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30KS flip-top peristaltic pump with 24 V Nema 23 short stack stepper motor.



Technical Data

Flow per Revolution

ID Ø 2.4 mm (x 1.6 mm wall)	0.60 / 0.50 ml per revolution (3 / 4 rollers)
ID Ø 3.2 mm (x 1.6 mm wall)	0.90 / 0.80 ml per revolution (3 / 4 rollers)
ID Ø 4.8 mm (x 1.6 mm wall)	2.00 / 1.80 ml per revolution (3 / 4 rollers)
ID Ø 6.4 mm (x 1.6 mm wall)	3.50 / 2.80 ml per revolution (3 / 4 rollers)
ID Ø 8.0 mm (x 1.6 mm wall)	5.00 / 3.60 ml per revolution (3 / 4 rollers)

Flow at max Speed (using A4 or A4p driver)

ID Ø 2.4 mm (x 1.6 mm wall)	240 ml at 400 rpm / 150 ml at 300 rpm (3 / 4 rollers)
ID Ø 3.2 mm (x 1.6 mm wall)	360 ml at 400 rpm / 240 ml at 300 rpm (3 / 4 rollers)
ID Ø 4.8 mm (x 1.6 mm wall)	800 ml at 400 rpm / 540 ml at 300 rpm (3 / 4 rollers)
ID Ø 6.4 mm (x 1.6 mm wall)	1400 ml at 400 rpm / 840 ml at 300 rpm (3 / 4 rollers)
ID Ø 8.0 mm (x 1.6 mm wall)	2000 ml at 400 rpm / 1080 ml at 300 rpm (3 / 4 rollers)

Power Consumption (including A4 driver)

13 to 24 W

Tube Materials

Innovaprene / Silicone / Lagoprene / ED-Plex

Driver Options

A4 (mounted on back of motor, see page 6)	Analogue driver: 0 to 5 V DC speed input, direction and enable inputs
A4p (mounted on back of motor, see page 7)	Analogue driver: speed potentiometer, direction and enable inputs

General Data

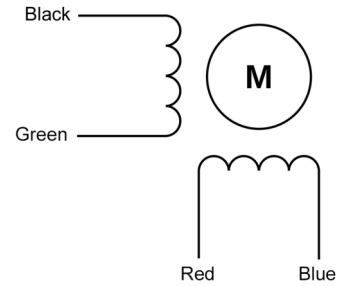
Max pressure	2.0 bar
Max suction height (dry)	9 m H ₂ O
Motor life	>10000 hour
Weight (without driver)	955 g

Optional Sensors

Lid sensor (to confirm pump is in the closed position)	Contacts close in locked position
Speed sensor	Contacts close once per revolution

All data measured with 'run-in' Innovaprene tubing and H₂O.

Motor Details



Specification

Type	2 phase, hybrid, bipolar
Size	Nema 23 / 57 mm. short stack (56 mm)
Step Angle	1.8 ° (200 steps per revolution)
Voltage	24 V
Phase 1 / Phase 2	Black - Green / Red - Blue (see diagram above)
Ambient temperature range	-20 to +50 °C
Max temperature rise	80 °C
Insulation resistance	100 MΩ
Insulation class	B
Rated current	2.8 A
Resistance per phase	0.9 Ω ±10%
Inductance per phase	2.5 mH ±20%
Wire gauge	22 AWG
Lead length	300 mm
Recommended driver rating	4.0 A (with current limiter set at 2.8 A)

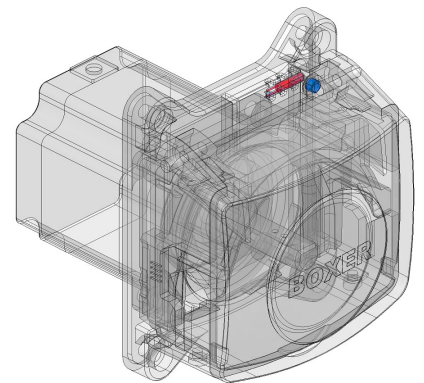
A current limiter should be used for low speed operation to avoid excessive motor temperatures

Optional Sensors

Two optional internal sensors are available for the 30KS peristaltic pump.

1 Lid Sensor

A reed sensor (shown in red) is mounted in the upper portion of the back plate. A permanent magnet (shown in blue) is located in the lid which operates the tube clamping mechanism. The contacts of the reed sensor close when the lid is in the closed position. The signal can be used as a safety feature to ensure the pump does not operate unless the pump is fully closed.



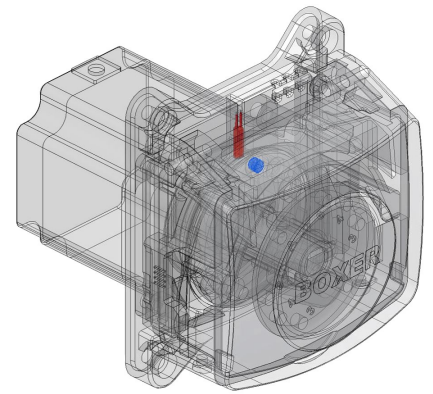
Specification

Reed sensor type	Normally open, single pole, single throw
Contact closure	Once per revolution
Max. switching current	0.5 A
Max. switching voltage	170 V
Lead cross section area	0.06 mm ²
Lead length	27 cm

2 Speed Sensor

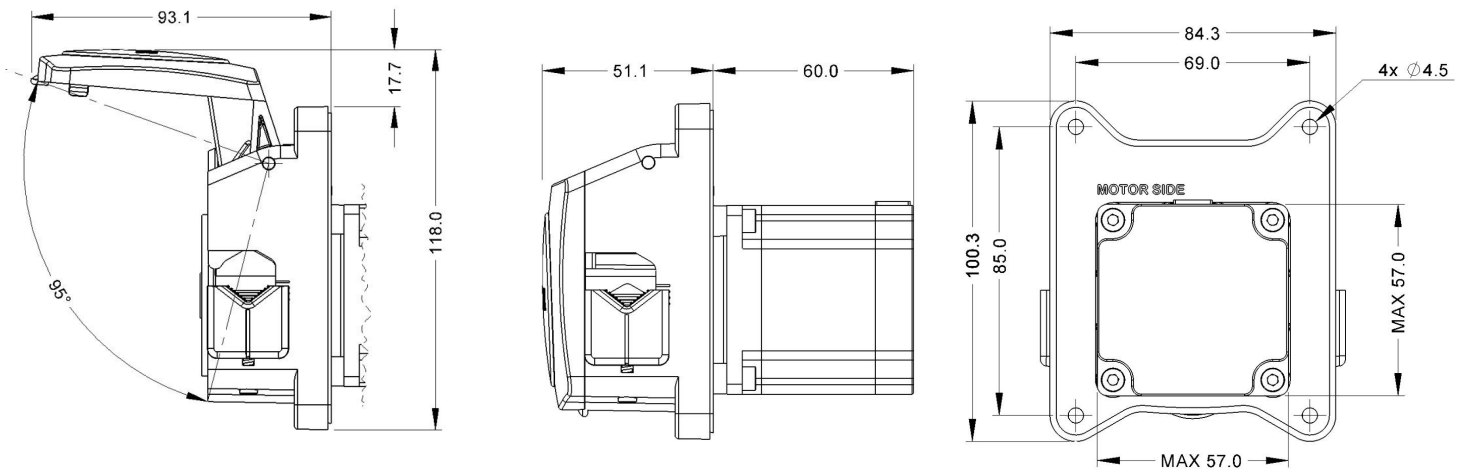
A micro reed sensor (shown in red) is mounted inside the pump body. A permanent magnet (shown in blue) is located on the rotor. The contacts of the micro reed sensor close when the magnet moves through the upper portion of the rotation, once per revolution. A speed sensor can also operate as a stall sensor

The reed sensor specification is as shown on the previous page for lid sensor.

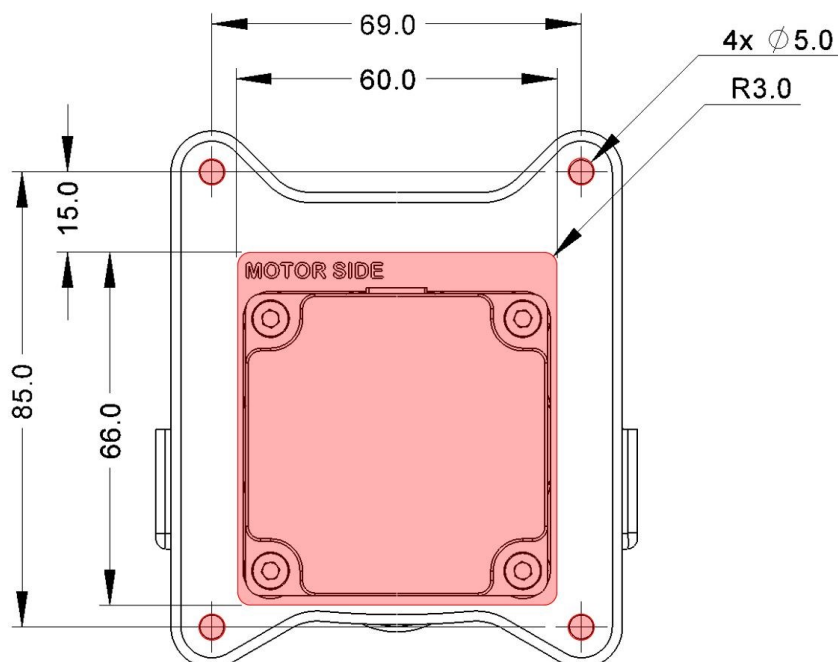


Assembly Information

The 30KS peristaltic pump is assembled to a panel cut-out using the 4 x M4 bolts.



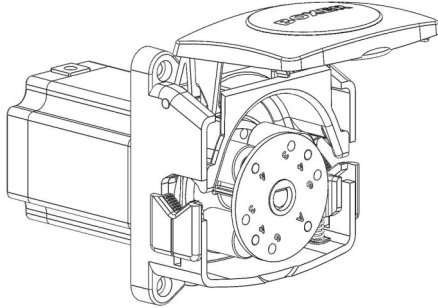
Suggested panel cut-out:



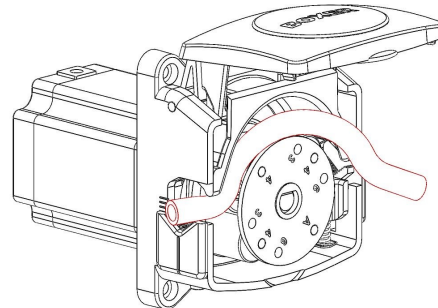
Tube Loading / Unloading

The 30KS peristaltic pump is a flip-top design. The loading and unloading of the tube is through operation of the lid:

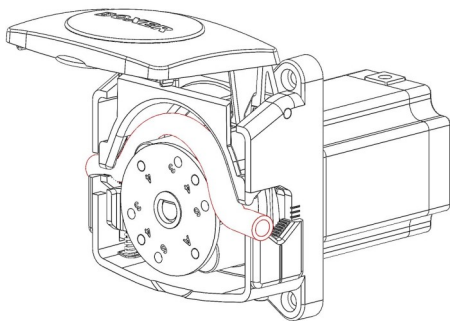
- ❶ Open the lid completely.



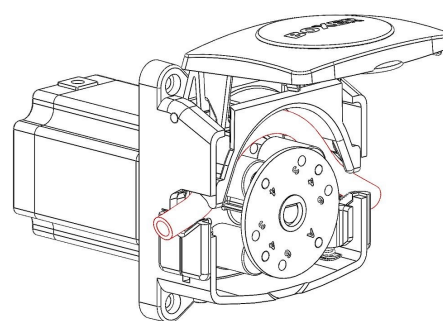
- ❷ Push the tube grip down and lay the tube over the rotor. Release the tube grip.



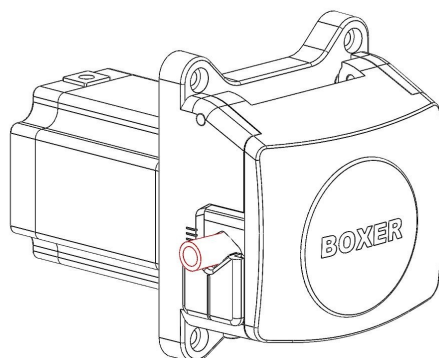
- ❸ Open the tube grip on the other side and move the tube into position.



- ❹ The tube should be touching the rollers.



- ❺ Close the lid.

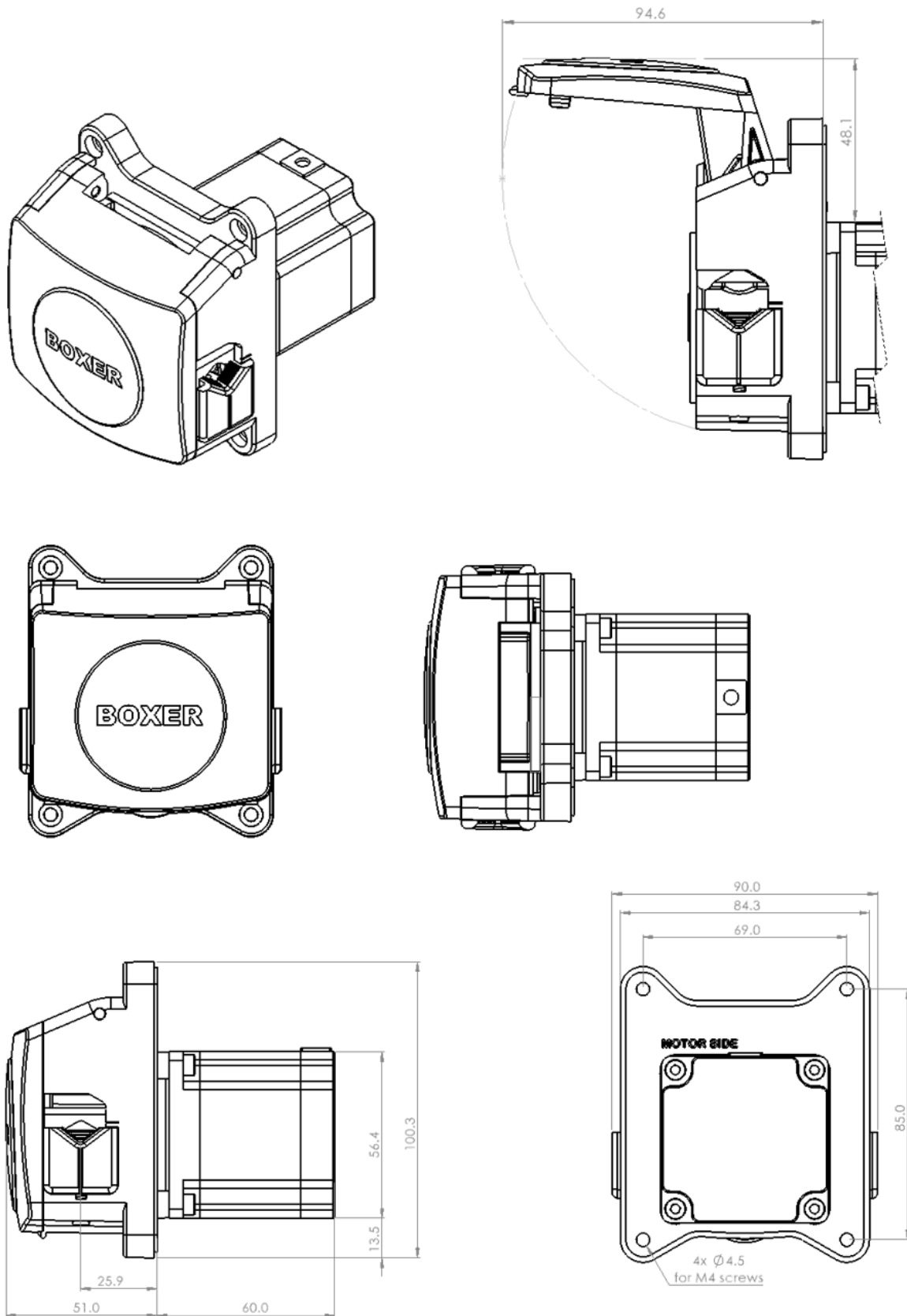


The tube grips are sprung loaded and adjust automatically to the OD of the tube. The 30KS is designed for 1.6 wall tubing from ID of 2.4 to 8.0 mm. The tube grips will hold ID 4.8mm tube and larger. For 2.4 and 3.2 mm tube, external tension is required to avoid the tube pulling into the pump head.

A different configuration is available for 2.4 mm wall tubing.

Only tubing suitable for peristaltic pumps should be used.

30KS Stepper Motor (without driver)



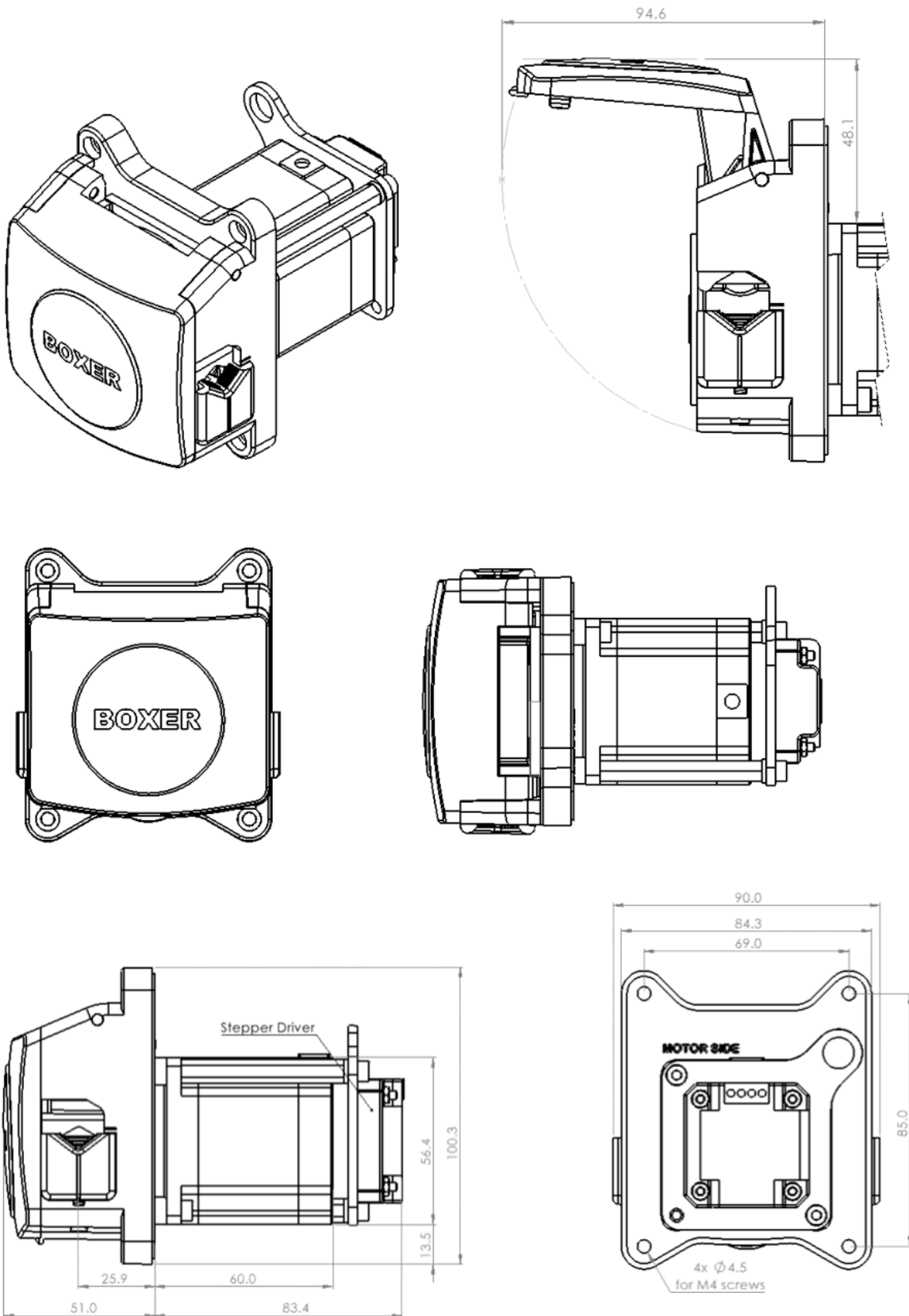
Links to Drawing and STEP file:

→ [Drawing \(.png\)](#)

→ [STEP \(.zip\)](#)

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25K Stepper Motor with Analogue Driver (0 to 5 V Speed Input)

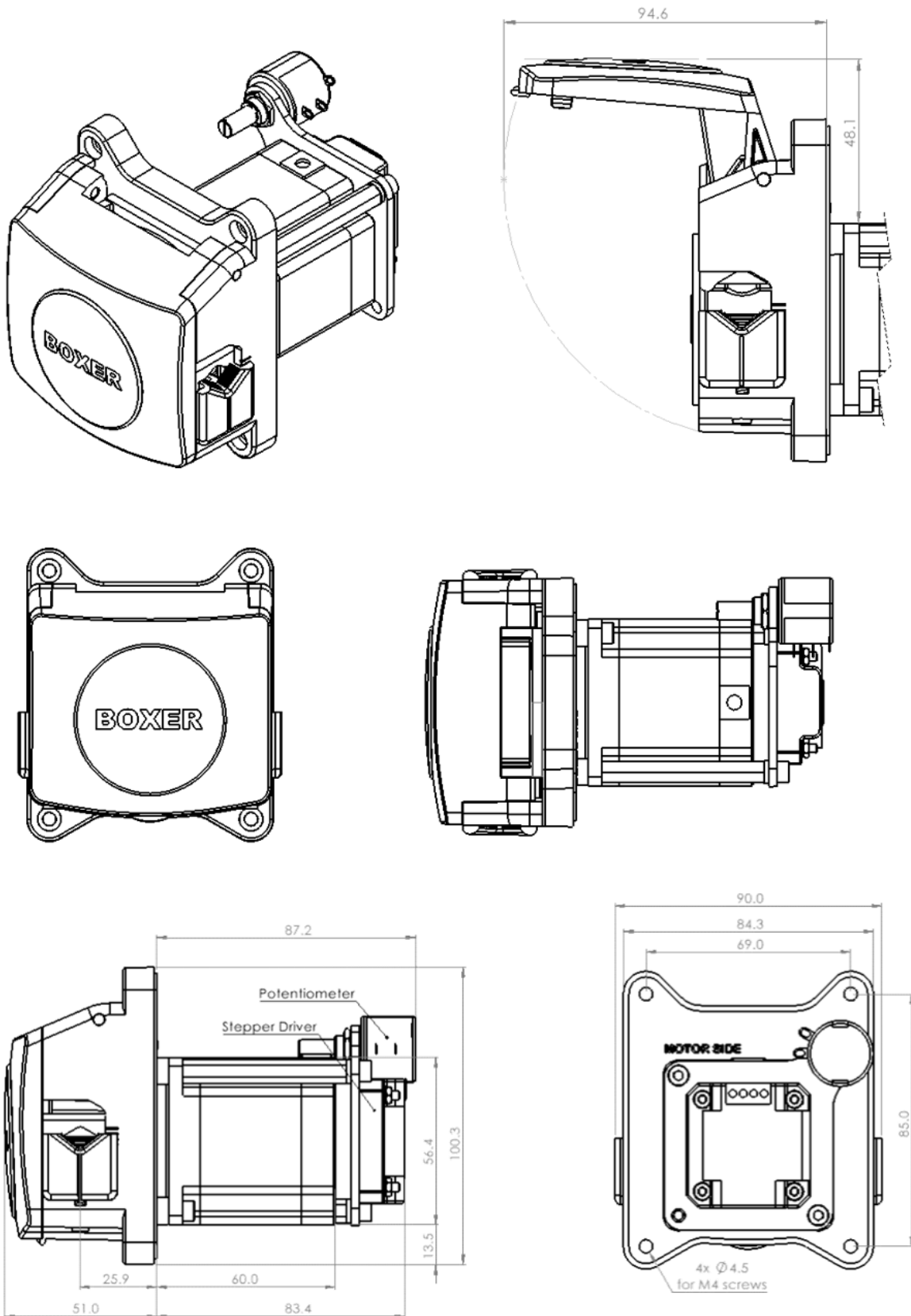


Link to driver information:
→ [Drivers](#)

Links to Drawing and STEP file:
→ [Drawing \(.png\)](#)
→ [STEP \(.zip\)](#)

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25K Stepper Motor with Analogue Driver with Speed Potentiometer



Link to driver information:
→ [Drivers](#)

Links to Drawing and STEP file:
→ [Drawing \(.png\)](#)
→ [STEP \(.zip\)](#)

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Order Information

Pump and tubing should always be ordered separately.

Pump Configuration	Without Driver	Motor + A4 Driver	Motor + A4p Driver
30KS 24 V Stepper / 3 Rollers	30101.000	30157.000	30151.000
30KS 24 V Stepper / 3 Rollers / Lid Sensor	30101.001	30157.001	30151.001
30KS 24 V Stepper / 3 Rollers / Lid Sensor / Speed Sensor	30101.002	30157.002	30151.002
30KS 24 V Stepper / 3 Rollers / Speed Sensor	30101.003	30157.003	30151.003
30KS 24 V Stepper / 4 Rollers	30102.000	30158.000	30152.000
30KS 24 V Stepper / 4 Rollers / Lid Sensor	30102.001	30158.001	30152.001
30KS 24 V Stepper / 4 Rollers / Lid Sensor / Speed Sensor	30102.002	30158.002	30152.002
30KS 24 V Stepper / 4 Rollers / Speed Sensor	30102.003	30158.003	30152.003

Tubing (Innovaprene P60 tubing in 250 mm single lengths, 1m (or multiples of) lengths or 15 m coils:

Innovaprene P60 ID Ø 2.4 mm x 1.6 mm wall x 250 mm	25000.126
Innovaprene P60 ID Ø 3.2 mm x 1.6 mm wall x 250 mm	25000.127
Innovaprene P60 ID Ø 4.8 mm x 1.6 mm wall x 250 mm	25000.128
Innovaprene P60 ID Ø 6.4 mm x 1.6 mm wall x 250 mm	25000.129
Innovaprene P60 ID Ø 8.0 mm x 1.6 mm wall x 250 mm	25000.131
Innovaprene P60 ID Ø 2.4 mm x 1.6 mm wall x 1 m	82416.601
Innovaprene P60 ID Ø 3.2 mm x 1.6 mm wall x 1 m	83216.601
Innovaprene P60 ID Ø 4.8 mm x 1.6 mm wall x 1 m	84816.601
Innovaprene P60 ID Ø 6.4 mm x 1.6 mm wall x 1 m	86416.601
Innovaprene P60 ID Ø 8.0 mm x 1.6 mm wall x 1 m	88016.601
Innovaprene P60 ID Ø 2.4 mm x 1.6 mm wall x 15 m	82416.615
Innovaprene P60 ID Ø 3.2 mm x 1.6 mm wall x 15 m	83216.615
Innovaprene P60 ID Ø 4.8 mm x 1.6 mm wall x 15 m	84816.615
Innovaprene P60 ID Ø 6.4 mm x 1.6 mm wall x 15 m	86416.615
Innovaprene P60 ID Ø 8.0 mm x 1.6 mm wall x 15 m	88016.615

Technical information including chemical compatibility → [Innovaprene P60](#)

BOX-it (Webshop)

Sample quantities are available for direct online purchase:



→ [BOX-it](#)