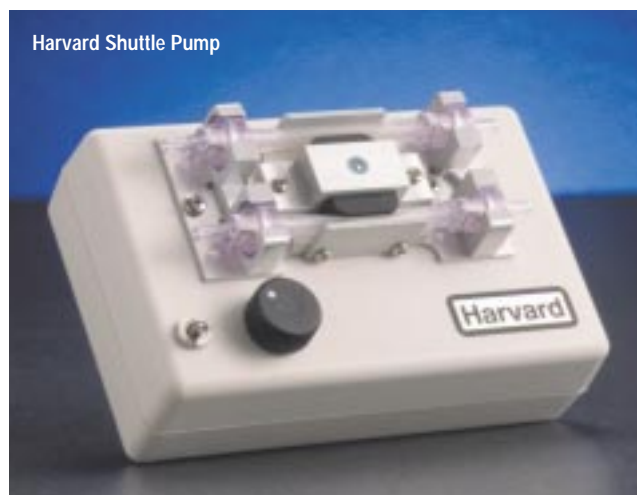


Harvard Shuttle Pump



- Battery powered
- Perfect for cell culture work
- Fits in palm of your hand
- Flow rates up to 50 ml/minute
- Extremely energy efficient
- Gentle pulsatile flow
- Extended tubing life

This Shuttle Pump is based on a patented dual-channel shuttle pump mechanism that can deliver flow rates up to 50 ml/min, but is small and incredibly power efficient. This unique pump was designed for cell culture experiments conducted on the Space Shuttle, where weight and power consumption are significant constraints.

Efficient Design

This fluid pump uses two easily removable pumping chambers on either side of an oscillating shuttle. The balanced tube arrangement, high-efficiency motor, and 4 passive check valves result in a pump that is far more efficient than a typical peristaltic pump: 13 times higher flow rates with 60% lower weight and 90% lower power consumption.

Gentle Pumping Action

The oscillating shuttle does not squeeze the tubes to occlusion, making this device ideal for pumping cell suspensions and blood. Fluid can free flow through the pump in the forward direction, simplifying filling and purging, but limiting applications to those where outflow pressure is greater than inflow pressure. Single or dual channel operation. Join the two tubes to form a single input and output and thereby generate twice the flow rate with less pulsation.

Built-In Control Circuitry

Adjust the motor speed over a 20:1 range using the knob on the top of the pump.

OEM

The pump mechanism is also available for OEM applications.

Specifications

Flow Rate (both tubes combined)	2.5 to 50 ml/min (no back pressure)
Flow Rate (single tube)	1.25 to 25 ml/min (no back pressure)
Flow Waveform	Pulsatile
Pumping Chambers	2 per pump
Pulses per Minute	~45 at 6 ml/min (single channel)
Developed Pressure	9 p.s.i. (flow = 0), maximum

Catalog No.

CGS 8338.63
CGS 8339.63
CGS 8340.63
CGS 8341.63
CGS 8342.63

Product

Harvard Shuttle Pump, 120 VAC
Harvard Shuttle Pump, 220 VAC
Replacement 120 VAC Wall Adapter
Replacement 220 VAC Wall Adapter
Replacement Check Valve and Tubing Set for Shuttle Pump, pkg. of 4