

SE-13

Calibration Vibration Exciter for Low Frequencies



Patent pending

The **SE-13** Air Bearing shaker is an electrodynamic force generator specifically designed to be used for calibration and evaluation of accelerometers and other motion transducers in vertical direction. It provides excellent properties for low frequency excitation of such devices. The model consists of a large air bearing load mounting table that allows high payloads up to 50 kg (110 lb) e.g. for the calibration of geophones and heavy seismic sensors.

Applications

- Primary Calibration (according to ISO 16063-11) of low frequency accelerometers
- Secondary Calibration (according to ISO 16063-21) of low frequency accelerometers
- Seismic simulation of components
- Calibration of reference sensors

Typical DUT

- Heavy seismic sensors (seismometers, geophones)
- Sensors for measurement of vibration immission (DIN 45669)

Features

- 500 N force ¹⁾
- Frequency range: DC ... 400 Hz
- Unique frictionless support system carries up to 50 kg (110 lb) test load
- Efficient electrodynamic drive for sine, random or transient signals
- Air bearing guidance provides excellent waveform purity
- Very low cross motion according to ISO 16063-21
- Large mounting surface: Ø 350 mm

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Technical Data

Vibration Exciter	
Force Rating ¹⁾²⁾	500 N
Frequency Range	DC (0.2 Hz) ³⁾ ... 400 Hz
Max. Stroke ³⁾	25 mm
Max. Velocity ¹⁾	300 mm/s
Max. Acceleration ¹⁾²⁾	60 m/s ² peak
Max. Current Input ²⁾	9 A rms
Operation	vertical
Moving Element Weight	8 kg
Max. Payload	50 kg (110 lb)
Table Size	Ø 350 mm
Air Pressure Required	4.0 ... 5.0 bar
Air Flow Required	800 l/h (0.48 cfm)
Air Quality	ISO 8573.1 Class 3
Total Weight	70 kg
Working Temperature	23°C (± 2 K)
Storage Temperature	-25°C ... +55°C
Connectors	
Vibration Exciter: drive	8-pin Speakon [®] plug
Vibration Exciter: compressed air	Air pipe Ø 6 mm
Attachment of Device under Test (DUT)	Thread holes M6 on 100 mm centers

¹⁾ Peak sine

²⁾ Interval mode of operation

³⁾ Recommended operation range peak-peak; mechanical stop at 32 mm (1.3 in)

⁴⁾ With the optional internal reference standard accelerometer

Accessories

Recommended power amplifier	APS 125
Standard mechanical adapter (incl. magnetic field shield)	V081100001
Customized mechanical adapter	On request

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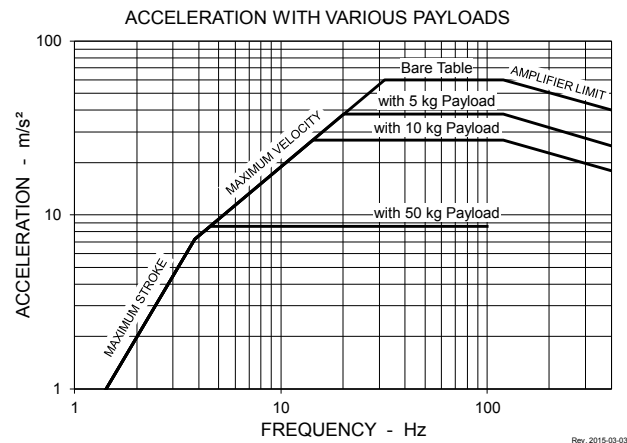
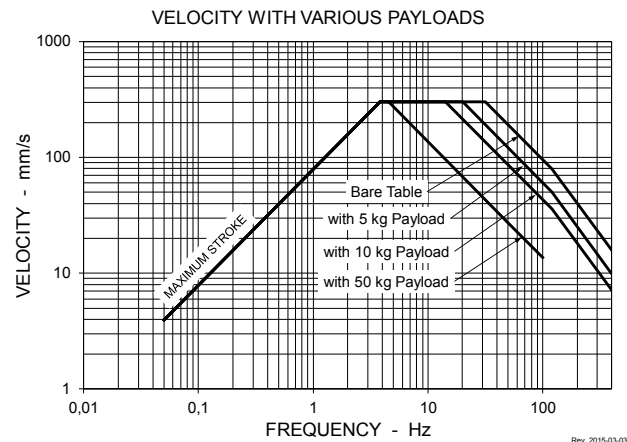
Performance

Test loads of up to 50 kg (110 lb) can be driven to velocity levels typical of those found in seismic specifications. Performance envelopes of the SE-13 shaker are given in the graphs below. These envelopes represent the maximum velocity and acceleration for various test loads that can be achieved on the table.



Application example: Calibration of a typical seismic sensor using the SE-13:

Seismowave CP ZM-500: 11 kg, 0.1...100 Hz



All data are subject to change without notice

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