Typical System Application

The **Model SD-1518-7** Series Vibration test system is a versatile wide frequency band electrodynamics vibration test system. It is designed to test from small to medium sized payload such as electronic assemblies and design features meet the testing requirements of the automotive, aviation, military, medical and electronic manufacturing industries, too.

The model is capable of a **Random RMS force of 600 kgf and Sine Vector force rating of 690 kgf** in the frequency of DC to 4,500 Hz under controlled conditions. The system consists of a model SD-1518-7 shaker and is driven by the Model DA-6 power amplifier and a 4 KW cooling blower.

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

SD-1518-7 shaker and DA-6 power amplifier is totally air cooled for easy installation and economical operation.

◎ Cooling Blower Unit

The suitable Cooling blower is ACU402 as below specification.

◎ 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

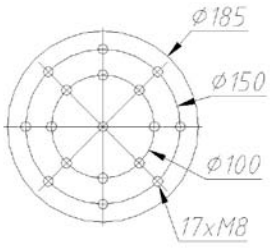
are pneumatically isolated (except low force series) providing high stability and allowing for direct mounting onto conventional industrial concrete floors. All shakers are optionally available with an integrated or stand-alone slip table assembly.

◎ D-Class Switching Amplifier

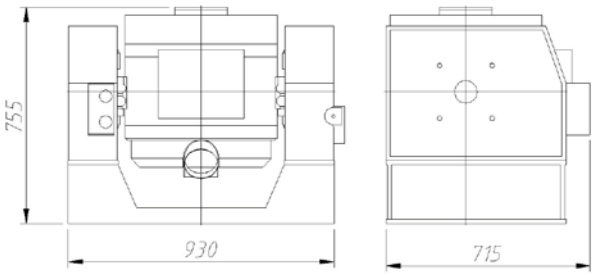
Our state-of-art modular switching amplifiers are 100% air-cooled with redundant safety systems and system interlocks insuring performance that is reliable and stable. All amplifiers adopt IGBT power modules of high quality.

◎ Safety

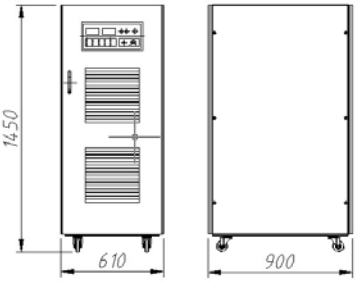
Products comply with European tests standards and ISO regulations.



Armature insert pattern



Shaker body



Amplifier

SD-1518-7/DA-6/ACU402
TECHNICAL SPECIFICATIONS

Shaker specifications			
Sine (Pk)	690kgf (1,518lbf)	***Table Diameter***	185 mm (7'')
Random (RMS)	600kgf (1,320lbf)	***Load Attachment Points (Standard)***	Stainless Steel Inserts of M8 or 5/16 UNC (option). Bolts circle is 1@0; 8@100mm; 8@150mm:.
Shock (Pk)	1,350kgf (2,970lbf)		
Usable Frequency	DC to 4,500 Hz	***Degauss Coil***	Standard
Maximum Displacement (p-p)	51mm (2'')	***Stray Flux Density @6 inch (152 mm) above table***	< 1 mT (10 gauss)
Maximum Velocity	2 m/s (78.7 in/s)	***Overall Dimensions***	790mmL×530mmD ×680mmH (31.1''L×20.9''D×26.8''H)
Maximum Acceleration	115 g		
Fundamental Resonance Frequency (Bare table)	3,500 Hz (nom.) +/- 5%	***Vertical Load Support***	300 kg (660 lbs)
Body Suspension Natural Frequency (Thrust Axis)	2.5 Hz	***Weight of Shaker (Uncrated)***	860 kg (1,900 lbs)
Armature Effective Nominal Weight	6.0 kg (13.2 lbs)	***Compressed Air Requirement***	0.6 Mpa (87 psi)

Power Amplifier Specifications	*DA-6*
Rated Output Capacity	6KVA
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)	*•Input Over/Under Voltage •Logic Fault •Output Over Voltage/Current •Control Power •External •Shaker Oil Pressure •Module O/T •Door Interlock •Shaker Temp*

Air Cooling Blower	***ACU402***
Blower Power (Full Load)	4 kW (5 HP)
Air Flow Rate	Air Flow: 0.33 m/s (700CFM) Air Pressure: 0.0035 Mpa (0.51psi)

System Environmental Requirement	
Operating Room Temperature	0 to 40 degree C
Humidity	0 to 85%, 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, 16 kW

SYSTEM OPTIONS	
●Slip Table Configuration ***●V-Groove Caster and Rail System*** ***●Remote Control*** ***●Head Expander***	***●Thermal Barrier*** ***●Load Support Air Compensator*** ***●Air Caster***

All the features make the SD-1518-7/DA-6/ACU402 a reliable and affordable system for your applications.

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