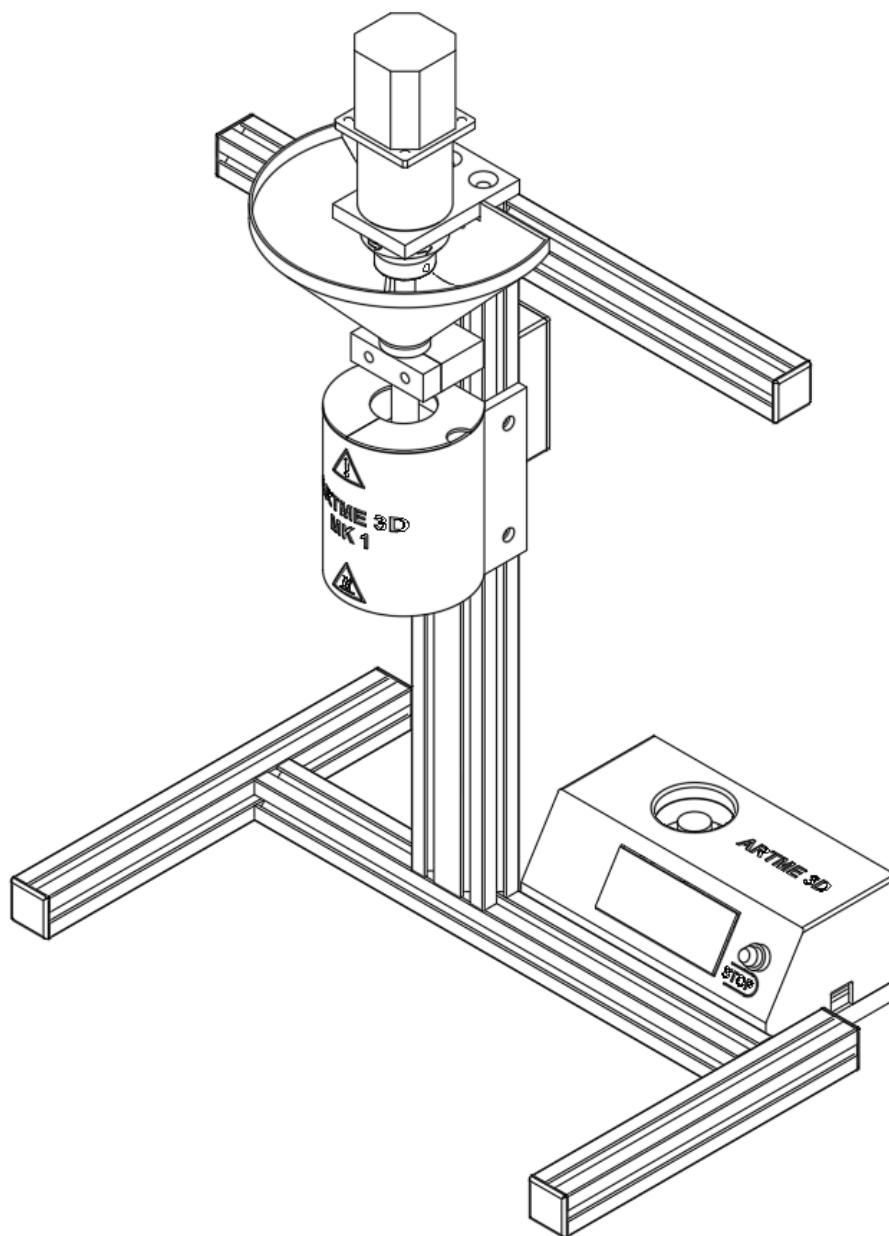


Assembly instructions

03 Insulation

Original Desktop Filament Extruder MK1 by ARTME 3D

Version 30.05.2022





The assembly instructions of ARTME 3D's original desktop filament extruder MK1 is an open source project used under a CC BY-SA license:

You may:

- Use, modify and redistribute any content.

Under the following condition:

- Attribution: David Thönnies of ARTME 3D
- Link my project: www.artme-3d.de
- Indicate what has been changed
- Publish under the same license

For more details about the license see <https://creativecommons.org/licenses/by-sa/4.0/>

Additional tools required for this assembly section:

Rubber gloves
Dust mask
Folding rule

Packages overview

Package 0: Delivered carton
Package 1: Screws (SC)
Package 2: Spare Parts (SP)
Package 3: Custom Metal Parts (CM)
Package 4: Extruder Barrel (EB)
Package 5: Electronics (EL)
Package 6: Tools (TO)

The insulation protects you from burns on the hot parts. The insulation greatly reduces the energy consumption of the extruder and provides better heat distribution and better extrusion. Therefore, it is strongly recommended to install the insulation as described below.

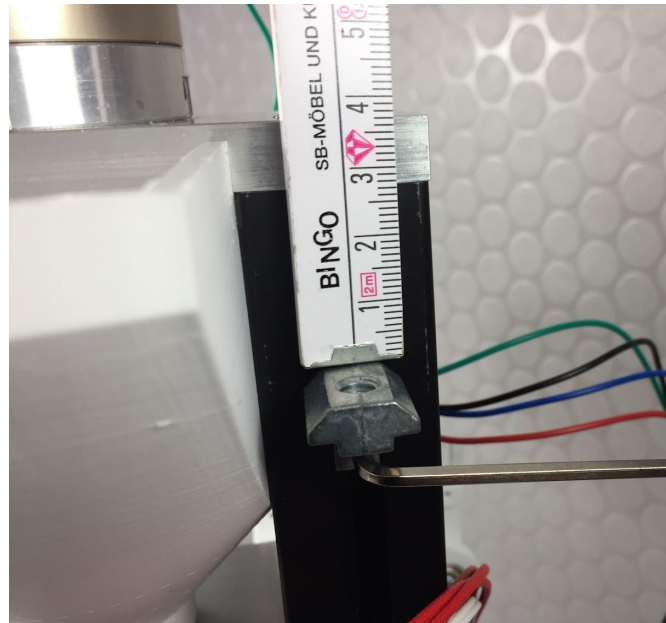
It is recommended to make the pressure parts of the insulation in PETG. If you print the insulation parts in PLA and insert the rockwool properly, operation up to 190°C is possible. Beyond that, the cover may become soft after prolonged operation and may deform.

Caution: The fibers of the rock wool may irritate the skin and cause itching. Use gloves or rubber gloves when handling. Avoid dust generation by working slowly. Use a dust mask.

Step 1:

Remove from package 6: Allen wrench 3mm (TO07).

Slide the prepared connector upwards in the right-hand groove of the aluminum profile and tighten the fastening screw slightly. The connector has a distance of approx. 37 mm to the upper edge of the motor holder.



Step 2:

3D print: 1x cover (IN02), 1x cover left (IN03), 1x cover right (IN04)

Remove from package 1: 2x hammer nut M4 (SC16), 2x cheese head screw M4x10 (SC05)

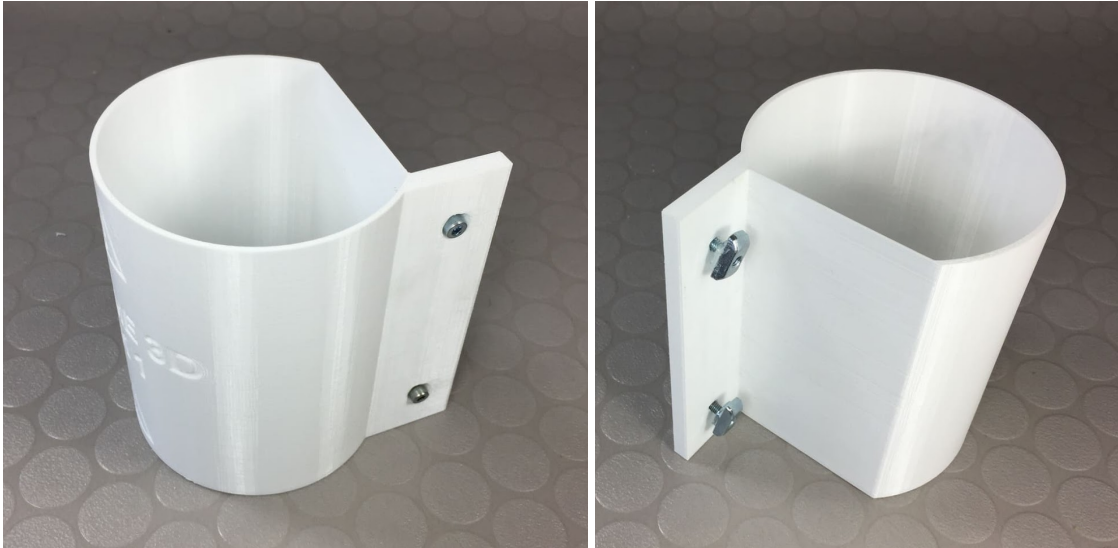
Remove from package 0: 1x rock wool 120x210x40mm (IN01)



Step 3:

Tool from package 6: Allen wrench size 3.

Insert the cap screws through the mounting holes and turn the hammer nuts onto the screws.



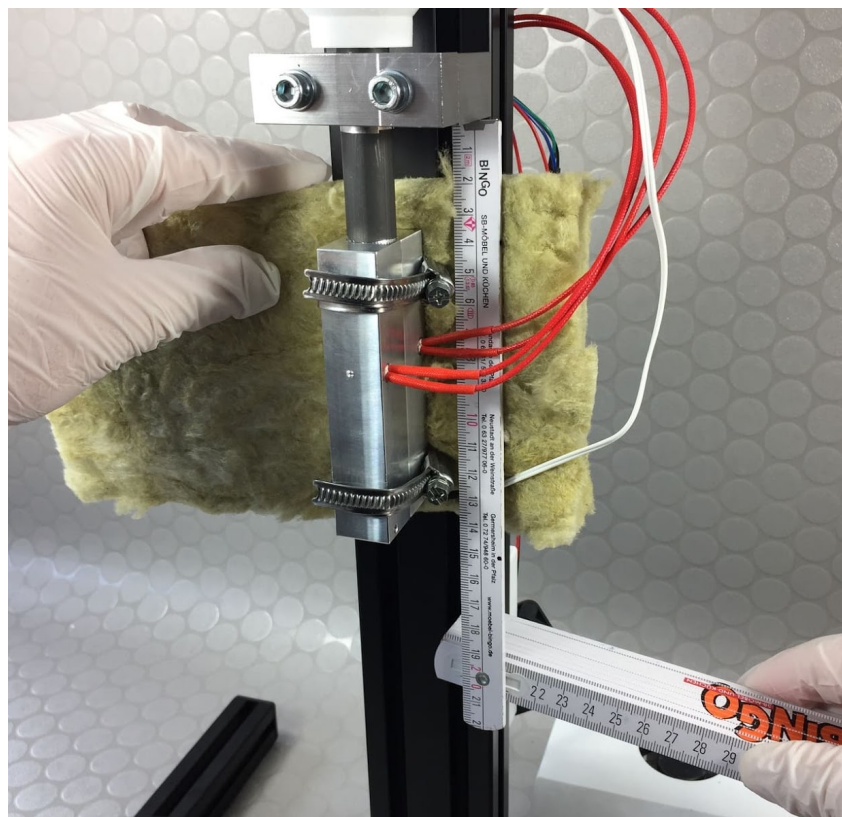
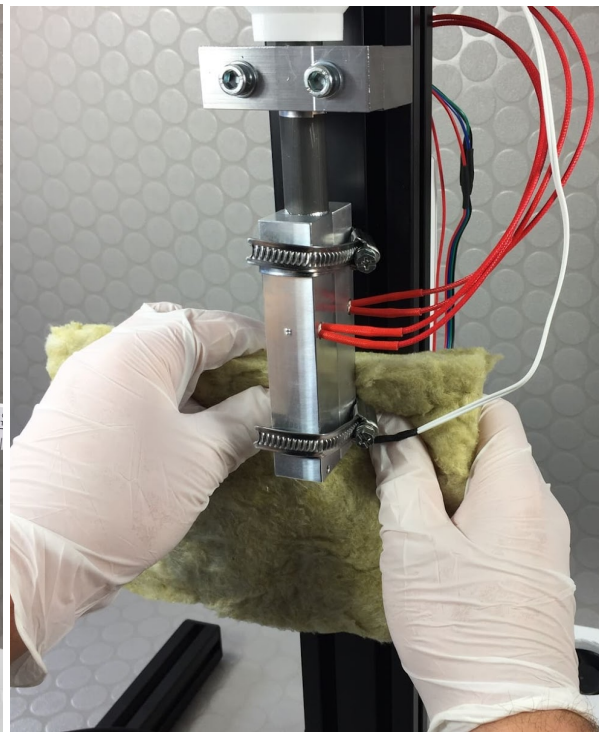
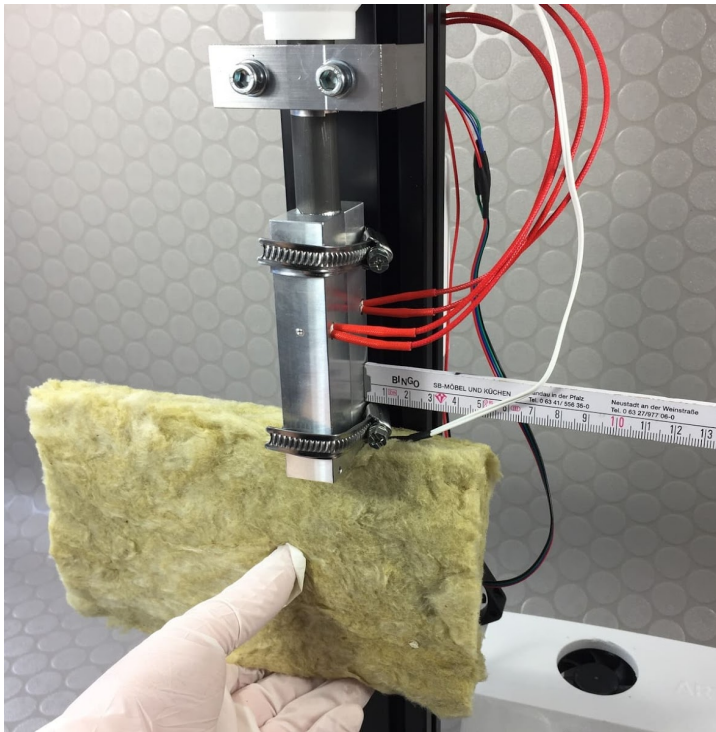
Step 4:

Flatten the rock wool over the entire surface several times by hand. This makes it more pliable.



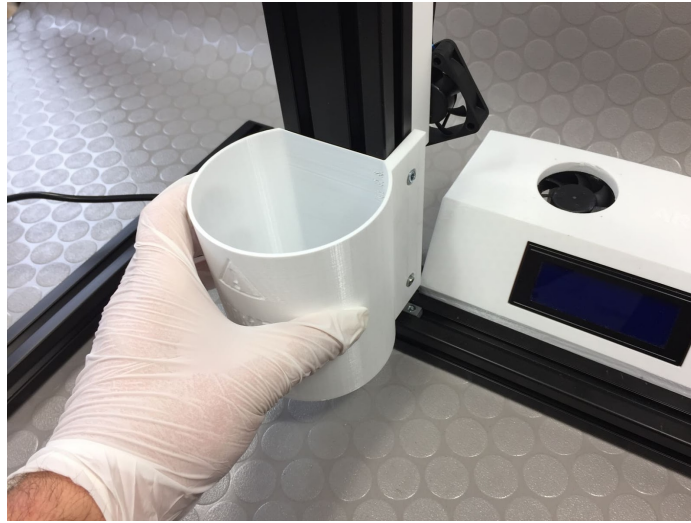
Step 5:

Align the rock wool, see picture. The rock wool protrudes 50mm on the right side. Measure from the heating element. Then clamp the rock wool behind the heating element and push it up. To do this, press the wool together with your thumbs and push it so that it does not get caught on the hose clamps. The correct height is reached when the wool is 20mm away from the tube holder.



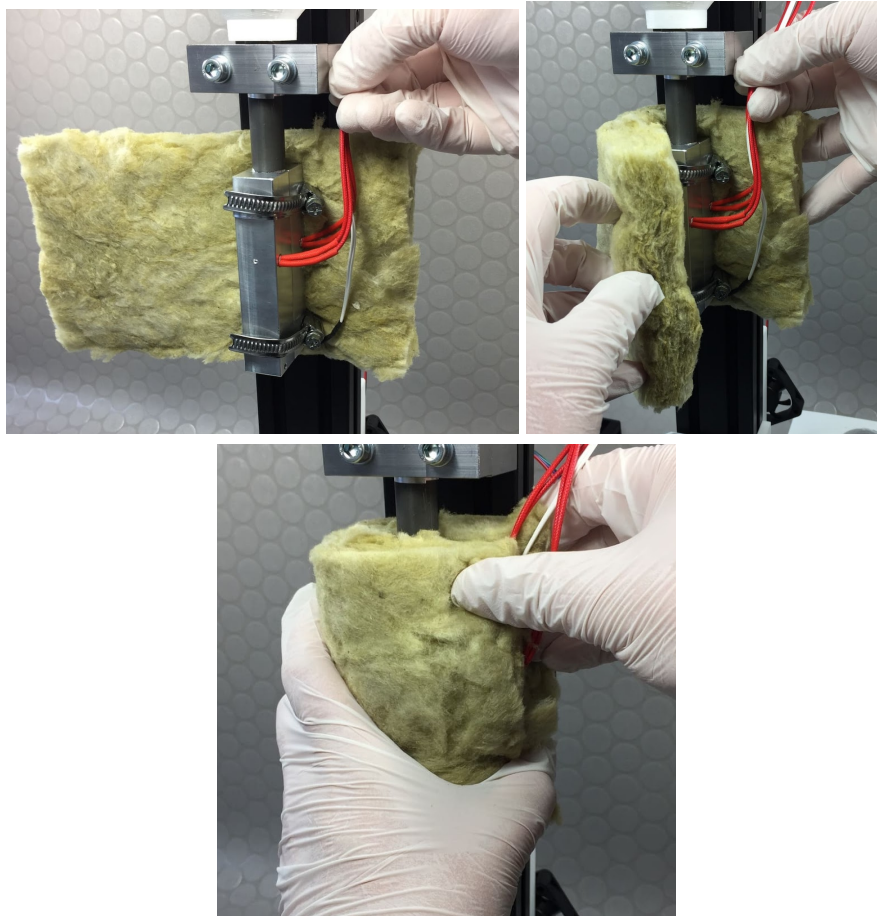
Step 6:

Align the cover with the aluminum profile. Insert the hammer nuts into the lateral groove of the profile but do not tighten them yet.



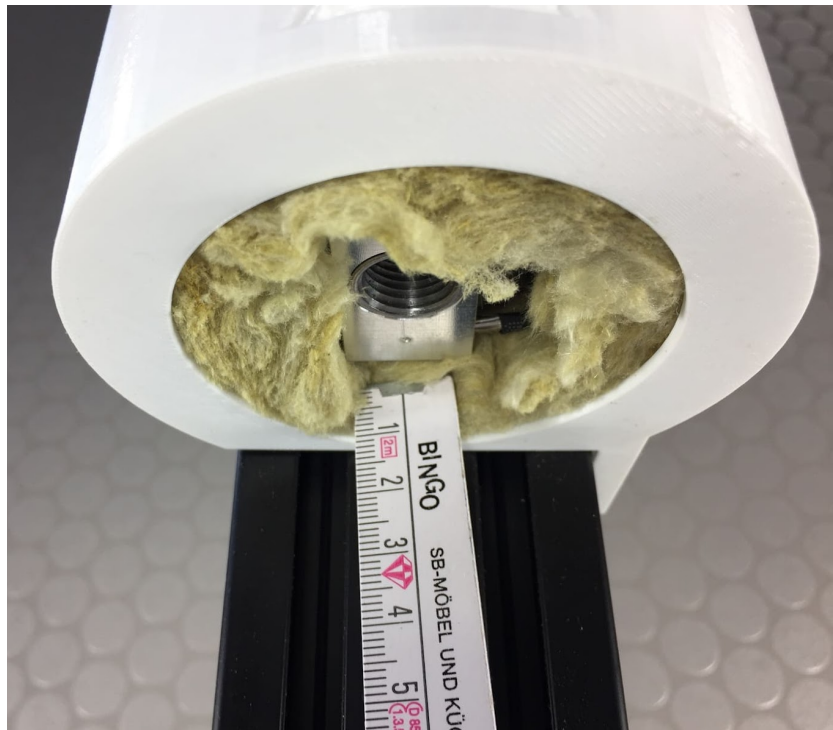
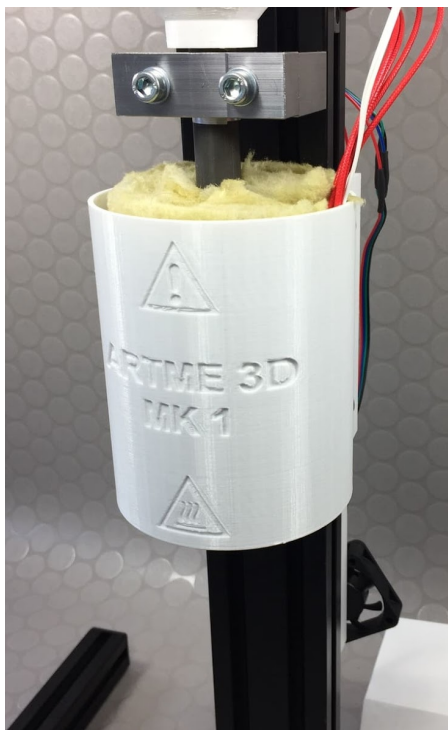
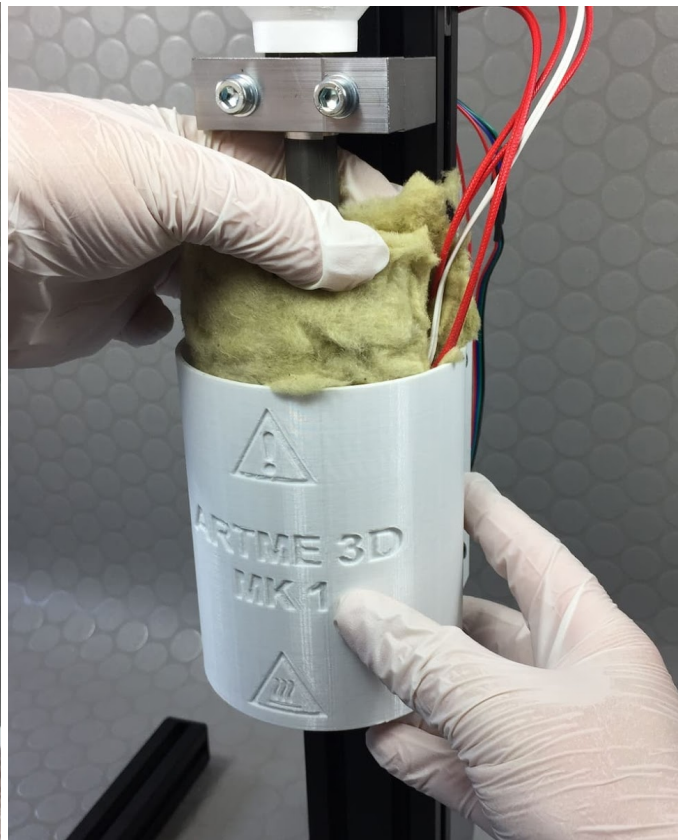
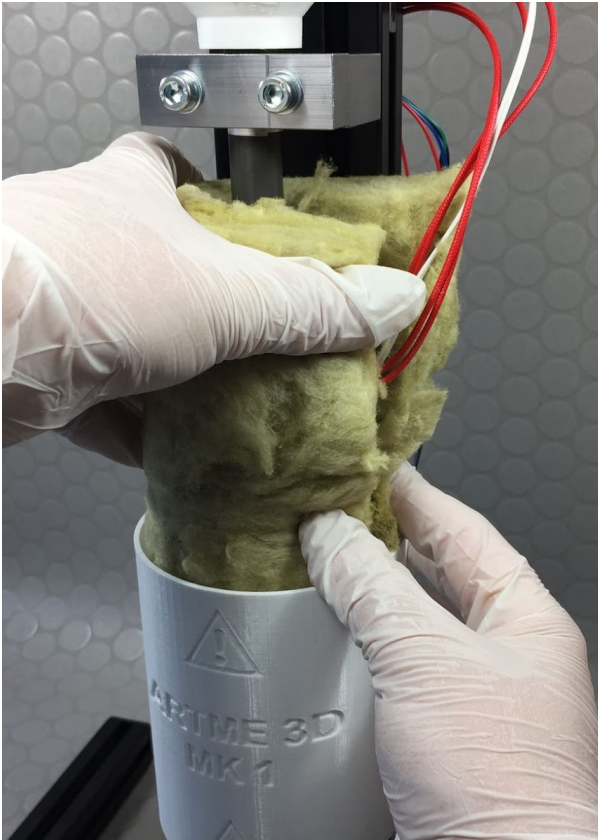
Step 7:

Carefully bend the rock wool around the heating element. Be careful not to break through the wool. Guide the lines still at the top during this process. Make sure that the leads are not kinked.



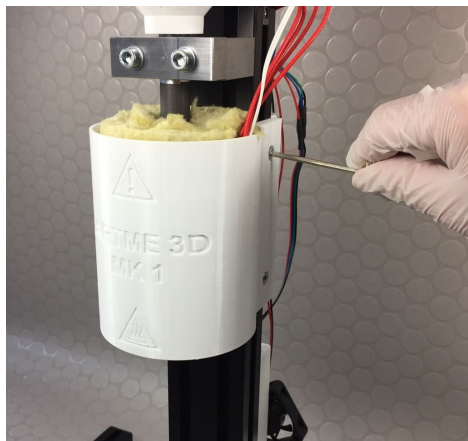
Step 8:

Slide the cover over the rock wool from below. While doing so, hold the wool together with one hand and push the cover up with the other hand. Also make sure that the hammer nuts remain in the lateral groove of the aluminum profile. The correct height is reached when the lower edge of the cover is approx. 8 mm from the heating element, see picture.



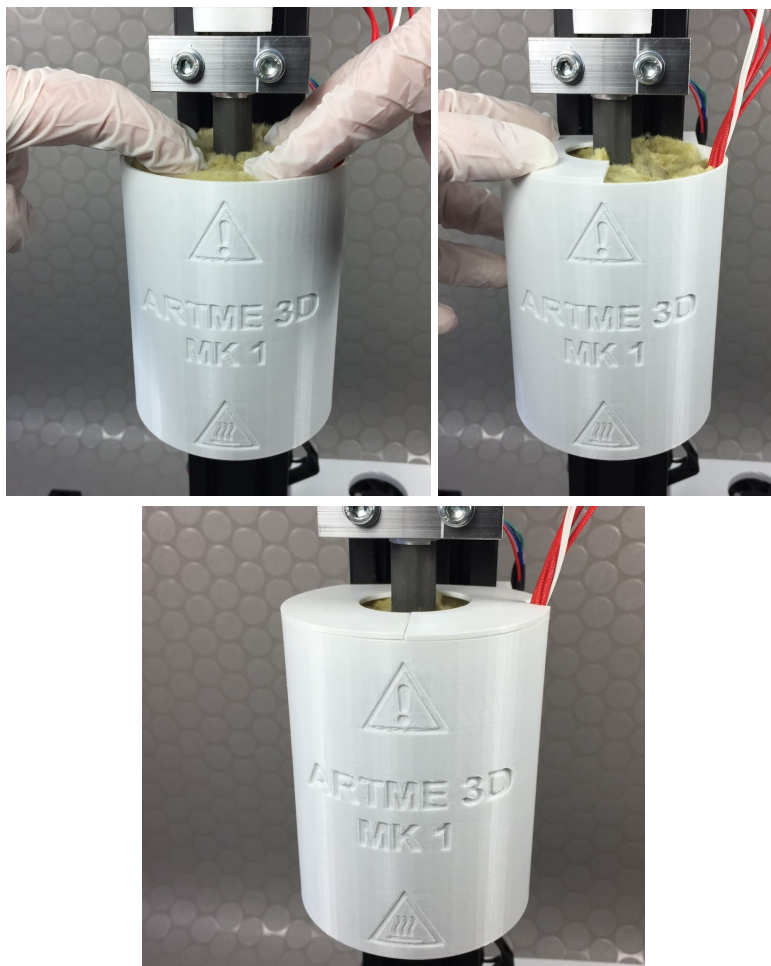
Step 9:

Tighten the cap screws. Make sure that the hammer nuts turn inside the groove. Do not overtighten the screws or the 3D printed part may break.



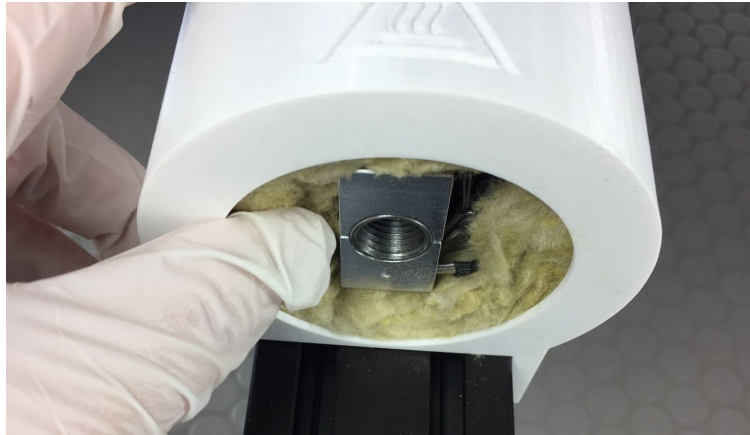
Step 10:

Press the protruding rock wool together a little with your fingers. Check that the lines are neatly routed and come out on the right side between the two ends of the rock wool. Then put on the left and right lids. The right cover has a recess for the lines to pass through.



Step 11:

On the lower side, press any protruding rock wool into the cover, distribute it and push it into place.



Done:

Now continue with assembly instructions "04-Sensor assembly".

