TITAN MODEL KITS

1:48 B-2A Spirit
Assembly Guide

Thank You for Purchasing a Titan Model Kit!

I'm Chris and I own Titan Model Kits. First and foremost, I'm a modeler. I created these kits simply because I was tired of waiting for someone, someday to create the kits that I wanted. I created this brand to share my model kits with fellow builders.

If you have questions during your build, drop me an email and I'll try to help. If you discover any missing or defective parts, let me know and I'll get replacements to you. If you royally screw something up while building, let me know and I'll do my best to get you replacement parts.

I'm always looking for ways to improve my products. If you have feedback, good or bad, please contact me and let me know your thoughts.

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https://www.facebook.com/TitanModelKits

Titan Model Kits are intended for experienced intermediate to advanced adult scale modelers. Kits will require you to measure, mark, cut, scratch-build, and modify various pieces. Builders are cautioned to review the assembly instructions in their entirety prior to beginning any work. These instructions are provided only as a guide. You may choose to alter the sequence of steps, change techniques, or omit steps at your discretion. You will find the following tools useful in your build: hobby knife, dial calipers, ruler or measuring tape, drill with various bit sizes, rotary tool (Dremel or equivalent), sand paper of various grit, sanding block, styrene model cement (solvent based), 2-part epoxy, and cyanoacrylate glue (Superglue or equivalent).

Assembly instructions may contain images that do not correspond precisely to the physical kit parts. Physical parts are in a state of continuous improvement and you may have earlier or later versions of an individual part than what is shown in the assembly instructions. The images are intended to provide you with general orientation only. Additionally some images are general in nature and are used to illustrate concepts which are common to multiple kits.

Screenshots of CAD models are used for concept illustration only and the images may contain elements that may or may not be present in the physical parts. For instance, cabin window and door outlines are shown in these images to help in visual orientation and are not necessarily present in the physical parts. Screenshots may omit adjacent parts for clarity.

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I. PARTS PREPARATION

VACFORM PARTS

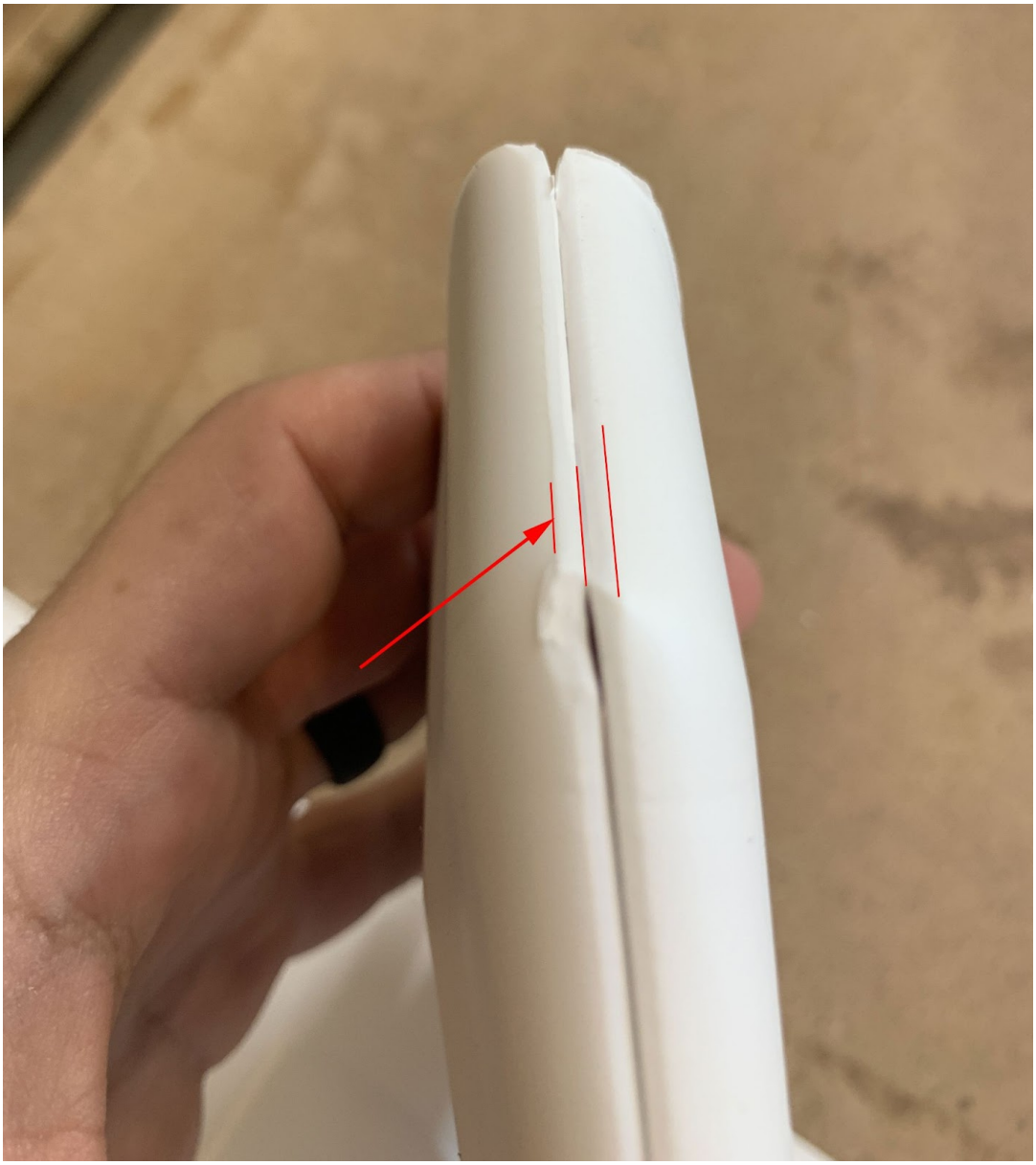
The fuselage halves, wing halves, and sometimes other large parts are vacuum formed from sturdy high-impact polystyrene plastic (HIPS). Vacformed parts are white in color. HIPS is very similar to the plastic used in injection-molded kits. Vacformed parts must first be cut out with a sharp knife prior to assembly. Vacformed parts can be glued together using solvent-based model cements that chemically weld the parts together. This is the same way that you're accustomed to assembling an injection molded kit.

Remove Parts From Sheet:

Carefully remove the parts by cutting along the silhouette of the part with a sharp utility knife. You may find it helpful to mark the cut lines with pencil prior to cutting. Always cut from the top of the parts, never from the bottom. Multiple shallow passes will always yield a better result than trying to cut through on a single pass.

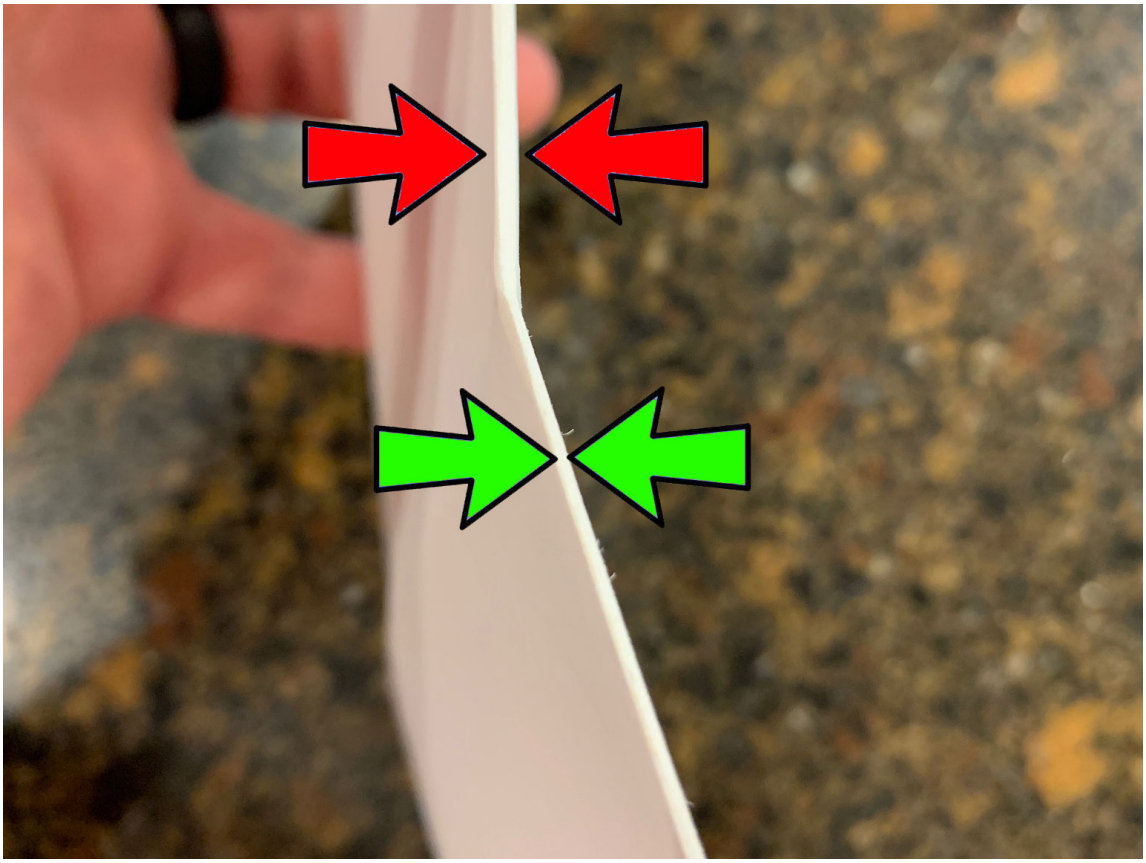
Remove Stock Thickness:

Once parts are cut away from their sheet they will still need to have the sheet thickness removed from them. As can be seen from the below photo, the .080” sheet thickness between the red lines should be removed. Coarse sandpaper in a sanding block is recommended to remove this material. Work slowly, checking progress often.



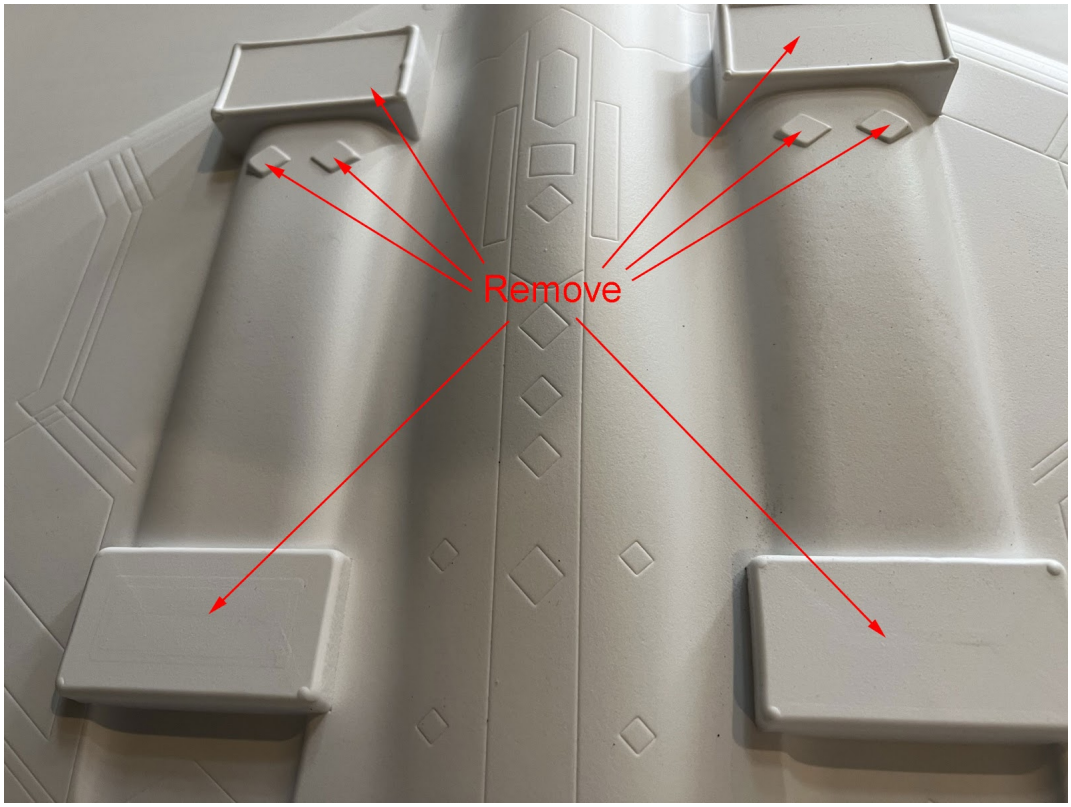
Thin Trailing Edges:

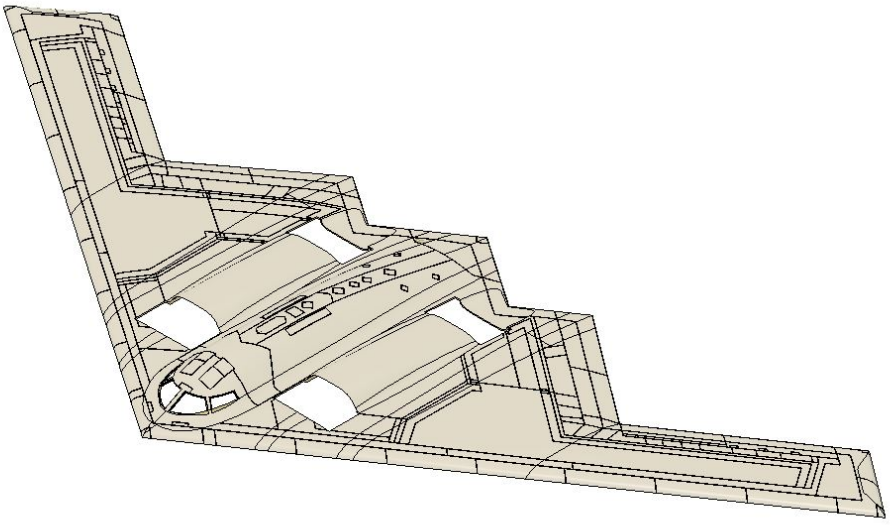
As delivered, the trailing edges of the wings and tail parts are the thickness of the plastic sheet used to produce them. If left alone, assembling raw parts will result in a trailing edge that is too thick for scale. Using 220 grit sandpaper, thin all trailing edges from the .080” material thickness to approximately .010”. Work slowly, checking thickness and consistency as you go. This will result in trailing edges that are more “to-scale”



Cut out intake and exhaust mounting holes and aux air intake holes:

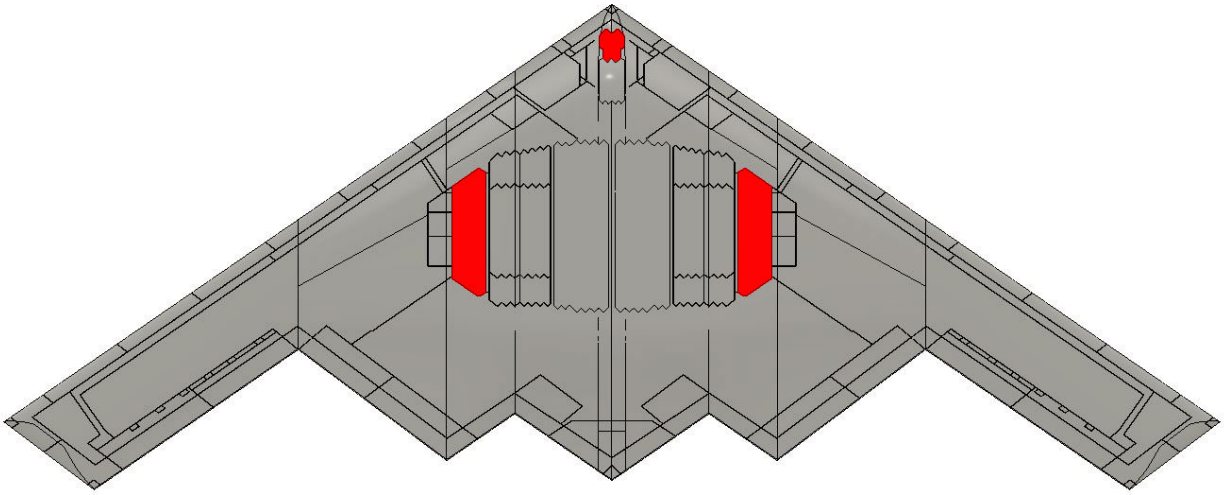
Remove material slowly and carefully, checking part fit as you go. Always verify and re-verify part fit in order to avoid cutting away too much material.





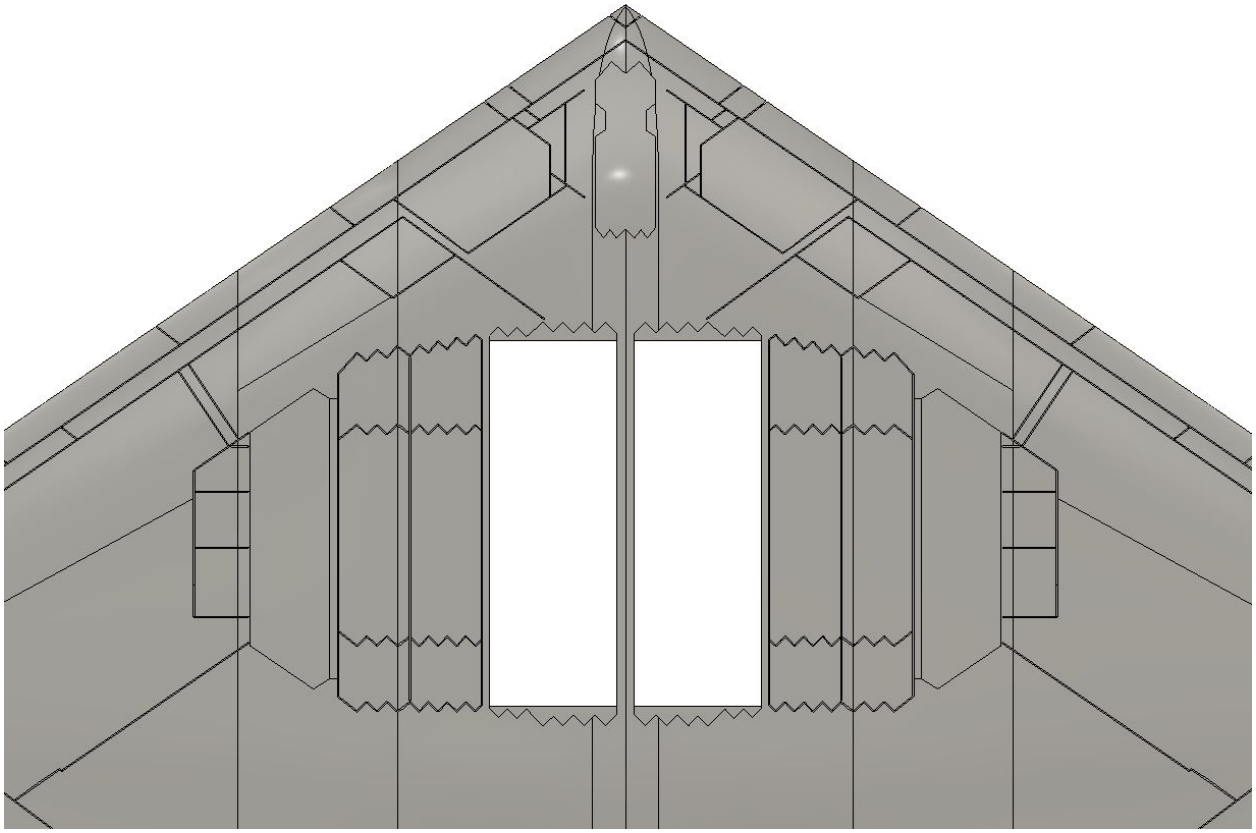
Landing Gear Cutouts:

Check the fit of the resin wheel wells against the vacformed part before cutting to ensure that you don’t remove too much material.



OPTION: Bomb Bay Cutouts

Check the fit of the resin bomb bay against the vacformed part before cutting to ensure that you don't remove too much material. **Exercise caution as the molded-in serrated front and back of the bomb bay doors should not be removed.**



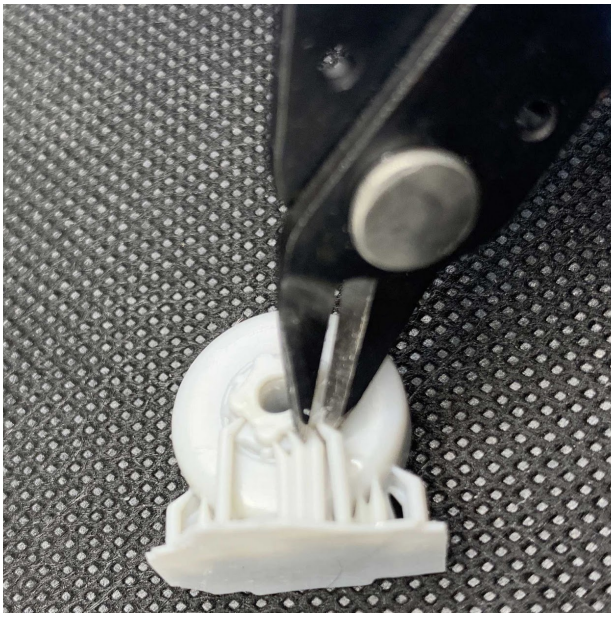
RESIN PARTS

Titan Model Kits' ultra-high-resolution 3D printed parts are made from UV-cured resin and have similar hardness and strength to cast resin. 3D printed parts are grey in color. They are typically much lighter in weight than cast resin parts. To assemble 3D printed parts and to attach 3D printed parts to vacformed parts, use cyanoacrylate (Superglue) or 2-part epoxy. Solvent based model cements will not work.

3D printed parts are composed of discrete layers that can be up to 32 microns thick. While every effort is made to minimize the visibility of the layering, you may see small step-marks on the part, particularly on large, smooth, curved surfaces. We recommend that you first prime the part with a high-quality primer. When the primer is dry, wet-sand to even the surfaces. Usually just a few minutes with a wet-dry sandpaper (from 320 to 600 grit) is all that is required. Don't worry, you are unlikely to sand away panel lines or details. On smaller, more detailed parts any visible layering pattern can usually be eliminated with a few coats of a high-quality spray primer.

Remove Support Columns

The 3D printing process uses resin support columns during printing. These supports are made of the same resin as the part. Depending on the part, you may need to remove some of these supports. Carefully remove the supports with sprue cutters, utility knife, or cuticle scissors. Twisting and pulling is likely to damage the part. Depending on the geometry of the part, the supports may leave small dimples on the part surface where they were attached. Lightly wet sand these areas

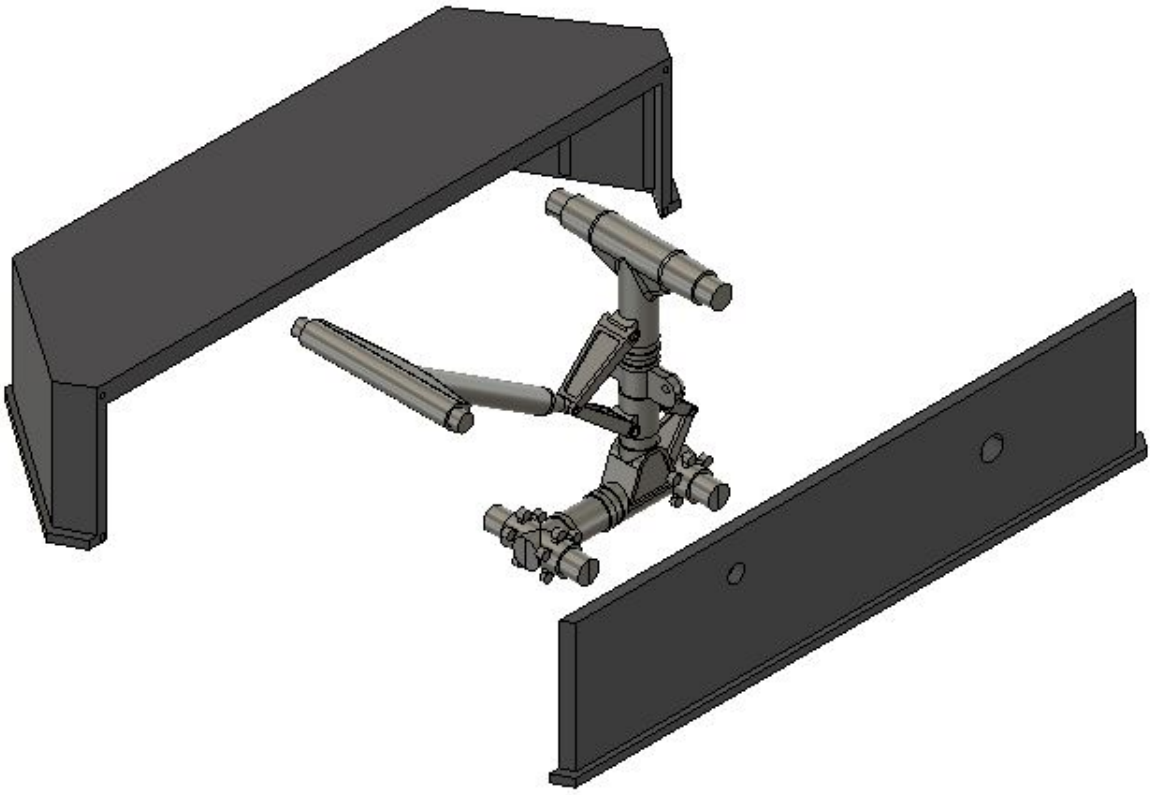


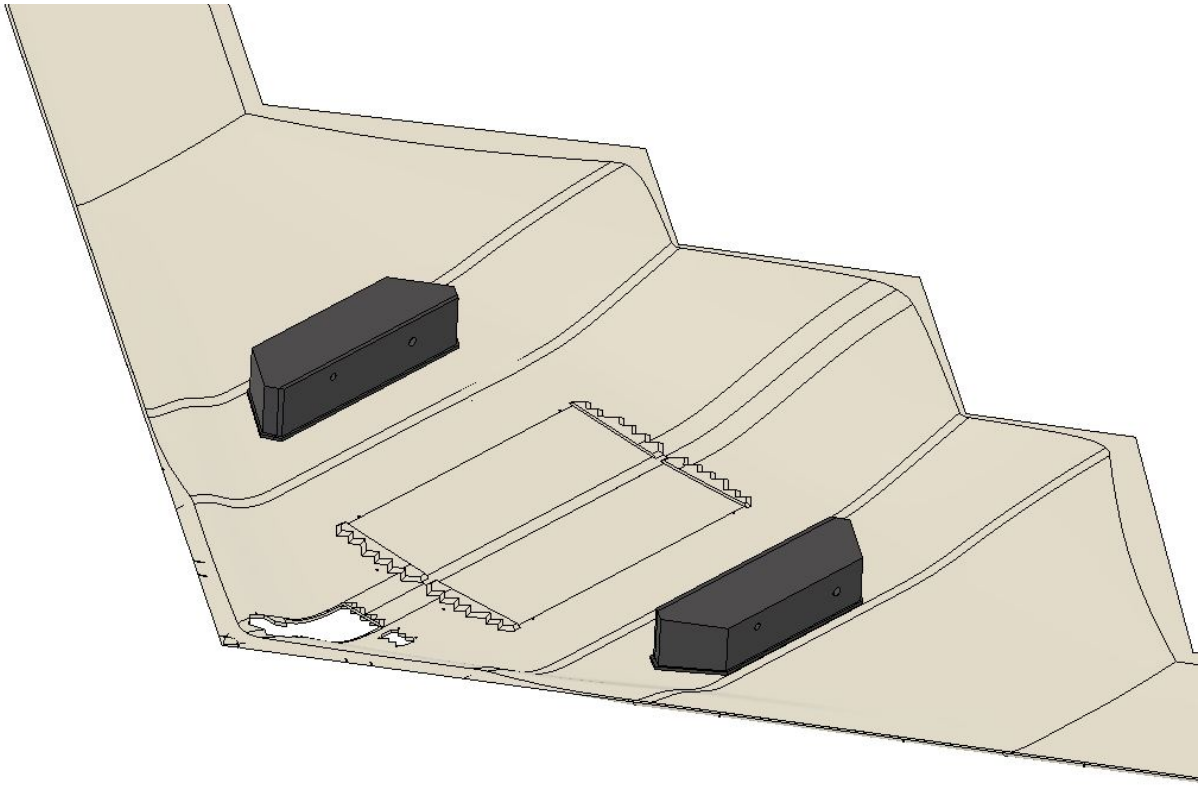
ASSEMBLY

General

Vacform parts should be glued to one another using solvent based ‘glue’. 3D printed parts should be glued to one another and to vacformed parts using cyanoacrylate (Superglue or equivalent) or 2-part epoxy.

Install wheel wells





Pro Tip:

The strongest joint is a chemically welded styrene-to-styrene joint–one that is glued with solvent glue. For extremely strong construction use scrap styrene to ‘wrap’ your wheel wells. This can be done before installing them, or after and can be done for both the main wheel wells and the nose wheel well. The goal is to make a styrene box to contain the resin part and take stress off of the resin-styrene joint.

*concept is illustrated with a photo from the 777 kit but the procedure is the same here

Install Engine Intake and Exhaust

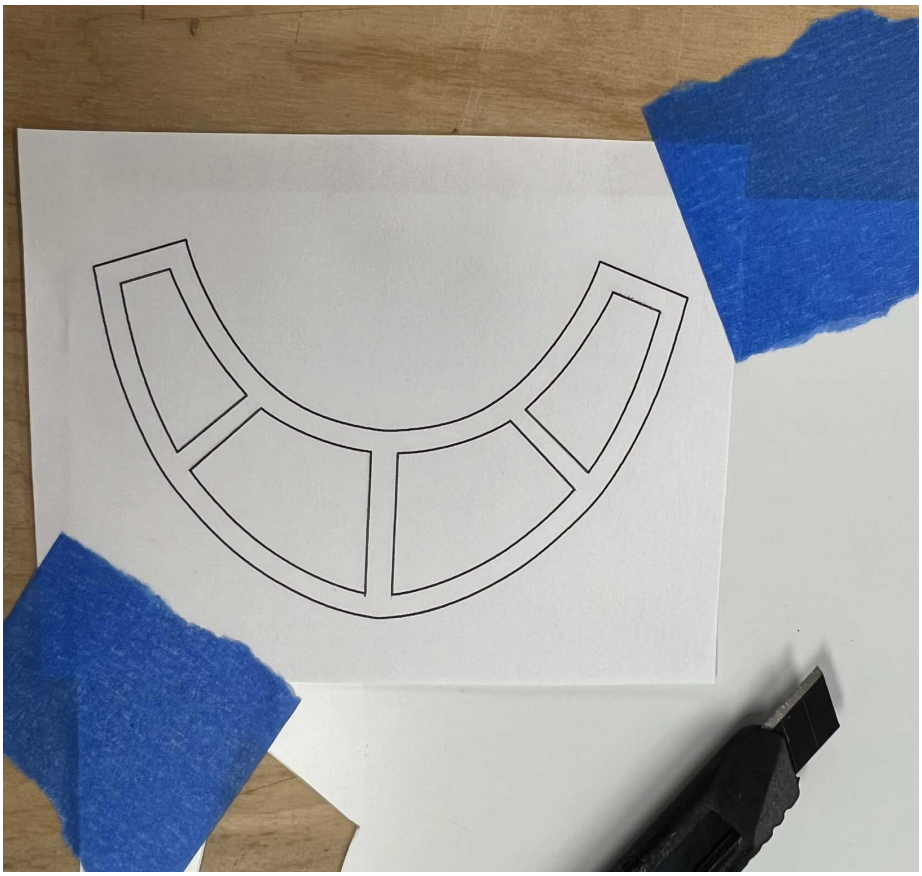
Install the engine and exhaust parts from the underside of the wing top.

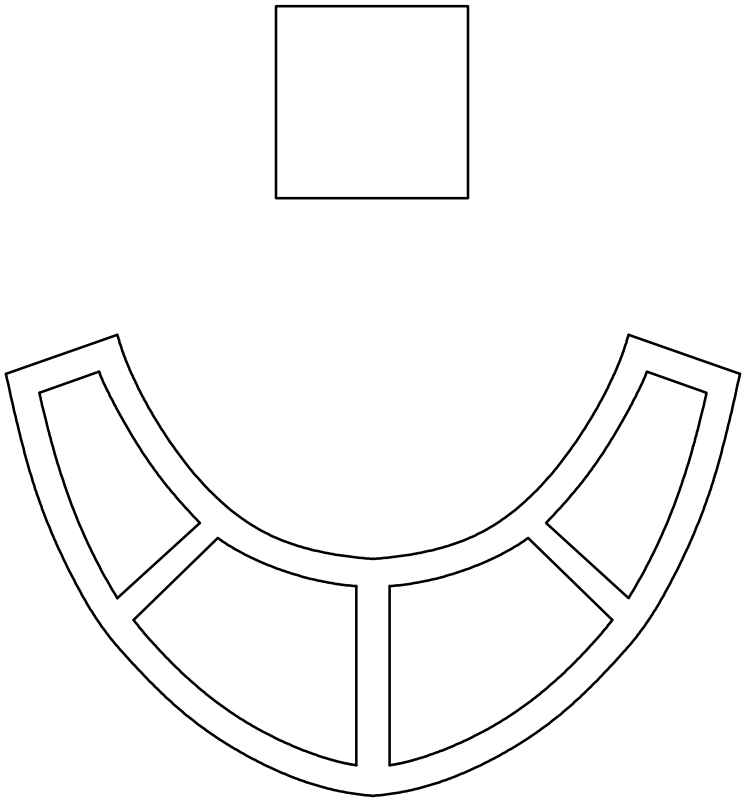
OPTION: Install Clear Cockpit Windows

Installing the clear cockpit windows is generally the most challenging step of the build. There are several ways to tackle this and each builder will have his preferred way. **Two clear window pulls are included in your kit to allow you to test and experiment with your approach.**

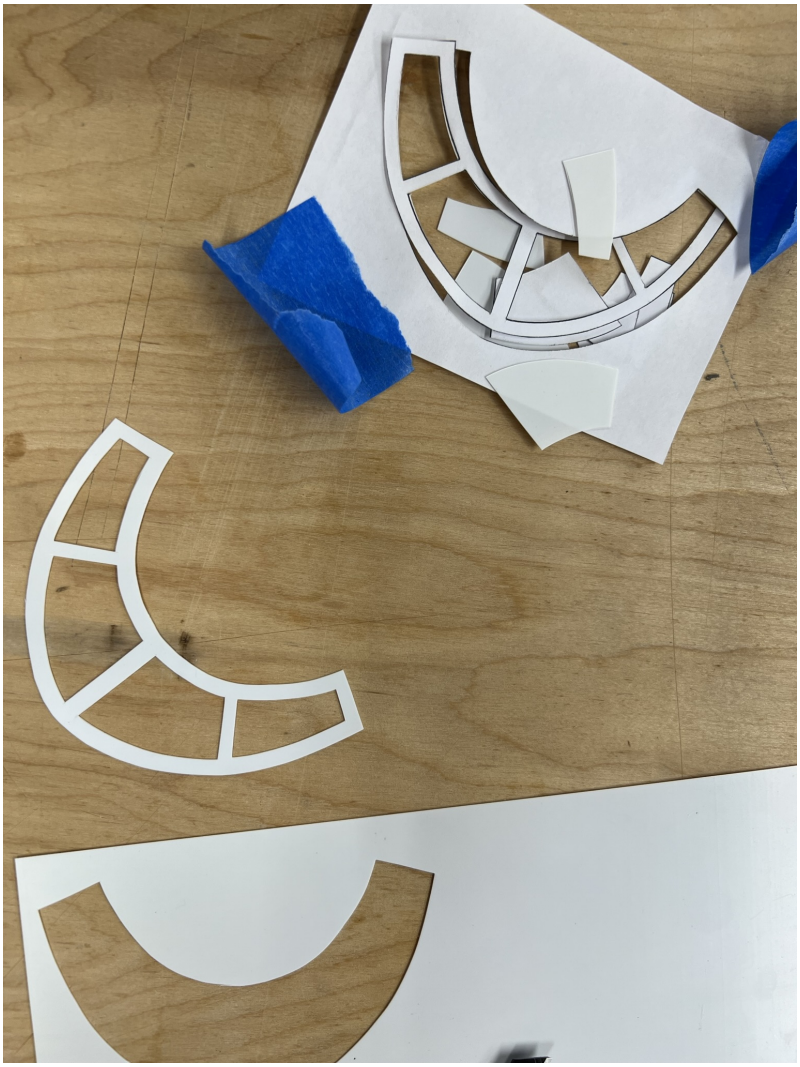
Below is my preferred way to prepare and install the cockpit windows.

Using the template on the next page, cut out two window frames from polystyrene sheet stock–one can be made from .010” thick stock and the other from .040” stock. If necessary, use the 1 inch x 1 inch square on the template to help you scale the printed page.

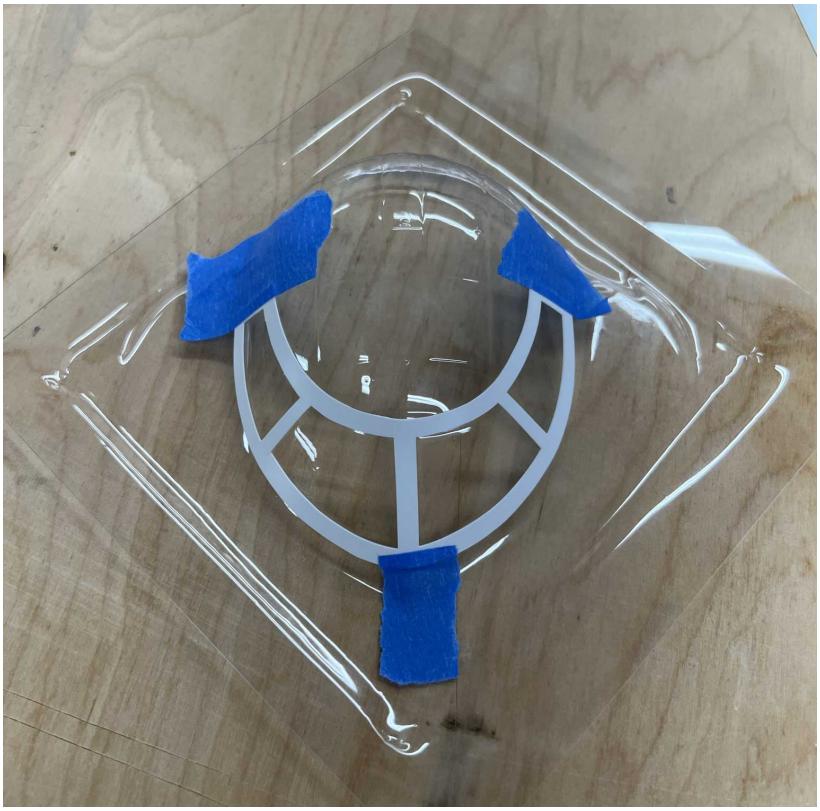




	PROJECT 1:48 B-2 Spirit				
	TITLE Window mask				
APPROVED	SIZE A	CODE	DWG NO		REV
CHECKED					
DRAWN Chris Rodak 9/2/2022	SCALE 1:1		WEIGHT	SHEET 1/1	

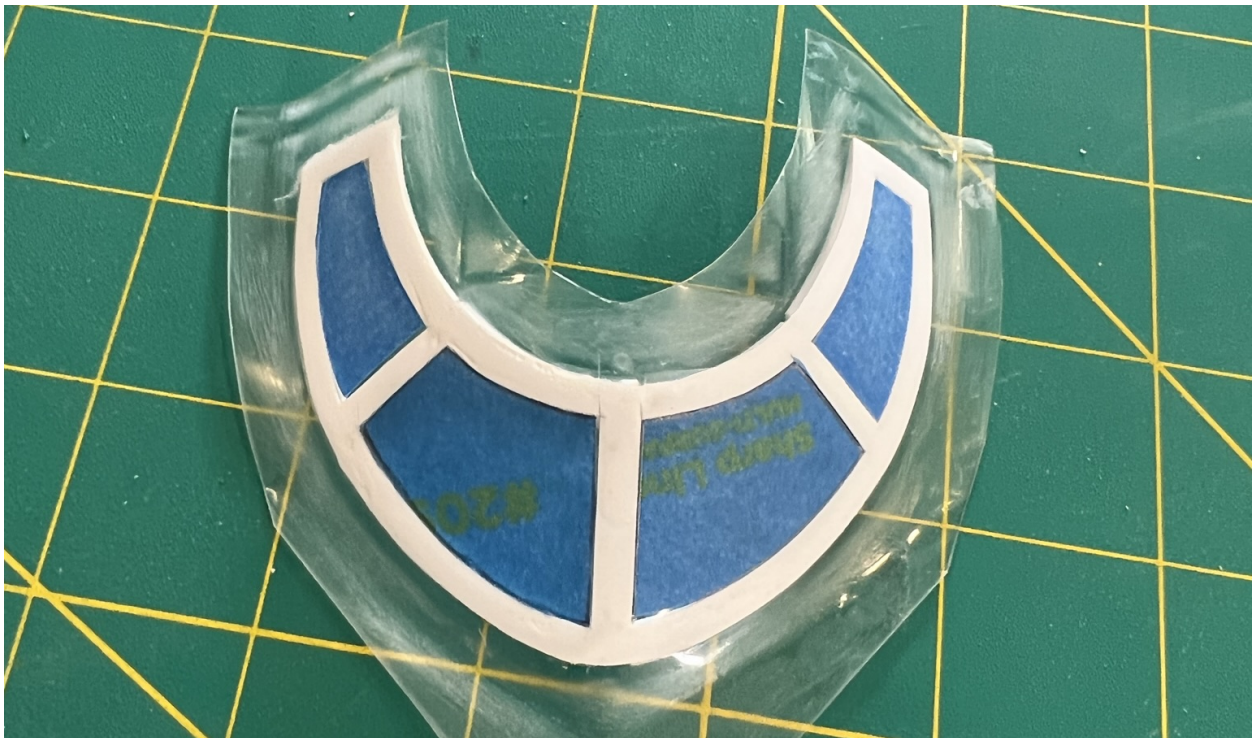


Glue the .010” frame to outside of the clear windows using plastic weld-type cement.** Let this dry thoroughly.



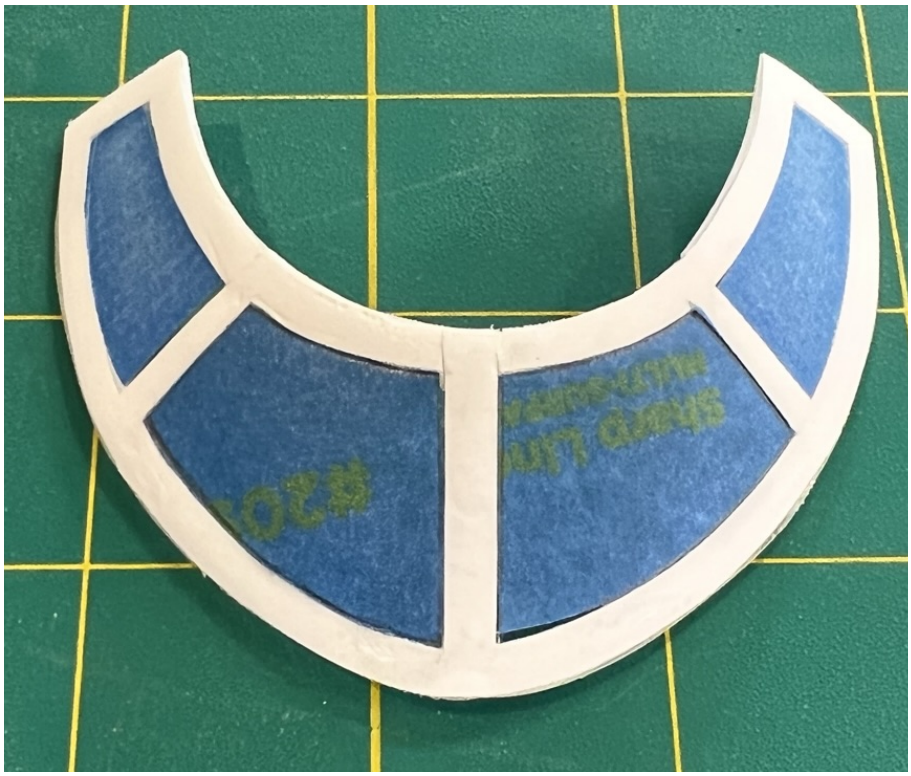
*** The clear plastic is PETG. Not all weld-type cements will bond styrene and PETG. This will depend on the solvent that forms the basis of your glue. Always check to ensure that your particular cement or glue will bond the styrene sheet to the clear plastic by testing in a corner of the piece prior to attempting assembly. If it doesn’t work, choose another type of glue or use 2-part epoxy.

When fully dry, mask the windows to protect them.

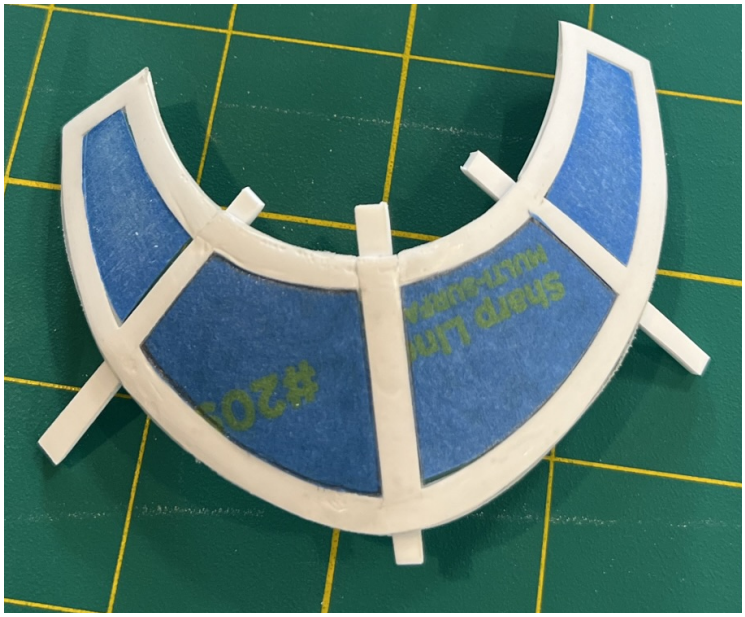


Glue the .040” frame to the inside of the clear windows.

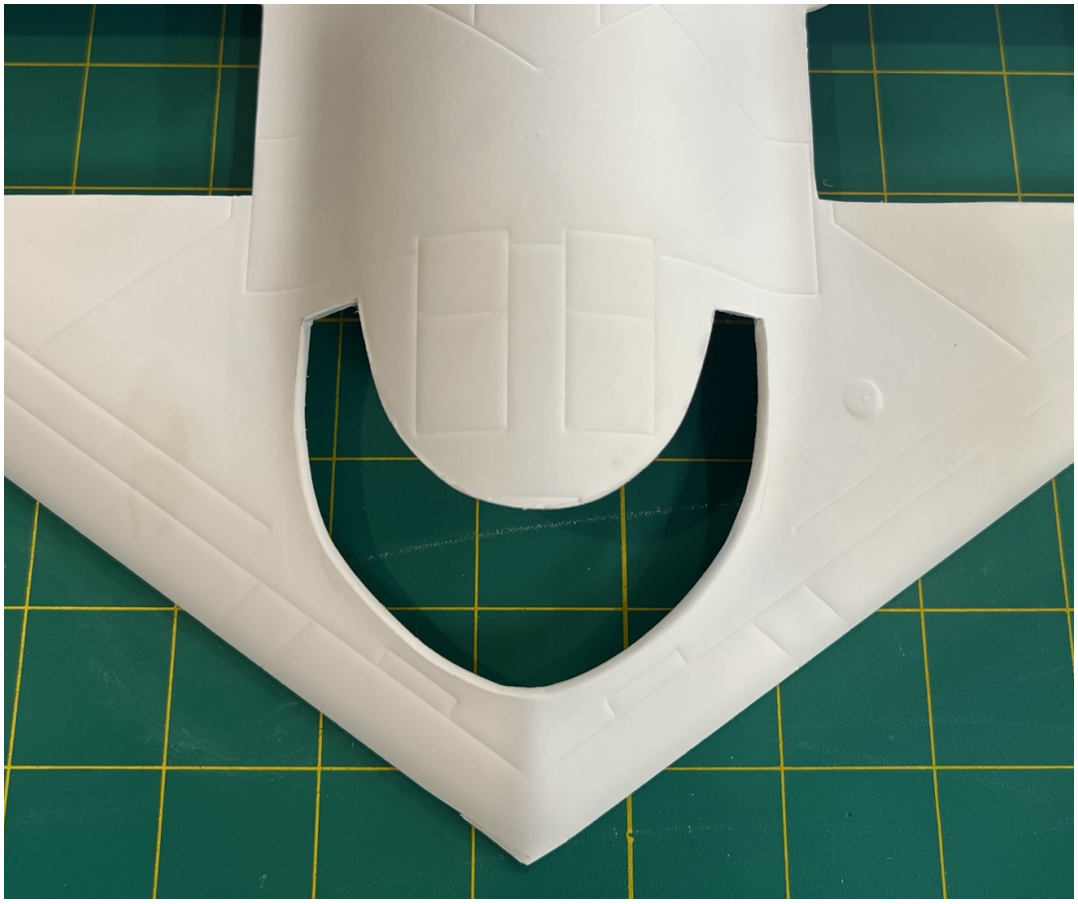
When the glue is fully dry, mask the inside of the windows to protect them. Then cut out the window assembly as shown.



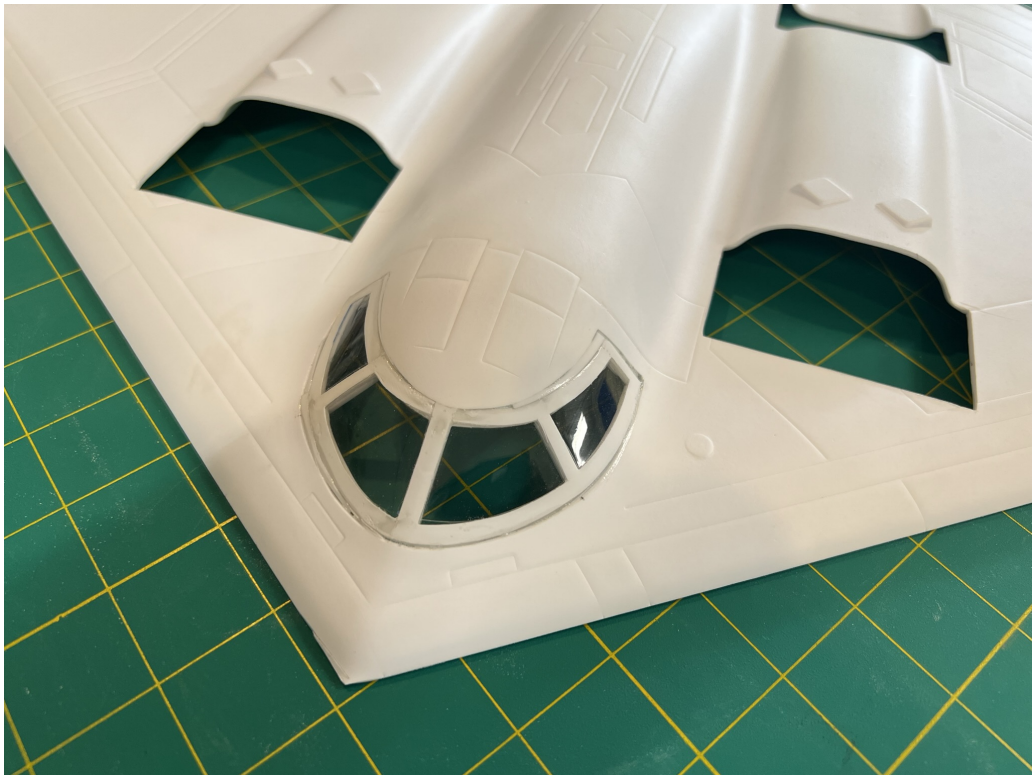
Use more scrap styrene to add internal bracing inside of the windows at the window posts.



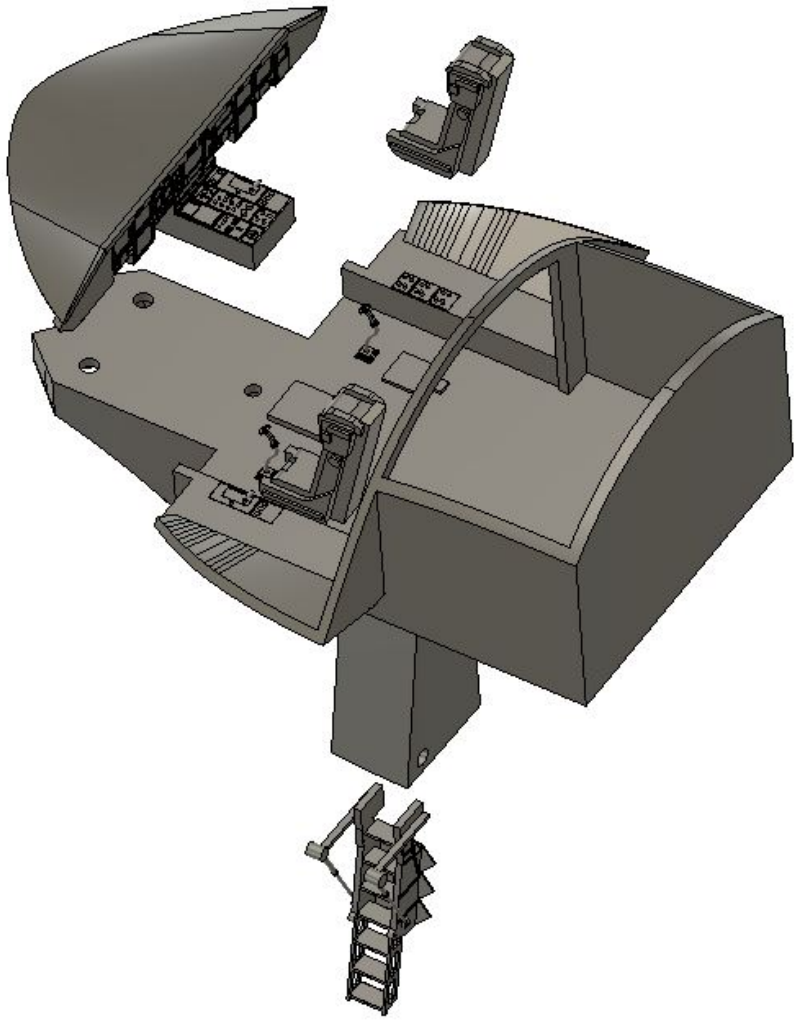
Use the same template to carefully remove the window and frame area from the vacformed upper fuselage half.



Cement the window assembly in place and blend the seam by sanding.



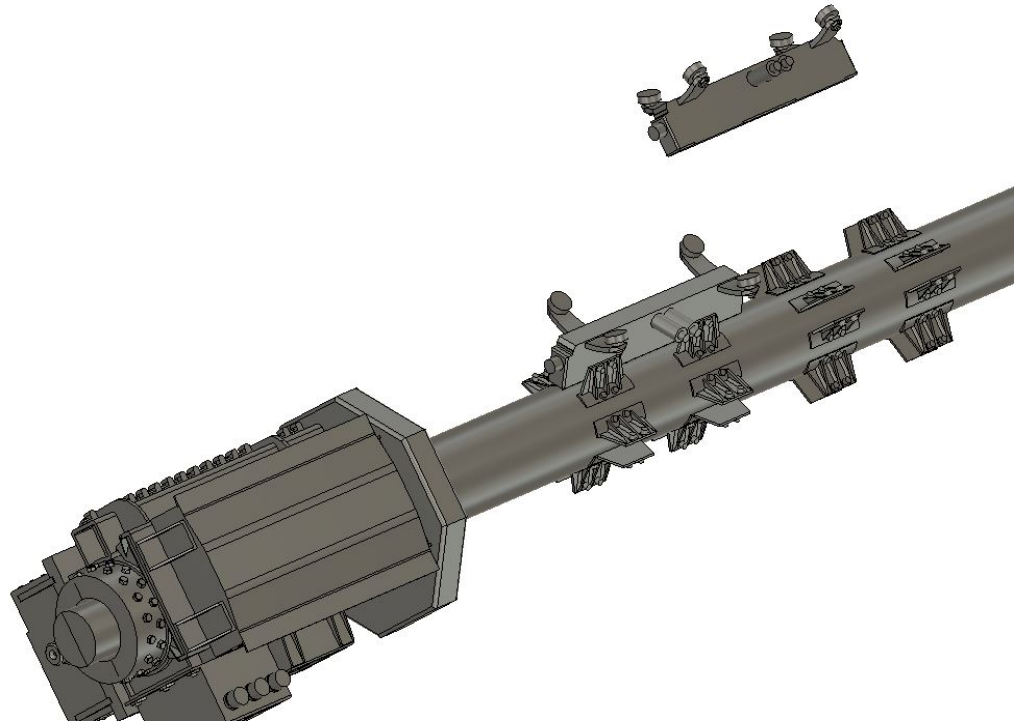
Assemble and Install Cockpit

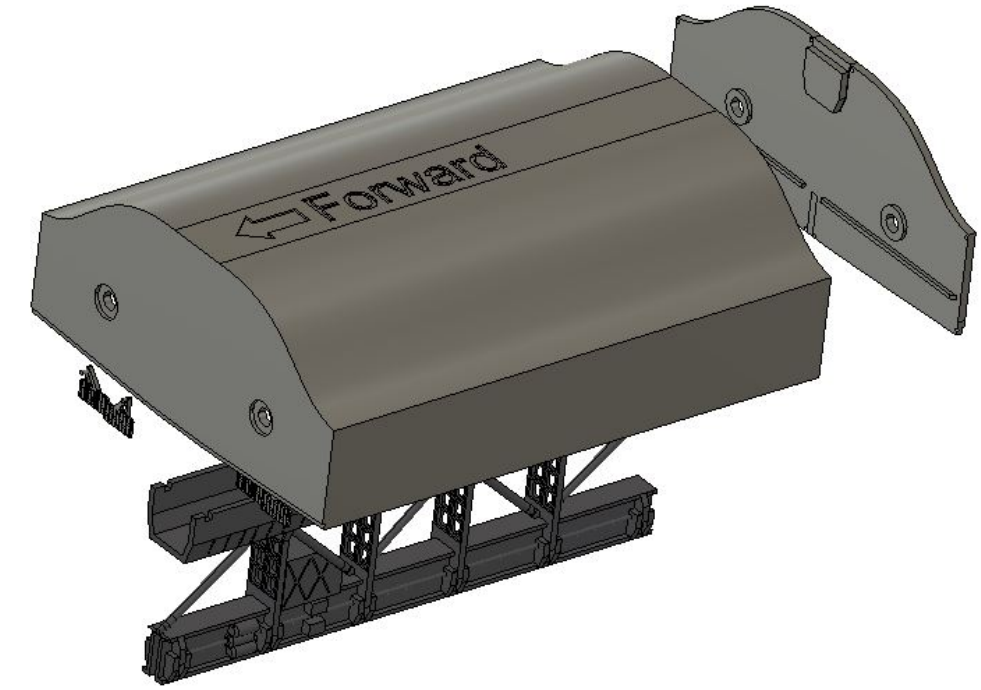


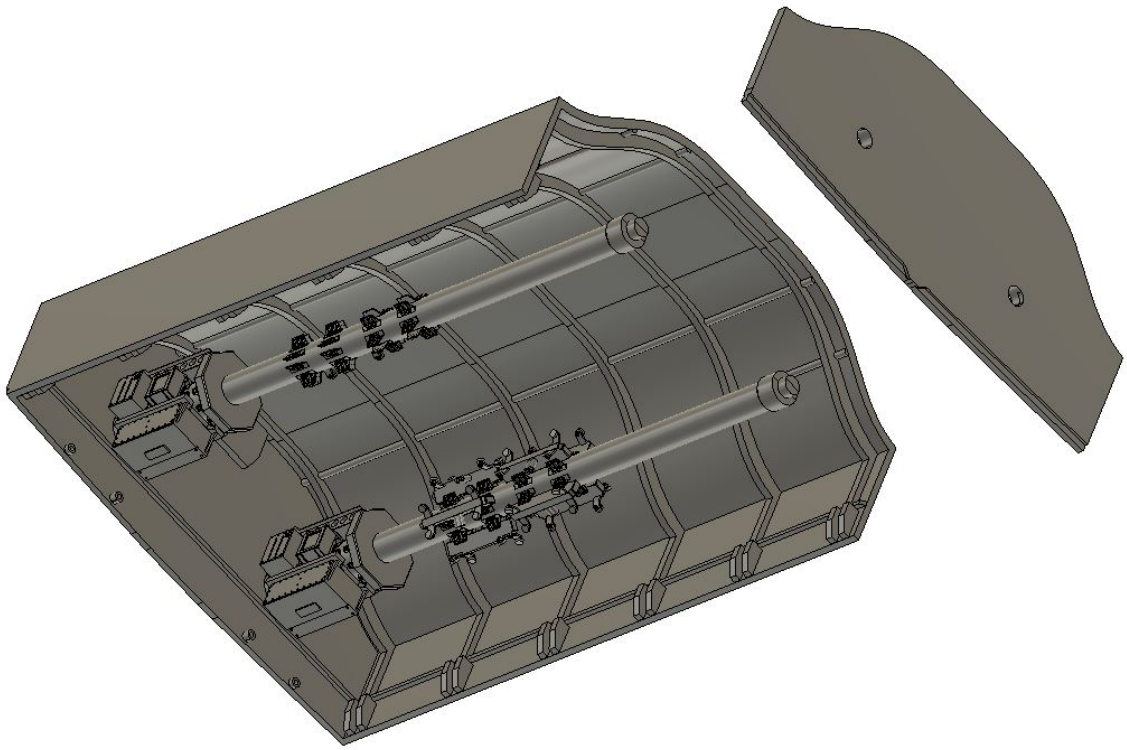
When installed, the cockpit / nose wheel well should sit snugly against the upper and lower fuselage halves without a gap. You may choose to install the cockpit in either the upper or lower fuselage half first.

If you are installing the optional entry ladder you will need to mark the location of the access hatch by positioning the cockpit against the vacformed bottom half. Mark the location with a pencil and then cut out the opening for the hatch.

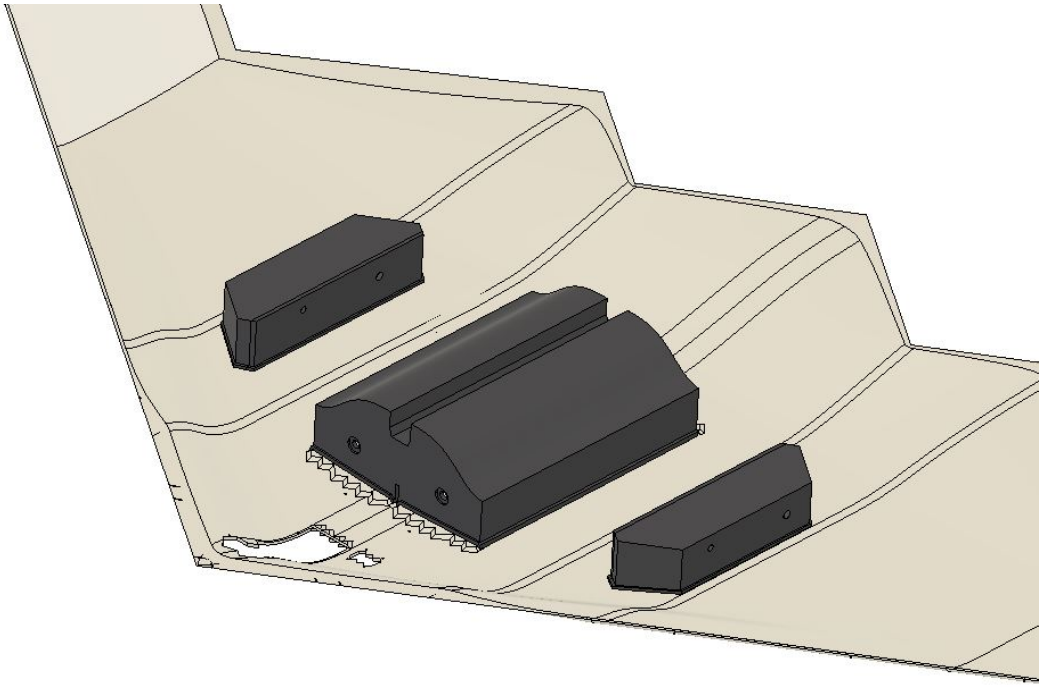
OPTION: Assemble and Install Bomb Bay




Forward



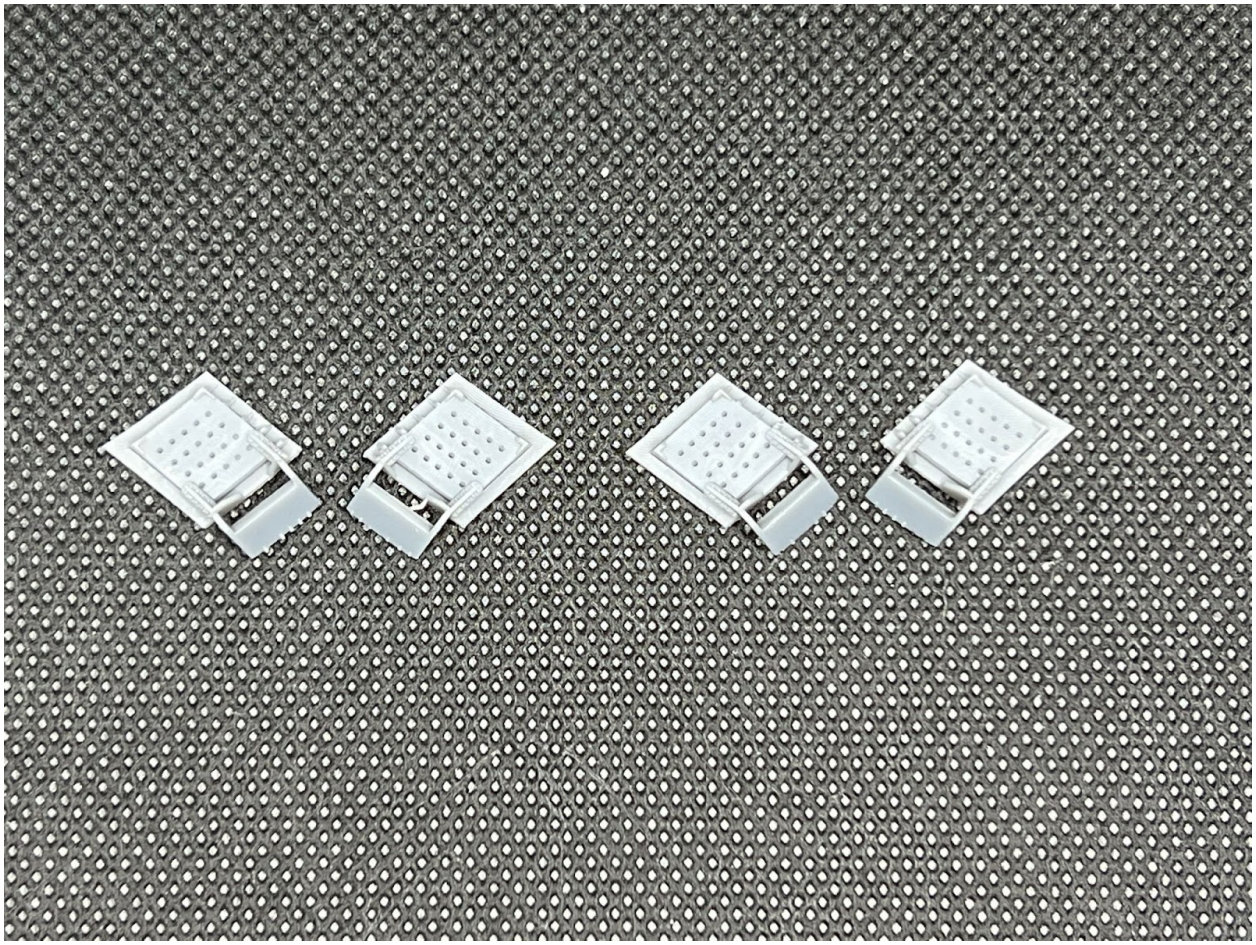
Install the assembled bomb bay to the bottom fuselage half. Wrapping the bomb bay with styrene scrap (as recommended for the wheel wells) will result in the strongest assembly.



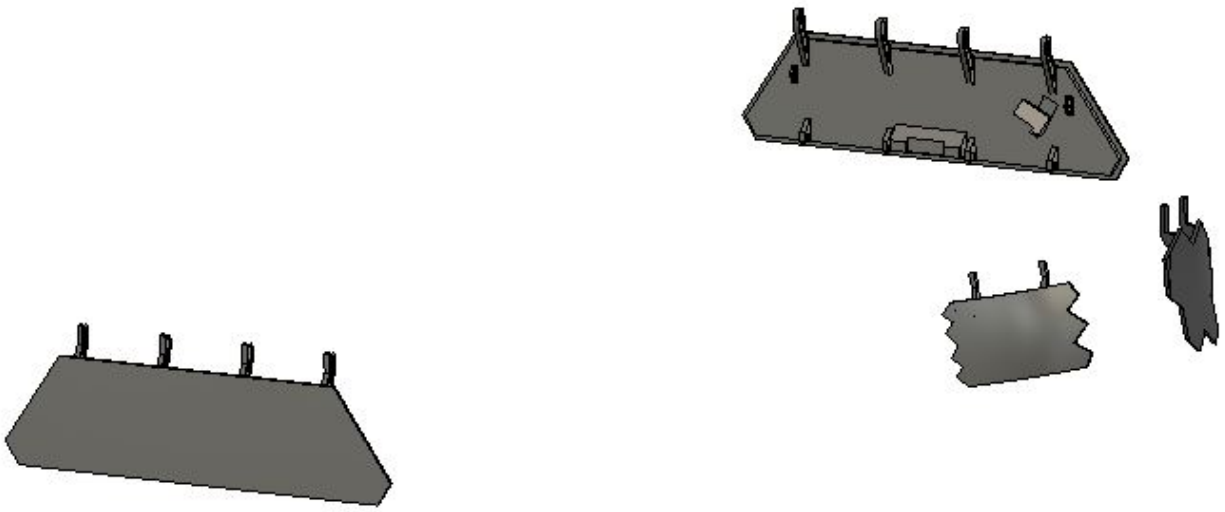
Assemble wing top and bottom

Assemble and install wheels

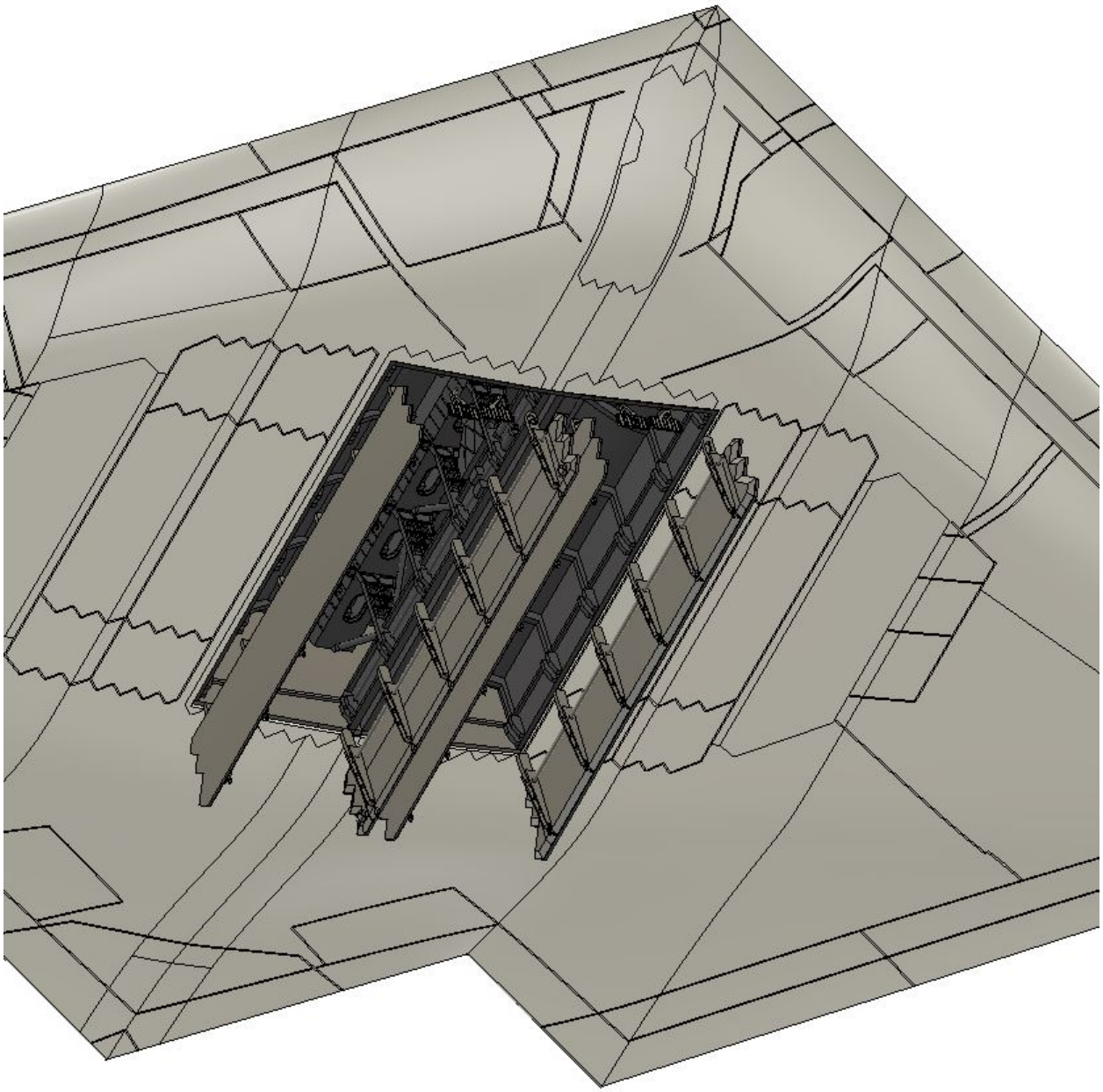
Install aux air intake doors



Install Landing Gear Doors



Install Bomb Bay Doors

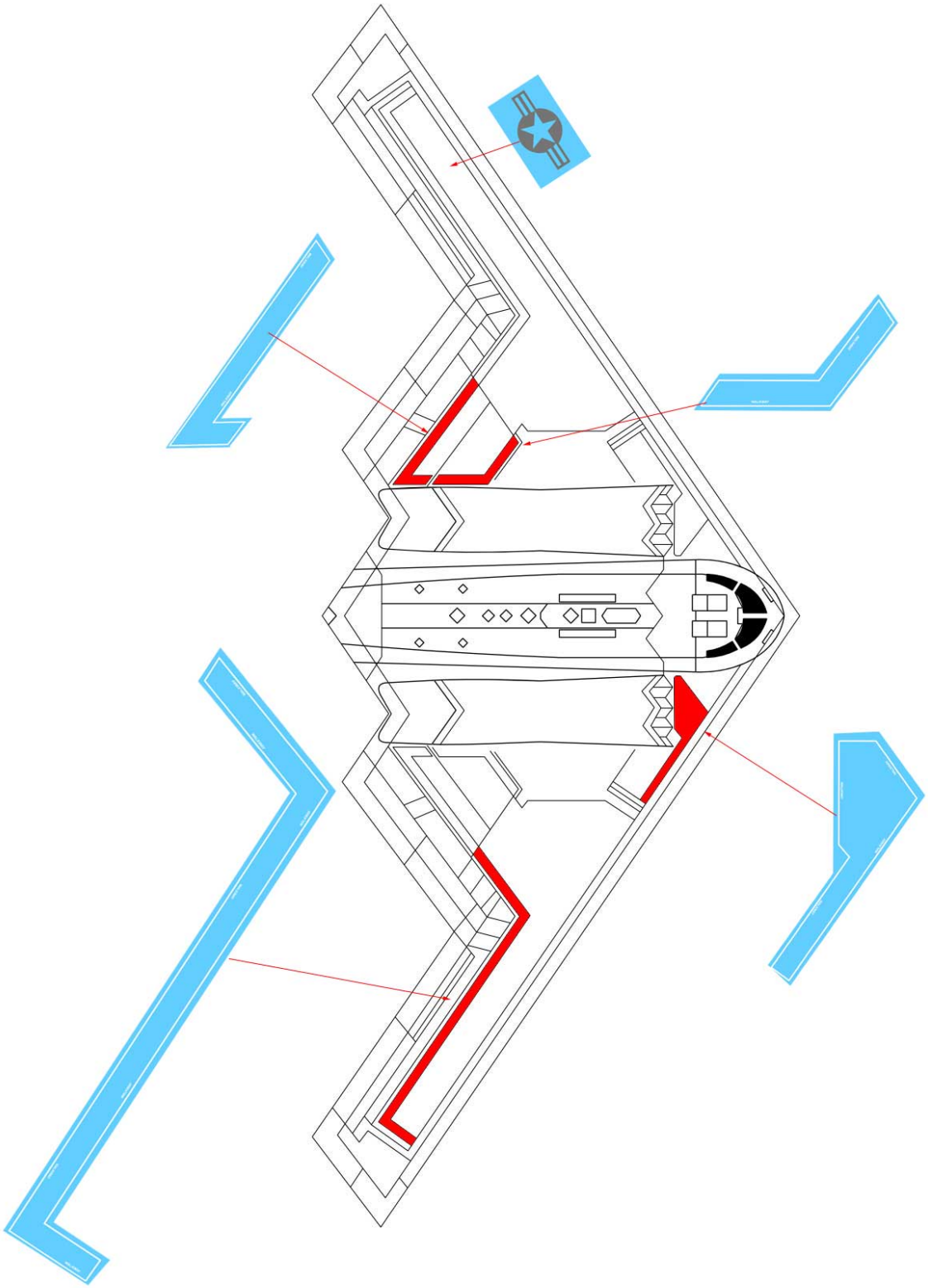


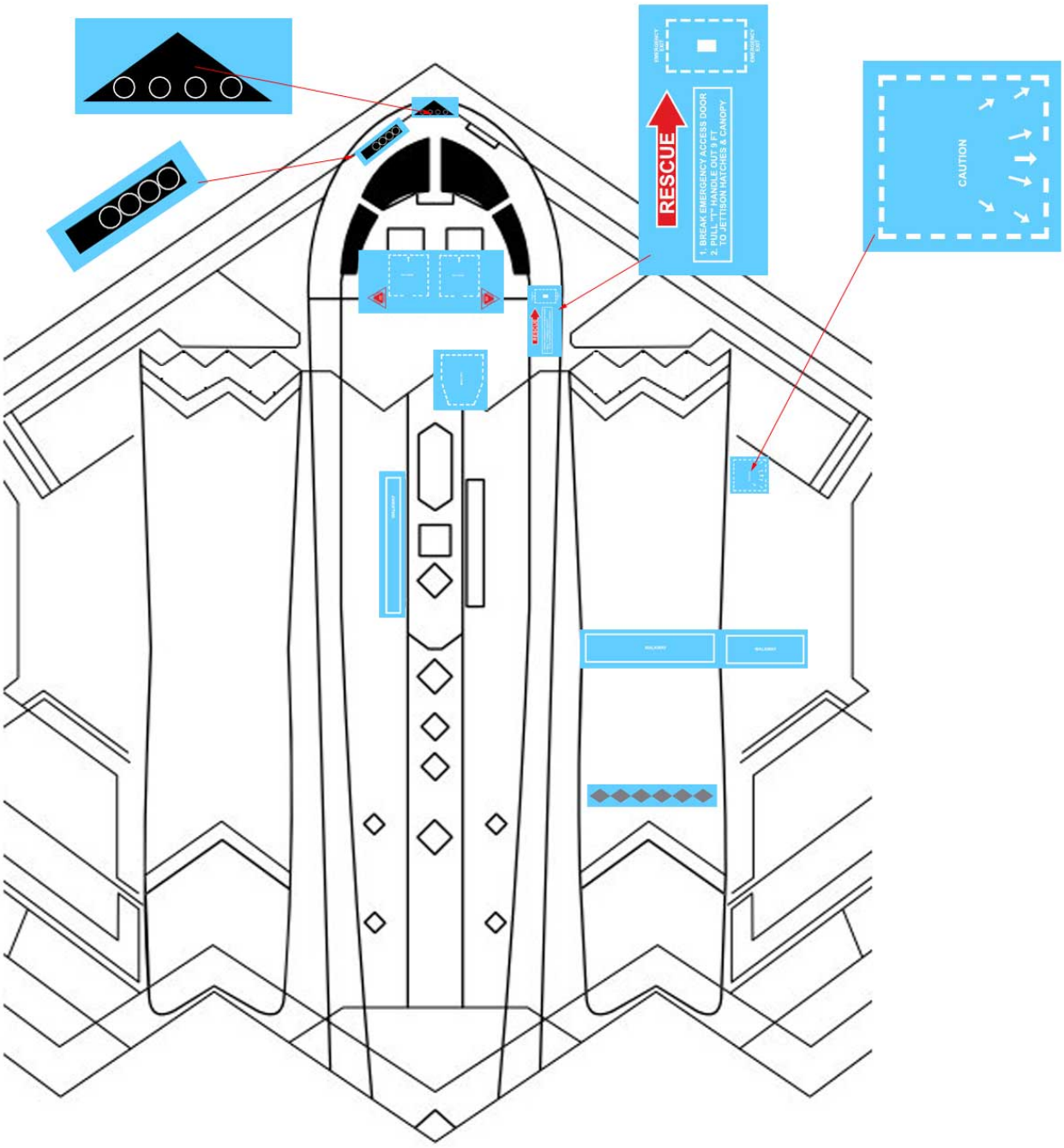
Note that each bomb bay door has its position number engraved on the forward hinge attachment point. Door 1 is on the port side of the aircraft.

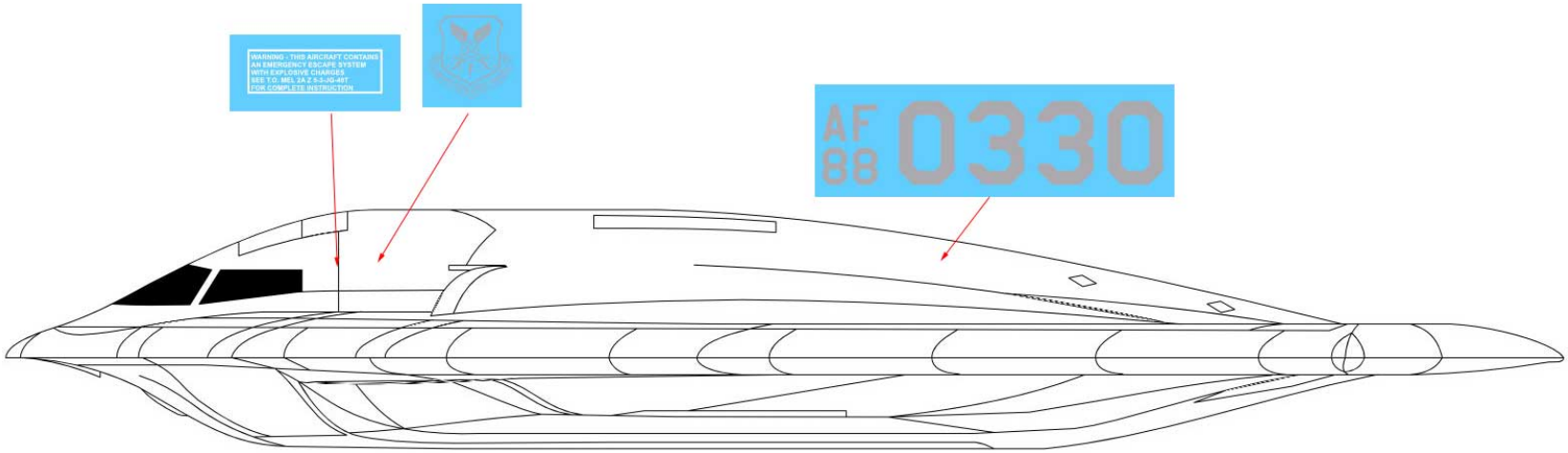
II. Painting and Decals

B-2s are painted overall FS36118 Gunship Gray

Decal Placement

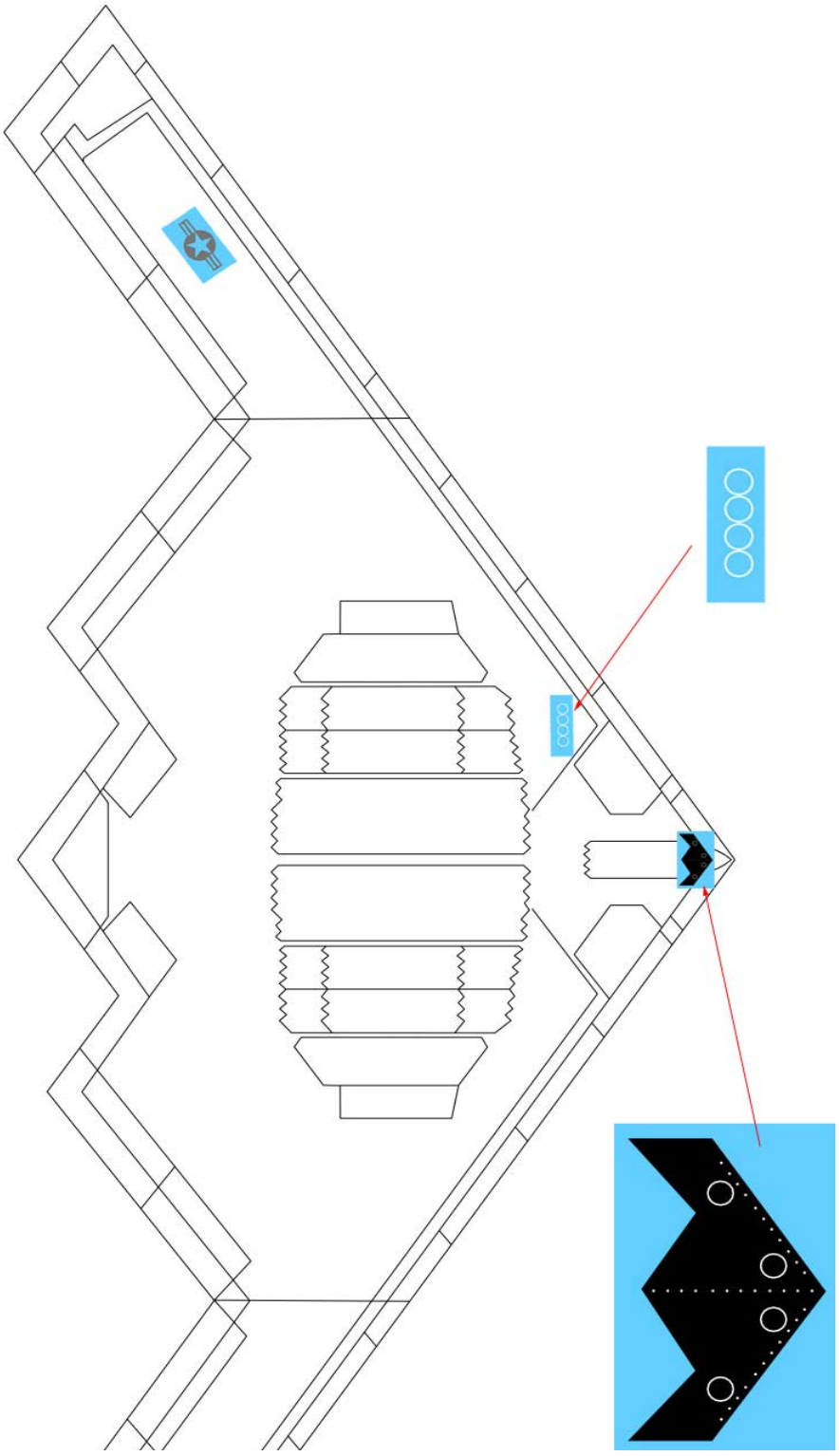



RESCUE
1. BREAK EMERGENCY ACCESS DOOR
2. PULL HANDLE OUTSIDE TO JETTISON HATCHES & CANOPY
CAUTION

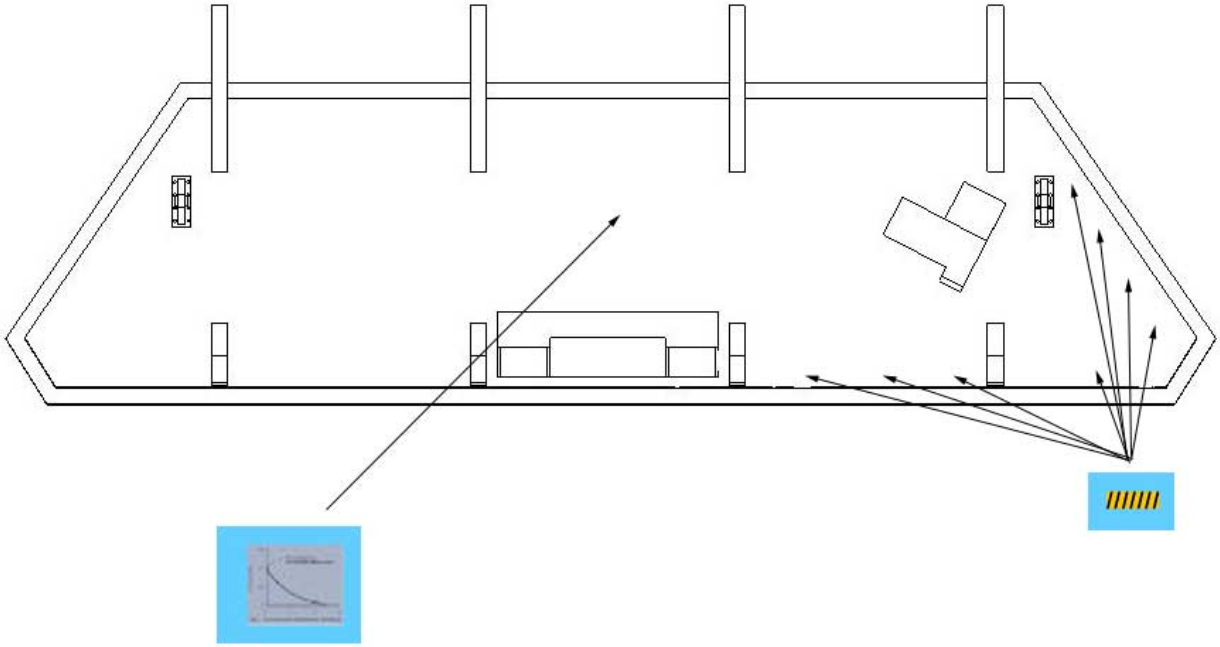


Regardless of which individual airframe decals you have, the badge on the left of the sheet always goes on the port side, the other badge (or badges) go on the starboard side

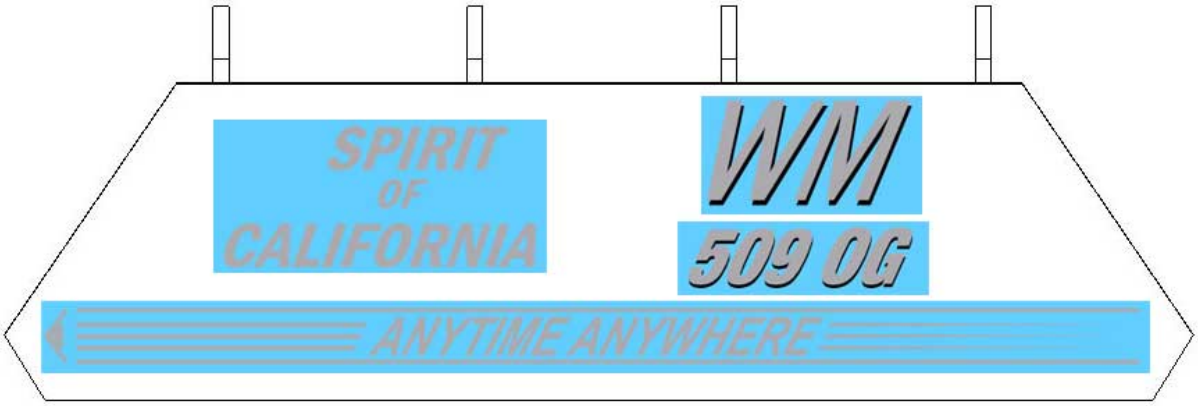
Revision 1.2 8 Sept 2022



Main Gear Doors, Inside (Port Side Shown)

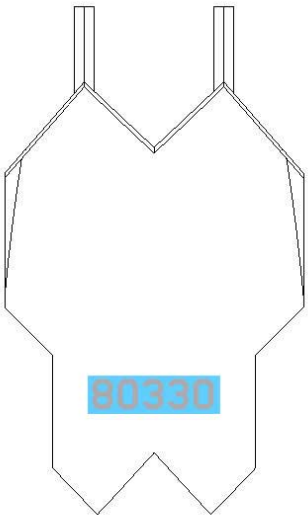


Main Landing Gear Doors, Outboard (Port Side Shown)

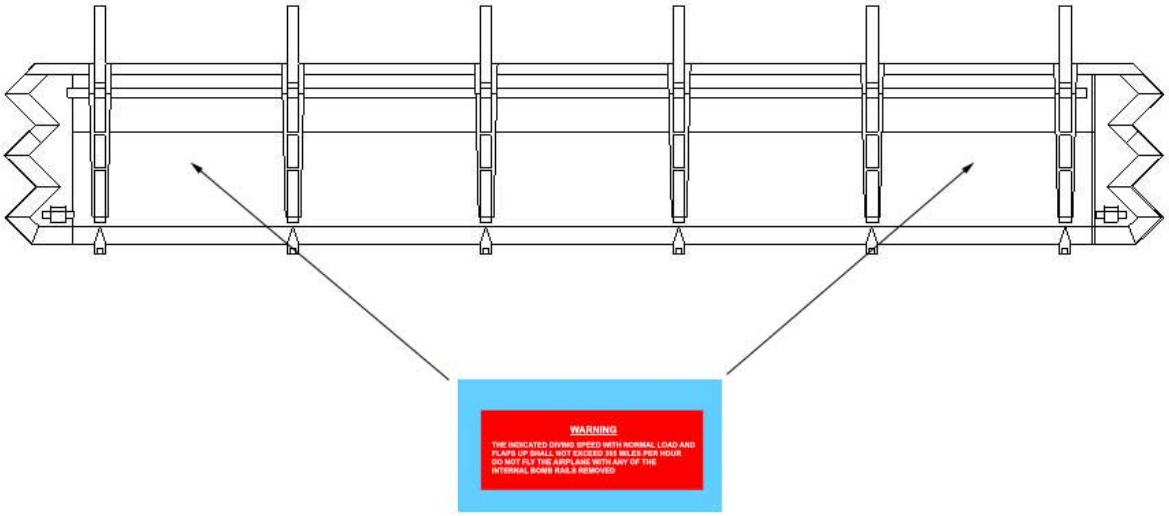


Decal placement is similar for all airframes. Always crosscheck your photos and reference materials.

Nose Gear Door



Bomb Bay Doors, Inside



END