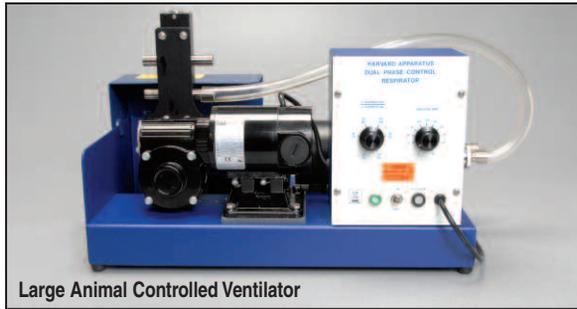


## Large Animal Ventilators



### Large Animal Volume Controlled Ventilator

- For animals from 1.5 to 50 kg (3.3 to 110 lb) in weight
- Volume adjustable from 30 to 750 cc/stroke
- Variable Inspiratory: Expiratory Ratio

This is the workhorse of the Harvard Apparatus Volume Controlled Ventilators. There are literally thousands of these Ventilators in use in leading research laboratories throughout the world. Their design has been essentially unchanged over the years. There are dozens of examples of these Ventilators giving continuous service for more than thirty years with proper care and maintenance.

Note that the volume adjustment is made on the piston shaft, and that therefore accurate volume adjustment cannot be made while the ventilator is running. However, the rate and the I:E % can be varied while the ventilator is running.

Air/gas valving is by the four port system with separate ports for gas inlet, gas outlet (to animal), gas return (from animal), and ventilator exhaust.

The gas inlet can be used to supply air or any non-flammable gas supply. Like the other Harvard Apparatus mechanical ventilators, attachment of the ventilator exhaust to a column of water can be used to produce a positive and expiratory pressure (PEEP).

#### Specifications

Volume	Adjustable from 30 to 750 cc/stroke. Note that the volume adjustment is made on the crank, and therefore accurate volume adjustments cannot be made while the ventilator is running
Rate	Adjustable from 7 to 50 strokes/min while the ventilator is running
Phase	Adjustable from 25 to 50% of a single stroke cycle continuously variable while the pump is in operation
Port Size:	
ID	12.7 mm (0.50 in)
OD	14.4 mm (0.56 in)
Dimensions, H x W x D	30 x 50 x 22.5 cm (12 x 20 x 9 in)
Weight	21 kg (45 lb)

#### Order # Product

<b>PY2 55-0715</b>	Large Animal Volume Controlled Ventilator, Model 613, 115 VAC, 60 Hz
<b>PY2 55-0723</b>	Large Animal Volume Controlled Ventilator, Model 613A, 230 VAC, 50 Hz
<b>PY2 55-0731</b>	Overhaul Kit for Harvard Apparatus Large Animal Ventilator; Contains O-rings, Valve Springs, Lubricants, etc. to Overhaul Ventilator*

\*Overhaul Kit does not include cylinder



### 970 Ventilator

- Stroke volumes of 0 to 2.5, 0 to 10 and 0 to 30 ml
  - LED digital readout of rate and volume
  - Electromagnetically quiet (meets EMC-CIS-B regulation)
  - Extremely quiet operation
- Rate and stroke adjustable during ventilation

The NEW Harvard Apparatus, Ltd. 970 Ventilator features negligible dead space, low noise, low wear and high reliability. The rate is indicated on a LED display. Both the rate and stroke can be changed while the ventilator is running. The fine pitch of the stroke control allows the stroke to be accurately set and the actual stroke is clearly displayed on a static pointer scale, not on the side of the piston, or moving scale.

Three different sizes are available: 0.25 to 2.5 ml, 1.0 to 10 ml and 3.0 to 30 ml. All air drawn into the pump is expelled on each stroke. The negligible dead space feature ensures that the piston reaches the end of the cylinder at the top of every stroke.

The speed of the motor is continuously monitored and regulated to maintain a constant stroke rate. The precision-machined valve assembly has four ports which provide maximum air channeling flexibility. The input may be room air or non-explosive gas mixtures. The exhaust air can be partially or completely recycled, or collected for analysis.

The Harvard Apparatus 970 Ventilator is designed to generate minimal electro-radiated noise and meet the stringent EMC CIS-B regulations for radiated noise, as well as other current CE directives.

#### Specifications

Tidal Volume	0.25 to 2.5 , 1.0 to 10 or 3.0 to 30 ml, continuously variable	
Respiratory Rate	10 to 200 breaths/min	
Display	Digital readout of rate and volume	
Port Size	OD 6.3 mm (1/4 in) ID 4.8 mm (3/16 in)	
Certifications	Meets all EMC and CE requirements	
Power	115 V, 60 Hz or 220 V, 50 Hz	
Dimensions, H x W x D	20 x 29 x 31 cm (7.9 x 11.4 x 12.2 in)	
Weight	10.6 kg (23.4 lb)	

Volume	Voltage 115 VAC, 60 Hz	Voltage 220 VAC, 50 Hz
0.25 to 2.5 ml	<b>PY2 50-9700</b>	<b>PY2 50-9701</b>
1 to 10 ml	<b>PY2 50-9702</b>	<b>PY2 50-9703</b>
3 to 30 ml	<b>PY2 50-9704</b>	<b>PY2 50-9705</b>