of one driver's impedance, wire them in parallel. Install the drivers and the grille. Rock on. *ax*

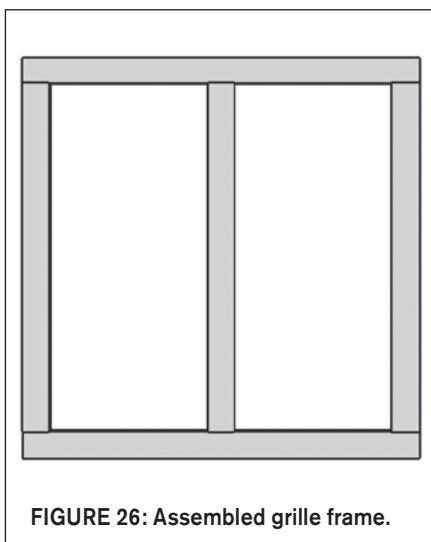


FIGURE 26: Assembled grille frame.

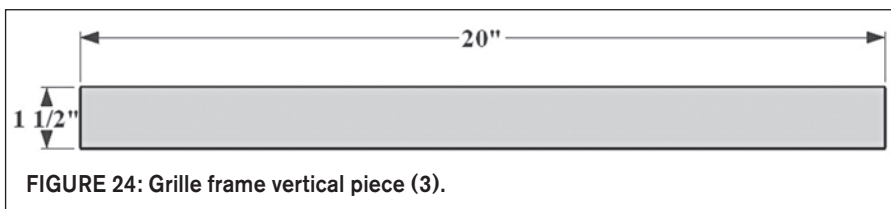


FIGURE 24: Grille frame vertical piece (3).

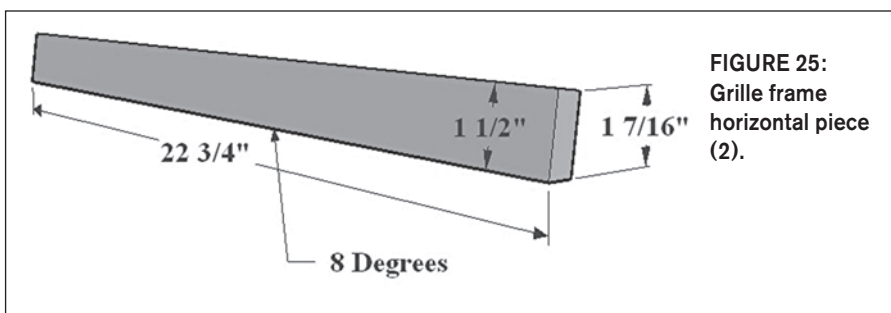


FIGURE 25: Grille frame horizontal piece (2).

Major parts nominal sizes, oversized for rough cutting. Confirm all final parts sizes per plans text.

Bottom.....	2¼" × 23¼"
Sides.....	12¼" × 23¼"
Lower Back.....	8¼" × 23¼"
Upper Back.....	4¼" × 23¼"
Baffle Half.....	14" × 23¼"
Top.....	8 3/8" × 23¼"
Back Door.....	11" × 23"

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