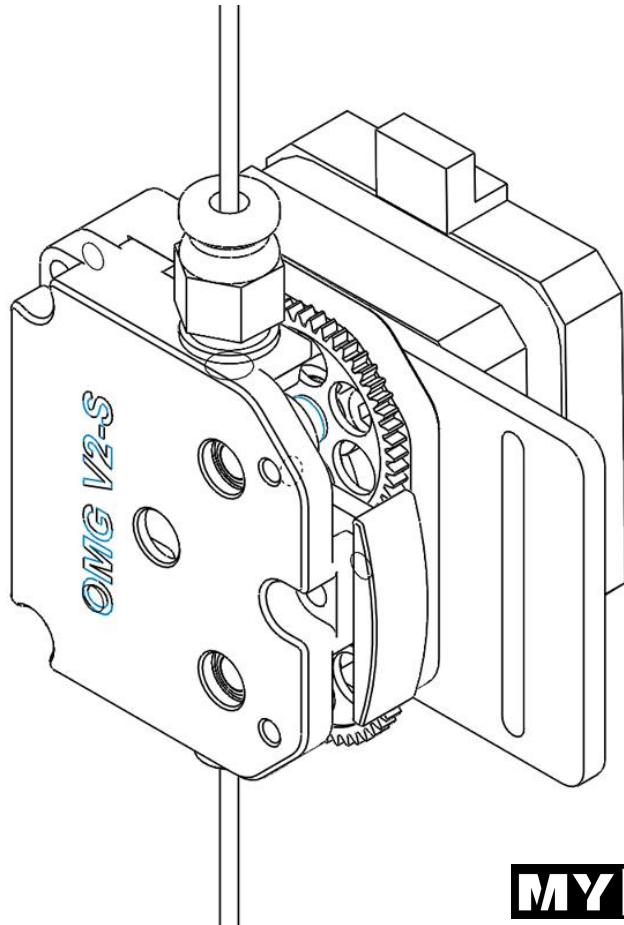


# OMG V2-S

## 3D Printer Extruder User Manual



v21911

**MY 3D**  
DIYMARIA

**A**

Basic parameters

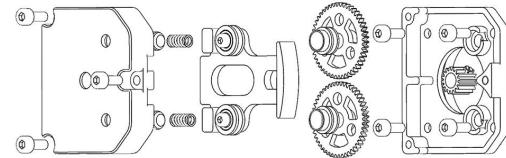
**B**

Installation steps  
Adjustment

**C**

Motor step value adjustment  
Drive current adjustment setting

# A

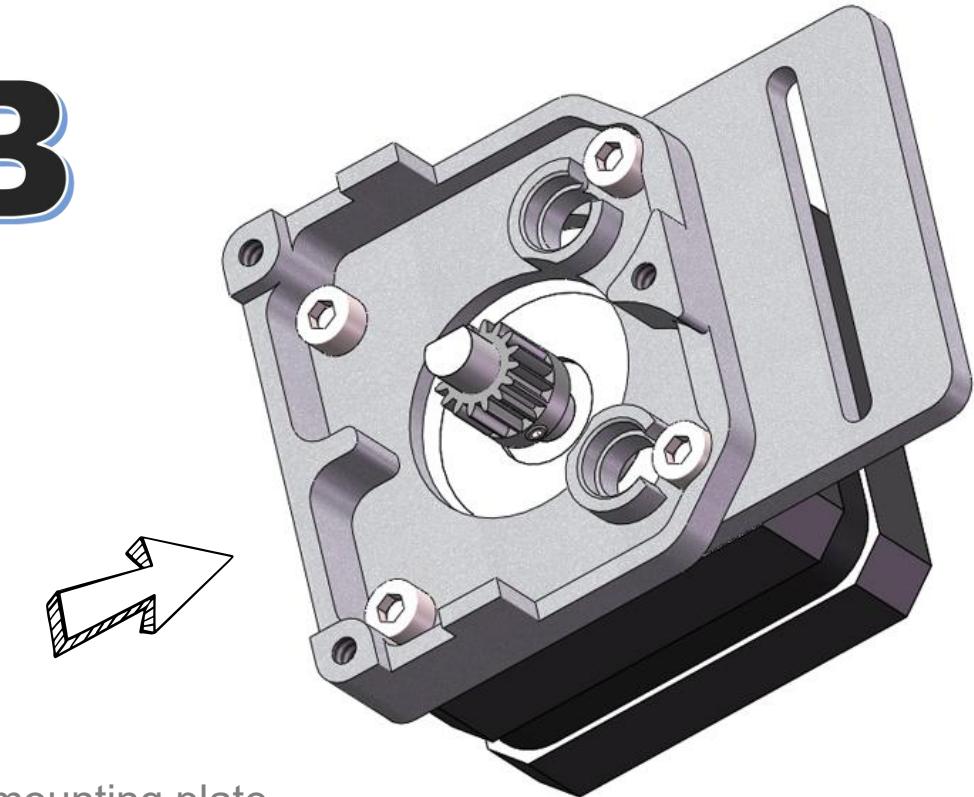
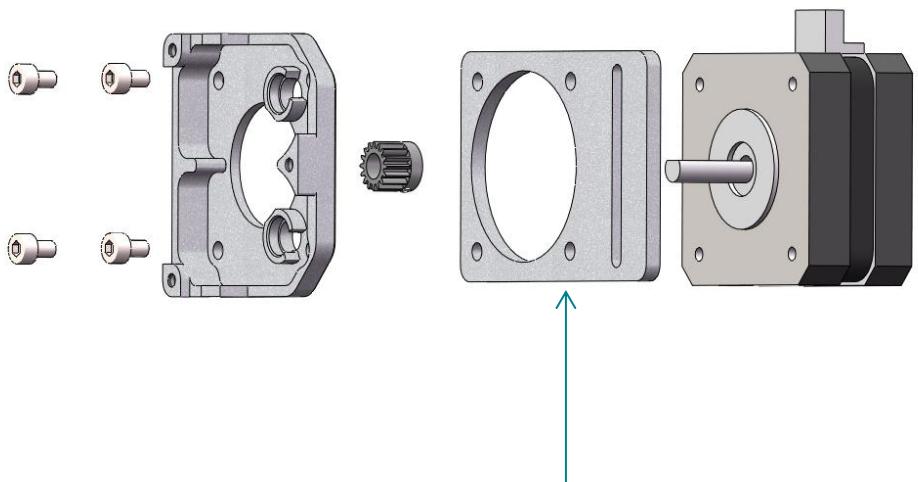


## Device parameters

Application:	FDM 3D printer
Way of working	long-distance feeding/direct extruder
Filament materials	PEEK, nylon, PLA, ABS, carbon fiber...
Gear reduction ratio	1:3
Wheel diameter	7.8mm (approximately)
Product Size	19. 5*42*48mm
Weight	64g(Net weight without packaging host weigh)

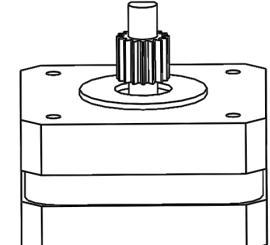
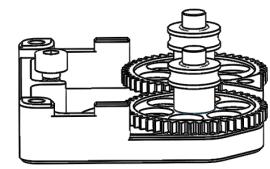
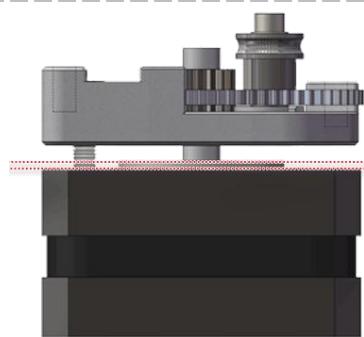
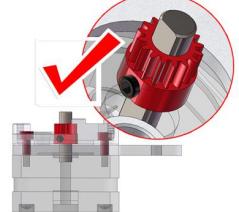
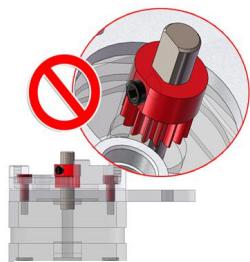
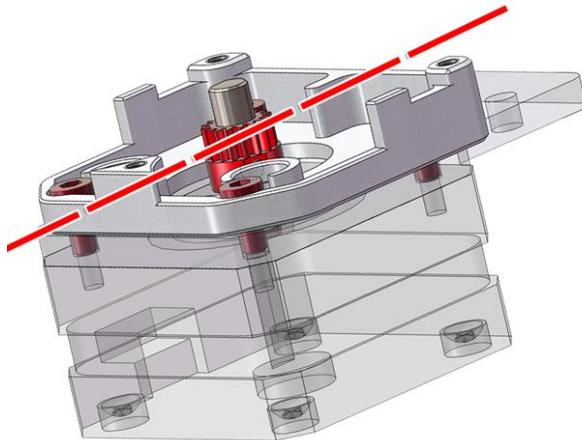
# 1 step

B



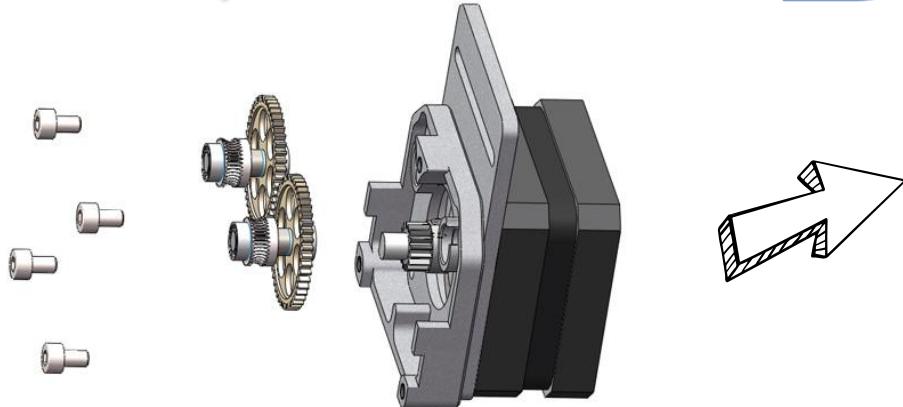
## Adjustment

Some printers don't need a mounting plate



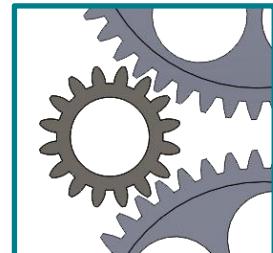
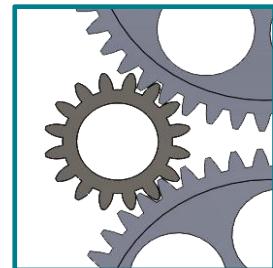
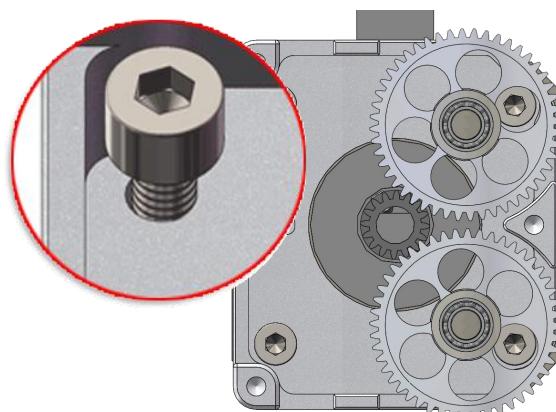
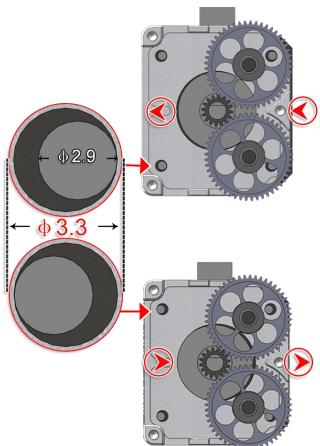
**2**  
step

**B**



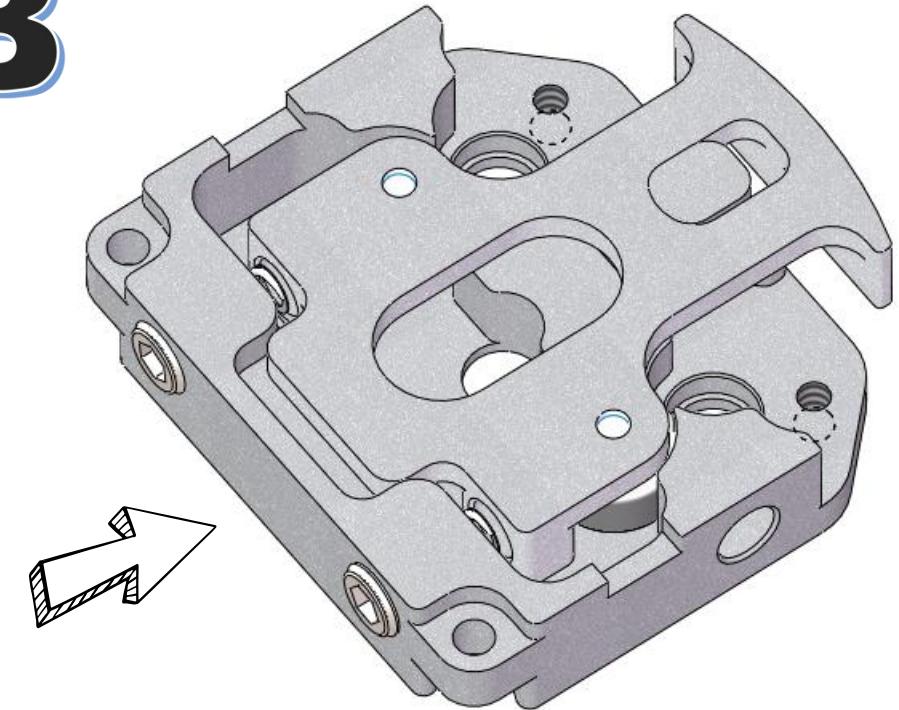
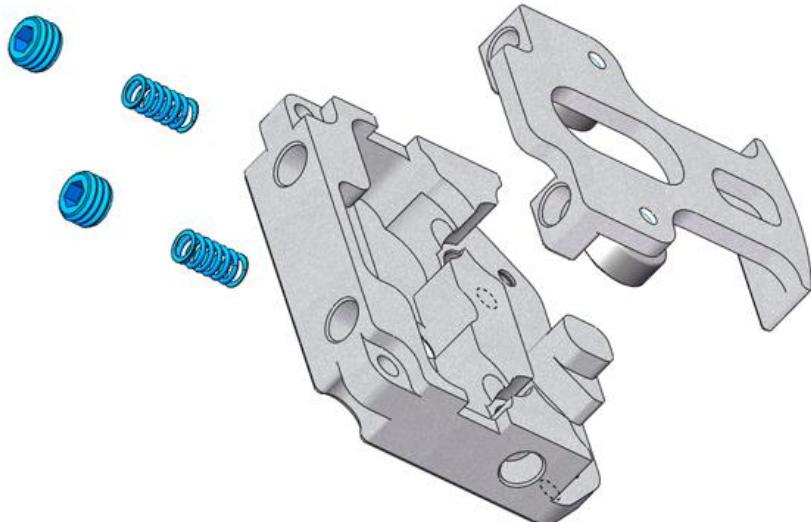
## Adjustment

- 
- 1/ Adjust the gear clearance first.    2/ Then tighten the M3 screws



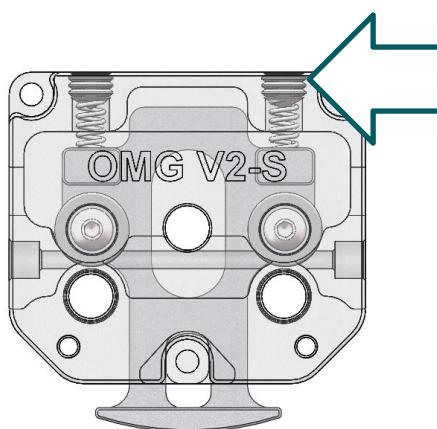
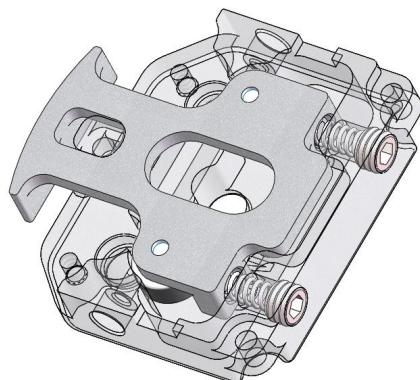
# 3 step

B



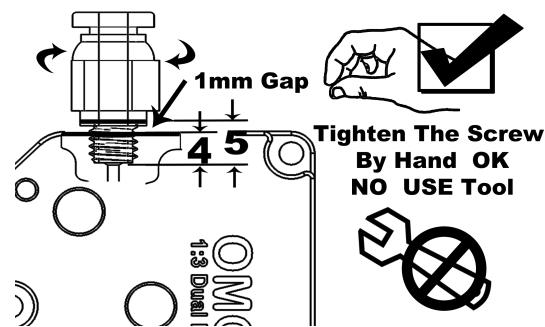
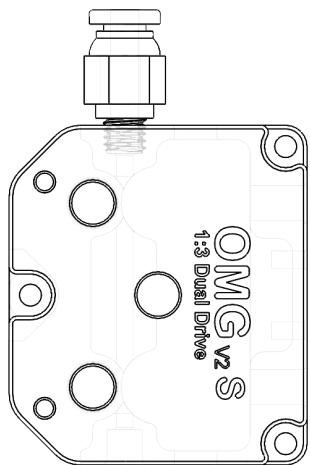
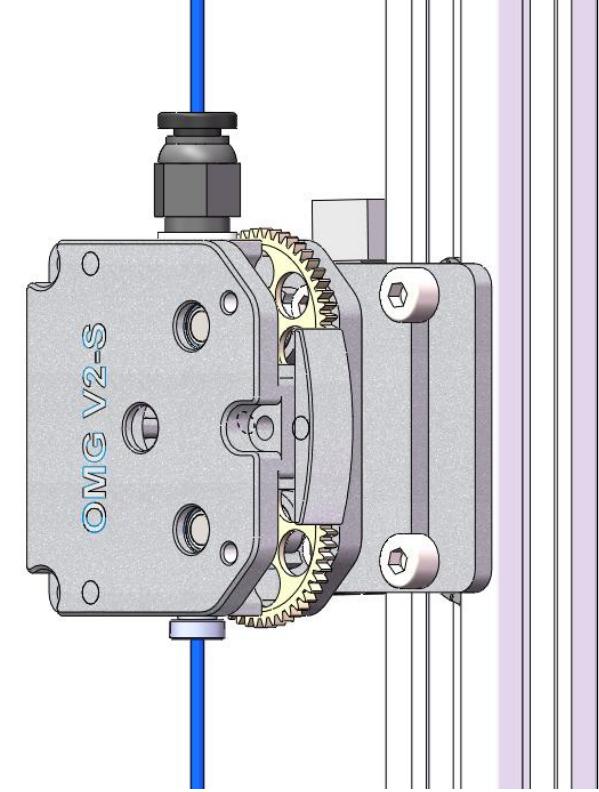
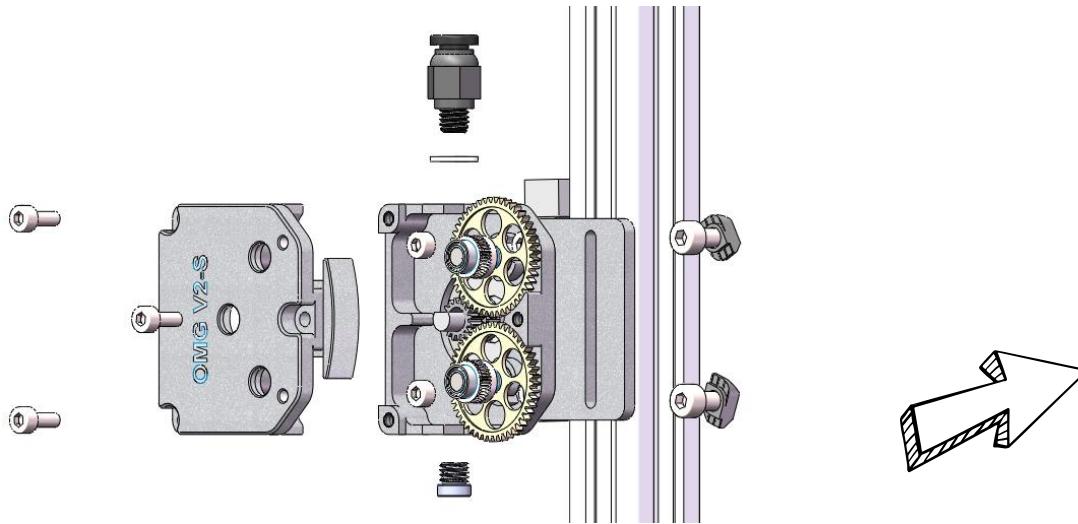
---

Adjust the spring tension. It is recommended that the tightening screws are flush

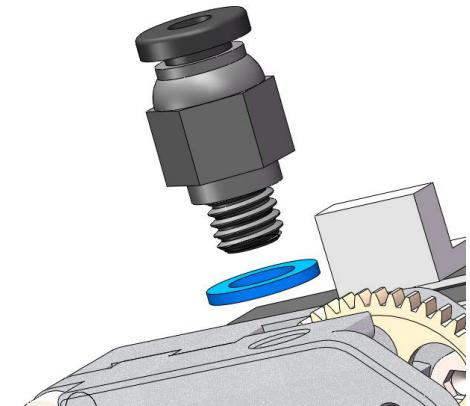


# 4 step

B



Do not use tools to twist vigorously

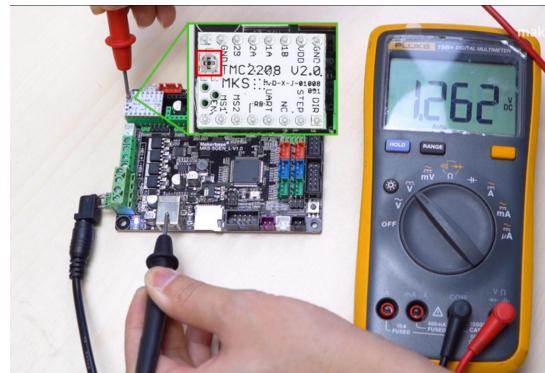




# Input Voltage:12- 24v

12V Input motor current setting Max 2a  
(suggested value **1.6a**)

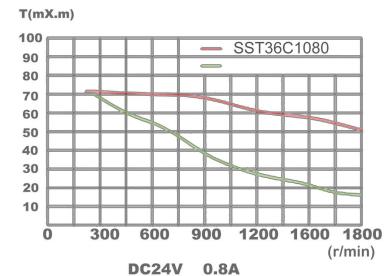
24v Input motor current setting Max1.2a  
(suggested value **0.8a**)



The MOTO working temperature of the motor **Max 80°C**

If the working environment exceeds 80°C ( cooling fan is required)

Stepper motor drive input current can be adjusted appropriately  
Need to follow the operating temperature up to 80 degrees Celsius  
and not exceed the maximum value  
Otherwise, the internal circuit of the motor will burn out and cannot work.



Two ways to modify the stepper motor drive current: A software adjustment B external potentiometer adjustment

A-Software adjustment commonly used 3 kinds

1/LCD screen enters the main menu,

2/Motherboard firmware refresh configuration file to adjust

3/Adjust through the upper computer. epetier-host or cura, after connecting, you can enter the M command code in the command line for dynamic current adjustment

B- external potentiometer adjustment

Modify the current mode of the stepper motor: adjust the potentiometer-screwdriver rotation adjustment.

Some motherboard firmware settings need to heat the print head,

Only the extruder motor drive will supply power, such as ENDER 3 V2, etc.

Drive current adjustment (please adjust according to different motherboard drivers)

A4988 drive maximum current calculation formula:  $I_{TripMax} = Vref/(8 \cdot Rs)$ . For example:  $Rs$  is  $R100$ , we need a maximum drive current of  $1.125A$ , and the  $Vref$  reference voltage needs to be adjusted to  $0.9 V$ .

[ $Vref$ ]: The reference voltage can be changed by adjusting the potentiometer. Turn the potentiometer clockwise to increase the voltage, and turn the potentiometer counterclockwise to decrease the voltage. Measure the voltage between the metal knob of the potentiometer and GND, which is  $Vref$ .

Drive current measurement TMC2208/TMC2209 For more info about the driver TMC, please check <https://github.com/watterott/SilentStepStick> Or consult the driver or motherboard supplier,



# Step Value Modification



42/Stepper motor step approach angle  $1.8^\circ$   
(pulse number)  
16 subdivision: **385**

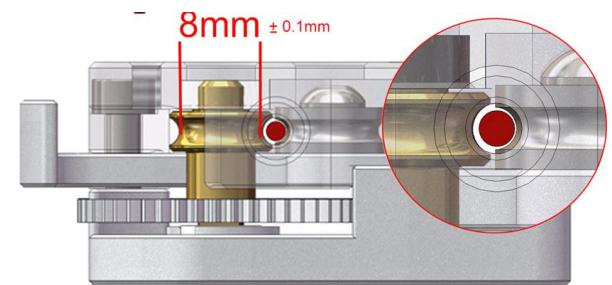
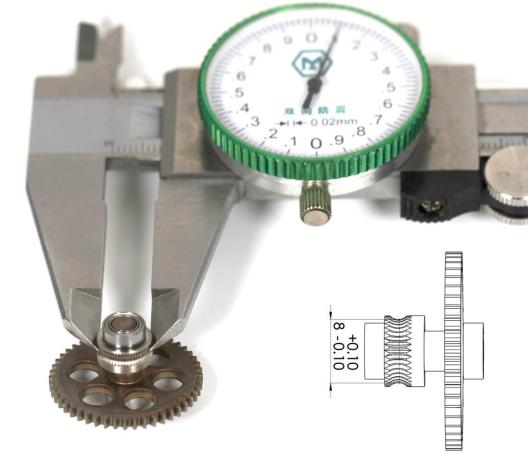


36 stepper motor,  
step approach angle  $0.9^\circ$   
16 subdivision **760**

Main board firmware modification code:  
#Movement setting

>DEFAULT\_E\_STEPS\_PER\_UNIT 385

#Default Axis-E Steps Per Unit (steps/mm)  
# 385 is the modifiable step value, usually the original value is 93



The diameter of the  
extrusion wheel:  
OMG V2 S: **8mm+0.1**  
OMG V2: 8.8mm +-0.1

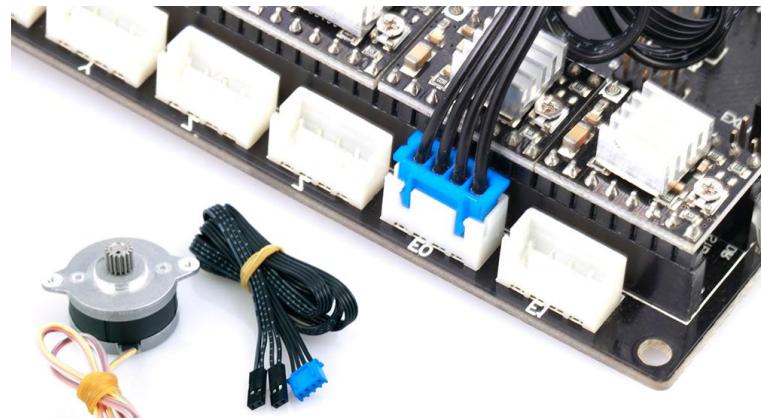


## Modification of the rotation direction of the motor:



ID:**SST36C1080-16**

Change the wiring sequence of **AB BA**  
Adjust the direction of rotation of the motor



Adjust the direction of motor rotation



Refresh the motherboard firmware

```
#Invert the stepper direction.  
>INVERT_E0_DIR      0  
#If you modify the rotation direction, you can directly modify it to 0-1 or 1-0
```



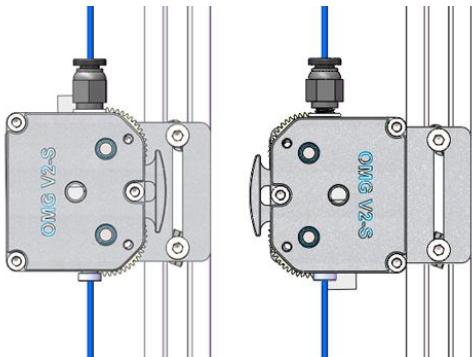
## Modification of the rotation direction of the motor: Refresh the motherboard firmware



#Invert the stepper direction.

>INVERT\_E0\_DIR 0

#If you modify the rotation direction, you can directly modify it to 0-1 or 1-0



You can also adjust the installation direction of the extruder  
Change the direction of filament feeding and discharging

# Ender 3 v2 Step Value Modification

42/Stepper motor step approach angle 1.8°  
(pulse number)  
16 subdivision: **385**



36 stepper motor,  
step approach angle 0.9°  
16 subdivision **760**

## Ender 3 V2 extruder step value modification:

Please write the following code (red) into a notepad, save it to a TF card, as a Gcode format file,  
Then insert the TF card into the printer and execute printing to modify it (the original value is 93)

M92 E385  
M500

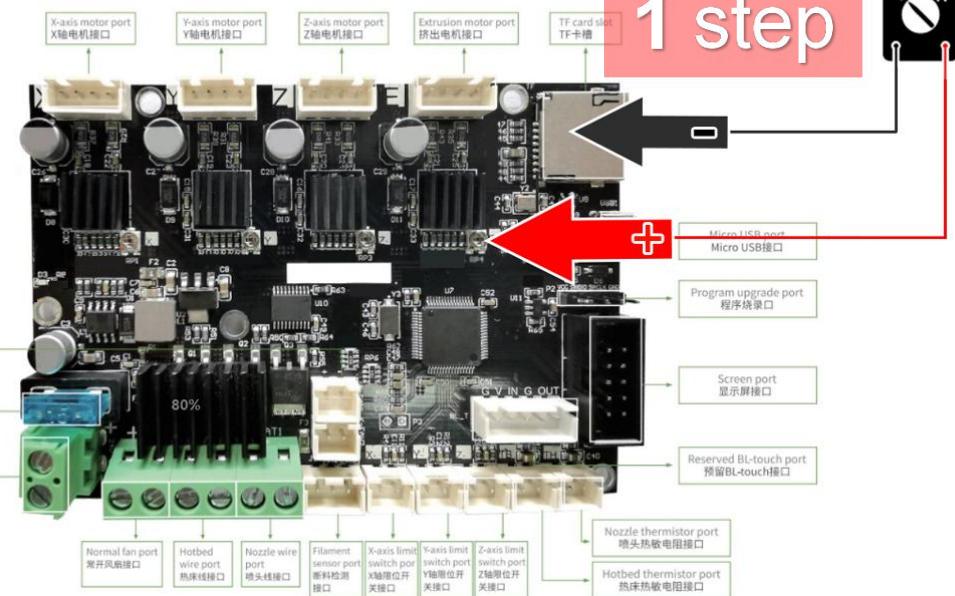
Note 385 can be modified to the step value you need. If 36 stepping motor is used, the value is 760

Select **Storage configuration** to save

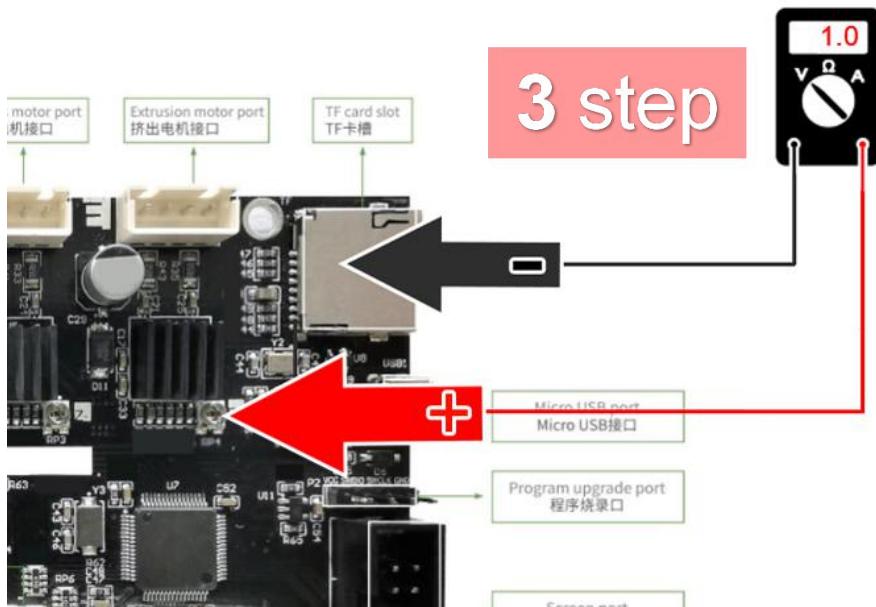


## Ender 3

- 1 Connect to the power supply Non-USB connection
- 2 Turn on the nozzle heating
- 3 Disconnect the stepper motor link



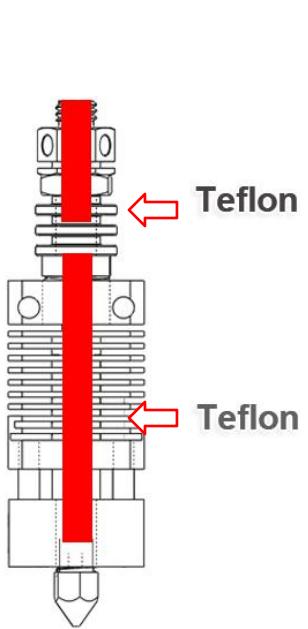
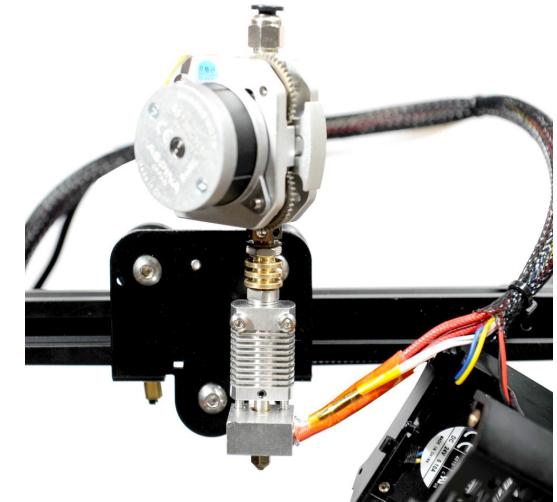
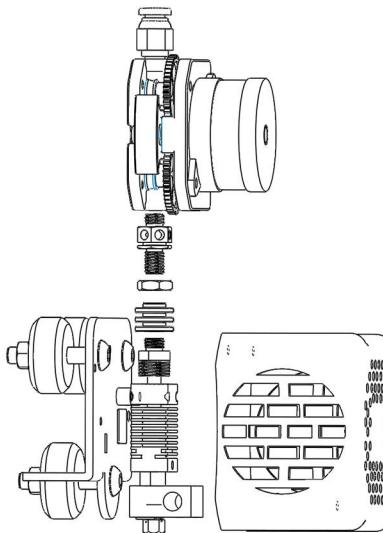
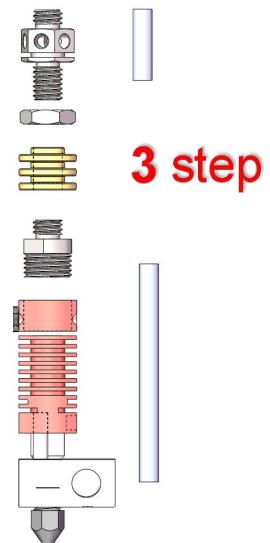
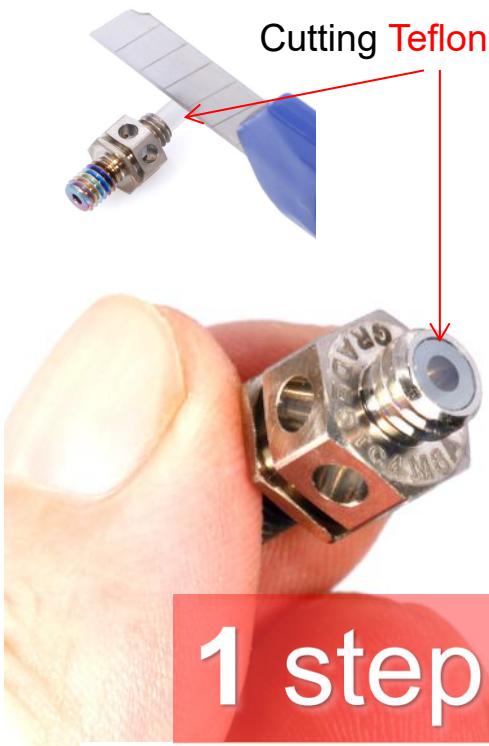
Step 1: Check the drive voltage  
Step 2: Rotation adjustment  
Step 3: Re-check Vref to 1.0



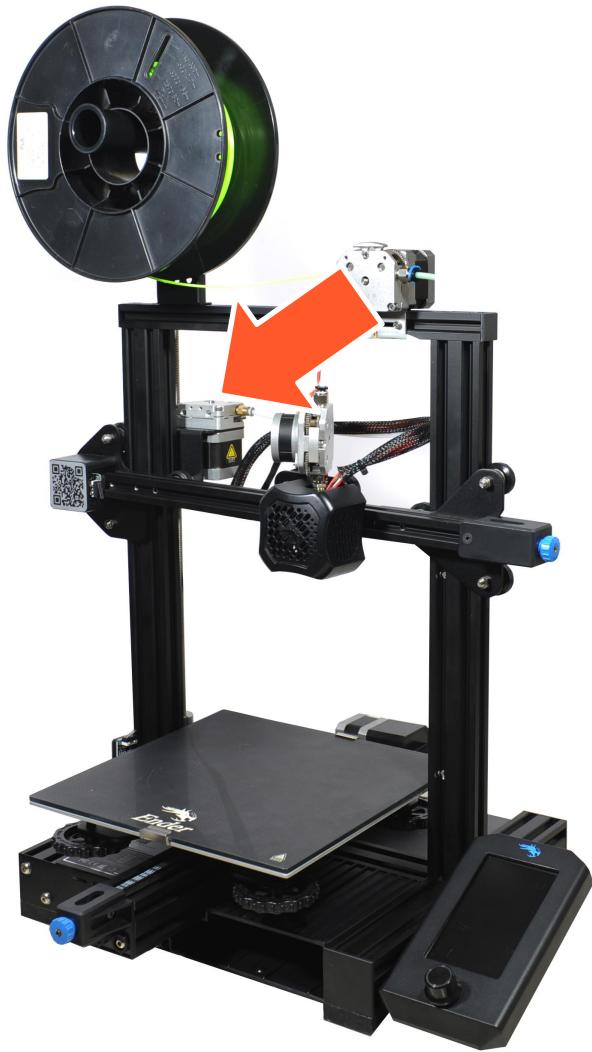
For more info about the driver TMC, please check  
<https://github.com/watterott/SilentStepStick>  
Or consult the driver or motherboard supplier,

# Ender 3 V2

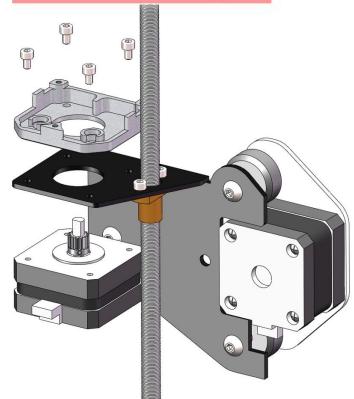
Direct extrusion installation



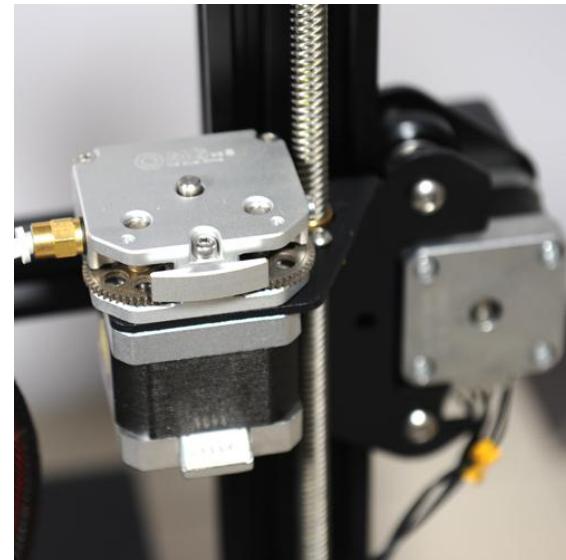
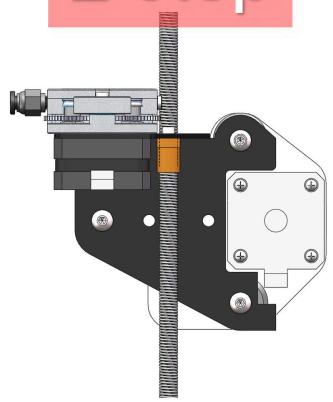
# Ender 3 V2 Long distance installation



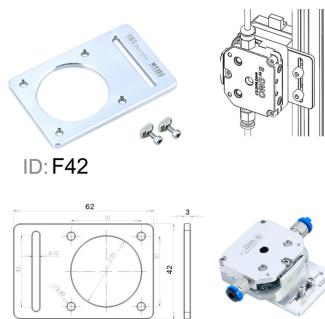
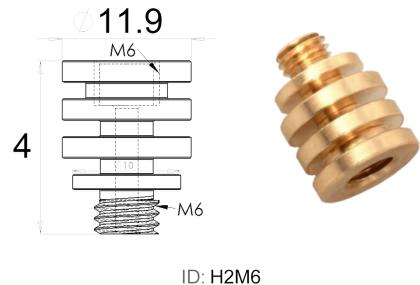
1 step



2 step

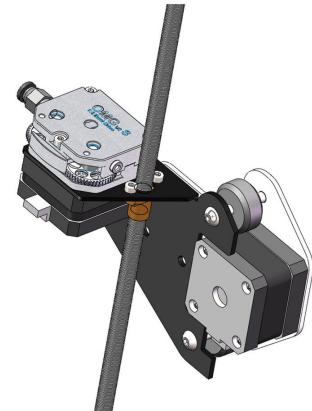
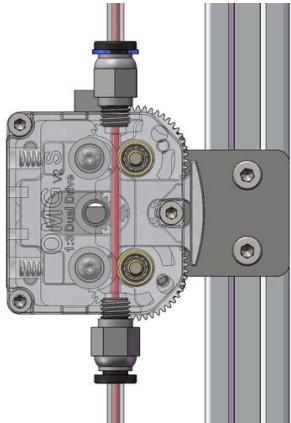


# OMG V2-S adapter extension parts

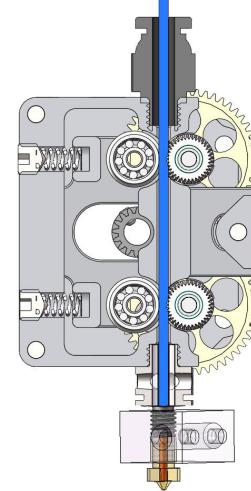


# 2 Ways work of feeding

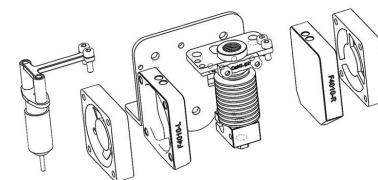
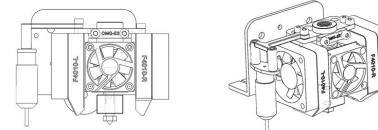
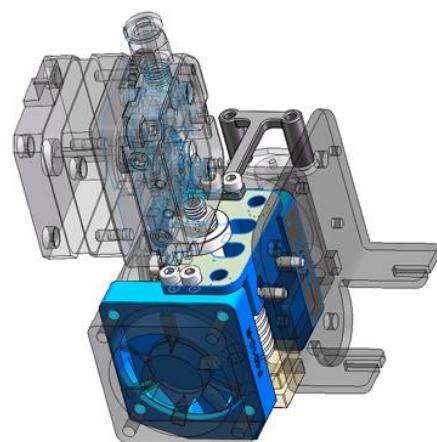
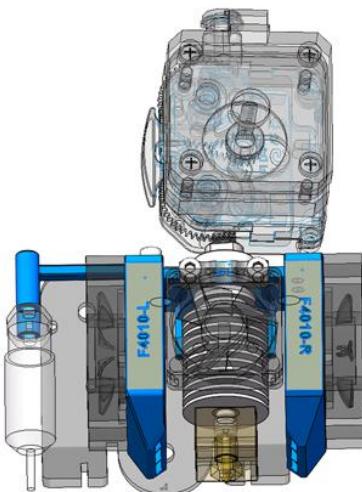
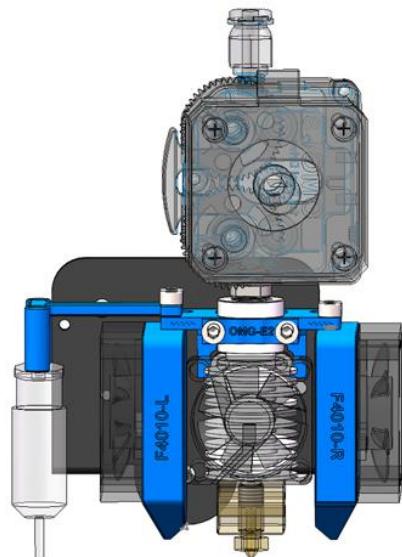
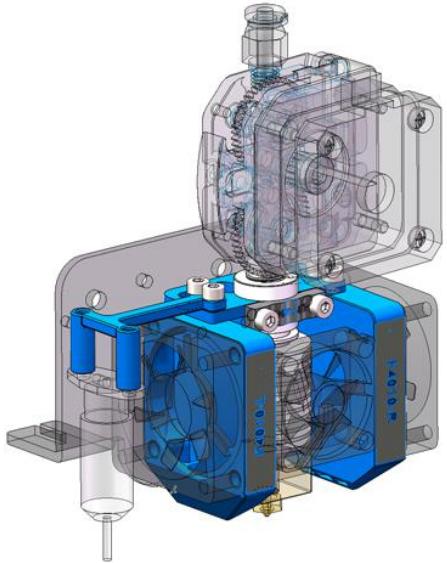
## Long-distance feeding extruder



## Direct extruder

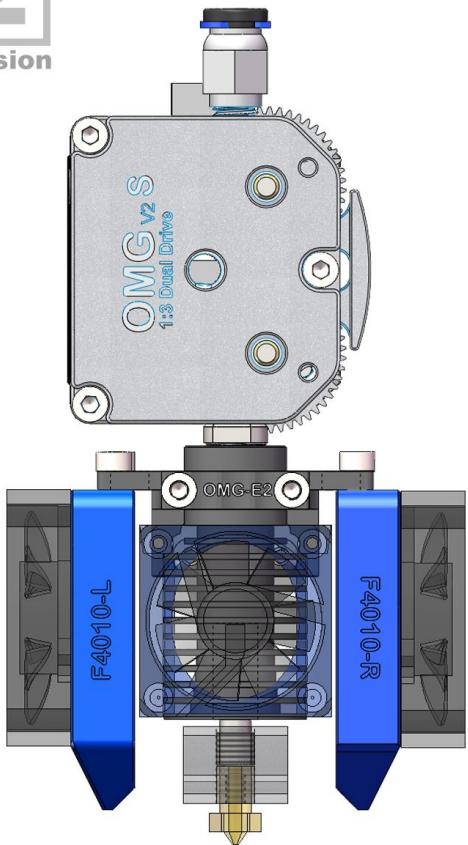


# Direct extruder for E3D V6 D2 Installation diagram

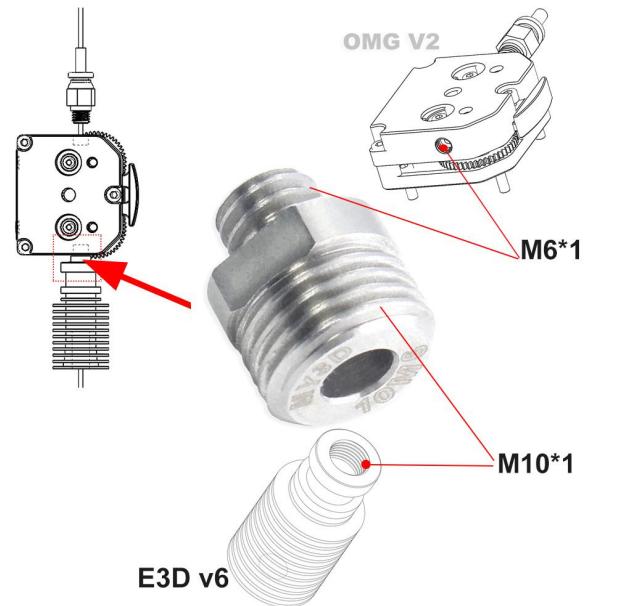


# Direct Extruder D2 Installation diagram

**D2**  
Direct extrusion



**E3D V6**



**ID: E-12**