

Boxer Pumps > Products > Peristaltic Pump

6K peristaltic pump, 12 channel for 1.0 mm wall tubing with 24 V stepper motor .

Options:

- 0.5, 1.0, 2.0 or 3.0 mm ID tubing
- 4 or 8 rollers
- complete with motor only or motor with choice of 3 pre-assembled drivers
- optical speed sensor

Note: separate datasheets provide details the 6K series for 1.6 mm wall tubing, however 1.0 mm and 1.6 mm wall tubing can be combined on the same pump.



## Technical Data

### Flow per Revolution (per channel)

ID Ø 0.5 mm	20 / 15 µl per revolution (4 / 8 rollers)
ID Ø 1.0 mm	61 / 41 µl per revolution (4 / 8 rollers)
ID Ø 2.0 mm	229 / 132 µl per revolution (4 / 8 rollers)
ID Ø 3.0 mm	382 / 187 µl per revolution (4 / 8 rollers)

### Flow at 300 RPM (max recommended speed)

ID Ø 0.5 mm	6.1 / 4.4 ml / min (4 / 8 rollers)
ID Ø 1.0 mm	18.7 / 12.4 ml / min (4 / 8 rollers)
ID Ø 2.0 mm	68.6 / 39.5 ml / min (4 / 8 rollers)
ID Ø 3.0 mm	115.1 / 56.3 ml / min (4 / 8 rollers)

### Electrical Data

Power consumption (with ID ID Ø 3.0 mm tube and including A4 driver)	36 to 53 W
Recommended driver current setting	4.0 A
Max. starting speed (with new tubing)	100 rpm

### Tube Materials

Pharm-A-line (PHI) / Norprene G / ED-Plex

### General Data

Max pressure	8 m H <sub>2</sub> O
Max suction height (dry)	8 m H <sub>2</sub> O
Motor life	>10000 hour
Weight (without driver)	1280 g

### Optional Sensor

Optical speed sensor	4 pulses per revolution
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All data measured with 'run-in' Pharm-a-line tubing and H<sub>2</sub>O.

## Inlet / Outlet Positions

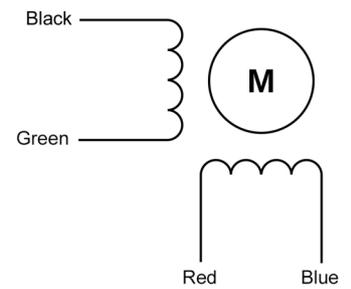
The 6K peristaltic pump is extremely compact due to each channel running through either the left or right side of the rotor assembly. The inlet and outlets of each channel are above and below the pump head.

The inlet and outlet positions shown here are for a pump running in the clockwise direction. If the motor is run in the reverse direction, the inlet and outlet position of each channel also reverse.

Each channel is run by a common shaft and cannot be controlled individually.



## Motor Details



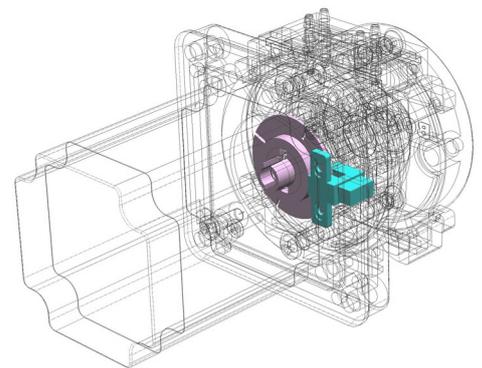
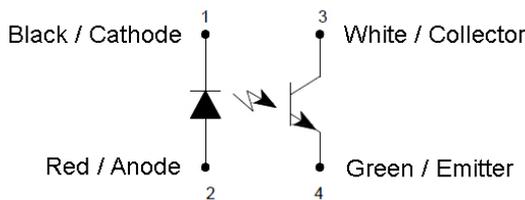
### Specification

Type	2 phase, hybrid, bipolar
Size	Nema 23 / 57 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	1.13 Ω ±10%
Inductance per phase	3.6 mH ±20%
Wire gauge	22 AWG
Lead length	300 mm
Available drivers	→ <a href="#">Drivers</a>
Recommended driver rating	4.0 A

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

## Optional Speed Sensor

An optical sensor (shown in turquoise) is mounted inside the pump body and is interrupted by a 4 slot rotating disc (shown in purple). The optical sensor has 4 leads.



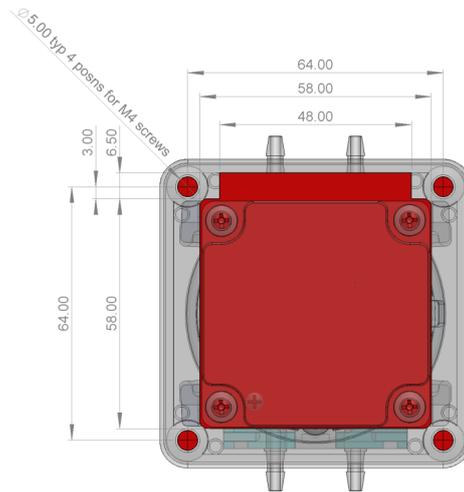
### Specification

Sensor type	OPB8340W (Optek Technology)
Input diode current	50 mA
Collector current	30 mA
Max. collector-emitter voltage	30 V
Lead gauge	26 AWG
Lead length	60 cm

## Assembly Information

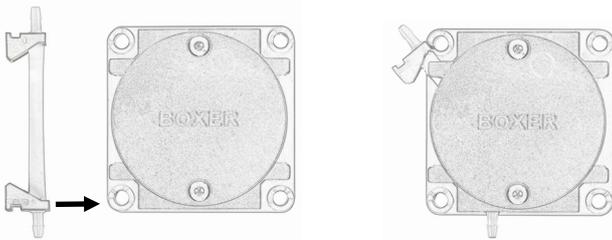
The 6K peristaltic pump is assembled to a panel cut-out using 4 x M4 bolts. The rubber gasket should be placed between the motor plate and the panel.

Suggested panel cut-out:

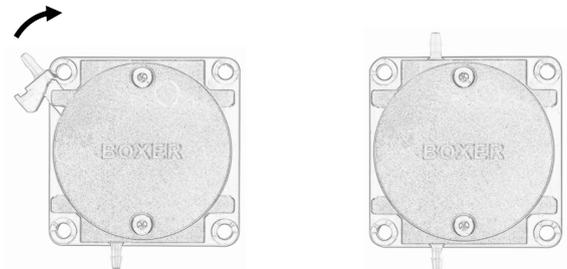


## Tube Set Loading / Unloading

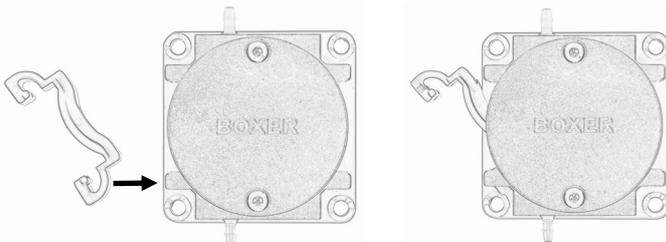
1 Align the lower tube clip with the pump body in the orientation shown below. Push the lower tube clip into the recess in the pump body.



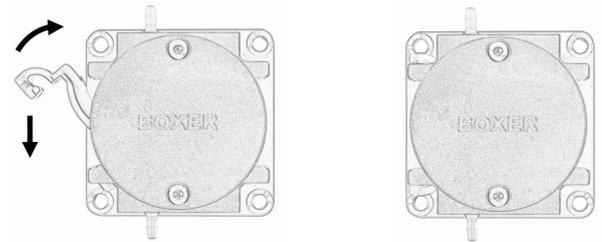
2 Push the upper tube clip into the recess in the pump body. Some tension in the tube will be required as it is pulled over the rollers.



3 Align the saddle with the pump body in the orientation shown below. Insert the lower pin of the saddle into the recess in the pump body.



4 Push the upper end of the saddle down, rotate the saddle and insert the upper pin of the saddle into the recess in the pump.

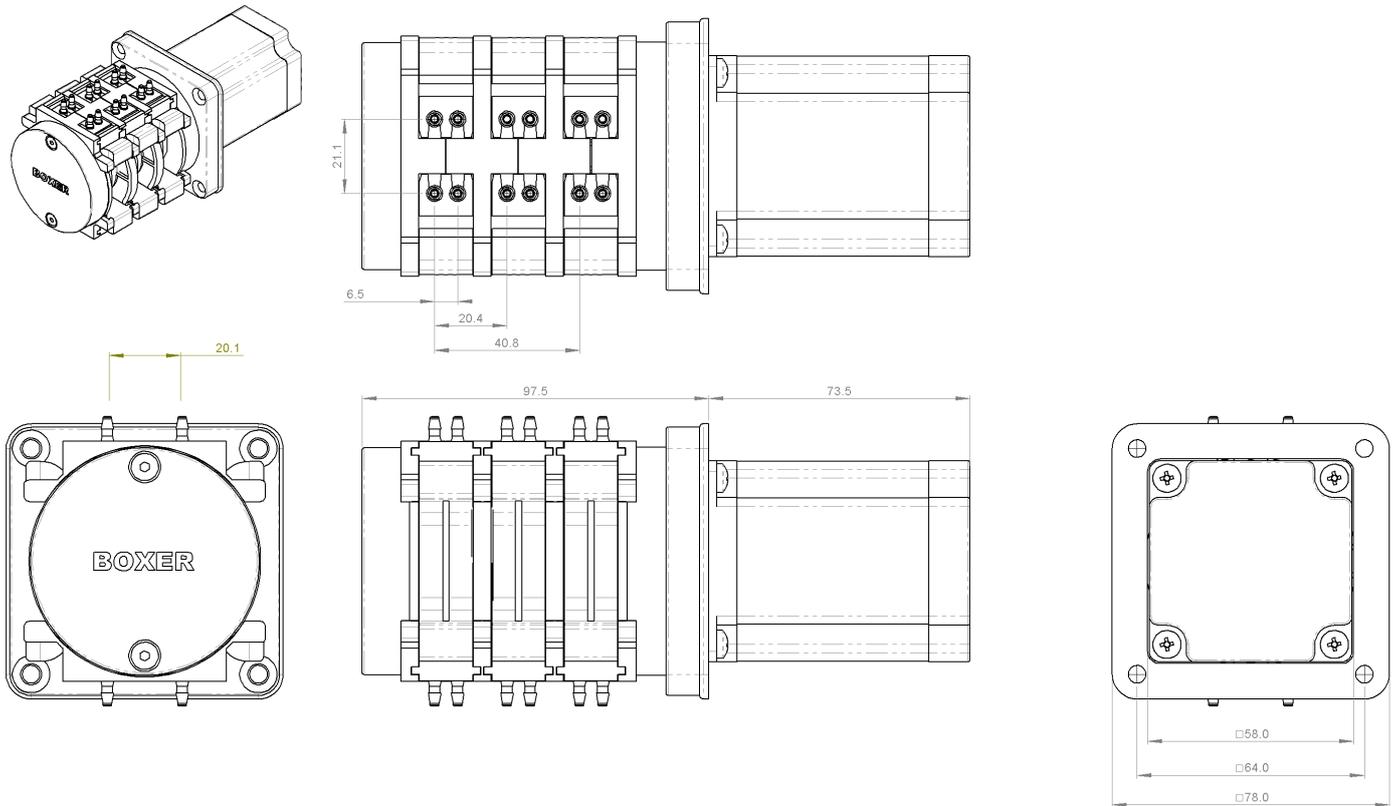


5 Repeat steps 1 to 4 for the right hand side of the pump.

6 To unload the tube set follow steps 1 to 4 in the reverse order.

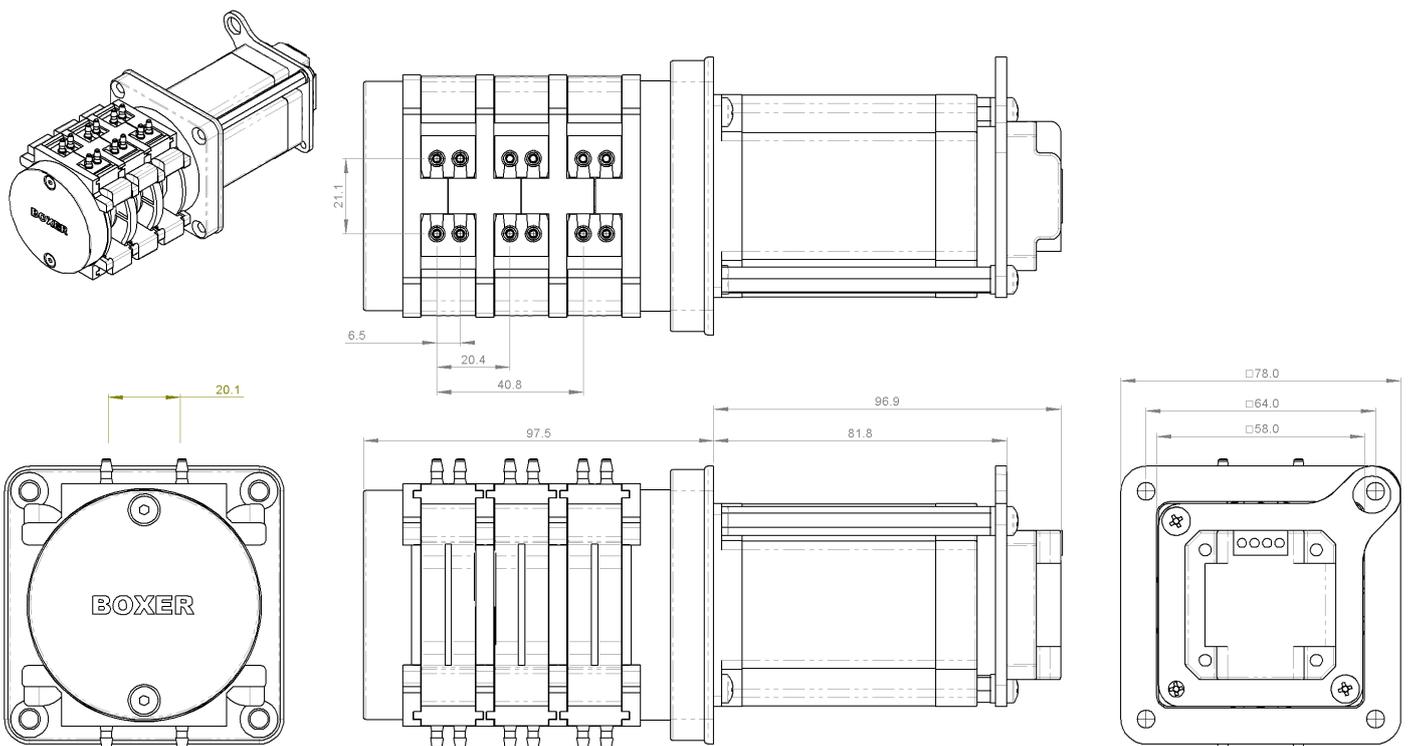
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6K with Stepper Motor (without driver)



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

6K with Stepper Motor + A4 Analogue Driver (0 to 5 V Speed Input)

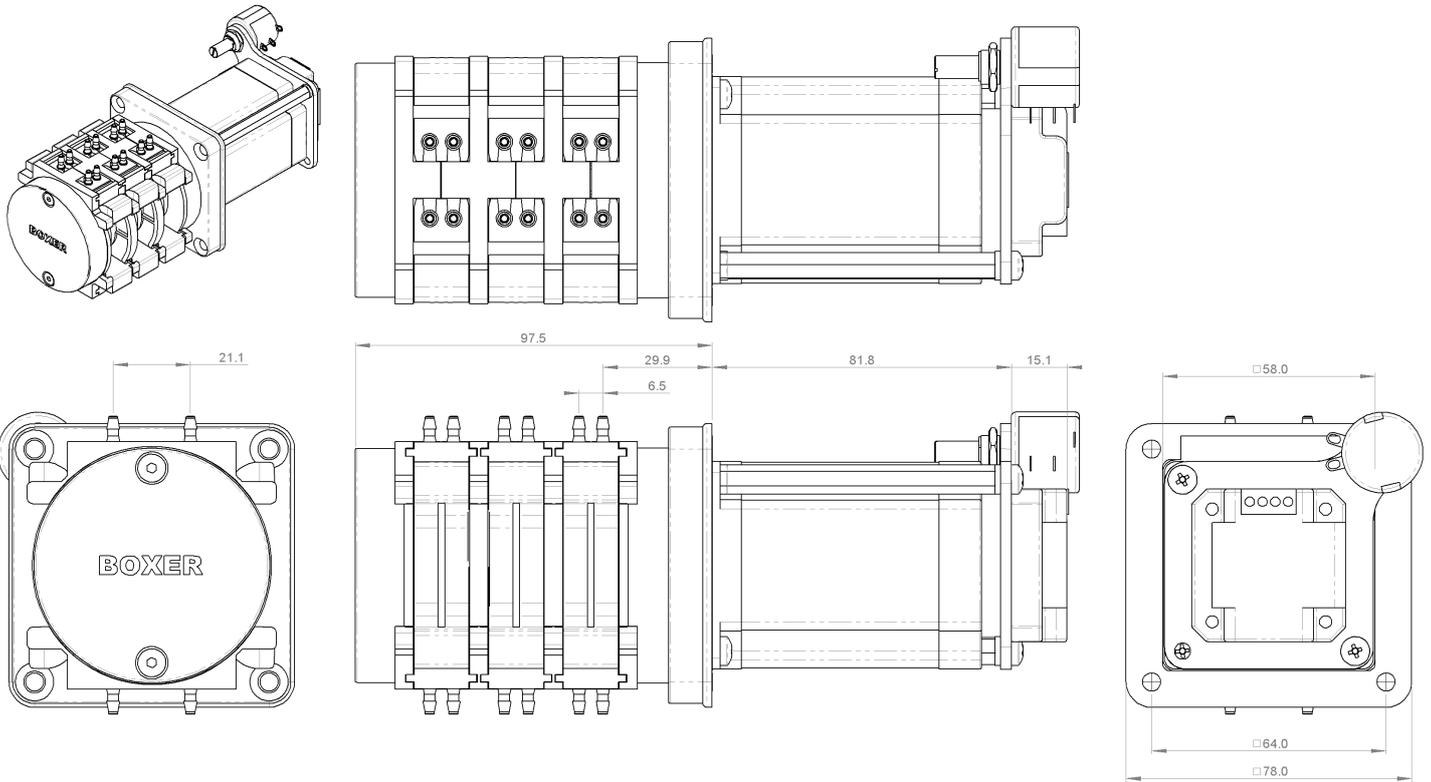


Link: → [Driver Information](#)

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

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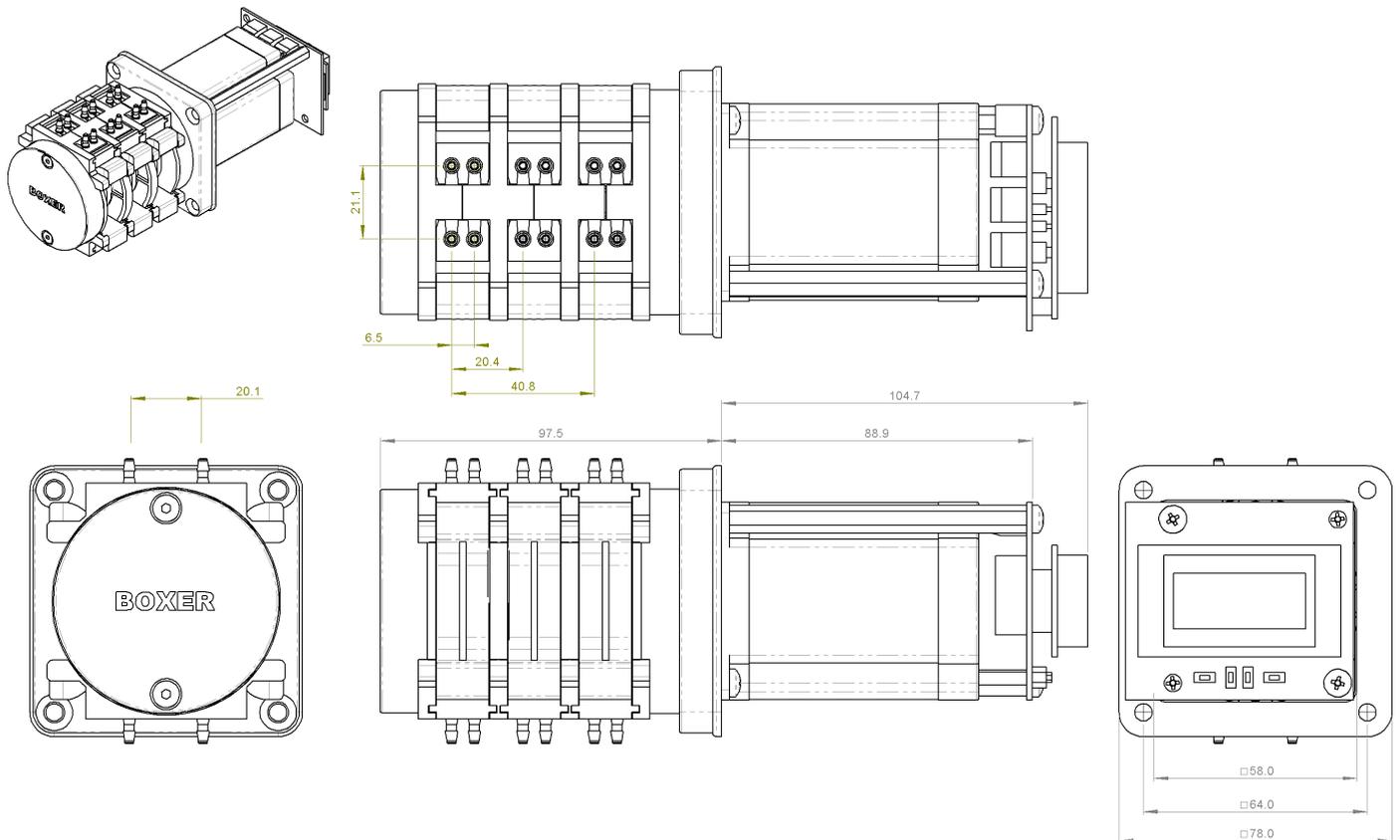
## 6K with Stepper Motor + A4p Analogue Driver with Speed Potentiometer



Link :→ [Driver Information](#)

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

## 6K with Stepper Motor + iD Programmable Digital Driver

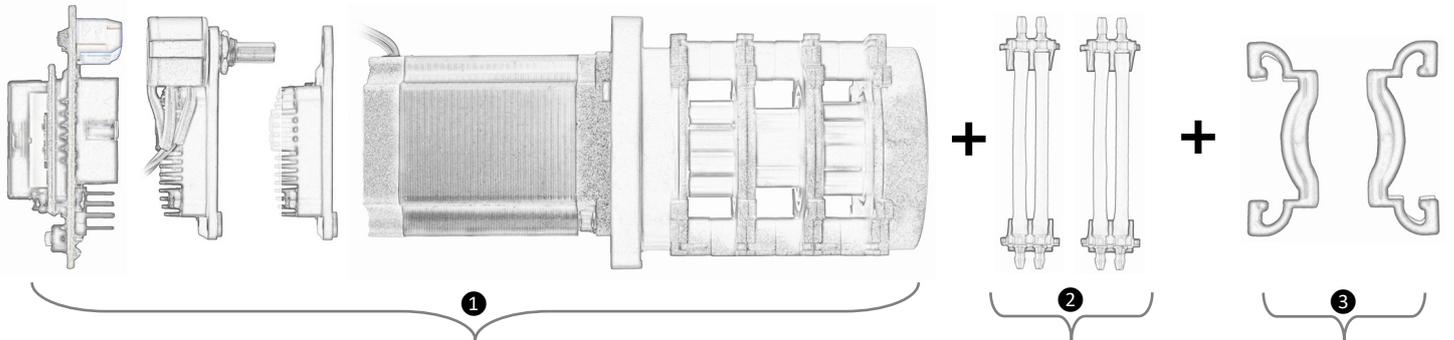


Link :→ [Driver Information](#)

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

## Order Information

When ordering the 6K peristaltic pump the base pump, tube sets and saddle kits should be ordered separately.



Base pump complete with motor only or motor with choice of 3 pre-assembled drivers. 4 or 8 rollers.

Tube set, supplied as pair of double tubes. 3 sets required per 12 channel pump.

Saddle kit, supplied as pair. 3 kits required per 12 channel pump.

### 1 Base Pump

#### Part Number Description

Motor Only:

6343.100	6K 24 V Stepper / 12 Channel / 4 Rollers
6333.100	6K 24 V Stepper / 12 Channel / 8 Rollers

With A4 Driver:

6343.101	6K 24 V Stepper / 12 Channel / 4 Rollers / A4
6333.101	6K 24 V Stepper / 12 Channel / 8 Rollers / A4p

With A4p Driver:

6343.151	6K 24 V Stepper / 12 Channel / 4 Rollers / A4
6333.151	6K 24 V Stepper / 12 Channel / 8 Rollers / A4p

With iD Driver:

6343.105	6K 24 V Stepper / 12 Channel / 4 Rollers / iD
6333.105	6K 24 V Stepper / 12 Channel / 8 Rollers / iD

### 3 Saddle Kit

#### Part Number Description

6000.104	Saddle Kit / 1.0 mm wall tubing / 4 rollers
6000.108	Saddle Kit / 1.0 mm wall tubing / 8 rollers

Sold as pairs. 3 kits required per 12 channel pump.

### 2 Tube Set

#### Part Number Description

6000.547	PHI ID Ø 0.5 mm with PP connectors for 0.5 to 1.0 mm ID tubing
6000.540	PHI ID Ø 1.0 mm with PP connectors for 0.5 to 1.0 mm ID tubing
6000.546	PHI ID Ø 2.0 mm with PP connectors for 2.0 to 2.4 mm ID tubing
6000.548	PHI ID Ø 3.0 mm with PP connectors for 2.4 to 4.0 mm ID tubing

Sold as pair of double tubes. 3 sets required per 12 channel pump.

Listed above are **Pharm-a-line** (PHI) tube sets. Technical information including chemical compatibility:

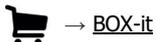
→ [Pharm-a-line](#)

Alternative tubing (**Norprene G** and **ED-Plex**):

→ [6K Tubing](#)

## BOX-it (Webshop for online purchase)

Sample quantities are available for direct online purchase:



## Additional Information (Links):

→ [6K web page](#)

→ [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.