

APS 129 ELECTRO-SEIS®

Long Stroke Shaker with Air Bearing Load Mounting Table



The **APS 129 ELECTRO-SEIS®** Air Bearing shaker is a long stroke, electrodynamic force generator specifically designed to be used for calibration and evaluation of accelerometers and other motion transducers. It provides excellent properties for low frequency excitation of such devices. The model consists of an air bearing driver attached to an air bearing load mounting table that allows high payloads up to 23 kg (50 lb) e.g. for the calibration of geophones and heavy seismic sensors.

Applications

- Calibration and test for seismic instruments like geophones and heavy seismic sensors
- Seismic simulation for components

Features

- 133 N (30 lbf) or 186 N (42 lbf) force (sine peak)
- 254 x 254 mm (10 x 10-in) load mounting table
- Air bearing guidance and support system carries up to 23 kg (50 lb) test load with very low cross-axis motion
- Efficient electrodynamic driver produces sine, random or transient waveforms
- Excellent waveform purity

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Description

The APS 1290 ELECTRO-SEIS® shaker consists of a load mounting table and air bearing assembly driven by an APS 113-AB ELECTRO-SEIS® long stroke air bearing shaker. The shaker imparts transverse base excitation to items mounted on the table.

Static and dynamic loads normal to the table surface are transferred through a large area precision air bearing to a rigid guide bar of rectangular cross section. The driver unit and guide bar assembly are mounted on a common rigid base, ensuring correct alignment of all moving parts.

The standard hole pattern consists of 25 threaded holes in a 5 x 5 array. Optional metric threads and spacing are available.

The APS 113-AB driver unit employs permanent magnets and is configured such that the armature coil remains in a uniform magnetic field over the entire stroke range ensuring a high degree of linearity. The self-cooled armature coil requires power from a matching electronic power amplifier.

Clean, water and oil free air for bearing operation is carried to the moving bearing housing by flexible PVC tubing, constrained to move with a rolling action.

The shaker may be used with optional accessory items to extend the areas of application:

APS 0109 - ZERO POSITION CONTROLLER - automatically controls the zero position of a vibration exciter irrespective of its load.

APS 1291 - VERTICAL MOUNTING KIT - permits vertical orientation of the shaker with a rigid bench attachment.

Optional Configurations

APS 129-HF

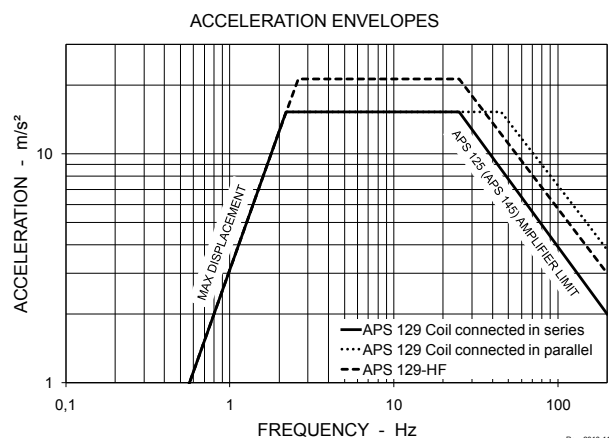
All features of the basic APS 129 ELECTRO-SEIS® shaker are retained. The drive coil is made for 40 % increase in force with a 50 % duty cycle (30 min cycle).



APS 129 with APS 1291 - Vertical Mounting Kit

Performance

Test loads of up to 23 kg (50 lb) can be driven to acceleration levels typical of those found in seismic specifications. Performance envelopes of the APS 129 shaker with the APS 125 Power Amplifier are given in the graph. These envelopes represent the maximum acceleration with no test load that can be achieved on the table.



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Specifications

Shaker	APS 129	APS 129-HF
Force (Sine Peak)	133 N (30 lbf)	186 N (42 lbf)
Stroke (Peak - Peak)	158 mm (6.25 inch)	
Frequency Range	DC ... 200 Hz	
Operation	horizontal or vertical	
Armature Weight	8.5 kg (18.7 lb)	
Max. Payload	Horizontal Vertical	23.0 kg (50.7 lb) 11.0 kg (24.3 lb)
DC Coil Resistance	4.4 or 1.1 Ω	1.4 Ω
Air Pressure Required	4 bar ... 5 bar (60 psig ... 70 psig)	
Air Flow Required	650 l/h (0.4 cfm)	
Air Quality	ISO 8573.1 Class 3	
Total Shaker Weight	79.0 kg (174.2 lb)	
Overall Dimension L x W x H	889 x 219 x 216 mm (35 x 8.6 x 8.5 inch)	
Load Table Size L x W	254 x 254 mm	
Operating Temperature	5 ... 40 degrees C	
Storage Temperature	-25 ... 55 degrees C	

Accessories (optional)

Shaker	APS 129	APS 129-HF High Force
Power Amplifier	APS 125	
System Cable for Connection Shaker to Amplifier	APS 0082-6E	
Zero Position Controller for Vibration Exciters	APS 0109	
Vertical Operation Kit	APS 1291	
Overtravel Switch	APS 8543	

Additional accessories available