

Long March 5 长征5号



The Long March 5 is the biggest and most powerful rocket of the Chinese Series of Long March rockets. Based on its Chinese name, 长征 *cháng zhēng*, the Long March 5 is also designated CZ-5. It was developed by the China Academy of Launch Vehicle Technology (CALT) and is operated by the China Aerospace Science and Technology Corporation (CASC).

The rocket is 57 meters tall and the main body without booster rockets is 5 meters in diameter. It may lift up to 14000 kg to geosynchronous orbit. There are two versions of the Long March 5: The Long March 5 has two stages, while the Long March 5B has only one stage and a higher payload.

The Long March 5 was first launched in November 2016, delivering a large new communications satellite into orbit. The second launch failed, after which no further launches were made for 900 days in order to find the problem. The YF-77 engine's turbo pumps were isolated and the problem fixed. In subsequent launches the problem did not reoccur.

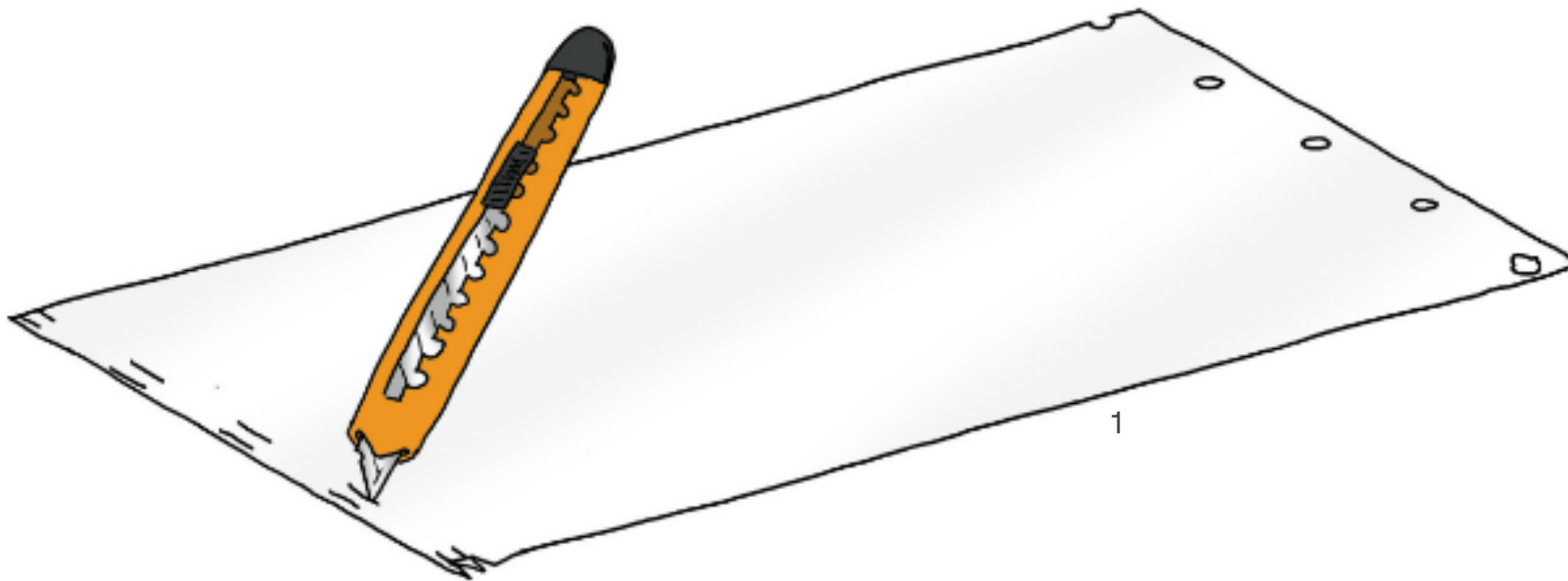
The Long March 5 is the backbone of major Chinese space missions. It carried the spacecraft for the Tianwen 1 Mars mission and the Chang'e 5 lunar lander into space. The Long March 5B was specifically designed to launch the modules for China's Tiangong space station into orbit.

The Long March 5B also had problems, when repeatedly parts of it fell back to earth uncontrolled. Fortunately these re-entries haven't caused any major harm on the ground or sea.

After the Long March 5B was launched with the Yuanzheng-2 upper stage, the uncontrolled re-entries seem to have ceased, as this allowed the 5B to remain suborbital.

The nickname of the Long March 5 is 胖五 *pàng wǔ*, which means *fat five* and it is launched from the launch station at Wenchang on Hainan island.

1. Cut holes and slits on part 1.

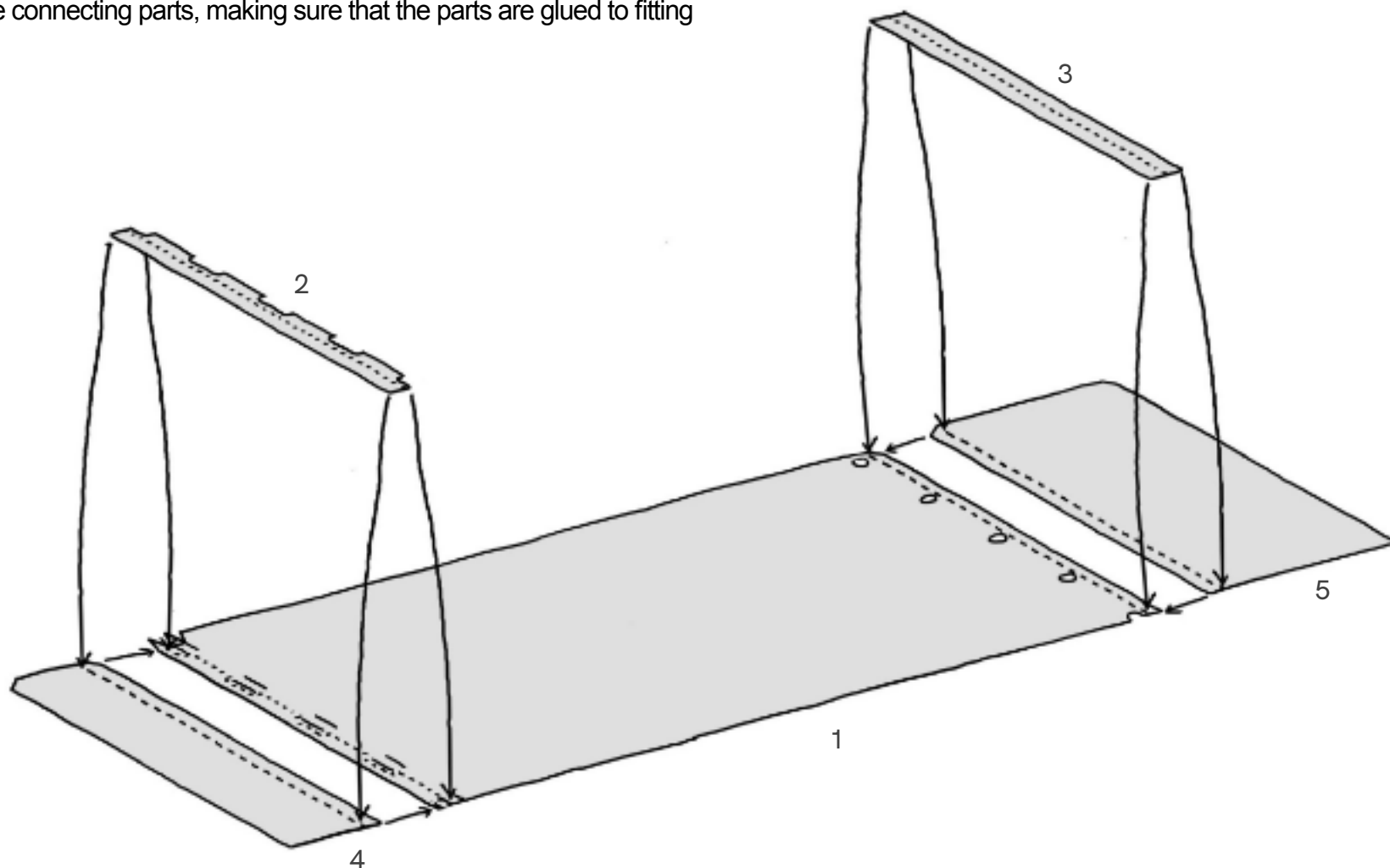


Look at this to see where to cut the slits:



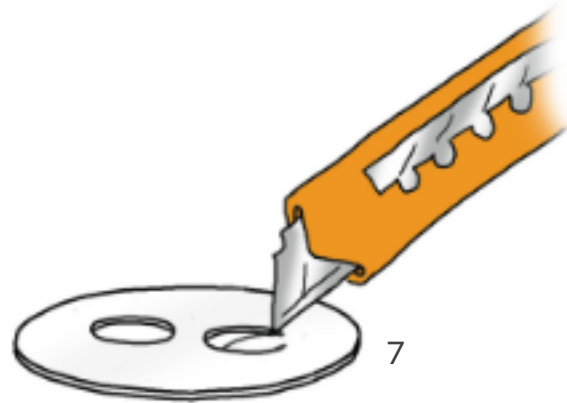
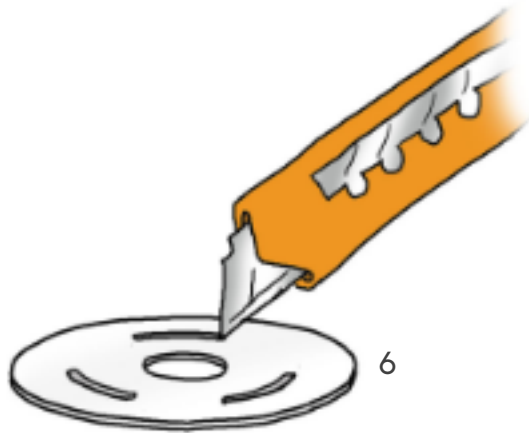
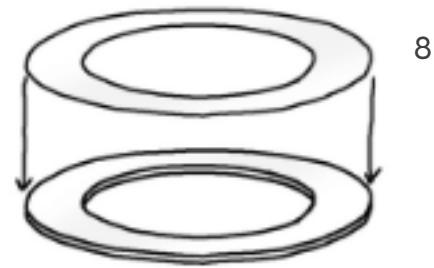
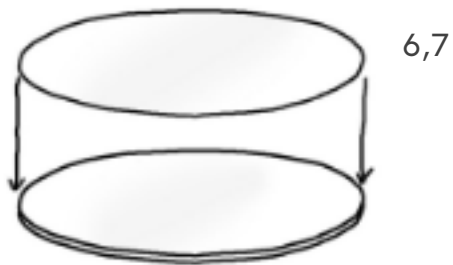
2. Glue together the parts of the first stage.

First glue the connecting parts on part 1, making sure that you don't glue them over the slits and holes. Then glue parts 4 and 5 to part one, on the connecting parts, making sure that the parts are glued to fitting edge.



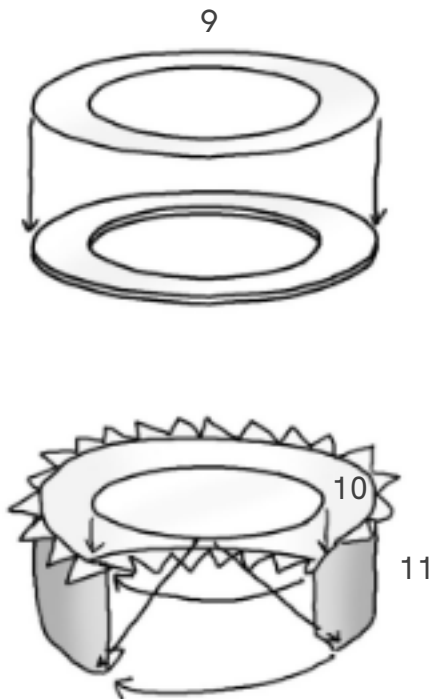
3. Prepare the sections for first stage / lower body.

Double up parts 6, 7 and 8 on heavy cardstock that can give some stability to the sections. Then cut out the holes and slits on those parts.

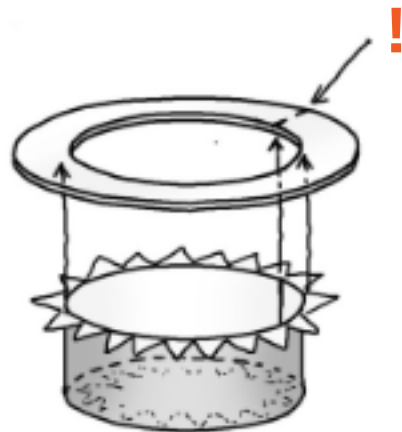


4. Build the docking ring (top section of first stage).

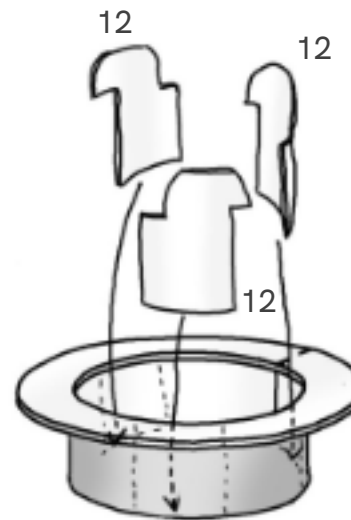
If you are building the Long March 5B or don't want to have a detachable second stage, then only double up part 9 and jump to step 6.



If you want to have a detachable second stage, build the inner walls, and bottom. The artwork should face inwards.

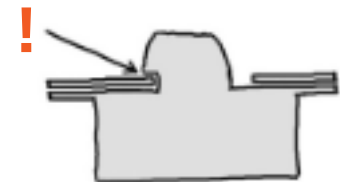


Glue the inner walls to the bottom of the docking ring.
Important: Align the seam with the small marking on the docking ring.



Glue the docking clamps on the inner wall and...

Important: You may have to adjust the distance of the corner of the clamps to match the thickness of the heavy cardstock you have used.



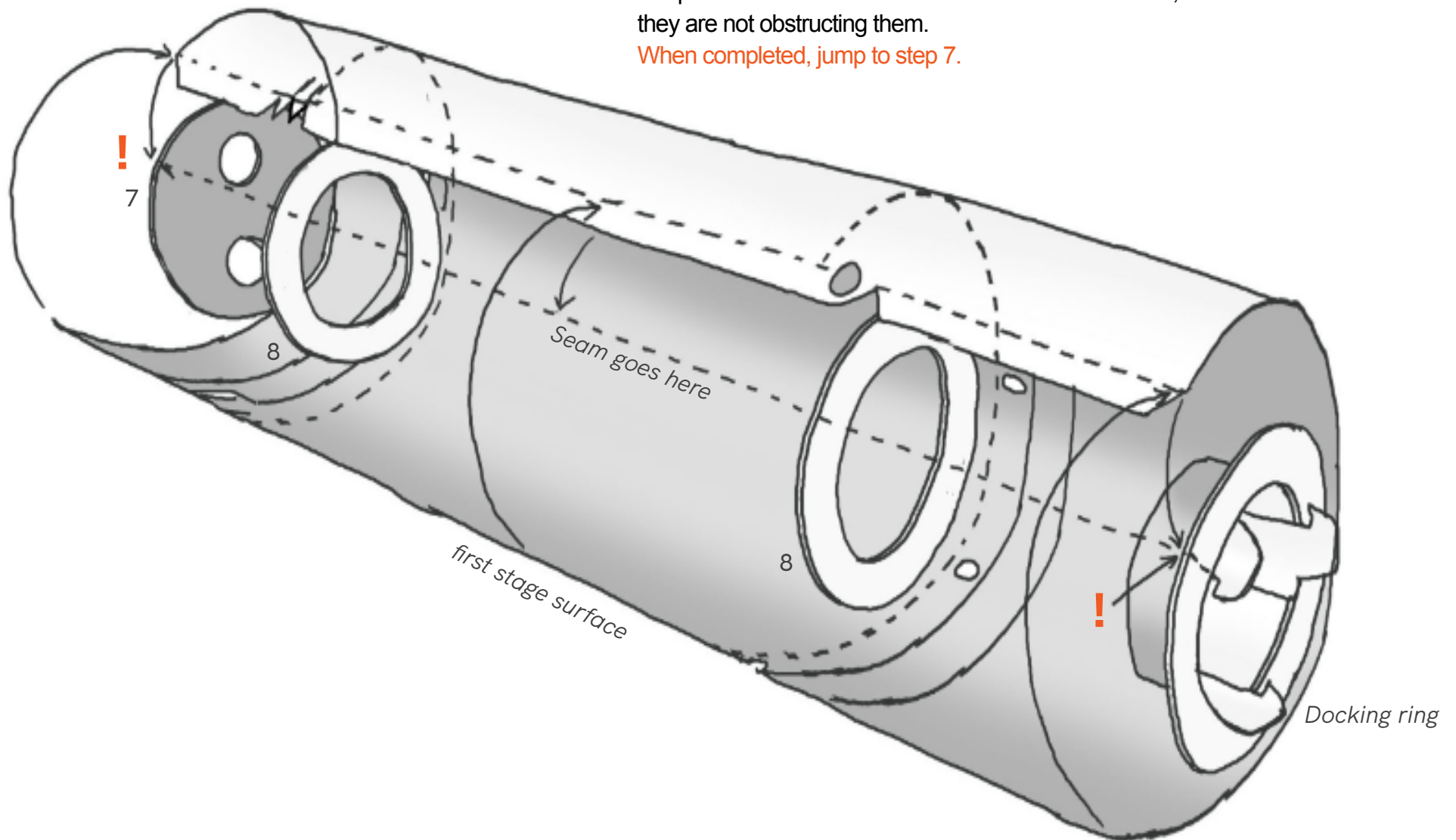
For this, try out with part 6 which you have already prepared. Then keep part 6 safe for later.

Skip step 5 if you are building the Long March 5B or don't want to have a detachable second stage.

5. Roll the first stage's surface around the sections.

Make sure that the top and bottom sections are flush with the paper edges and have the printed side facing outward. **Important:** Align the seam of the surface with the small markings on the top and bottom sections. Keep the two other sections close to the slits and holes, but make sure they are not obstructing them.

When completed, jump to step 7.

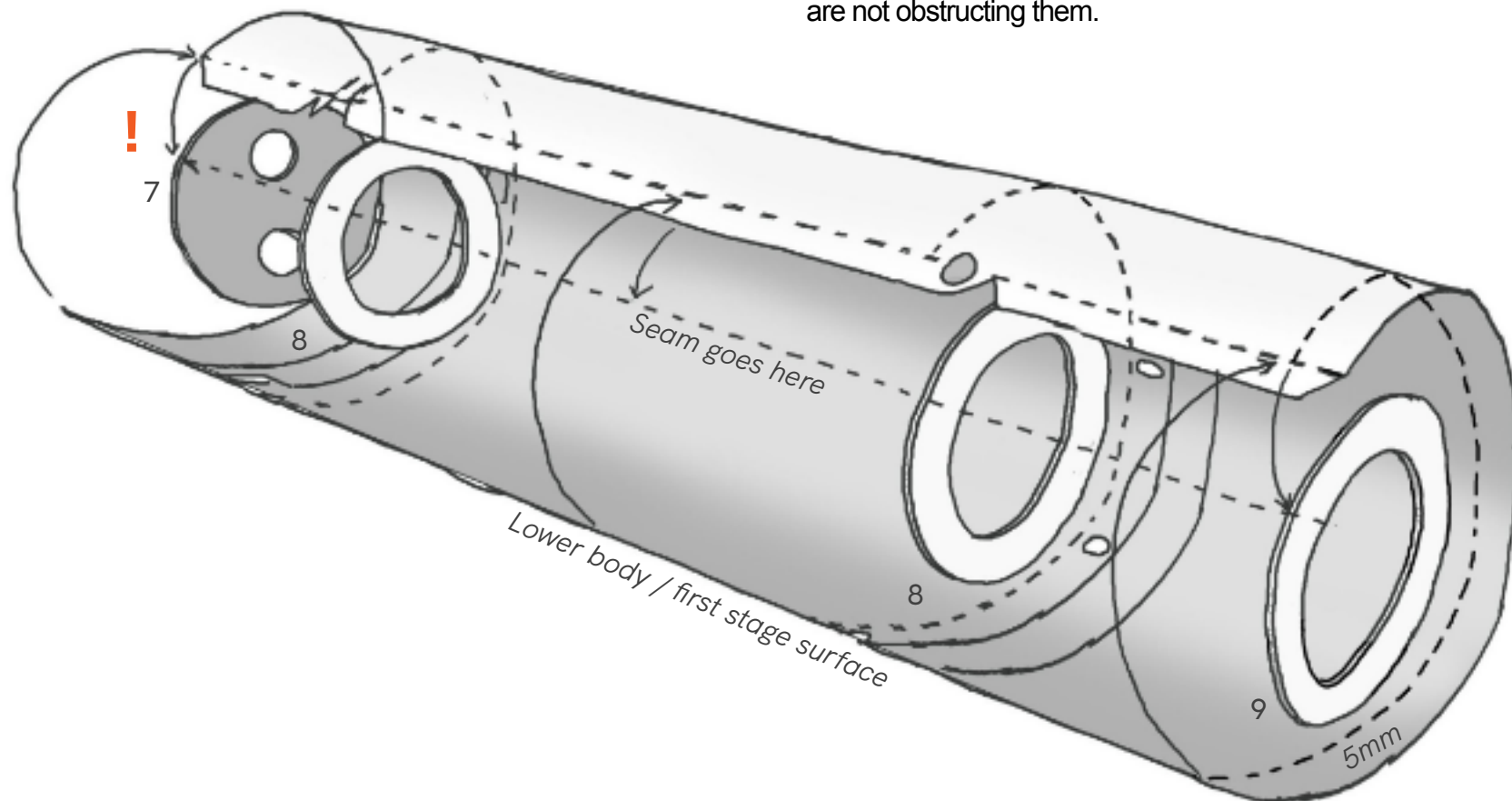


6. Roll the first stage surface around the sections. (5B)

Make sure that the bottom section (7) is flush with the paper edges and has the printed side facing outward. **Important:** Align the seam of the surface with the small markings on the bottom section.

For the Long March 5B, the top section needs to be slightly away from the edge, about 5 mm.

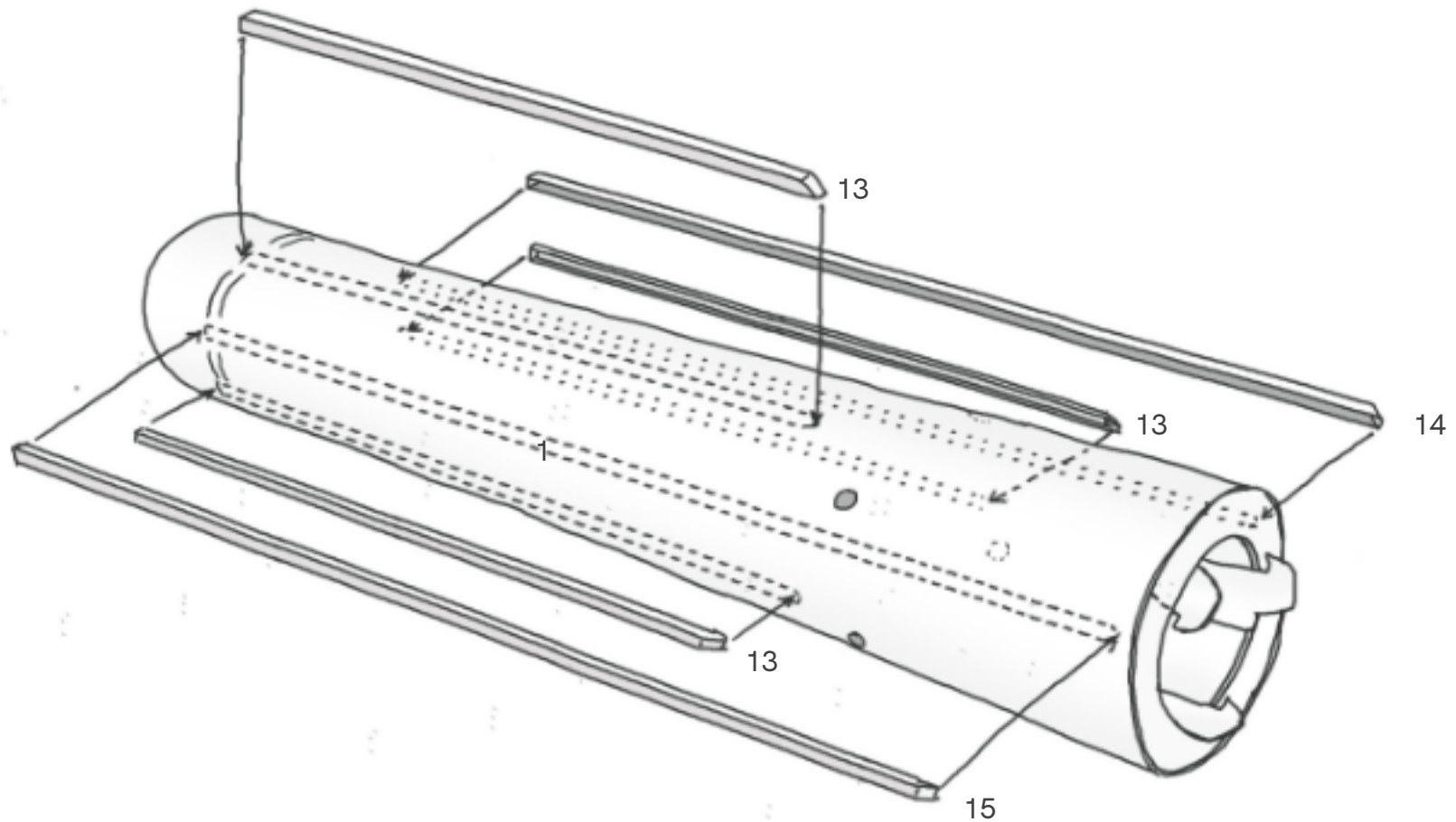
Keep the two other sections close to the slits and holes, but make sure they are not obstructing them.



7. First stage / lower body larger details.

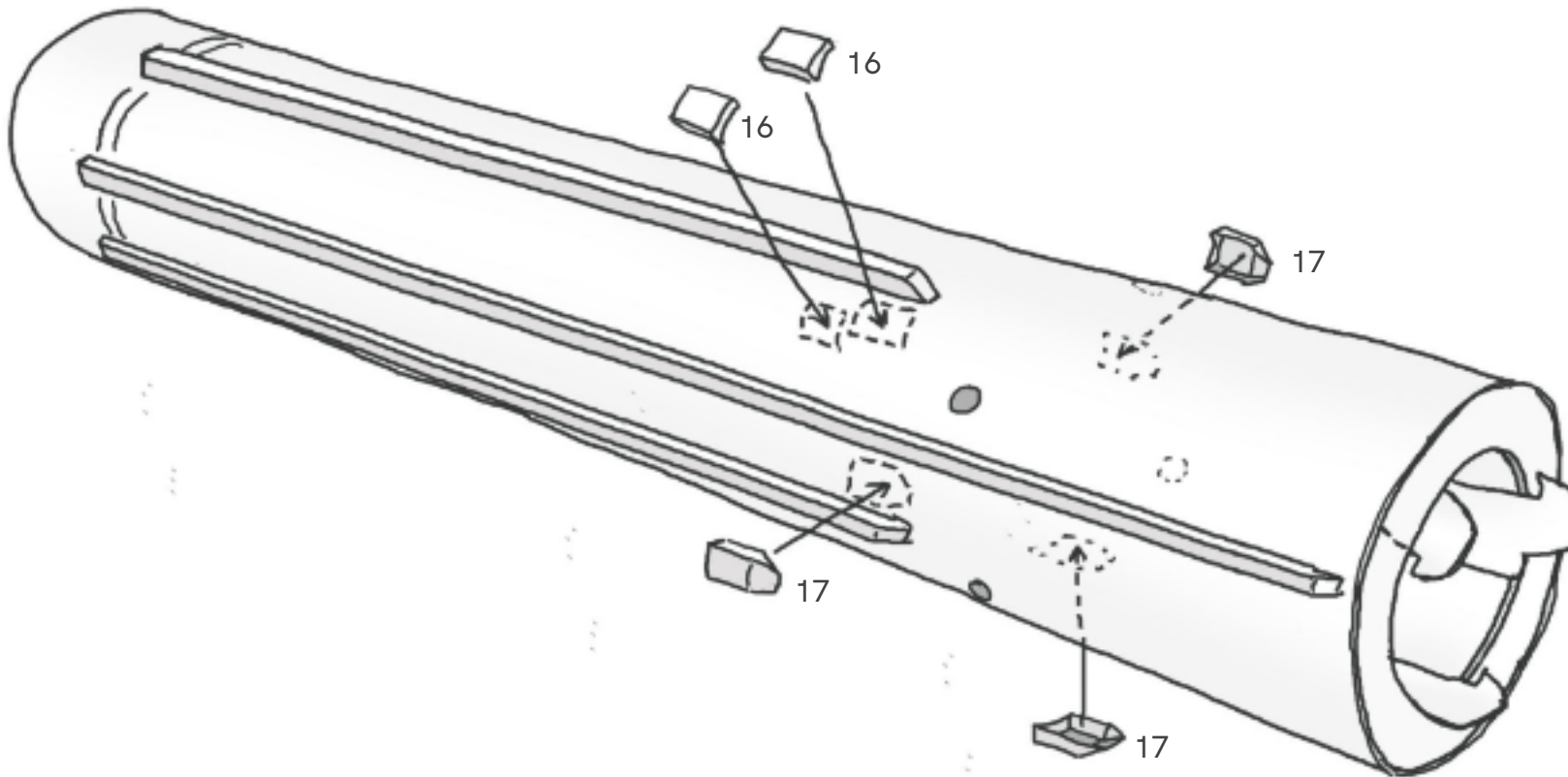
Glue the strakes to their respective positions.

Pay attention to align them correctly where paint is going across them.

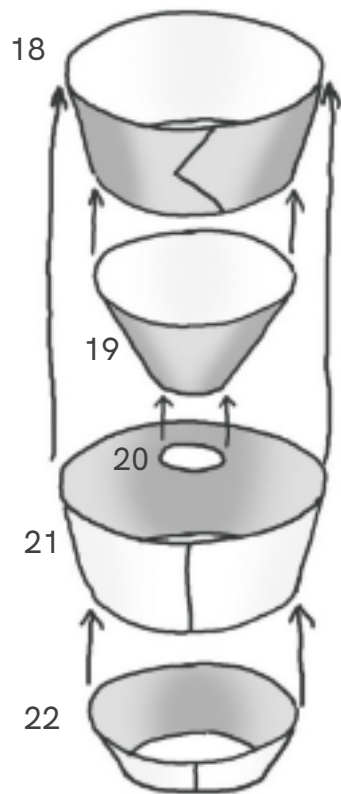


8. First stage / lower body smaller details.

Glue the various boxes to their respective positions.



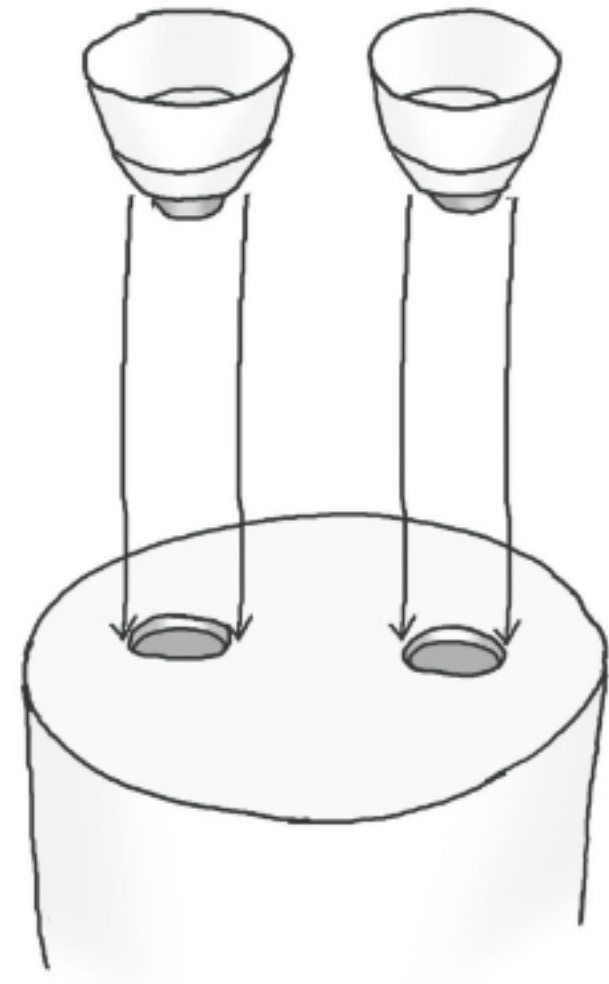
9. Build and install the main engines.



Glue together the cones for the engines.
First build the inner side which has the artwork facing inwards.

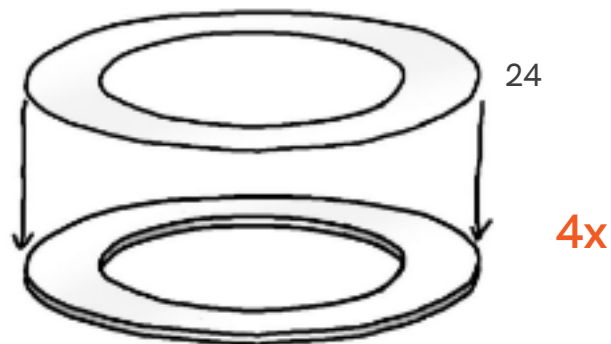
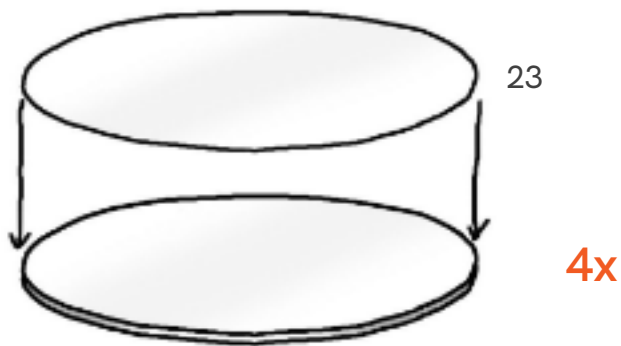
Then build the outer side, which has the artwork facing outwards.

Then glue the engines into the holes on the bottom of the first stage / lower body.

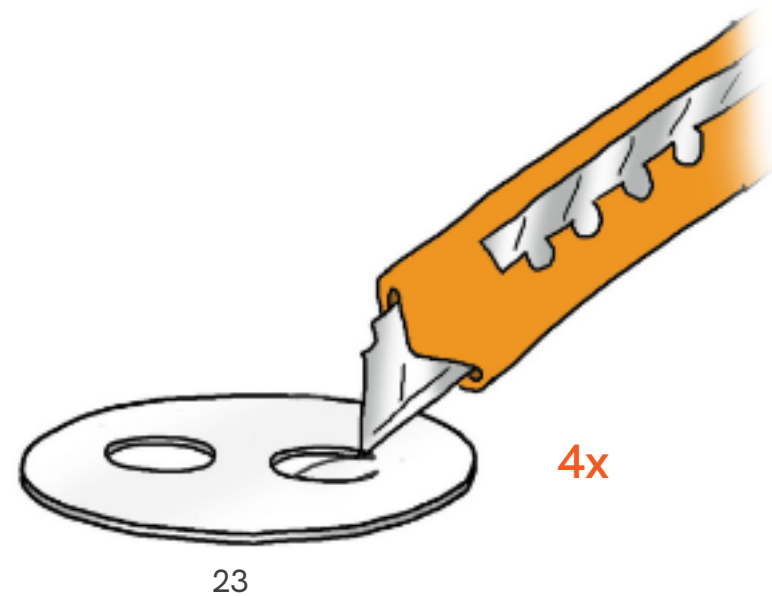


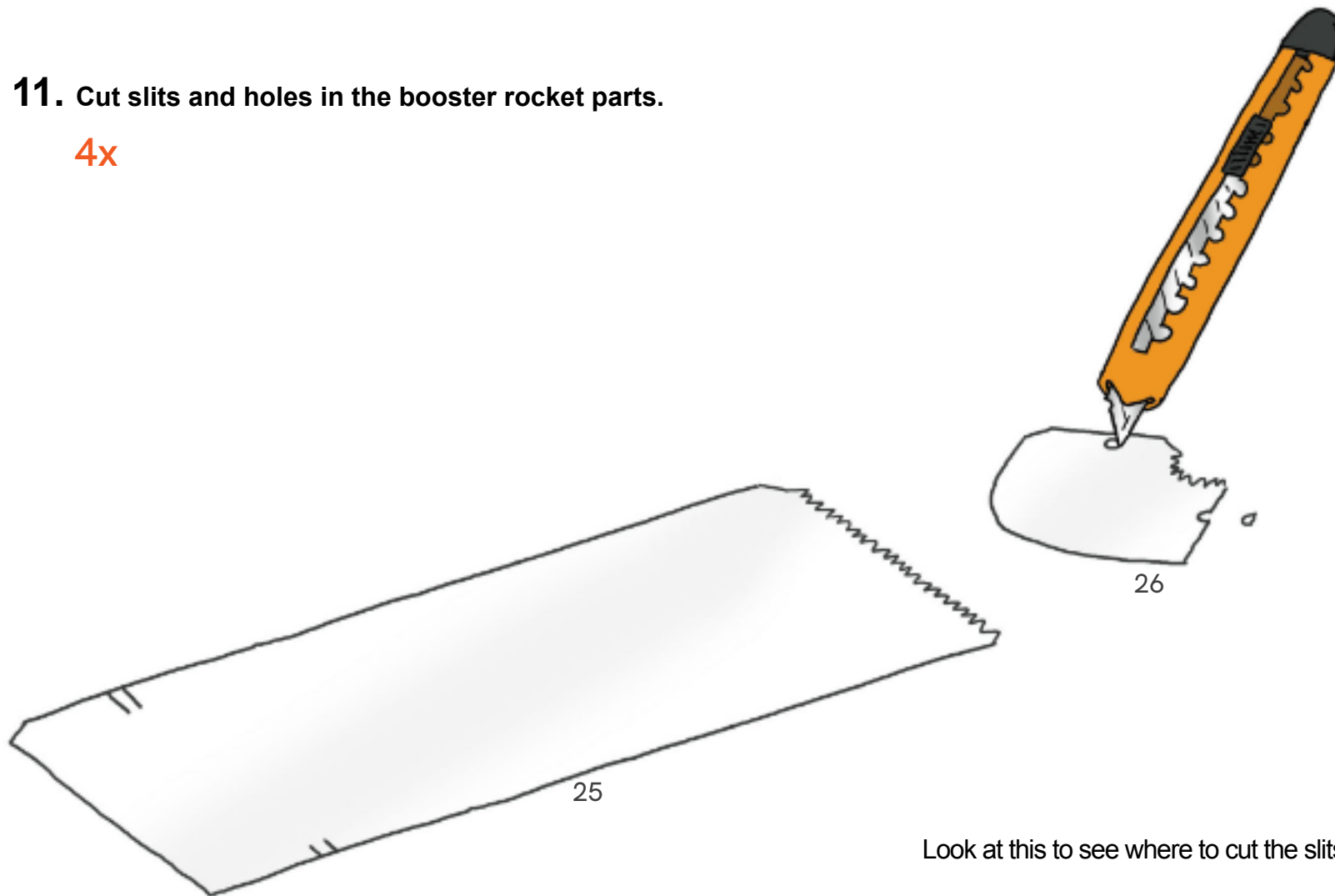
10. Prepare the sections for the booster rockets.

Double up parts 22 and 23 on a heavy cardstock, that can give some stability to the sections. Then cut out the holes on part 22.

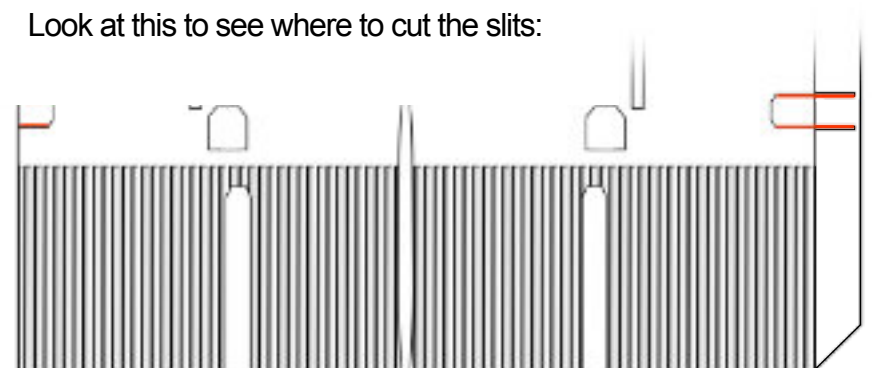


4x Repeat steps 10 to 15 four times for the four booster rockets.



11. Cut slits and holes in the booster rocket parts.**4x**

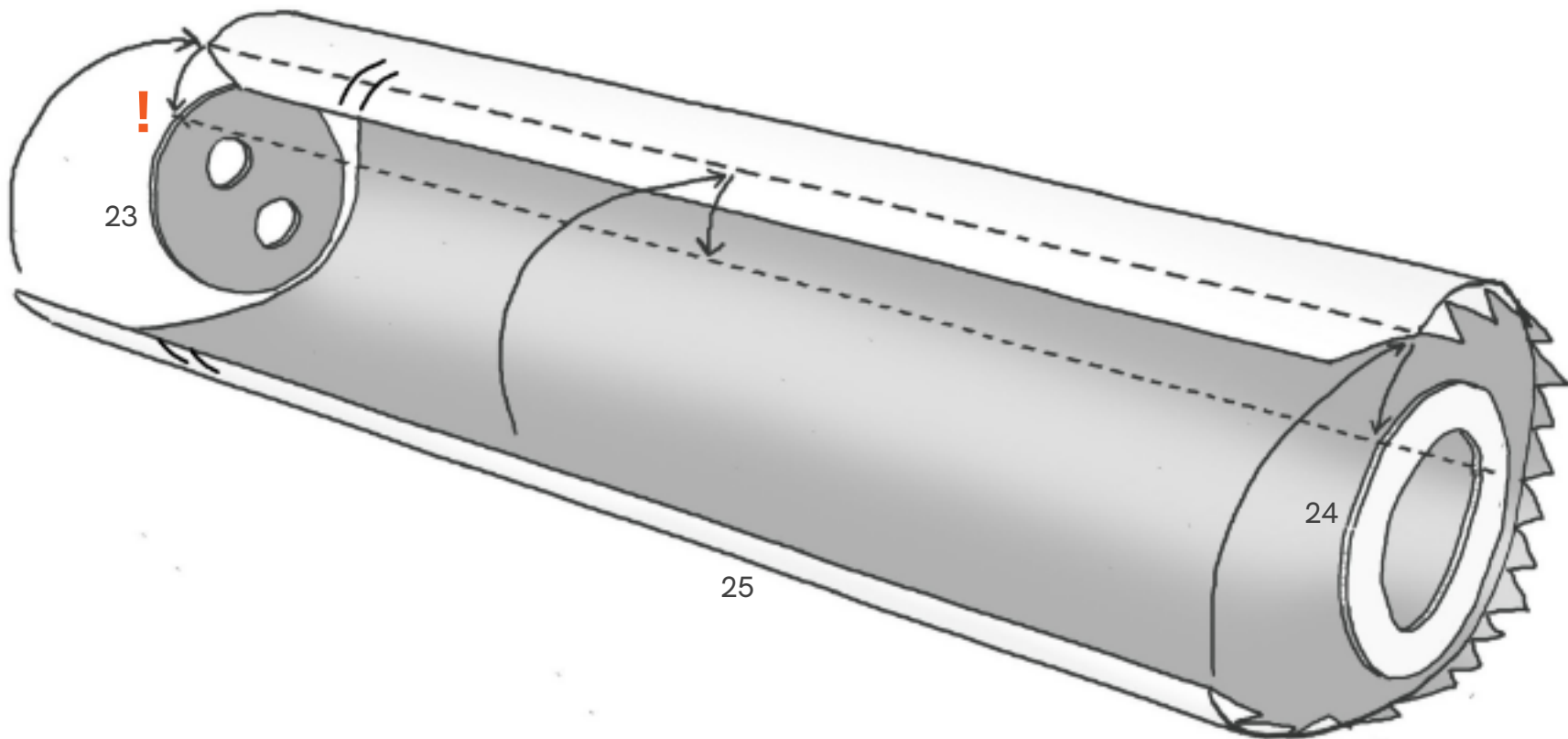
Look at this to see where to cut the slits:



12. Roll the main body for the booster rockets.

Make sure that the bottom section (22) is flush with the paper edges and has the printed side facing outward. **Important:** Align the seam of the surface with the small markings on the bottom section.

4x

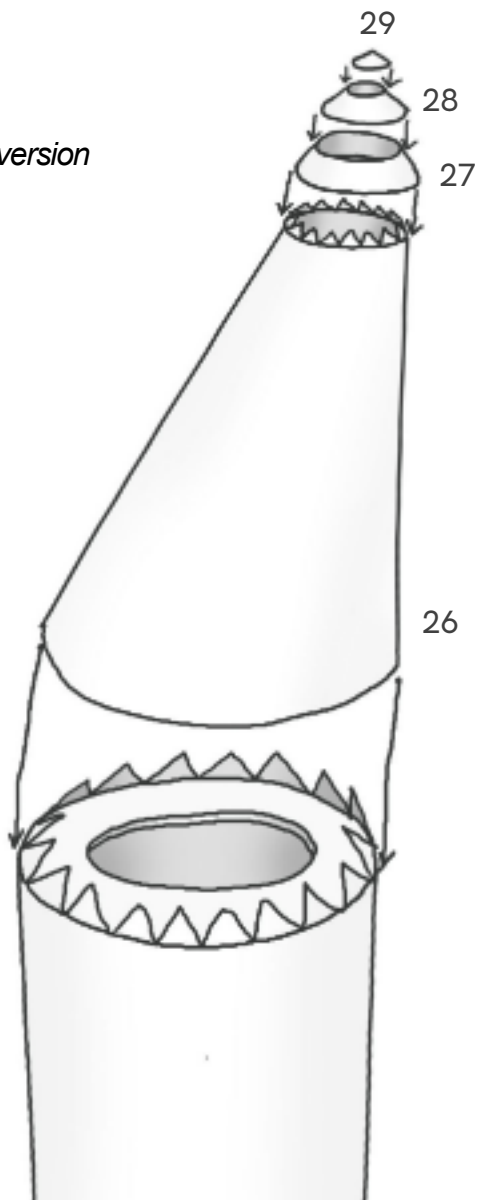


13. Build the tips for the booster rockets. 4x

? You have 2 options:

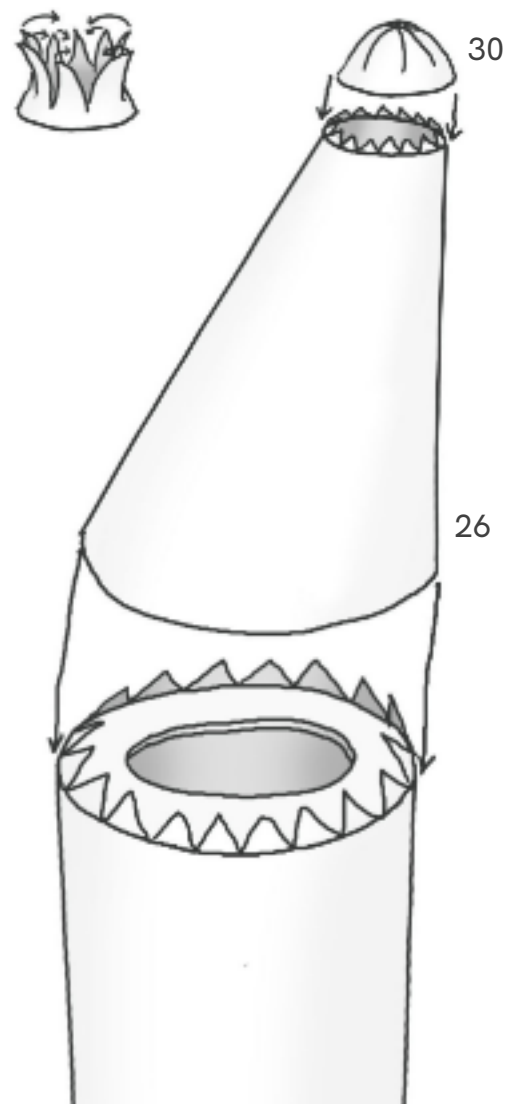
#1

Cones only version



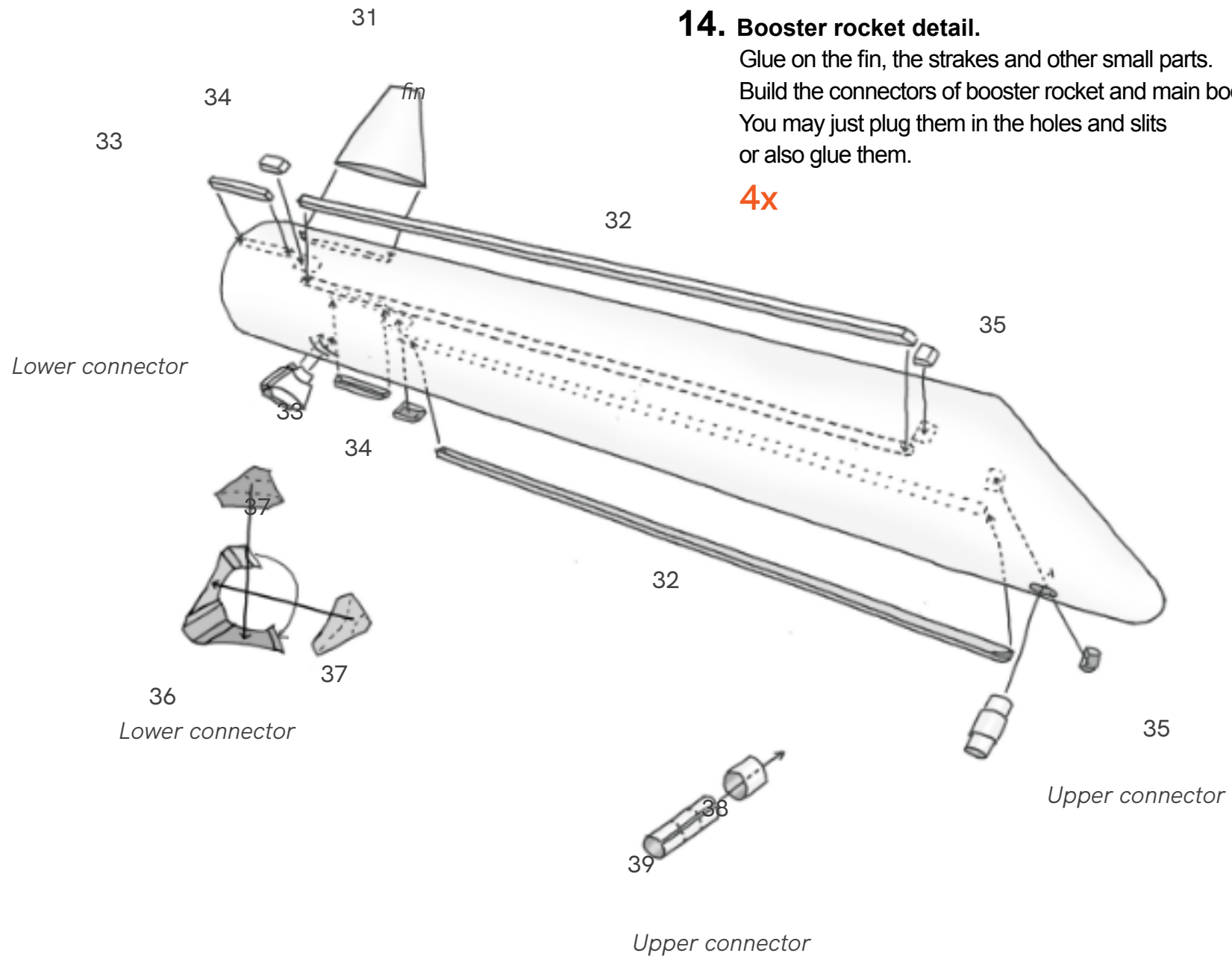
#2

Petals version



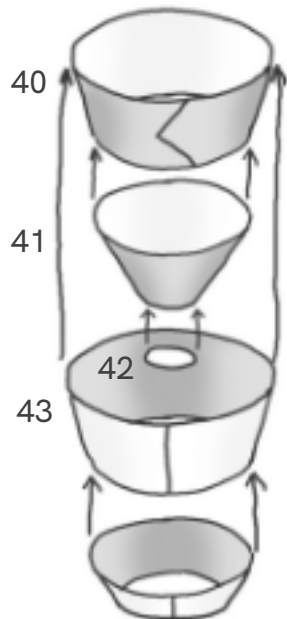
14. Booster rocket detail.

Glue on the fin, the strakes and other small parts.
Build the connectors of booster rocket and main body.
You may just plug them in the holes and slits
or also glue them.

4x

15. Build and install the main engines.

8x



Glue together the cones for the engines. First build the inner side which has the artwork facing inwards.

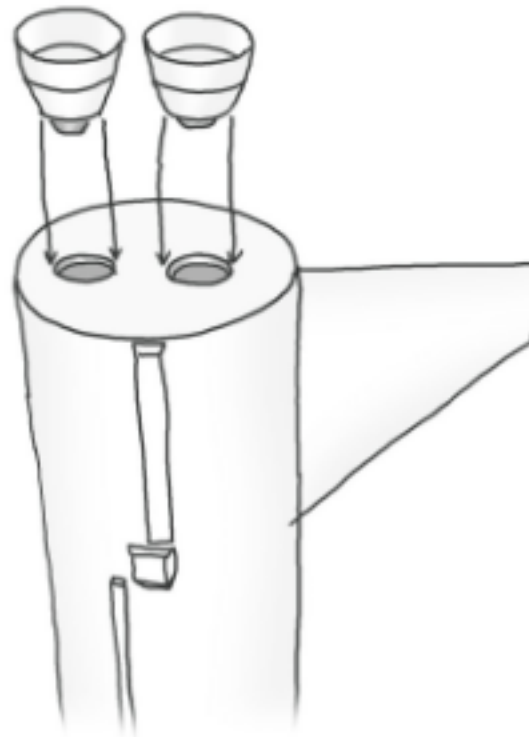
Then build the outer side, which has the artwork facing outwards.

44 (45)

Parts 44 and 45 are slightly different from one another, but the engines are built the same.

4x

Then glue the engines into the holes on the bottom of the first stage / lower body.



As one engine is smaller, make sure they are aligned to angle back slightly towards the fin, like this:

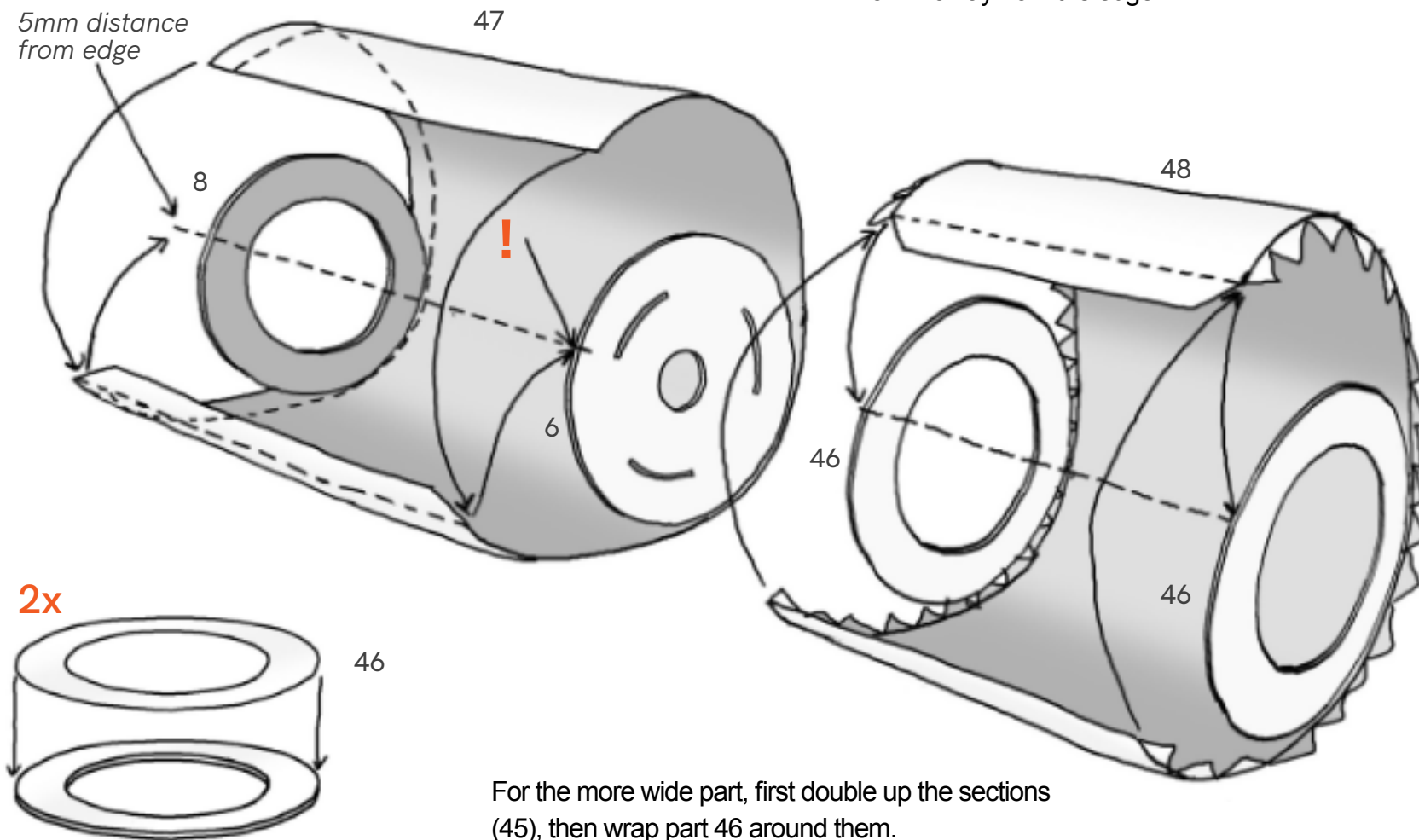


If you are building the Long March 5B skip this step and jump to 18.

16. Roll second stage parts.

On the more narrow part (44) make sure that part 6 is aligned flush with the paper edge and that the seam of 44 aligns with the small marking on part 6.

On the opposite side, make sure the section is about 5mm away from the edge

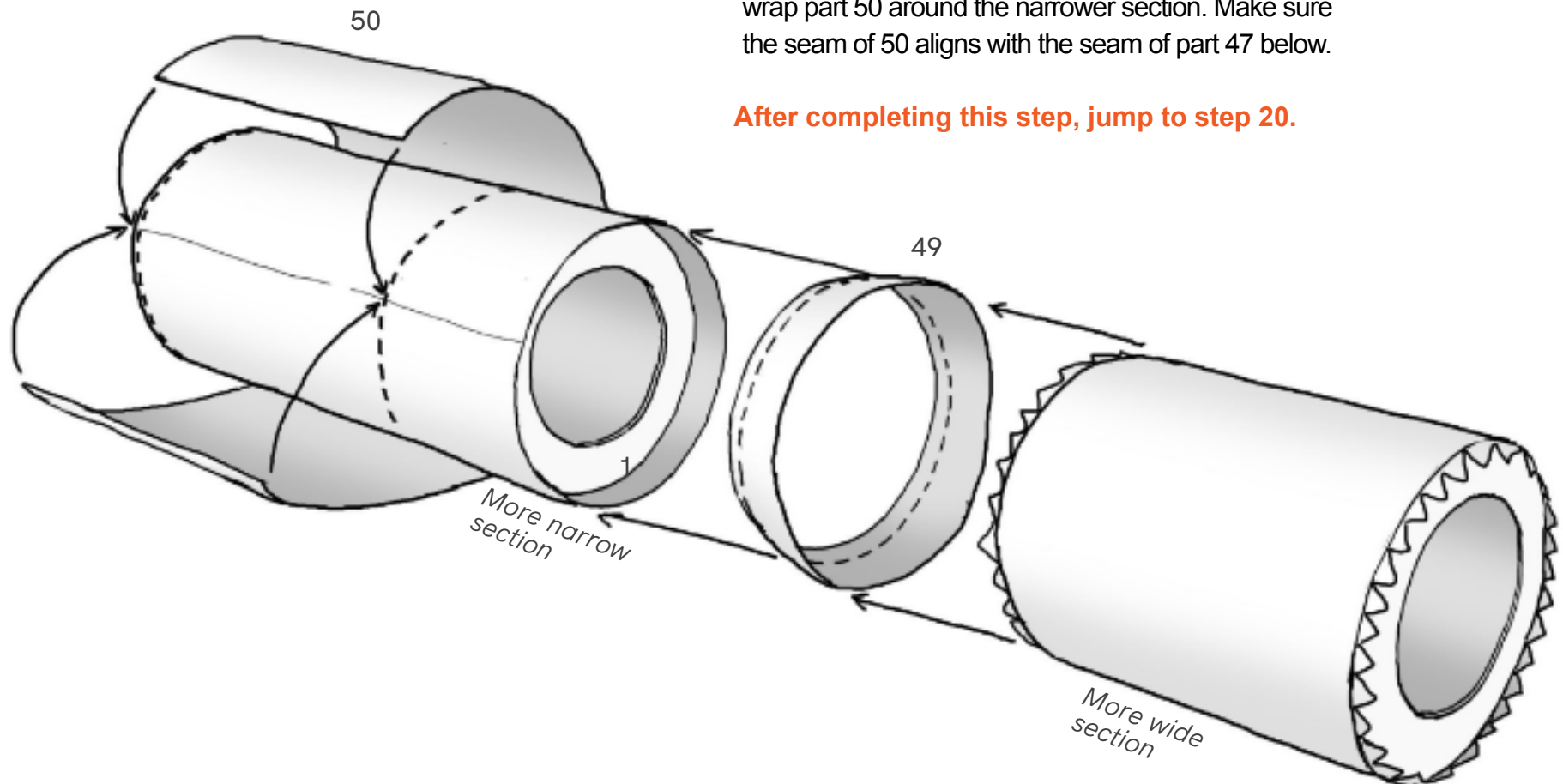


For the more wide part, first double up the sections (45), then wrap part 46 around them.

17. Assemble the second stage / upper body

Connect the previously built section with part 49 and wrap part 50 around the narrower section. Make sure the seam of 50 aligns with the seam of part 47 below.

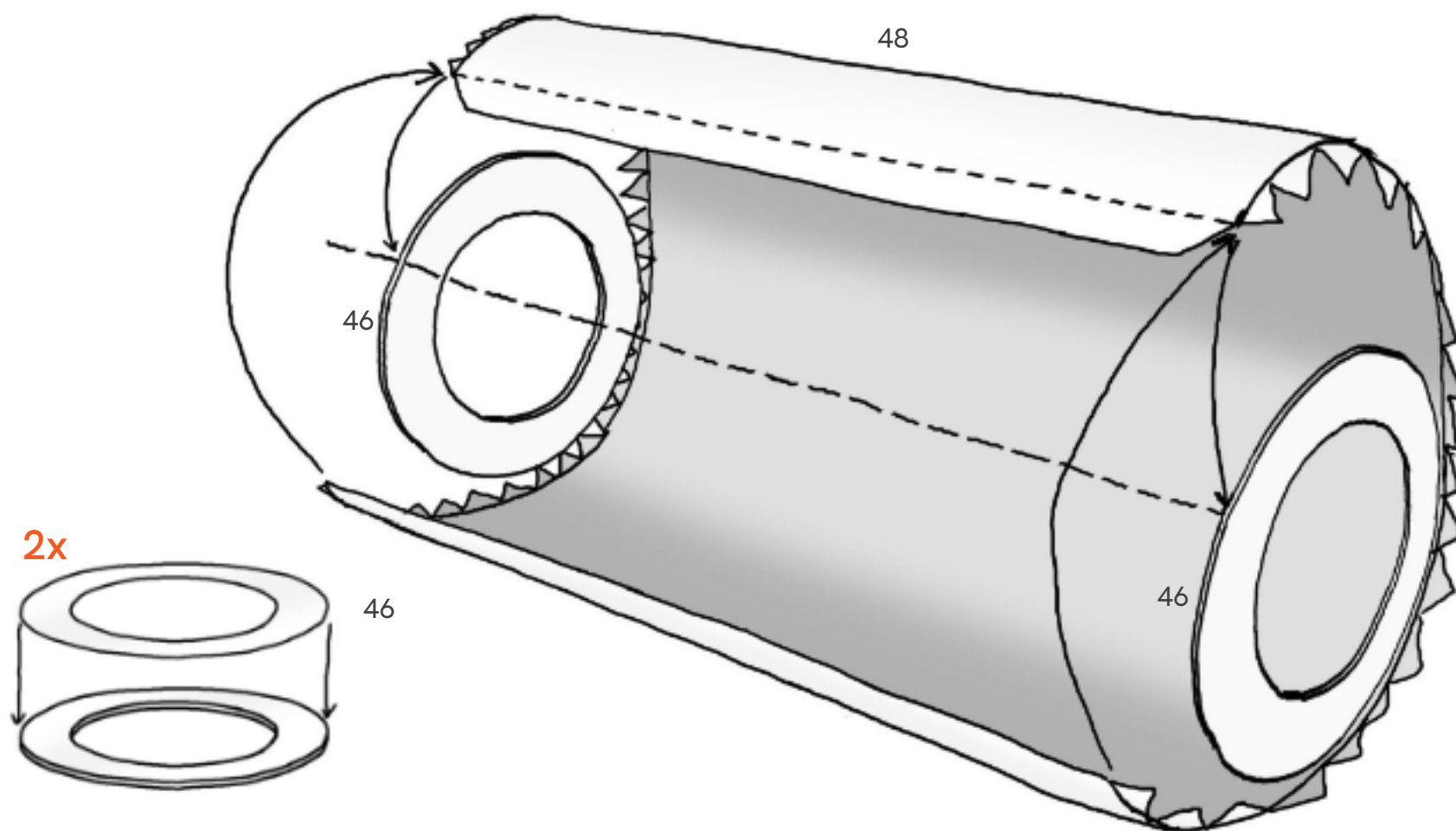
After completing this step, jump to step 20.



Step 18 is for the Long March 5B only.

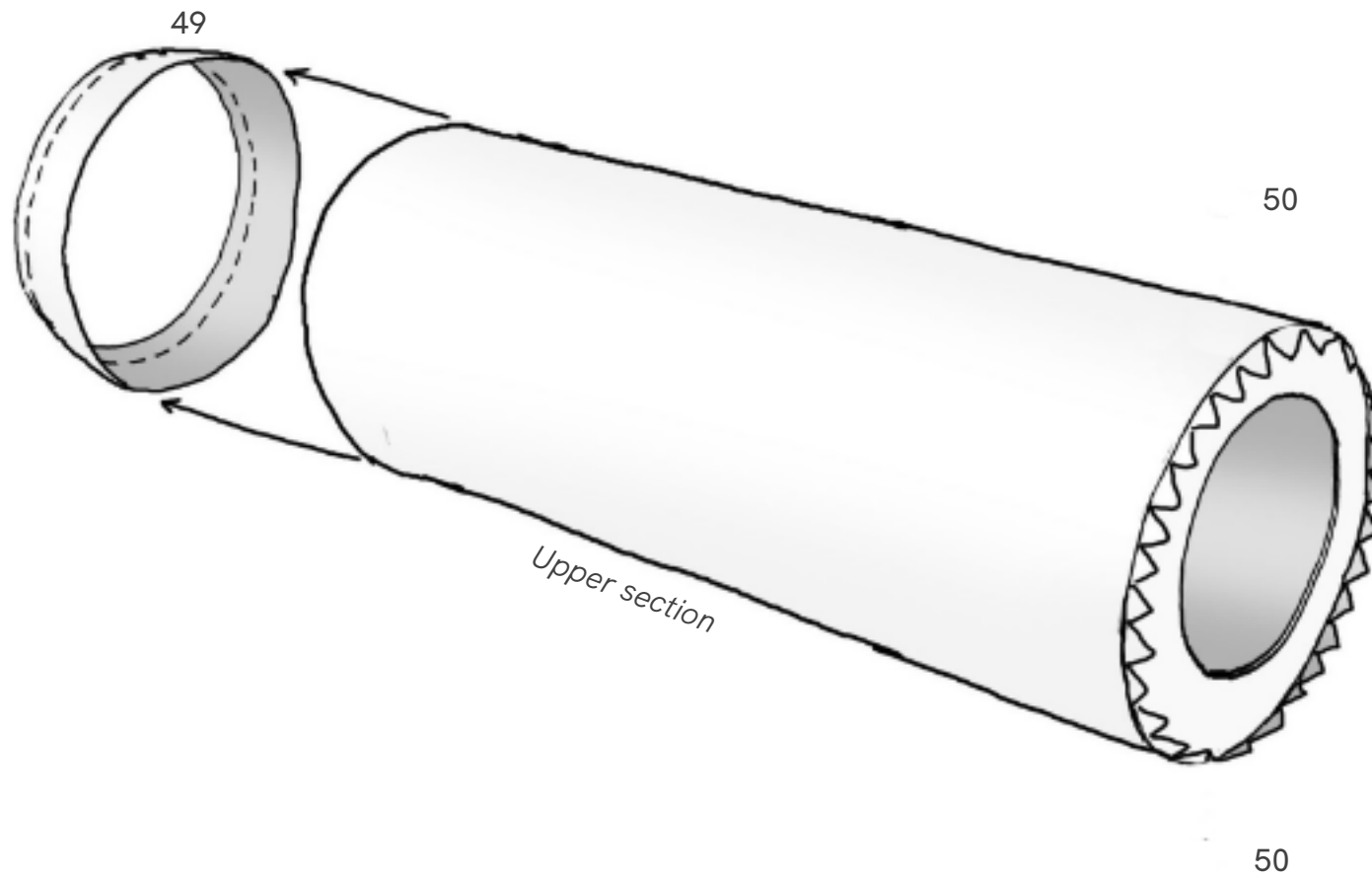
18. Build the upper section of the upper body. (5B)

First double up the sections (45), then wrap part 46 around them.



19. Assemble the upper body. (5B)

Glue the upper section to the connecting cone.

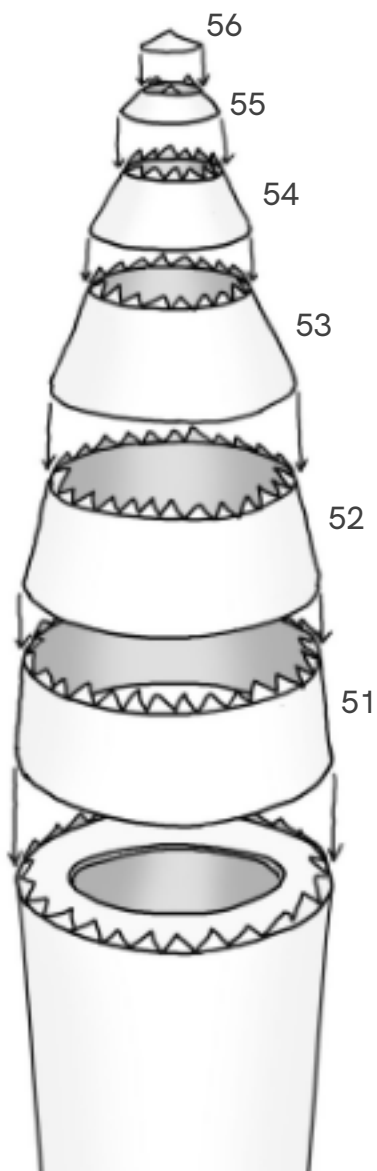


20. Build the tip of the main body.

? You have 2 options:

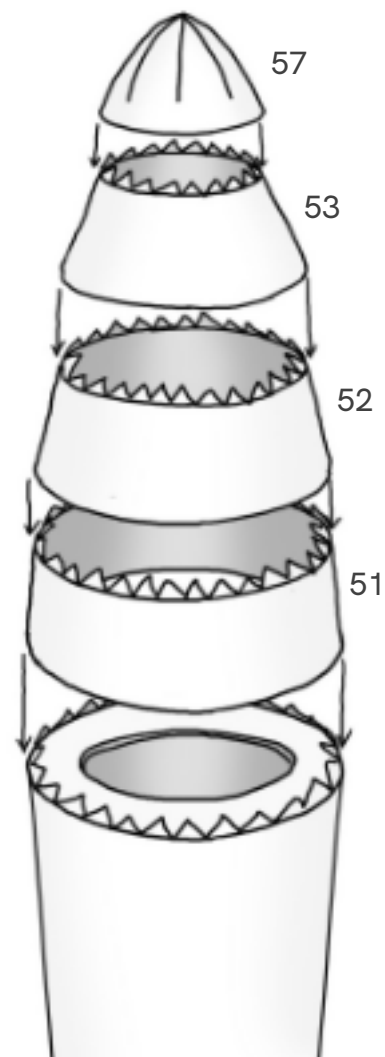
#1

Cones only version



#2

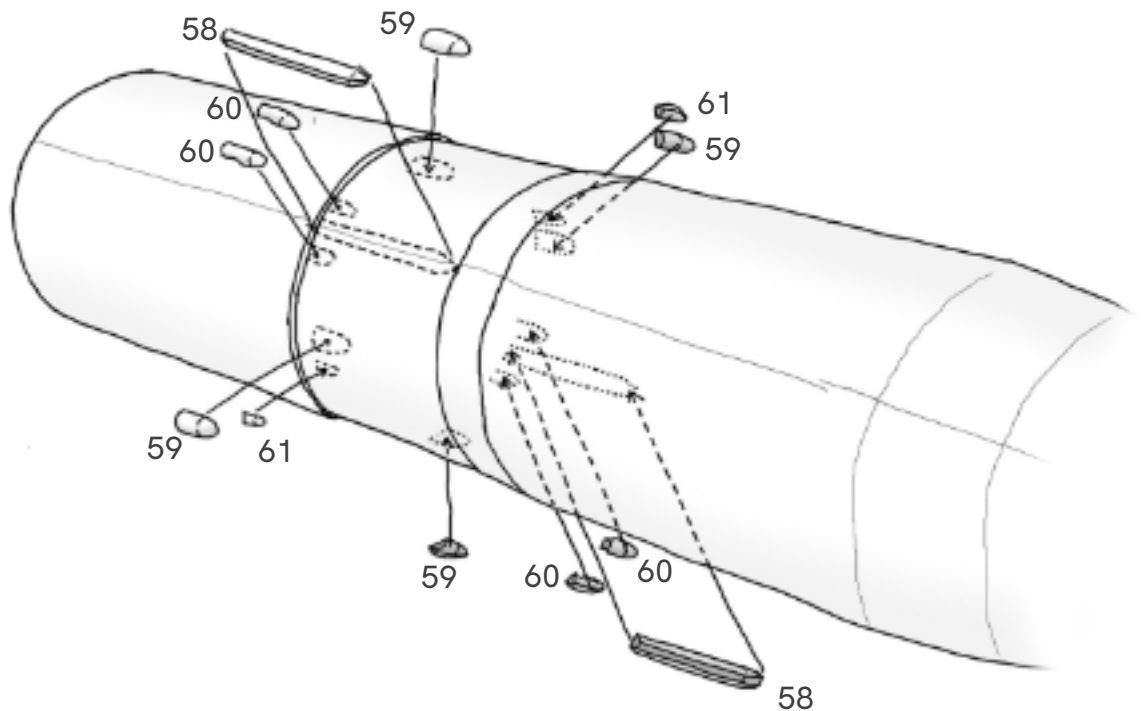
Petals version



If you are building the Long March 5B skip these steps and jump to 24.

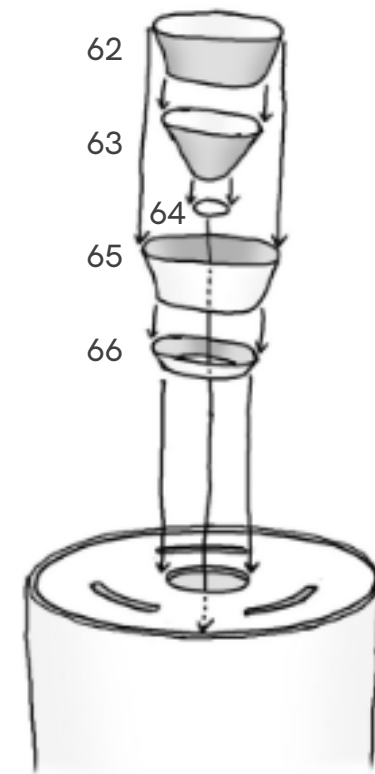
21. Details on second stage.

Glue on the strakes and thrusters.



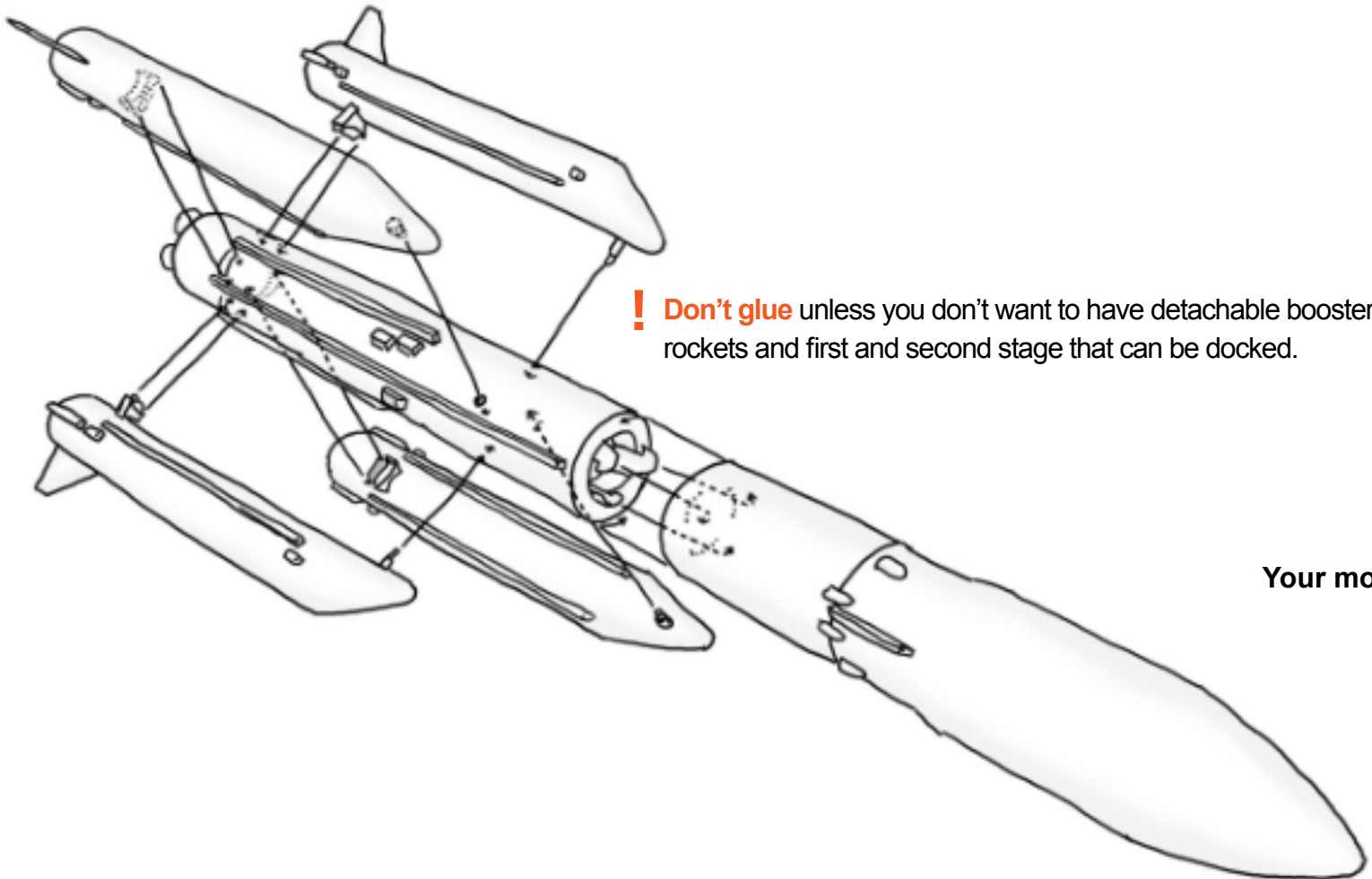
22. Details on second stage.

Build the engine the same way as other engines and glue it in the hole.



23. Final docking.

Plug the booster rockets into holes and slits on the first stage. Push the docking clamps of the first stage into the second and rotate to dock.



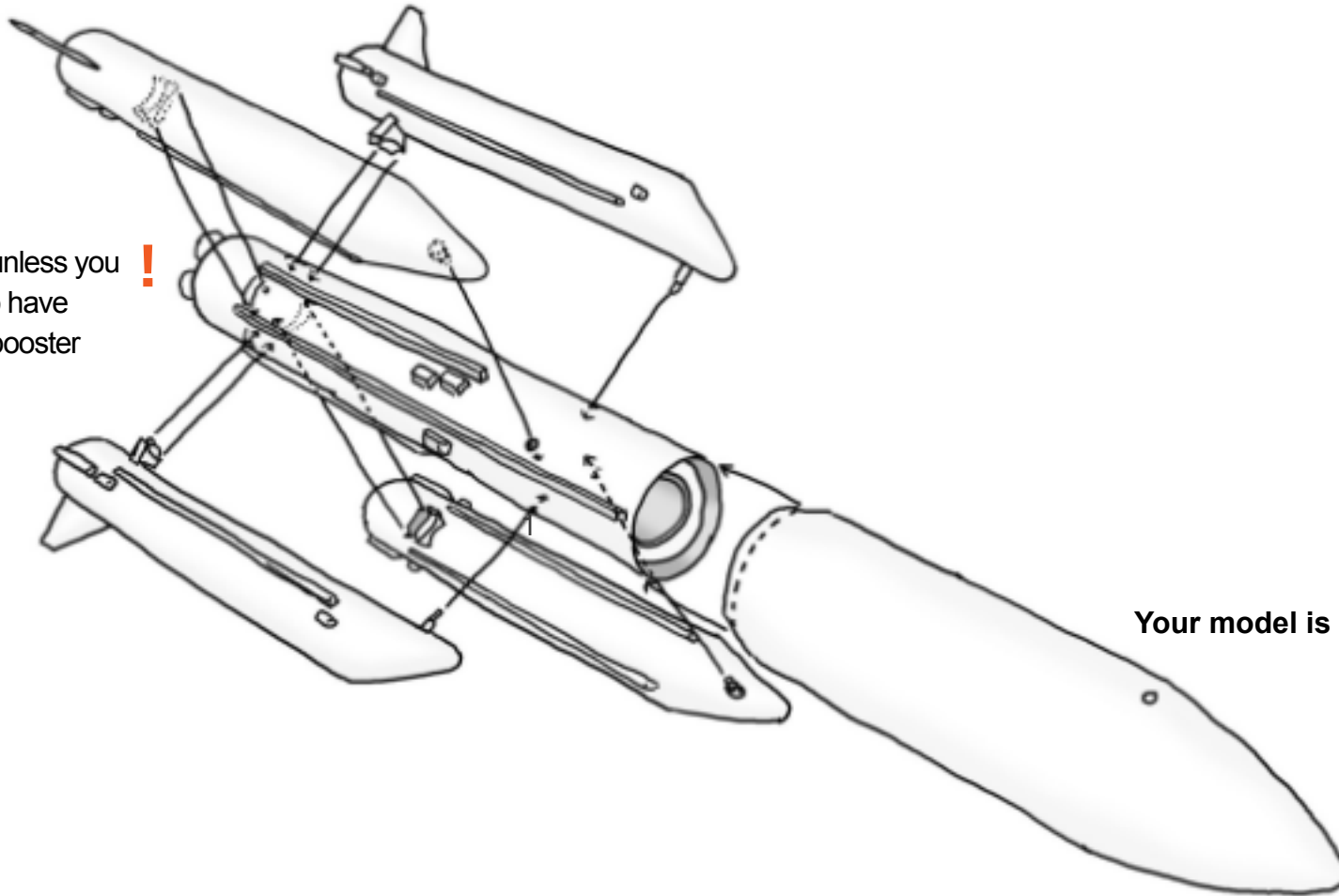
Your model is finished.

24. Final assembly and docking. (5B)

Glue the upper body to the lower body.

You may just plug the booster rockets into the holes and slits on the lower body to keep them detachable.

Don't glue unless you **!**
don't want to have
detachable booster
rockets.



Your model is finished.