

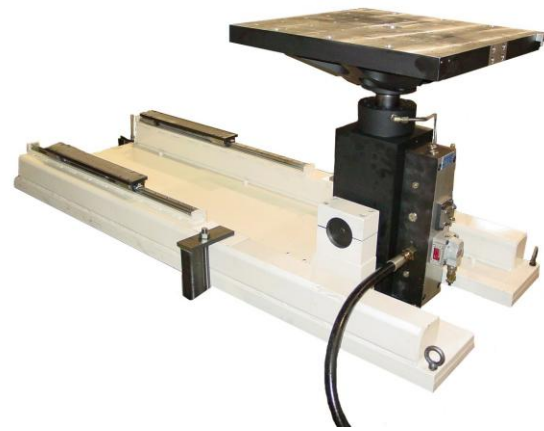
Bi-Axial Vibration Test Stand: VB-1

DTE manufactures a variety of servo hydraulic vibration machines. This system is designed to perform a wide range of tests in packaging, electrical component, military, and defense applications.

Dynamic Testing can easily re-configure the machine to accommodate your specific needs. Information is provided on the system pictured. The VB-1 is designed to accommodate a payload of 800 pounds with a maximum acceleration of 10 G. To avoid backlash and actuator alignment problems the table is connected to the actuator with an axially stiff flexure joint. By moving the table and rotating the actuator, the displayed system is designed for both vertical and horizontal motion.

The system uses a proven control technology to simulate following features and functions:

- Sine sweep: operator defined frequency range and linear or logarithmic rate, with defined acceleration level
- Graphing capability: auto-scaled or zoom features with cursors
- Control limits based upon displacement, load, or acceleration
- Selectable tracking filters in remove harmonics (The tracking filter bandwidth and signal averaging is user configurable)
- Ability to run random or SRS profiles
- Playback of time history files with wave-form editing capabilities
- Automatic report generation option
- Variety of table sizes available



HPS – Hydraulic Power Supply:

DTE's quiet "whisper power unit" is used to provide hydraulic fluid to the machine. A 20 GPM supply is standard with the machine. The DTE HPS has a built-in control manifold providing a soft start with a proportional controlled valve.

Actuator:

A low-friction, fatigue-rated hydrostatic bearing actuator with an enlarged piston rod assures operation without distortion at low and high frequencies. Proprietary piston rod surface coating and finish provide a service life exceeding other fatigue-rated actuators. A flexure joint used to eliminate backlash and again provide increased life.

Head Expander:

Aluminum or magnesium head expanders are available from 12in. x 12in. (300mm x 300mm) to 78in. x 78in. (2m x 2m)

Reaction Base:

The system can be mounted on an integrated reaction base, a customer-provided strong floor, or bedplate. Optional hydrostatic bearing slip tables available for high-frequency operation.



Hydraulic Servo Control:

The digital servo controller includes:

- 4kHz loop rate
- PIDF tuning with Delta P stabilization
- 241 sample rates from 100Hz to 108kHz
- Extremely low noise floor (<70 nV/ $\sqrt{\text{Hz}}$)
- Incredible 26,000 spectral lights
- Up to 32 true floating point sine tones with sine on random
- <-100dB THD + N
- >130dB Dynamic range
- Redundant calibration monitoring

VB-1 Specifications:

(Please contact us for custom specifications.)

- Table size 24in. x 24in. (600mm x 600mm)
- Frequency range: 0.1 to 100 Hz
- LHA11, rated at 11 kip 6in. (150mm) stroke hydrostatic actuator (stroke is application dependant)
- Single or Double 15 GPM Moog servo valve based on application
- Accelerometer

Services required:

- 30 Amps 460 VAC 3 Phase
- 10 GPM water at 85° F.

