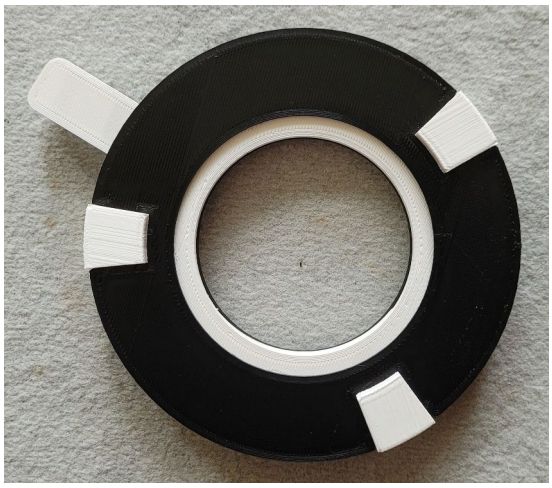
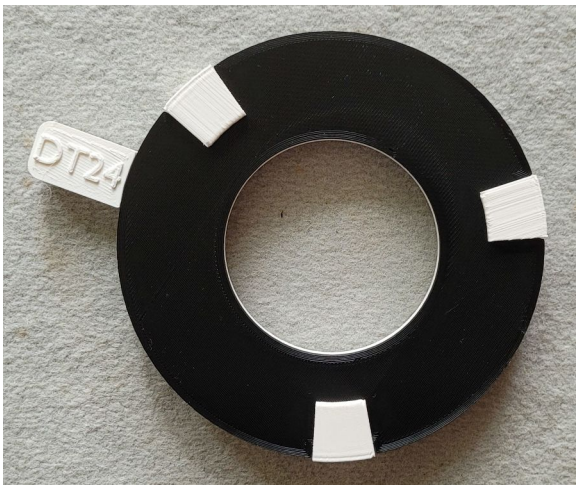
Mechanical Iris Assembly Guide

The mechanical iris is a fascinating item which can easily be 3D printed by yourself, if you have a 3D printer. The outer diameter of this iris is 11.5 mm (4.6 inches). The iris has 5 blades and is designed for smooth operation.

The bottom view looks different from the top view. The actuator ring is not visible from this view.





Feel free to choose your favourite colors for the different parts of the iris.

Required tools for the assembly

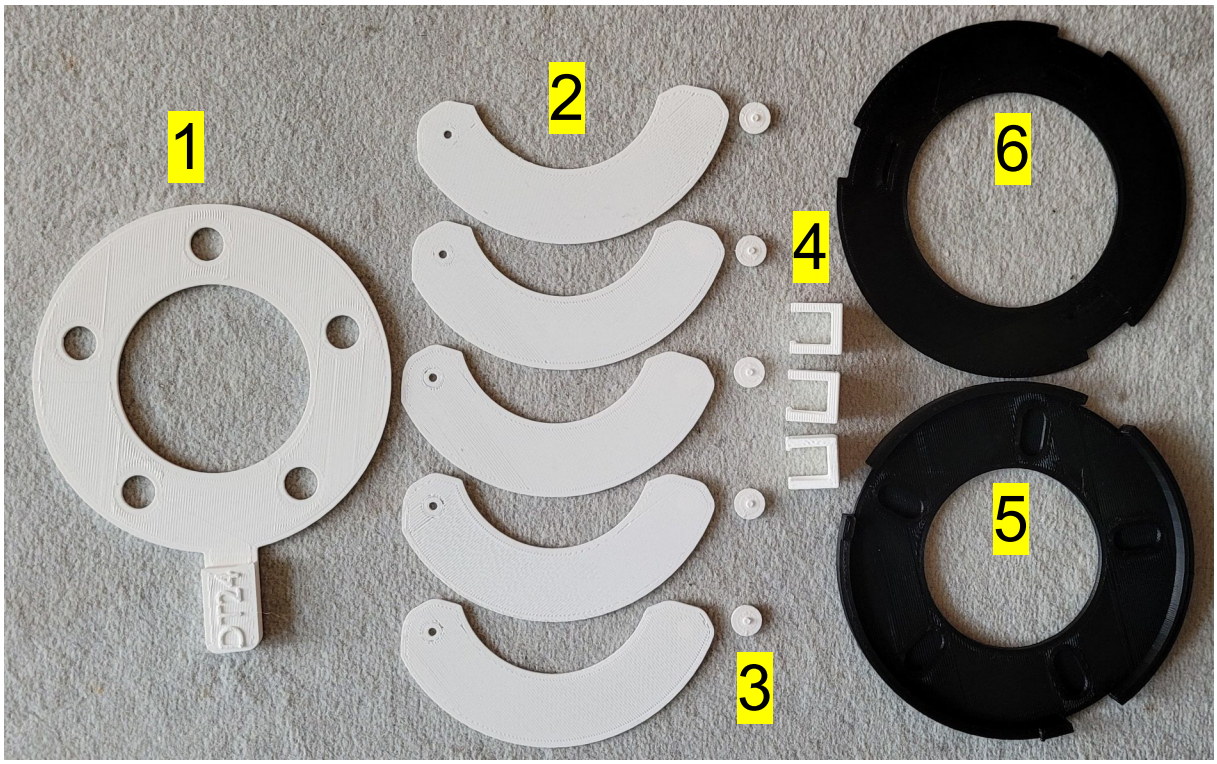
- Plastic glue suitable for the material you are using. The glue is needed only to fix the second pin to the each blade. One pin is already 3D printed together with the blade. Due to the glueing action no supports are needed for the 3D print.

List of STL files

The STL files can be downloaded from Thingiverse. Multiply the items in your slicer program if required. The number of required items is listed in column „Number of items required“.

STL file name	Description	Number of items required
Iris 115 mm blade.stl	Blade of the iris	5
Iris 115 mm blade pin.stl	Each blade alrady has a pin on one side. However, another pin is required on the other side which has to be glued.	5
Iris 115 mm clip.stl	Clip to hold the base and the top part together.	3
Iris 115 mm base.stl	The base of the iris iwth 5 long holes for the blades to slide in.	1
Iris 115 mm actuator ring.stl	The actuator ring moves the blades around to close/open them.	1
Iris 115 mm top.stl	The top part is a flat part to hold everything together. The top part is fixed to the base part with the clips.	1

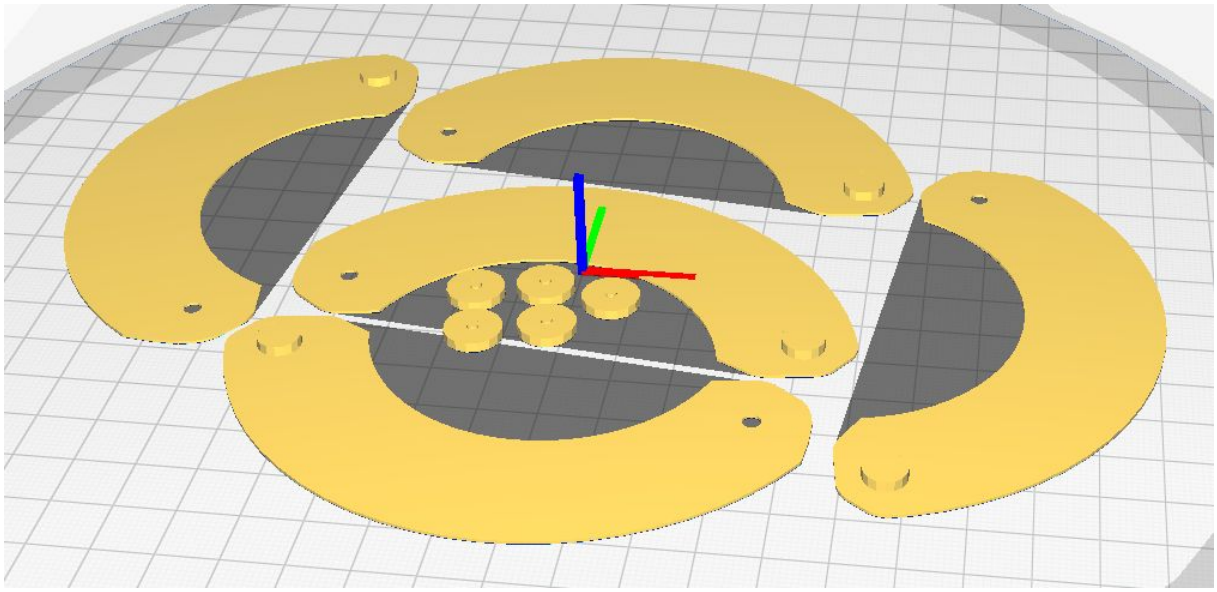
List of items to print



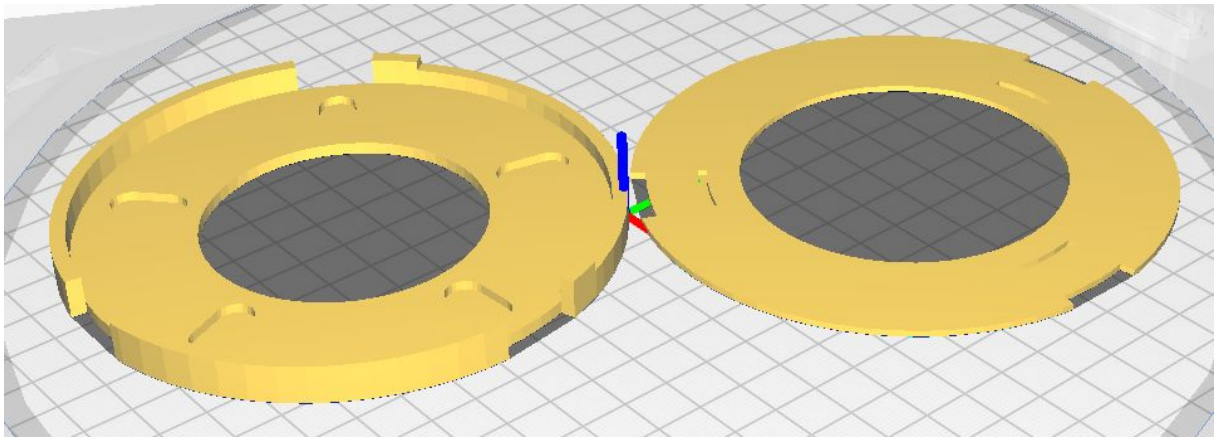
Print the actuator ring (1), the five blades (2), five blade pins (3), the clips to hold everything together (4), the base part (5) and the top part (6). When you have printed all these parts you are ready for the assembly.

Print all parts with 0.2 mm layer height!

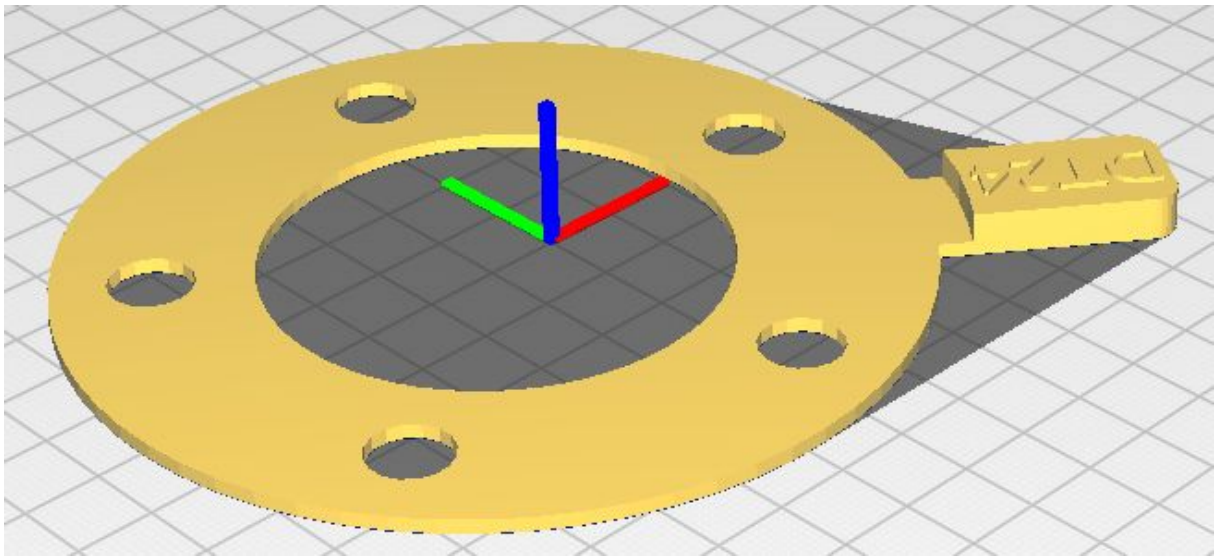
Orientation of items in slicer program



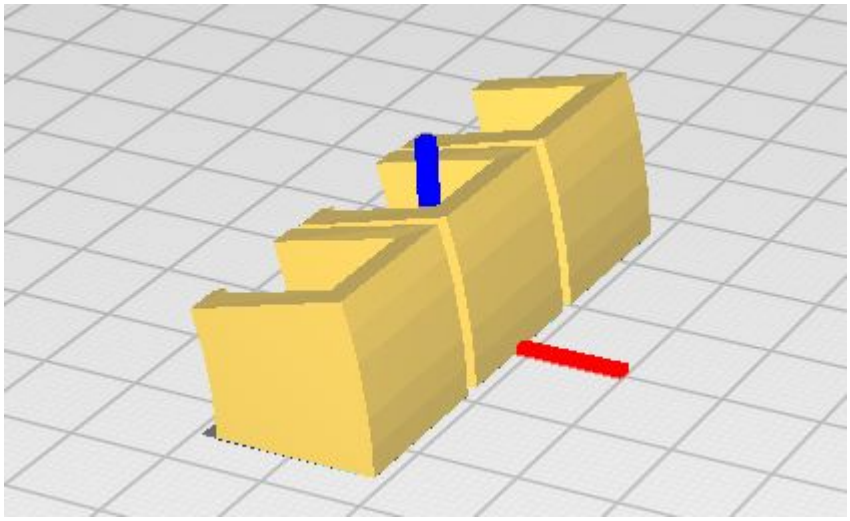
The pins of the blades are facing upwards.
The extra pins have their small pins facing upwards.



The long holes of the base and the top part are facing upwards.



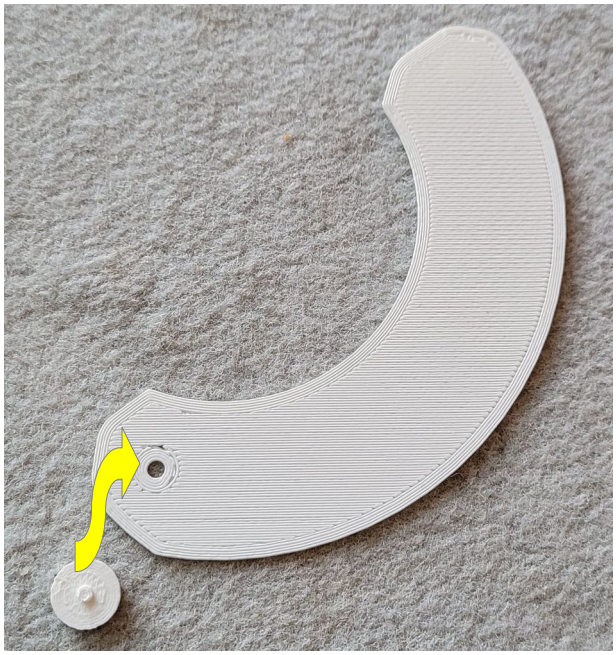
The text „DT24“ of the handle is facing upwards.



Locate the clips exactly as shown. This orientation gives them strength.

Assembly step 1: Assembling the blades

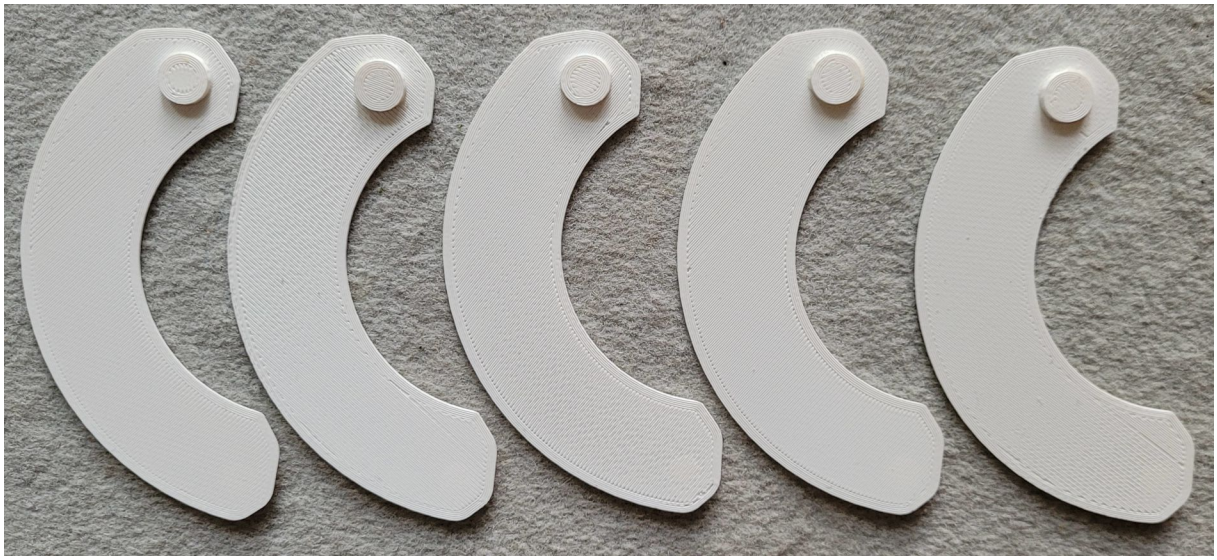
Each blade has a small pin already attached after the blade is printed. Locate each blade so that the existing pin is facing downwards. The large separate pins have a small pin on top which must be glued into the holes of each blade. The holes make sure that the location of the pins is correct.



Glue the pin to the blade. The small pin fits into the hole so that the pin automatically has the right position. After this operation each blade has a pin on each side.

Blade with large pin glued to it. The small pin is on the other side.

At the end you should have 5 blades with the large pins glued to them.



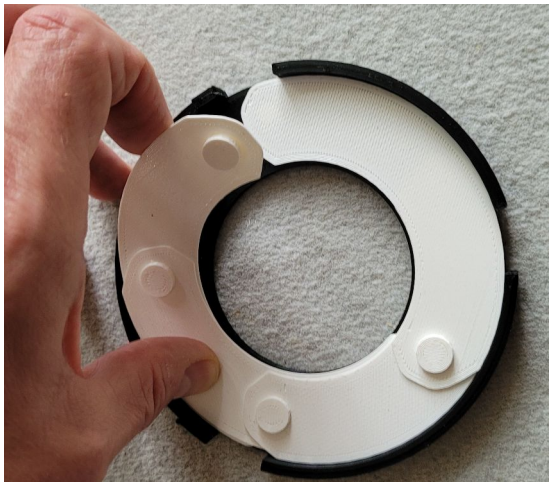
Wait till the glue has hardened before you continue with the next step.

Assembly step 2: Put the blades into the base part

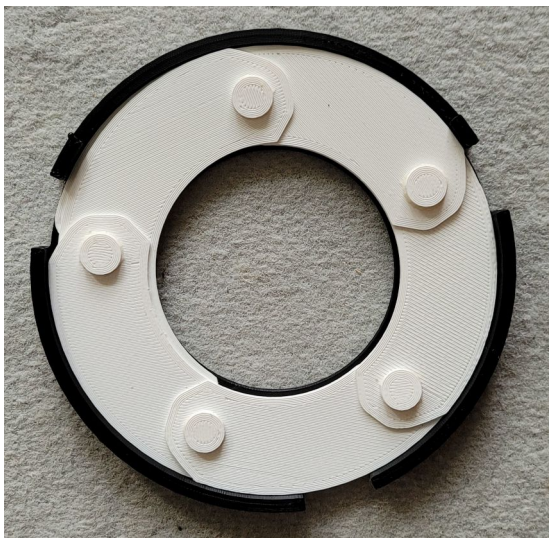
Did you wait till the glue of the pins is hard? You should :)
Position the base part with the long holes facing upwards. Take the first blade with the small pin facing downwards and lay it on the base part so that the small pin is in a long hole.

The first blade should be located as shown on the picture. The small pin is facing downward and is positioned in the long hole. The large pin is facing upwards.

Position the second blade with the small pin in the long hole and the side with the large pin on top of the first blade.

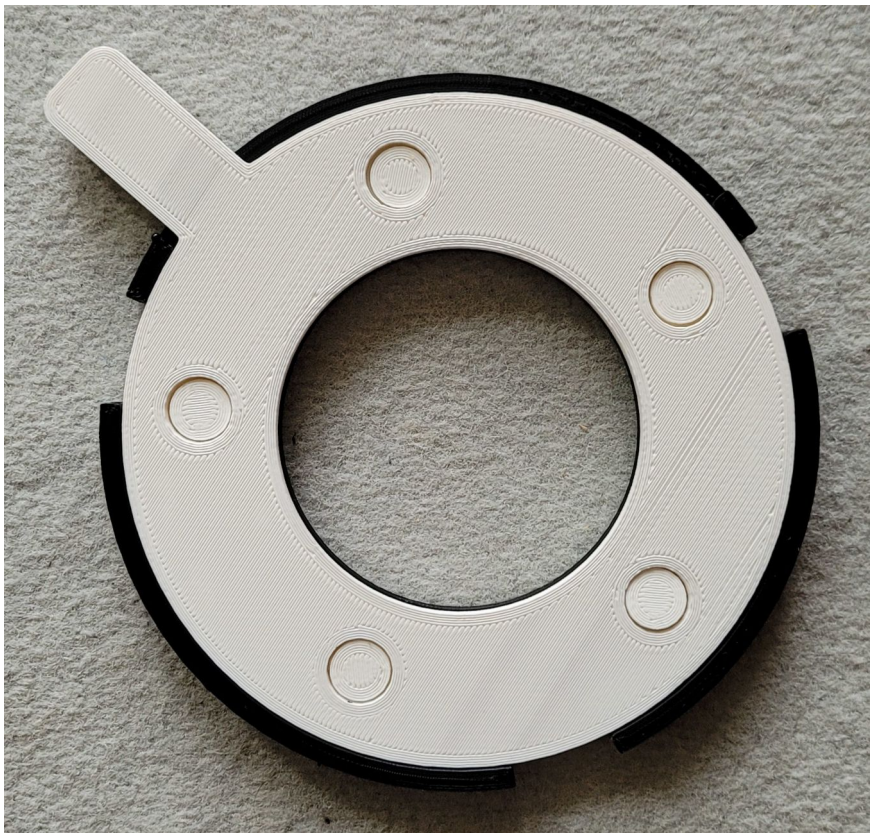


Positioning the last 2 blades is a bit more difficult, as they must have their small pins below the first and second blade. Lift the first and second blade up a bit and hold them to prevent the blades from moving.



All 5 blades are now positioned with the small small pins facing downwards in the long holes.

Assembly step 3: Add the actuator ring

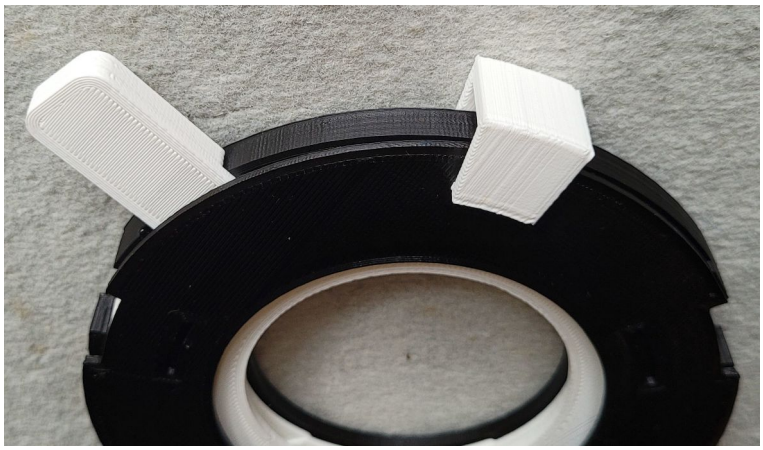


Take the actuator ring with the text „DT24“ on the handle facing downwards. Position it exactly as shown on the picture above. The border of the base part is lowered on one side for the handle to slide along. The 5 pins must be positioned in the holes. Move the ring a bit to the right and to the left to accomplish this. You can also press the actuator ring down a little bit and slide it to the right to check, if the iris is working correctly and if all pins are in the holes. If everything looks good, you can advance to steps 4 and 5.

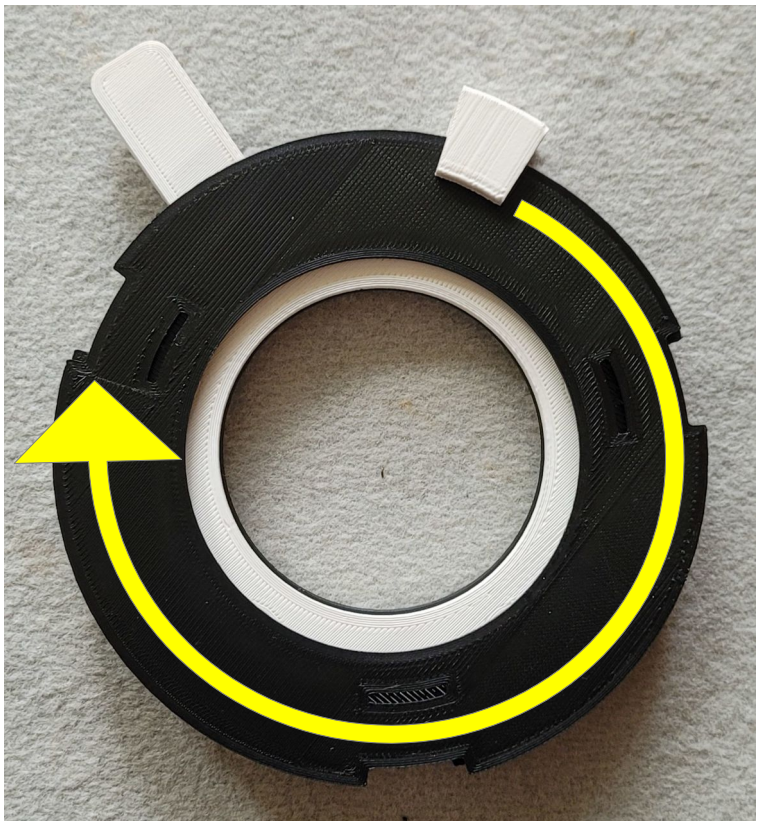
Assembly step 4: Add the top part

Put the top part onto the iris. You cannot do wrong, as there is only one orientation where the insets of the top part align with the insets of the base part.

Assembly step 5: Add the clips

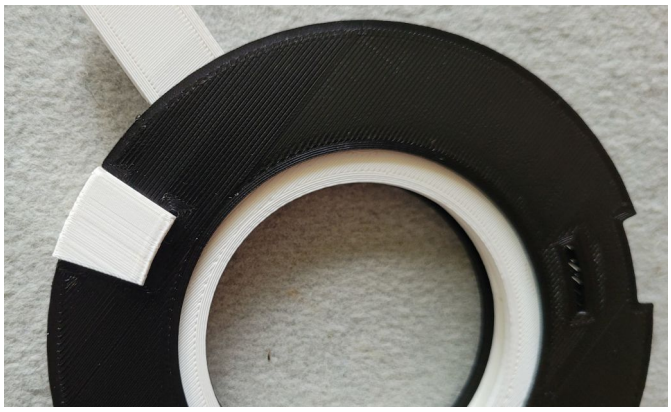


Hold the top part in place and slide in the first clip. The best position for this is where the handle slides along. You can press the top part down a little bit to slide in the clip. Make sure that the little inner edge of the clip is on the same side as the long holes in the top part.

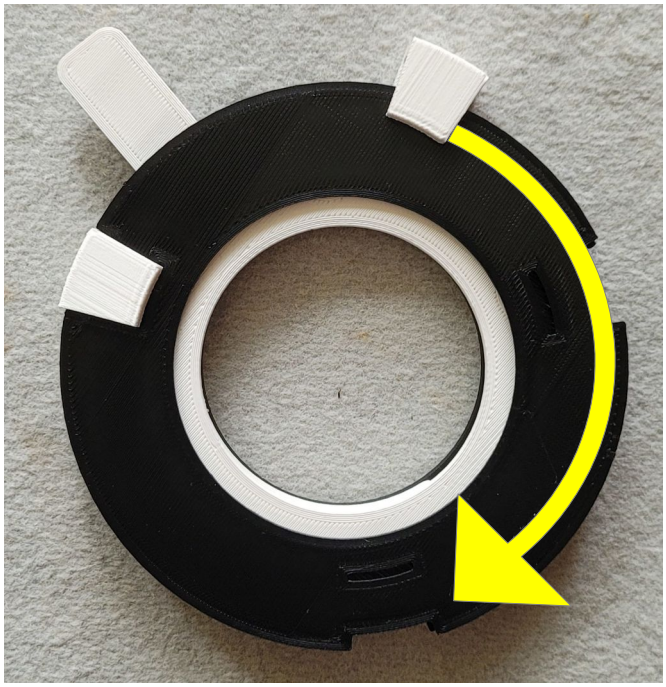


Now slide the first clip all the way round as shown on the picture.

Align the first clip with the long hole in the top part.

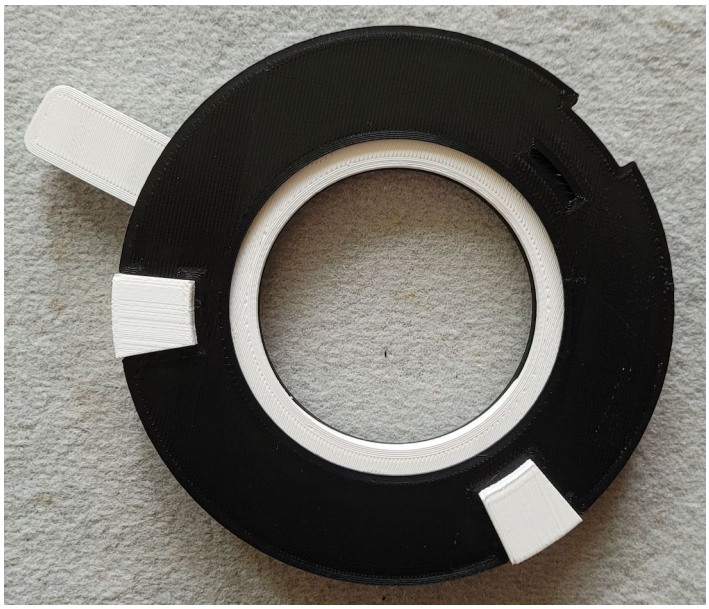


Slide the clip towards the long hole till you cannot push it any further. The clip should sit correctly in the space designed for it.

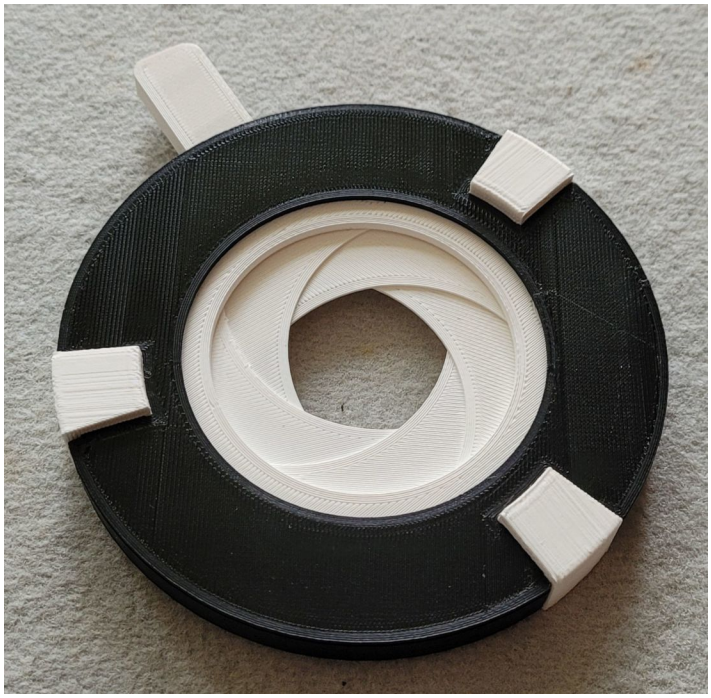


Slide in the second clip. You can press the top part down a little bit to slide in the clip. Make sure that the little inner edge of the clip is on the same side as the long holes in the top part.

Now slide the second clip to its final position.



Slide the second clip towards the long hole till you cannot push it any further. The clip should sit correctly in the space designed for it.



Do the same for the third clip.

The assembly is now complete and the iris is ready to be used. Do not close it too hard at the end, as a small hole will always remain due to the construction type of this iris.

Revision Information

Version	Date	Author	Change description
01	2022-02-22	Axel Ehrich	Initial version of this document.