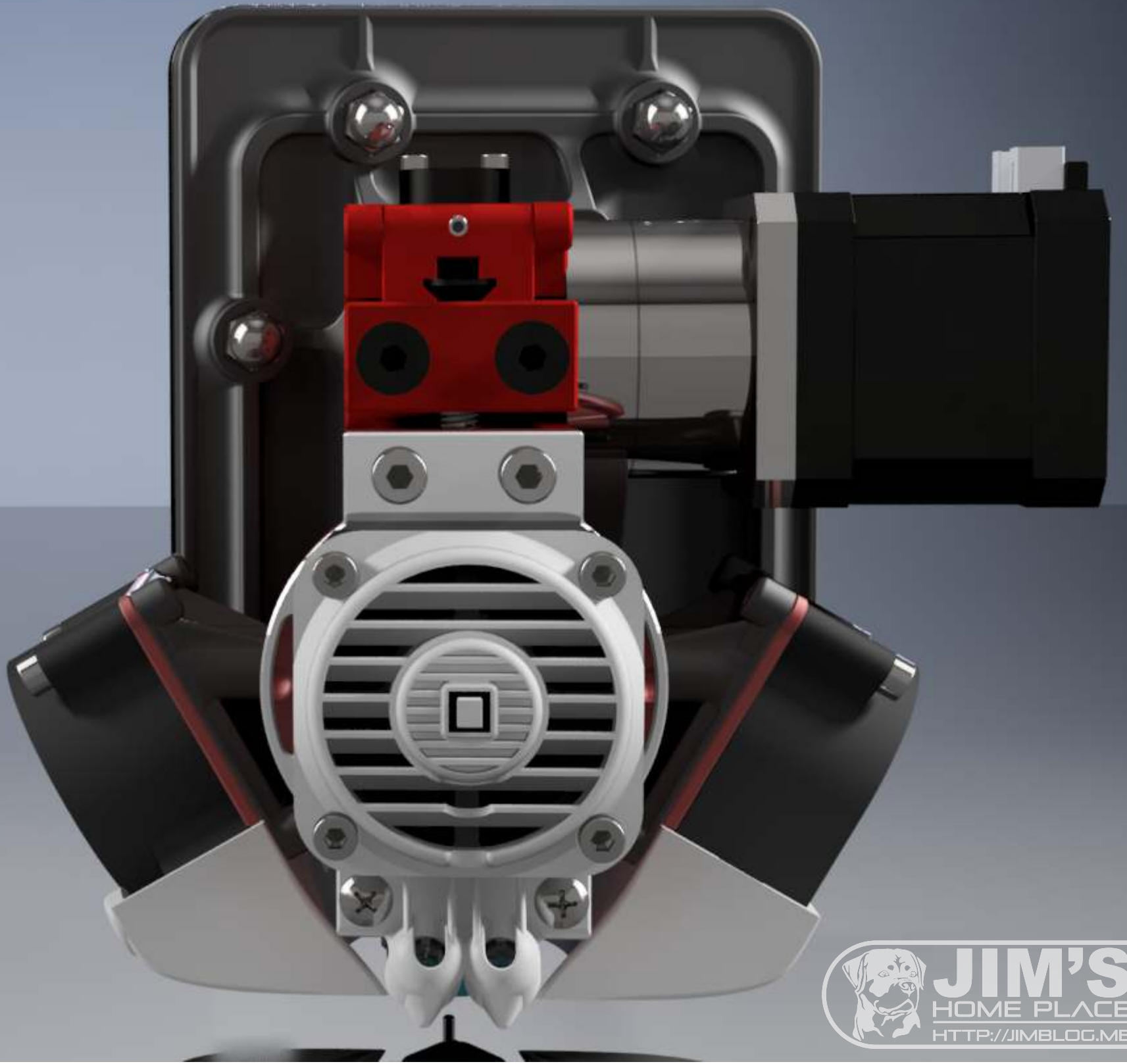
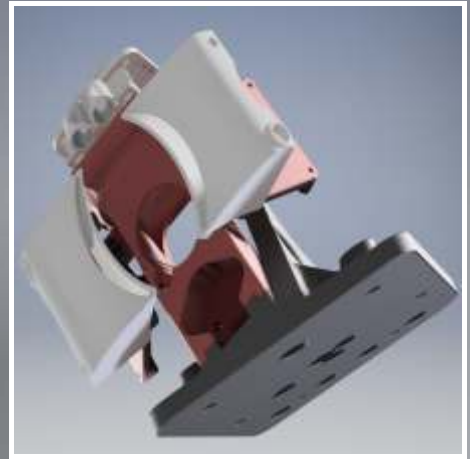
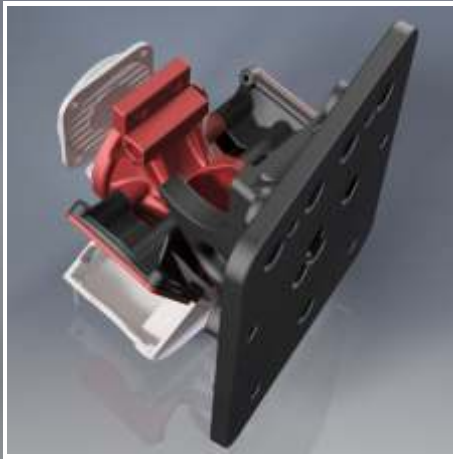
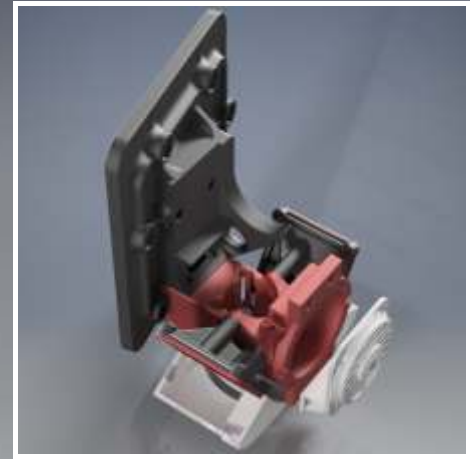
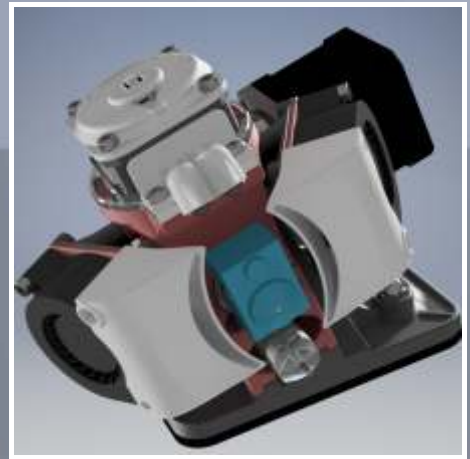


# TEVO BLACK WIDOW TOOL HEAD UPGRADE

# CHELICERAE

- 13 DEGREE MOUNT
- HEAT SINK AIR DUCT
- DUAL LAYER COOLING
- BL-TOUCH MOUNT
- FRONT SPOT LIGHT

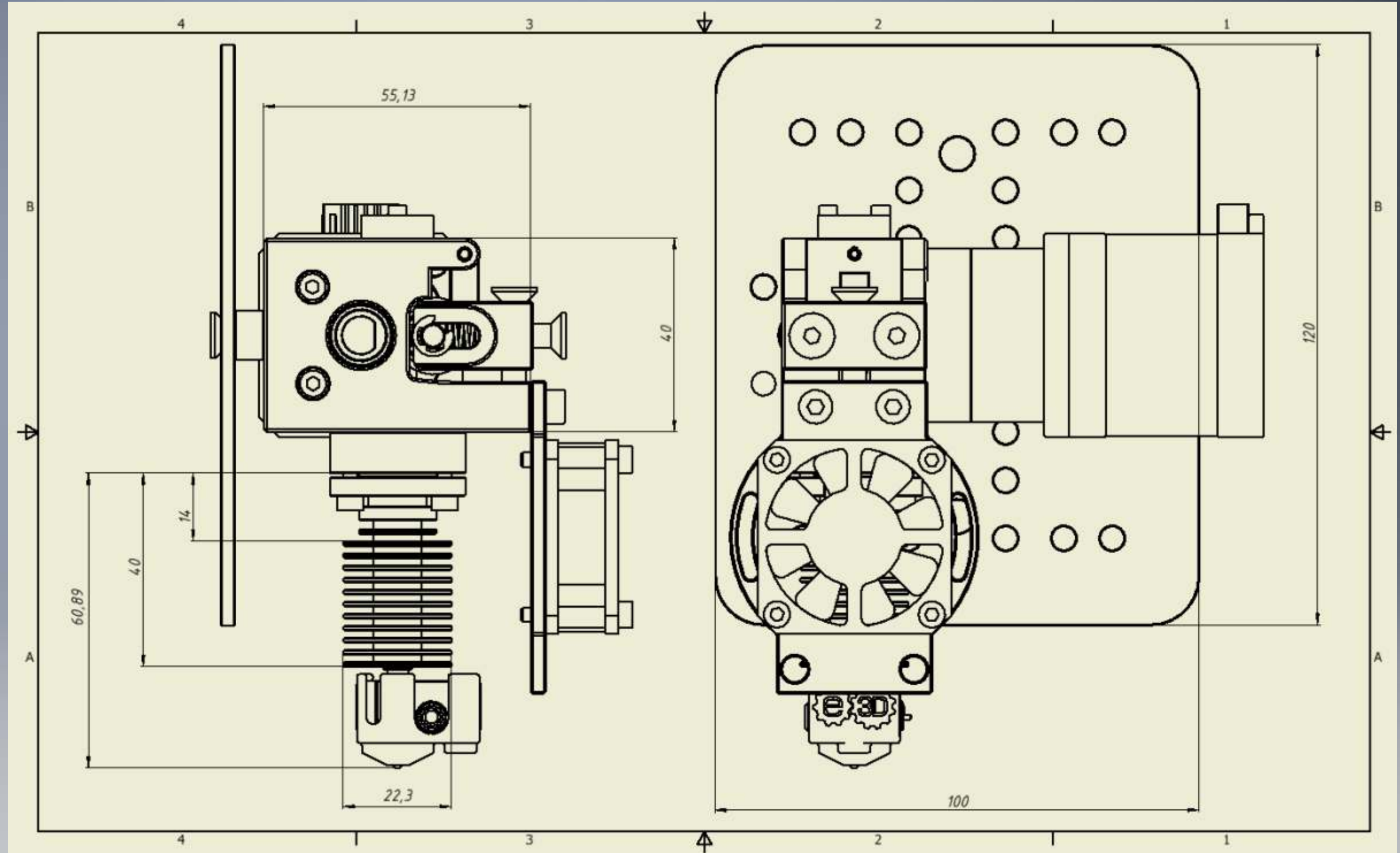


# STEP 1

# CHECK THE KEY SIZES

This upgrade was designed for use with stock TEVO Black Widow tool head or with stock TEVO Black Widow tool head upgraded by the standard e3dv6 hot end parts.

Check your printer for key sizes important for this upgrade:



## STEP 2

## PRINT ALL THE PARTS

All files contains the parts oriented in recommended position for printing without any support material.

Originally, all the parts were designed to be printed with 0.3 mm printing nozzle, but 0.4 mm should be fine too.

### mount.stl

Layer width: 0.3 - 0.4 mm  
Layer height: 0.15 - 0.25 mm  
infill: 45%  
perimeters: 3-4

### air-duct\_back.stl

Layer width: 0.3 mm  
Layer height: 0.15 mm  
infill: 35%  
perimeters: 2-3

### fan\_grill.stl

Layer width: 0.3 mm  
Layer height: 0.1 - 0.15 mm  
infill: 35%  
perimeters: 1-2

### air-duct\_front.stl

Layer width: 0.3 mm  
Layer height: 0.15 mm  
infill: 35%  
perimeters: 2-3

### fan\_grill-cap.stl

Layer width: 0.3 mm  
Layer height: 0.1 - 0.15 mm  
infill: 35%  
perimeters: 1-2

### soffit.stl

Layer width: 0.3 mm  
Layer height: 0.1 - 0.15 mm  
infill: 35%  
perimeters: 2-4

blower-nozzle.stl 2 pcs.

Layer width: 0.3 mm  
Layer height: 0.1 - 0.15 mm  
infill: 35%

blower\_mount-right.stl

blower\_mount-right.stl

Layer width: 0.3 - 0.4 mm  
Layer height: 0.15 - 0.20 mm  
infill: 35%  
perimeters: 3-4

blower\_base.stl 2 pcs.

Layer width: 0.3 - 0.4 mm  
Layer height: 0.20 - 0.25 mm  
infill: 35%  
perimeters: 2-3

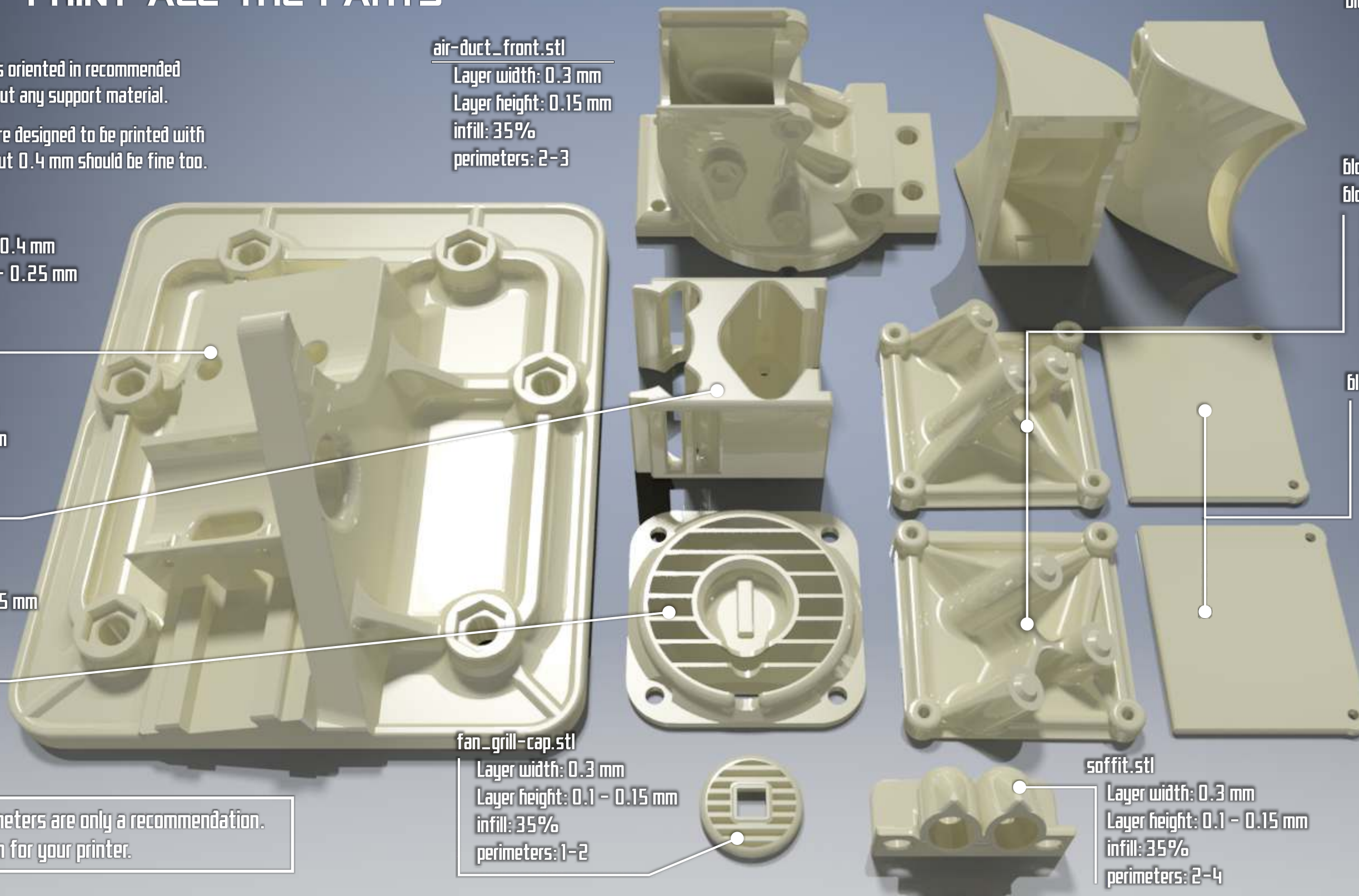
Recommended materials:  
ABS (blower nozzles)  
PLA (other parts)

Estimated printing time:  
22-26 hours

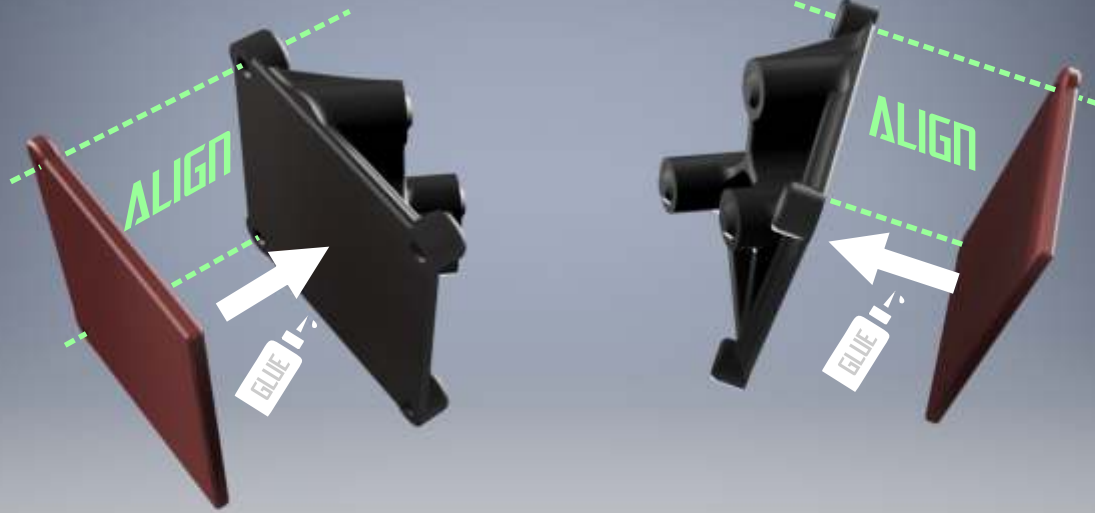
Plastic weight:  
180-200 g

/with recommended parameters/

The presented parameters are only a recommendation.  
You can change them for your printer.

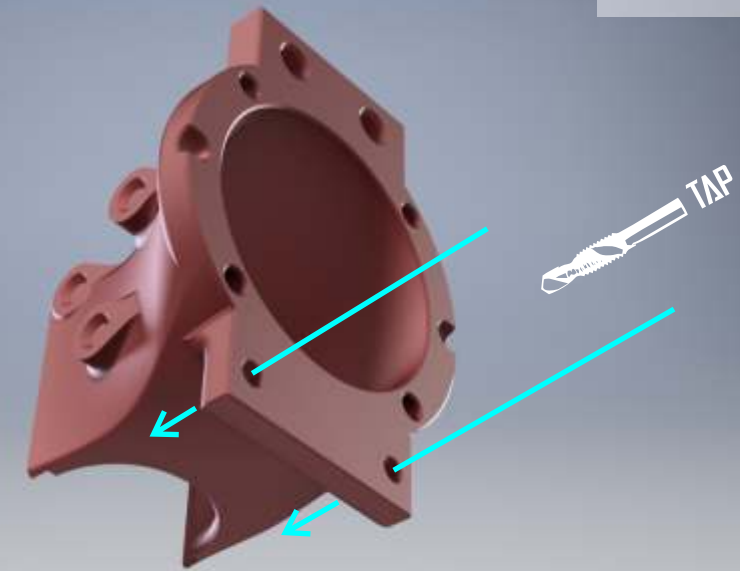


### STEP 3



### STEP 5

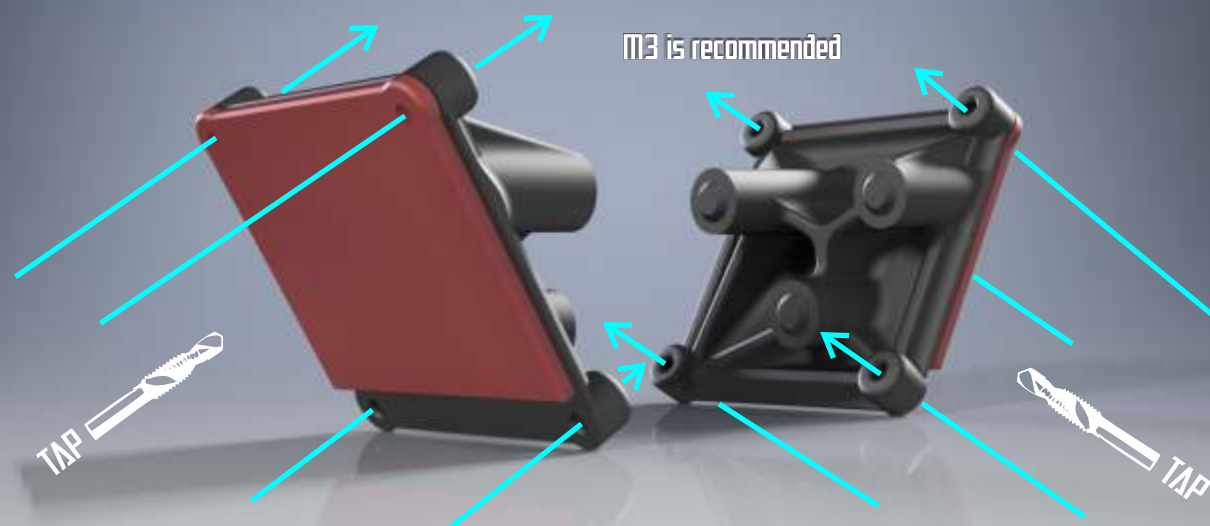
#6 6-32 or  
M4 is recommended



### STEP 4

**!!IMPORTANT!**  
Do this step before you proceed next!

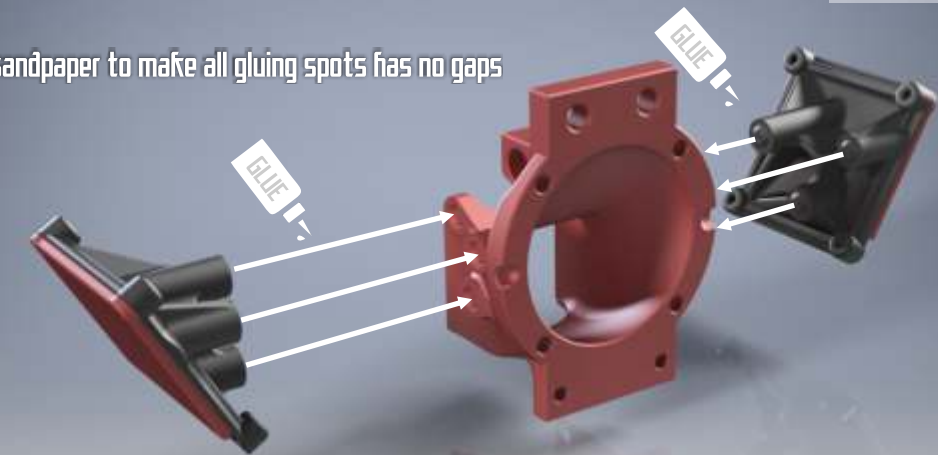
M3 is recommended



Alternatively: you can use long M3 bolts with M3 nuts to fix blowers thru these holes. In this case, predrill them first.

### STEP 6

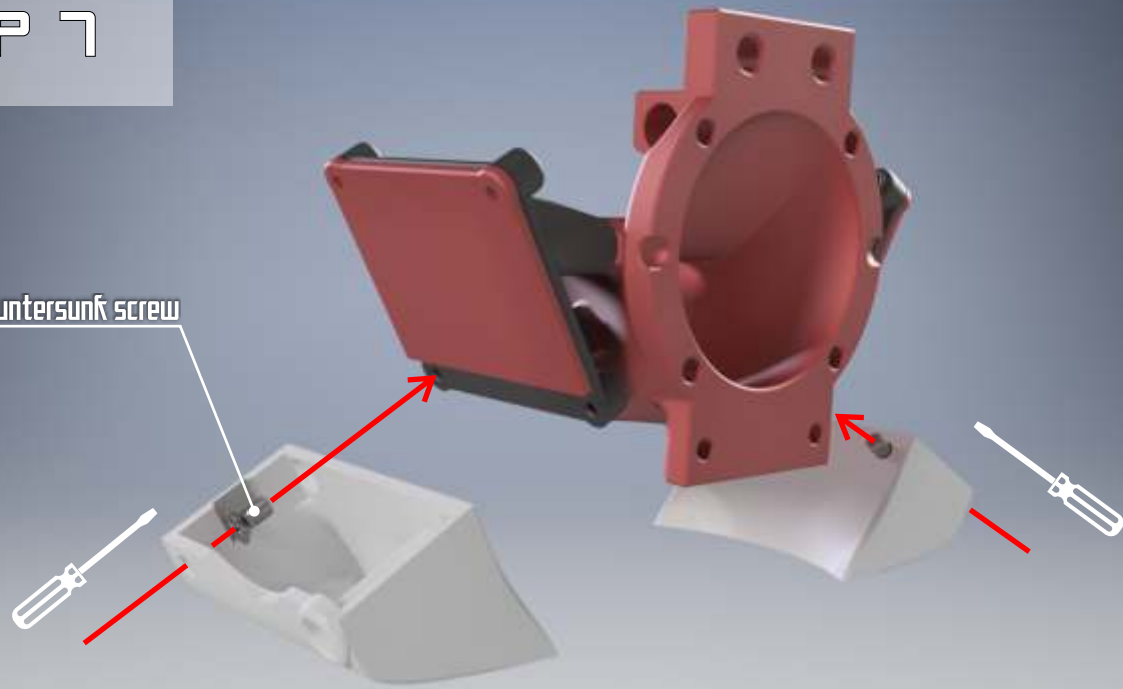
Use file and/or sandpaper to make all gluing spots has no gaps



Office rubber bands are good for fixing the parts while glue is drying

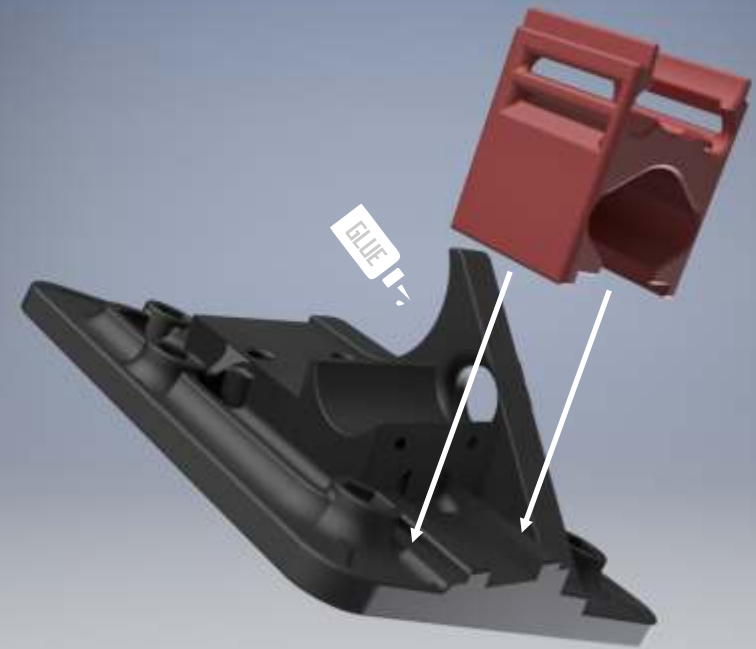
# STEP 7

M3 x 6 countersunk screw  
x2



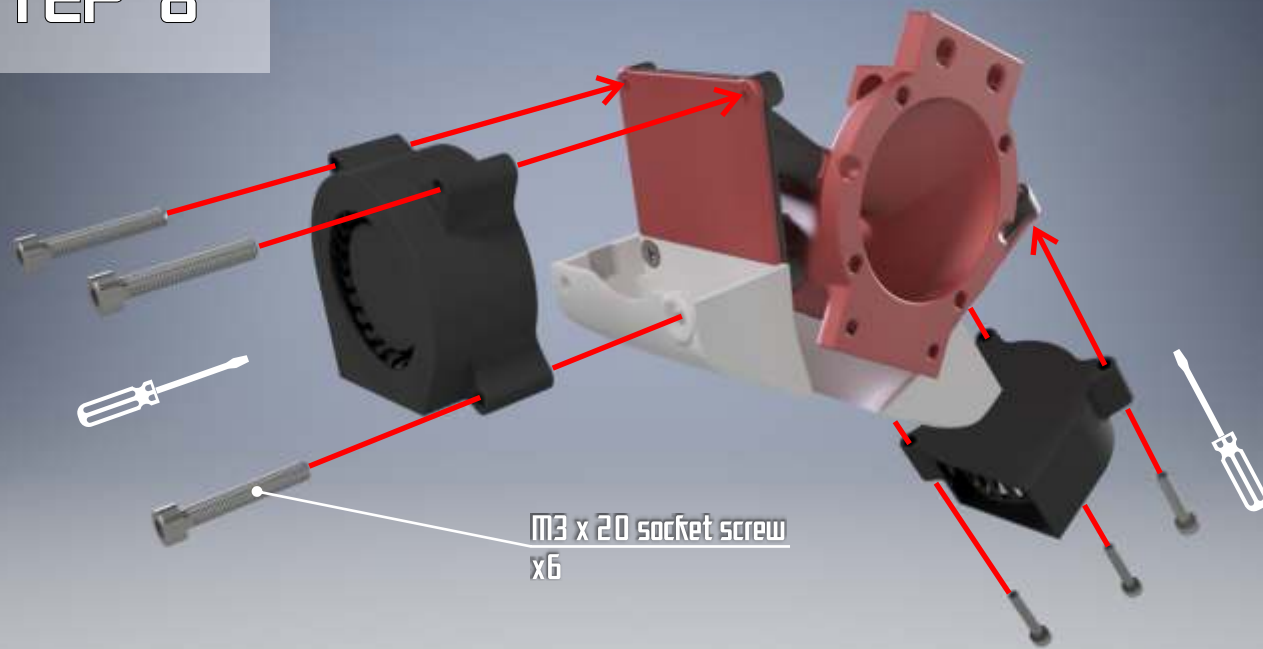
# STEP 9

GLUE



# STEP 8

M3 x 20 socket screw  
x6

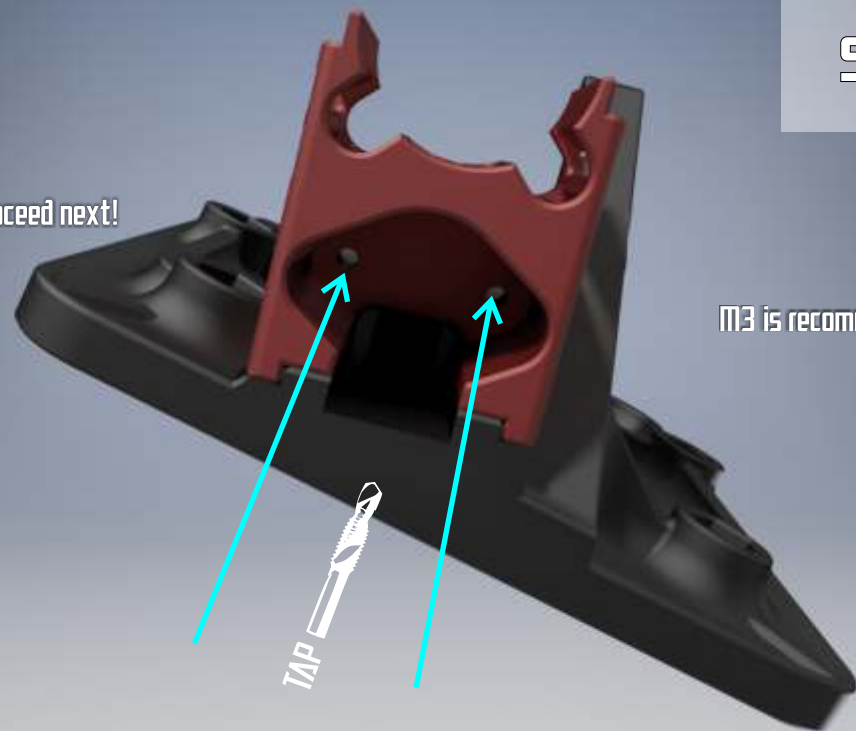


# STEP 10

!!IMPORTANT!  
Do this step before you proceed next!

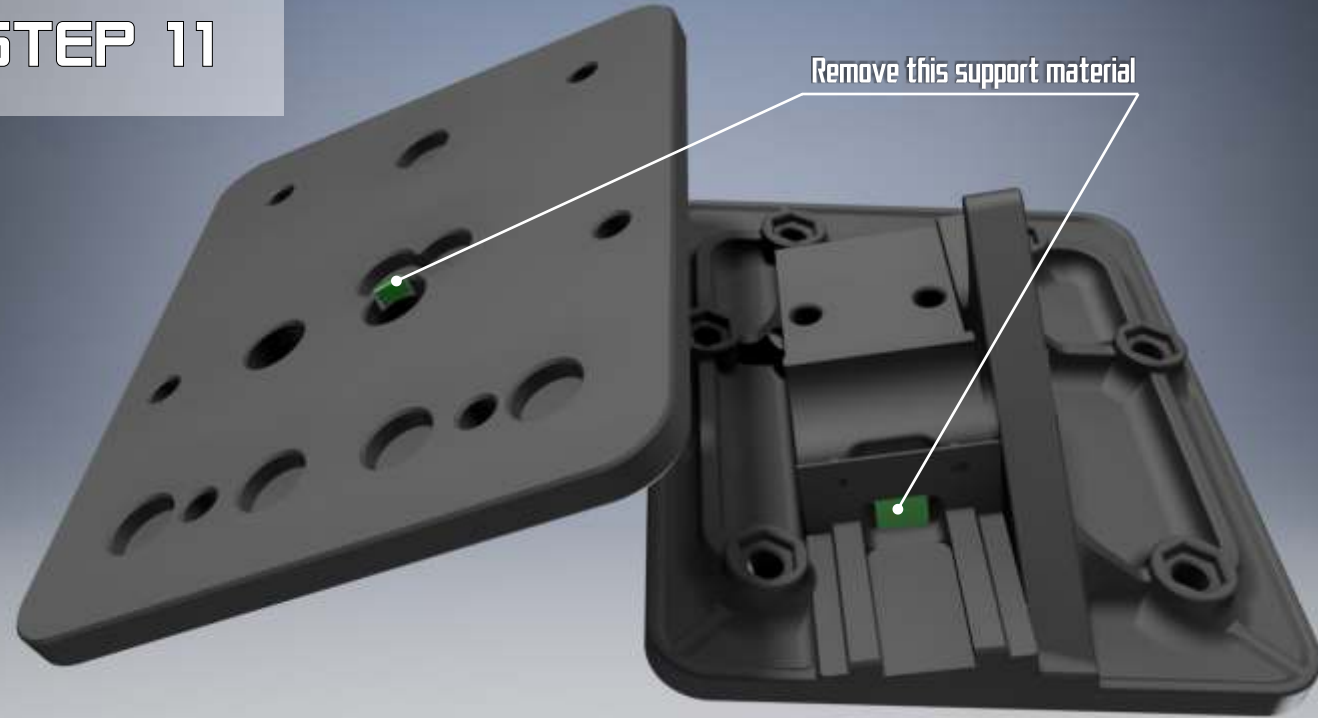
M3 is recommended

TAP



## STEP 11

Remove this support material



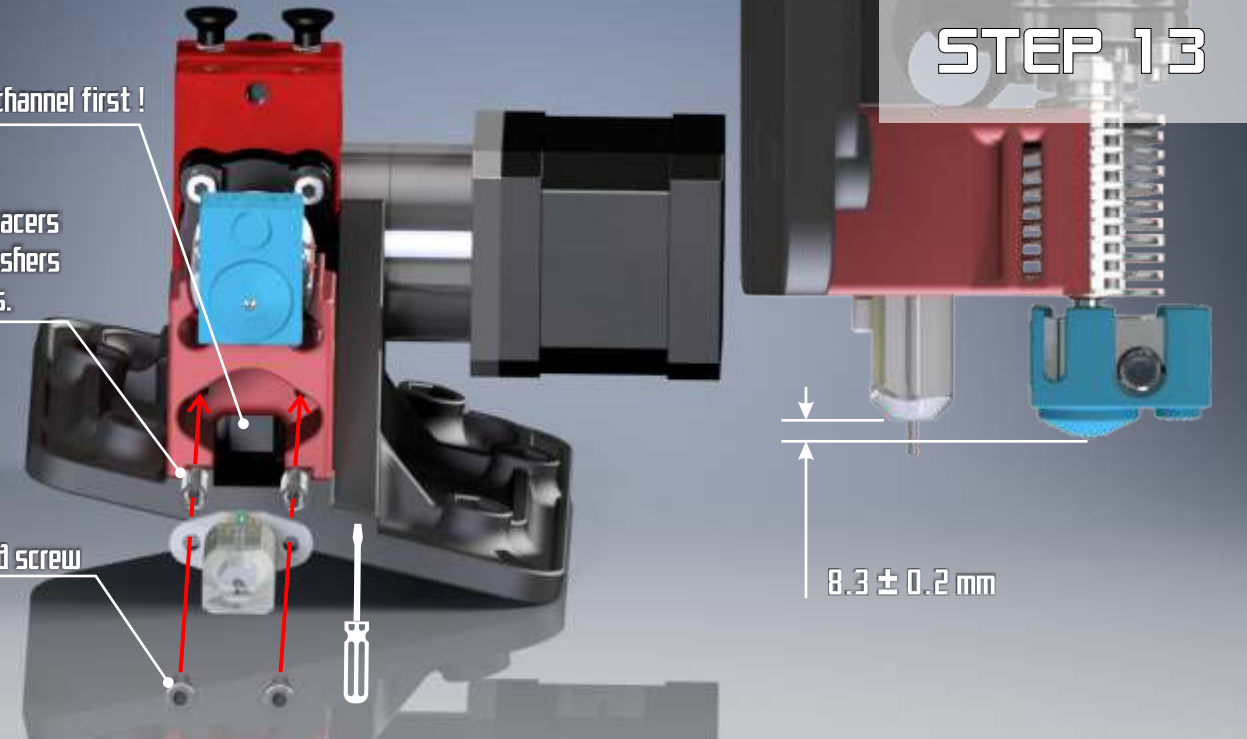
## STEP 13

! Put wire in this channel first!

You can use spacers or stack of washers instead springs.

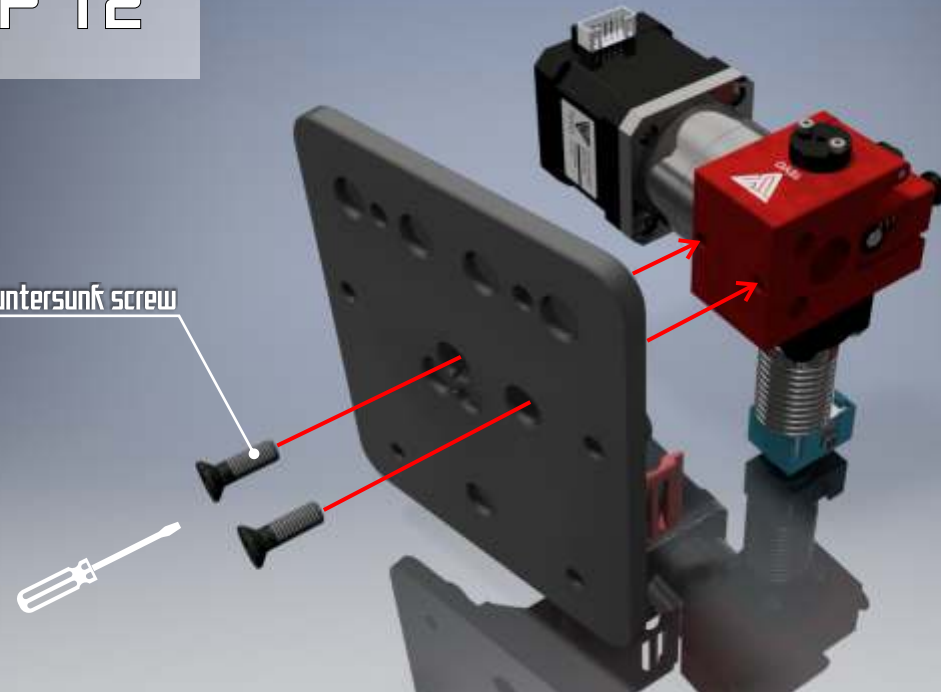
M3x20 socket screw  
x2

8.3 ± 0.2 mm



## STEP 12

M5 x 16 countersunk screw  
x2



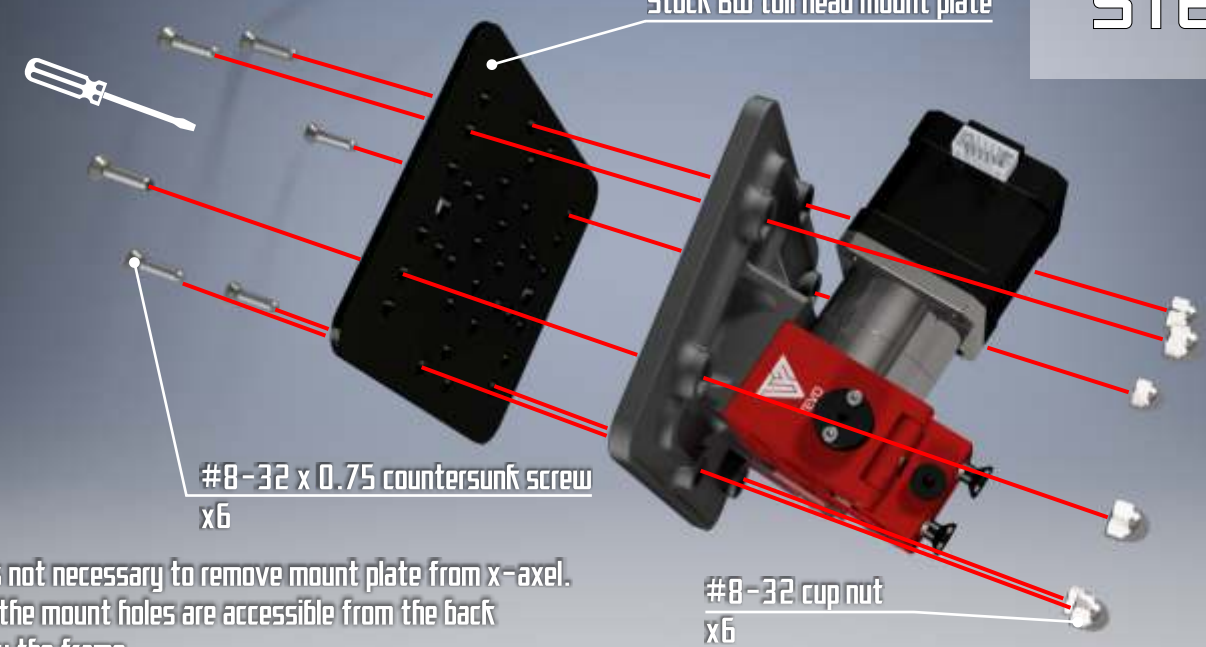
## STEP 14

Stack 8W toll head mount plate

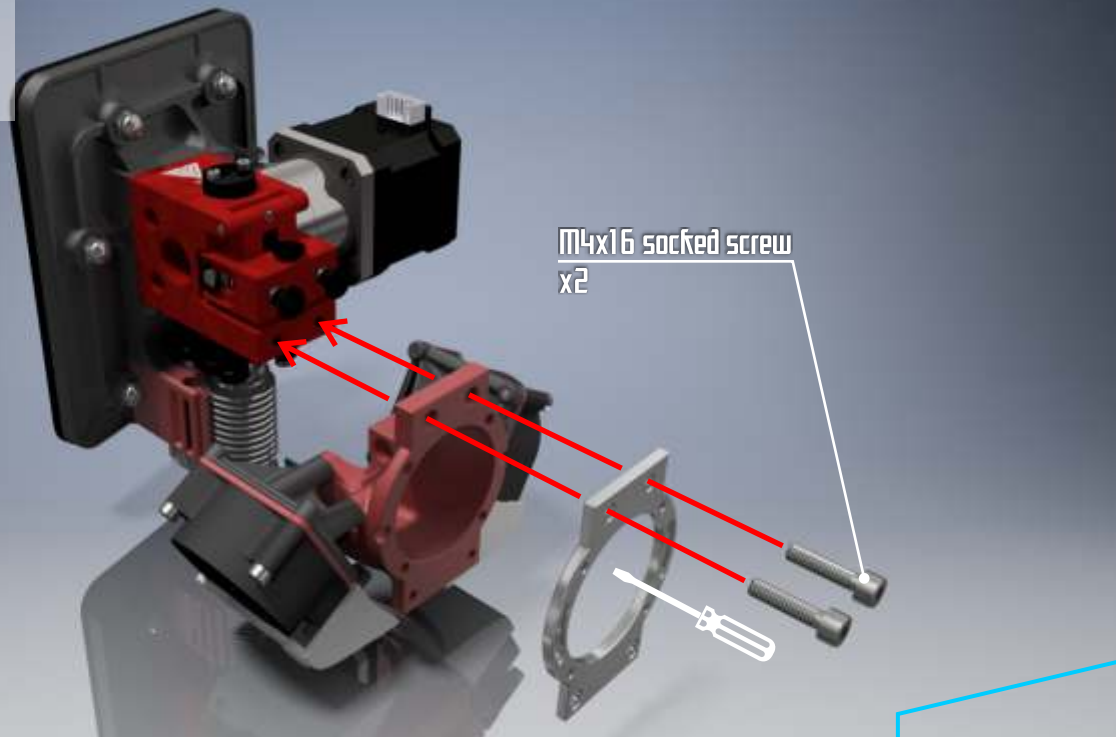
#8-32 x 0.75 countersunk screw  
x6

#8-32 cup nut  
x6

It's not necessary to remove mount plate from x-axel.  
All the mount holes are accessible from the back  
thru the frame.

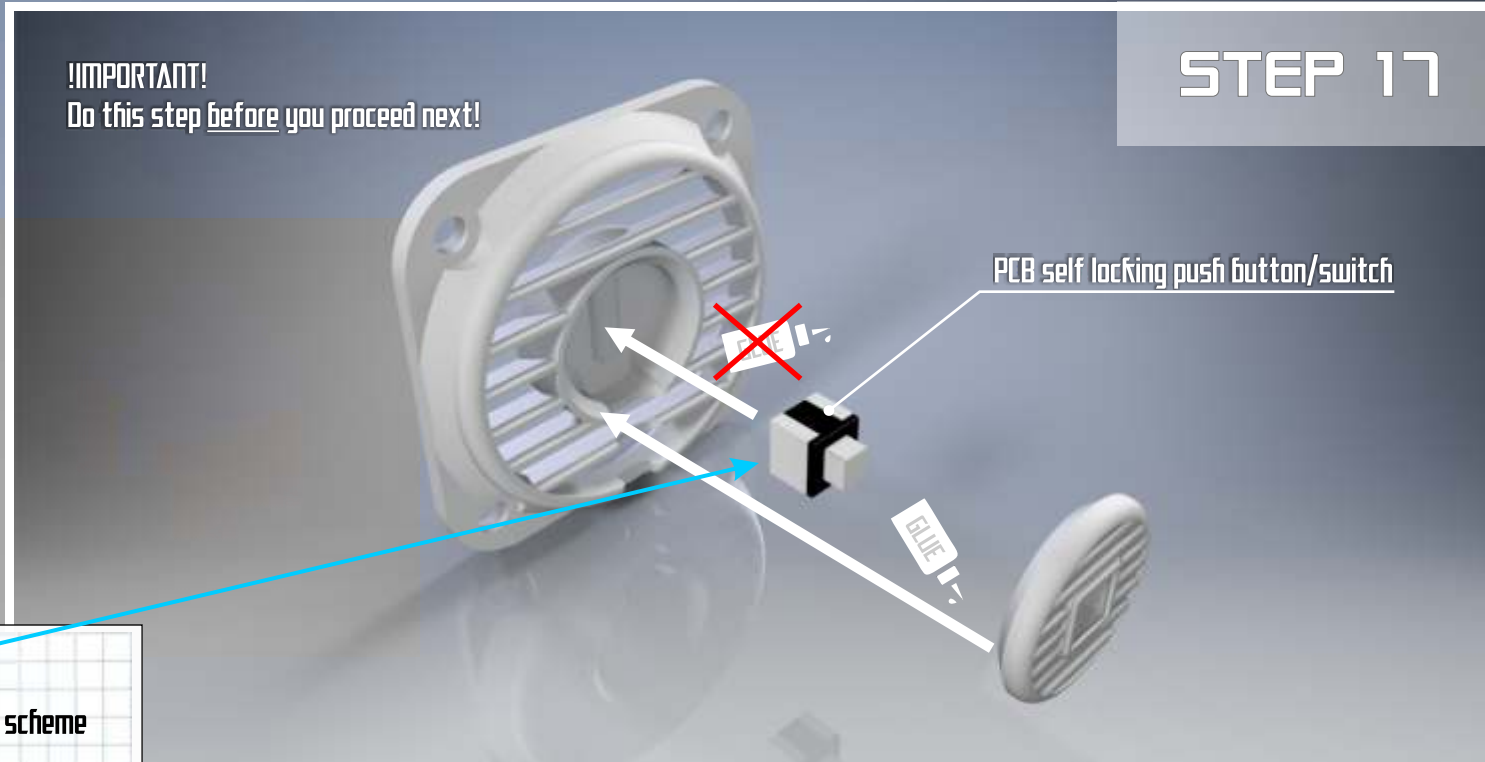


# STEP 15



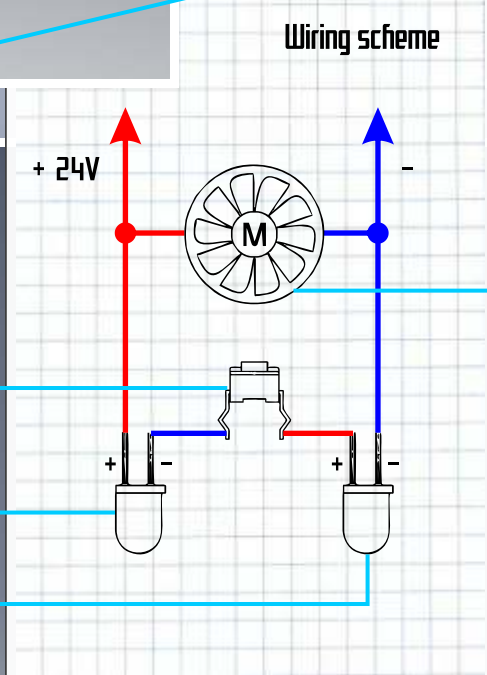
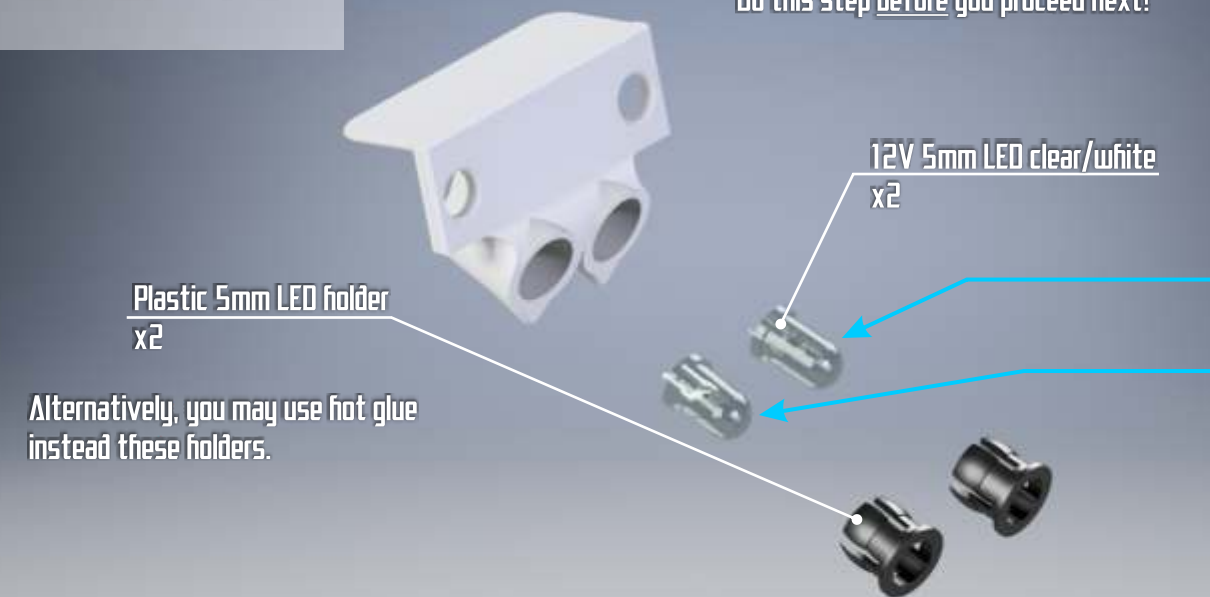
**!!IMPORTANT!!**  
Do this step before you proceed next!

# STEP 17

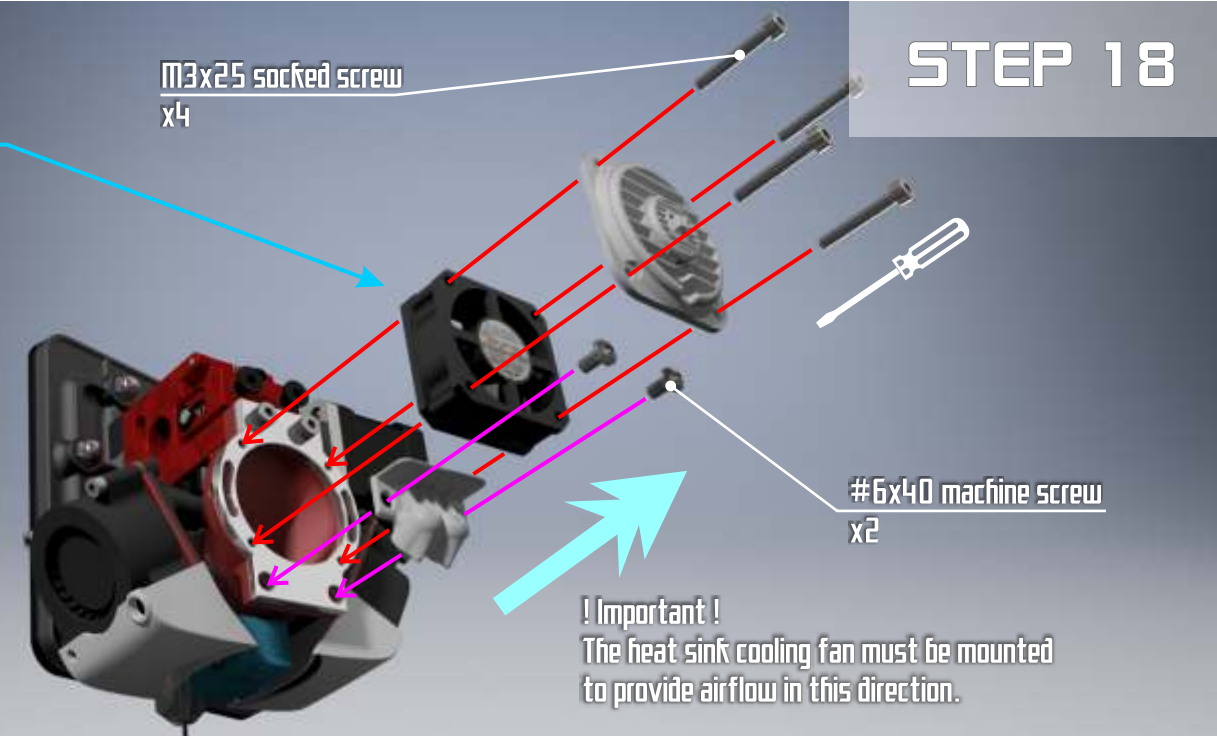


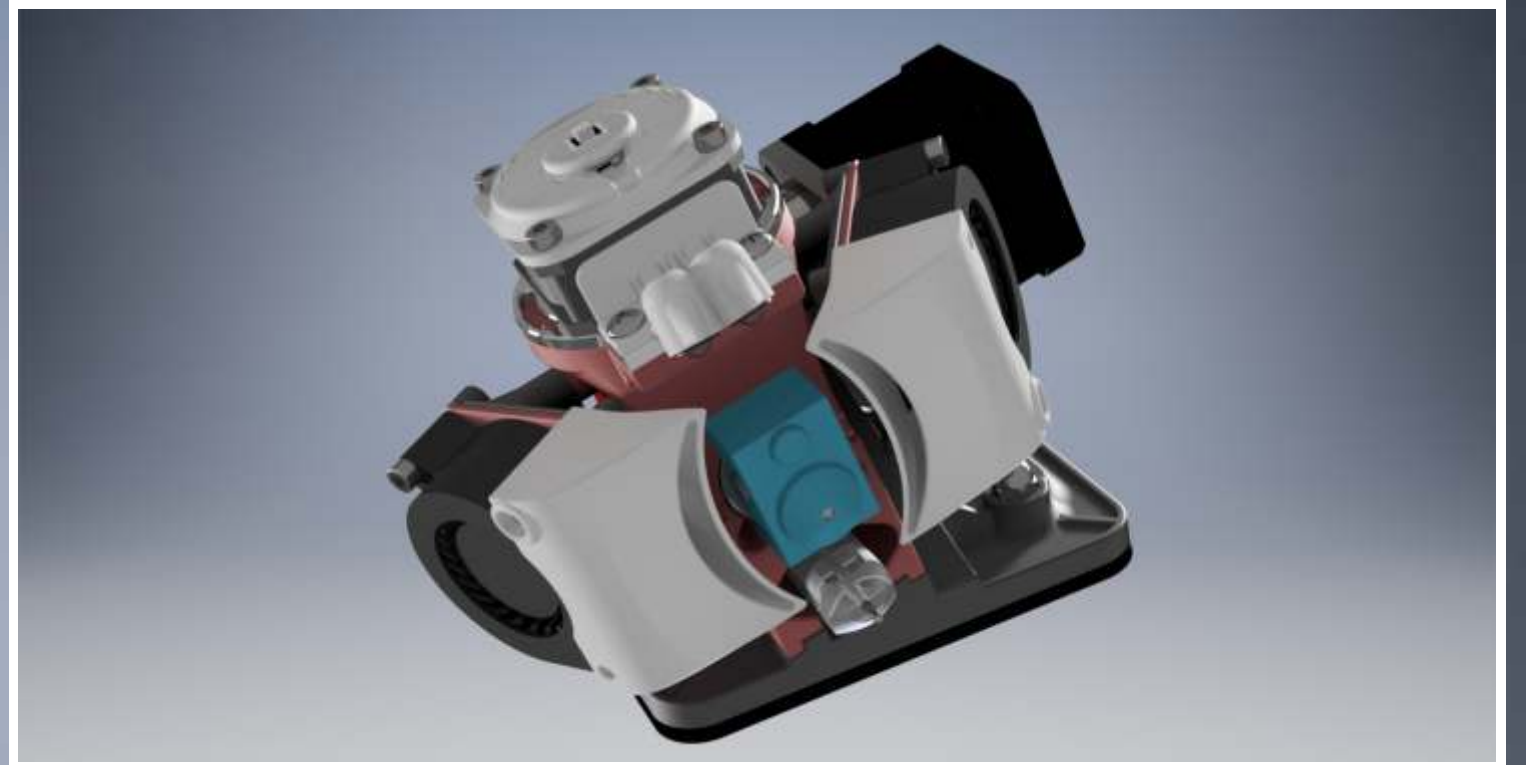
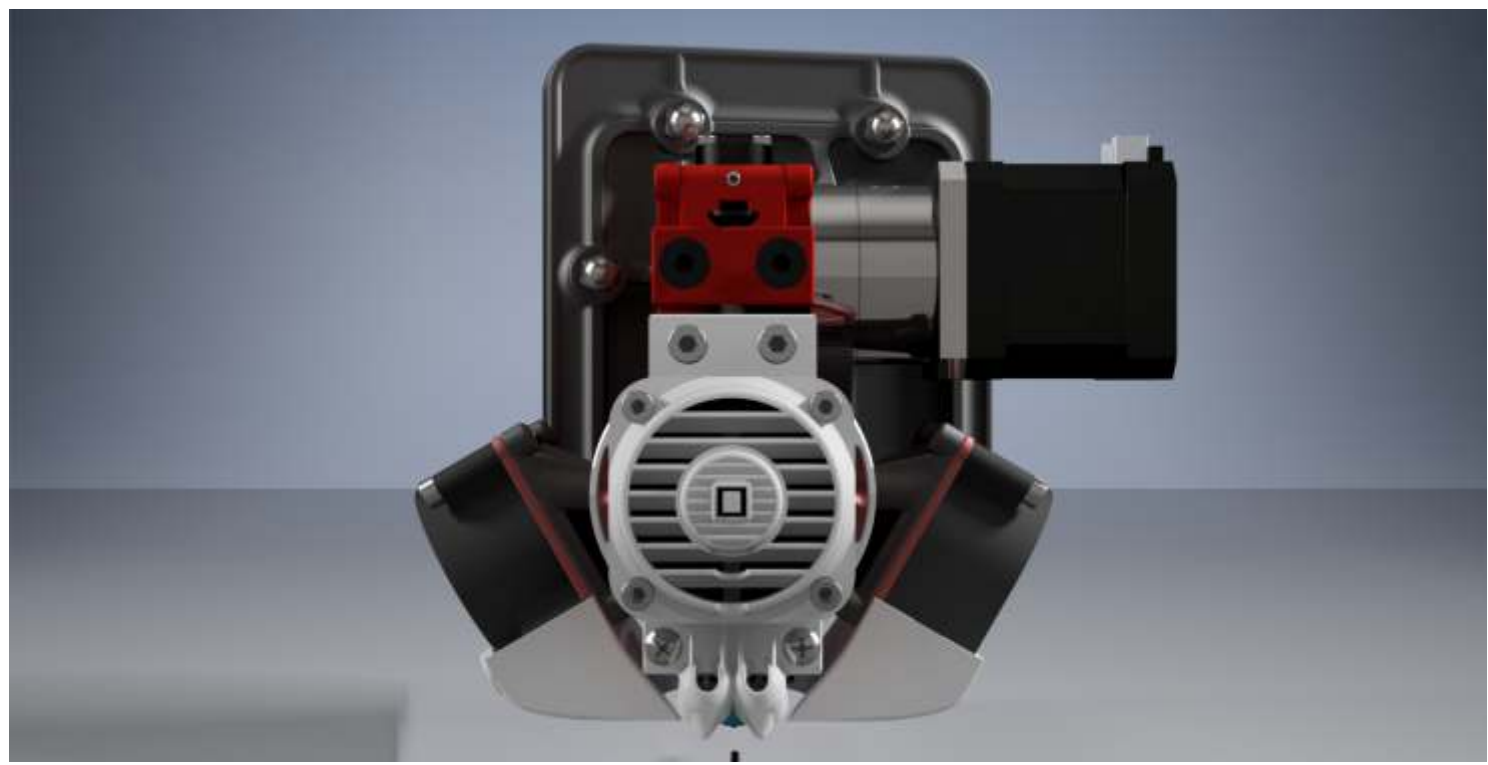
# STEP 16

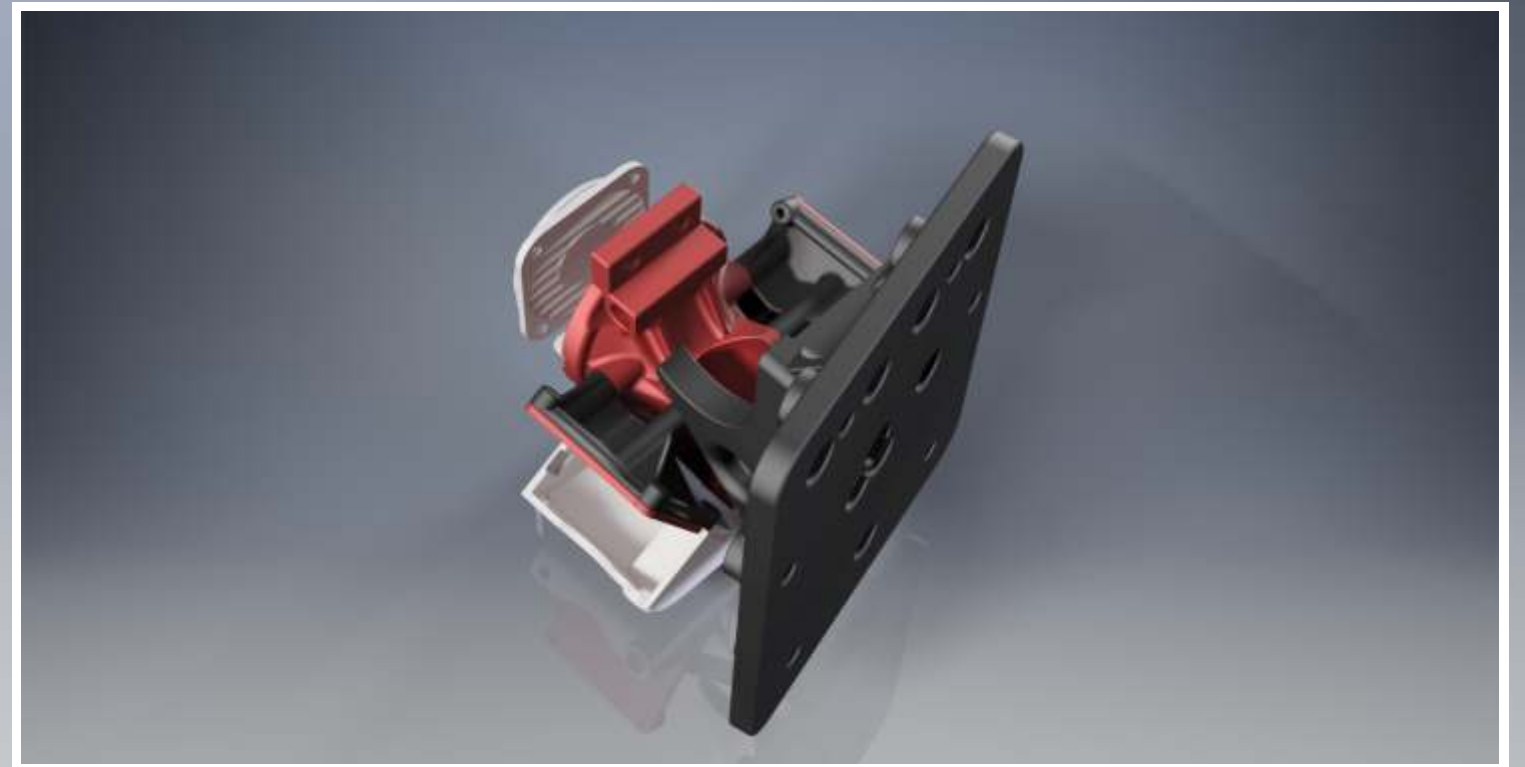
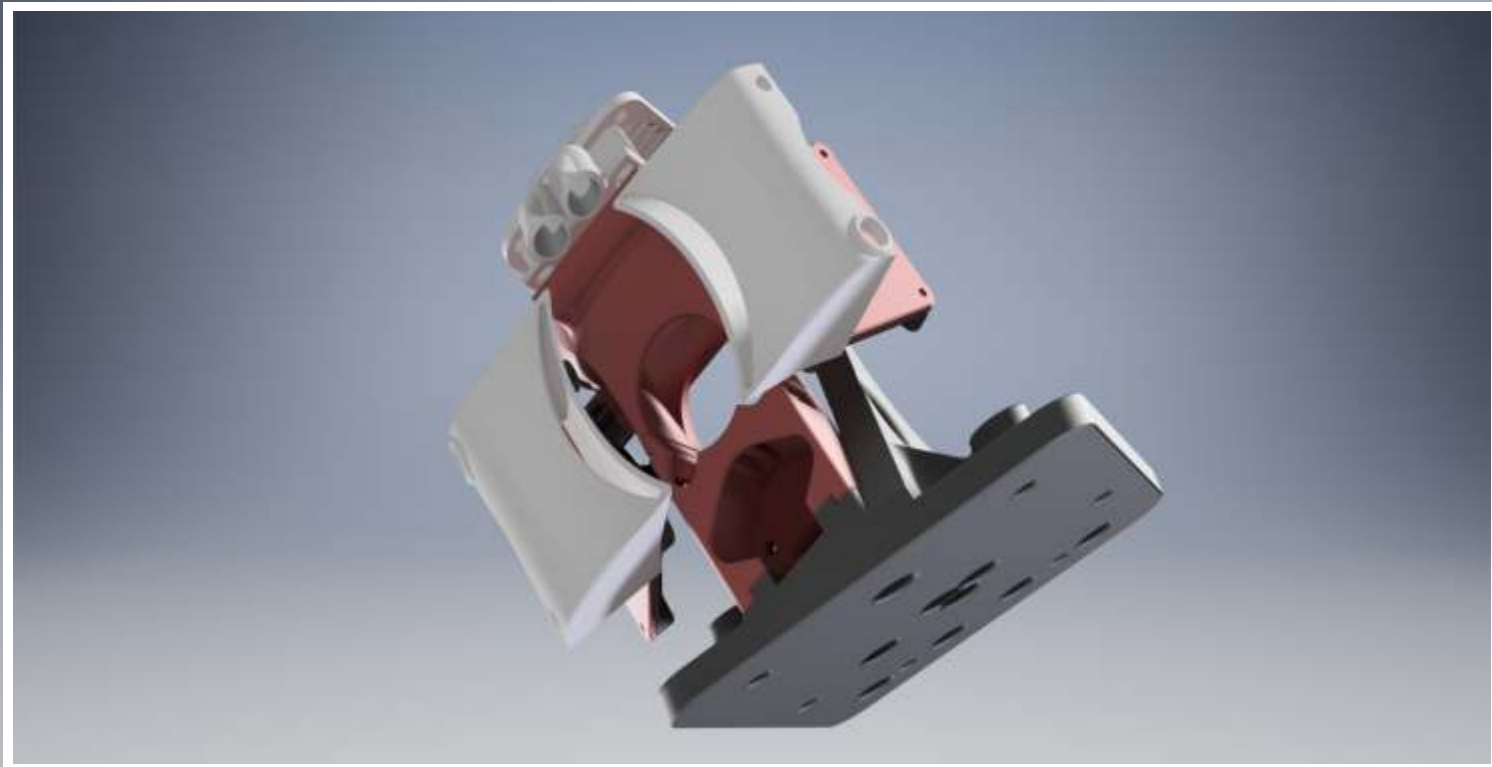
**!!IMPORTANT!!**  
Do this step before you proceed next!

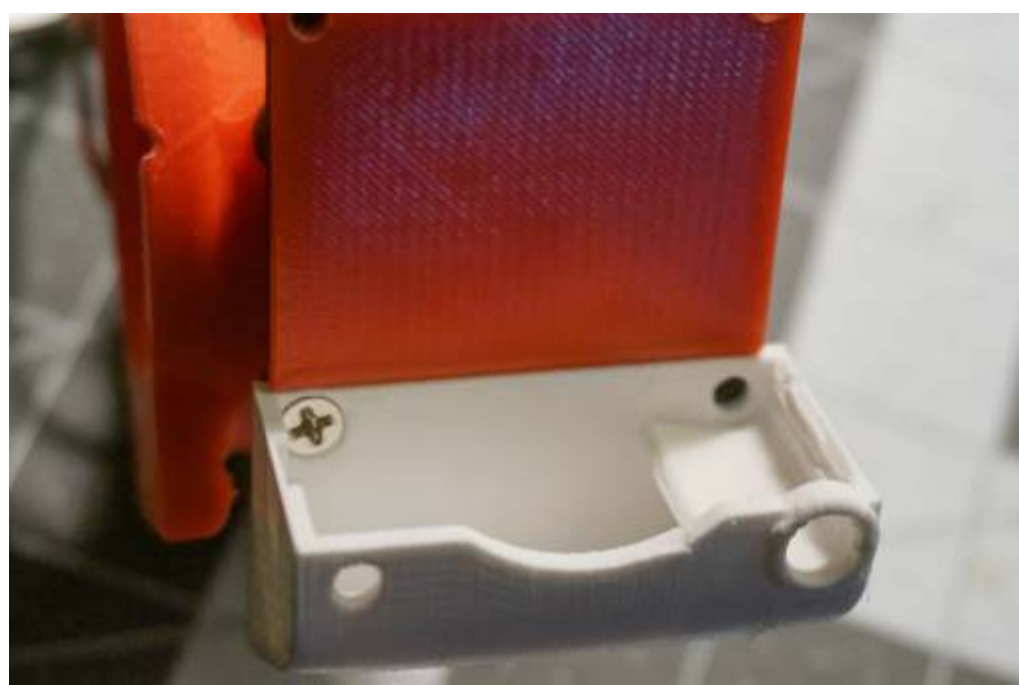
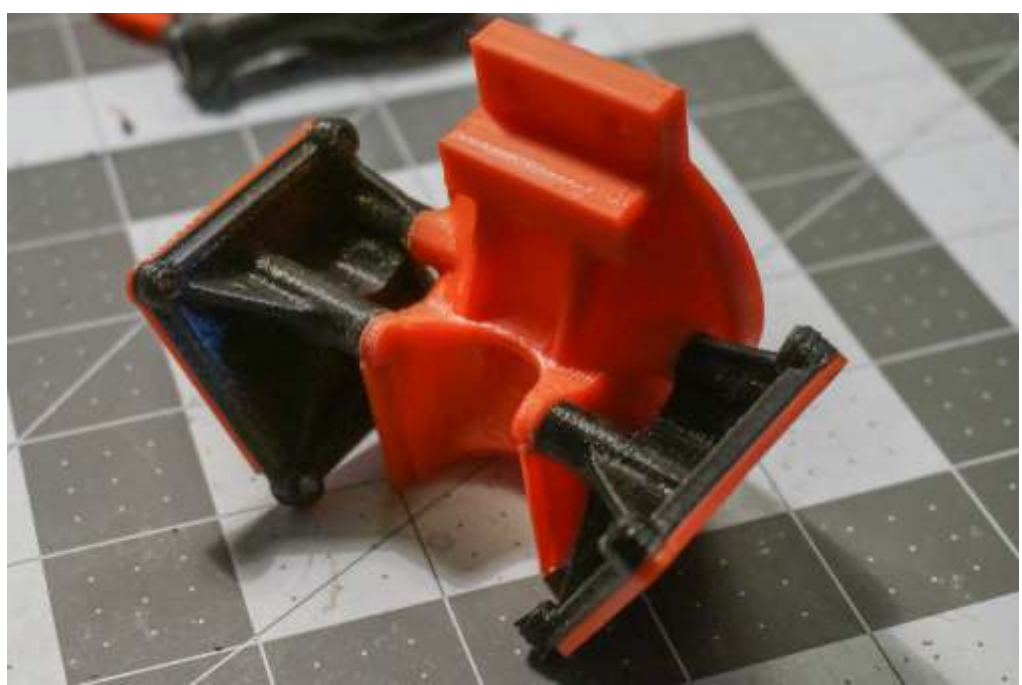
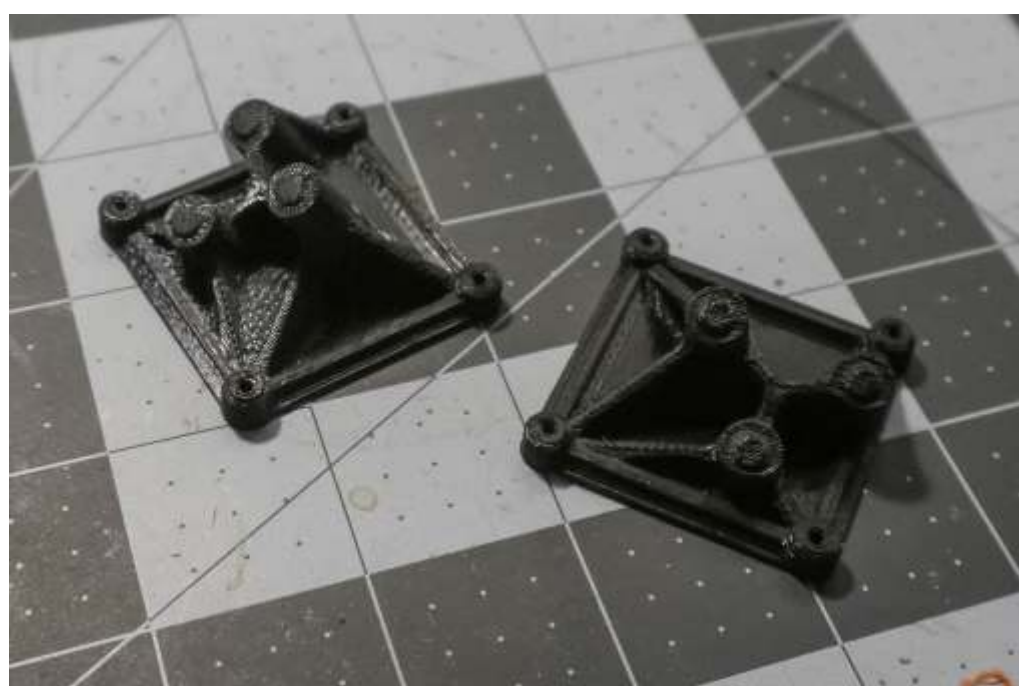


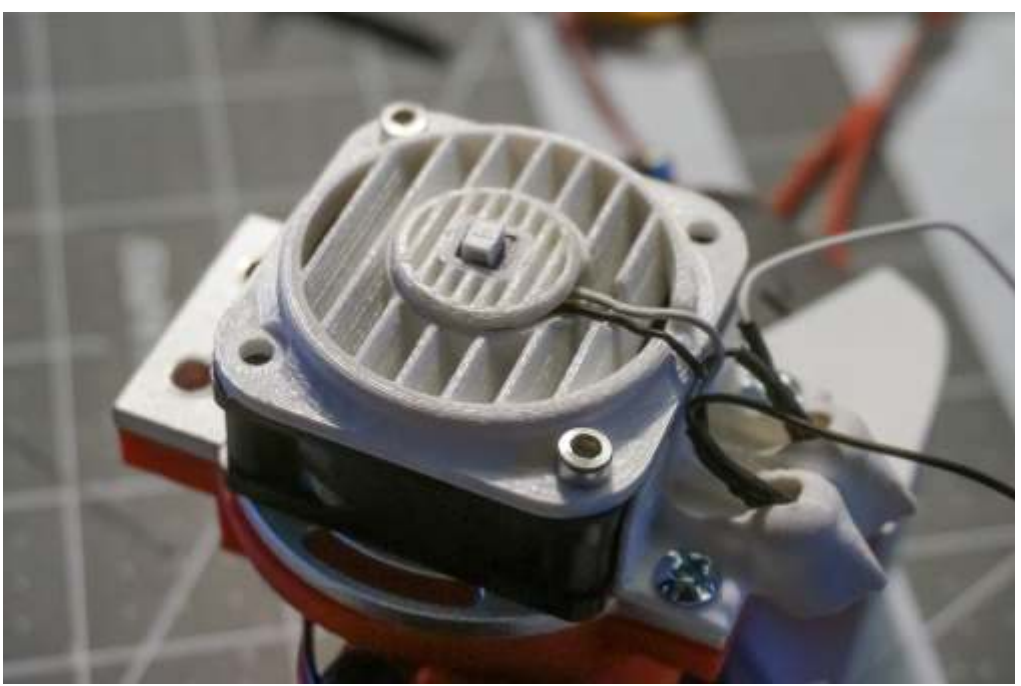
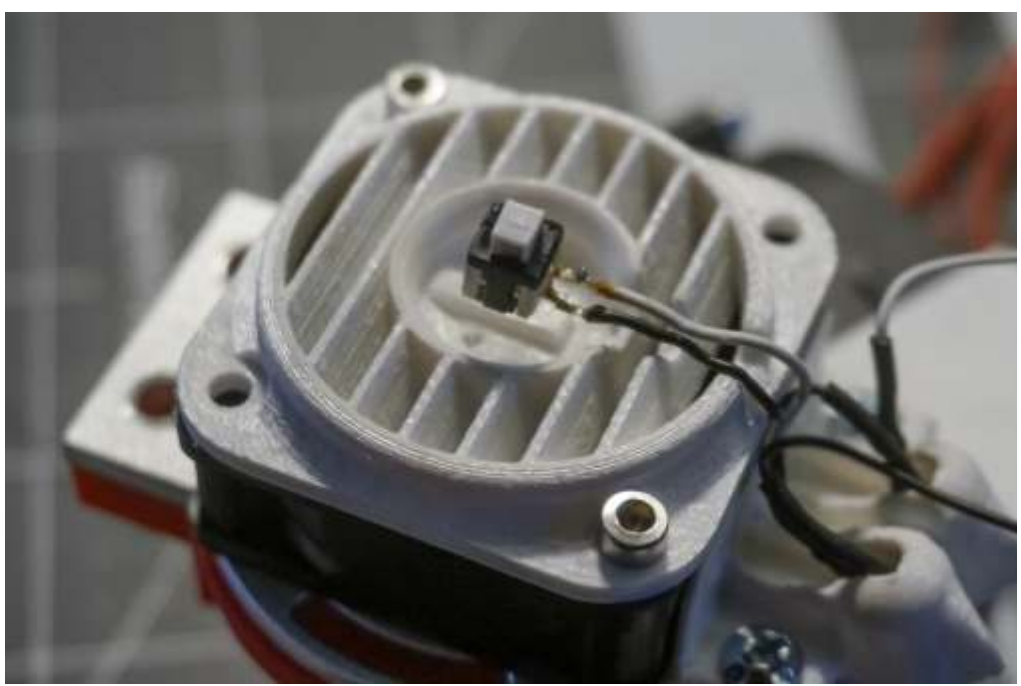
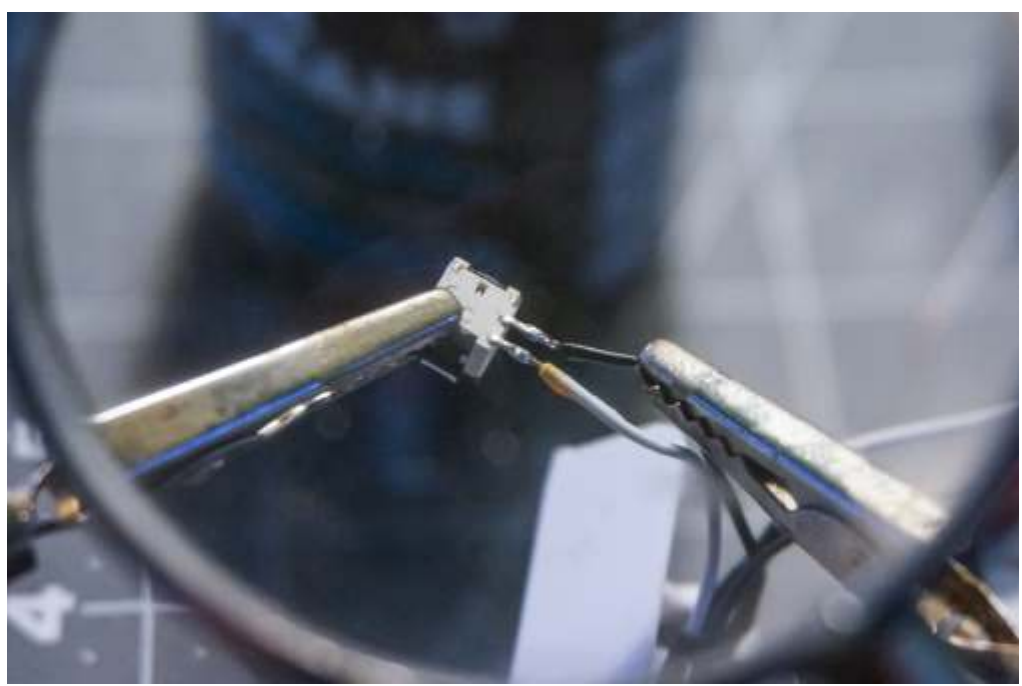
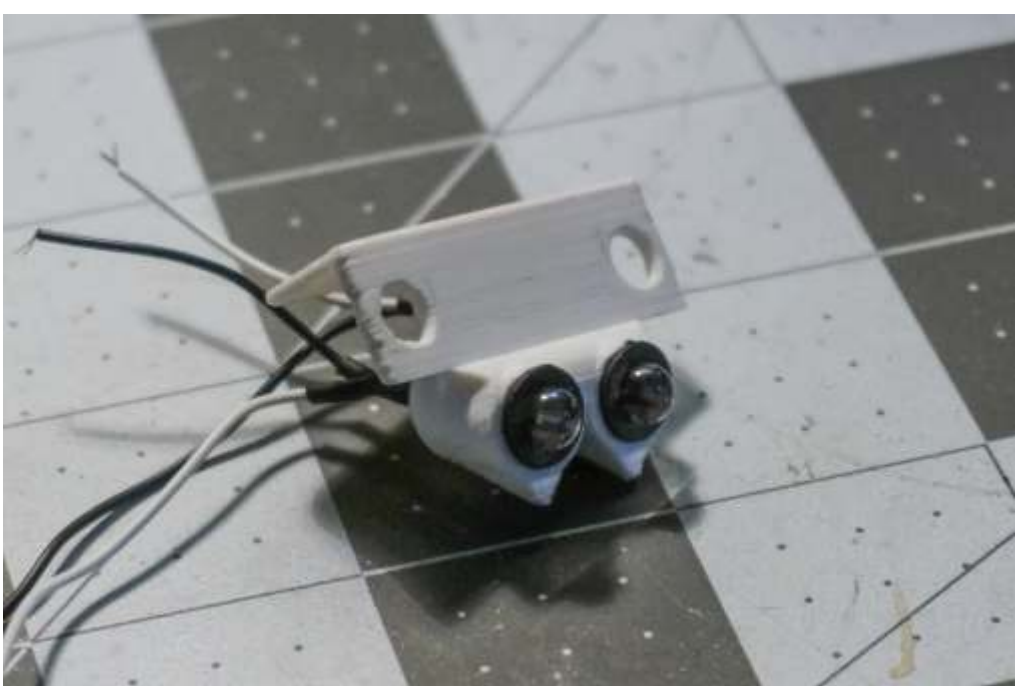
# STEP 18

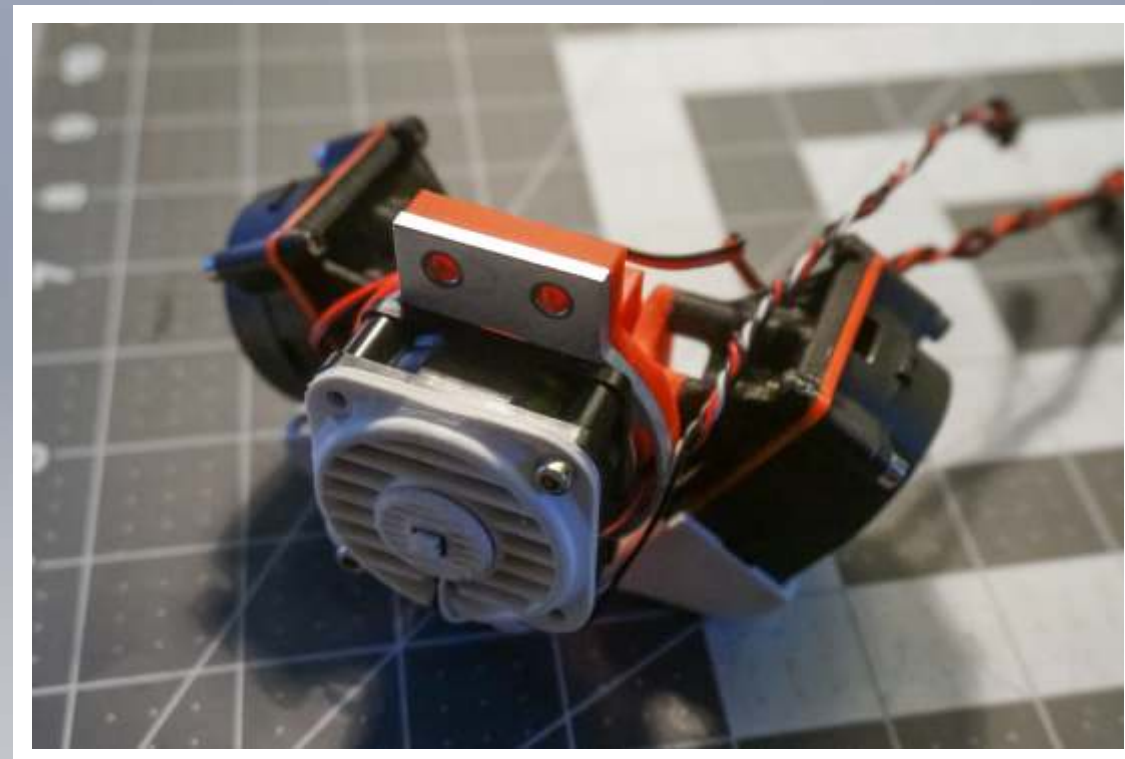
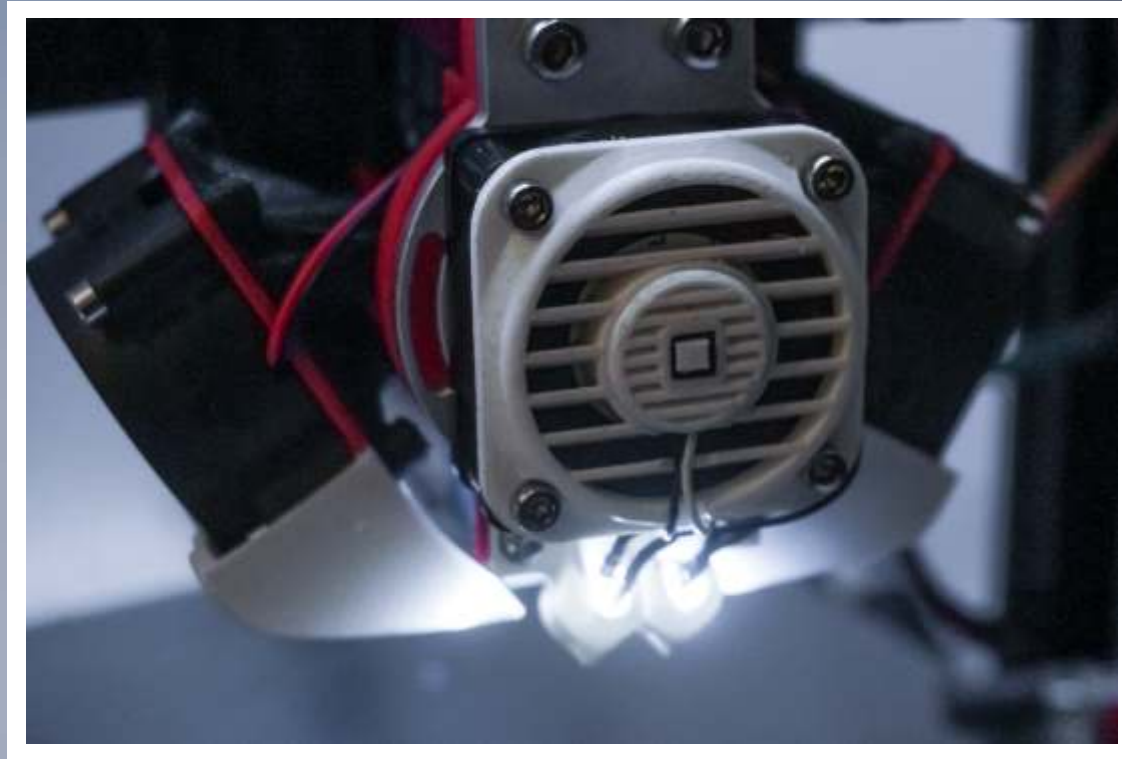
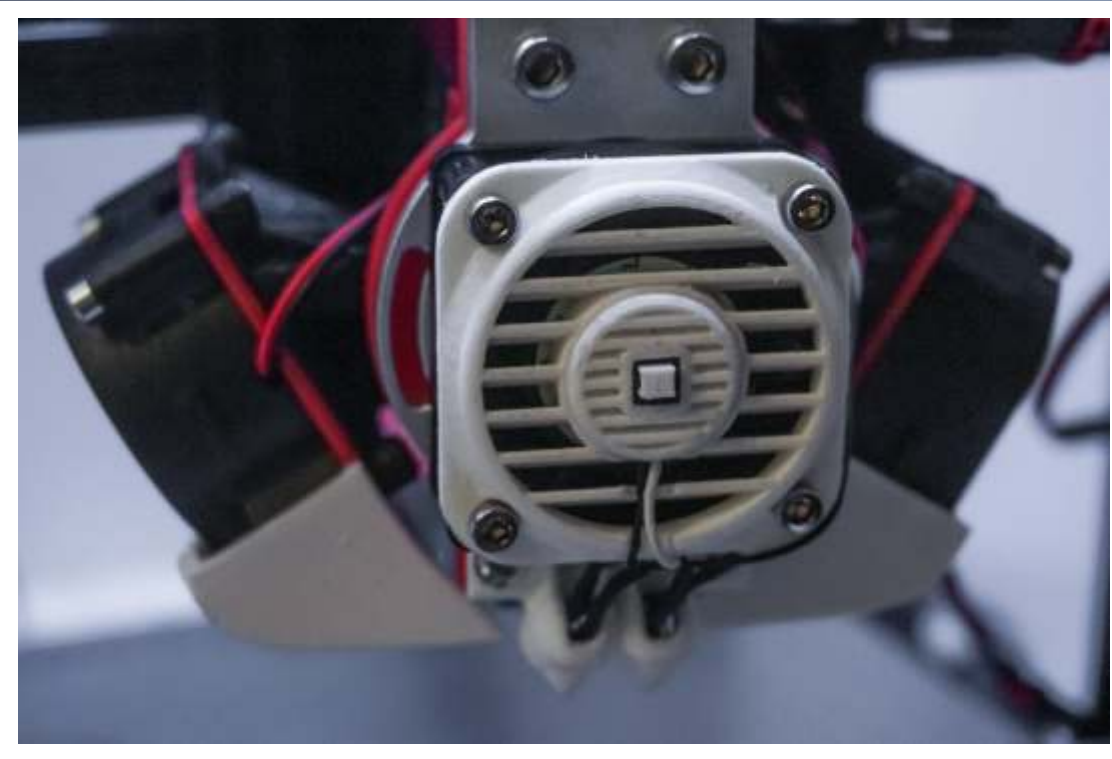


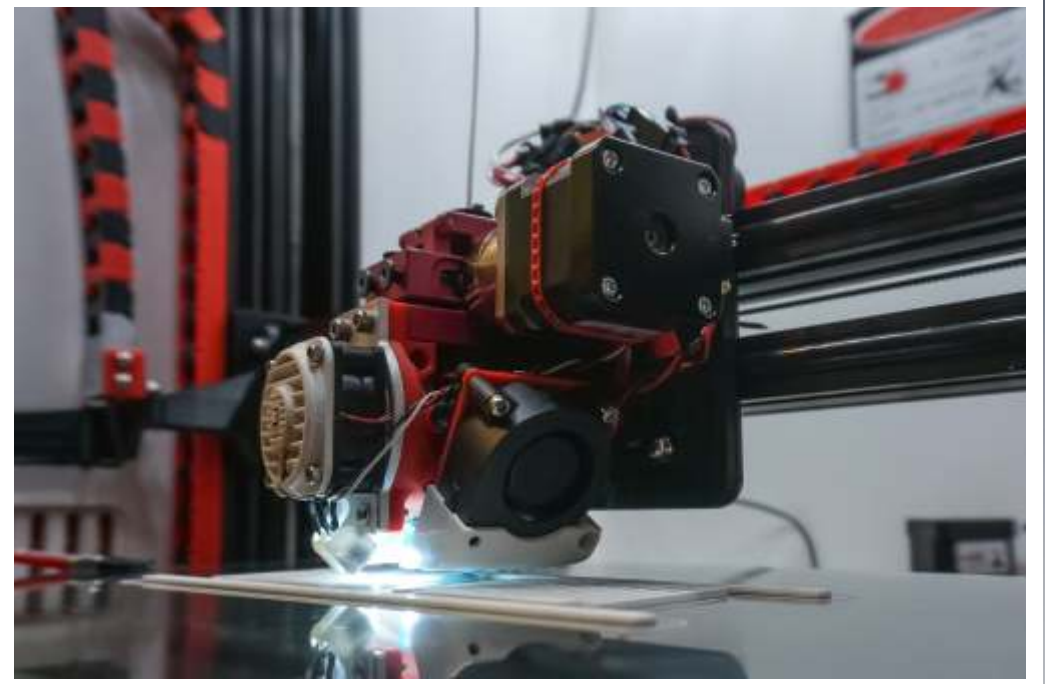
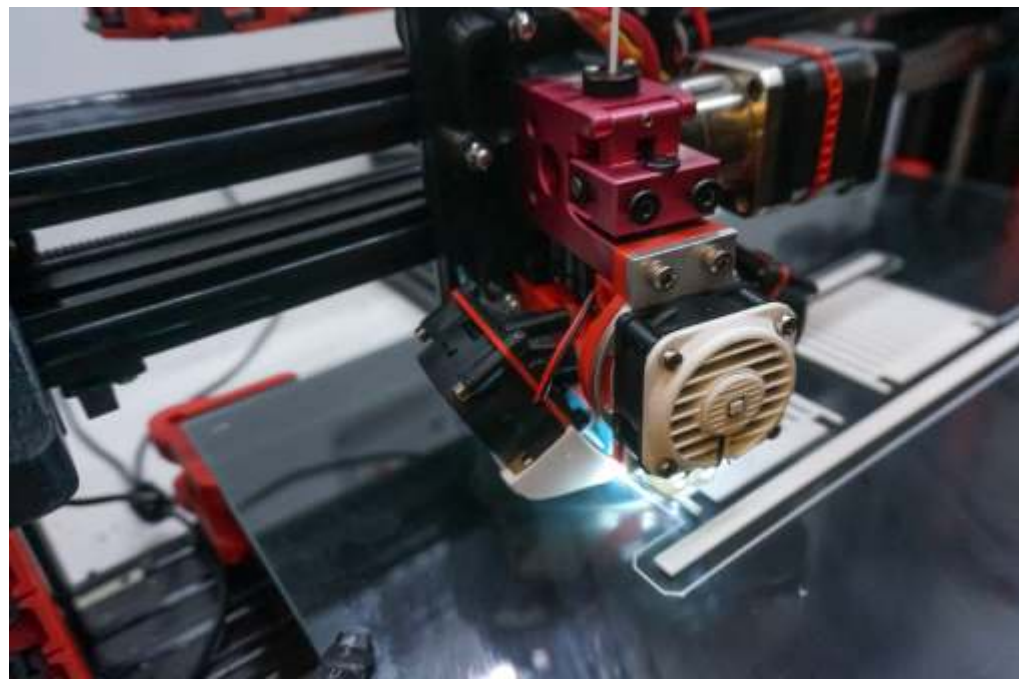
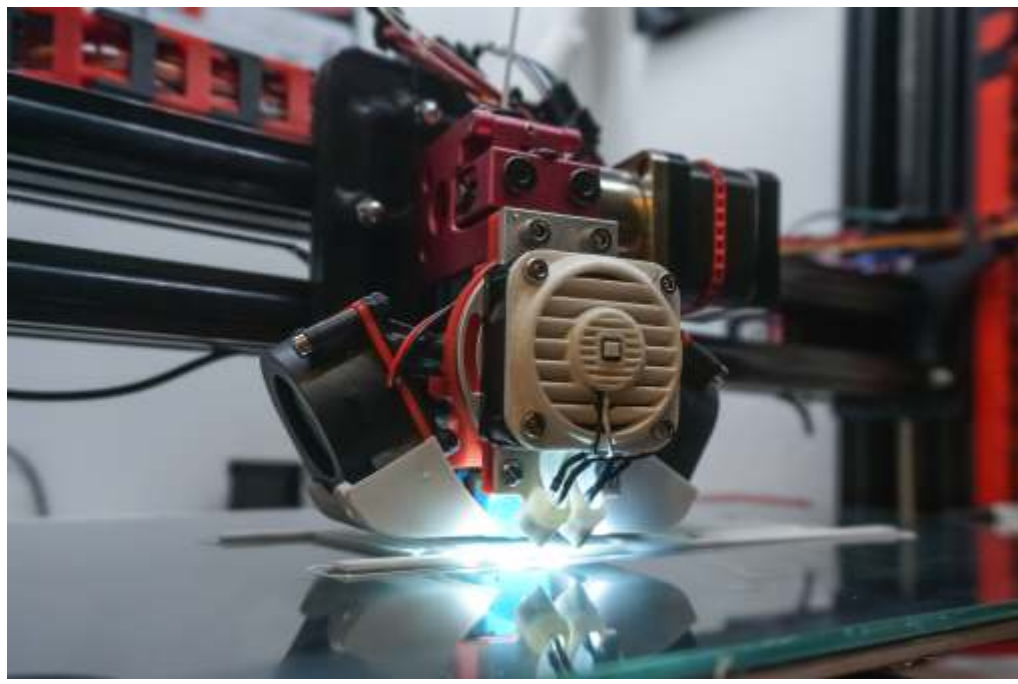
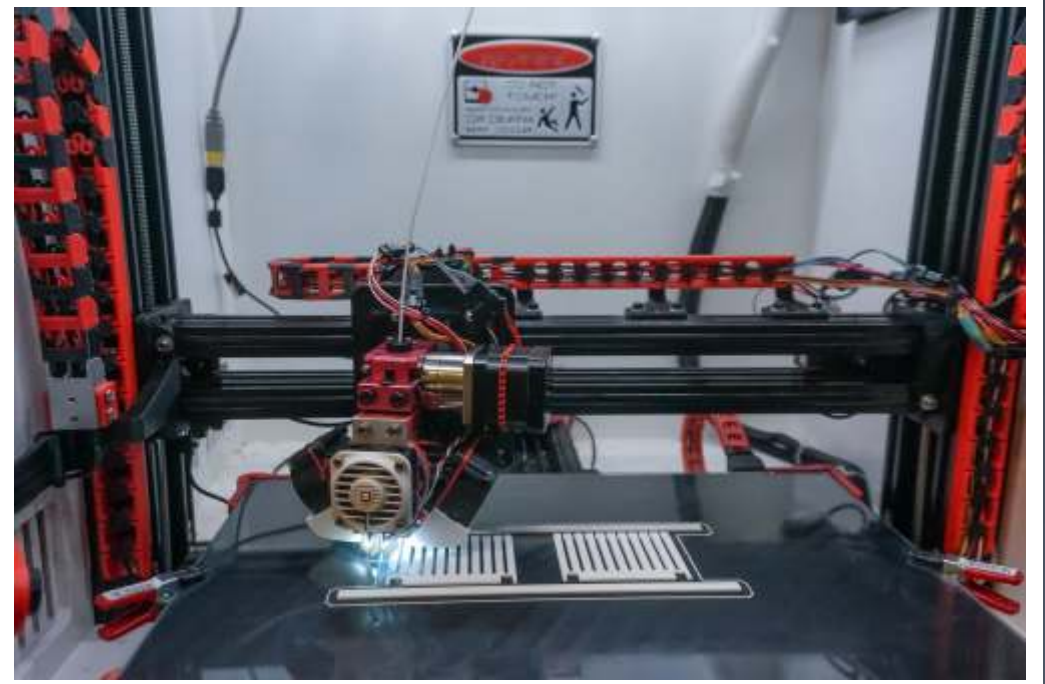
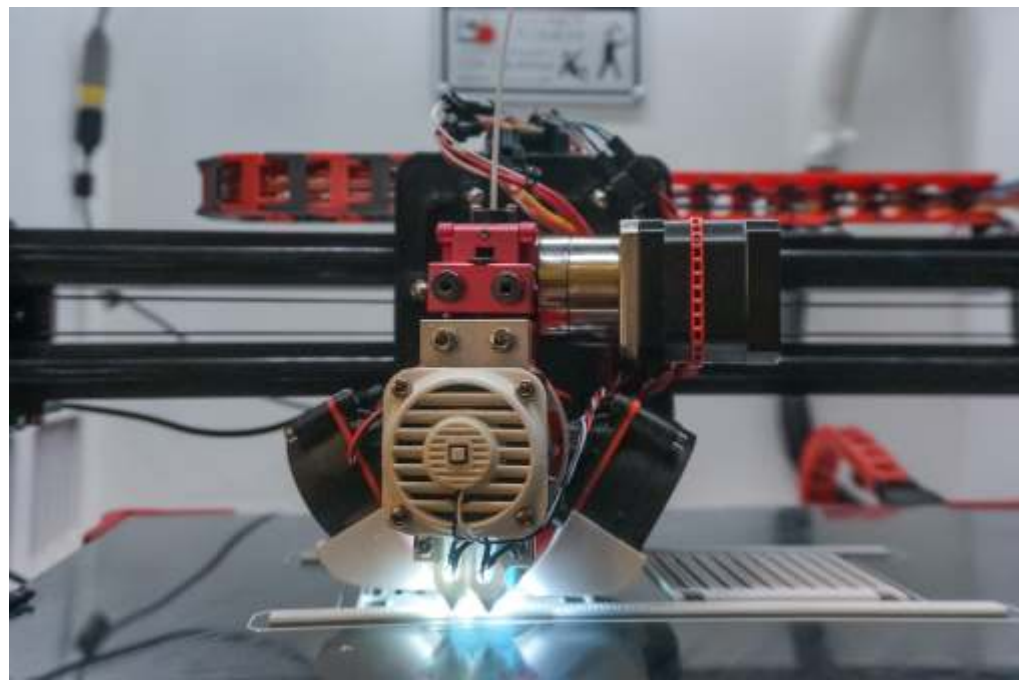
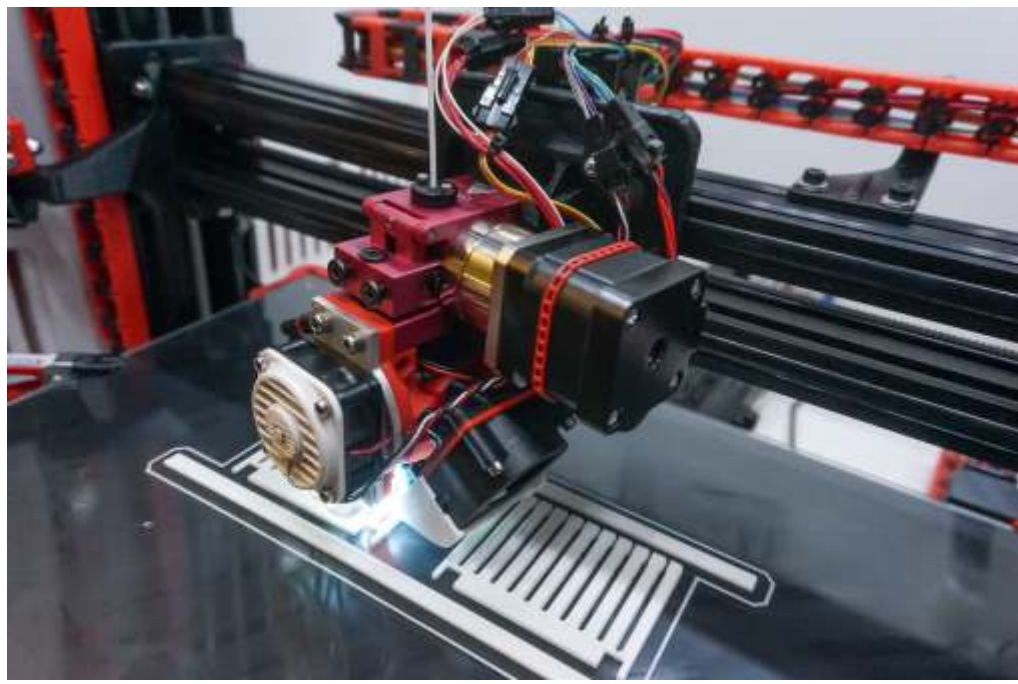












**"Chelicerae 537"  
TEVO Black Widow  
tool head upgrade**

**created by Vladimir Gorshunin  
aka Jim  
<http://jimblog.me>  
[info@jimblog.me](mailto:info@jimblog.me)**

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