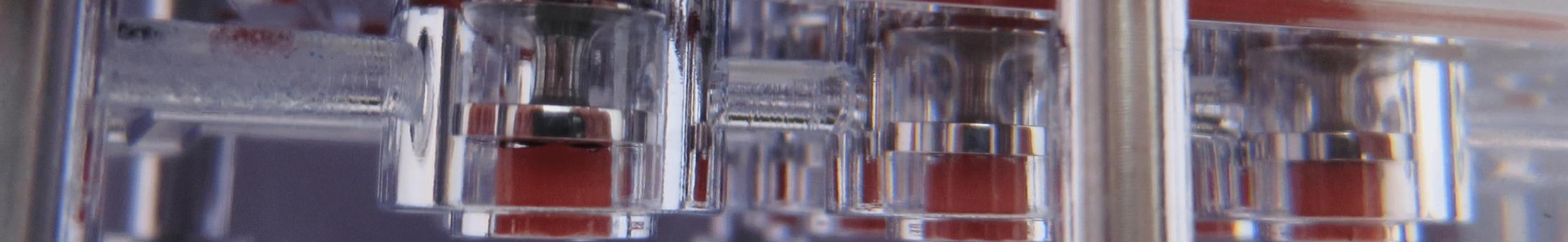


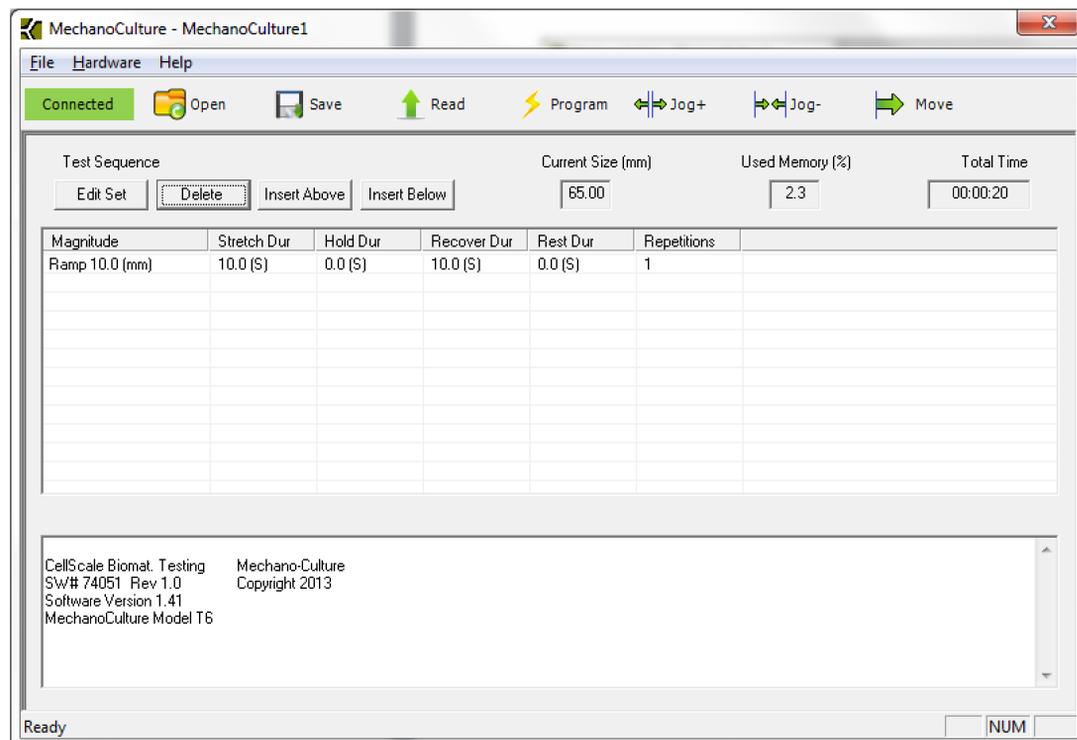
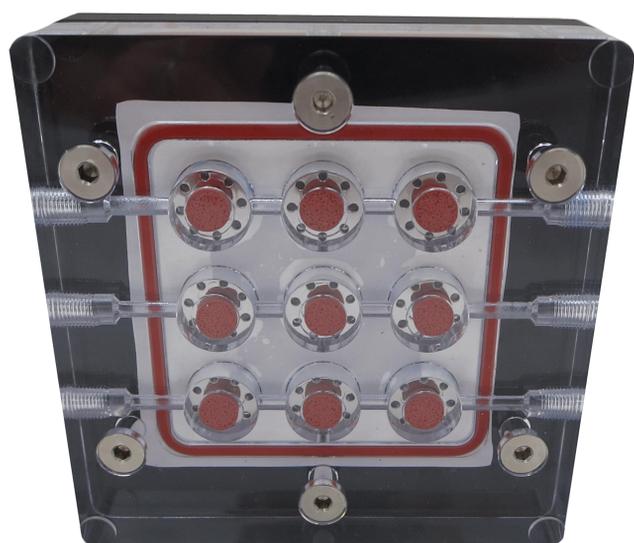
The MechanoCulture product group allows researchers to culture cells in a mechanically active environment. Configurations of these culture systems support single or parallel tests using a variety of flexible substrates and scaffolds. On-board controllers enable PC-independent execution of user-defined motion protocols. All MechanoCulture systems can be operated in an incubator environment. All cell-contacting components are made from autoclavable materials.

The MechanoCulture TR can uniaxially compress cylindrical specimens in 9 independent wells. During the compression stimulation, the system can monitor the force-displacement data in order to determine the stiffness profile of each specimen as a function of time. The well plate is highly polished to allow visual confirmation of proper specimen loading a compression during setup and throughout the test.

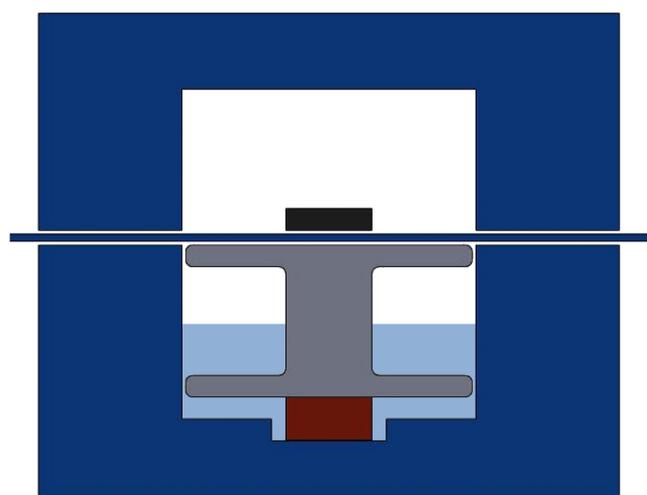




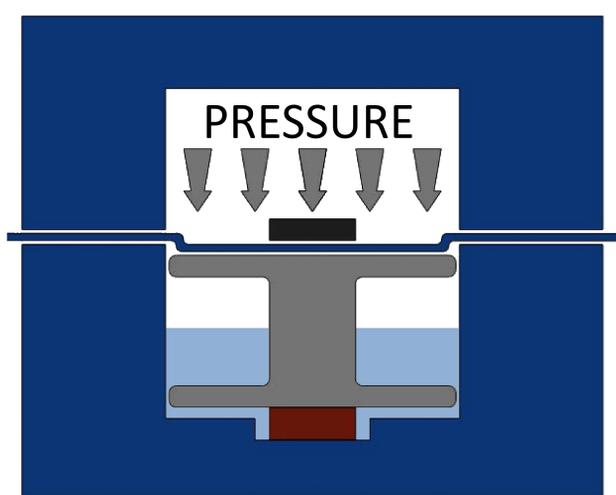
The MechanoCulture TR can be programmed to run constant velocity or sinusoidal compression patterns. Magnitudes, frequencies, rest periods, and cycle counts can all be specified in the software application and programmed to the device.



A range of specimen geometries are supported using reusable well plates. Specimens can be up to 20mm in diameter and 10mm long. Forces can be programmed up to 100N per well and displacements can be tracked with 10µm resolution up to 5mm of total travel. The maximum frequency of the system is 2Hz. All components in contact with the culture can be autoclaved and the device can be operated inside an incubator environment.



Uncompressed



Compressed

Specimen deformation is achieved by pressurizing a cavity above the culture chamber, which drives down a piston. Motion of the piston is determined by measuring the magnetic field strength of the magnet attached to the upper surface. A flexible membrane separates the sterile culture well from the pressure cavity.



CellScale Biomaterials Testing is the industry leader for precision biomaterial and mechanobiology test systems. Our products are being used at world-class academic and commercial organizations in over 30 countries around the globe.

Our mechanical test systems allow researchers to characterize the mechanical properties of biomaterials. Our mechanobiology technologies provide insights into the response of cells to mechanical stimulation.

CellScale's technologies are improving human health by helping researchers discover the causes of disease, improve medical treatments and devices, and advance regenerative medicine and other basic science research.

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