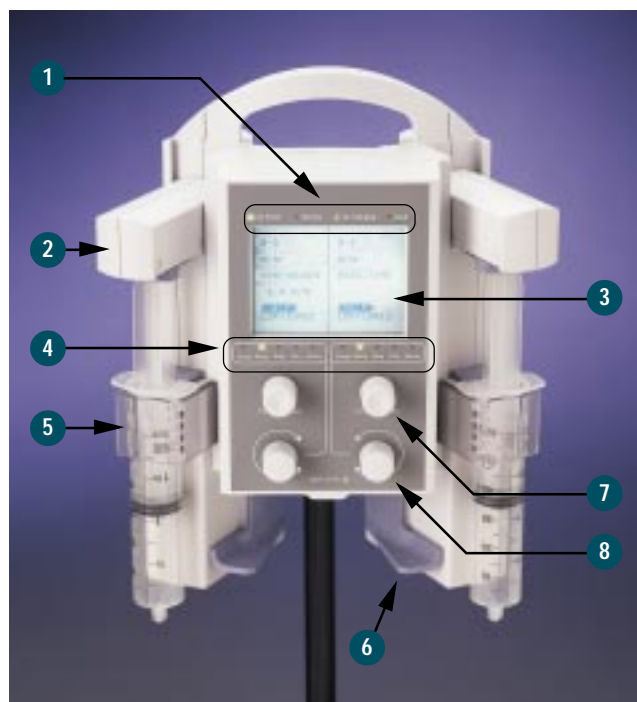




## Harvard 2 Dual Syringe Pump with Occlusion Detection



- Two independent pumps in one case
- Occlusion and syringe capture detection improves safety and data integrity
- Clear color screen, pull down menus, and simple 'mouse like' data entry knobs provide exceptional ease of use
- Battery backup/operation up to 5 hrs
- Infusion log reduces data recording time
- Bi-directional serial communications
- Optional drug library
- Ideal for anesthesia

1. Status Lights
2. Syringe Plunger Capture Mechanism
3. Backlit Color LCD Screen
4. Function Lights Indicate Pump Function Mode
5. Barrel Clamp Secures Syringe in Place
6. Barrel Clamp Paddle Opens Barrel Clamp for Easy Syringe Loading
7. Data Entry Knob: Used to Enter and Change Information
8. Function Knob: Controls Operation of the Pump

Fifty years ago Harvard Apparatus invented the syringe pump. After extensive research and development, Harvard Apparatus now introduces to you the next generation of syringe pumps.

### Two Independent Pumps in One

The Harvard 2 Syringe Pump features two independent syringe pumps in one housing. Each pump can flow at a separate rate, hold a different size syringe, infuse a different drug, and be connected to 2 different animals or infuse two different solutions into the same animal.

### Each Pump Provides

- Accurate delivery of  $\pm 3\%$  (excluding syringe variations)
- Flow rates from 0.01 to 1,200 ml/hr

Three infusion modes: Continuous, Continuous with Bolus, and Dose/Time (for a single volume limit infusion or intermittent infusions). Select from 16 different infusion units. (See specifications.)

### Improved Safety

**Occlusion Detection** - Detection of occlusion has always been a problem when using infusion pumps. Today with the trend toward micro-infusion and the increased delivery of potent, fast-acting drugs, the importance of occlusion detection has increased. The Harvard 2 has a unique occlusion detection and pressure status message system that decreases the time to sense an occlusion.

A bar graph illustrates the pressure build-up (can be displayed on the last line of all screens).

The Occlusion Alarm Limit can be set to 'Sensitive' or 'High-Fixed'. In 'Sensitive' Mode the pump samples the actual pressure in the system and displays it on the bar graph. The alarm pressure is set just above the measured pressure. In the 'High-Fixed' mode the pump will alarm when a fluid pressure of 17 p.s.i. (nominal) is reached.

### Intuitive and Easy to Use

**Large, Full Color LCD Screen** - Easy to read even up to 6 feet away with a wide viewing angle. Colors displayed convey important information at a glance.

Setting up and using the Harvard 2 is fast, easy and accurate! Each pump is controlled using only 2 knobs: One for data entry and one for selecting the function.

**Automatic Syringe Detection** - The syringe size is automatically detected and displayed on the screen next to the syringe manufacturer. Simply press the data entry knob for positive confirmation. You will never have to measure a syringe diameter again!

**Help Screens** - *First Time Users* - By selecting 'Help', the pump provides a series of screens prompting entry of the necessary information.

**Data Entry and Function Knobs** - Both knobs rotate to scroll through options and are pressed to select the desired function.

- **Data Entry Knob** - Works similar to a computer mouse! Used to select data from pull-down menus and is also used to scroll through available flow rate units. Also used to change the flow rate and other numbers even when the pump is running.
- **Function Knob** - Five operating modes: Purge, Setup, Stop, Run, and Bolus can be selected. A simple LED indicates the selected mode. A two step confirmation process to start the pump insures safe accurate infusions.

**Simple Syringe Loading** - This pump will hold any syringe from 1 to 60 ml. To load, push the paddle down to open the barrel clamp. Insert the syringe and release the paddle. Now simply slide the pusher block down to the top of the syringe. It's that easy.

