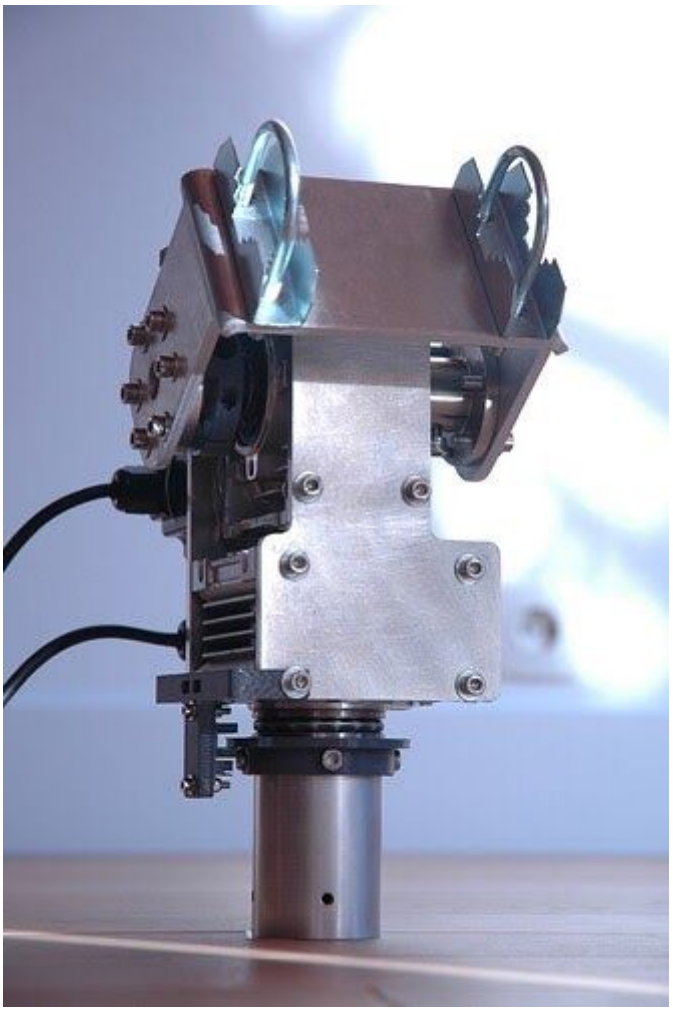
SuperAntennaz Assembly Instructions



Thanks for purchasing your SuperAntennaz kit !

Introduction :

This guide will help you to build your SuperAntennaz Rotator, you will find pictures, and advice to try to avoid the bigger mistakes you can make during the assembly.

However the assembly or somes of the steps can seem really obvious, and it is totally possible to build your rotator without strictly following all the steps presented in this guide.

If you have a doubt about the place of each parts during assembly you can at any time check the CAD online with this link : https://a360.co/2CAJL9K

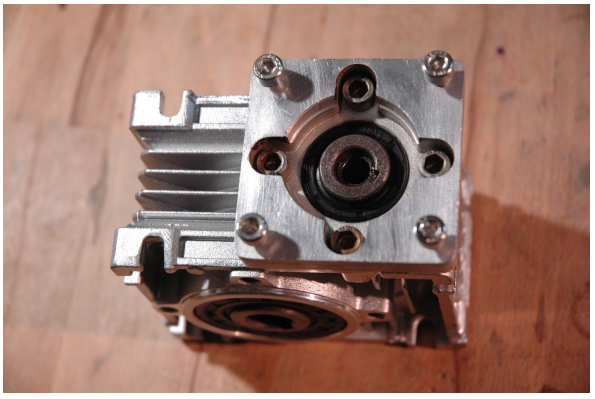
And if you have any questions, feel free to contact me at :

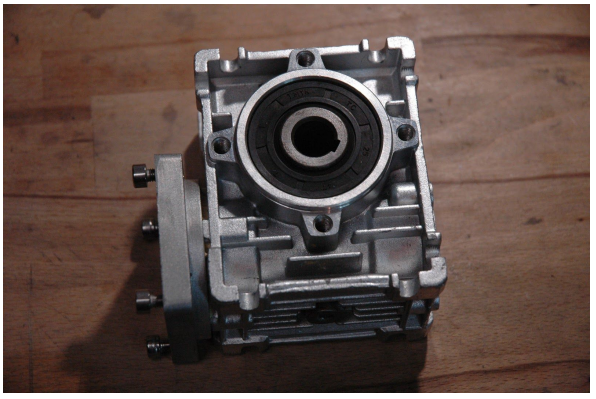
hadji.yohan (at) gmail.com

The parts :

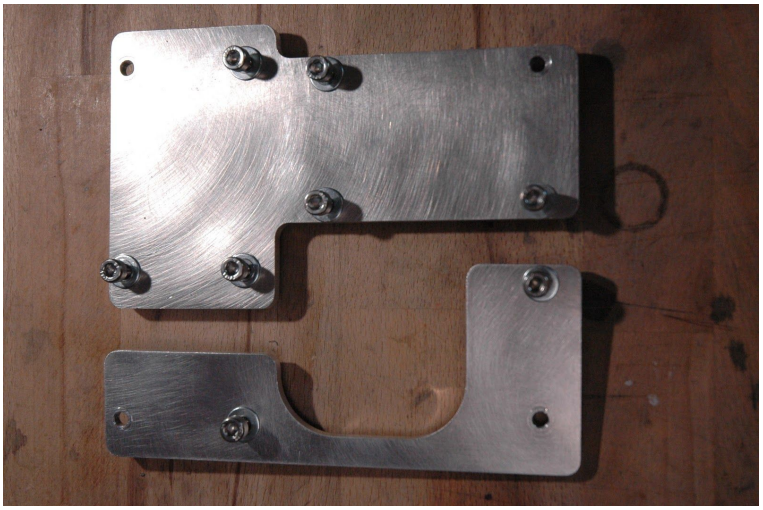
The first thing we need to do is to discover and name all the mains parts that we need for the mechanical assembly :

The worm gear reducer - 80:1 - NMRV030





Front and back plates - Aluminium 5mm

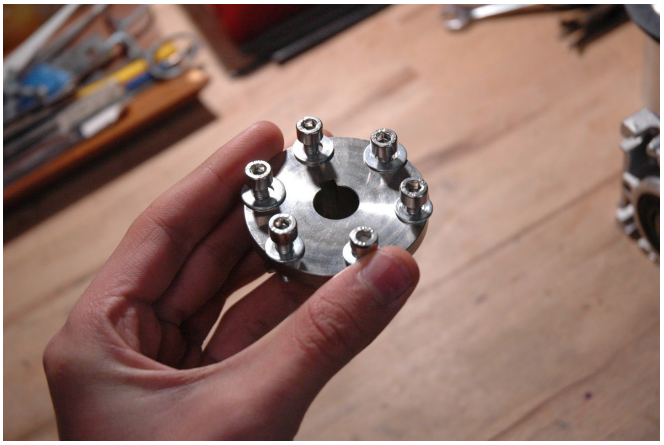


Bracket - Aluminium 5mm (with mast jaws already mounted)

Simple and double worm gear 14mm shaft - Stainless Steel

Right Key Hub - Stainless Steel (with endstop pin already mounted)

Left Key Hub - Stainless Steel

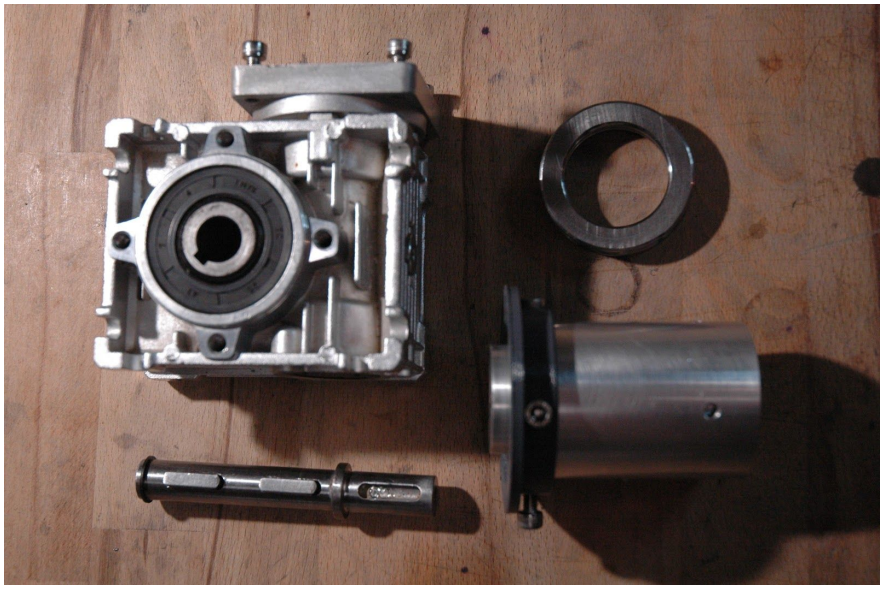


Fixatube : Mechanical connection between the rotator and the mast - Aluminium (with endstop pin already mounted)

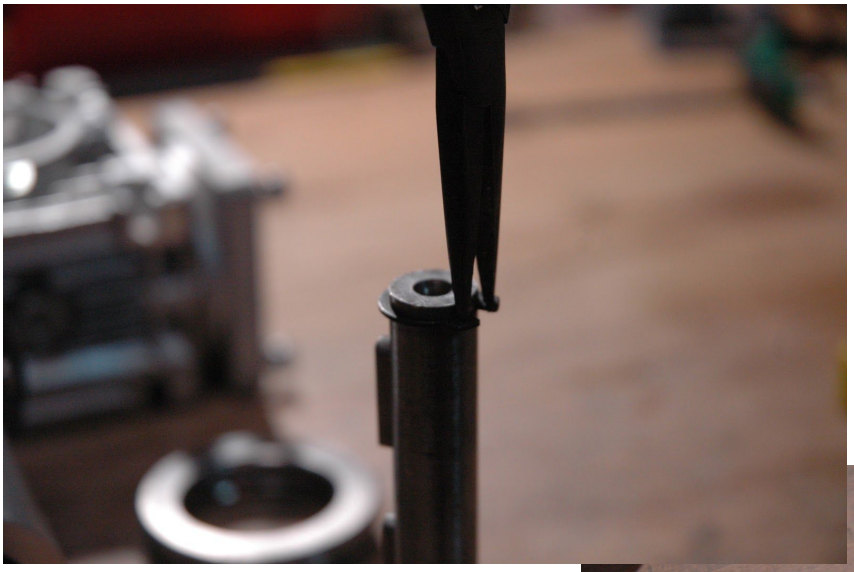
Plate bearing - Stainless Steel

First step : the azimuth axis

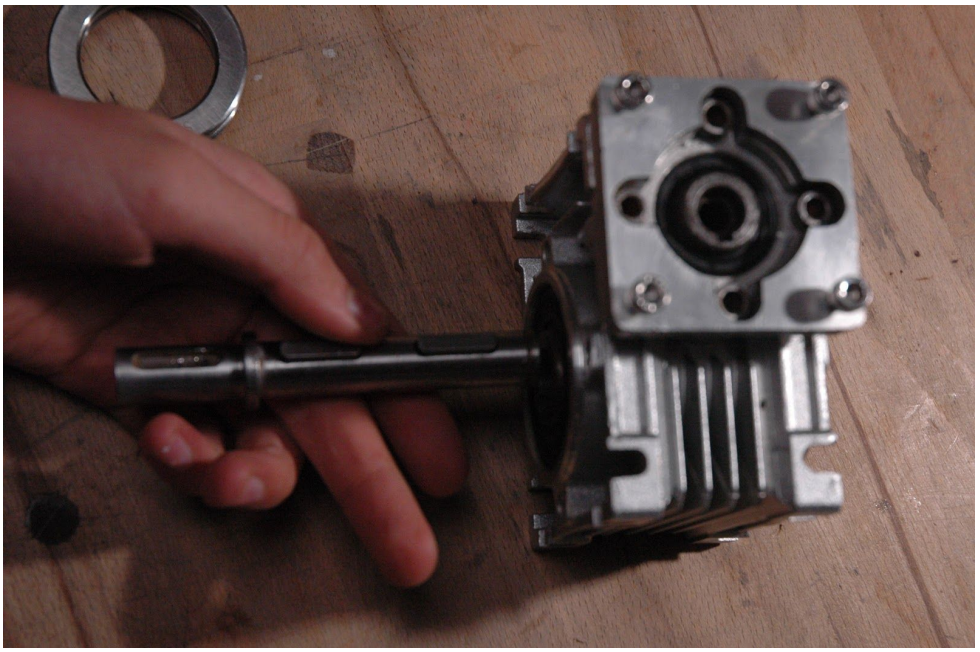
This is all the parts that we will need for this step :

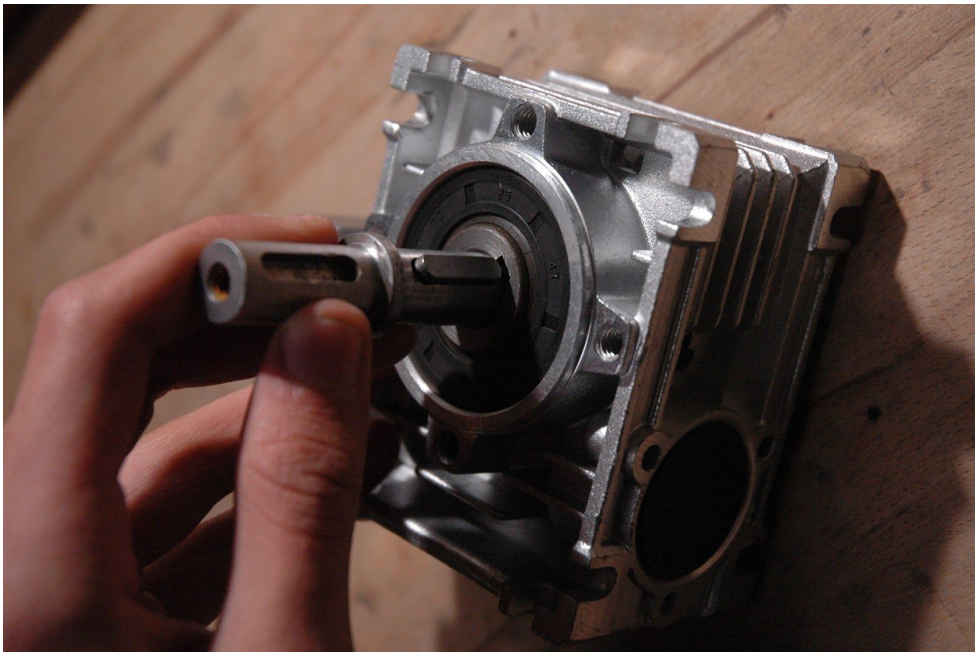


Start by removing the circlip on the single worm gear shaft

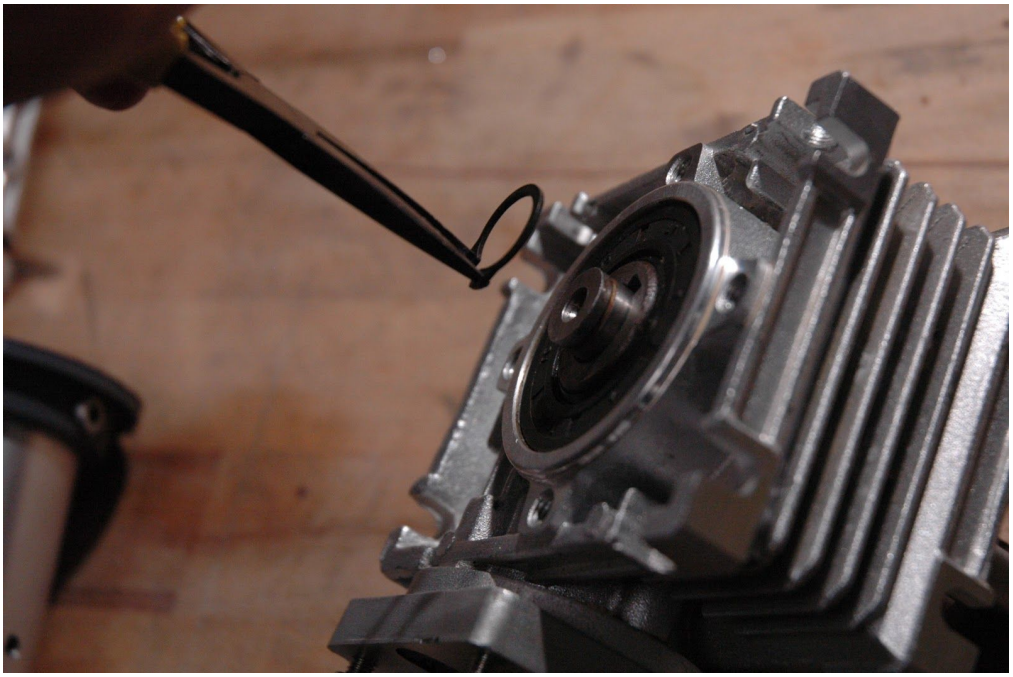


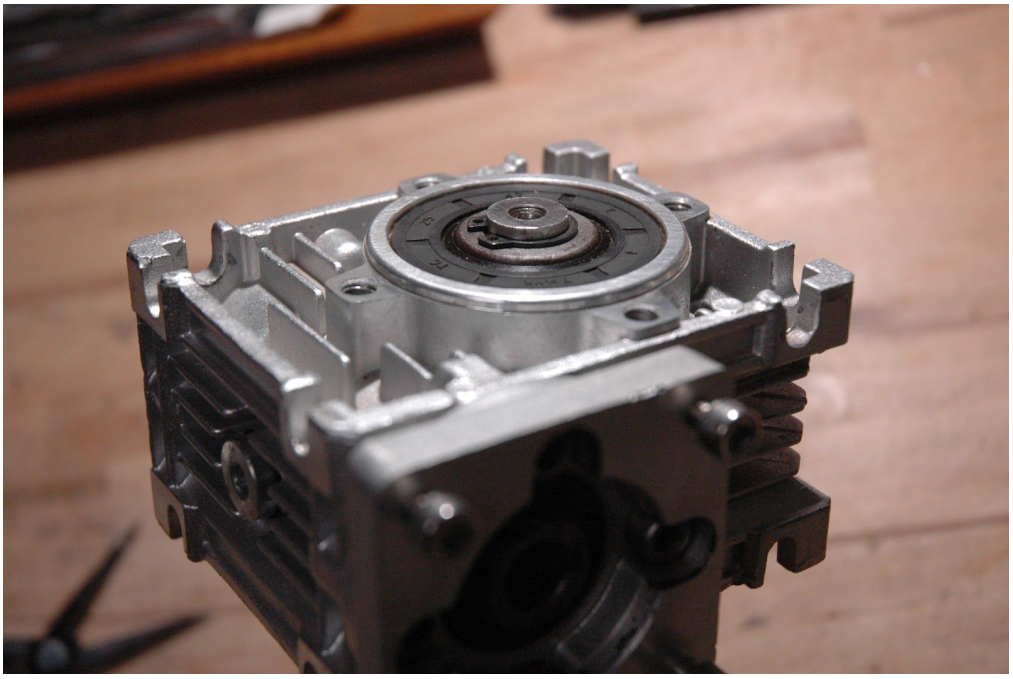
Then insert the shaft as following (direction is important) in one of the two reducer :



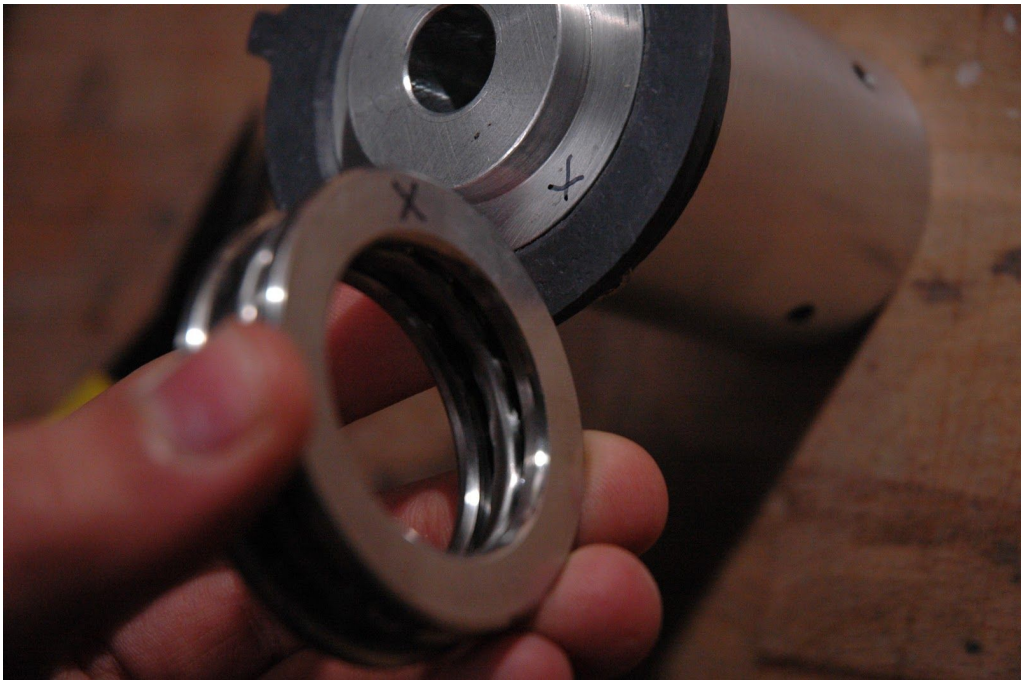


Re-insert the circlip at the end of the shaft





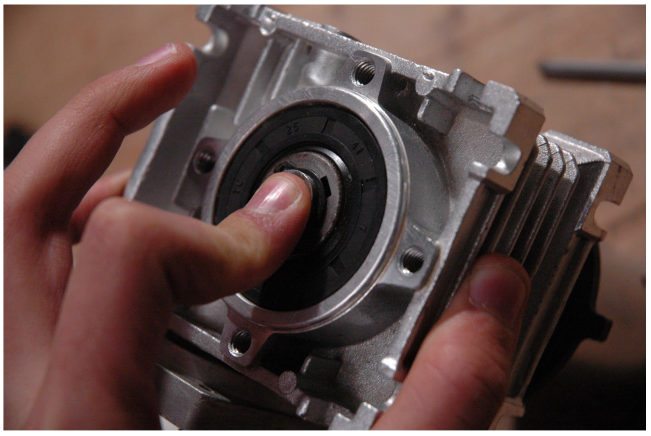
Then we need the plate bearing and the fixatube :



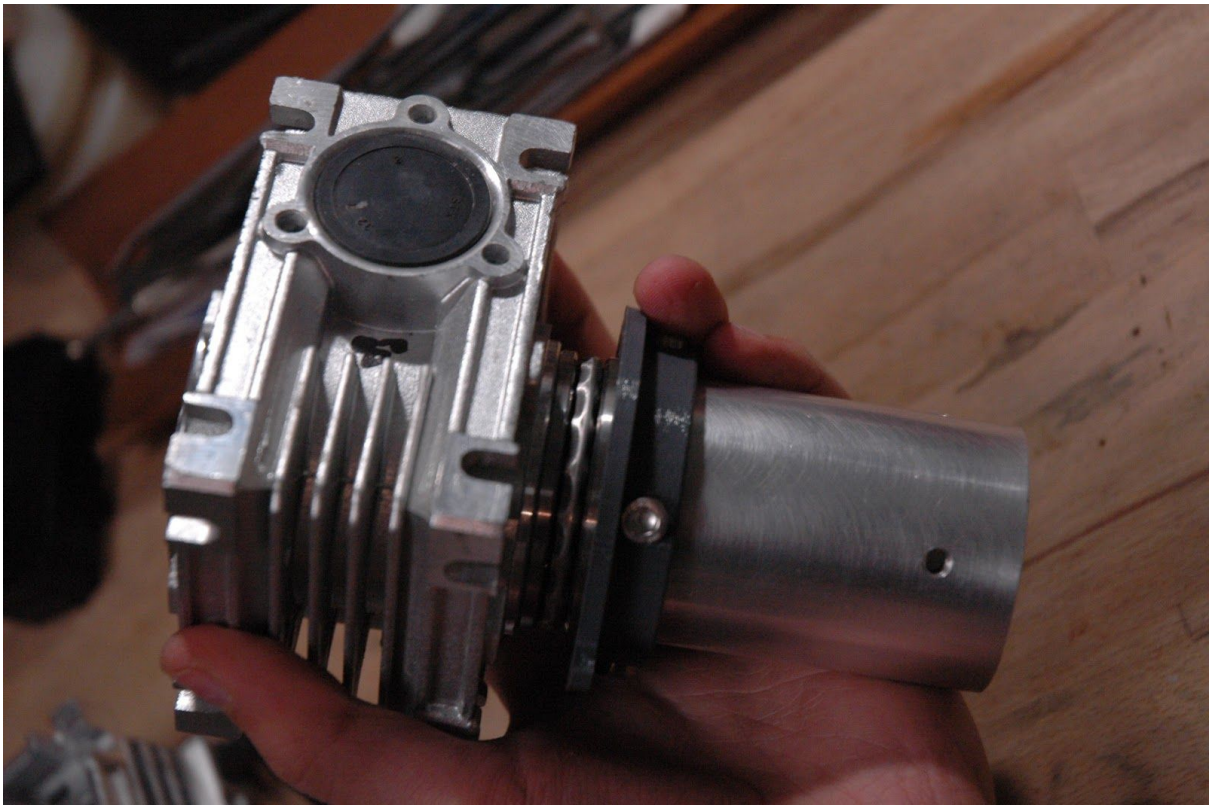
We want to put the face of the bearing with the the cross (or with the number) against the face with the other cross on the Fixatube

Then we want to insert the first block we built, with the axis and the worm gear into the Fixatube, the hole in the shaft should be aligned with the screw on the Fixatube that is not fully screwed (way longer than other screws). Once inserted you can start to secure it with the screw.

But before securing it totally you need to push the other end of the shaft to make sure that the plate bearing in under enough pressure even when the rotator in upside down

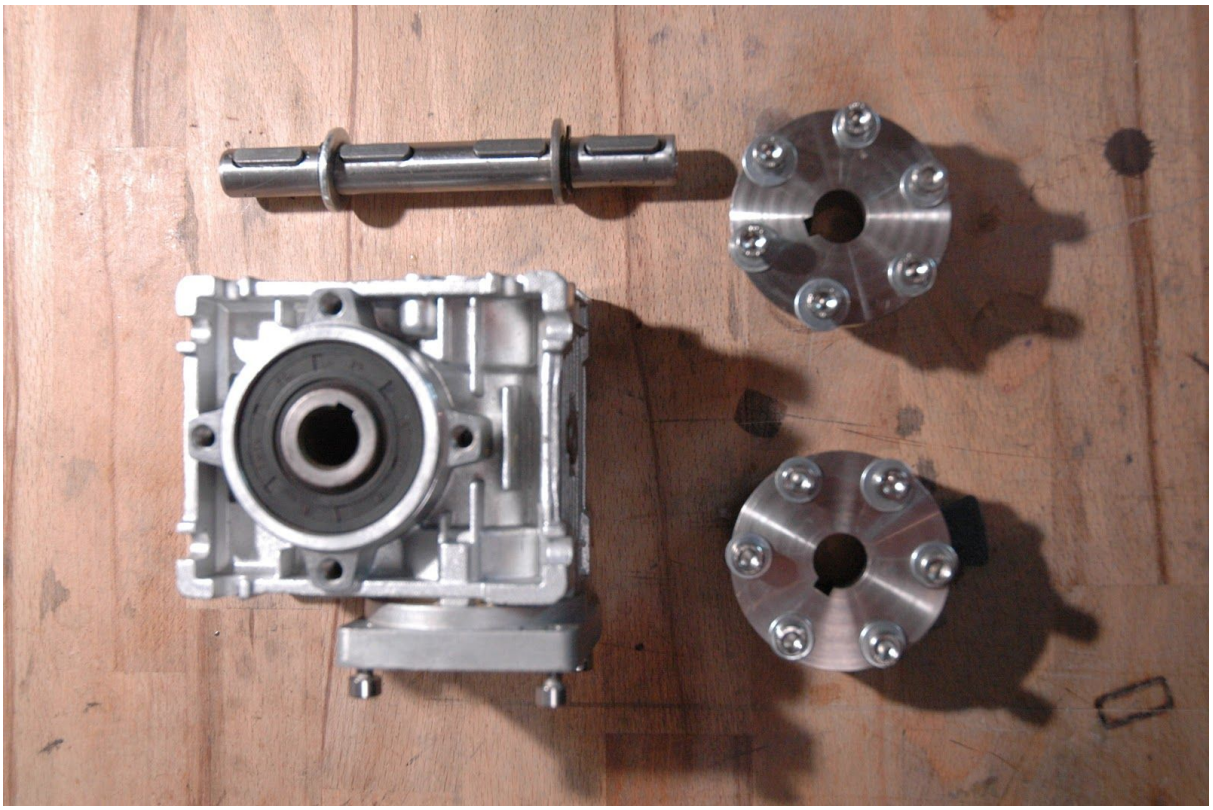


And that’s it, congratulations! the first block is finished !



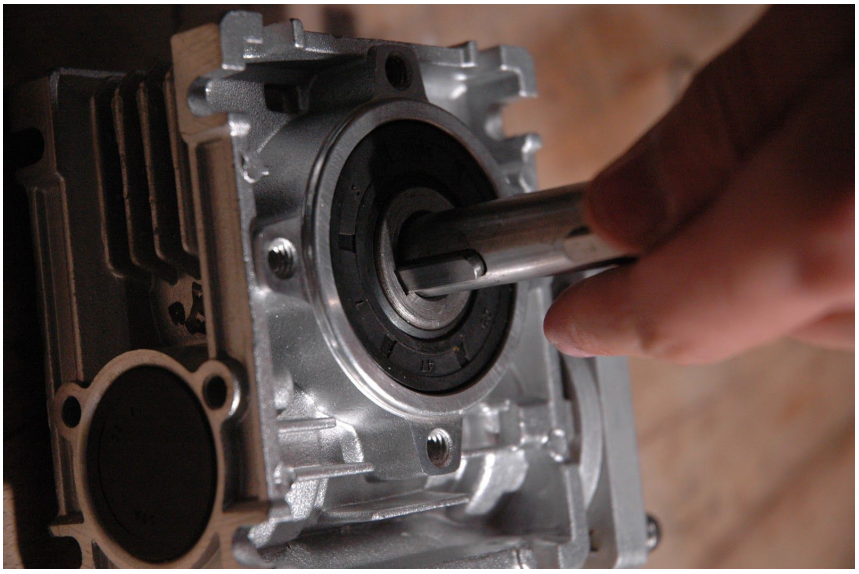
Second step : the elevation axis

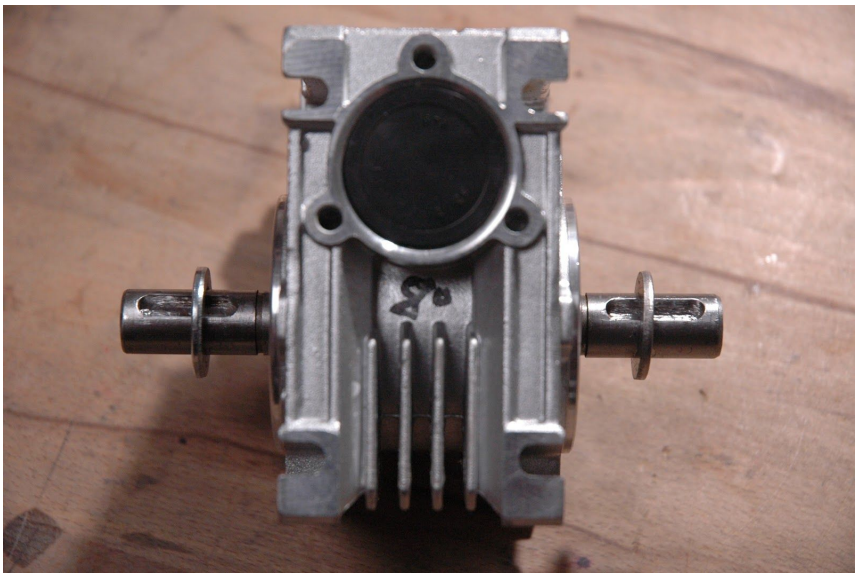
This is all the parts that we need for the elevation axis :

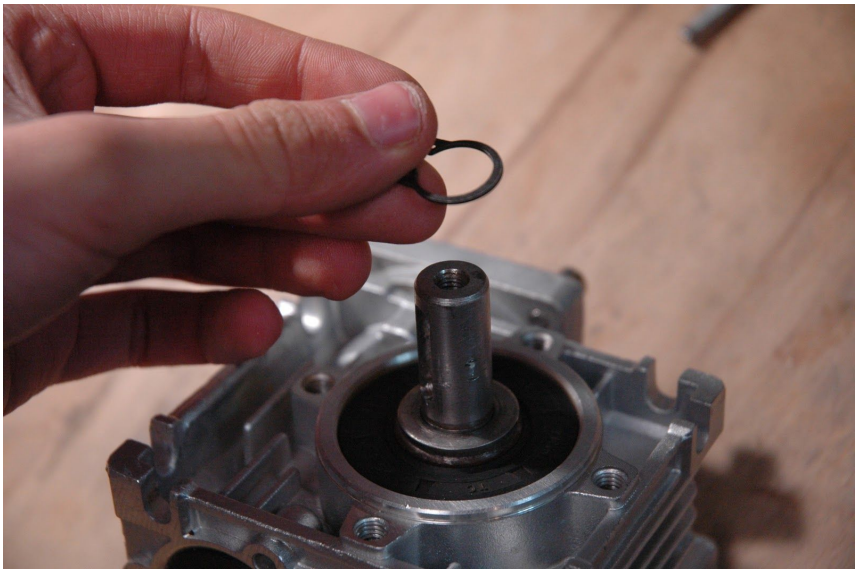


Take the double worm gear shaft and remove one or both of the circlips

Insert the axis in the worm gear (sometimes it is easier to insert it in one or another direction, so test both). Then re-place both washer and circlips

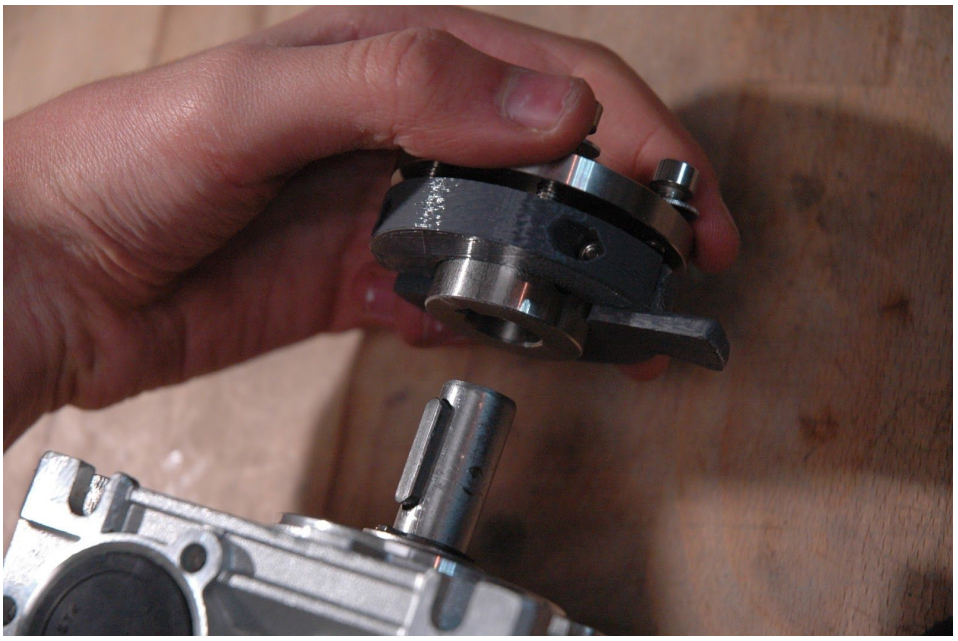


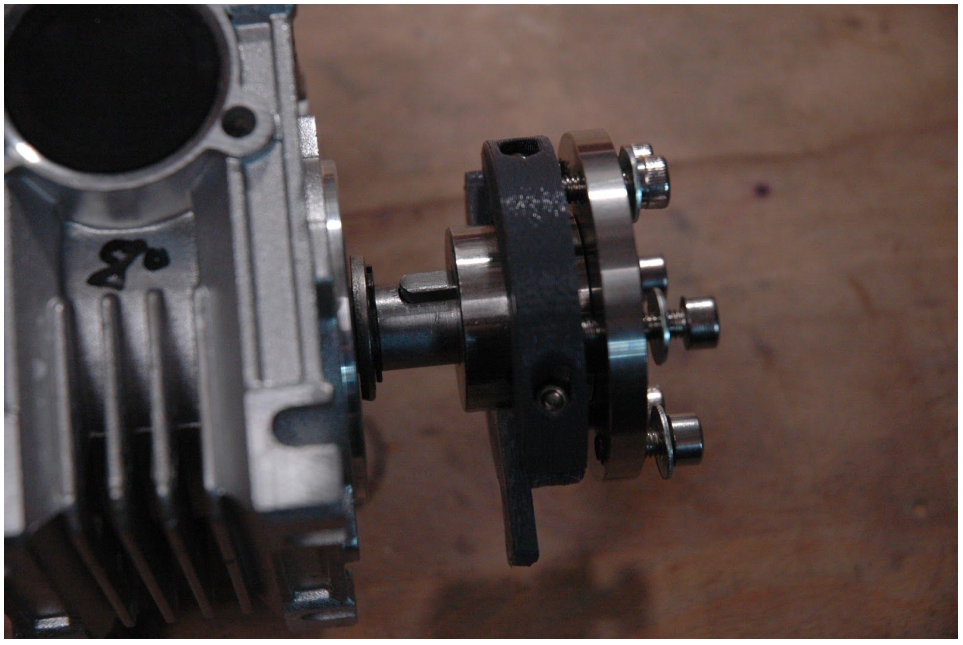




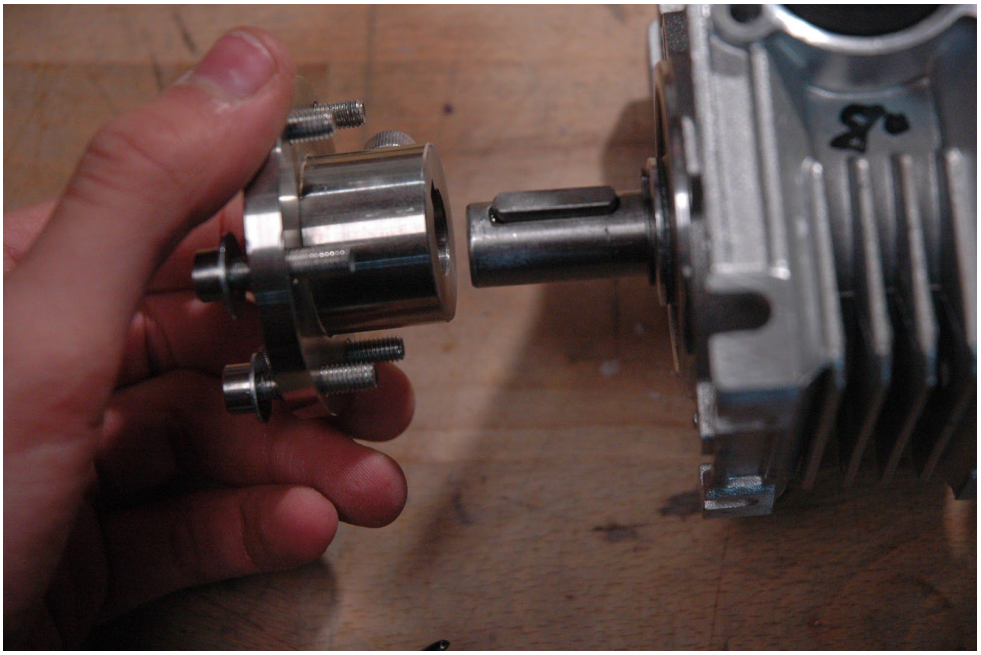
Then insert the first key hub, the right one, with the 3D printed endstop pin on the right arm of the shaft, repeat the same operation for the left key hub on the left arm of the shaft.

Don’t forget to insert the key on the shaft which sometimes falls off when you are moving it.





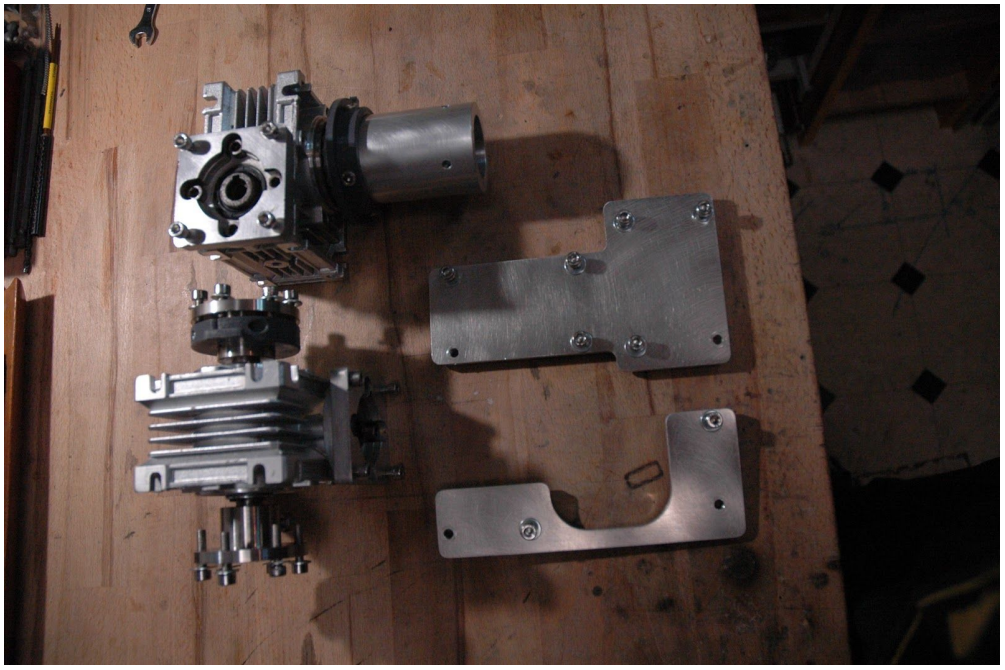
You might want to use a soft hammer because sometime the fit is a bit hard, but if the fit seems really too hard, the hammer have no brain (so use your own), it mean there is a problem, you can try to remove it and see if there is not a big scratch on the axis, if there is one, you can try to sand it down.

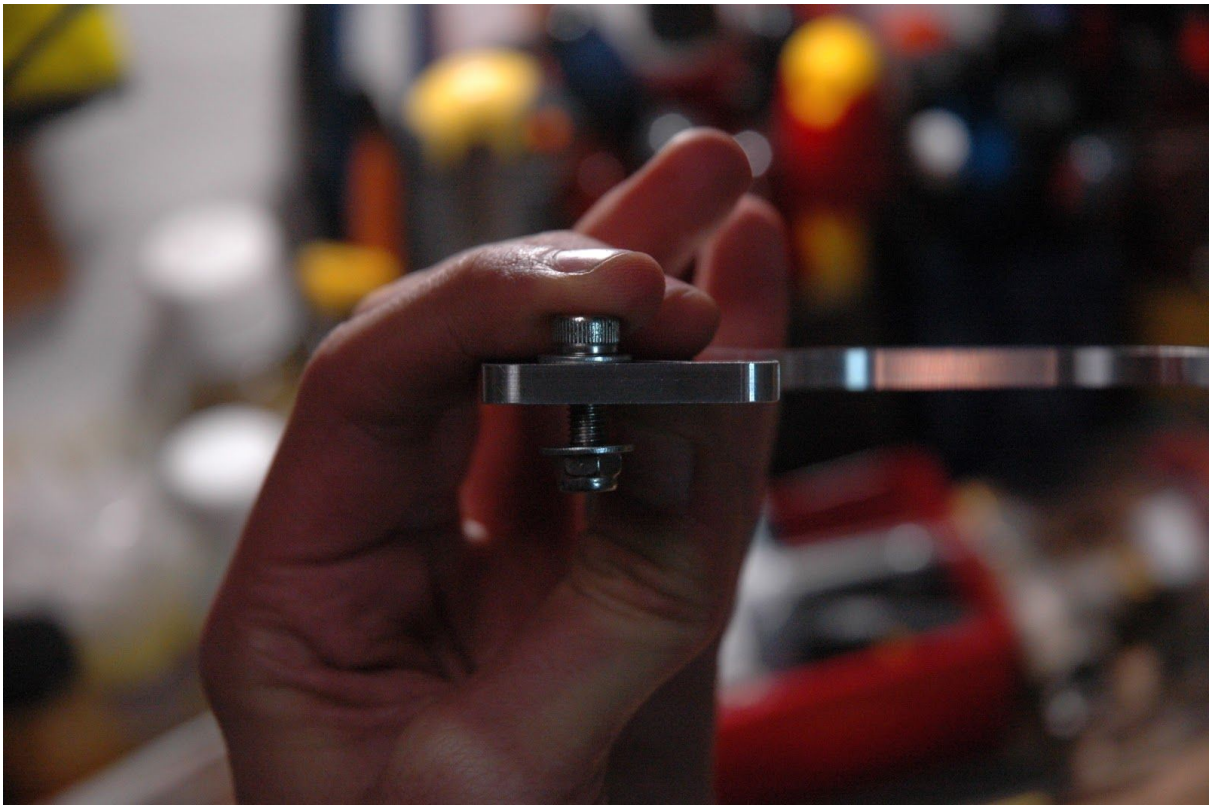


And that's it congratulations! The two blocks are now ready for final assembly!

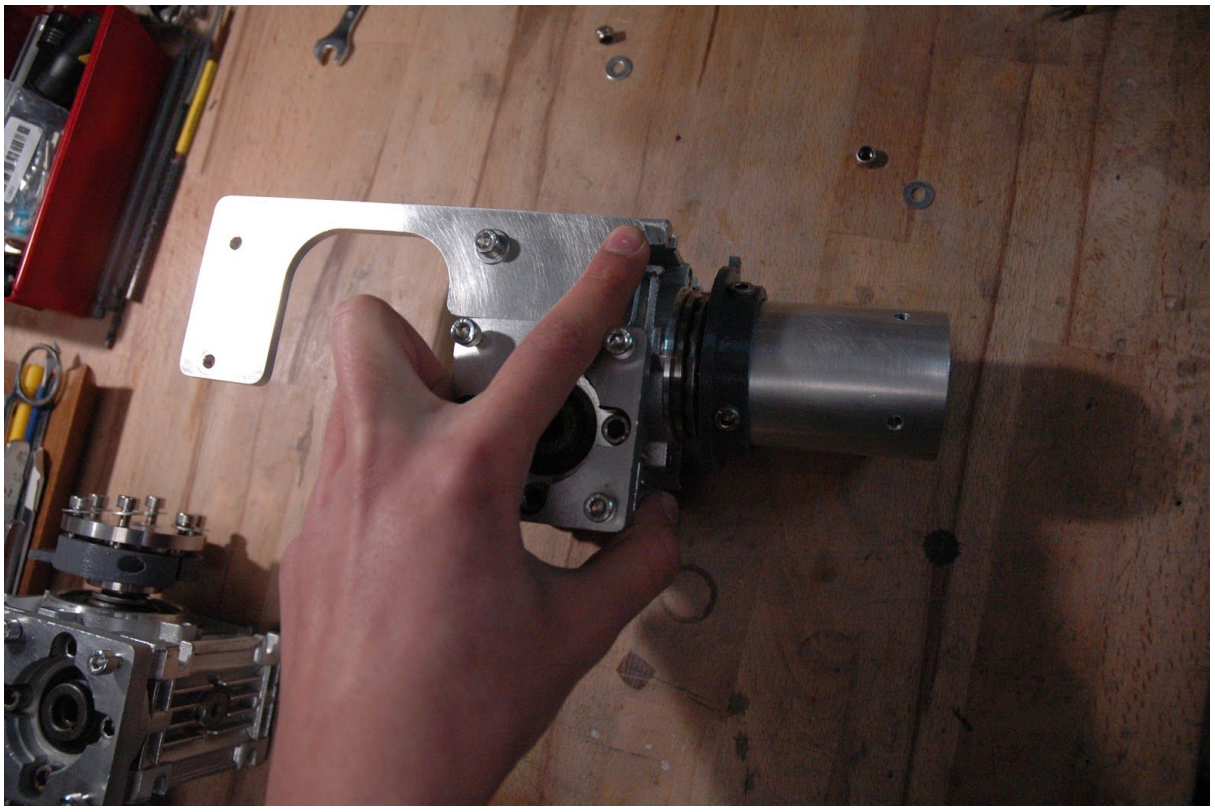
Third step : the final assembly

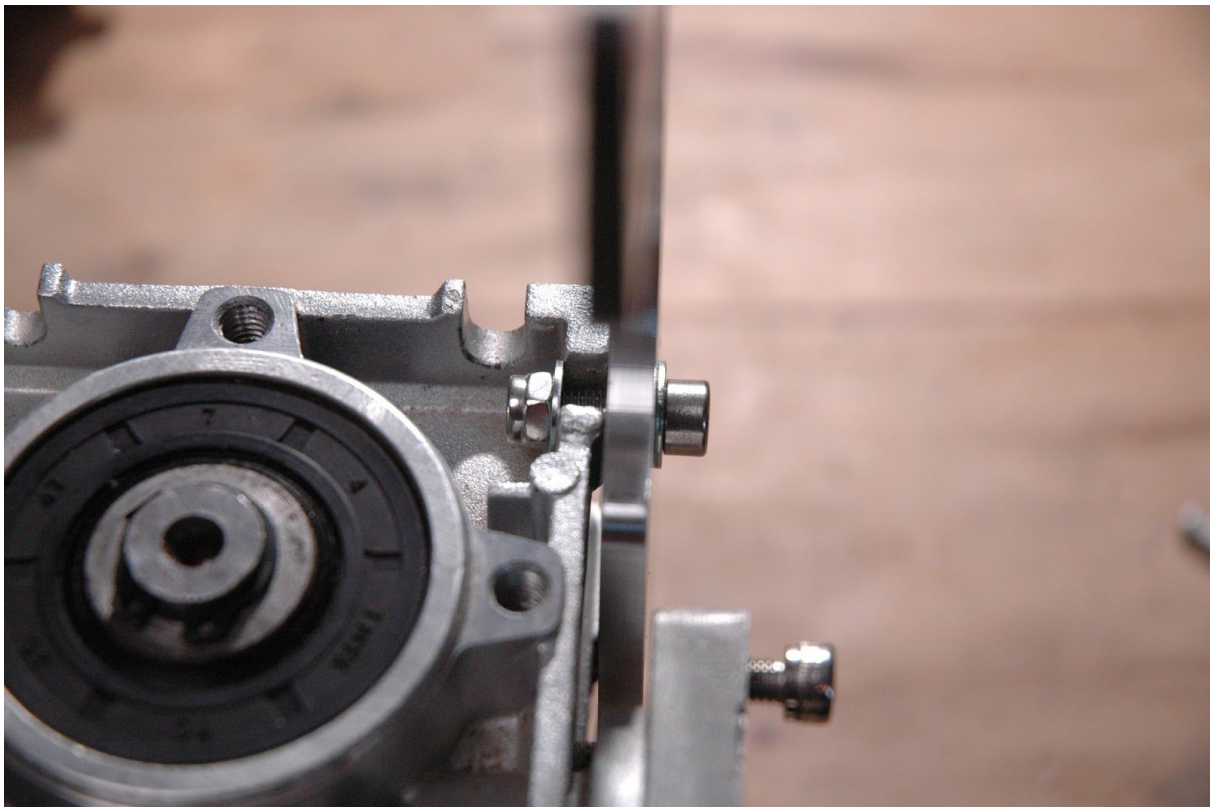
That's all the parts we need, the both blocks and the plates, the first sub-step is to screw all the screws of the plates on the blocks. On each hole, the order from outside to inside should be : screw head - washer - plate - wormgear - washer - nut

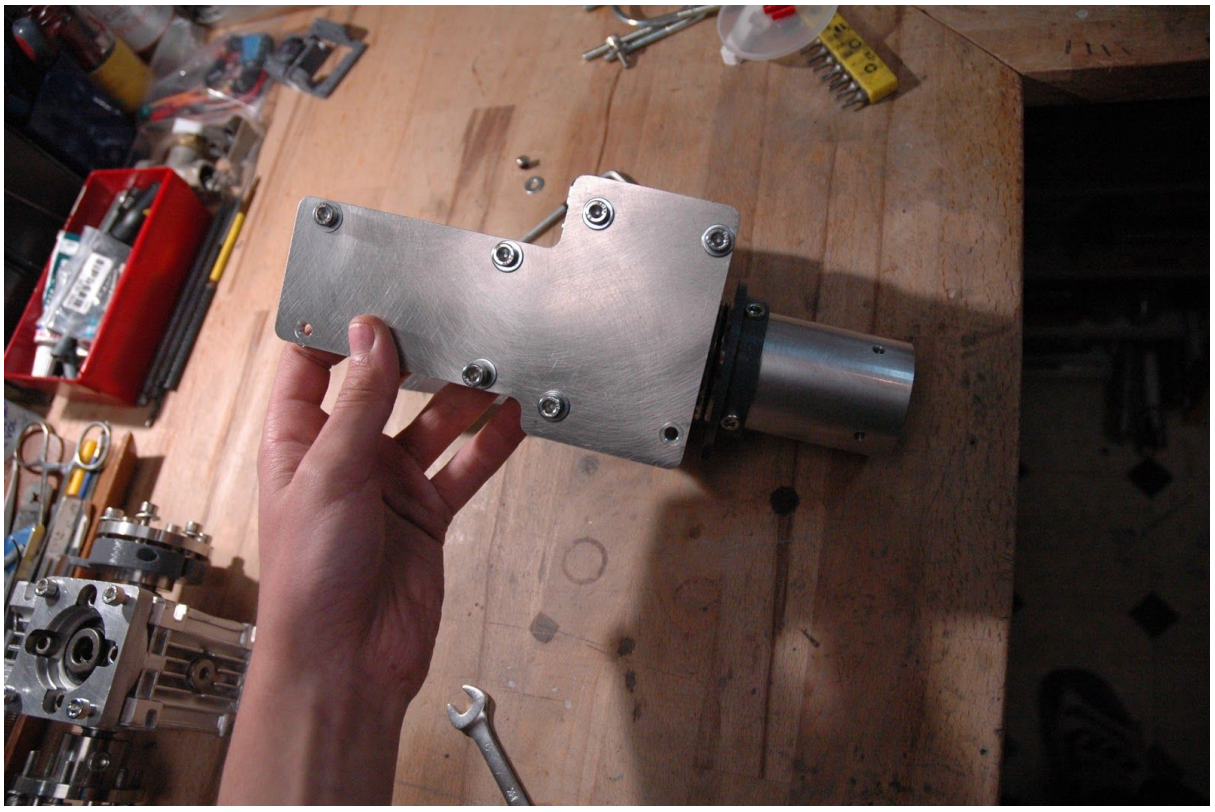


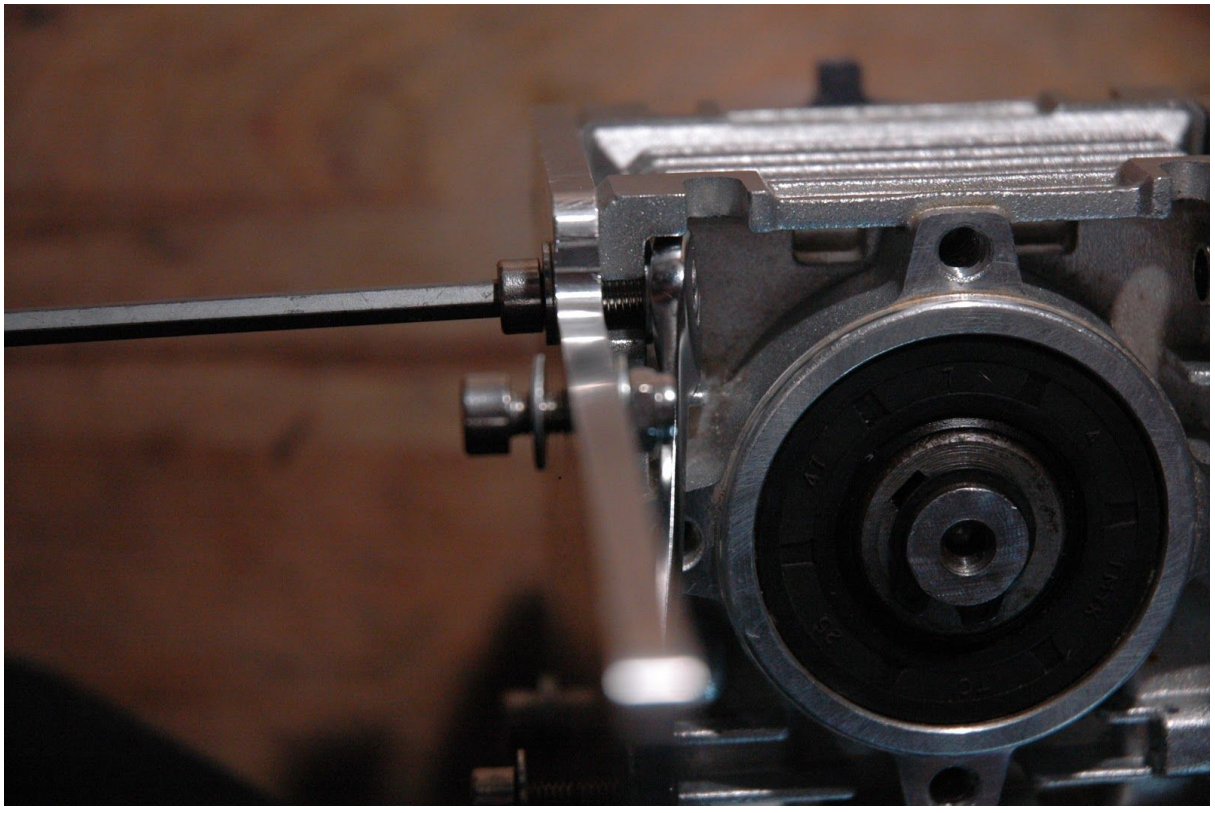


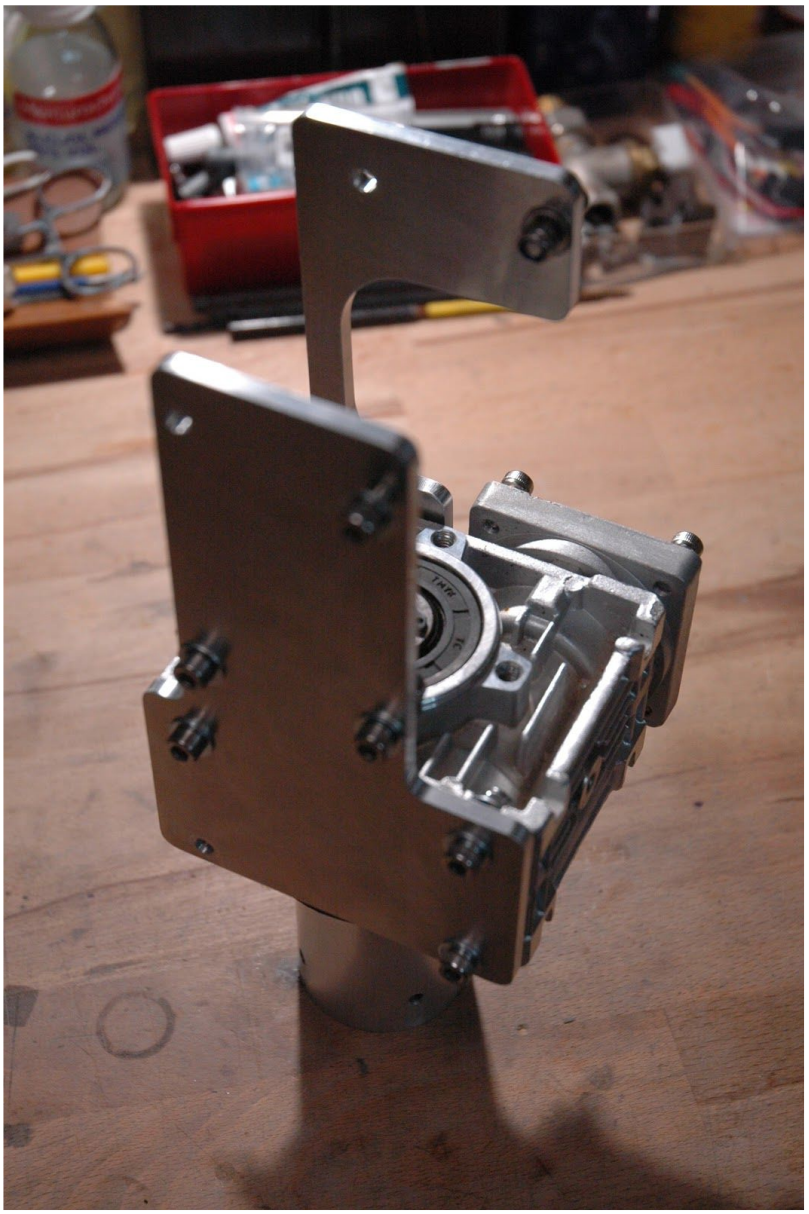
Start by screwing only the azimuth block (2 screw) and then continue with the elevation block



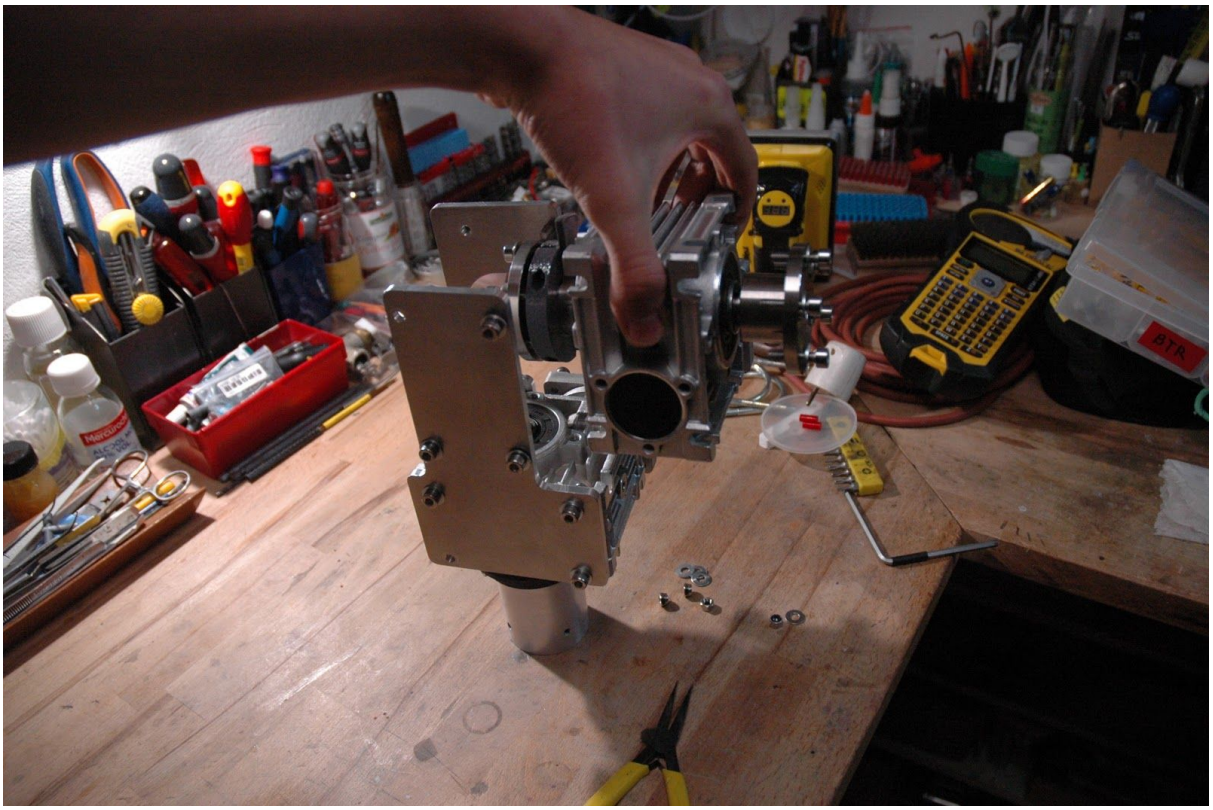


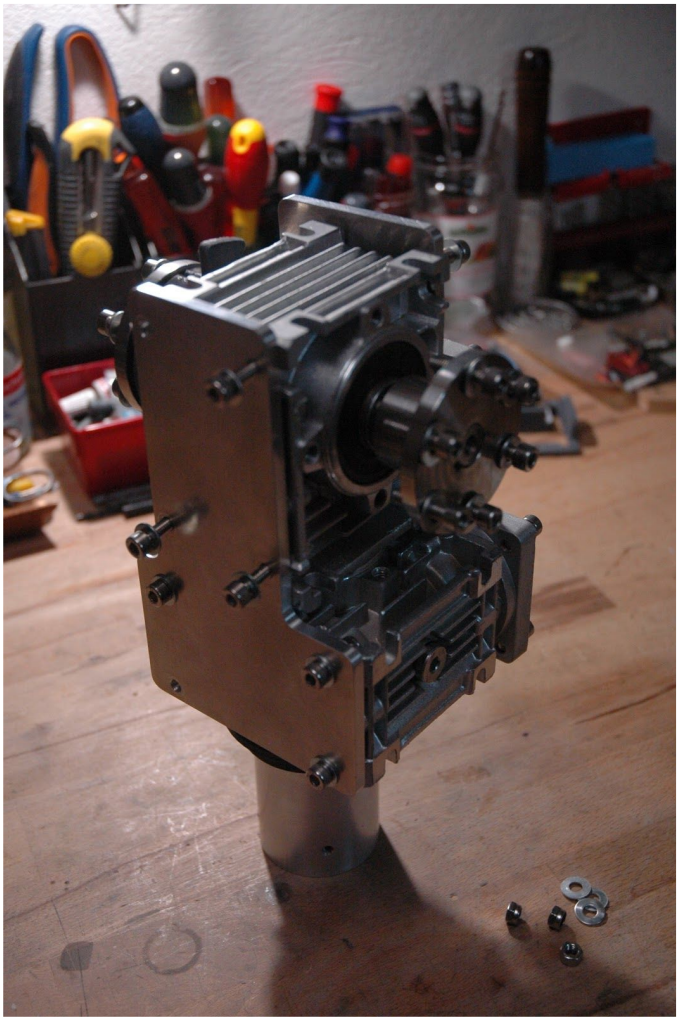




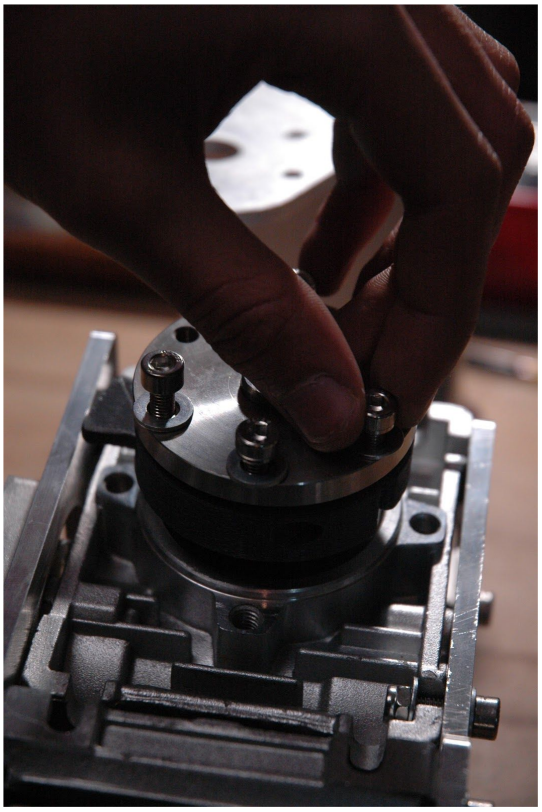


Continue with the elevation axis

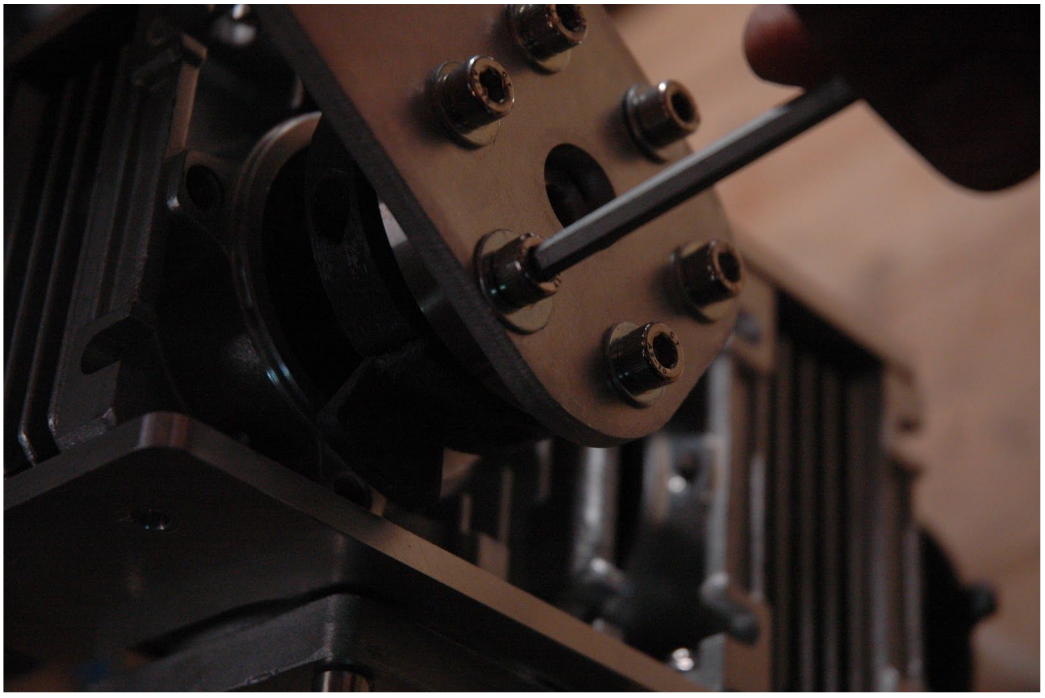




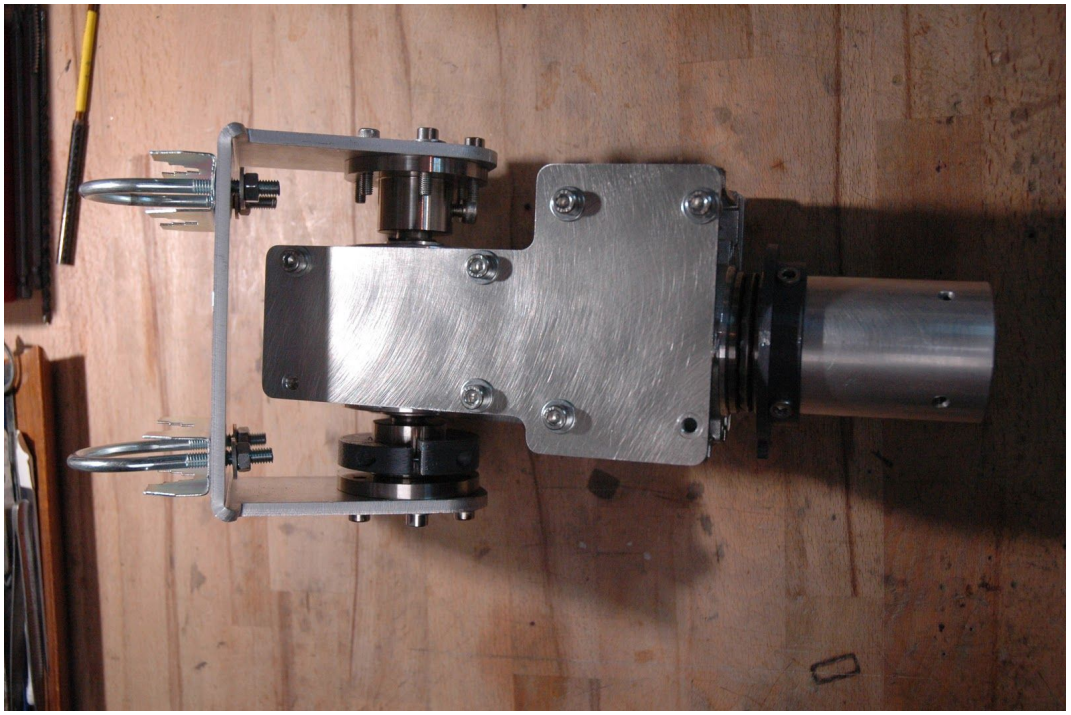
Now we want to mount the bracket on the rest of the rotator, start by removing in two separated groups the screw that are screwed on each key hub :

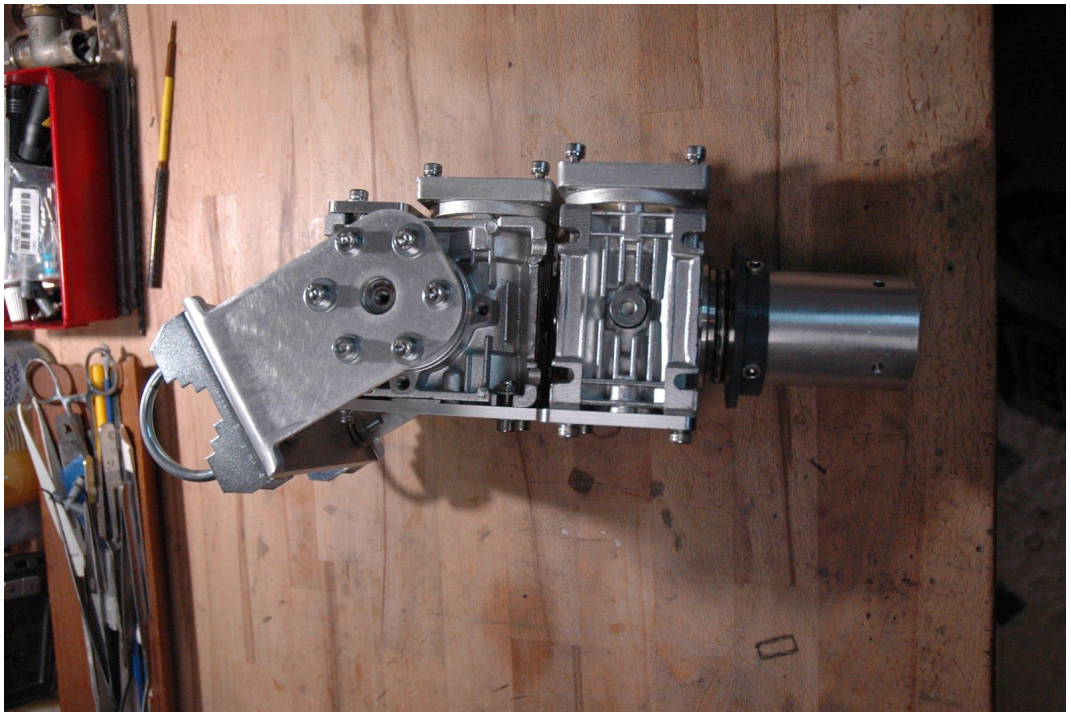


Then mount the bracket with only 2 screw not totally screwed on each side and add screw one by one to avoid hard mounting of some screws due to tolerances on bending of the bracket

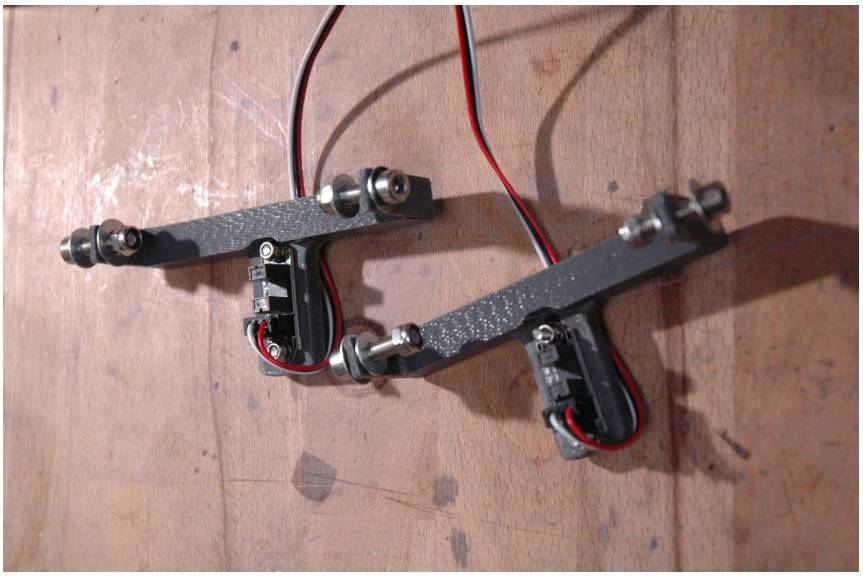


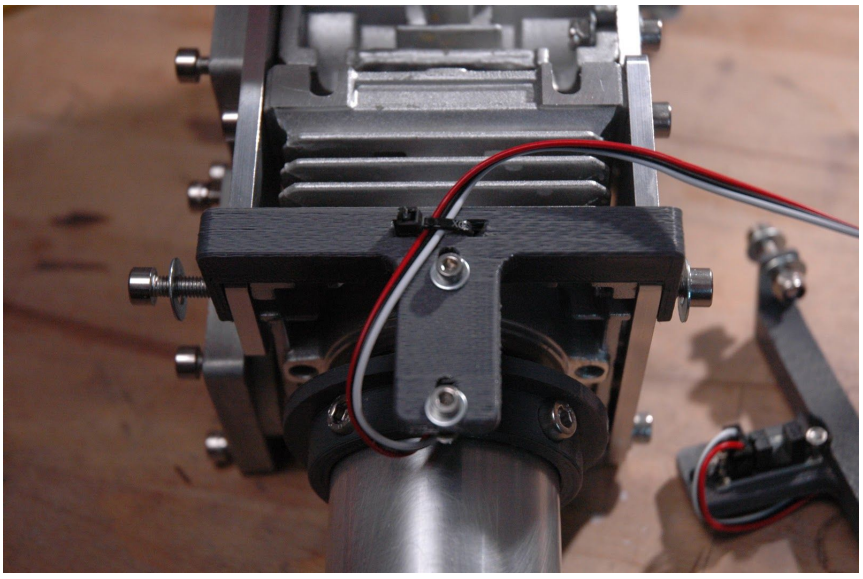
So now the only missing parts are the endstops and the steppers motors (note the four missings screws on the plates for endstop mount) :



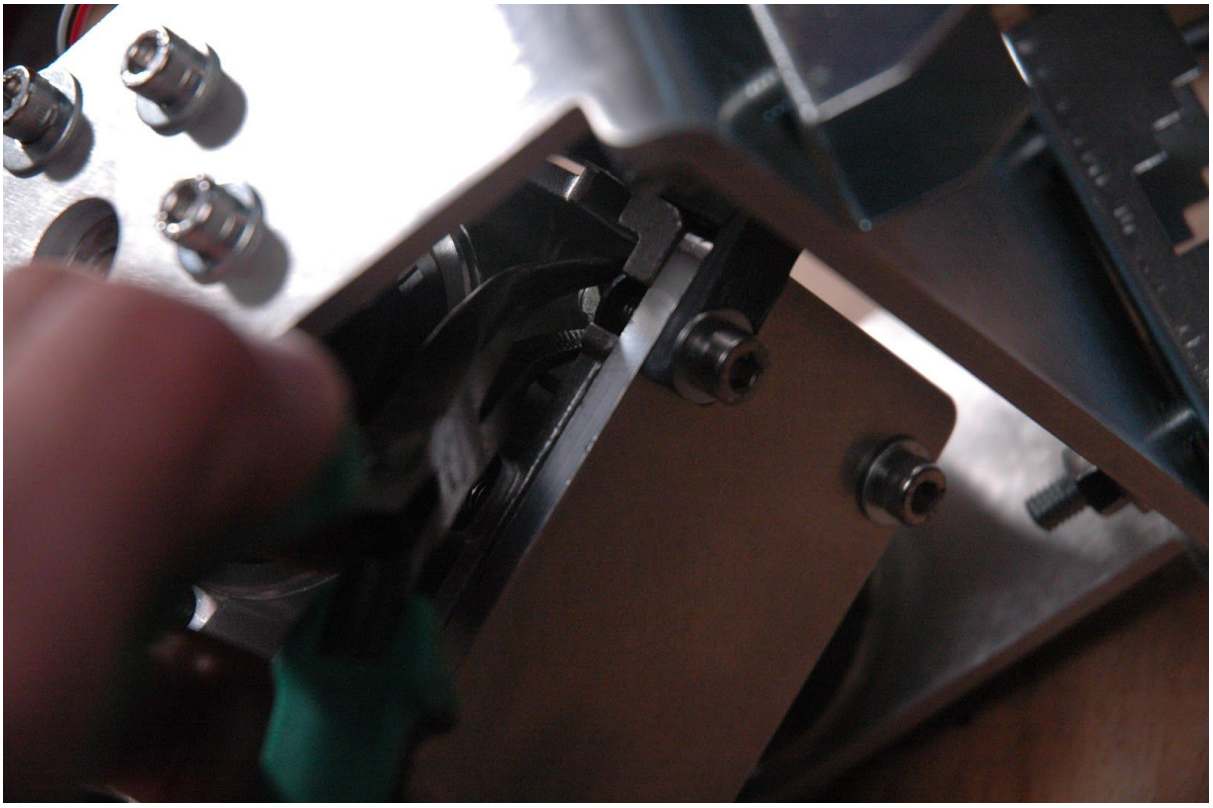


We can start by mounting the two endstops (one for the azimuth axis and one for the elevation axis)

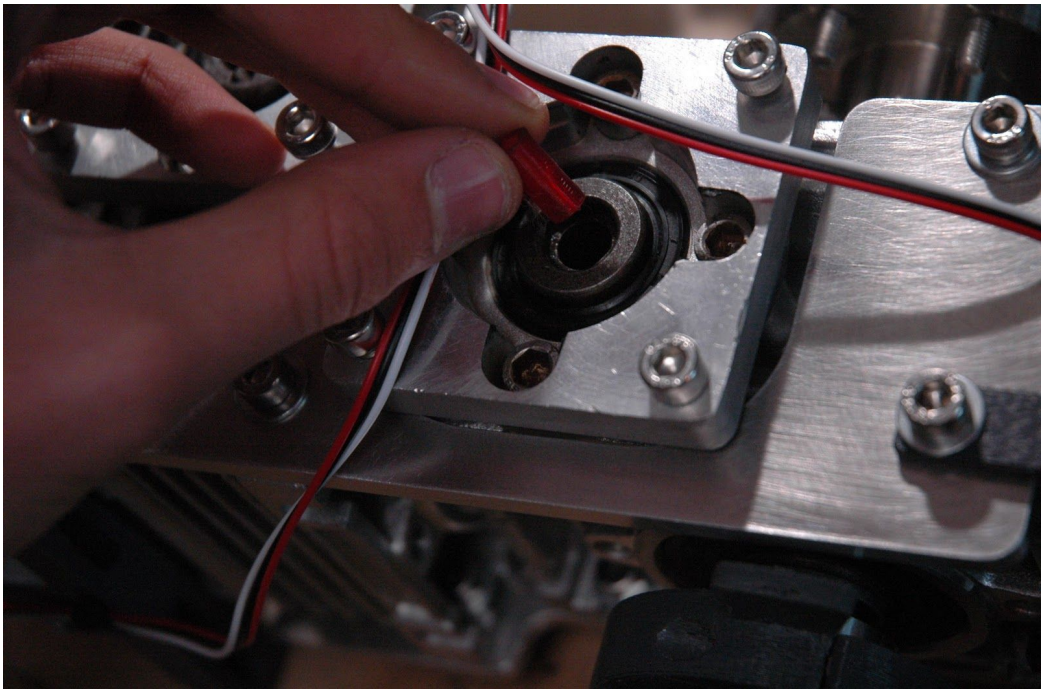


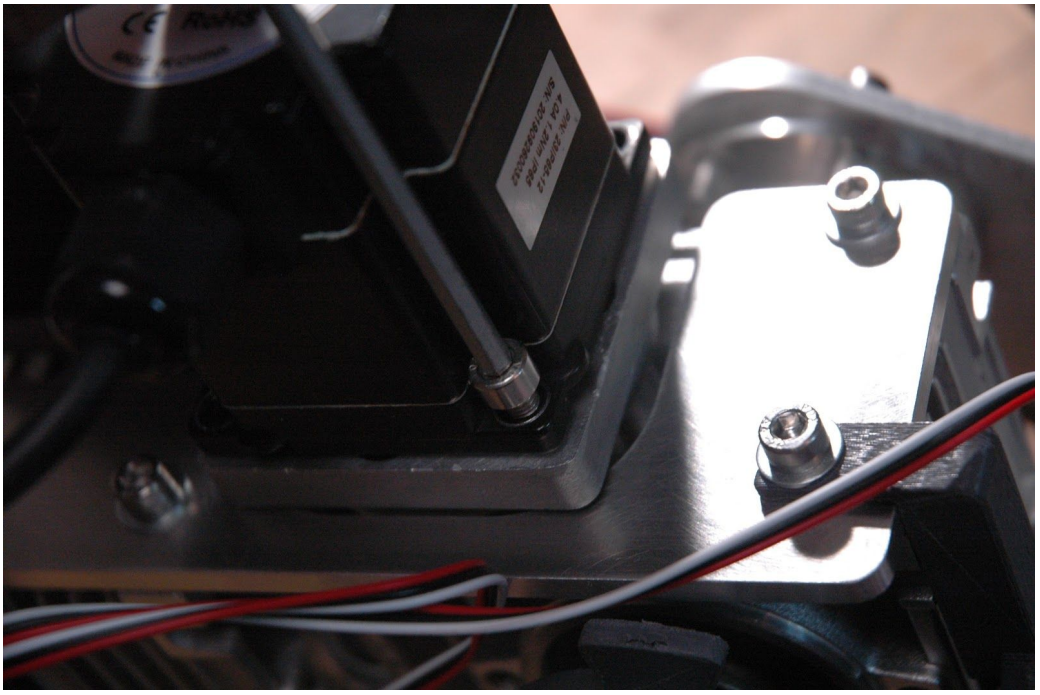


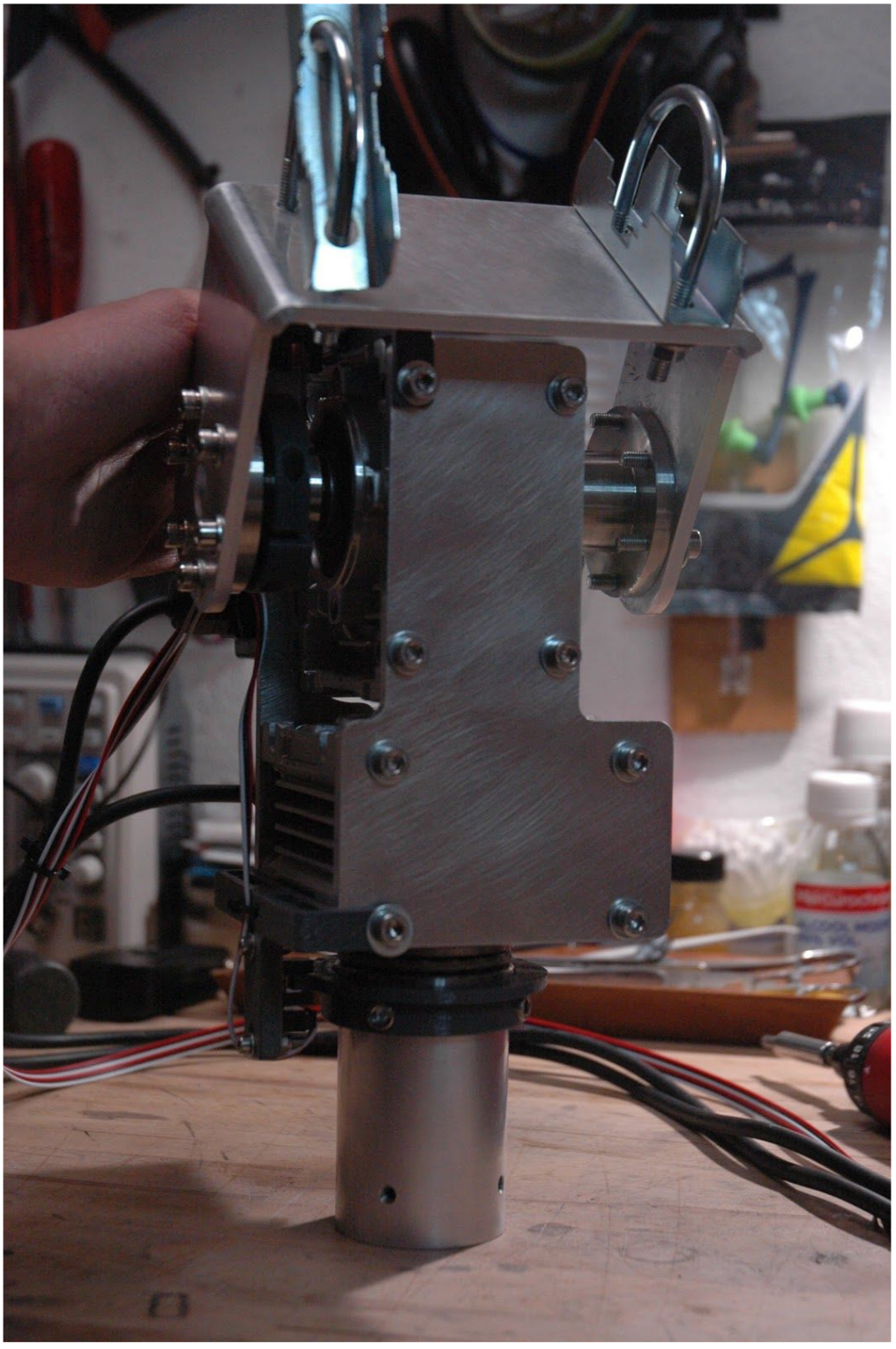
You might want the bracket to be perfectly at 90° (by turning the input shaft of the wormgear) otherwise it might be sometimes tricky to have access to some nuts.. but nothings impossible with the good plier!



Finally we want to mount both steppers motor, remember do put one red flexible 3D printed spacer before putting each stepper, it will help reduce the mechanical play of the wormgearbox







Congratulations! Your SuperAntennaz is mechanically ready for use !