Claims of US Patent No. 9,186,224

- 1. A method for operating an accelerated cyclic test system for evaluating a valved prosthetic device comprising driving a test system fluid cyclically above a normal physiological rate, at an accelerated pulsed rate of greater than 200 beats per minute within the test system; storing a volume of test system fluid in an excess volume area during a system driving stroke that opens the valved prosthetic device; and releasing the stored volume of test system fluid during a return stroke that closes the valved prosthetic device.
- 2. The method of claim 1, wherein the excess volume area enlarges in response to a pressure on the test system fluid during the driving stroke and decreases during the return stroke.
- 3. The method of claim 2, wherein the excess volume area provides a spring force counter to and in response to the pressure on the test system fluid.
- 4. The method of claim 3 further comprising altering a spring factor of the spring force provided by the excess volume area through selection of a material forming at least a portion of a boundary of the excess volume area.
- 5. The method of claim 4, wherein the material is an elastomeric material that expands and contracts in response to the pressure on the test system.
- 6. The method of claim 1, further comprising compressing a volume of a compressible gas with the volume of test system fluid to provide a spring force counter to and in response to a pressure on the test system fluid when the volume of test system fluid is stored in the excess volume area.
- 7. The method of claim 6 further comprising altering a spring factor of the spring force provided by the excess volume area by adjusting the volume of the compressible gas.

