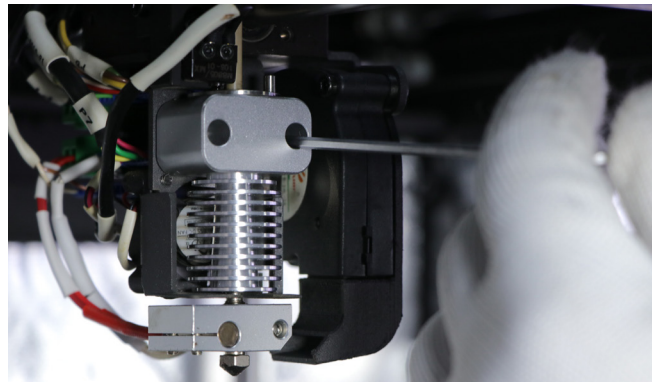
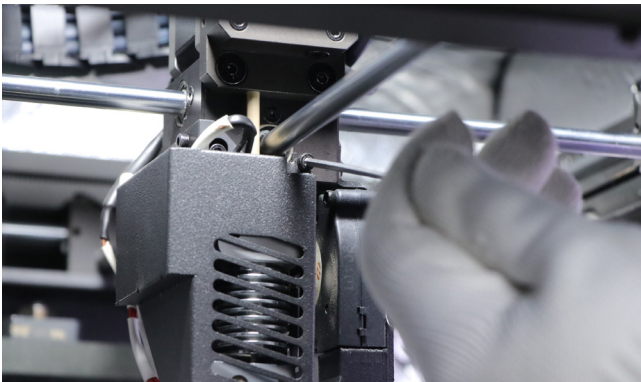


# Nozzle Set

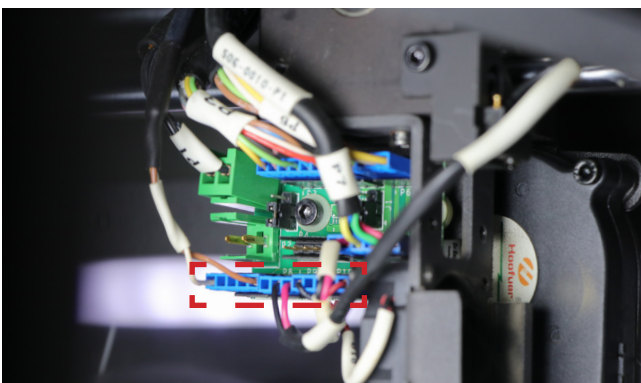
This section can help to replace nozzle set.

## Nozzle set replacement

1. To change the nozzle set, firstly, you need to move the current material out of the nozzle. If the filament is stuck in the nozzle, user can increase the nozzle temperature manually and pull it out.
2. Power off the machine and let the nozzle cool down to the room temperature. Be caution with the HOT NOZZLE!
3. Use the screwdriver to take out the screws fixed on the nozzle set cover and the nozzle set.



4. Unplug the adapters which are behind the nozzle set, unplug the adapter circled in the picture.



# Nozzle

This section can help to clean nozzle, and replace nozzle, and clean the terrible filament impurity stuck in hotend.

## Clean nozzle outside surface

1. Heat the nozzle up to filament melting temperature.
2. Carefully remove the material with tweezers or brush.



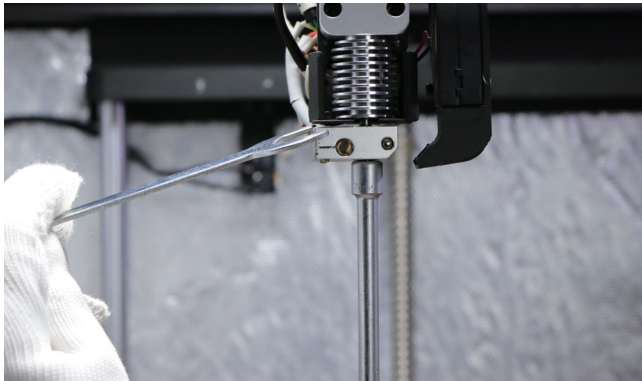
## How to change nozzle only and clean filament impurity

1. Use M2.5 screwdriver to take out the screws fixed on the nozzle set cover.

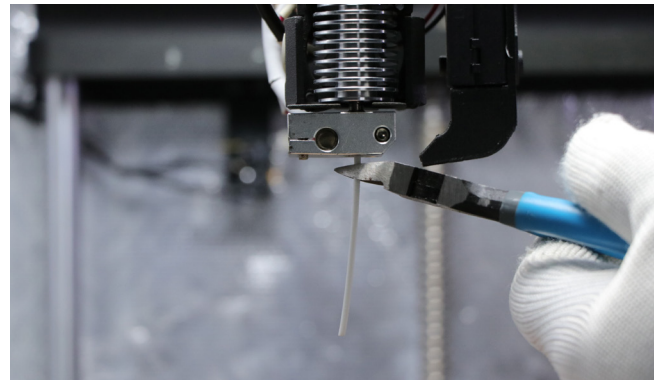
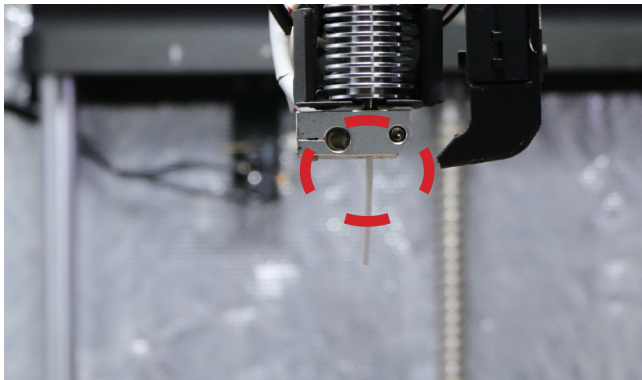


2. Move the current material out of the nozzle at “Axis” - “Extruder” interface.

3. Remain “Extruder” interface, and use spanner to hold the heating block and the socket wrench to remove the old nozzle.



4. Load filament to push the residual material in the break, and cut off the filament end.



Note: If the teflon tube is accidentally pushed out, remember to put it back.



5. Install the new nozzle and turn off “Extruder” interface to cool down nozzle.

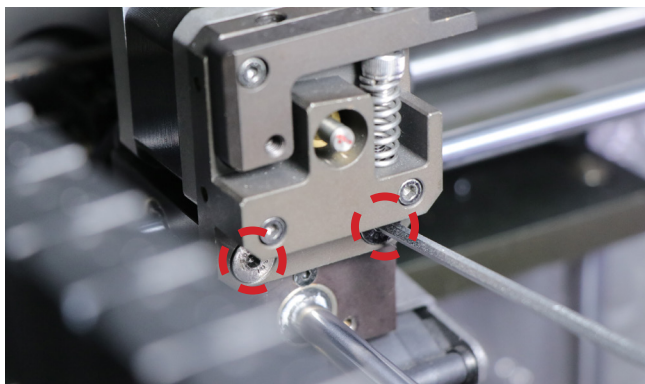
6. Re-install the set nozzle cover back.

# Extruder

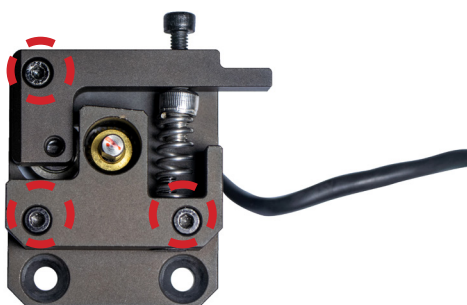
This section can help to replace a new E motor, and replace a new feeding gear, and clean the Extruder, and adjust spring clamp force, and adjust the current of E motor to reduce motor heat.

## E motor or feeding gear replacement

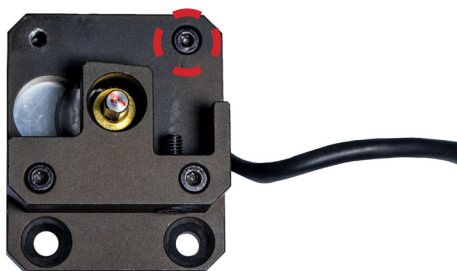
1. Remove below 2 screws with M3 Allen key, and unplug motor cable.



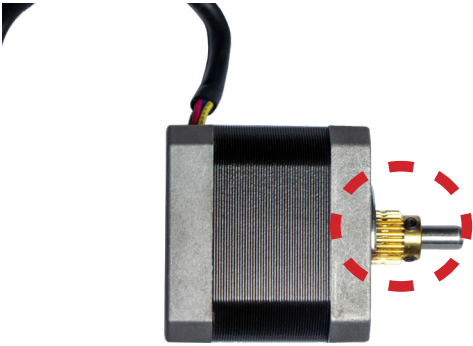
2. Remove below 3 screws with M2.5 Allen key.



3. Remove below screw with M2 or M2.5 Allen key, depends on which screw installed.



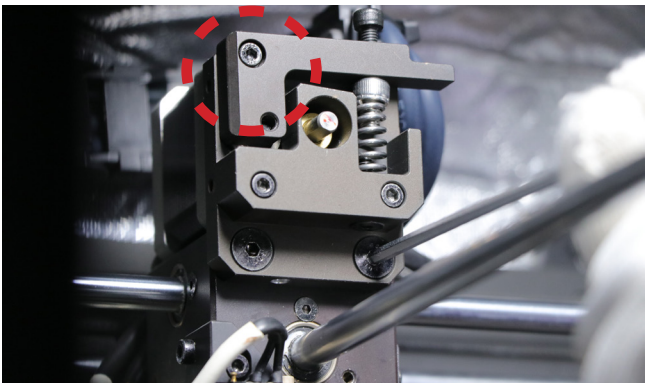
4. Remove below 2 screws with M1.5 screwdriver. If the yellow feeding gear has been abraded deeply on teeth, it needs to change a new one.



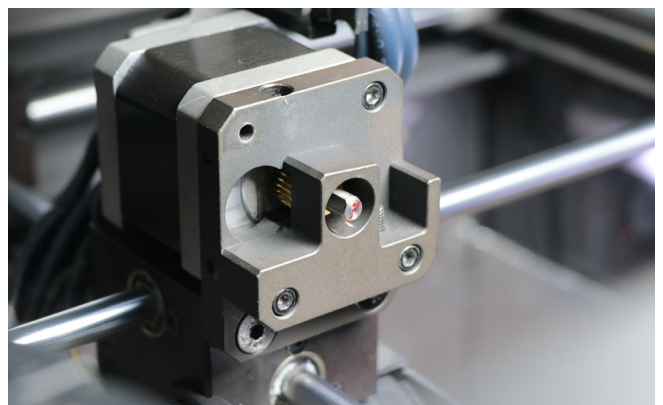
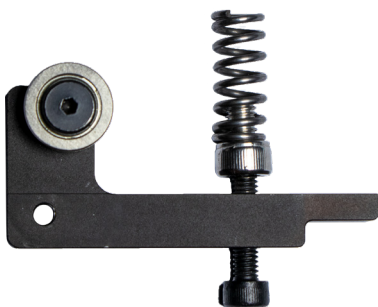
5. Re-install all screws with reverse sequence. Note at least one screw should press on the plane of axis, screw mentioned in step 4. Re-insert cable of motor at P7 position on adapter board.

## How to clean feeding gear

1. Remove circled screw with M2.5 screwdriver.



2. The feeding gear is exposed, and then clean the material fragment.



## Spring clamp force of extruder adjustment

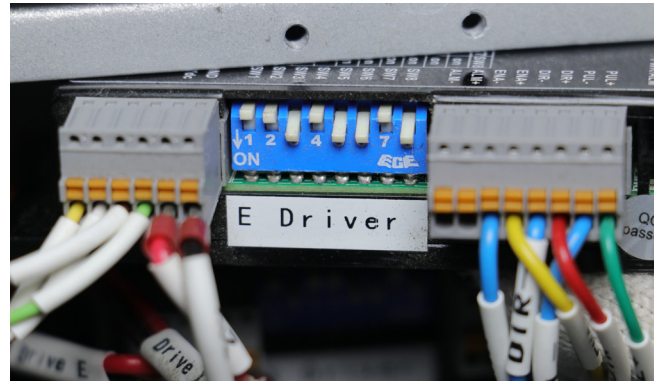
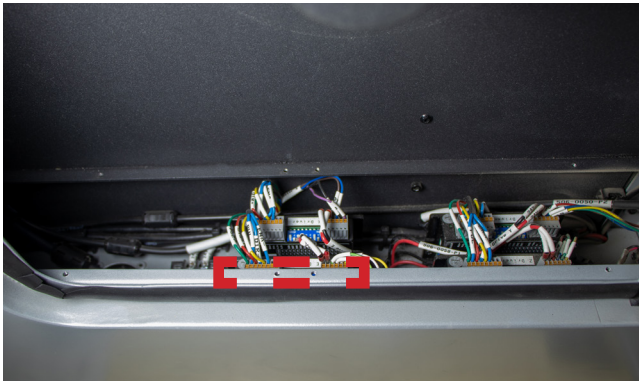
1. Load filament passing feeding gear.
2. Tighten the screw pressing spring till it grabs filament.
3. Then loosen the screw by a round after completely tighten it, so that the pressing bar can move up and down smoothly.

## The current of E motor adjustment

1. Open filament chamber door, and remove eight screws. Then take two metal covers out.



2. Find the driver labeled with “E driver” , and change the switch setting as below shown.

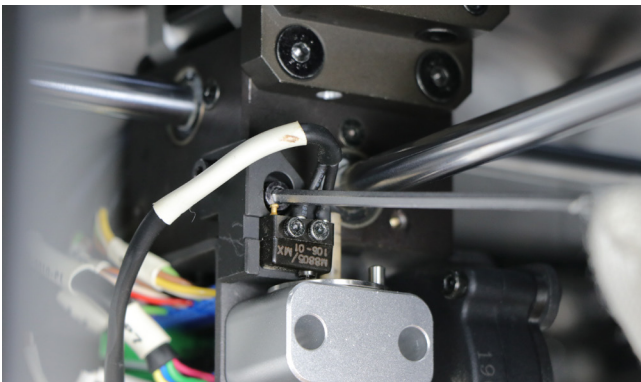


# Leveling Sensor

This section can help to replace leveling sensor, and adjust leveling sensor installation.

## Leveling sensor adjustment

1. Use M2.5 screwdriver to remove the screws fixing on the nozzle set cover.
2. Use M2.5 screwdriver to remove the screws fixing the leveling sensor bracket, and unplug its cable.



3. Press the sensor components on the plane.



If you hear a click, means the sensor can be triggered. Otherwise, adjust sensor installation refer to below.

Loosen the leveling sensor screw, push down the leveling sensor, and meanwhile tighten the screw. If the sensor still does not trigger after adjustment, please contact the salesperson.

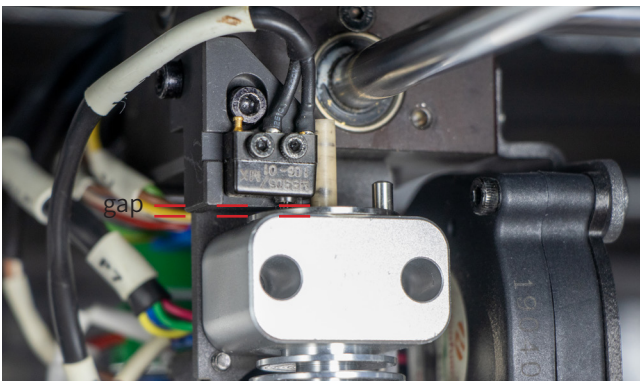
4. After adjust leveling sensor, please read below “Leveling sensor installation” step 3&4 to install.

## Leveling sensor installation

1. Check if your nozzle is the same as shown below (eight holes), please install the cover-plate. If it is different from the one shown below, there is no need to install the cover-plate and you can execute step 2 directly.



2. Before leveling sensor installation, please read above “Leveling sensor adjustment” step 3 to adjust sensor trigger.
3. Install the leveling sensor components as below to ensure that the illustrated gap is 1-2mm.



4. Insert the sensor's cable at P9 position on adapter board.



# XYZ Axis

## Axis lubrication

If the axis moves not smoothly or blocked, it is advised to lubricate the X Y Z axis.

In general, it is suggested to lubricate X Y Z axis 2 weeks without heating chamber, or 1 week with heating chamber.

1. Use M2.5 screwdriver to remove total 16 screws. And then remove upper and lower belt guards.
2. Recommend perfluoropolyether grease or WD-40 to lubricate axes (total 9).

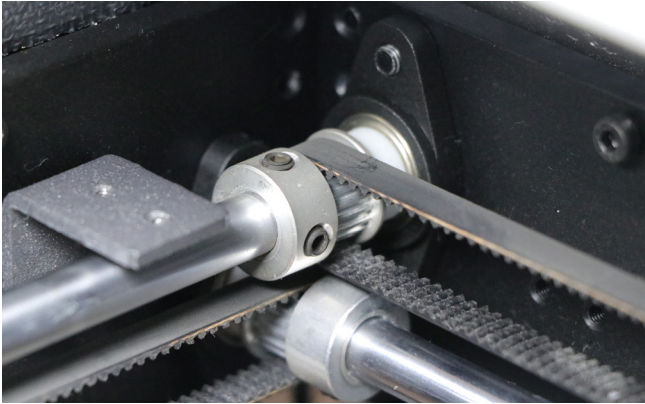
perfluoropolyether grease

WD-40

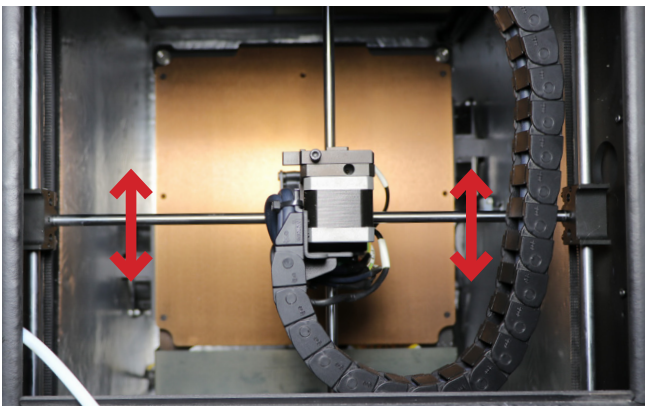
## XY axis adjustment

This section can solve XY axis unsmooth movement even after lubricated, as one side of X axis for example:

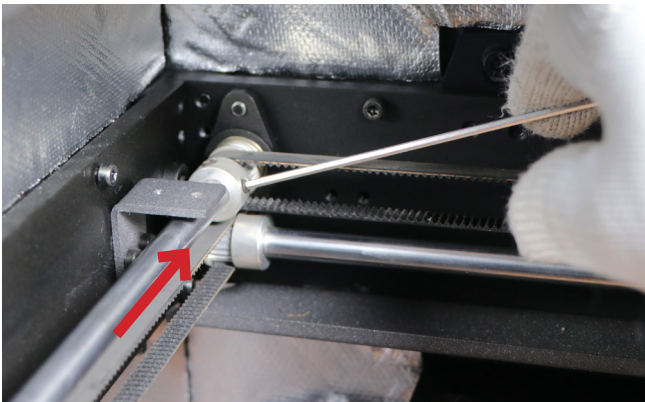
1. Read “Axis lubrication” step 1 to remove belt guards.
2. Use M2 screwdriver to loosen the X axis four timing pulley jackscrews.



3. X Axis Adjustment. Move the extruder to the center, then push the extruder left and right with both hands along the X axis until it feels smooth. Please use both hands to push slowly.



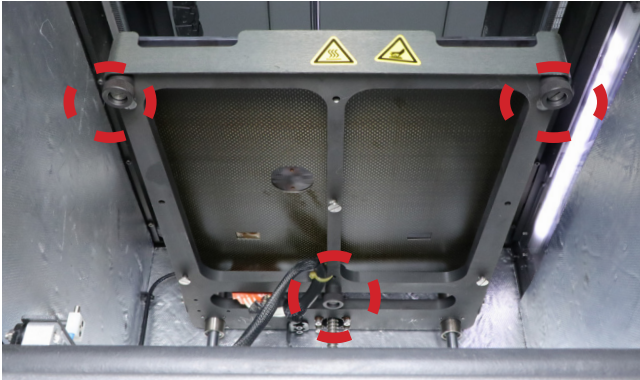
4. Lock the timing pulley jackscrews. Apply axial thrust to the pulley and then lock the screw.



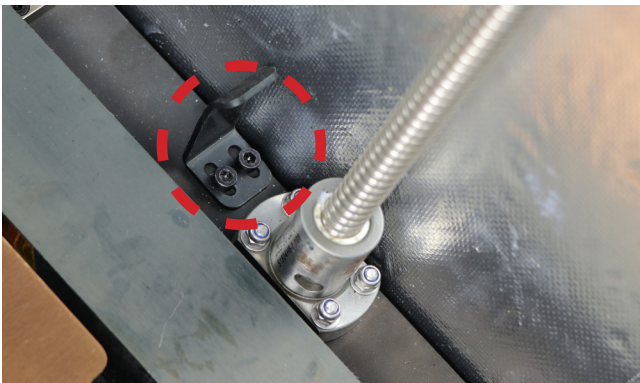
## Z axis limit adjustment

This section can help to solve the problem that the gap is too large or small between nozzle and buildplate when doing manual leveling or autoleveling.

1. Adjust the leveling screws to the middle of their positions. The leveling screws are at the back of buildplate.

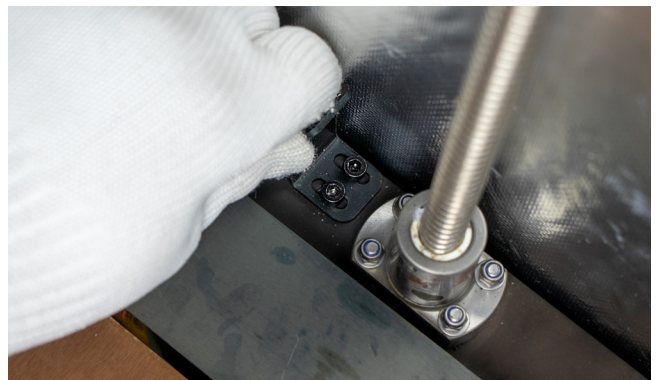
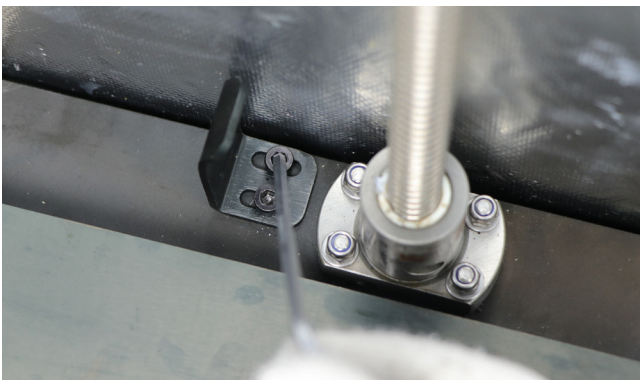


2. Find the part at the end of buildplate (marked by red circle in the picture).

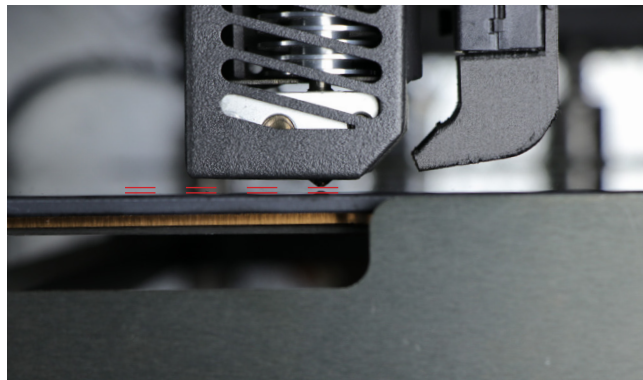


3. Use M3 screwdriver to loosen both two screws or manually push the vertical part aside, and then move the limit to right or left till you think there is appropriate gap. Move right for less gap, and left for more. When the part moves 1mm, the height of buildplate may change 1.7mm at top, which is totally for reference.

Noted: Carefully not break the glass. It is better to take out the glass firstly.



4. Move to “Axis” -” XYZ” interface, and set Z position to 0mm. Then check the gap which should be 1~2mm.



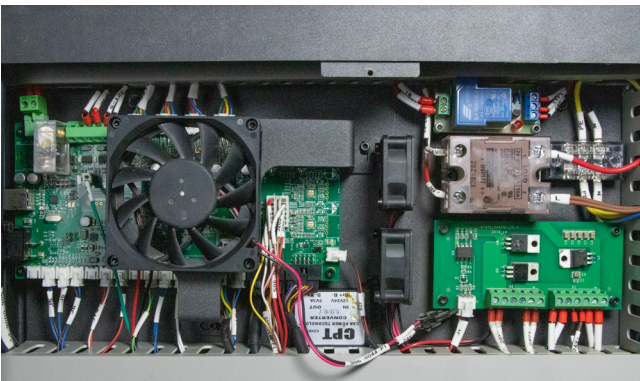
5. If the gap meets your need, then tighten screws. If not, redo step 3 and 4.

# Electrical System

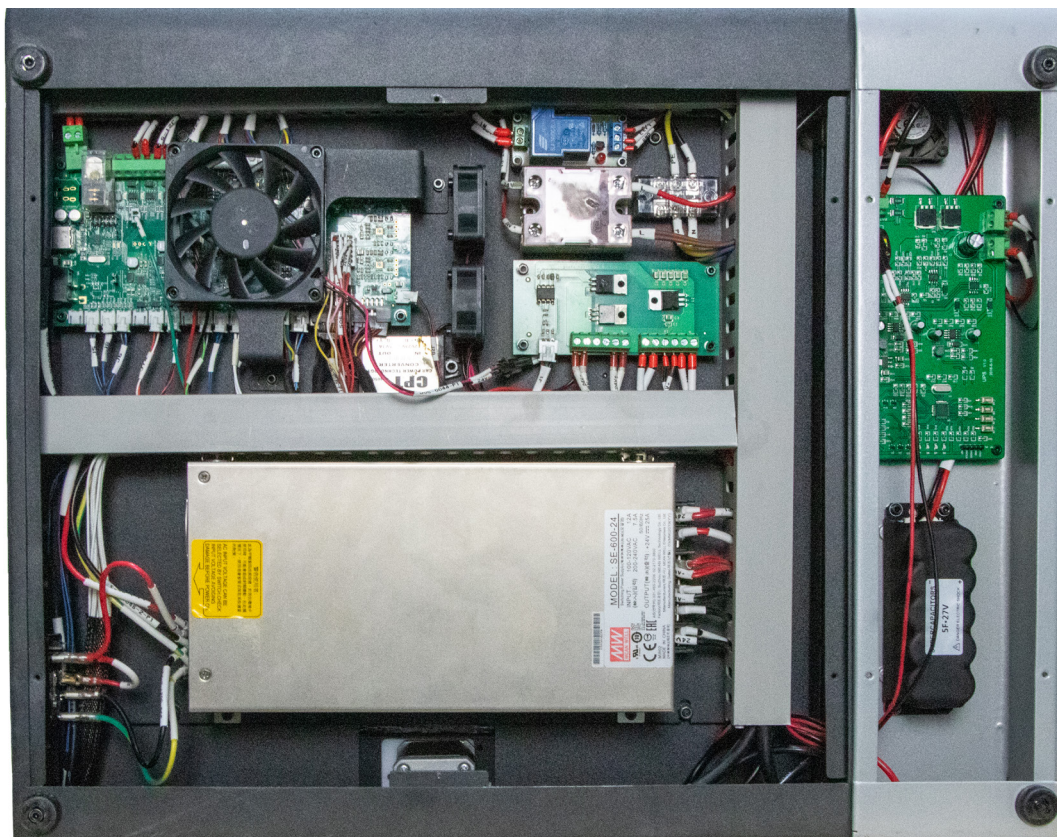
This section can help customer to figure electrical parts, and lead to upgrade mainboard.

## Electrical parts at bottom (includes mainboard)

1. Put down the printer, and remove bottom cover with M2.5 screwdriver.
2. Remove fan brackets with M2.5 screwdriver.



3. All the parts have been shown as below. For better knowledge, each part is labelled in figure, diagram and part list.



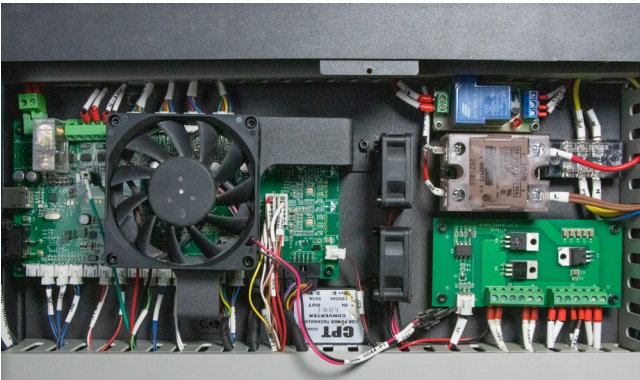
Diagram

1	802-0001-P01	Power Switch		Fuse related
2	801-0002-P01	Power Supply		The whole printer' s power
3	505-0811-E02	Mother Board V5.0 without driver boards		All control signal related
4	810-0001-P01	Relay Board		UPS control signal related
5	810-0002-P01	Solid State Relay (SSR)		Chamber heating related
6	505-0003-P01	Power Board		Build plate heating related
7	505-0005-P01	UPS Board		UPS related
8	824-0001-P01	Backup Power		

Part list

## Electrical parts close to nozzle set (PCB)

1. Remove nozzle set cover.



2. PCB is at nozzle' s left hand, behind nozzle set.

Figure

- |   |              |                                 |                               |
|---|--------------|---------------------------------|-------------------------------|
| 1 | 505-0810-E01 | Adapter plate (PCB) V3-Extruder | Nozzle set & extruder related |
|---|--------------|---------------------------------|-------------------------------|

Part list

3. Remember to put insulation pads under screws at PCB' s both sides.