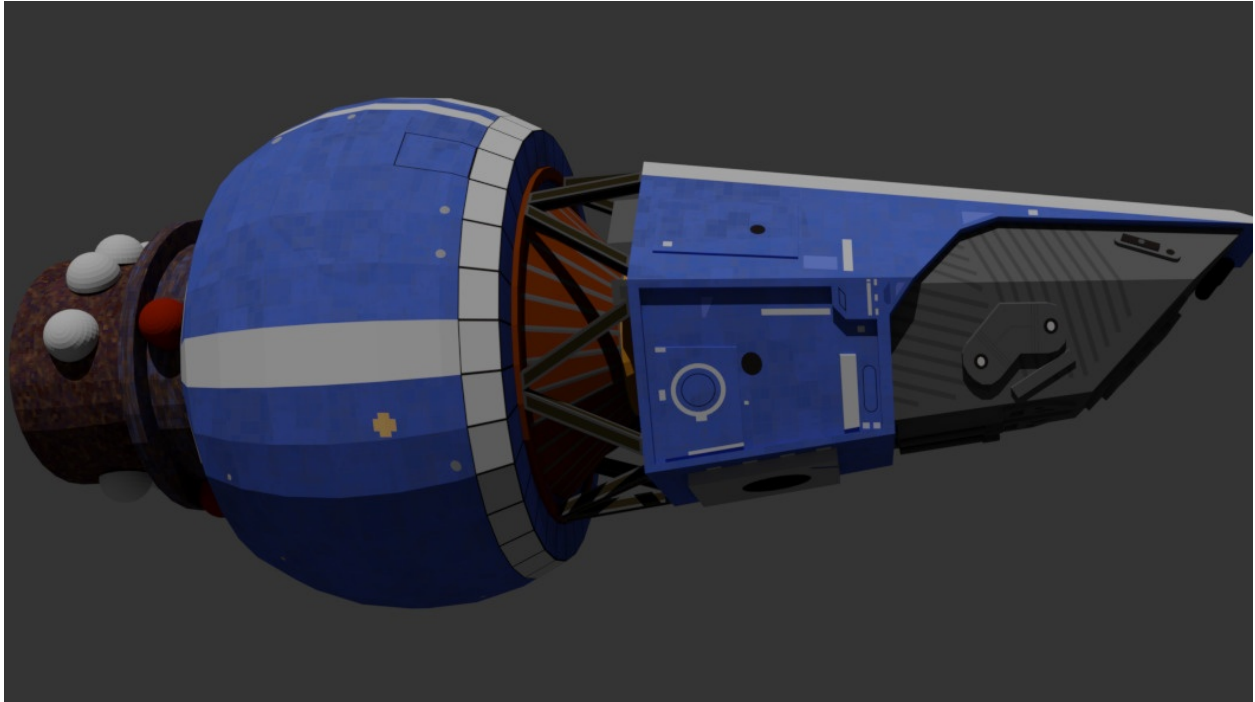


Epstein Yacht - The Expanse

Version 1.0, Card Model Designed by David Lukens (C)2018
David@insanityunlimited.com, David@geekindustries.com
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](#)



Forward

All of the photos used in this guide can be found in higher resolutions in the gallery:

http://www.insanityunlimited.com/gallery/paper_models/epstein/

Tips and Tricks

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

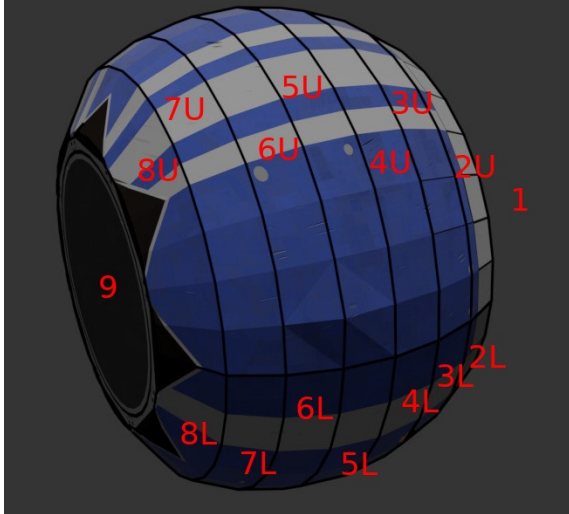
- By default, print the pages on 60-70lb card stock.
- Use the high resolution images in my gallery for reference as needed. There are both CG and photos there.

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

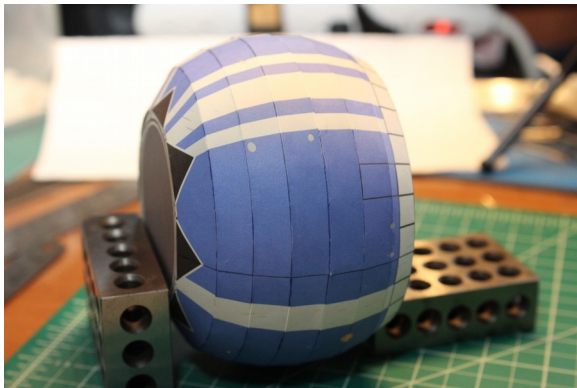
- Take your time.
- Test fit parts.
- If you don't like how a subsection of parts came out, then make another set.
- For large flat pieces, reinforce them from the inside with chipboard as desired.
- Use a metal straight edge as a guide for making scoring marks and long cuts.
- Use a chisel style blade 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.

Body

The body is made up of end caps 1 and 9. The spherical portion is made up of parts 2U/L (the U parts are the upper half, the L parts are the lower half) through 8U/L.

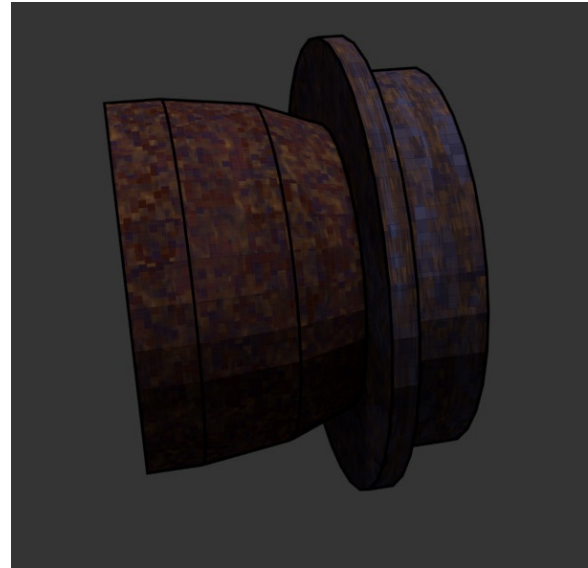


I recommend laminating parts 1 and 9 so they have more structural rigidity.



Engine Mount

The engine mount is made up of two cylinders glued together. The first cylinder is made up of parts 17-19. I recommend laminating 17 and 18 to chipboard to offer some more rigidity. The second cylinder is made of parts 14-16 similarly.

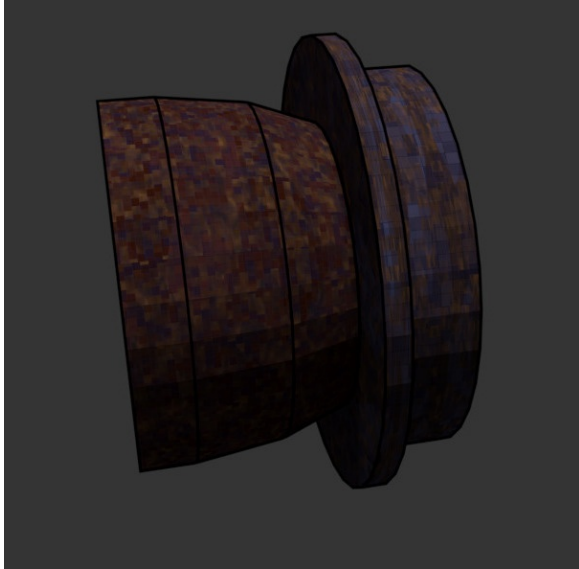


These parts are glued to part 9.



Engine

The outside of the engine is made up of parts 24, 27-29. The inside face of the engine bell is made of parts 26 and 25.

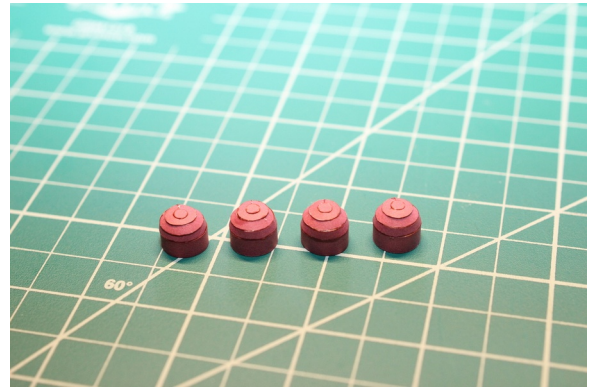


Parts 20-23 make up the interior engine spike.



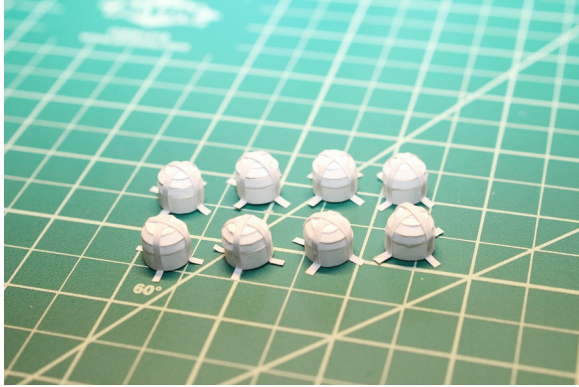
Engine fuel bags

The fuel bags, both red and white, are made the same way. The concentric circles are glued together to make shapes like those in the photos below.



The long white strips are used as the tie-down straps on each of the bags when glued to the engine. Glue one of them over the seam running up the side of the bag to hide it. Two strips go on each bag. On the red bags one of them will be cut even with the bottom of the bag on both sides. The other strip 90 degrees off from the first will be trimmed so that there is some excess on either side. For the white bags both strips will be cut long to allow them to be glued to the engine.

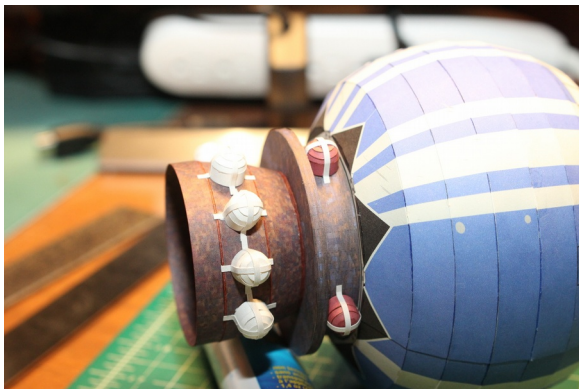




The red bags are glued at the 12 o'clock, 3 o'clock, 6 o'clock, and 9 o'clock positions on part 19.



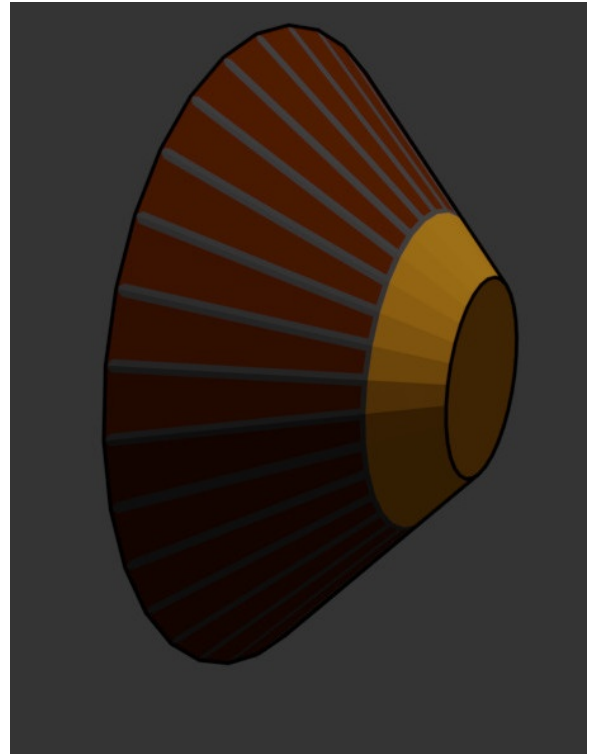
For the white bags these are glued onto part 28 at the following clock positions: 12, 1, 2, 3, 6, 8, 9, and 10.



Cone and Ring

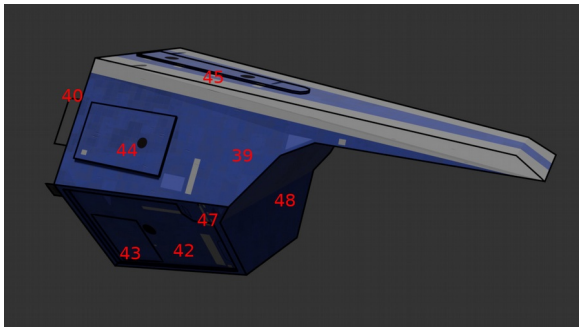
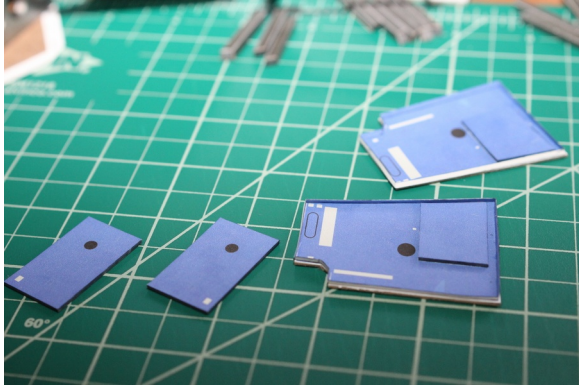
The cone is made of parts 10-12. Part 13 is laminated to 1.5-2mm. Both of these are

centered and glued to part 1.

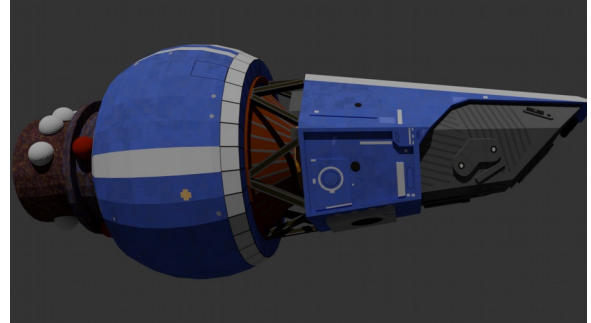
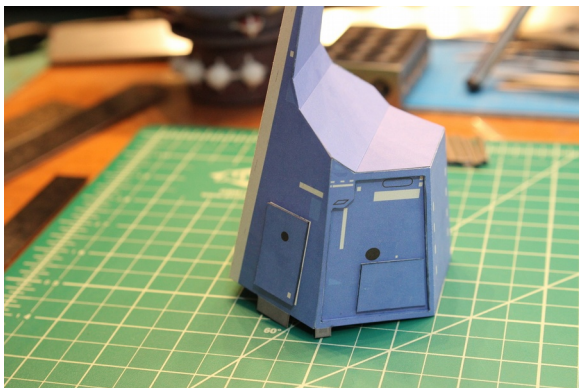
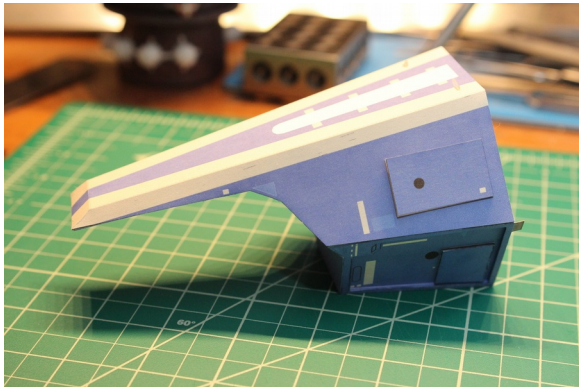


Nose

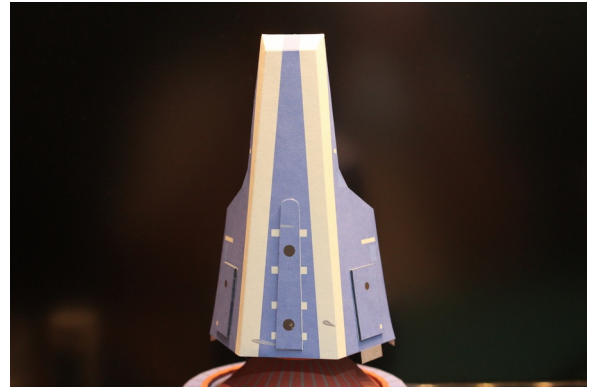
The back of the nose is part 40. The top half is made of part 39 and the bottom half 47. Before gluing those large pieces together, cut out the inserts on part 47. You will use parts 46 to act as a lip to give depth to parts 41 and 42 on either side.



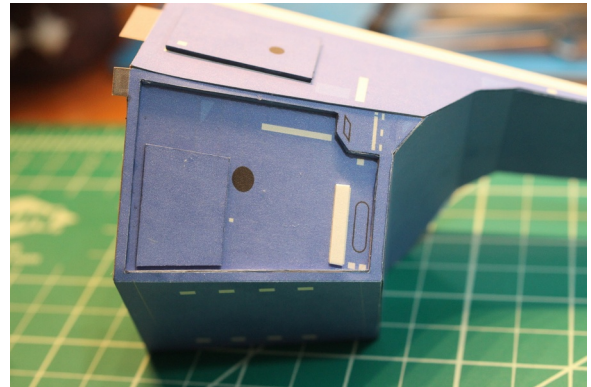
Parts 43 and 44 are laminated and fixed to either side. Part 48 closes out the under-front side of the nose.



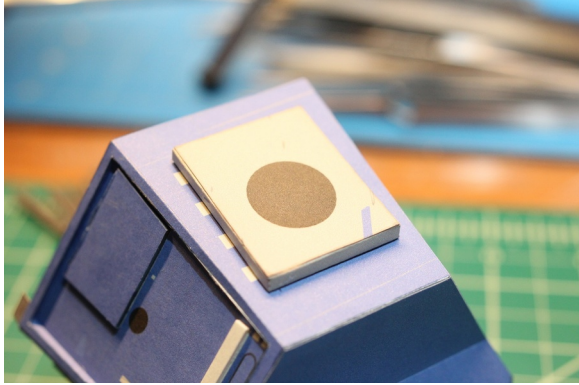
Part 45 goes on top.



Part 55 is laminated and put onto parts 41 and 42.

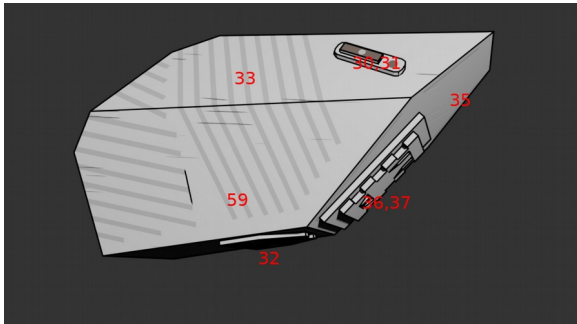


Parts 49-51 are used to make the bottom panel on the nose.

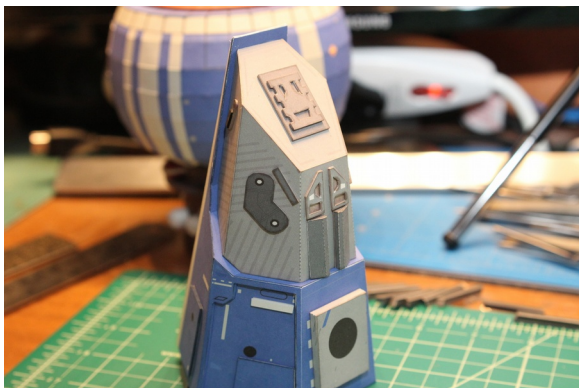


Nose Insert

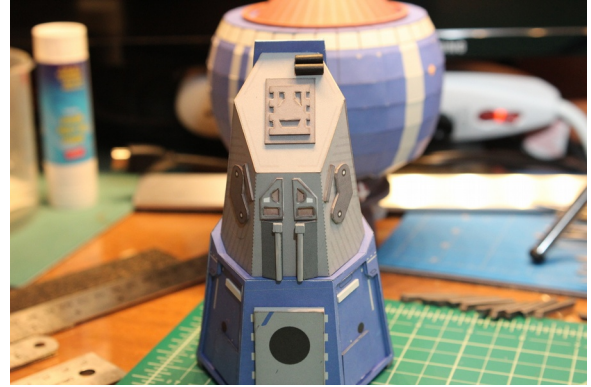
The body of the insert is made of parts 33-35, and 59.



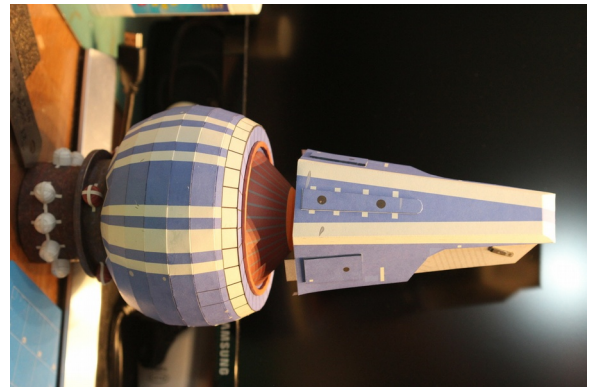
Laminate parts 30-32, 36-37, 56-57. These are placed on the locations indicated in the photo below. Parts 52 are also glued to the bottom of the insert. The insert is then glued into the nose.



Parts 53 and 54 are glued onto parts 52. Parts 38 are rolled into cylinders and glued as noted in the photo below.



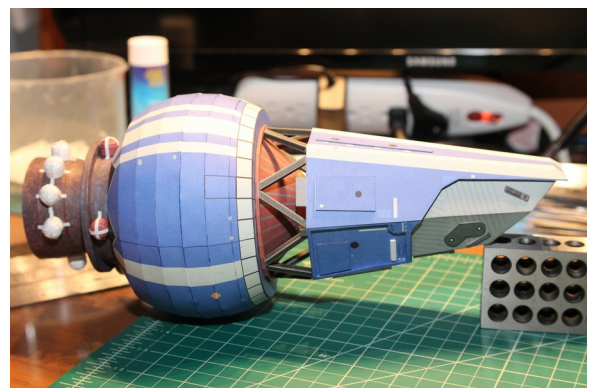
Finally the completed nose is centered and glued to the top of the cone previously constructed.

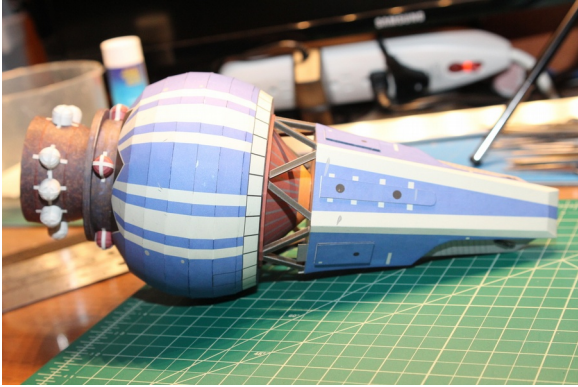


Struts

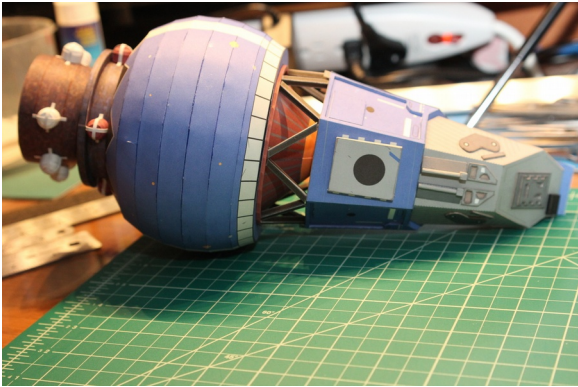
Build all of the struts.

Each pair abuts each other on the cone ring centered on each of the nose faces.





Let the end on the nose piece handle any slop, as those ends of the struts may not touch each other.



body

6L

6U

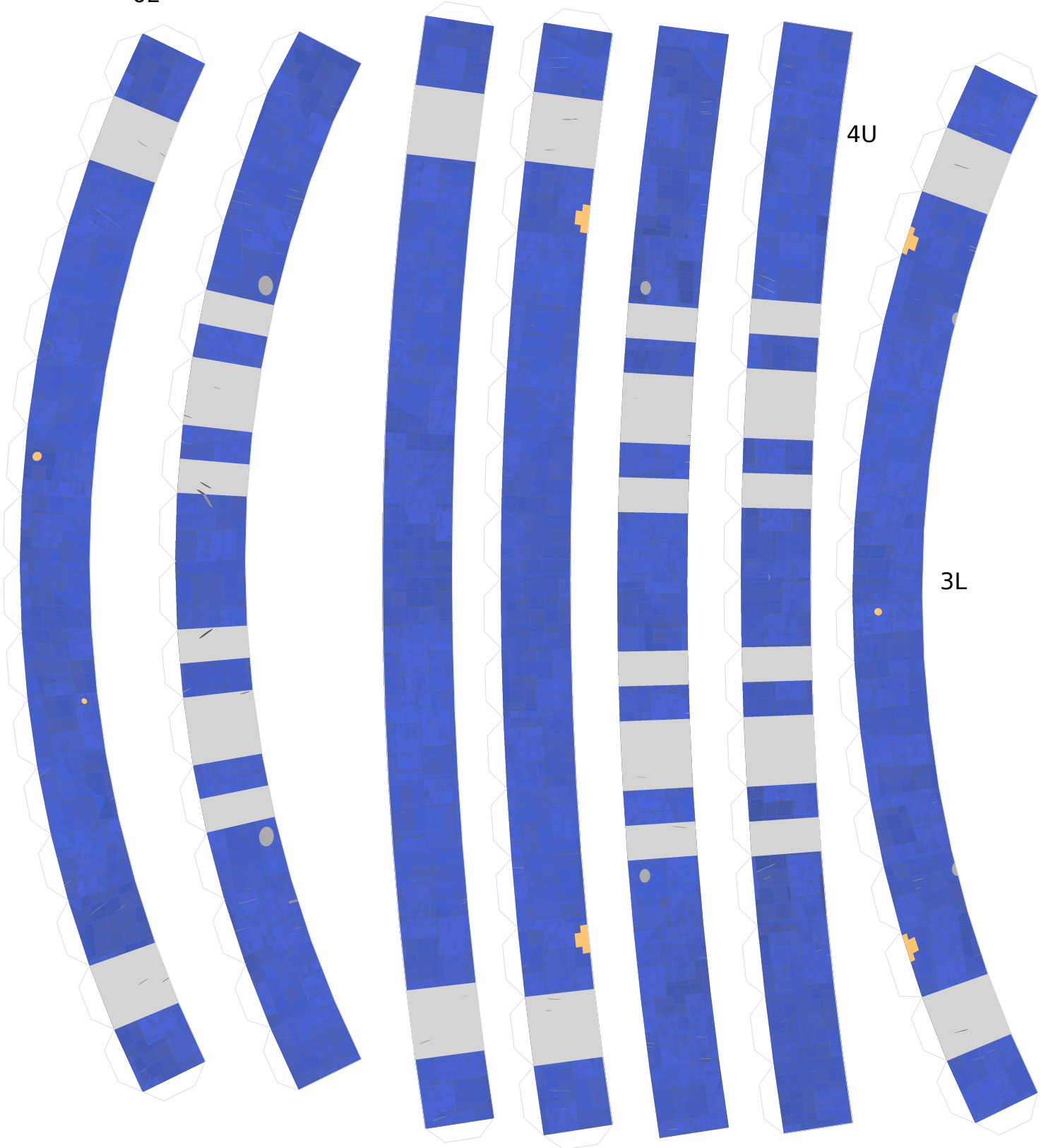
5L

4L

5U

4U

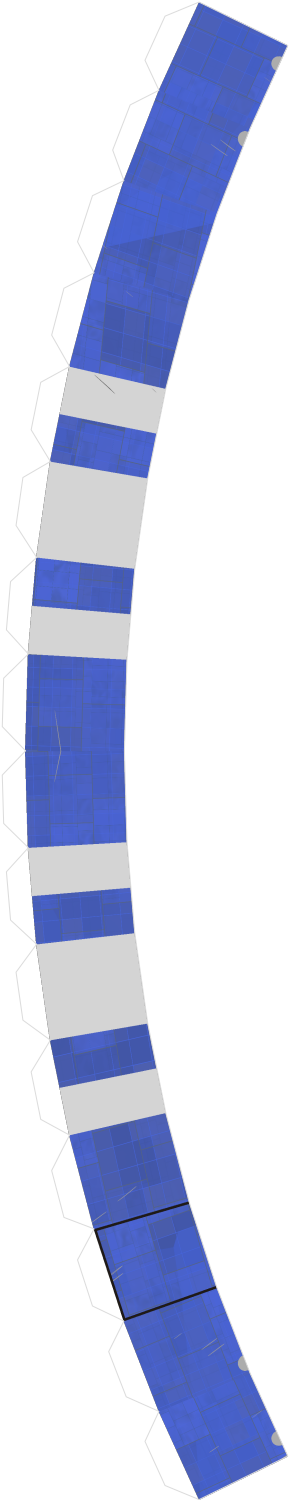
3L



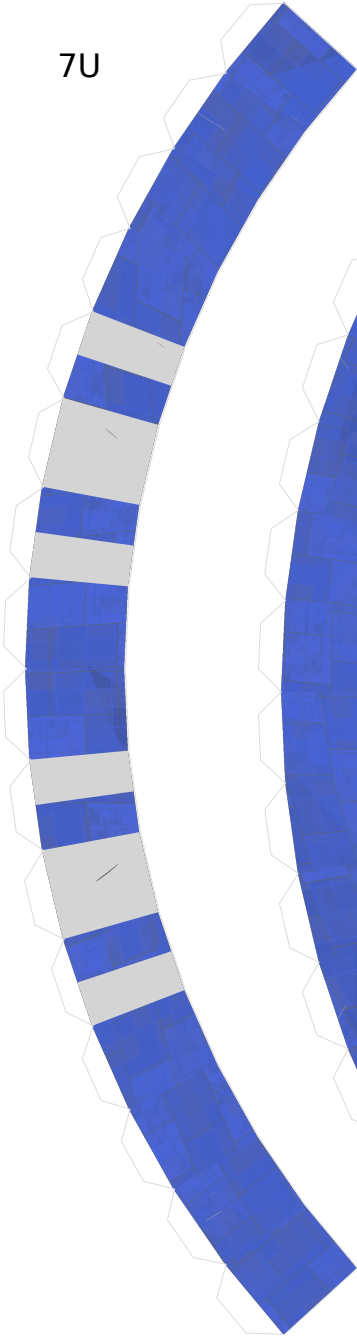
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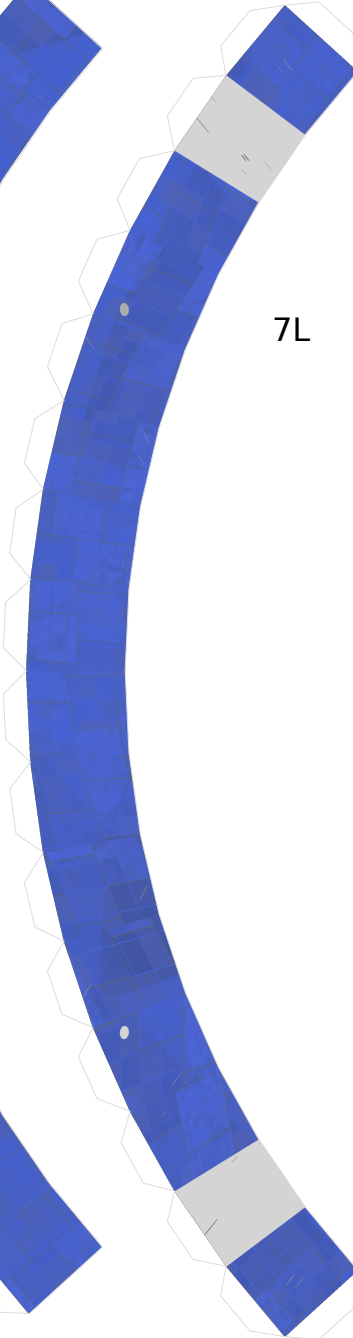
3U



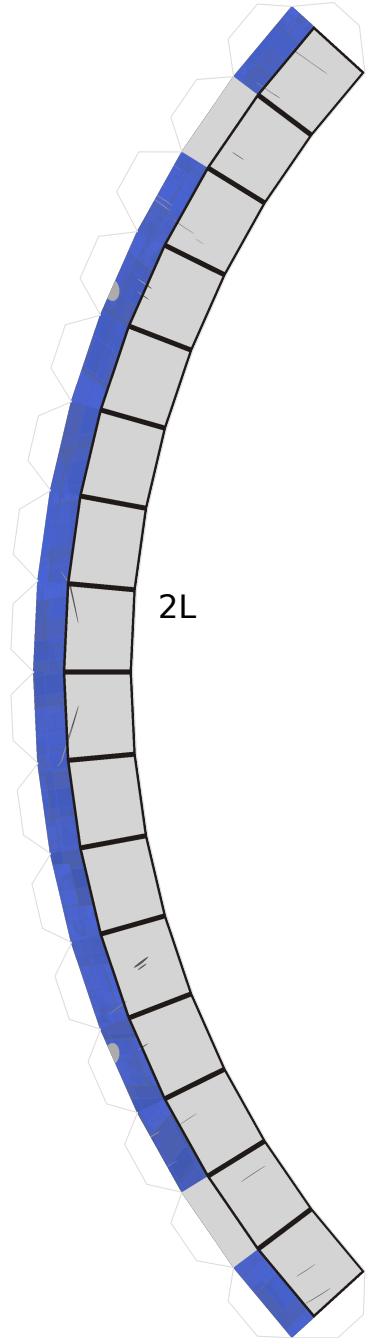
7U

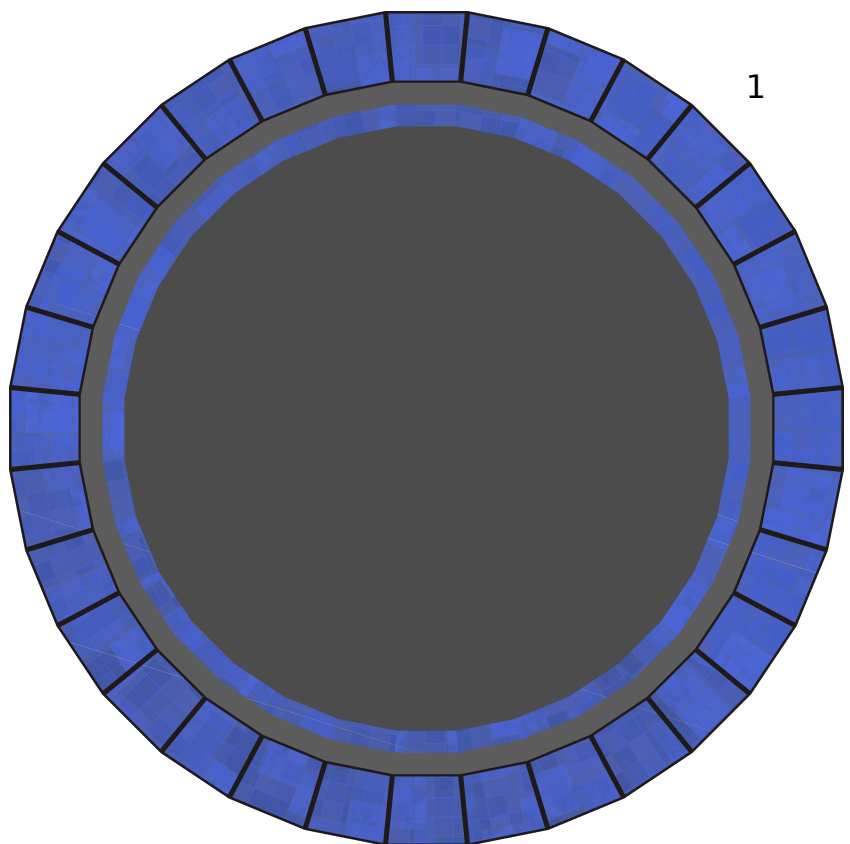
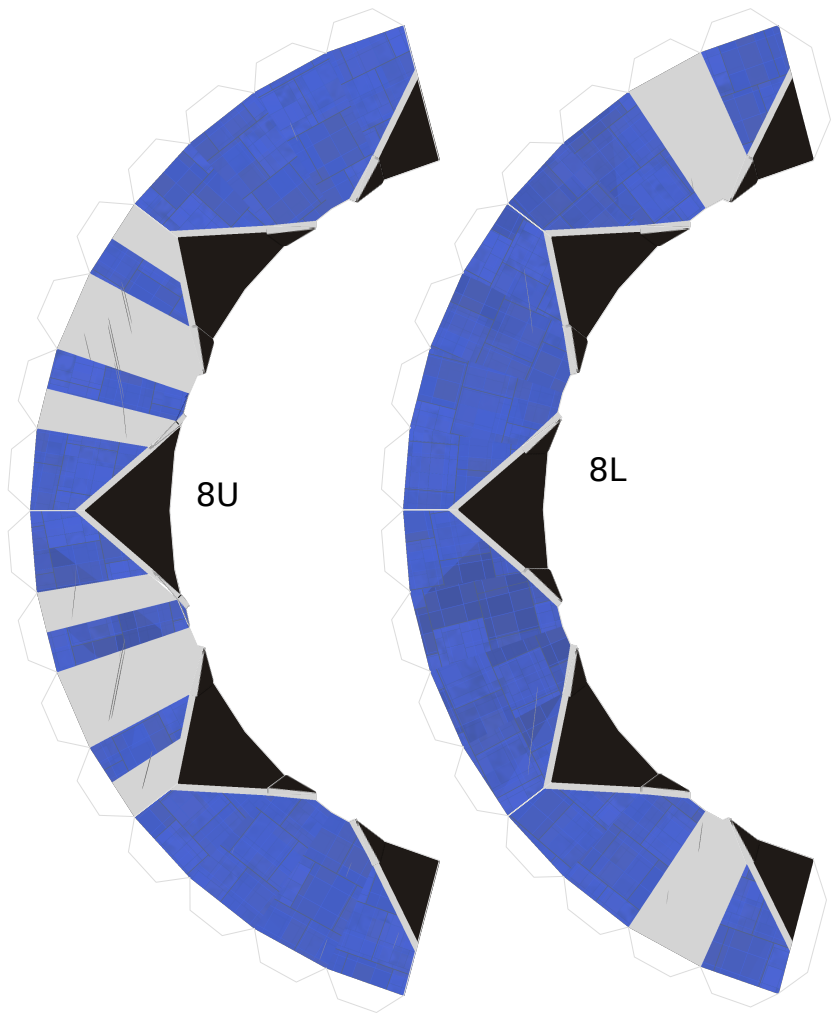
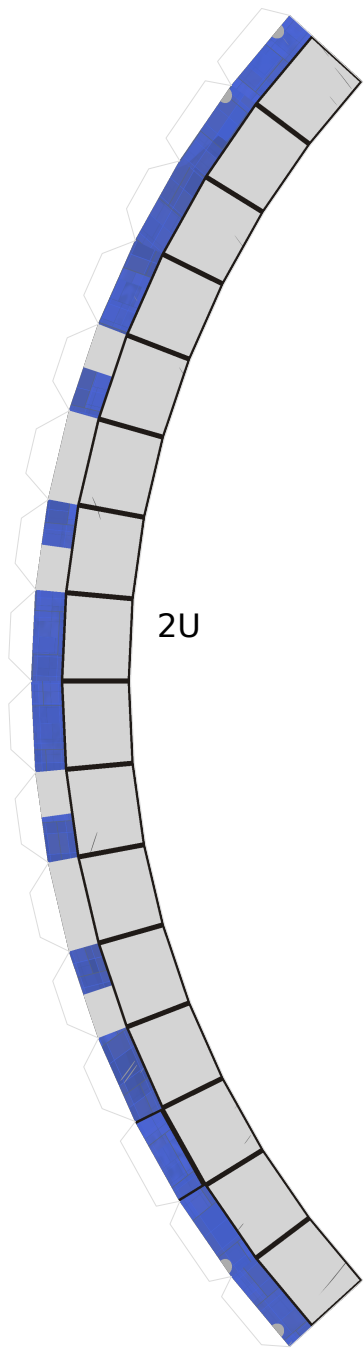


7L

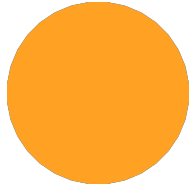


2L



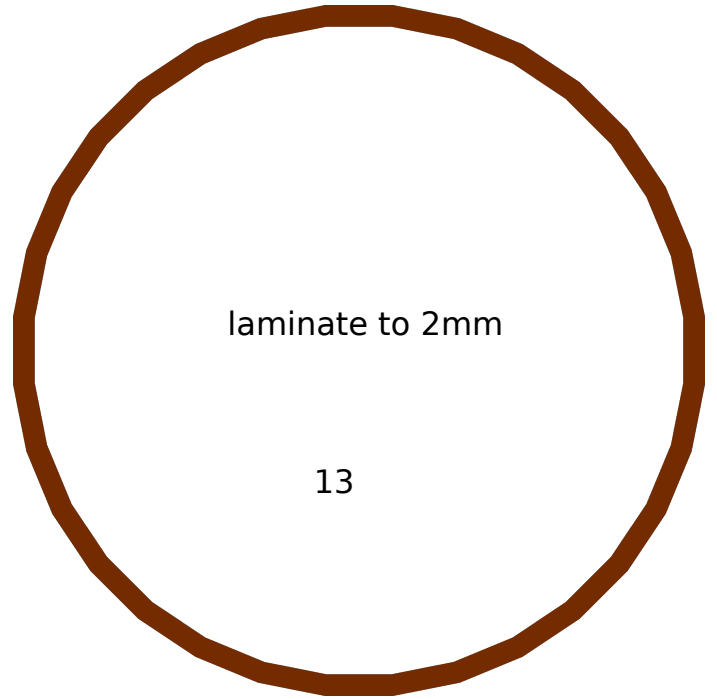
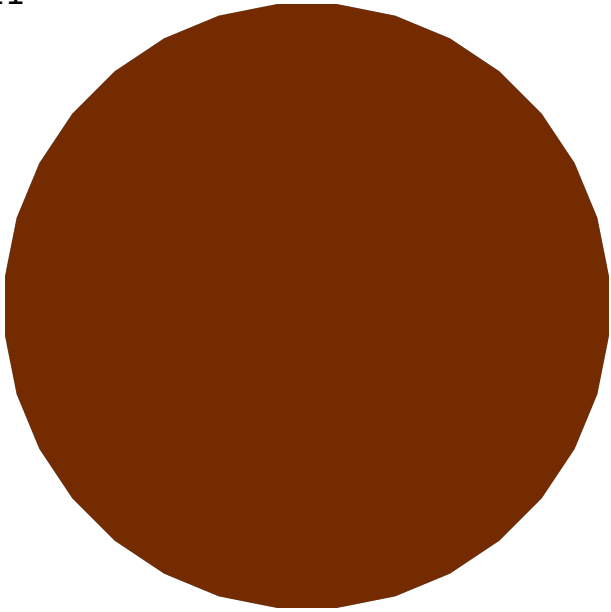


cone and ring

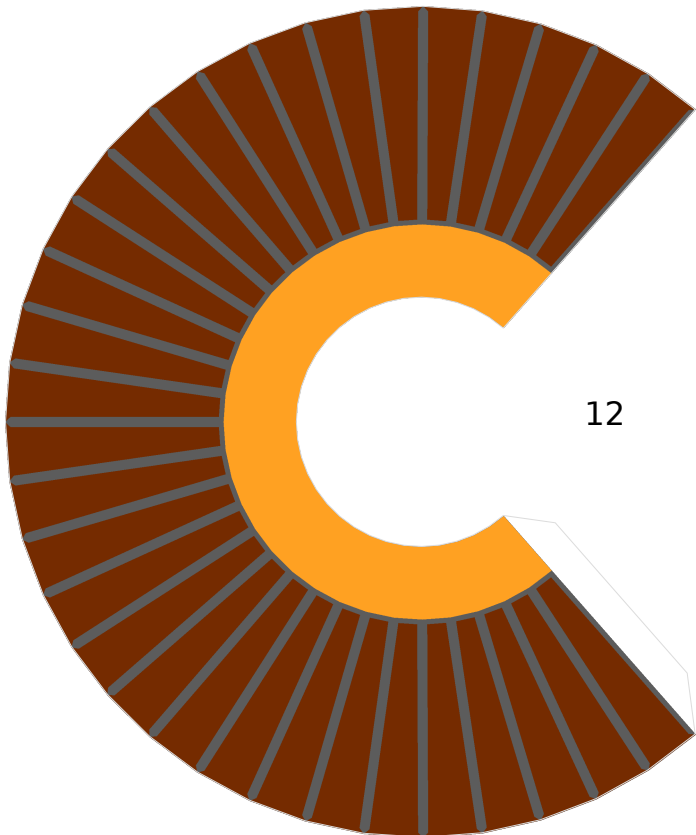


10

11



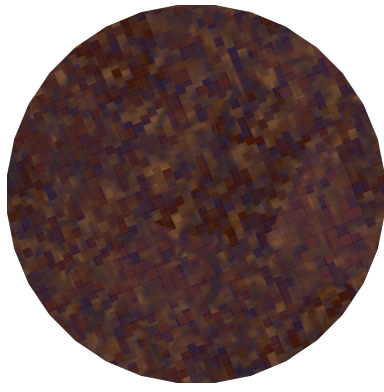
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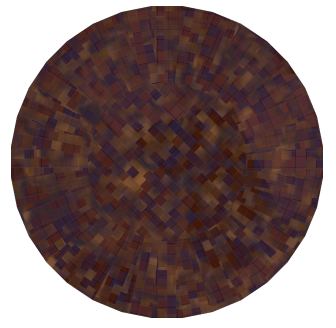
12

engine

24



25



29

outer

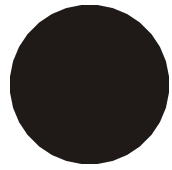
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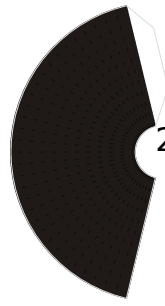
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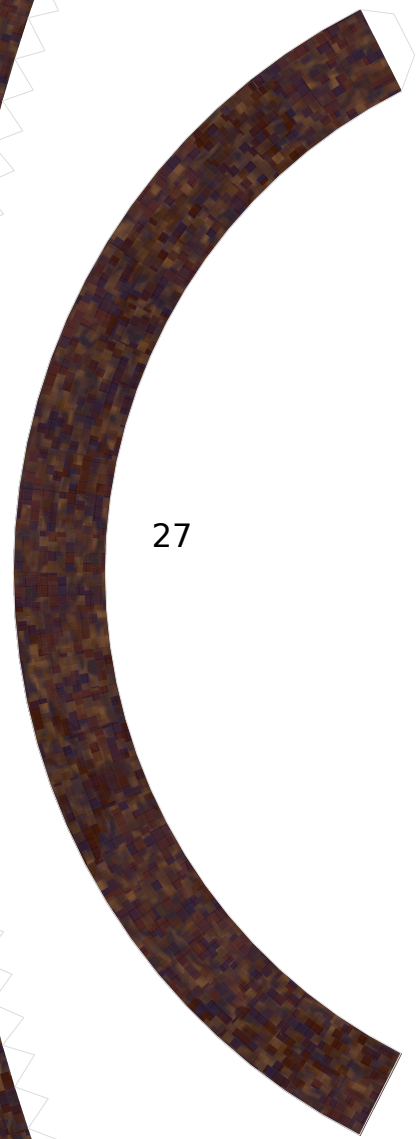
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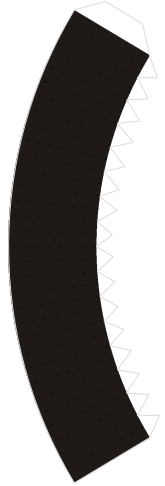
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27

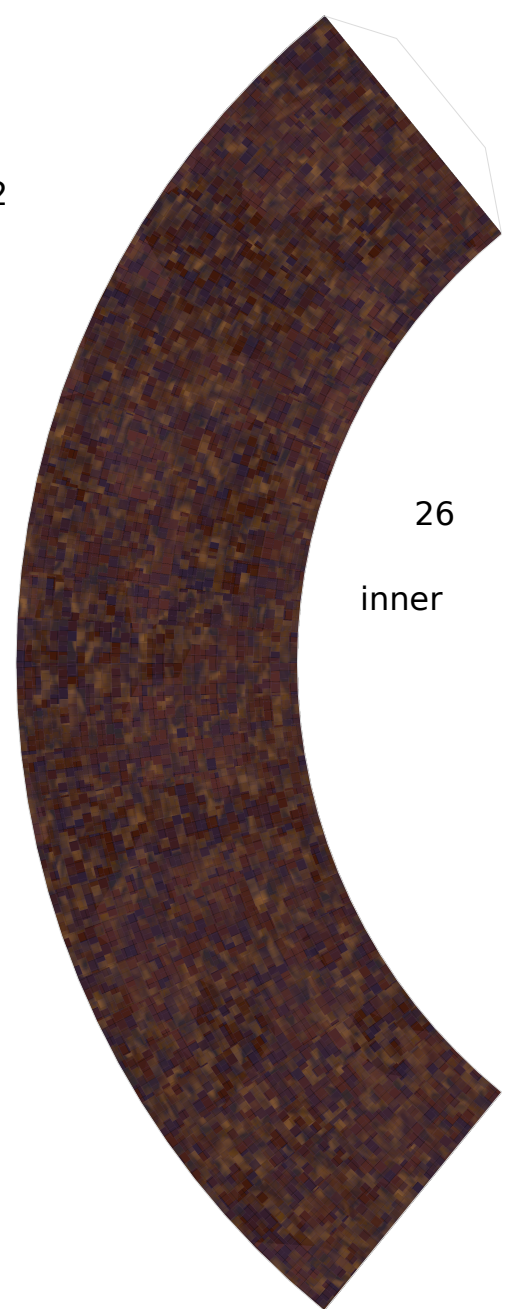


23



26

inner



engine mount

14

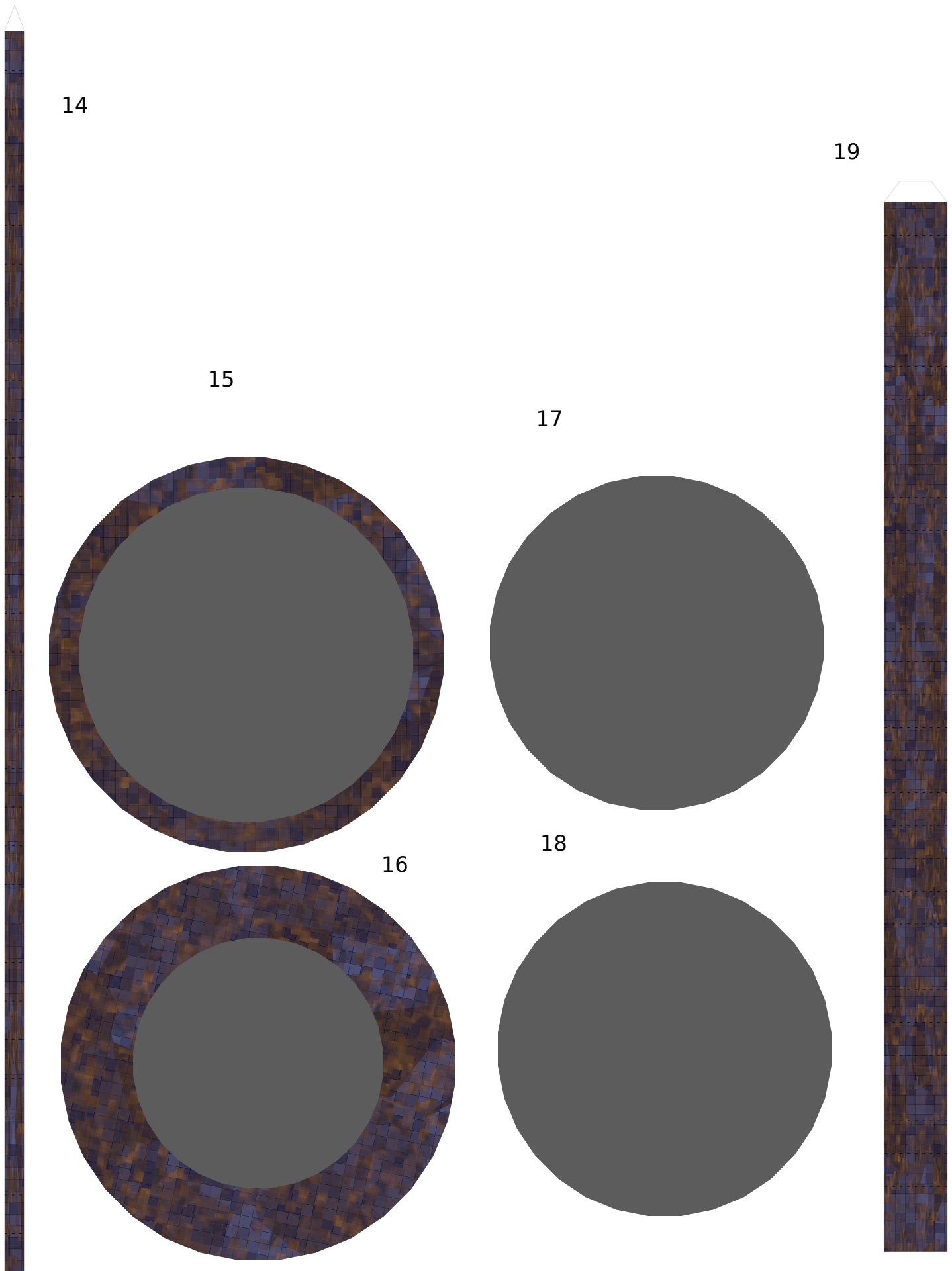
19

15

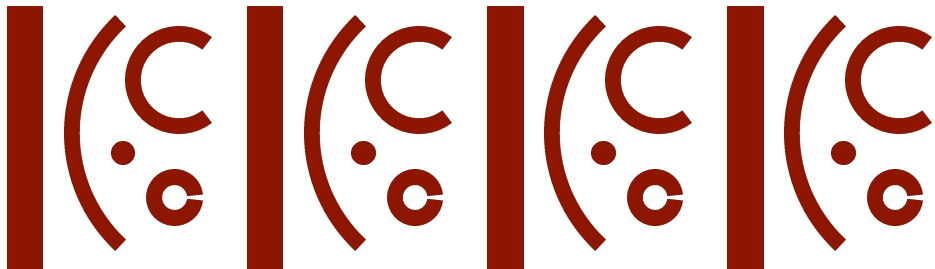
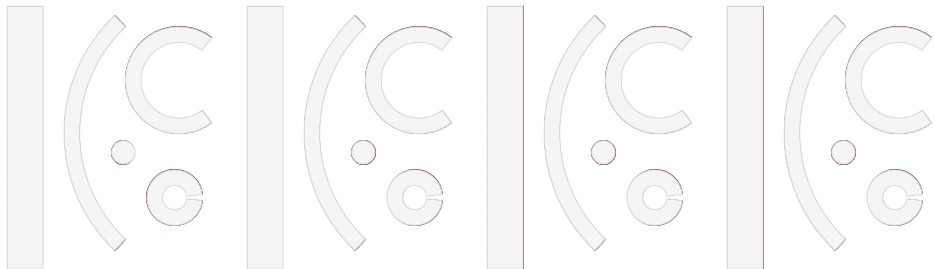
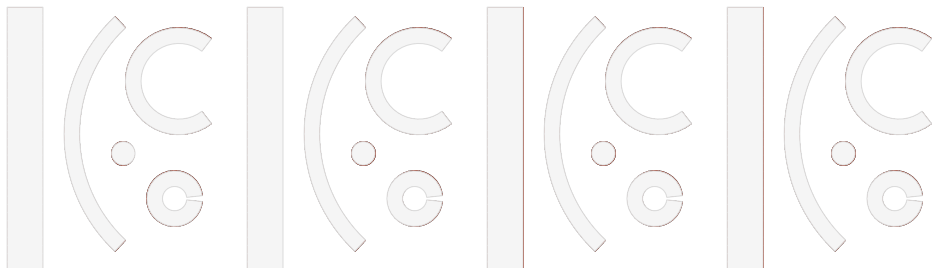
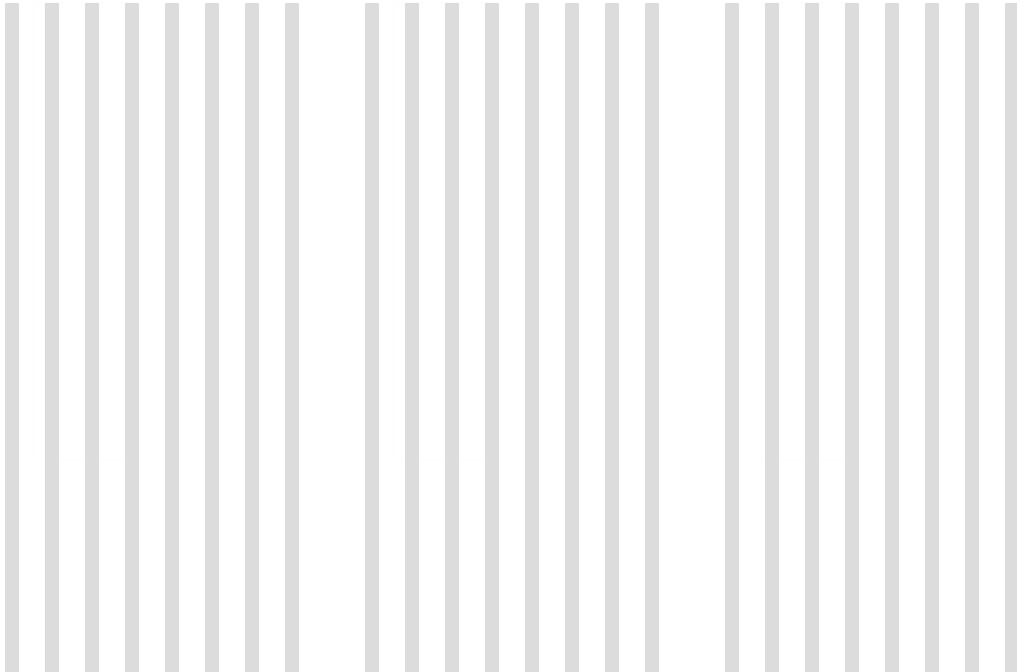
17

16

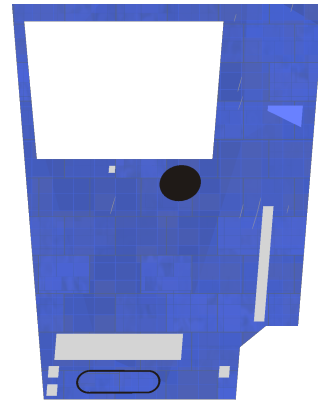
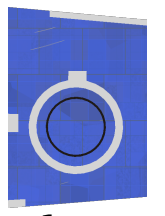
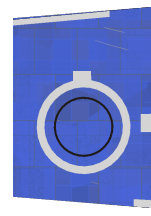
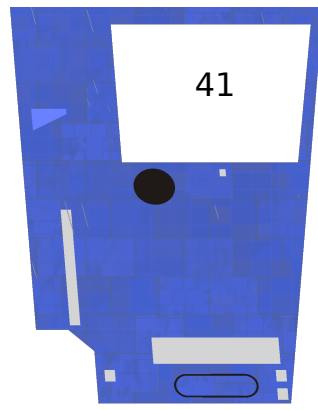
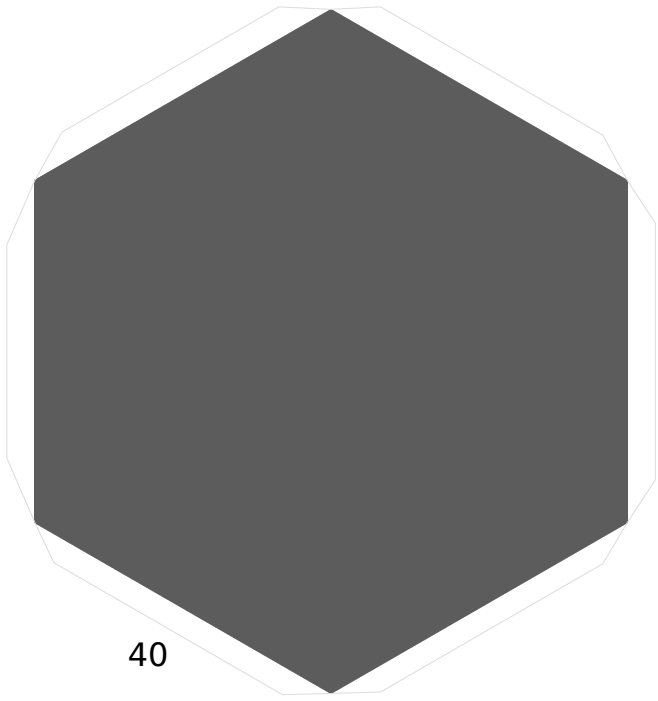
18



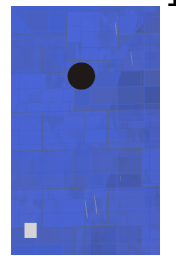
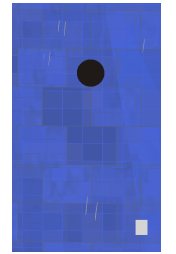
domes



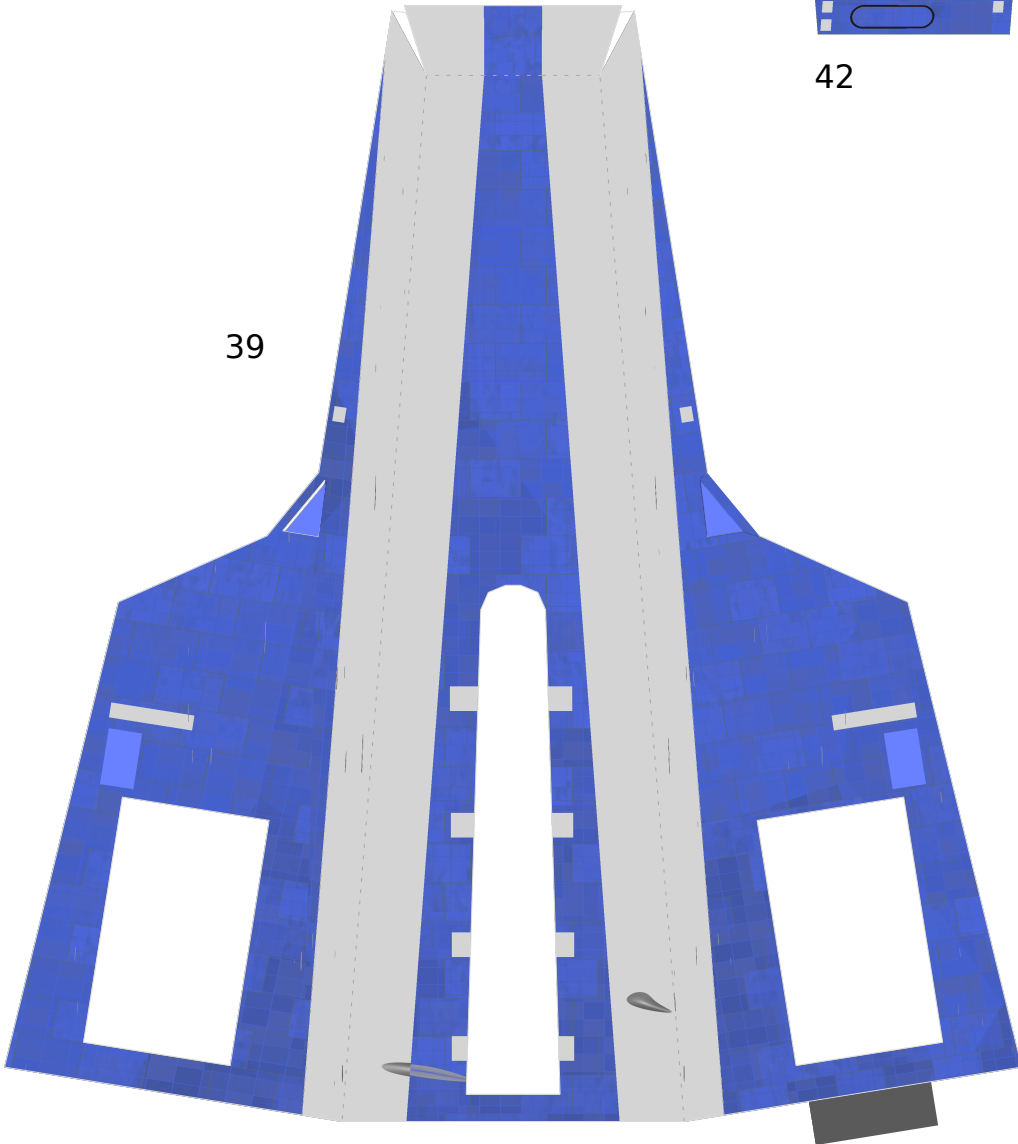
nose



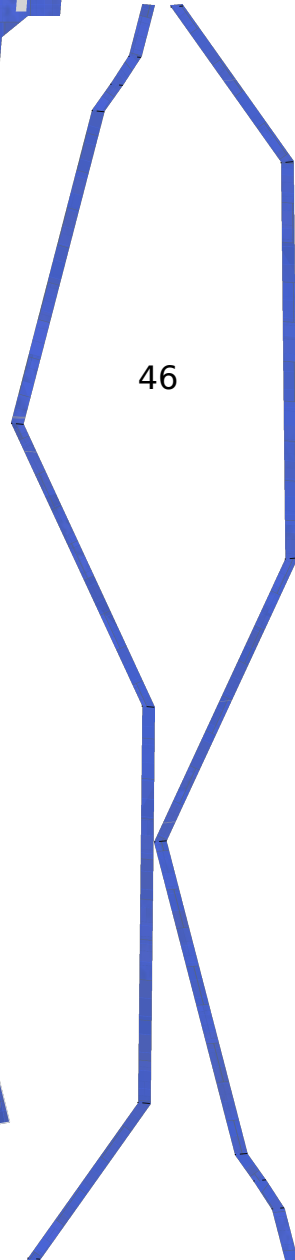
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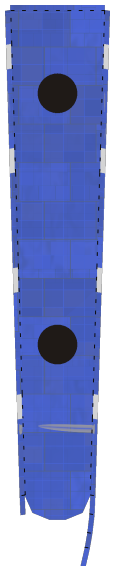
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46

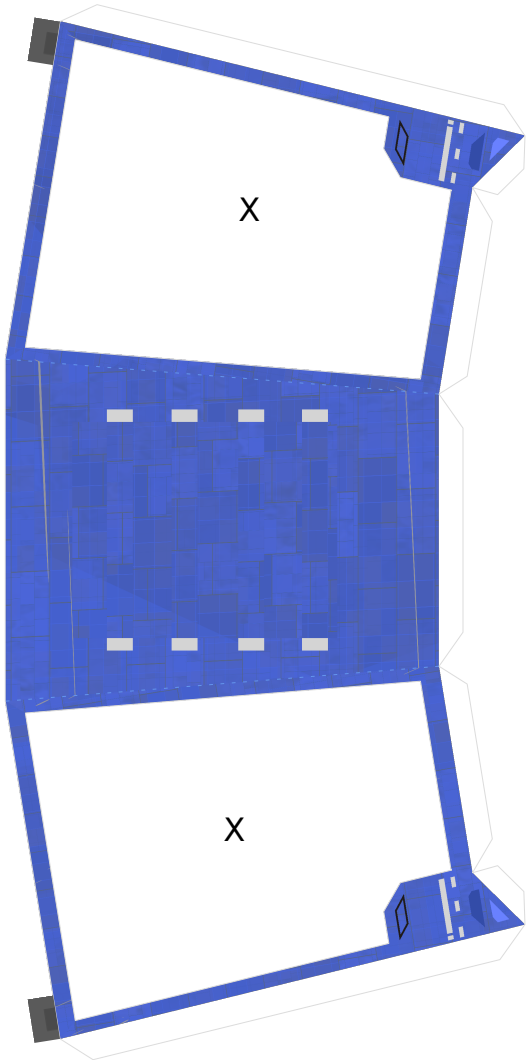


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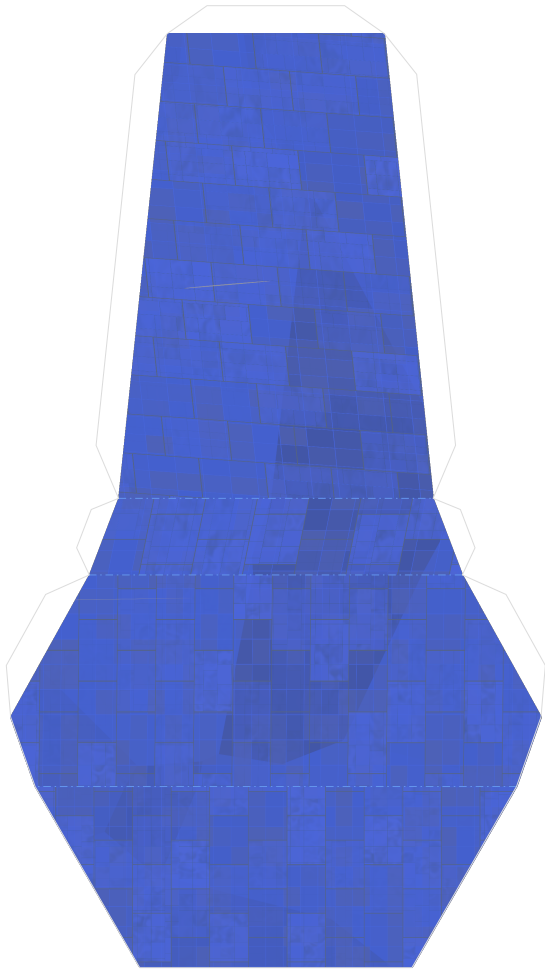


nose

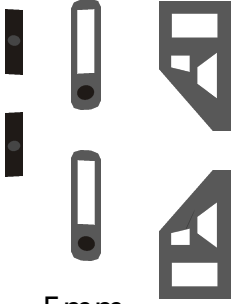
47



48



30 31 32

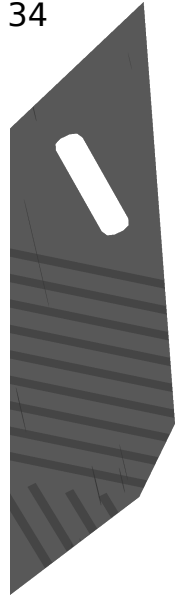


.5mm

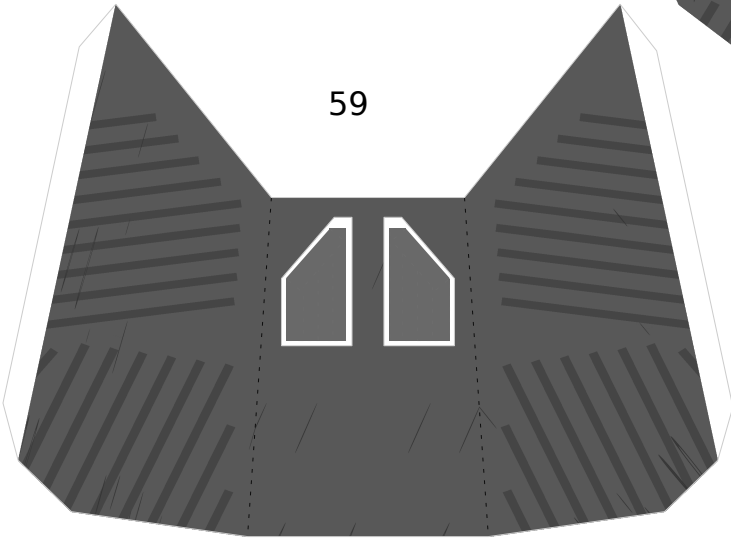
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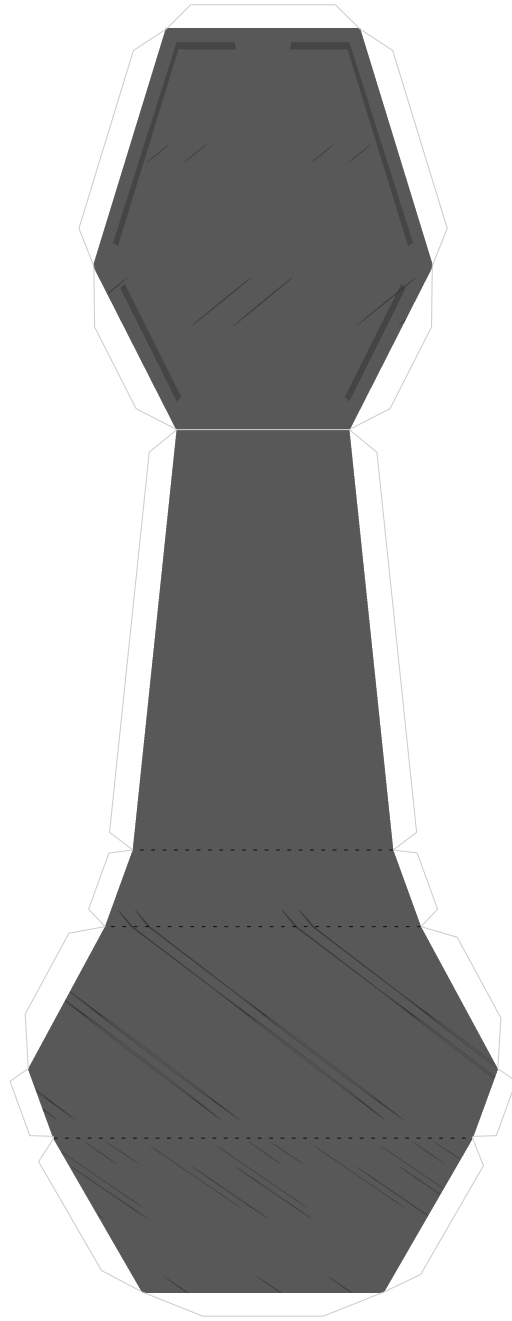
34



59



35



1mm

37



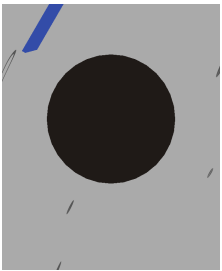
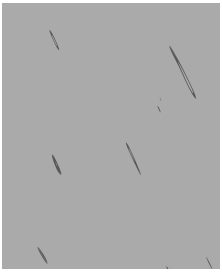
.5mm

36

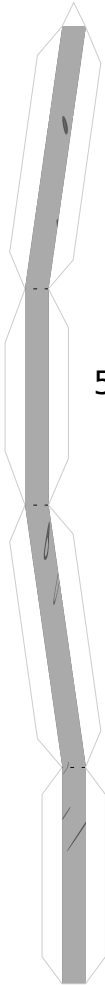


38

49

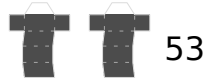
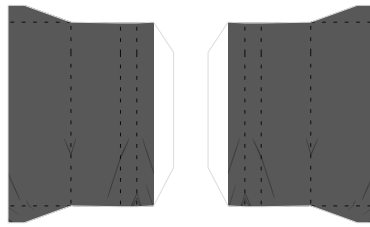


bottom panel
50

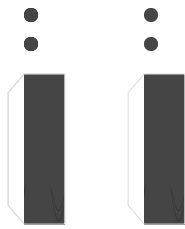


51

52



53

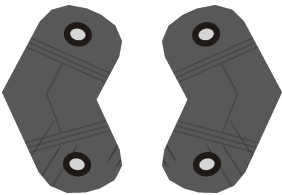


54

55



56



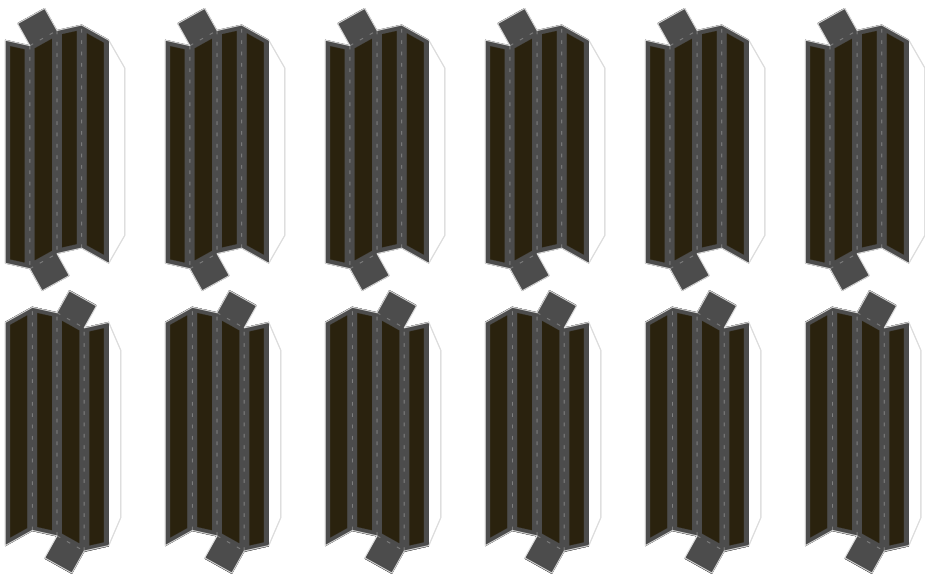
.5mm

57



insert plank
.5mm

nose slats
.5mm



58

struts