



Behind-the-Screen “BTS”
Subwoofers by GSG™
Assembly Instructions
Skill Level: Intermediate

WARNING: STACKING SUBWOOFERS CAN CREATE A DANGEROUS SITUATION WHERE THE TOP SUBWOOFER OR BOTH SUBWOOFERS COULD FALL OVER IN AN EARTHQUAKE, BE TOPPLED OVER BY CHILDREN, OR OTHERWISE FALL OVER. IF YOU PLAN TO STACK YOUR SUBWOOFERS, YOU MUST SECURE THE SUBWOOFERS TO THE WALL BEHIND THEM OR AS MAY BE APPROPRIATE IN THE INSTALLATION. GSG ASSUMES NO LIABILITY FOR DAMAGE, INJURY, OR DEATH CAUSED BY FALLING SUBWOOFERS. GSG'S FINANCIAL LIABILITY IS LIMITED TO THE AMOUNT PAID FOR THE SUBWOOFERS.

WARNING: GSG SUBWOOFERS ARE CAPABLE OF PRODUCING EXTREME LEVELS OF OUTPUT WITH VERY LOW DISTORTION. AS A RESULT, THIS SUBWOOFER IN PARTICULAR (AND ALL SUBWOOFERS GENERALLY) CAN CAUSE PERMANENT HEARING DAMAGE. BE CAREFUL!

Take these warnings seriously!

This assembly manual applies to all BTS subwoofers:

- BTS Subwoofer 36" x 40" x 17" (Page 8)**
- BTS Subwoofer 32" x 44" x 17" (Same as 36", see Page 8)**
- BTS Subwoofer 28" x 48" x 17" (Page 20)**
- BTS 72" x 28" x 17" Upright Single and Dual (Page 30)**
- BTS SEALED 46" x 29" x 17" (Page 47)**
- BTS SEALED 60" x 29" x 17" (Page 60)**

If you ordered a matched set (one left ported and one right ported, the panels for the left ported cab will be marked with an "L" for LEFT. Be sure to group all the panels for each cab in separate areas, so there will be no confusion as to which panels go with which cab. Some panels are the same in both the left and right cabs; in this case the panels may not have a number or an "L" marking.

Thank you and congratulations on your GSG™ purchase. We've tried to make your enclosure as easy to assemble as possible.

This subwoofer is an “intermediate skill level” project. This means that you are expected to have some knowledge working with clamps (and/or a brad nailer), aligning and squaring panels, etc. It is not a complicated build, but if you have never built anything before, this may not be the best project for your first attempt.

Intermediate build directions include mostly just pictures. Each page highlights the panel(s) that will be added to the existing structure at the top of the page and how the unit should look after the panel(s) are added at the bottom of the page.

Panel numbers are included on some panels to help aid in assembly, but the Panel numbers do not indicate the order of assembly.

Cabinet Orientation During Your Build

As a builder with some skill, it is up to you to choose how to orientate the cabinet at each step of the build. The images are only guidelines. Depending on whether you are using brad nails, clamps, weight, or some combination of all three, you may find that positioning the cabinet in an orientation that is different from the image on the page will make for an easier and/or better fitment. Use your judgment and do what works best for you.

IF SOMETHING IS NOT CLEAR ABOUT THE ASSEMBLY PROCESS, PLEASE SEND A NOTE TO US AT CUSTOMERCARE@GSGAD.COM BEFORE PROCEEDING.

ONCE YOUR PANELS ARE GLUED IN PLACE THEY WILL BE ALMOST IMPOSSIBLE TO ADJUST.

IT IS IMPORTANT TO READ THE INSTRUCTIONS AND FOLLOW THEM CAREFULLY

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 PREPARATION:

Your 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. Be careful handling the panels, as the edges along the panels can be quite sharp.

TEAM:

Many GSG subs are big and heavy by design. They are designed so that they can be assembled by one person working alone. However, some folks find that assembly is easier with the assistance of a helper. If you find that moving the subwoofer or positioning any of the panels seems to be a little too much for a single person, then find someone who can assist you with the build. We always recommend two people when moving GSG subs.

DRY FIT:

DRY FIT EACH PIECE BEFORE GLUING IT UP SO THAT YOU WILL KNOW HOW IT GOES TOGETHER.

This will help familiarize you with how it goes together, so you can move quickly once you start applying glue.

GLUE UP:

Titebond III wood glue is recommended for this project. It has the longest “working time” of the Titebond series. PL Premium construction adhesive can also be used and it can fill in any gaps that have resulted, for whatever reason, during your build. With PL, be sure to wear gloves and don’t get it on you or your clothes.

Be sure to apply glue to ALL the edges where panels touch each other, not just in the dados (“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.

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

If using PL and it squeezes out on the outside of the cabinet, don’t try to wipe it off as this just makes a mess. Let the bead line cure, then come back with a razor blade or chisel and remove the excess.

Ensure that panels are fully seated in dados throughout the build. If the panels are not fully seated, the cabinet will not go together properly.

Note: If you wish to use the Speakon adapter, it is easiest to install it first. Be sure allow the glue to dry (about 2-3 hours) before proceeding with the rest of your build.

To help ensure that everything goes together nice and square (all lined up), we recommend checking your work at each stage with a builder's square.

Humidity: It is best not to let your panels sit in a humid environment for an extended period of time as they may begin to swell and will be very tight going into the dados.

Take your time building your subwoofer and enjoy the process!

Please read through the entire assembly instructions BEFORE building.

36" x 40" x 17" Instructions
(also applies to 32" x 44" x 17")

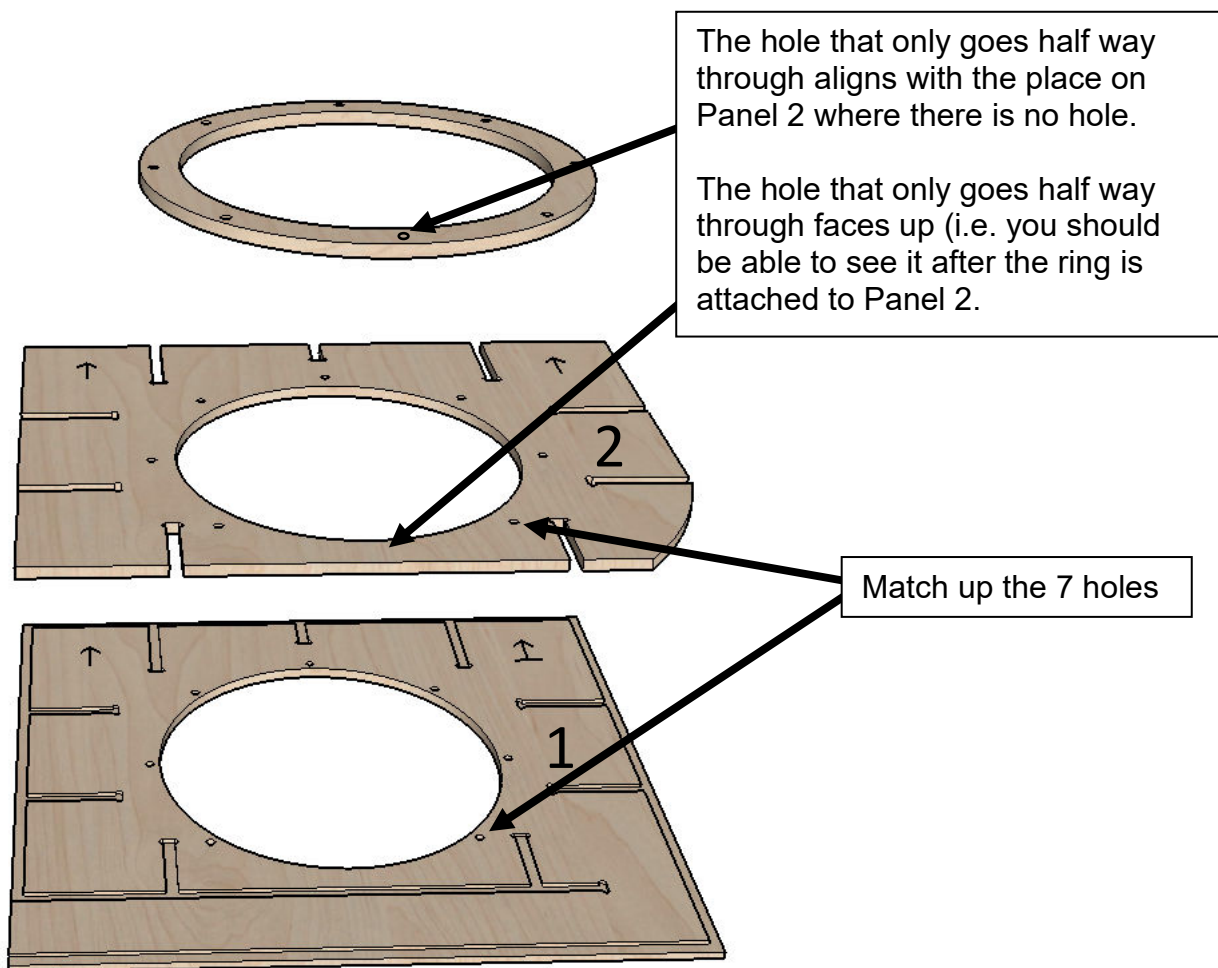
Start: Middle and inner baffle, and driver mounting ring.

Set Panel 1 on a flat surface. Apply glue to Panel 1 and Panel 2 where they will contact.

Attach Panel 2 to Panel 1.

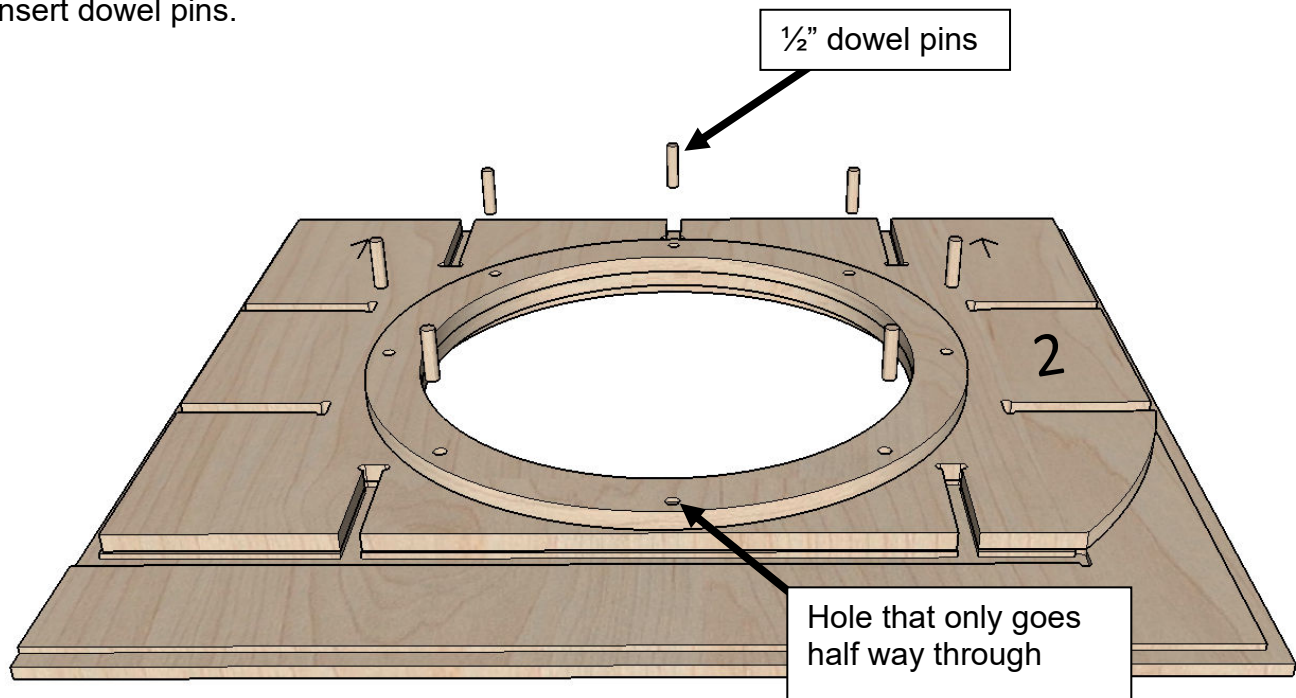
Apply glue to the driver mounting ring and Panel 2 where they will contact.

Attach driver mounting ring to Panel 2.

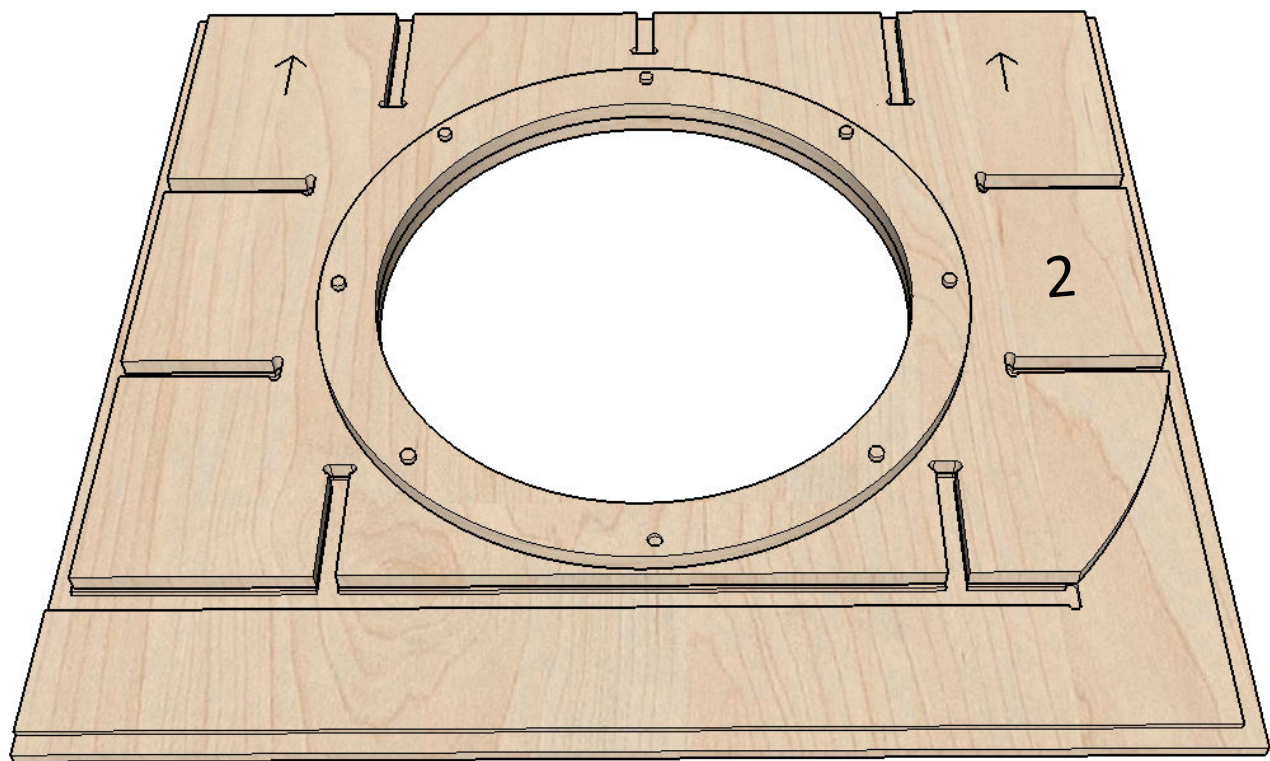


Apply glue to the dowel pin holes.

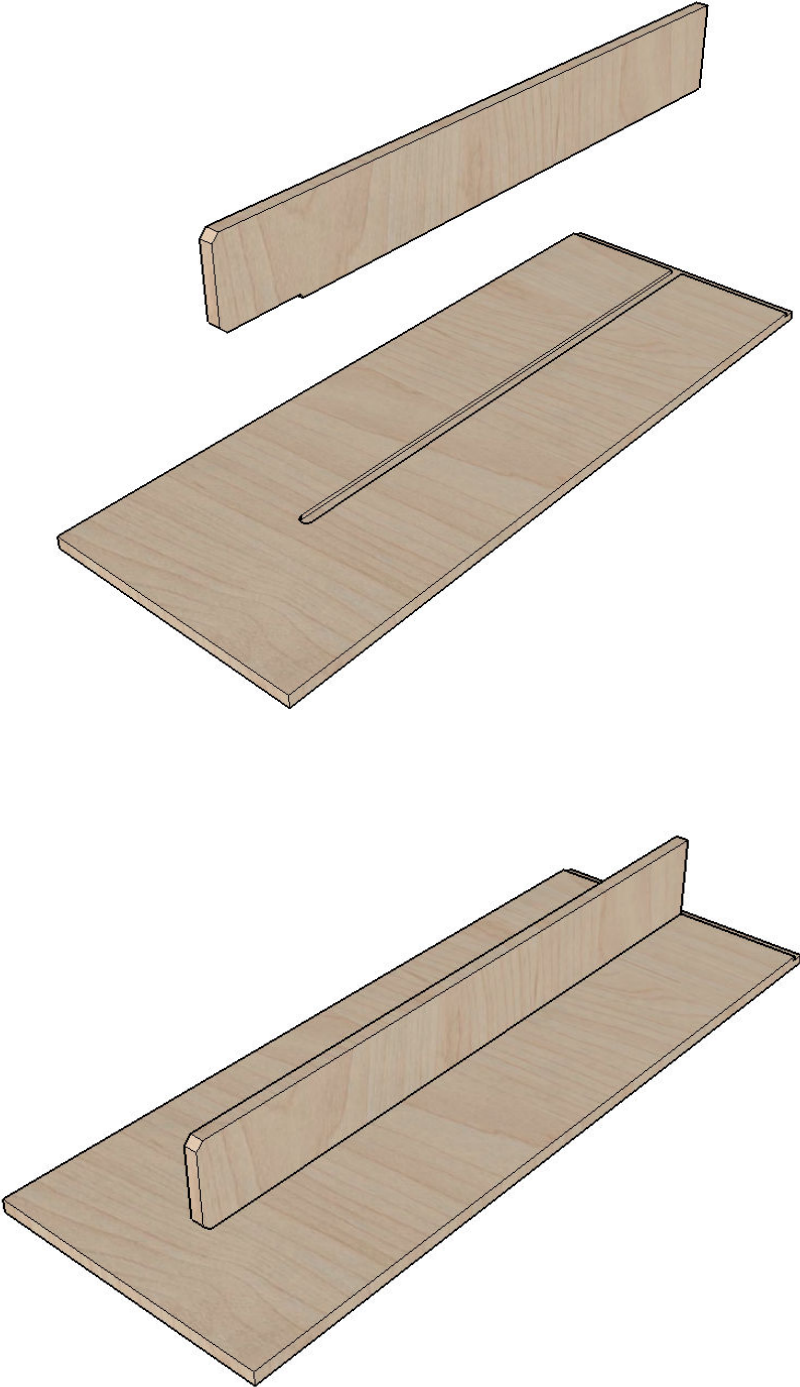
Insert dowel pins.

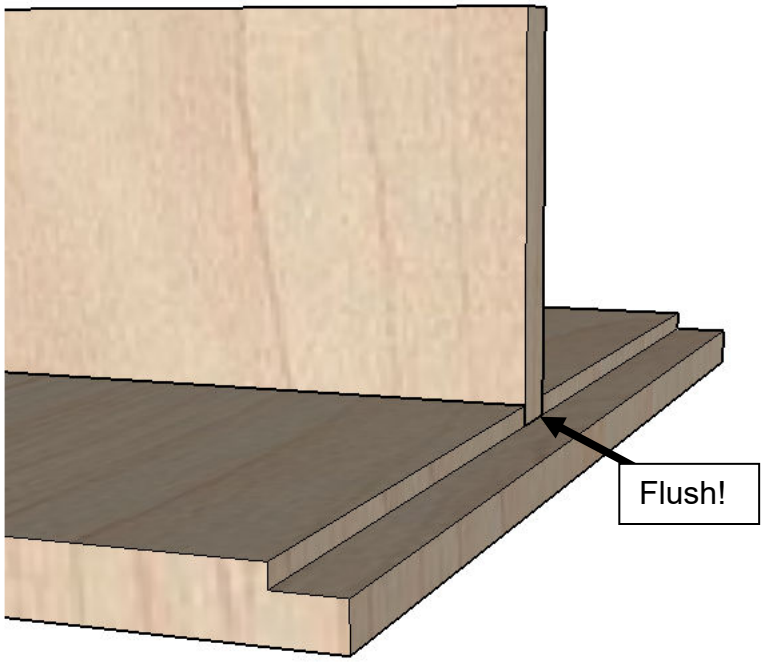


Dowel pins inserted. Clamp and let dry.



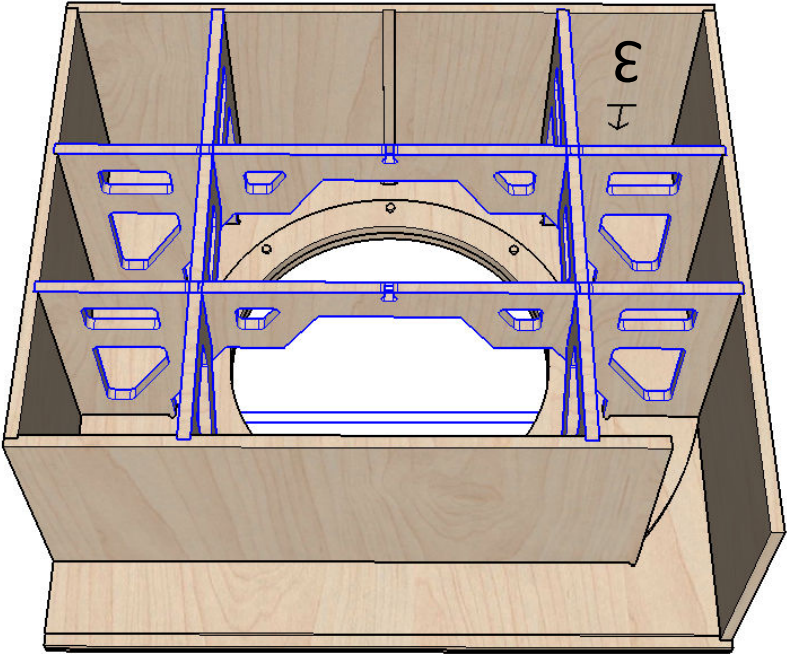
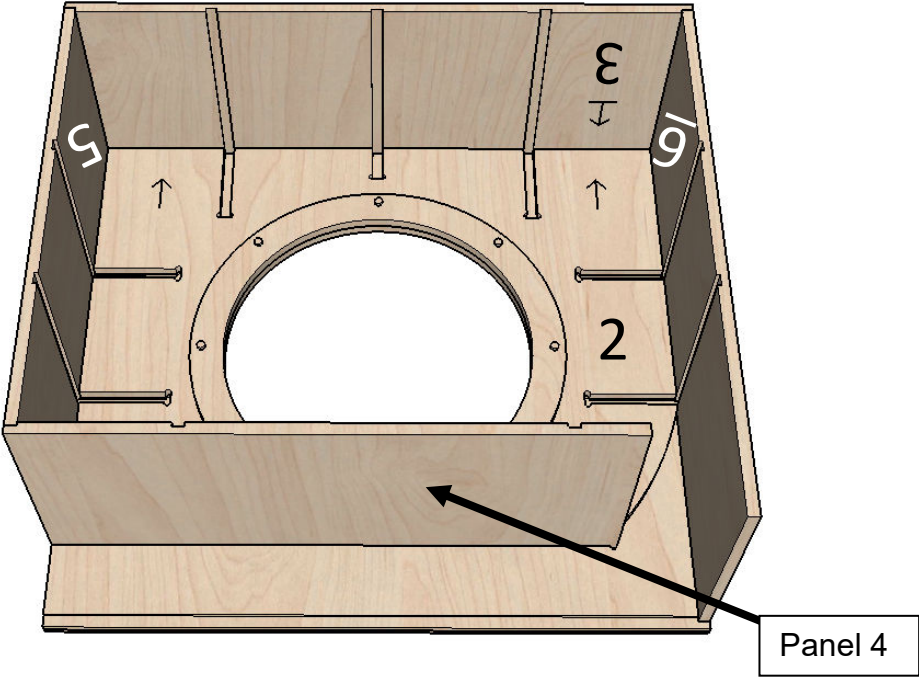
Port brace and bottom panel.





Attach Panels 3, 4, 5, and 6 using the internal bracing to help position the panels and to hold the panels square.

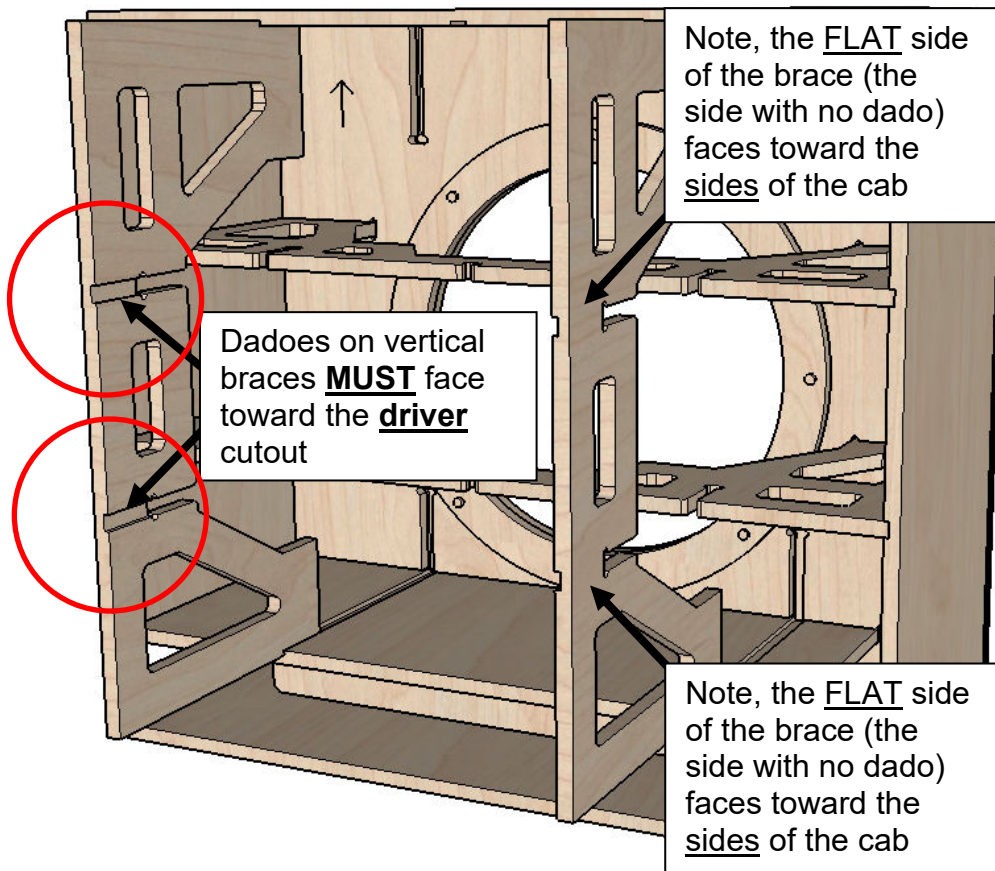
The arrows on Panels 3, 4, 5, and 6 should point toward Panel 2.



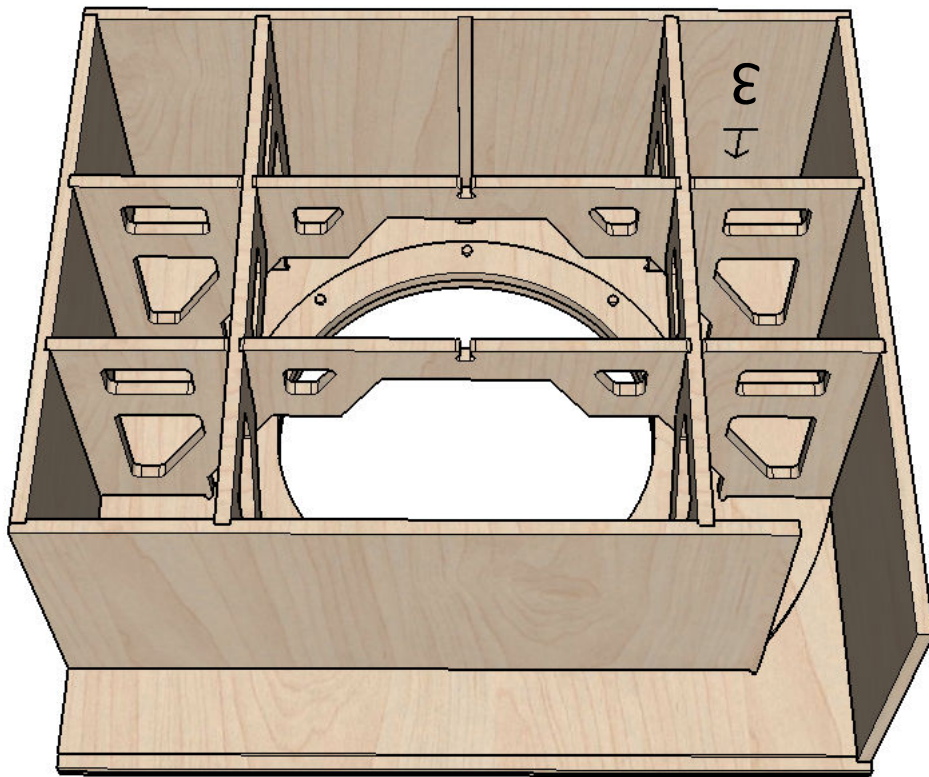
Ensure the dados on the vertical braces are aligned properly.

Please note that the dados on the vertical braces **MUST** face toward the center of the cabinet (i.e. the dados in the vertical braces face each other) NOT toward the outer sides.

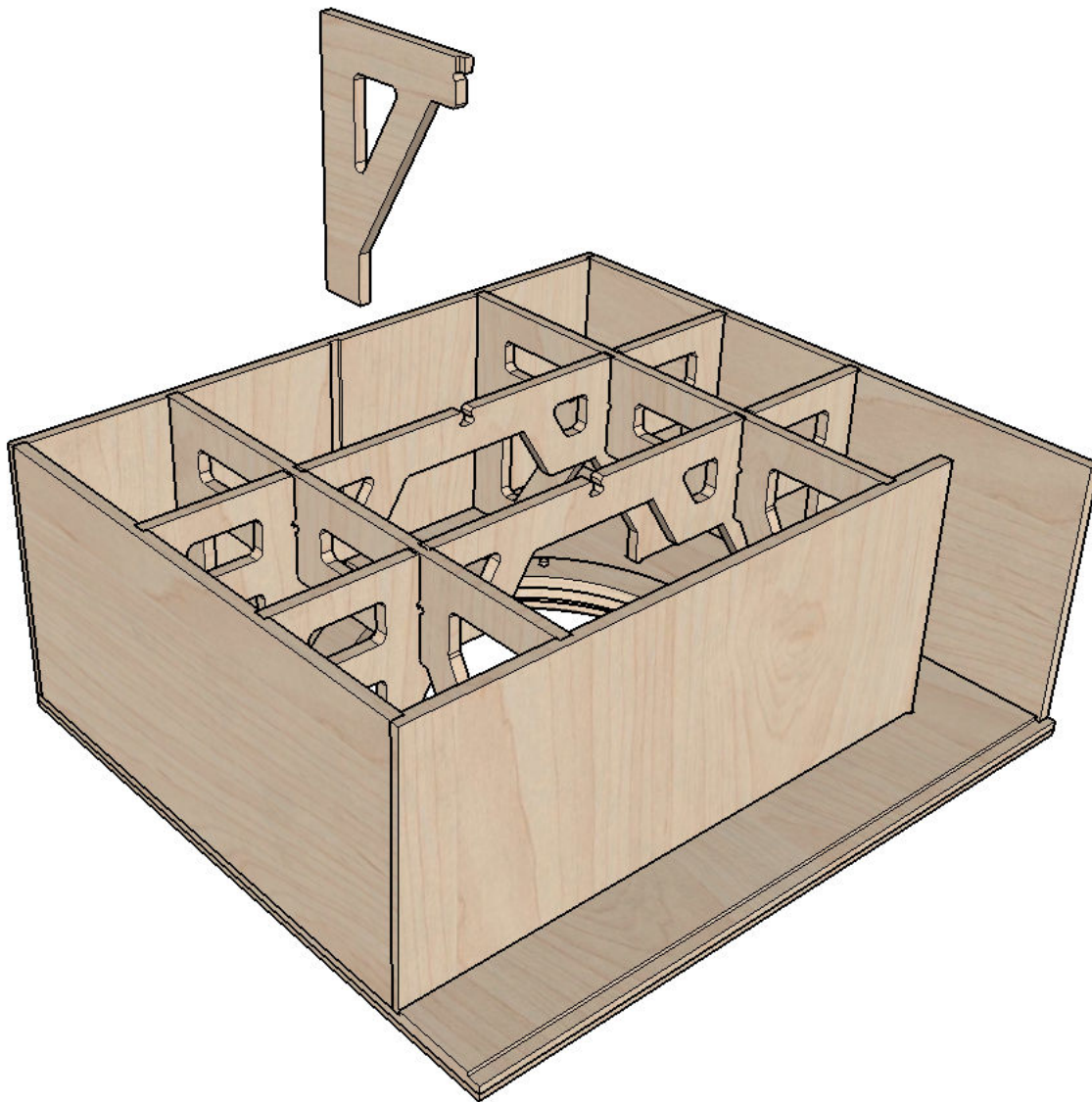
If the dados are not pointing toward the center of the cabinet, the vertical braces will bend, which is an indication that it is the vertical brace is inserted improperly.



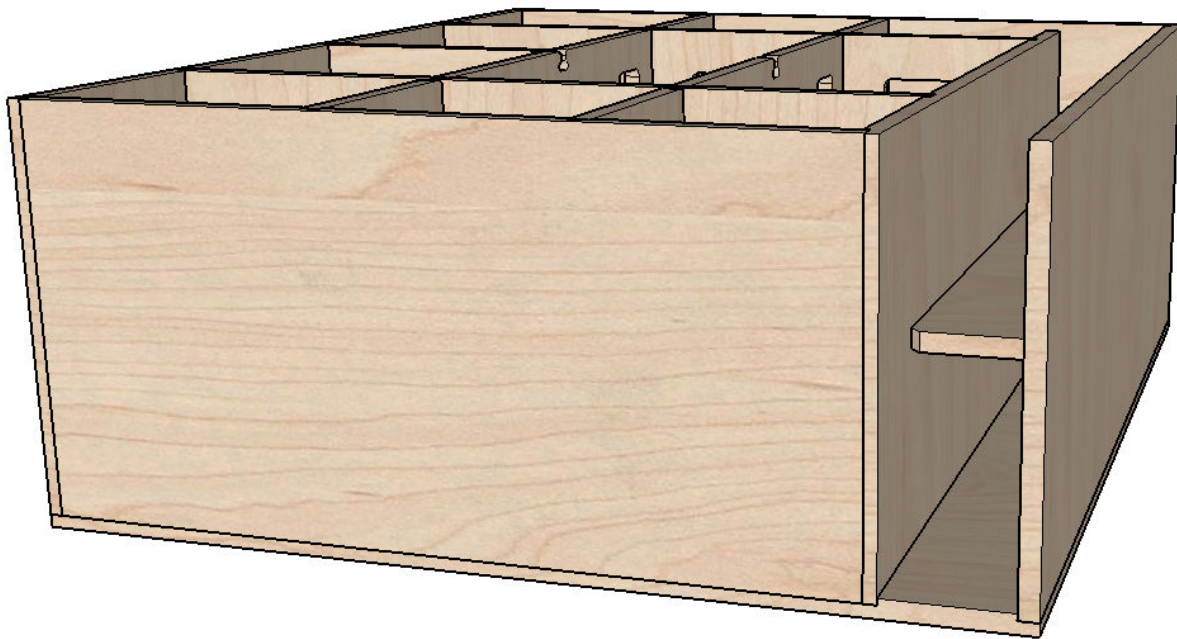
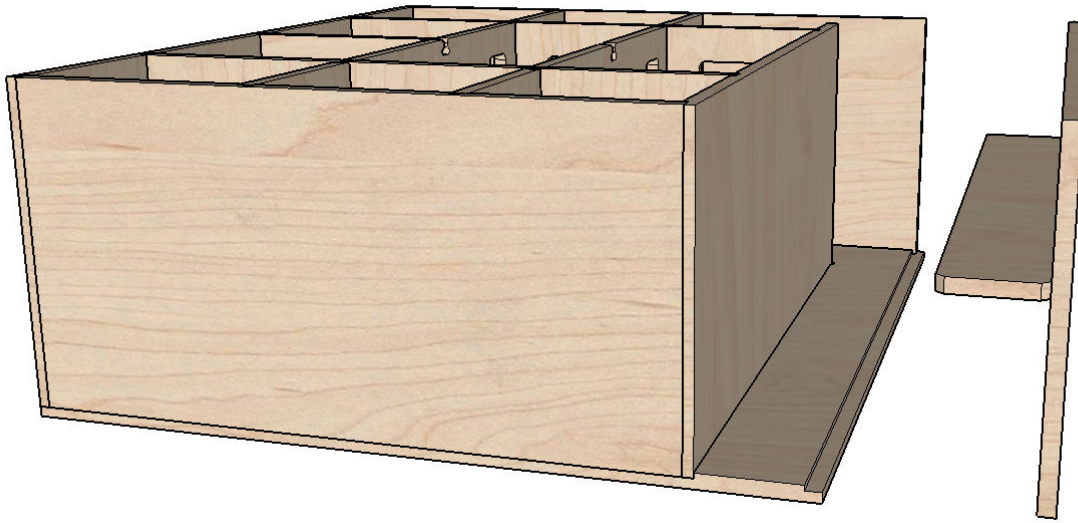
Then glue in the bracing.



With the main shell and bracing clamped, nailed, and/or glued in place, attach any supplemental bracing pieces.



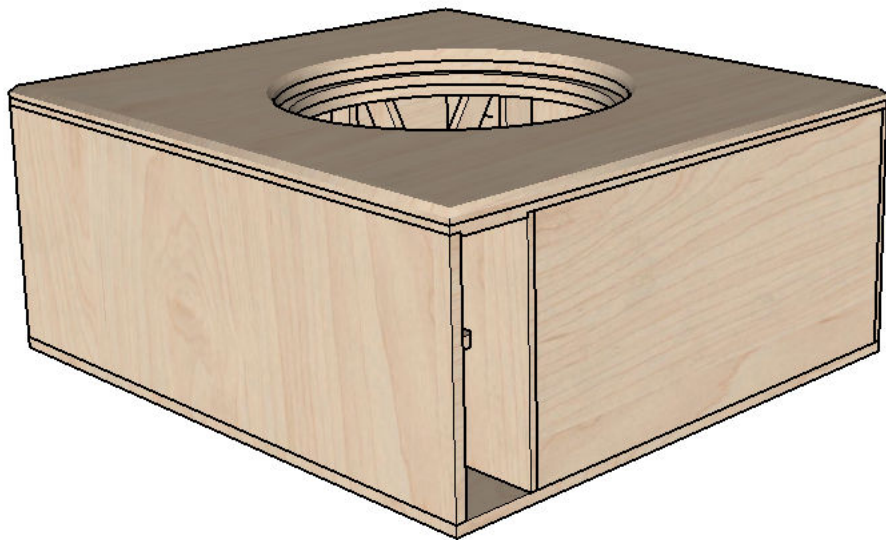
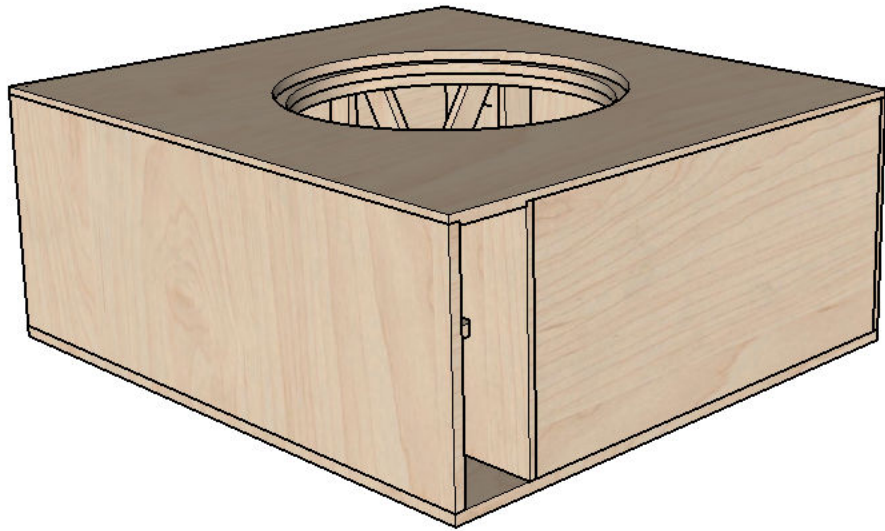
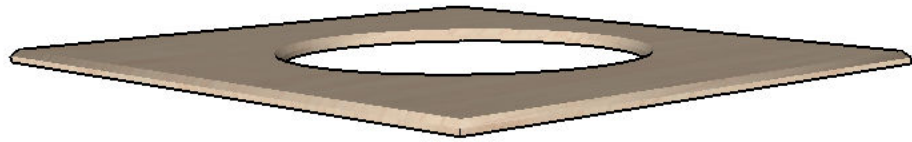
Attach bottom port assembly.

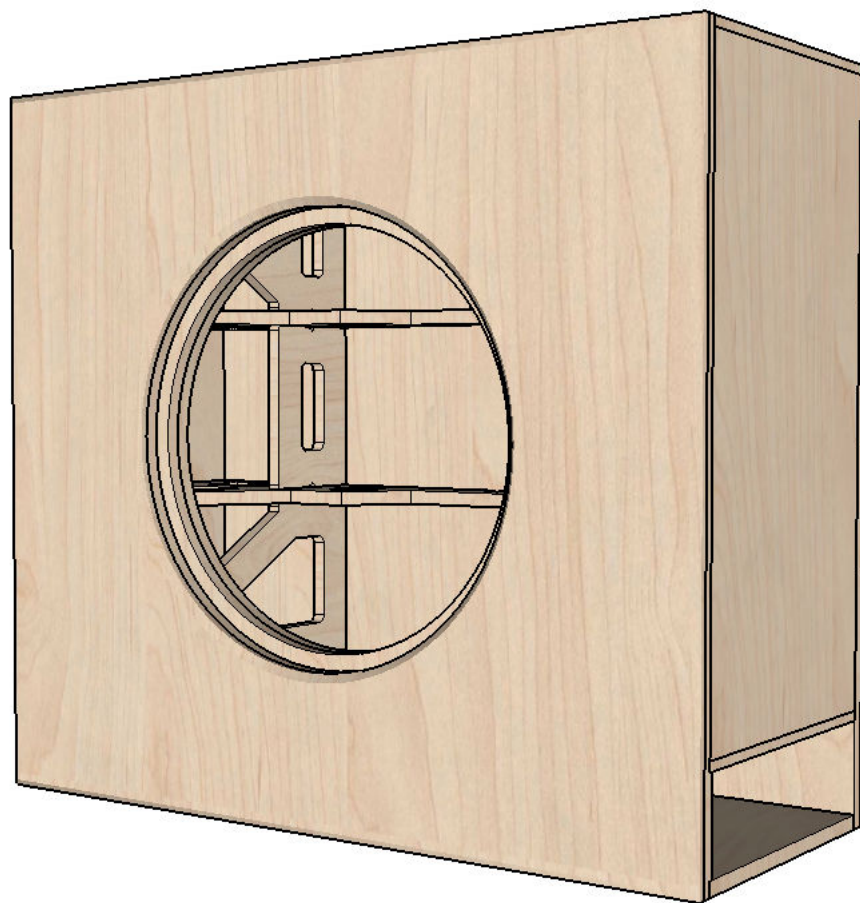


Attach Back Panel.



Attach front baffle.





28" x 48" x 17" Instructions

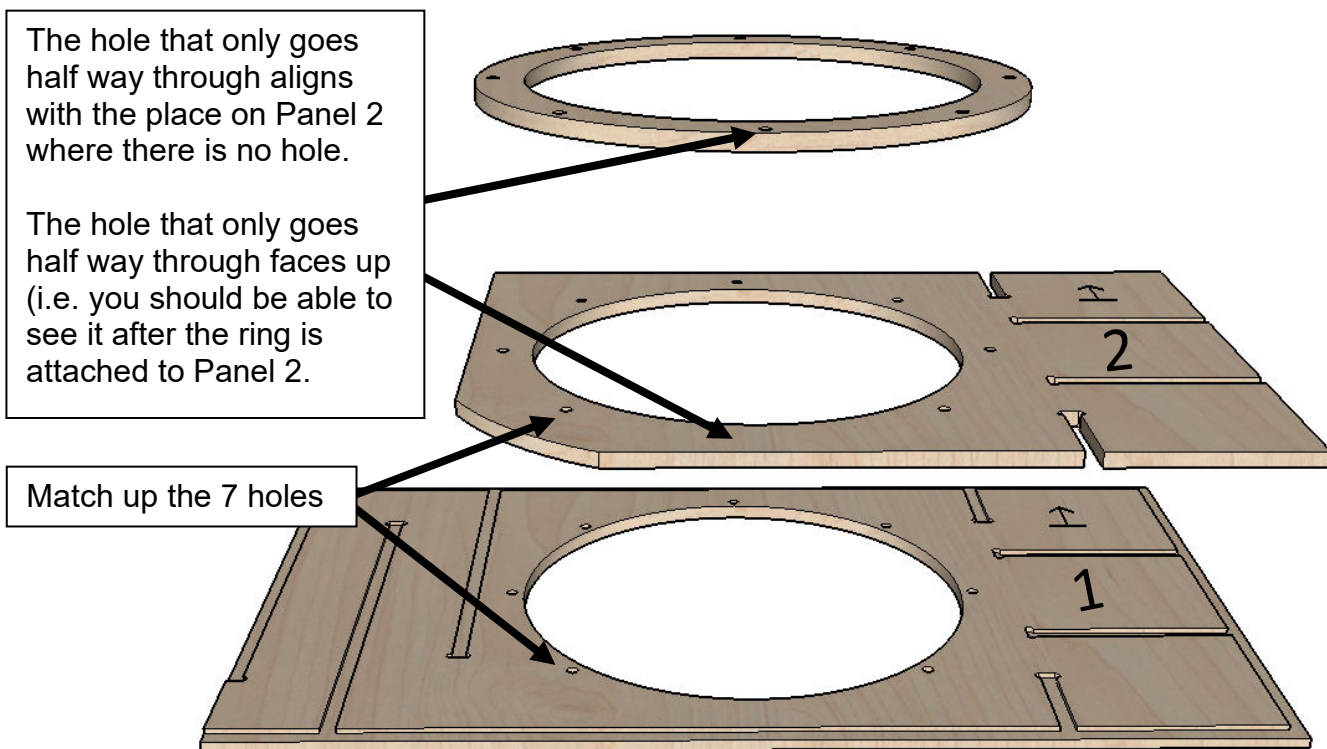
Start: Middle and inner baffle, and driver mounting ring.

Set Panel 1 on a flat surface. Apply glue to Panel 1 and Panel 2 where they will contact.

Attach Panel 2 to Panel 1.

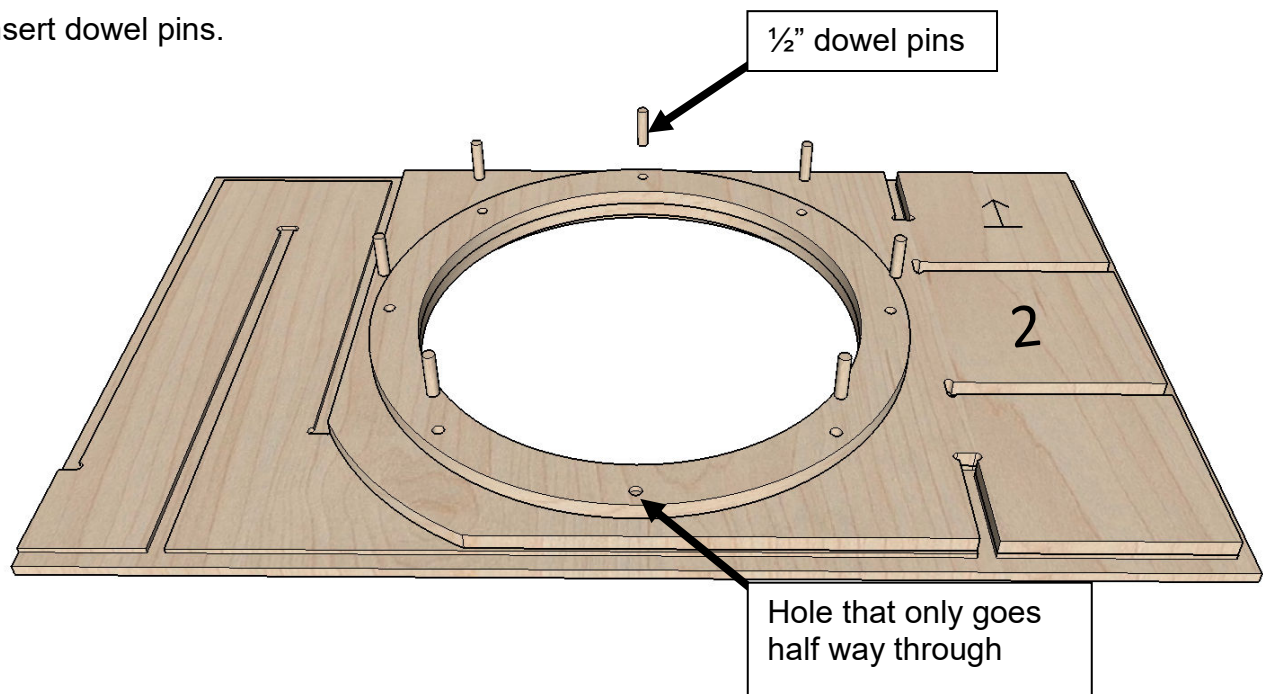
Apply glue to the driver mounting ring and Panel 2 where they will contact.

Attach driver mounting ring to Panel 2.

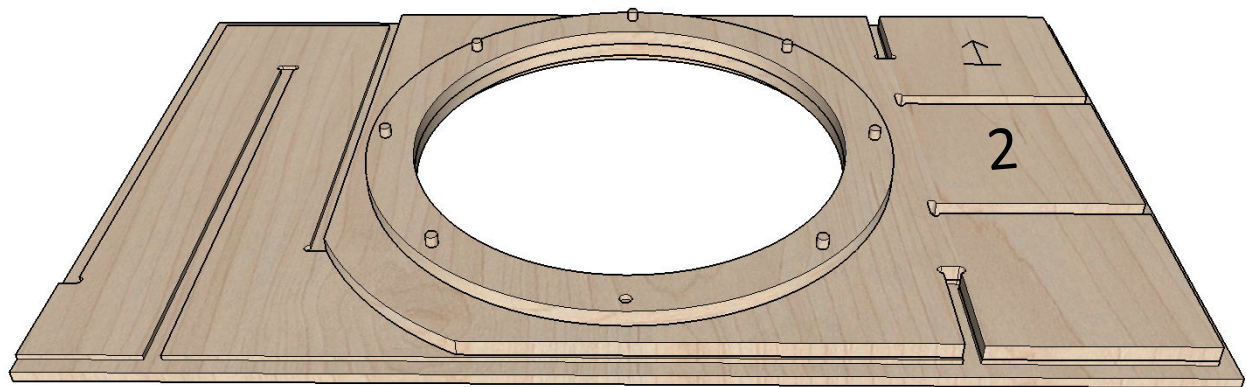


Apply glue to the dowel pin holes.

Insert dowel pins.

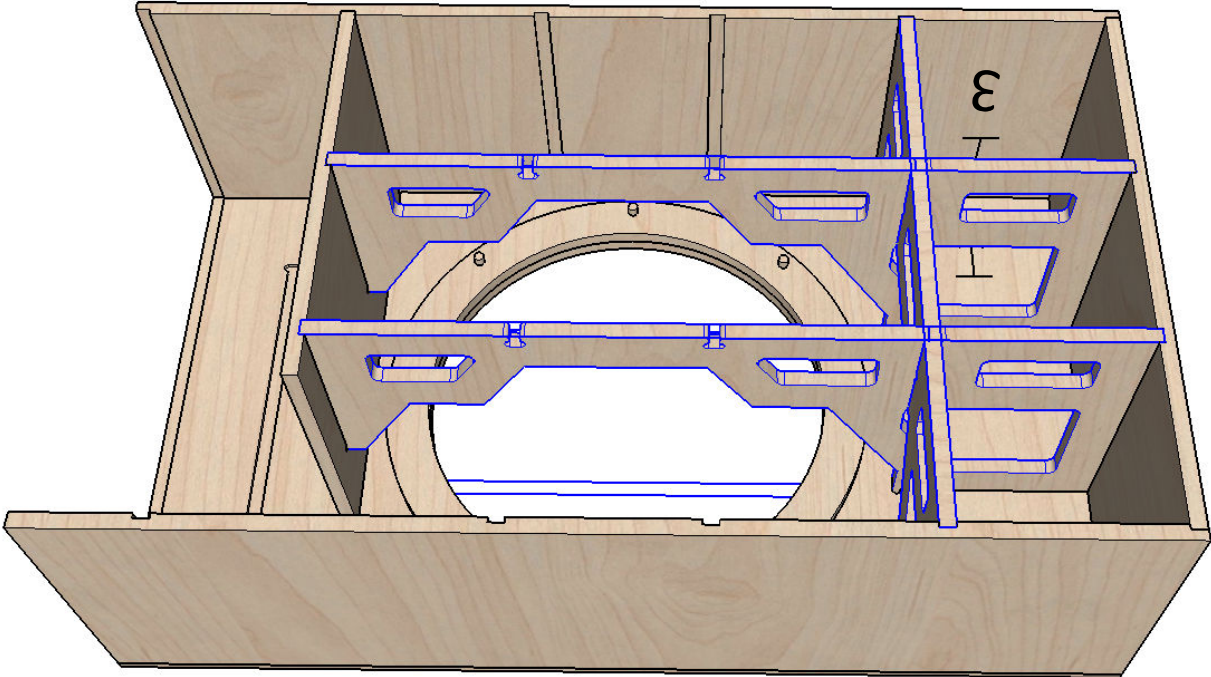
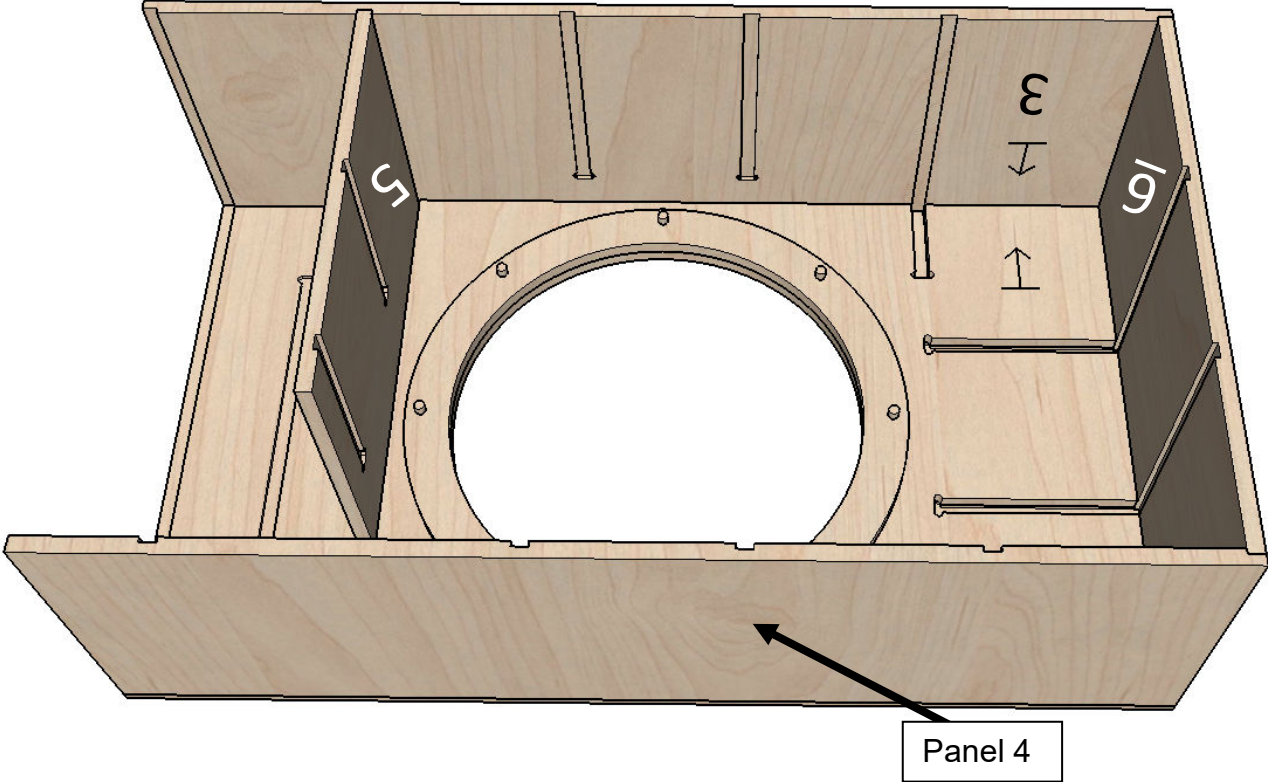


Dowel pins inserted. Clamp and let dry.

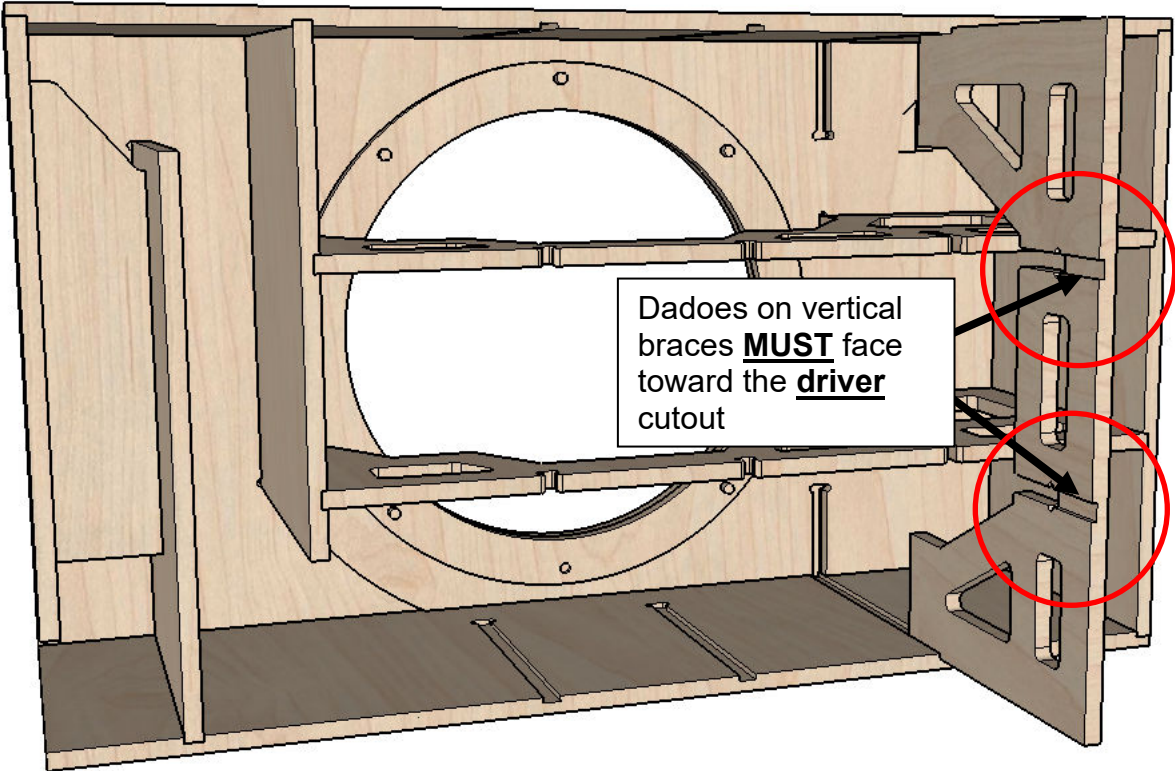


Attach Panels 3, 4, 5, and 6 using the internal bracing to help position the panels and to hold the panels square.

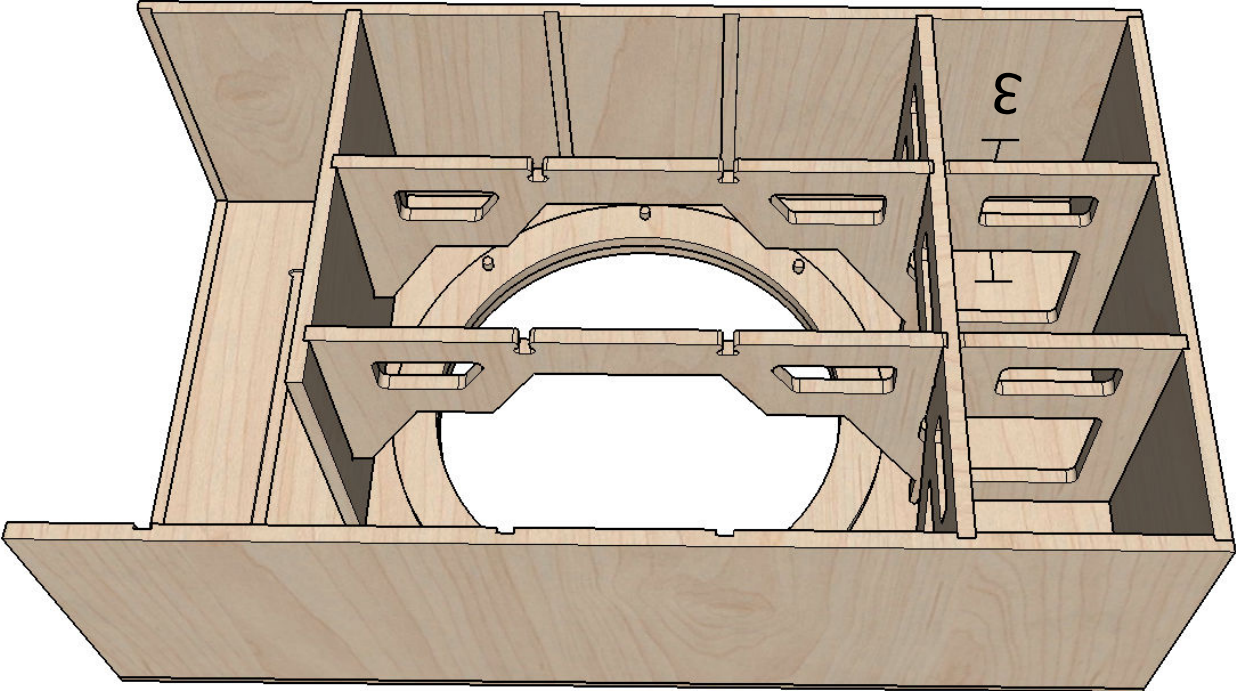
The arrows on Panels 3, 4, 5, and 6 should point toward Panel 2.



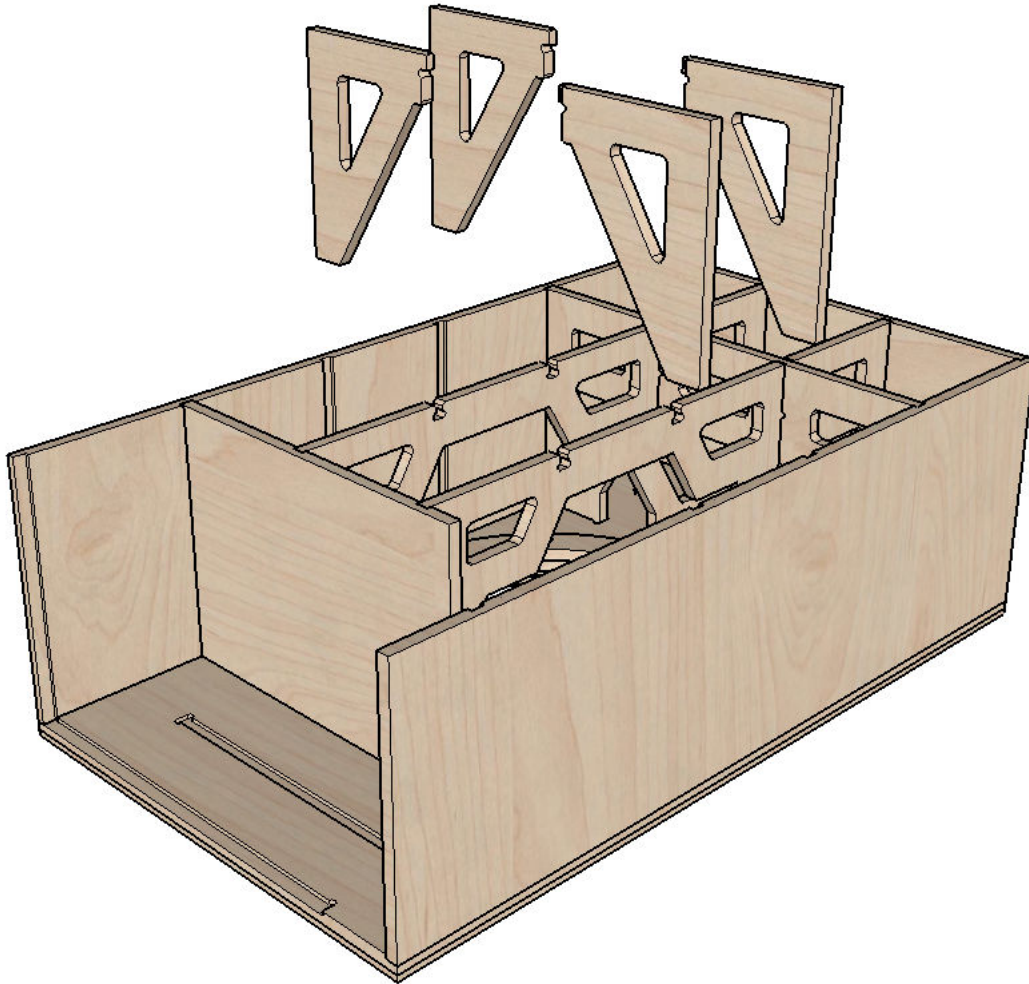
The 28 x 48 cab has only one vertical brace with dadoes. Ensure the dadoes are pointing toward the center of the cabinet (i.e. toward the driver cutout) NOT facing outward toward the side of the cabinet.



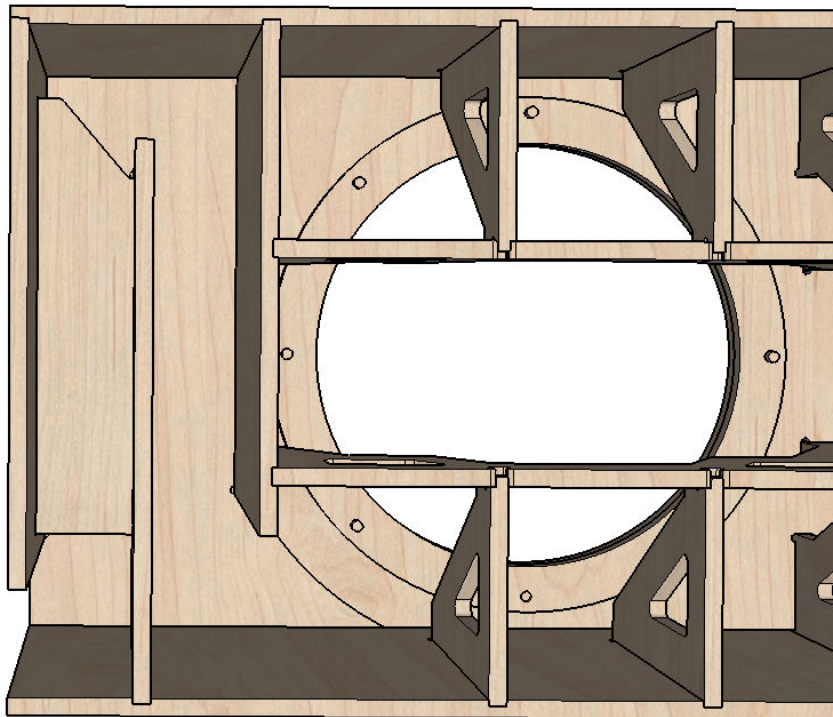
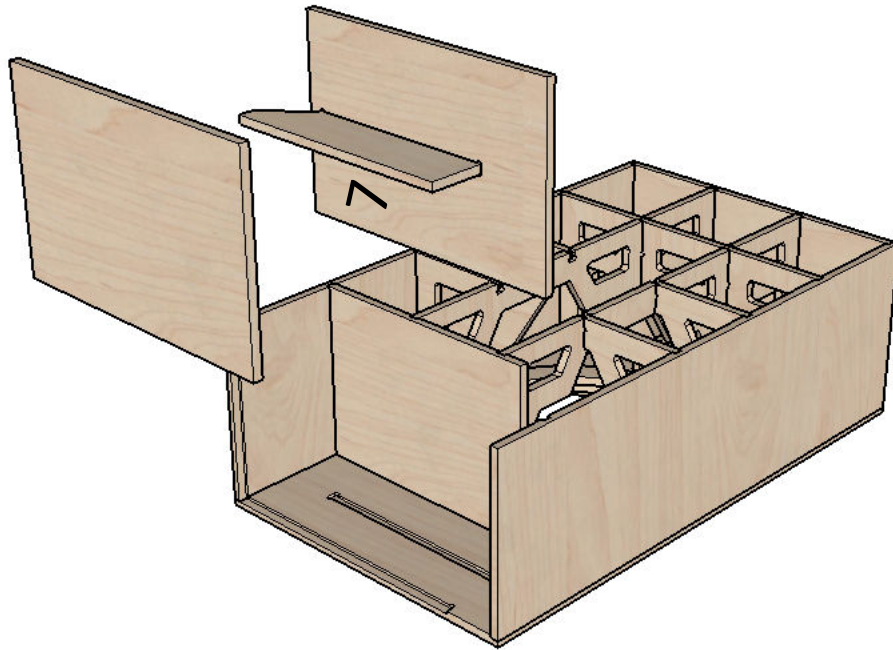
Then glue in the bracing.



With the main shell and bracing clamped, nailed, and/or glued in place, attach any supplemental bracing pieces.



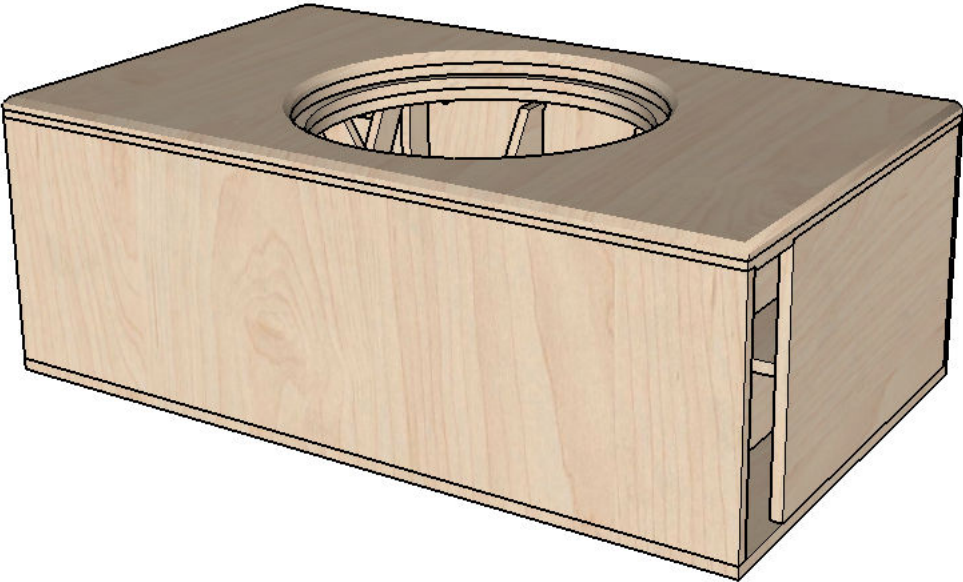
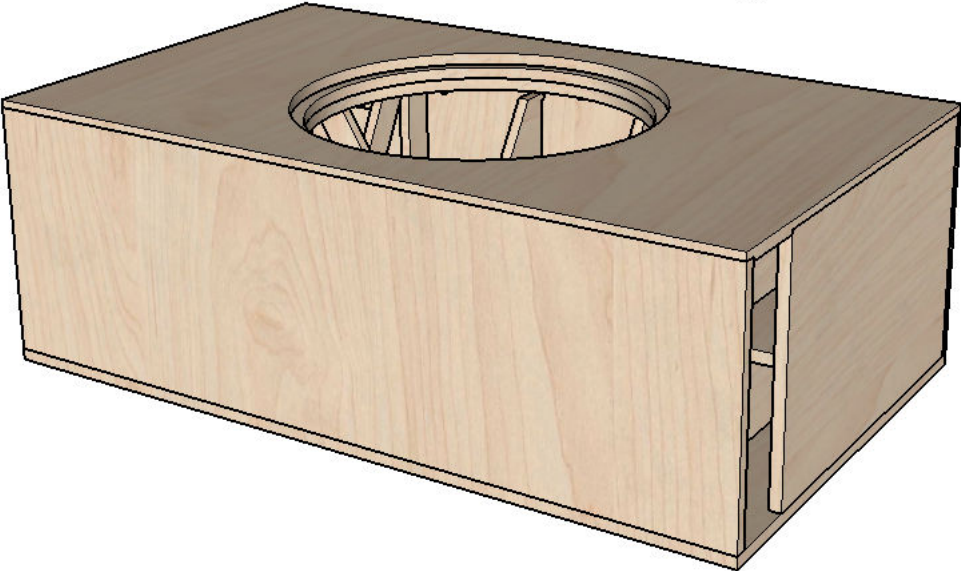
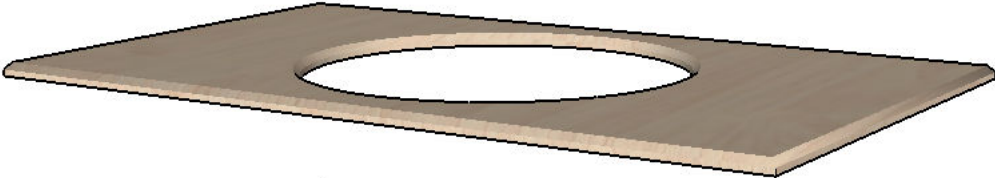
Attach Panels 7, 8 and the port brace joining them together.

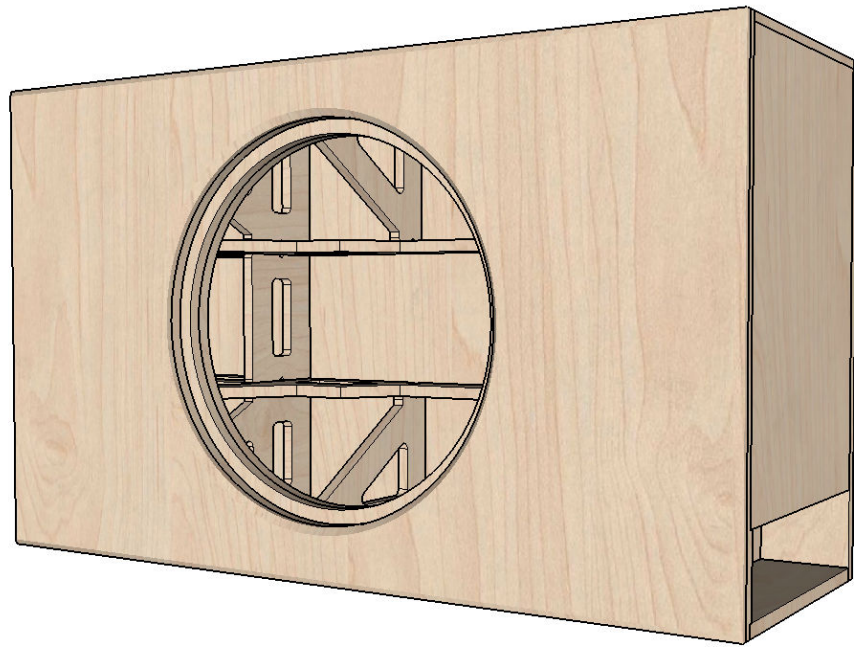


Attach back panel.



Attach front baffle.





All “Upright” BTS (Single and Dual driver) Instructions

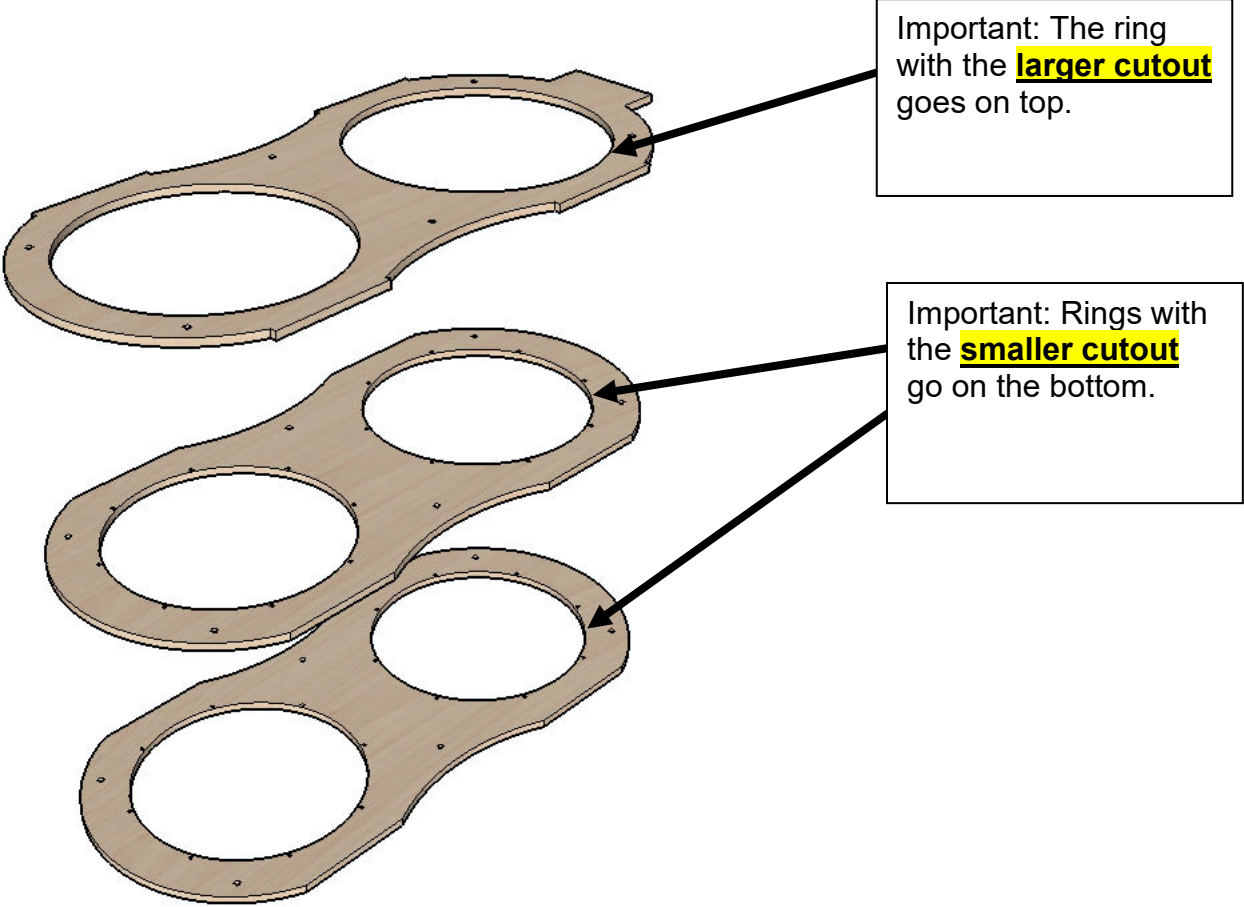
Assembly of the dual driver and single driver upright BTS cabinets follows the same process with some minor variations.



Start: Driver mounting rings. The rings with the smaller diameter are mounted on top of the assembly.

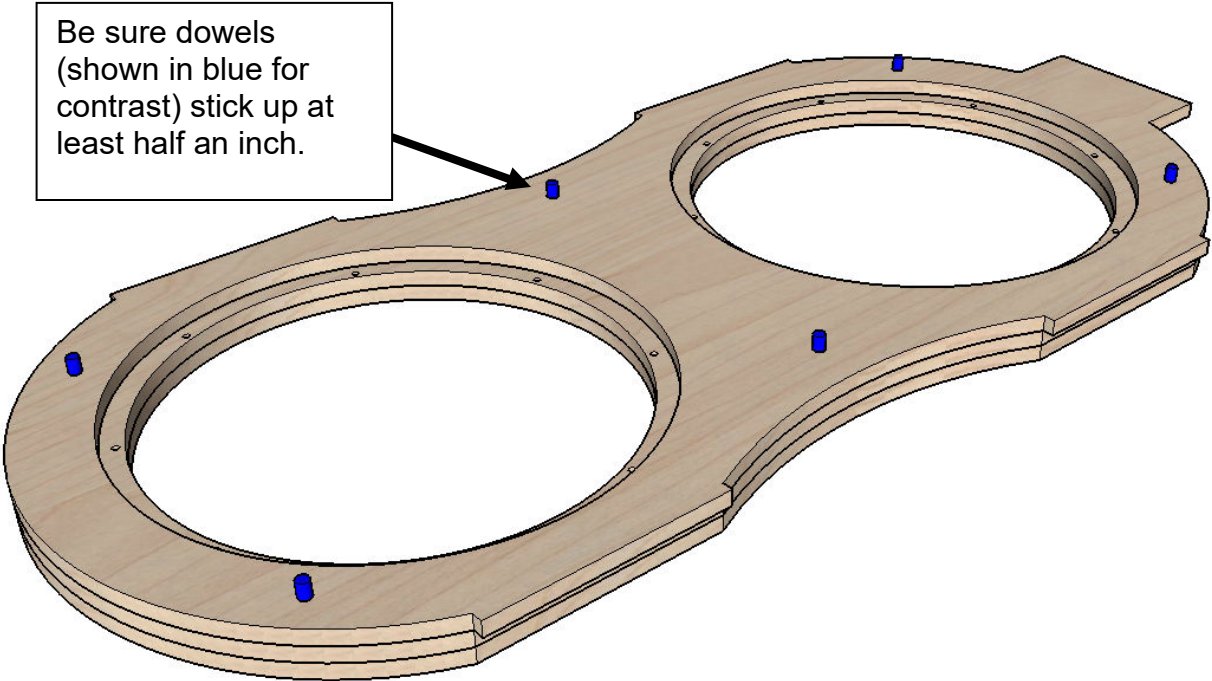
Attached the driver mounting rings using dowels.

See next page for additional details.



This is how it will look when assembled.

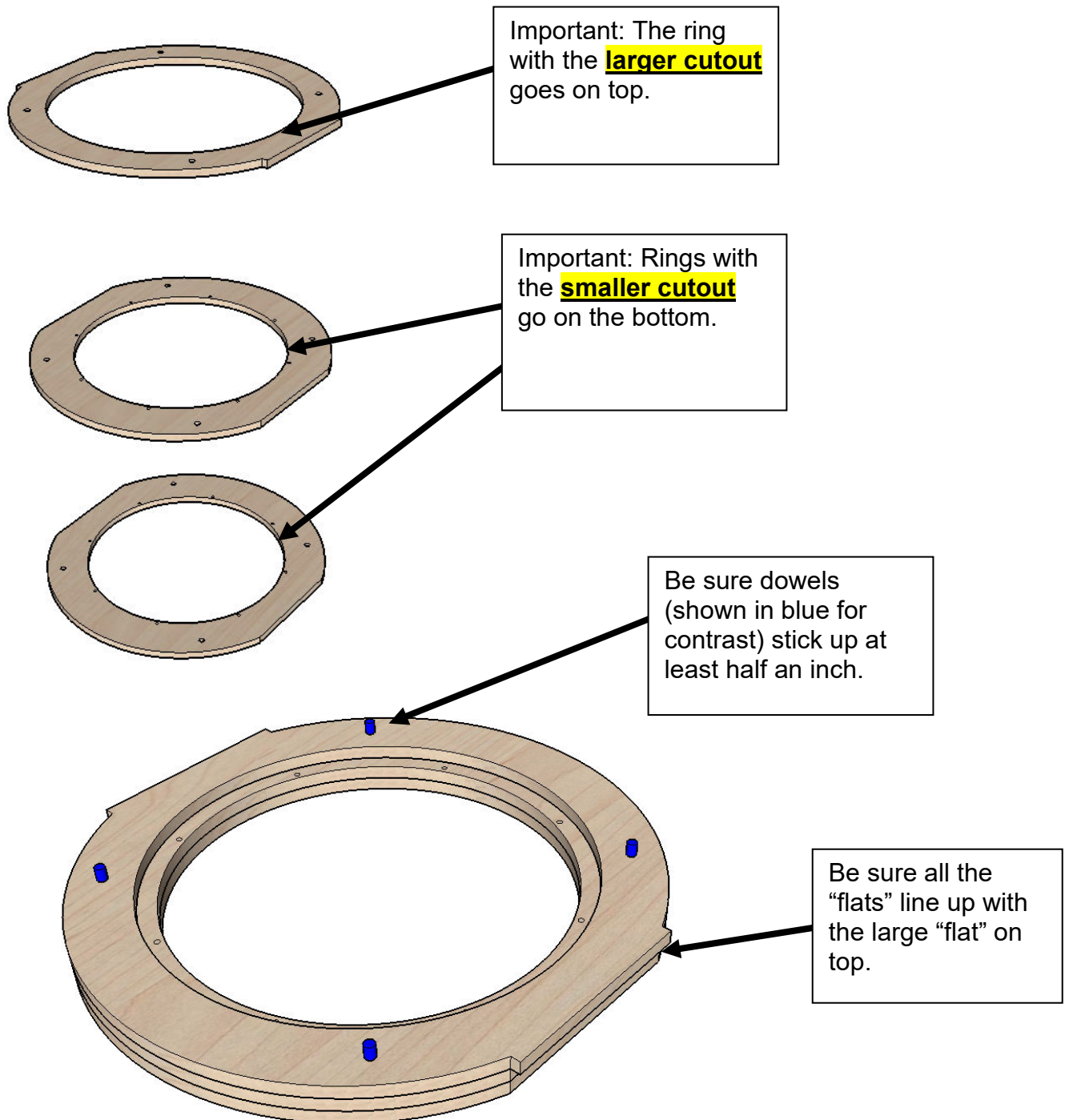
IMPORTANT: THE BAFFLE WILL MOUNT ON TOP OF THIS PANEL. THE BAFFLE HAS HOLES DRILLED FOR DOWELS. ENSURE THAT THE DOWELS (SHOWN IN BLUE) STICK UP 0.50".



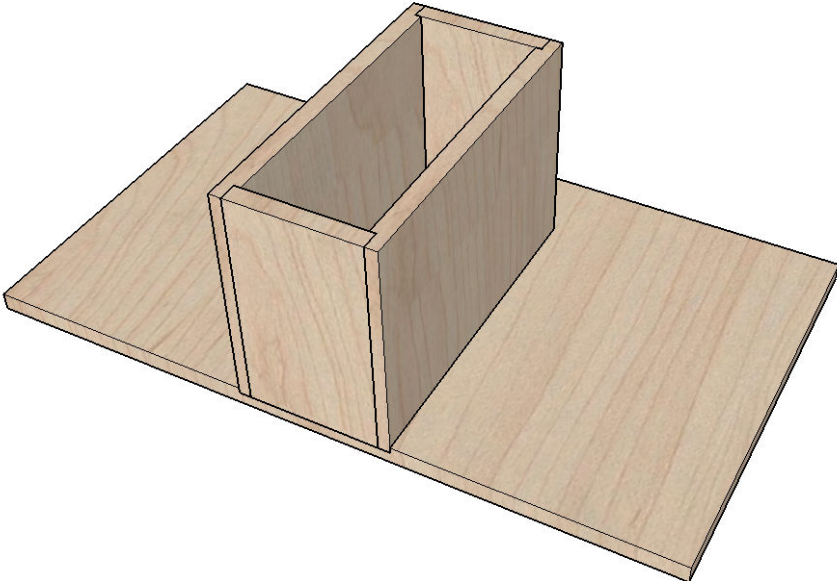
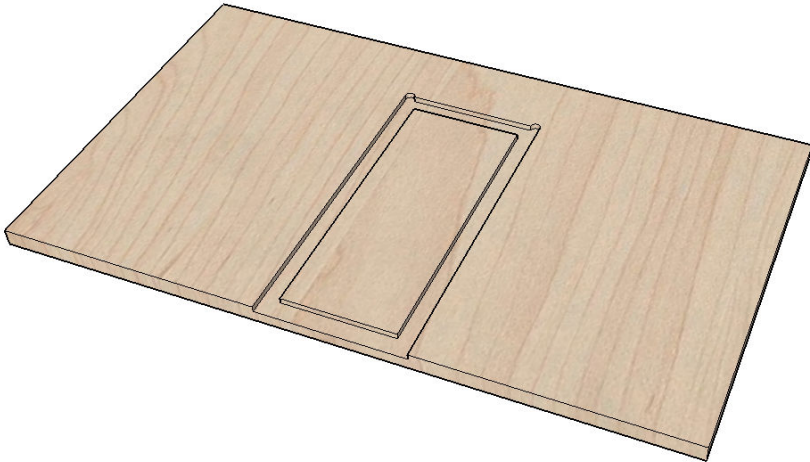
For the Single Driver 21" and Single Driver 18" Cabinets:

The assembly of the Single Driver 21" and Single Driver 18" is similar as the Dual Driver except for a couple of differences.

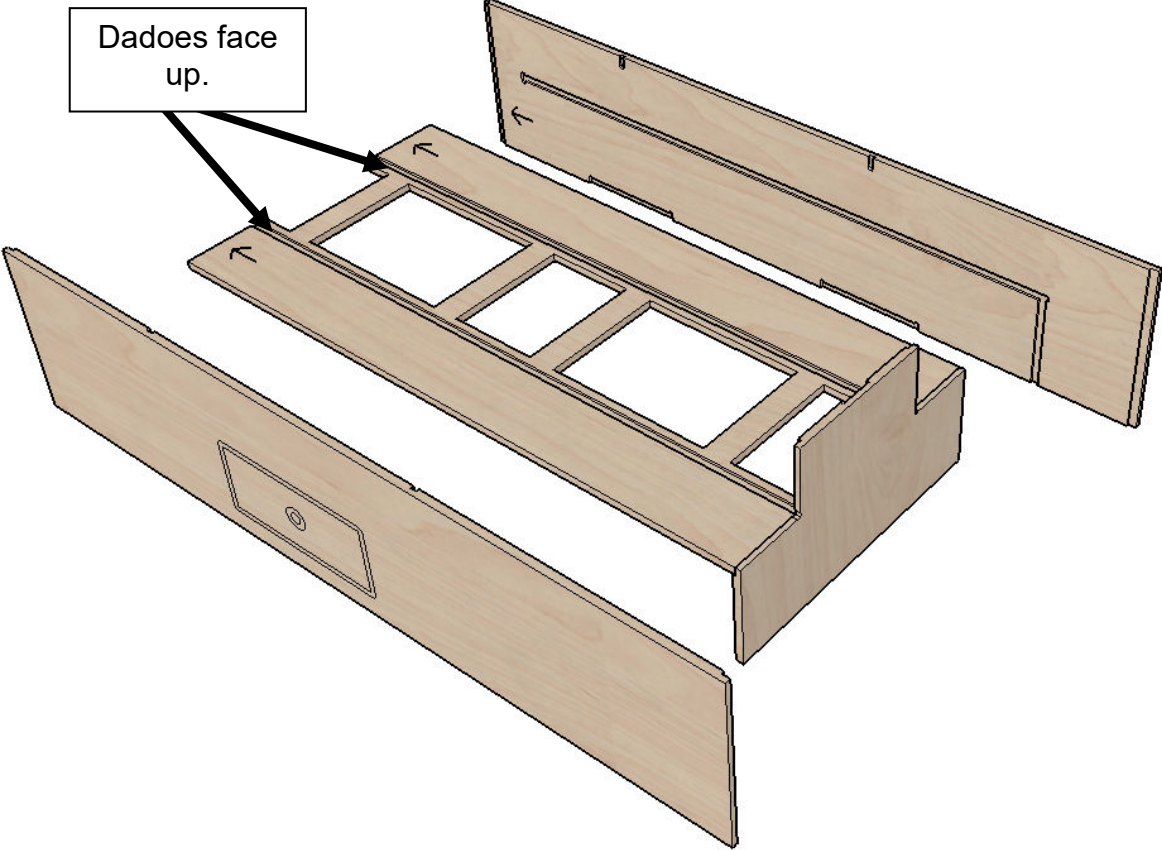
IMPORTANT: THE BAFFLE WILL MOUNT ON TOP OF THIS PANEL. THE BAFFLE HAS HOLES DRILLED FOR DOWELS. ENSURE THAT THE DOWELS (SHOWN IN BLUE) STICK UP 0.50".

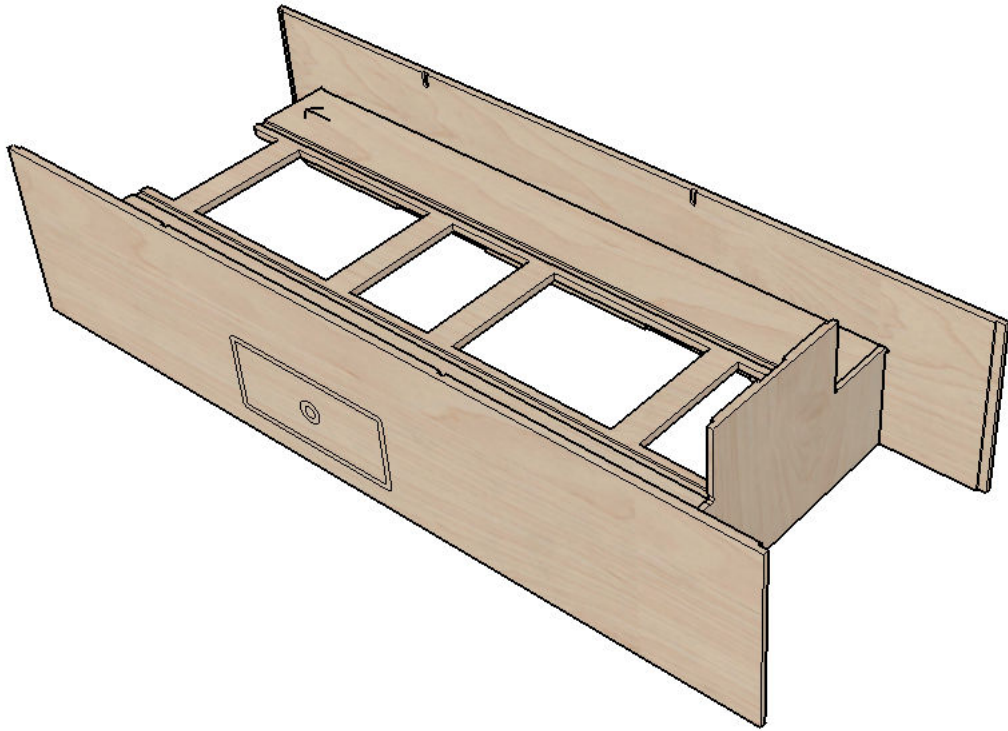


Bottom panel and braces.



Back, sides, and bottom brace.

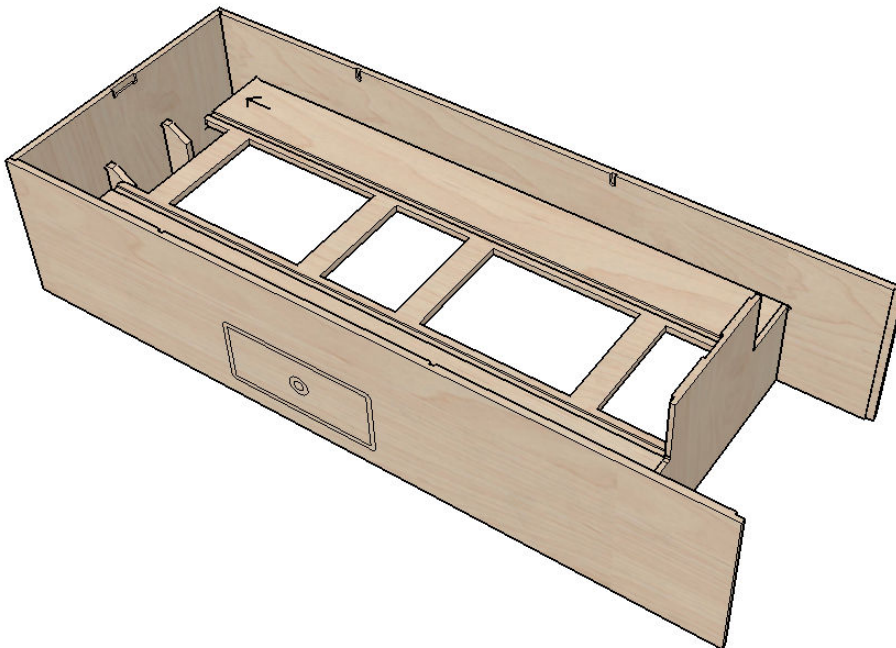
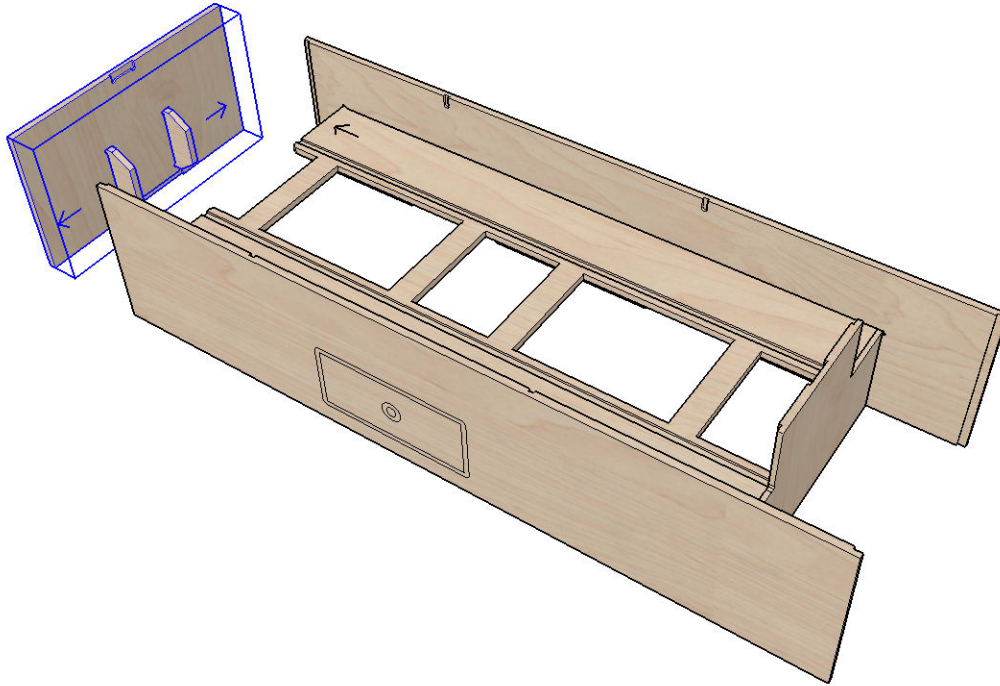




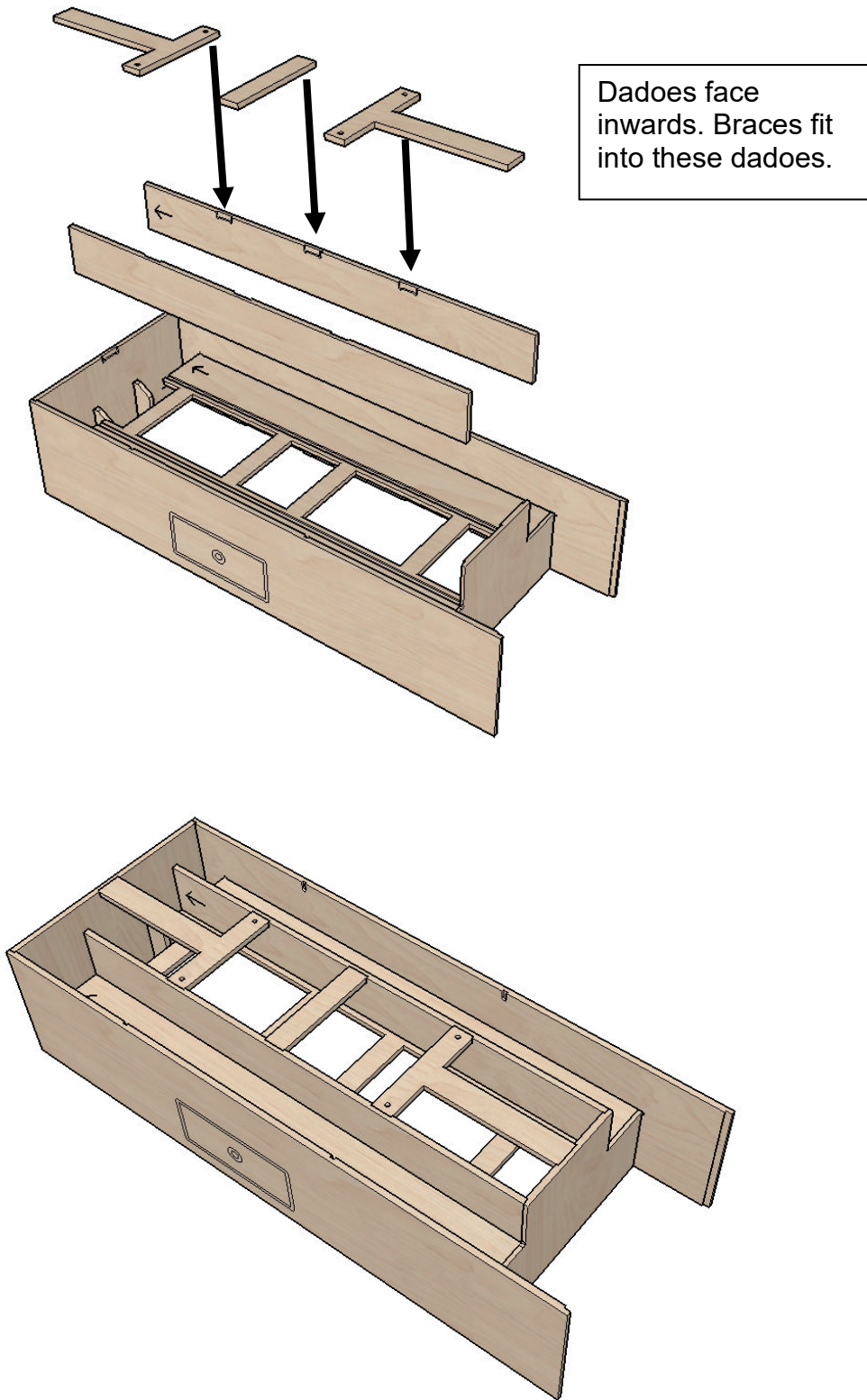
Attach top.

Note the dual driver cab has two small braces in the top. Glue those in first.

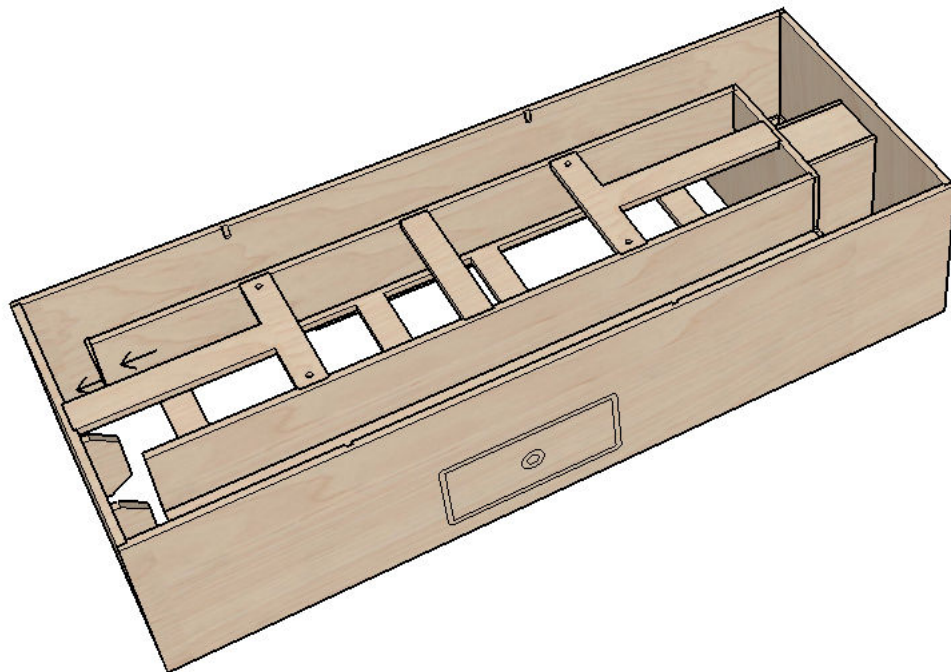
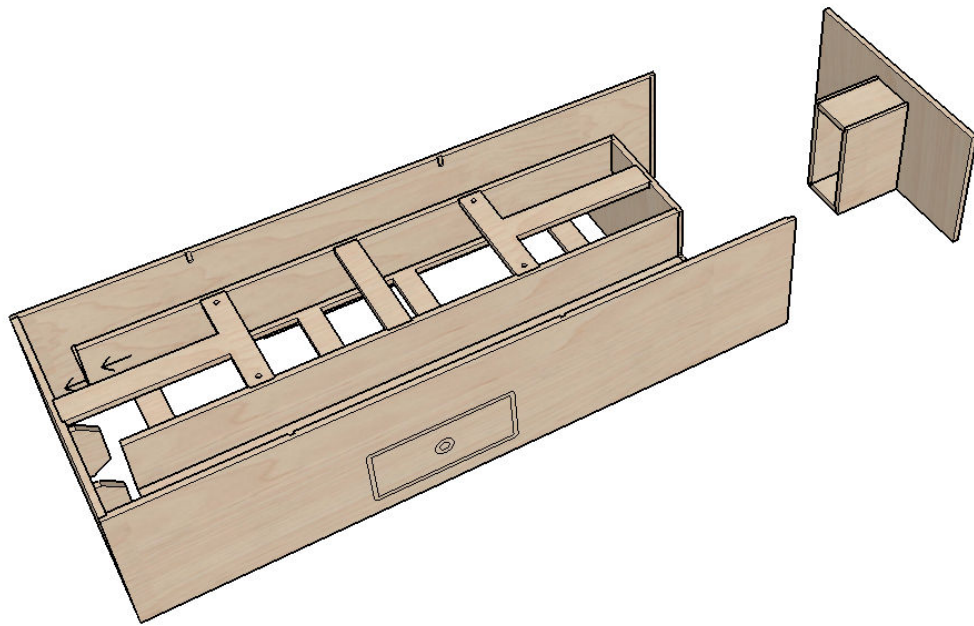
The single driver cab will not have any braces in this step.



Attach port boards and braces.

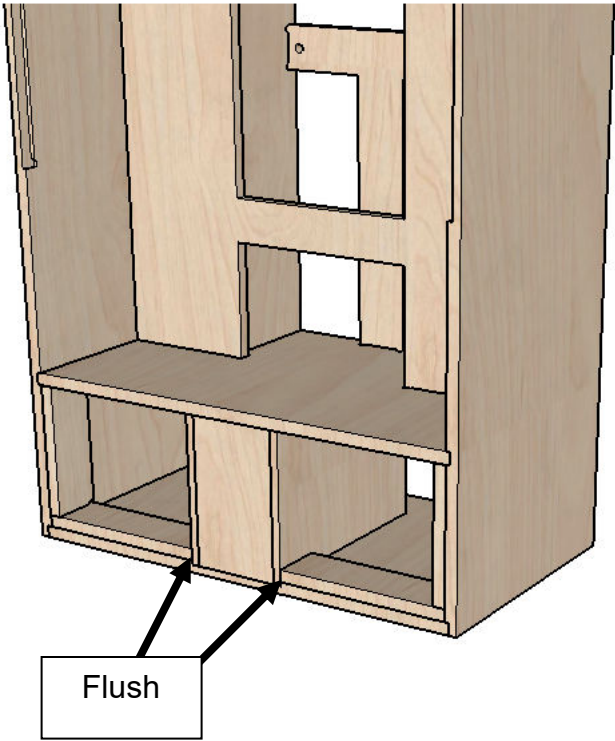
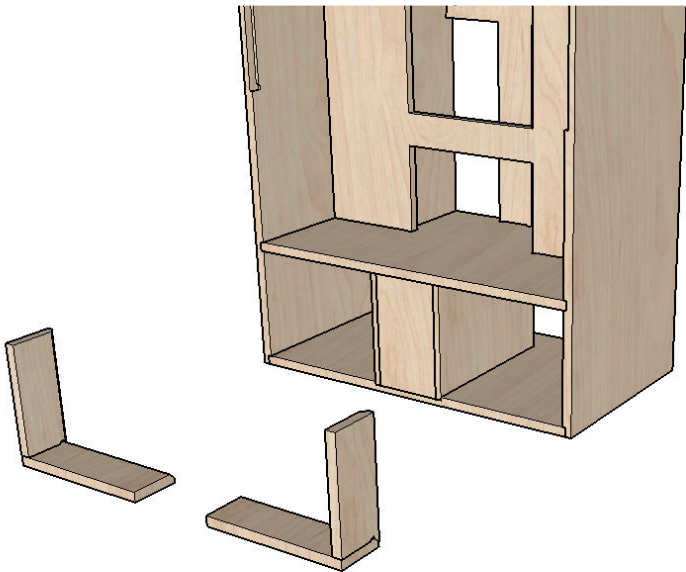


Attach bottom assembly.

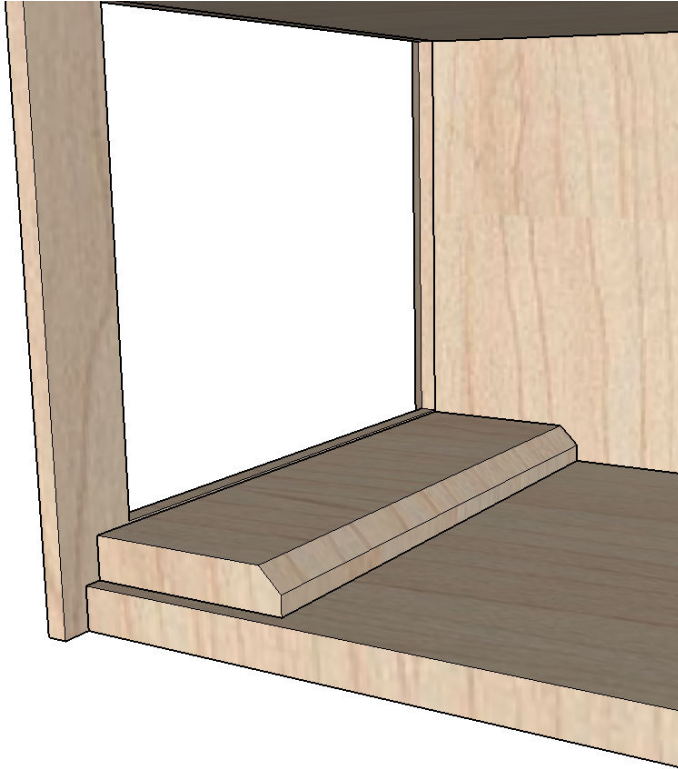


Port spacers.

Ensure the horizontal pieces are flush against the center piece.

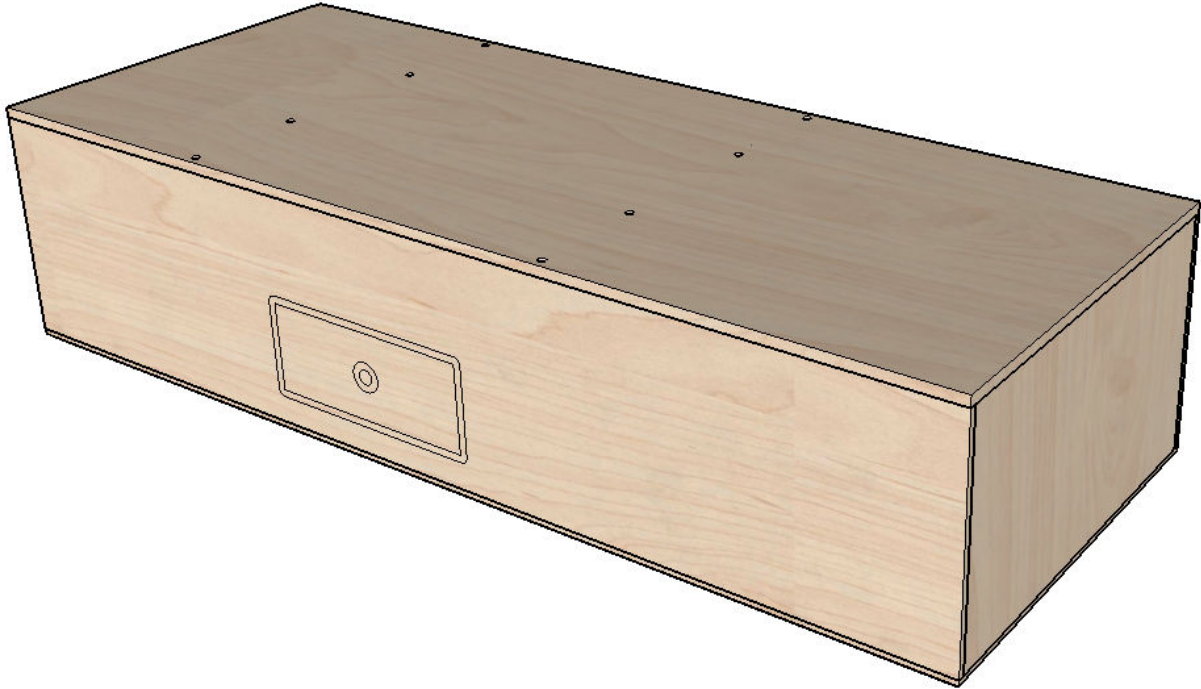


Insert the horizontal piece first. And press it flush against the center brace.
View from inside the cabinet (side panel removed so you can see how it looks).

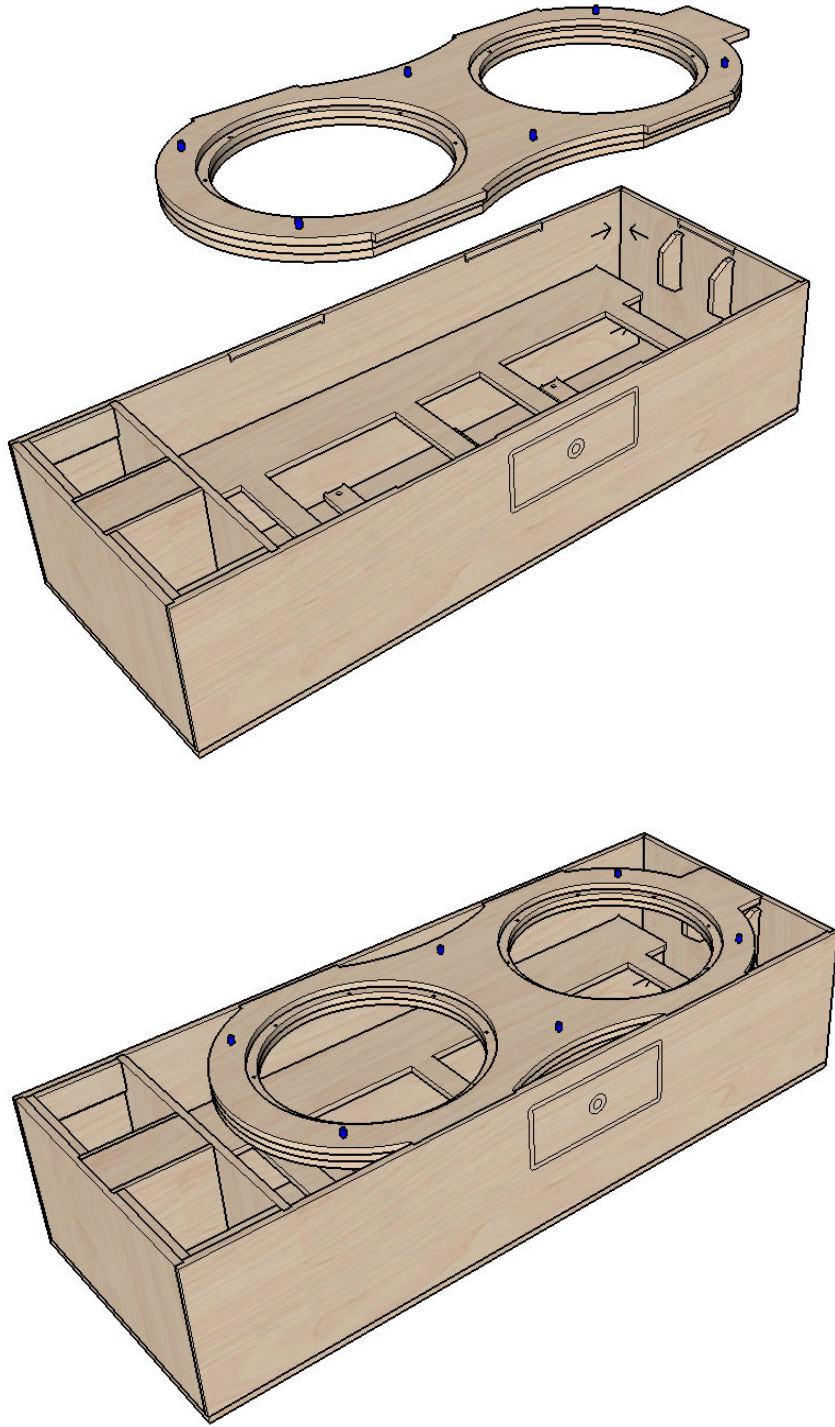


Rear Panel.

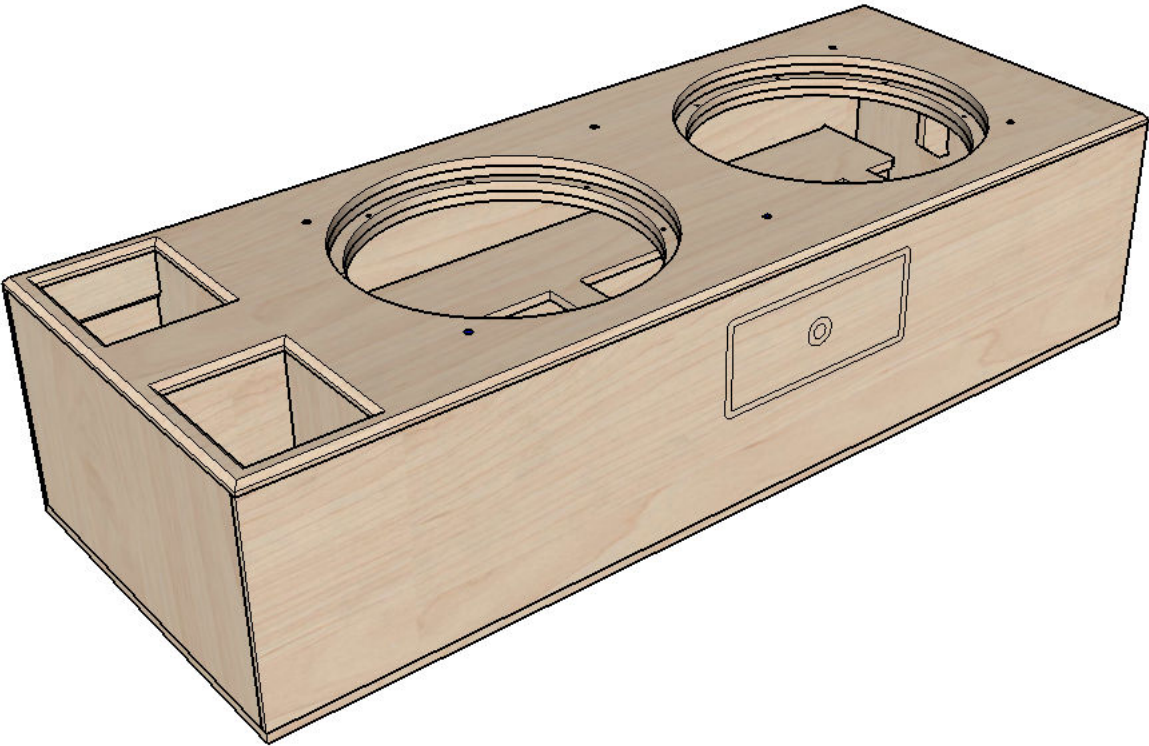
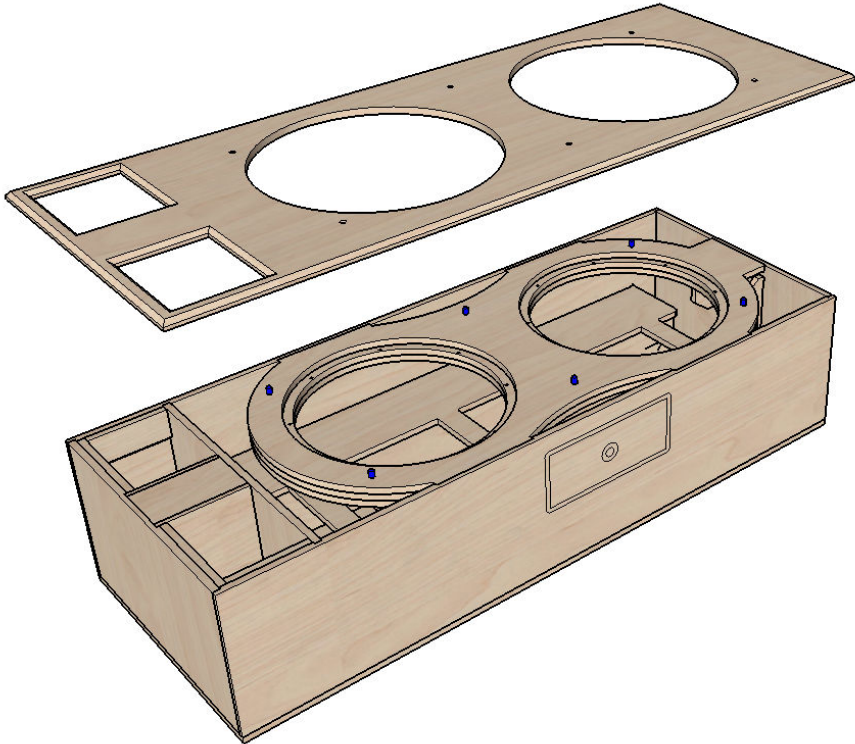
Inset dowels part way through the rear panel. These will be used to help adjust the side panels if they are bowing slightly in or out. Glue on the rear panel.



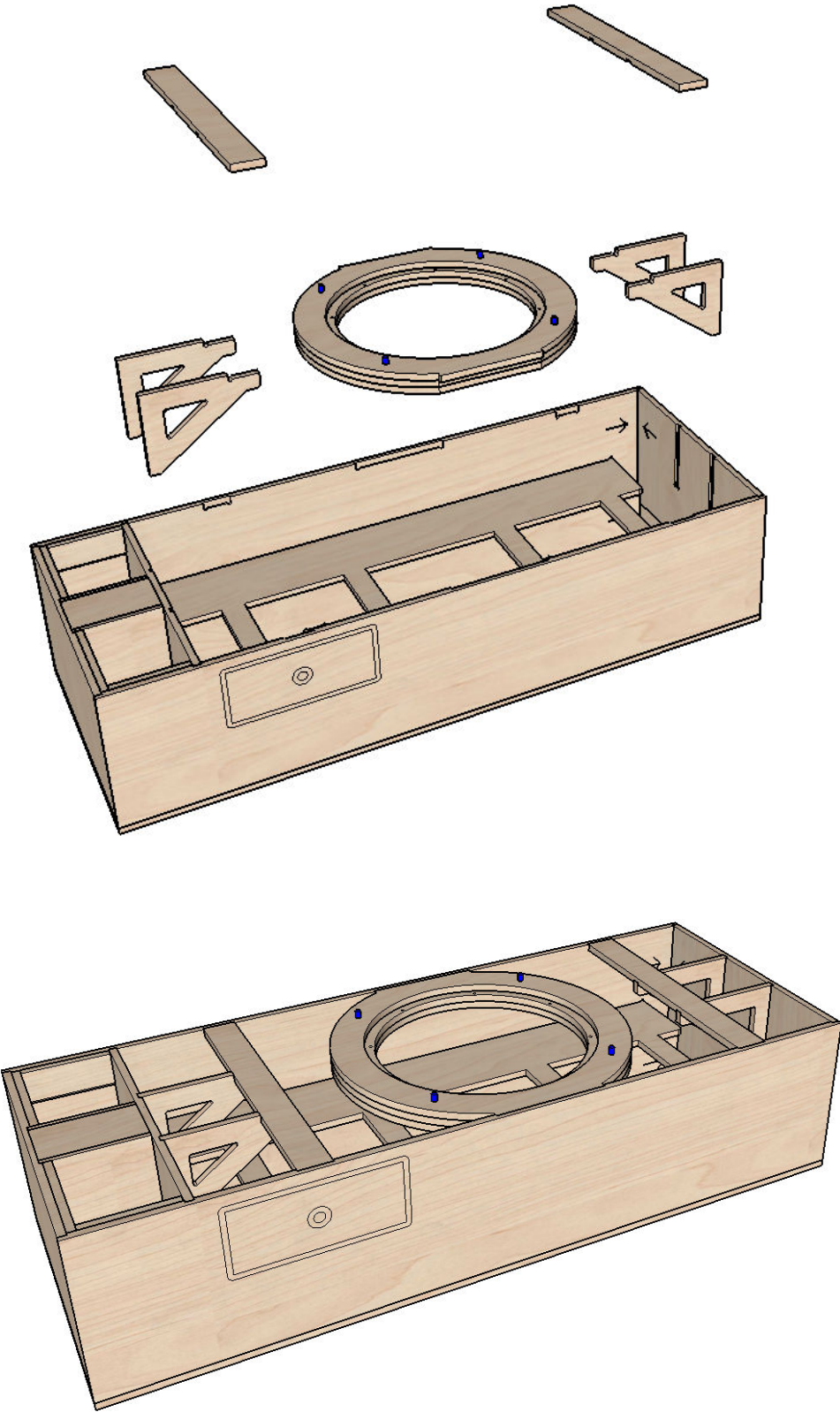
Woofers mounting rings assembly (for Single driver cab, skip forward two pages).



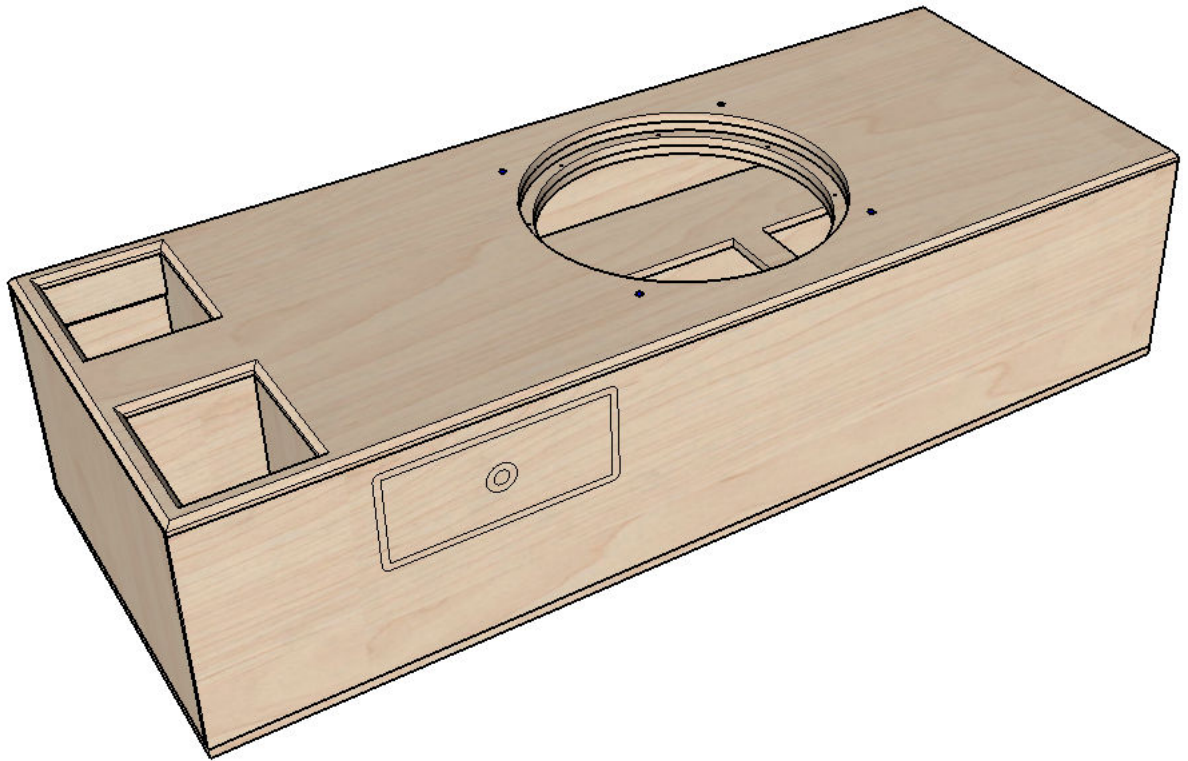
Baffle.



Woofer mounting rings assembly and additional baffle bracing.



Attach baffle.



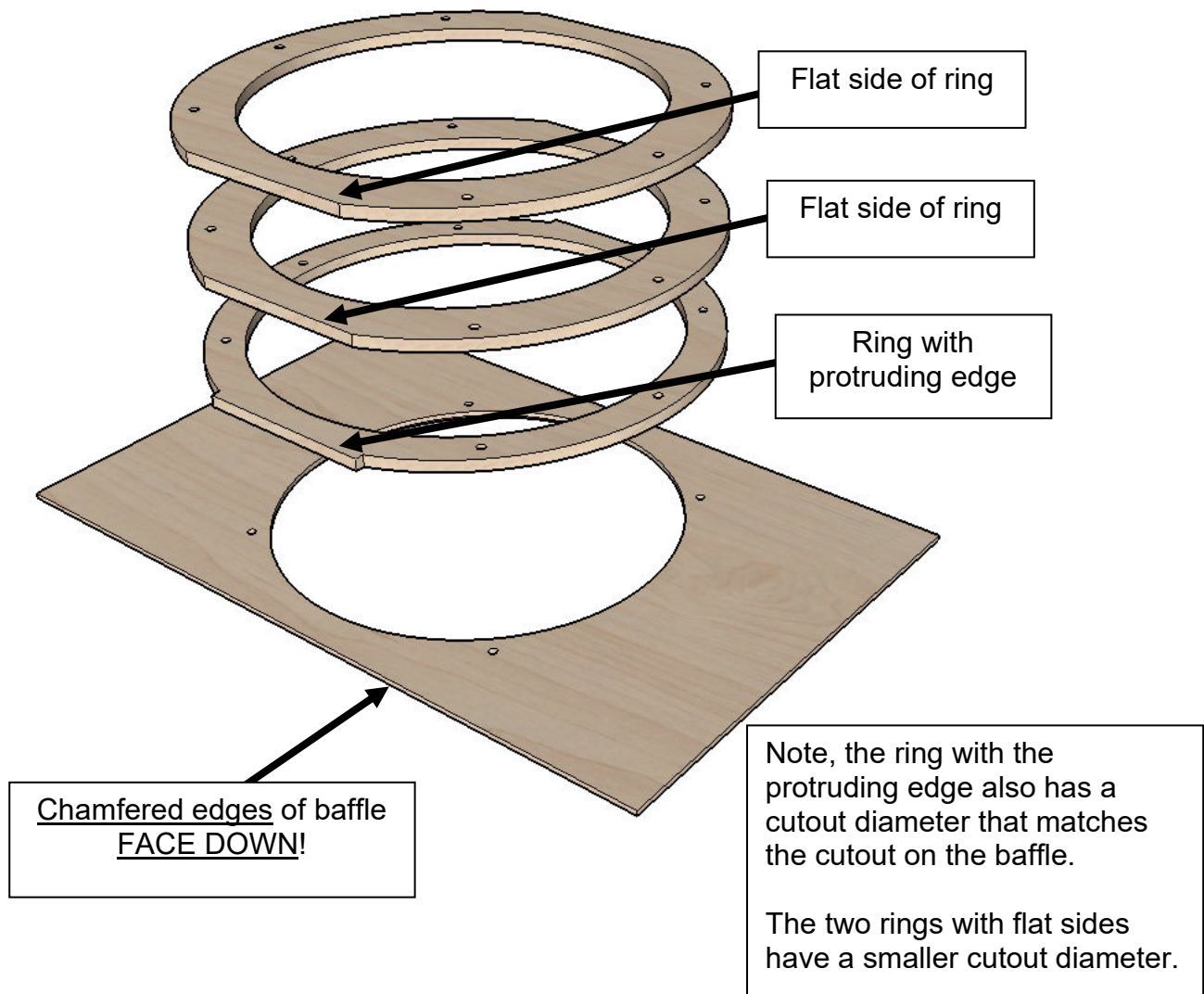
Sealed BTS 46" x 29" x 17" Instructions

Start: Front baffle and woofer mounting rings.

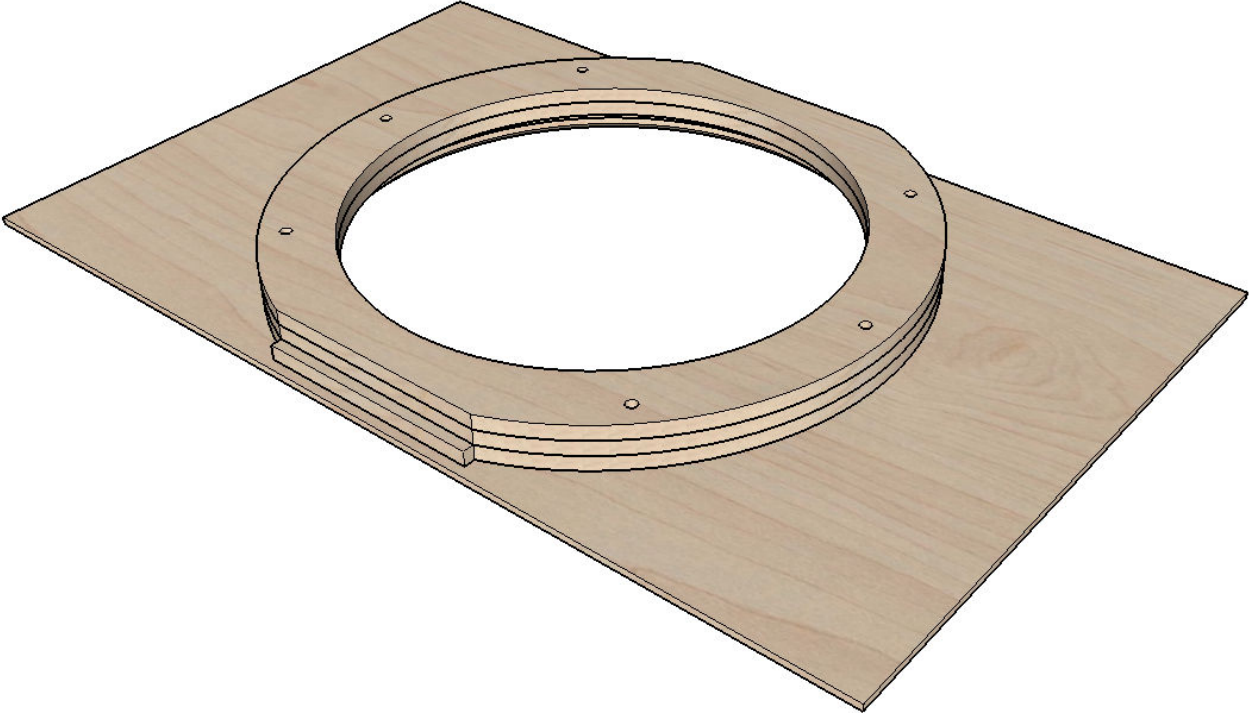
Place the baffle with the chamfered edges **FACING DOWN** on your work surface.

A "chamfer" is a 45 degree decorative that knocks the sharp corner off the board.

The **FLAT** side of the baffle will be facing up.

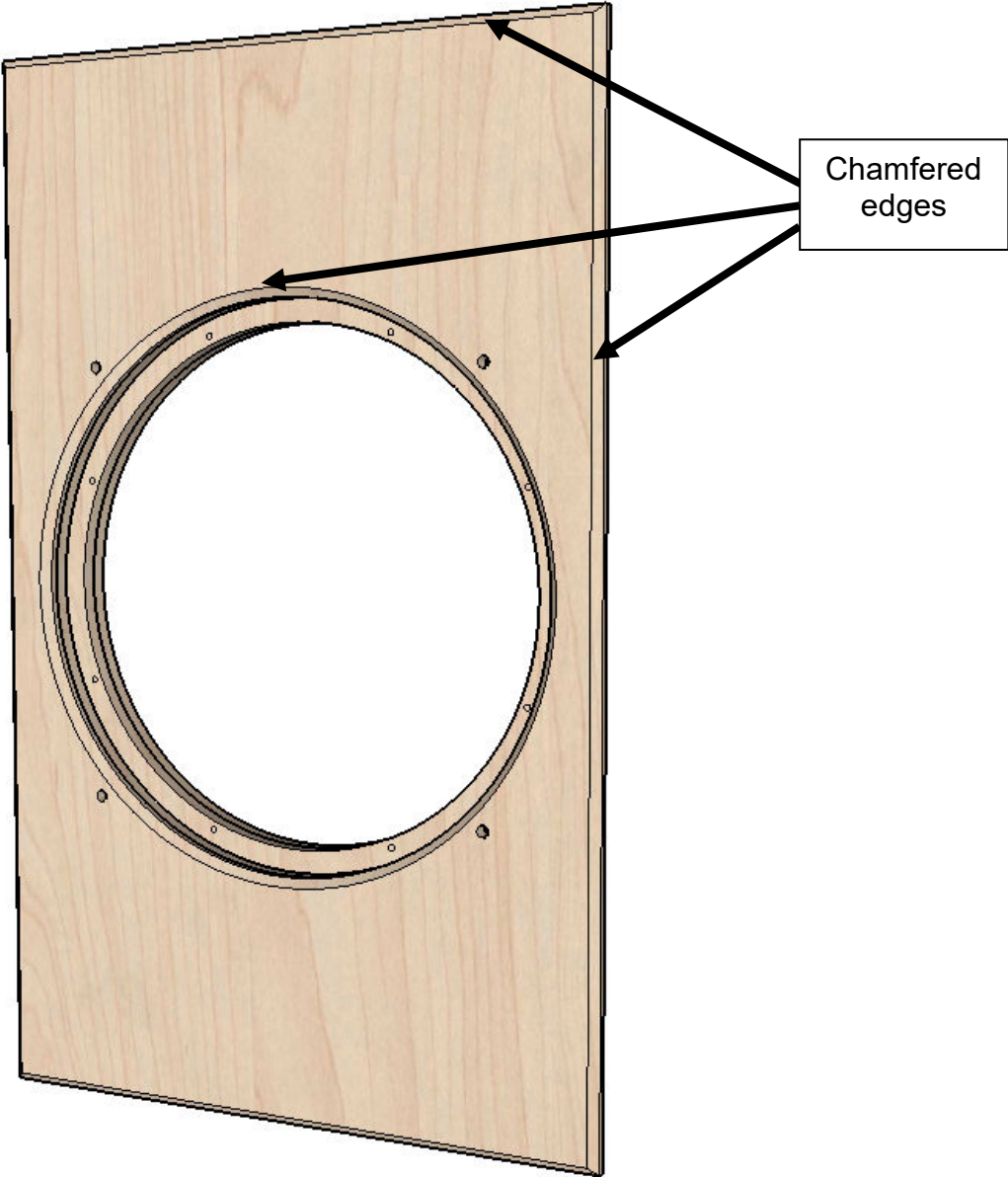


Glue the rings to the baffle with dowels in the six holes.



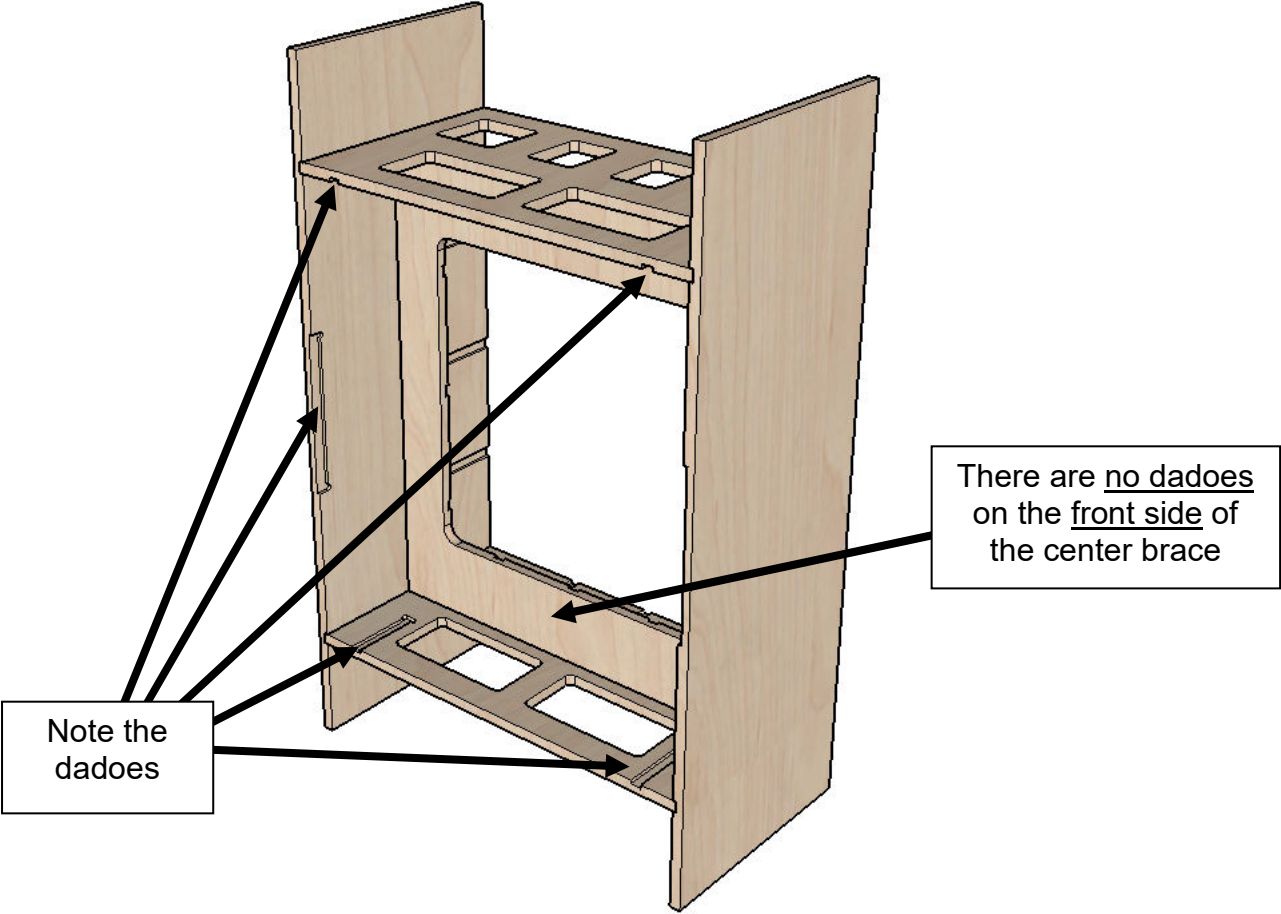
Front of baffle after proper glue up of mounting rings.

The four holes will need to be filled in and sanded at some point.

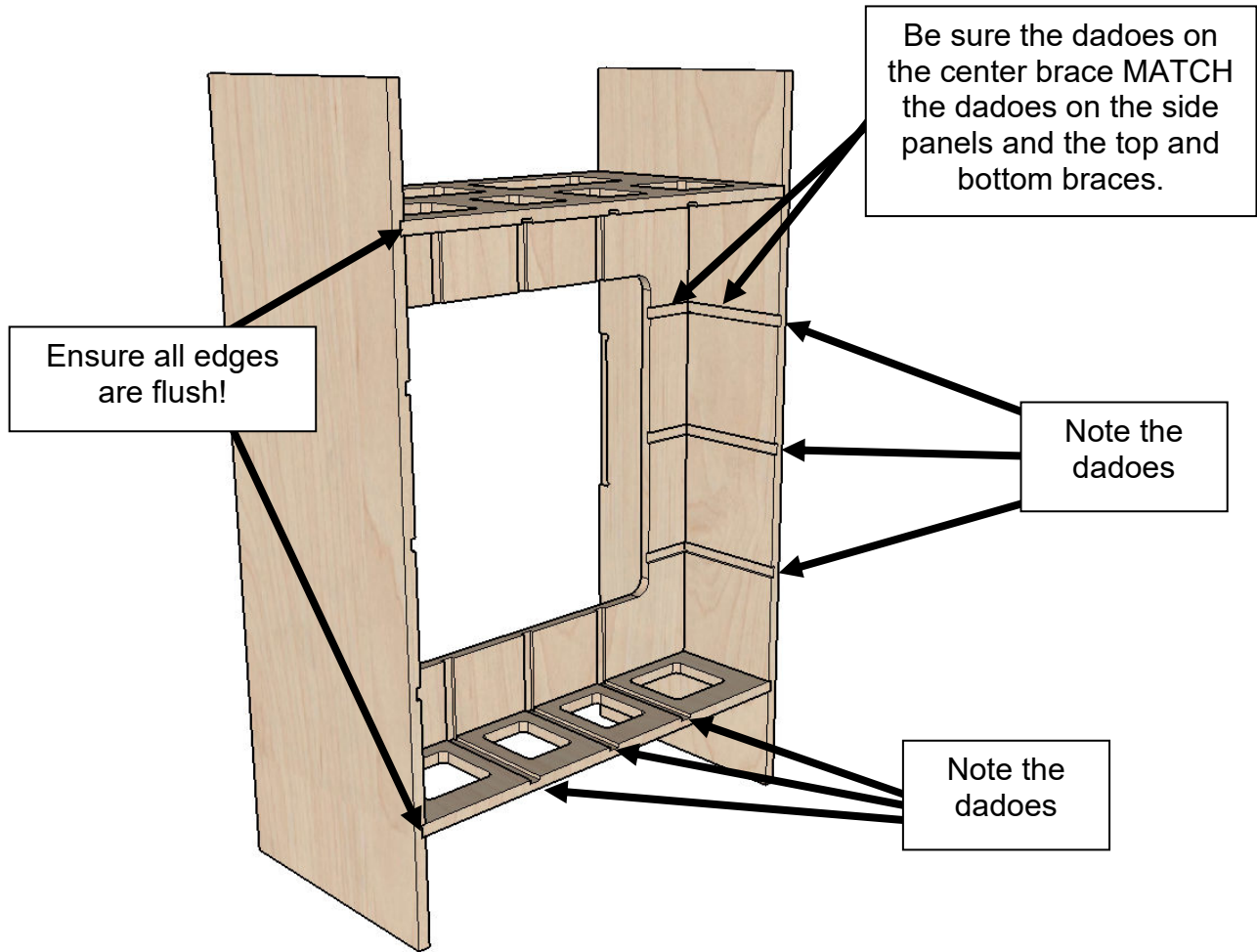


Top and bottom braces, center brace, and sides.

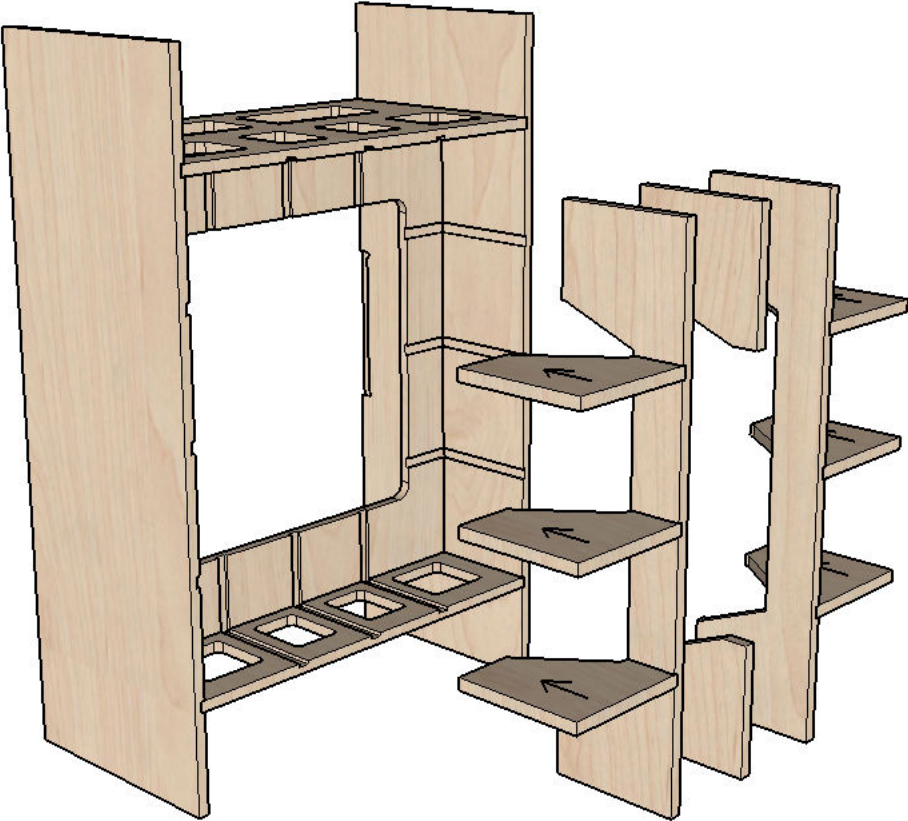
Front view of cabinet

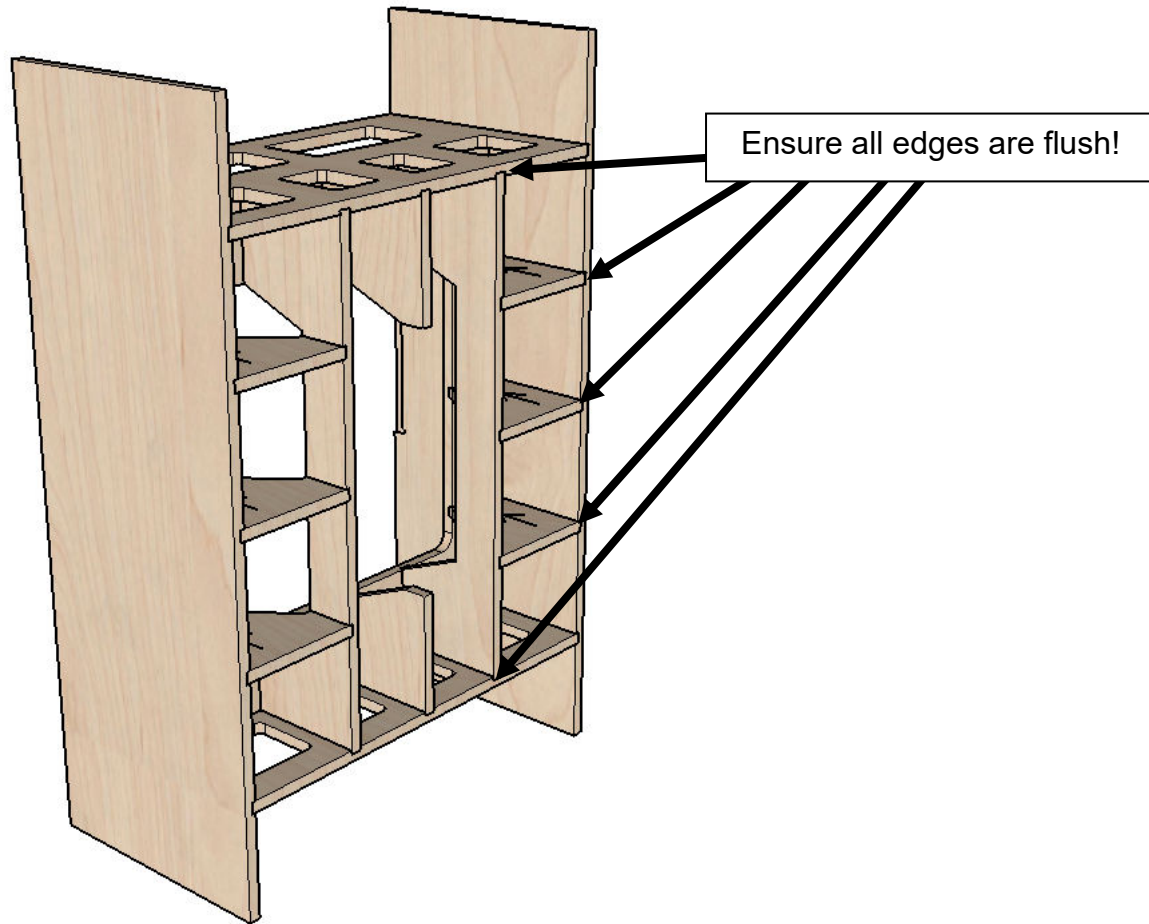


Rear view of cabinet

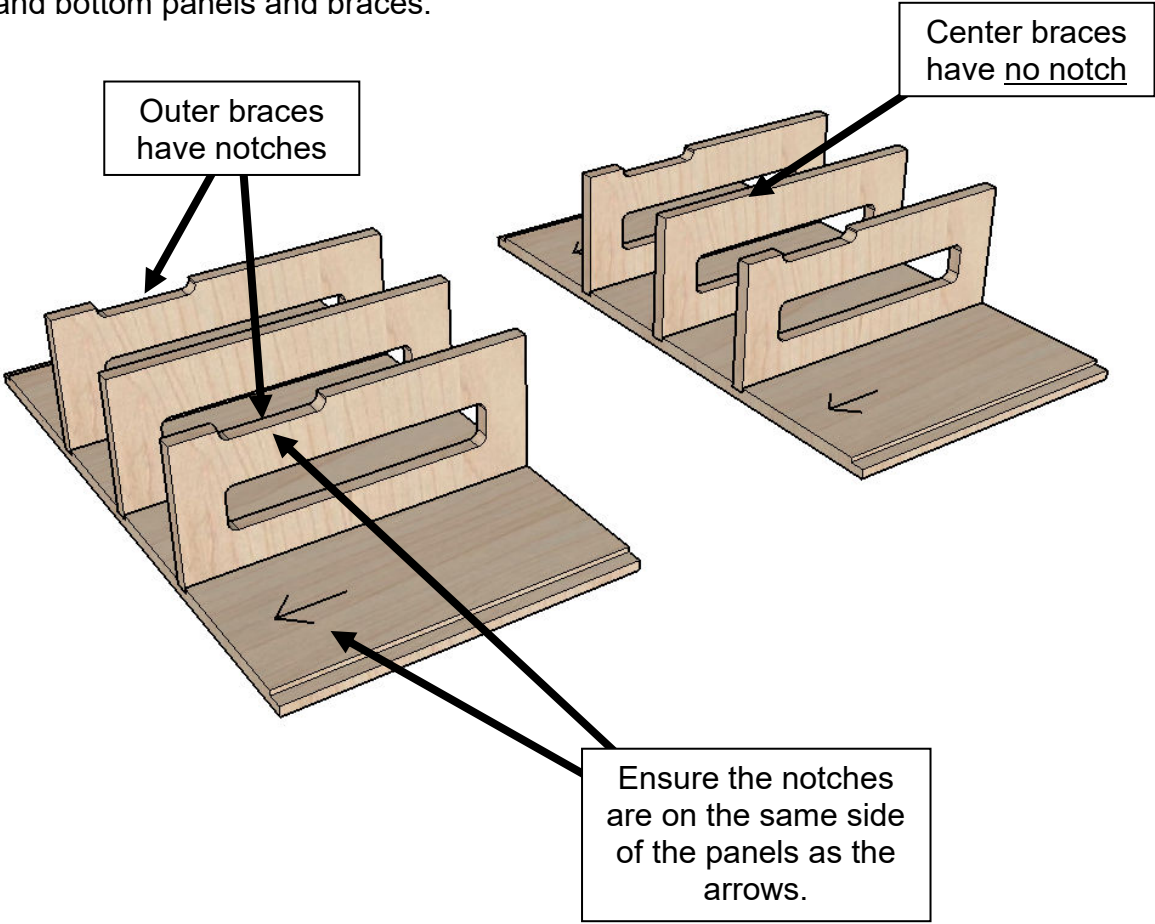


Rear bracing.

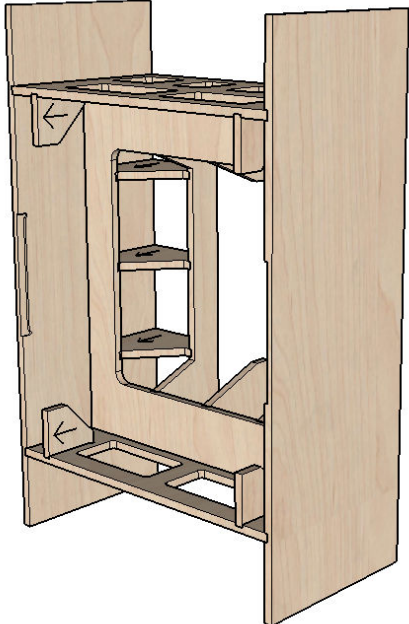
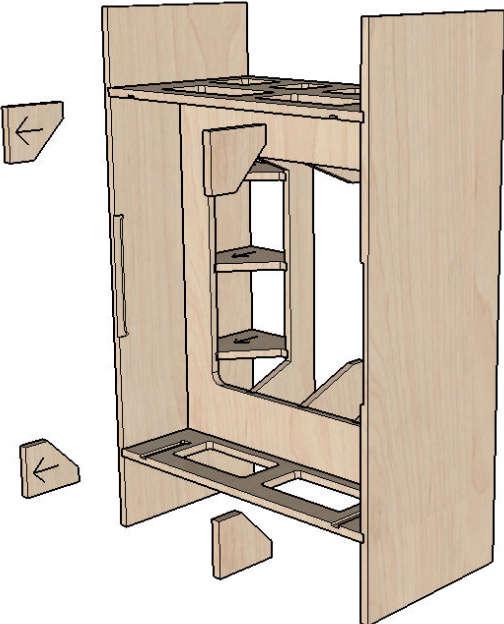




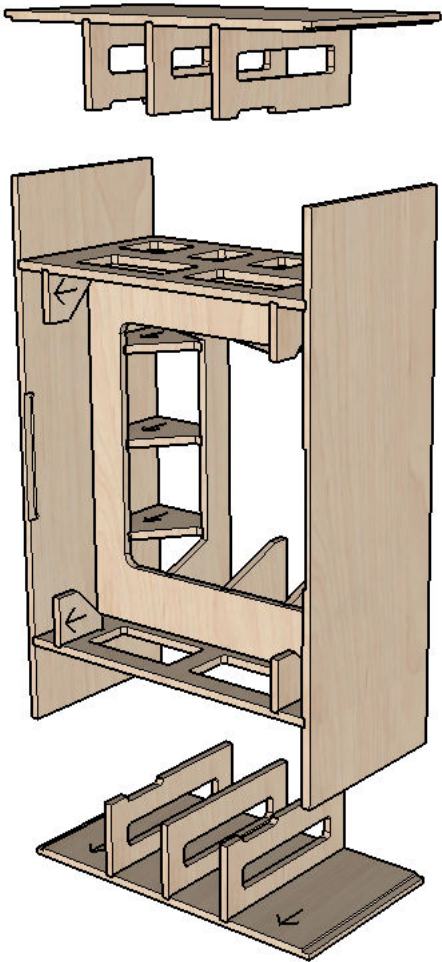
Top and bottom panels and braces.



Small baffle braces.

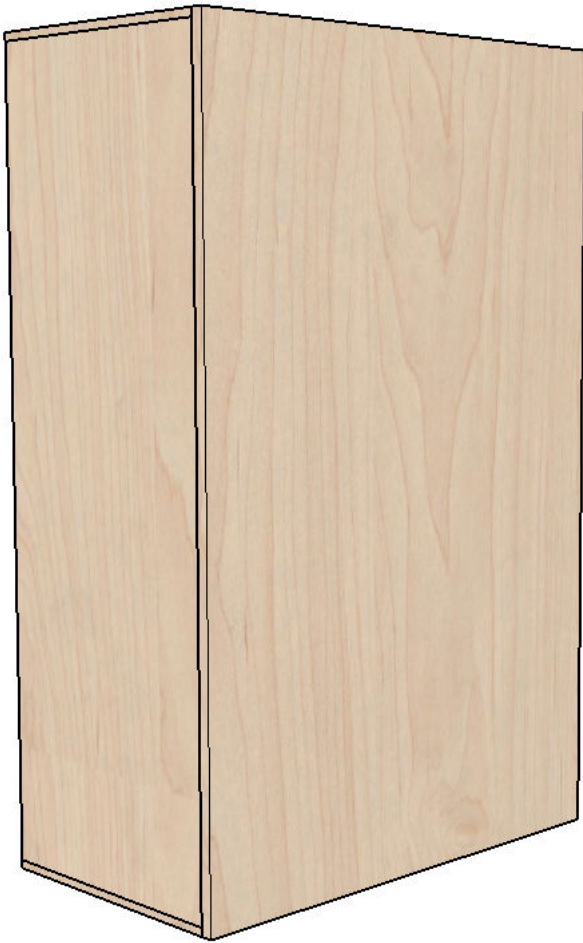


Top and bottom panel assemblies.

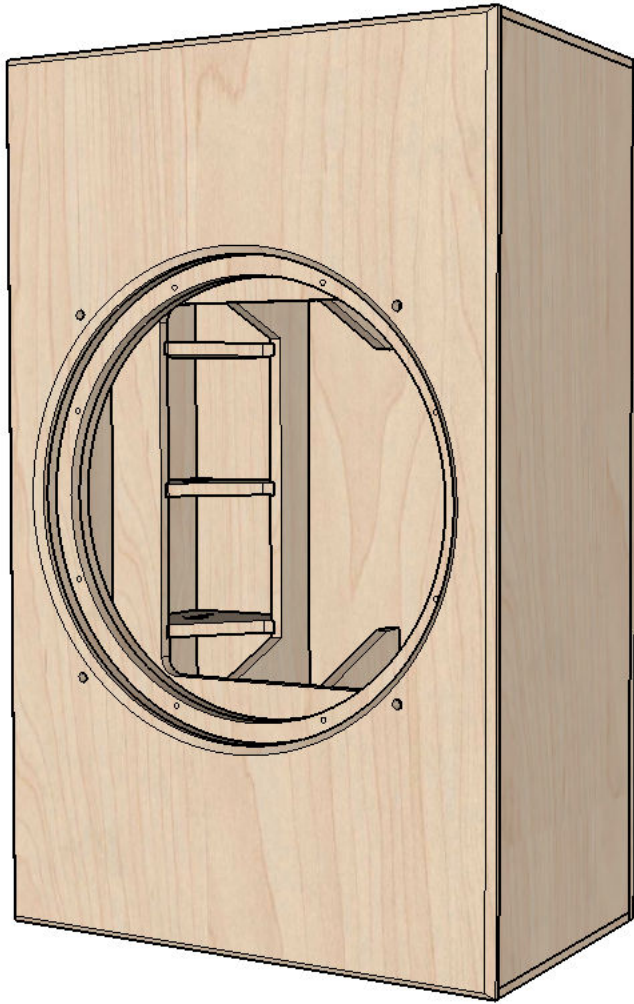




Rear panel.



Baffle assembly.



Assembly complete!

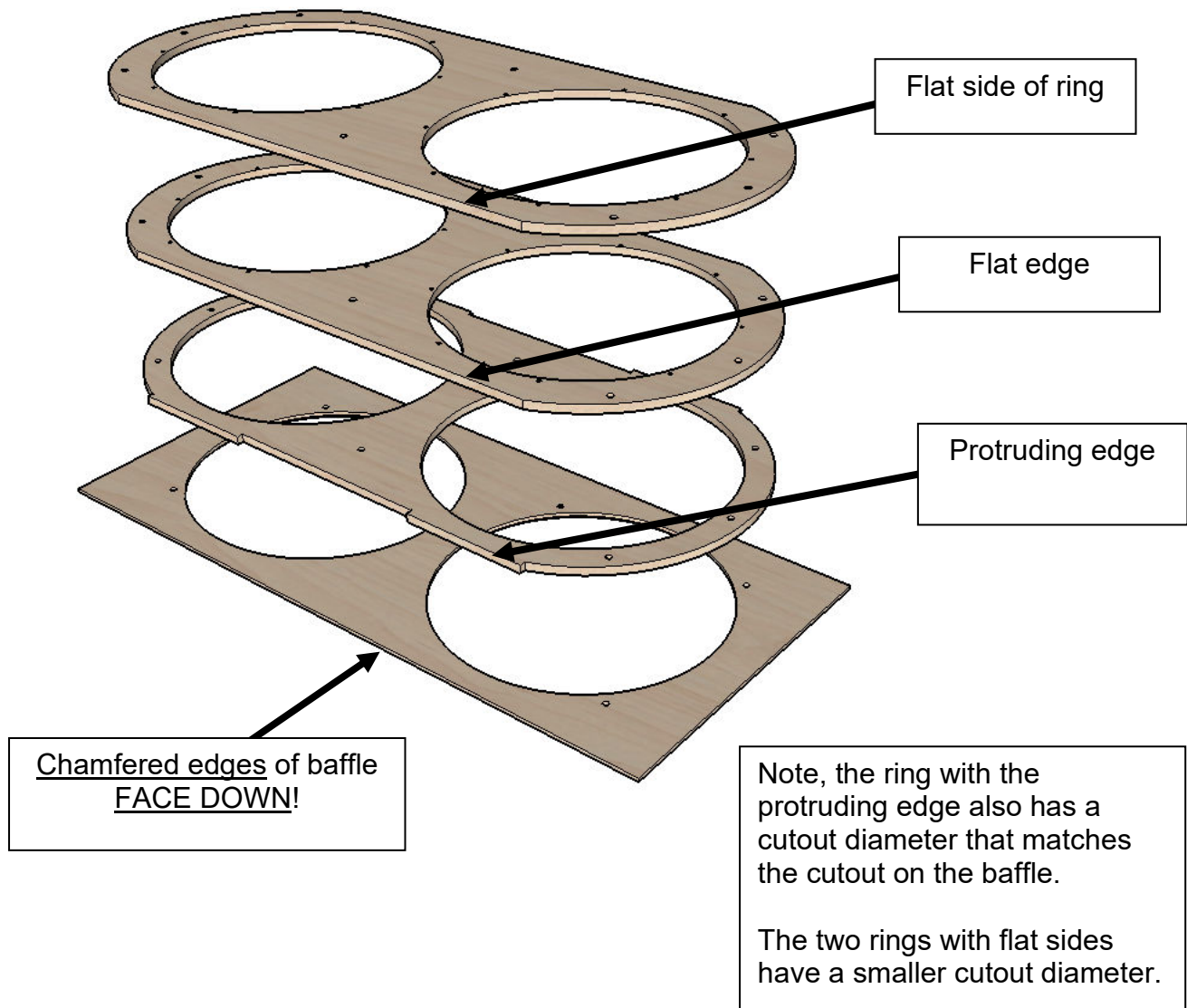
Sealed BTS 60" x 29" x 17" Instructions

Start: Front baffle and woofer mounting rings.

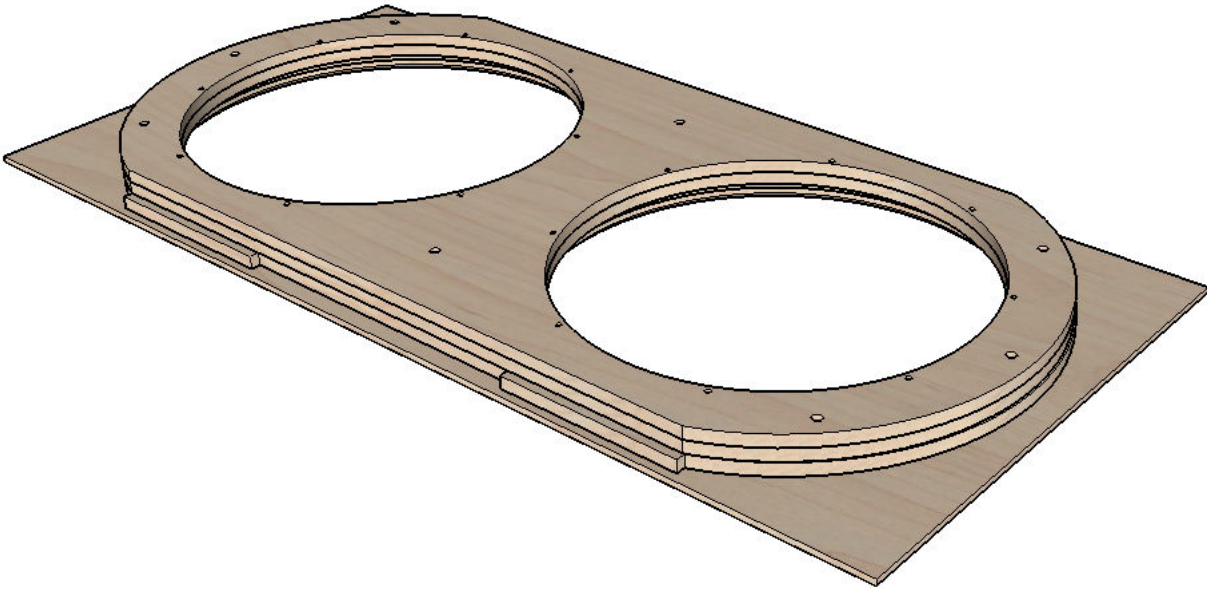
Place the baffle with the chamfered edges **FACING DOWN** on your work surface.

A "chamfer" is a 45 degree decorative that knocks the sharp corner off the board.

The **FLAT** side of the baffle will be facing up.

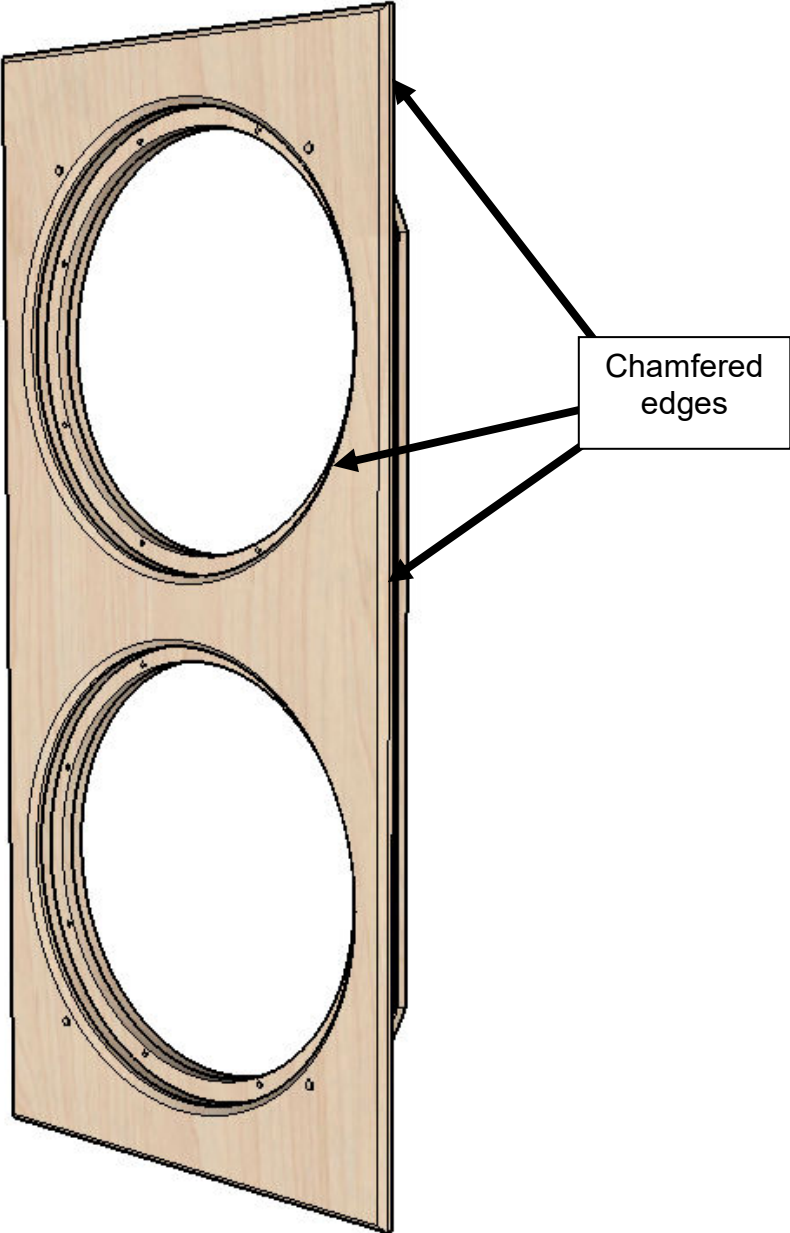


Glue the mounting rings to the baffle with dowels.



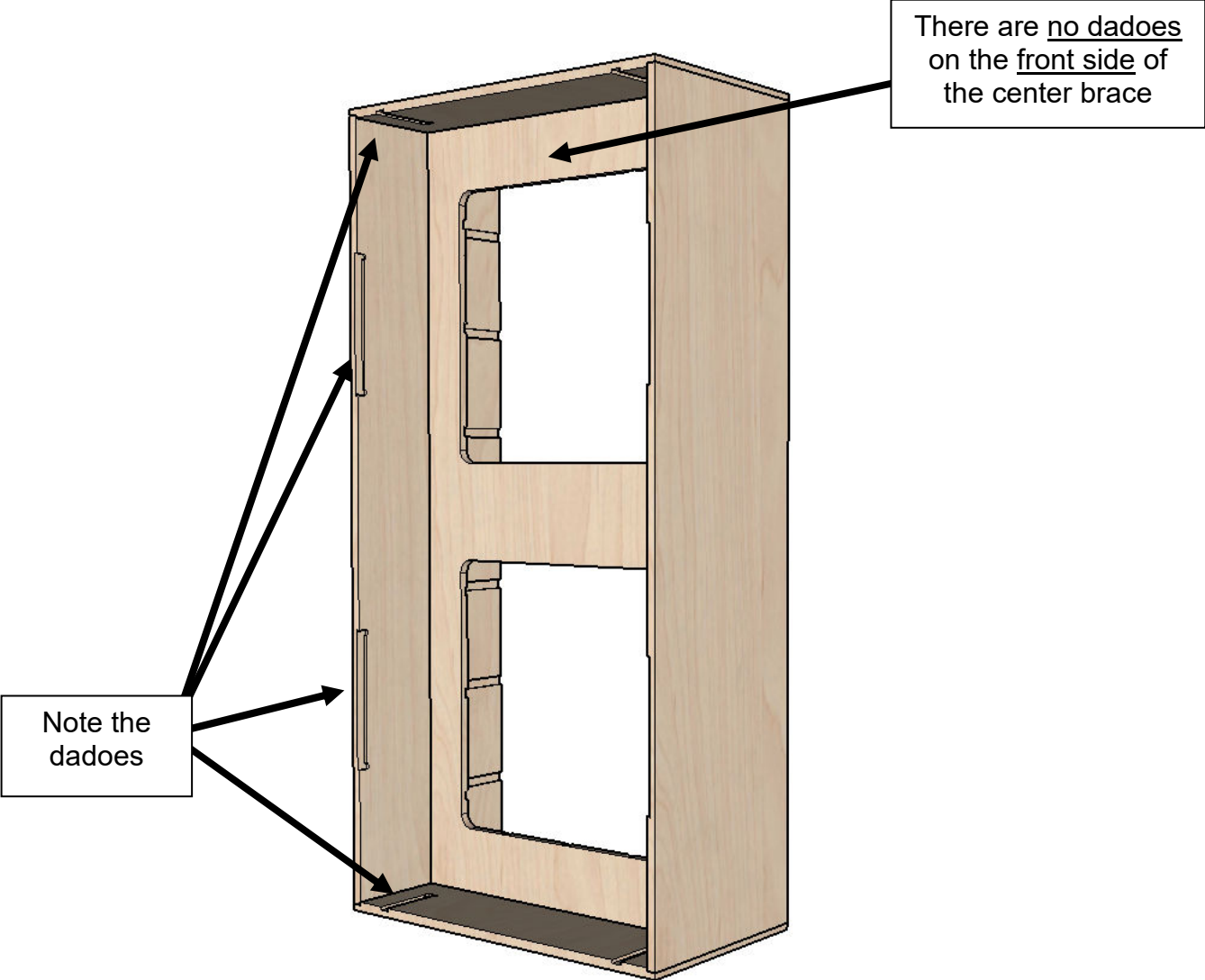
Front of baffle after proper glue up of mounting rings.

The four holes will need to be filled in and sanded at some point.

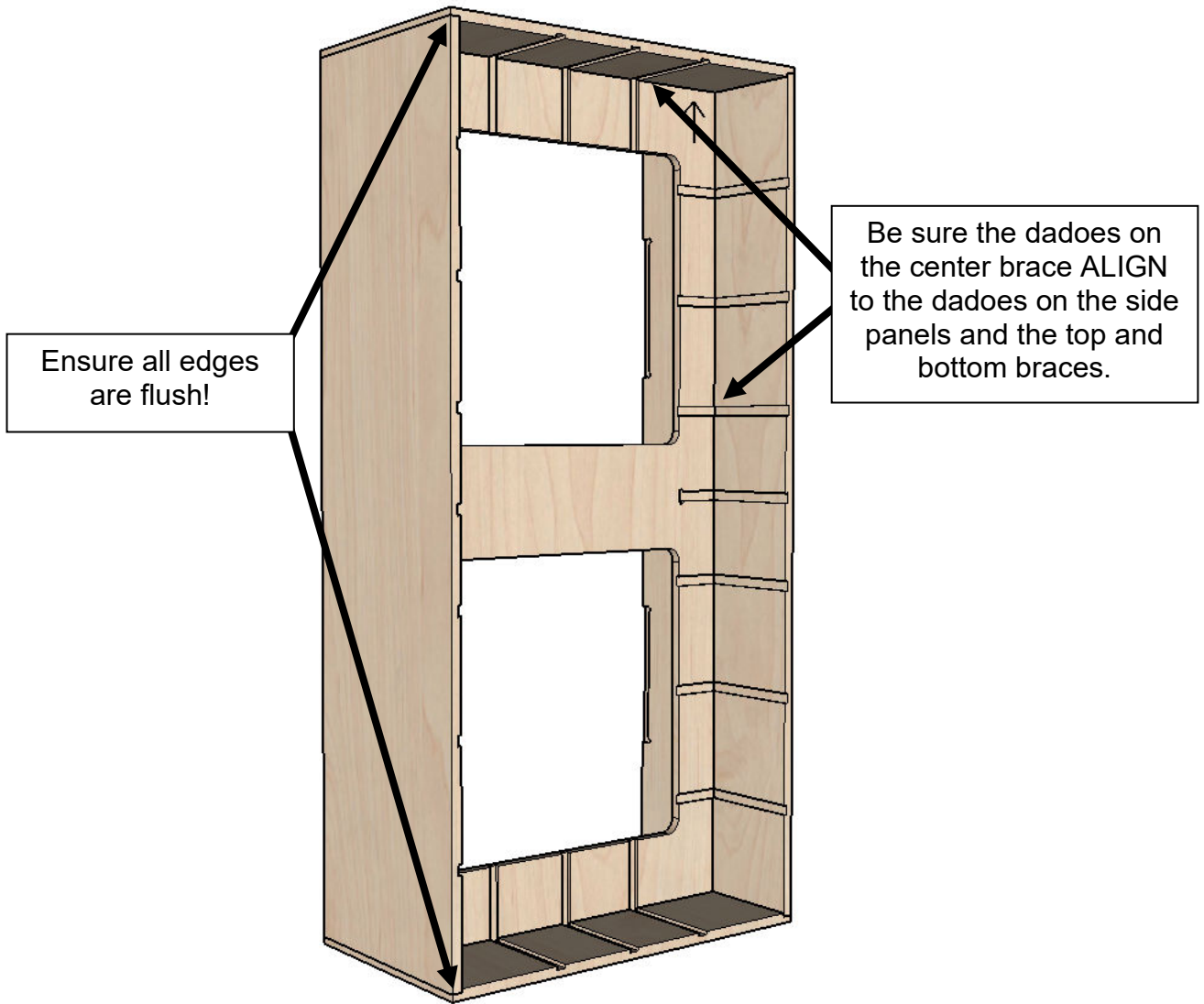


Top and bottom, center brace, and sides.

Front view of cabinet

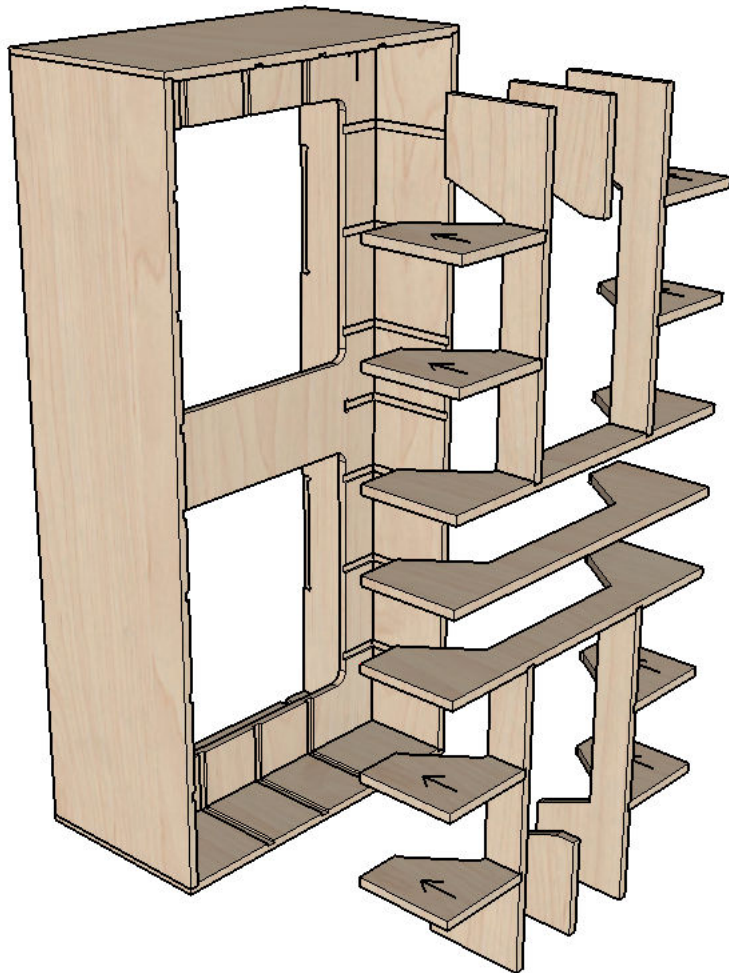


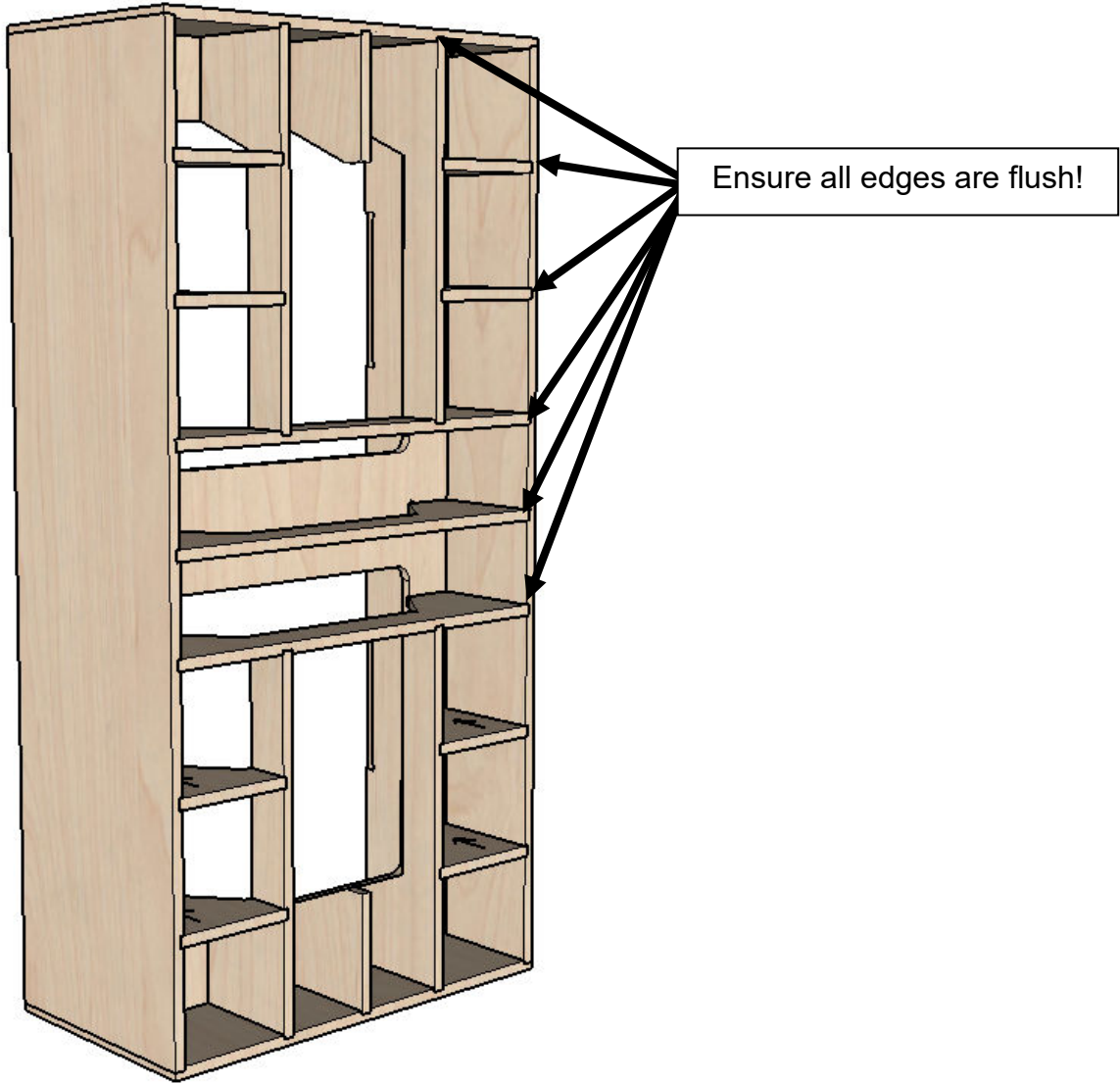
Rear view of cabinet

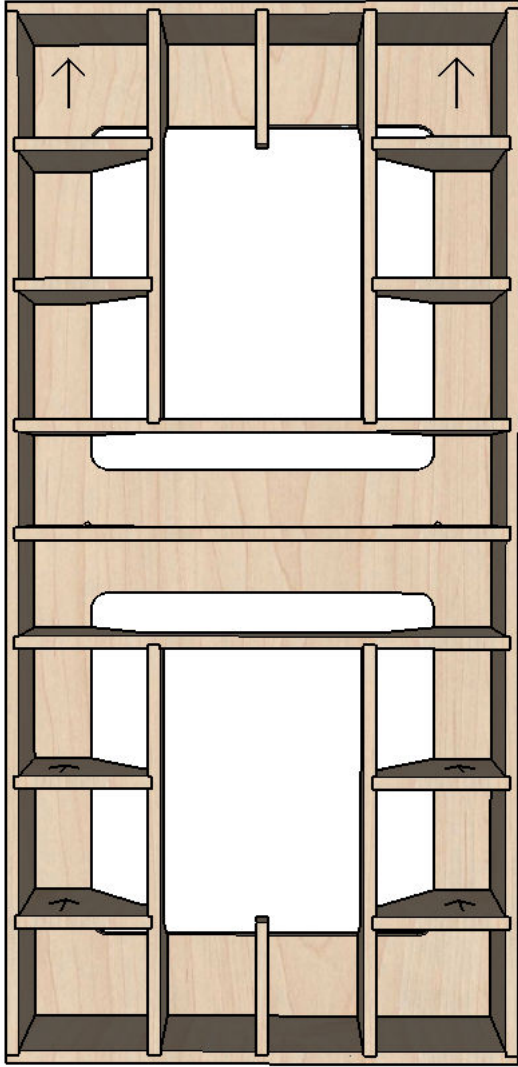


Rear bracing.

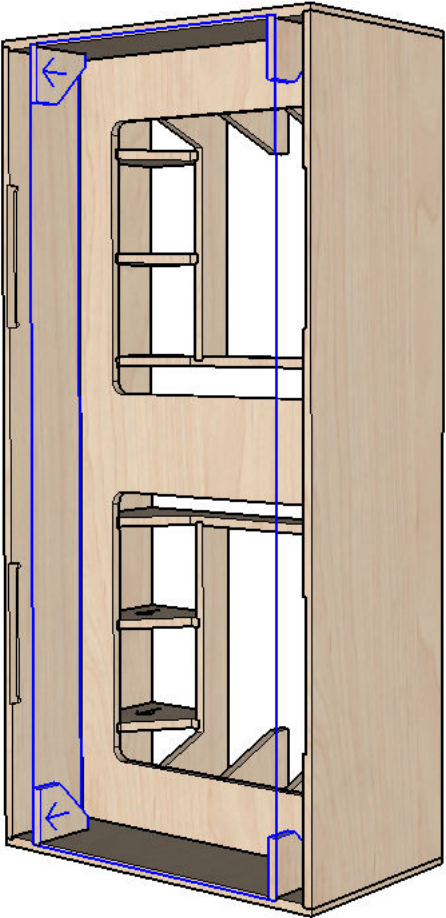
Arrows on the small braces point to front of cabinet.







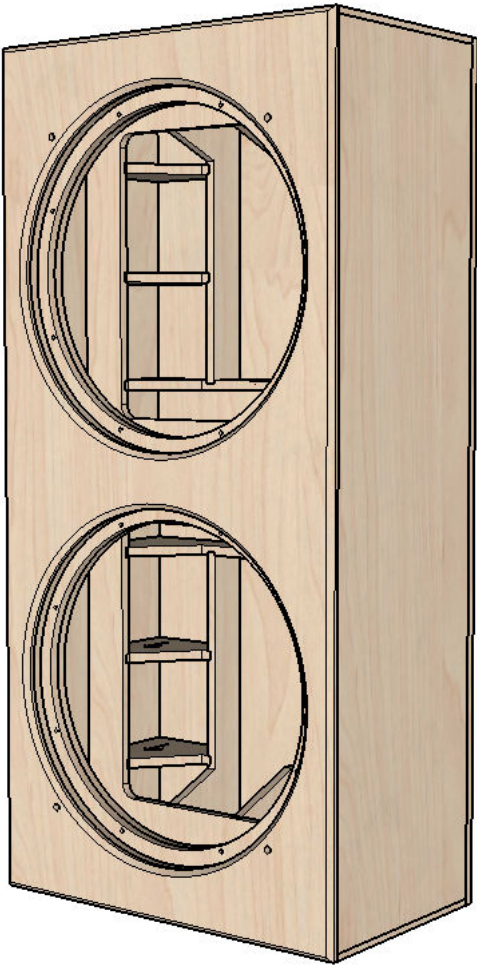
Small baffle braces.



Back panel.



Baffle assembly.



Assembly complete!

Finishing

We recommend the same finishing techniques for this cab as the MartySubs. The GSG-spec flat black paint over 3X primer works great as does Duratex. Of course, how you finish it is up to you! (See the Builder's Guide on the website for paint code and other building supplies).

Securing the Subwoofers

If you plan to stack your BTS subwoofers or are using an upright BTS, please be sure to secure them to the wall behind the subwoofers or otherwise as may be appropriate.

Properly secured, two of these anchors per subwoofer should help keep them in place.

DON'T RISK NOT SECURING YOUR SUBS. THE STRAPS ONLY COST \$10.

<https://www.amazon.com/Furniture-Proofing-Bookshelf-Earthquake-Dualeco/dp/B0874C2782/>



Roll over image to zoom in

Metal Furniture Straps 6 Pack, Furniture Anchors Kit for Baby Proofing, Anti Tip Straps for Cabinet/Dresser/Bookshelf, Earthquake Straps for Safety, Baby Safety Kit by Dualeco

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Color: **Black**

- **【 VALUABLE FURNITURE ANCHORS KIT 】** Dualeco furniture straps kit contains 12 anti tip furniture anchors, 4 outlet cover and 1 screwdriver. The valuable baby safety kit that can help you make a safer home for the baby/pet easily.
- **【 EASY INSTALL FOR BOTH MEN/WOMEN 】** This furniture anchor kit contains 1 screwdriver, 1 vivid detailed manual and all hardware that are needed for installation. Follow the manual, no matter you are men or women, you can anchor the furniture in 5 steps with no hassle.
- **【 400LB VERTICAL PULL FOR HEAVY FURNITURE 】** As the

Before Firing Up Your Sub for the First Time

Be sure to have your high pass filter set up before 'letting her rip'. 😊

Protective High Pass:

2nd order Butterworth, 12dB/Octave, frequency=19-20Hz.

Cautionary note:

It is generally best to avoid constant, full-power, sine waves as these can burn up even the most expensive drivers.

Congratulations again and enjoy!