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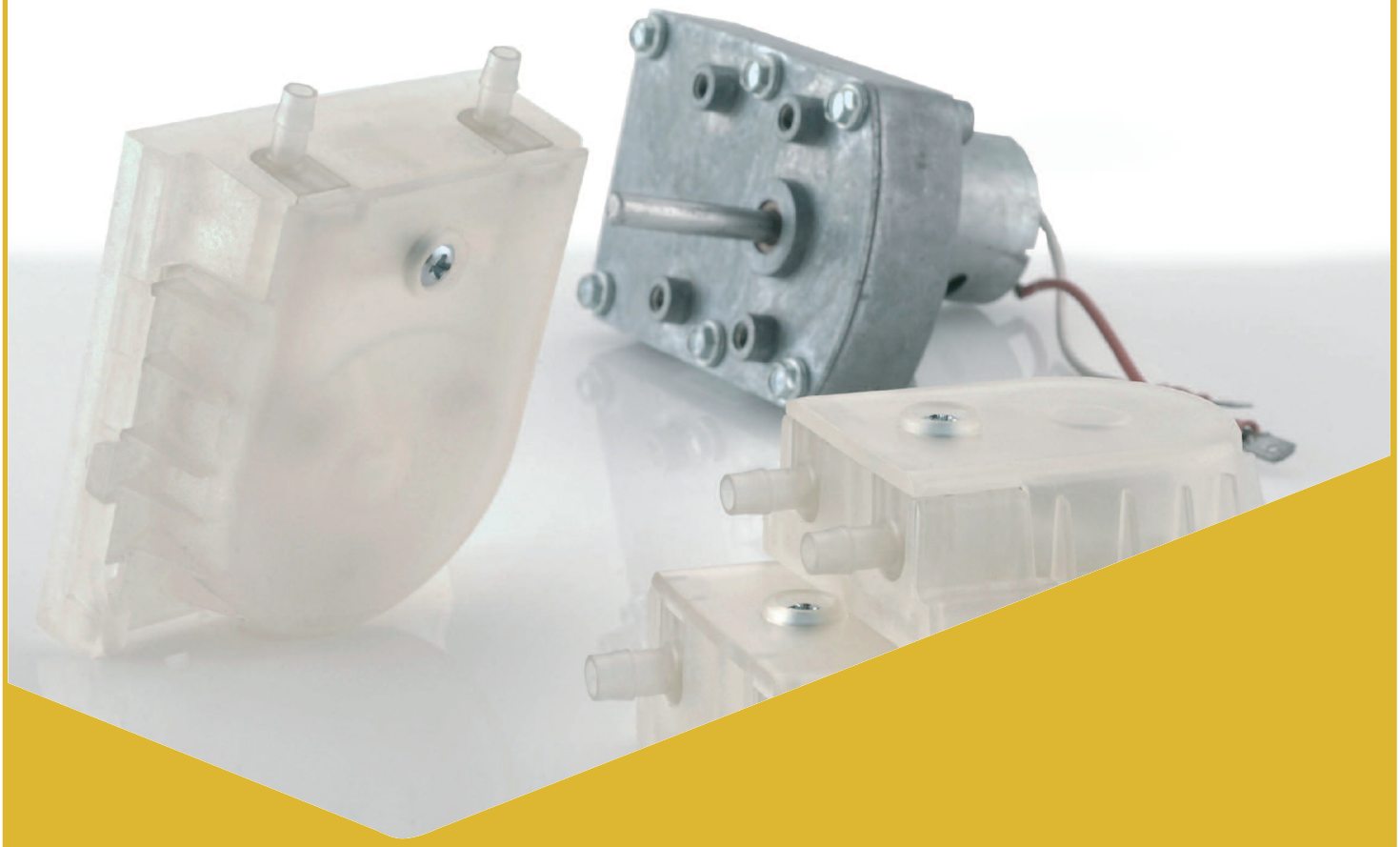
Refreshing Your Beverage
And Catering Products

Peristaltic Pump Heads for OEM



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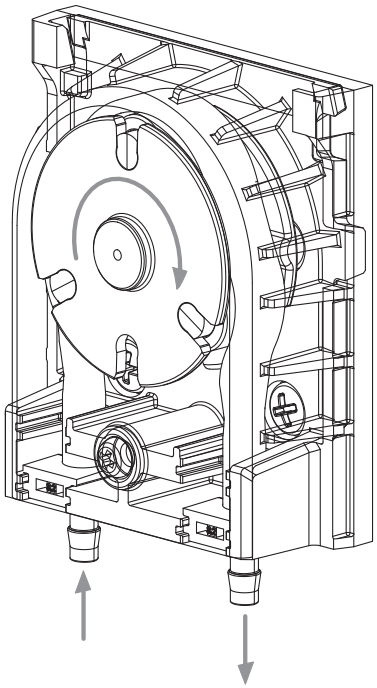
Peristaltic Pump Heads for OEM

Introduction

Peristaltic pumps are one of the oldest methods of pumping and the way in which they operate is quite simple. A rotor with 2 or more rollers squeezes a tube held in a captive 'horse shoe' U shape. This brings many advantages:

- The ability to monitor the volume of liquid pumped with accuracy
- Positive displacement
- Self-priming
- Pump wet or dry
- Pump without contaminating the liquid
- To pump different thicknesses of liquid



Index

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How to specify a peristaltic pump - questions to ask

Q1 What pump are you using at the moment?

We always have a good chance to change an existing type of pump into a peristaltic. This gives us a background to their request.

Q2 What are you pumping?

Different viscous materials will need different "shore" hardness of the tube – the tube material needs to hold and regain its shape.

Choose different tube materials for different applications. *See page 11*

Q3 What temperature liquids are you pumping?

Extreme temperatures will reduce the life of the tube and maybe effect the ability of the motor to start.

Q4 How often do you want to pump?

A pump running continuously may have a short life – where as a pump running 15 seconds a day may last 10 years!

Q5 How much do you want to pump and over what period of time?

This is about choosing the right size of peristaltic pump, in combination with question 4. Also *see page 6*

Q6 Is a smooth pumping delivery required?

Choose 3 roller rotor for a smother flow. A faster RPM will also help.

Q7 What life span are you expecting from a pump?

Clients will want and expect very different life spans from a peristaltic pump.

Q8 Is noise an issue?

You may choose a gearbox to power your pump because you want long life, but then you find you need a quieter unit such as a DC motor or synchronous motor.

Q9 Ask client to choose, "cut & fitted tube harness" or wrap around "continuous tube"?

This is down to client preference and their individual application.

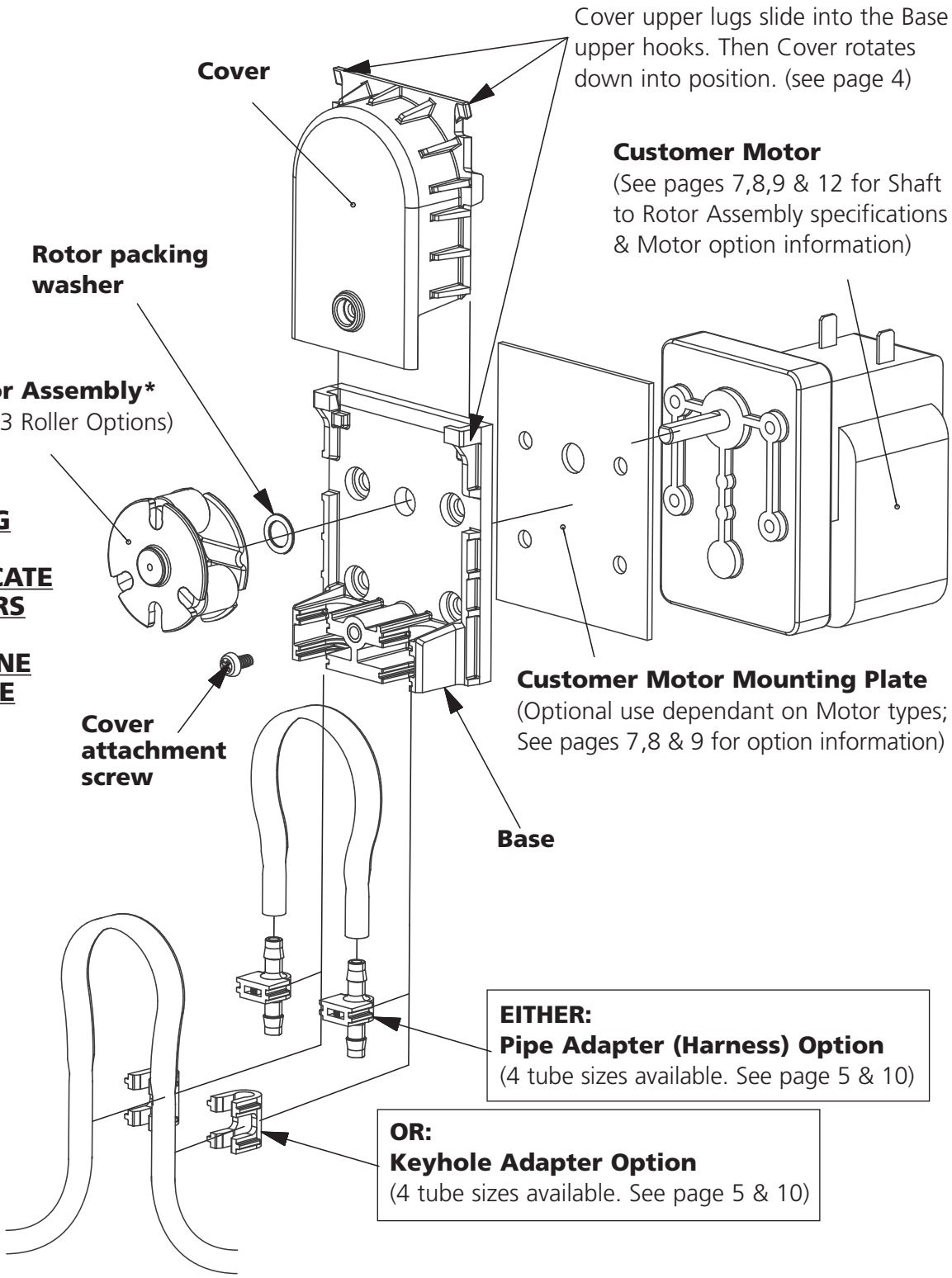
Q10 What are the sales benefits of the tubes and adapters?

Client may want to be able to confirm that a service has been carried out correctly. Evidence would be the return of the old harness (cut & fitted tube). Also this would allow the client to make a profit out of the spares. *See page 10*

Q11 What physical space has been allocated for this pump?

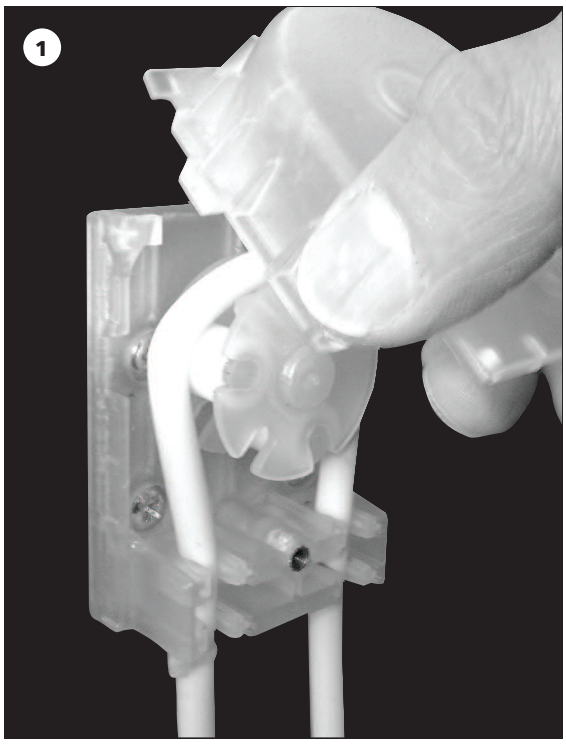
A common mistake – take care not to spend time and effort only to find it will not fit!!!

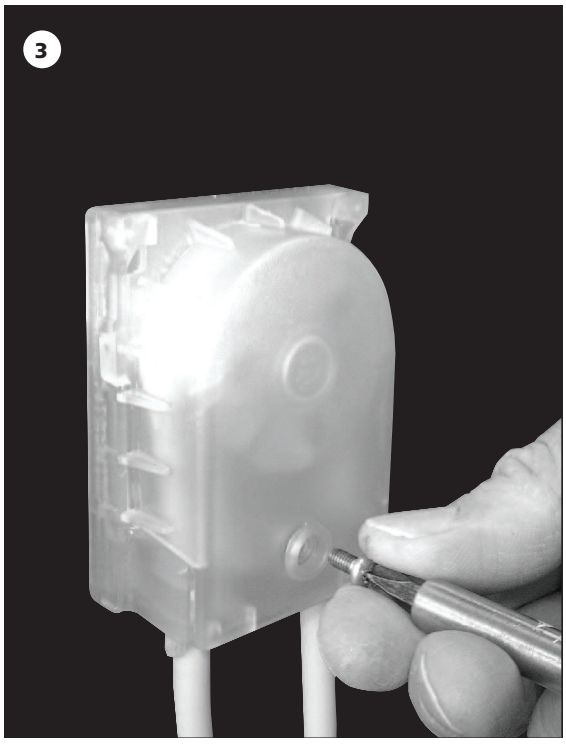
Component assembly



*** IF ROLLER ASSEMBLIES ARE REMOVED ENSURE THAT THE ROLLER SHAFTS ARE FITTED INTO THE ROTOR IN THE CORRECT ORIENTATION FOR EACH ROLLER ASSEMBLY SLOT.**

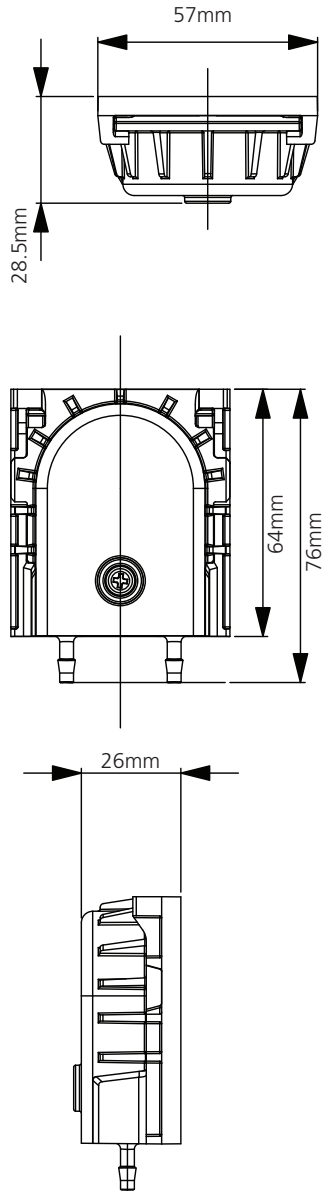
Simple latching mechanism





Dimensional overview - *3 pump models available*

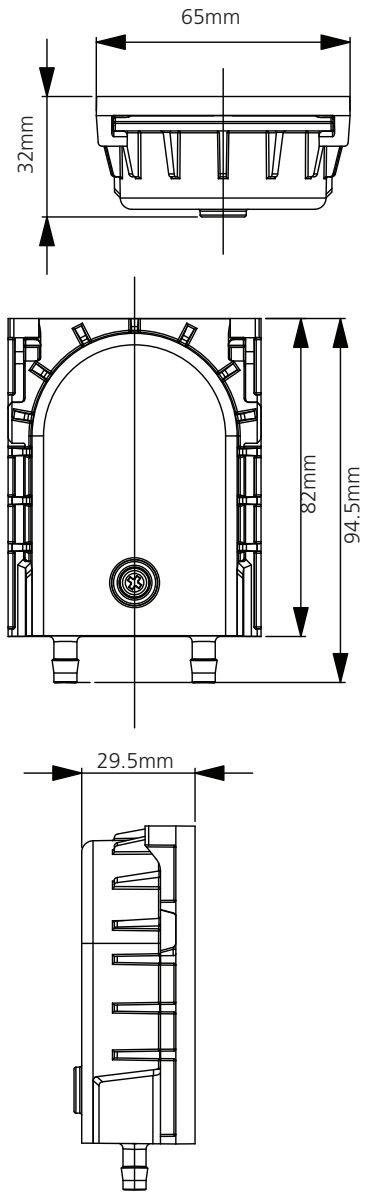
PeriPump 1



Rotor assembly available with:
- 2 rollers
- 3 rollers

Tube sizes available:
- 1.6mm (I/D)
- 3.2mm (I/D)

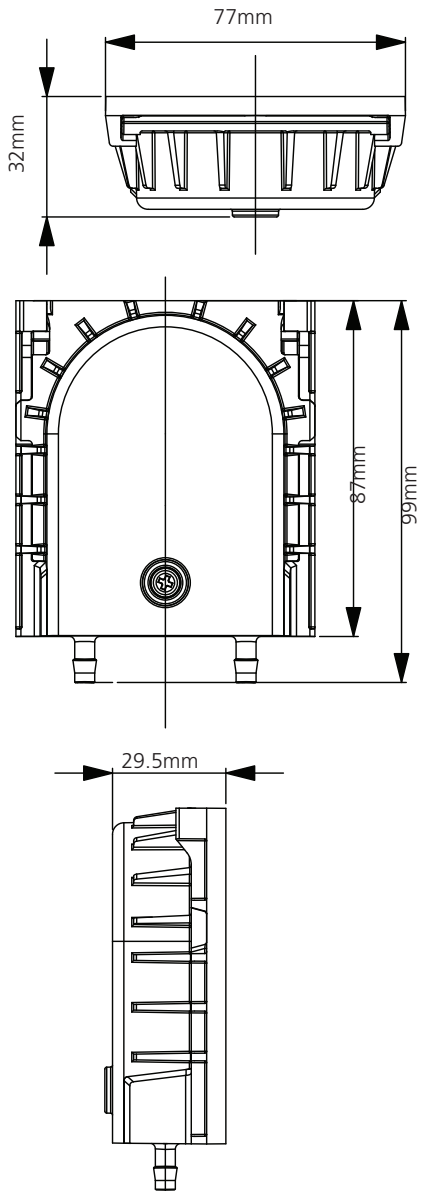
PeriPump 2



Rotor assembly available with:
- 2 rollers
- 3 rollers

Tube sizes available:
- 3.2mm (I/D)
- 4.0mm (I/D)
- 4.8mm (I/D)

PeriPump 3



Rotor assembly available with:
- 2 rollers
- 3 rollers

(NOTE: Metal heavy duty rotor assembly (2 rollers) also available for PeriPump 3)

Tube sizes available:
- 3.2mm (I/D)
- 4.0mm (I/D)
- 4.8mm (I/D)

PUMP	NO. OF ROLLERS	TUBE I/D (mm)	REVOLUTIONS/MINUTE = LIQUID IN LITRES PUMPED PER HOUR BETWEEN 10 - 240 RPM															
			10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	220	240
PERIPUMP 1	2	1.6	0.09	0.19	0.28	0.37	0.47	0.56	0.66	0.75	0.84	0.94	1.12	1.31	1.50	1.69	1.87	2.06	2.25
	2	3.2	0.33	0.67	1.00	1.33	1.66	2.00	2.33	2.66	3.00	3.33	3.99	4.66	5.33	5.99	6.66	7.32	7.99
	3	1.6	0.09	0.18	0.27	0.37	0.46	0.55	0.64	0.73	0.82	0.91	1.10	1.28	1.46	1.65	1.83	2.01	2.19
	3	3.2	0.32	0.64	0.96	1.28	1.59	1.91	2.23	2.55	2.87	3.19	3.83	4.46	5.10	5.74	6.38	7.01	7.65
PERIPUMP 2	2	3.2	0.44	0.88	1.33	1.77	2.21	2.65	3.09	3.54	3.98	4.42	5.31	6.19	7.07	7.96	8.84	9.73	10.6
	2	4.0	0.72	1.44	2.16	2.88	3.61	4.33	5.05	5.77	6.49	7.21	8.65	10.1	11.5	13.0	14.4	15.9	17.3
	2	4.8	0.93	1.85	2.78	3.70	4.63	5.55	6.48	7.40	8.33	9.26	11.1	13.0	14.8	16.7	18.5	20.4	22.2
	3	3.2	0.40	0.81	1.21	1.62	2.02	2.43	2.83	3.24	3.64	4.05	4.86	5.67	6.48	7.28	8.09	8.9	9.7
	3	4.0	0.62	1.24	1.86	2.48	3.1	3.72	4.34	4.96	5.58	6.2	7.44	8.68	9.92	11.2	12.4	13.6	14.9
	3	4.8	0.82	1.64	2.45	3.27	4.09	4.91	5.72	6.54	7.36	8.18	9.81	11.5	14.0	14.7	16.4	18.0	19.6
PERIPUMP 3	2	3.2	0.53	1.06	1.59	2.11	2.64	3.17	3.7	4.23	4.76	5.28	6.34	7.4	8.46	9.51	10.6	11.6	12.7
	2	4.0	0.85	1.7	2.55	3.41	4.26	5.11	5.96	6.81	7.66	8.51	10.2	11.9	13.62	15.3	17.0	18.7	20.4
	2	4.8	1.03	2.05	3.08	4.10	5.13	6.15	7.18	8.20	9.23	10.3	12.3	14.4	16.4	18.5	20.5	22.6	24.6
	3	3.2	0.51	1.03	1.54	2.05	2.57	3.08	3.60	4.11	4.62	5.14	6.16	7.19	8.22	9.25	10.3	11.3	12.3
	3	4.0	0.75	1.50	2.26	3.01	3.76	4.51	5.27	6.02	6.77	7.52	9.03	10.5	12.0	13.5	15.0	16.6	18.1
	3	4.8	0.99	1.99	2.98	3.98	4.97	5.97	6.96	7.96	8.95	9.95	11.9	13.9	15.9	17.9	19.9	21.9	23.9

PUMPING CAPACITY REFERENCE TABLE

ISSUE 2

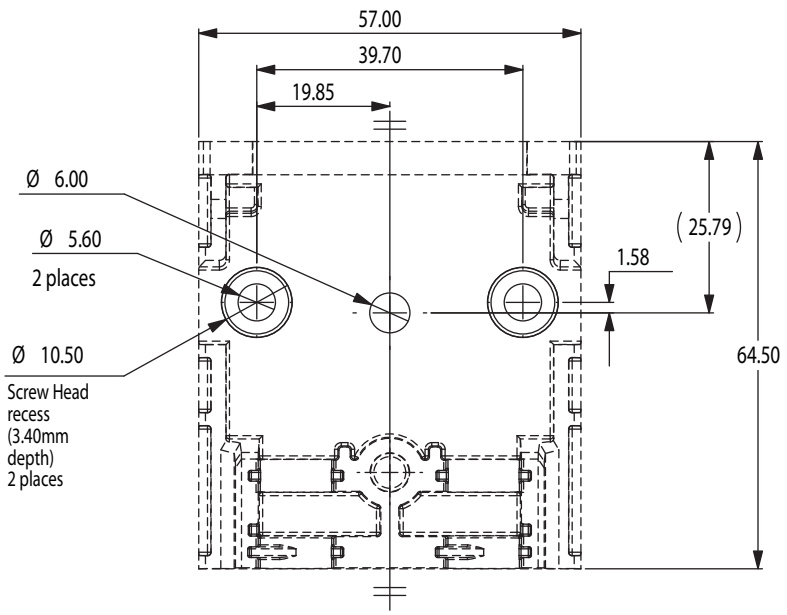
Because all applications are so different it is essential that the pump unit and power unit are tested in the environment required. There are many ways of achieving the desired effect. Your first choice may not be the best! * Tubes will flatten over time - performance may reduce. *Contact your distributor or Aspen Pumps.*

TEST CONDUCTED ON WATER @ 20°C
@ 1 METRE LIFT
@ 2 METRE HEAD

	Min. l/hr.	Max. l/hr.
PERIPUMP 1	0.09	7.99
PERIPUMP 2	0.04	22.2
PERIPUMP 3	0.51	24.6

Base mounting hole centre:

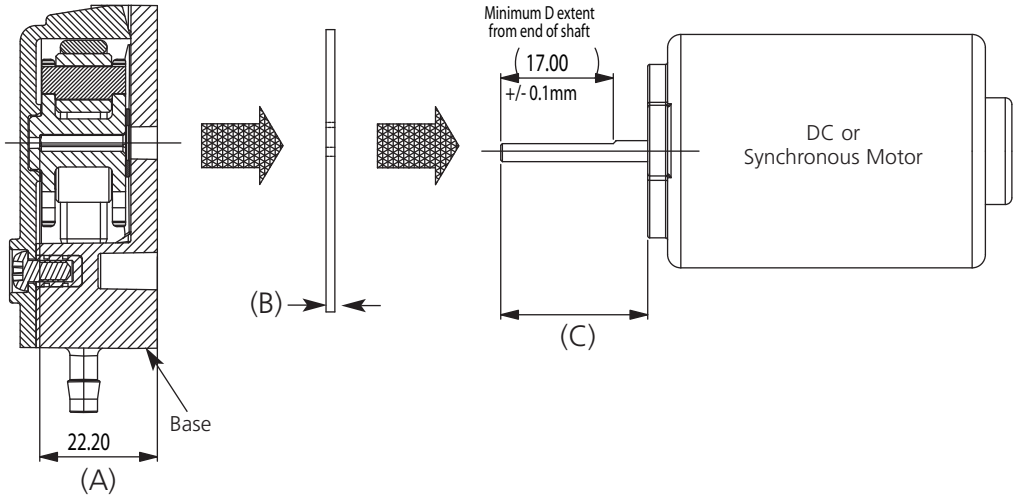
(Dimensions in millimetres except where indicated)



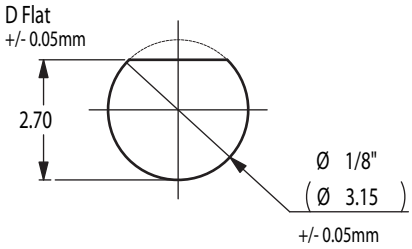
If a motor with different hole centres is to be fitted to the PeriPump 1 Base, then a Customer 'motor mounting plate' will need to be used, with a thickness and profile suited to the Customer motor specification. The motor shaft length will then need to be calculated as shown:

A + B = C

PeriPump 1 + Customer motor mounting plate = Motor shaft length

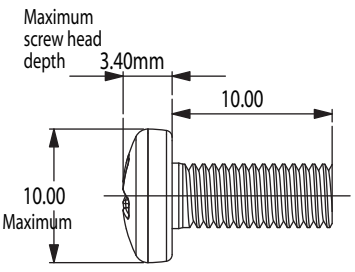


Shaft Ø & D flat:



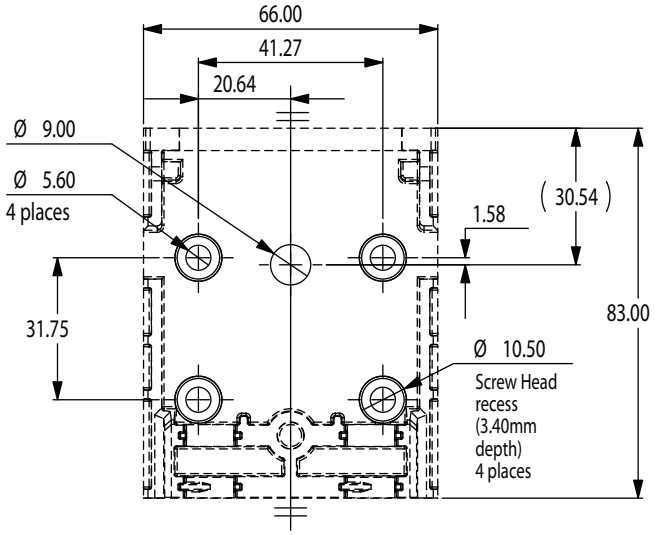
M5 Motor attachment screw:

This screw is suitable if NO customer 'motor mounting plate' is used.
A LONGER SCREW WILL NEED TO BE USED IF A CUSTOMER 'MOTOR MOUNTING PLATE' IS USED.



Base mounting hole centre:

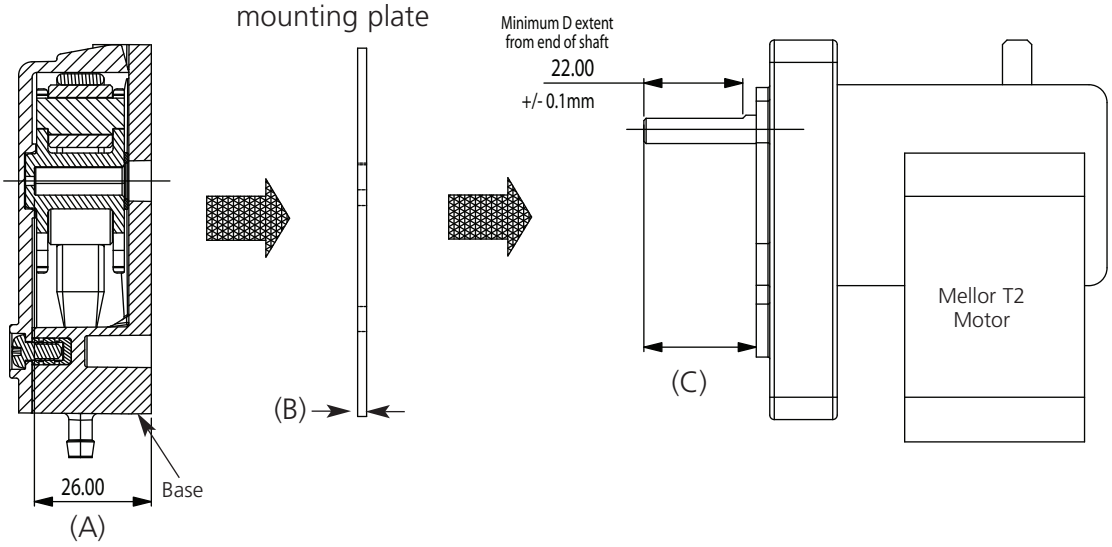
(Dimensions in millimetres except where indicated)



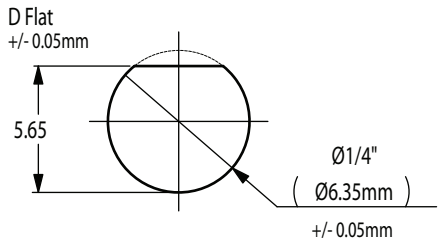
If a motor with different hole centres is to be fitted to the PeriPump 2 Base, then a Customer 'motor mounting plate' will need to be used, with a thickness and profile suited to the Customer motor specification. The motor shaft length will then need to be calculated as shown:

A + B = C

PeriPump 2 + Customer motor mounting plate = Motor shaft length

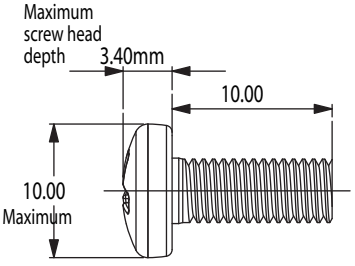


Shaft Ø & D flat:



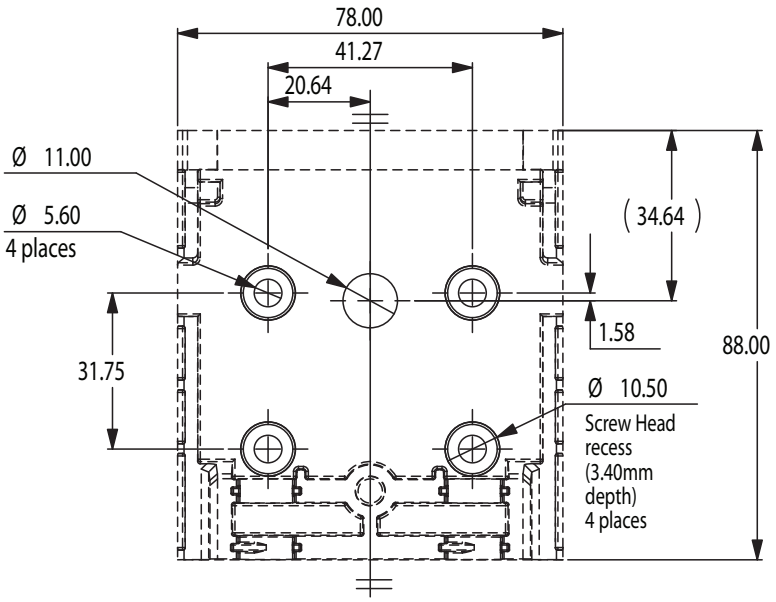
M5 Motor attachment screw:

This screw is suitable if NO customer 'motor mounting plate' is used.
A LONGER SCREW WILL NEED TO BE USED IF A CUSTOMER 'MOTOR MOUNTING PLATE' IS USED.



Base mounting hole centre:

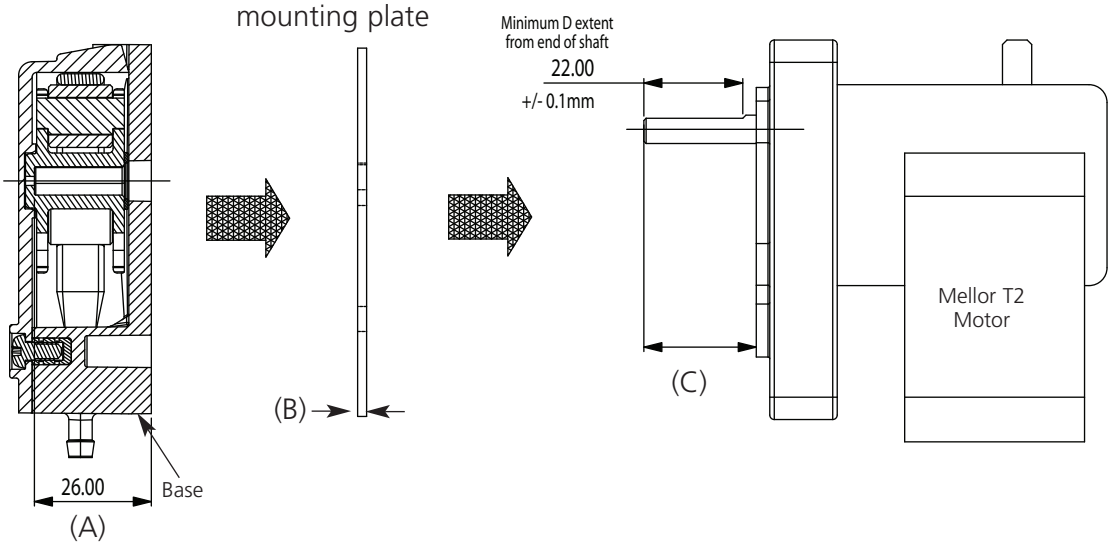
(Dimensions in millimetres except where indicated)



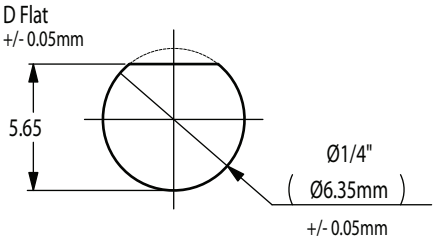
If a motor with different hole centres is to be fitted to the PeriPump 3 Base, then a Customer 'motor mounting plate' will need to be used, with a thickness and profile suited to the Customer motor specification. The motor shaft length will then need to be calculated as shown:

A + B = C

PeriPump 3 + Customer motor mounting plate = Motor shaft length

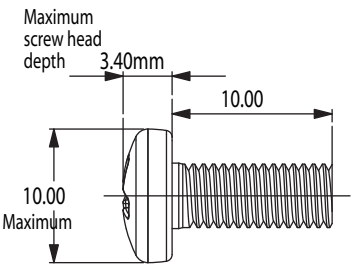


Shaft Ø & D flat:



M5 Motor attachment screw:

This screw is suitable if NO customer 'motor mounting plate' is used.
A LONGER SCREW WILL NEED TO BE USED IF A CUSTOMER 'MOTOR MOUNTING PLATE' IS USED.



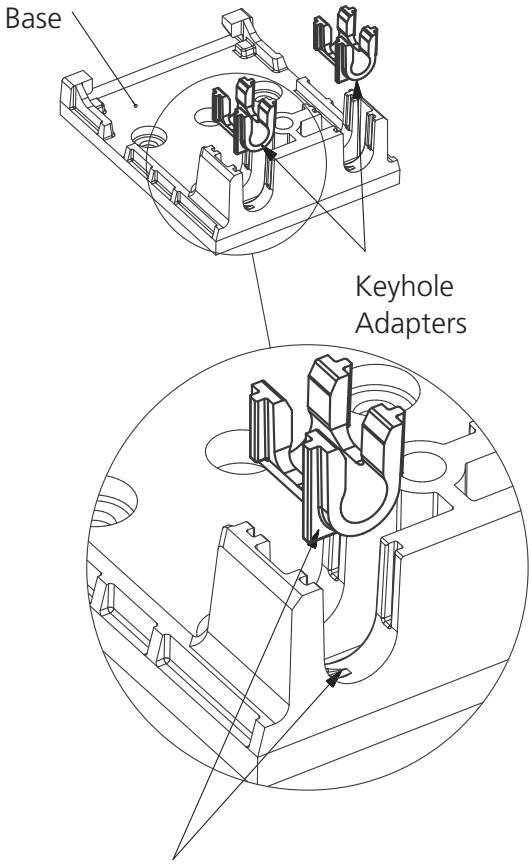
Adapter fitment into base

Ensure that the adapters (keyhole & pipe types) are fitted in the correct orientation, as shown below:

Keyhole Adapters

(CONTINUOUS TUBE "WRAP AROUND")

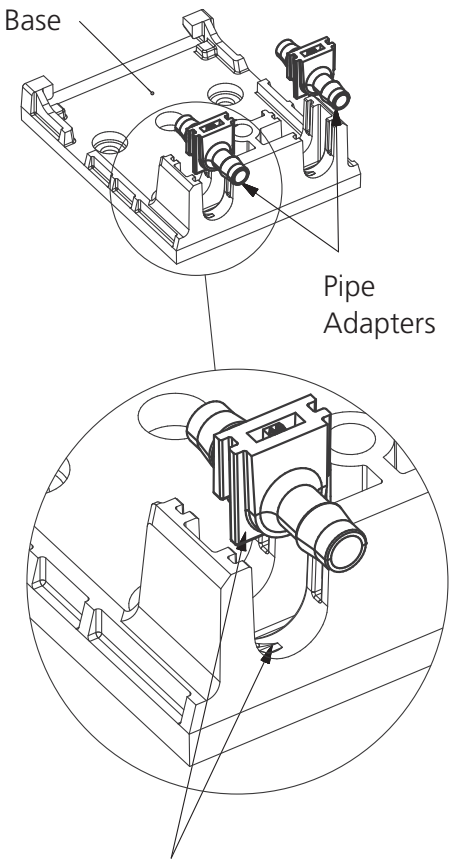
Ref. Question 9, page 2



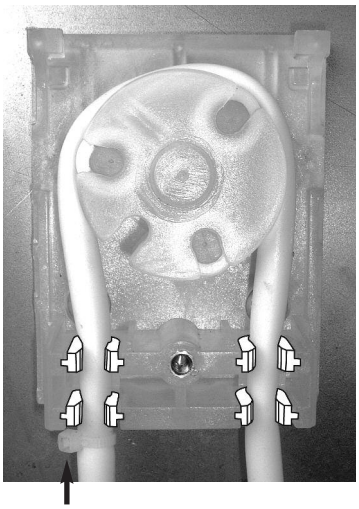
Pipe Adapters

(CUT & FITTED TUBE HARNESS)

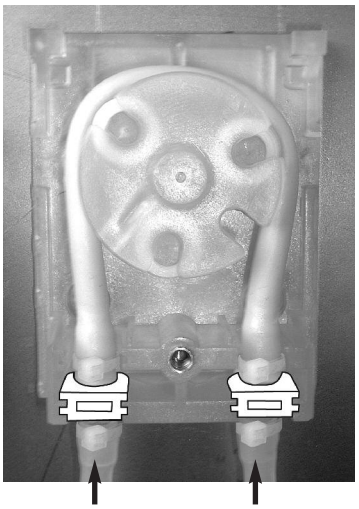
Ref. Question 9, page 2



Locate the master rib (e.g. the longer rib) on the selected Keyhole or the Pipe type Adapters into the Base lower left-hand master slot (e.g. the deepest slot).



CABLE TIE (to stop tube being pulled through pump head)



CABLE TIES (to stop tube being pulled off adapters)

Tube material & shore hardness

Available in 3 Shore hardnesses:

- 45A & 55A > Better for low pressure applications.
- 64A > More efficient head and suction head pressure outputs.

The tubing material is highly important and tubing from a credible source MUST be used.

Tube materials recommended for use:

1. **Santoprene/Autoprene (beige colour)**
   - Suitable for non oil based liquids
   - Increased longevity of life
   - Good wear characteristics
   - Federal Drug Administration (USA) grade approval
   - Superior chemical resistance

2. **Viton (black colour)**
   - Suitable for oil based liquids, concentrated acids & solvents
   - Excellent chemical compatibility
   - High capability
   - Lower life expectancy than Santoprene/Autoprene

Choosing a motor

PeriPump 1: Generally small DC and synchronous motors will be ideal for this unit. *(see page 7)*
PeriPump 2: Generally use a synchronous or shaded pole motor combined with a gearbox. *(see page 8)*
PeriPump 3: Generally use a synchronous or shaded pole motor combined with a gearbox. *(see page 9)*

Contact your motor supplier for help.
For further information on motors please contact Iain Gordon of Abbeychart Ltd +44(0)1367 711919 or iaingordon@abbeychart.co.uk.

Checklist

- Tube **must** be lubricated with silicone grease.

- The tube size and speed of the motor (revolutions per minute) will dramatically change the performance of the pump head. **Choose well - Take advice - Test!!**

- To increase the longevity of your pump, we suggest reducing:
  a) Speed
  b) Operational time
  c) Ambient temperature
  d) Use a larger pump less frequently

- Additional considerations for optimal use:
  a) Go back to page 2 - 'How to specify a peristaltic pump'
  b) Choose the correct hose material for the liquid that is being pumped *(page 11)* **- Take advice**
  c) Choose a power unit with the correct shaft size/D shape and speed *(page 7/8/9)* **- Take advice**

Specification

- 3 Models: PeriPump 1, 2 & 3 *(page 7/8/9)*
- 2 or 3 roller options
- Either a continuous "wrap around" or "cut & fitted" type of adapter for tubing *(page 10)*
- Tube for "wrap around" (continuous) application NOT SUPPLIED
- Tube for "cut & fitted" harness supplied, and available as spares
- 4 sizes of tubes available *(page 5/6)*
- Recommended tubing shore hardness: 45A, 55A or 64A
- Tubing material - *(see page 11)*
- We recommend a maximum of 240 RPM for our pump units
- Temperature Ratings: liquid: 0 - 60°C
  ambient: 5 - 65°C
- All pump head components: plastic (glass-filled polycarbonate)
  Optional metal heavy duty rotor available (for PeriPump 3 only - page 5/9)
- Pump units are individually packed (DO NOT INCLUDE MOTOR, MOUNTING PLATE OR SCREWS)

IMPORTANT: As Aspen Pumps will not know the environment or working conditions of each application, the contractor / engineer must satisfy themselves that the chosen unit is suitable for use. Aspen Pumps take no responsibility for an incorrectly specified unit or any resulting failures.

Contact: