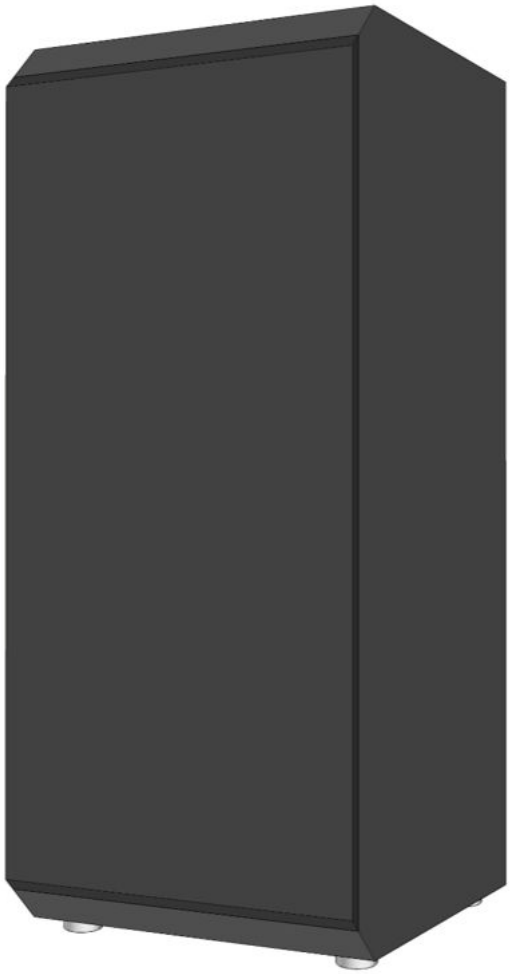
GSG
AUDIO DESIGN



Evolution Series by GSG™

Assembly Instructions

Skill Level: Intermediate

Assembly Instructions Version 2.0

Thank you and congratulations on your Evolution Series by GSG™ subwoofer purchase. We've tried to make your enclosure as easy to assemble as possible. Even though some folks could assemble this cabinet without reading the instructions, please do so.

IT IS IMPORTANT TO READ THE INSTRUCTIONS
AND FOLLOW THEM CAREFULLY

NOTE: The build is not as complicated as the instructions make it appear at first glance. We have simply tried to highlight every point along the build where a builder may have questions and provide pictures and explanations. If you have any questions along the way, STOP!! and contact us. We'll help you figure things out. Hopefully, the instructions will help each builder achieve a fantastic result.

INTERMEDIATE BUILD:

Evolution Series by GSG™ are an intermediate build. It is assumed that the builder has some experience building things before or is confident in his capabilities.

Evolution cabs require the use of clamps and it is assumed that the builder has some experience working with clamps. Evolution cabs also require that the builder pay attention to keeping their cabinets nice and square while building. Evolution cabs are precision machined for fit, so any mis-alignments by the builder are likely to result in small gaps, that won't affect performance for the most-part, may make for a less than ideal aesthetic.

WORKSPACE:

Find a location that is clean, dry, and flat. Make sure there is plenty of room for you to move around your cabinet and that there is plenty of room for sliding in some of the panels. Ideally, the workspace will be about room temperature, but in no case should assembly take place when the temperature or the materials are under 50 degrees. If temperatures are high, the glue may have less working time before it starts to dry. If it is humid, allow extra time for the glue to dry (it turns dark brown when dry).

PANEL PREPARTION:

Your subwoofer panels were cut on a precision CNC machine. Before assembling, check over your panels to ensure that they are free of any sawdust or other debris, especially in the dadoes.

Additionally, the CNC may sometimes leave a little bit of “hair” along some of the edges of the panels. This can be taken off by wiping along the edges with a cotton towel.

TEAM:

Evolution Series by GSG are big and heavy by design. As your cab nears completion, it will become very heavy and may become unmanageable by one person.

PLEASE, find a person to help move the subwoofer if it is too heavy for you to manage alone.

We always recommend AT LEAST two people when moving Evolution Series and if moving up and down stairs, we STRONGLY RECOMMEND MOVING THE CABINET WITHOUT THE DRIVERS LOADED AND WITH THE ASSISTANCE OF THREE STRONG MEN.

DRY FIT:

At each point along the way, you may find it helpful to “dry fit” the panels in the step prior to applying glue. This will help you see which points need to be lined up without the stress of glue drying.

Once familiar with how your cab goes together, you can move quickly once you start applying glue.

A NOTE ON CLAMPING FORCE:

Research and experimentation has shown that there is no practical benefit to overtightening clamps. In fact, too much pressure on MDF can cause the panels to warp or become mis-aligned. The builder is encouraged to clamp the panels only as tight is as necessary to hold the panels together snugly with no gaps.

GLUE UP:

Be sure to apply glue to ALL the edges where panels touch each other, not just in the dadoes (“dado” is a woodworking term for the grooves in the panels).

When the panels are sandwiched together, the glue should “squeeze out” along the entire length of the panels being joined together. Squeeze out on the inside of the cabinet doesn’t need to be cleaned up.

Seeing the glue squeeze out is important as it ensures that there will be no air leaks when the glue dries.

On the inside of the cabinet, where drips don’t matter, it is better to use too much glue vs. not enough glue.

Have a damp cloth ready to wipe up any runs or drips off the outside of the cabinet as you go along.

WORKING TIME:

We recommend working at a pace that allows getting through each step in less than 10 minutes, which is when the glue will start to dry at room temperature (this is the approximate working time of Titebond III, which has the longest working time of the Titebond glue line). If you are outdoors or in a hot garage, drying time will be even less.

By using “extra glue” on the panels, you will have more working time before it begins to set up.

A couple of notes on the design and the instructions:

You may notice there are several places around your subwoofer where there are gaps along the panels; this is by design and is usually the case where clearance is provided just in case a panel bows or warps slightly prior to assembly.

The instructions show the assembly of the Evolution Series Dual 18, but the general approach is the same for the Dual 21 as well as the Cube.

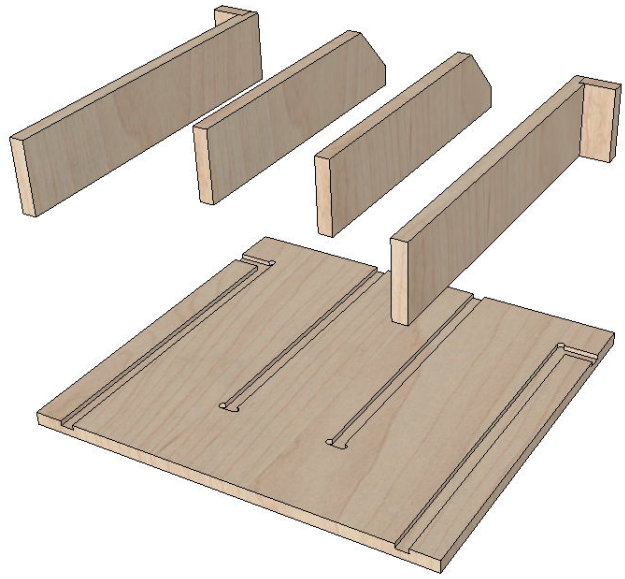
Additional notes for the Dual 21 and the Cube are provided along the way where panels may look different than the Dual 18.

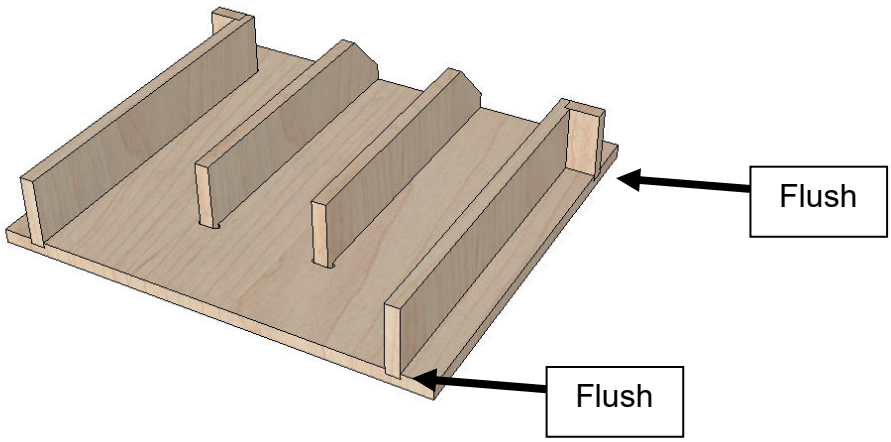
ASSEMBLY

After you have read the entire instructions and are confident in your understanding of the process AND have dry fit the key panels so that you will see how they go together…begin!

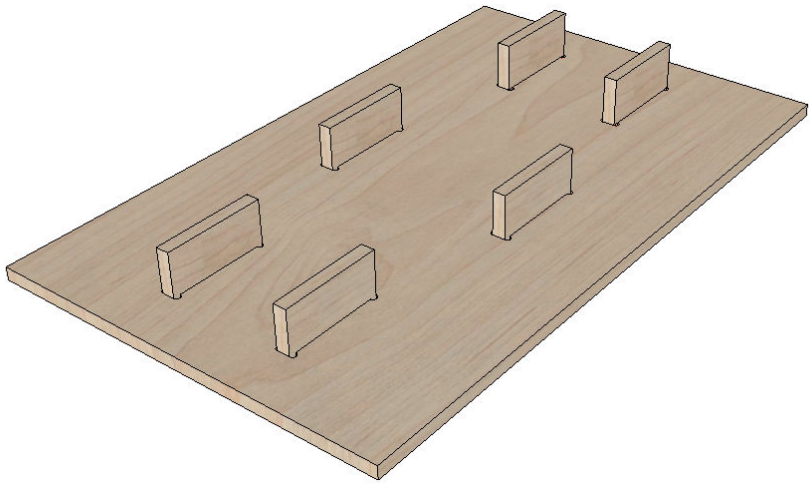
Bottom port board bracing.

On a <u>flat</u> surface arrange

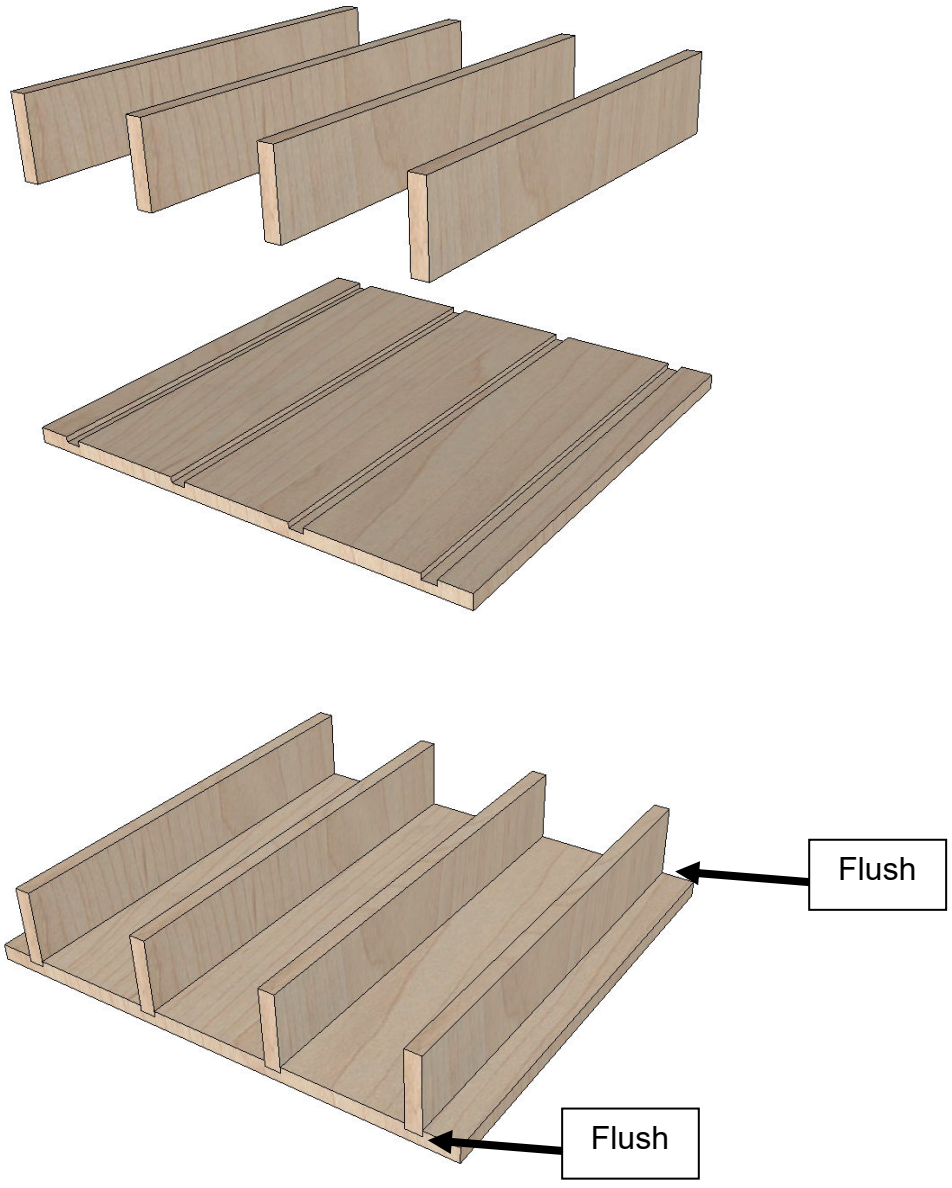




Rear port board bracing.



Bottom assembly.

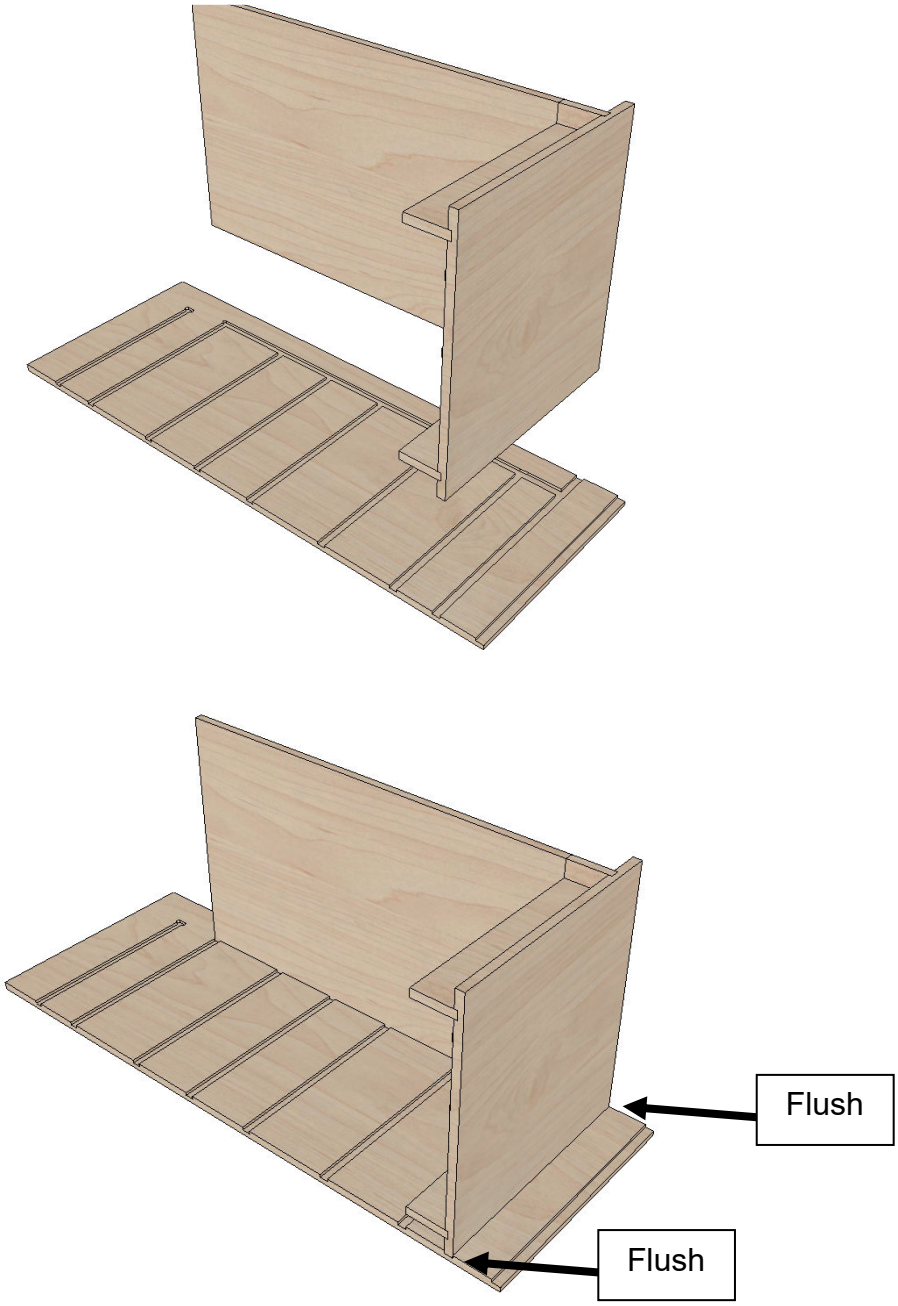


Attach rear port board and bottom port board to side panel.

Pay attention to the dadoes on the side panel to ensure that you have the correct piece (dadoes blacked out in the image to highlight the board you need in this step).

Ensure everything is **SQUARE**.

See next page for additional details.



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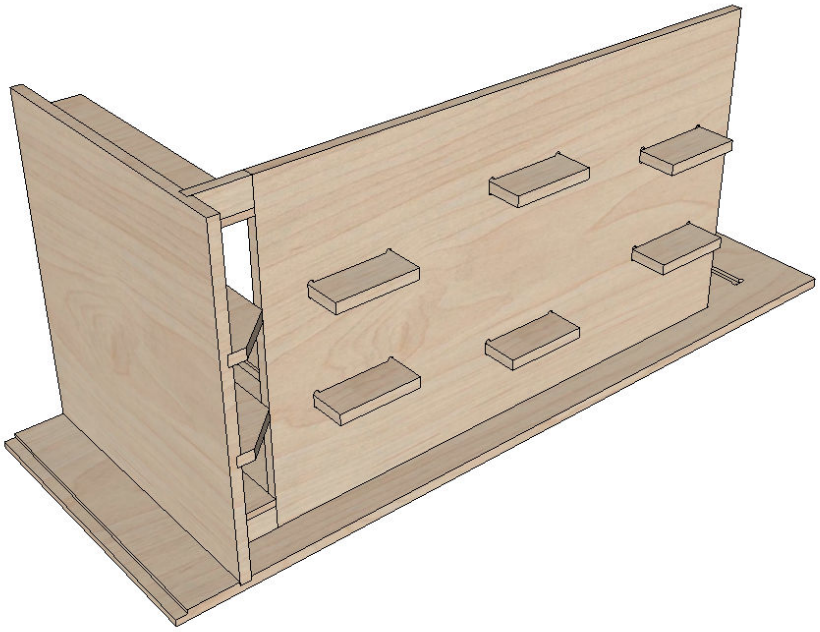
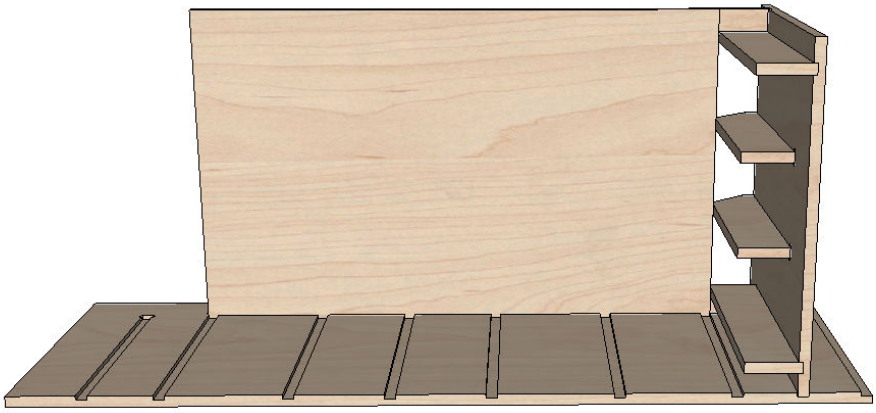
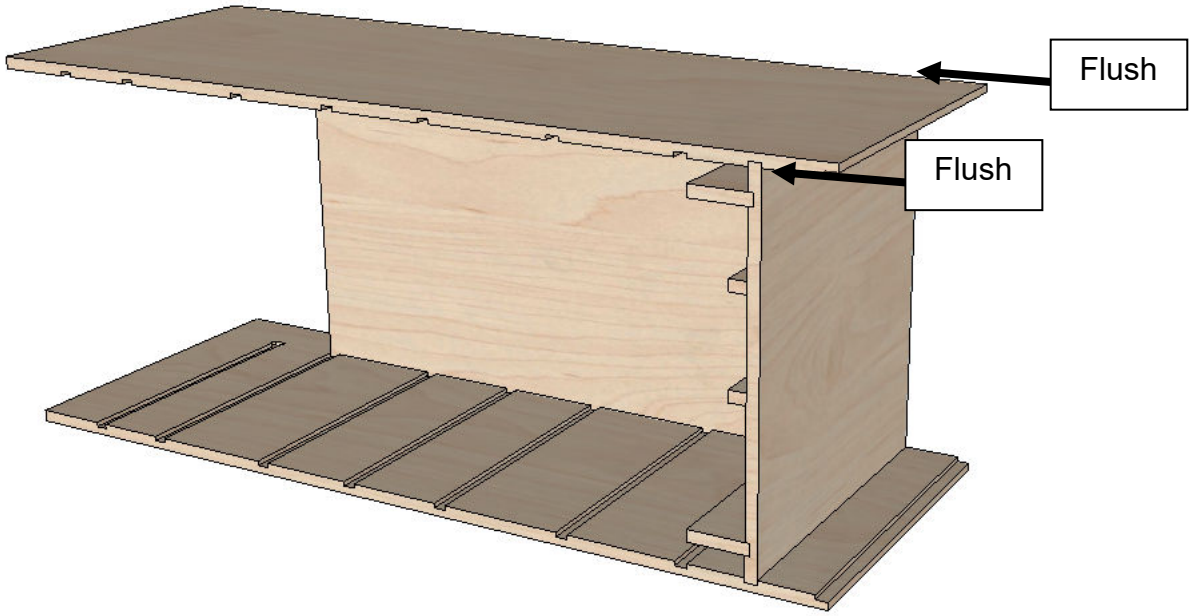




Attach second side panel.

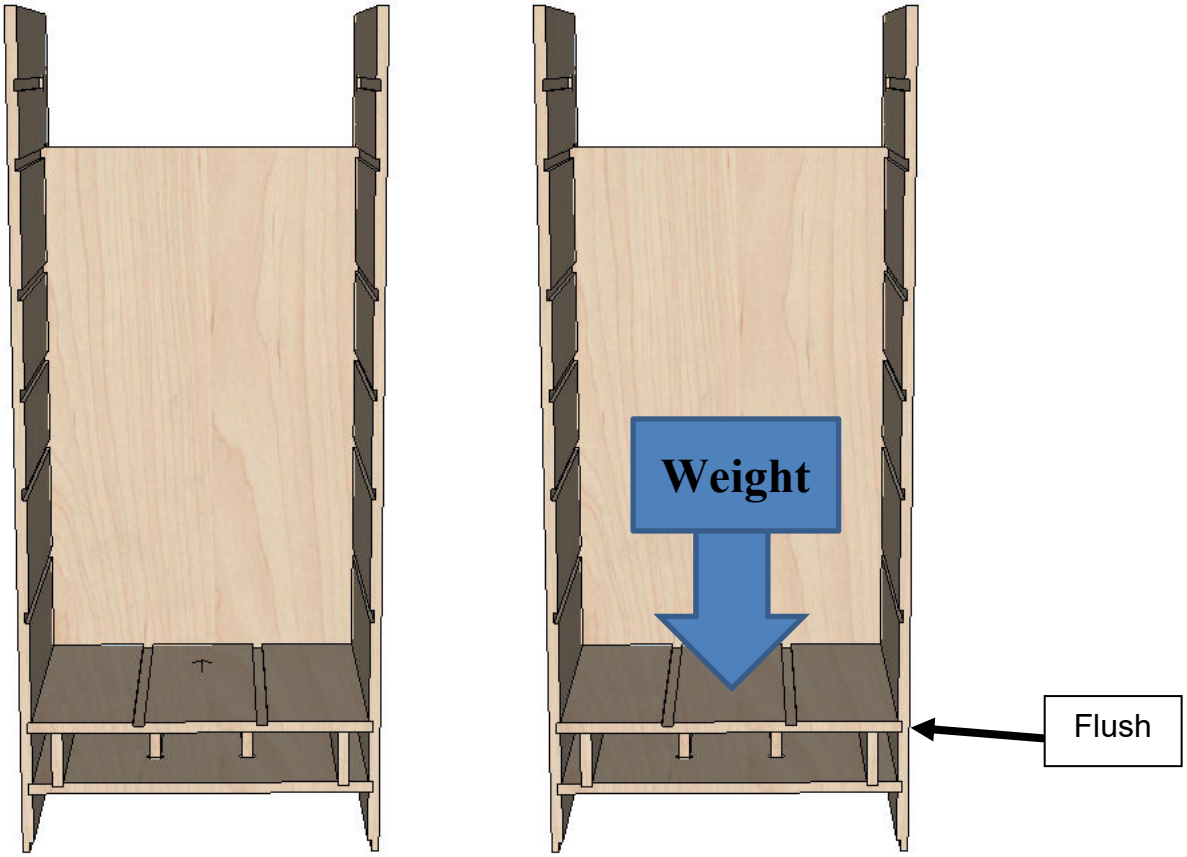


Port board.

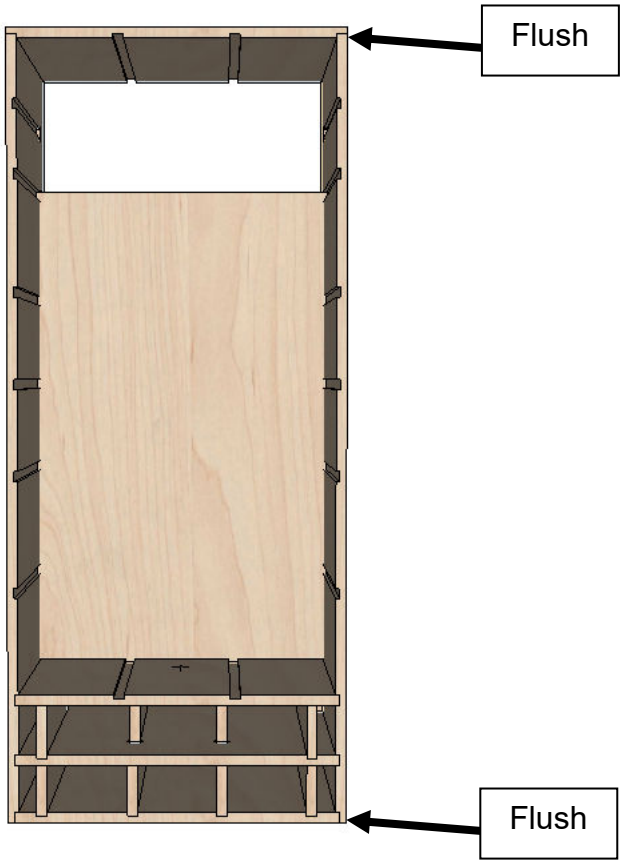
IMPORTANT. There is extra room in the dadoes so the board can be slid in without wiping all the glue off the braces. However, the port board MUST BE BIASED DOWNWARD OR THE VERTICAL BRACES WILL PUSH THE TOP OF THE CABINET UP IN THE AIR.

Half of the board is a slight trapezoid, so it will be easier to slide into place. Note arrow points toward back of cabinet.

See next page.


Weight
Flush

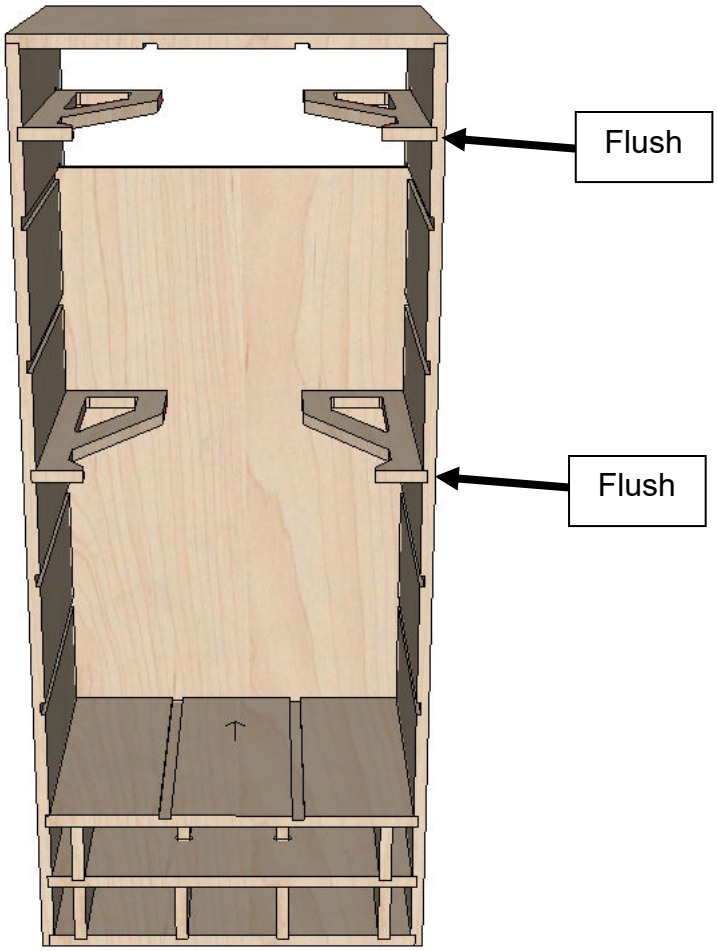
Top and bottom.



Middle Horizontal Small braces.

Insert the full width horizontal braces to hold the side panels square.

Glue in the small horizontal braces only.



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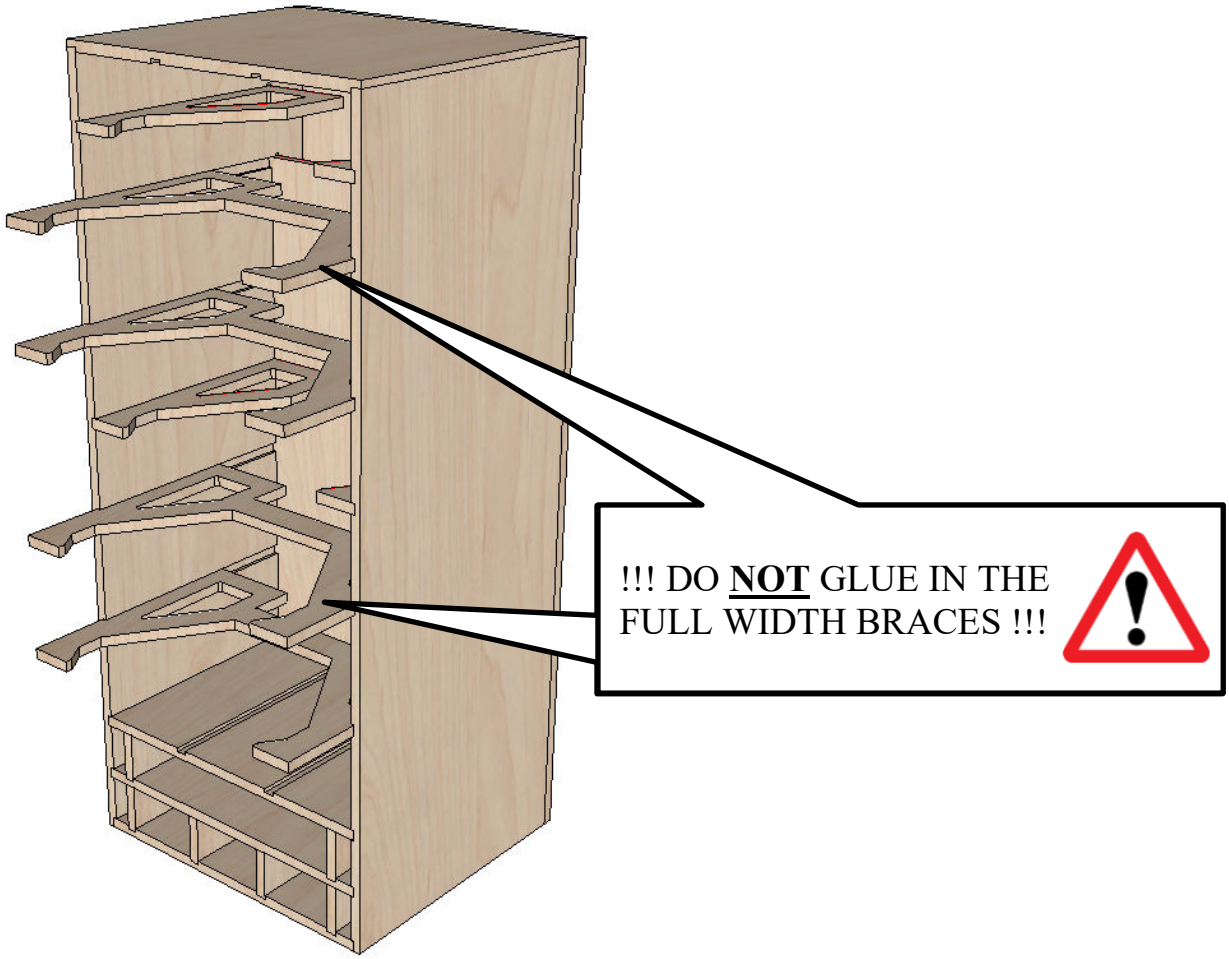
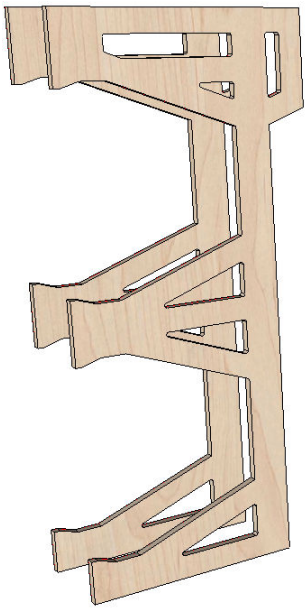
The full width braces can be used to help hold the cab square while gluing in the small braces. DO NOT GLUE IN THE FULL-WIDTH BRACES AT THIS POINT!



Vertical braces.



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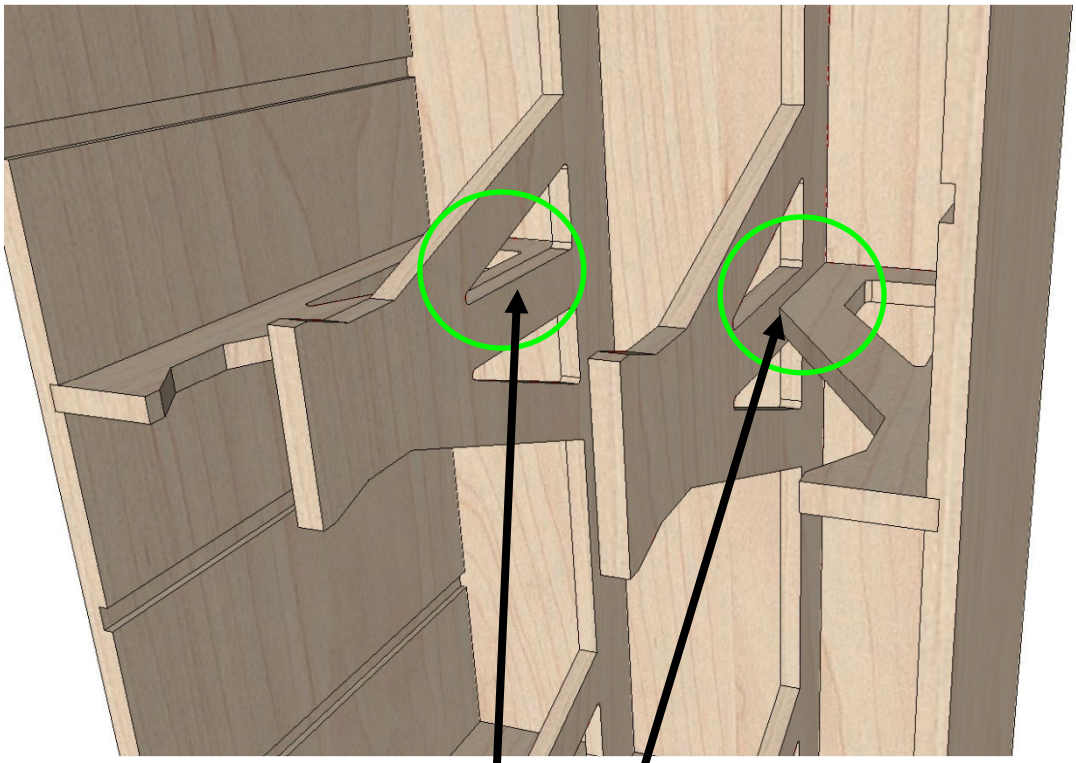
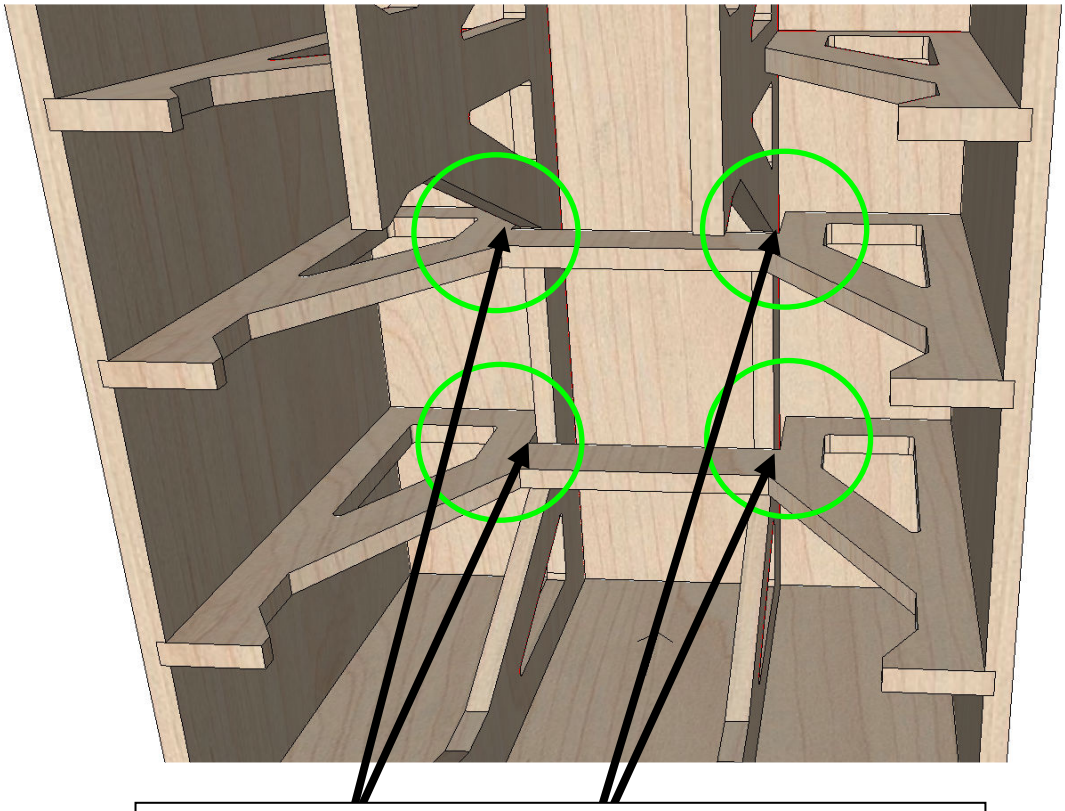


Where the small braces contact that vertical brace, be sure to apply glue and clamp them together.

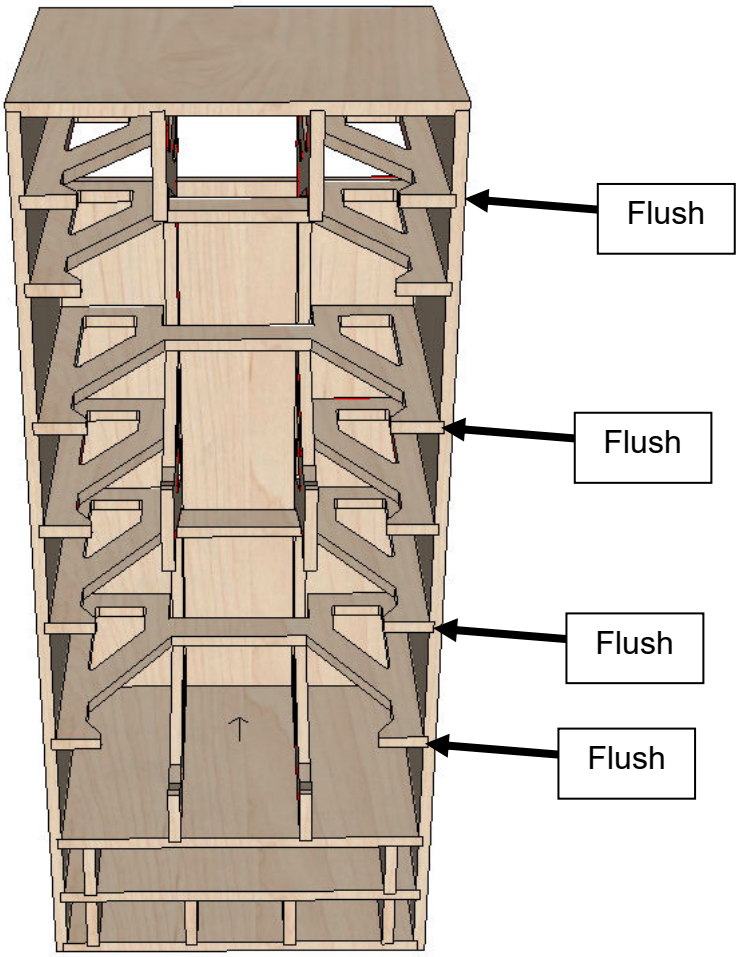
Also, the front “tips” of the vertical braces should not stick out past the front of the cabinet or your baffle will not go on correctly.

Horizontal braces.

NOTE the horizontal braces do not contact the vertical braces. There is a 0.25” gap between them just in case the vertical braces are bowed slightly for whatever reason.

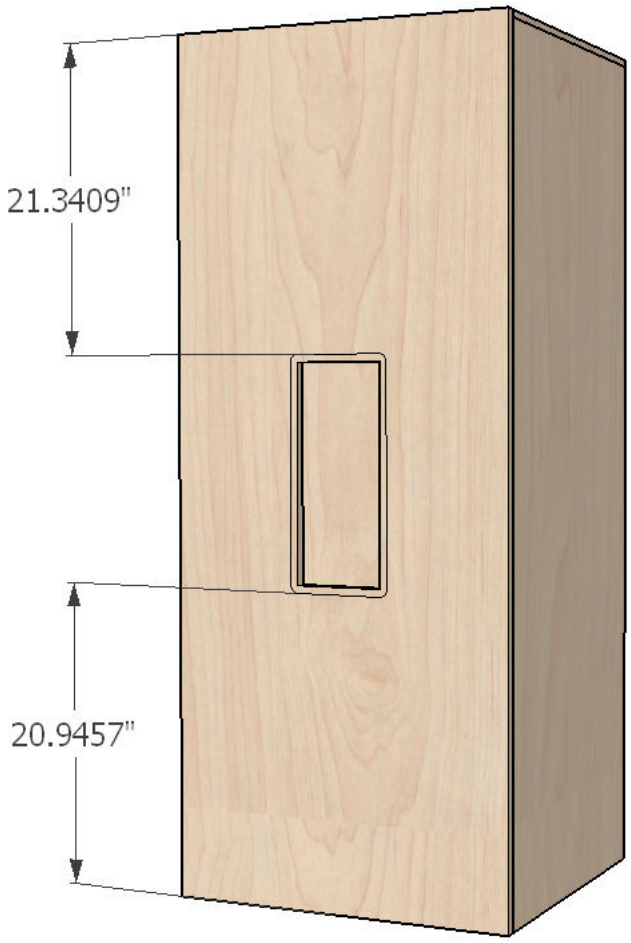


There is a 0.25” gap between the full-width horizontal brace cutout and the vertical braces. DO NOT ATTEMPT TO CLAMP THESE PIECES TOGETHER.

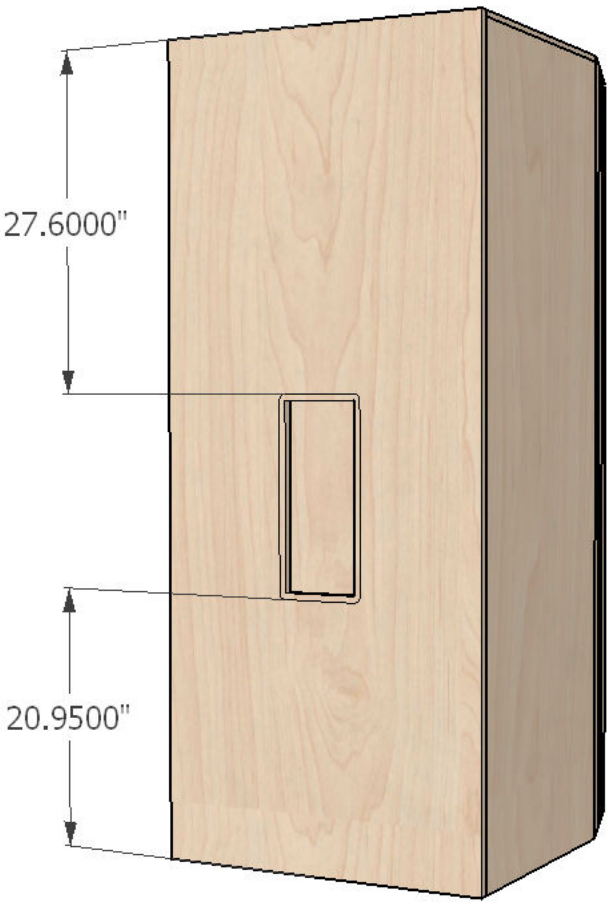

Flush
Flush
Flush
Flush

Rear panel **18” cab**.

The amplifier or Speakon connector pair sits slightly **<u>BELOW</u>** vertical center.

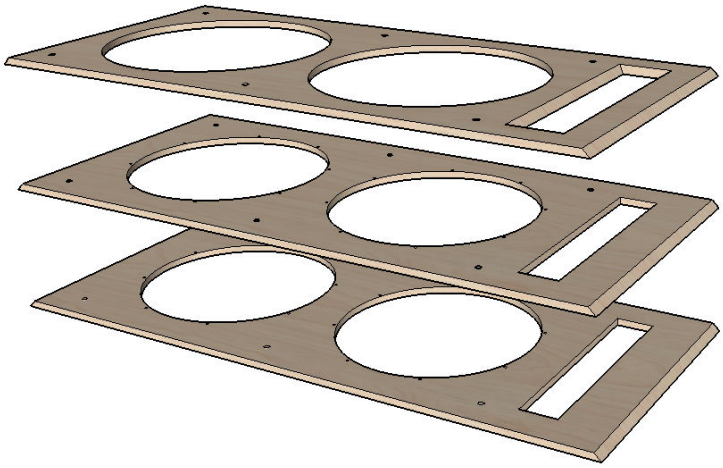


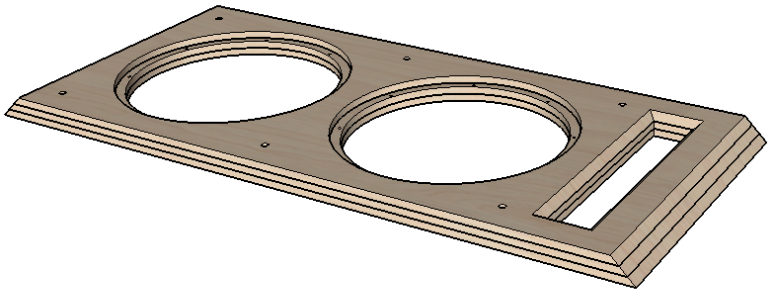
Rear panel **21” cab**.



Laminate up the baffle.

For 18mm cabs, use 1.25” long dowels
For 0.75” cabs, use 1.50” long dowels





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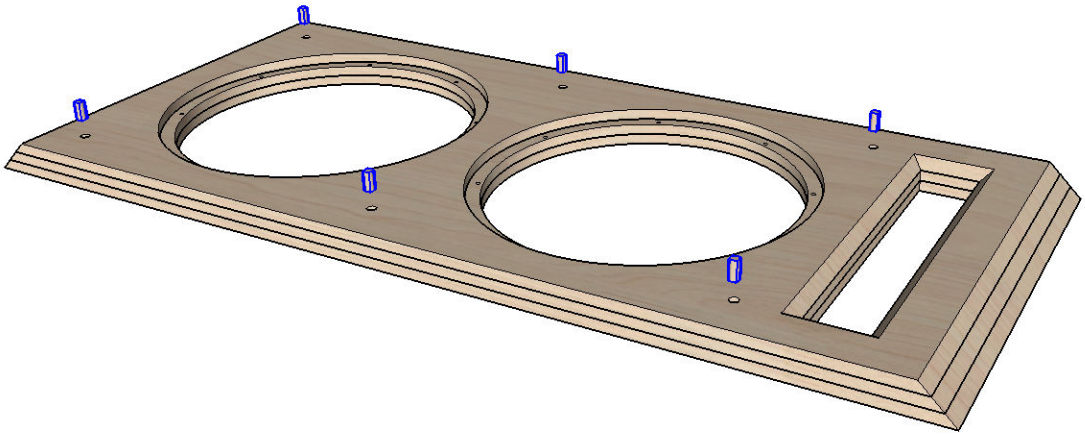
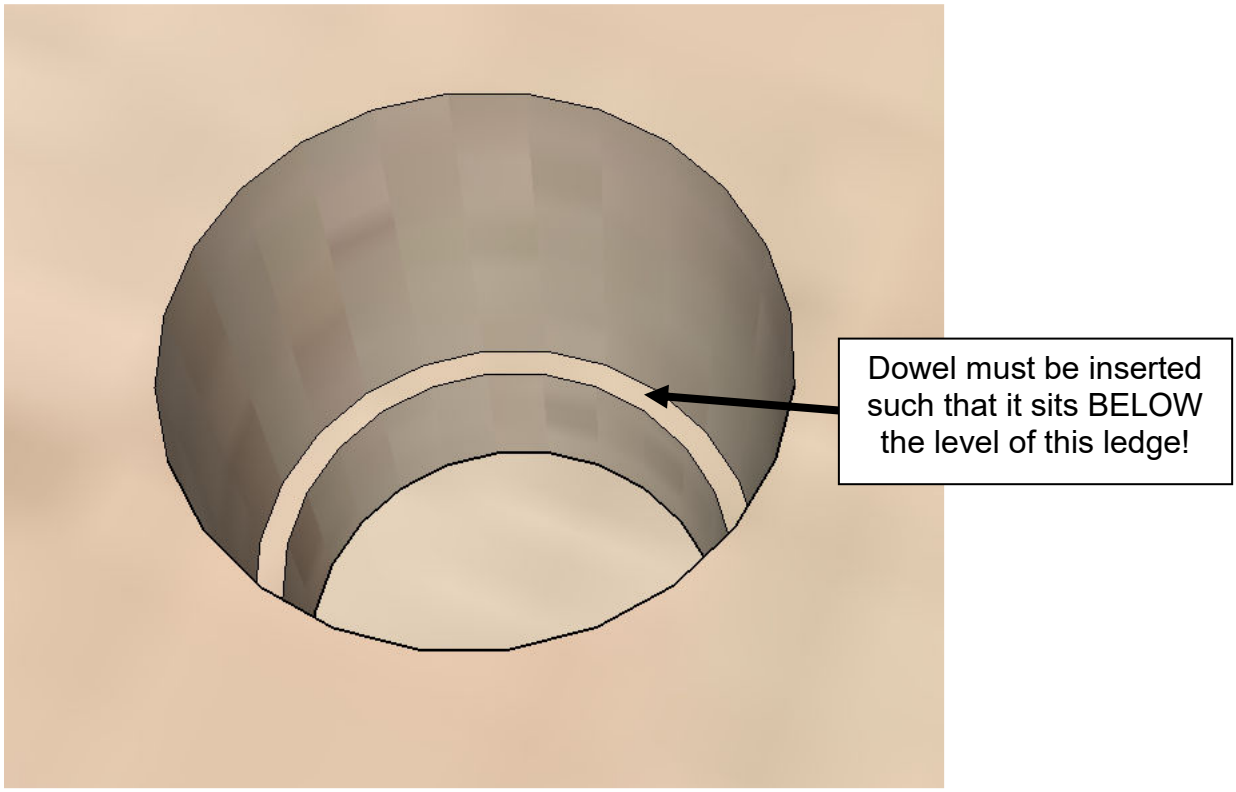


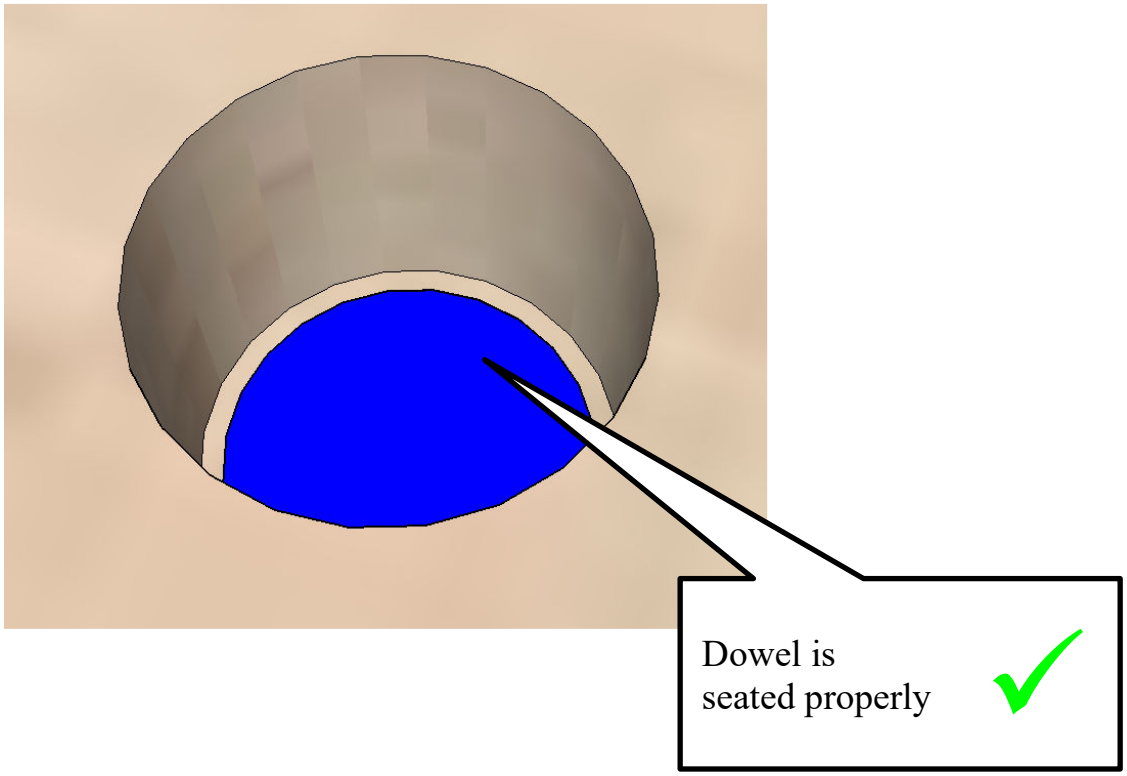
Please note that on the outer baffle, there is a recess for the Grill Guides.

The dowel must sit below this line or the Grill Guide will not sit flush on the front of the finished cabinet.

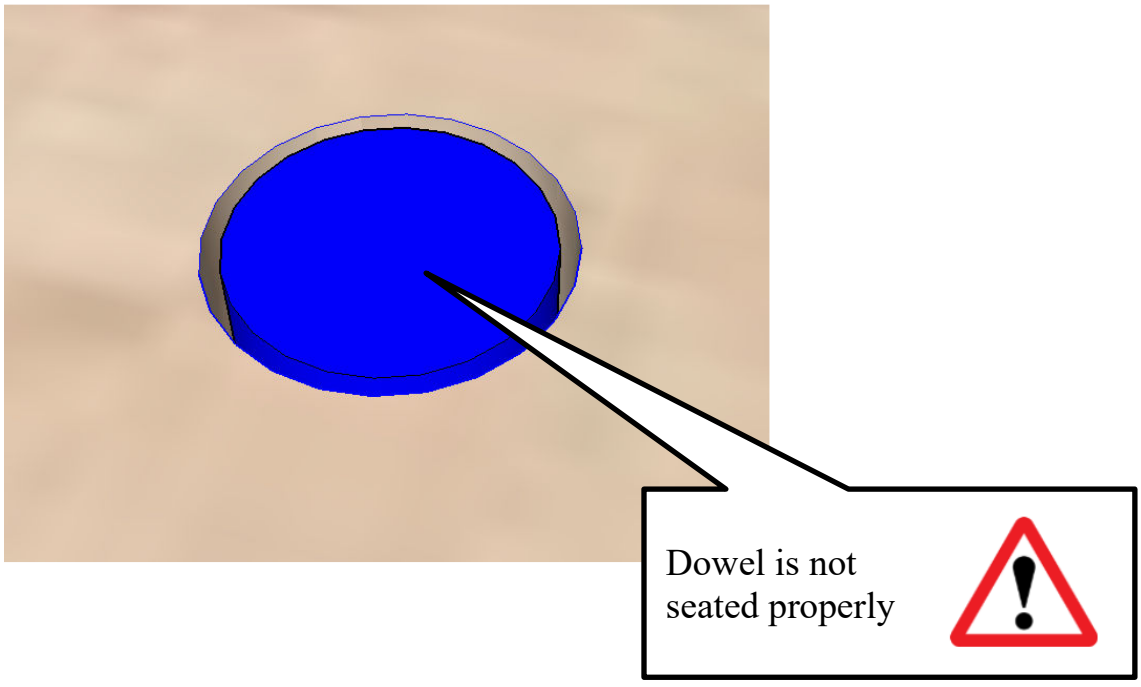
Close-up of a dowel alignment hole on the outer baffle



Properly inserted dowel (dowel shown in blue).



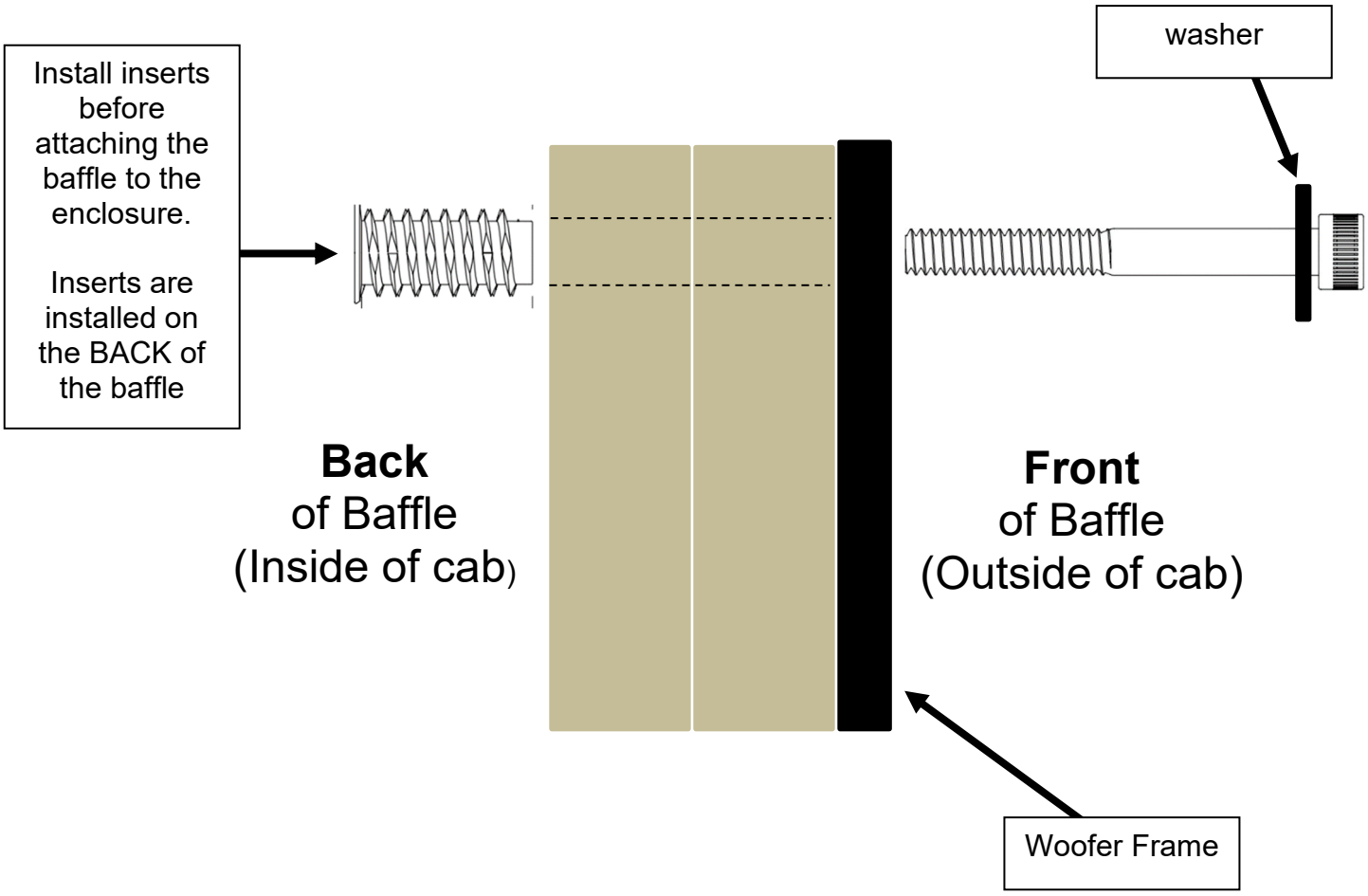
NO GOOD!



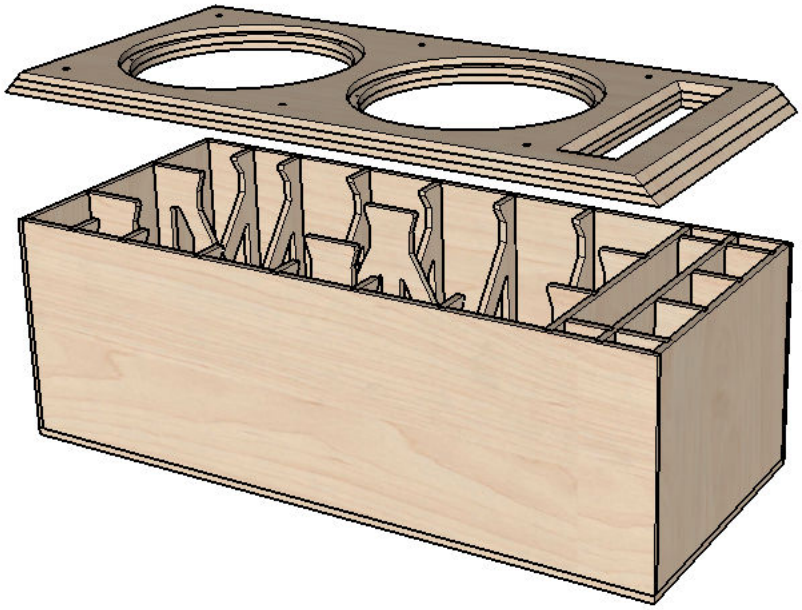
Woofer mounting inserts.

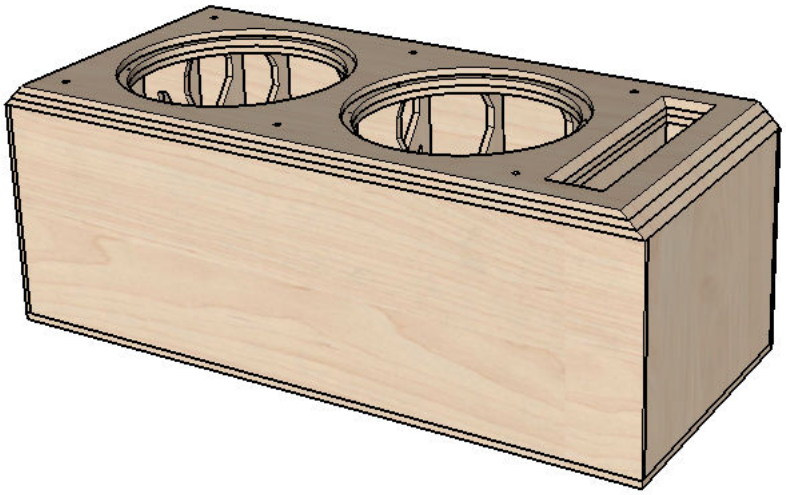
If you will be using woofer mounting inserts, they go in through the **BACK** of the baffle, so they will be easier to install **prior** to mounting the baffle on the enclosure.

Don't over tighten the woofer mounting bolts.
Torque spec on the bolts is about 20 ft. lbs.



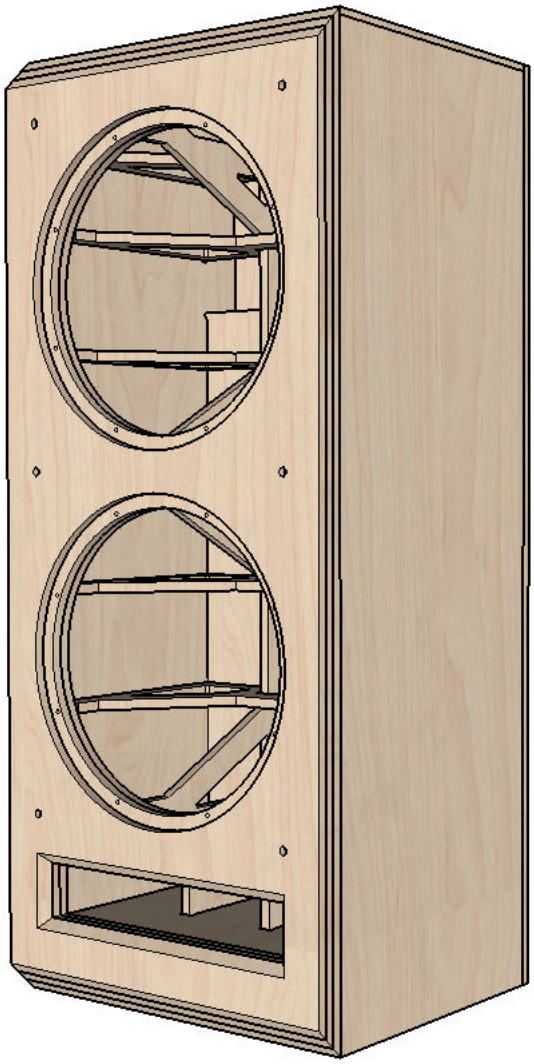
Baffle (with inserts installed) – the moment of truth!





Congratulations!

If you intend to coat with Duratex, we recommend a very slight roundover to take off the sharp edges. This can be done with careful sanding or with a router. If you intend to veneer your cab, the corners are best left sharp.



Final steps

If you are shooting for a super smooth seamless look, you may wish to apply spackle around the perimeter of the baffle and along the two seams on the top of the cabinet prior to painting.

Best practice is to lay it on thick, wait for it to fully dry, then sand it down to be perfectly flush.

We recommend this one, which turns white when dry.

If using spackle, do not attempt to paint until it is fully dry or the paint may not adhere properly.

Wire up your drivers and attach any remaining hardware.

[END]