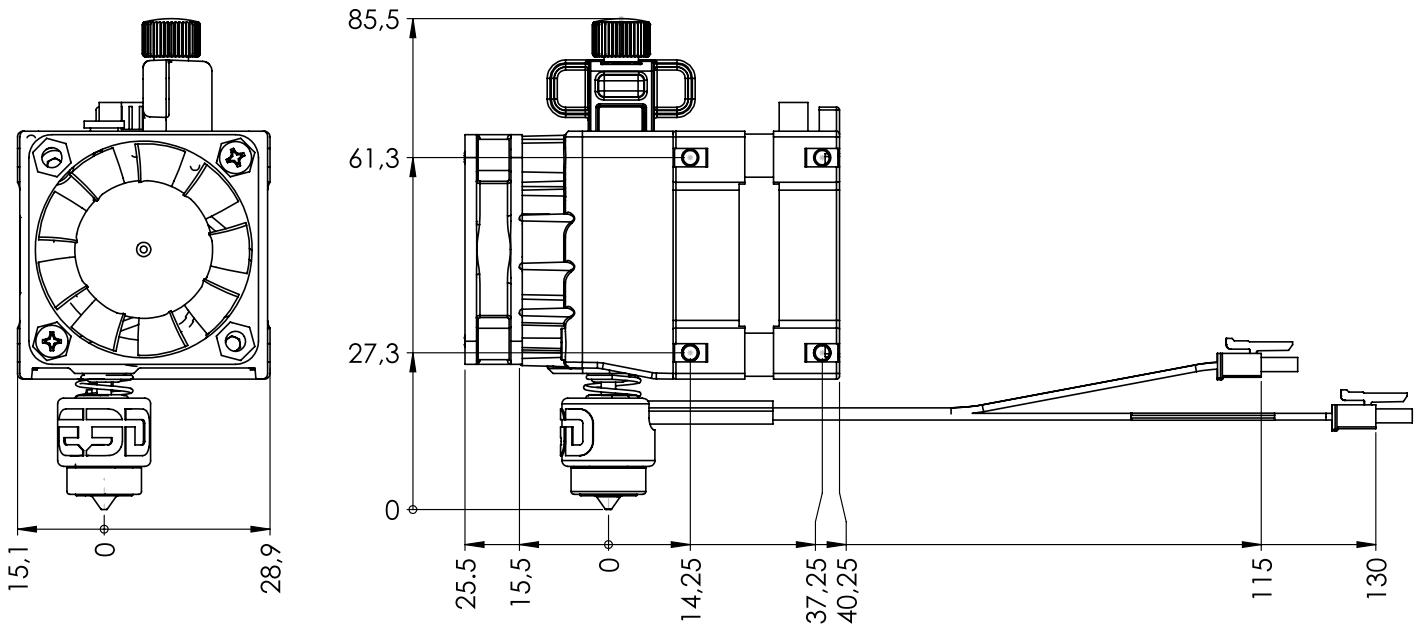




### Summary

- Drive Type: dual drive with adjustable tension idler
- Max Printing Temperature: 300°C
- Nominal steps per mm (x16): 397
- Recommended current: 1.4A Peak (~0.99 RMS)
- Filament diameter: 1.75mm
- Mass (Direct): 256 grams (Including Revo hotside)

### Direct Drive Dimensions



## Performance Characteristics

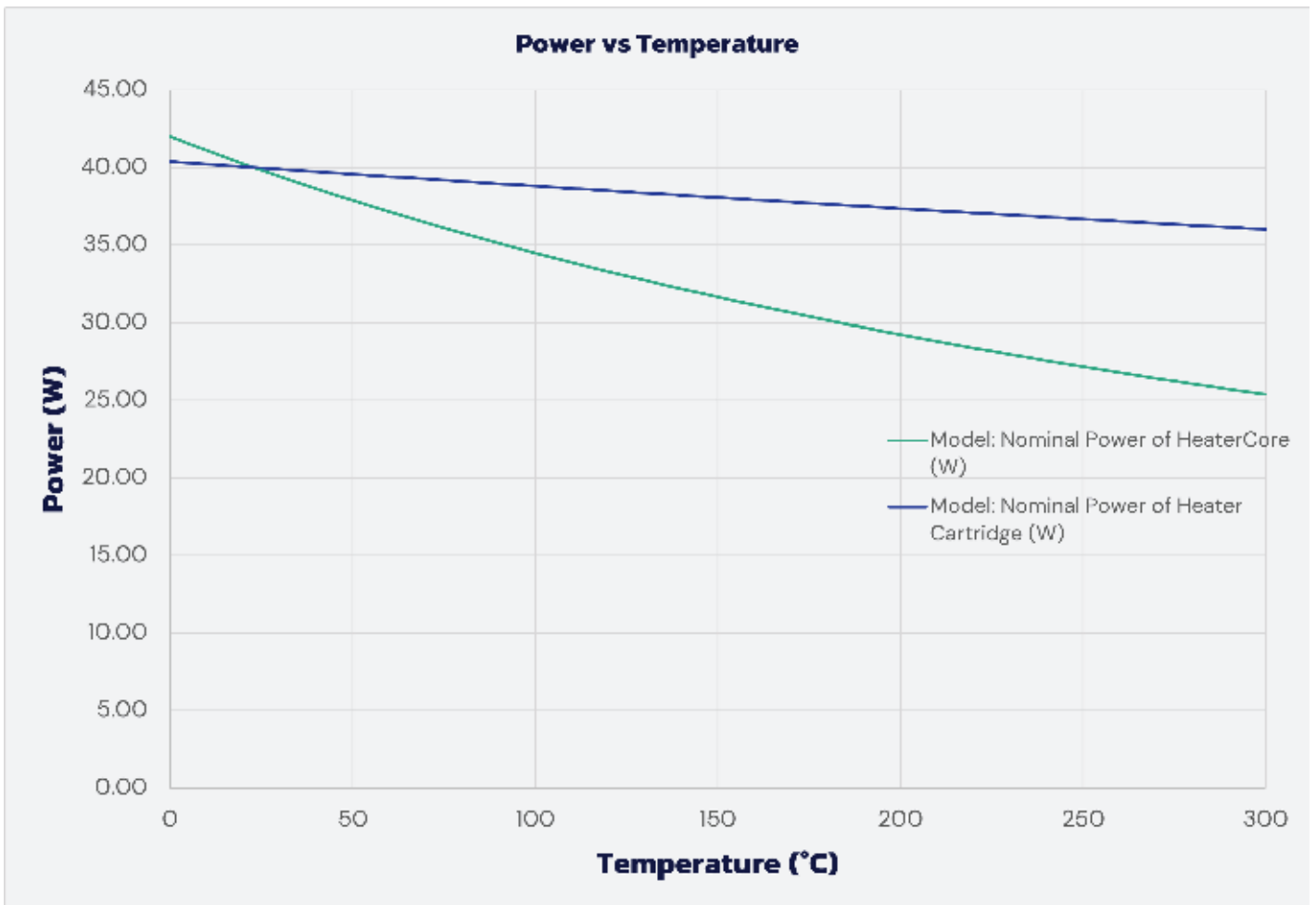
- Maximum printing temperature: 300°C

## Service Temperatures

Note, these are max ambient service temperatures of the components used, and not a guaranteed operating temperature of the system

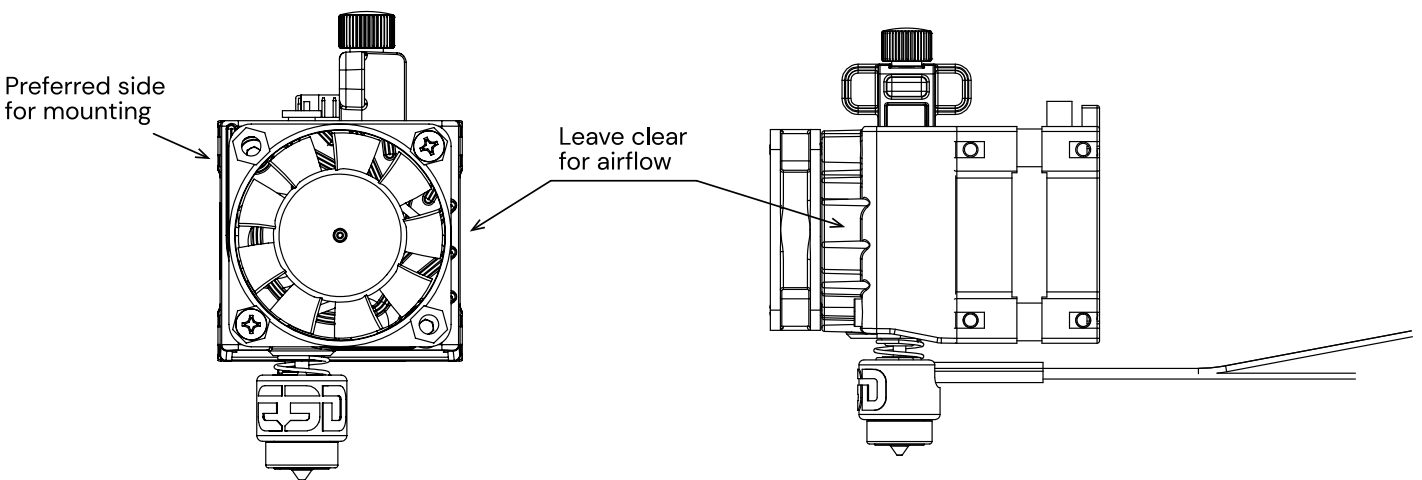
- Fan: 50°C
- Motor: 85°C
- Polymer bushing: 90°C
- Bearings: 100°C
- Acetal idler components: 120°C

## Power vs Temperature



Initial Resistance of a 24V heater at 23°C: 14.4Ω  
 Temp Coefficient of HeaterCore: 0.002078  
 Temp Coefficient of Heater Cartridge: 0.002078

### Mounting Guidance



Hemera is mounted to a flat surface via the T-slots on the left or right sides of the motor. Typically Hemera is mounted onto the left side, as the air from the heatsink cooling fan exits on the right. If mounting on the right, ensure that sufficient space is left for airflow. The screws must protrude 3mm±0.25mm from the mounting surface to go into the T-slots. The supplied

M3×8 mounting screws are suitable for a nominal 5mm mounting plate thickness. Hemera must be mounted on a minimum of 2 mounting points, if using 2 mounting points, diagonally opposing points should be used, in order to ensure rigidity.

## Connections

Fan: Dupont 0.1"

Heater: Molex Micro-Fit 3.0, 2 pin horizontal

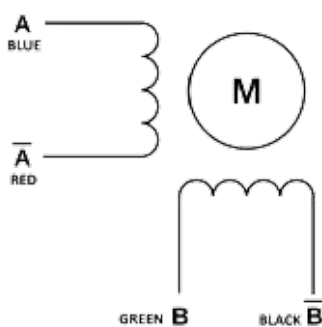
Temperature sensor: Molex Micro-Fit 3.0, 2 pin horizontal

Assembly is supplied with 1m cables to connect to mainboard

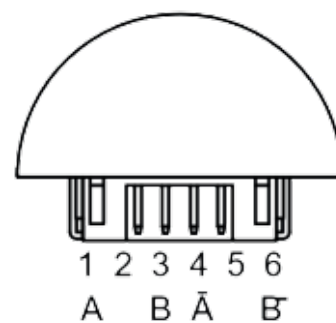
## Fan Specification

- Width: 40mm
- Depth: 10mm
- Cable: 1000mm
- Voltage: 12VDC and 24VDC
- Current: 0.08A (12V) and 0.04A (24V)
- RPMS:  $7500 \pm 10\%$  (12V) and  $6900 \pm 10\%$  (24V)
- Speed: 7000RPM
- Connector: Dupont 0.1"
- Startup voltage: 6 VDC (12V) and 12VDC (24V) Airflow: 6.8 CFM
- Static Pressure: 4.55 mmH<sub>2</sub>O
- Noise level: 33.6 dBA
- Weight: 14g

## Motor Specification and Diagrams



Winding Arrangement



Connector Pinout

- Motor cable length: 1000mm
- Phase no: 2 phases
- Rated voltage per phase: 3.22V
- Recommended Current: 1.40A Peak (~0.99A RMS)
- Resistance: 2.3Ω per phase
- Inductance: 2.5mH
- Holding torque: 180mNm
- Detent torque: 10mNm

- Rotate direction: AB $\bar{A}\bar{B}$  CW
- Insulation class: Class B
- Rotor inertia: 24.3gcm<sup>2</sup>
- Connector: JST - 56B - PH
- Step angle: 1.8°
- Motor mass: 160g

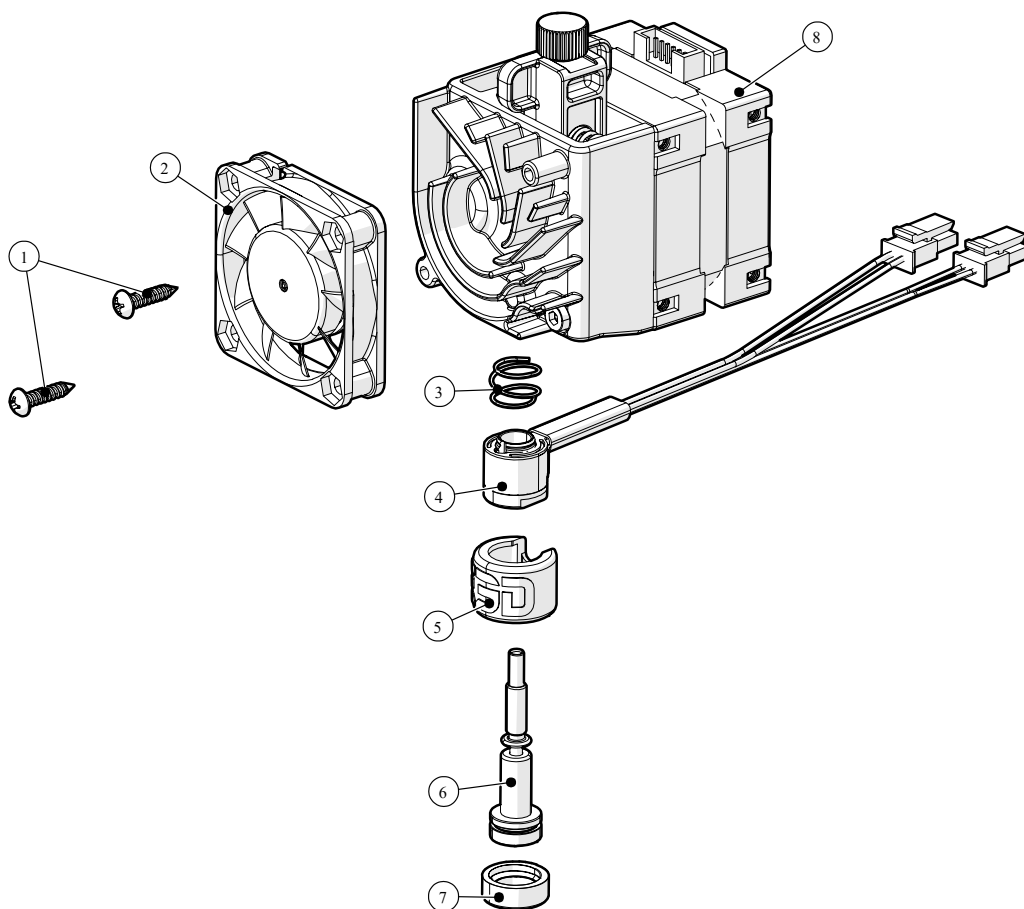
## Maintenance

- Do not remove the grease from the drive gears.
- Compressed air is a recommended method of dislodging filament debris from hobb teeth.
- Avoid using wire brushes on the hobb teeth or gears.

## Materials

- Heatsink: die cast aluminium
- Gear/Hobb materials: stainless steel
- Fixings: steel
- Idler materials: Acetal
- Bearing elements: 2x shielded 623 bearings (drive shaft), Igus bushing.

## Exploded View



1. Self-Tapping screws

5. Revo HeaterCore sock

2. 4010 fan
3. Revo spring
4. Revo HeaterCore

6. Revo Nozzle
7. Revo Nozzle sock
8. Hemera XS

## Changelog

### **Edition 2**

Approved: ST 19/07/22

Published: 19/07/22

Notes: Migrated to Zendesk and connections section added

### **Edition 1**

Approved: ST 03/03/22

Published: 04/03/22

**Revo™ Hemera XS**  
**DATASHEET**

