## HARVARD APPARATUS

## Superior tools for Small Animal Surgery Increase Your Small Animal Survival Rate

Ventilation Temperature Control Physiological Monitoring Animal Surgery

Anesthesia

www.harvardapparatus.com

### lation • ventilation • ventilation • ventilation •

# Ventilation

For over 100 years, we have been providing quality lab products to all facets of laboratory research.



#### **MicroVent Ventilator**

- Designed for prenatal mice with minimal dead space
- Tidal volumes from 0 to 130 µl
- Respiration rate from 60 to 400 bpm
- Valveless piston pump continual use with no clogged valves

product #	model	description
73-3591	848	MicroVent Ventilator, 110 VAC
73-3590	848	MicroVent Ventilator, 230 VAC

#### **Mouse Ventilator Model 687**

- New design enhances accuracy and precision with quiet operation
- Small volume delivery adjustable in 0.1cc increments
- Ability to monitor PEEP
- · Can be combined with inhalation anesthesia

product #	model	description
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<b>55-0001</b> 687 Mouse Ventilato
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#### **MiniVent Mouse Ventilator**

- Minimal system dead space makes this the perfect choice for mice!
- Precise & accurate delivery tidal volume: 30 to 350 µl
- Respiration rate from 60 to 400 bpm
- · Simple adjustment while unit is running

product #	model	description
73-0043	845	MiniVent Ventilator, 110 VAC
73-0044	845	MiniVent Ventilator, 230 VAC

#### MidiVent Ventilator for Large Mice and Small Rats

- Ideal ventilator for large mice & small rats up to 100 g
- Stroke volume range from 60 to 700 μl
- Ventilation rate from 60 to 400 breaths/minute
- · Simple adjustment of stroke volume while running
- · Valveless piston pump, no valves to clog
- Very small instrument/circuit dead space volume
- · Compact, easy to install close to animal
- No vibrations, very low noise

product #	model	description
73-4120	849	MidiVent Ventilator for Mice, 115 VAC
73-4119	849	MidiVent Ventilator for Mice, 230 VAC

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#### **683 Small Animal Ventilator**

- Quiet, new design for more accurate tidal volume delivery
- Two piston and cylinder assemblies to accommodate tidal volumes from 0.5 to 30cc
- Ability to monitor PEEP

683

- · Ideal for animals from 250g to 5kg
- product # model description

55-0000

Small Animal Ventilator

#### NEW Inspira Advanced Safety Ventilator

- NEW Inspriary Hold
- Harvard Apparatus' most versatile ventilator can accommodate animals from mice to cats with one unit
- Both volume and pressure controlled models available
- · Continuous airway pressure monitoring
- Sigh breath feature to maintain optimal lung function
- Adjustable I:E ratio
- Assist mode to help wean animal post-surgery

product #	model	description
55-7058	ASV	Inspira Advanced Safety Ventilator
	·	Volume Controlled
55-7059	ASV <sub>P</sub>	Inspira Advanced Safety Ventilator
		Pressure Controlled
55-7061	ASV <sub>v</sub> -IH	Inspira Advanced Safety Ventilator with
	·	Inspiratory Hold Volume Controlled
55-7062	ASV <sub>P</sub> -IH	Inspira Advanced Safety Ventilator with
		Inspiratory Hold Pressure Controlled

#### **613 Large Animal Ventilator**

- Accommodates animals from 1.5 to 50 kg
- Volume controlled
- Tidal volume adjustable from 30 to 750 cc/stroke

product #	model	description
55-0715	613	Large Animal Ventilator, 115 VAC
55-0723	613	Large Animal Ventilator, 230 VAC



**Small Animal Ventilator Model 683** 



**Inspira Advanced Safety Ventilator** 

Large Animal Ventilator Model 613

# ical • surgical • surg

Small Animal Retractor System and Surgical Tray



• Our technical support representatives are experts on anesthesia delivery and ventilation

NEW! Panlab/Harvard Apparatus Non-Invasive Blood Pressure Monitor



Rodent Operating Table

1

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Intubation and Tracheal Cannulae

PowerLab Data Acquisition and Analysis Systems

Regulators and Gas Hoses





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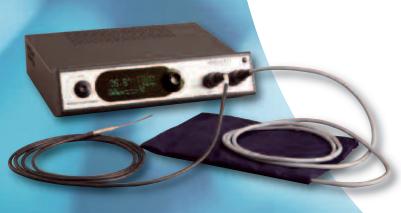
#### perature control • temperature control • tem

# TemperatureHarvard Apparatus has<br/>multiple options for small

Harvard Apparatus has multiple options for small animal post-surgery recovery.



Harvard Apparatus Small Intensive Care Units



NEW! Harvard Apparatus Homeothermic Monitoring System

6

#### **Intensive Care Units**

- · Speeds recovery for post-operative animals
- · Fluid heating method eliminates hot spots
- Constant temperature maintained
- Models available for rodents, dogs and primates

#### product # description

52-4777	Small Intensive Care Unit, 115 VAC
52-4793	Medium Intensive Care Unit, 115 VAC
52-4819	Large Intensive Care Unit, 115 VAC
52-4785	Small Intensive Care Unit, 230 VAC
52-4801	Medium Intensive Care Unit, 230 VAC
52-4827	Large Intensive Care Unit, 230 VAC

#### NEWE Homeothermic Monitoring System

- Accurate to within 1°F
- Maintains animal's core body temperature with feedback loop
- Displays set and actual temperatures continuously on screen
- Models available for mice, rats, cats or dogs
- Analog output

#### product # description

50-7220-F	Small Homeothermic Blanket System, 115 VAC
50-7222-F	Medium Homeothermic Blanket System, 115 VAC
50-7224-F	Large Homeothermic Blanket System, 115 VAC
50-7221-F	Small Homeothermic Blanket System, 230 VAC
50-7223-F	Medium Homeothermic Blanket System, 230 VAC
50-7224-F	Large Homeothermic Blanket System, 230 VAC

## See website for accessories and full product details.

#### perature control • temperature control • temp



- Accurate to within 1°F
- · Ideal for animal surgery and recovery
- Safeguards against overheating
- Mercury free
- · Uses tap water

#### product # description

72-9710	Heat Therapy Pump with Clik-Tite® Connectors 120 VAC with
	one 15 x 22 in pad
72-9712	Heat Therapy Pump with Clik-Tite® Connectors 120 VAC
72-9711	Heat Therapy Pump with Clik-Tite® Connectors 220 VAC
60-3413	Heat Therapy Pump Stand with 4 Casters and Basket
60-3414	Disposable Polymer/Fabric Temperature Therapy Pad with
	Clik-Tite® Connectors, 7.6 x 58.4 cm (3 x 23 in), pkg. of 10
60-3415	Disposable Polymer/Fabric Temperature Therapy Pad with
	Clik-Tite® Connectors, 33 x 45.7 cm (13 x 18 in), pkg. of 20
72-2582	Disposable Polymer/Fabric Temperature Therapy Pad with
	Colder Connectors, 33 x 45.7 cm (13 x 18 in), pkg. of 10
60-3416	Disposable Polymer/Fabric Temperature Therapy Pad with
	Clik-Tite <sup>®</sup> Connectors, 38.1 x 55.9 cm (15 x 22 in), pkg. of 20
72-2583	Disposable Polymer/Fabric Temperature Therapy Pad with
	Colder Connectors, 38.1 x 55.9 cm (15 x 22 in), pkg. of 10
60-3417	Disposable Polymer/Fabric Temperature Therapy Pad with
	Clik-Tite® Connectors, 45.7 x 66 cm (18 x 26 in), pkg. of 10
72-2584	Disposable Polymer/Fabric Temperature Therapy Pad with
	Colder Connectors, 45.7 x 66 cm (18 x 26 in), pkg. of 10
60-3420	Reusable Heavy Duty Pliable All Polymer Pad with Clik-Tite®
	Connectors, 38.1 x 55.9 cm (15 x 22 in), pkg. of 1

#### Heating Plate and Temperature Controller

- Accurate temperature control
- Maintain body temperature
- · Feedback sensor prevents overheating
- · Models available for mice and rats

#### product # description

72-7563	Large Heating Plate*
72-7617	Small Heating Plate*
72-7560	TCAT-2LV Temperature Controller for Plate

72-7561 TCAT-2DF Temperature Controller for Plate or Lamp

\* Requires one of the TCAT-2 Temperature Controllers

Maintaining the animal's body temperature during procedures is critical.

GAYMAR'

TGAT-2LV CONTROLLER

NEW! Harvard Apparatus Heat Therapy Pump

> NEW! Harvard Apparatus Heating Plate and Temperature Controller

> > 7

# Physiological Monitoring **NEW! Panlab/Harvard Apparatus**

**Non-Invasive Blood Pressure Monitor** 

MRESSLANE METER



- · Easy to use and reliable
- Ideal for awake or anesthetized rodents
- Continuously displays heart rate, systolic and diastolic pressure and mean
- · Systolic and diastolic pressure are measured not calculated
- · Single or multiple animal measurements
- · Only 2 transducers needed to fit all rodents
- Automatic tail cuff release is less stressful for the animal
- · Advanced noise filter ensures accurate readings
- · Full analog traceability available

#### ✓ MouseOx<sup>™</sup> **Pulse Oximeter**

- Only pulse oximeter for use with mice!
- Real-time continuous measurements of:
  - Arterial O<sub>2</sub> Saturation
  - Breath Rate
  - Pulse Strength
  - Blood Flow
  - Effort to Breathe
- Perfect for surgical procedures!
- Easily monitor anesthesia and prevent hypoxia
- Specially designed non-invasive sensor provides highly accurate results up to 900 BMP!
- Waveform and real-time data displayed on included software

**Contact Technical Support for more** details and a quote for your personal system today!

NEW! MouseOx" **Pulse Oximeter**  TOUSE

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- Temperature

#### PowerLab Data Acquisition and Analysis Systems with LabChart Pro Software

PowerLab data acquisition systems integrate seamlessly with Harvard Apparatus physiological monitoring systems to create definitive and complete physiology solutions for:

- Atrial and Ventricular Pressure	- Blood Flow
- Biochemical Sensors – pH, pO <sub>2</sub> , pCO <sub>2</sub>	- Cardiac Output
- Blood Pressure – Invasive and Non Invasive	- ECG, EKG, EMG
- Ventricular Pressure and Pressure-Volume	- Hemodynamics
- pH and Ionic Concentrations	- Pulse Oximetry

- Cardiac Function
- Respiratory Air Flow
- Intuitive and powerful software allows researchers to concentrate on the science. With no programming required, the software is mastered quickly and provides comprehensive recording, display and analysis features
- Proven track record with installations in thousands of research institutes, universities, hospital and commercial laboratories around the world
- Straightforward interface for the Harvard Apparatus Non-Invasive Blood Pressure Monitor, MouseOx™ or virtually any monitor, transducer or probe with an analog voltage output

#### **Specialized Data Analysis Modules for Physiological Monitoring**

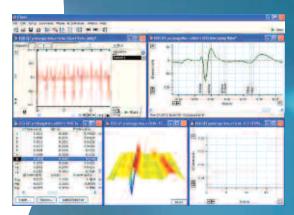
**Blood Pressure Module**: automatically detects, analyzes and reports advanced cardiovascular parameters from arterial or ventricular pressure signals, online or offline.

**ECG Analysis Module**: detects and reports the onset, amplitude and interval times of PQRST online or offline.

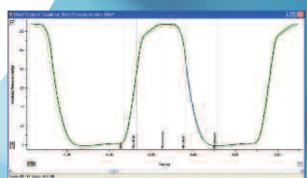
**Heart Rate Variability Module:** provides a comprehensive set of tools for the analysis and display of variation in the interval between heartbeats as measured by pressure or electrogram recordings.



PowerLab Data Acquisition and Analysis System



ECG Analysis Module for LabChart Pro



Blood Pressure Module for LabChart Pro

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Surgical Instruments These new Harvard Apparatus brand surgical tools are designed to give you maximum performance at affordable prices.





**Rat Surgical Kit** 

**Mouse Surgical Kit** 







**Deluxe Major Surgical Kit** 

#### We offer the new tools in four different high quality materials: **Tungsten Carbide, Titanium,** Diamond-Coated, and "Ultra-edge".

The Harvard Apparatus brand surgical tools are forged and finished in a German ISO 9001 facility. They are made from certified German surgical-grade steel. These superior quality tools are highly resistant to corrosion and maintain their sharp cutting surfaces for a long time.

#### **Rat Surgery Surgical Kit**

Harvard Apparatus' Rat Surgical Kit is an ideal starting point for surgical procedures commonly performed on laboratory rats.

product #	description
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72-8942 Rat Surgical Kit

#### **Mouse Surgical Kit**

This convenient surgical kit is ideally suited for basic procedures and minor surgery on mice.

product #	description	
72-8943	Mouse Surgical Kit	

#### Minor Surgery Surgical Kit

This convenient surgical kit is ideally suited for basic procedures and minor surgery.

product #	description
72-8940	Minor Surgery Surgical Kit

#### Deluxe Major Surgical Kit

The savings, convenience and top Germany quality continue in this kit assembled for more extensive procedures and major laboratory animal surgeries.

product #	description
72-8941	Deluxe Major Surgical Kit

Many other surgical instruments are available – please see our website for full product offering.

#### nents • surgical instruments• surgical instrument• surgic

## Harvard Apparatus offers the following common surgical instruments:

- Scissors
- Operating scissors including Mayo
- Eye scissors including Castroviejo
- Spring scissors including Vannas
- Forceps
- Tweezers
- Needle Holders
- Bone Rongeurs
- Vessel Clips and Bulldog Clamps

#### **Glass Bead Dry Sterilizer**

- · Fast and easy to use
- Ideal for sterilizing surgical instruments
- No messy chemicals
- No open flame in laboratory

Surgical Instruments

Instrument Sterilizers

DRY STERN

## nesthesia · anesthesia · anesthesia · anesthe Anesthesia Delivery

- Custom configurations to meet any set up requirements!
- Many options available to meet your needs
- Safe delivery of anesthetic gas to:
  - Induction chamber
  - Mask
  - Ventilator
  - Stereotaxic frame
  - Any combination of the above and more!

Contact our Technical Support Specialists – experts on anesthesia delivery and ventilation!

Anesthesia Machines

**Evacuation** 

**Regulators & Gas Hoses** 

**Circuit & Masks** 

#### Contact our Technical Support Specialists today! 1-800-272-2775 • techsupport@harvardapparatus.com

**Japorizers** 



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