

## 1. INTRODUCTION

The Peristaltic Pump **RH-P120ELS** is a single channel pump for the use in laboratory and extensively in industrial applications where accurate flow rate is essential. Pumping action is done by the roller cages driven by a geared AC motor. The motor and internal are almost independent of temperature. The rollers are made up of carbon filled nylon for trouble free operation. The AC drive has load and line compensation circuit. It provides constant flow rate even there is line voltage or load variation.

## 2. GENERAL DESCRIPTION.

### 2.1. AC DRIVE

Make : **Telemecanique**

Model : **Altivar 11**

1. ON/OFF of the pump can be performed by pressing the 'RUN' and 'STOP' keys in the drive respectively.
2. Using the potentiometer in the drive the RPM of the pump head can be varied. The corresponding Frequency will be displayed in the digital panel meter.

$$\text{RPM} = \text{Frequency} \times 4.0$$

(Note: User Manual for the AC drive also enclosed)

### 2.2. REAR PANEL

#### a. A.C.Main Cable

This cable accepts the supply of 230v, 50Hz single phase AC.

### 3.1.OPERATION.

#### 3.1. Loading the tube.

Fitting the tube in the roller cage is a straight forward procedure requiring no specialised knowledge or expertise.

- 1.Loosen the screws in the tube holding mechanism, insert the tube and tighten the screws.
- 2.Rotate the roller cage in the clockwise direction so that the tube is automatically in its path.
- 3.Fit the tube in the delivery side of the tube holding mechanism as described in suction side.
- 4.Start the motor in a slower RPM initially, confirm the smooth rotation of the rollers over the tube.

**NOTE:** The rollers are set for 3mm wall thickness tubes. If 4mm wall thickness tube has to be used, Tighten the screws provided in the sides of both the roller holding plates uniformly by using the screw driver. Tighten the screws until required pumping pressure is achieved.

### 3.2. SETTING THE FLOW RATE

The flow rate can be varied by changing the speed using the potentiometer by varying the RPM. The speed of the pump head can be varied from **20 to 200**. The approximate flow rate can be selected by using the output per revolution given below for various tubes.

The approximate ml/rev.:

- 10 mm I.D. - 55ml
- 12mm I.D. - 81ml
- 15 mm I.D. - 125ml
- 19mm I.D. - 200ml
- 20mm I.D. - 226ml
- 25mm I.D. - 260ml

Example:

For a flow rate of 6 Lit/Min in 19mm I.D.tubing

$$\text{RPM} = \frac{\text{Flow rate}}{\text{ml/rev}} = \frac{6,000}{200}$$

$$= \mathbf{30 \text{ (Approx.)}}$$

$$\text{Frequency} = 30/4.0 = \mathbf{7.5 \text{ Hz}}$$

#### 4.MAINTENANCE

The peristaltic pump **RH-P120ELS** does not require any regular service or maintenance other than replacement of worn-out tubing.

It is advisable to replace the tubing after 300 to 500 Hours depending upon the environment , to minimise the risk of tubing breakage during operation.

#### 4.1. LUBRICATION

No lubrication is required as the internal mechanisms are lubricated for life.Lightly lubricate the rollers whenever it is necessary.External lubrication of tubing is recommended for longer life of the tube.Silicon grease(midland silicon MS4 or equivalent)can be used with advantage on all materials except silicon rubber.Glycerine and other non-solvent lubricants can be applied to solicone rubber and other elastomers.

#### 5.TECHNICAL SPECIFICATIONS

No. Of Channel	: One
Flow Rate	: 50 Lit/hr to 3000 Lit/hr
RPM	: 20 to 200
Tubing	: 10 to 25mm I.D.tubing (with 3 to 4mm wall thickness)
Motor	: 3 phase, 1 H.P. geared AC motor
Pressure	: Upto 2 Kg/Sq.Cm
Supply	: 230v, 50Hz, Single phase AC
Temp.range	: 0 to 50 deg.C
Dimension	: 390 x 500 x 630mm (H x W x D)
Weight	: 50 Kgs(Approx.)

# **PERISTALTIC PUMP**

**MODEL RH-P120ELS**

**USER'S MANUAL**

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