

Boxer Pumps > Products > Peristaltic Pump

29QQ miniature peristaltic pump with DC / gear motor.

Options:

- Rear or front panel mount
- 12 or 24 V DC, each with 4 different speeds
- Motor encoder
- Lid close sensor
- 4 tube materials
- 0.5, 1.0 or 2.0 mm ID tubing
- Stepper motor with driver (separate datasheet)



Rear Mount



Front Mount

## Technical Data

### Flow per Revolution

ID Ø 0.5 mm tube	13 µl per revolution
ID Ø 1.0 mm tube	34 µl per revolution
ID Ø 2.0 mm tube	100 µl per revolution

### Power Consumption

3.8 W (with 2.0 mm ID tube and 520 rpm motor)

### Tube Materials

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

Numbers of rollers	4
Mounting gasket	Supplied as standard (for both front and rear mount options)
Max pressure	1.0 bar
Max suction height (dry)	9.0 m H <sub>2</sub> O
Typical Motor life	>2000 hour
Weight	125 g (+ 15 g for front mount)

All data measured with 'run-in' Pharm-a-line tubing and H<sub>2</sub>O.

## Flow Data

Both 12 and 24 V motors are available each with 4 different fixed planetary gears for different speeds. Reduced speed and flow is obtained with supply voltage reduction by maximum 50%. The flow values below shows 50% (at half nominal voltage) to 100% (at nominal voltage).

Tube Size	12 V / 15 RPM	12 V / 116 RPM	12 V / 315 RPM	12 V / 520 RPM
ID Ø 0.5 mm tube	0.1 to 0.2 ml / min	0.8 to 1.5 ml / min	2.1 to 4.1 ml / min	3.4 to 6.7 ml / min
ID Ø 1.0 mm tube	0.3 to 0.5 ml / min	0.2 to 3.9 ml / min	5.4 to 10.7 ml / min	8.9 to 17.7 ml / min
ID Ø 2.0 mm tube	0.8 to 1.5 ml / min	5.8 to 11.6 ml / min	15.8 to 31.5 ml / min	26.0 to 52.0 ml / min

Tube Size	24 V / 33 RPM	24 V / 107 RPM	24 V 315 RPM	24 / 520 RPM
ID Ø 0.5 mm tube	0.2 to 0.4 ml / min	0.7 to 1.4 ml / min	2.1 to 4.1 ml / min	3.4 to 6.7 ml / min
ID Ø 1.0 mm tube	0.6 to 1.1 ml / min	1.8 to 3.6 ml / min	5.4 to 10.7 ml / min	8.9 to 17.7 ml / min
ID Ø 2.0 mm tube	1.7 to 3.3 ml / min	5.4 to 10.7 ml / min	15.8 to 31.5 ml / min	26.0 to 52.0 ml / min

Boxer Pumps > Products > Peristaltic Pump

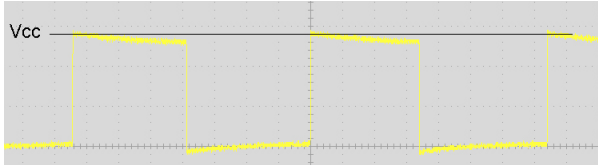
## Sensor / Encoder Options

The 29QQ peristaltic pump with DC / gear motor is available with a motor encoder and lid close sensor.

### Motor Encoder

The 29QQ peristaltic pump with DC / Gear is available with a dual channel encoder mounted on the rear of the motor. Each channel is switched by a hall effect sensor triggered by a 10 pole rotating magnet.

Output Signal:

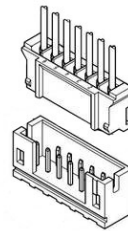


The output is 10 pulses per motor revolution. Since the encoder is placed on the motor shaft, the number of pulses per pump revolution depends on the gear ratio and nominal speed of the motor and so varies according to each motor version:

Motor Voltage / Speed	Pulses per Revolution	Motor Voltage / Speed	Pulses per Revolution
12 V / 15 RPM	2700	24 V / 33 RPM	2700
12 V / 116 RPM	840	24 V / 107 RPM	840
12 V / 315 RPM	190	24 V / 315 RPM	190
12 V / 520 RPM	190	24 V / 520 RPM	190

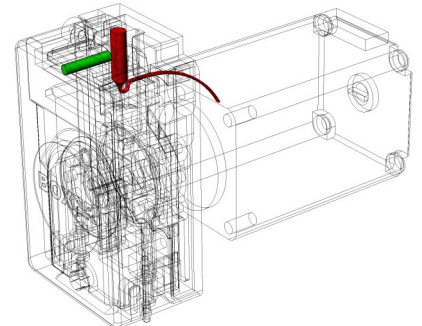
The encoder is supplied with 10 cm of ribbon cable and terminated by a PHR-6 2.0 mm pitch JST connector. The power supply to the motor is also connected via this cable:

Pin	Description
1	Motor GND
2	Motor + V (red)
3	Encoder +VCC (2.4 to 26.0 V DC)
4	Encoder GND
5	Output 1 (HA)
6	Output 2 (HB)



### Lid Close Sensor

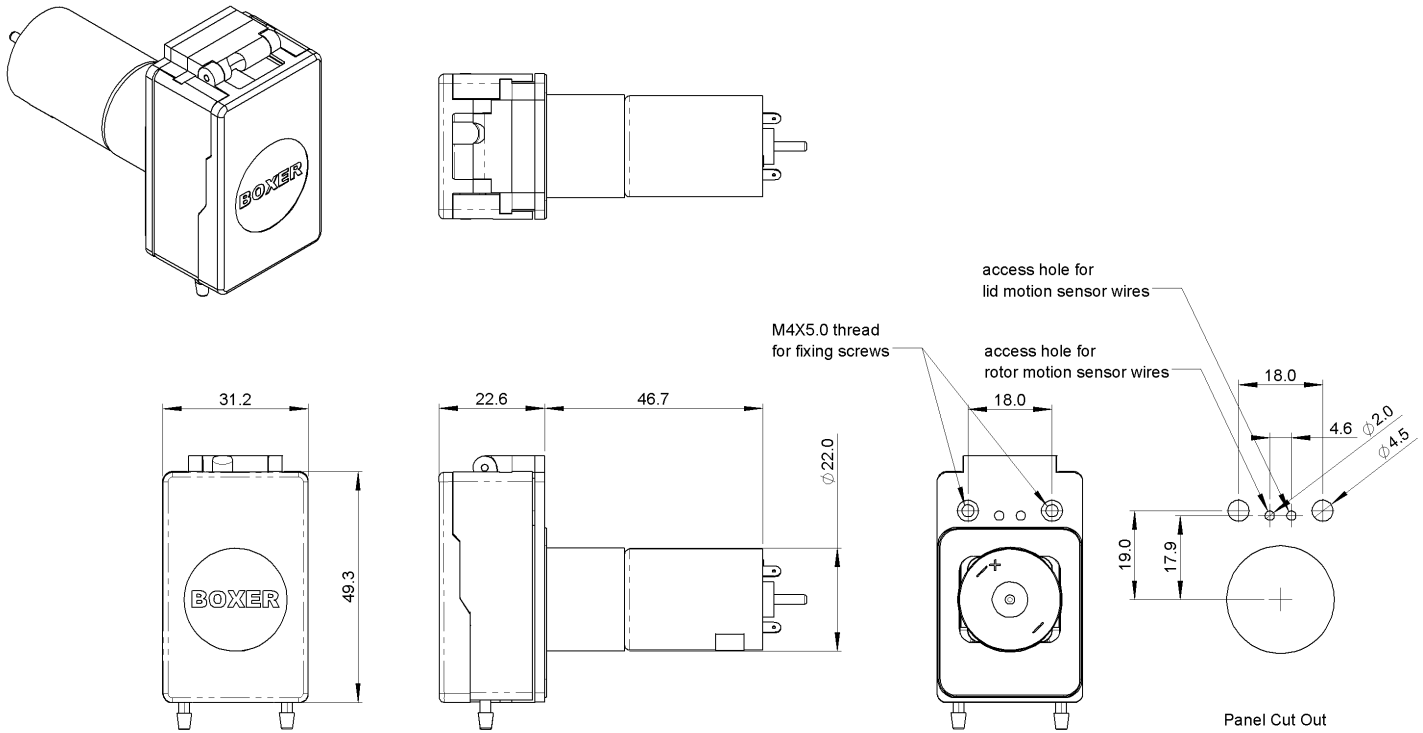
A micro reed sensor (shown in red) is located on the pump back-plate. A permanent magnet (shown in green) is located on the lid closing mechanism. The contacts of the reed sensor close when the lid is in the closed position. The signal can be used as a safety feature to ensure the pump does not operate 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 <sup>2</sup>
Lead length	27 cm

## Drawing: 29QQ with DC / Gear Motor, Rear Mount

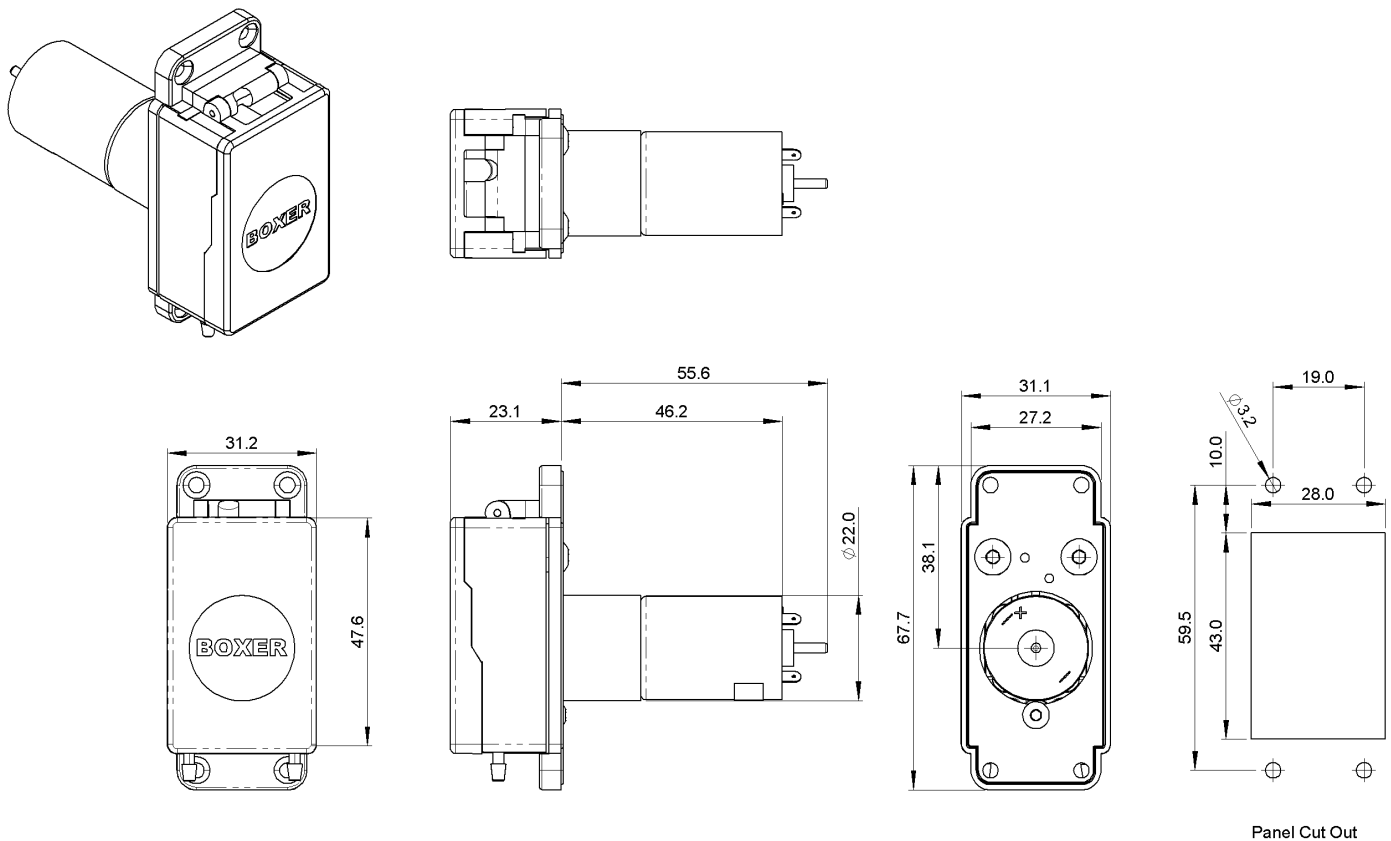


Links to Drawing and STEP file:

→ [Drawing \(.png\)](#)

→ [STEP \(.zip\)](#)

## Drawing: 29QQ with DC / Gear Motor, Front Mount



Links to Drawing and STEP file:

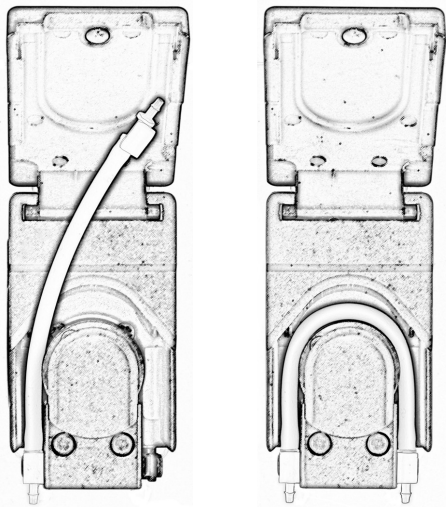
→ [Drawing \(.png\)](#)

→ [STEP \(.zip\)](#)

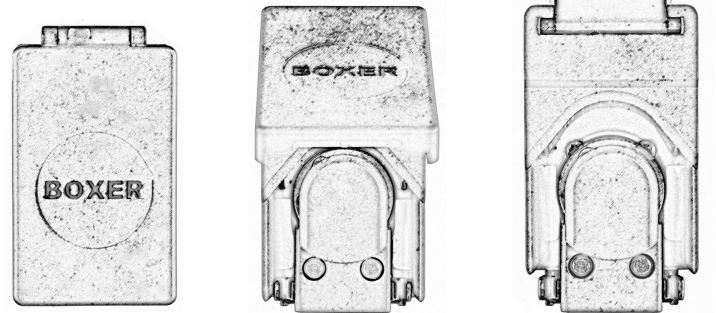
## Tube Loading / Unloading

The 29QQ peristaltic pump is designed to be used with dedicated tube sets. See page 5 for details.

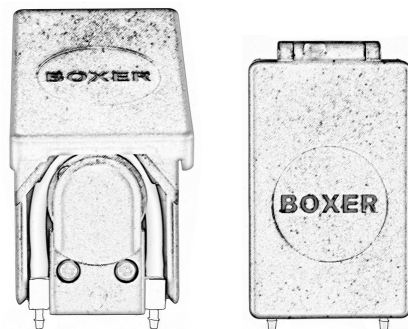
- 2 Insert one end of the tube set into the mating clip in the pump. Place the tube around the rotor ensuring it lies centrally across the rollers. Insert the other end of the tube set into the second clip. Ensure both clips are fully engaged.



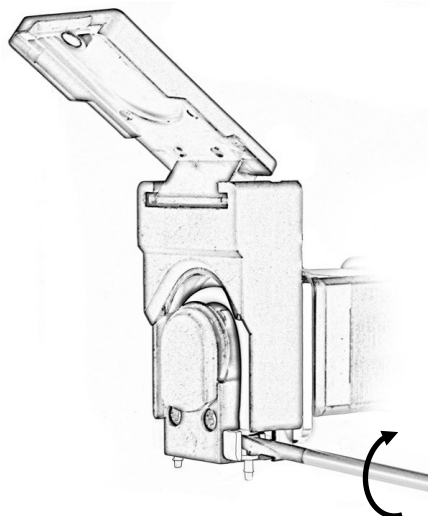
- 1 Rotate the lid to the upper position.



- 3 Close the lid to the lower position.



- 4 To remove the tube set, repeat the process in the reverse order. A small screwdriver can be used to assist in disengaging the clips.



The 29QQ is designed for 1.0 mm wall tubing from ID of 0.5 mm to 2.0mm mm. Only tubing suitable for peristaltic pumps should be used.

Boxer Pumps > Products > Peristaltic Pump

## Order Information

Pump part number matrix (Configuration X Voltage / Speed):

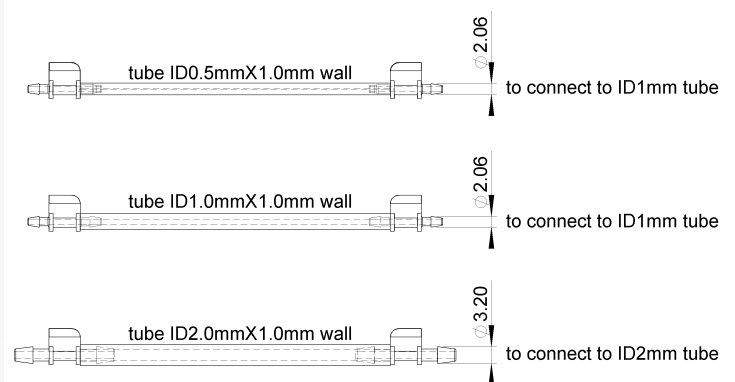
Configuration	12 V / 15 RPM	12 V / 116 RPM	12 V / 315 RPM	12 V / 520 RPM
29QQ DC / Rear Mount	29240.940	29100.940	29220.940	29070.940
29QQ DC / Front Mount	29240.941	29100.941	29220.941	29070.941
29QQ DC / Rear Mount / Encoder	29240.942	29100.942	29220.942	29070.942
29QQ DC / Front Mount / Encoder	29240.943	29100.943	29220.943	29070.943
29QQ DC / Rear Mount / Lid Sensor	29241.940	29101.940	29221.940	29071.940
29QQ DC / Front Mount / Lid Sensor	29241.941	29101.941	29221.941	29071.941
29QQ DC / Rear Mount / Encoder / Lid Sensor	29241.942	29101.942	29221.942	29071.942
29QQ DC / Front Mount / Encoder / Lid Sensor	29241.943	29101.943	29221.943	29071.943

Configuration	24 V / 33 RPM	24 V / 107 RPM	24 V / 315 RPM	24 V / 520 RPM
29QQ DC / Rear Mount	29160.940	29120.940	29080.940	29150.940
29QQ DC / Front Mount	29160.941	29120.941	29080.941	29150.941
29QQ DC / Rear Mount / Encoder	29160.942	29120.942	29080.942	29150.942
29QQ DC / Front Mount / Encoder	29160.943	29120.943	29080.943	29150.943
29QQ DC / Rear Mount / Lid Sensor	29161.940	29121.940	29081.940	29151.940
29QQ DC / Front Mount / Lid Sensor	29161.941	29121.941	29081.941	29151.941
29QQ DC / Rear Mount / Encoder / Lid Sensor	29161.942	29121.942	29081.942	29151.942
29QQ DC / Front Mount / Encoder / Lid Sensor	29161.943	29121.943	29081.943	29151.943

Tube Sets Part Numbers (ordered separately):

### Material / Size

PHI Ø 0.5 mm with PP Connectors	29000.105
PHI Ø 1.0 mm with PP Connectors	29000.110
PHI Ø 2.0 mm with PP Connectors	29000.120
Silicone Ø 0.5 mm with PP Connectors	29000.305
Silicone Ø 1.0 mm with PP Connectors	29000.310
Silicone Ø 2.0 mm with PP Connectors	29000.320
Lagoprene Ø 1.0 mm with PP Connectors	29000.410
Lagoprene Ø 2.0 mm with PP Connectors	29000.420
ED-Plex Ø 1.0 mm with PP Connectors	29000.510
ED-Plex Ø 2.0 mm with PP Connectors	29000.520



## BOX-it (Webshop for online purchase)

Sample quantities are available for direct online purchase:



(Select configuration from drop-down menu)

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.

## Additional Information (Links):

→ [29QQ webpage](#)

→ [Boxer peristaltic pump overview](#)