



SIH LTMT Muscle Tester

Long term culture/incubation muscle research system

Key Experiments

- Measure intact muscle responses to electrical stimulation or tetanus. Measure myomechanical properties of contracting and relaxing muscle strips. An ergometer (WPI #ERG) can be used to perform after-loaded contractions in heart muscle and to perform eccentric contractions.
- Twitch amplitude and kinetics analysis, time to peak, (50%) relaxation velocities, starting curve and diastolic force development can be monitored with SI-H MuscleData software.
- A linear motor with control units can be adapted to measure mechanical muscle properties like slack-test, isotonic release, constant velocity release, stretch release, vibration, eccentric and after-loaded contractions (intact muscle).

Accessories

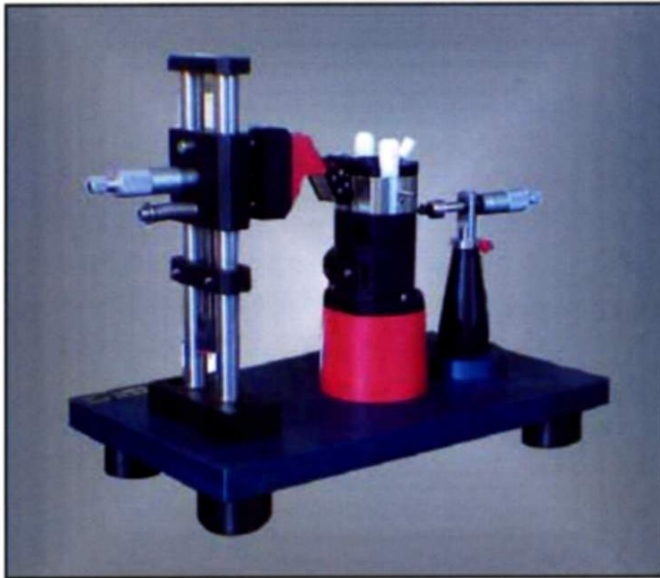
- DAS** Data acquisition/analysis system that can control the stimulator and all length devices. Includes MuscleData software.
- ERG** Ergometer unit for after loaded contractions (for example, heart muscle)
- FURA** Photomultiplier for the microscope to allow intracellular calcium studies
- LCPERF** Laser controlled perfusion system for highly accurate low force measurements
- MACP** Motor Action Control Panel for motor control when using your own data acquisition system
- STIM** Standalone stimulator, analog or digital control, $\pm 45V$, mono/bipolar
- TET** Tetanizer converts a single stimulus from the stimulator into a train of stimuli

Complete SI-H systems are assembled from a large variety of custom components and made to order. Call our staff physiologist to discuss the many options for your experimental needs.



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The Long term incubation muscle research system is primarily designed for studies where the effect of a mechanical, biological or other intervention is monitored over time. Its primary use is intact living muscle preparations. It combines the versatility of the rugged and stable force transducer of the KG series with fast and sensitive force measurements.

It features a completely closed, heat-controlled, sterilize-able incubation cuvette system. All parts that come into contact with the incubation medium may be sterilized at 140°C. The cuvette has a small volume (approximately 1 ml) and an integrated magnetic stirrer which provides an optimal

oxygen supply. The cuvette solution may be changed without even opening the cuvette system.

Options for this system include field stimulation electrodes, a stimulator (WPI #STIM), a tetanizer (WPI #TET) and a photometer (WPI #FURA). For complete instrument control with your own data acquisition system and software, add the SI-H Motor Action Control Panel hardware (WPI #MACP). Or, add the SI-H integrated data acquisition package (WPI #DAS/MuscleData) to control all the hardware and record to data and optical recordings.

Features

- Mechanically stable platform for combining mechanical & simple optical muscle studies
- Sophisticated cuvette system
- Fiber length precisely adjustable with micrometers on both sides
- Special preparation holder available for papillary muscle, trabeculae, skeletal and smooth muscle
- Heat control between 30-42°C
- Linear motor for muscle length perturbation studies included