

VIBRATION SYSTEM

ELECTRODYNAMIC VIBRATION TEST SYSTEMS

SEV 400 Series Shaker

- > SEV 400 - DSA 16K
- > SEV 400 - DSA 24K
- > SEV 400 - DSA 32K

Most ideally suited for test accreditation laboratories, this special category looks after all the related test requirements. A unique flexibility is that the in-house tests of companies driven by quality objectives are also supported by this category of shakers.

The mirror imaged magnetic structure provides concentrated electromagnetic flux in the force generating area keeping stray magnetic field at the minimum. The self-lubricated linear bearing system ideally guides the motion in the thrust axis.

The shaker's armature is made of magnesium alloy with a webbed structure design to take care of force transmission. The armature is a wound coil of circular cross-section magnetic grade oxygen-free conductor capable to withstand high temperatures.

The shaker's electromagnet is energized by a solid-state field power supply interlocked electronically to the amplifier console and is placed within the console for saving space.

A unique, automatic pneumatic operated load compensation system employs latest micro-electronics & optical sensors built into the shaker which helps in realising nominal displacement at all payloads.

Exemplary safety interlocks are designed for system safety, which are logged on to the most user-friendly microcontroller based intelligent logic unit to communicate system status and operation.

Coupled with slip table, expander and controller, the system becomes most versatile for the TEST.



Saraswati Dynamics

SYSTEM APPLICATIONS

- AUTOMOTIVE COMPONENT TESTING
- ELECTRONIC ASSEMBLY TESTING
- STRESS SCREENING
- SINE, RANDOM & SHOCK TESTING
- STRUCTURAL DYNAMIC TESTS
- TEST LABORATORIES
- TELECOMMUNICATION EQUIPMENTS
- CONSUMER ELECTRONICS

VIBRATION SYSTEM

Technical Performance Parameters

Model

Model SEV 400 / DSA 16K

SEV 400 series Shaker	Metric	American
Armature Diameter	400 mm	15.75 Inch
Sine force peak	1200 Kgf	2640 lbf
Random force rms*	1200 Kgf	2640 lbf
Shock force	2400 Kgf	5280 lbf
Bare table Acceleration	392 mt/s ²	40 'g'
Velocity	1.8 mt/s	5.92 ft/s
Displacement (p-p)	51 mm	2 inch
Effective mass of Armature	30 Kg	66 lb
Armature Resonance (±5%)	2.5 KHz	2.5 KHz
Useful frequency range	2.8 KHz	2.8 KHz
Suspension axial stiffness	5 Kg / mm	280 lb / in
Suspension Cross-axial stiffness	300 Kg / mm	16800 lb / in
Body Suspension resonance	< 5 Hz	< 5 Hz
Cooling air flow rate	28.3 M ³ / mt	1000 CFM
Stray Magnetic Field **	< 1 mT	< 10 gauss
Pneumatic Pay Load Capacity	350 Kg	770 lb
Working ambient temperature range	0 – 45°C	32° – 113°F
Shaker dimensions (L x W x H)	1420 x 885 x 1165 (mm)	56 x 35 x 46 (Inch)

DSA series Amplifier	
Rated Output Voltage	80 V
Rated Output Current (Sine & Random)	150 A
Input Impedance	10 KΩ
Input Sensitivity	4 V rms
Module Efficiency	> 90 %
Signal to Noise Ratio	> 70 dB
Total Harmonic Distortion	0.5%
Working Ambient Temperature Range	5-45°C
Overall dimensions W x D x H (mm)	800 x 600 x 1955

System Utilities & Safety

Power Requirement (3 Phase + N + E)	22 KVA
Pneumatic Supply Requirement	6 Bar/87 PSI for Shaker's internal load support (ILS) and Air suspension of the body.
Protection Interlocks	Main Input Over & Under Voltage, Over Current, Loss of Input Phase, Module Disable, Over Temperature Amplifier & Shaker, Cooling, Field fail and user safety interlock
Safety Norms	Comply with International Safety requirements for CE

* Force with payload equal to or greater than twice the armature mass.

** At 150 mm above armature with full field power (optional).

- The formal quotations reflect latest specifications and supersedes this printed pdf sheet/ catalogue.
- Head Expander or Load Support Platform and Combo base Horizontal Slip Table can be integrated if required for testing voluminous specimens.
- Armature top contains 13 nos. SS inserts. 01 at centre, 04 at 141.4 mm PCD, 04 at 200mm PCD and 04 at 250mm PCD



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VIBRATION SYSTEM

Technical Performance Parameters

Model

Model SEV 400 / DSA 24K

SEV 400 series Shaker	Metric	American
Armature Diameter	400 mm	15.75 Inch
Sine force peak	1800 Kgf	3960 lbf
Random force rms*	1800 Kgf	3960 lbf
Shock force	3600 Kgf	7920 lbf
Bare table Acceleration	588 mt/s ²	60 'g'
Velocity	1.8 mt/s	5.92 ft/s
Displacement (p-p)	51 mm	2 inch
Effective mass of Armature	30 Kg	66 lb
Armature Resonance (±5%)	2.5 KHz	2.5 KHz
Useful frequency range	2.8 KHz	2.8 KHz
Suspension axial stiffness	8 Kg / mm	448 lb / in
Suspension Cross-axial stiffness	400 Kg / mm	22400 lb / in
Body Suspension resonance	< 5 Hz	< 5 Hz
Cooling air flow rate	42.5 M ³ /mt	1500 CFM
Stray Magnetic Field **	< 1 mT	< 10 gauss
Pneumatic Pay Load Capacity	350 Kg	770 lb
Working ambient temperature range	0 – 45°C	32° – 113°F
Shaker dimensions (L x W x H)	1420 x 885 x 1165 (mm)	56 x 35 x 46 (Inch)

DSA series Amplifier

Rated Output Voltage	120 V
Rated Output Current (Sine & Random)	220 A
Input Impedance	10 KΩ
Input Sensitivity	4 V rms
Module Efficiency	> 90 %
Signal to Noise Ratio	> 70 dB
Total Harmonic Distortion	0.5%
Working Ambient Temperature Range	5-45°C
Overall dimensions W x D x H (mm)	800 x 600 x 1955

System Utilities & Safety

Power Requirement (3 Phase + N + E)	32 KVA
Pneumatic Supply Requirement	6 Bar/87 PSI for Shaker's internal load support (ILS) and Air suspension of the body.
Protection Interlocks	Main Input Over & Under Voltage, Over Current, Loss of Input Phase, Module Disable, Over Temperature Amplifier & Shaker, Cooling, Field fail and user safety interlock
Safety Norms	Comply with International Safety requirements for CE

* Force with payload equal to or greater than twice the armature mass.

** At 150 mm above armature with full field power (optional).

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VIBRATION SYSTEM

Technical Performance Parameters

Model

Model SEV 400 / DSA 32K

SEV 400 series Shaker		
	Metric	American
Armature Diameter	400 mm	15.75 Inch
Sine force peak	2200 Kgf	4840 lbf
Random force rms*	2200 Kgf	4840 lbf
Shock force	4400 Kgf	9680 lbf
Bare table Acceleration	706 mt/s ²	72 'g'
Velocity	1.8 mt/s	5.92 ft/s
Displacement (p-p)	51 mm	2 inch
Effective mass of Armature	30 Kg	66 lb
Armature Resonance (±5%)	2.5 KHz	2.5 KHz
Useful frequency range	2.8 KHz	2.8 KHz
Suspension axial stiffness	8 Kg / mm	448 lb / in
Suspension Cross-axial stiffness	400 Kg / mm	22400 lb / in
Body Suspension resonance	< 5 Hz	< 5 Hz
Cooling air flow rate	42.5 M ³ / mt	1500 CFM
Stray Magnetic Field **	< 1 mT	< 10 gauss
Pneumatic Pay Load Capacity	350 Kg	770 lb
Working ambient temperature range	0 – 45°C	32° – 113°F
Shaker dimensions (L x W x H)	1420 x 885 x 1165 (mm)	56 x 35 x 46 (Inch)

DSA series Amplifier	
Rated Output Voltage	140 V
Rated Output Current (Sine & Random)	230 A
Input Impedance	10 KΩ
Input Sensitivity	4 V rms
Module Efficiency	> 90 %
Signal to Noise Ratio	> 70 dB
Total Harmonic Distortion	0.5%
Working Ambient Temperature Range	5-45°C
Overall dimensions W x D x H (mm)	800 x 600 x 1955

System Utilities & Safety

Power Requirement (3 Phase + N + E)	35 KVA
Pneumatic Supply Requirement	6 Bar/87 PSI for Shaker's internal load support (ILS) and Air suspension of the body.
Protection Interlocks	Main Input Over & Under Voltage, Over Current, Loss of Input Phase, Module Disable, Over Temperature Amplifier & Shaker, Cooling, Field fail and user safety interlock
Safety Norms	Comply with International Safety requirements for CE

* Force with payload equal to or greater than twice the armature mass.

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