

Harvard Pulsatile Blood Pumps



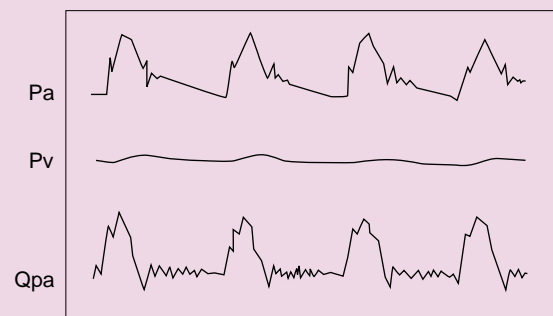
If you are performing cardiovascular work, this is the pump for you. It truly simulates the pumping action of the heart. It features silicone rubber-covered heart-type ball valves and smooth flow paths which minimize hemolysis. Only inert materials like silicone rubber, acrylic plastic, and Teflon contact the fluid. The pumping head is easy to take apart and reassemble and can be sterilized.

- Pulsatile output truly simulates the ventricular action of the heart
- Minimal hemolysis
- Models for mice to large animals
- Ideal for moving emulsions, suspensions, and non-Newtonian fluids such as blood

Outstanding Performance

The pulsatile output closely simulates the ventricular action of the heart. This action provides physiological advantages in blood flow for perfusion in cardiovascular and haemodynamic studies. It is ideal for isolated organ perfusion, whole body perfusion, blood transfers, hydration/dehydration procedures, and blood cellular profile studies.

Pressure and Flow Curves Using Harvard Model 1421 Pulsatile Blood Pump in Isolated Perfusion of Left Lower Lobe of Dog Lung*



Pa	Pulmonary Artery Pressure
Pv	Pulmonary Venous Pressure
Qpa	Pulmonary Artery Blood Flow
Instrumentation:	
Pressure	Statham
Flow	Biotronex Electromagnetic Flowmeter
Recording	Electronics for Medicine

Pump Mechanism

A positive piston actuator and ball check valves provide the proportioning action. The product of stroke rate times stroke volume is an accurate indicator of the flow rate. Positive piston action prevents changes in flow rates, regardless of variations in resistance or back pressure. The piston always travels to the end of the ejection stroke, independent of the volume pumped. The Pump completely empties at each cycle.

Harvard Pulsatile Blood Pump

Specifications	Mice/Rats	Rabbits	Dogs/Monkeys	Large Animals; Haemodynamic Studies
Stroke Volume, Adjustable	0.05 to 1.0 ml	0.5 to 10 ml	4 to 30 ml	15 to 100 ml
Rate, Stroke/Min.	20 to 200	20 to 200	20 to 200	10 to 100
Minute Volume, Stroke Vol. x Rate	1 to 200 ml	5 to 2,000 ml	80 to 6,000 ml	150 to 10,000 ml
Phasing	Fixed Phase	Fixed Phase	Adjustable Phase	Adjustable Phase
Systole/Diastole	35% systole	35% systole	35% to 50% of	35% to 50% of
Ratio	65% diastole	65% diastole	total cycle	total cycle
Tube ID	8 mm (.31 in)	8 mm (.31 in)	13 mm (.5 in)	7.9 mm (.31 in)
Dimensions, H x W x D	312 x 156 x 250 mm (12.5 x 6.25 x 10 in)	312 x 156 x 250 mm (12.5 x 6.25 x 10 in)	500 x 212 x 337 mm (20 x 8.5 x 13.5 in)	500 x 212 x 337 mm (20 x 8.5 x 13.5 in)
Weight	7.3 kg (16 lb)	7.3 kg (16 lb)	13.6 kg (30 lb)	32 lb (14.5 kg)
Voltage	115/230 VAC, 50/60 Hz	115/230 VAC, 50/60 Hz	115 VAC, 60 Hz	115 VAC, 60 Hz
Catalog No.	CGS8441.72	CGS8442.72	CGS8443.72	CGS8444.72