

# VIBRATION SYSTEM

## ELECTRODYNAMIC VIBRATION TEST SYSTEMS

### SEV 180 Series Shaker

- > SEV 180 - DSA 4K
- > SEV 180 - DSA 6K
- > SEV 180 - DSA 8K

**D**esigned to cater to the generalized testing requirements of various segments of the industry, these shakers are manufactured with a high degree of precision.

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

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

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



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### SYSTEM APPLICATIONS

- INVESTIGATIVE TESTS
- ELECTRONIC COMPONENTS
- AUTOMOTIVE TESTS
- SINE, RANDOM SIMULATION
- TELECOMMUNICATION EQUIPMENTS
- ENGINEERING INSTITUTIONS

# VIBRATION SYSTEM

## Technical Performance Parameters

# Model

## Model SEV 180 / DSA 4K

SEV 180 series Shaker	Metric	American
Armature Diameter	180 mm	7 Inch
Sine force peak	400 Kgf	880 lbf
Random force rms*	280 Kgf	620lbf
Shock force	800 Kgf	1771 lbf
Bare table Acceleration	490 mt/s <sup>2</sup>	50 'g'
Velocity	1.6 mt/s	62.99 in/sec
Displacement (p-p)	38 mm	1.5 inch
Effective mass of Armature	8 Kg	17.6 lb
Armature Resonance (±5%)	3200 Hz	3200 Hz
Useful frequency range	upto 3500 Hz	upto 3500 Hz
Suspension axial stiffness	1.6 Kg / mm	89.6 lb / in
Suspension Cross-axial stiffness	230 Kg / mm	12879.5 lb / in
Cooling air flow rate	8.5 M <sup>3</sup> /mt	300 CFM
Stray Magnetic Field **	< 2.5 mT	< 25 gauss
Pneumatic Pay Load Capacity	150 Kg	330 lb
Working ambient temperature range	0 – 45°C	32° – 113°F
Shaker dimensions (L x W x H)	725 x 500 x 800 (mm)	28.5 x 19.6 x 31.5 (Inch)

DSA series Amplifier	
Rated Output Voltage	75 V
Rated Output Current (Sine & Random)	55 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)	12 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 180 / DSA 6K

SEV 180 series Shaker	Metric	American
Armature Diameter	180 mm	7 Inch
Sine force peak	600 Kgf	1320 lbf
Random force rms*	400 Kgf	880 lbf
Shock force	1200 Kgf	2640 lbf
Bare table Acceleration	735 mt/s <sup>2</sup>	75 'g'
Velocity	1.6 mt/s	62.99 inch/sec
Displacement (p-p)	38 mm	1.5 inch
Effective mass of Armature	8 Kg	17.6 lb
Armature Resonance (±5%)	3200 Hz	3200 Hz
Useful frequency range	upto 3500 Hz	upto 3500 Hz
Suspension axial stiffness	3.2 Kg / mm	179 lb / in
Suspension Cross-axial stiffness	250 Kg / mm	14000 lb / in
Cooling air flow rate	19.8 M <sup>3</sup> / mt	700 CFM
Stray Magnetic Field **	< 1 mT	< 10 gauss
Pneumatic Pay Load Capacity	150 Kg	330 lb
Working ambient temperature range	0 – 45°C	32° – 113°F
Shaker dimensions (L x W x H)	725 x 500 x 800 (mm)	28.5 x 19.6 x 31.5 (Inch)

DSA series Amplifier	
Rated Output Voltage	80 V
Rated Output Current (Sine & Random)	85 A
Input Impedance	10 KΩ
Input Sensitivity	4 V rms
Module Efficiency	> 92 %
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)	15 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

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

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# VIBRATION SYSTEM

## Technical Performance Parameters

# Model

## Model SEV 180 / DSA 8K

SEV 180 series Shaker	Metric	American
Armature Diameter	180 mm	7 Inch
Sine force peak	800 Kgf	1760 lbf
Random force rms*	490 Kgf	1078 lbf
Shock force	1500 Kgf	3300 lbf
Bare table Acceleration	882 mt/s <sup>2</sup>	90 'g'
Velocity	1.6 mt/s	63 inch/sec
Displacement (p-p)	38 mm	1.5 inch
Effective mass of Armature	9 Kg	19.8 lb
Armature Resonance (±5%)	3200 Hz	3200 Hz
Useful frequency range	upto 3500 Hz	upto 3500 Hz
Suspension axial stiffness	3.2 Kg / mm	179 lb / in
Suspension Cross-axial stiffness	250 Kg / mm	14000 lb / in
Cooling air flow rate	19.8 M <sup>3</sup> / mt	700 CFM
Stray Magnetic Field **	< 1 mT	< 10 gauss
Pneumatic Pay Load Capacity	150 Kg	330 lb
Working ambient temperature range	0 – 45°C	32° – 113°F
Shaker dimensions (L x W x H)	725 x 500 x 800 (mm)	28.5 x 19.6 x 31.5 (Inch)

DSA series Amplifier	
Rated Output Voltage	90 V
Rated Output Current (Sine & Random)	100 A
Input Impedance	10 KΩ
Input Sensitivity	4 V rms
Module Efficiency	> 92 %
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)	18 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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