



# Vibration Test Systems

**Lansmont**  
*Field-to-Lab<sup>®</sup>*

vibratic



# Vibration Test Systems



**Lansmont Vibration Test Systems** are versatile, easy to operate, and reliable servo-hydraulic vibration testing equipment. Whether you are testing bare products, individual packages, full pallet loads, or much larger crated systems, Lansmont has a vibration system model that is perfect for your testing applications.

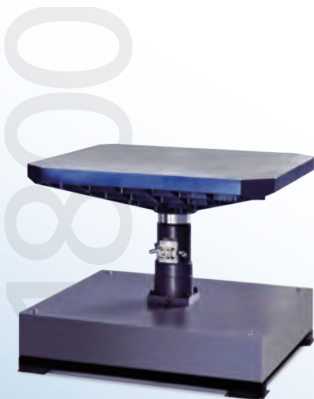
During product development or validation, vibration tests are used to assess reliability and determine fragility levels. To evaluate packaging systems used to transport those products, vibration tests simulate shipping and handling conditions.

Lansmont Vibration Test Systems are widely utilized for product and packaging evaluations, as well as, a wide range of vibration tests in accordance with government, industry, and corporate specifications.

Model 1000



Model 1800



Model 10000



Model 56000





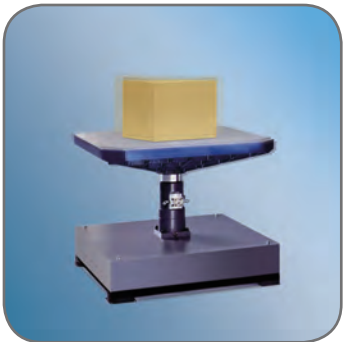
# Vibration Test Systems



## Selecting the Lansmont Vibration Test System for your Application

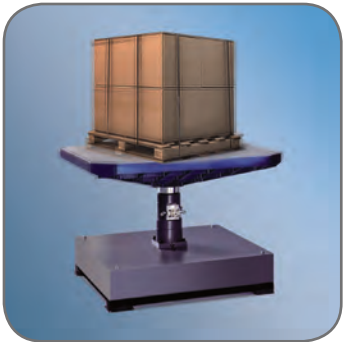
We recommend the most suitable system configuration for every testing application based on two important criteria:

- The size of your largest test item
- The performance capability needed to meet your testing needs



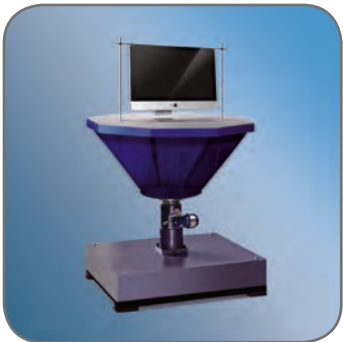
## Test Item Size

Each customer has unique requirements for their dynamic testing equipment. It is important to know the size and weight of test items to correctly configure the appropriate testing equipment. The size of your largest test item will help determine the table surface area. The maximum payload will help determine the size of the actuator.



## Performance Capability

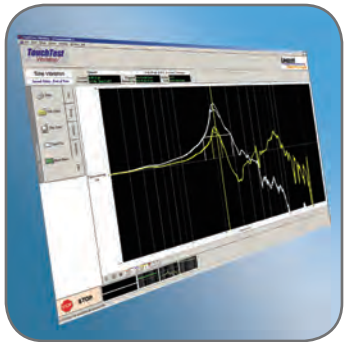
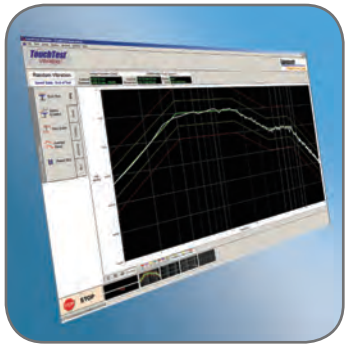
Vibration testing levels vary significantly depending on the product you are evaluating or the conditions you are simulating. The two most important vibration performance criteria are frequency range and acceleration levels. It is also important to know the type of vibration—sinusoidal or random.





# Vibration Test Systems

**Lansmont**  
*Field-to-Lab*®



## TouchTest Vibration 2 Controls

Lansmont offers the only integrated servo hydraulic vibration control system available today. The controller provides intelligence to the system—a vital component which acts as the brain to direct the hydraulic brawn.

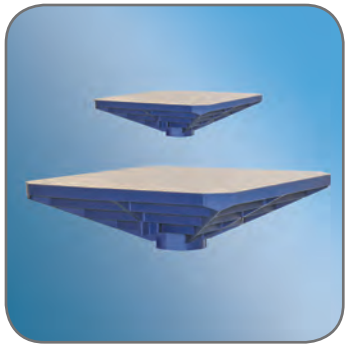
- Swept Sine, Dwell, Random, and Field-to-Lab™ vibration
- QuickStart technology
- Up to 8 acceleration input channels
- Built-In Signal Conditioning
- Multi-channel control and response measurement
- Integrated HPS sequencing

**With the single touch of a button**, your TouchTest controller will engage your hydraulic power supply, bring your vibration table to its center position, and initiate your pre-loaded vibration test. Control complex tests with integrated simplicity.





# Vibration Test Systems



## Table Structure

Table design greatly influences the performance of your vibration system. Lansmont designs tables as light as possible for maximum performance with enough stiffness such that the table's frequency response does not impact the vibration system's control or the items undergoing testing.

Lansmont offers several table sizes. Standard tables vary in size from 25.8 in. (65.5 cm) square up to 60 x 98 in. (152 x 249 cm). High performance and custom table sizes are also available.



## Actuator

The actuator is located underneath the vibration table. The engineering of this high performance component allows you to "shake" the test load, while controlling frequency, displacement, and acceleration. Hydraulic oil ported by the servo valve forces the piston inside the actuator body up and down at varying amplitudes and frequencies.

Lansmont has several actuators available with varying force and stroke capacity.

### Hydrostatic vs. Hydro-Film Actuators

Hydrostatic actuators offer advantages over conventional hydro-film actuators:

- Hydrostatic actuators have no piston to bearing contact
- Hydrostatic actuators tolerate excessive side loads and heavy use better
- Hydrostatic actuators run at low acceleration levels and high frequencies



# Vibration Test Systems



## Servo Valve

A Servo Valve assembly, attached to the actuator, ports hydraulic fluid above or below the piston to create vibratory motion. The ability to move the actuator up and down allows your Lansmont vibration system to perform the vibration needed for your testing.

### High Performance Servo Valve

The Lansmont 1SVC servo valve represents the next generation in high-flow, high-frequency response servo-valve technology.

#### Key Features:

- High-flow at high frequencies
- Single-stage with high performance voice coil
- Minimal moving parts
- High reliability
- Easy set-up and adjustment



## Hydraulic Power Supply

The Hydraulic Power Supply (HPS) is the “heart” of your vibration system. These self-contained pump units provide the hydraulic fluid needed to make your vibration system function properly. Lansmont HPS designs are available with either water-cooled or air-cooled heat exchangers.

### GEN3 HPS Unit

The GEN3 HPS design provides reliable, efficient performance. Our latest HPS model is equipped with a filter protection relief valve, which redirects excessive hydraulic pressure from your filter back into the oil reservoir. This protects your filter from potential collapse during operation.

Each unit also includes highly accurate temperature and fluid level interlocks. The temperature interlocks assure the water or air-to-oil cooling systems operate efficiently and correctly. The fluid level interlocks protect your system from operating if a minimum amount of oil is not present in the HPS reservoir.



# Vibration Test Systems



## OPTIONS



### 1-G Supports:

1-G Supports are airbags mounted underneath the vibration table. The air pressure is regulated automatically by the controller. These optional supports improve the

system performance, particularly with heavy test items. By producing an upward force to counterbalance the table load, 1-G Supports will increase the payload capacity. 1-G Supports also restrict table rotation during testing.



### Seismic Base:

Vibration Test Systems produce dynamic energy during operation. To attenuate these vibrational forces, the system is mounted to a large steel mass called a seismic base.



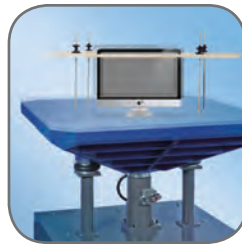
### SAVER™ Field Instruments:

Real world vibration conditions can be replicated in the laboratory. Our SAVER™ Field Instruments can record the vibration your products and packages experience in shipping and this data is easily replayed in the lab using your Lansmont Vibration Test System.



### Column Stacking Fixtures:

Column stacking fixtures mount to the vibration table to keep large test items corralled during testing. They can also keep packages or products aligned and restrained during stacking simulations.

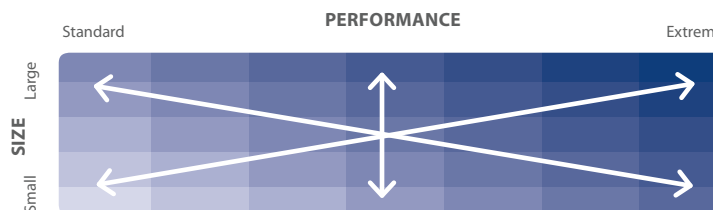


### Hold Down Fixtures:

For certain testing applications, it may be desirable to couple the test item with the vibration table surface. Hold Down Fixtures will keep your products and packages secured to the table surface during vibration testing.

## MADE TO ORDER

Not quite the equipment size or performance level that you need? If we do not already manufacture the test machine ideally suited for your company's testing applications, our engineering team can custom design a test system specific to your needs.





# Vibration Test Systems



## VIBRATION TEST SYSTEM MATRIX - STANDARD PERFORMANCE

MODEL	STROKE	FREQUENCY RANGE	MAX PAYLOAD	TABLE SIZES
<b>1000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	1 – 300 Hz	75 lbs. (34 kg)	15.7 in. (40 cm) 25.6 in. (65 cm) 33.5 in. (85 cm)
<b>1800</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	1 – 300 Hz	1500 lbs. (680 kg)	33.5 in. (85 cm) 48 in. (122 cm)
<b>6200</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	1 – 300 Hz	2000 lbs. (907 kg)	33.5 in. (85 cm) 48 in. (122 cm) 60 in. (152 cm)
<b>7000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	1 – 300 Hz	2500 lbs. (1134 kg)	48 in. (122 cm) 60 in. (152 cm)
<b>10000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	1 – 300 Hz	3500 lbs. (1587 kg)	48 in. (122 cm) 60 in. (152 cm) 60 x 98 in. (152 x 249 cm)
<b>15000</b>	10.0 in. (25.4 cm)	1 – 100 Hz	3500 lbs. (1587 kg)	48 in. (122 cm) 60 in. (152 cm)
<b>28000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	1 – 200 Hz	3500 lbs. (1587 kg)	60 in. (152 cm) 60 x 98 in. (152 x 249 cm) 102 x 160 in. (259 x 406 cm)
<b>6000 Horizontal</b>	6.0 in. (15.2 cm)	1 – 100 Hz	3000 lbs. (1361 kg)	36 in. (91 cm) 60 in. (152 cm)





# Vibration Test Systems



## VIBRATION TEST SYSTEM MATRIX - HIGH PERFORMANCE

MODEL	STROKE	FREQUENCY RANGE	MAX PAYLOAD	TABLE SIZES
<b>1000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm)	1 – 500 Hz	50 lbs. (23 kg)	15.7 in. (40 cm) 25.6 in. (65 cm)
<b>1800</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm)	1 – 500 Hz	500 lbs. (227 kg)	36 in. (91 cm)
<b>6200</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	1 – 500 Hz	500 lbs. (227 kg)	36 in. (91 cm)
<b>28000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm)	1 – 500 Hz	1000 lbs. (454 kg)	50 in. (127 cm) 60 in. (152 cm)
<b>56000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm)	1 – 500 Hz	8000 lbs. (3628 kg)	48 x 96 in. (122 x 244 cm)
<b>65000</b>	2.5 in. (6.4 cm) 4.0 in. (10.2 cm)	1 – 300 Hz	2000 lbs. (907 kg)	83 x 98 in. (210 x 250 cm)

**Performance Capability:** Vibration testing levels vary significantly depending on the product you are evaluating or the conditions you are simulating. The two most important vibration performance criteria are frequency range and acceleration levels. It is also important to know the type of vibration—sinusoidal or random.