

SD-220-120M/SPA102B/ACU751



SYSTEM OPTIONS

- ◆ Slip Table Configuration
- ◆ V-Groove Caster and Rail System
- ◆ Head Expander
- ◆ Thermal Barrier
- ◆ Assistant Load Support Under Head Expander
- ◆ Air Caster

Typical System Application

The **Model SD-220-120M** Vibration test system is a versatile wide bandwidth electrodynamic vibration test system. It is designed for testing small to medium sized payloads of the automotive, aviation, military, medical and electronic manufacturing industries.

It is capable of a Random RMS force of 220 lbf and Sine Vector force of 220 lbf operating in the frequency range 5 Hz to 6,000 Hz under controlled conditions. The system consists of a model SD-220-120M shaker and is driven by the Model SPA102B power amplifier and a 0.75 KW cooling blower.

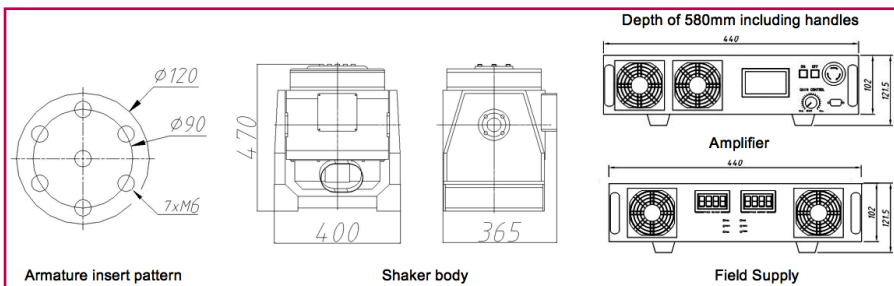
Optional items including slip tables, head expanders, accelerometers and vibration controller can be added upon request.

State of the Art Magnesium Armature

The unique reinforced magnesium armature structure design is state-of-the-art, providing increased reliability, unsurpassed performance, optimized rigidity and force transmissibility. Designed for continuous duty and ideal for research and development, production, stress screening and qualification testing, the ruggedized armatures can endure severe vibration and shock forces as well as extreme temperature conditions.

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

The new shaker design significantly raises the Fundamental Resonance Frequency and Useable Frequency range of the long stroke systems and outperforms similar products from other manufacturers.

Efficient Air Cooling

The SD-220-120M shaker system is totally air cooled for easy installation and economical operation.

Cooling Blower Unit

The suitable ACU751 cooling blower is specified below.

Rigid and Rotating Trunnion

All shakers come standard in a rotating trunnion for easy 90° rotation between the horizontal and vertical test axes. The trunnion is rigidly connected to the trunnion frame. Rubber isolation pads are supplied

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

The 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 discrete IGBT power modules of high quality with a 120 KHz switching frequency. There are two boxes - amplifier and field supply.

Safety

Products comply with European tests standards and ISO regulations.

TECHNICAL SPECIFICATIONS

Shaker SD-220-120M			
Sine (Pk)	220 lbf (100 kgf)	Vertical Load Support	100 kg (220 lbs)
Random (RMS)	220 lbf (100 kgf)	Body Suspension Natural Frequency (Thrust Axis)	Rigid trunnion
Shock (Pk)	440 lbf (200 kgf)	Table Diameter	120 mm (4.7")
Usable Frequency	5 to 6,000 Hz	Armature Effective Nominal Weight	1.5 kg (3.3 lbs)
Max. Displacement (p-p)	25 mm (1")	Load Attachment Points (Standard)	Stainless steel M6 Inserts or optional UNC.
Maximum Velocity	1.6 m/s (63 in/s)	Overall Dimensions	400mmL x 360mmD x 470mmH (15.7"L x 14.2"D x 18.5"H)
Maximum Acceleration	65 g	Weight of Shaker (Uncrated)	175 kg (385 lbs)
Fundamental Resonance Frequency (Bare Table)	4,700 Hz (nom.) +/- 5%	Air Requirement	Manual Pumped
Degauss Coil	Standard	Stray Field@6 inch (152 mm) above table	< 1 mT (10 gauss)

System Environmental Requirement		Air Cooling Blower ACU751		Switching Power Amplifier SPA102B	
Operating Room Temperature	0 to 40 degree C	Blower Power (Full Load)	1 HP (0.75 kW)	Rated Output Capacity	1 kVA
Humidity	0 to 90%, non condensing	Air Flow Rate	0.1 m ³ /s (215 CFM)	Signal to Noise Ratio	Greater than 65 dB
Amplifier	1 kVA	Air Pressure	0.001 Mpa (0.15 PSI)	Switching Frequency	120 kHz
Field Supply	1 kVA			Amplifier Efficiency	Greater than 90%
Blower	1 kVA			Interlock Protection	<ul style="list-style-type: none"> • Shaker Over Travel • Shaker Over Temp • Shaker Air pressure • Shaker Oil pressure • Shaker E Stop • Amplifier E Stop • Transformer Over Temp • UART Power • PM Over Temp
Power Supply Requirement	Single phase, Neutral and Ground is required. 230VAC (50/60 Hz) and 115VAC (50/60 Hz) available. Amplifier, field and blower are powered separately. The values are actual ones, the mains need a safety margin.				<ul style="list-style-type: none"> • PM Over Current • PM Drive Power • Input Under Voltage • Input Over Voltage • Output Over Voltage • Output Over Current • Cooling Fan • Power Over Temp • Logic Fault

NOTE: Standard vibration systems consist of an electro-dynamic exciter, a state-of-the-art air-cooled switching power amplifier with field power supply and cooling unit. Optional items including slip tables, head expanders, accelerometers and vibration controller can be added upon request.

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