

# Heart Valve Durability Tester Model MDV



[www.blockwise.com](http://www.blockwise.com)



The Blockwise **Model MDV** is the easiest-to-setup prosthetic heart valve durability testing machine. Since a single specimen is tested on each machine, process adjustments or failures of the valve or the machine do not affect other tests in progress.

The MDV provides accelerated wear testing of a single prosthetic heart valve specimen by pumping water through the valve and controlling the pressure difference across the valve. The pump is an unsealed piston-in-cylinder driven by a linear motor actuator.

Control of the piston pump, temperature, and systemic pressure regulator are implemented by an embedded controller and operator-interface screen and keyboard on the testing station.

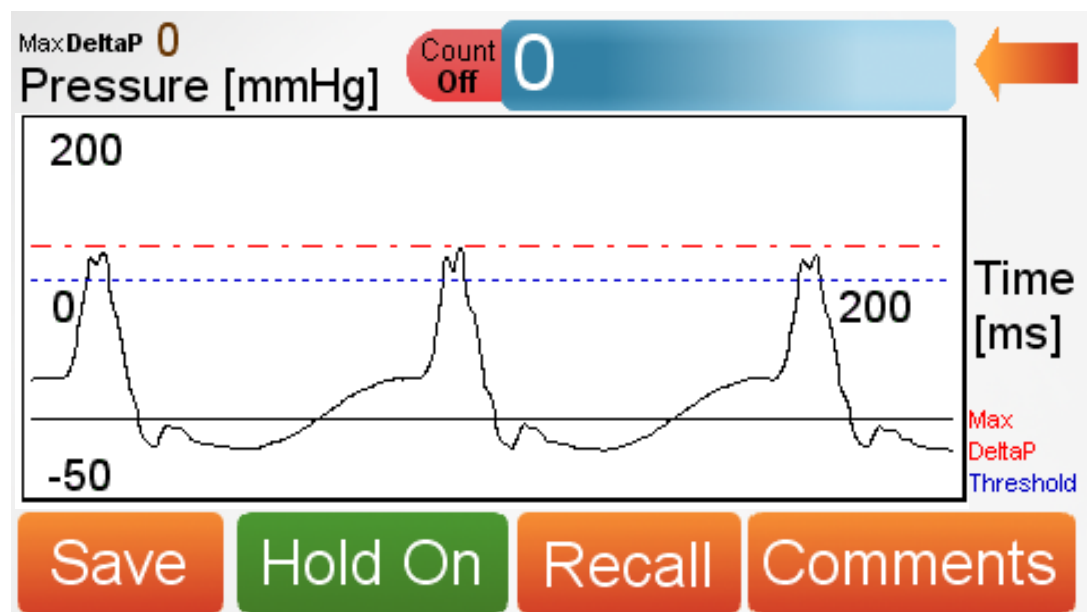


Data collection and calibration functions are implemented by a separate, PC-based data acquisition software that communicates with several testing stations simultaneously. Test specimens can be easily removed and replaced in *less than 5 minutes*. The machine is designed to facilitate customer compliance with test standards and regulatory guidance.



**Autotune Mode**  
 automatically adjusts pump amplitude to achieve set heart valve differential pressure.

The tester utilizes an innovative system for expanding the width of the pressure spike. “Differential pressure greater than the defined pressure for 5% or more of the duration of each cycle” can be achieved with a *much lower peak pressure* than with competing machines.



**Features:**

- Flexure-guided, un-commutated voice-coil linear motor designed for infinite fatigue life.
- Linear motor is operated as a position servo, providing flexible software control of frequency and piston amplitude.
- Unsealed piston & cylinder eliminates wear and fatigue that would be present with bellows, diaphragms, or piston seals.
- Easy visibility of test specimen. Machine accommodates clear plastic, easily-replaceable test sections.
- Break/failure detection. If differential pressure is not maintained within user defined minimum and maximum thresholds, the test is interrupted.
- Bubble-trapping spaces are minimized. De-bubbles in minutes.
- Water temperature is controlled.
- Pressure transducers remain installed during testing.

**Specifications:**

Max Piston Amplitude	4.5mm (9mm peak-to-peak)
Temperature Control Accuracy	+/- 1 degree C
Actuator Frequency	5 - 25 Hz
Systemic Pressure Range	0 - 150 mmHg

