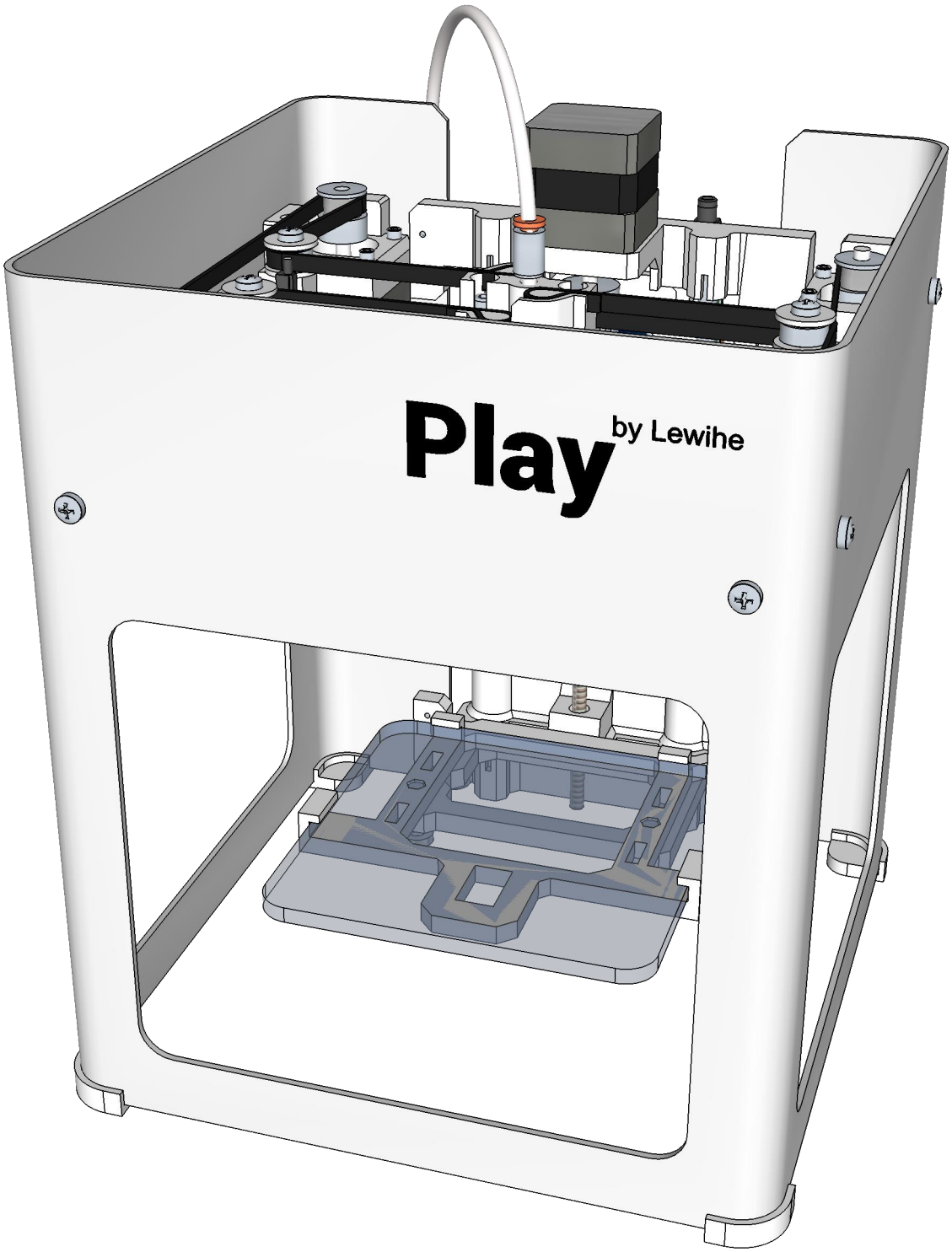
Play by Lewihe

Kit Play 3D



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How to Play

Play by Lewihe

TERMS

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DISCLAIMER

The purpose of this guide is to provide approximate instructions for installing the Printing Kit Play. This guide is based on a "base" configuration, so **the end user will choose additional items and therefore he will be responsible for the final operation and safety of the assembled product.**

Lewihe is not responsible for the additional elements that are assembled on the Kit Maker Edition.

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What is needed?

The Play 3D printer brings you closer to the world of 3D printing in the most simple and affordable way. Designed specifically for the education sector, is the perfect kit for learning and initiation in the world of 3D printing.

To assemble your printer you need three "packages":

- Structural elements (Kit Maker Edition):

Composed by chassis, rods, methacrylate printing base, spindle and HotEnd support.

- Additional elements

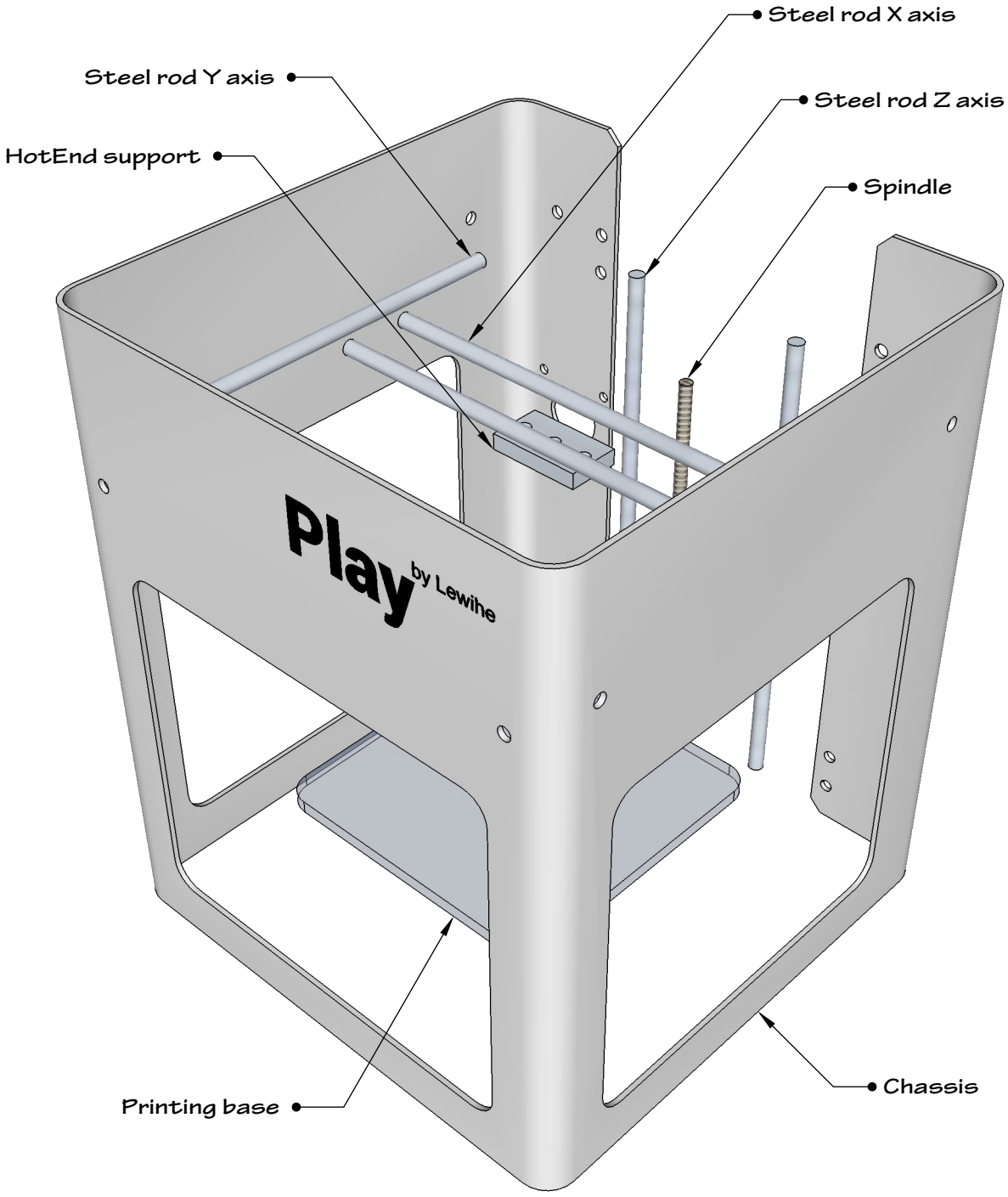
Screws, motors, and electronics. The Play 3D printer assembles standard components that you can find in any online store. You can find the BOM list with all the vitamins you need in the DOCUMENTATION section of the website. In that section you also have links to stores that have already prepared the entire set of components and have already done the work for you.

- Printed parts. STL files

You can download the STL files in the DOCUMENTATION section of the web. If you do not have the possibility to print the files, in that section, you can also find links to stores where you can buy these pieces already printed.

Structural elements (Kit Maker Edition)

1x Chassis
1x Methacrylate printing base
1x Aluminum HotEnd support
1x M-5 spindle
2x Steel rods Ø6 x190 mm. for Z axis
4x Steel rods Ø6 x165 mm. for X and Y axis



Additional components

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Printed parts. STL files

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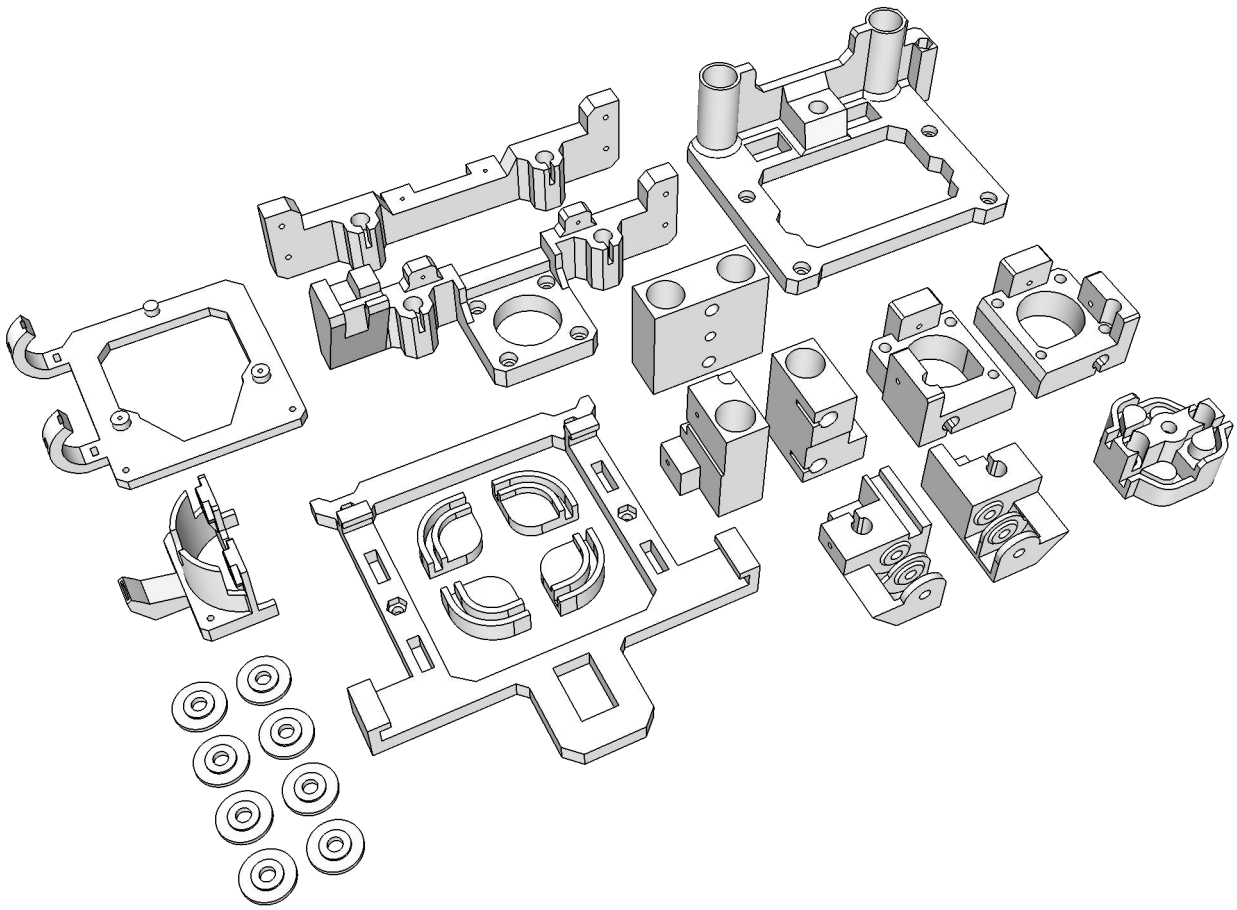
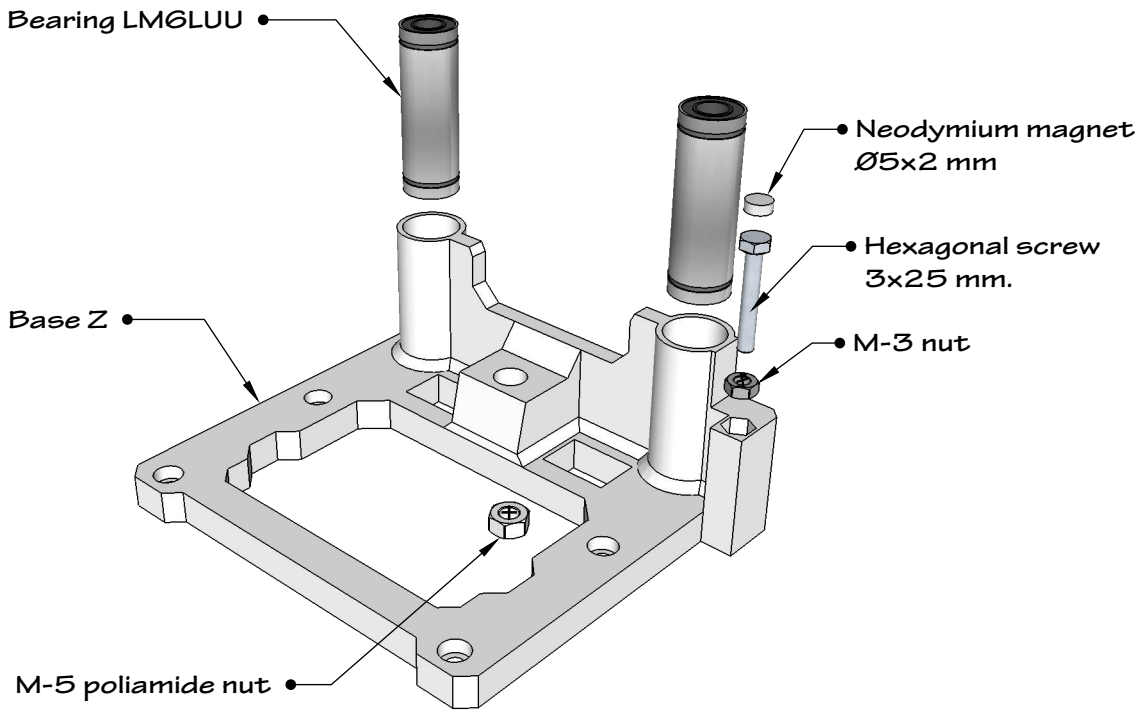
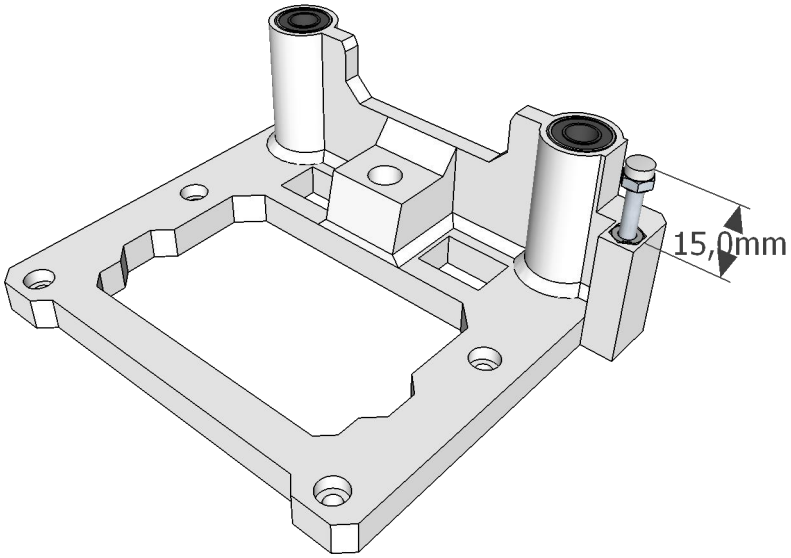
* This guide refers to the assembly of the kit version 2017.



Assembly guide - Z Base

The first step you must take is the assembly of the Z Base that serves to support the printing base.
In the figure below you can see how the set looks once assembled.



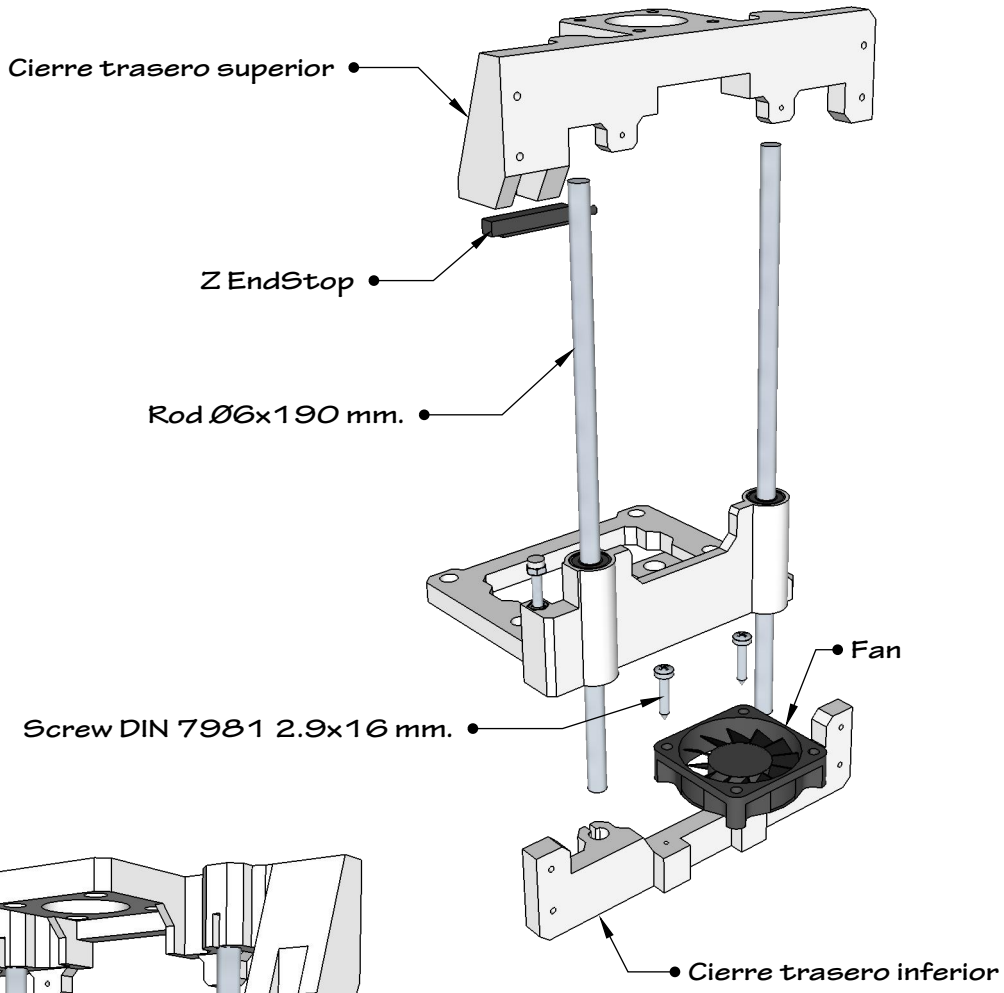


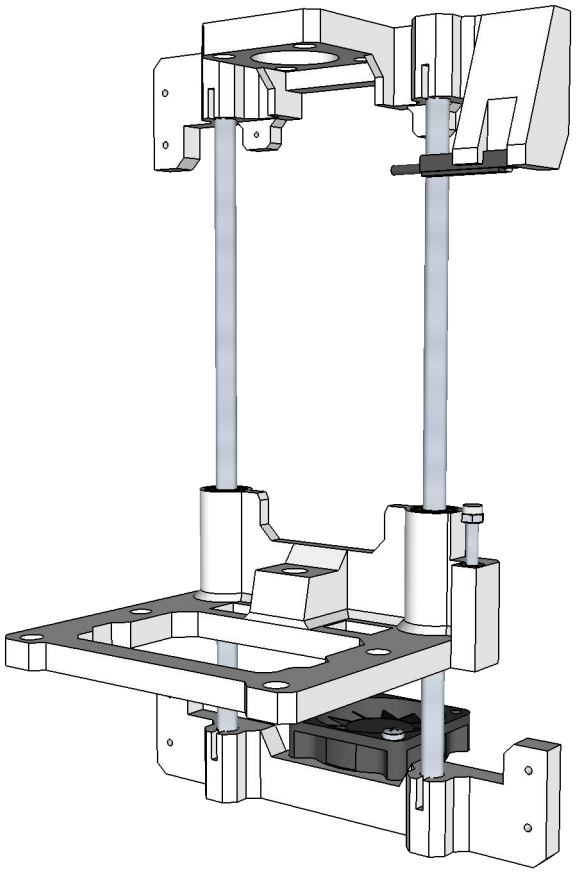
ASSEMBLY TIPS

You can use contact adhesive to stick the neodymium magnet to the hexagonal screw. Leave about 15 mm. away from the base, as shown in the figure.

Assembly guide

The next step is the assembly of the rear closures, Z EndStop and the fan that will be responsible for cooling the electronics
In the figure below you can see how the set looks once assembled.



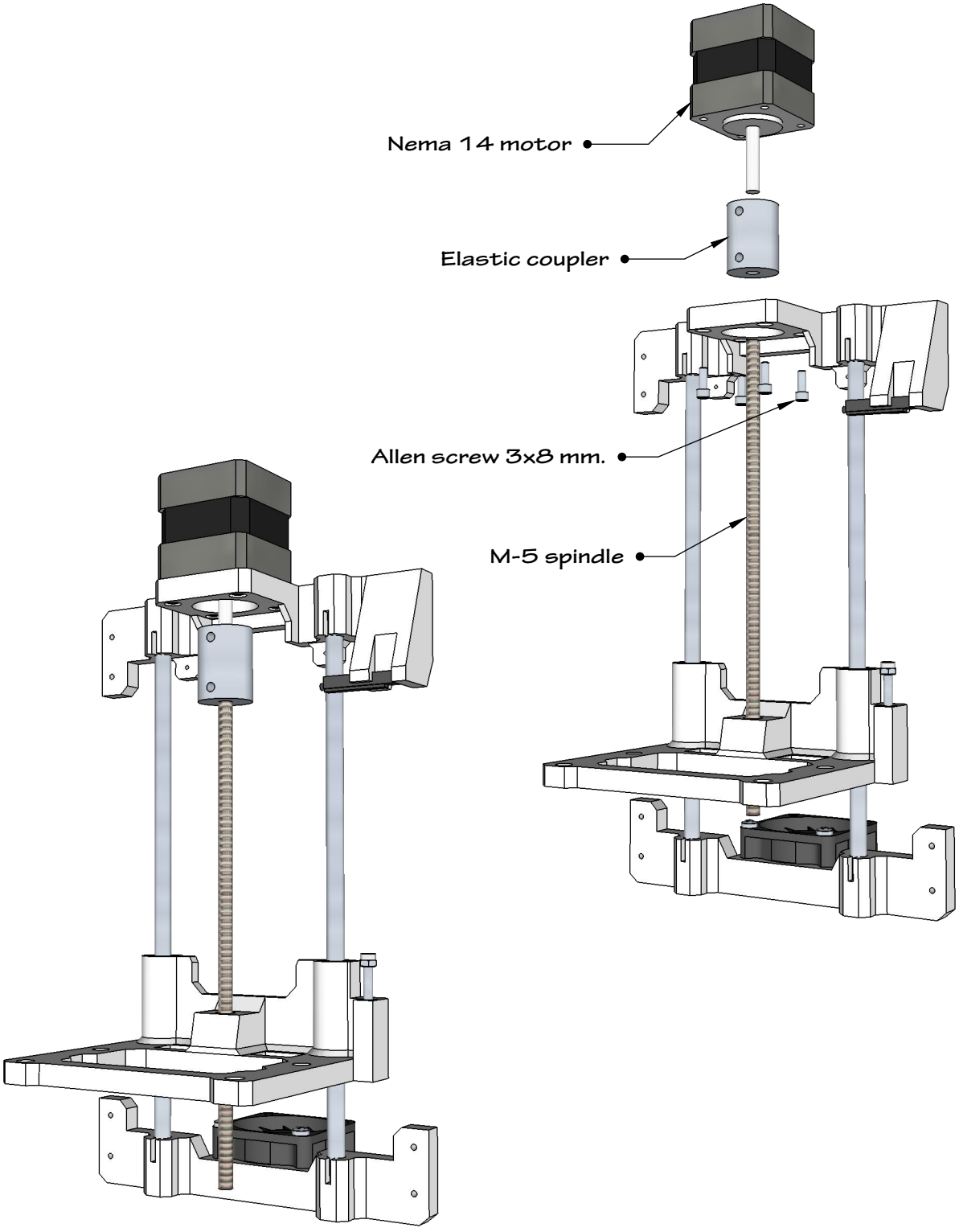


ASSEMBLY TIPS

Make sure the Ø6 mm rods. enter to the end of your accommodations.

Assembly guide - Z motor

We continue with the assembly of the Z motor, spindle and elastic coupler.
In the figure below you can see how the set looks once assembled.

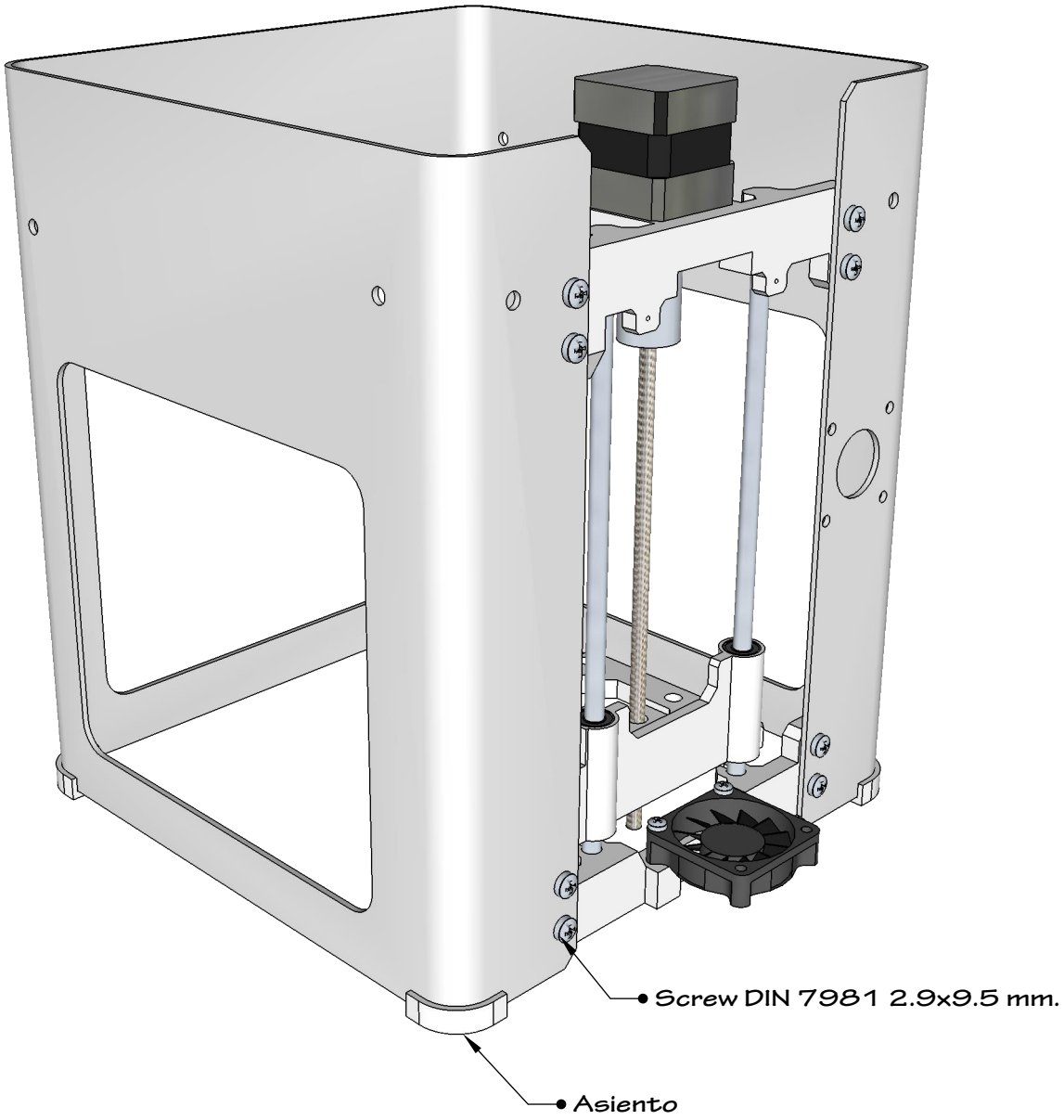


ASSEMBLY TIPS

To mount the spindle, screw it by hand into the polyamide M-5 nut, about 20 mm.
The motor shaft and spindle must enter equally (up to half each) in the elastic coupler.
Check that the motor connector or the wiring outlet is facing back to facilitate the connection of the wiring to the electronic board.

Assembly guide

The next step is the assembly of the previous group in the chassis so that the set is firm and robust.

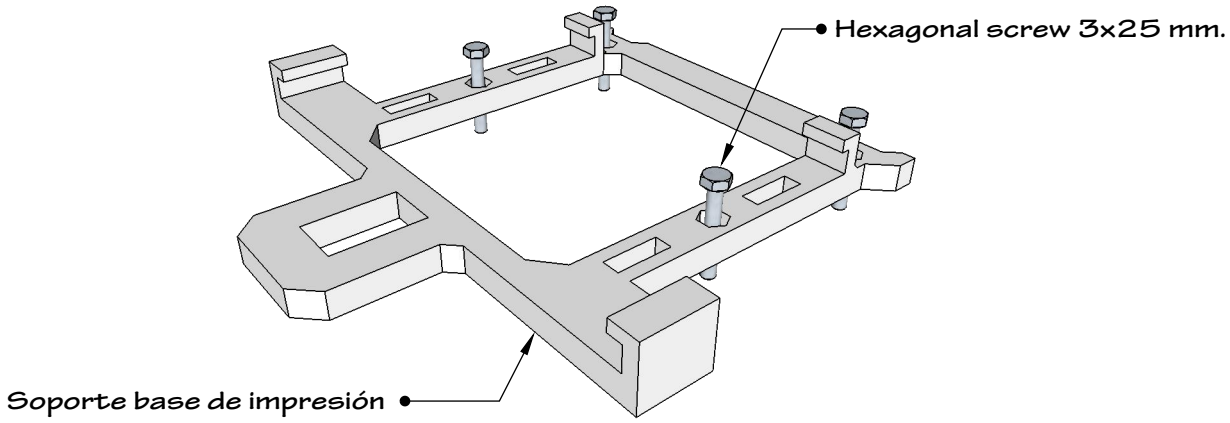


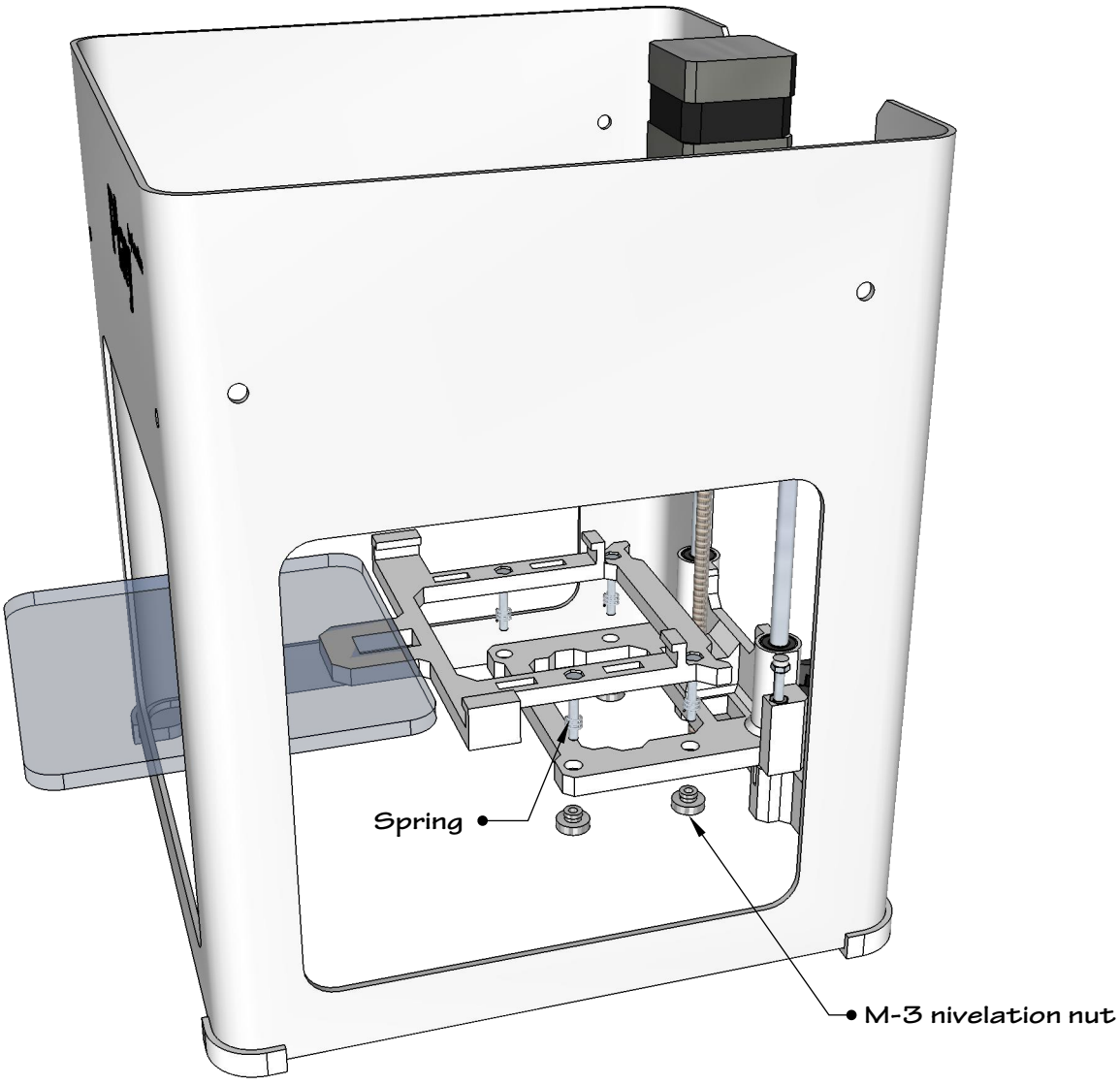
ASSEMBLY TIPS

Optionally you can use contact adhesive to stick the seat to the chassis.

Assembly guide - Printing base

In this section we will mount the support where the methacrylate printing base is inserted. Insert the M-3x25 screws in the "support" and mount this in the "Z Base" interposing between the two printed pieces the four springs that will serve to cushion and level the "Printing base"
With the M-3 leveling nuts, close the assembly so that everything is assembled..

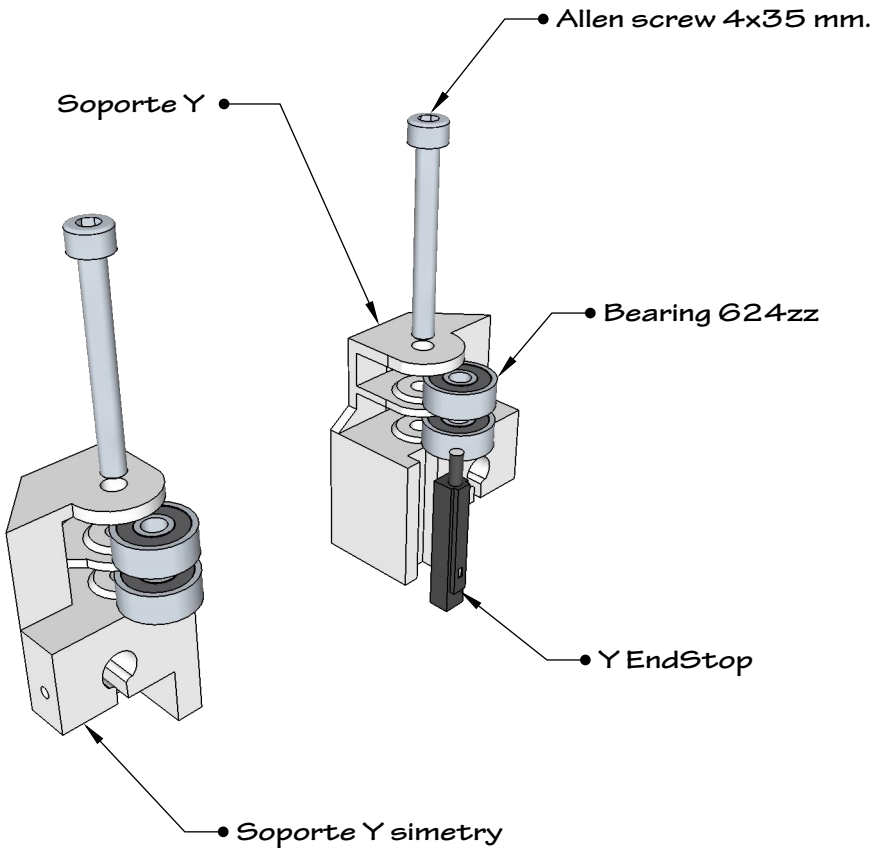




Assembly guide - Y supports

Now let's start with the movement system of the X and Y axes. In this step we will mount the front fixed supports.

Make sure the 624zz bearings turn smoothly once mounted.



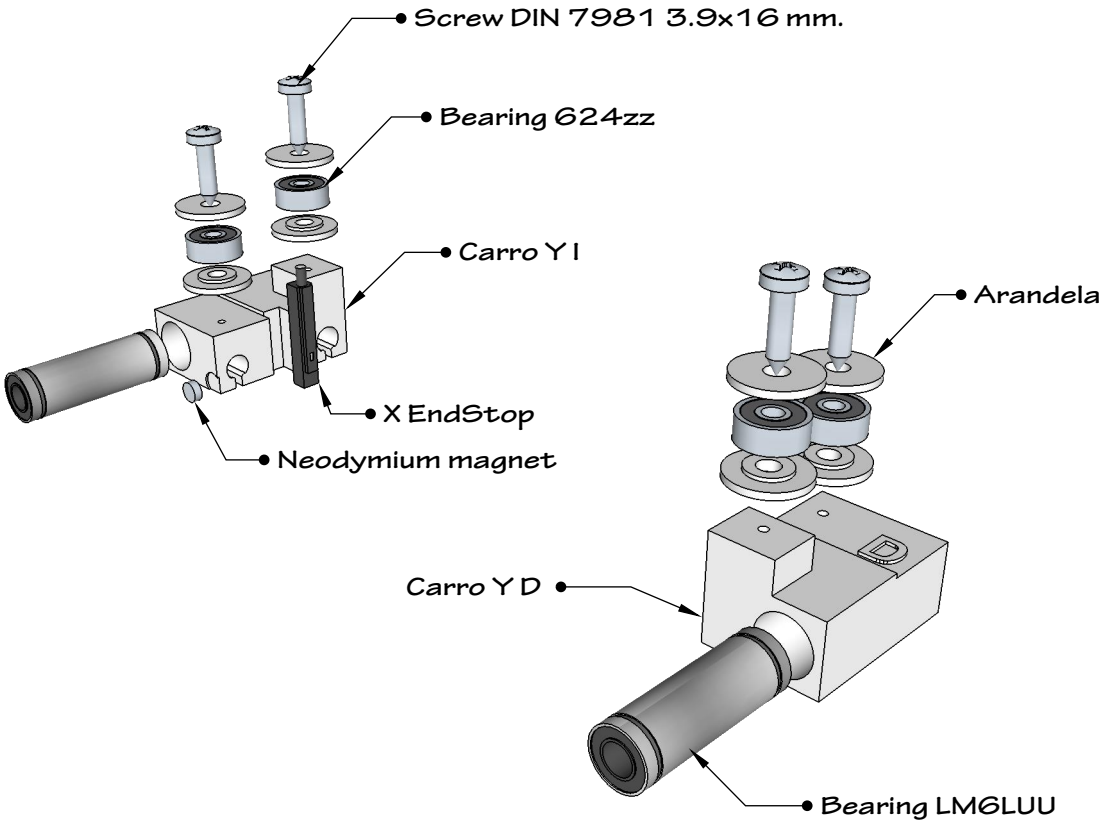
ASSEMBLY TIPS

You can use a contact adhesive to stick EndStop to the printed piece.
Use an Allen key to screw the 4x35mm screws. to the printed piece. No nut is necessary, the screw will screw directly into the part.

Assembly guide - Y cart

The next step is to mount the carts Y. They are the supports that move in the Y direction.

Make sure the 624zz bearings turn smoothly once mounted.

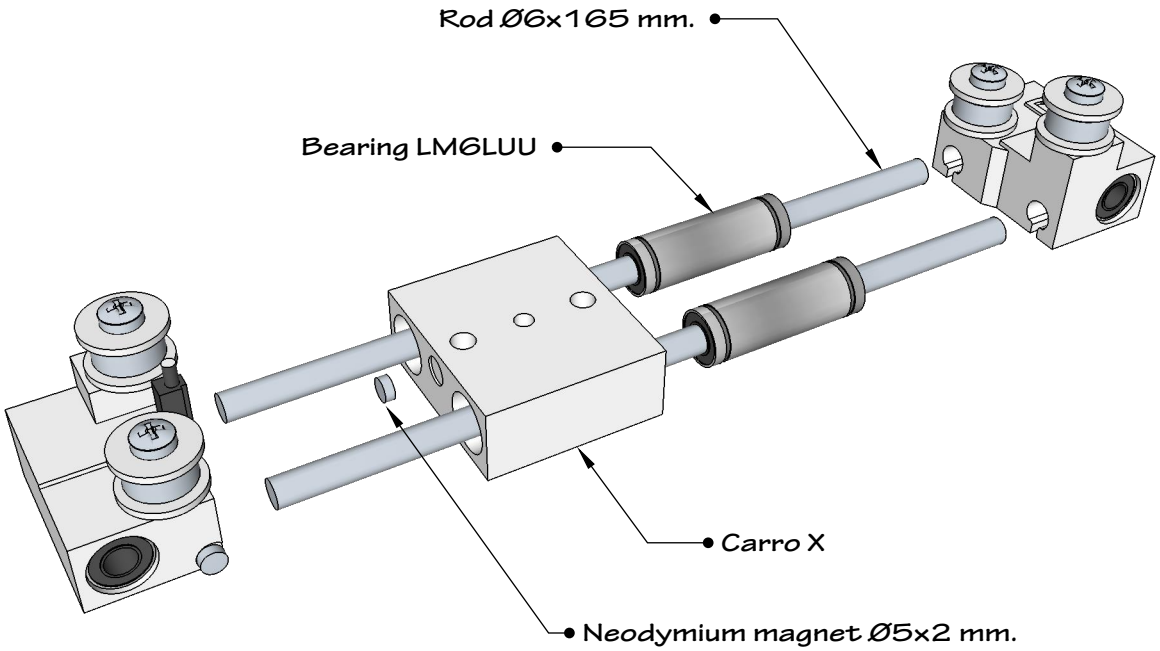


ASSEMBLY TIPS

You can use contact adhesive to stick the neodymium magnet and the EndStop to the printed part..

Assembly guide - Set Y

Now we are going to assemble the complete set Y that contains the X offset carriage.
Be sure to insert the Ø6 mm rods. until the end of their accommodations.

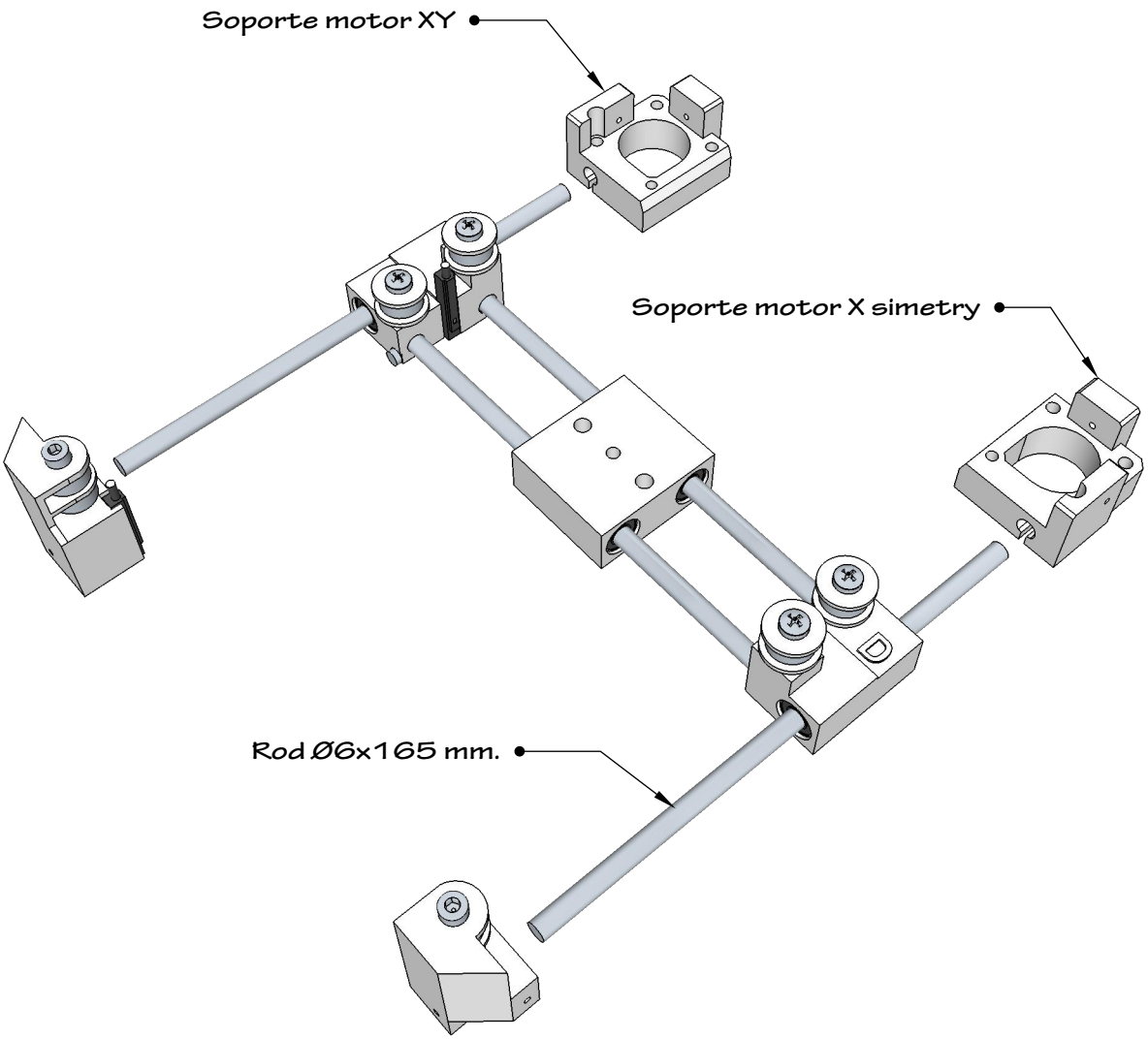


ASSEMBLY TIPS

You can use contact adhesive to stick the neodymium magnet.

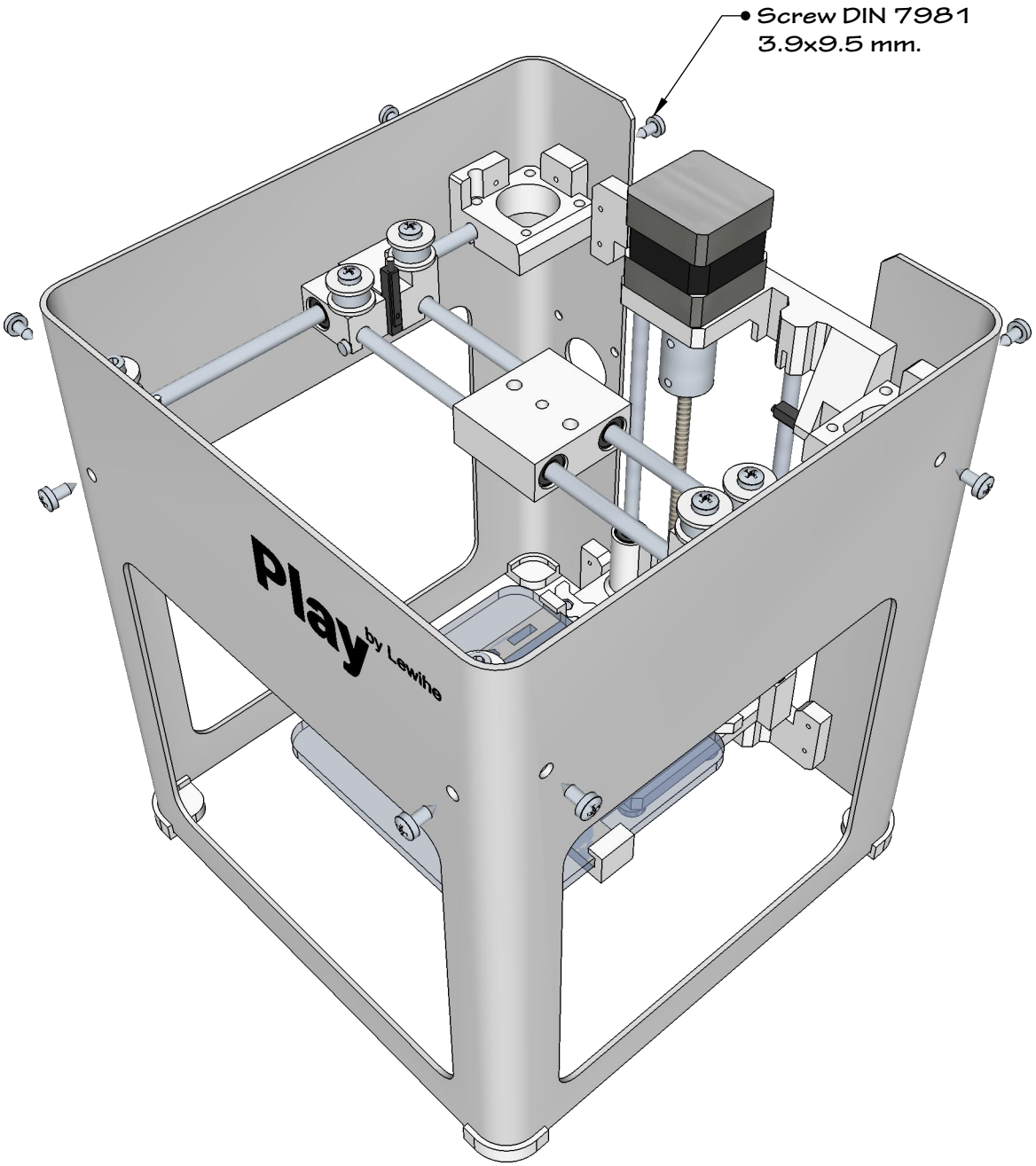
Assembly guide - Set XY

In this step, the complete movement set of the X and Y axes will be finished. It is the well-known Core XY movement system.
Be sure to insert the Ø6 mm rods. until the end of their accommodations.



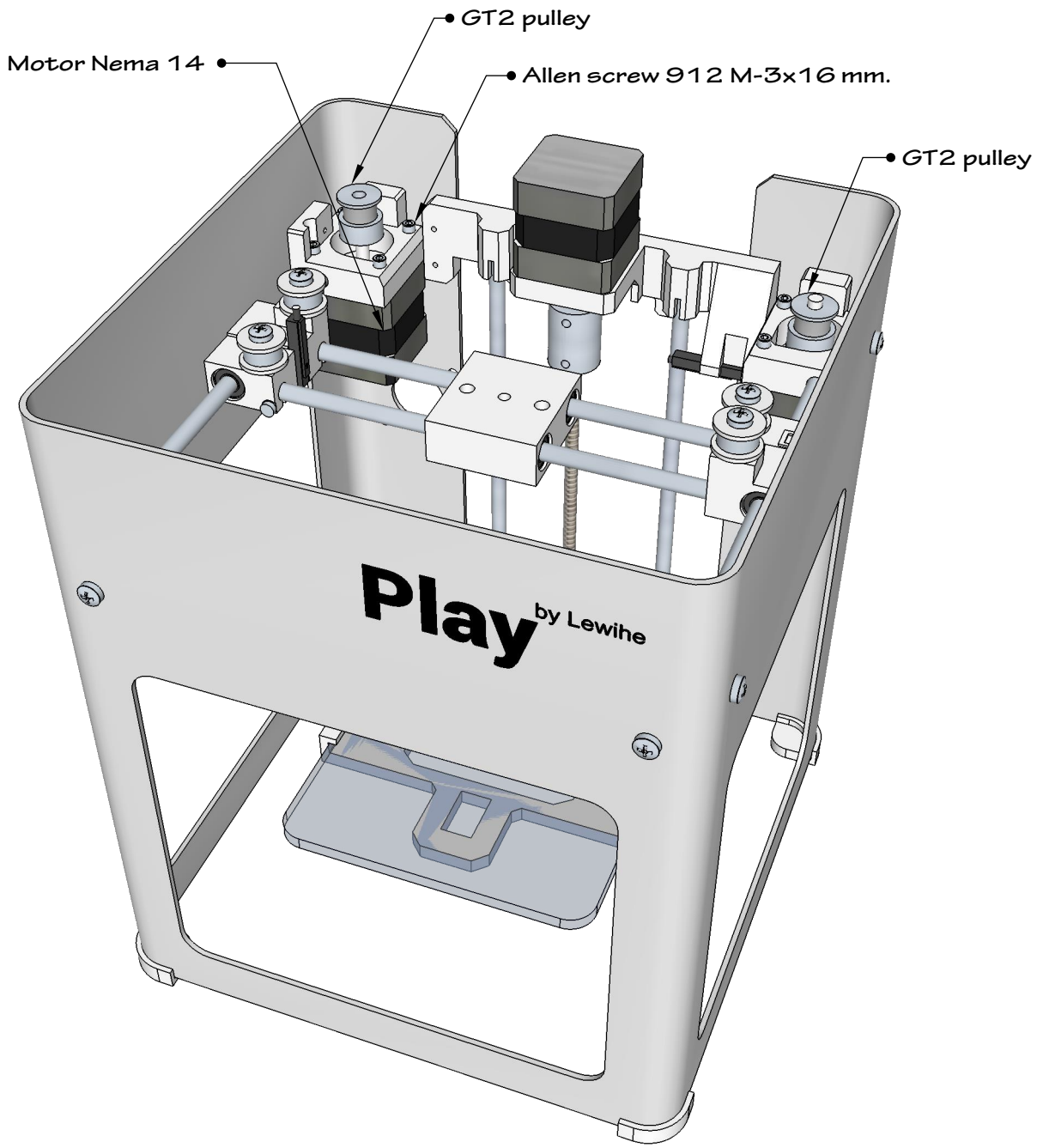
Assembly guide

Now we are going to assemble the "Core XY" set in the chassis.
We screw it with the 8 screws of 3.9x9.5 mm.



Assembly guide - XY motors

We continue with the assembly of the two motors that will give movement to the set. These motors are moored with 8 M-3x16 mm screws.
Also mount the GT2 pulleys but do not fix them completely. Wait for the step where we will mount the straps to fix them completely.



ASSEMBLY TIPS

Check that the motor connector or the wiring of the motors are inward once mounted.

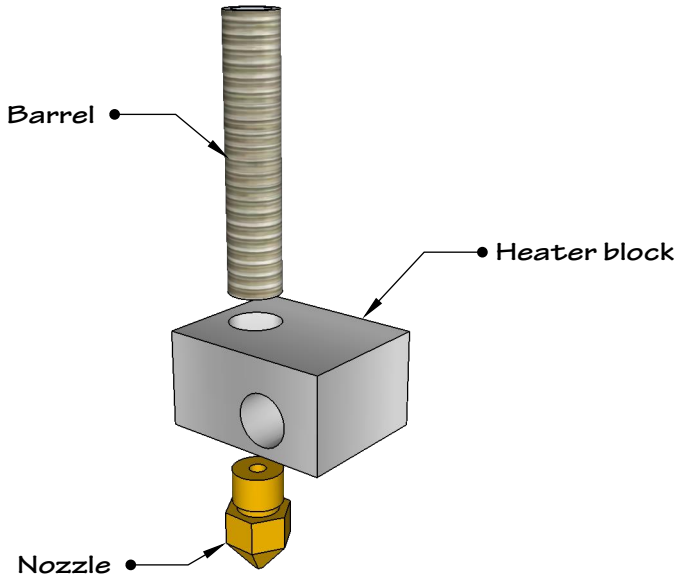
Assembly guide - The HotEnd

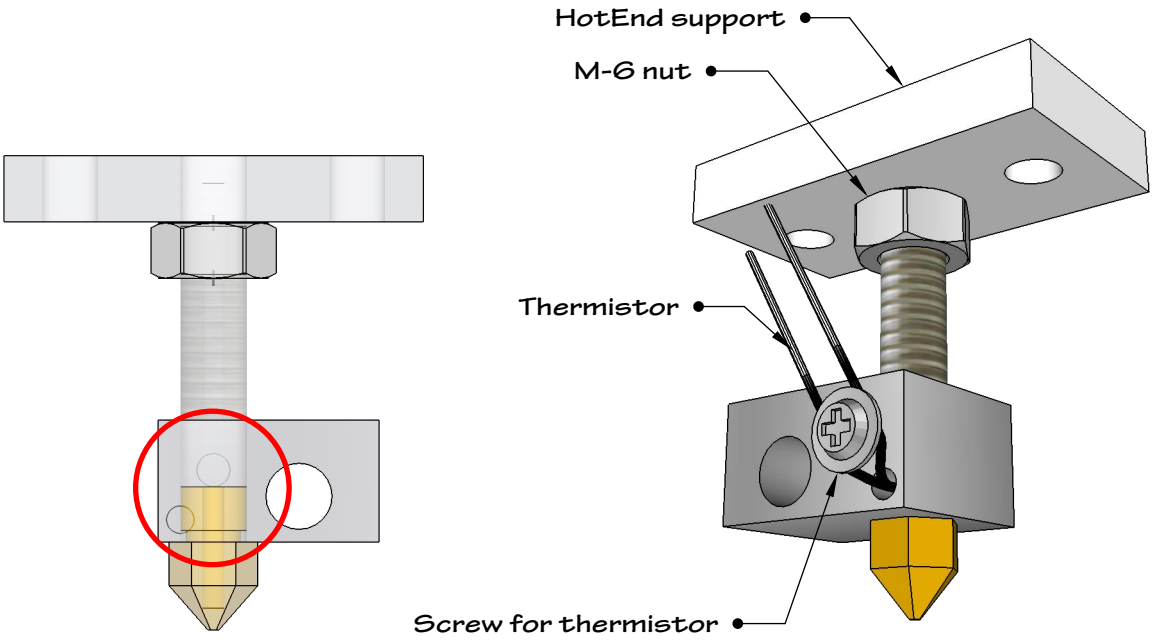
For the assembly of the hotend follow the steps that we detail below:

Mount the "barrel" and the "nozzle" so that these two components are blocked and there is no leakage in the area marked in the red circle. It is not necessary to tighten with great force, but with the necessary for the closure to occur.

Mount the HotEnd on the "HotEnd support" and with the "M-6 nut" it blocks.

Insert the "thermistor" in the hole of the "heating block" and tie it with the "screw for thermistor" so that it is fixed but without crushing the cables too much.

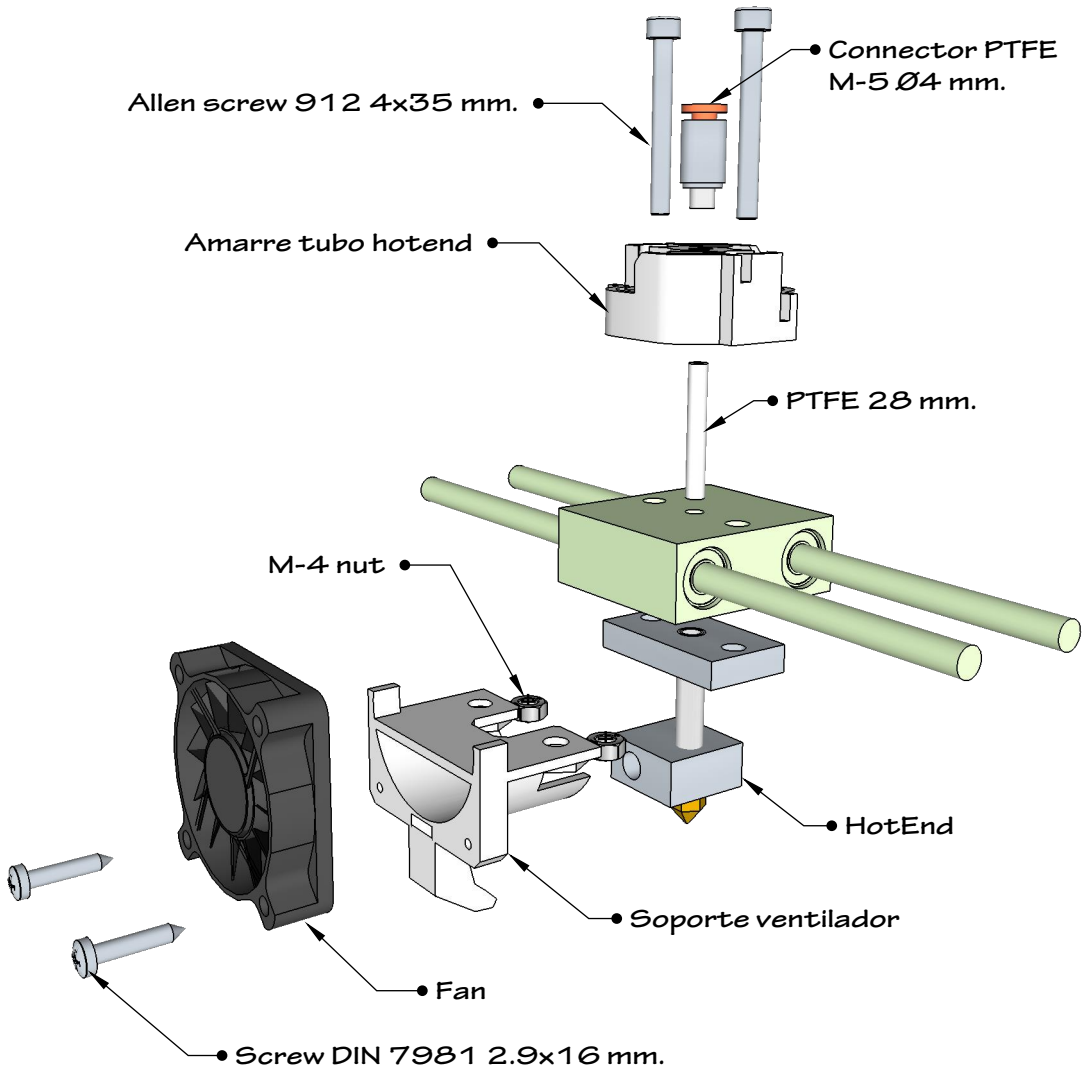


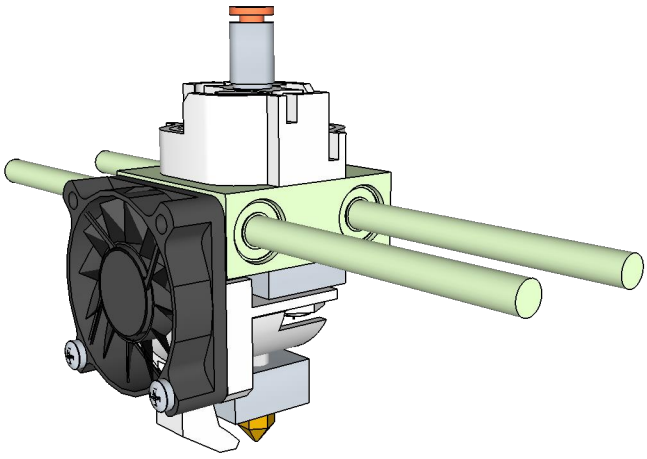


Assembly guide

Now we are going to mount the HotEnd on the X carriage and the lashing of the belts. This mooring will do closing and will hold the HotEnd.
It is recommended that you mount a 28 mm PTFE tube. long (may be worth a bit of same bowden tube) between the X carriage and the lashing of the belts. The tube will rest in the HotEnd plate and in this way the filament will enter completely guided and smoothly.

The M-5 fitting is threaded directly into the printed part "Amarre tubo HotEnd"





ASEMMBLY TIPS

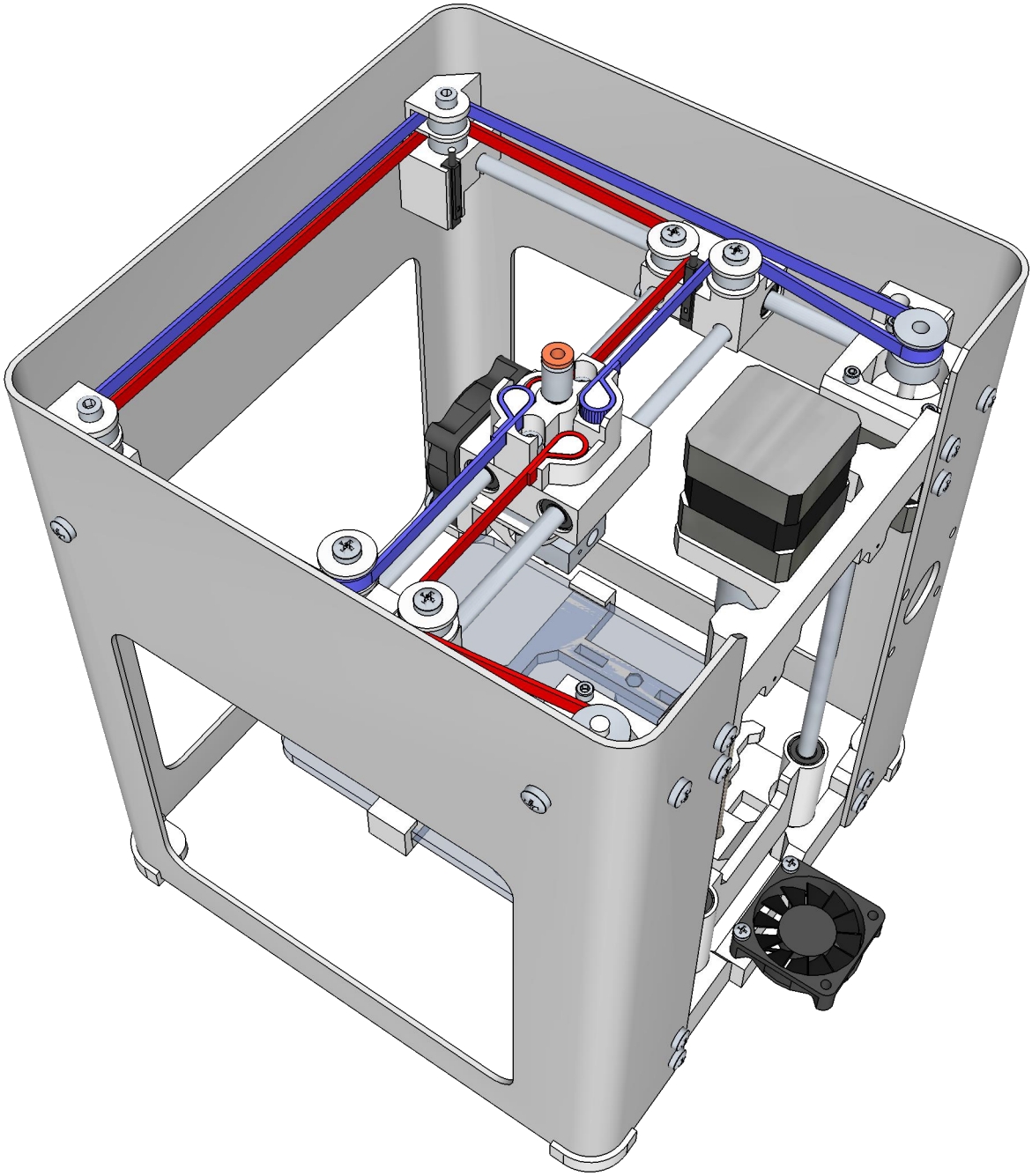
You can use a Ø4 mm drill bit. to go over the hole in the printed parts and make sure that the PTFE tube is easily assembled.

Assembly guides - Belts

At this point is where we will mount the GT2 belts. Pay attention to the disposition of these in the following figure. As you can see the straps are mounted on different levels. Start first with the one that is mounted on the lower level (we have colored it in red to see it better) and then the top level.

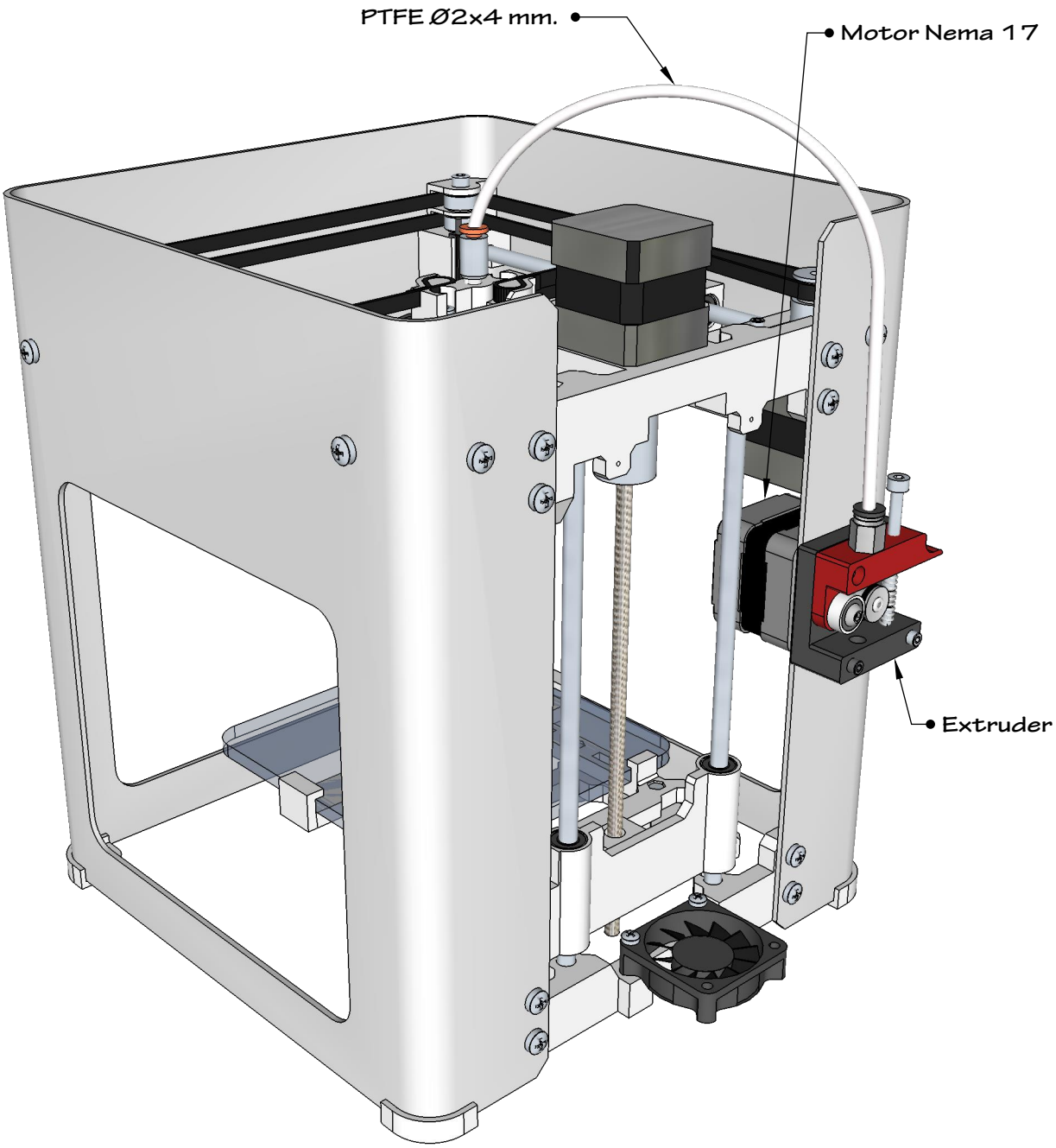
As you can see, the straps are not tied or fastened with any type of flange or clip. They are simply tied when "facing" each other's teeth, being able to easily and quickly adjust the tension of each strap. Keep in mind that the arrangement of the teeth of the belt must match that of the pulleys, so that they can have traction. Try that the tension of both belts is similar. It is important that they remain equally tense so that the set Y is horizontal (seen from above) and moves correctly.

It is not necessary that the straps are very tight, but if enough so that they are not slack and can get out.



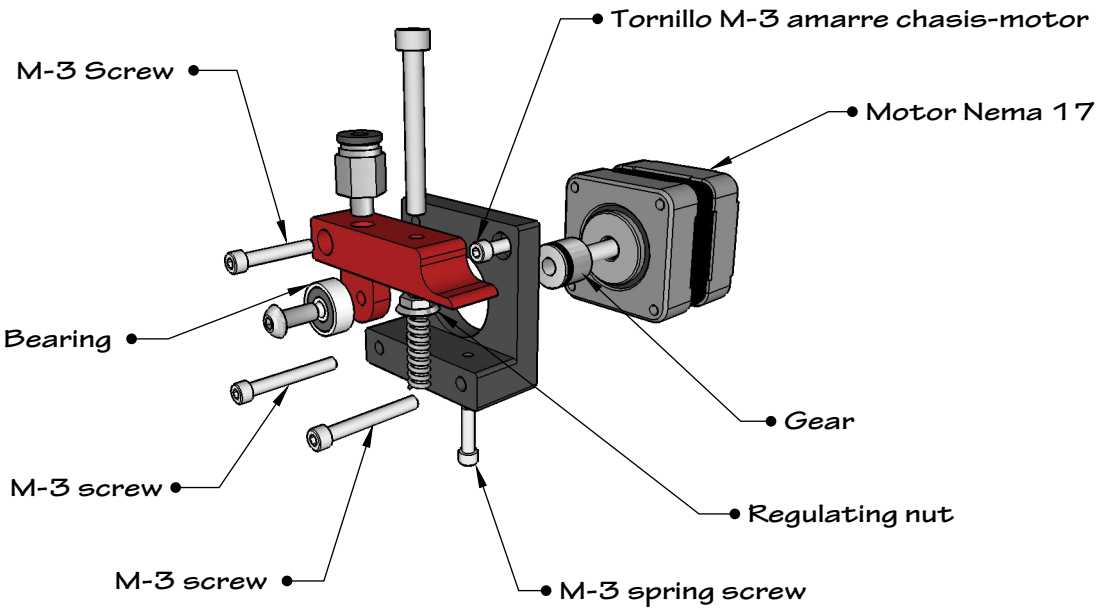
Assembly guide - Extruder

The extruder is one of the most important parts of the printer. A good printing result will depend on its proper functioning.
The Kit Play 3D assembles an extrusion system called "bowden" which consists of an extruder away from the HotEnd. With this configuration the X carriage moves more smoothly and quickly while avoiding large inertias, helping in this way to achieve a higher quality printing.
As you can see in the following figure, the extruder is located on the back of the printer and the traction motor inside the chassis.



Assembly guide - Extruder

The assembly of the extruder is not complicated. Observe the following drawing and pay attention to the arrangement and measurements of the screws.
The "bearing" must be able to rotate freely once fixed, so that the filament can slide correctly on it.
As for the "spring", with the "regulating nut" you can adjust the pressure so that the "bearing" presses on the "gear" with enough force so that it can "bite" the filament.
The Nema 17 engine (the largest of the four) is bolted inside the chassis with the four M-3 screws.



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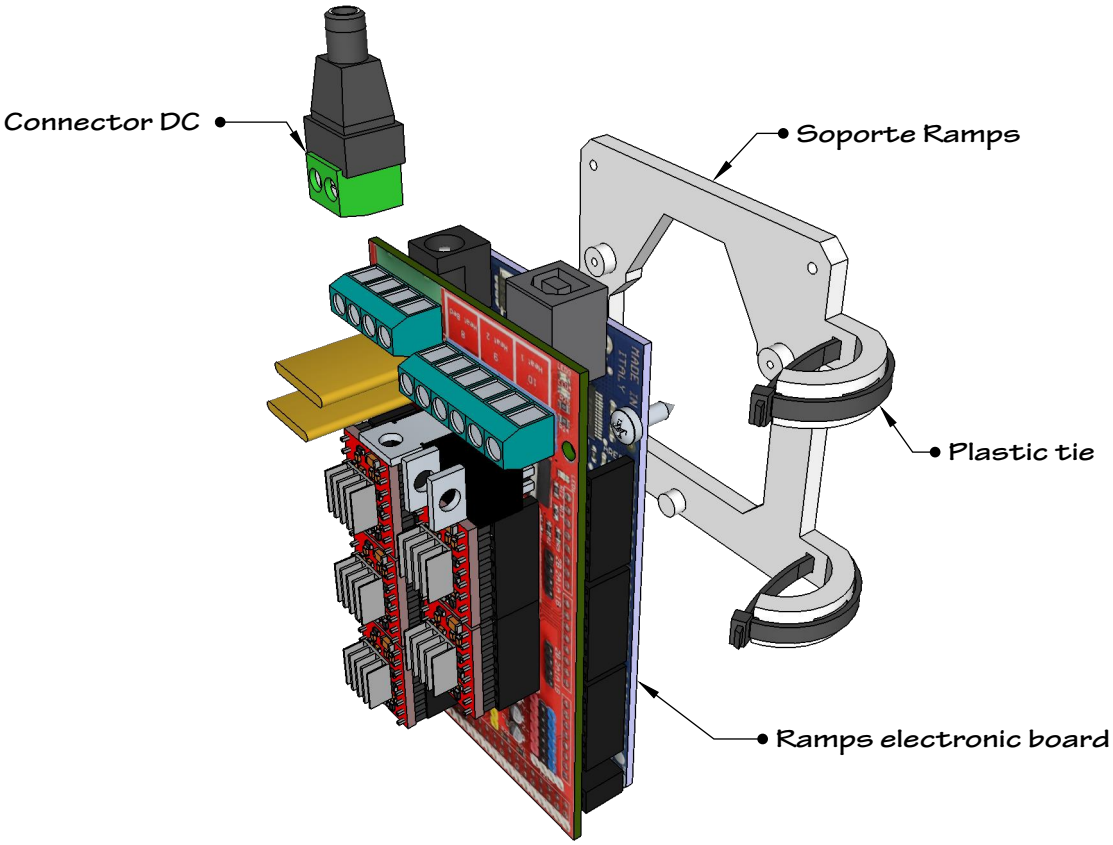
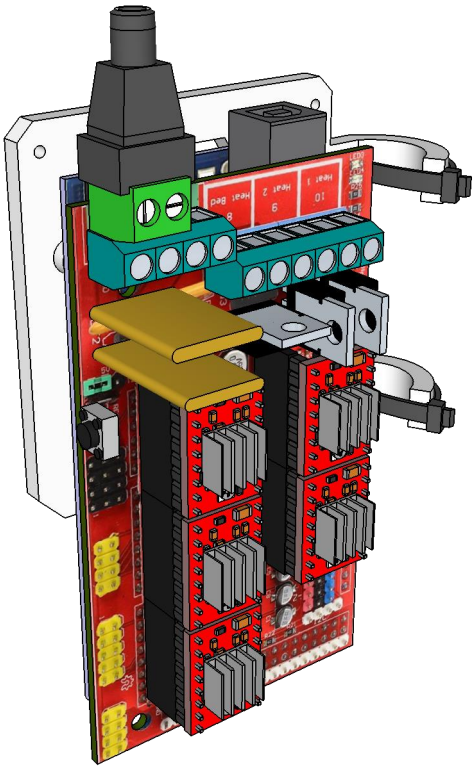
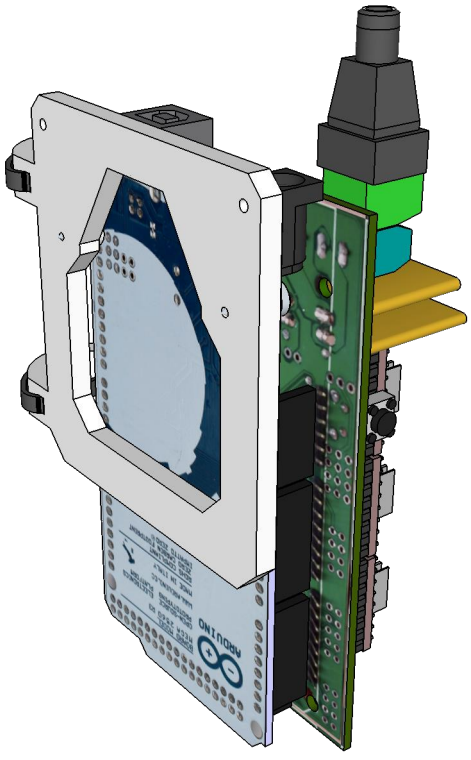
Assembly guide - Electronics

We continue with the assembly of the electronics. The printed piece serves to mount the Ramps electronic board.
The small holes that are in the hooks of the support are where you can introduce some plastic cable tie.
With these plastic cable tie you can organize and tie the electrical wiring.







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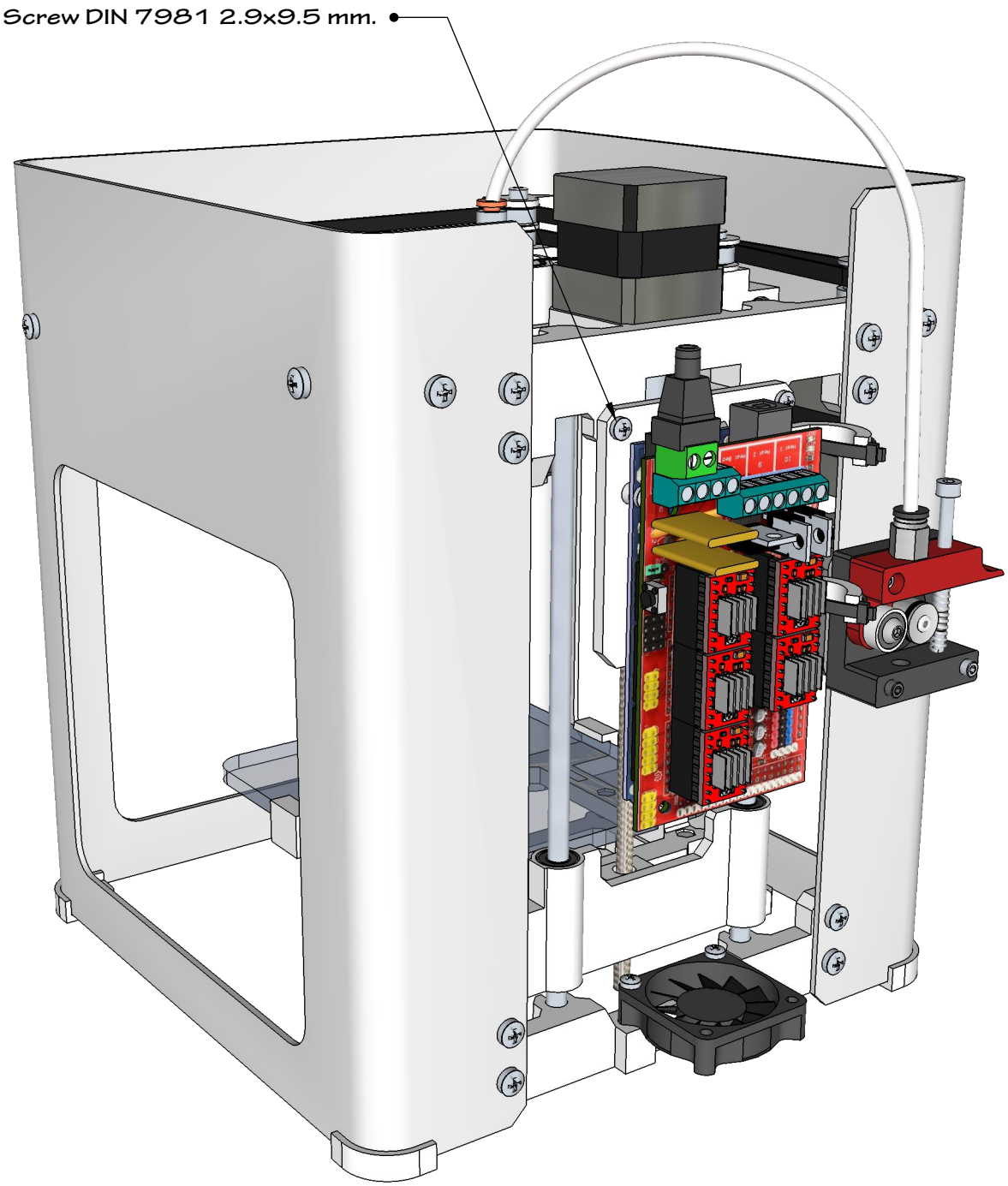
Final result

And this is the final result of your montage.

With the two 2.9x9.5 mm screws. screw the electronics set to the top closure.
Now only the electronic connection remains.



Calibration

Once mounted, the Kit Play 3D does not need calibration.Visit the section DOCUMENTATION of the web to adjust the firmware (especially to configure if you have used pulleys of 20 or 16 teeth) and to download the printing profiles.

To level the printing base, use the M-3 leveling nut. Turning in one direction or another will get the base up or down. You can use a circular level or you can bring the tip of the nozzle to the base and turn the nut in the direction you need.

The M-3 screw on the Z base that carries the magnet serves as a regulator to adjust the start of printing on this axis. Adjusting this screw will bring the nozzle closer to or away from the printing base.

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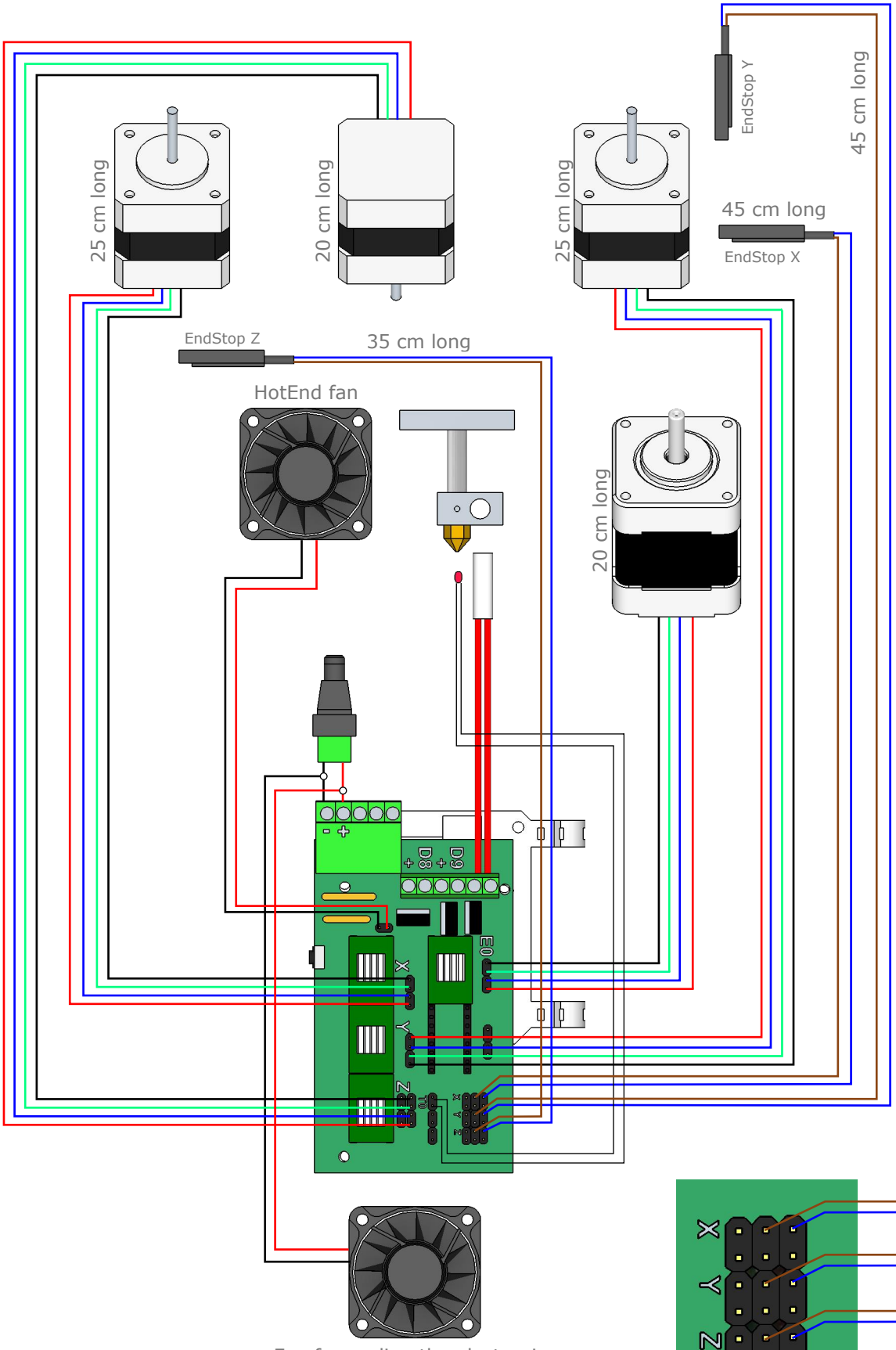
Connection diagram

The connection of your Play printer is very simple. You just have to follow the diagram and respect the polarities and colors.

This view corresponds to the back of the printer.



Fan for cooling the electronic

DETAIL CONNECTION ENDSTOPS TERMINALS

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Annotations:

