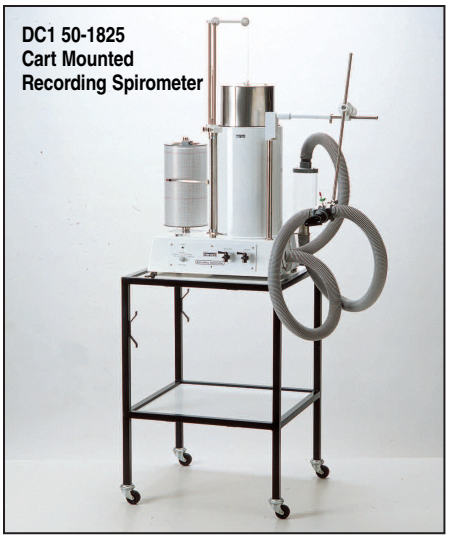
Harvard Apparatus Recording Spirometer


DC1 50-1825
Cart Mounted
Recording Spirometer

- Ideal for education
- 9 liter capacity; for flow and volume measurements
- One-way air valve with mica discs minimizes resistance
- 30 mm ID tubing result in nearly 50% greater cross-sectional area than traditional 22 mm tubing
- Tubing offers minimum distortion on bending so that maximum cross-sectional area is maintained
- Stainless steel bell
- Mouthpiece on double ball and socket universal joint
- Gas sampler located near the mouthpiece
- Externally-mounted, transparent absorbent canister allows use of color-indicating absorbent
- Choice of bench use or cart-mounted spirometer

The ideal spirometer would offer so little resistance to the movement of air to and from the subject's lungs that it wouldn't affect the subject's respiratory movements. The Harvard Apparatus Recording Spirometer approaches this ideal with wide bore airways, a lightweight, perfectly counterpoised gas bell, and a low-inertia recording device.

This Recording Spirometer has the least airflow resistance of any similar instrument, making it ideal for maximum respiratory flow rates. The 9 liter capacity is adequate for:

- **Recording the largest vital capacities**
- **Extended period oxygen uptake determinations**
- **Spirometry during mild exercise**

The spirometer directly records basal minute ventilation, exercise ventilation or maximum breathing capacity. The ventilation equivalent for oxygen can be calculated directly from the spirogram slope lines for ventilation and oxygen uptake.

Wide-Bore Airways

The mouthpiece is molded from soft rubber with a cross-section of 30 mm. It has two bites and is easily removed for sterilization. The one-way air valve permits the gas stream to flow in only one direction, with minimum resistance. Three arms and a universal joint provide full adjustability for easy positioning of the mouthpiece whether the subject is sitting, standing or lying down. The ethylene vinyl acetate copolymer tubing supplied with the Spirometer has a 30 mm bore, and its cross-sectional area is nearly 50% greater than that of traditional 22 mm bore tubing. The tubing has extremely low profile annular rings, minimizing distortion on bending and preserving maximum cross-sectional area. A two-way valve allows the test subject to be connected to the atmosphere while becoming accustomed to the equipment. By rotating the valve, the circuit is closed and the subject is connected to the Spirometer. The valve permits precise determination of when the experiment starts. A 900 ml absorbent canister can be mounted on the side of the Spirometer allowing use of a color-indicating absorbent.

Lightweight, Perfectly Counterpoised Gas Bell

The gas bell is made from corrosion-free stainless steel. It is housed in a brass cylinder with brass interior fittings and piping, and weighs 480 g (17 oz). The water chamber is of the minimum dimensions that allow the bell to travel and provide a proper water seal. The gas bell has a hook on top that is connected to a counterweight by a line travelling over two lightweight pulleys. This counterweight fits in a tube that has graduations from 0 to 9 liters in 0.1 liter increments. On the bottom of the counterweight is a marker which permits direct reading of the gas measurement from the spirometer. The marker holds a pen arm and disposable cartridge pen for recording on the kymograph. The entire counterweight tube housing can be rotated by a handle at its base so that the pen can either be turned away from the kymograph or towards it to make a recording. The Spirometer is available for bench use or mounted on a cart with four casters for easy mobility.

Recording Device

A 4-speed kymograph with a crystal-controlled electronic drive is mounted on the base of the Spirometer. The four chart speeds are 25, 150, 600 and 1200 mm per minute. The slower kymograph speeds are used for conventional metabolism tests. The faster speeds are for timed vital capacity measurements and the determination of 'mid-expiratory flow' or 'expirograms'. The pen with disposable cartridge has free-flowing ink, yet is quick drying and permits immediate use of the charts. This Recording Spirometer is supplied complete with the kymograph, one-way valve, 3 mouth pieces, 2 nose clips, 100 sheets kymograph paper, color-indicating absorbent (3 kg), 6 disposable pen cartridges, pen arm, and thermometer.

Specifications

Gas Bell Weight	480 g (17 oz)
Dimensions:	
Spirometer Overall, H x W x D	950 x 850 x 350 mm (37.4 x 33-1/2 x 13.8 in)
Cart, H x W x D	860 x 600 x 600 mm (33.9 x 23.6 x 23.6 in)
Gas Bell, OD x H	195 x 400 mm (7-3/4 x 16 in)
Brass Cylinder, ID x H	250 x 400 mm (10 x 16 in)

Order #	Product
DC1 50-1809	Recording Spirometer, Bench Use, 115 VAC, 60 Hz
DC1 50-1817	Recording Spirometer, Bench Use, 230 VAC, 50 Hz
DC1 50-1825	Recording Spirometer, Cart Mounted, 115 VAC, 60 Hz
DC1 50-1833	Recording Spirometer, Cart Mounted, 230 VAC, 50 Hz