

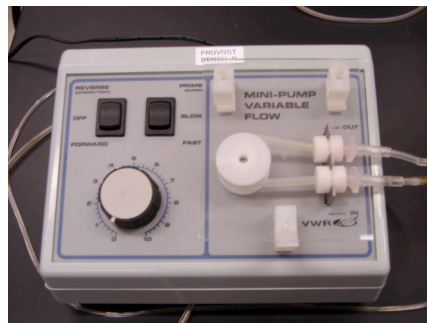


Peristaltic Pump Instructions



PURPOSE OF THIS DOCUMENT: To assist you in using the Peristaltic Pump.

ASSEMBLY AND LOCATION - Each pump is labeled and stored on the bench. When not used they are located in the Northwest drawers in the Biochem Lab. Each pump will have the power supply, pump and a series of tubing with holders and connectors. Each tube has a different flow range. Use the medium sized tube.



PREPARATION - Check the tube for dried material/buffer salt crystals. Look for kinks in tubing that would block buffer flow. Check connections for proper fit.

USE - Stretch tubing and connect white plastic placeholders onto metal clips. Test flow rate and adjust.

FLOW RATE CALCULATIONS- Once the tubing and column are connected and have run long enough to settle beads and equilibrate, collect the volume from the column for five minutes in a graduated cylinder. Measure the volume eluted in the five minutes. See below for simple calculation. A typical column run at a fast setting of 4-5 will give a 1.5 ml/min. You must check each time as each column will have it's own back-pressure and flow rate characteristics.

$$\text{Flow Rate (ml/min)} = \text{Volume collected in five min (ml)} / 5.0 \text{ min}$$

TROUBLE SHOOTING - If there is no flow check the following.

- Inspect tube around rollers to determine if the tube is kinked closed. Manipulate with fingers to loosen blockage.
- Inspect all connections leading to and from pump. If pump runs when the outlet tube is not connected to the column adaptor but fails to run when connected to column, the blockage is downstream of pump. Check column stopcock or other possible obstructions on column.
- Check for leaks leading to pump. A leaking tube/fitting may pump until connected to column.
- Loss of pressure or flow may result from tubing not properly stretched around the pump.
- A pulsing flow rate (as determined by watching for small bubbles or buffer eluting from tubing) is the result of too high a flow rate for the column, too much back-pressure or worn tubing. If the pulsing occurs without the column examine the tubing stretched around the pump. If it is too tight or loose, contact your instructor about replacing the tubing.

CLEANING AND STORAGE - After each use, the tubing must be flushed with water and disconnected from the pump. Leaving buffer in the tubing will result in salt crystals. Failure to disconnect the tubing will stretch the tube for the next use.