

## H2 V2S Lite User Manual

### Basic Parameters

- Extrusion Method: Dual Gear Extrusion
- Maximum Printing Temperature: 270°C (upgradable to 500°C.)
- Weight: 175g (including Heater Cartridge, Thermistor, and Fan.)
- Maximum Extrusion Force: 7.5kg (depending on the filaments.)
- Extrusion (based on the existing): 2700mm<sup>3</sup>/min (depending on the filaments.)
- E-step: 932/mm at 16 microstep (Further calibration is recommended.)
- Rotation distance: 3.433
- Recommended Motor Current: 800mA
- Gear Ratio: 7:1
- Drive Gear Circumference: 24.5mm
- Filament Diameter and Tolerance: 1.75 ± 0.05mm
- Thermistor Type: NTC100K

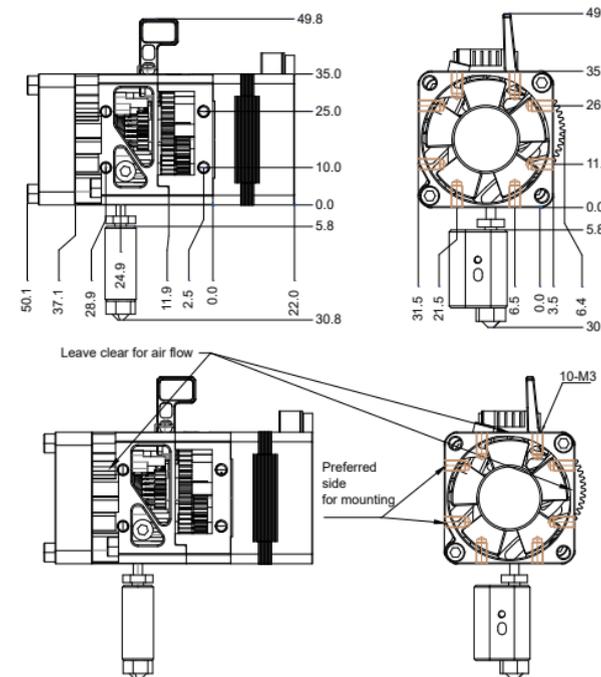
Note: Not compatible with standard NEMA14 motor.

### H2 V2S Lite vs Other H2 Series Products

- Light weight as low as 175g;
- Flowrate boosted from 15mm<sup>3</sup>/s to 45mm<sup>3</sup>/s;
- The idler arm is made of 7075 T6 aluminum, with special blend high-performance anti-wear MoS2 grease to improve the quick release lever haptics and enhance wear resistance;
- High performance thermal grease has been pre-applied to the heat break to increase thermal conductivity between the heat break and heatsink to improve cooling performance;
- The filament drive gear is made of tool steel plated with nano-coating to improve hardness, wear resistance, corrosion resistance and provides longer life when printing abrasive materials.

### Product Dimensions

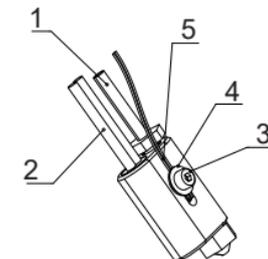
- XYZ Dimensions(including the fan): 72.1 x 37.9 x 80.6mm
- Thread of Nozzle/Heat Break: M4
- Nozzle Diameter: Φ0.6mm



### More Guidance

- It is recommended to install the fan toward the left; if toward the right, pay attention to the gear and air vent. There are 10pcs M3 screw holes on the extruder for fixing.
- The M3X8 screws provided are suitable for mounting plates with a thickness of 3~5mm.
- Please assemble the hotend with the following steps:
  1. Insert the heater cartridge into the heater block;
  2. Install the heat break;
  3. Place the thermistor head into the designated spot on the side of the heater block(preferably pack the spot full of thermal grease, standard thermal grease for PC cooling purposes should suffice)and clamp down the thermistor wire with the included M2 screw and washer;
  4. Wrap the heater block with the included PTFE tape at least 3 times for optimal thermal insulation(To achieve the ultimate lightweight and smallest dimension, the thermistor screw and washer can be neglected, fix the thermistor in place with only PTFE tape);
  5. Install the nozzle(the nozzle should be hot tightened again after the heater block has been heated to printing temperature).

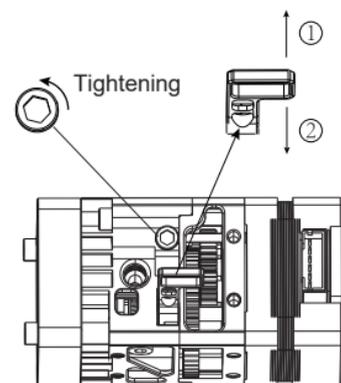
- ① Heat Break
- ② Heater Cartridge
- ③ M2x3 Screw
- ④ Washer
- ⑤ Thermistor



## About Filament Tension and Filament Release

- Drive gear tension is adjustable to accommodate different material filament, turn the Tensioner Screw counterclockwise to increase pressure, clockwise to decrease pressure (when the screw stops turning, Do not force it or you will damage the extruder.)

- To release the filament, pull the lever towards the position of ② in the picture below.



## Maximum Operating Temperature

- Fan: 50 °C
- Motor: 130 °C
- Heater Break: H2 bi-metal (copper alloy + grade5 titanium alloy), 500 °C compatibility.
- Bearing: 100 °C

Note: it is the maximum working temperature of a single part, not of the whole system.

## Heater Cartridge Specifications

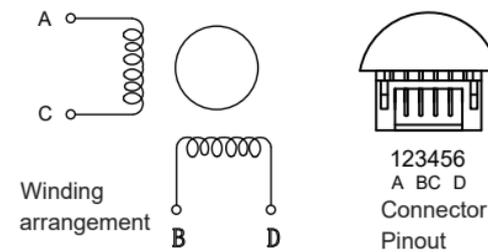
- Head Size: 6 x 20mm
- Voltage: 24V
- Power: 70W

## Fan Specifications

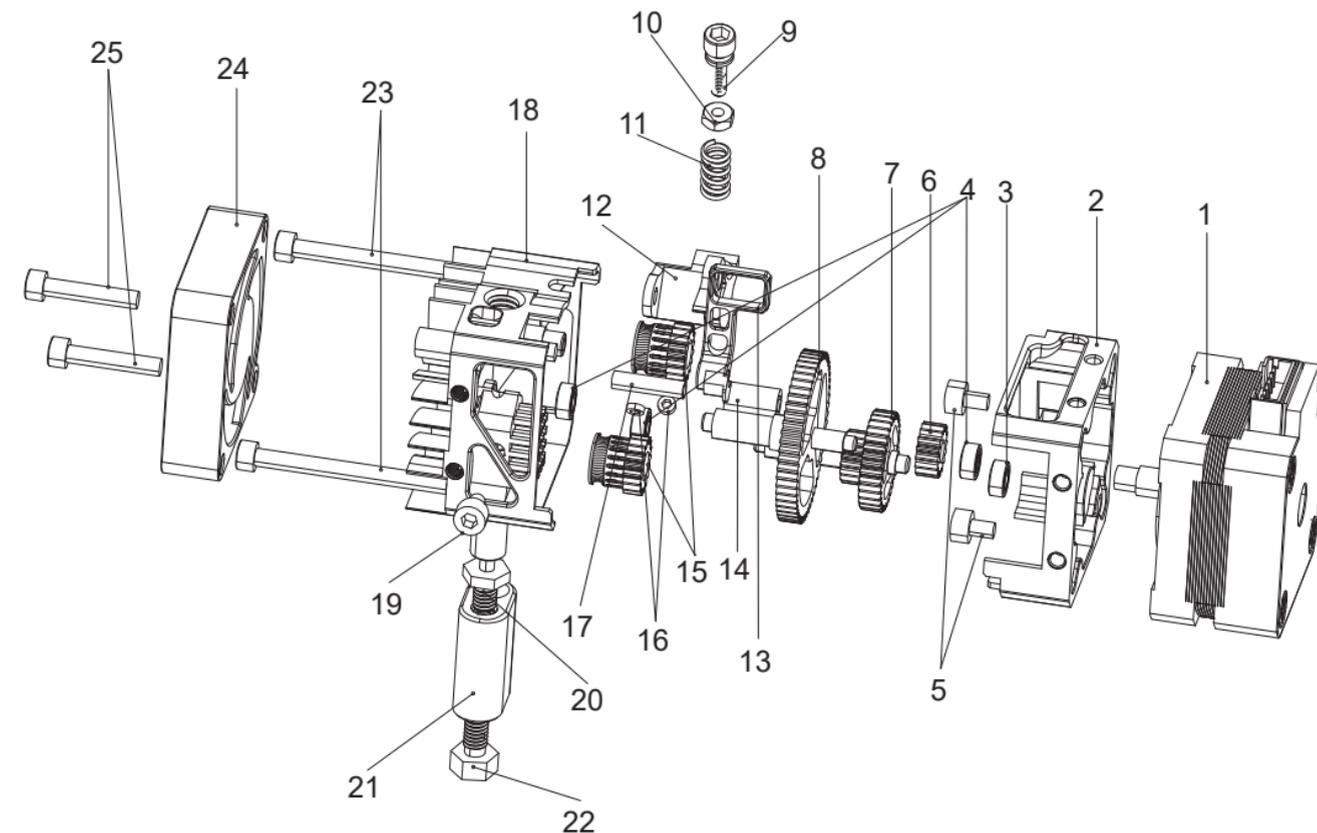
Item	Specifications
Size	35 x 35 x 10mm
Cable	150mm
Voltage	24V
Speed	9000±10%
Terminal Model	XH2.54

## Motor Specifications

Item	Specifications
Rated Voltage	DC 3.45V
Rated Current	DC 1.5A/phase
Phase	2
Winding DC Resistance (25 °C)	2.3X (1±10%)Ω
Winding Inductance	2.0X (1±20%) mH
Holding Torque	≥110mN·m
Positioning Torque	7mN·mREF
Insulation Resistance	≥100MΩ (DC 500V)
Insulation Level	Class B
Moment of Inertia	8g·cm <sup>3</sup>



## Product Overview



- |                            |   |
|----------------------------|---|
| 1. Motor                   | 14. Roller Bearing                          |
| 2. Gearbox                 | 15. Idler Gear                              |
| 3. 682ZZ Bearing           | 16. Set Screw                               |
| 4. 673ZZ Bearing           | 17. Pin                                     |
| 5. M3X4 Socket Head Screw  | 18. Heat Sink                               |
| 6. Pinion Gear             | 19. M3x4 Socket Head Screw                  |
| 7. Spur Gear               | 20. M4 Heat Break                           |
| 8. Output Gear             | 21. Heater Block                            |
| 9. Tensioner Screw         | 22. Brass Nozzle                            |
| 10. M2.5 Nut               | 23. M3x33 Aluminium Alloy Socket Head Screw |
| 11. Spring                 | 24. 3510 Fan                                |
| 12. Gear Carrier           | 25. M3x16 Aluminium Alloy Socket Head Screw |
| 13. Filament Release Lever |   |