Narcissus Shuttle

Version 1.0, Card Model Designed by David Lukens (C)2018
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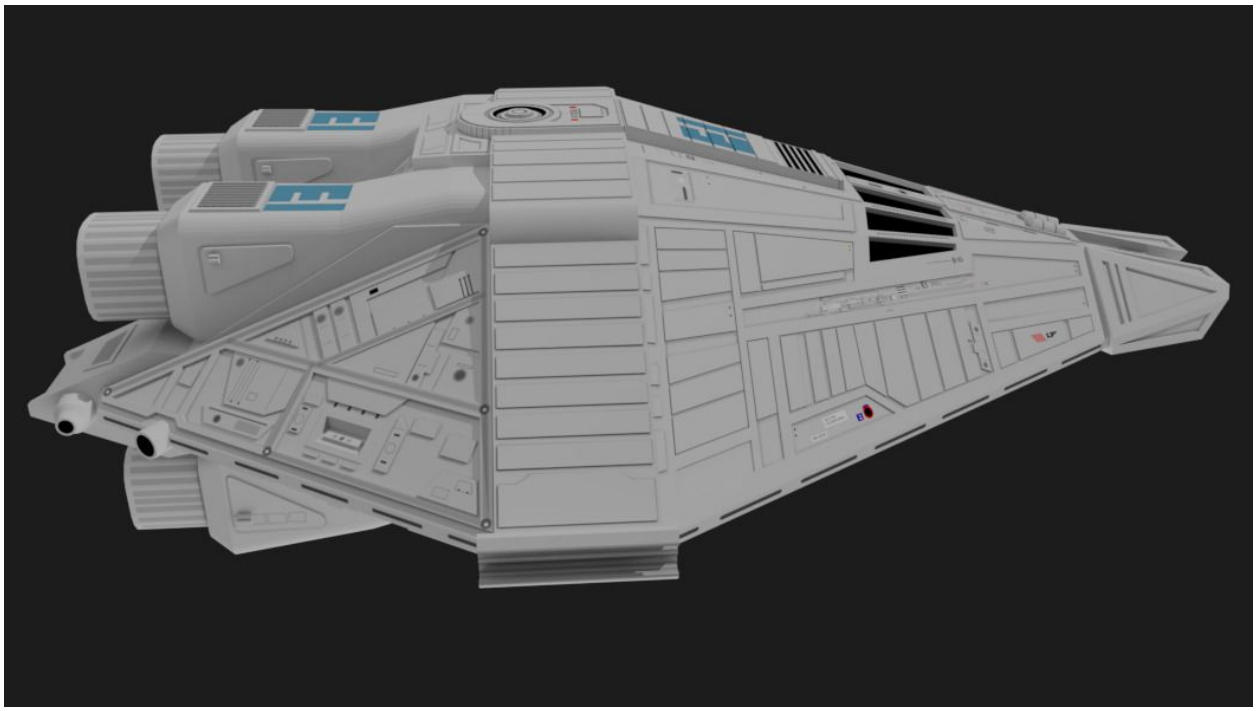
http://insanityunlimited.com/model_plans/



I hope you enjoy this model. I distribute it for free so that as many as possible can build it. If you think it is worth something, please drop a few dollars in the tip jar. Knowing that people are getting something out of all the work that goes into a design such as this makes a big difference. These models easily consume several hundred hours to design, layout, and build. Thanks.

-Dave

QR code for the tip jar:
Paypal Link

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All of the photos used in this guide can be found in higher resolutions in the gallery:
http://www.insanityunlimited.com/gallery/paper_models/narcissus/

Tips and Tricks

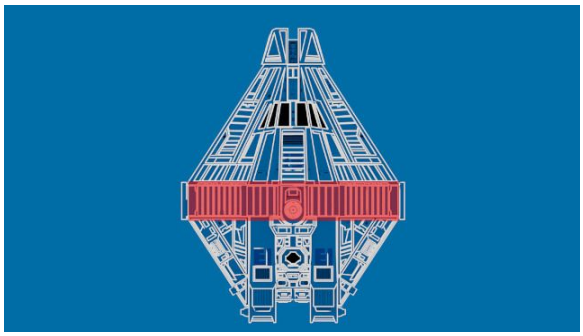
Here are a few things that have come up in testing the build that make life easier from several different angles.

- By default, print the pages on 60-70lb card stock.
- Use the high resolution images in my gallery for reference as needed. There are both CG and photos there.
- Print out the parts with the highest quality setting your printer will use.

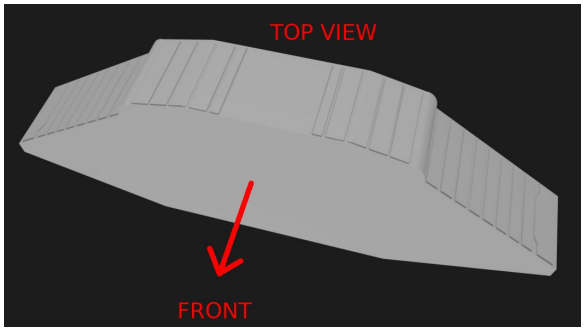
General Tips – These may or may not be useful to your building style

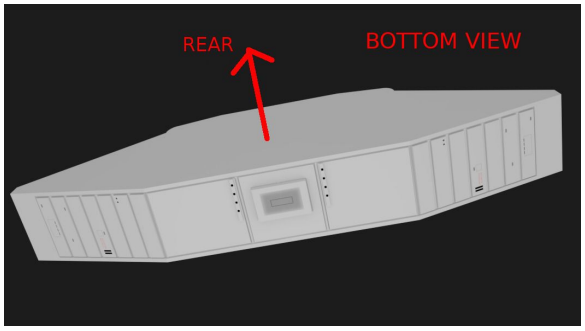
- Take your time.
- Test fit parts.
- If you don't like how a subsection of parts came out, then make another set.
- For large flat pieces, reinforce them from the inside with chipboard as desired.
- Use a metal straight edge as a guide for making scoring marks and long cuts.
- Use a chisel style blade for small cuts and corners.
- Edge color where needed with pencils/markers/paint.
- If you have a better technique for making some of these components, do it.

Lateral Spine



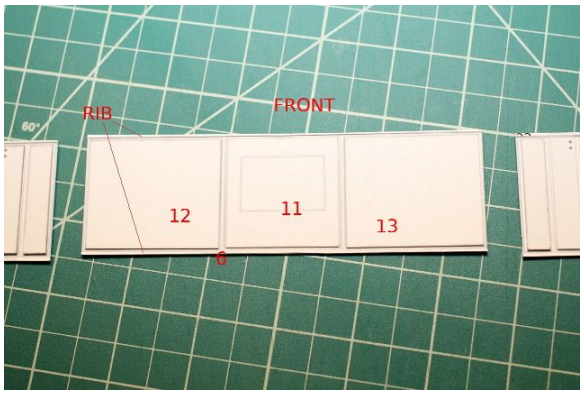
The lateral spine is lengthwise section of the ship at its widest point.



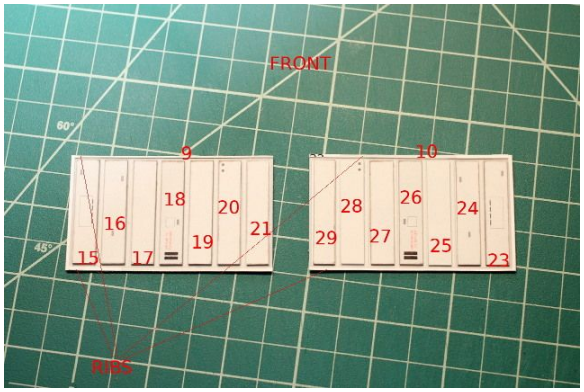


We start with part 6. The edges with adjacent red lines need to be thickened to .5mm to create the inset panel effect. I did this by making 1mm wide strips and gluing them one by one to the white edge of the part and then trimming the excess.

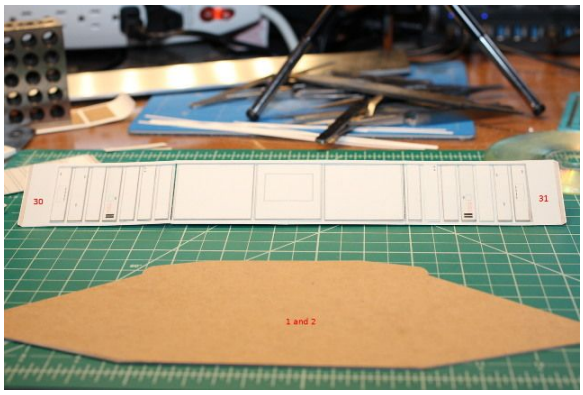
Parts 11, 12, and 13 are laminated to a thickness of .5mm and glued to part 6. The shading on part 11 is placed closer to the nose of the ship.



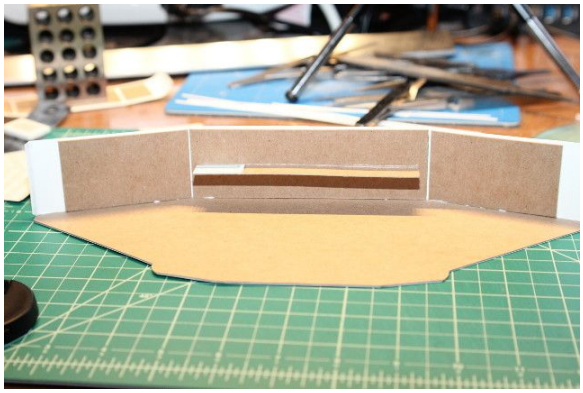
The underside inset panels are done similarly. Parts 9 and 10 have their edges thickened to .5mm (the ones adjacent to the red lines on the parts page). One side does not have a rib applied to it. Parts 15-21 and 23-29 are laminated to 1mm and placed on parts 9 and 10.



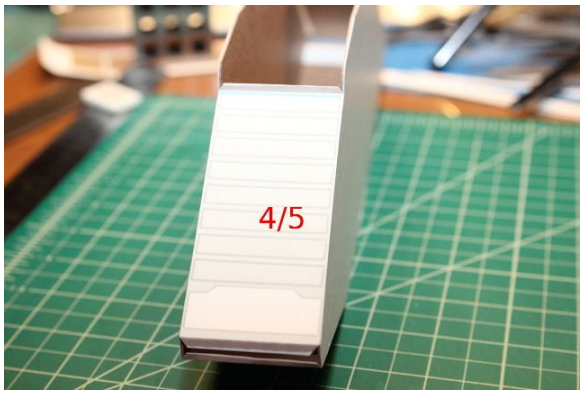
These three panels get inset into parts 30 and 31.



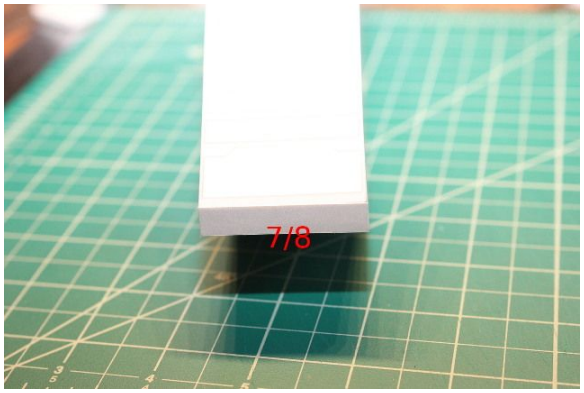
The bottom strip of the lateral spine is then attached to parts 1 and 2.



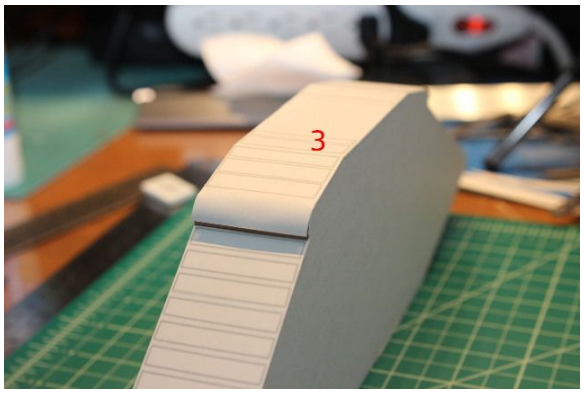
Panels 4 and 5 are attached to the upper wings of the lateral spine formers.



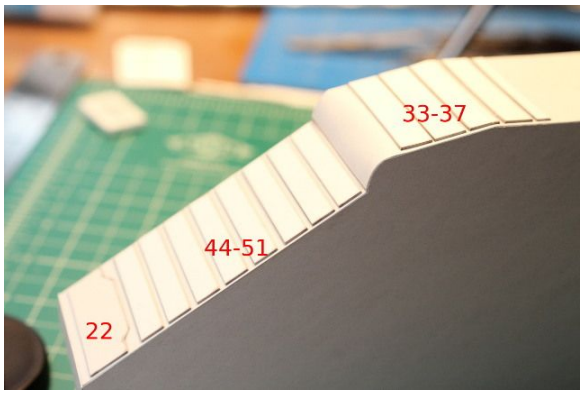
Parts 7 and 8 cap off the ends of each side of the lateral spine.



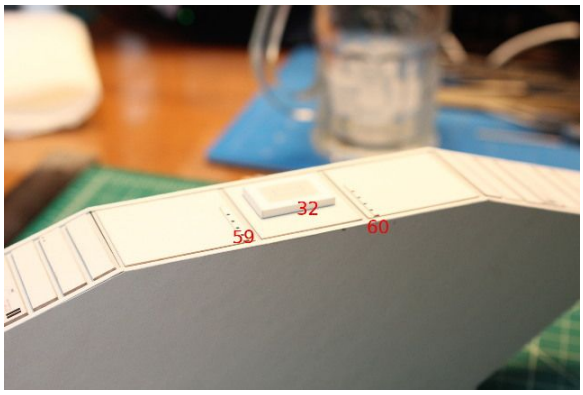
Part 3 goes on top in the center. Note that each end of it are curled downwards to complete the rolled edge.



On one side parts 22, 33-37, 44-51 are laminated to .5mm thick and placed on the shaded squares.

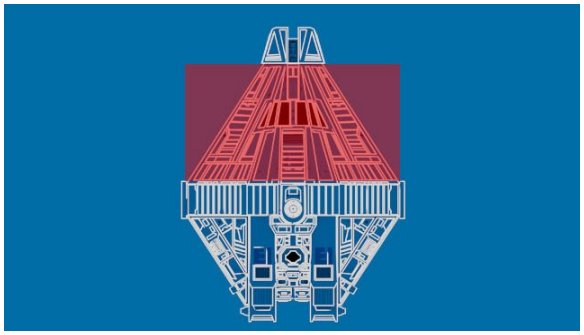


On the other side the same thing happens with parts 14, 38-42, 52-58. Parts 59 and 60 are laminated to a thickness of .5mm and placed on parts 12 and 13. Part 32 is formed into a box and goes on the shaded square in the center of the bottom panel of the spine. This finishes the lateral spine.

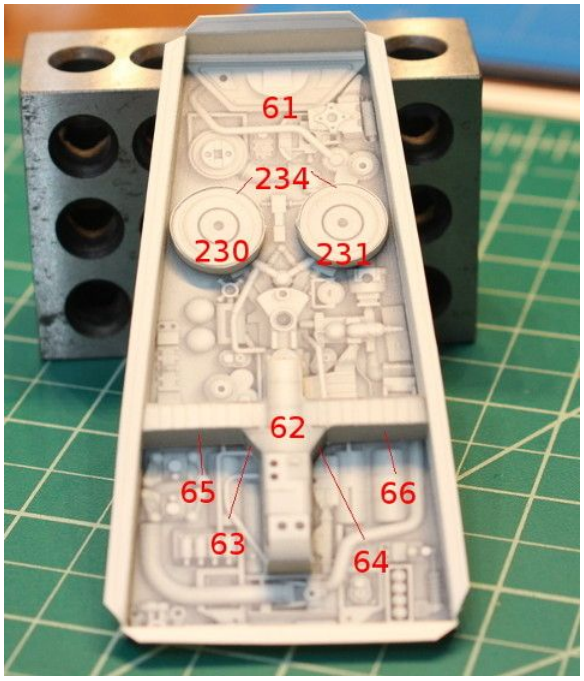


In this picture the front is towards the camera.

Forward Hull



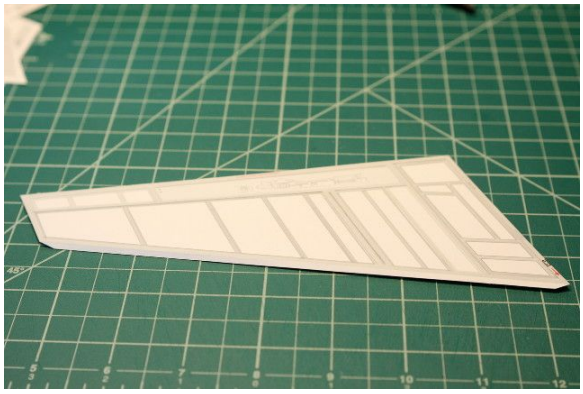
We start by assembling the bottom bay of the shuttle. The main component is part 61. The two cylinders are made of disks (parts 230 and 231) and the edges are made of parts 234. One is slightly larger than the other and goes on the left side of the part as seen here.



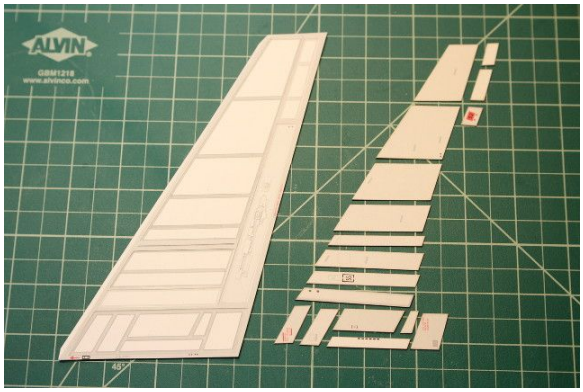
The “T” is made up of the main part 62, and side plates 63-66.

Next up are some of the bottom inset

panels. The first set is made up of parts 67/68 and the assemblies of inset parts on page “Front Hull 8”. “Front Hull 8” is laid out such that if you cut around the parts they will line up with each of the openings in 67 and 68. If you really want to, you can cut out each of the parts on “Front Hull 8” in behind 67 and 68 separately… but I found it much easier to use the bulk inset conglomerations on “Front Hull 8”. These inset parts are *NOT* built up to .5mm because some of the separation between them is incredibly fine (and not realistic to work with).



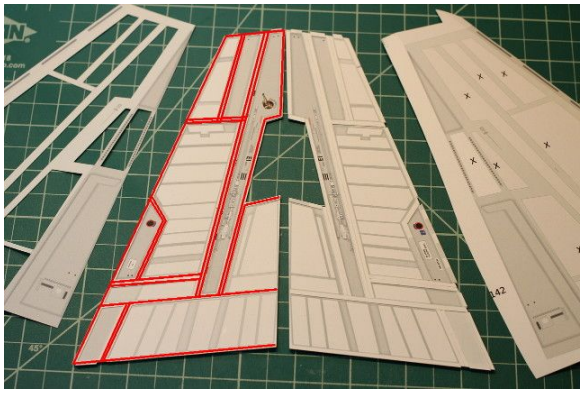
The smaller panels are then laminated to .5mm and cut out and glued to their positions within the inset assembly. This covers parts 183-188, 215-224, 73, 77, 74, 76, 70, 71, 192-203.



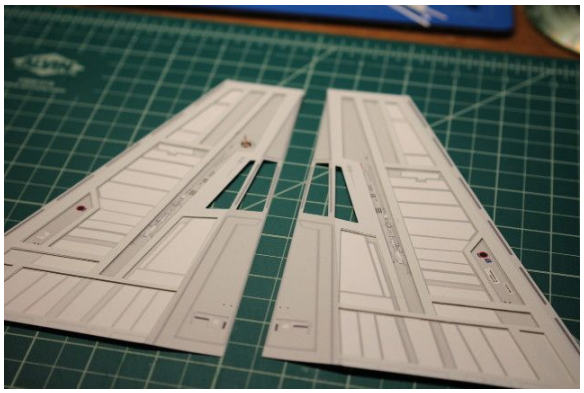
This completes these two lower hull panels.

Next up is a set of upper panels, which we build similarly. Parts 104 and 142 are the outer surfaces with the assemblies from “Hull Front 9” making up the inset parts.

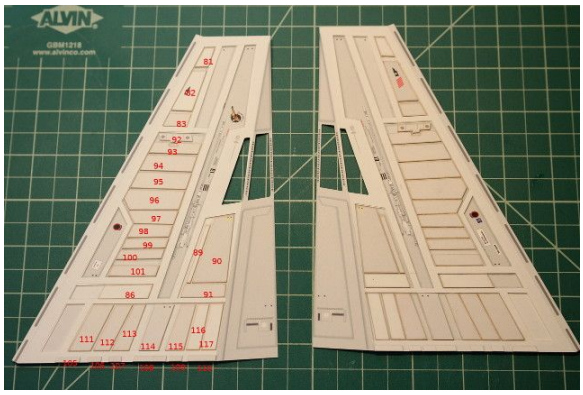
On the assemblies from “Hull Front 9” you will need to build up edges around the inset segments to .5mm. I did this by gluing in thin strips and trimming to length. Apply these to the lines in red on the image below.



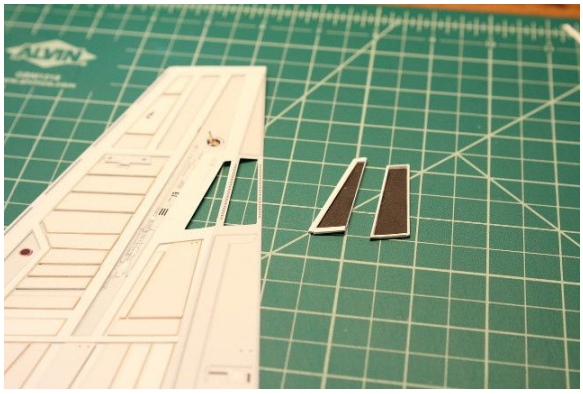
After that, glue the assemblies into parts 104 and 142.



The following parts are laminated to .5mm and placed inside the insets: Left: 81-83, 92-101, 86, 89-91, 105-110, 111-117; Right: 120, 124-126, 128-134, 136-138, 143-148, 150-159

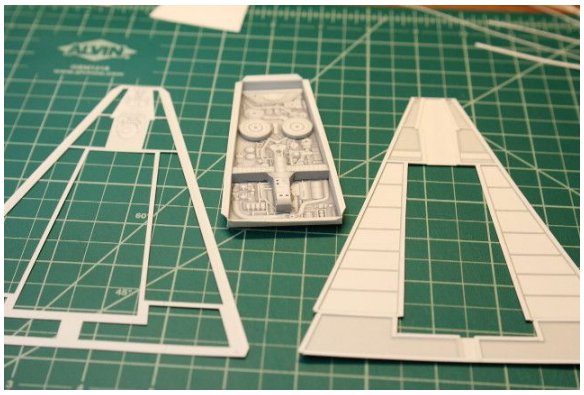


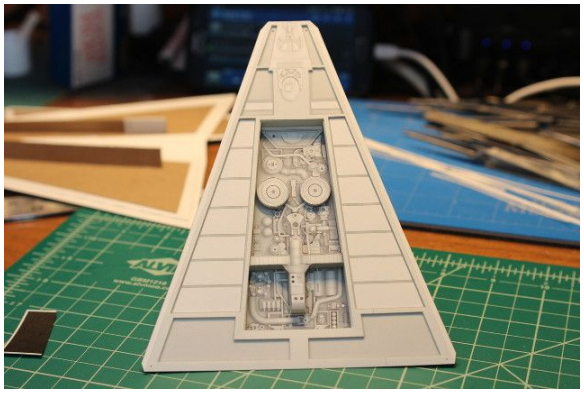
Now parts 207, 208, 211, 212 have their edges built up to 1mm thick, trimmed, and glued into the window holes of the panels.



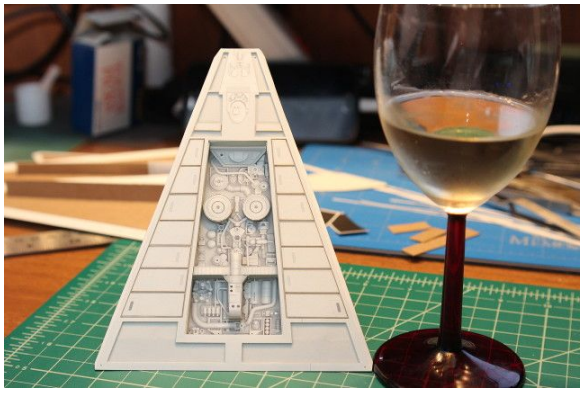
These panels are now complete.

Next up is the bottom with the engine bay. This is made up of parts 166 and the assembly of inset parts on “Front Hull 7”. Again, this has the edges built up to .5mm to give a proper depth of the inset part inside part 166. The bay from earlier is glued inside the inset assembly.

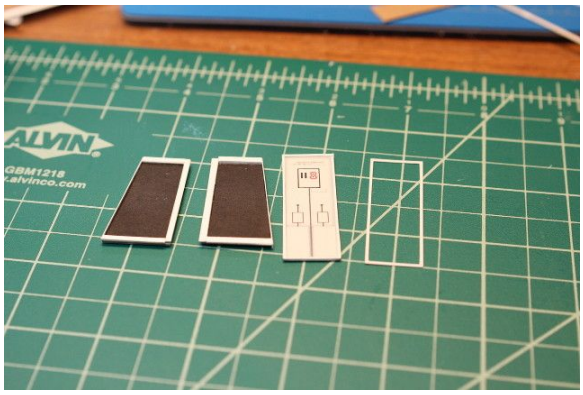




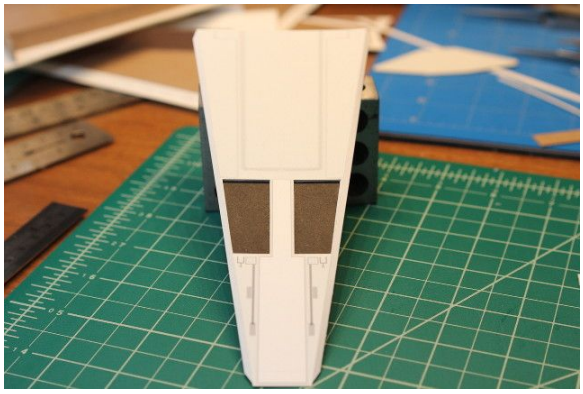
Next, laminate parts 162, 164, 167-180 to .5mm and glue on the inset panel.



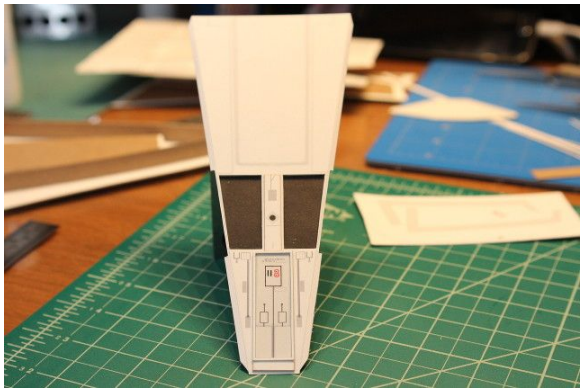
Build up the edge parts 209 and 210 to 1mm so they will fit into a future window hole. On part 69 build the edge up to .5mm. Part 228 is the outer rim that goes onto 69.



Cut out part 223 and mount the windows in it.



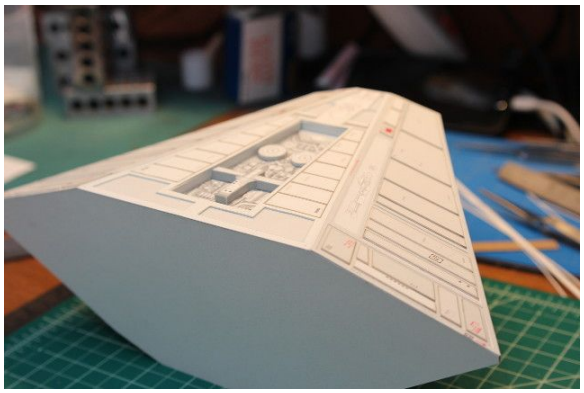
Part 229 goes against the nose, with part 69 behind it, and 232 behind that. This completes the main panel for the top center.

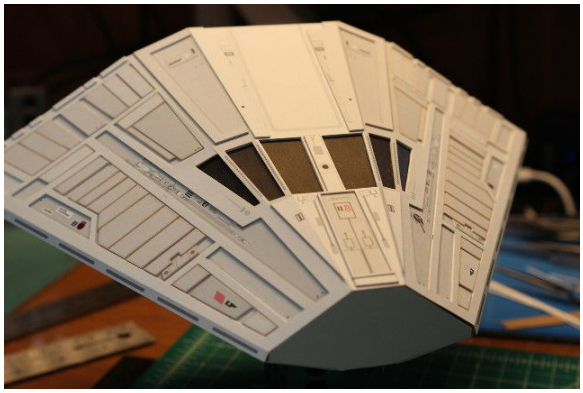


Attach the top sides to the top center. Laminate parts 225, 226, 235-238 to .5mm thick and place them on the combined upper faces.

Afix the lower sides to the engine bay.

Take the formers 227 and 127. Glue the bottom panels to the formers first. Once dry, glue the top panels to the formers. Finally seal the sides together.

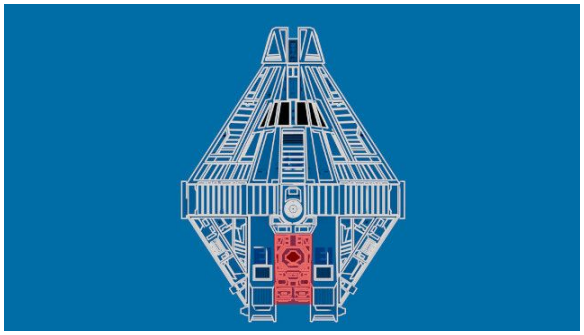




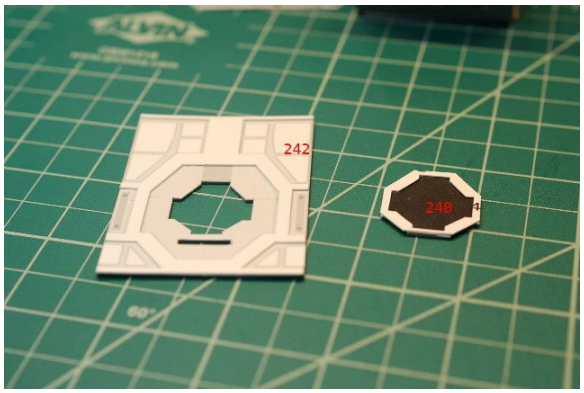
Form the nose greeble with parts 239 and 240. This image is looking at the bottom of the vessel.

Parts 326-328 are used to make two half cylinders, which go onto the top of the forward hull inside the rim. The dots of these cylinders point toward the cockpit.

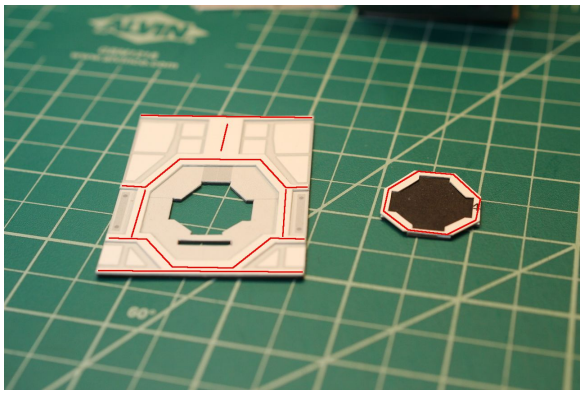
Rear Hull



This starts with the airlock, parts 242 and 248. Both of these need to have their edges built up to .5mm thick. For part 242 I printed off an extra copy of the part, laminated it to thickness and cut out everything except for the white part.

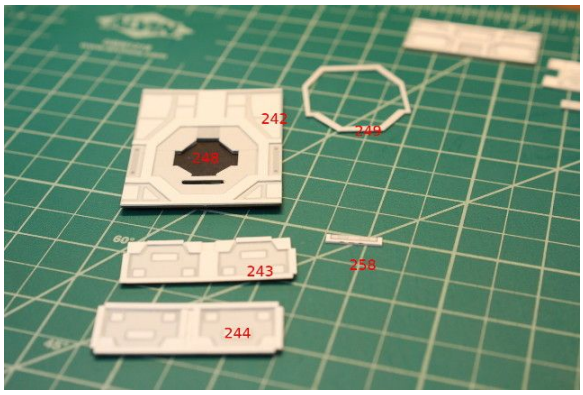


The lines in red are where the thickness needs to be built up.



The 248 is glued to the back of 242.

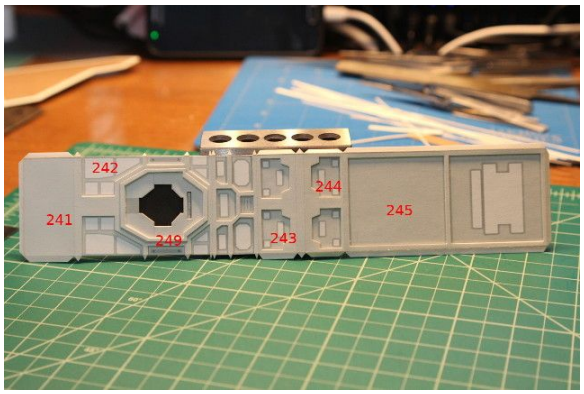
Next, build up the edges on 243 and 244 and 258 to .5mm thick. Also laminate part 249 to .5mm.



258 Goes into the slide on part 242 on the backside.

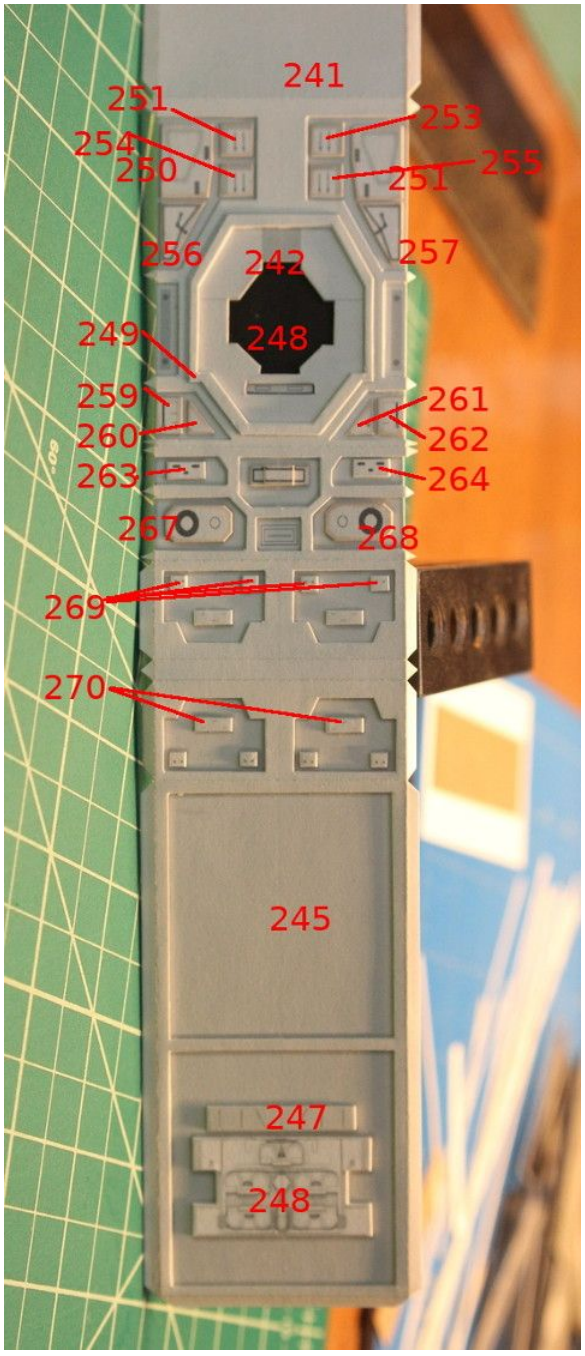
The airlock assembly goes on the back of 241 (the overall frame). Part 259 goes around the airlock area on the outside.

Build up the edge on part 245 to .5mm (just like the other inset panels). Part 243, 244, and 245 are also glued to the backside of 241 as inset panels.

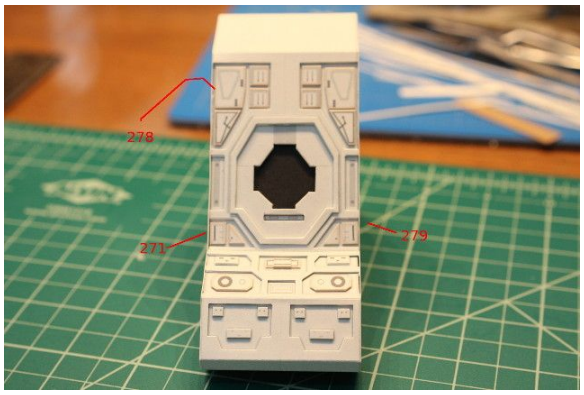


Next we will laminate all of the subpanels to .5mm thick and apply them to our assembly. See the next diagram for where they go.

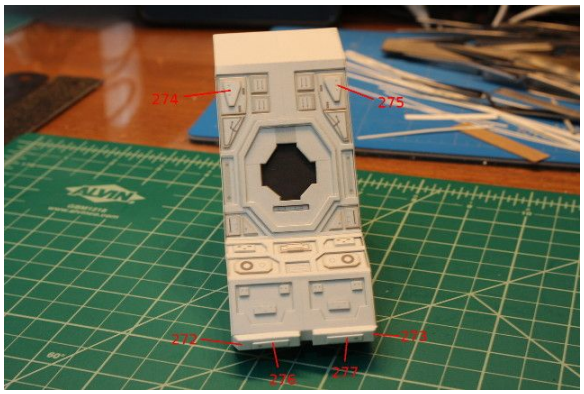
Between parts 263 and 264 is a pair of rectangles. These pair is made up of 265 and 266. The small “bolts” all are oriented towards the airlock.



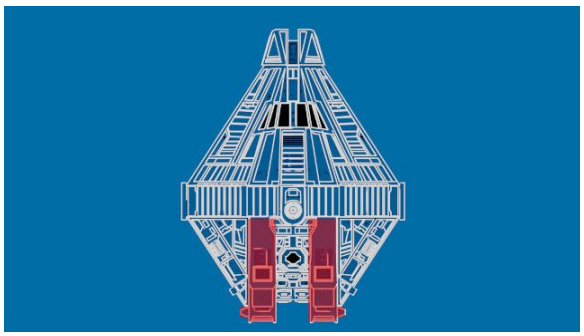
Take parts 271, 278, and 279 to form the back and sides of the rear hull. Then mount the detail panels above into them.



A few more detail parts go on the rear hull now. Laminate parts 274 and 275 to .5mm and glue them to the upper corners as in the picture. Form 272 and 273 into rectangular prisms. Laminate 276 and 277 to .5mm and attach them to parts 272 and 273, these then go onto the hull assembly themselves.

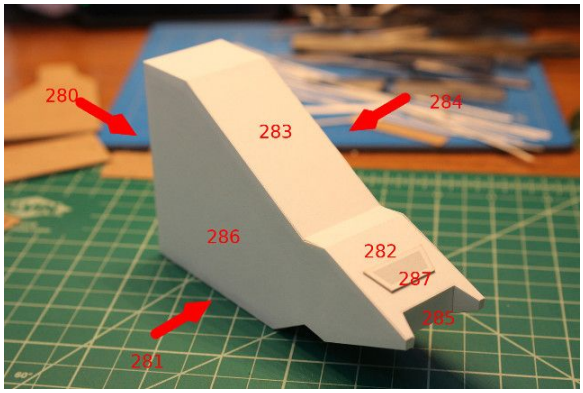


Engine Substructure

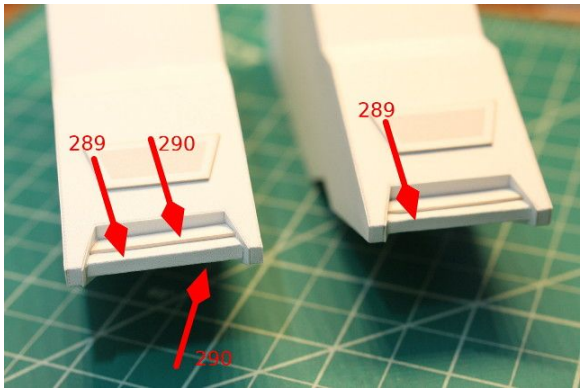


We will need to make two of these subassemblies.

The engine substructure is made up of both sides (284, 281), the back (280), bottom (281), top (283), and the end (282). Part 285 is put into the cutout in part 282. Part 287 and 288 is laminated up to .5mm and put over the center of the shadows on part 282.

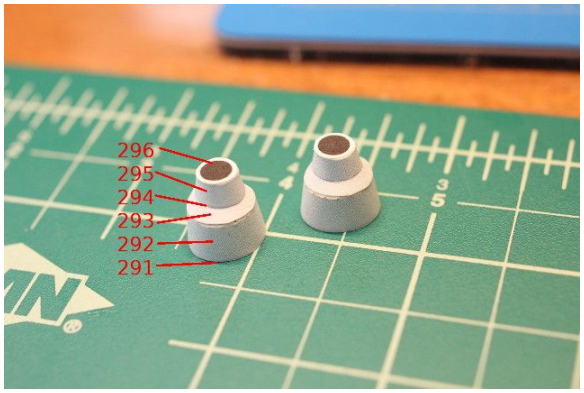


Detail pieces 289 and 290 (290 laminated to .5mm) are added as shown.

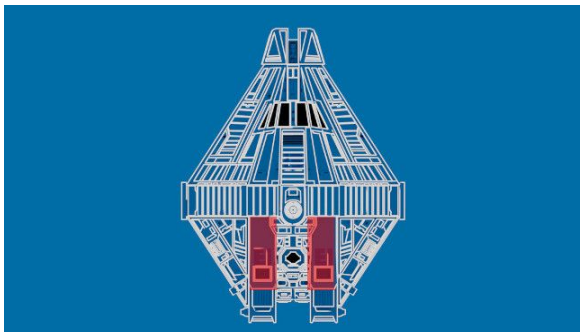


Two more details (cylinders/cones) are made next. We will attach them to the model later on.

The stack, from the bottom up is made of parts 291-296.

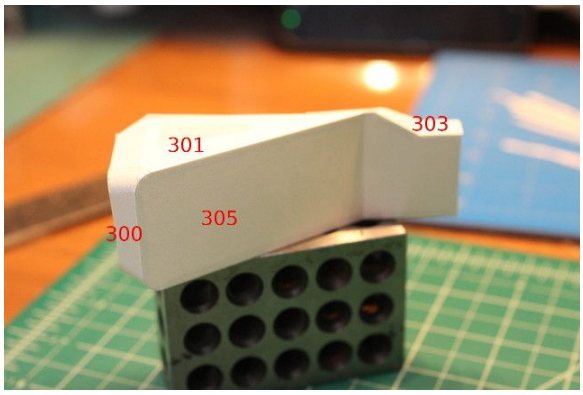


Topside Engines

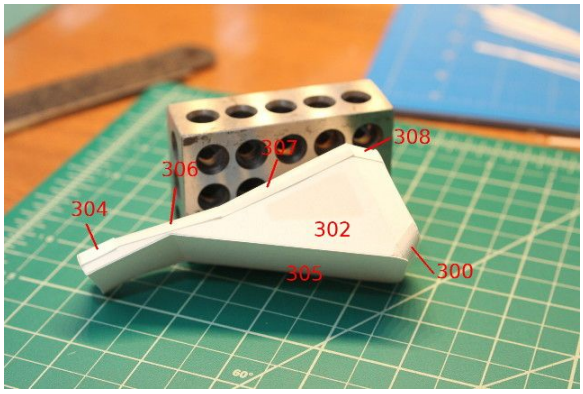


On the page labeled “Top Engines” on the left side is the top left engine, and the right side is the top right. Part 305 is the bottom of the engine. Parts 302 and 301 are the sides of it. Part 309 is the rear face and part 303 is the cutout on the front corner. Part 300 is the bottom rear curved panel and parts 304, 306, 307, and 308 form the top. The sides of the top parts are curved on both sides. While the parts of this whole assembly has glue tabs on them, I found I achieved much better results by trimming the tabs off and building separate ones inside.

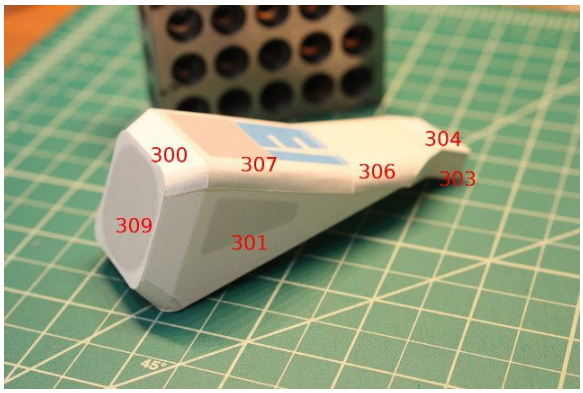
Left engine from the bottom with the front to the right:



Left engine from the left with the front to the left:



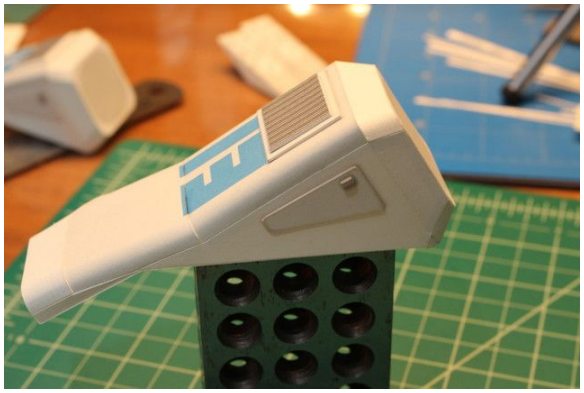
Left engine from the right/top with the front to the right:



The right side top engine is made similarly with the other parts on the page labeled “Top Engines”.

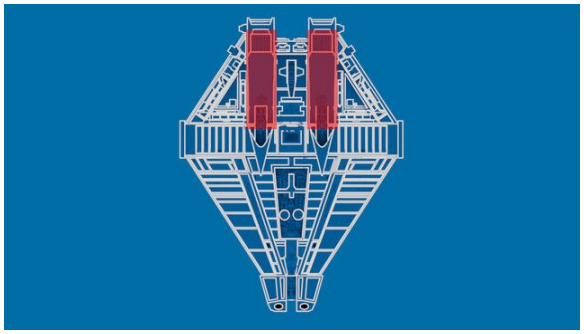
Detail parts of 321 and 322 are placed on the top of each engine centered on the grey rectangle behind the E1. This makes the topside grating.

Parts 318-320 make up the side panels similarly. Part 319 goes in the white square on part 318 and part 320 goes in the center of part 319. All of this should be aligned horizontally.



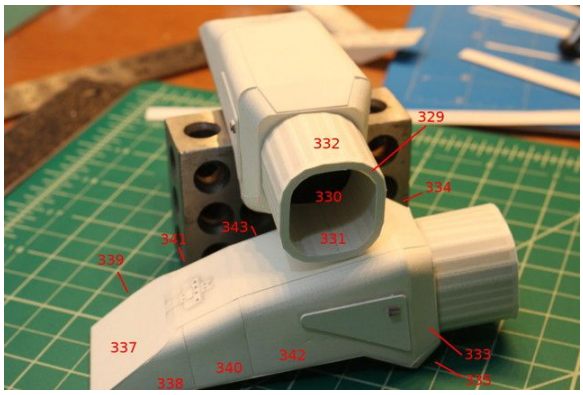
Bottom Engines

The bottom engines are very similar to the topside ones.



The main body of it is made of part 337, with the rearmost panels being 333-335, which are capped by 336. Moving forward from there, 342 and 343 make up the slab sides, followed by 340 and 341 and then 338 and 339. The other bottom engine is made from the remainder of the parts on the

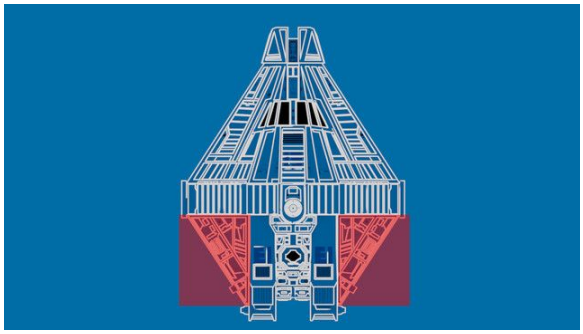
page labeled “Engine Bottom1”.



Parts 355, 319-320 make up the side panels similarly. Part 319 goes in the white square on part 355 and part 320 goes in the center of part 319. All of this should be aligned horizontally.

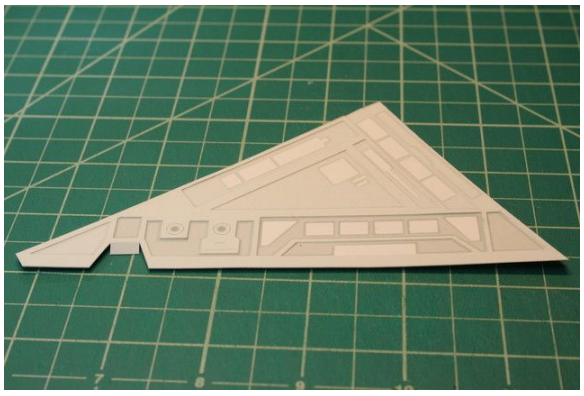
The nozzles for all four engines are made up of parts 329-332. Part 332 should be oriented so that the shaded edge is against the engine body and the unshaded edge should point out the back of the nozzle.

Rear Corners

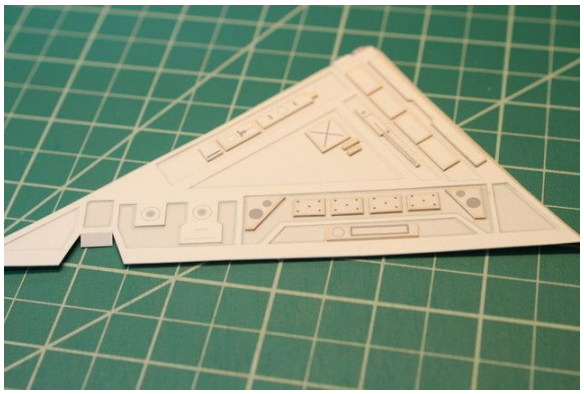


Each of the rear corners is a triangular prism type shape. One corner is made of page 1 and 2, and pages 3 and 4 are the same thing flipped horizontally.

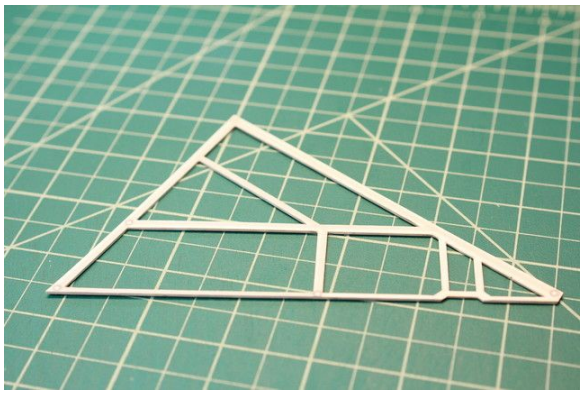
We start by applying 356 on 389. Note that on the cutout the small rectangular piece needs to be scored so that it is folded.



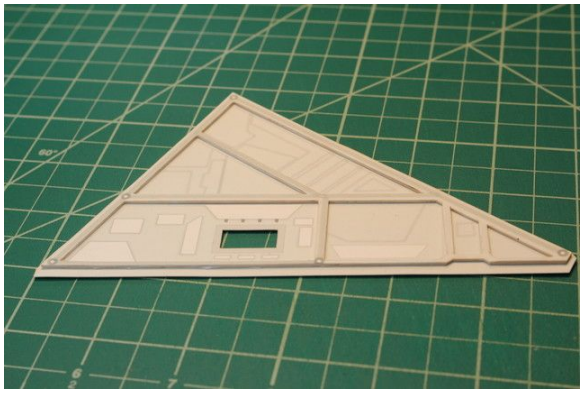
Next, laminage parts 391-408 plus 371 to .5mm. Each of these goes onto part 389 in the space provided. This makes the topside panel for the corner.



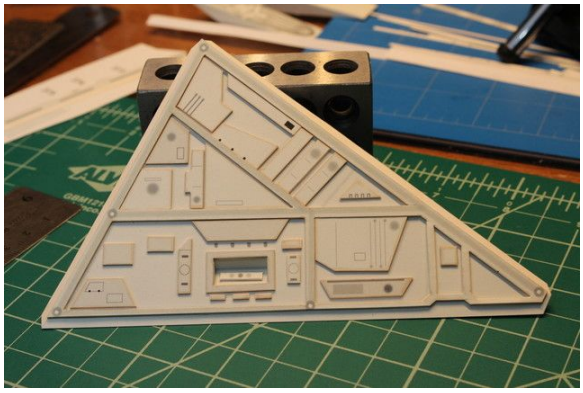
Next, laminate part 409 to .75mm and cut it out.



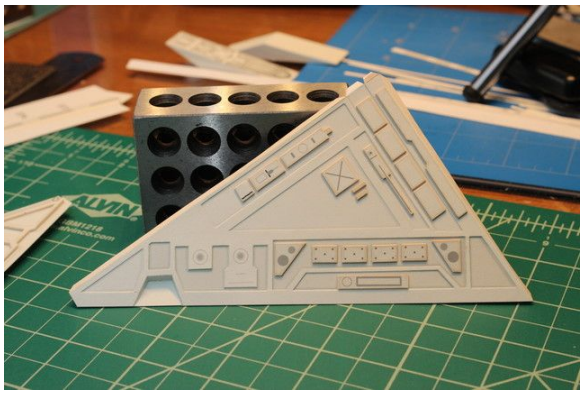
Part 409 is glued on top of part 357.



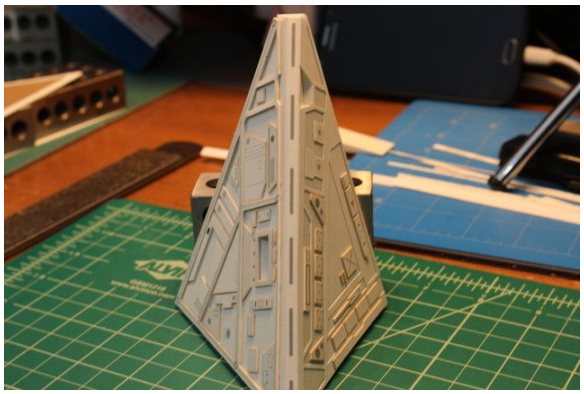
Parts 358 - 365, 367-369, 376-388 are all laminated to .5mm. Part 366 is formed into an inset box and goes into the cutout on 357. Part 365 is glued into this inset. All of the other parts go onto the panel as you see in the image. They are relatively similarly laid out on the parts pages to make things simpler. This makes the lower panel.



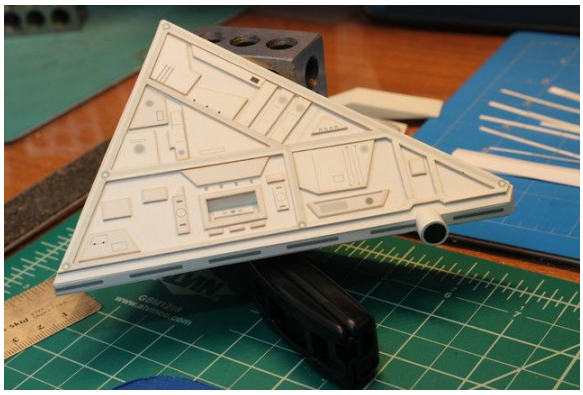
Part 370 is used to form the inset notch in the topside panel.



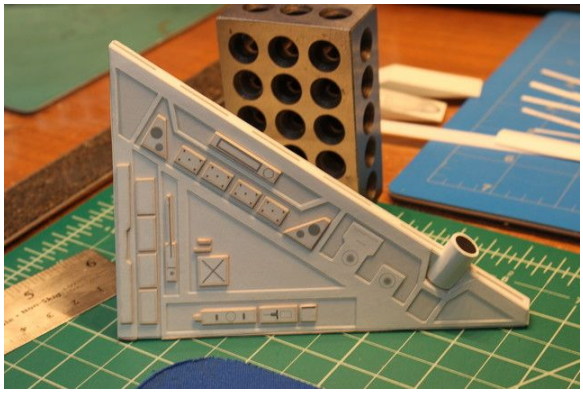
Part 372 is used to join both the upper and lower triangular panels.



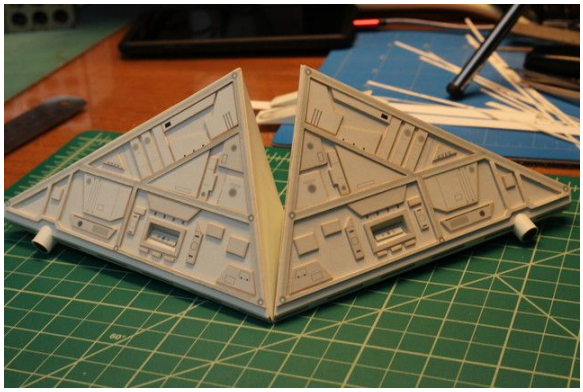
Part 375 is rolled into a cylinder and part 374 is used as a cap on it. This then goes over part 372 in the center of the notch on the upper panel.



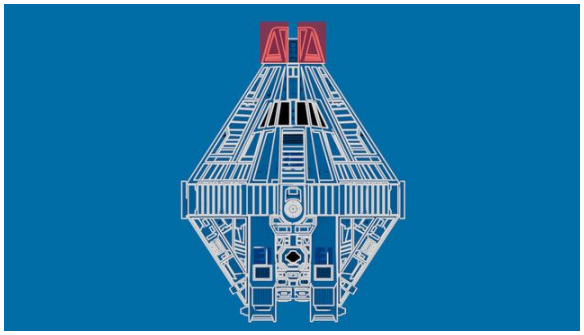
Parts 390 and 410 are used to finish off the non-visible sides of the corner.



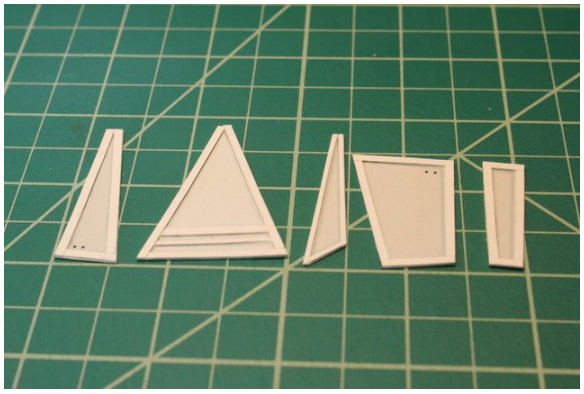
Then construct the 2nd corner the same way with the mirrored parts on the 3rd and 4th pages.



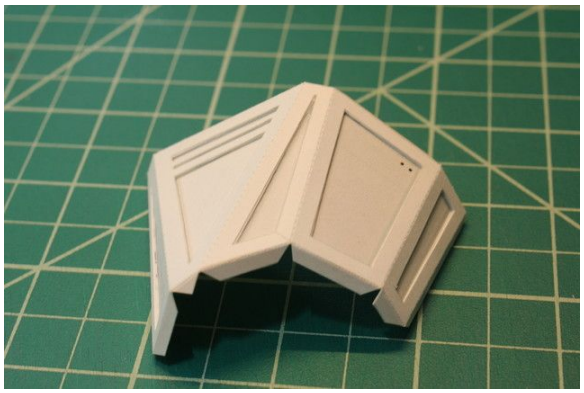
Nose



Start by taking parts 417-421 and building up the outside rim of them to .5mm.

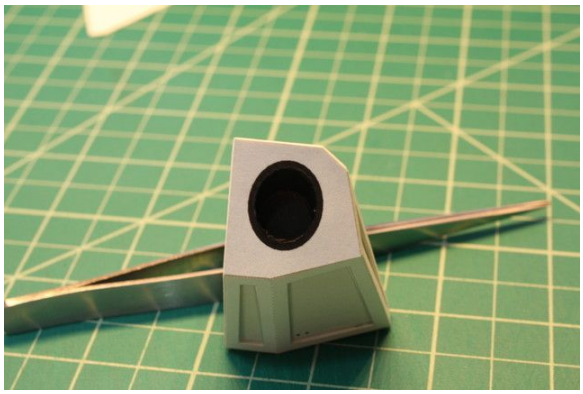


Now cut out part 416 and put the insets from the step before into it.

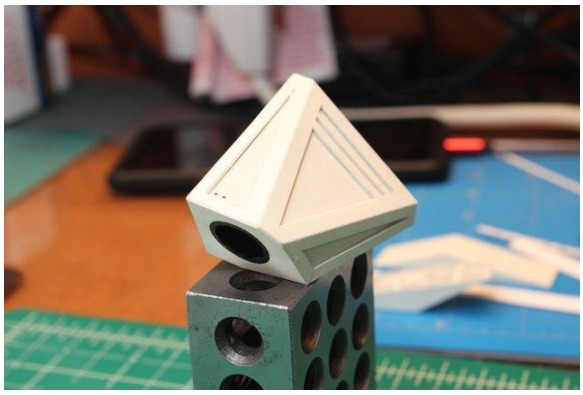


Cut the center out of part 413. Roll part 412 into a cylinder. Part 411 is the inside cap on

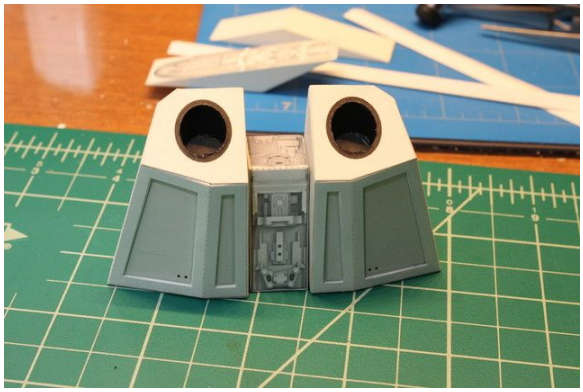
412. Our cylinder is then glued to the inside edge of 413. This forms the front face of the nose section and is glued in place onto 416.

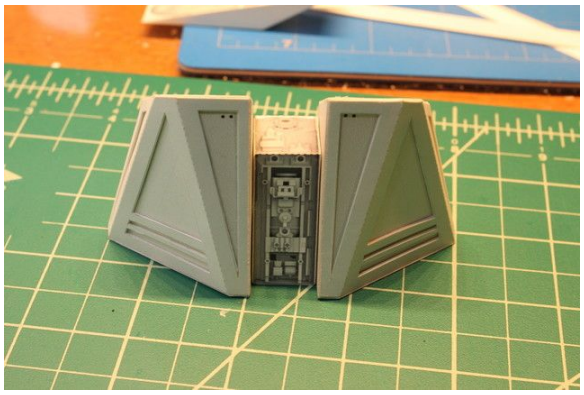


Parts 414 and 415 make up the inside and rear faces of the part.

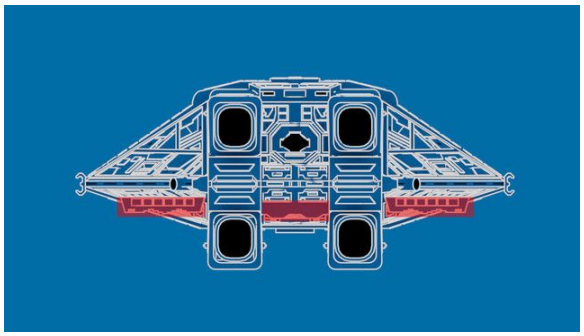


Perform the same steps with the mirrored parts for the 2nd nose section.

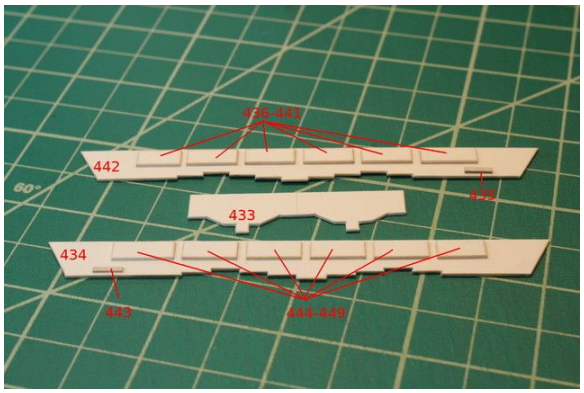




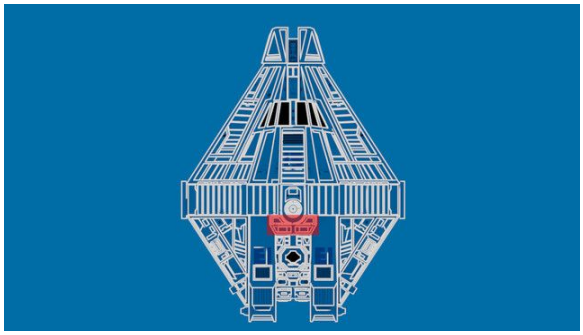
Side and Rear Skirts



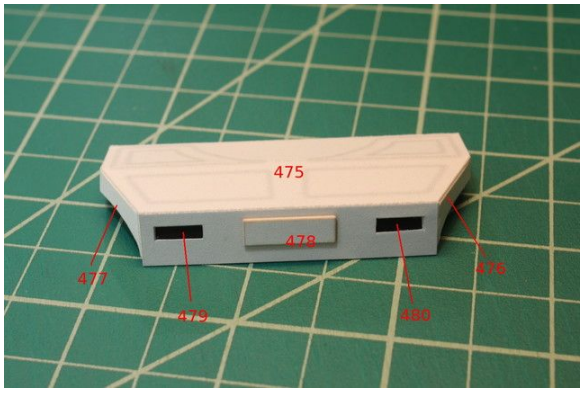
The skirts for the rear and rear corners are pretty straight forward. Parts 433-449 are all laminated to a thickness of .5mm and assembled as in the following diagram.



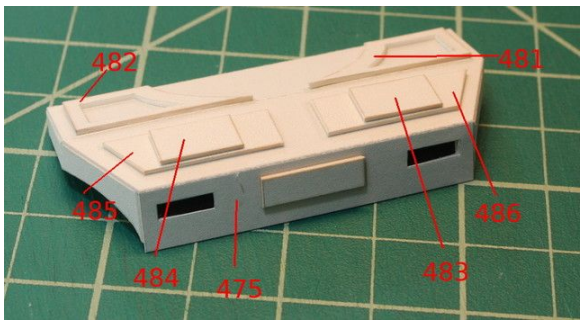
Rear Deck



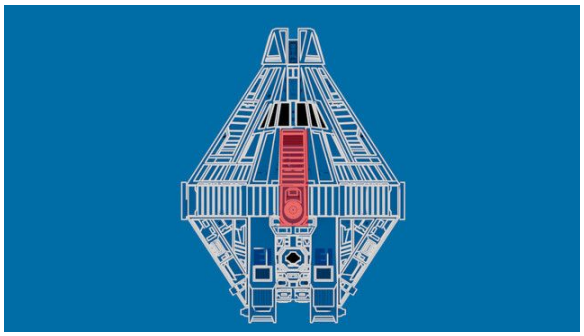
The rear deck sits beneath the topside airlock. The main body is part 475 with the two small windows cut out. 476 and 477 make up each side. The edges of 479 and 480 are built up to .5mm and inset from the two cutouts in 475. Part 478 is laminated to .5mm and placed in the center of 475.



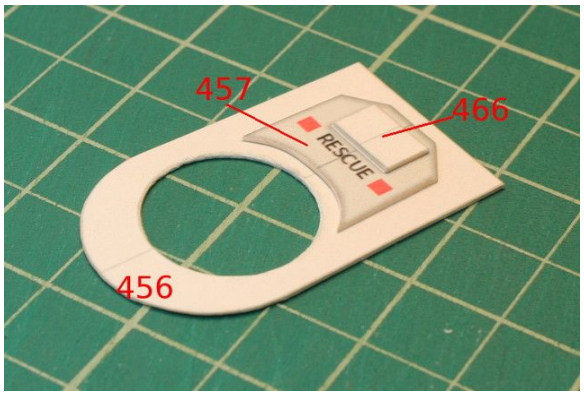
Parts 481-486 are laminated to .5mm thick and placed on the top of part 475.



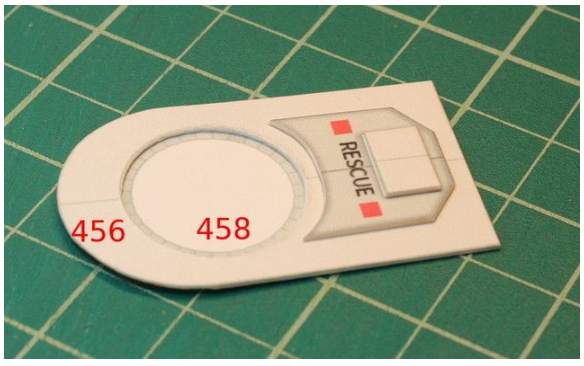
Longitudinal Spine and Airlock



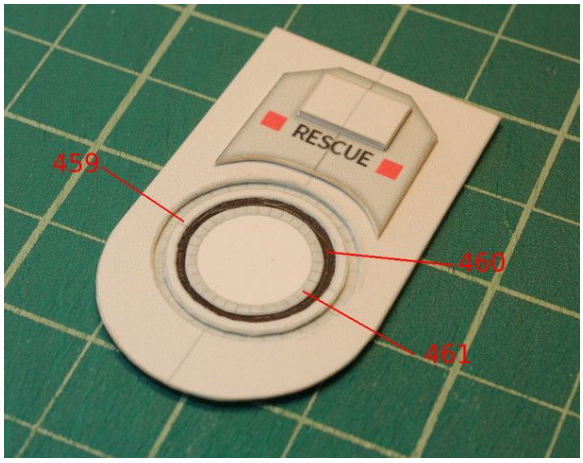
This sub-assembly begins with part 456, 457, and 466. Each is laminated to a thickness of .5mm.



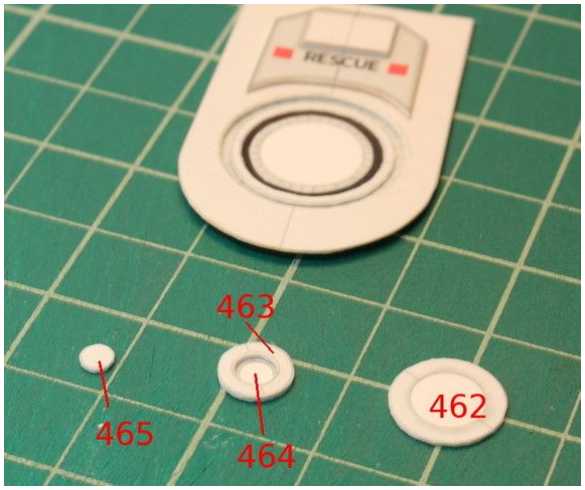
The rest of the airlock is made of a stack of disks and rings. The first is part 458, which is set underneath 456.



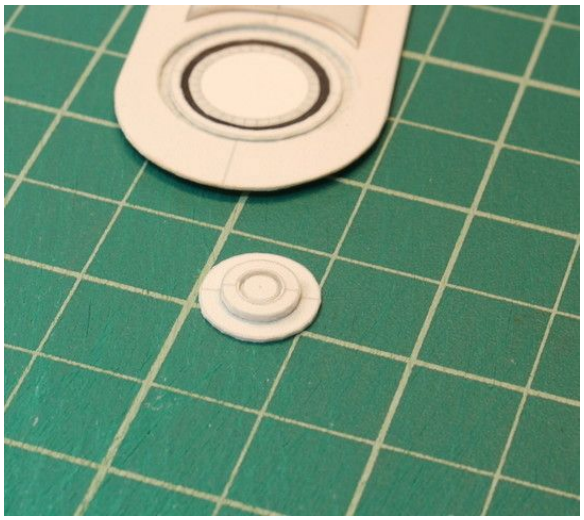
The next few layers are made of 459-461. Part 459 is laminated to .25mm and glued onto part 458. Place part 460 inside 459 part 460 and part 461 on top of part 460.



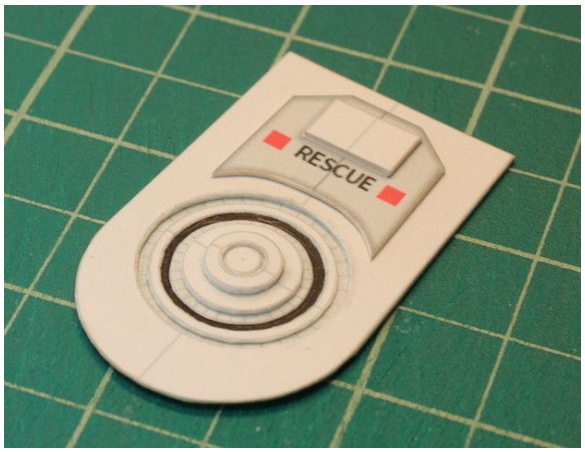
Next, parts 462, 463, and 465 are laminated to .5mm thick. Part 464 is glued to the underside of part 463.



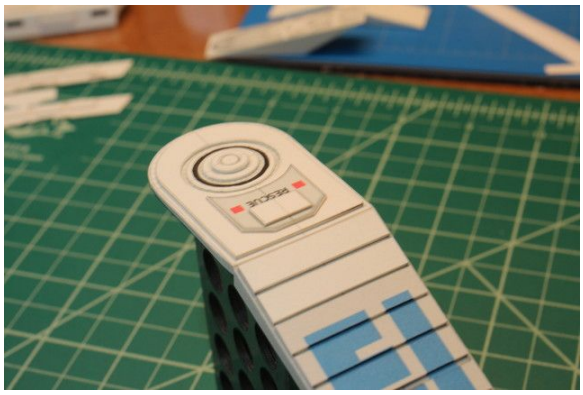
These four parts are stacked on top of each other. 465 inside 463 and 464 on top of 462.



The center of the airlock is then put onto the larger parts. Note that the bisecting lines of part 463, 462, and 459 are oriented port and starboard.



Parts 453 and 455 are glued together and part 456 is glued on top.

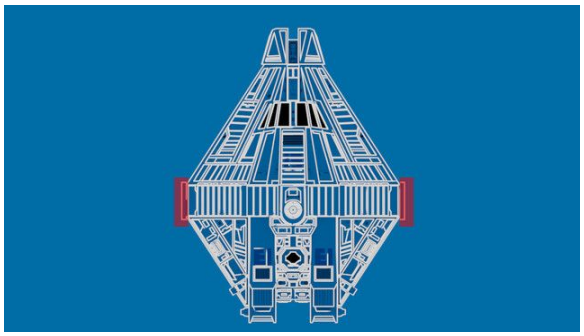


Part 454 is glued around the edge of part 455 and part 452 is glued around the edge of 453. These both create the walls on this assembly.

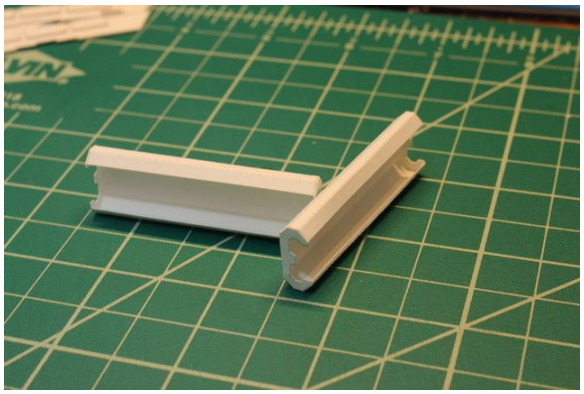
Parts 467-474 are laminated to a thickness of .5mm and glued on top of part 453.

This finishes the longitudinal spine and upper airlock.

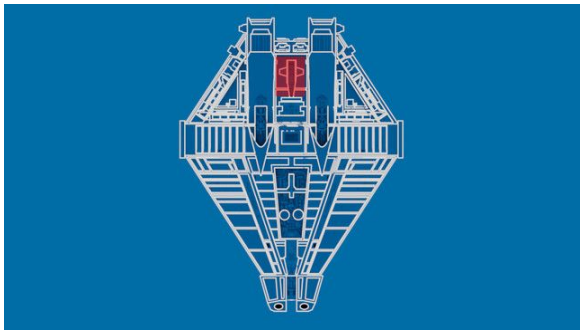
Clamps



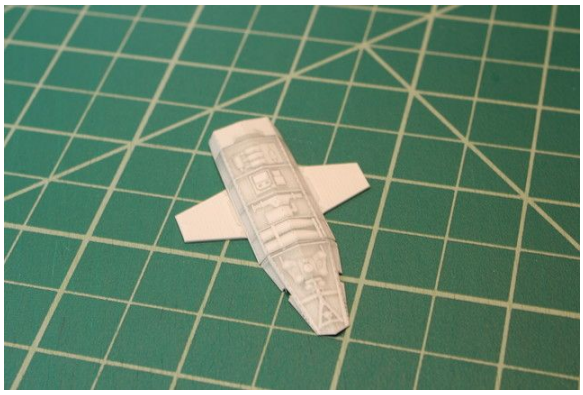
The clamps are made from part 487 and 488.



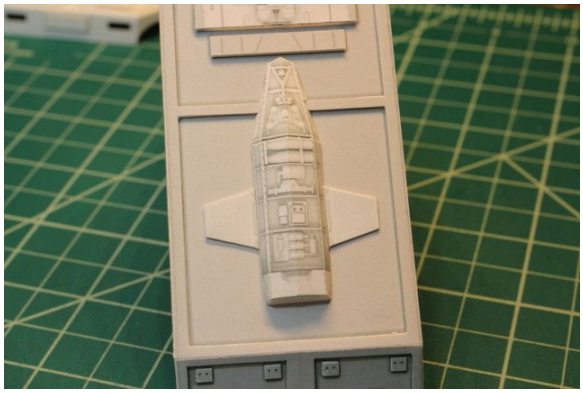
Chevron



The chevron is a detail piece that goes on the bottom of the rear hull section. It is made of parts 489 through 493. Parts 492 and 493 are laminated to .25mm.

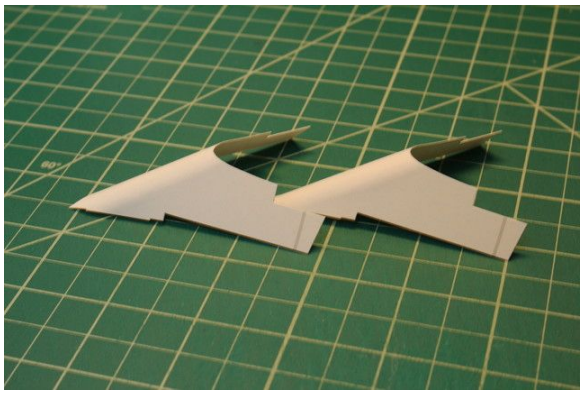


This is then glued to the bottom of the rear hull section.



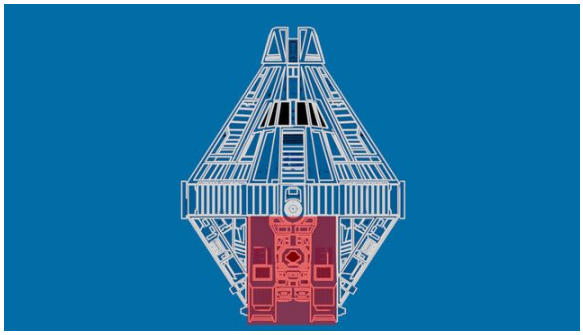
Spats

The spats are just cut out from the parts sheet and shaped. There is no assembly needed on them until they go onto the body of the shuttle.



Final Assembly

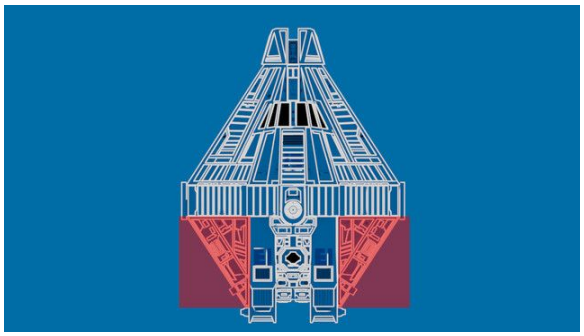
Final assembly begins with the two engine substructures and the rear hull assembly.

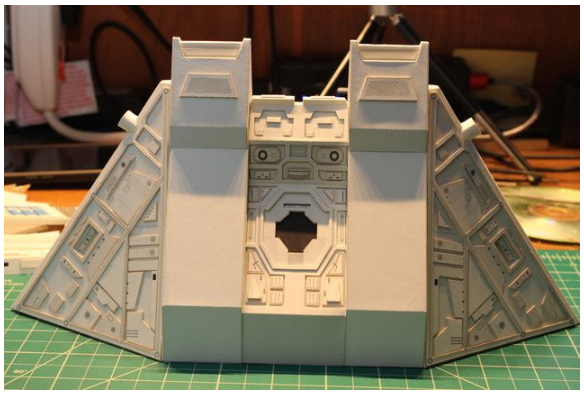


The forward plane (yellow in the image below) should be flat and the top and bottom edges should be level (red lines).

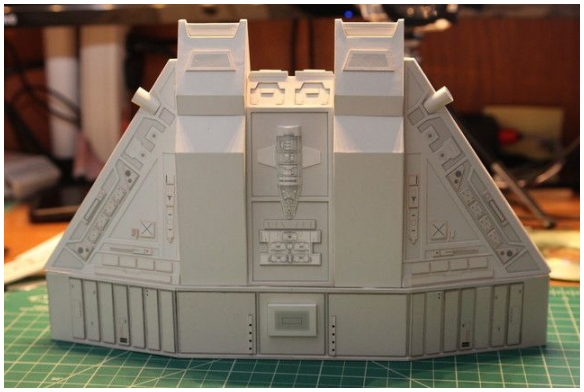
In this image the camera is above and looking towards the rear of the model. The yellow plane faces forwards.

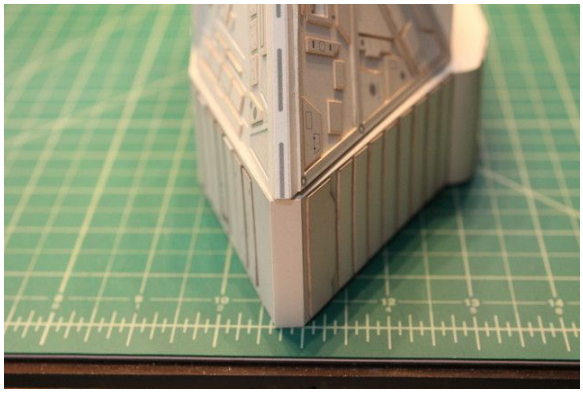
Do a similar operation to attach the rear corners.



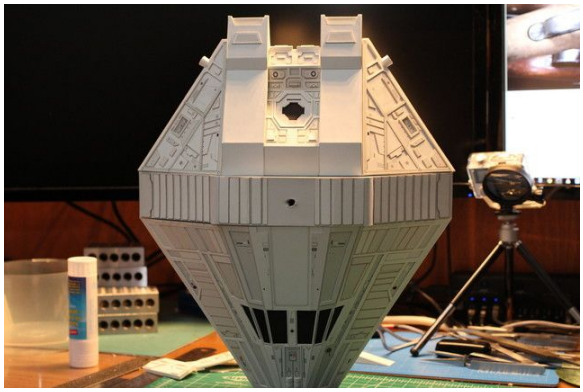


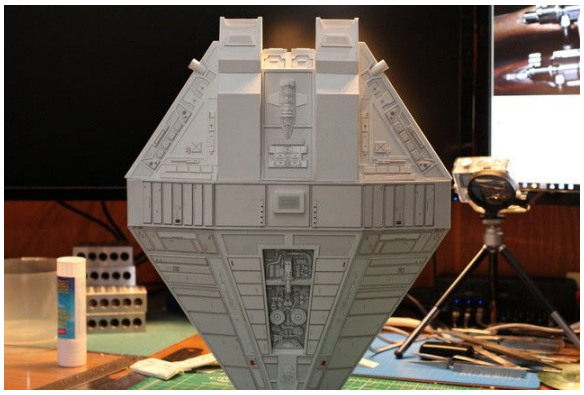
Next, glue this assembly on to the lateral spine. You will center the rear of the shuttle on the lateral spine side to side, and then at the outer edges center the outer edge of the rear corners on the outer edge of the lateral spine.

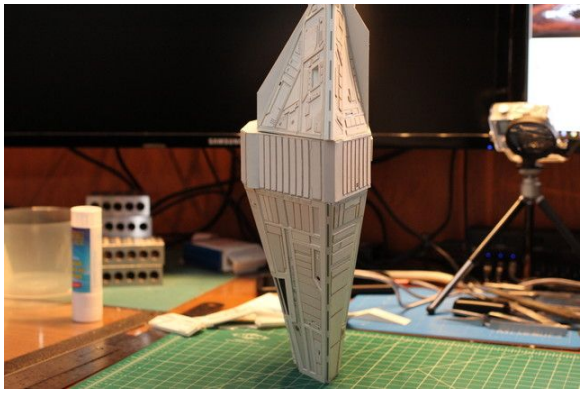




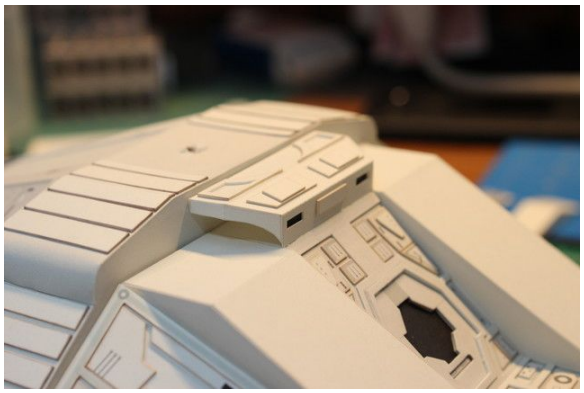
Next, glue the forward hull to the front of the lateral spine in a similar manner.







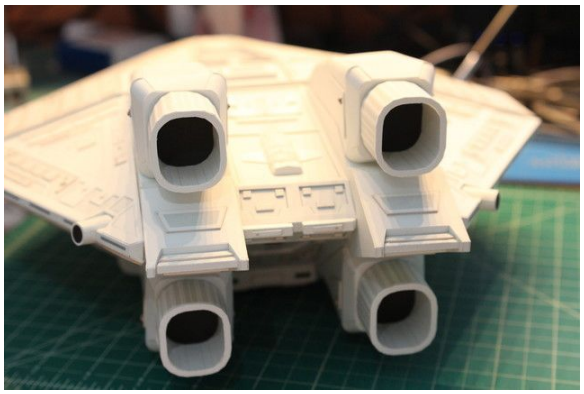
Next, glue on the rear deck. It goes above and between the two engine substructures. This involves a butt joint at the rear of the part. Use the longitudinal spine to determine how far beneath the top of the spine the rear deck should be placed.



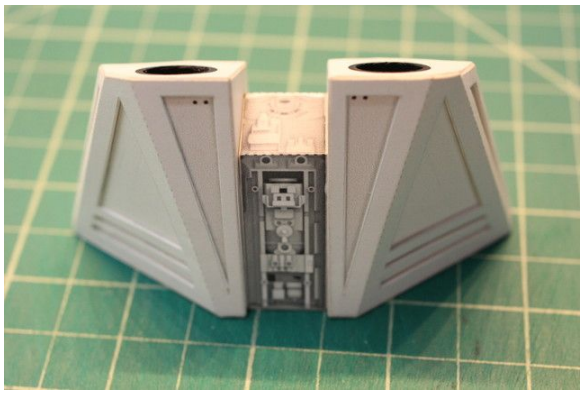
Glue on both of the upper engines. They should fit flush against the engine substructures, the rear of the lateral spine,

and against the side of the rear deck.

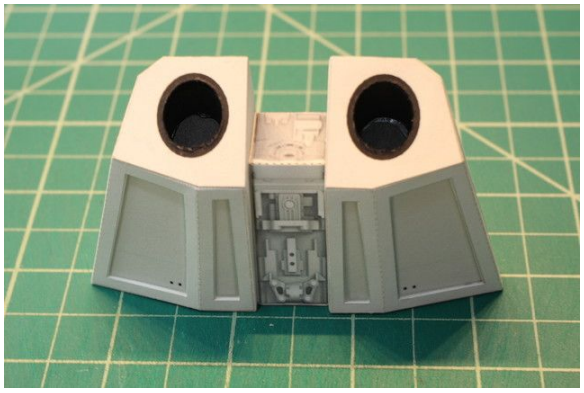
Now attach the rear engines. They should be centered horizontally on the engine substructures and fit flush against them.



Next up we need to glue the three parts together to form the nose of the shuttle. Note that the outside parts rise above the center block and also below. The image below is looking at the top of the nose. The rear faces should all be glued together in a single pane (which is why those faces are against my mat).

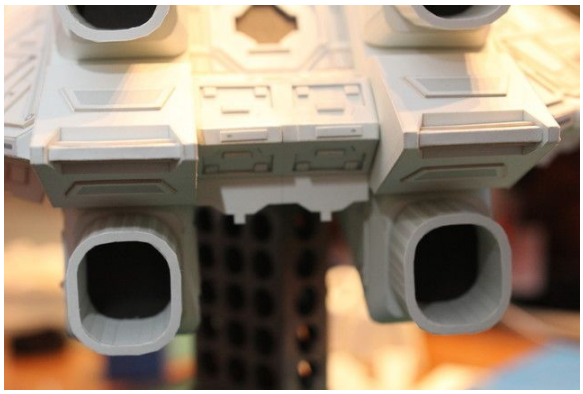


The same section from the bottom.

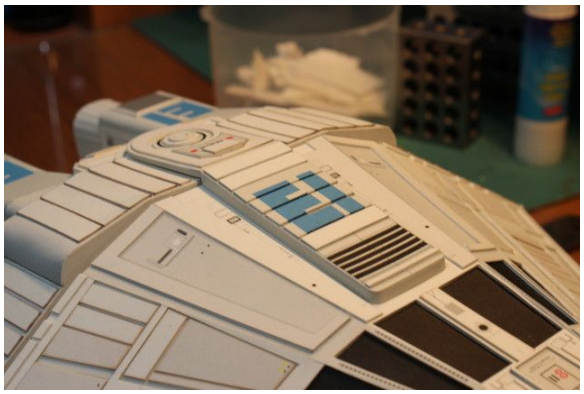


The side skirts go on both of the rear corners on the bottom. Note that the small rectangular part always goes towards the front of the shuttle.

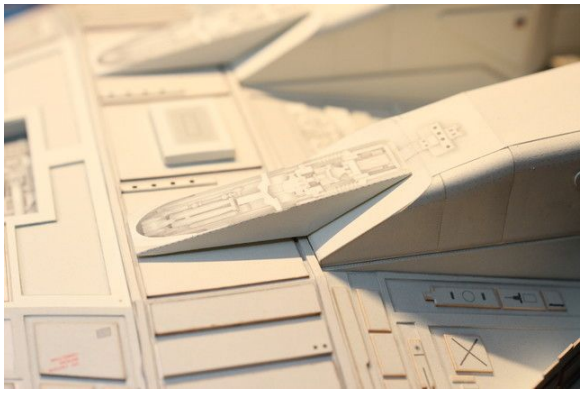
The rear skirt goes on the bottom of the rear hull similarly.



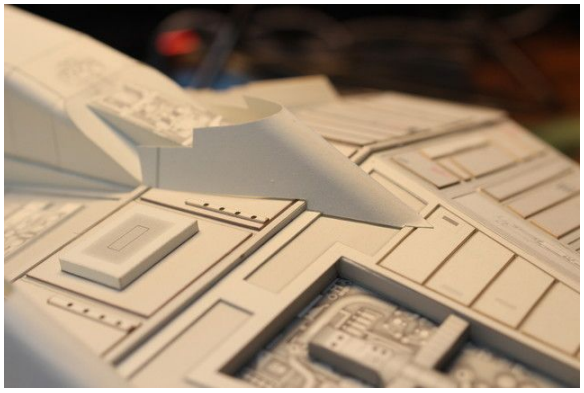
Now the longitudinal spine and airlock go on top of the shuttle.



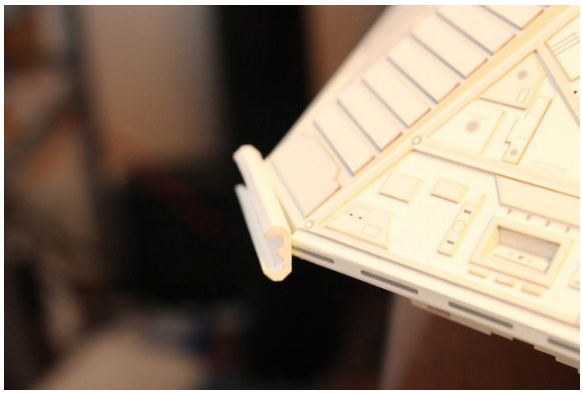
The lower engine wedges go on next and are aligned with the texture printed on those engines.



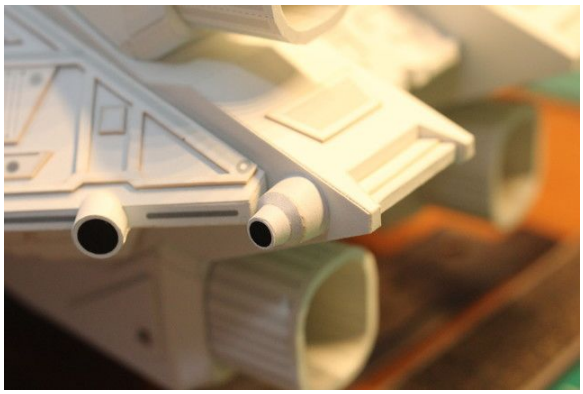
The “spats” or lower engine fairings go on now. These are complex shapes that are very dependent upon spacing and the thickness of the other parts you constructed. As such, you may need to trim them to fit cleanly.



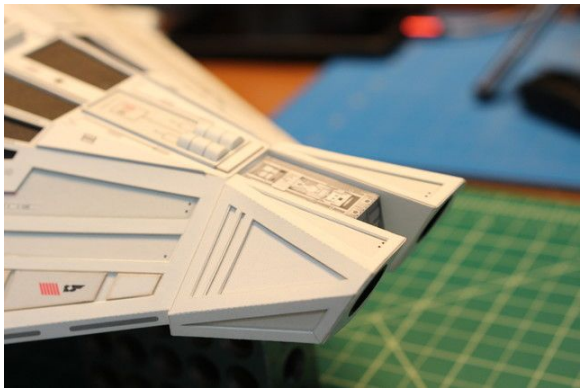
Next the side clamps go onto both ends of the lateral spine.



Another detail, the rear corner ports go on the outside of both engine substructures.

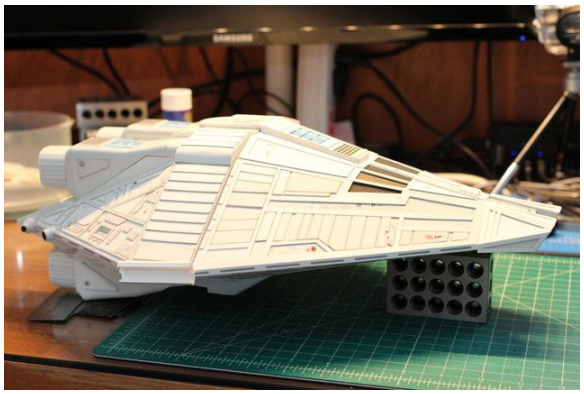


The last part of the assembly… the nose now goes onto the shuttle.



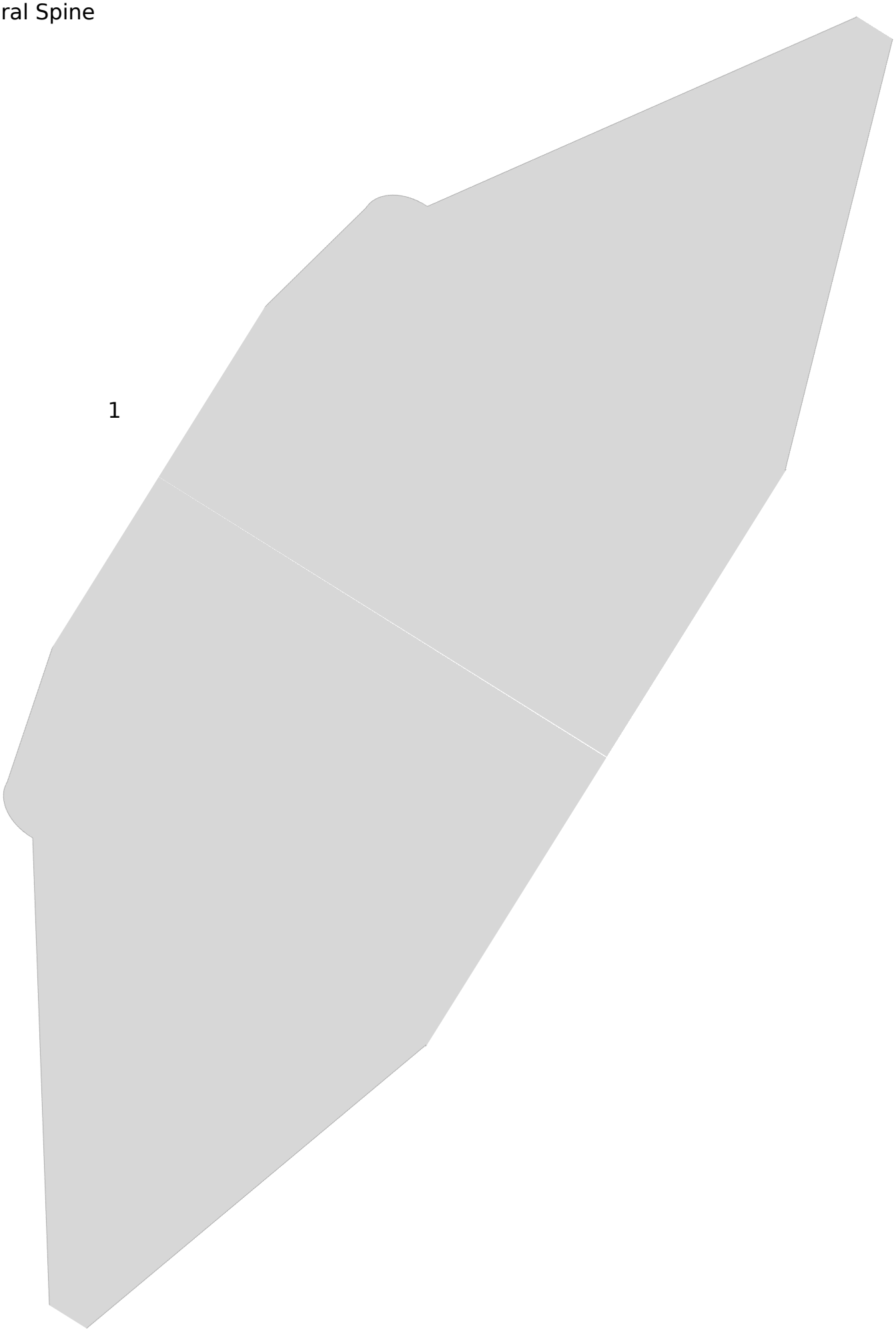
And you have finished. Please see my gallery for full size reference images.

From the top:

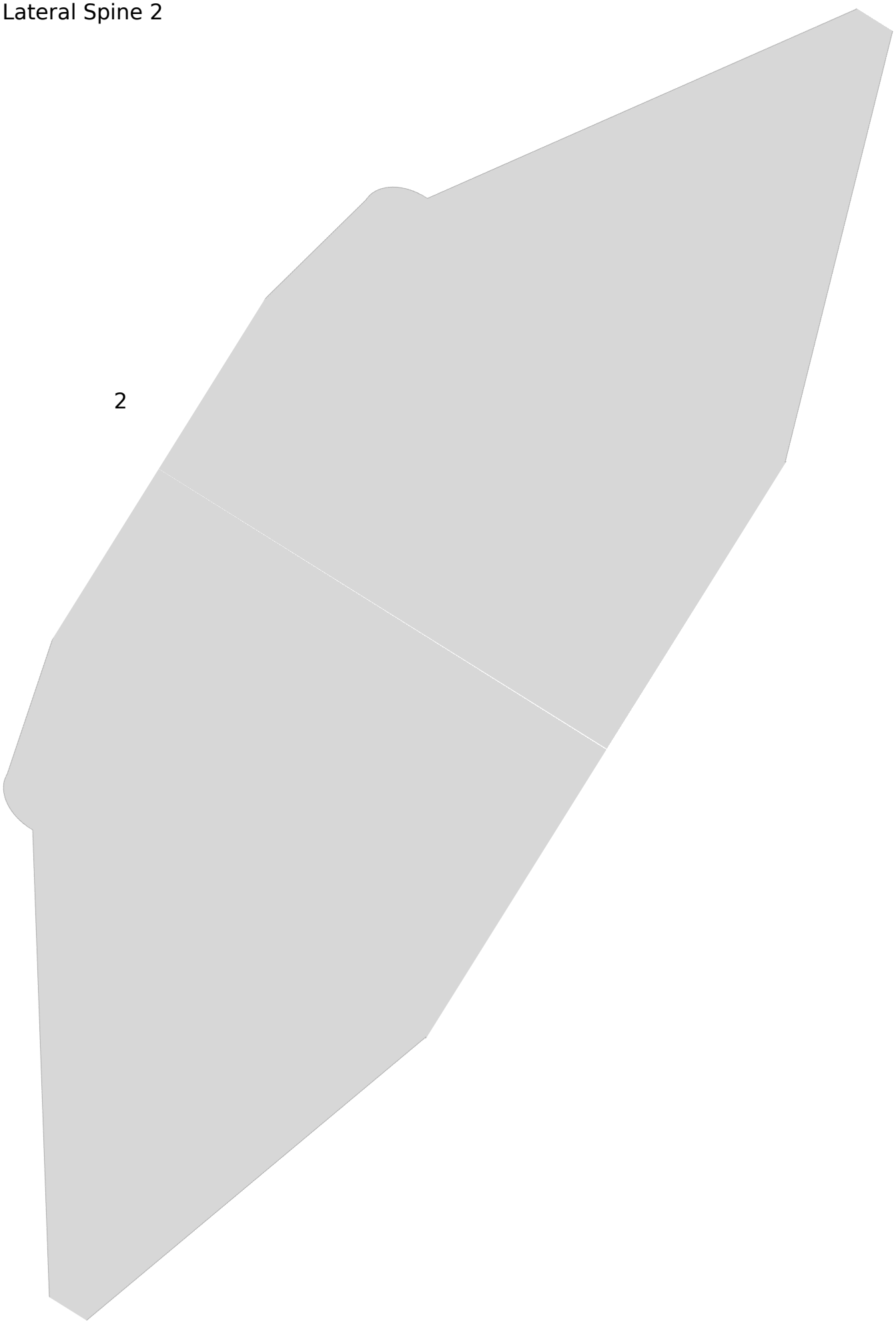


From the bottom:

Lateral Spine



Lateral Spine 2



Lateral Spine 3

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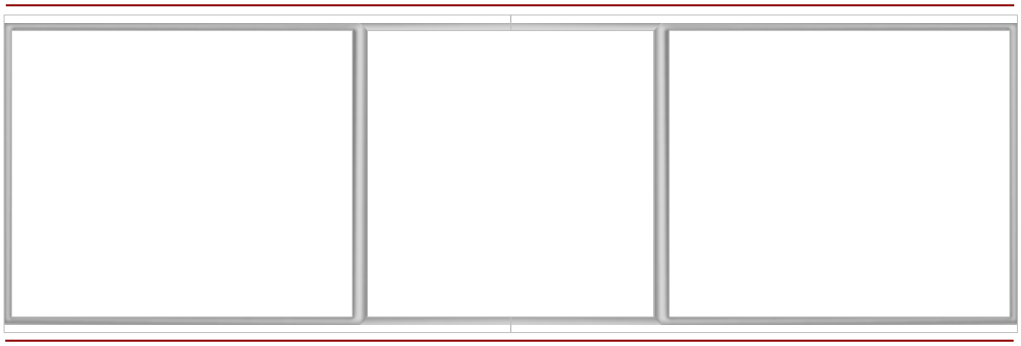

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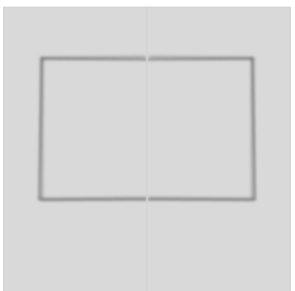

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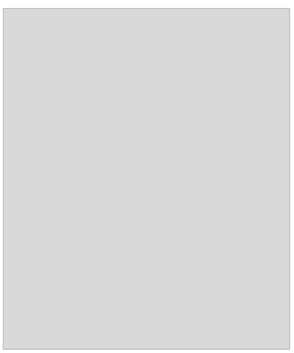

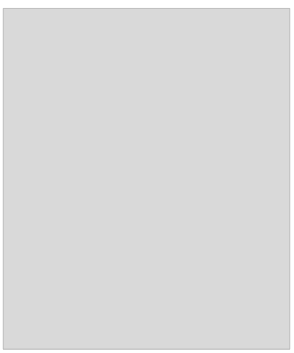

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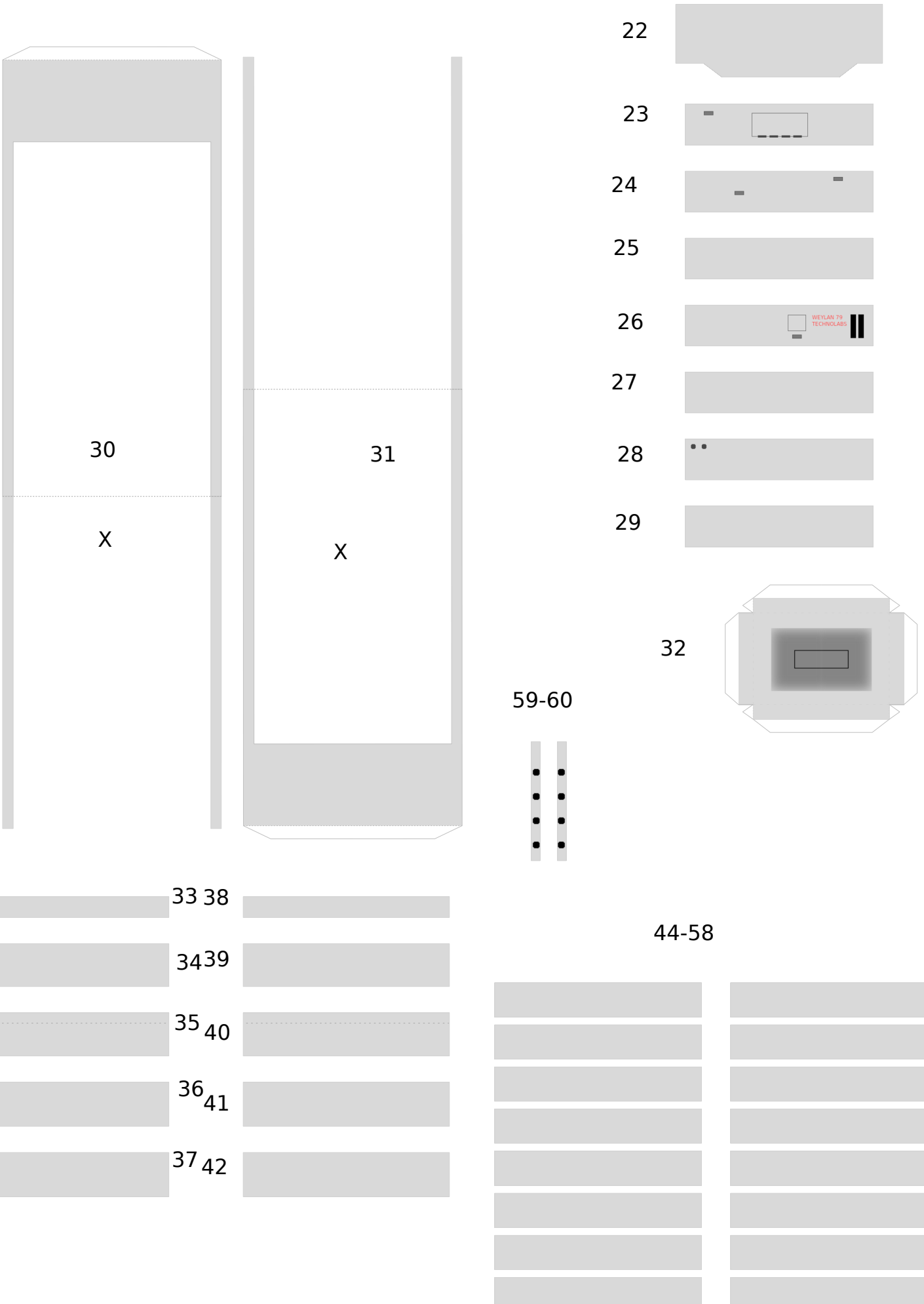
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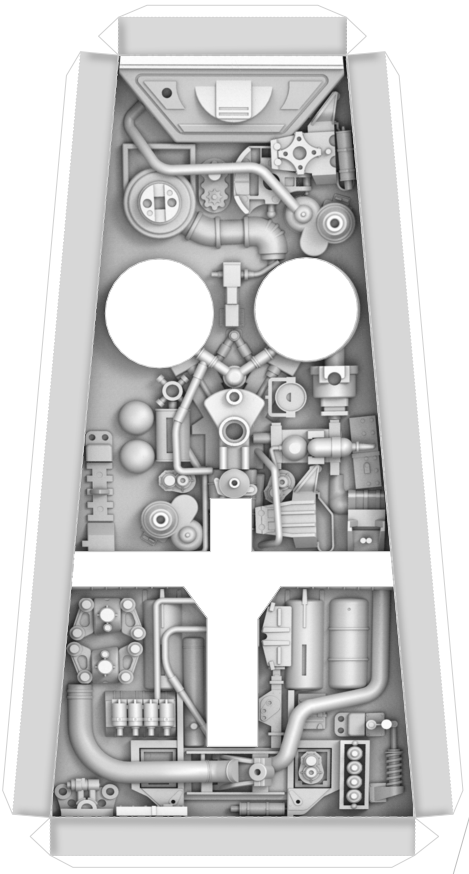
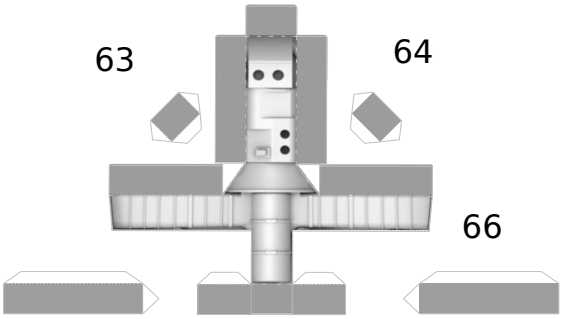
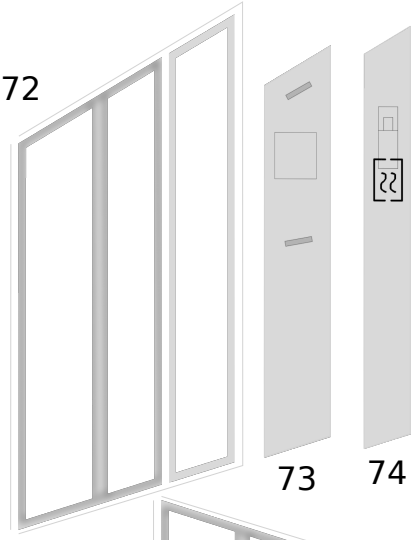
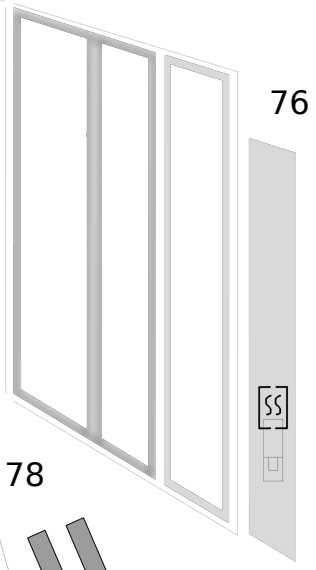
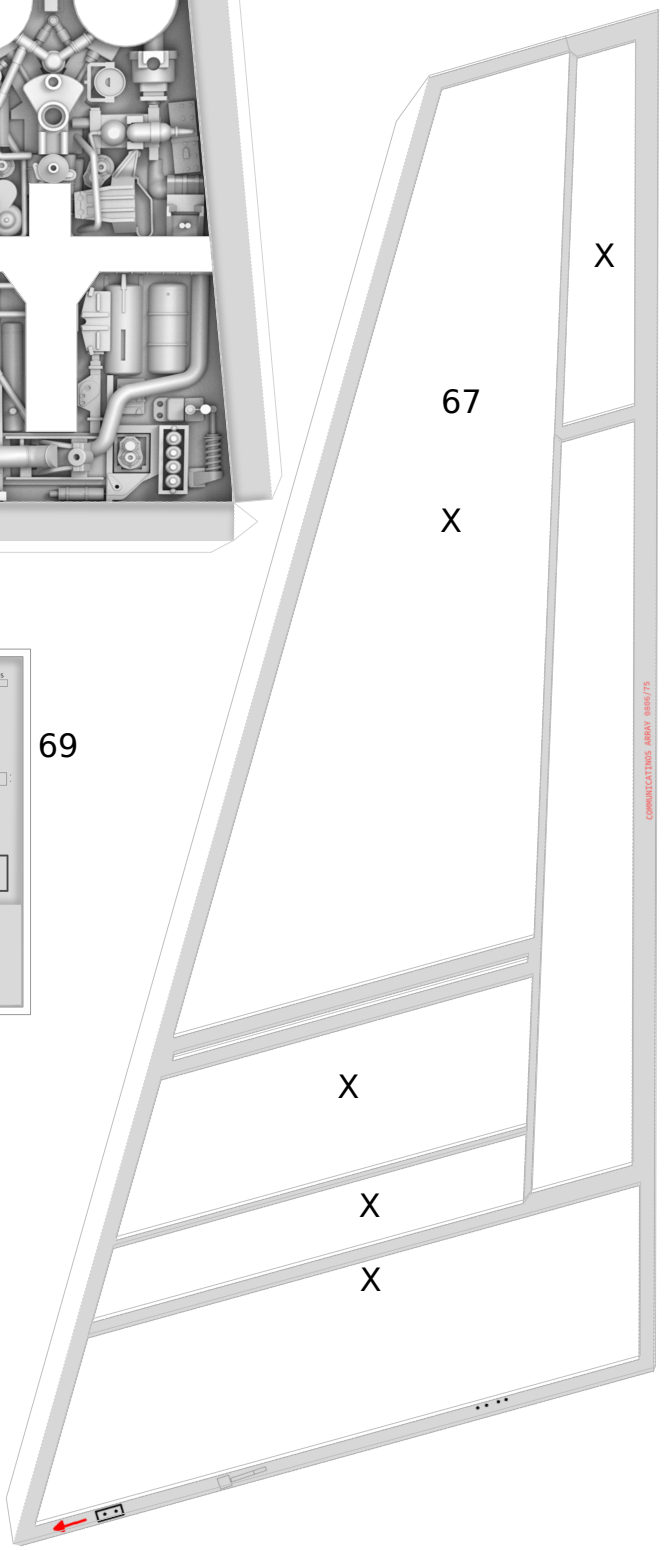
Front Hull 1

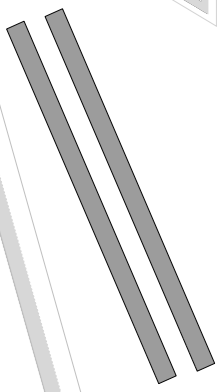


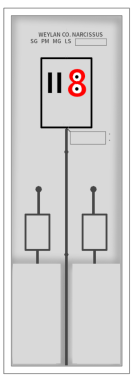


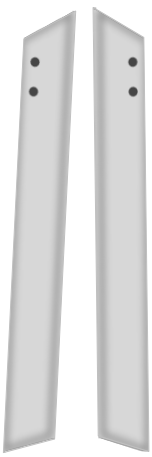












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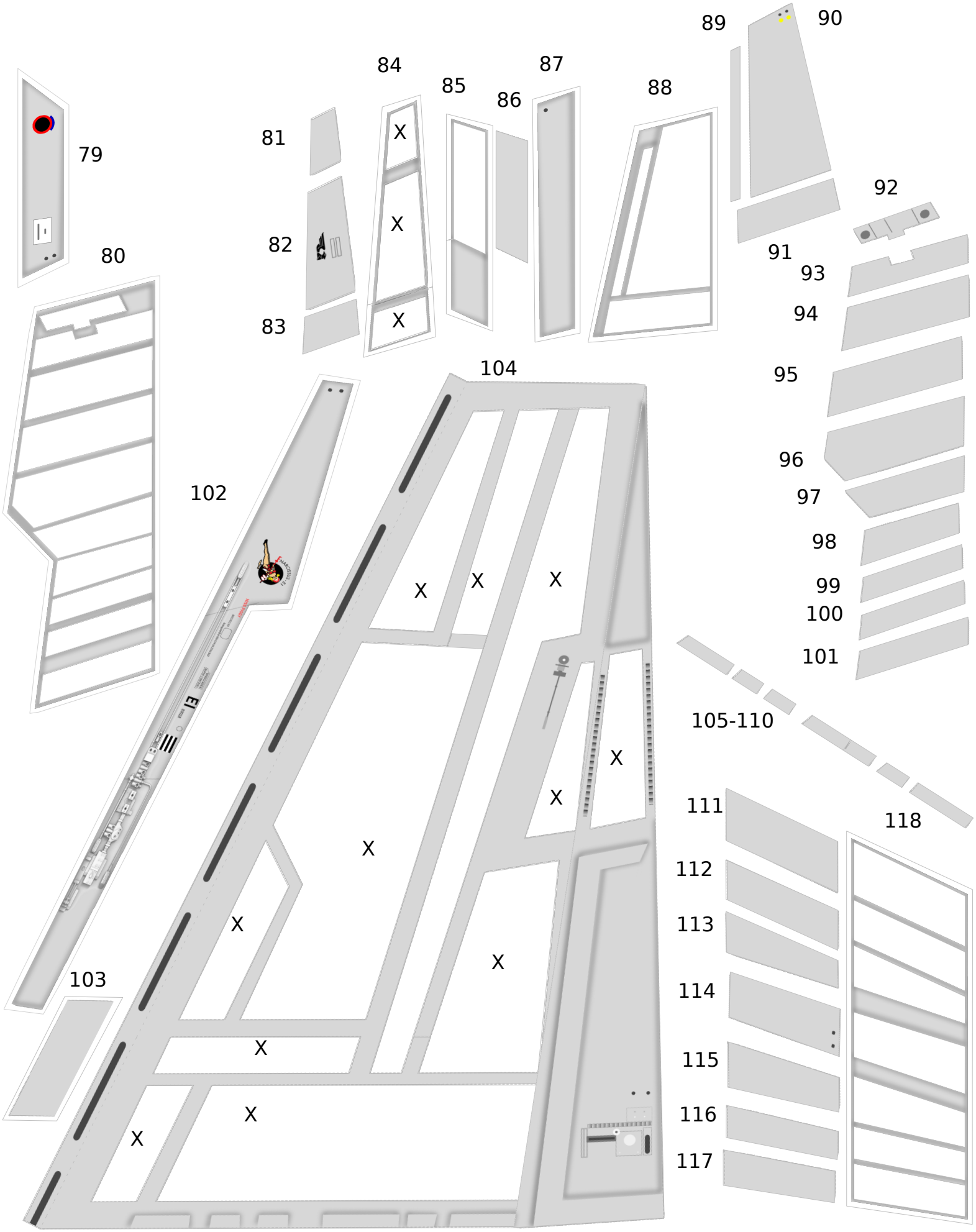
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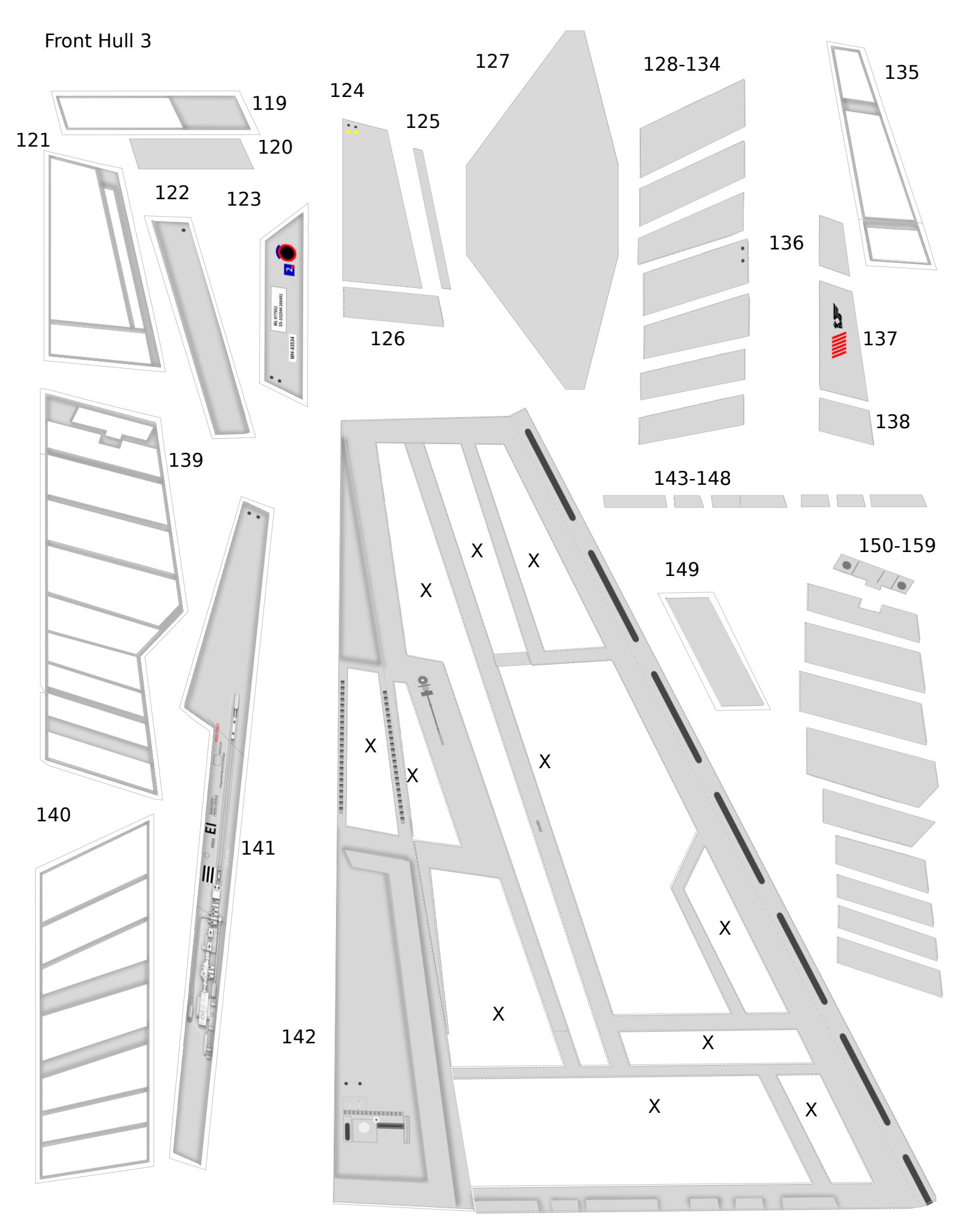
Front Hull 3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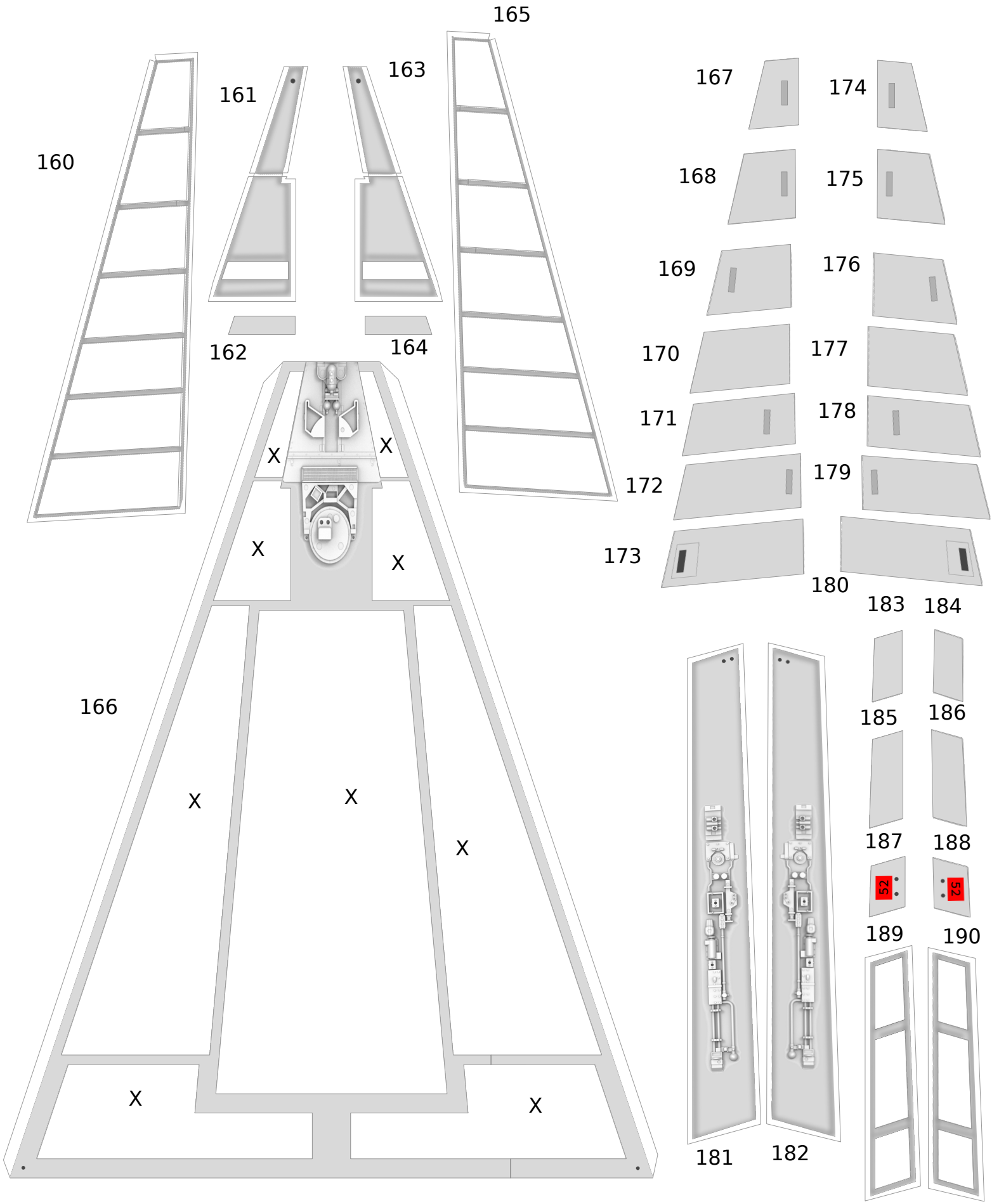
Front Hull 4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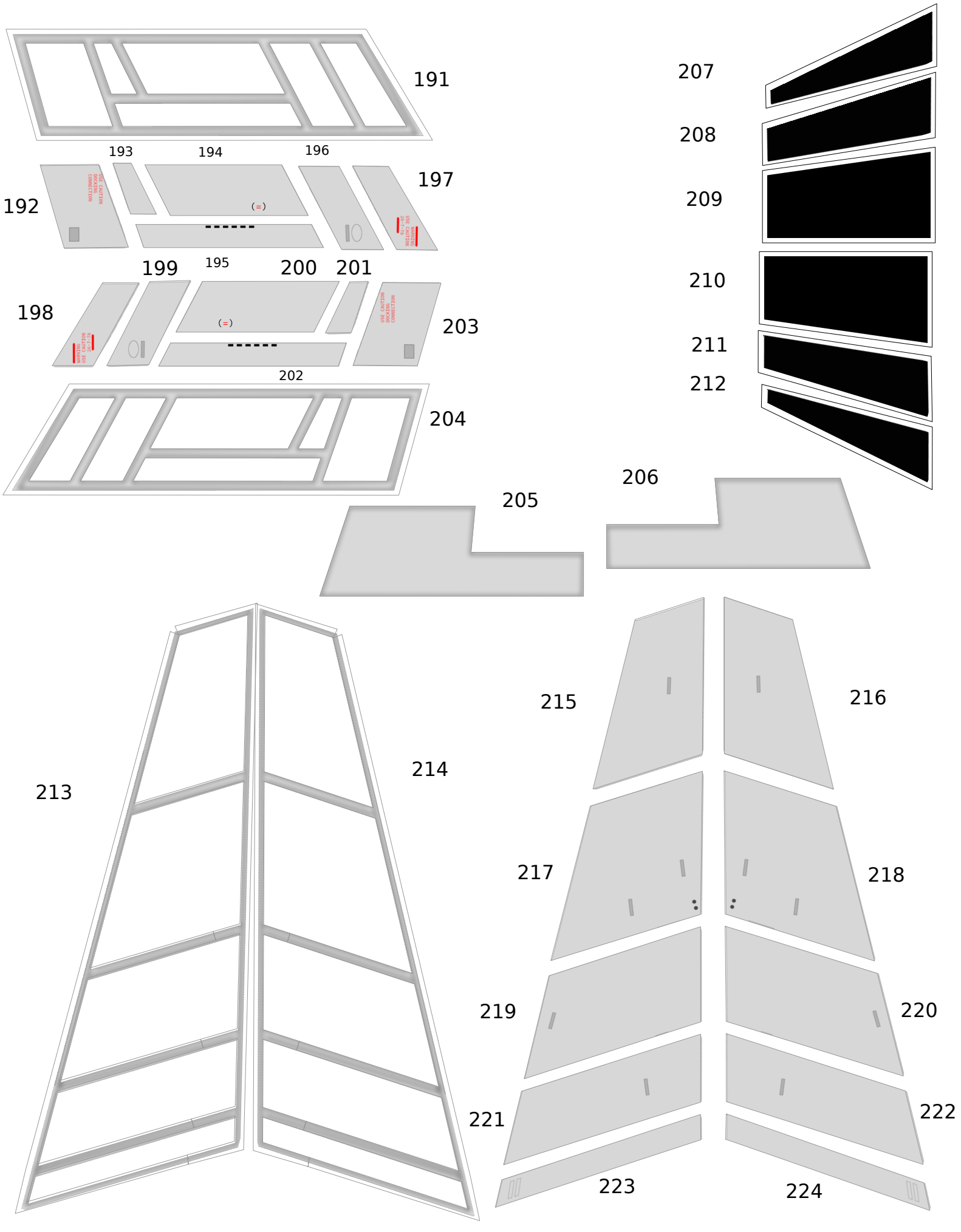
Front Hull 5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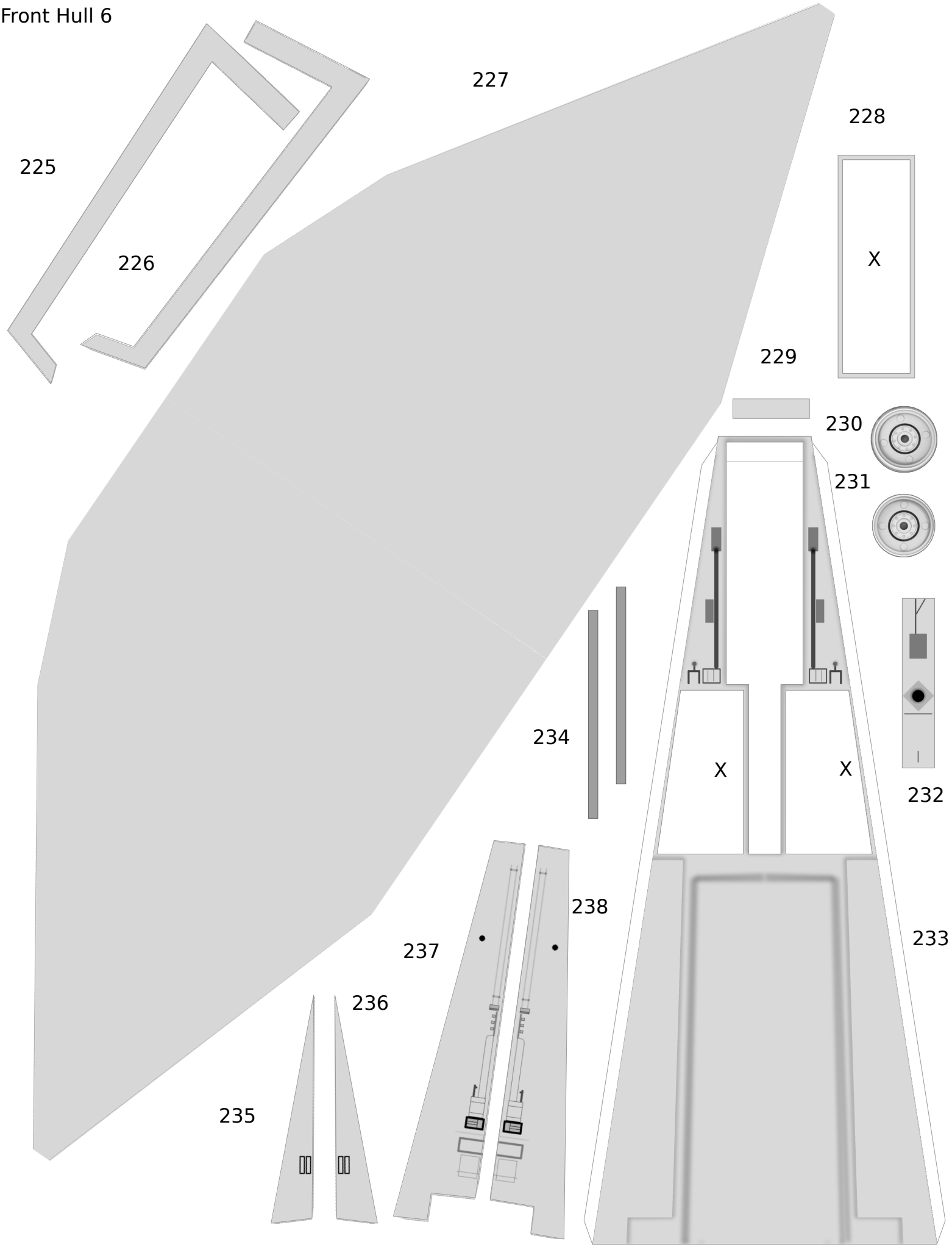
Front Hull 6



Front Hull 7

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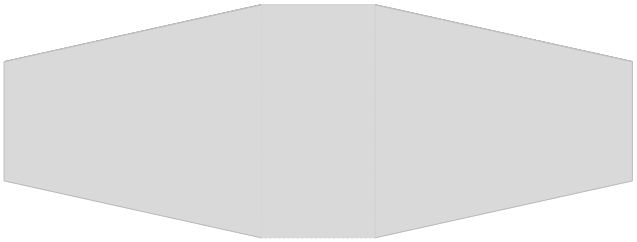

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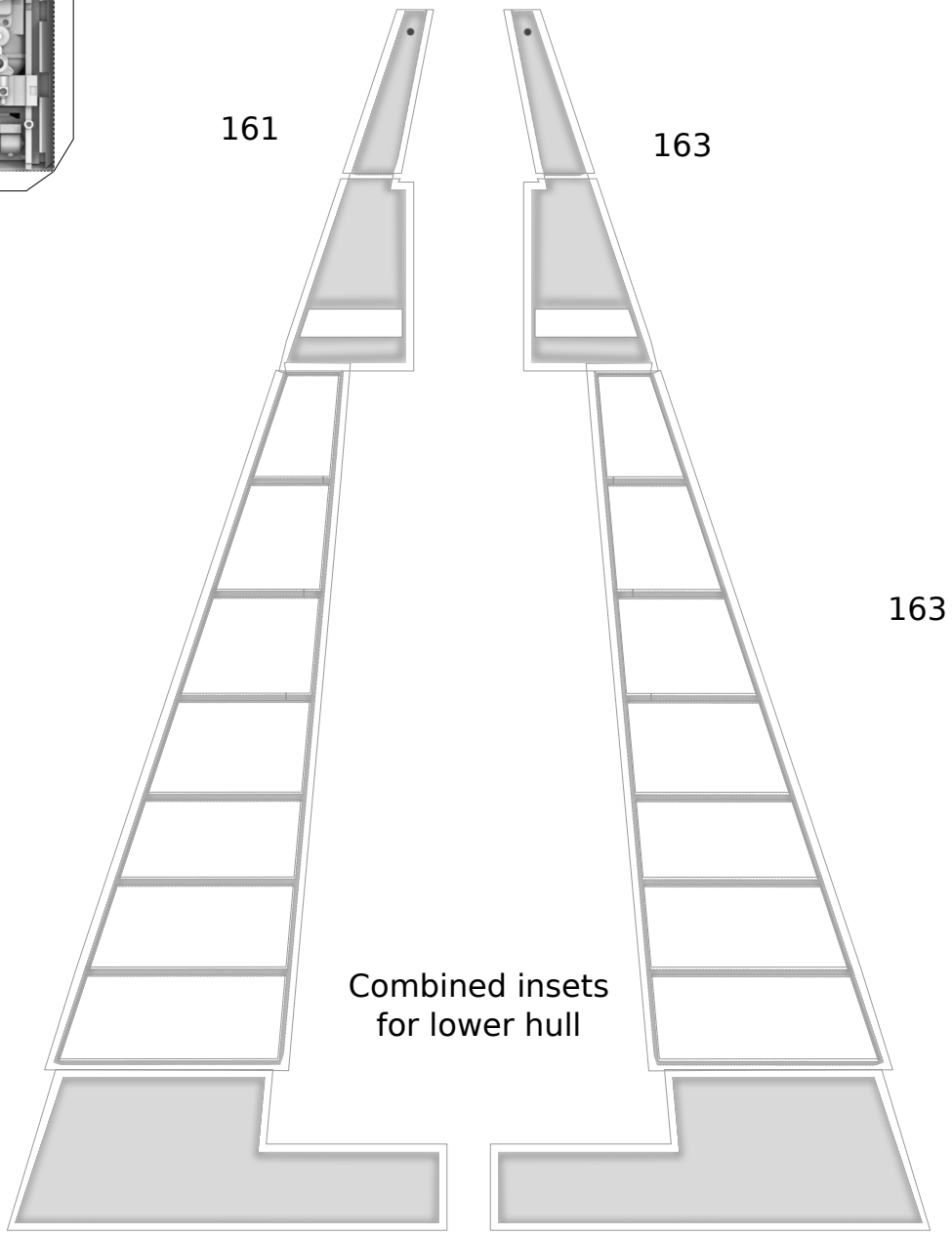

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Combined insets
for lower hull

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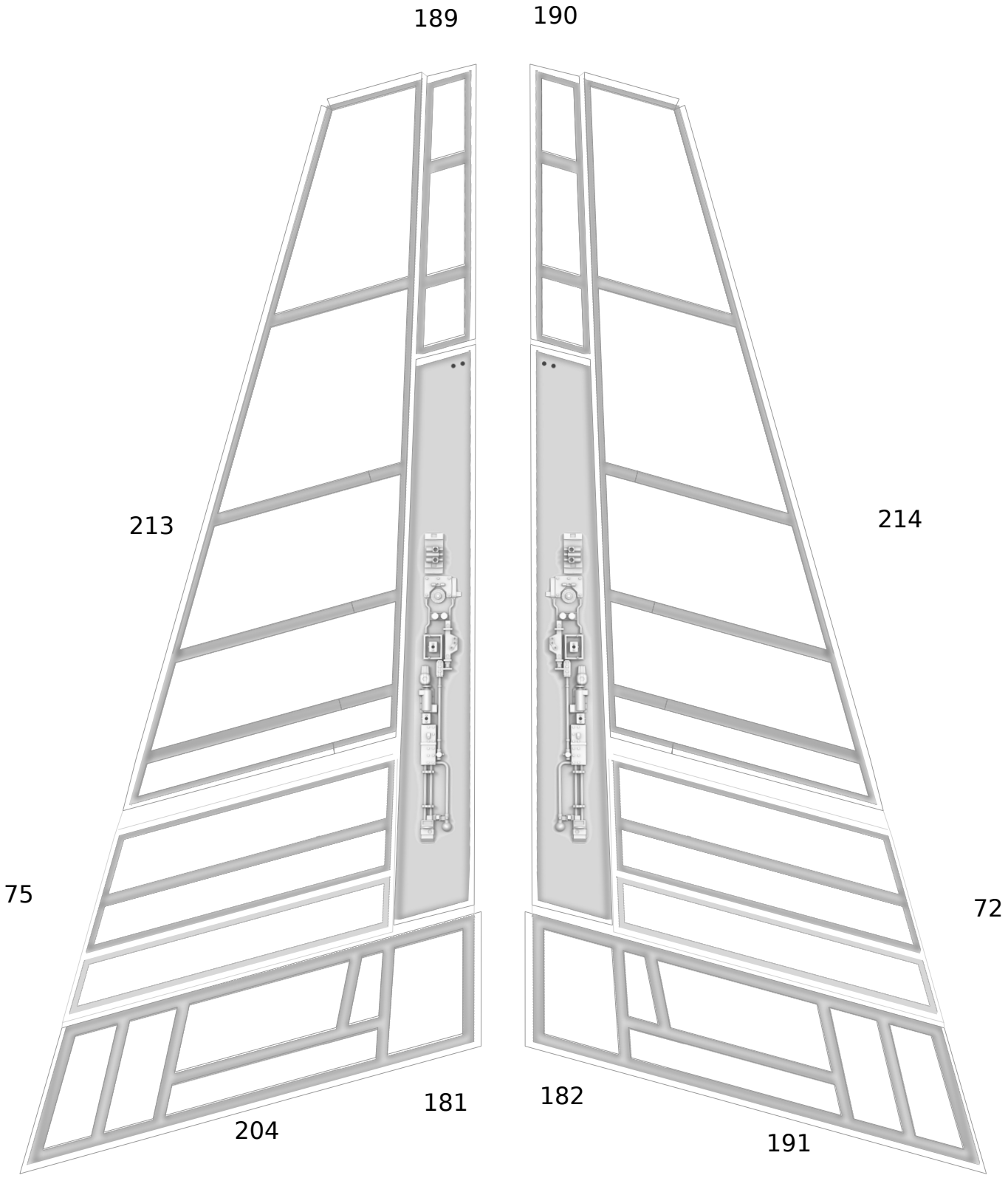
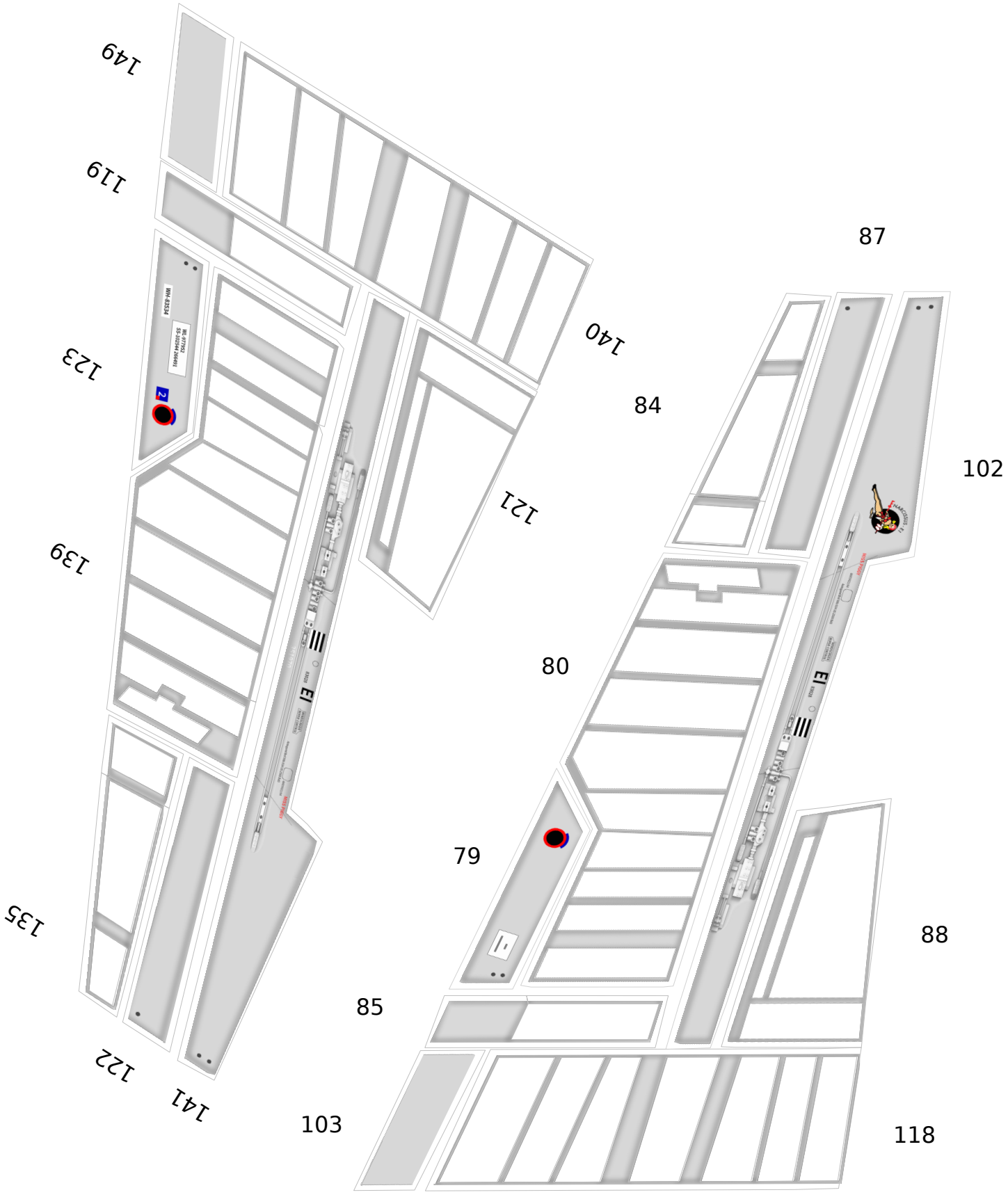
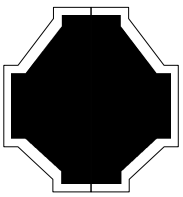
Front Hull 8
Combined Insets for the lower hull



Front Hull 9
Combined insets for upper hull



Rear Hull 1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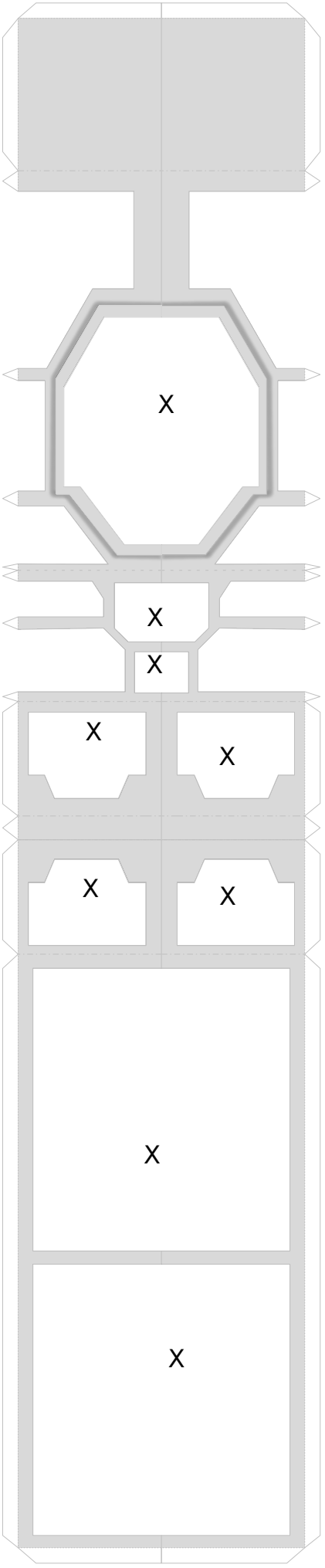
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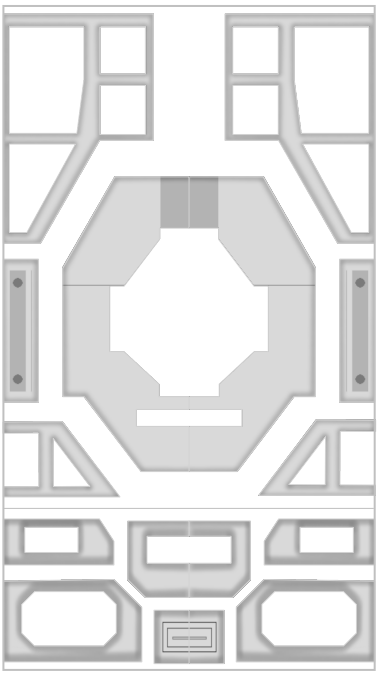
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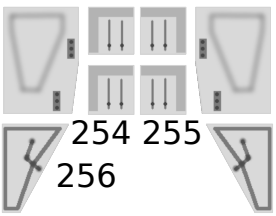
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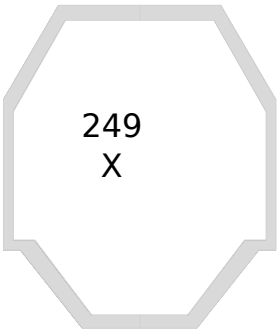
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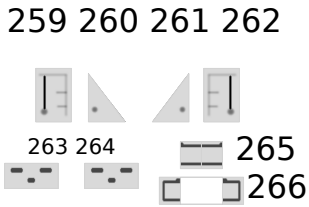
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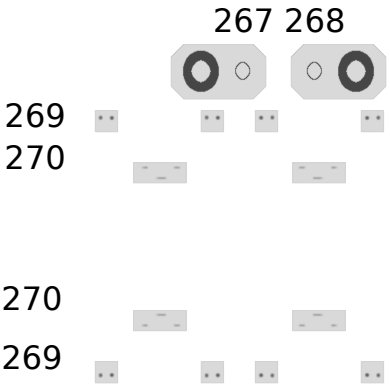
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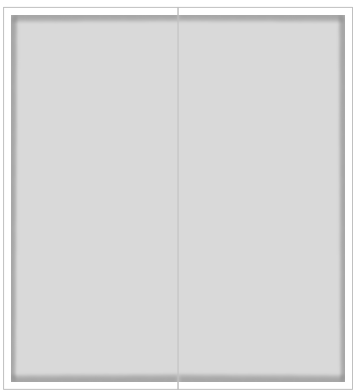
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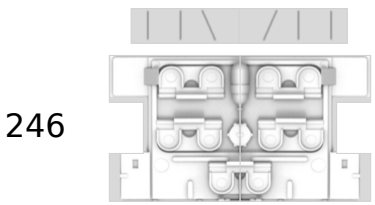
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Rear Hull 2

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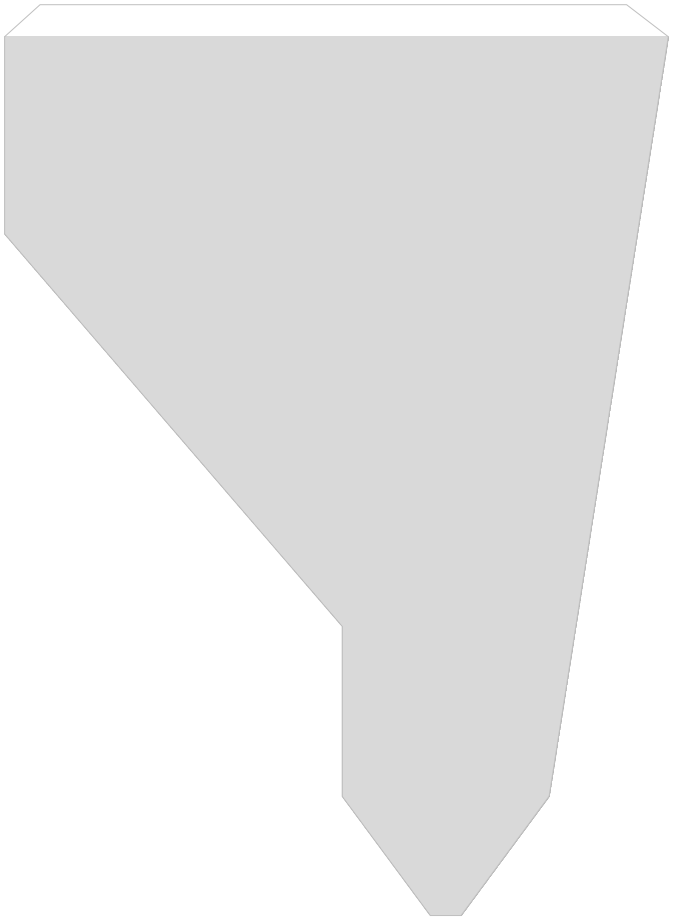
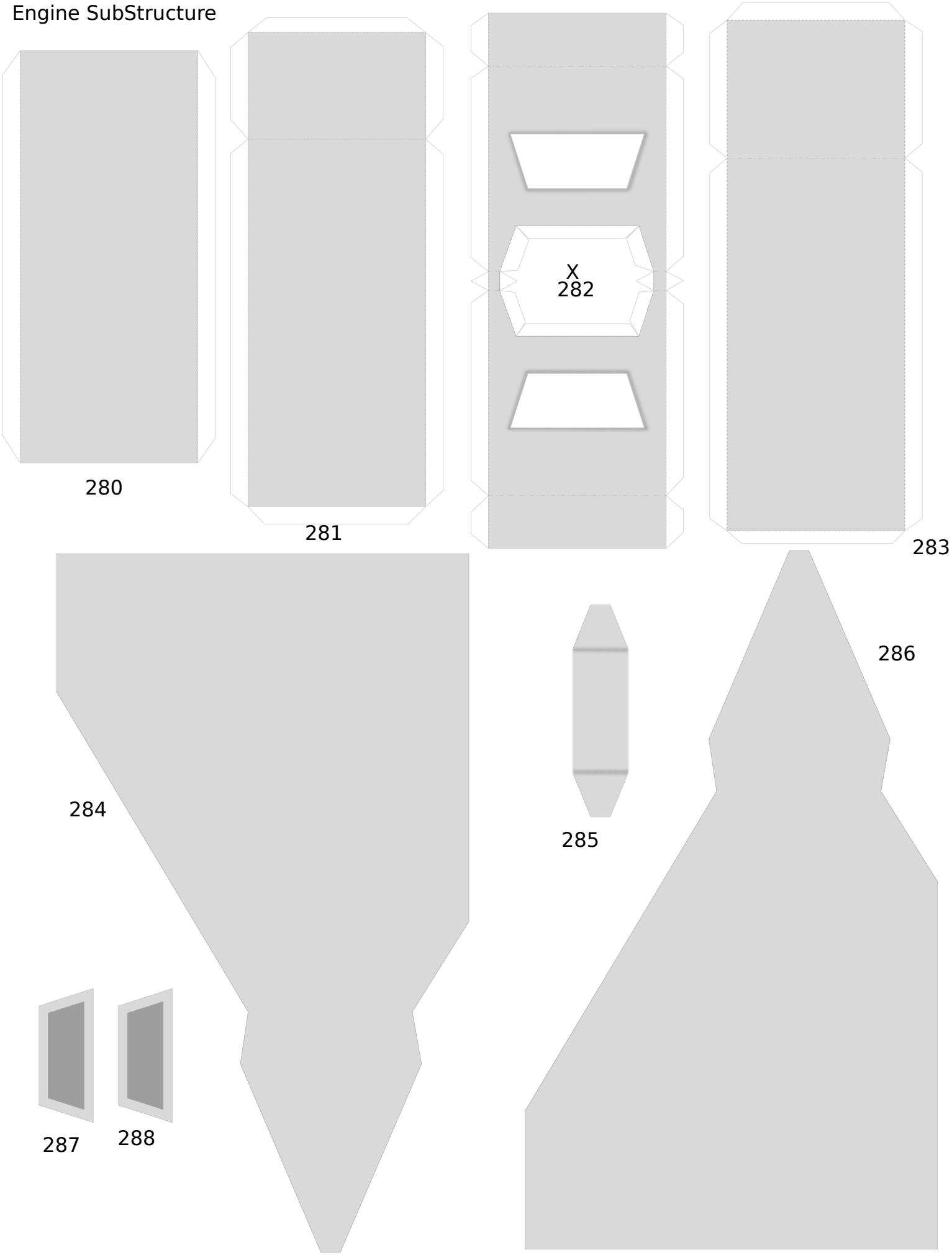
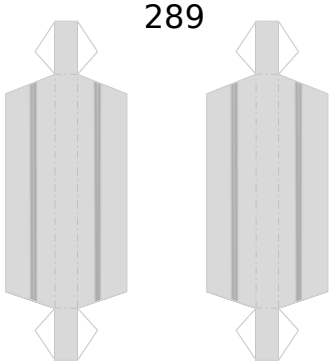
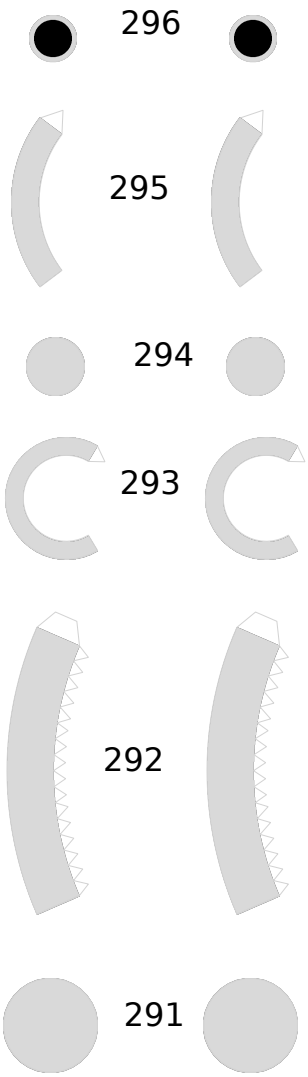


Engine SubStructure

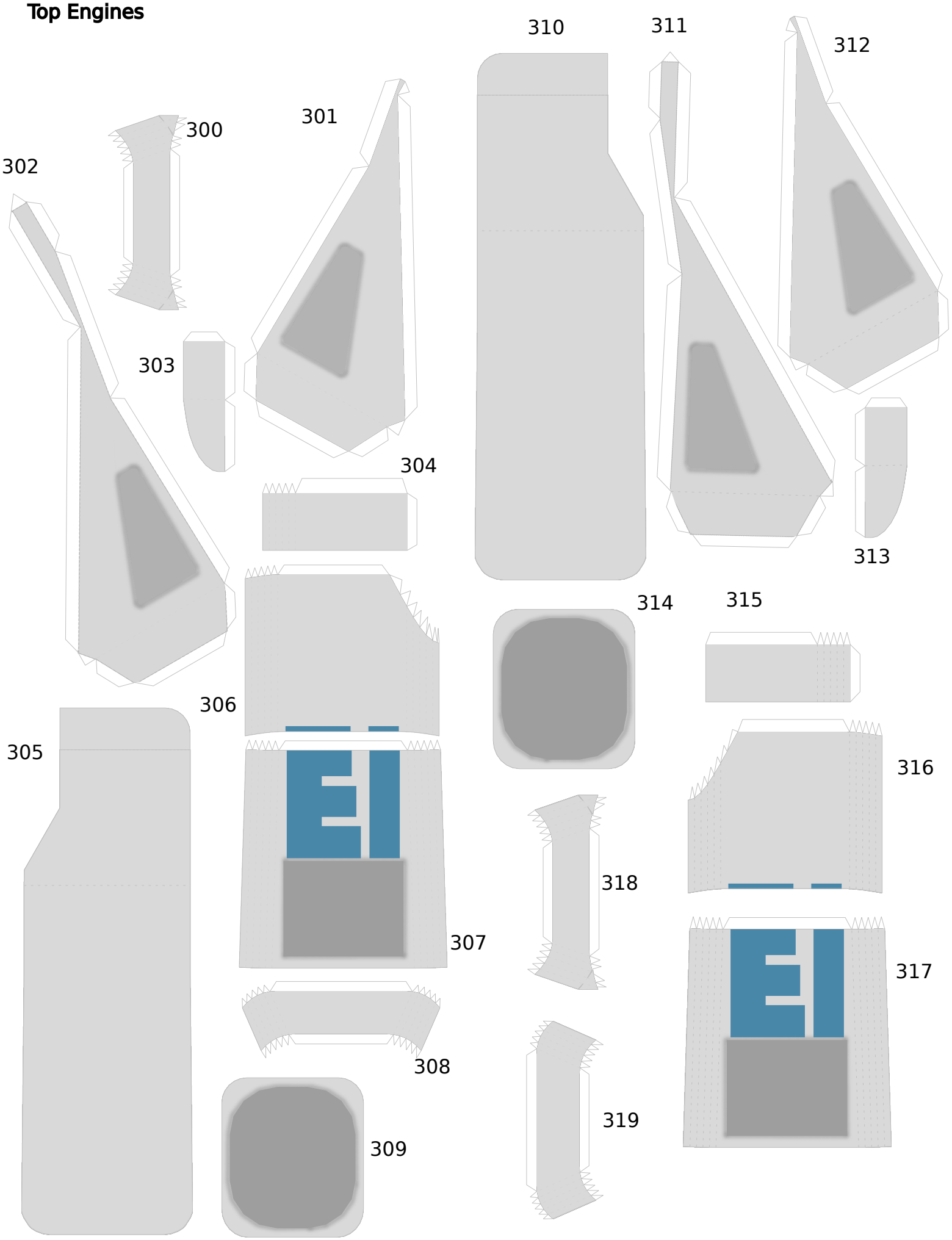


Engine SubStructure 2





Top Engines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Engine Top 2

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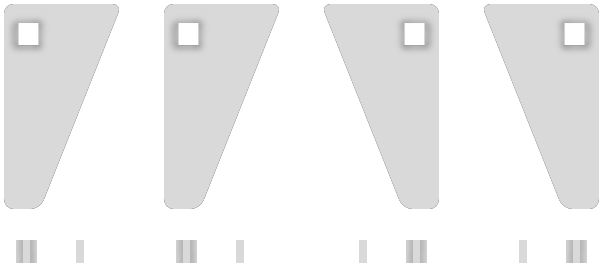

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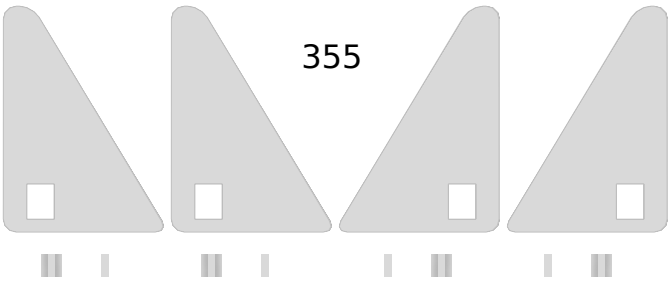

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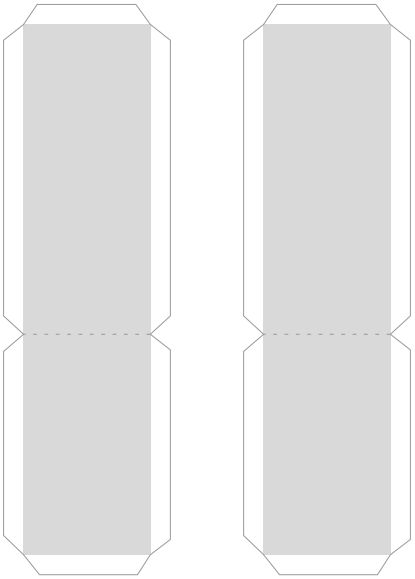

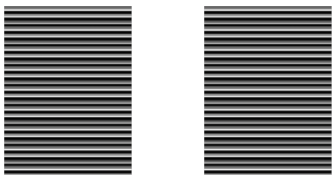

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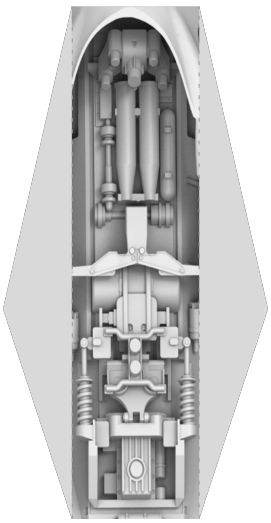

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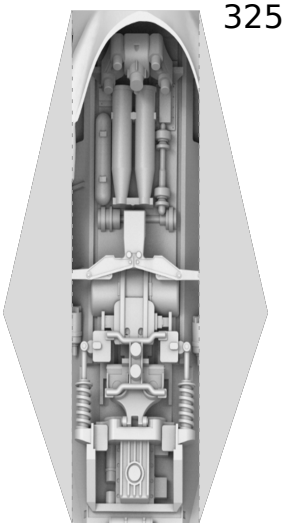

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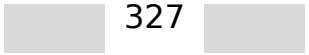

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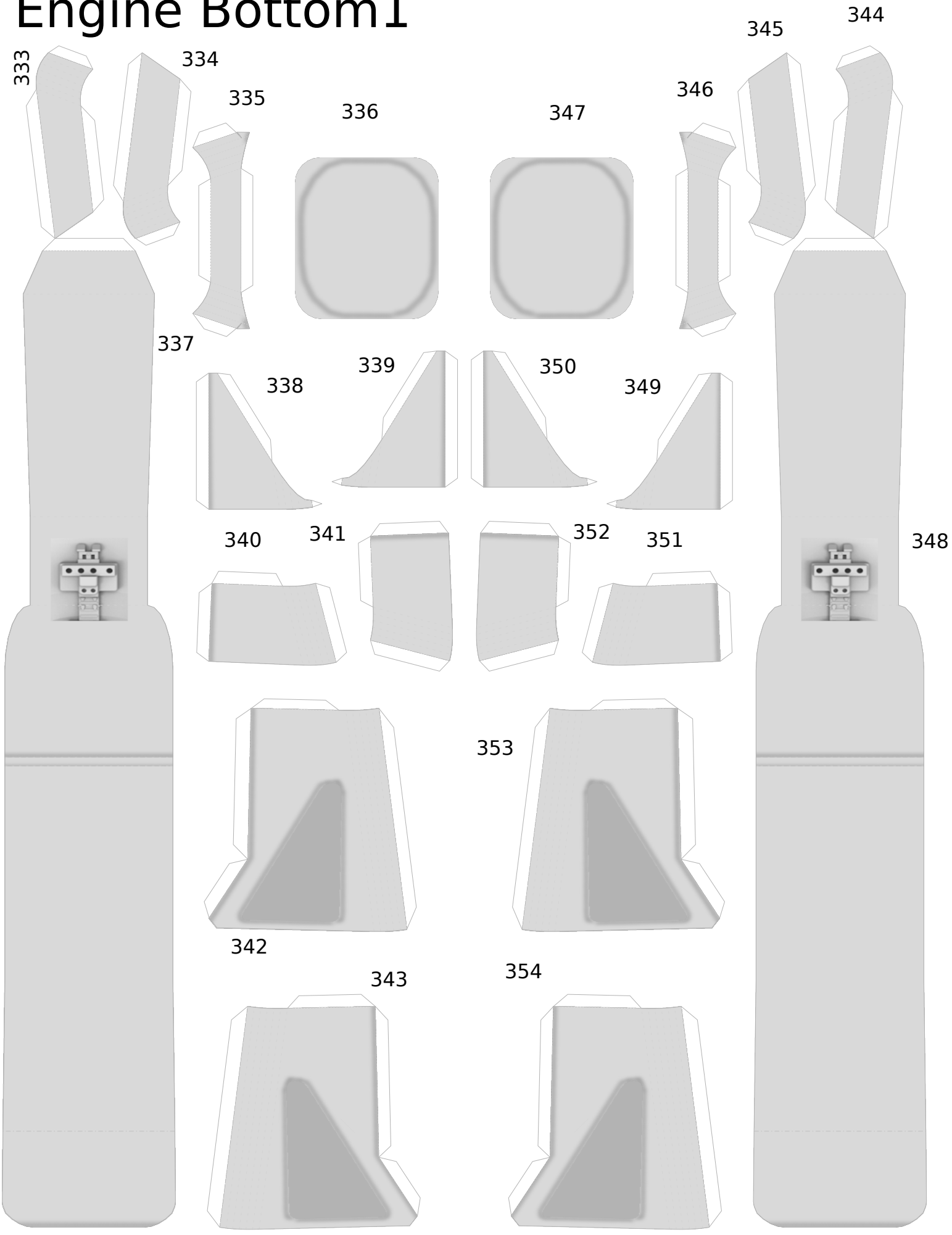

Engine Bells

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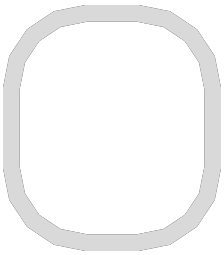

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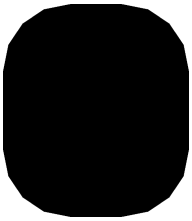

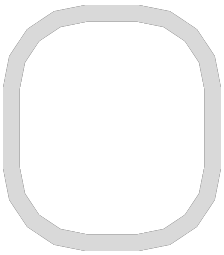

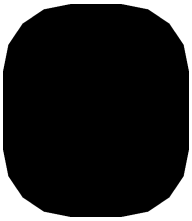

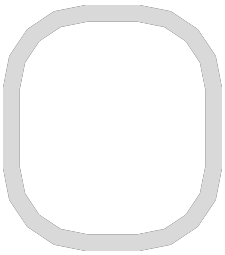

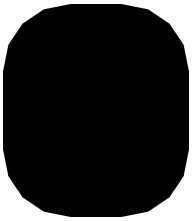

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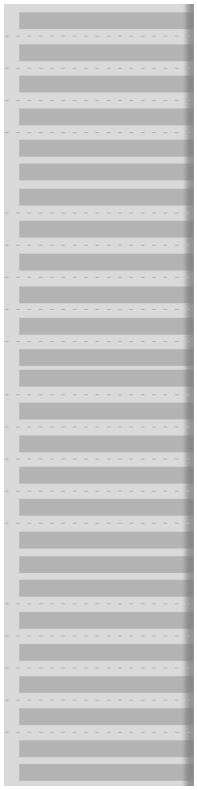

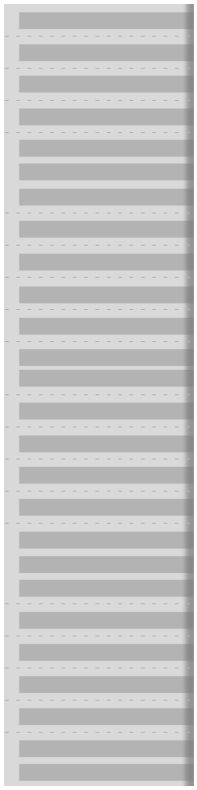

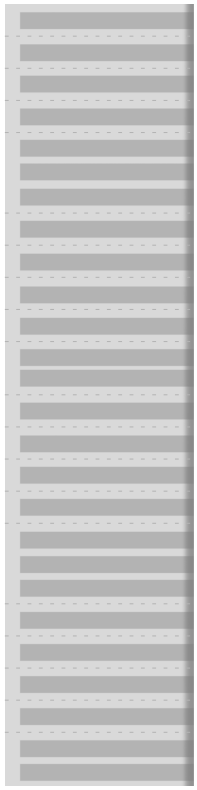

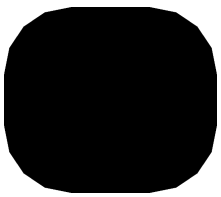

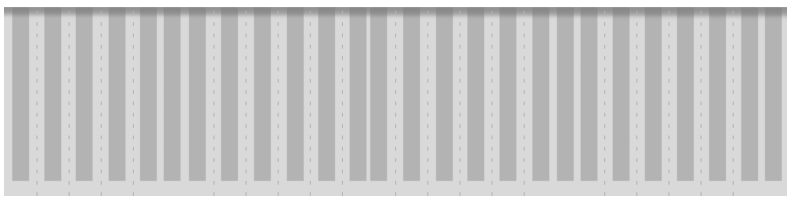

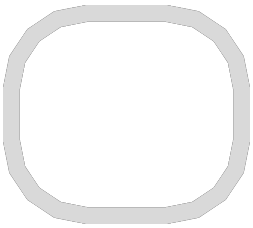

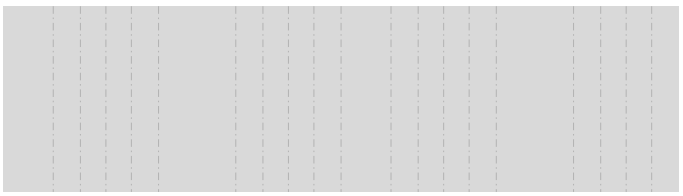

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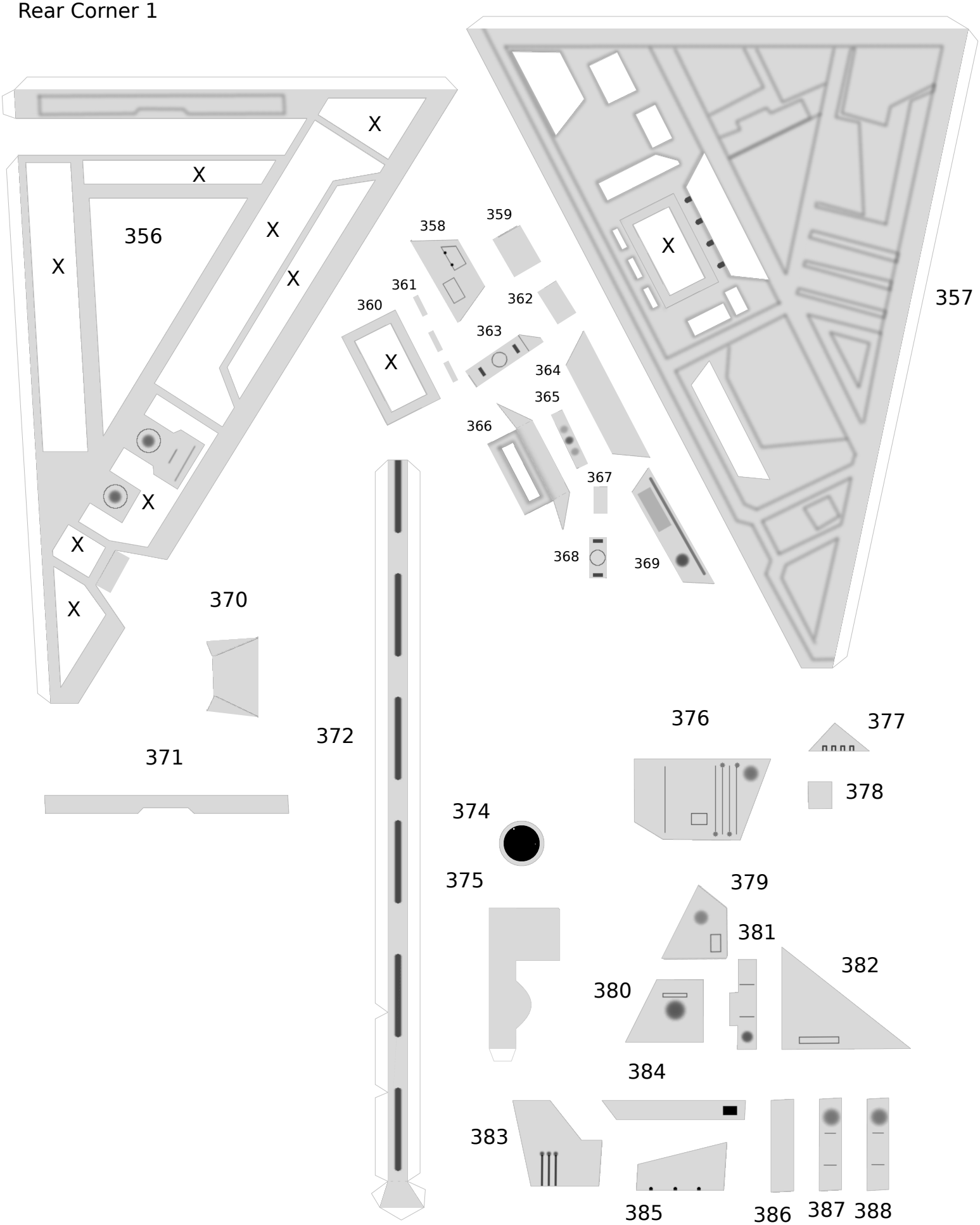

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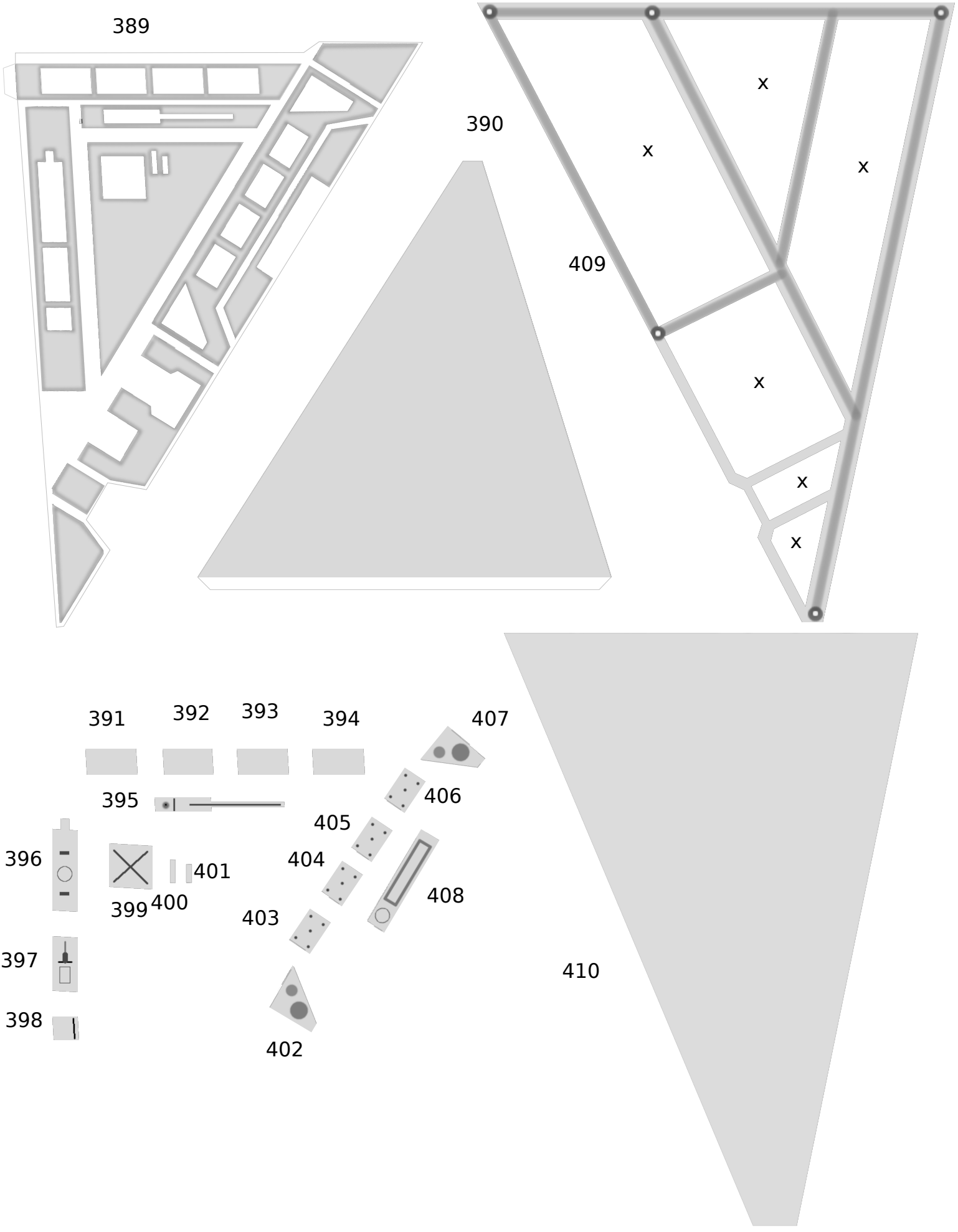

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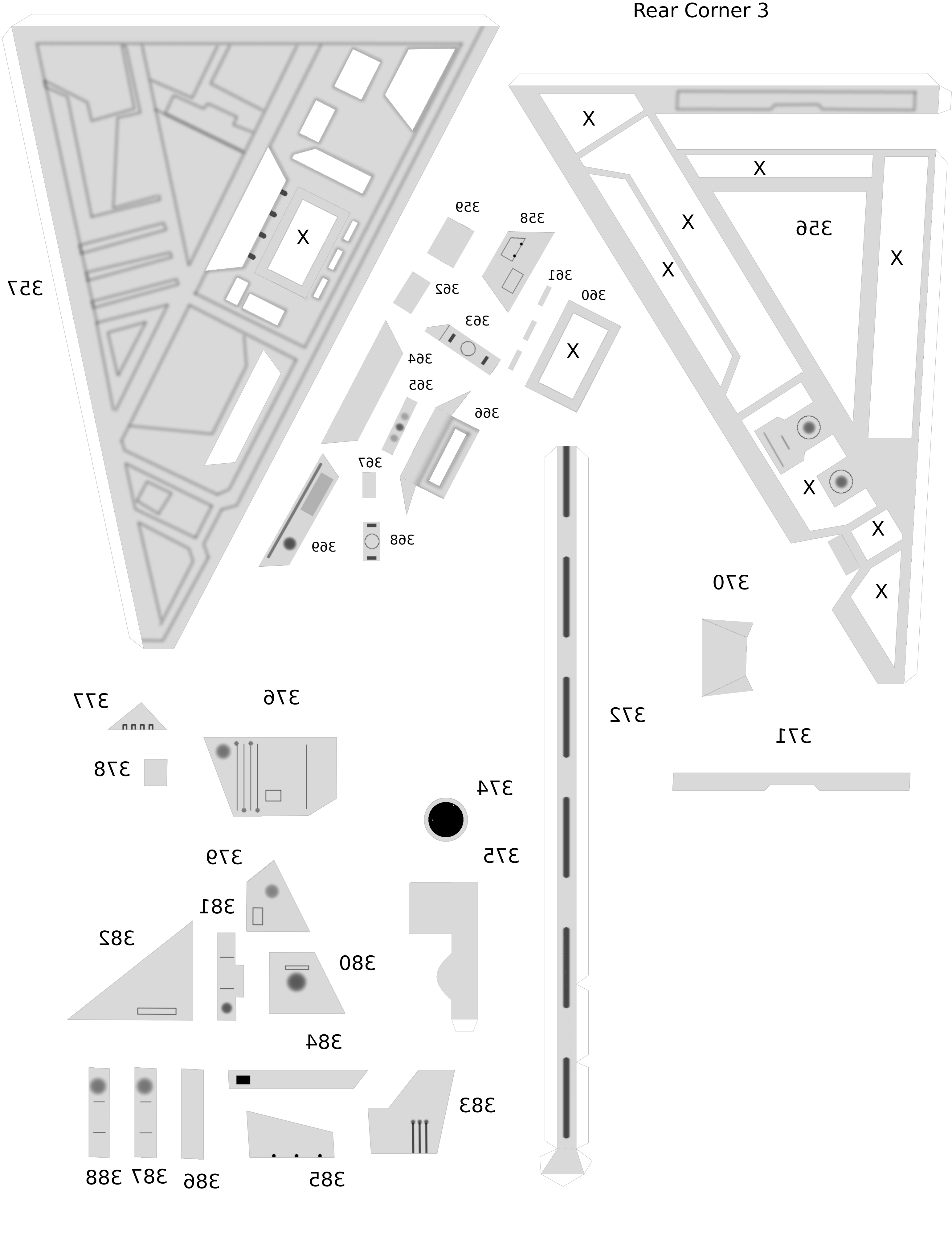

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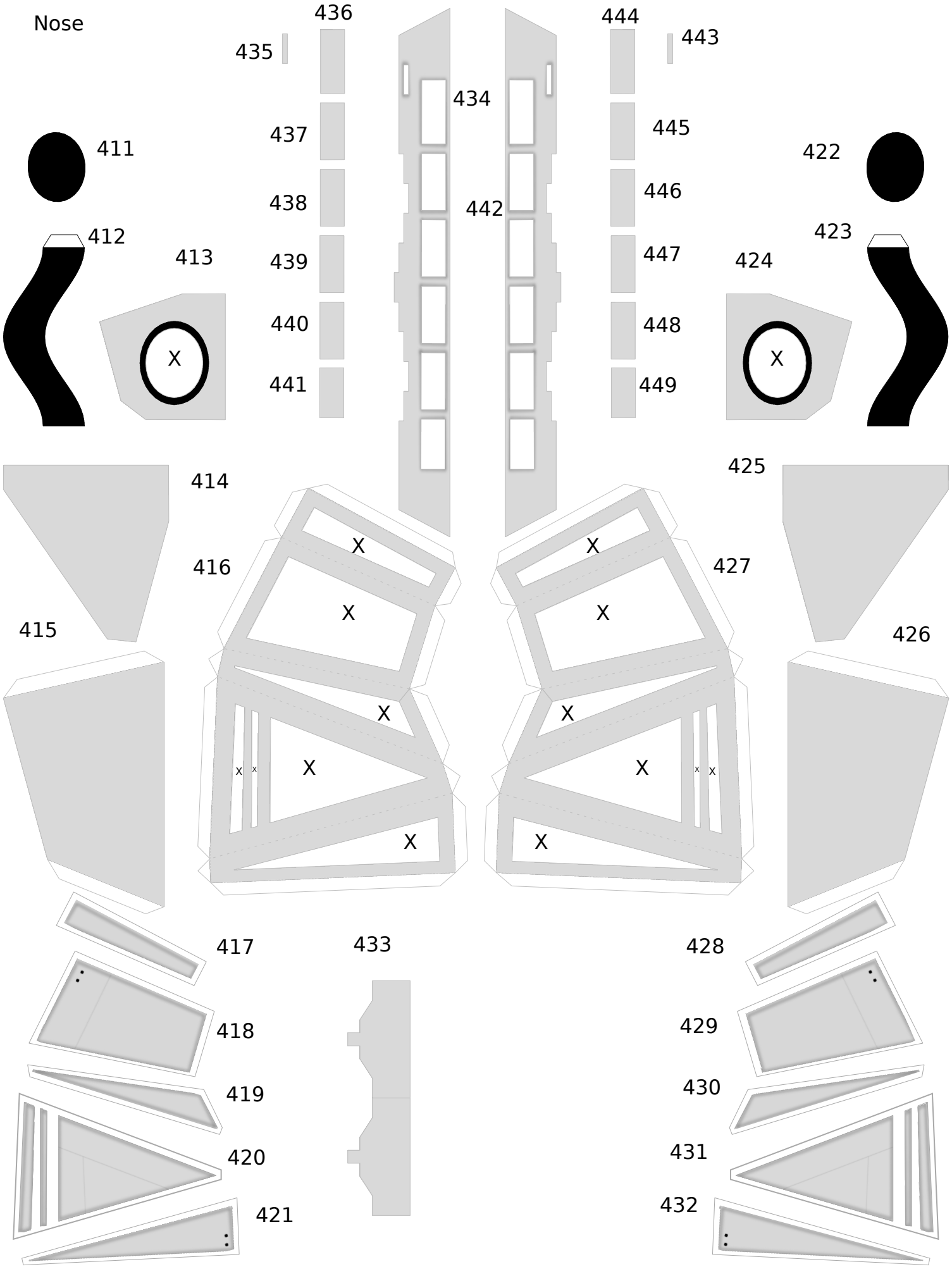
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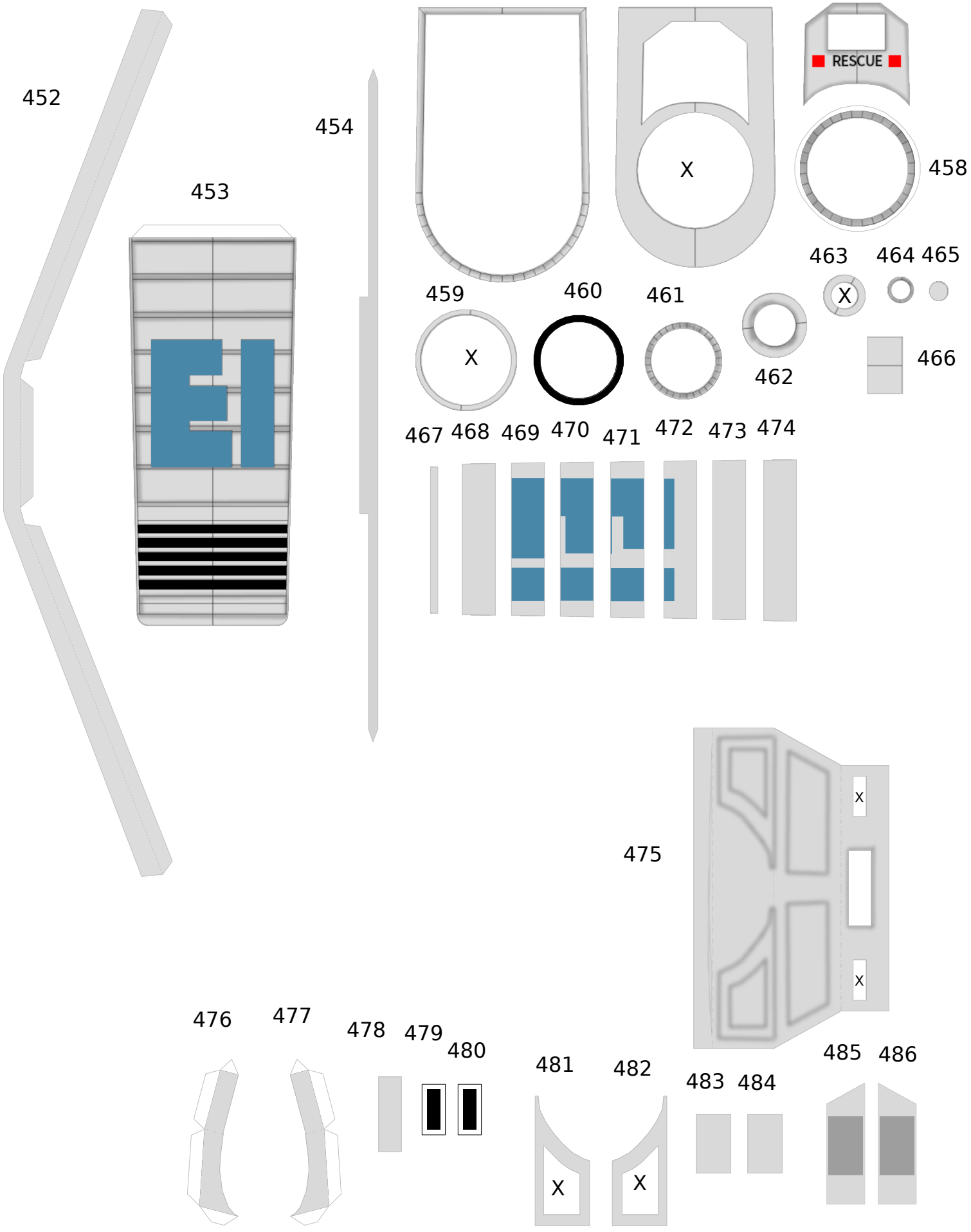
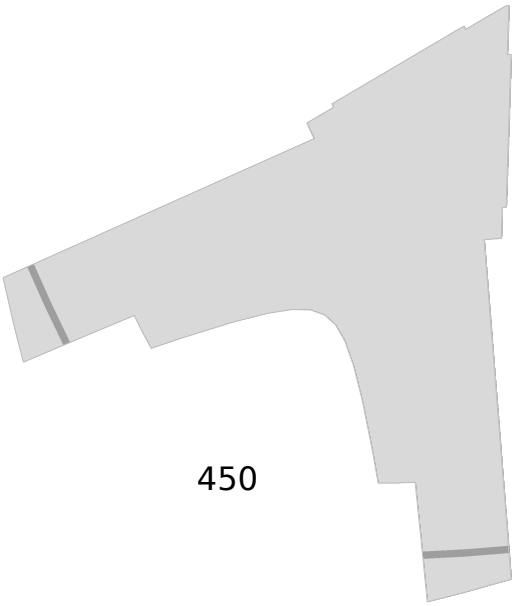
Longitudinal Spine



Spats



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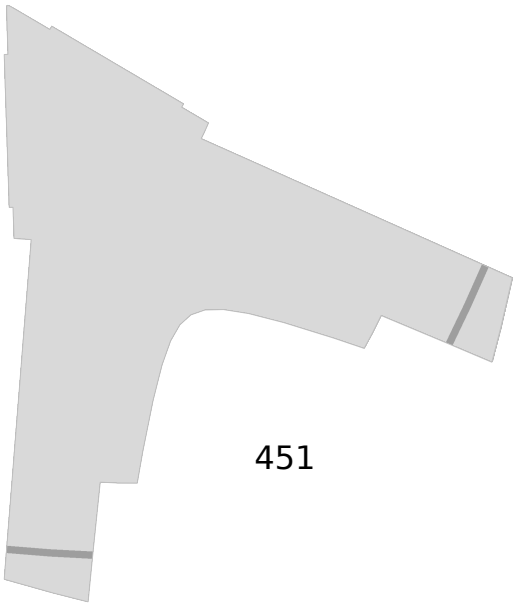

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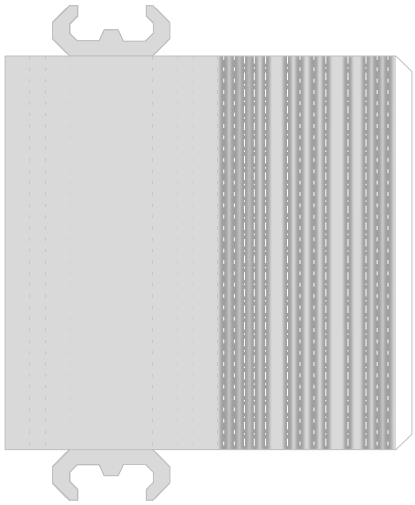

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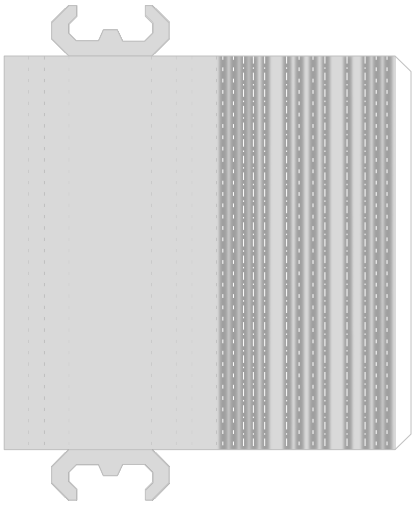

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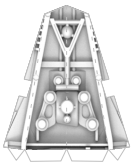

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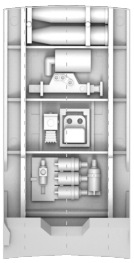

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