

HICYCLE DURABILITY TESTER

The HiCycle Durability Tester is an accelerated wear tester (AWT) used to determine the durability of replacement heart valves and other cardiac devices under physiological loading for R&D and regulatory submissions.

When combined with the HiTest Data Acquisition System, operators are able to monitor pressure and collect data according to ISO 5840 standards through an intuitive user interface.



The HiCycle system uses an electromagnetic motor to drive six pistons within fluid-filled, temperature-controlled chambers to move the device rather than the fluid. This results in higher energy efficiency and stable fluid flow. The devices can be cycled at accelerated rates up to 1,650 cycles/minute. Clear viewports allow imaging of the device during testing, and pressure ports allow monitoring of the dynamic pressures up and downstream of the device. Each test chamber is independent of the others to offer more testing flexibility.



> Features

- Up to 6 device designs can be tested in operation
- Electromagnetic drive mechanism for quiet, stable, and reliable operation
- Temperature controlled
- Independent chambers allow for quick device change-out and startup
- Rotatable Scan-Valve with mounted transducers for quick pressure collection
- Angled windows assist in chamber de-bubbling
- Transparent materials allow for flow and device visualization
- Adjustable sync pulse to output for synchronization



Dry weight	Module: 25 kg Controller: 8 kg Cart: 18 kg
Dimensions without cart	Module: 64 x 30 cm Ø Controller: 43 x 34 x 15 cm
Dimensions with cart	57 x 58 x 132 cm
Cycle Rates	500 – 1,650 cpm
Temperature Range	up to 40°C ± 0.5°C
Volume per chamber	280 ml
Working Height for Valve	5 cm
Chamber Windows	6 acrylic discs 6.55 cm diameter
Device Diameter	<= 5 cm
Valve mounting	custom silicon rubber rings fabricated using jig provided
Flow restrictors	one in each chamber with index dial range 0 - 100% in 2% divisions
Electromagnetic driver	maximum displacement 0.88 cm or 22.4 mm
Cycle count	8 digit front panel LCD, to 99,999.999 million

> Accessories:

ViVitro Labs offers a wide variety of accessories and complementary equipment to support its products as well as provides customization to suit various requirements.



The image shows a black metal cart with two shelves and four casters. On top of the cart is a cylindrical black device with a flexible hose attached to the top. The front of the cart has a control panel with a digital display and several buttons.

HiCycle Cart

The ViVitro HiCycle Cart is specifically designed to make the ViVitro HiCycle system portable and raise it to a comfortable working height. The ViVitro HiCycle Cart has locking castors, height adjustment for the pressure head post, a locating pin, and quick release fasteners for turning the HiCycle in place.



The image shows a handheld, grey stroboscope. It has a digital display at the top showing '1740.0'. Below the display are several buttons, including a large circular dial with a white knob. The device is ergonomically shaped for handheld use.

Stroboscope

ViVitro offers a compact, battery-operated stroboscope to view devices while undergoing cycling. This rechargeable handheld device allows for mobility throughout the lab. The stroboscope also provides fast and accurate cycle per minute measurements to verify cycle rates.

- User adjustable flash rates - 40.0 to 12,500 fpm (flashes per minute)
- Phase shift feature allows user to advance or retard flash timing by degrees of angle, without changing actual fpm
- Includes AC adapter and extra flash bulb

Digital Manometer



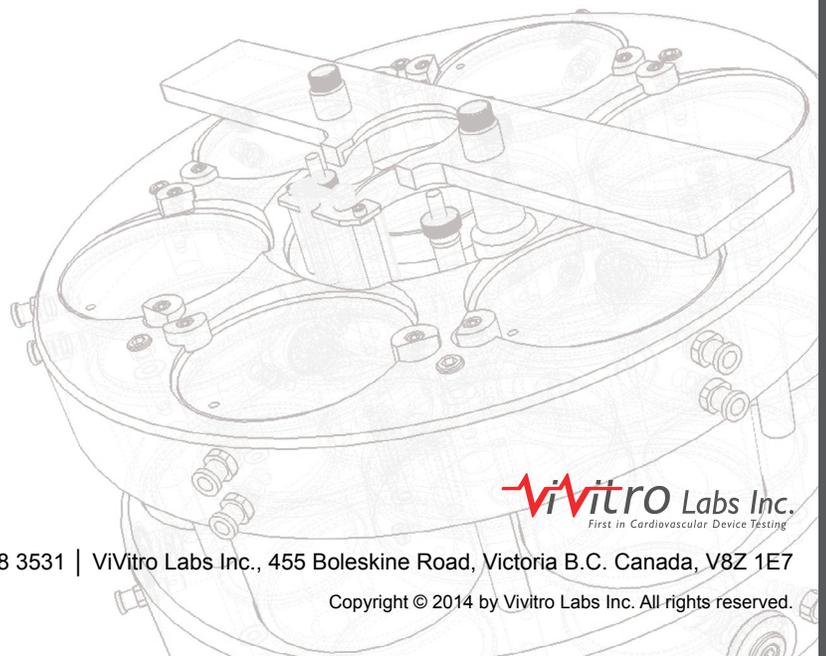
This precision, handheld, digital pressure reference manometer allows for convenient calibration of pressure transducers. The M2 series can be recalibrated in the field for zero, span, and linearity. The user has the option to select a 1 point or 5 point calibration procedure. The manometer enables users with accurate primary standards to calibrate their devices locally if desired.

Engineering Units - Inches of H₂O (select 4°C, 20°C, or 60°C), PSI, mm of Hg, inches of Hg, mBars, Bars, kPa, kg/cm², cm of H₂O and user selectable scaling.

Accuracy: $\pm 0.05\%$ FS

Media Compatibility - DN: Non-isolated differential sensor for clean, dry, non-corrosive gases. GI & AI: Isolated Gauge or Absolute sensor for fluids compatible with 316L SS

Provided with transducer manifold for quick and easy pressure transducer calibration



Vivitro Labs Inc.
First in Cardiovascular Device Testing