

VIBRATION SYSTEM

ELECTRODYNAMIC VIBRATION TEST SYSTEMS

SEV 240 Series Shaker

- > SEV 240 - DSA 8K
- > SEV 240 - DSA 10K
- > SEV 240 - DSA 15K

These shaker systems are designed to optimize the operation and test costs by simulating a wide variety of vibration tests applicable to all types of products.

The shaker's low frequency isolation assembly eliminates the need for bolting it to the ground –the body is suspended on a trunion assembly; and the pneumatic isolation system suspends the body on air springs.

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
- CONSUMER ELECTRONICS
- TELECOMMUNICATION EQUIPMENT

VIBRATION SYSTEM

Technical Performance Parameters

Model

Model SEV 240 / DSA 8K

SEV 240 series Shaker	Metric	American
Armature Diameter	240 mm	9.44 Inch
Sine force peak	700 Kgf	1540 lbf
Random force rms*	700 Kgf	1540 lbf
Shock force	1400 Kgf	3080 lbf
Bare table Acceleration	490 mt/s ²	50 'g'
Velocity	1.7 mt/s	5.59 ft/s
Displacement (p-p)	38 mm	1.5 inch
Effective mass of Armature	14 Kg	30.8 lb
Armature Resonance (±5%)	2.7 KHz	2.7 KHz
Useful frequency range	3.0 KHz	3.0 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	250 Kg	550 lb
Working ambient temperature range	0 – 45°C	32 ^o – 113°F
Shaker dimensions (L x W x H)	1100 x 660 x 880 (mm)	43.3 x 26 x 34.6 (Inch)

DSA series Amplifier	
Rated Output Voltage	80 V
Rated Output Current (Sine & Random)	130 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)	600 x 800 x 1955

System Utilities & Safety	
Power Requirement (3 Phase + N + E)	20 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 9 nos. of SS inserts, 01 at centre, 04 at 100 mm PCD and 04 at 141.4 mm PCD.



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VIBRATION SYSTEM

Technical Performance Parameters

Model

Model SEV 240 / DSA 10K

SEV 240 series Shaker	Metric	American
Armature Diameter	240 mm	9.44 Inch
Sine force peak	1000 Kgf	2200 lbf
Random force rms*	1000 Kgf	2200 lbf
Shock force	2000 Kgf	4400 lbf
Bare table Acceleration	735 mt/s ²	75 'g'
Velocity	1.7 mt/s	5.59 ft/s
Displacement (p-p)	38 mm	1.5 inch
Effective mass of Armature	13 Kg	28.6 lb
Armature Resonance (±5%)	2.7 KHz	2.7 KHz
Useful frequency range	3.0 KHz	3.0 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	250 Kg	550 lb
Working ambient temperature range	0 – 45°C	32° – 113°F
Shaker dimensions (L x W x H)	1100 x 660 x 880 (mm)	43.3 x 26 x 34.6 (Inch)

DSA series Amplifier	
Rated Output Voltage	80 V
Rated Output Current (Sine & Random)	130 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)	600 x 800 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 9 nos. of SS inserts, 01 at centre, 04 at 100 mm PCD and 04 at 141.4 mm PCD.



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VIBRATION SYSTEM

Technical Performance Parameters

Model

Model SEV 240 / DSA 14K

SEV 240 series Shaker	Metric	American
Armature Diameter	240 mm	9.44 Inch
Sine force peak	1500 Kgf	3300 lbf
Random force rms*	1500 Kgf	3300 lbf
Shock force	3000 Kgf	6600 lbf
Bare table Acceleration	980 mt/s ²	100 'g'
Velocity	1.7 mt/s	5.59 ft/s
Displacement (p-p)	51 mm (38 mm continuous)	2 inch (1½ inch continuous)
Effective mass of Armature	15 Kg	33 lb
Armature Resonance (±5%)	2.7 KHz	2.7 KHz
Useful frequency range	3.0 KHz	3.0 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	250 Kg	550 lb
Working ambient temperature range	0 – 45°C	32 ^o – 113°F
Shaker dimensions (L x W x H)	1100 x 660 x 880 (mm)	43.3 x 26 x 34.6 (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)	600 x 800 x 1955

System Utilities & Safety

Power Requirement (3 Phase + N + E)	25 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 9 nos. of SS inserts, 01 at centre, 04 at 100 mm PCD and 04 at 141.4 mm PCD.



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