Replace the extruder motor

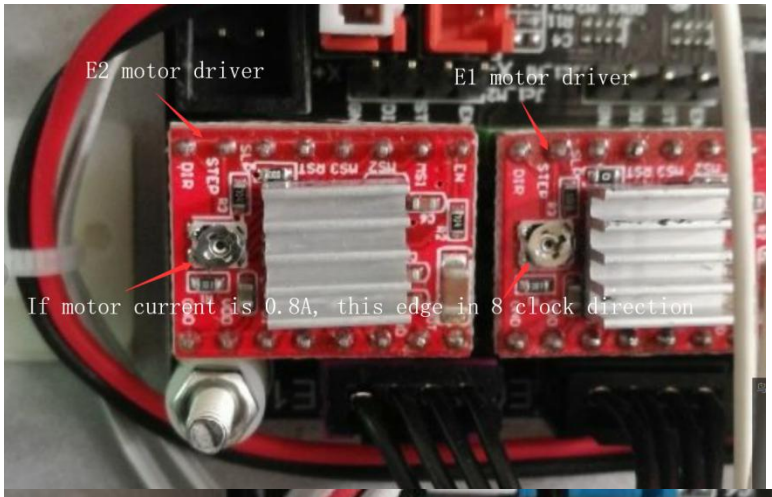
Warning： Please be careful for human electrostatic especially in winter when touching the motherboard or extruders or laser. The easiest way to solve this problem is that we can touch the metal part nearby by hand first before touching the motherboard or extruders or laser. So the electrostatic usually will be gone before touching the motherboard or extruders or laser.

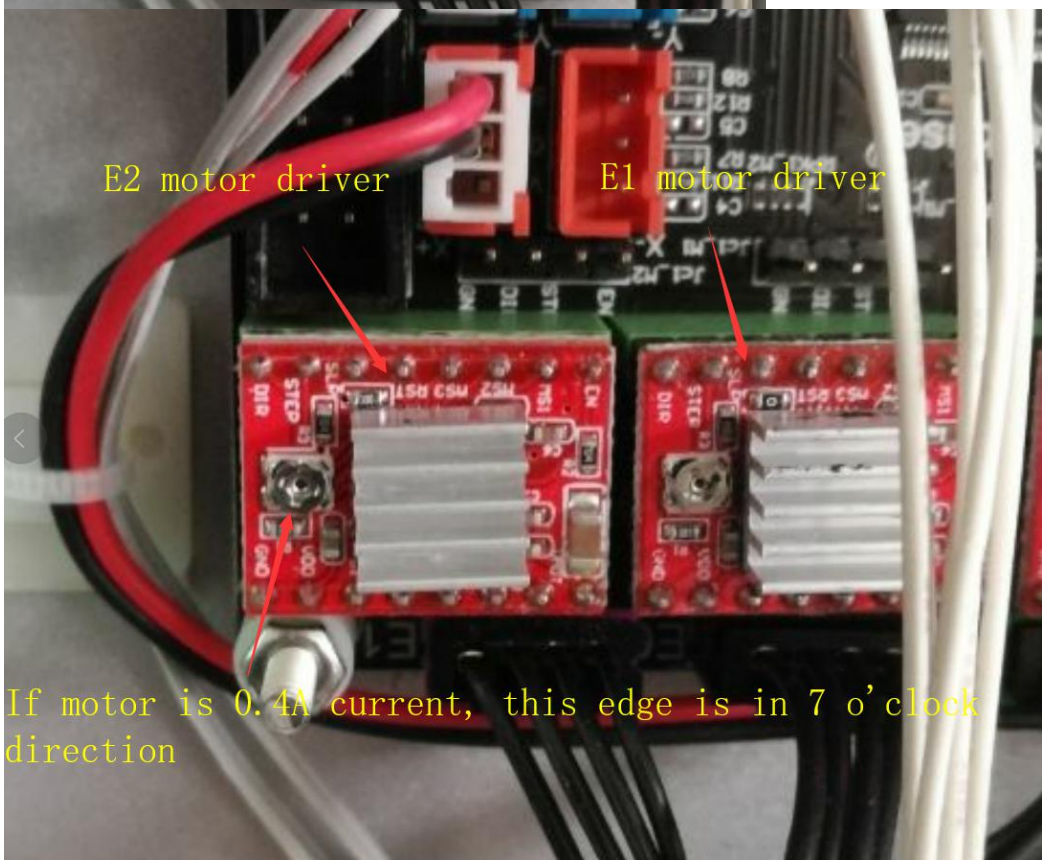
If your print *always* comes out well at first, then the extruder can't extrude enough filament, the cause may be extruder motor has the problem. If the extruder motor is the cause, you will hear the extruder gear clicking noise when it is under extrusion, and when you stop the printing and restart the printer, it will be hard to push the filament down after heating the extruder as the extruder gear is hard to be turned. However, if the extruder's hot end is clogged or the filament is tangled on the spool, the same thing happened. How to check whether it is clogged or the motor has the problem ? The point is that if the extruder motor has the problem, your next print maybe start ok at first, then you will find the under extrusion again. If the extruder is clogged, usually your next print will have the problem at first if this problem still not solved. If the cause is tangled filament, you will find this on the spool when this problem happens.

Usually the motor will not have the problem. But when we our printing speed is too fast or too low, printing temperature is too low, layer height is too thick, the motor works in an overloaded condition, and its life will be shortened. The motor hates heat too. When the motor works in the hot enviroment, its life will be shortened too.

Regarding how to replace the extruder motor, please kindly disassemble the extruder according to the video link below:
https://drive.google.com/file/d/0B148jWiv_vJebE10Nm5DTlZNUDA/view?usp=sharing&resourcekey=0-eUFQm_Yq_iOTrDQ0sZbJCA

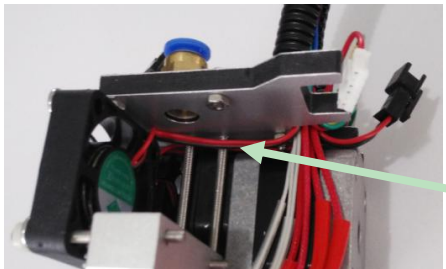
Our extruder motor is in 0.8A current, 34mm in length, Nema17 type. If the motor you replaced is from us or bought in 0.8A current, just replace the extruder motor after powering off the printer. **If the motor you replaced is in 0.4A** current, we have to power off the printer and open the bottom of the printer, rotate the extruder motor driver screw counterclockwise about 30 degrees as the photo below (or the motor will be burnt):

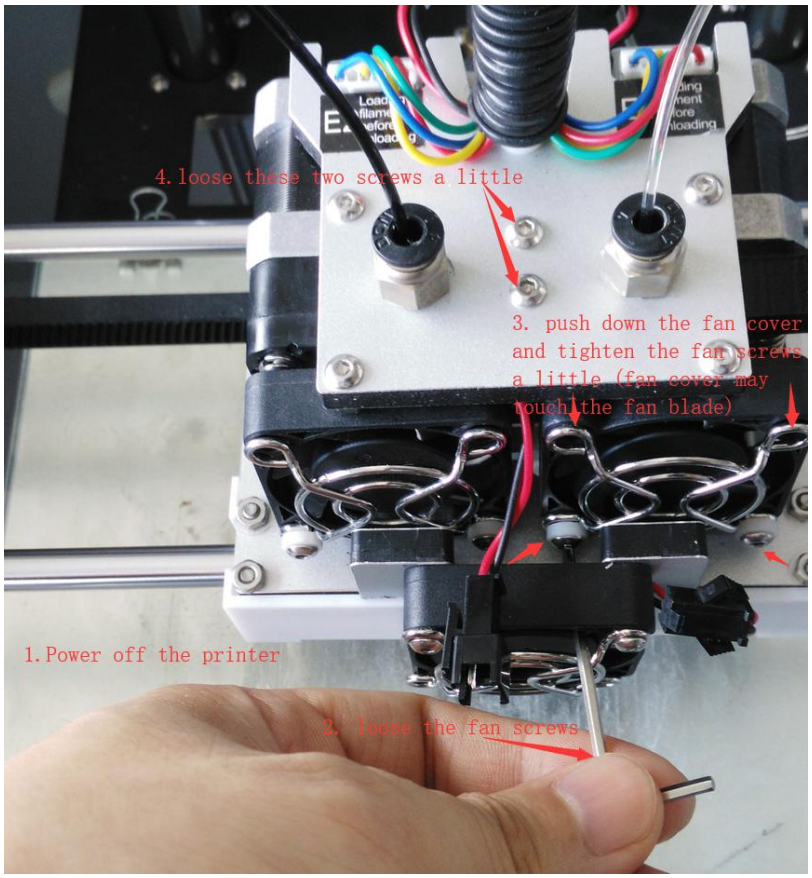




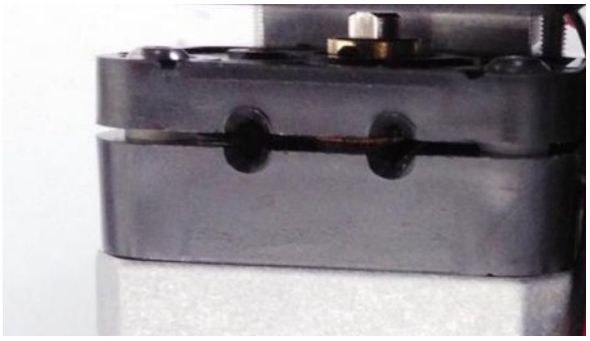
When adjusting an extruder you may get a misalignment with the throat of the hot end, to avoid this try inserting a length of filament while the extruder is loose and wiggling it around until the filament passes through to the nozzle, then tighten the extruder.

When you assemble the extruder again, please make sure **the fan wire is not pressed by the screw's thread. The Fan metal cover should be pushed down and the screws on the extruders top piece should not be tightened, or the fan will have the noice or can't run.** Check the photo below:



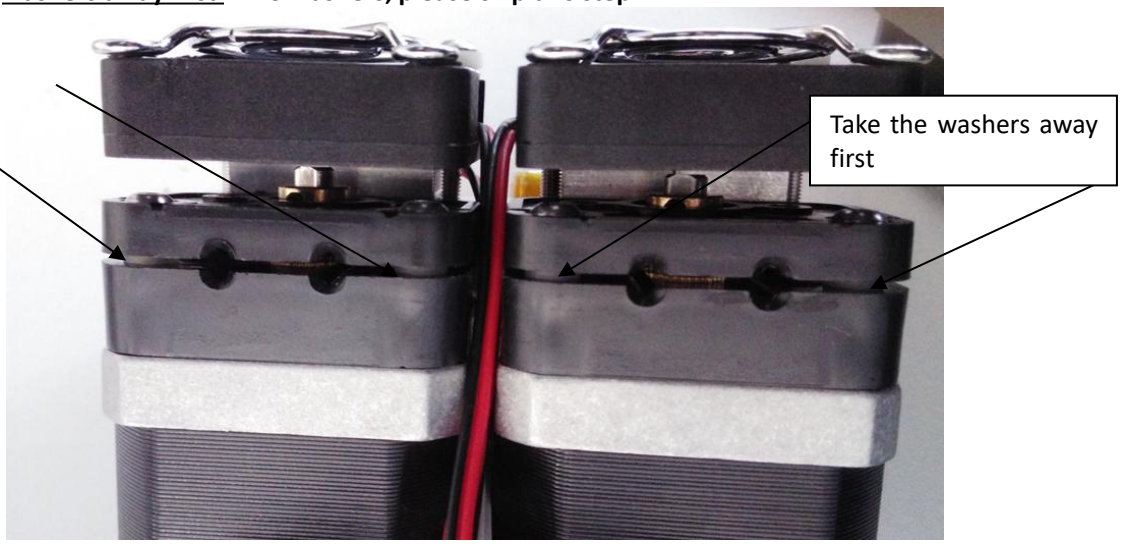


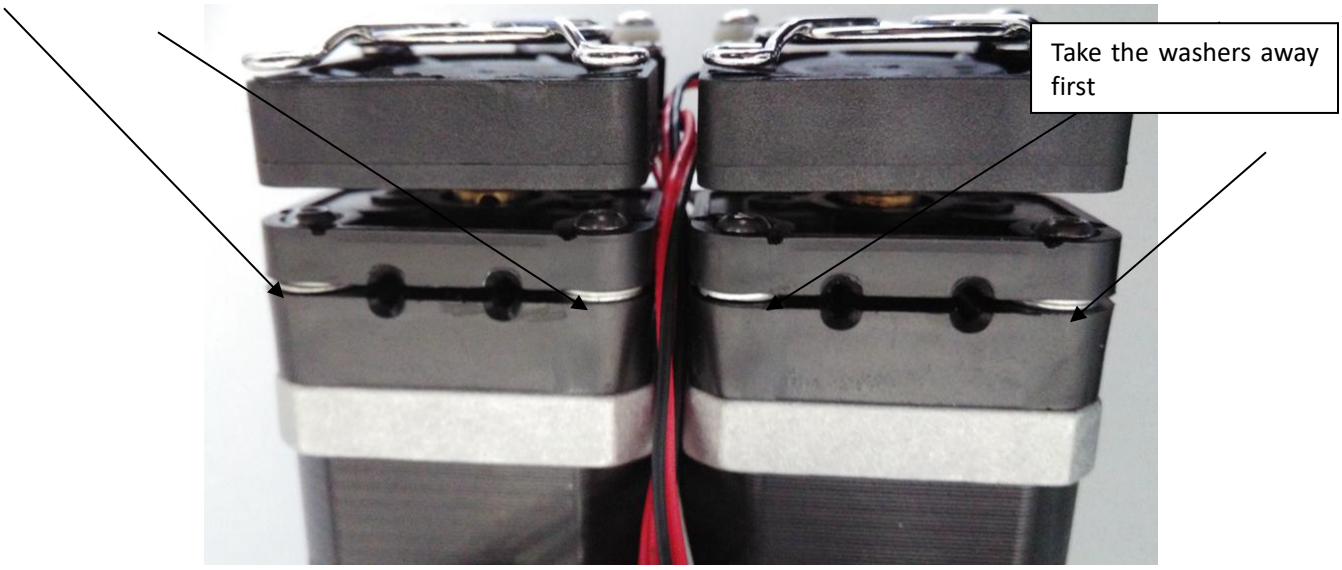
Please don't <u>disassemble</u> the extruder part as the photo below:

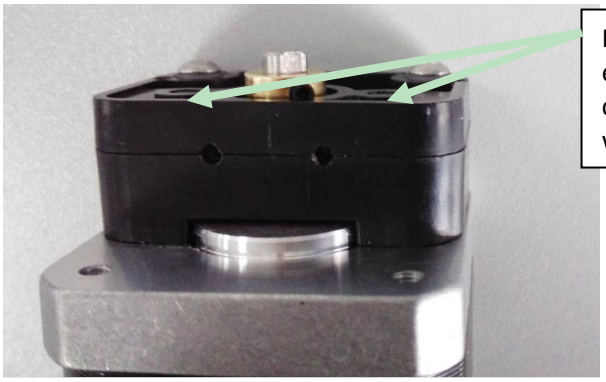


We have calibrated the tension for extruding system. If you disassemble them, the calibration will be broken.

If you want to reassemble them and there are washers between two plastic parts, **please <u>take the washers away first.</u> If no washers, please skip this step.**







Press **the bottom part first** to ensure two plastic parts are contacted well then screw the bolts with washers

Sometimes the filament can't be extruded, as the extruder assembly is too tight or too loose . If it is hard for you to get the correct tension for two bolts, please check this link: https://drive.google.com/file/d/0B76TjeOkslHlTzJ5RWZiT2ZaQ00/view?usp=sharing&resourcekey=0-JUhrp2fA7iifRcAZuHn7qg

When you press the filament on the back of the extruder motor, the filament can still be

extruded properly , and this tension is usually ok.