RapidChange™

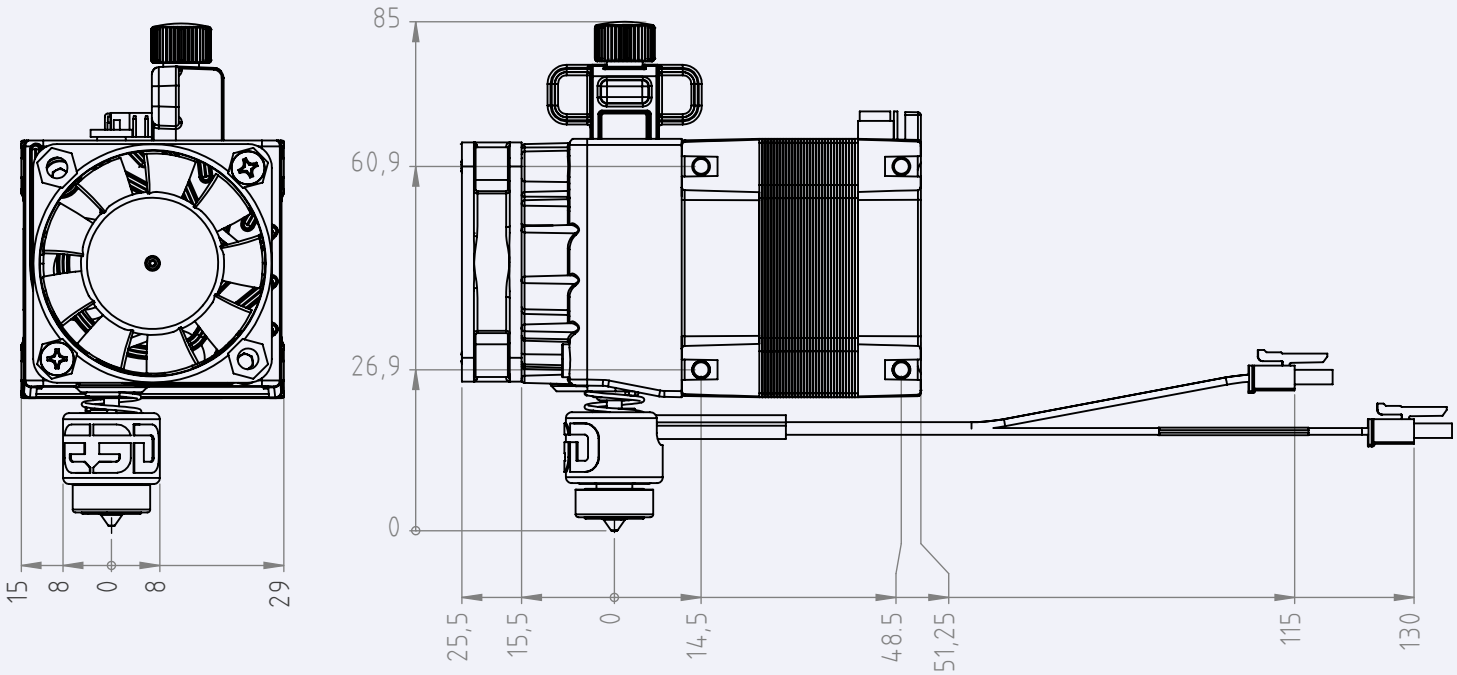
Revo™ Hemera

DATA SHEET

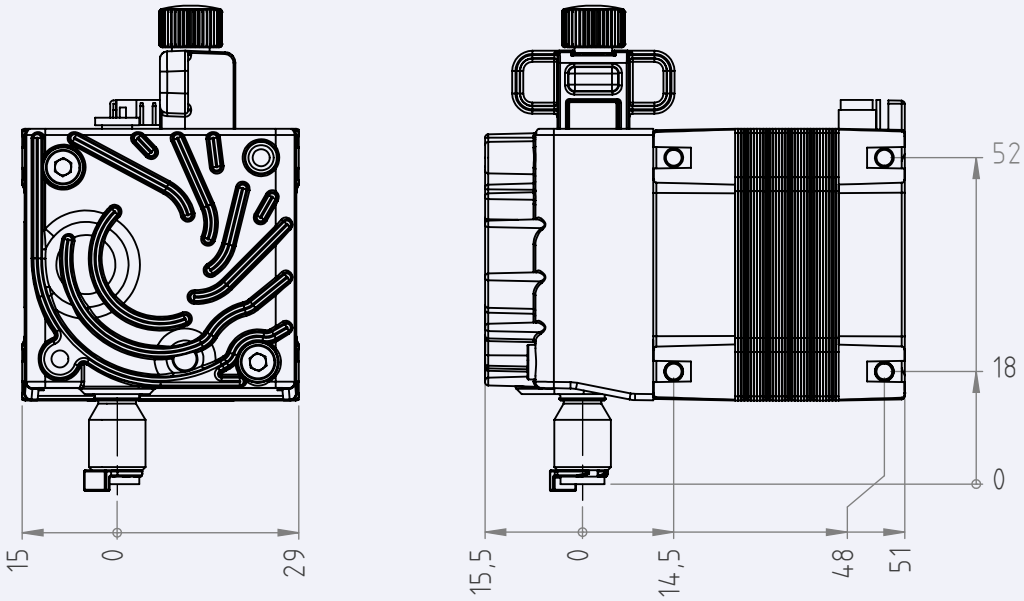
SUMMARY

- Drive type: dual drive with adjustable tension idler
- Max printing temperature: 300°C
- Mass: 352g (including Revo hotside)
- Max pushing force: 120N (depending on filament)
- Flow rate: 600mm³/min (depending on filament)
- Nominal steps per mm (x16): 397
- Max motor current 1.33A
- Filament diameter: 1.75mm

DIRECT DRIVE DIMENSIONS



BOWDEN DIMENSIONS



MASS

- Direct: 352g (Inc. Hot side)
- Bowden 327g

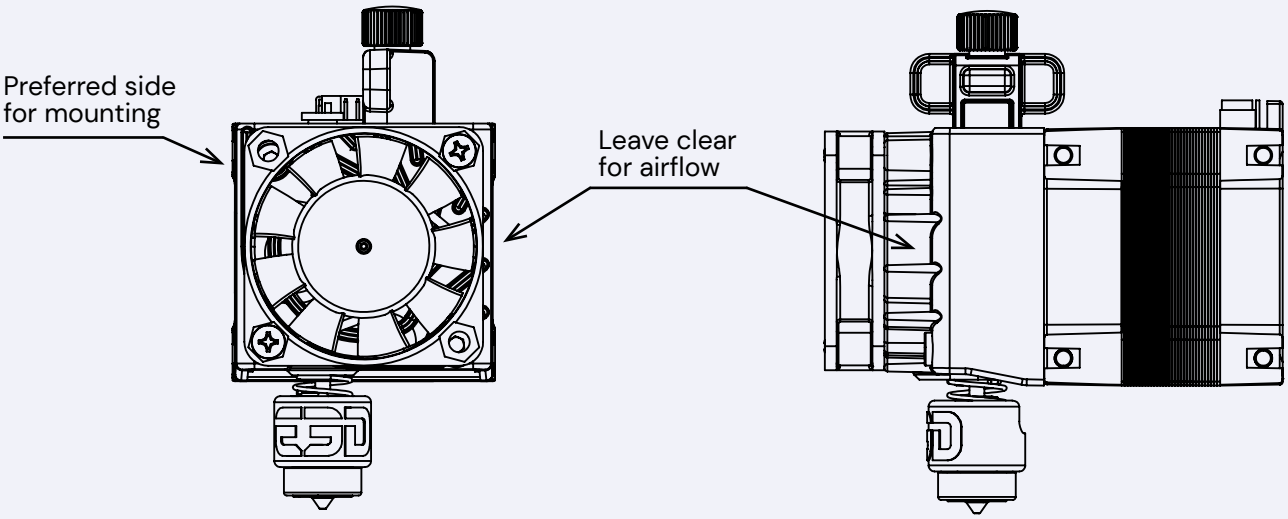
PERFORMANCE CHARACTERISTICS

- Max pushing force: 120N (depending on filament)
- Maximum nominal volumetric throughput: 600mm³/min (PLA at 220°C)
- 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

MOUNTING GUIDANCE



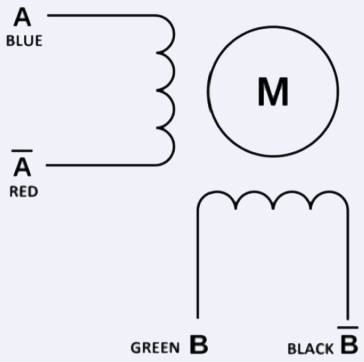
- Hemera is mounted to a flat surface via the T-slots in the left or right sides of the motor
- Typically Hemera is mounted on to the left side, as the air from the heatsink cooling fan exits on the right, if mounting on the right ensure that sufficient space is left for airflow.
- The screws must protrude 3mm±0.25mm from the mounting surface to go into the T-slots
- The supplied M3×8 mounting screws are suitible 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.

FAN SPECIFICATION

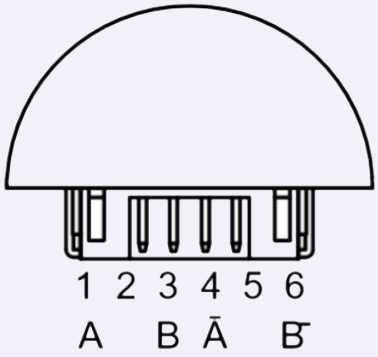
- Width: 40mm
- Depth: 10mm
- Cable: 1000mm
- Voltage: 12VDC and 24VDC
- Current: 0.08A (12V) and 0.04A (24V)
- RPMS: 7500±10% (12V) and 6900±10% (24V)
- Connector: Dupont 0.1”
- Startup voltage: 6 VDC (12V) and 12VDC (24V)
- Airflow: 6.8 CFM
- Static Pressure: 4.55 mmH20
- Noise level: 33.6 dBA
- Weight: 14g

MOTOR SPECIFICATION AND DIAGRAMS

- Motor cable length: 1000mm
- Phase no: 2 phases
- Rated voltage: 2.8V
- Current: 1.33A
- Resistance: 2.1Ω per phase
- Inductance: 2.5mH
- Holding torque: 3.2 kgcm
- Detent torque: 0.12kgcm
- Rotate direction: ABĀB̄ CW
- Max starting PPS: 2800 PPS
- Max slewing PPS: 3500 PPS
- Insulation: ≥ 100MΩ (DC 500V)
- HI POT: AC 600V/1mA/1S
- Insulation class: Class B
- Rotor inertia: 35gcm²
- Connector: JST - 56B - PH
- Step angle: 1.8°



Winding Arrangement



Connector Pinout

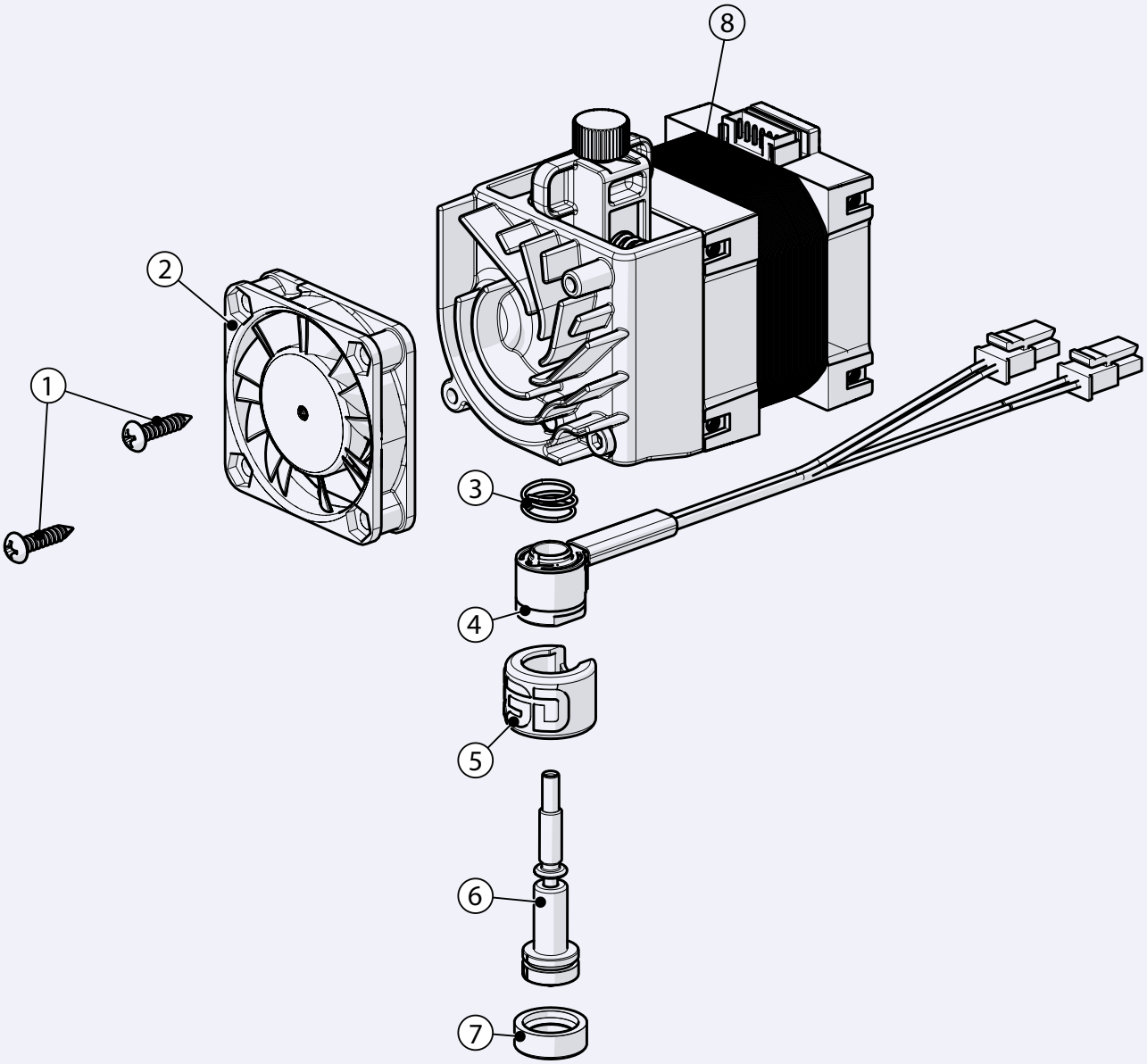
MAINTENANCE

- 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
- Heatbreak: stainless steel
- 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
2. 3010 fan
3. Revo spring
4. Revo HeaterCore
5. Revo HeaterCore sock
6. Revo Nozzle
7. Revo Nozzle sock
8. Hemera

CHANGELOG

Edition 1: Published 17/09/21
- Approved: RY 17/09/21

Edition 2: Published 03/11/21
- Approved: ST 03/11/21
- Notes: Updated Drawings and Exploded View.