



FEATURES

- **THREE INCH (76mm) Displacement**
- **Sine Force Range: 4,400 lbf**
- **Random Force: 4,400 lbf**
- **Shock Force: 8,800 lbf**
- **Lightweight, optimized armature**
- **Rotating Trunnion with Pneumatic Isolation**
- **Integral Payload Support**
- **Automatic Armature Centering**
- **Efficient Double Field Coil Design**
- **Low Magnetic Flux Leakage**
- **Uniform Magnetic Field**
- **Remote cooling blower with silencer**
- **100% Air-cooled Switching Amplifiers**

Typical System Application

This new 3" displacement shaker system was designed to meet today's demanding high displacement random and shock test requirements with small to medium sized specimens. Often eliminating the need for messy hydraulic shakers and stand-alone shock test equipment, the long stroke series increases the spectrum of your lab's testing capability without requiring additional real estate and capital expense.

Easy to install and widely used for commercial and military applications in the fields of aerospace, aviation, defense, watercraft, telecom, automotive, electronics, and home appliances, the DS4400LS is 100% air-cooled.

Additional standard features include: integral payload support, rotating trunnion base with pneumatic isolation, 1:1 Sine to Random output force ratio and high fundamental armature resonance. Built and tested in full compliance with ISO-5344, the DS4400LS Shaker system consists of an electro-dynamic exciter (the "shaker"), a state-of-the-art air-cooled switching power amplifier with field power supply and a remote cooling blower. Optional items including slip tables, head expanders, accelerometers and vibration controllers can be added upon request.

◉ **High FRF & Wide UF**

Our new shaker design significantly raises the FRF (Fundamental Resonance Frequency) and UF (Useable Frequency) of our long stroke systems and outperforms similar products from other manufacturers.

◉ **Reliable Armature**

The DS4400LS uses a unique, state-of-the-art, reinforced armature "ring" design, providing increased reliability and unsurpassed performance. This proprietary armature ring has been designed to optimize its rigidity and force transmissibility. Designed for continuous duty and ideal for research & development, production, stress screening and qualification testing, these ruggedized armatures can endure severe vibration and shock forces and extreme temperature conditions.

◉ **Efficient Air Cooling**

The DS4400LS shaker system is engineered for optimal cooling capacity. The efficient airflow design contributes to the system's outstanding overall reliability. This new and improved airflow cooling design uses more efficient long air tunnels instead of circular inlet paths and a new state-of-the-art honeycomb design for maximum field coil cooling capability.

◉ **Cooling Blower with Silencer**

Remote cooling blowers equipped with noise-reducing silencers are appropriately sized to provide optimum cooling efficiency and are included with all long stroke systems.

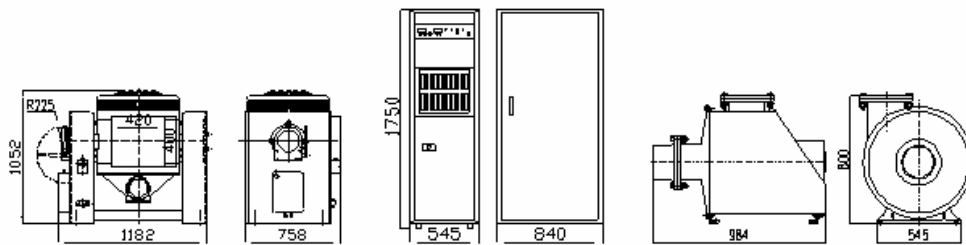
◉ **Air-Isolated Rotating Trunnion**

All Dynamic Solutions shakers come standard in a rotating trunnion designed with a labor-saving worm wheel for easy 90° rotation between the horizontal and vertical test axes. The rotating trunnions are pneumatically isolated providing high stability and allowing for direct mounting on conventional industrial concrete floors. All shakers are optionally available with an integrated or stand-alone slip table assembly.

◉ **D-Class Switching Amplifier**

Our state-of-art modular switching amplifiers are 100% air-cooled with redundant safety systems and system interlocks insuring performance that is reliable and stable. All amplifiers adopt IGBT power modules of high quality.

NOTE: In keeping with our commitment to continuous product improvement, the information herein is subject to change.



DS4400LS-13/20 Shaker System TECHNICAL SPECIFICATIONS

Shaker Specifications		DS4400LS	
Sine Force (Pk)	2,000 kgf (4,400 lbf)	Vertical Load Support	300 kg (660 lbs)
Random Force (RMS)	2,000 kgf (4,400 lbf)	Table Diameter	340 mm (13.4")
Shock Force (Pk)	4,000 kgf (8,800 lbf)	Load Attachment Points (Standard)	21 stainless steel M10 Inserts (UNC option)
Usable Frequency	5 to 3,000 Hz	Degauss Coil	Standard
Maximum Displacement (p-p)	76 mm (3")	Stray Flux Density @6 inch (152 mm) above table	< 1 mT (10 gauss)
Maximum Velocity	200 cm/s (78.7 in/s)	Overall Dimensions	1182mmL×758mmD ×1052mmH (46.5"L×29.8"D×41.4"H)
Maximum Acceleration	80 g		
Fundamental Resonance Frequency (Bare table)	2,550 Hz (nom.) +/- 5%	Weight of Shaker (Uncrated)	1,695 kg (3,729 lbs)
Body Suspension Natural Frequency (Thrust Axis)	2.5 Hz	Compressed Air Requirement	0.6 Mpa (87 psi)
Armature Effective Nominal Weight	25 kg (55 lbs)		

Power Amplifier Specifications		SA-20	
Rated Output Capacity	20 kVA		
Signal to Noise Ratio	Greater than 65 dB		
Amplifier Efficiency	Greater than 90%		
Interlock Protection (to prevent the output devices from working outside their specified limits)	<ul style="list-style-type: none"> •Over-Current •Logic Fault •Input Phase Loss •Over-Voltage •Control power •Input Under-Voltage •Over-Travel •External Fault •Door Interlock •Over-Temp (Field Coil and Driving Coil) 		

Blower Specifications		B-2000LN	
Blower Power (Full Load)	7.5 kW (10HP)		
Air Flow Rate	Air Flow: 0.71 m ³ /s (1,508 CFM) Air Pressure: 3.5 kpa (0.51 PSI)		

System Environmental Requirement	
Operating Room Temperature	0 to 40 degree C
Humidity	0 to 80%, non condensing
System Continuous Duty	not less than 7 hours at the full ratings
Power Supply Requirement	380/415/480 VAC, 50/60 Hz, 3Ph, 115 kVA

SYSTEM OPTIONS	
<ul style="list-style-type: none"> •Slip Table Configuration •V-Groove Caster and Rail System •Remote Control •Head Expander 	<ul style="list-style-type: none"> •Thermal Barrier •Load Support Air Compensator •Air Caster