

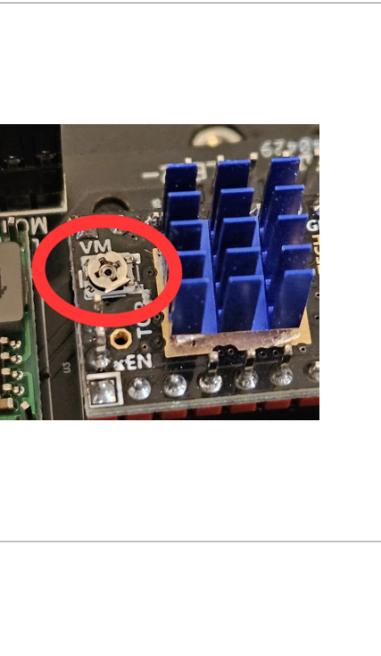
Assembly:

The next few steps can be skipped if you ordered the Power Pack.

Start with the *Motor Base*.



Slide in the NEMA 17 stepper motor and secure it using **3 M3 x 6 screws**.



Insert 4 M3 nuts into the hexagonal holes and push them down.

If you bought it, you can now install the PCB using **3 M3 x 6 screws**.

If you do not own the PCB, skip this step.
You can find a wiring Diagram in the Documentation.



Install the Arduino Nano and the stepper driver onto the PCB and connect the steppermotor.

Make sure the driver is installed in the correct orientation.

The Power regulator screw should face roughly the same direction as in the picture. If the Motor is too weak, please adjust the screw!

If the Motor is jittering and not spinning correctly, please try swapping out the two inner wires.



Take the *Interface* and install the Button and the LEDs. The LEDs will need a little glue to stay in place.

Solder wires to the Button and LEDs and connect the other ends to a female dupont connector. The correct order is written on the PCB.

Please use flexible/small gauge wire, space inside of the case is very limited!

If you purchased the "PCB and Electronics" Kit, please print the part *Interface for PCB* and press the Interface PCB into place.

Set the *Electronics case* onto the Base plate and secure it from below with **4 M3 x 6 screws**.

Connect the Interface to the connectors on the PCB and push it into place.

If you are using an arduino with mini USB, you can find a print profile for an alternative Case!

If you are wiring everything yourself and don't need the USB port, there is a print profile for the Case without it!



Connect the Filament Sensor to the PCB.
The switch needs to be in a "normally open" configuration. You only need two of the three wires. Usually, you can remove the red wire.

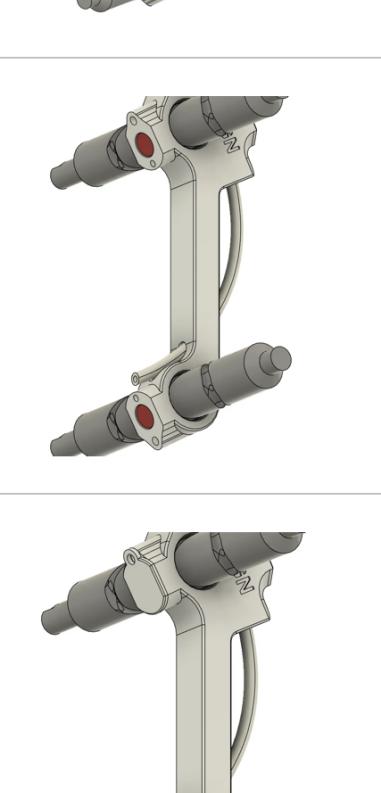
With all the electronics in place, close the Electronics case using **4 M3 x 6 screws**. The wire for the Filament Sensor is routed through the little slot in the lid.

You can now connect the arduino to your PC and upload the code found under Documentation.



The the *Motor Pulley* and slide a M3 nut into the little slot next to the hole.

Slide the Pulley onto the Motor shaft and secure it using a M3 x 6 screw.



Attach the pulley to the Motor and screw the Power Pack down to the *Base* using **4 M3 x 10 screws** (from below).

Take the *Spool center* and insert the *Spool shaft* into it. Secure it using a M3 x 10 screw. The hole is not pictured here, it's located on the left.



Remove all the Supports from the *Frame R* and press **4 bearings** into their position.

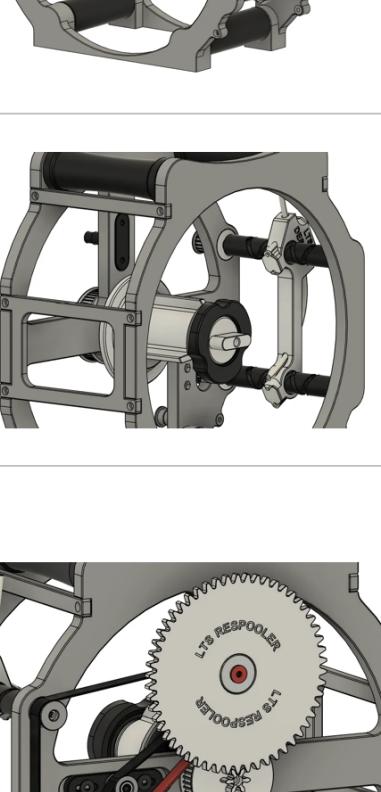
Two of them are installed front/left and the other two on each side of the spool shaft.



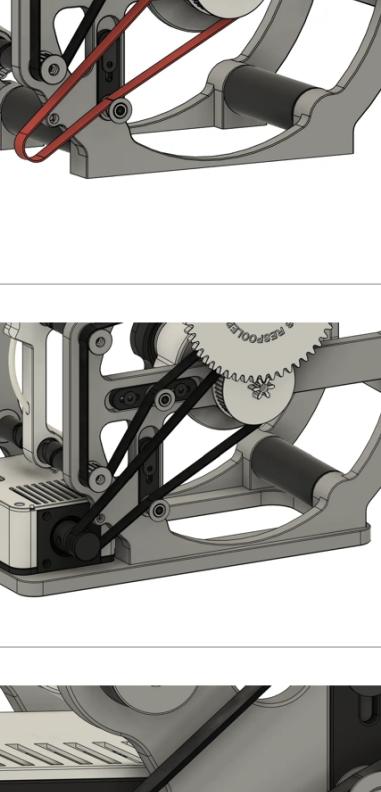
Push the Spool shaft through the two central bearings as seen on the picture.

Slide the Spool shaft washer onto the shaft. (Seen on the picture as the small white ring around the center shaft)

You can also screw on the black *Spool nut* now.



Attach the *small Gear* and secure it with a M3 x 10 screw.

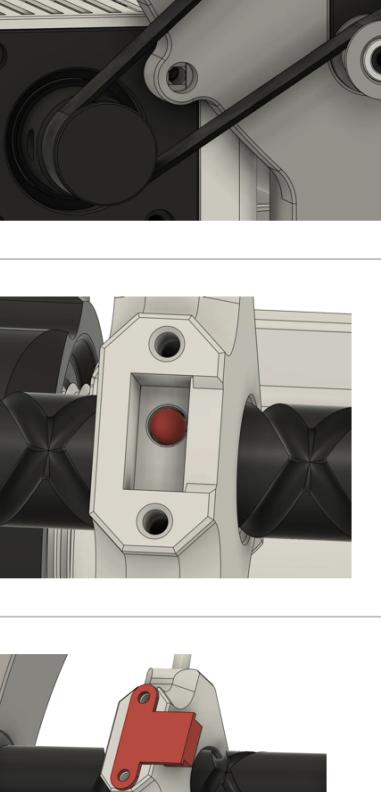


Push in the *Gear shaft* and secure it using **2 M3 x 10 screws** and **2 M3 nuts** (on the other side).

Attach the *Tension 1 holder* as shown in the Picture and secure it loosely with **2 M3 x 10 screws**.

Don't forget to add the washers (pictured in red) and the M3 nuts on the other side.

The black piece should be able to move side to side.

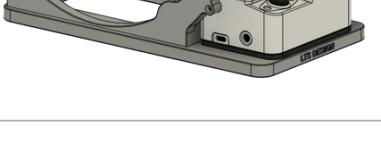


Assemble both of the two Tension Pulleys by taking the parts *Tension Pully top* and *Tension Pully bottom* and sticking them together.

Insert a small MR85 bearing on each end.



Attach the *Tension Pulley* with an M3 x 6 screw (screw not pictured).



Repeat the same steps for the second Tensioner.

Take the *Filament guide* and insert **two PTFE tubes** as seen in the picture. (this might take a bit of force)

Insert the two *worm Gears* as pictured.

Slide in the two *Filament guide pins*. They are red in this picture, you might need to spin the worm Gears a little to wiggle them into place.

Close the holes using the *Filament guide lids* and secure them using a M3 x 6 screw each.

Slide the two shafts of the worm Gears through the corresponding bearings on the right Frame. Attach the two *Filament Guide Pulleys* and secure them with one M3 x 6 screw each.

Press the **8** bearings into the ends off all four *Rollers*.

You can now slide the Rollers into position. The longer ones are on top.

Add the left *Frame L*. The fit is pretty loose at this point.

Attach all three *Braces* between the two frame sides using **8 M3 x 10 screws**.

Add the drive *Belt* to the largest Pulley.

Press the remaining bearing into the *big Gear*. Slide the gear, together with the second Belt, into position.

Secure The gear with a M3 x 6 screw **and the Gear washer (red)**.

!! make sure the two worm gears are in sync, meaning they're both at the same angle/position !!

If needed, you can now adjust the belt tension.

You can now lower the Frame onto the Base and secure it from below with **8 M3 x 16 screws**. Make sure the surface where the Base connects to the Frame is reasonably smooth.

While doing so, connect the Drive Belt to the Motor Pulley.

Connect the Frame to the Motor Base with (2) M3 x 10 screws! (one on each side)

This step is important because otherwise the belt might start skipping, even at low resistance!

Insert the **4mm steel ball** into the hole of the *Filament guide*.

Remove the metal lever from the Filament switch and slide it into position as seen on the picture.

Secure it with **2 M3 x 6 screws**.

If you want, you can now glue the TPU feet into position.

And with that, your Respoiler is complete! :)

