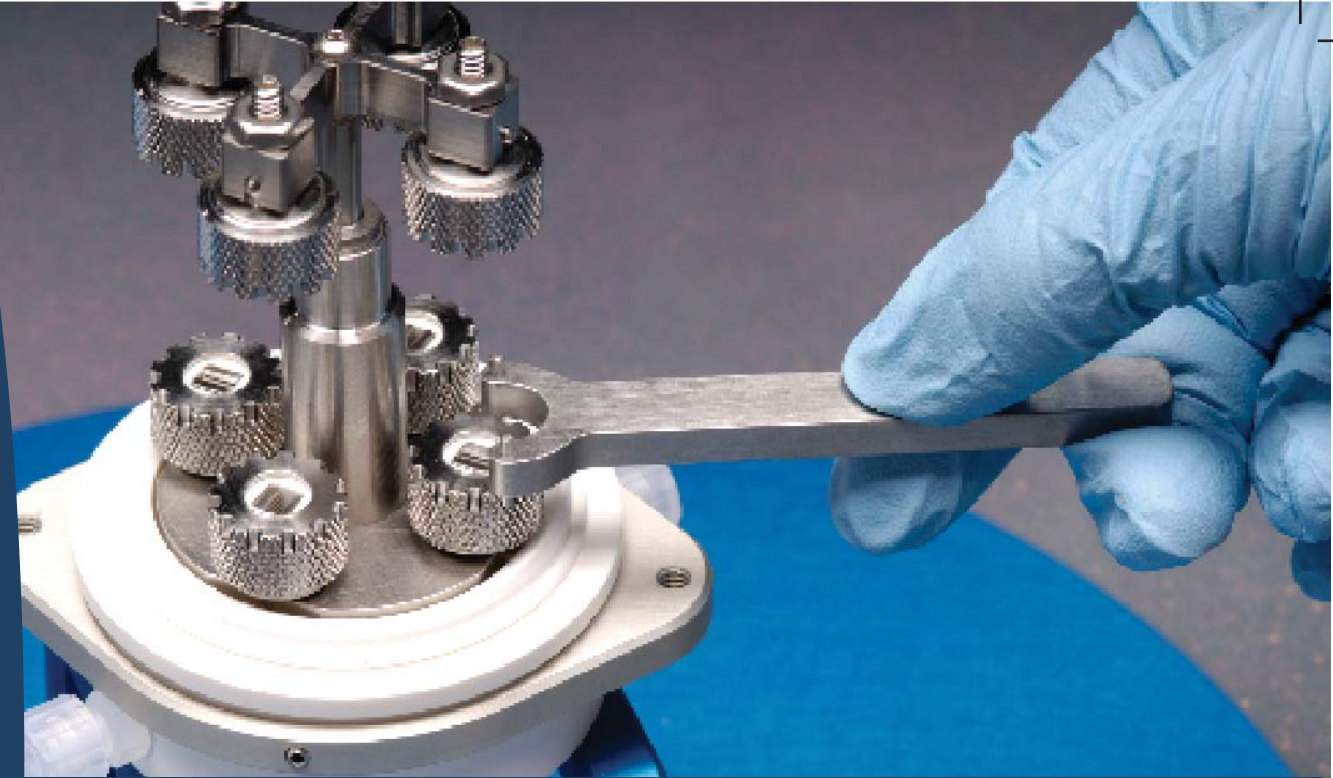


LigaGen



A Tension Bioreactor System



DynaGen<sup>®</sup> bioreactors provide a controllable, 3D environment for stimulating physiological conditions *in vitro*. The LigaGen system imparts mechanical tension/compression to a 3D sample. Applications include investigating cell function, modulating the growth and development of engineered tissues, or acting as a test bed for drug and regenerative medicine technologies.

# TGT LigaGen Bioreactor System

**Chambers:** Fabricated out of bioinert, autoclavable materials, the LigaGen bioreactor chamber delivers oscillatory compressive/tensile axial stimulation to samples with a large aspect ratio. The chambers can be used with a variety of construct materials from decellularized tendons and ligaments to polymerized hydrogels. The chamber accommodates samples up to 30 mm wide, and 3 mm thick. Multiple grip styles allow for a wide range of construct geometries to be stimulated. A unique seal provides mechanical feed-through into the chamber while facilitating axial motion in a sterile environment with minimal resistance. Two different chamber designs allow either single sample or multi-sample stimulation. Both chambers can be used with a perfusion system to provide convective media transport around the sample.

**Chamber Options:**

L30-1X: Single sample per chamber with 23 mL compartment volume.

L30-4C: Either 2 or 4 samples per chamber with 80 mL compartment volume.

**Grip Options:**

*Clamp:* Mechanical clamp vice grips with collet locking mechanism. Used for constructs which require a large clamping force.

*In Situ Poly:* Integrated construct mold and porous grips to enable mechanical stimulation of hydrogel scaffolds.

*Suture:* 316 SS tab with suture holes drilled through, accommodates wide constructs.

*Custom:* Custom designed for specific scaffold textures or geometries.

**DynaGen® Stimulator:** The LigaGen bioreactor system includes the TC (tension/compression) mechanical stimulator. Featuring a 20 or 40 newton linear motor, the stimulator is lightweight, compact, corrosion resistant and compatible with most standard incubators. The TC stimulator controls both load and displacement and can be used with any of the LigaGen bioreactor chambers.

**Stimulator Specifications:**

L30-1X: Footprint: 15" x 5" x 7" Weight: 6.5 lbs.

L30-4C: Footprint: 13" x 4" x 4" Weight: 5.0 lbs.

**GrowthWorks® Control System:** A fifth generation design, the GrowthWorks® Software and Control platform includes advanced capabilities, such as multiple waveform control, data acquisition and multi-motor operation. The intuitive software runs on a laptop computer under Windows XP and features a simple user interface. User defined stimulation profiles are controlled by the computer and readily monitored using graphical displays. Integrated data acquisition routines capture and record data at user prescribed intervals.

Featuring a 32 bit Intel based CPU and integrated motor drives, the control hardware communicates with the laptop using a network cable. GrowthWorks® can be configured to run four stimulators and monitor up to 8 transducers, allowing the researcher to customize the system functionality. The controller can be upgraded with additional modules for applications requiring automation features or additional axes of mechanical stimulation.

Straightforward and adaptable, GrowthWorks® provides the ideal control platform for mechanically stimulated tissue growth.

Visit our website to see the full line of TGT bioreactors and accessory products.

