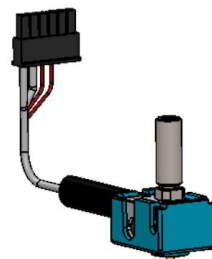| Title	E3D V6
Models	Bolt Pro
Version	1.1
Revision date	2019-09-09
Expected duration	20 minutes

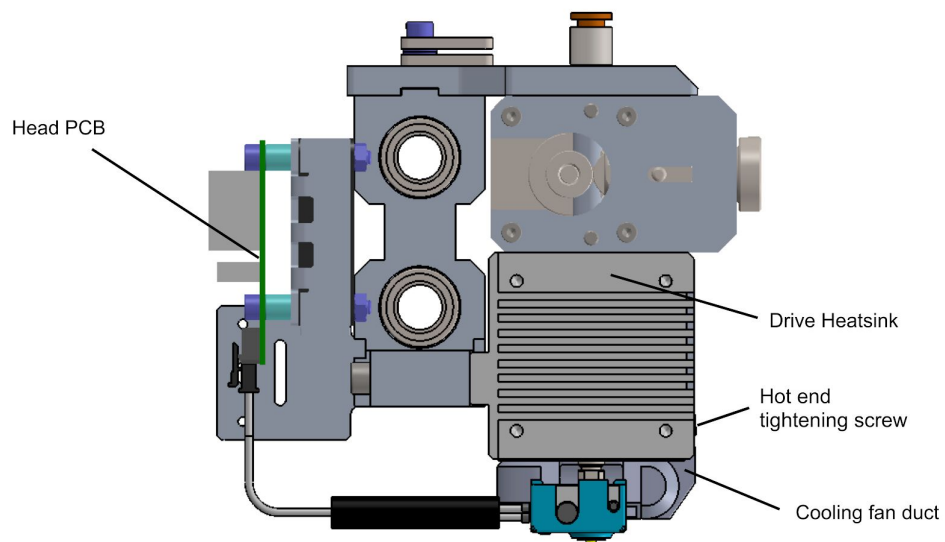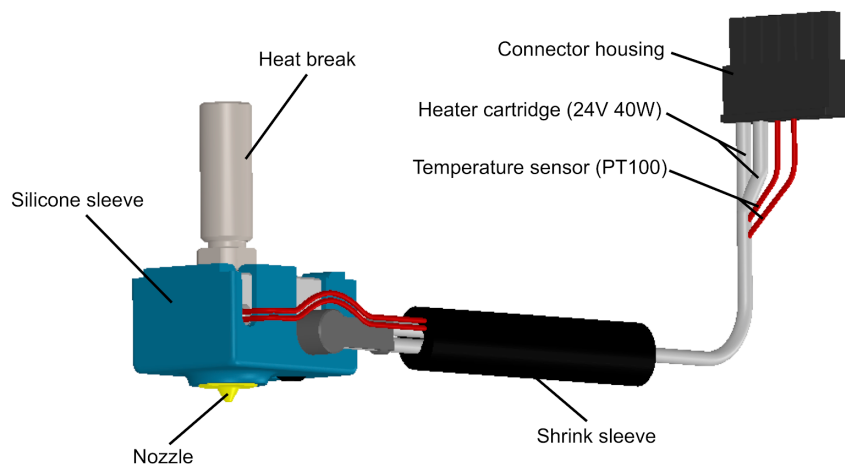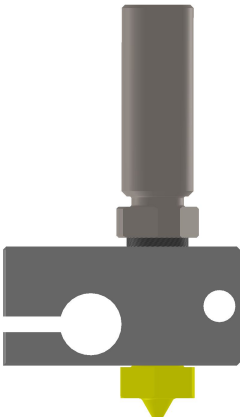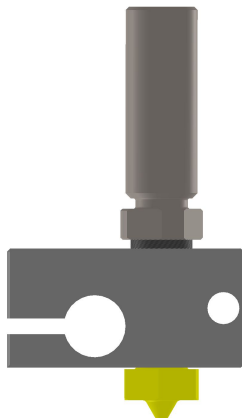| Description |
|---|
| This manual will describe how the E3D V6 hot end can be used with the Leapfrog Bolt PRO. The hot end is responsible for melting filament so it can be extruded.

 - How to assemble the E3D V6 hot end
 - How to install the E3D V6 hot end
 - How to hot-tighten the E3D V6 hot end
 -
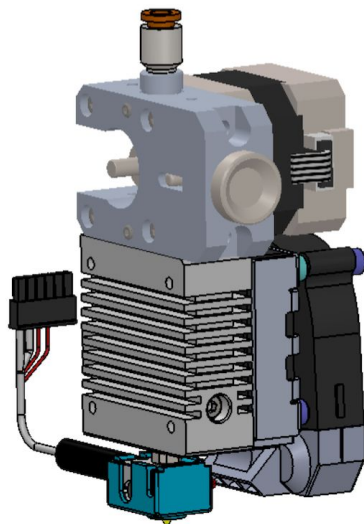
Printhead E3D V6 hot end |

Head PCB

Drive Heatsink

Hot end
tightening screw

Cooling fan duct

Printhead

Heat break

Connector housing

Heater cartridge (24V 40W)

Temperature sensor (PT100)

Silicone sleeve

Shrink sleeve

Nozzle

E3D V6 hot end

Step 1	How to assemble the E3D V6 hot end
a.	Screw Nozzle into the Heater Block into the end closest to the thermistor holes. Unscrew the Nozzle a 1/4 to a 1/2 turn. Please note how the aluminium block is orientated in relation to the nozzle.
b.	Screw the Heat Break into the other side of the Heater Block so it is butts up against the nozzle.
c.	Gripping the Heat break with a spanner, tighten the Nozzle with a torque wrench.. This will tighten the nozzle against the Heat break and ensure that your hot end does not leak. Aim for 2-3Nm of torque on the nozzle - this is about as much pressure as you can apply with one finger on a small spanner. **It is recommended to hot-tighten newly assembled hot ends. when the hot end is installed and pre-heated to a temperature of 230 °C. This should be done prior to loading filament. This will ensure a closed seal between heat break and nozzle. Consult step 3. This step will therefore be repeated.**

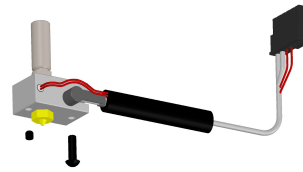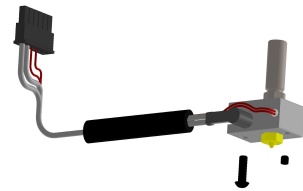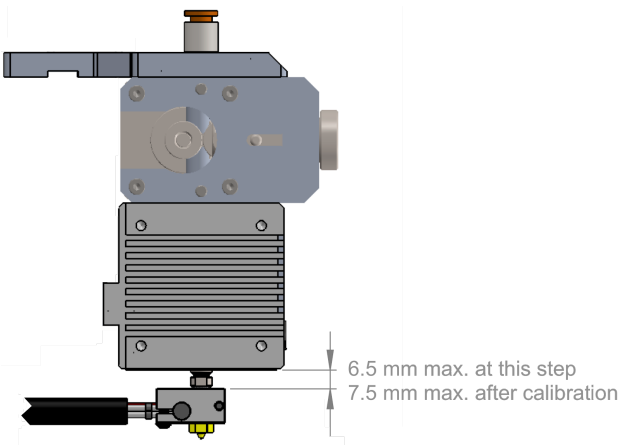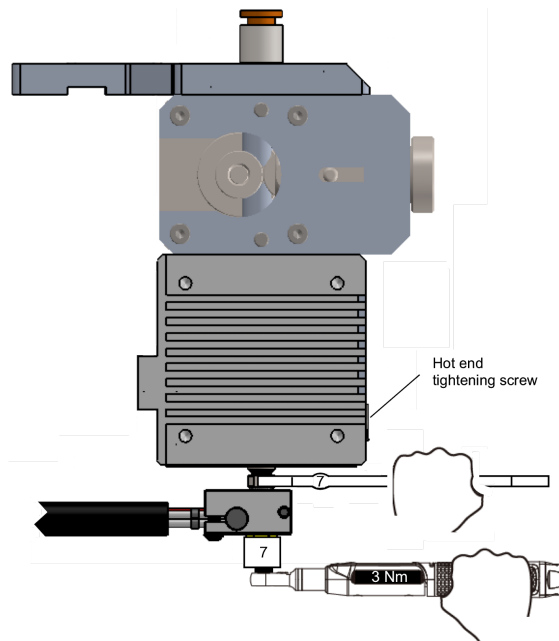|	
d.	This step will describe how the heater cartridge and temperature sensor can be installed. We recommend having the wiring of left printhead facing left and wiring of right printhead facing right. please take this into consideration when inserting the heater cartridge and temperature sensor. **Heater cartridge** Tighten the clamping portion of the heater block around the heater cartridge with the longer M3x10 screw. you should be able to see very slight deformation of the heater block clamp as it wraps around the cartridge for maximum thermal contact. **Temperature sensor** Simply slide the sensor cartridge into the heater block and use the supplied M3 grub screw to fix the cartridge into place. Tighten the grub screw until it just touches up against the cartridge, then do one more half turn. It is important not to over-tighten the screw against the relatively soft copper cartridge.	 Hot end - **right** printhead (wiring inserted **right**) Hot end - **left** printhead (wiring inserted **left**)

Step 2	How to install the E3D V6 hot end
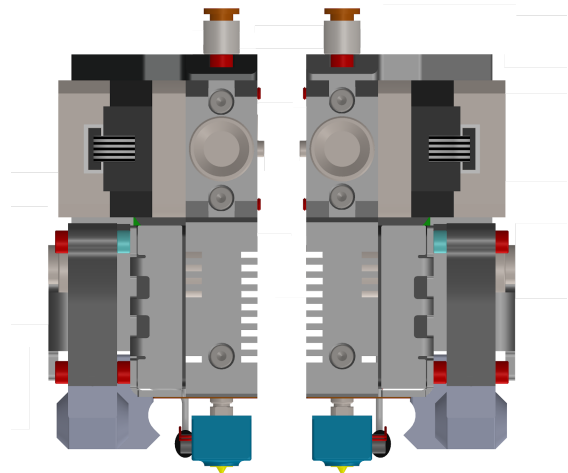
Drive Heatsink

Hot end tightening screw
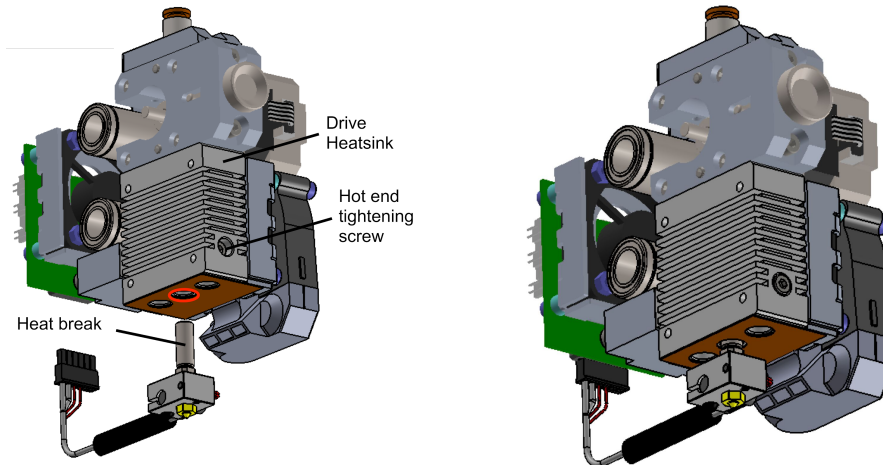
Heat break

a.	Make sure the hot end tightening screw is loosened. Insert the hot end into the drive heatsink.
b.	Insert the heat break fully into the drive heatsink. Distance between heat break and radiator block should be <6.5mm. The heat break is allowed to be slid out **a maximum of ±1mm**. to accompany for leveling printheads during the final step of bed leveling sequence. Please do not exceed this value. 6.5 mm max. at this step 7.5 mm max. after calibration
c.	Tighten the hot end tightening screw(s). Aim for 1-2Nm of torque. **This will be repeated with 2Nm set-value in step 3.**
d.	Insert the connector housing of the hot end into the head pcb.

Step 3	Hot tightening

Hot end
tightening screw

3 Nm

a.	Turn your Leapfrog machine on, wait for it to boot up , then press 'begin homing'
b.	Select ABS (or any other 230 °C material) and press 'Pre-heat'. Wait for temperature status to be ready.
c.	Collect a torque wrench cable of 2-3Nm, Allen key size 3 and spanner size 7.
d.	● place a torque wrench 3Nm on the nozzle. ● While keeping the torque wrench in place: loosen the hot end tightening screw ● While keeping the torque wrench in place: place your spanner size 7 on the heatbreak ● While holding the spanner in place, tighten the torque wrench until 3Nm is reached. ● While keeping the torque wrench in place: tighten the hot end tightening screw lightly. ● Use a torque wrench to tighten the hot end tightening screw (2Nm).
e.	Press done and wait for the hot ends to cool down to room temperature.
d.	Mount the blue silicone sleeve around the heater block. Make sure the wires can go out and are not trapped in between the heater block and silicone. The silicone is rated to a temperature of 300℃. Using the silicone between 300℃ and 400℃ can result in reduced life. Printing without the blue silicone sleeve could result in reduced print quality.
e.	Navigate to settings / maintenance / calibrate bed and follow the procedure before starting your next print job.