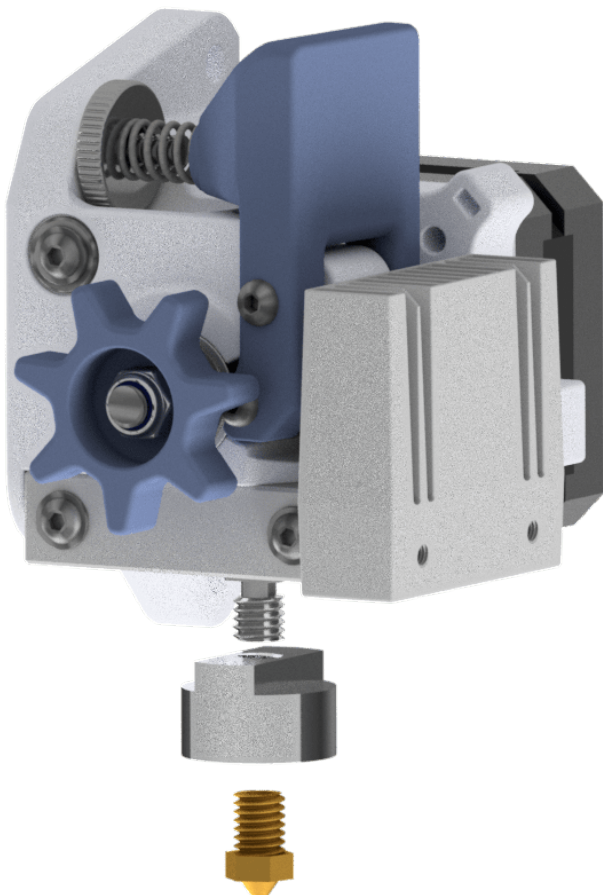# Assembly OmniaDrop V2.1

Tools:

- Hex key 1.5 mm
- Hex key 2 mm
- 10 mm wrench (you can get away with pliers)
- 7 mm socket spanner or wrench

If you have the OmniaDrop Prusa edition follow the same instructions as the OmniaDrop Standard Edition, they do not differ, if not otherwise stated.

Step 1

Items:

- Ring Heater
- 0.4 mm Nozzle

Screw the Ring Heater with the indentations facing towards the heatsink onto the heatbreak until no more threads are visible. However, do NOT screw the Ring Heater until it touches the heatsink, the "bottle neck" section of the heatbreak should always be visible. Orientate the cables of the Ring Heater so that they are facing the stepper motor. Finally, screw the nozzle into the Ring Heater and tighten it down. Please ensure that you do NOT put too much strain on the cables. Use some pliers or a 8mm open spanner to hold onto the Ring Heater while tightening the nozzle. There should now be a gap (1-2 mm) between the nozzles hex section and the Ring Heater (this is intentional). The gap ensures that you tightened nozzle against heatbreak and there is no gap between the nozzle and the heatbreak and as such creates a continuous filament path with no gaps.

Attach your OmniaDrop Standard Edition onto your 3D printer carriage.

Step 2

Items:

- 2 x M3x8
- 2 x M2x6
- 2 x M2 washer

Secure one of the blower fans with two M2x6 screws and M2 washers on the cooling duct. If you lose a M2 washer do not worry about it, it will work without it as well. For the Prusa edition the blower fan needs to be upside down.

With the two M3x8 screws attach the cooling duct to the cooling block.
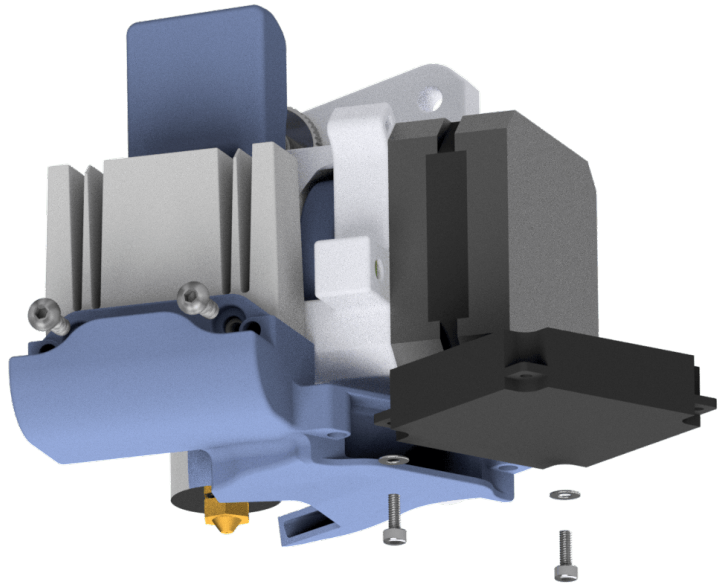
Step 3

Items:

- 2 x M2x6
- 2 x M2 washer

Take the last blower fan and install it on the cooling duct. Use the two M2x6 screws and M2 washers to secure the blower fan. Again if you lose a M2 washer just install the fan without the M2 washers.

If you have the OmniaDrop Prusa Edition then go to the chapter "Prusa Edition" which guide you through the steps on how to install your OmniaDrop Prusa Edition.
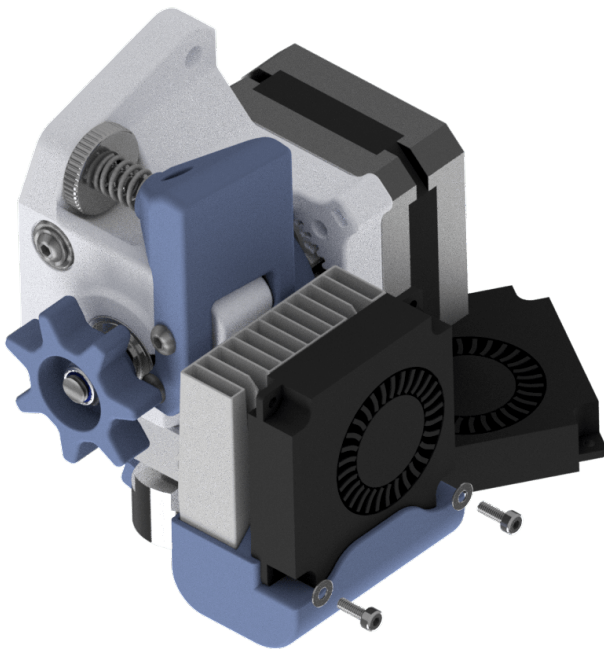
BLTouch (optional)

Items:

- 2 x M3x8
- 2 x M3 washer

Attach the BLTouch to the probe holder using the two M3 screws and the M3 washers. Then attach the probe holder on the small standoff of the OmniaDrop extruder.

The probe_offsets are X = 32.4 mm and Y = 34.9 mm. Depending on your printer and how the firmware is configured those offset can be negative. Usually the Y probe offset is negative so Y = -34.9 mm.
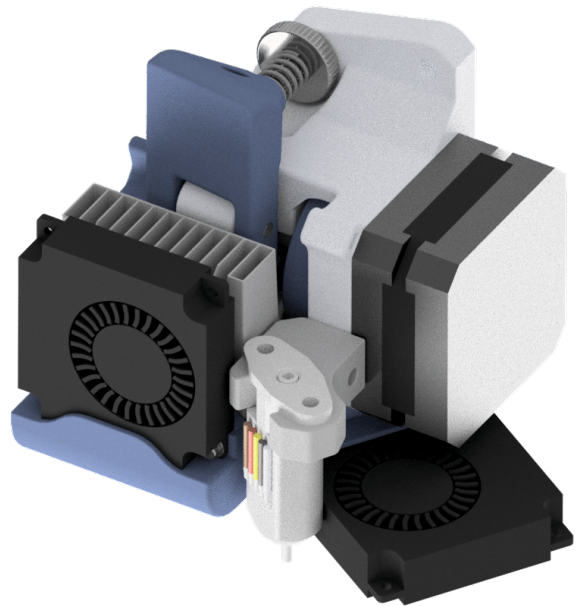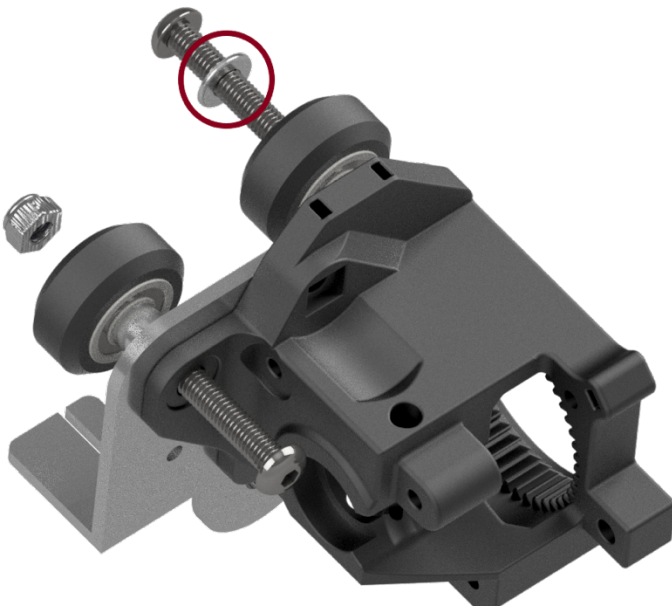
Ender 3 Edition

Items:

- 1 x M5 washer

Attach the OmniaDrop Ender 3 Edition to the Ender 3 X-carriage according to the picture.

Please do not forget to place the M5 washer on the M5x30 screw which fixes the V-slot wheel closest to the stepper motor.

LAST STEPS

Adjust Current

First you should adjust the current to the extruder stepper motor. The stepper motors require the following currents:
- small stepper motor (body length 20 mm) set current to 0.6A
- bigger stepper motor (body length 34 mm) set current to 0.85A.

Depending on your stepper driver and electronic controller you need to either adjust the current in the firmware or manually using a trim pot on the stepper driver.
If you have a A4988 driver set a 0.5 Vref for the small stepper motor and a 0.7 Vref for the bigger stepper motor. If the motor gets too hot then decrease the current. As a rule of thumb after 20-30 minutes of printing you should be able to hold your fingers for 5 seconds on the stepper motor.

Update steps/mm value

To adjust your steps/mm value use the M92 G-code and then save that new value to EEPROM using the Gcode M500. Your G-code file should look like this:

M92 E[steps/mm]
M500

For the 1.75 mm Filament OmniaDrop version the steps/mm value is 480 steps/mm for 1/16 microstepping. The G-code should look like this: M92 E480

For the 3 mm Filament OmniaDrop version the steps/mm value is 560 steps/mm for 1/16 microstepping. The G-code should look like this: M92 E560

Hot tightening

Next you need to heat up the hotend to 285°C. Once the hotend reached the temperature hold the hotend in place using pliers or a 10 mm wrench and tighten the nozzle using a 7 mm socket spanner or wrench. Be careful not to use too much force otherwise you will damage the Heatbreak or the nozzle.

To make sure that the temperature is stable during printing do a PID autotune/calibration.

Thermistor

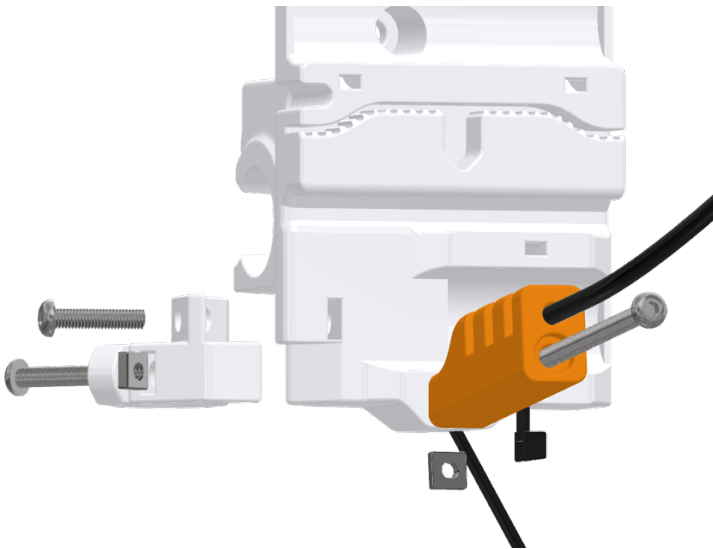The thermistor is a NTC 100K 1% 4267. In Marlin firmware that would be thermistor number "5".

PRUSA EDITION

Remove the old extruder from your Prusa. Attach the OmniaDrop extruder to your Prusa using zip ties and insert the GT2 belt into the intended slots.

Prusa Cable Management

Items from Bag 1:

- 1 x M3x50
- 2 x M3 square nut
- 2 x M3x14

Wire all the cables (except the PINDA probe cable) at the bottom of the OmniaDrop-Main body and secure the cable to OmniaDrop-Main body using a zip tie, like shown in the image.

Attach the cable holder to the OmniaDrop-Main body using a M3 square nut and the M3x50 screw. Make sure to orientate the cable holder like shown in the image.

Attach the PINDA probe to the OmniaDrop-probe-holder using the M3x14 screw and M3 square nut and mount it to the OmniaDrop-Main body using another M3x14 screw.. Wire the PINDA probe cable above the GT2 belt and then down to the cable holder.

Insert the Nylon cable guide in the cable holder and attach all the cables to the cable holder using three zip ties.

Original Prusa MK3

To adjust your steps/mm value use the M92 G-code and then save that new value to EEPROM using the G-code M500. Your G-code file should look like this:

M92 E960
M500

Next you need to heat up the hotend to 285°C. Once the hotend reached the temperature hold the hotend in place using pliers or a 10 mm wrench and tighten the nozzle using a 7 mm socket spanner or wrench. Be careful not to use too much force otherwise you will damage the Heatbreak or the nozzle.

To do a PID calibration on a original Prusa MK3 go the LCD Menu

Calibration > PID calibration

Under Settings disable the following two features:

Filament sensor   [off]
Fans check   [off]

Adjust the PINDA probe to the correct height using the method mentioned in the Prusa assembly manual.

In your slicer you need to add the following line to your Start G-Code, after the G80 mesh bed leveling G-code:

G1 X2.5 Y17.5 F3600
G92 X0 Y0

Remember the OmniaDrop Prusa Edition loses 17.5 mm at the back of the printbed.
Place your 3D model in your slicer in such a way that 3D model does not fall into these regions.