



Shock Test Systems



Mechanical shock tests accurately measure the fragility of products and evaluate how they respond to particular shock inputs. Shock test data is key information to ensure any product is capable of withstanding its intended “real world” use. Whether you wish to perform a complete Damage Boundary Product Fragility Assessment, an industry / mil standard shock pulse, or a company-specific test specification, **Lansmont Shock Test Systems** are available with the performance to meet your application.

The products you take for granted every day have undergone shock testing. Lansmont Shock Test Systems are used worldwide to test the consumer, automotive, medical, military and aerospace products and components that shape our lives. For any type of product or shock testing applications, Lansmont has a shock system model that is perfect for your testing applications.

Model 65/81



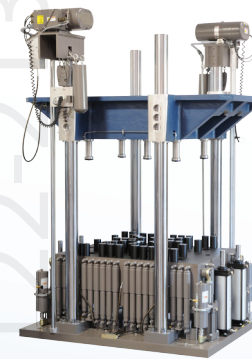
Model 95/115D



Model 152



Model 23



Model 122-213



Model HSX20



Shock Test Systems



Selecting the Lansmont Shock Test System for your Application

Lansmont makes a wide range of Shock Systems. We recommend the most suitable system configuration for every testing application based on two important criteria:

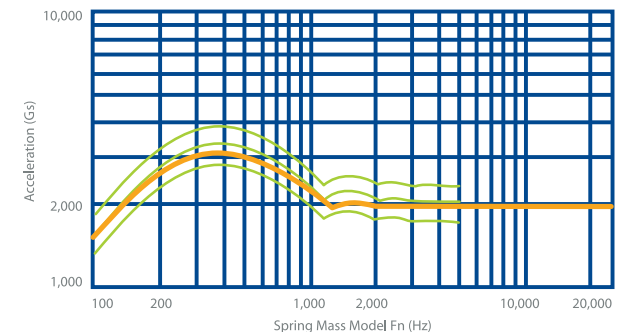
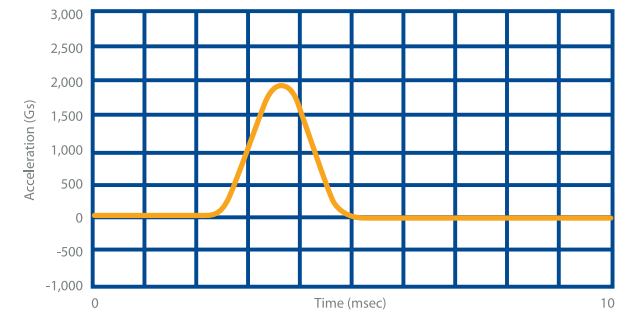
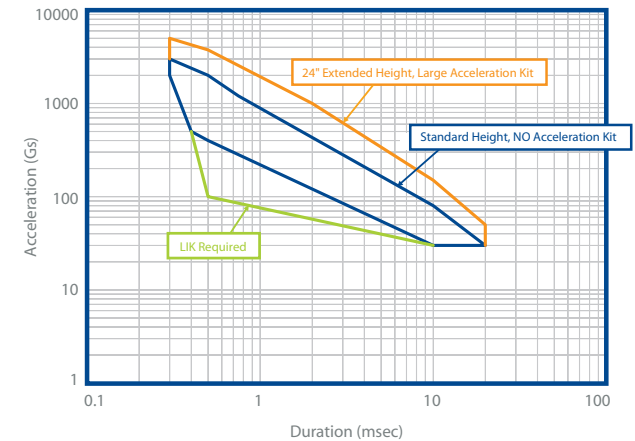
- The size of your largest test item
- The performance capability needed to meet your testing needs

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 shock system performance category.

Performance Capability

Shock testing levels vary significantly depending on the product you are evaluating or the conditions you are simulating. The two most important shock performance criteria are velocity change and acceleration level. It is also important to know the shock pulse waveforms—half sine, sawtooth, or trapezoidal.





Shock Test Systems



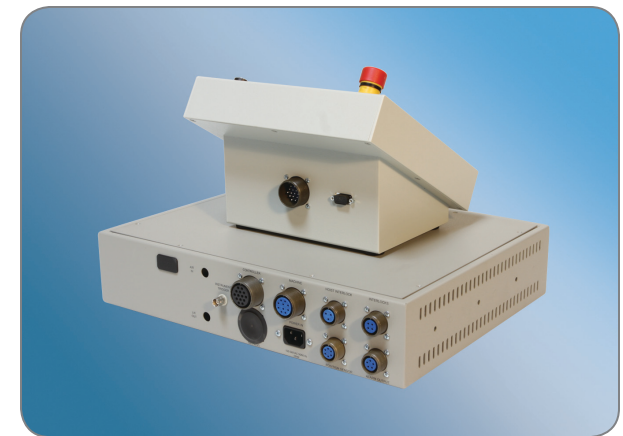
TouchTest Shock 2 Controls

TouchTest Shock 2 is designed specifically with test efficiency and ease of use in mind. From a small, high-resolution LCD touch screen, the user can perform the initial setup and test initiation quickly and easily. Simple touch screen menus enable the user to make convenient adjustments to machine settings and to provide total control of the Lansmont Shock Test System during operation.

TouchTest Shock 2 Features

- One-button operation to reduce test cycle time
- Auto cycle control mode, allowing drop cycles up to 32,000 drops
- Shock pulse estimator function to set up machine based on desired shock pulse
- Programmable safety interlocks to ensure a safe working environment
- Digital drop height and pressure control for optimal pulse accuracy and repeatability

TouchTest Shock 2 communicates seamlessly with Lansmont's TestPartner™ Data Acquisition System, a Windows-based software system. TestPartner™ includes powerful analysis tools. Such as Shock Response Spectrum (SRS) analysis, FFT analysis, shock response animation in both 2D and 3D modes, Shock Response analysis with programmable model F_n and damping, and tolerance band overlays with selectable MIL-STD and programmable pulse parameters.





Shock Test Systems



OPTIONS

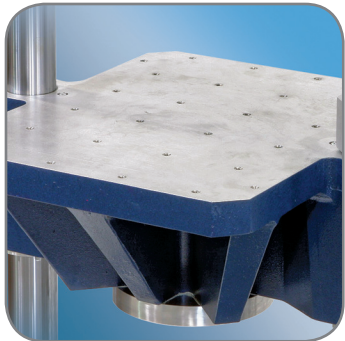
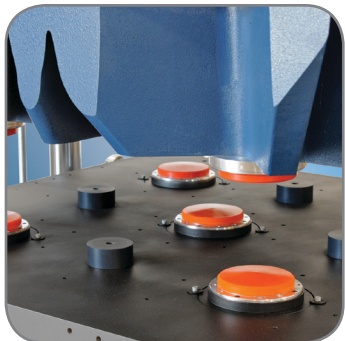


Table Structure

Table design greatly influences the performance of your shock system. Lansmont designs tables as light as possible for maximum performance with enough stiffness such that the table's frequency response does not adversely affect shock pulse quality.

Standard shock system tables vary in size from 6 in. (15 cm) square up to 60 in. (152 cm). High performance and custom shock table sizes are also available.



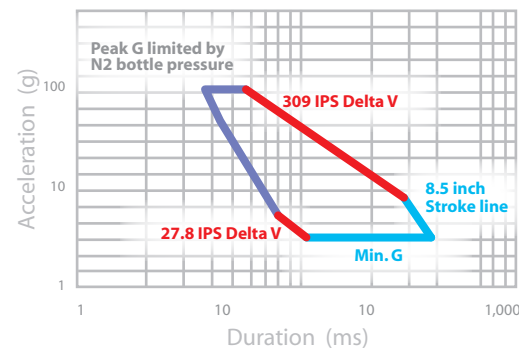
Shock Pulse Programmers

The table structure impacts a shock pulse programmer during a shock test to create the waveform needed for the testing application. Whether it be a short duration or long duration half sine, trapezoidal, or sawtooth pulse requirement, Lansmont makes the type of shock pulse programmer you will need for generating these waveforms.

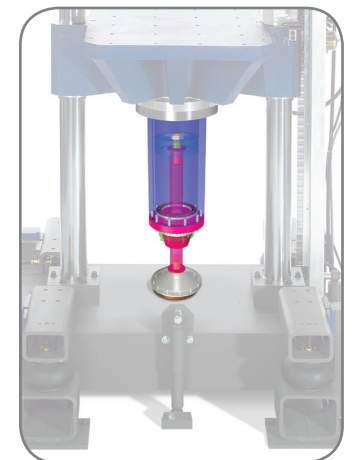
Opposing Force Gas Programmer

For extremely long duration half sine shock pulse testing, Lansmont developed a special type of gas programmer. The OFGP is tuned using high pressure nitrogen and is programmed remotely from the TTS2 controller.

OFGP DVAT Performance Plot



* Performance data provided for Model 65/81.
OFGP performance customizable to fit customer needs





OPTIONS



High Cycle Shock

Certain test requirements call for hundreds, if not thousands of consecutive shock impacts to be performed on test items during a given test session. Considering the requirements, event cycle time is of utmost importance in maintaining an efficient testing regimen. Lansmont now offers a High Cycle (HC) Series of test systems that address such requirements, including those specified by JEDEC for testing of electronic circuit boards.

Features

- Incorporates high fidelity table designs
- Innovative high-speed lifting and positioning system for decreased cycle time
- Tailored to perform pulses in accordance with JEDEC JESD22-B104C
- Can perform pulse durations from 0.3 to 2.0 msec
- Test up to six JEDEC test boards simultaneously
- Tailored to JEDEC testing with table sizes, and mounting-hole pattern
- Designed to run 24/7 non-stop for extended shock test evaluations



Shock Test Systems



FEATURES



Guide Rods

When moving the shock table structure up or down prior to a shock test or when the table falls during the shock pulse event, it travels on solid steel, chrome-plated Guide Rods. The Guide Rods are machined to tight tolerances to maintain precise alignment between the table and shock pulse programming during impact. The Guide Rods are also the surfaces that the shock table brake pistons act against following the shock event to avoid any secondary impacts.



Electric Hoist Lifting and Positioning System

Precise drop height accuracy is critical to performing repeatable shock pulses. Lansmont Shock Test Systems utilize electric hoists for lifting and positioning the shock table prior to shock test.



Seismic Base

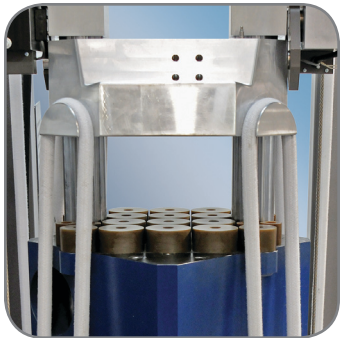
Shock Test Systems produce dynamic energy during operation. To attenuate these impact forces, the system is mounted to a large steel mass called a seismic base. For high performance or heavy payload shock testing applications, Lansmont offers Low Frequency and Floating Seismic Base options.



Shock Test Systems



OPTIONS



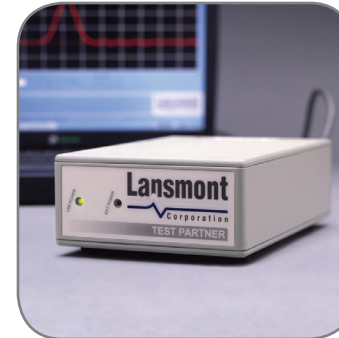
Acceleration Kit:

Acceleration Kits increase the velocity change capability of the shock system. The Kits include bungee cord assemblies, pulleys, pulley brackets, and in some cases, electric winches.



Low Impulse Kit:

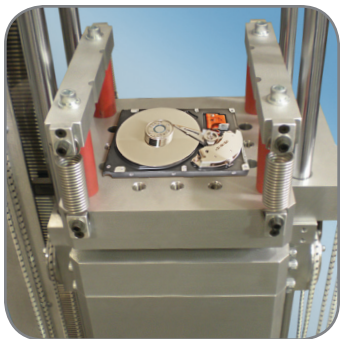
Low Impulse Kits (LIK) are used to reduce the minimum velocity change performance of a shock system to allow for low level shock pulse impacts. The amount of velocity change reduction is controlled by the operating air pressure.



Test Partner Mini

Test Partner™ 3 Data Acquisition System:

Test Partner™ 3 is a powerful combination of computer software and hardware specifically tailored to the capture and analysis of transient shock events. It can acquire up to sixteen channels of acceleration data simultaneously from shock, drop, or other kinds of impact events.



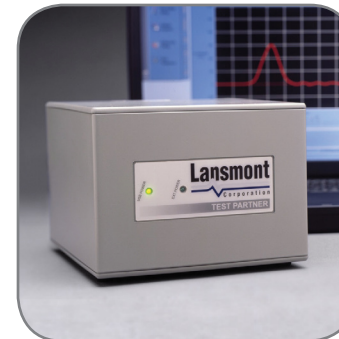
DMSA:

For lightweight test specimens, a Dual Mass Shock Amplifiers (DMSA) can be mounted to the shock table to produce shock pulses with high accelerations (30,000+ g) and very short durations (less than 1 msec).



Hold Down Fixtures:

Consists of lightweight, rectangular aluminum bars used to hold down test items to the shock table. Bars are slotted so they may be used with different size test items.



Test Partner USB 4x4



SHOCK TEST SYSTEM MATRIX - STANDARD

MODEL	TABLE SIZE	MAX ACCELERATION	MAX PAYLOAD
15D	6 in. (15.2 cm) cube	2000g	40 lbs. (18 kg)
23	9.06 in. (23 cm) square	5000g	80 lbs. (36 kg)
23D	9.06 in. x 6 in. (23 x 15 cm) [top surface] 9.06 in. (23 cm) square [front surface]	2000g	40 lbs. (18 kg)
65/81	25.6 in. x 32 in. (65 cm x 81 cm)	600g	500 lbs. (227 kg)
65/81D	25.6 in. x 32 in. (65 cm x 81 cm)	600g	500 lbs. (227 kg)
95/115	37.2 in. x 45.4 in. (95 cm x 115 cm)	600g	1000 lbs. (454 kg) [standard] 2500 lbs. (1134 kg) [heavy duty]
95/115D	37.2 in. x 45.4 in. (95 cm x 115 cm)	600g	1000 lbs. (454 kg)
122	48 in. (122 cm) square	600g	750 lbs. (340 kg) [standard] 2500 lbs. (1134 kg) [heavy duty]
152	60 in. (152 cm) square	400g	2000 lbs. (907 kg)



SHOCK TEST SYSTEM MATRIX - PERFORMANCE SERIES

MODEL	TABLE SIZE	MAX ACCELERATION	MAX PAYLOAD
P15	6 in. (15.2 cm) square	5000g	110 lbs. (50 kg)
P23	9.06 in. (23 cm) square	5000g	110 lbs. (50 kg)
P30	11.8 in. (30 cm) square	5000g	110 lbs. (50 kg)
P30M	12 in. (30.5 cm) square	1500g	150 lbs. (68 kg)
P60M	24 in. (60.9 cm) square	1500g	150 lbs. (68 kg)
P65/81L	25.6 in. x 31.9 in. (65 cm x 81 cm)	1000g	1500 lbs. (680 kg) [free fall] 500 lbs. (227 kg) [accelerated]
P95/115L	37.2 in. x 45.4 in. (95 cm x 115 cm)	1000g	2500 lbs. (1134 kg) [free fall] 1000 lbs. (454 kg) [accelerated]
P122L	48 in. (122 cm) square	1000g	2500 lbs. (1134 kg) [free fall] 1000 lbs. (454 kg) [accelerated]
P152L	60 in. (152 cm) square	1000g	2500 lbs. (1134 kg) [free fall] 1000 lbs. (454 kg) [accelerated]



SHOCK TEST SYSTEM MATRIX - HIGH SPEED SERIES

MODEL	TABLE SIZE	MAX ACCELERATION	MAX PAYLOAD
HS15	6 in. (15.2 cm) square	5000g	250 lbs. (113 kg)
HSX15	6 in. (15.2 cm) square	10,000g	250 lbs. (113 kg)
HSXX20	7.9 in. (20 cm) Square	10,000 g	250 lbs. (113 kg)
HS23	9.06 in. (23 cm) square	5000g	250 lbs. (113 kg)
HSX23	9.06 in. (23 cm) square	10,000	250 lbs. (113 kg)
HS30	11.8 in. (30 cm) square	5000g	250 lbs. (113 kg)
HSX30	11.8 in. (30 cm) square	10,000g	250 lbs. (113 kg)
HSX30M	11.8 in. (30 cm) square	7500g	500 lbs. (227 kg)
HSX60M	23.6 in. (60 cm) square	1500g	2000 lbs. (907 kg)



SHOCK TEST SYSTEM MATRIX - HIGH CYCLE SERIES

MODEL	TABLE SIZE	MAX ACCELERATION	MAX PAYLOAD
HC18	7.09 in. (18 cm) cube available mounting on 3 sides of cube	2900g	25 lbs. (11.3 kg)
HC23	9.06 in. (23 cm) cube available mounting on 3 sides of cube	2900g	25 lbs. (11.3 kg)

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.

