



Performance Shock Test Systems



Lansmont Performance Shock Test Systems are intended for testing applications that require testing capabilities above that which we can achieve with our standard shock systems. To provide the increased testing capability, Performance Shock Systems feature optional acceleration systems, suspended seismic reaction masses, and heavier load frames. When test specifications ask for more performance, the Performance Series shock machines provide the answer.

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. To make shock testing as simple and easy as possible, each Performance Shock System is outfitted standard with TouchTest™ Shock II Controls which communicate seamlessly with Test Partner Data Acquisition Systems.

Model P30



Model P65/81





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:

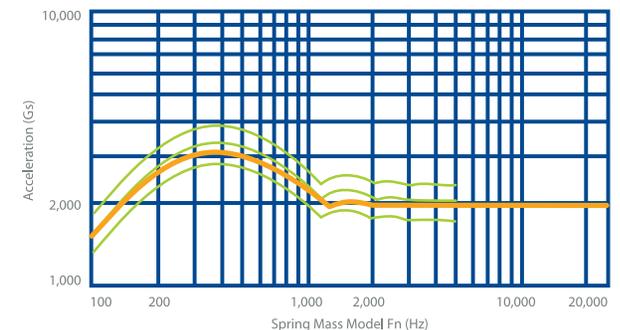
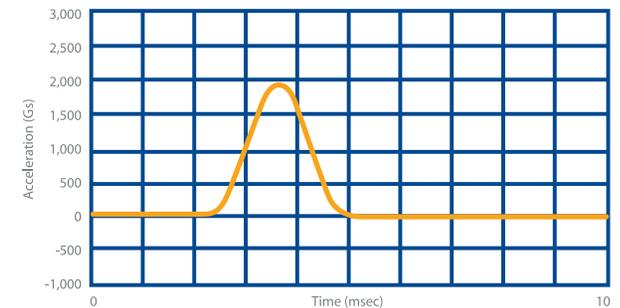
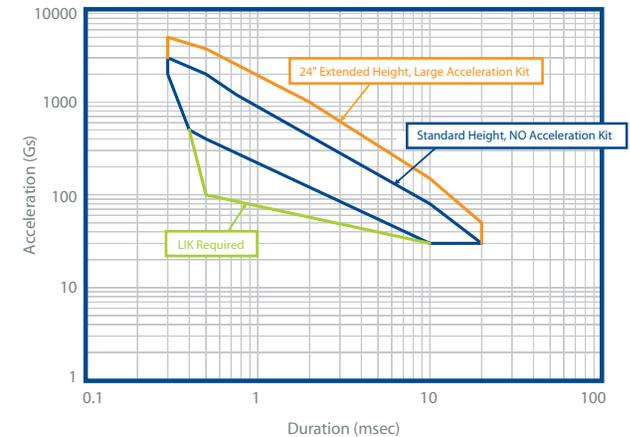
- The size of your largest test item
- The performance capability needed to meet your testing needs

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



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

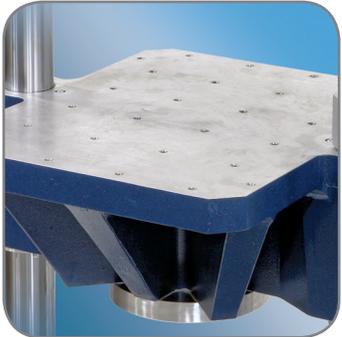


Table Structure

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.

Performance shock system tables vary in size from 9 in. (23 cm) square up to 48 in. (122 cm).



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.



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.



P23 Shock Tester



PERFORMANCE SPECIFICATIONS

TABLE SIZE

Side to Side	9.06 in. (23 cm)
Front to Back	9.06 in. (23 cm)

TEST CAPABILITIES

Max. Acceleration	5,000g (10,000g optional)
Min. Pulse Duration	0.25 msec (half sine)
Max. Velocity Change	22 – 55 ft./sec (6.7 – 16.8 m/sec)
Pulse Waveforms	Half Sine Trapezoidal* Terminal Peak Sawtooth*

**with Optional Programmers*

MAXIMUM PAYLOAD	110 lbs. (50 kg)
------------------------	------------------

MACHINE SPECIFICATIONS

DIMENSIONS

Height	98 – 146 in. (249 – 371 cm)
Side to Side	18.1 in. (46 cm)
Front to Back	21.3 in. (54 cm)

POWER REQUIREMENTS

Machine	200 – 240 VAC/3Φ/50 – 60 Hz: 4 amp min. 380 – 480 VAC/3Φ/50 – 60 Hz: 2 amp min.
Controller	100 – 120 VAC/1Φ/50 – 60 Hz: 1 amp min. 200 – 240 VAC/1Φ/50 – 60 Hz: 1 amp min.

PNEUMATIC REQUIREMENTS

Plant Air	90 psi (6.2 bar)
------------------	------------------



P30 Shock Tester



PERFORMANCE SPECIFICATIONS

TABLE SIZE

Side to Side	11.8 in. (30 cm)
Front to Back	11.8 in. (30 cm)

TEST CAPABILITIES

Max. Acceleration	5,000g (10,000g optional)
Min. Pulse Duration	0.25 msec (half sine)
Max. Velocity Change	22 – 55 ft./sec (6.7 – 16.8 m/sec)
Pulse Waveforms	Half Sine Trapezoidal* Terminal Peak Sawtooth*

**with Optional Programmers*

MAXIMUM PAYLOAD	110 lbs. (50 kg)
------------------------	------------------

MACHINE SPECIFICATIONS

DIMENSIONS

Height	98 – 146 in. (249 – 371 cm)
Side to Side	21 in. (53 cm)
Front to Back	24 in. (61 cm)

POWER REQUIREMENTS

Machine	200 – 240 VAC/3Φ/50 – 60 Hz: 4 amp min. 380 – 480 VAC/3Φ/50 – 60 Hz: 2 amp min.
Controller	100 – 120 VAC/1Φ/50 – 60 Hz: 1 amp min. 200 – 240 VAC/1Φ/50 – 60 Hz: 1 amp min.

PNEUMATIC REQUIREMENTS

Plant Air	90 psi (6.2 bar)
------------------	------------------



P40 Shock Tester



PERFORMANCE SPECIFICATIONS

TABLE SIZE

Side to Side	15.7 in. (40 cm)
Front to Back	15.7 in. (40 cm)

TEST CAPABILITIES

Max. Acceleration	5,000g (10,000g optional)
Min. Pulse Duration	0.5 msec (half sine)
Max. Velocity Change	22 – 55 ft./sec (6.7 – 16.8 m/sec)
Pulse Waveforms	Half Sine Trapezoidal* Terminal Peak Sawtooth*

**with Optional Programmers*

MAXIMUM PAYLOAD	165 lbs. (75 kg)
------------------------	------------------

MACHINE SPECIFICATIONS

DIMENSIONS

Height	98 – 158 in. (249 – 401 cm)
Side to Side	28 in. (71 cm)
Front to Back	28.5 in. (72.4 cm)

POWER REQUIREMENTS

Machine	200 – 240 VAC/3Φ/50 – 60 Hz: 4 amp min.
	380 – 480 VAC/3Φ/50 – 60 Hz: 2 amp min.
Controller	100 – 120 VAC/1Φ/50 – 60 Hz: 1 amp min.
	200 – 240 VAC/1Φ/50 – 60 Hz: 1 amp min.

PNEUMATIC REQUIREMENTS

Plant Air	90 psi (6.2 bar)
------------------	------------------



P55 Shock Tester



PERFORMANCE SPECIFICATIONS

TABLE SIZE

Side to Side	21.7 in. (55 cm)
Front to Back	21.7 in. (55 cm)

TEST CAPABILITIES

Max. Acceleration	1,000g (5,000g optional)
Min. Pulse Duration	0.5 msec (half sine)
Max. Velocity Change	22 – 59 ft./sec (6.7 – 18 m/sec)
Pulse Waveforms	Half Sine Trapezoidal* Terminal Peak Sawtooth*

**with Optional Programmers*

MAXIMUM PAYLOAD	300 lbs. (136 kg)
------------------------	-------------------

MACHINE SPECIFICATIONS

DIMENSIONS

Height	112 – 208 in. (295 – 532 cm)
Side to Side	41 in. (104 cm)
Front to Back	48 in. (122 cm)

POWER REQUIREMENTS

Machine	200 – 240 VAC/3Φ/50 – 60 Hz: 4 amp min. 380 – 480 VAC/3Φ/50 – 60 Hz: 2 amp min.
Controller	100 – 120 VAC/1Φ/50 – 60 Hz: 1 amp min. 200 – 240 VAC/1Φ/50 – 60 Hz: 1 amp min.

PNEUMATIC REQUIREMENTS

Plant Air	120 psi (8.3 bar)
------------------	-------------------



P65/81 Shock Tester



PERFORMANCE SPECIFICATIONS

TABLE SIZE

Side to Side	25.6 in. (65 cm)
Front to Back	31.9 in. (81 cm)

TEST CAPABILITIES

Max. Acceleration	1,000g
Min. Pulse Duration	2 msec (half sine)
Max. Velocity Change	
<i>Free Fall</i>	20 – 25 ft./sec (6.1 – 7.6 m/sec)
<i>Accelerated</i>	25 – 50 ft./sec (7.6 – 15.2 m/sec)
Pulse Waveforms	Half Sine
<i>*with Optional Programmers</i>	Trapezoidal*
	Terminal Peak Sawtooth*

MAXIMUM PAYLOAD

<i>Free Fall</i>	1,500 lbs. (680 kg)
<i>Accelerated</i>	500 lbs. (227 kg)

MACHINE SPECIFICATIONS

DIMENSIONS

Height	128 – 208 in. (325 – 532 cm)
Side to Side	64 in. (163 cm)
Front to Back	56 in. (142 cm)

POWER REQUIREMENTS

Machine	200 – 240 VAC/3Φ/50 – 60 Hz: 5 amp min. 380 – 480 VAC/3Φ/50 – 60 Hz: 3 amp min.
Controller	100 – 120 VAC/1Φ/50 – 60 Hz: 3 amp min. 200 – 240 VAC/1Φ/50 – 60 Hz: 3 amp min.

PNEUMATIC REQUIREMENTS

Nitrogen	2,200 psi (150 bar)
-----------------	---------------------



P95/115 Shock Tester



PERFORMANCE SPECIFICATIONS

TABLE SIZE

Side to Side	37.4 in. (95 cm)
Front to Back	45.3 in. (115 cm)

TEST CAPABILITIES

Max. Acceleration	1,000g
Min. Pulse Duration	2 msec (half sine)
Max. Velocity Change	
<i>Free Fall</i>	20 – 25 ft./sec (6.1 – 7.6 m/sec)
<i>Accelerated</i>	25 – 50 ft./sec (7.6 – 15.2 m/sec)
Pulse Waveforms	Half Sine
with Optional Programmers	Trapezoidal
	Terminal Peak Sawtooth*

MAXIMUM PAYLOAD

<i>Free Fall</i>	2,500 lbs. (1,134 kg)
<i>Accelerated</i>	1,000 lbs. (454 kg)

MACHINE SPECIFICATIONS

DIMENSIONS

Height	128 – 208 in. (325 – 532 cm)
Side to Side	79 in. (201 cm)
Front to Back	56 in. (142 cm)

POWER REQUIREMENTS

Machine	200 – 240 VAC/3Φ/50 – 60 Hz: 8 amp min. 380 – 480 VAC/3Φ/50 – 60 Hz: 4 amp min.
Controller	100 – 120 VAC/1Φ/50 – 60 Hz: 3 amp min. 200 – 240 VAC/1Φ/50 – 60 Hz: 3 amp min.

PNEUMATIC REQUIREMENTS

Nitrogen	2,200 psi (150 bar)
-----------------	---------------------



P122 Shock Tester



PERFORMANCE SPECIFICATIONS

TABLE SIZE

Side to Side	48 in. (122 cm)
Front to Back	48 in. (122 cm)

TEST CAPABILITIES

Max. Acceleration	1,000g
Min. Pulse Duration	2 msec (half sine)
Max. Velocity Change	
<i>Free Fall</i>	20 – 25 ft./sec (6.1 – 7.6 m/sec)
<i>Accelerated</i>	25 – 50 ft./sec (7.6 – 15.2 m/sec)
Pulse Waveforms	Half Sine
<i>*with Optional Programmers</i>	Trapezoidal*
	Terminal Peak Sawtooth*

MAXIMUM PAYLOAD

<i>Free Fall</i>	2,500 lbs. (1,134 kg)
<i>Accelerated</i>	1,000 lbs. (454 kg)

MACHINE SPECIFICATIONS

DIMENSIONS

Height	128 – 182 in. (325 – 462 cm)
Side to Side	89 in. (226 cm)
Front to Back	56 in. (142 cm)

POWER REQUIREMENTS

Machine	200 – 240 VAC/3Φ/50 – 60 Hz: 8 amp min. 380 – 480 VAC/3Φ/50 – 60 Hz: 4 amp min.
Controller	100 – 120 VAC/1Φ/50 – 60 Hz: 3 amp min. 200 – 240 VAC/1Φ/50 – 60 Hz: 3 amp min.

PNEUMATIC REQUIREMENTS

Nitrogen	2,200 psi (150 bar)
-----------------	---------------------