

Boxer Pumps > Products > Peristaltic Pump

9QX miniature flip-top peristaltic pump with Stepper Motor.



Technical Data

Flow per Revolution

ID Ø 0.5 mm tube	16 / 15 / 13 µl per revolution (3 / 4 / 6 Rollers)
ID Ø 1.0 mm tube	55 / 50 / 42 µl per revolution (3 / 4 / 6 Rollers)
ID Ø 2.0 mm tube	190 / 160 / 120 µl per revolution (3 / 4 / 6 Rollers)
ID Ø 3.0 mm tube	340 / 290 / 200 µl per revolution (3 / 4 / 6 Rollers)
ID Ø 3.5 mm tube	400 / 340 / 230 µl per revolution (3 / 4 / 6 Rollers)

RPM	0 to 500 rpm
------------	--------------

Power Consumption	Ca. 8.0 W
--------------------------	-----------

Tube Materials	Pharm-a-line / Silicone / Lagoprene / ED-Plex
-----------------------	---

Max pressure	1 bar
--------------	-------

Max suction height (dry)	9.5 m H ₂ O
--------------------------	------------------------

Motor life	>10000 hour
------------	-------------

Weight	245 g
--------	-------

All data measured with 'run-in' Pharm-a-line tubing and H₂O.

Flow Data

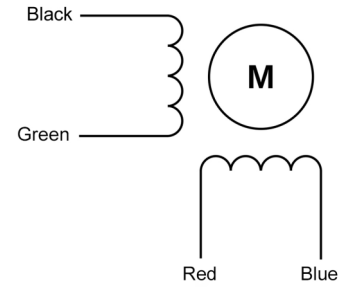
Flow Range (ml/min) with Stepper Motor:

Tube ID	3 Roller		4 Roller		6 Roller	
	Min	Max	Min	Max	Min	Max
0.5 mm	0.0	8.0	0.0	7.5	0.0	6.5
1.0 mm	0.0	27.5	0.0	25.0	0.0	21.0
2.0 mm	0.0	95.0	0.0	80.0	0.0	60.0
3.0 mm	0.0	170.0	0.0	145.0	0.0	100.0
3.5 mm	0.0	200.0	0.0	170.0	0.0	115.0

Max at 500 rpm

Higher speeds are possible depending upon tube material, tube ID, number of rollers and driving method

Motor Details



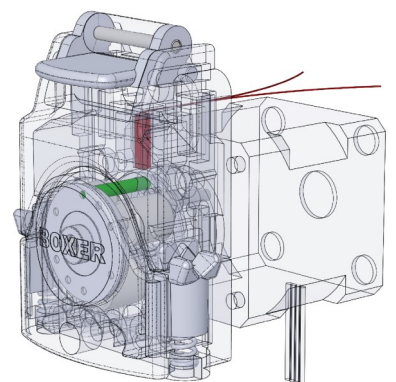
Specification	
Type	2 phase, hybrid, bipolar
Size	Nema 14 / 35 mm
Step Angle	1.8 ° (200 steps per revolution)
Voltage	24 V
Phase 1 / Phase 2	Black - Green / Red - Blue (see diagram above)
Ambient temperature range	-20 to +50 °C
Max temperature rise	80 °C
Insulation resistance	100 MΩ
Insulation class	B
Rated current	1.0 A
Resistance per phase	2.7 Ω ±10%
Inductance per phase	4.3 mH ±20%
Wire gauge	26 AWG
Lead length	800 mm
Available drivers	→ Drivers
Recommended driver rating	2 A

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

Encoder

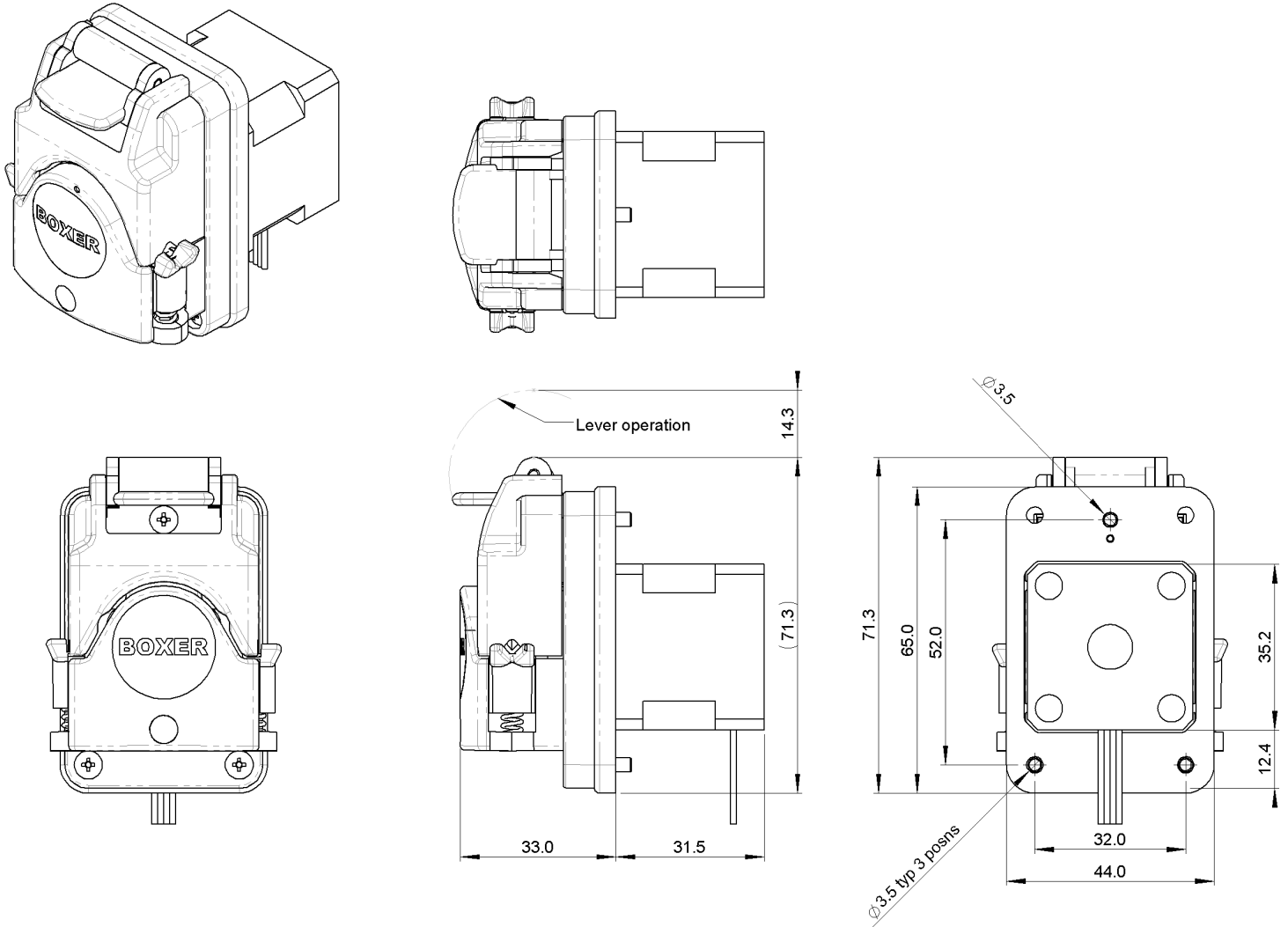
The 9QX peristaltic pump with stepper motor is available with an encoder mounted inside pump body:

A micro reed sensor (shown in red) is located on the pump back-plate. A permanent magnet (shown in green) is located on the rotor. The contacts of the micro reed sensor close when the magnet moves through the upper portion of the rotation.



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

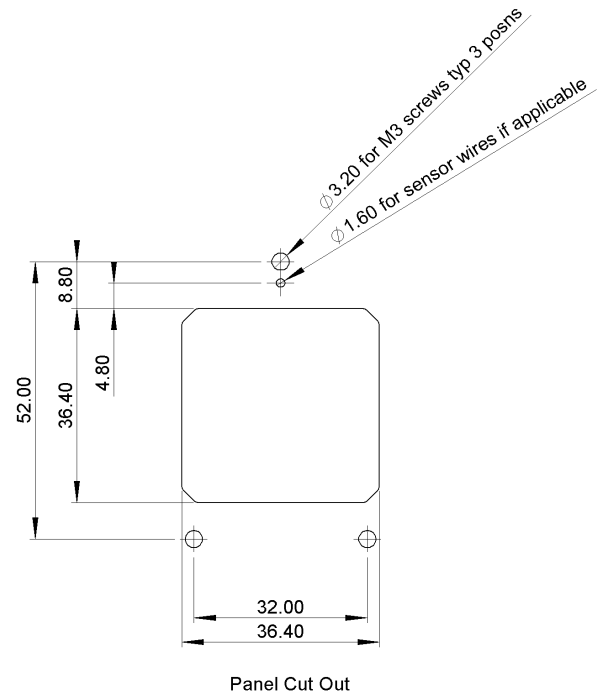
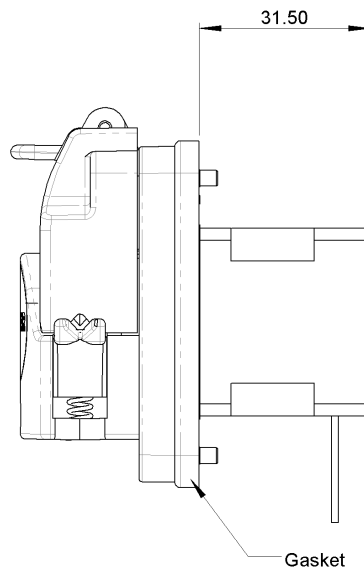
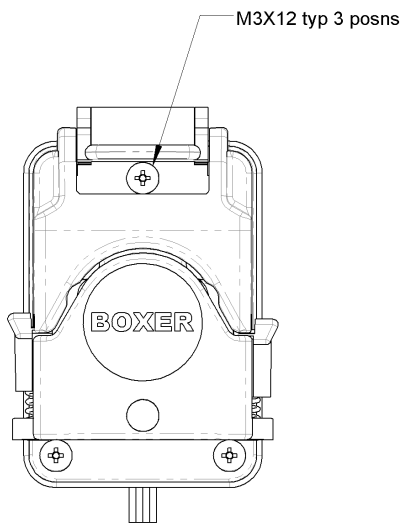
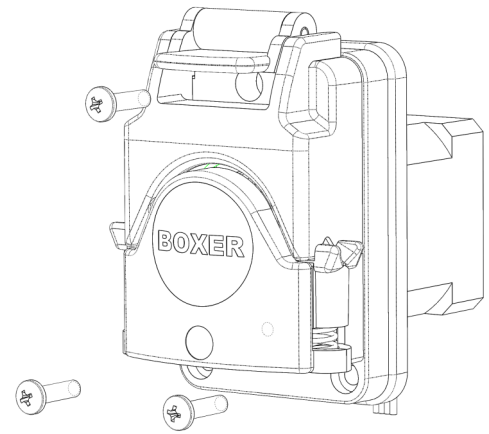
Drawing



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

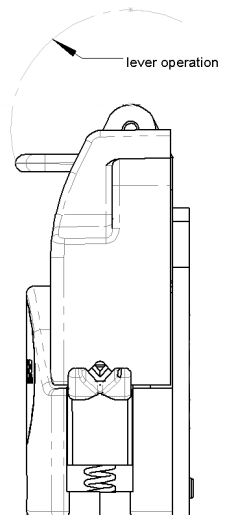
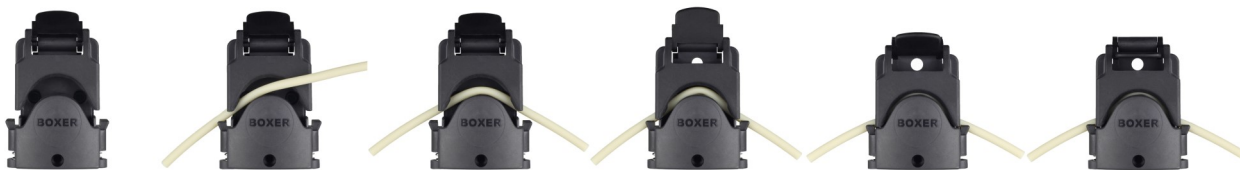
Assembly Information

The 9QX peristaltic pump with stepper motor is assembled to a panel cut-out using 3 x M3 bolts. The lever must be in the lower position to access the upper mouting hole.



Tube Loading / Unloading

The 9QX peristaltic pump is a flip-top design. The loading and unloading of the tube is through operation of the lever:



The tube grips are sprung loaded and adjust automatically the OD of the tube. The 9QX is designed for 1.0 mm wall tubing from ID of 0.5 mm to 3.5 mm. Only tubing suitable for peristaltic pumps should be used.

Boxer Pumps > Products > Peristaltic Pump

Order Information

Part Number	Description
9600.730	9QX 24 V Stepper / 3 Rollers
9600.740	9QX 24 V Stepper / 4 Rollers
9600.760	9QX 24 V Stepper / 6 Rollers
9601.730	9QX 24 V Stepper / 3 Rollers / Encoder
9601.740	9QX 24 V Stepper / 4 Rollers / Encoder
9601.760	9QX 24 V Stepper / 6 Rollers / Encoder

Please enquire for part numbers of other configurations.

BOX-it (Webshop for online purchase)

Sample quantities are available for direct online purchase:



→ [BOX-it](#)

Tubing

Tubing should always be ordered separately. Listed here is **Pharm-a-line** (PHI) tubing in 120 mm single lengths, 1m (or multiples of) lengths or 15 m coils:

Part Number	Description
9000.713	PHI ID Ø 0.5 mm x 120 mm
9000.714	PHI ID Ø 1.0 mm x 120 mm
9000.716	PHI ID Ø 2.0 mm x 120 mm
9000.718	PHI ID Ø 3.0 mm x 120 mm
9000.719	PHI ID Ø 3.5 mm x 120 mm
9000.566	PHI ID Ø 0.5 mm x 1 m
9000.535	PHI ID Ø 0.5 mm x 1 m
9000.536	PHI ID Ø 0.5 mm x 1 m
9000.537	PHI ID Ø 0.5 mm x 1 m
9000.547	PHI ID Ø 0.5 mm x 1 m
80510.115	PHI ID Ø 0.5 mm x 15 m
81010.115	PHI ID Ø 1.0 mm x 15 m
82010.115	PHI ID Ø 2.0 mm x 15 m
83010.115	PHI ID Ø 3.0 mm x 15 m
83510.115	PHI ID Ø 3.5 mm x 15 m

Technical information including chemical compatibility:

→ [Pharm-a-line](#)

Alternative tubing (**Silicone**, **Lagoprene** and **ED-Plex**):

→ [9QX Tubing](#)

Additional Information (Links):

→ [9QX Webpage](#)

→ [Boxer peristaltic pump overview](#)

All data is representative for initial selection purposes. It is the responsibility of the user to determine suitability for the intended use. Technical changes reserved. These peristaltic pumps are not suitable for in-vivo applications.