

SHOCK TEST SYSTEMS

SD Series for Product Reliability & Fragility Assessments

Products must survive the mechanical shock exposure they will be subjected to during shipment and ultimately in their operating environment.

L.A.B.'s SD SERIES SHOCK TEST SYSTEMS

Perform accurate and repeatable shock tests; used in the design of rugged products and cost effective protective shipping packages.

L.A.B. SHOCK TEST SYSTEMS

Produce half-sine, sawtooth, and square wave pulses meeting military (MIL-SPEC) and industrial (ASTM, ISO, JEDEC) specifications, as well as other specified test requirements.

STANDARD FEATURES:

- **High Performance Carriage** – every SD Series Shock Test System carriage is a massive, solid aluminum casting machined to precision flatness. This ensures that the carriage has no resonant frequencies within the machine's operating range. Consequently, the resulting shock pulses are clean and do not require over-filtering.
- **Specimens are firmly anchored** – to the mounting surface, which is equipped with numerous tapped holes machined to close tolerances. Each hole is strengthened with stainless steel inserts.
- **Fail-safe rebound brakes** on every system incorporate a fail-safe design requiring no auxiliary air or electrical services. The brake arrests the carriage after rebound, prevents secondary impacts, and maintains it in a fail-safe position during the hoisting cycle.
- **Full safety guards are standard equipment** on all SD Series machines with power hoists. These expanded sheet metal safety enclosures surround the hoist mechanism and the carriage falling zone. Opening the electrically interlocked enclosure door will interrupt hoist operation.
- **No special foundation is needed.** A solid steel reaction mass is isolated from the floor by heavy-duty springs and shock absorbers. This unique feature prevents transmission of shock waves created by the carriage impact, and is standard on all models.
- All SD Series are manufactured in the USA using the finest materials available.

OPTIONS:

- **Extended Drop Heights** as required by customer
- **Automatic Cycle Counter** allows multiple tests without operator intervention.
- **Half Sine Shock Programmers** are calibrated to produce standard shock pulses.
- **Trapezoidal (square wave) Pulse Cylinder** pneumatically produces pulses and includes pressure regulation. A 13.8 Mpa (2000 psi) N supply is required.
- **Elastomer Half Sine Kit** includes 9 elastomer modules, two mounting plates, and fasteners. This allows a wide variety of manually programmed half sine or Haversine pulses.
- **Carriage Expanders** increases the load mounting surfaces.
- **Sawtooth Pulses** lead molds and furnace for generating sawtooth pulses.
- **Dual Mass Shock Amplifier** produces short duration, high acceleration shock pulses on small items.
- **Low Impulse Kit** produces shock pulses with a velocity change of 1.5 m/s (5 ft/sec) or less with a pneumatic cylinder that decelerates the shock table prior to impact.
- **Premium Data Analysis and Acquisition Systems** are available from L.A.B. to capture and analyze data from multiple tests.



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SD Series Shock Test System Specifications

	<u>SD-10</u>	<u>SD-16</u>	<u>SD-24</u>
Size	10"x10" (254x254 mm)	16"x16" (406x406 mm)	24"x24" (610x610 mm)
Test Load Rating	30 lbs (14 kg)	200 lbs (91 kg)	400 lbs (181 kg)
Carriage Weight	45 lbs (20 kg)	170 lbs (77 kg)	540 lbs (245 kg)
Standard Specimen Mounting Hole Pattern	M6x1-50 mm	M8x1.25-75 mm	M10x1.25-100 mm
Optional Carriage Size	N.A.	16"x20" (406x508 mm)	24"x30" (610x762 mm)
Optional Carriage Test Load Rating	N.A.	130 lbs (59 kg)	250 lbs (113 kg)
Optional Carriage Weight	N.A.	240 lbs (109 kg)	720 lbs (327 kg)
Standard Carriage Fall	42" (1067 mm)	60" (1524 mm)	60" (1524 mm)
Optional Carriage Fall	Consult Factory		
Maximum Acceleration	2900 G	1500 G	1000 G
Minimum Pulse Duration*	0.3 ms	0.5 ms	1 ms
Isolated Base Weight	500 lbs (228 kg)	2100 lbs (952 kg)	3300 lbs (1497 kg)
Floor Space Required	12"x25" (305x635 mm)	27"x33" (686x838 mm)	48"x48" (1219x1219 mm)
Machine Overall Height	Selected carriage fall plus 52" (1321 mm)	Selected carriage fall plus 61" (1549 mm)	Selected carriage fall plus 72" (1829 mm)
Shipping Weight (est.)	700 lbs (318 kg)	3500 lbs (1588 kg)	5500 lbs (2495 kg)
Standard Power Inputs	120V/1PH/60Hz	120V/1PH/60Hz	230V/3PH/60Hz

* Consult factory for specific performance requirements.

L.A.B. Equipment, Inc.

Innovative Technology that Works!

Headquarters/Sales

1091 E. Green Street, Franklin Park, Illinois 60130, USA
P: 630.595.4288 ▪ F: 630.595.5196

Service/Manufacturing/Engineering

1326 New Seneca Turnpike, Skaneateles, New York 13152, USA
P: 315.685.5781 ▪ F: 315.685.8106

E-mail: sales@labequipment.com Web: www.labequipment.com