Micro Swiss Direct Drive Extruder for CR-10 / Ender 3 Printers with ExoSlide Configuration
# INSTALLATION INSTRUCTIONS

Tools needed

Gather the required tools before starting installation.

- Adjustable wrench
- Phillips-Head screwdriver
- 7mm socket wrench
- 7mm spanner wrench (supplied)
- 1.5mm Allen wrench (supplied)
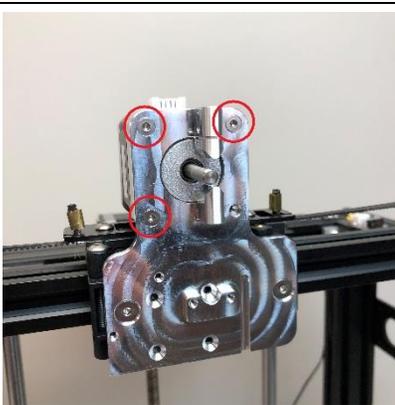- 2mm Allen wrench
- 2.5mm Allen wrench

⚠ For your safety, turn off and unplug your printer.

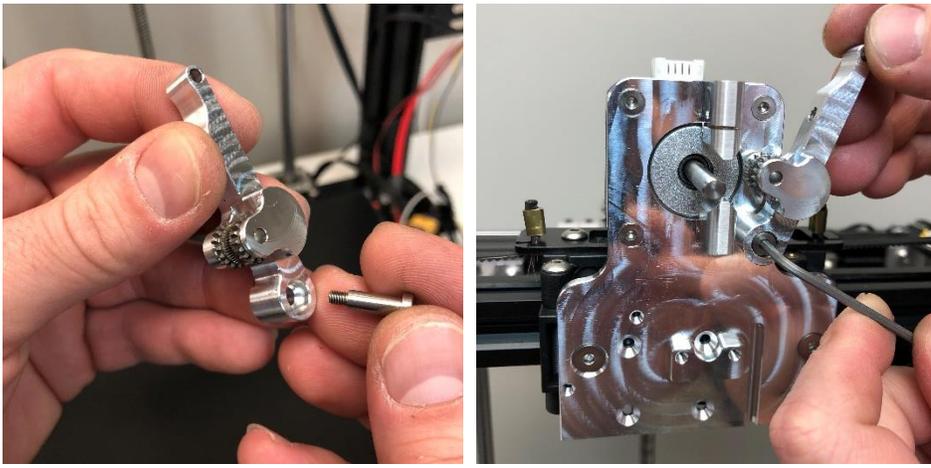## Step 1 - Installing Micro Swiss cartridge on the ExoSlide block
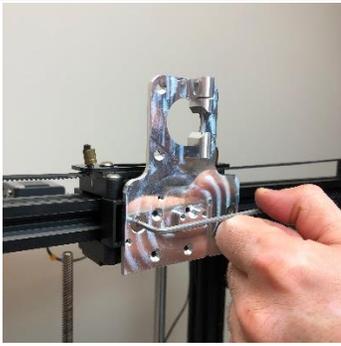
	• Use provided (2x) M4x16mm screws to mount the cartridge on the ExoSlide block

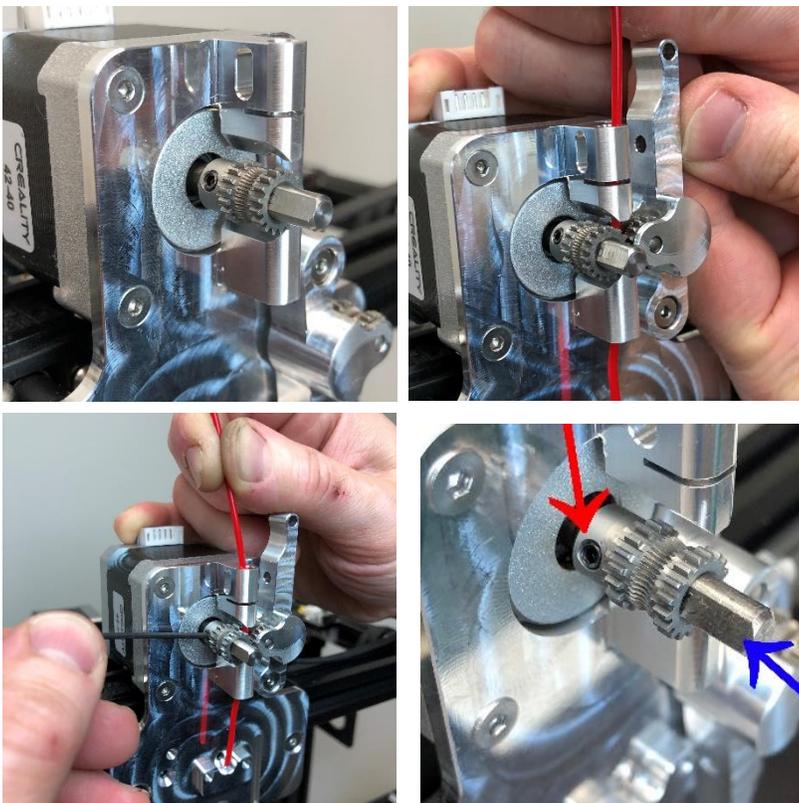## Step 2 – Install extruder motor

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	• Install the extruder motor on the aluminum cartridge • Use the provided (3x) M3 screws Make sure the motor connector is facing upwards.

Step 3 – Install the lever

- Insert the precision shoulder screw into the lever

- Install the lever. Use the 2mm Allen wrench

Step 4 – Install the drive gear

- Install the drive gear on the extruder motor. Note the correct orientation - set screw against the flat part of the shaft

- Engage the lever and insert a piece of filament, preferably rigid PLA. Use back and forth motion to align the center line of lever and drive gear

- Once aligned, keep applying pressure to the lever and tighten the grub screw

- Double check to see if the gears are centered

- Make sure the set screw is on the flat part of the shaft and when tightened, should be flush with the gear shank

Step 5 – Install the lever pin
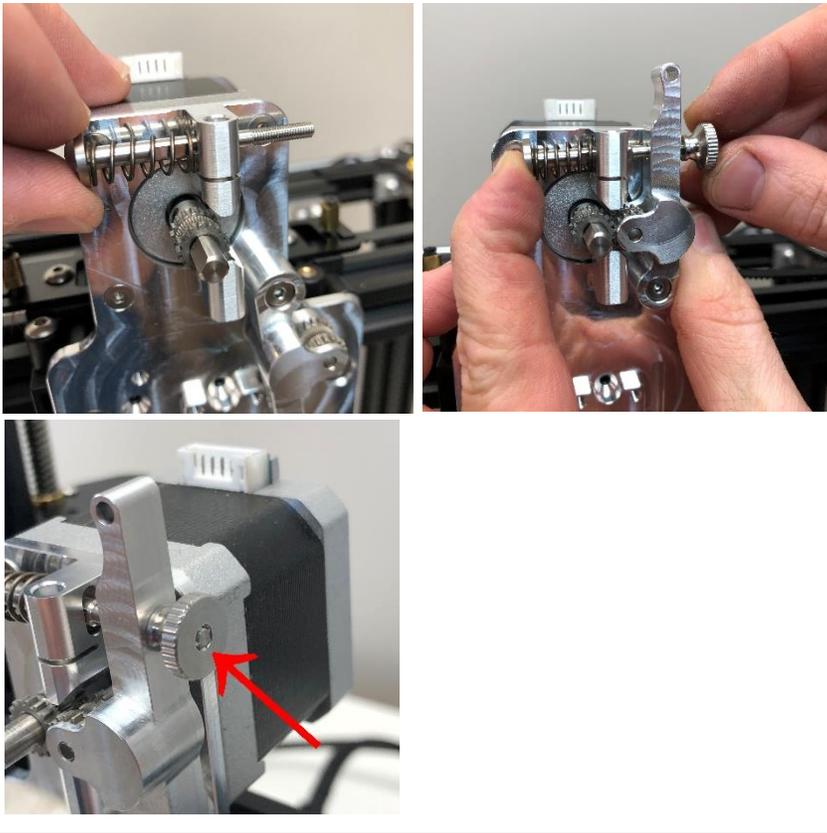
- Screw in the lever adjusting knob until the pin is flush with the knob. *This should be a good starting point for the filament grip*

- For Flexible filament, use less pressure

Step 6 - Assembling the hotend
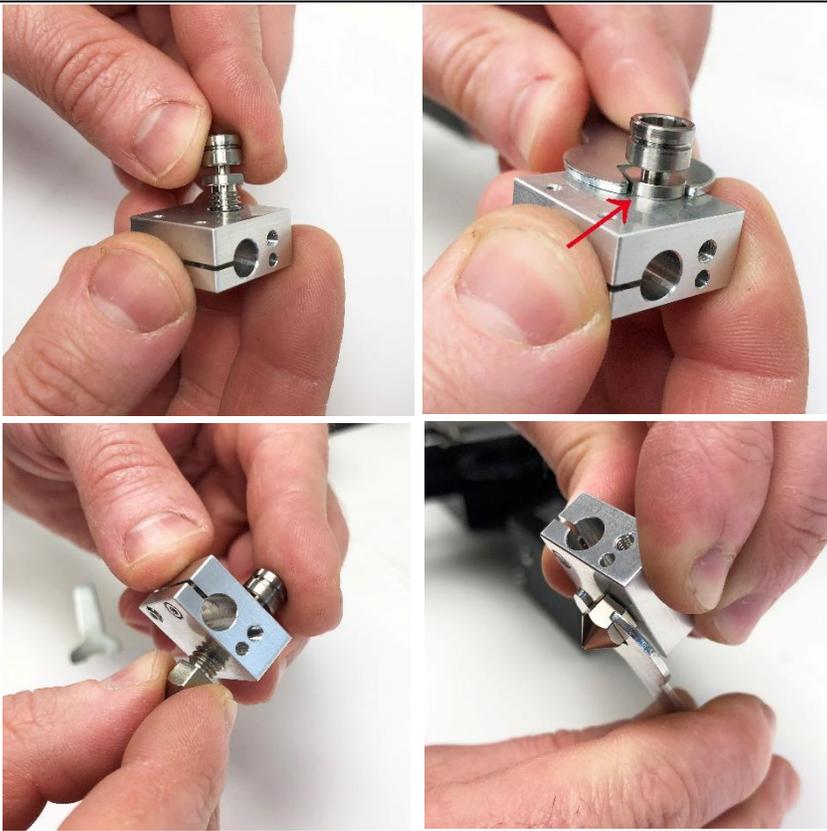
- Start by screwing in and tightening the titanium thermal break. Make sure it is flush with the heater block.

- Install the nozzle

Step 7 - Assembling the hotend
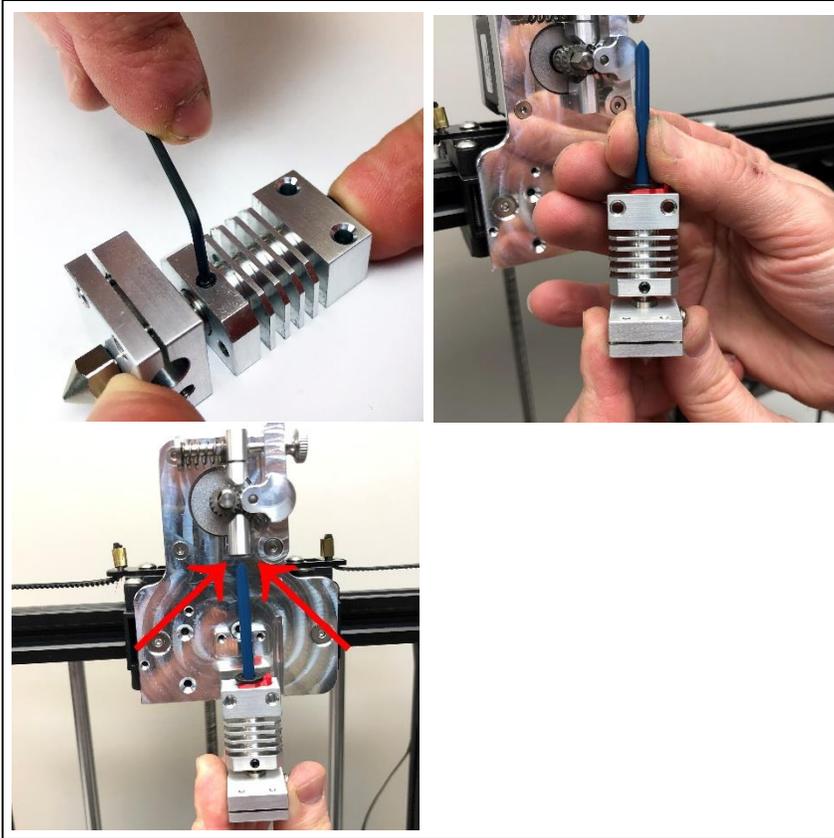
- Insert the heater block assembly into the cooling block and tighten the grub screw

- Insert the provided PTFE liner. Make sure the beveled edge is facing up

- Install the hotend assembly on the extruder plate. The beveled end of the tube should align with the extruder gear, to provide duly constrained filament path

Step 8 - Reinstall the heater cartridge and thermistor
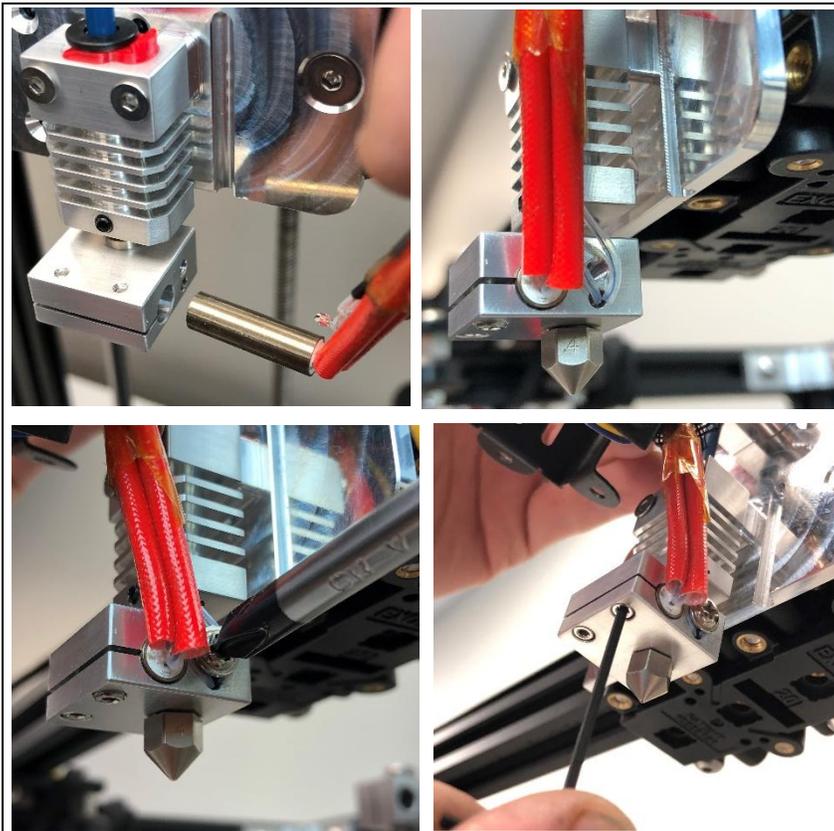
- Reinstall the heater cartridge and thermistor

- Tighten the heater cartridge using the 1.5mm Allen wrench

- Secure the thermistor. Be careful not to overtighten the screw as this can damage delicate wires

Step 9 - Fully seat the nozzle
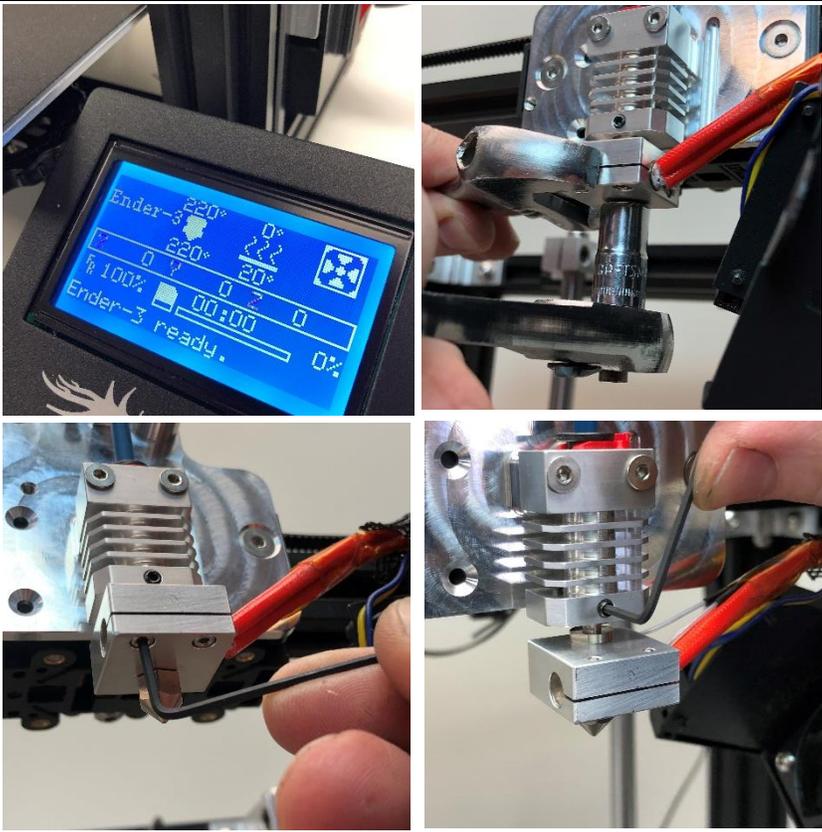
- Turn on the printer and preheat the hotend to 220 degrees Celsius

  ⚠ The hotend is now at 220 degrees Celsius. Be extremely careful not to burn your fingers when tightening the nozzle and the grub screws

- Hold the heater block with the adjustable wrench and use the 7mm socket wrench to tighten the nozzle. If using torque wrench, set it to 30in-lb setting
- The heater cartridge might become loose after initial heat up. Make sure it is fully tightened. Be careful not to burn your fingers!

- Tighten the grub screws on the cooling block. Again, be careful not to burn your fingers!

Step 10 – Cool down your printer

- Cool down your printer and shut it off

- ⚠ Make sure the printer is fully cooled down. Turn off and unplug your printer before finishing installation
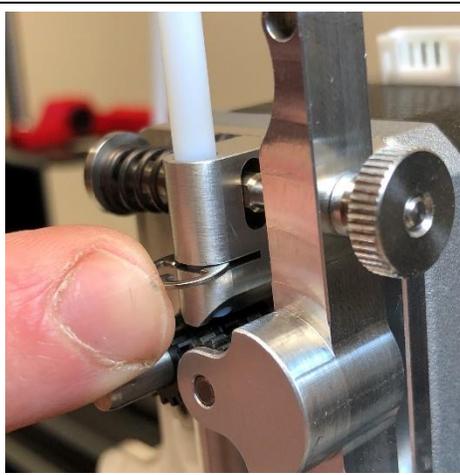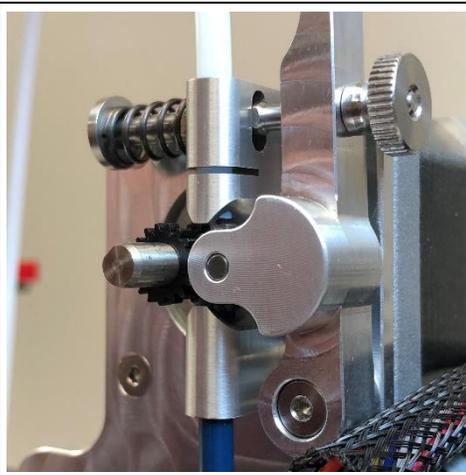
Step 11 – Reinstall the fan
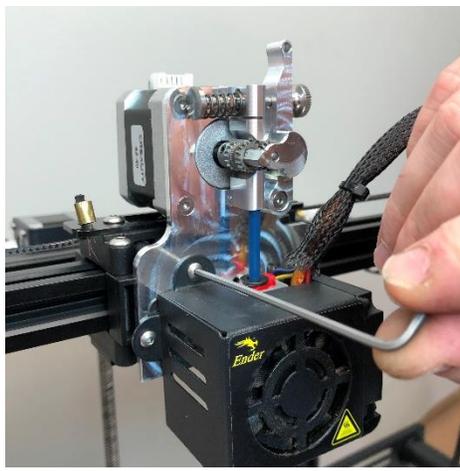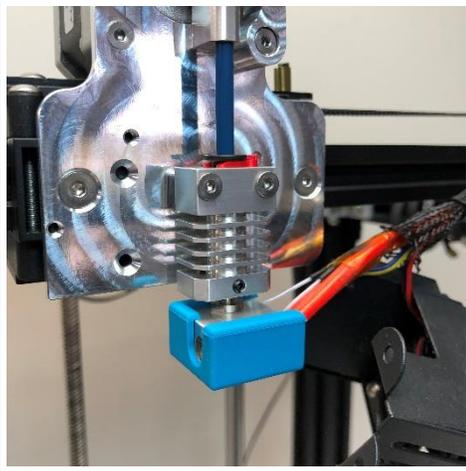
- Install the silicone sock

- Reinstall the cooling fan shroud

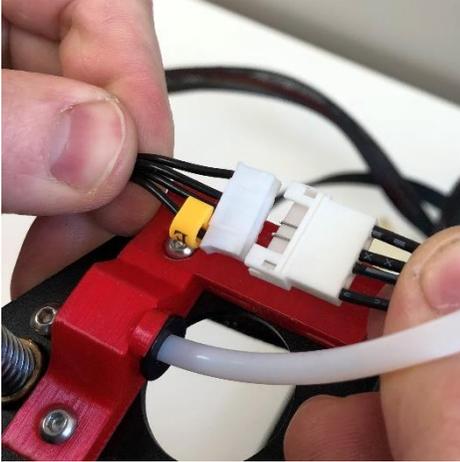## Step 12 – Install the filament guide bracket

- Install the filament guide bracket using provided M3 bolts and nuts

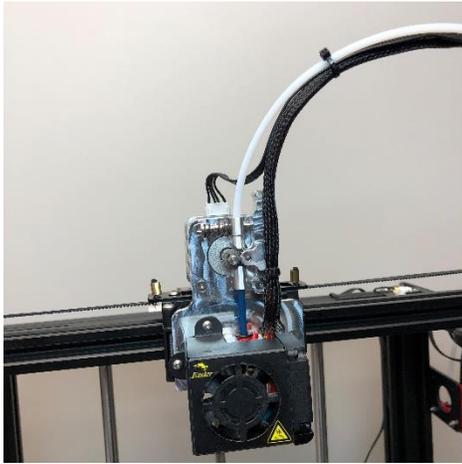## Step 13 – Install the filament guide tube

- Insert the filament guide tube and secure it with the provided retaining clip

Step 14 – Connect the motor

- Connect the extruder motor with the provided custom extension cord

Step 15 – Finishing the installation

- Secure the cables and filament guide tube with zip ties

Step 16 – Fine tune

Extruder steps/mm needs to be calibrated.
Good starting point is 130 steps/mm

- Download this custom **G-code** file to your SD card and run it in your printer. This will set the steps/mm to 130.

- For best results, you will have to fine tune the extrusion multiplier/flow rate in your slicer.

The installation is now complete!

Tips and Tricks

- Reduce the retraction amount. Maximum recommended retraction is 1.5mm @ 35mm/sec.

- With All Metal Hotend, the nozzle temperature might need to be increased by 5-10 °C.

- Make sure the Z-axis rail wheels are adjusted properly to eliminate rail sagging.

- Download and print the **Extruder Knob** from Thingiverse. This makes the manual filament changing process very easy.

MicroSwiss
www.micro-swiss.com