



FEATURES

- Air Cooled
- 220 lbs (100 kgf) Sine Force
- 220 lbs (100 kgf) Random Force
- 1 inch (25 mm) Peak to Peak displacement
- Large diameter, lightweight armature
- Double Field Coils (Upper and Lower) design
- Ultra-Compact energy efficient amplifier
- Available combined with slip table
- Sine, Random and Transient Testing
- Standard cooling blower silencer
- Standard Vertical and Horizontal Operation

Typical System Application

The **Model SD-220-5** Series Vibration test system is a versatile wide frequency range electrodynamic vibration test system. It is designed to test payloads weighing less than 100 lbs such as electronic assemblies and components for larger devices as may be found in automotive, aviation, military, medical, and electronic manufacturing industries and Civil Engineering applications. The system consists of a model SD-220-5 shaker and is driven by the Model DA-1 power amplifier and a 0.75 KW cooling blower.

The model is capable of a **Random RMS force of 100 kgf and Sine Vector force rating of 100 kgf** in the frequency of DC to 4,500 Hz under controlled conditions. Standard vibration systems consist of an electro-dynamic exciter (the “shaker”), a state-of-the-art air-cooled switching power amplifier with field power supply and a water cooling unit. Optional items including slip tables, head expanders, accelerometers and vibration controller can be added upon request.

How to select the suitable model

It is critical to consider the size and position of the test article and the total moving mass of the payload as well as the payload’s inertial and overturning moments when selecting a system for your application. It is recommended the force selected should be 1.2 times the theoretical value, to insure appropriate safety margins. For assistance selecting the best system for your needs, please contact our sales representative.

◎ 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 unique reinforced armature structure design is state-of-the-art, providing increased reliability and unsurpassed performance. Our proprietary armature structure has been re-designed to optimize its rigidity and force transmissibility. Designed for continuous duty and ideal for research & development, production, stress screening and qualification testing, our ruggedized armatures can endure severe vibration and shock forces and extreme temperature conditions.

◎ Efficient Air Cooling

The shaker and power amplifier are totally air cooled for easy installation and economical operation.

◎ Cooling Blower Unit

The suitable Cooling blower is ACU751 as specified below.

◎ Air-Isolated Rotating Trunnion

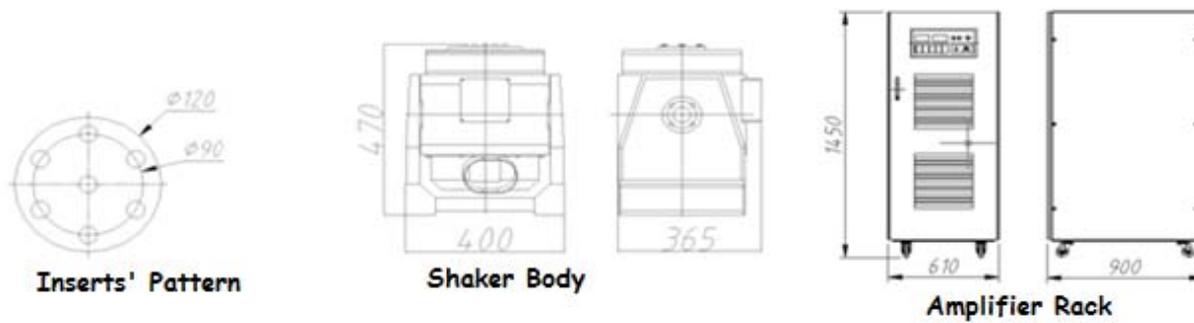
All shakers come standard in a rotating trunnion for easy 90° rotation between the horizontal and vertical test axes. A labor-saving worm wheel is designed for this rotation, which make it friendly for both men and women. Trunnion are pneumatically isolated (except low force series) providing high stability and allowing for direct mounting onto 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.

◎ Safety

Products comply with European tests standards and ISO regulations.



SD-220-5/DA-1

TECHNICAL SPECIFICATIONS

Shaker Specifications		SD-220-5	
Sine (Pk)	220 lbf (100 kgf)	<i>Body Suspension Natural Frequency (Thrust Axis)</i>	3 Hz
Random (RMS)	220 lbf (100 kgf)	<i>Table Diameter</i>	5 Inches (120 mm)
Shock (Pk)	440 lbf (200 kgf)	<i>Armature Effective Nominal Weight</i>	5.5 lbs (2.5 kg)
Usable Frequency	DC to 4,500 Hz	<i>Load Attachment Points (Standard)</i>	13 stainless steel M8 Inserts (UNC option)
Maximum Displacement (p-p)	1 Inch (25mm) p.p	<i>Overall Dimensions</i>	27.3" L × 20.5" D × 24.0" H (694mm L × 520mm D × 610mm)
Maximum Velocity	47.2 in/s (120 cm/s)	<i>Weight of Shaker (Uncrated)</i>	1,210 lbs (550 kg)
Maximum Acceleration	40 g	<i>Compressed Air Requirement</i>	87 psi (0.6 Mpa)
Fundamental Resonance Frequency (Bare table)	3,400 Hz (nom.) +/- 5%		
Vertical Load Support	154 lbs (70 kg)		

Power Amplifier Specifications		DA-1
Rated Output Capacity	1 kVA	
Signal to Noise Ratio	Greater than 65 dB	
Amplifier Efficiency	Greater than 90%	
<i>Interlock Protection (to prevent the output devices from working outside their specified limits)</i>	<ul style="list-style-type: none"> ● Over-Current ● Logic Fault ● Input Phase Loss ● Over-Voltage ● System Fault ● Input Under-Voltage ● Over-Travel ● External Fault ● Door Interlock ● Over-Temp (Field Coil and Driving Coil) 	

Blower Specifications		ACU 751
Blower Power (Full Load)	1 HP (0.75 kW)	
<i>Air Flow Rate</i>	Air Flow: 319 CFM (0.15 m ³ /s) Air Pressure: 0.15PSI (0.001 Mpa)	

System Environmental Requirement	
Operating Room Temperature	32F to 104F (0 to 40 degree C)
Humidity	0 to 80%, non condensing
System Continuous Duty	not less than 7 hours at the full ratings
<i>Power Supply Requirement</i>	380/415/480 VAC, 50/60 Hz, 3Ph, 4 kW



SYSTEM OPTIONS

- Slip Table Configuration
- V-Groove Caster and Rail System
- Table Inserts

- Head Expander
- Thermal Barrier
- Air Caster

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