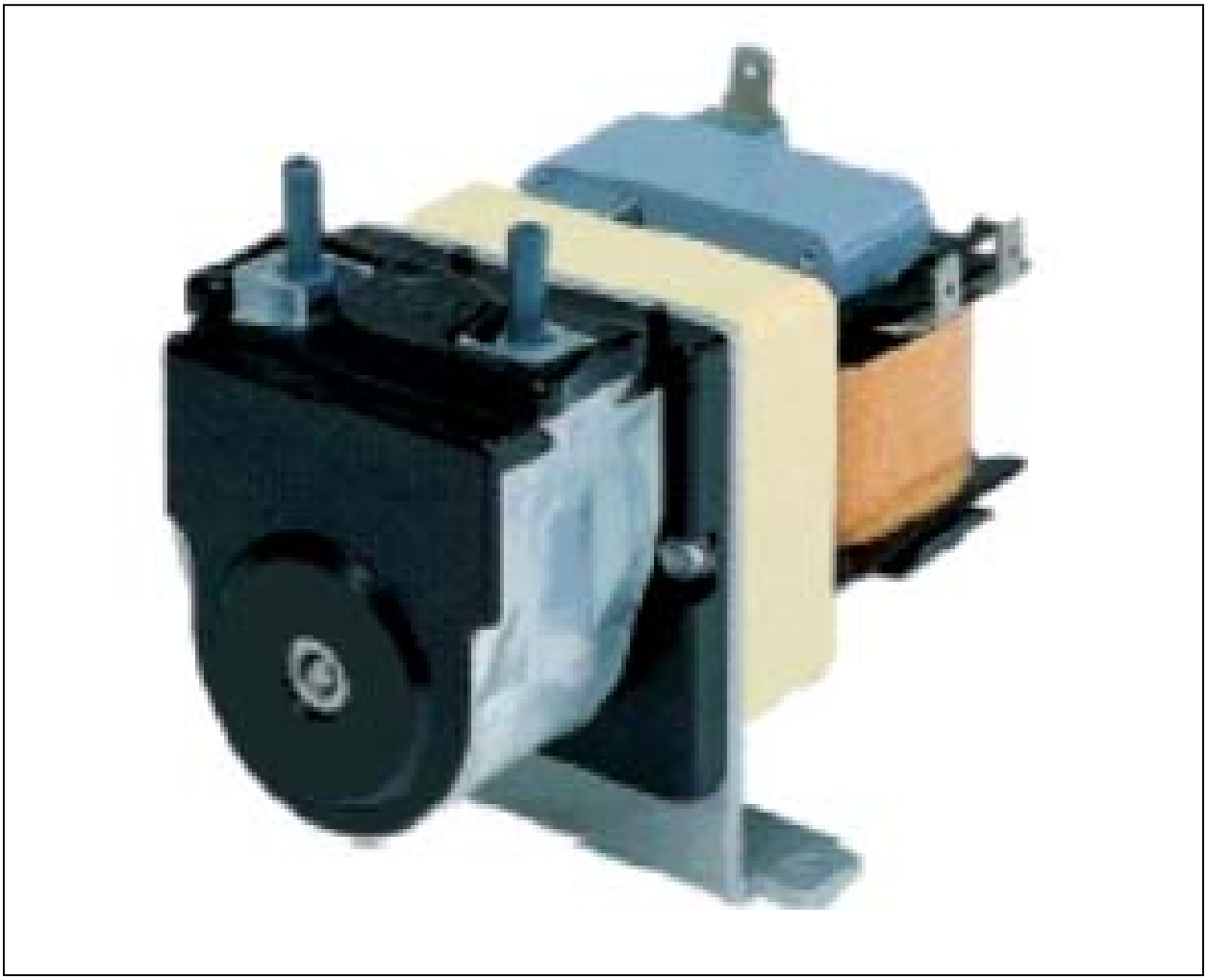
Asea Brown Boveri Limited
(BU Analytical)

Peristaltic Pump



Instruction Manual
IM-GAA-014
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Technical Description

1. Application

The Peristaltic Pump is used to draw liquid condensate from the gas-sampling stream of gas analyzer. It draw liquid where sample at negative pressure and liquid do not come out at its own or chances are there of mixing of atmospheric air to the sample.

2. Technical Data

2.1 Equipment Data:

Designation	:	Peristaltic Pump
Catalogue No.	:	9624072
Protection Class	:	IP 00 without sheet metal cover
Dimensions	:	Width = 108mm Height = 100mm Depth = 132mm
Type of mounting	:	Surface, Pump motor shaft horizontal
Weight	:	1.0 kg approx.
Material of wetted parts	:	Novoprene / PVDF
Case	:	Sheet steel, powder coated
Process Connection	:	Push fit for flexible tubing, ID=4mm
Electrical Connection	:	Through cable gland suitable to 5mm to 10mm OD power lead to be terminated on 4.8 x 1 solderable / Snap on lugs.
Grounding	:	On grounding conductor terminal
Power Supply	:	230V AC, 50hz, 16watts
Motor Type	:	Shaded pole motor for short time operator
Insulation Class	:	`E'
Nominal Speed	:	30 rpm
Working temperature	:	-10° to 45°C for motor -10° to 130°C for wetted parts

2.2 Measurement Data:

Pumping Capacity	:	Suction height = 8mwc Pressure Height = 10mwc
Flow Rate	:	40 ml/min.
Recommended Duty Cycle	:	

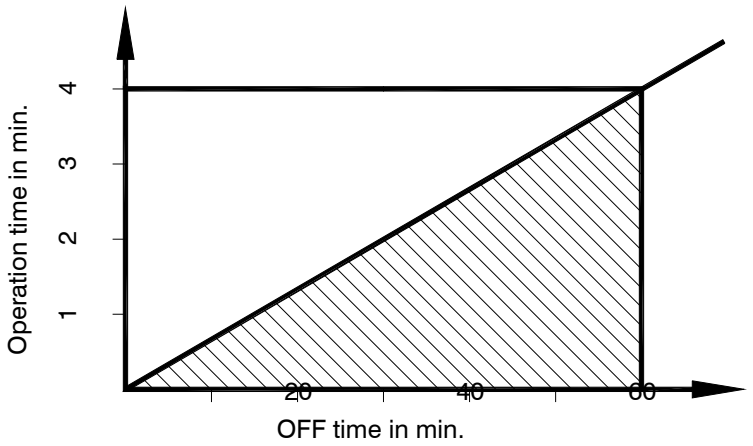

Fig-1 (Duty Cycle)

3. **Construction of Peristaltic Pump**
   The peristaltic pump is supplied in surface mounting and can be mounted at any surface at any direction with the help of two M5 screws. The shaded pole motor is protected with a sheet steel cover. The pump has pump body ❶ with roll carrier ❾fastened on mounting support ❽. Tubing with connector ❷ Rolling Band ❸ and Clamp ❹ are mounted on pump body ❶. On the back of it Gear Box ❻ and shaded pole motor ❼ (not shown) is mounted. Three terminals for power supply and grounding are located directly on the shaded pole motor.

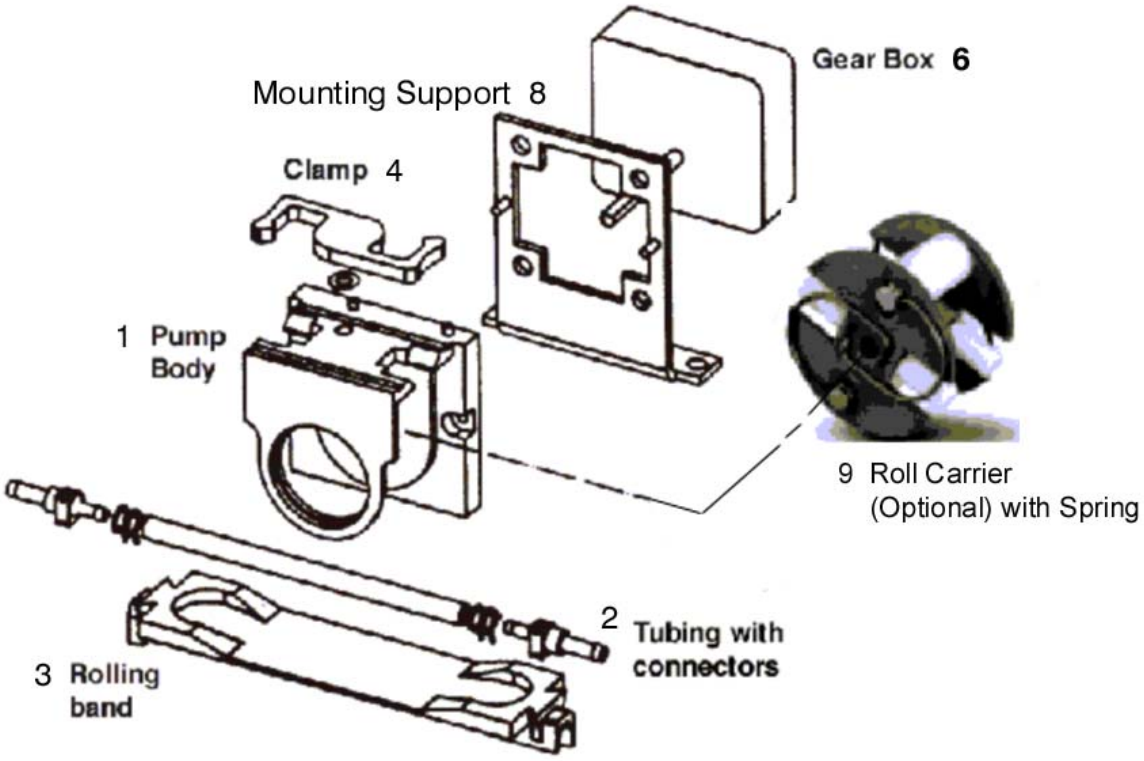

Fig-2 Construction Peristaltic Pump

Operating Instructions

4. Mounting and Connection Instructions

4.1 Mounting of Unit

In the gas analysis set up the peristaltic pump is located to the down stream of condensate removal section. The unit can be screwed on any support along with its sheet metal cover with the help of two M5 screws. One example of arrangement of individual component in a gas analysis system shown below.

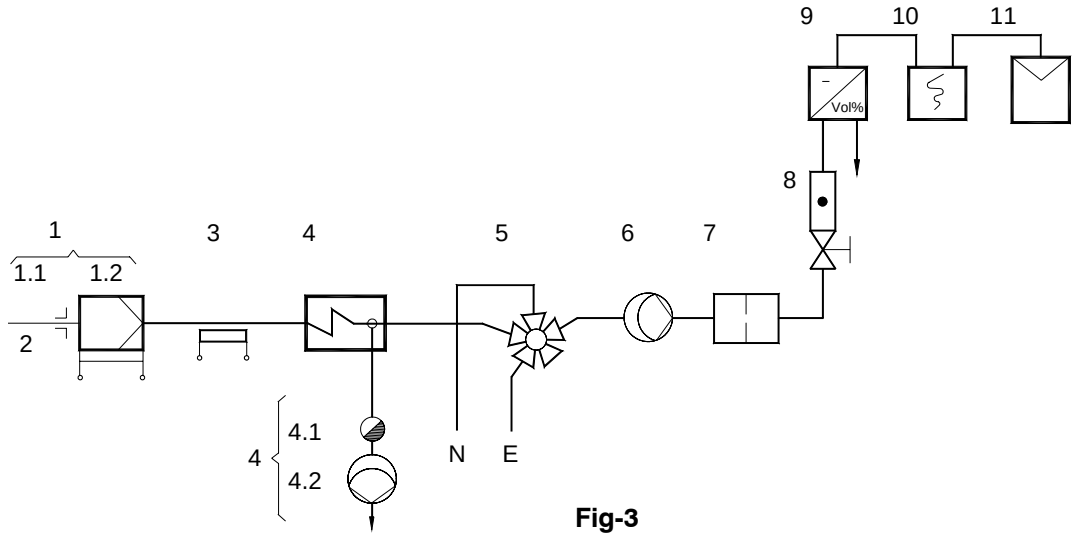

Fig-3

Fig. 3 Example of a complete gas analysis setup for flue gas monitoring

1 Gas sampling probe with external filter
1.1 Sampling probe (max. 900ºC)
1.2 Heating device for case with external filter
2 Feed pipe with flange Bushing tube (to be provided by the customer)
3 Heating device line to prevent freezing
4 Electric sample gas cooler
4.1 Condensate Collector
4.2 Peristaltic Pump
5 Five-way valve
6 Diaphragm Pump Model 3N
7 Membrane filter
8 Flowmeter with adjustable needle valve
9 Gas analyzer in surface-mounting case (field unit)
10 Recorder
11 Controller
N Zero gas
E Span gas

4.2 Process Connection:-

The condensate outlet of condensate removal device is connected to the inlet of pump marked with O🡐 and the outlet is to connected with the outlet port marked with O➔ respectively. A flexible hose of 4mm ID of silicon rubber or viton may be used

4.3 Power Connection:-

The power connector is always be made last & with the power switch off. The power line is introduced via cable gland on the backside of sheet metal cover and pump is connected to power supply via terminal L1 & N and grounding terminal.

5. Initial Operation

Before Switching on the pump, make sure that the unit is connected to correct power supply. The pump will start operating upon switching on the main voltage with no time lag.

6. Maintenance :

Except tubing with connector ❷ and rolling band ❸ the peristaltic pump is completely maintenance free. The replacement interval depend upon the particular local condition of the pump in the gas analysis setup.

For changing the tubing. The apparatus must be switched off from the mains.

- Turn the clamp ❹ clockwise.
- Remove the tubing ❷ and rolling band ❸ from pump body ❶
- Check the tubing and rolling band for cracks
- Tubing should be changed after 4000 hrs of its continuous working
- Take new tubing & rolling band and mount it on the pump body, place it at right location
- Turn clamp ❹ anti clockwise and lock the tubing with pump body.
- Make the process connections
- Switch on the power from mains.

7. Packing:-

Before removing and supply the peristaltic pump the process connections must be sealed with protective caps.
The unit is wrapped in paper and put in a crate lined with shock absorbing material.

For overseas shipment the pump must additionally be warped in thick polyethene and kept with silica gel in the crate

8. Spare Parts:-

When ever replacement part are needed they can be ordered by specifying the designation & part no. of the individual item.

	Description	Item No. w.r.t Figure-2	Part No.
1.	Tubing Neoprene 4.8x1.6mm	❷	9624108
2.	Rolling band	❸	9624110
3.	Roll carrier 30 rpm two roller	❾	9624109
4.	Clamp	❹	9624111

9. Dimensional Drawing:-

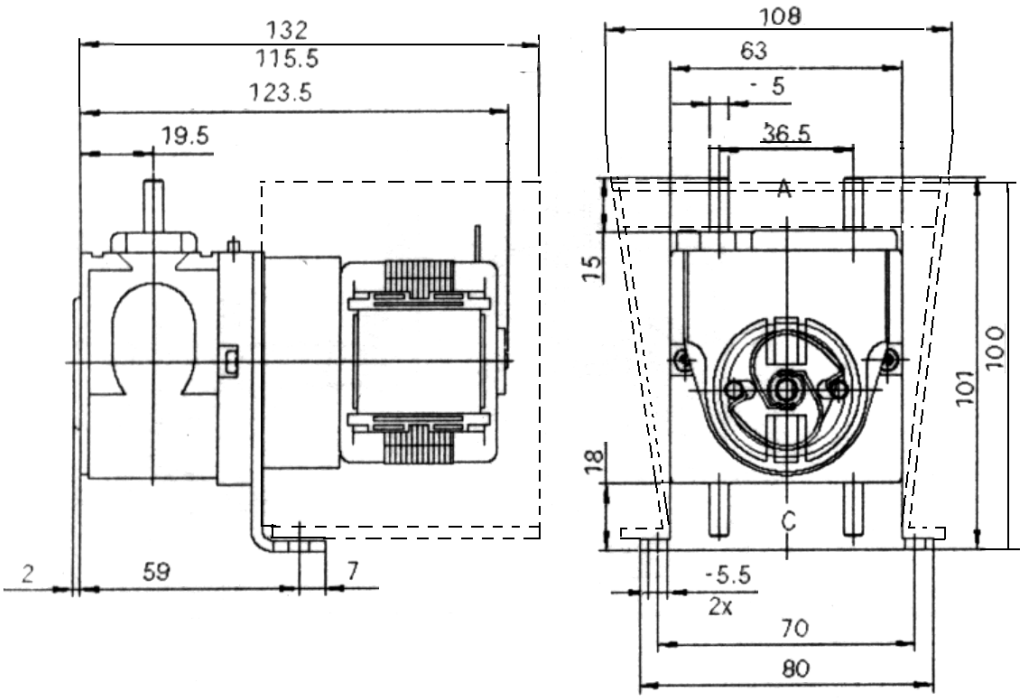

Fig-4 Dimension

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