Miniature Shaker

A small electro-dynamic shaker is good choice to those tests where the units under test is very small, the needed force is limited, and a more flexible, easier movable and compact design is needed to match field use.

We are supplying customers such low force shakers with force range from 20N to 500N. This shaker is designed for long and trouble-free operation. Its structure is permanent Magnetic and its moving element is supported by an optimal and robus rectilinear guidance. Working with a dedicated linear and high-precision power amplifier, it will bring customers superb performances.

Features

- ✓ Force Range from 20N to 500N
- ✓ Permanent Magnetic Structure
- ✓ Compact Design, portable and easy in use
- ✓ Digital Power Amplifier with Precise Control
- ✓ Embedded-in Power Amplifier (optional)
- ✓ System MTBF >10,000 Hours
- ✓ Multi-axis Design Option Available
- ✓ In Accordance with ISO, MIL, IEC and ASTM, etc.

Ordering Information

Shaker Model	**VE-5102**	**VE-5110**	**VE-5120**	**VE-5150**
Rated Sine Force (N)	20	100	200	500
Usable Frequency Range (Hz)	5-10,000	2-7,000	2-7,000	5-5,000
Max. Acceleration (g)	20	40	80	34
Max. Displacement (mm, p-p)	5	13	13	10
Max. Payload (kg)	0.8	2	2	8
Armature Diameter (mm)	30	60	60	80
Effective Moving Elements Mass (kg)	0.1	0.25	0.25	1.5
Armature Fundamental Resonance (Hz)	>13k	>6.5k	>6.5k	>4k
Dimension (L×W×H, mm)	165×150×160	245×210×240	245×210×240	315×284×280
Weight (kg)	5	18	18	55
Cooling Mode	Natural Cooling	Air Cooling	Air Cooling	Air Cooling
Shaker Model with Slip Table	**VE-5102ST**	**VE-5110ST**	**VE-5120ST**	**VE-5150ST**
Slip Table Dimension (L×W×H, mm)	100×100×20	150×150×20	200×200×20	250×250×20
Slip Table Weight (kg)	0.4	1.6	2.3	4.9
Max. Displacement (mm, p-p)	5	10	10	10
Max. Payload (kg)	1	3	3	12
Power Amplifier Model	**VSA-H40A**	**VSA-H181A**	**VSA-H751A**	**VSA-H102A**
Max. Power Output (VA)	40	180	750	1000
Max. Output Voltage (Vrms)	12	12	50	53
Max. Output Current (Arms)	4	15	15	19
Max. Input Voltage (Vrms)	1	1.5	2.5	2.5
Weight (kg)	Embedded-in	14	16	16

Modal Exciter

The Modal exciter is mainly composed of driving coil, magnetic circuit system, table and supporting parts. Its force can be selected from 20N to 1000N. The whole adopts advanced structural design and finishing technology, which has the characteristics of reliable structure, small error and high precision.

The moving part uses high-quality alloy materials and improves the winding process and support system design. It has light weight, wide frequency range (2Hz-10,000Hz) and can ensure the undistorted transmission of output force. Good air duct design and the use of high-quality thermal conductive materials make the exciter body have good heat dissipation performance and low noise, and support natural cooling and forced cooling.

Features

- Wide frequency range for modal excitation
- Small dimension with high force output
- Suspension stiffness is electronically adjustable, no additional mass to Device Under Test
- Can be working in any angular excitation
- Flexible stinger mounting and length adjustment
- Suitable for modal testing, structual dynamic response testing and fatigue testing

Ordering Information

Shaker Model	**VE-5110M**	**VE-5120M**	**VE-5150M**	**VE-51100M**
Force Output with Forced Air Cooling	1,00N (sine peak)	200N (sine peak)	500N (sine peak)	1,000N (sine peak)
Force Output with Natural Cooling	50N (sine peak)	100N (sine peak)	220N (sine peak)	500N (sine peak)
Frequency Range	DC-10000Hz	DC-8,000Hz	DC-6,000Hz	DC-5,000Hz
Fundamental Resonance Frequency	>10000Hz	5800Hz	4,700Hz	>4,000Hz
Max.Displacement (p-p)	18mm	20mm	20mm	25.4 mm
Max.Acceleration (bare table)	80g	70g	100g	50g
Max.Velocity	1.5m/s	1.5m/s	1m/s	2m/s
Effective Moving Elements Mass	0.13kg	0.32kg	0.45kg	2kg
Suspension Stiffness	Electronically Adjustable	Electronically Adjustable	Electronically Adjustable	Electronically Adjustable
Coupling Thread	M6	M6	M6	M6
Dimension (unpacked, L×W×H)	245×210×240mm	245×210×240mm	315×284×280mm	472×394×510mm
Weight (unpacked)	18kg	18kg	55kg	130kg
System Working Environment	**VE-5110M**	**VE-5120M**	**VE-5150M**	**VE-51100M**
Temperature	0-40℃	0-40℃	0-40℃	0-40℃
Humidity (RH, non-condensing)	0-90%	0-90%	0-90%	0-90%
Power Supply Requirement	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz
Power Consumption	2,000W	2,000W	2,000W	2,000W
Power Amplifier Model	**VSA-H152A**	**VSA-H181A**	**VSA-H751A**	**VSA-H102A**
Max. Power Output	180VA	750VA	1,000VA	1,500VA
Max. Output Voltage	12Vrms	50Vrms	53Vrms	53Vrms
Max. Output Current	15Arms	15Arms	19Arms	30Arms
Max. Input Voltage	1.5Vrms	2.5Vrms	2.5Vrms	2.5Vrms
Dimension (L×W×H)	455×490×110mm	460×510×110mm	460×510×110mm	460×510×110mm
Weight	14kg	16kg	16kg	18kg