

Ventana F.U.N.™



Ventana 12"



Ventana 8"

Welcome to HEMP Acoustic's F.U.N.™ Loudspeaker Kit
full range driver

This design is strictly for the home DIY enthusiast and not to be used professionally or for commercial purposes without prior written permission from Hemp Acoustics. For inquiries please e-mail us at info@hempacoutics.com. Thank you.

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Getting Started

Tools

-
- Wood Glue
- 12 X Large Rubber Bands / Hockey Elastics (**OPTIONAL**)
- Multihead Screwdriver
- Rubber Mallet
- Hole Saw **OR** Jig Saw
- Glue Roller **OR** Paint Brush
- Cleaning Rag
- Solder
- Soldering Iron
- Square Ruler
- Pencil
- Router (**OPTIONAL**)

Components per Individual Loudspeaker

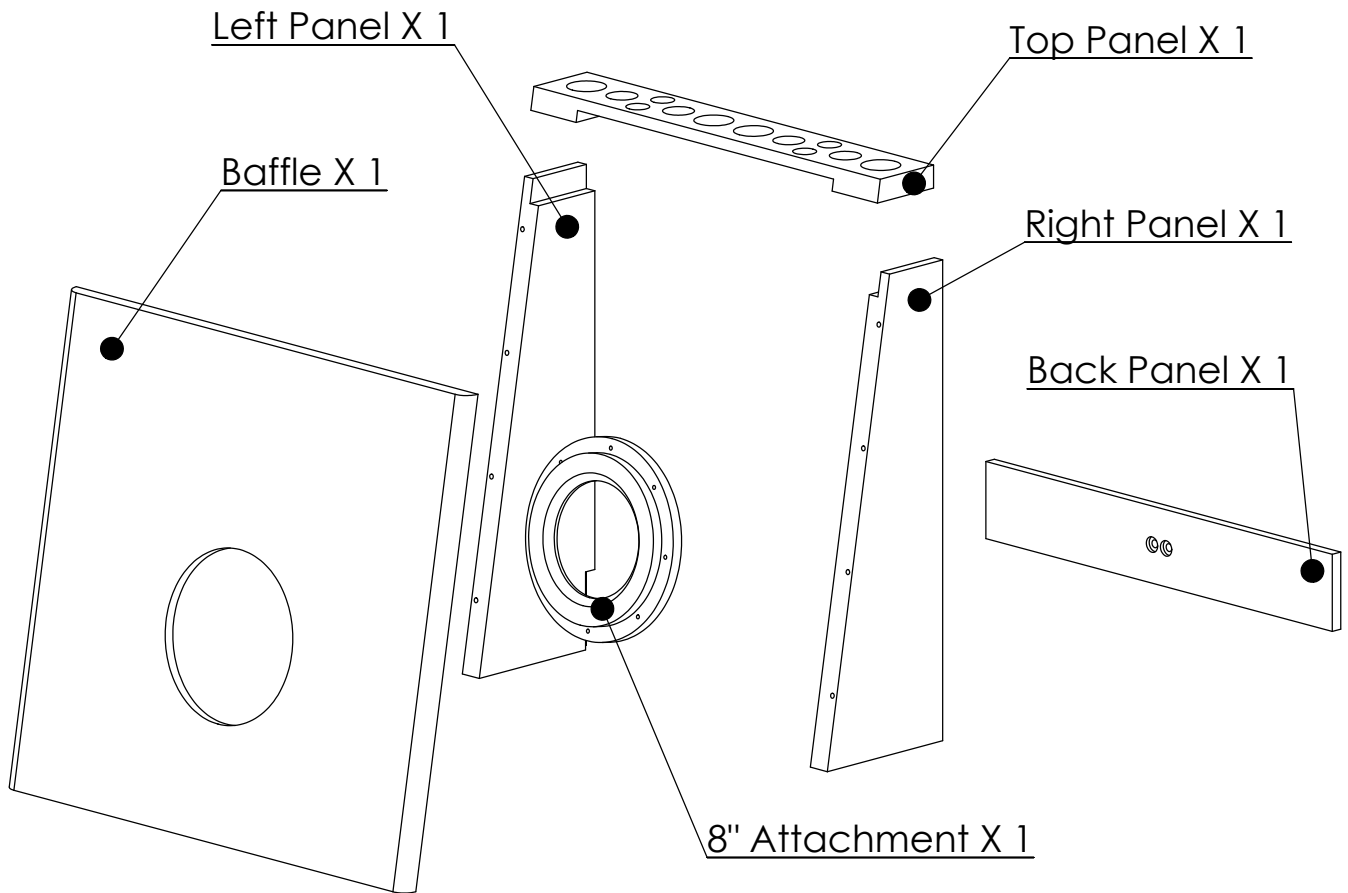
- 1 X MDF sheets **OR** high grade Plywood, 4' X 8' X 3/4" thick [Optional 3/4" laminated Bamboo for Baffle]
- 1 X 8" Woofer (8" HEMP Acoustics FR8C) **OR** 12" Woofer (12" HEMP Acoustics CO12OB) [Optional HEMP Acoustics CO8V and CO15V, see driver specs for mounting cut-outs]
- 1 X Hook-up Wire (high grade 0.999999 copper or silver)
- 1 X pair of Binding Posts (suggestions; www.cardas.com, www.wbtusa.com, www.eichmanncables.com)
- 4 X 4 mm X 60 mm T-nuts **OR** Wood Screws (for mounting FR8C woofer) **for Ventana 8"* **OR** 8 X 4 mm X 60 mm T-nuts **OR** Wood Screws (for mounting CO12OB woofer) **for Ventana 12"*
- 8 X 4 mm X 60 mm Wood Screws (for mounting 8" Attachment) **for Ventana 8"*
- 12 X 1-1/2" L X 1/4" Ø Wood Dowel Pins
- 4 X 1" L X 1/4" Ø Wood Dowel Pins

List of Suppliers within North America

- www.soundanchors.com
- www.madisound.com
- www.solen.ca
- www.e-speakers.com
- www.diy cable.com
- www.alpiwood.com
- www.veneers.com
- www.blueridgesales.ca

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Cabinet Parts

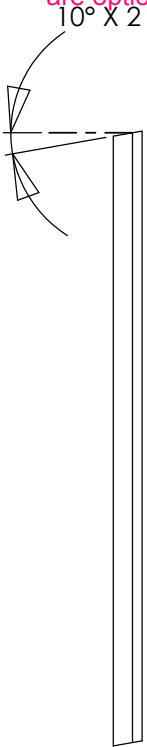


Baffle

Note: The Baffle without the 8" Attachment is for Ventana 12".

Right View

OPTIONAL: 10 degree angle on top and bottom edge are optional



Back View

* T-nut recommended for mounting Woofer and Wood Screws needed for mounting 8" Attachment

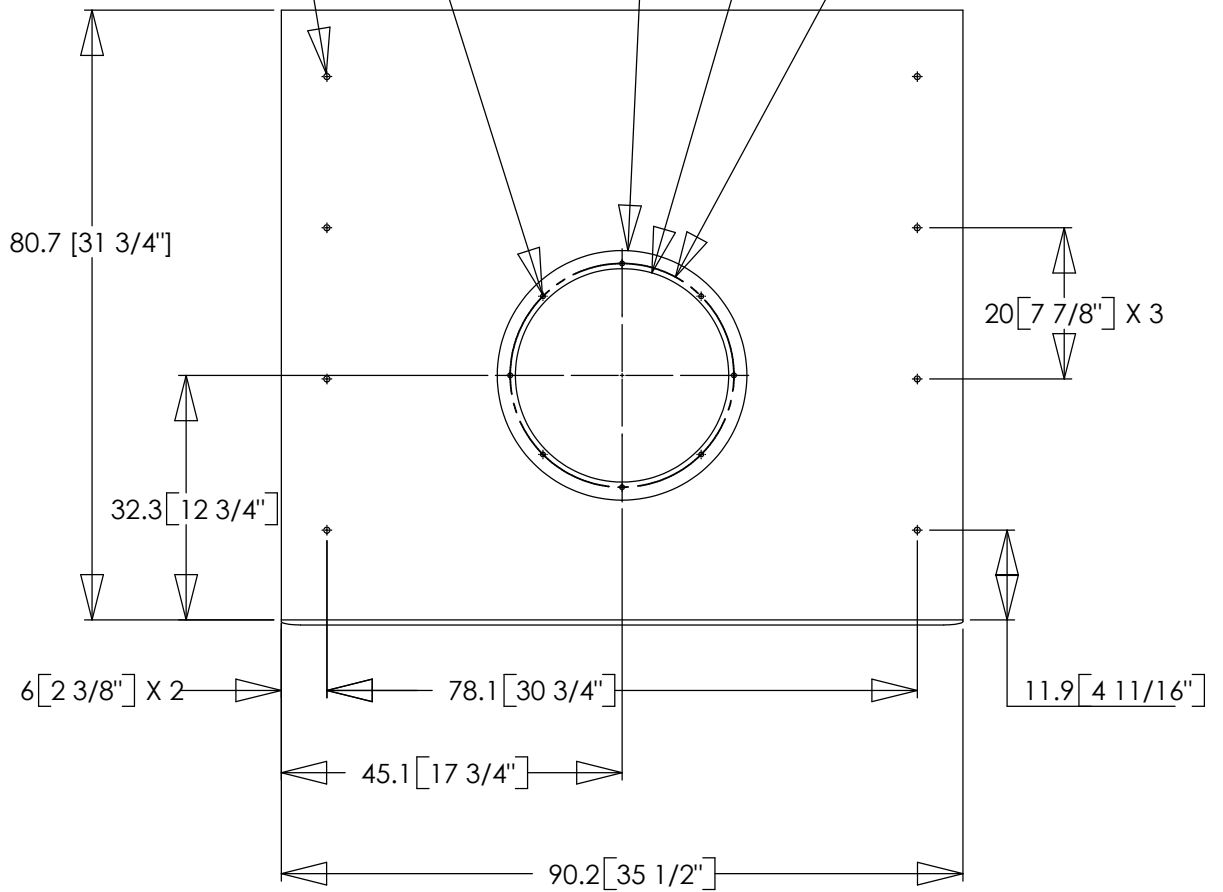
Tap Drill Size
 \varnothing 5.3mm [#4(0.209")] X 8
 Clearance Drill Size
 \varnothing 7mm [J(0.277")] X 8
 Depth 1.3 [1/2"]

Dowel Clearance Hole
 \varnothing 8mm [5/16"]
 Depth 2.1 [13/16"]

\varnothing 33 [13"]
 Depth 1.9 (3/4")

\varnothing 28.2 [11 1/8"]
 Thru

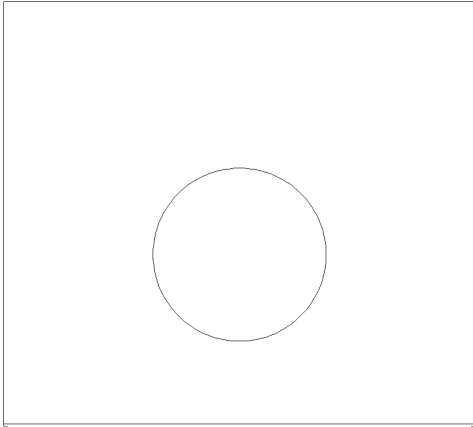
Mounting Diameter
 \varnothing 29.6 (11-21/32")



Baffle, 1 piece 1-1/2" thick
 Dimensions are in cm [inches]

Baffle Construction Steps

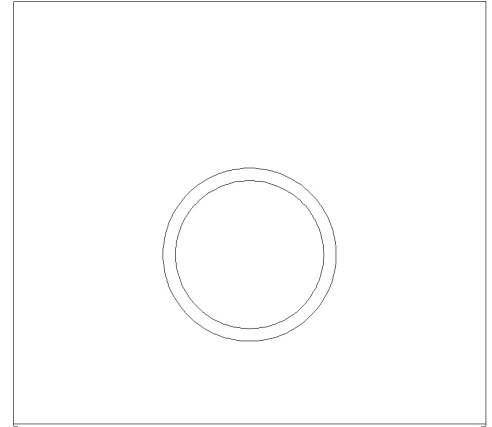
Back View



-Cut-out circular groove with router [Depth 1.9 cm (3/4")]

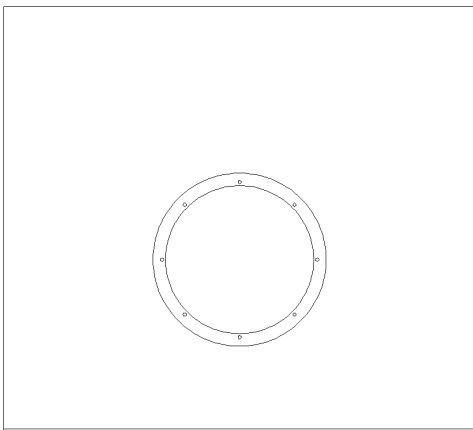
-This will allow woofer to be flush with baffle surface

Step 1



-Cut-out woofer mounting hole with a hole saw or a jig saw

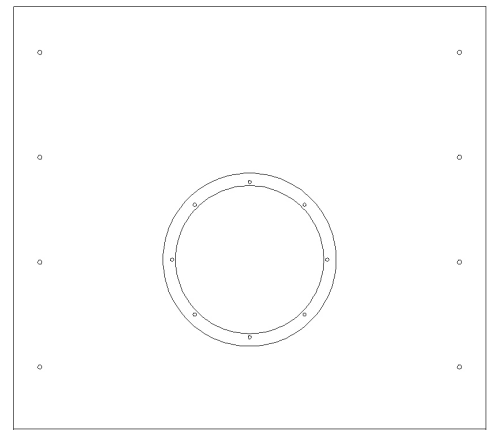
Step 2



-Drill 8 holes for wood screws or T-nuts

* T-nuts require clearance drill size and wood screws require tap drill size

Step 3



-Drill 8 holes for wooden dowels

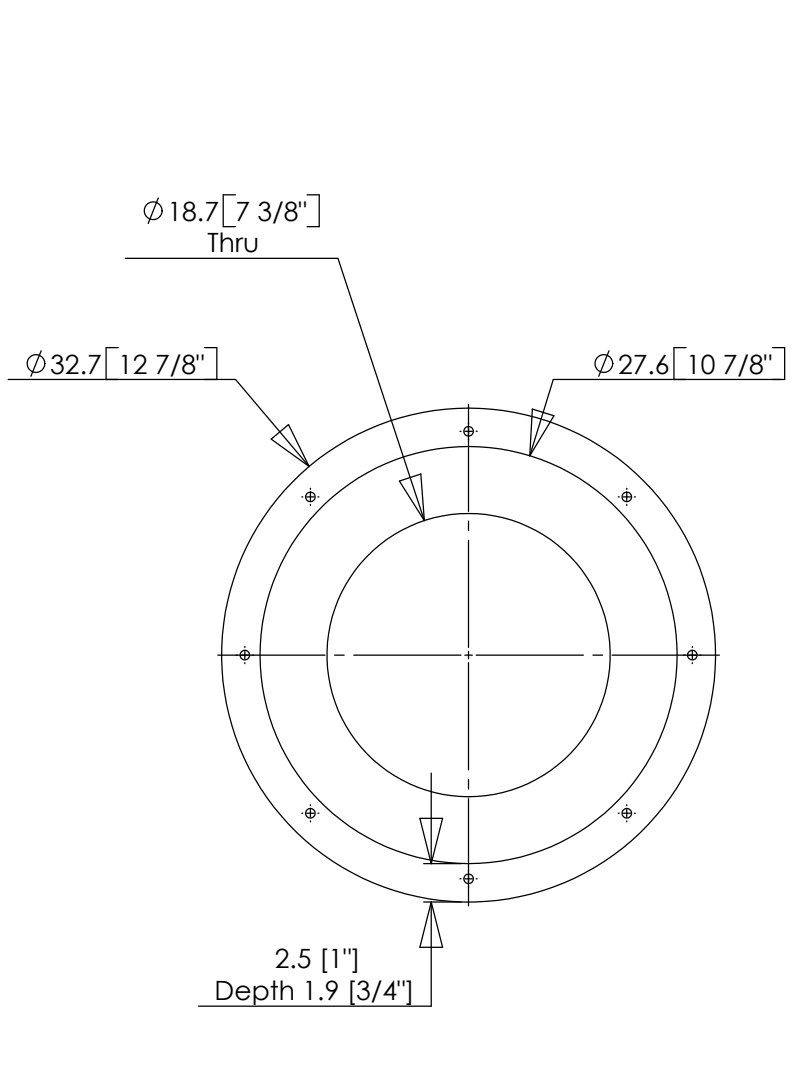
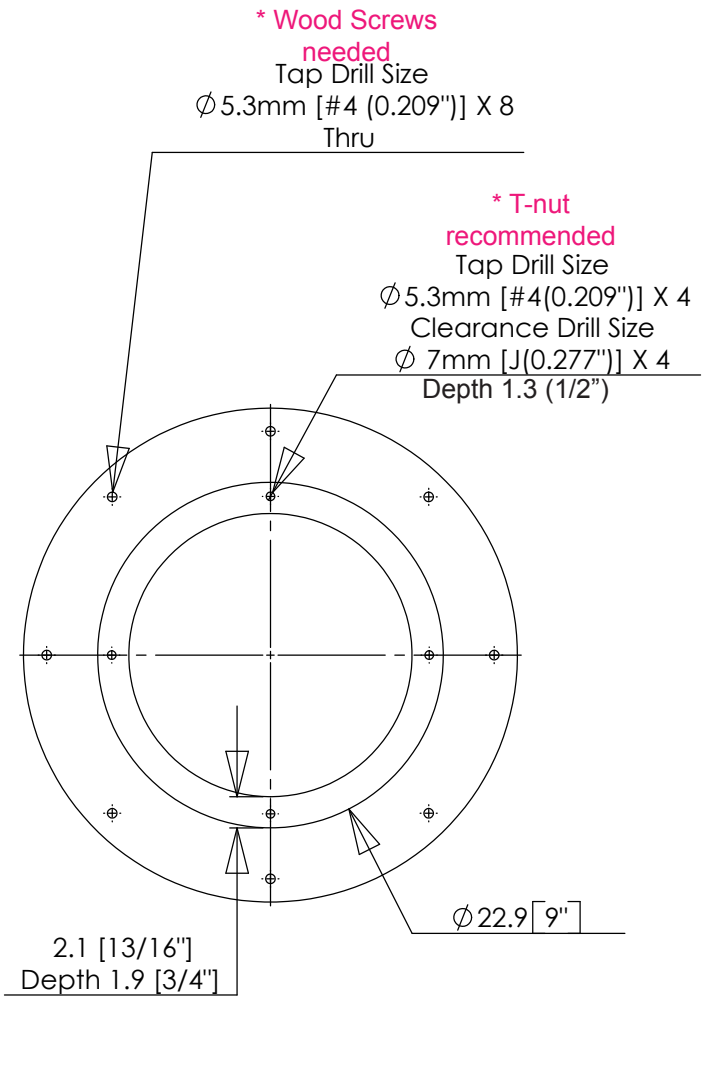
Step 4

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8" Attachment For Ventana 8"

Back View

Front View



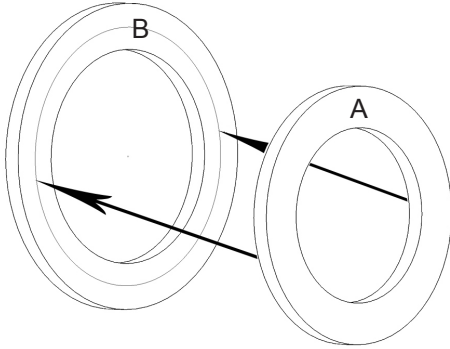
8" Attachment, 1 piece 1-1/2" thick
Dimensions are in cm [inches]

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8" Attachment Construction Steps

Front View

* Option 1 & Option 2 apply to 8" Attachment, Left Panel, Right Panel, and Top Panel



(No router needed)

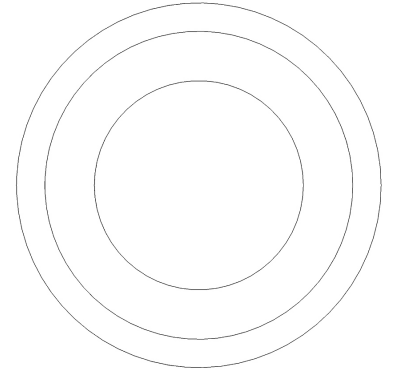
Option 1

- Draw outlines with a pencil onto panel B of where piece A goes
- Then glue pieces A onto panel E in its designated area
- Allow glue to set before proceeding to Step 2

OR

Option 2

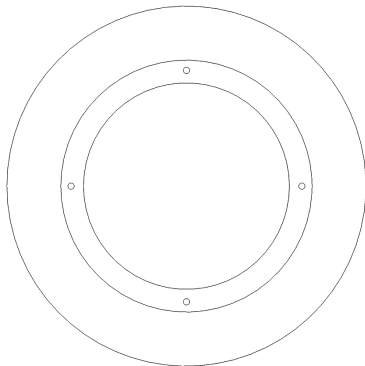
- Start with a 32.7 (12-7/8") Ø X (1-1/2") TH sheet of MDF
- Then router out groove



(Router needed)

Step 1

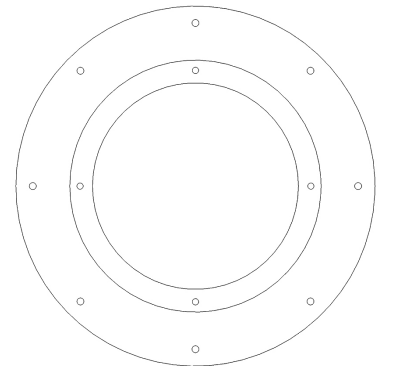
Back View



Step 2

- Drill 4 holes for wood screws or T-nuts
- * T-nuts require clearance drill size and wood screws require tap drill size

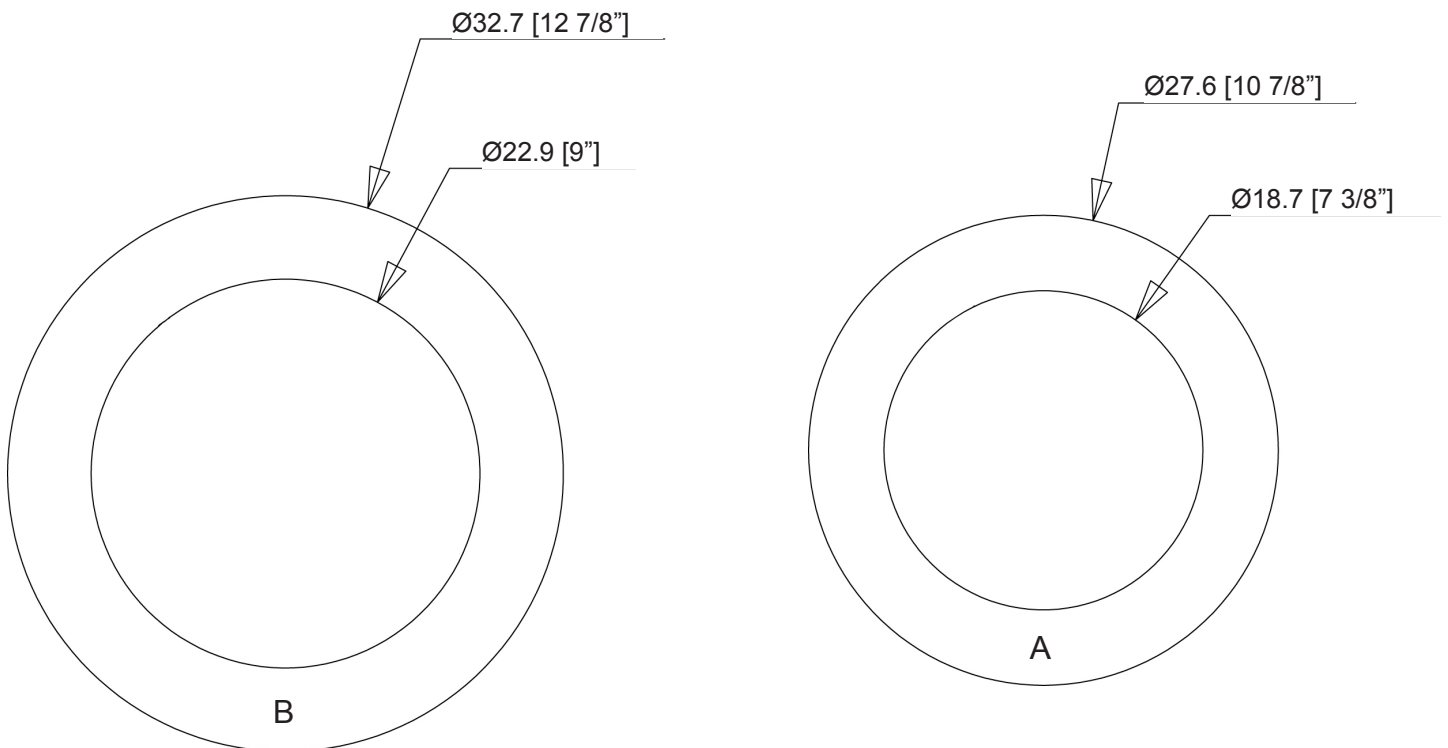
- Drill 8 holes for wood screws



Step 3

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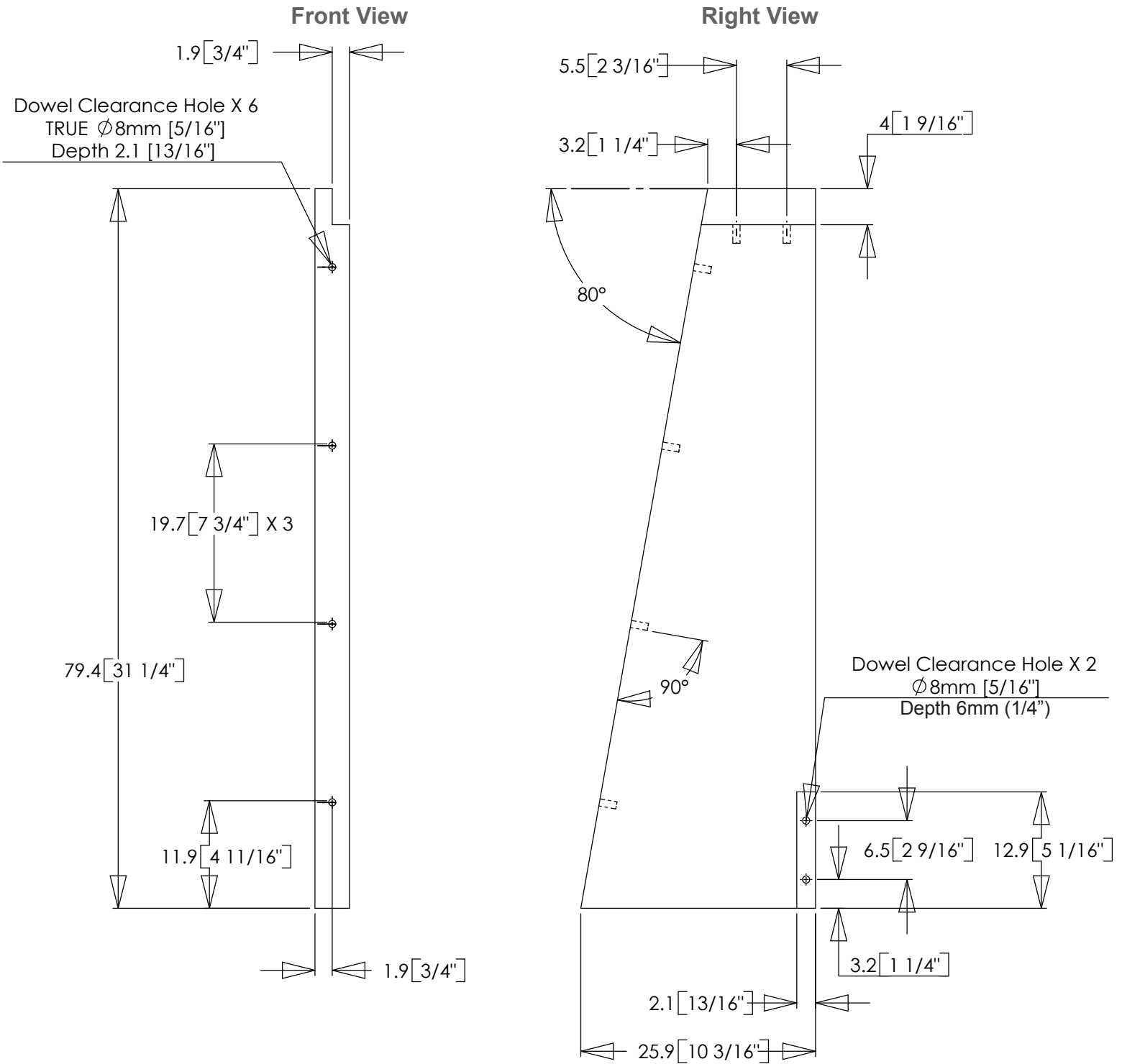
8" Attachment Raw Cuts For Option 1



Pieces are 3/4" thick each
Dimensions are in cm [inches]

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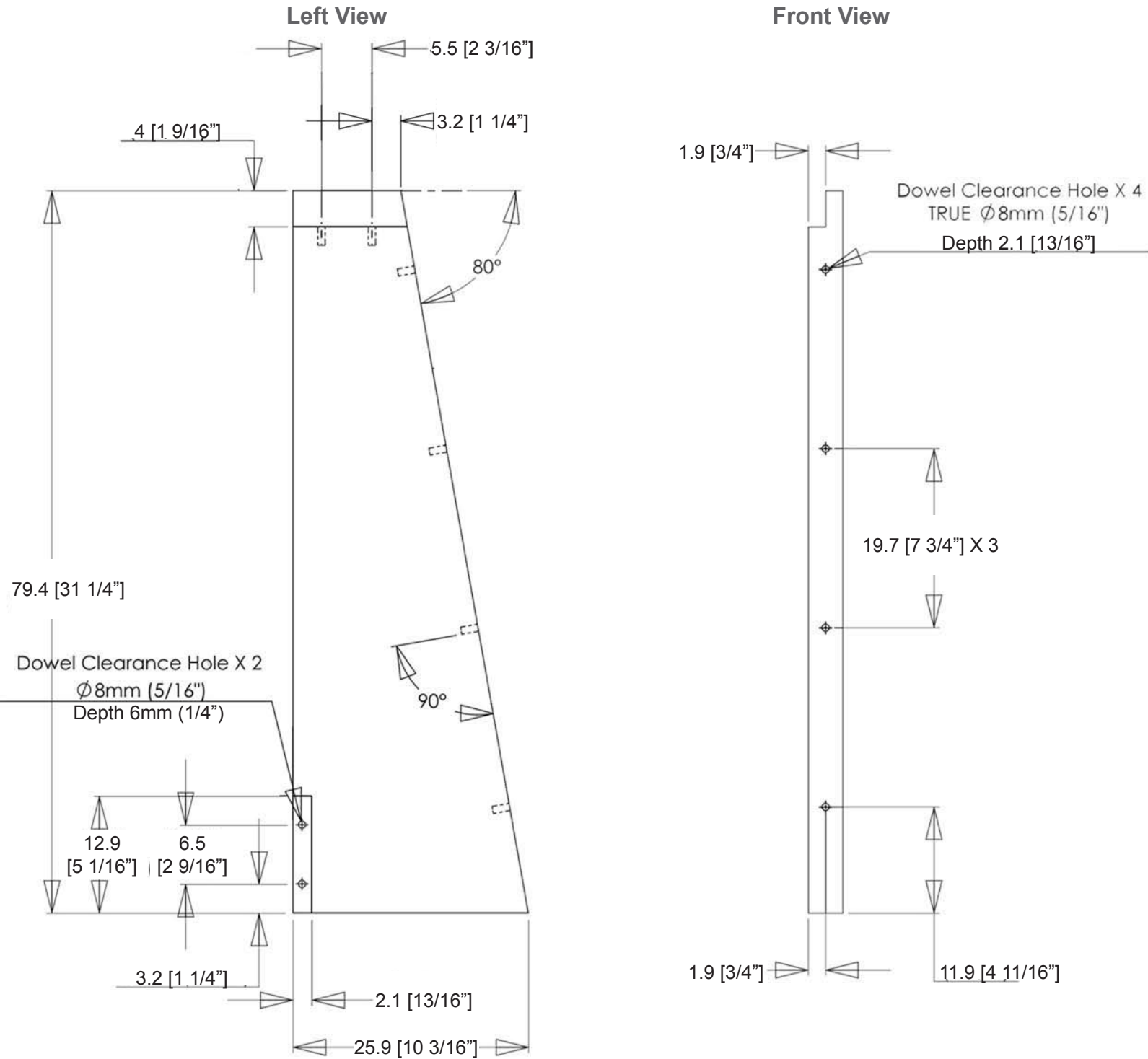
Left Panel



Left Panel, 1 pieces 1-1/2" thick
Dimensions are in cm [inches]

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Right Panel



Right Panel, 1 pieces 1-1/2" thick
Dimensions are in cm [inches]

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Left & Right Panel Construction Steps

Please refer back to Step 1 on Page 8

Note: For Option 2 start with 79.4 cm (31-1/4") H X 25.9 cm (10-3/16") W X (1-1/2") TH sheet of MDF

Step 1

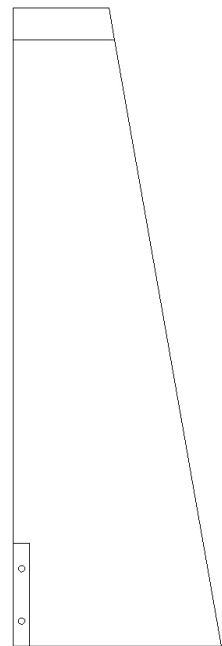
Front View



-Drill 4 holes 2.1 cm (13/16") deep on both Left and Right Panel for Wood Dowel Pins

Step 2

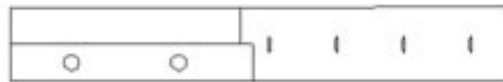
Side View



-Drill 4 holes 6 mm (1/4") deep on both Left and Right Panel for Wood Dowel Pins

Step 4

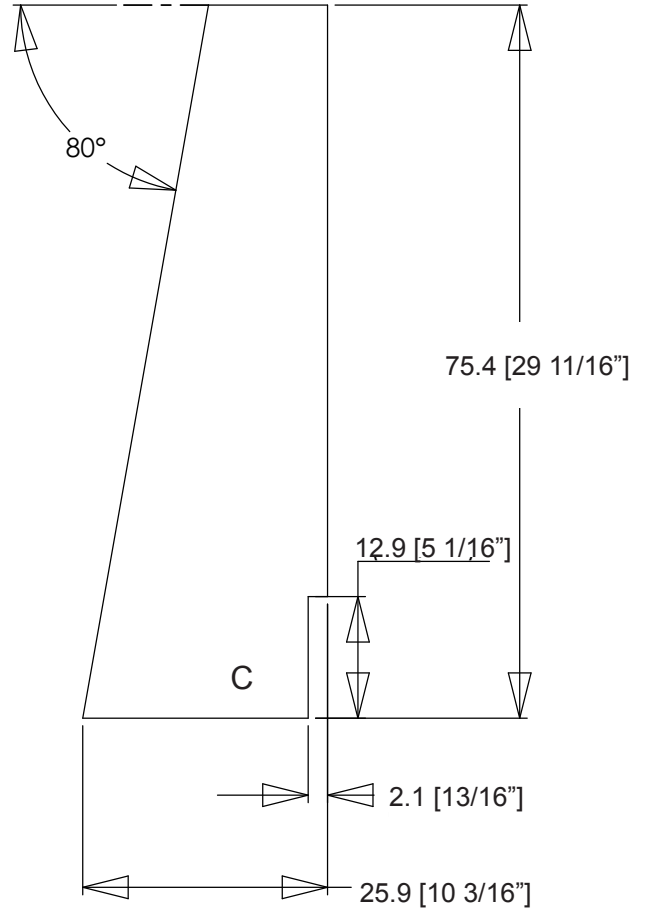
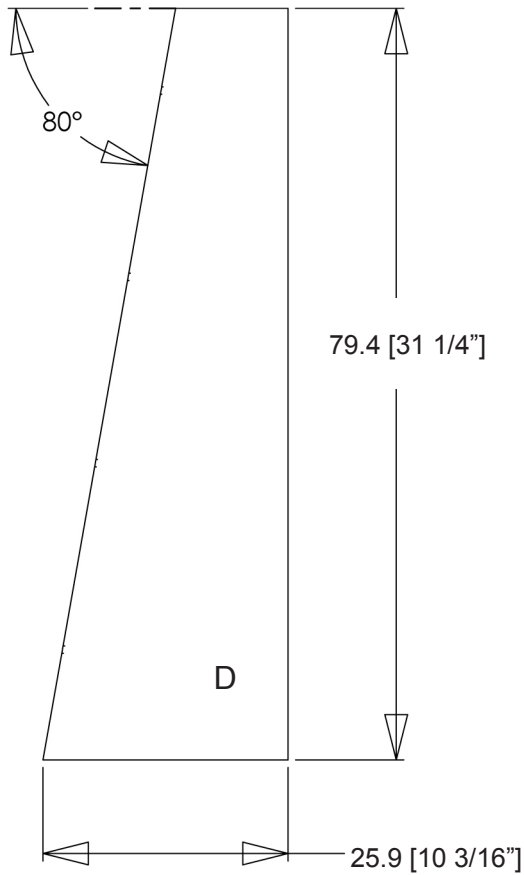
Top View



-Drill 2 holes 2.1 cm (13/16") deep on both Left and Right Panel for Wood Dowel Pins

Step 3

Left & Right Panel Raw Cuts For Option 1 on Page 8

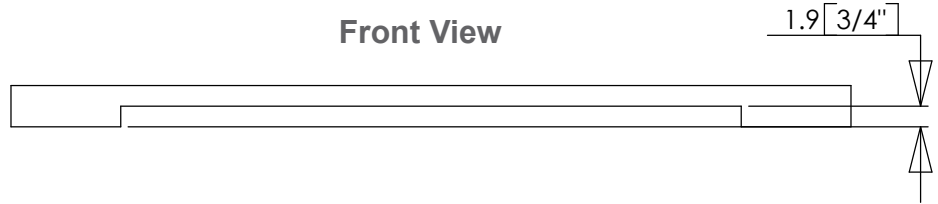


Pieces are 3/4" thick each
Dimensions are in cm [inches]

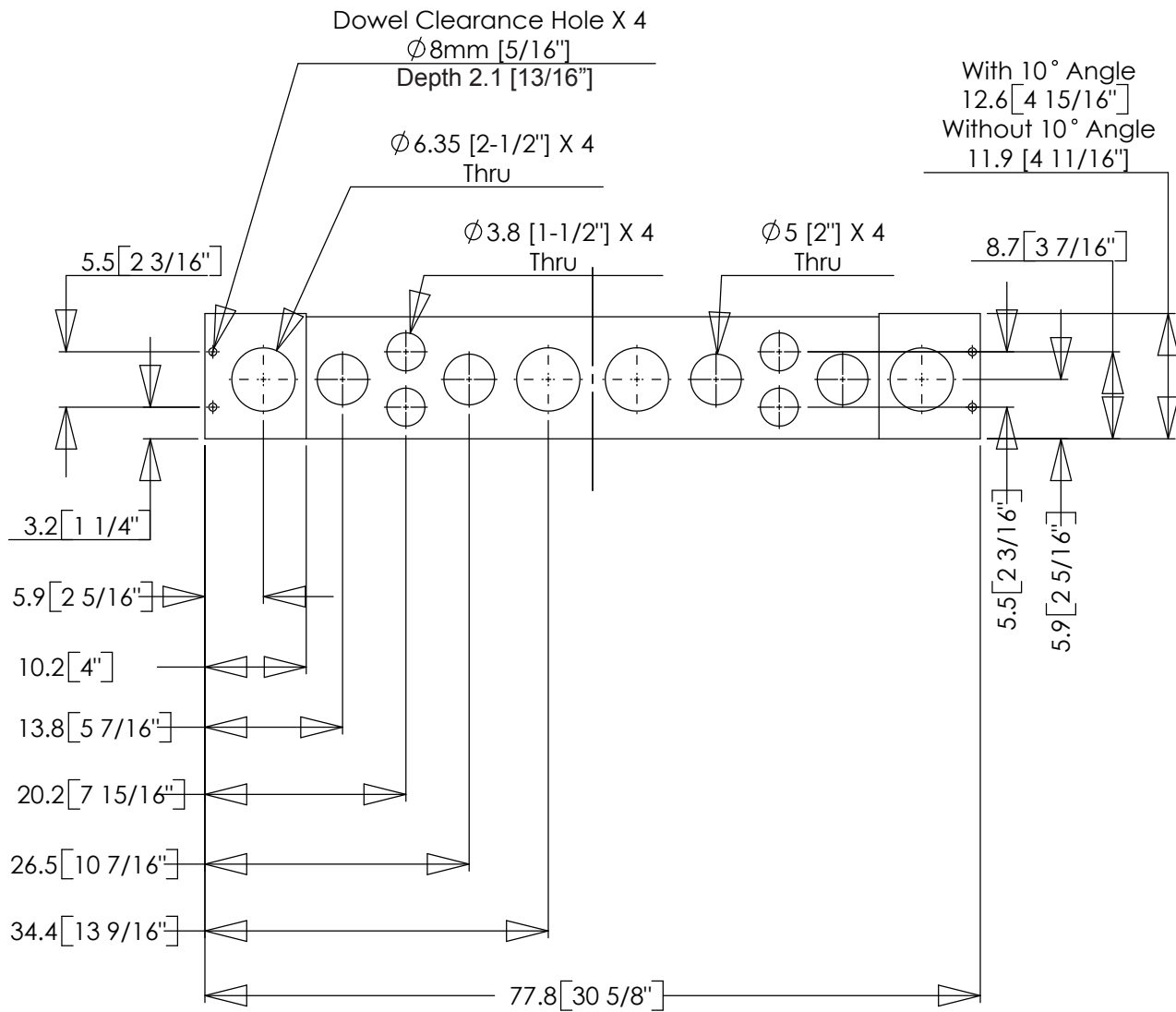
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Top Panel

Front View

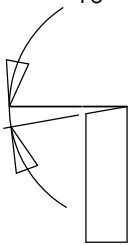


Bottom View



Left View

OPTIONAL: 10 degree angle on front edge is optional 10°



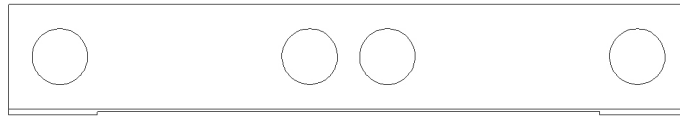
Top Panel, 1 piece 1-1/2" thick
 Dimensions are in cm [inches]

Top Panel Construction Steps

Please refer back to Step 1 on Page 8

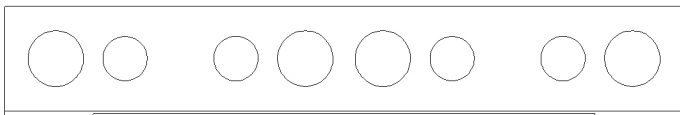
Note: For Option 2 start with 12.6 cm [4-15/16"] **OR** 11.9 cm [4-11/16"] H X 77.8 cm (30-5/8") W X (1-1/2") TH sheet of MDF

Step 1



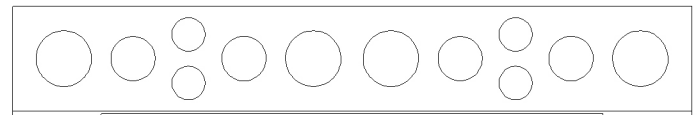
Cut-out 6.35 cm (2-1/2") holes with jig saw or hole saw.

Step 2



Cut-out 5 cm (2") holes with jig saw or hole saw.

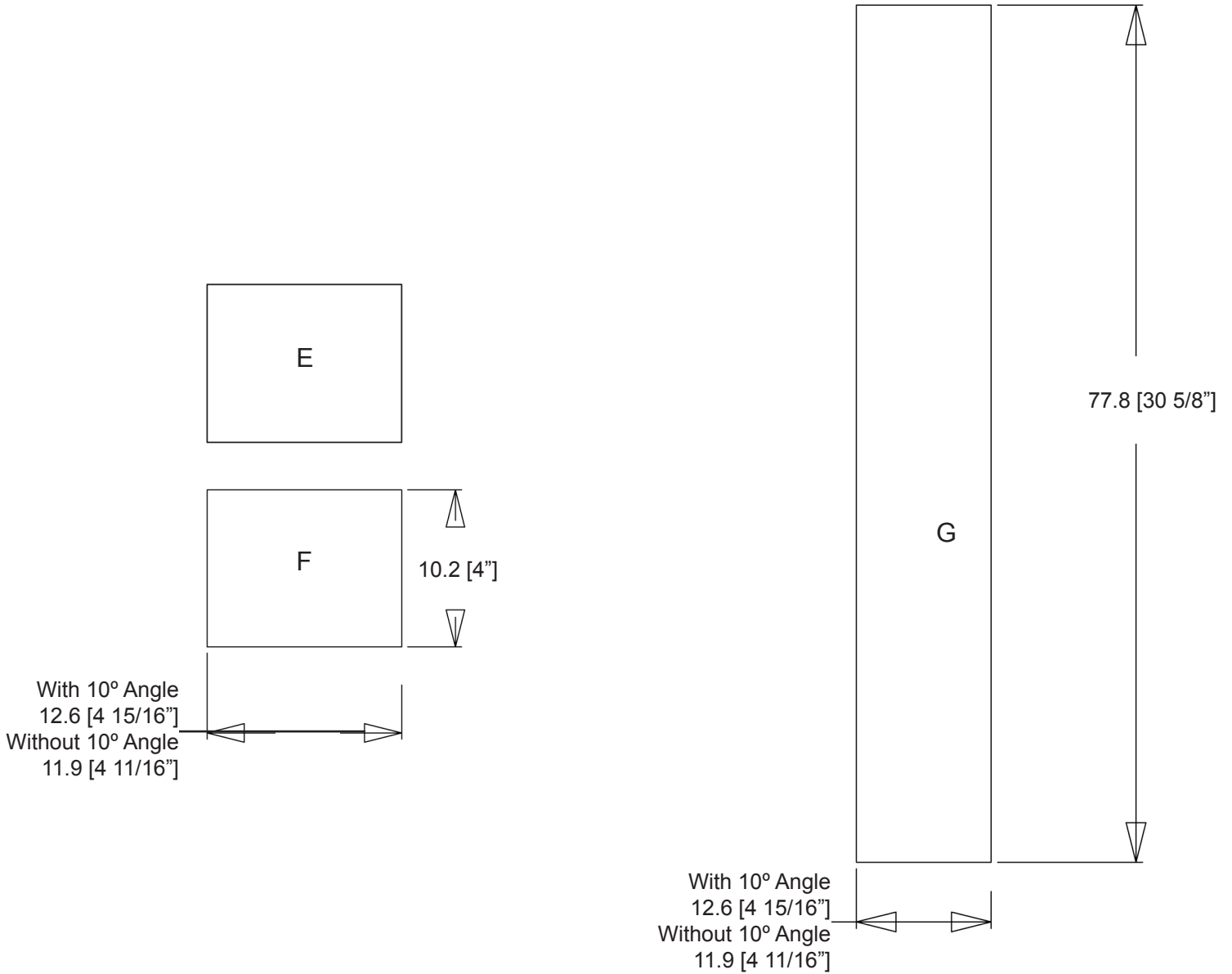
Step 3



Cut-out 3.8 cm (1-1/2") holes with jig saw or hole saw.

Step 4

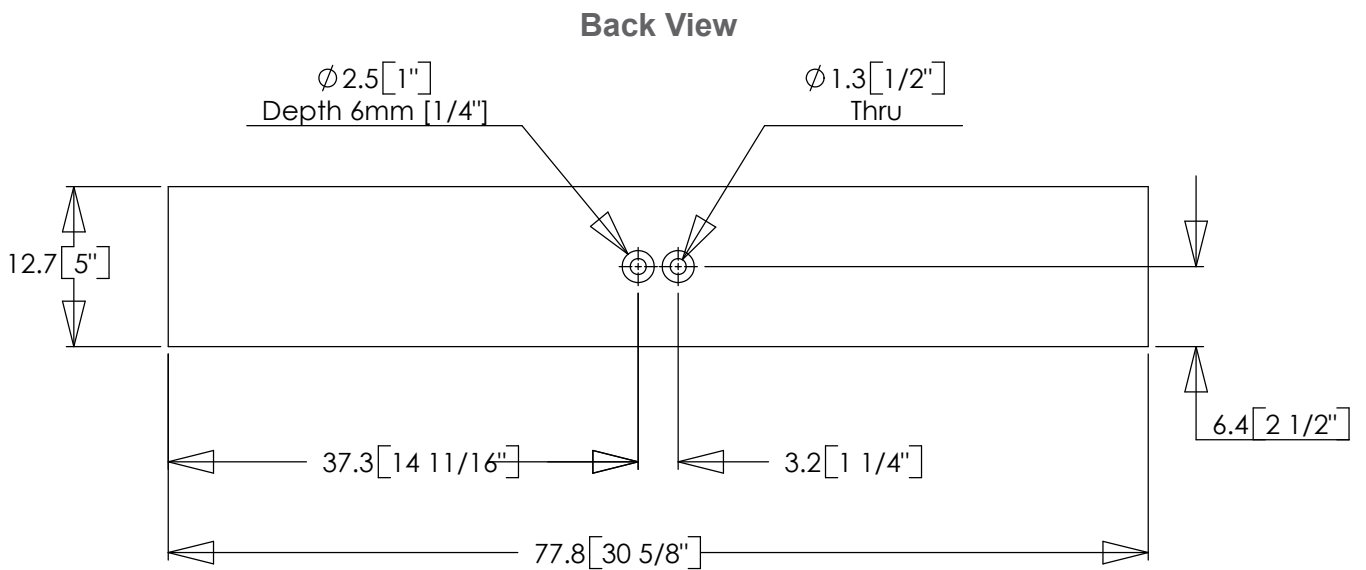
Top Panel Raw Cuts For Option 1 on Page 8



Pieces are 3/4" thick each
Dimensions are in cm [inches]

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Back Panel

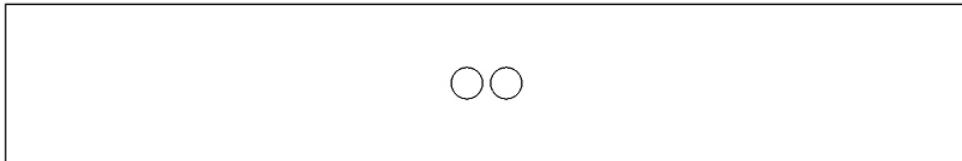


Back Panel, 1 piece 3/4" thick
 Dimensions are in cm [inches]

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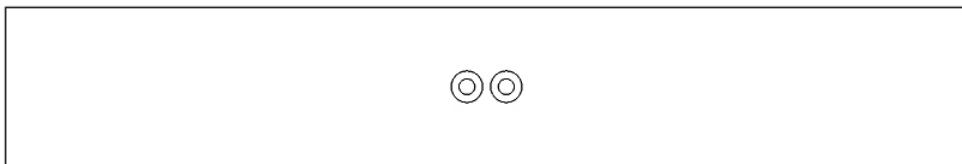
Back Panel Construction Steps

Back View



-Cut-out circular groove with
router [Depth 6 mm (1/4")]

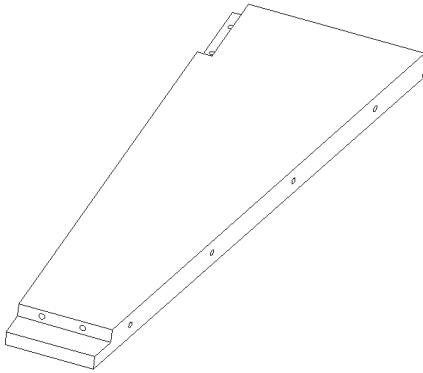
Step 1



-Drill holes for binding
posts

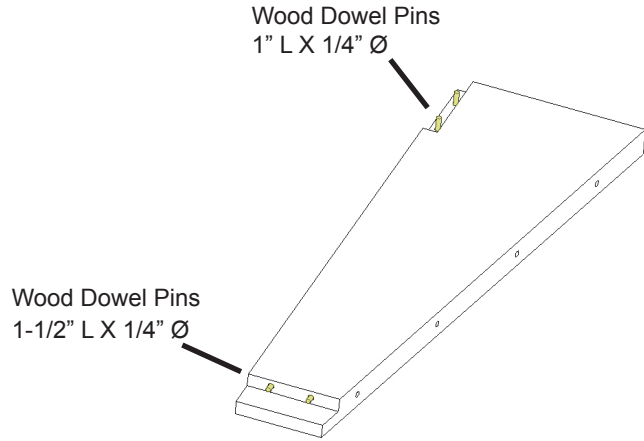
Step 2

Cabinet Assembly



-Place left panel onto a flat clean sturdy surface

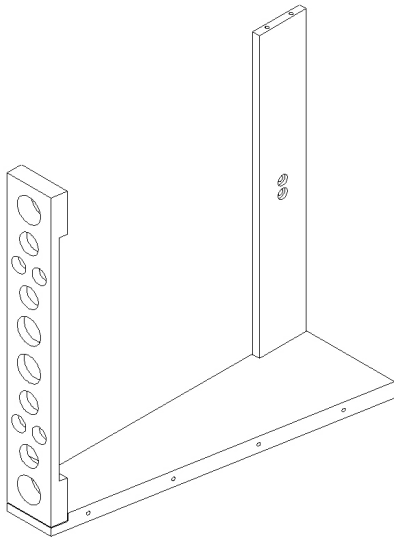
Step 1



-OPTIONAL: Apply glue to 4 holes found on Left Panel in clean beads

-Insert Dowels into the four 8 mm (5/16") drilled holes

Step 2

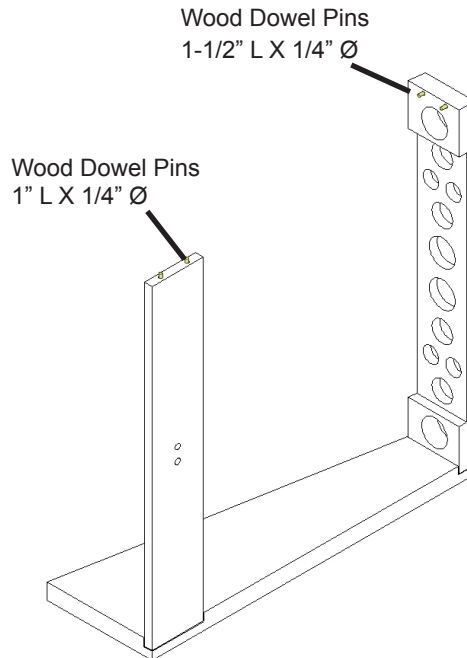


-OPTIONAL: Apply glue to 4 holes found on Top and Back Panel in clean beads

-Attach Top and Back Panel to Left Panel
-You may require slight tapping with rubber mallet

-If wood glue is used wipe off any excess glue with a damp cloth

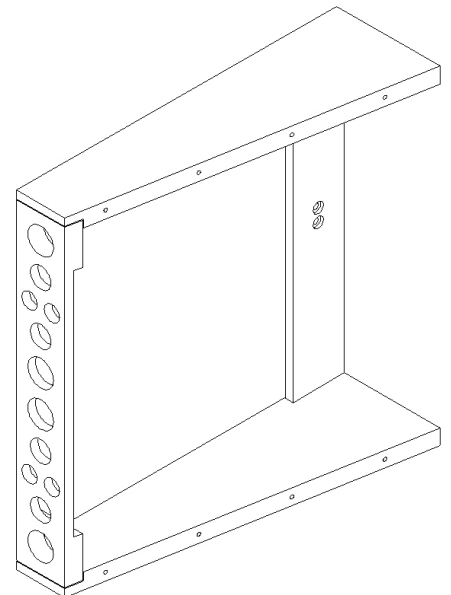
Step 3



-OPTIONAL: Apply glue to 4 holes found on Top and Back Panel in clean beads

-Insert Dowels into the four 8 mm (5/16") drilled holes

Step 4



--OPTIONAL: Apply glue to 4 holes found on Right Panel in clean beads

-Attach Right Panel to Top and Back Panel
-You may require slight tapping with rubber mallet

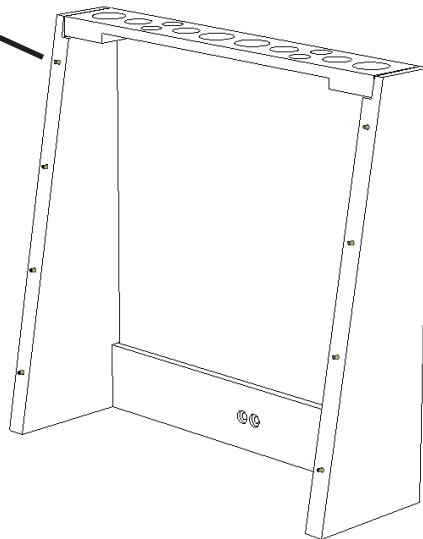
-If wood glue is used wipe off any excess glue with a damp cloth

Step 5

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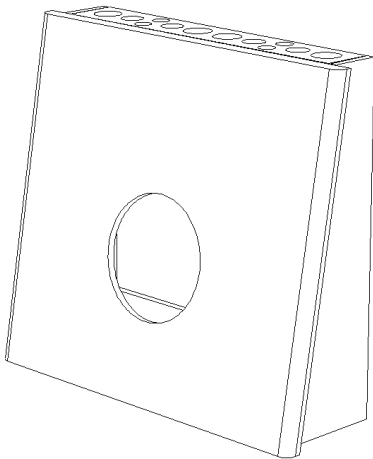
Cabinet Assembly

Wood Dowel Pins
1-1/2" L X 1/4" Ø



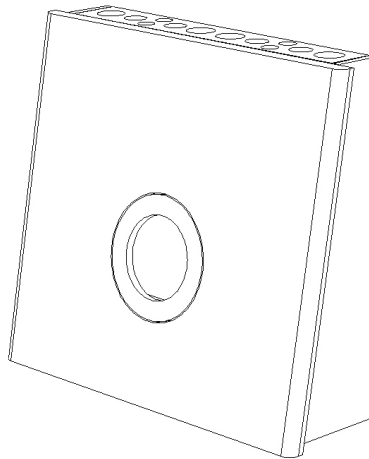
- If glue is used allow glue to dry before proceeding to Step 6
- OPTIONAL: Apply glue to 8 holes found on Right and Left Panel in clean beads
- Insert Dowels into the eight 8 mm (5/16") drilled holes

Step 6



- Apply glue to 8 holes found on the back of Baffle in clean beads
- Attach Baffle to Left and Right Panel
- You may require slight tapping with rubber mallet
- Wipe off any excess glue with a damp cloth

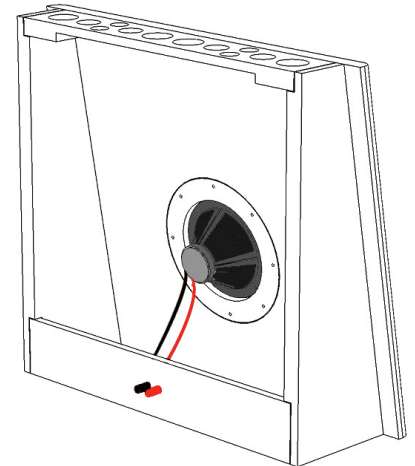
Step 7



- If glue is used allow glue to dry before proceeding to Step 8
- Attach 8" Attachment with wooden screws if Hemp Acoustics FR8C woofer is desired.

**However if Hemp Acoustics CO12OB loudspeaker is desired omit 8" attachment.*

Step 8



- Attach Binding Posts and solder the Hook-up Wire to their corresponding terminals
- Mount woofer
- Attach Hook-up Wire to woofer

Step 9

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Notes

Wood Selection

- We suggest either MDF, Birch Plywood, laminated Bamboo or solid wood or a blend of all three example: sides and rear panels in plywood with top, bottom and bracing in MDF and baffle in solid Mahogany or laminated Bamboo. It's all up to you but we have found mixing different woods typically sound better due to variation in resonance frequencies.

Finishing

- For applying veneers, paint, varnish or waxes please consult your local woodworking expert for advice. You can also purchase pre finished panels of plywood or MDF with high quality environmentally friendly veneer from Alpi or Brookside veneers, contact and inquire about availability and resellers in your area.

Wall Thickness

- Wall thickness dimensions can be altered.

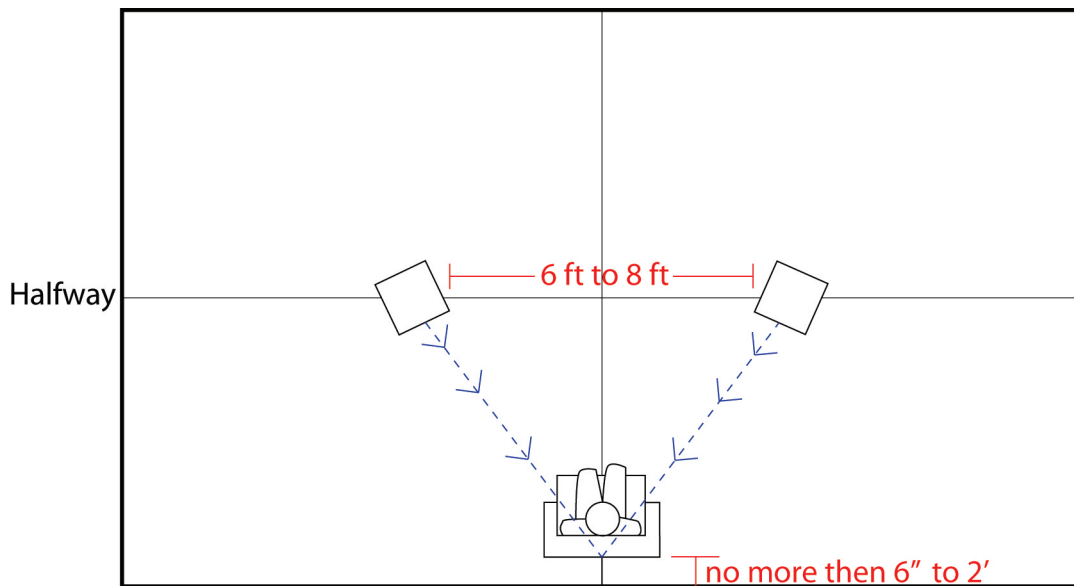
Panels Construction Options

- You will notice option 1 and 2 for construction of panels. Option 1 is for someone with no router or less woodworking skills option 2 is for use with router for a higher skill level.

Notes

Room Placement:

Assuming your room is an average rectangle, sit as close to the rear of the room in front of the longest wall with your head positioned approximately 6 inches to 2 feet (closer is best) from back wall. Hang an absorption panel or drape or a pillow behind your head. The speakers placed equidistant from each other with approximately (start at 6 ft to 8 ft) between them in the center (halfway) of the listening room, sharply angled so that the center of the cones aim just behind your ears. You can also incrementally angle the baffle backwards at your discretion. Move the speakers incrementally (1 inch at a time) on the horizontal plane to adjust mid bass output and imaging. Move them front to back for bass output. This is as close to near field listening as possible, eliminating or reducing many problems associated with room acoustic issues including standing waves and secondary reflections.



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