

# EX VIVO SIMULATOR

Product Codes: 29348: Ex Vivo System Bundle / 10647: SuperPump System / 25654: Compliance Assembly  
30146: Accessories / 29300: Tray Assembly

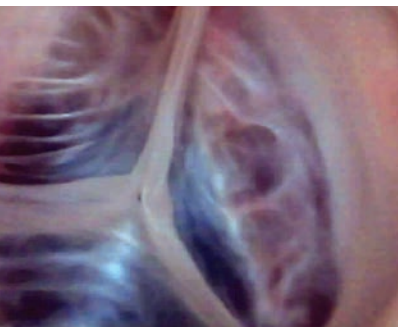
*The Ex Vivo Simulator uses a ViVitro Labs SuperPump to generate physiological flows in an excised heart for bench top testing.*

*The system can model either the left or right heart, or two systems can be combined to generate a four chamber model.*

The Ex Vivo beating heart combines clinical anatomical similarity with controllable physiological flow and pressure signatures for bench top testing. This results in repeatability and ease of use, and anatomical and functional performance previously only found in animal models.

Access sites at the arteries, atrium and apex allow for the insertion of catheters and other devices. Optional pressure transducers and data acquisition system acquire the arterial, ventricular and atrial pressures and a flow meter measures the cardiac output of the simulator.

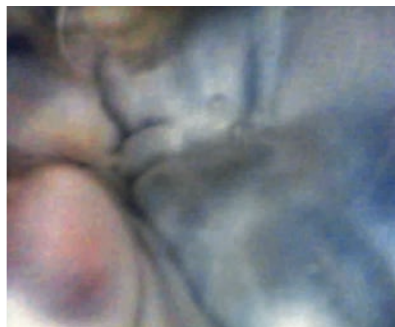
Investigate valve movement with an endoscope or ultrasound. Pathological states such as low ejection fractions and high beat rates can be simulated with the heart via the SuperPump. Degenerative and functional mitral regurgitation can be simulated by severing the mitral chords and pressurizing the left ventricle, respectively.



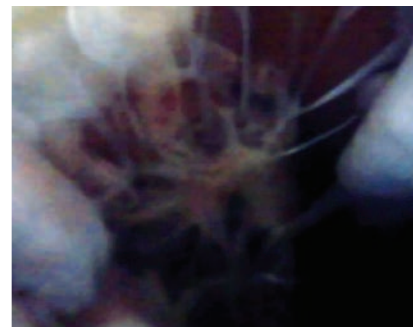
**Aortic Valve  
(Closed)**



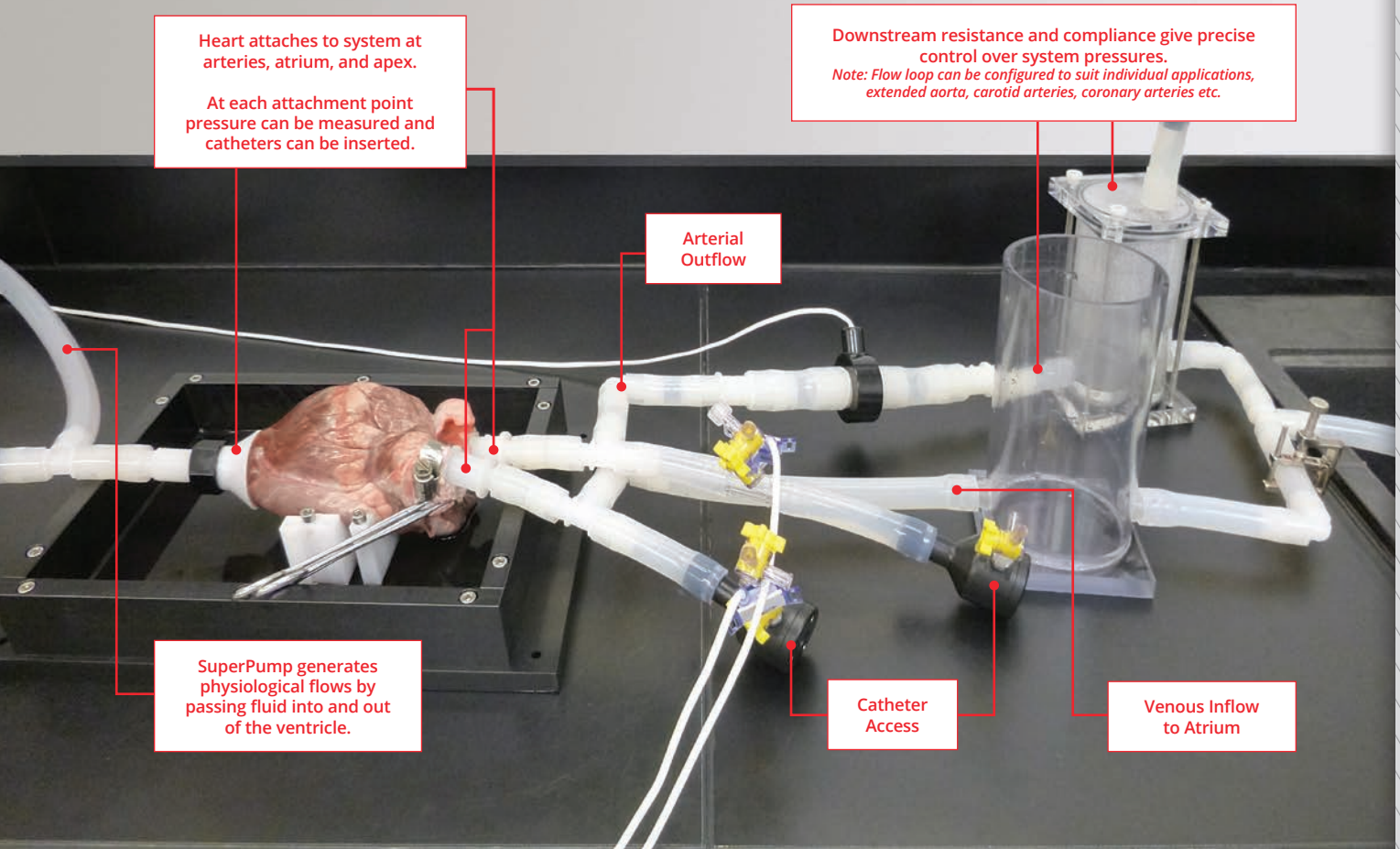
**Aortic Valve  
(Open)**



**Mitral Valve  
(Closed)**



**Mitral Valve  
(Open)**



Heart attaches to system at arteries, atrium, and apex.  
At each attachment point pressure can be measured and catheters can be inserted.

Downstream resistance and compliance give precise control over system pressures.  
*Note: Flow loop can be configured to suit individual applications, extended aorta, carotid arteries, coronary arteries etc.*

Arterial Outflow

SuperPump generates physiological flows by passing fluid into and out of the ventricle.

Catheter Access

Venous Inflow to Atrium

**Optional Accessories:**



Viscoelastic Impedance Adapter (VIA)



Data Acquisition System



ViViFlow Flowmeter