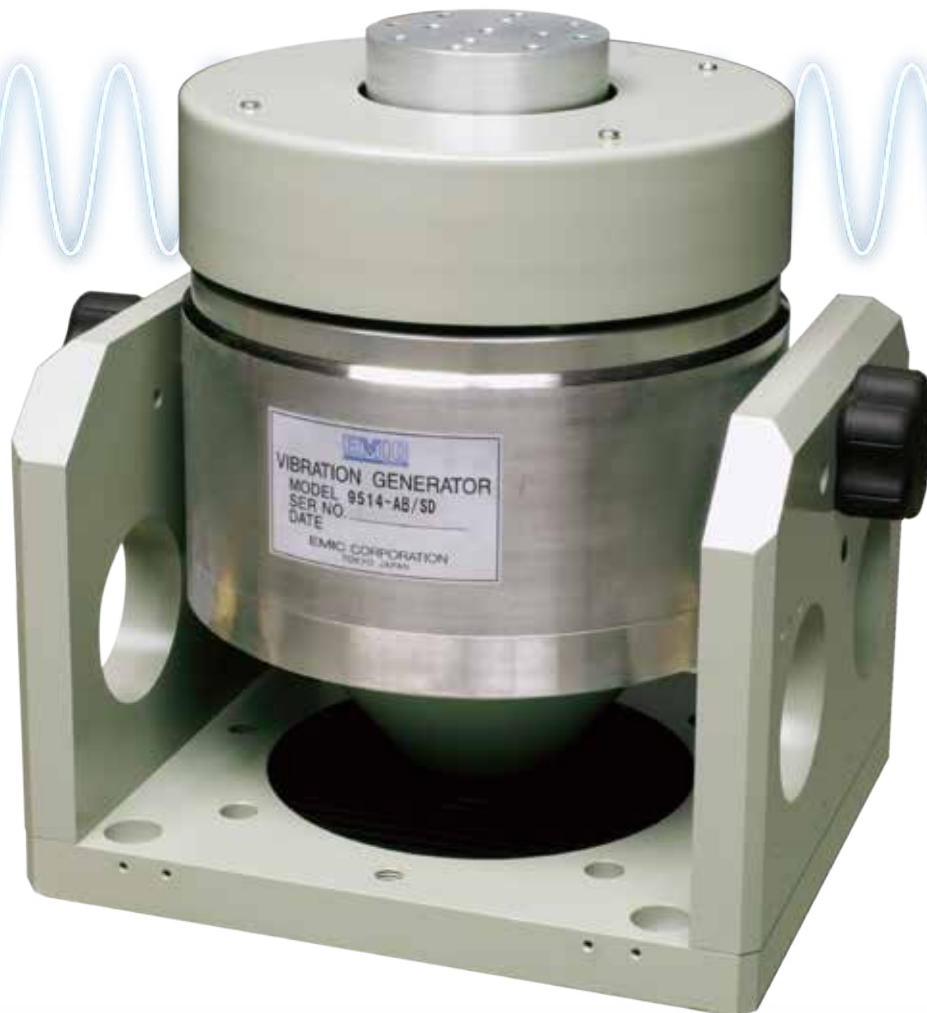


Compact Vibration Testing System

Modal Excitation & Analysis, Calibration, Reliability Test, etc.



EMIC CORPORATION

Compact High-Performance Vibration Generator

EMIC Corps' Compact Vibration Generator is used for calibration of Vibrometers, measuring mechanical impedance and used as an excitation source for modal analysis and reliability tests of small and light specimens.

In particular, EMIC Corp's 512-D and 513-D Model Vibration Generators feature the world's first ceramic armature which allows the system to operate at higher frequencies of 30 kHz and 24 kHz respectively.



Structure Analysis & Transfer Function Measurement

The ability to generate vibrations up to 24 kHz or 30 kHz. Can precisely perform modal analysis and transfer function measurement over the wide frequency range of various structures' dynamic behaviour.

Mechanical Impedance Measurement

The Compact Vibration Generator can be used as an excitation source to measure the mechanical impedance of a structure. To cover a wide range of structures we offer a High Force Model (Max. 500 N) and High Frequency Model (Max. 30 kHz)

Inspection Equipment in Production Line

The Compact Vibration Generator can be integrated into production lines to inspect products by performing a Vibration test. Products such as car audio equipment and GPS navigation systems

Calibration of Vibrometer

The systems acceleration, velocity and displacement can be controlled at any desired frequency. Therefore, the vibration generator can be used for calibration of various vibration measurement instruments and transducers.

Many applications

Compact Vibration Generators are most suitable for reliability tests of small and light parts such as electronic parts or circuit boards. Moreover, there are many applications such as tests of various sensors (Car Acceleration sensors, Gyro sensors, etc.) and functional tests of precision mechanical systems. Combined Reliability Tests can also be accomplished together by incorporating an environmental chamber.

Super High Frequency Excitation Source

We also offer the EM-772 that can generate a extremely high frequency vibration up to 60 kHz to measure the frequency characteristics such as spurious characteristics of the crystal oscillator mounted on suspension-head unit in hard disk drives, mobile-phone and smart phone.

9514 Series Compact Vibration Generator

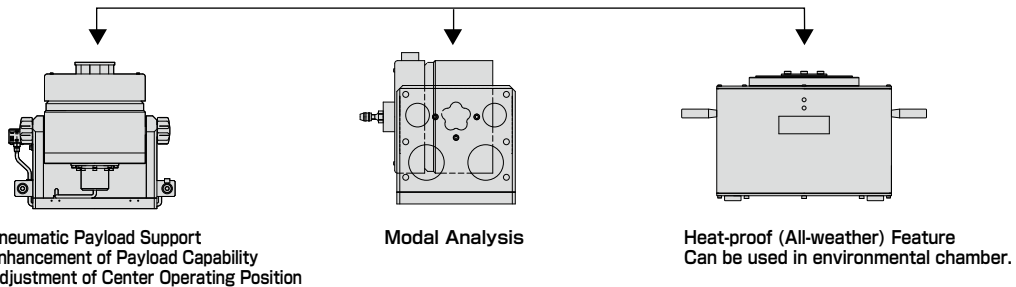
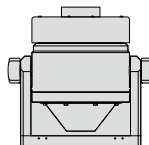
The 9514 series Vibration Generator provides the flexibility to comply with various applications by combining the system with various optional equipment.

While its main components are standardized, the system is highly customizable and suited for your company needs.

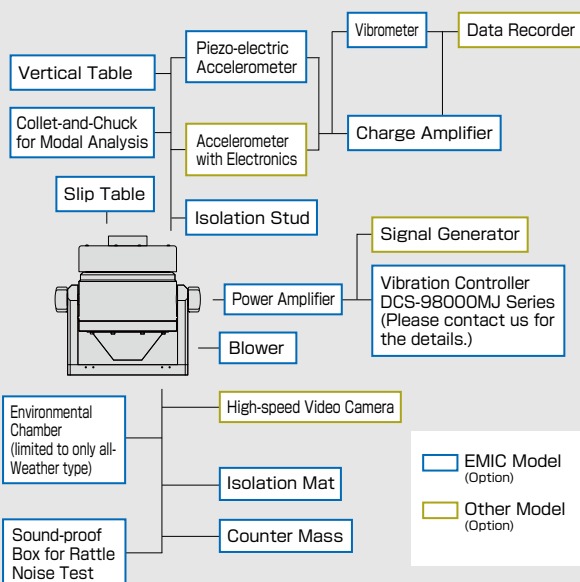
The flexibility of the system offers allows it to comply with examination of rattle noise tests and other testing applications such as heavy load, through hole, heat-proof, etc.



Standard 9514



System Configuration



Application

The 9514 series has a wide variety of applications which can be customized to the customers test requirements. Allowing EMIC Corp to offer various test systems.

Horizontal Slip Table + Reinforcement against Offset Load

The figure shows the add-on features, horizontal slip table with linear bearing and reinforcement against offset load in vertical vibration mode. The table size can be changed according to the customer's needs.



Rattle Noise (Very Low Abnormal Noise) Measuring Evaluation Test System

Used for measuring and evaluating very low abnormal noise (rattle noise) from audio equipment such as CD, DVD player, etc. mainly used for car audio systems. The system consists of a vibration controller and sound-proof box to deaden ambient noise as well as compact vibration generator and associated power amplifier.




511, 512 Series

		 (Shown without Trunnion Stand Option)			
Category	Modal Analysis	Standard	High Force : 64 N	High Frequency : 30 kHz	High Frequency : 30 kHz High Force : 64 N
Model	511-A	512-A	512-A/A	512-D	512-D/A
Rated Force	15N	49N	64N	49N	64N
Frequency Range	2 Hz to 5 kHz	2 Hz to 20 kHz	2 Hz to 20 kHz	2 Hz to 30 kHz	2 Hz to 30 kHz
Max. Acceleration	230.7m/s ²	376.9m/s ²	492.3m/s ²	272.2m/s ²	355.5m/s ²
Max. Velocity	1.26m/s	1.14m/s	1.31m/s	1.00m/s	1.14m/s
Max. Displacement	5.0mm _{p-p}	7.0mm _{p-p}	7.0mm _{p-p}	7.0mm _{p-p}	7.0mm _{p-p}
Axial Resonance	More than 3.9 kHz	More than 16 kHz	More than 16 kHz	More than 32 kHz	More than 32 kHz
Armature Mass	0.065kg	0.13kg	0.13kg	0.18kg	0.18kg
Armature Material	Aluminum	Magnesium	Magnesium	Ceramics	Ceramics
Stiffness	5N/mm	12N/mm	12N/mm	12N/mm	12N/mm
Armature Diameter	M6 Screw (length=20mm)	φ 40mm	φ 40mm	φ 40mm	φ 40mm
Maximum Payload	—	2.0kg	2.0kg	2.0kg	2.0kg
Stray Field	—	—	—	—	—
Field Power	Permanent Magnet	Permanent Magnet	Permanent Magnet	Permanent Magnet	Permanent Magnet
Ambient Temp.	-10 °C to +40 °C (Without dew drop)	-10 °C to +40 °C (Without dew drop)	-10 °C to +40 °C (Without dew drop)	-10 °C to +40 °C (Without dew drop)	-10 °C to +40 °C (Without dew drop)
Cooling method	Natural	Natural	Forced Air	Natural	Forced Air
Dimensions	120W×190H×100Dmm	φ150mm×178mm(※1)	φ150mm×178mm(※1)	φ150mm×178mm(※1)	φ150mm×178mm(※1)
Mass	4.2kg	9.5kg	9.5kg	9.5kg	9.5kg
Matched Amplifier	371-A	371-A	372-A	371-A	372-A
Blower	—	—	Standard Accessory	—	Standard Accessory
Accessory	Trunnion Stand	—	—	—	—
Option	—	Trunnion Stand (Weight=2.4 kg)	Trunnion Stand (Weight=2.4 kg)	Trunnion Stand (Weight=2.4 kg)	Trunnion Stand (Weight=2.4 kg)

Note : Photo is for illustrative purposes only. Specifications subject to change without prior notice.

513 Series

	 (Shown with Trunnion Stand Option)				
Category	Standard	High Force : 147 N & 196 N		High Frequency : 24 kHz	High Frequency : 24 kHz High Force : 147 N
Model	513-B	513-B/A		513-D	513-D/A
Rated Force	98N	147N	196N	98N	147N
Frequency Range	3 Hz to 13 kHz	3~13kHz		3~24kHz	3~24kHz
Max. Acceleration	264.8m/s ²	397.2m/s ²	529.7m/s ²	175m/s ²	262.5m/s ²
Max. Velocity	1.17m/s	1.43m/s	1.67m/s	0.92m/s	1.14m/s
Max. Displacement	10mm _{p-p}	10mm _{p-p}		10mm _{p-p}	10mm _{p-p}
Axial Resonance	More than 12 kHz	More than 12 kHz		More than 23 kHz	More than 23 kHz
Armature Mass	0.37kg	0.37kg		0.56kg	0.56kg
Armature Material	Magnesium	Magnesium		Ceramics	Ceramics
Stiffness	14.0N/mm	14.0N/mm		14.0N/mm	14.0N/mm
Armature Diameter	φ 79mm	φ 79mm		φ 79mm	φ 79mm
Maximum Payload	3.0kg	3.0kg		3.0kg	3.0kg
Stray Field	—	—		—	—
Field Power	Permanent Magnet	Permanent Magnet		Permanent Magnet	Permanent Magnet
Ambient Temp.	-10 °C to +40 °C (Without dew drop)	-10 °C to +40 °C (Without dew drop)		-10 °C to +40 °C (Without dew drop)	-10 °C to +40 °C (Without dew drop)
Cooling method	Natural	Forced Air		Natural	Forced Air
Dimensions	φ 215W×230H(※1)	φ215W×230H(※1)		φ215W×230H(※1)	φ215W×230H(※1)
Mass	26kg	26kg		26kg	26kg
Matched Amplifier	371-A	372-A	374-A	372-A	374-A
Blower	—	Standard Accessory		—	Standard Accessory
Accessory	Interconnecting Cable x 1 Grip x 2	Interconnecting Cable x 1 Grip x 2		Interconnecting Cable x 1 Grip x 2	Interconnecting Cable x 1 Grip x 2
Option	Trunnion Stand (Weight=4.0 kg)	Trunnion Stand (Weight=4.0 kg)		Trunnion Stand (Weight=4.0 kg)	Trunnion Stand (Weight=4.0 kg)

Note : Photo is for illustrative purposes only. Specifications subject to change without prior notice.

9514 Series



Category	Standard	High Force : 500 N	Integrated Pneumatic Support Large Displacement : 30mm _{p-p}	Integrated Pneumatic Support Large Displacement : 30 mm _{p-p} High Force : 500 N
Model	9514-AN/SD	9514-AB/SD	9514-AN/AS	9514-AB/AS
Rated Force	300N	500N	300N	500N
Frequency Range	5 Hz to 5 kHz	5 Hz to 5 kHz	5 Hz to 3 kHz	5~3kHz
Max. Acceleration	250m/s ²	416.7m/s ²	230.8m/s ²	384.6m/s ²
Max. Velocity	1.2m/s	1.2m/s	1.2m/s	1.2m/s
Max. Displacement	15mm _{p-p} (※2)	25mm _{p-p}	30mm _{p-p}	30mm _{p-p}
Axial Resonance	More than 4350 Hz	More than 4350 Hz	More than 3600 Hz	More than 3600 Hz
Armature Mass	1.2kg	1.2kg	1.3kg	1.3kg
Armature Material	Aluminum	Aluminum	Aluminum	Aluminum
Suspension & Guide	Half Loop Flexure Sleeve Shaft	Half Loop Flexure Sleeve Shaft	Pneumatic Payload Support Roller Bearing + Sleeve Shaft	Pneumatic Payload Support Roller Bearing + Sleeve Shaft
Stiffness	25.0N/mm(※2)	25.0N/mm	—	—
Armature Diameter	φ75mm	φ75mm	φ75mm	φ75mm
Maximum Payload	12kg	12kg	12kg	12kg
Thrust Axis	Vertical	Vertical	Vertical	Vertical
Stray Field	Less than 3 mT(※3)	Less than 3 mT(※3)	Less than 3 mT(※3)	3mT以下(※3)
Field Power	Permanent Magnet	Permanent Magnet	Permanent Magnet	Permanent Magnet
Ambient Temp.	-10 °C to +40 °C(Without dew drop)	-10 °C to +40 °C(Without dew drop)	-10 °C to +40 °C(Without dew drop)	-10 °C to +40 °C(Without dew drop)
Cooling method	Natural	Forced Air (Blower)	Natural	Forced Air (Blower)
Dimensions	283W×270H×205Dmm	283W×270H×205Dmm	283W×276H×205Dmm	283W×276H×205Dmm
Mass	25kg	26kg	27kg	27kg
Matched Amplifier	373-A	375-D	373-A/Z12	375-D
Blower	—	Standard Accessory	—	Standard Accessory
Accessory	—	—	●Air Pump ●Midpoint Adjuster Block	●Air Pump ●Midpoint Adjuster Block
Option	■ Accelerometer ■ Counter Mass(※4) ■ Isolation (Rubber) Pad	■ Accelerometer ■ Counter Mass(※4) ■ Isolation (Rubber) Pad	■ Accelerometer ■ Counter Mass(※4) ■ Isolation (Rubber) Pad	■ Accelerometer ■ Counter Mass(※4) ■ Isolation (Rubber) Pad

Note : Photo is for illustrative purposes only. Specifications subject to change without prior notice.

9514 Series, Modal & All-weather Application



Category	Modal Excitation	High Frequency	All-weather Type used in Workspace of Environmental Chamber	
Model	9514-AN/MD	9514-AB/WF	9514-AB/AW	
Rated Force	300N	500N	300N	500N
Frequency Range	5 Hz to 2.5 kHz	5 Hz to 10 kHz	5 Hz to 3.0 kHz	5 Hz to 3.0 kHz
Max. Acceleration	300m/s ²	277.7m/s ²	250.0m/s ²	416.7m/s ²
Max. Velocity	1.2m/s	1.2m/s	1.2m/s	
Max. Displacement	15mm _{p-p}	20mm _{p-p} (※2)	10mm _{p-p}	10mm _{p-p}
Axial Resonance	More than 3600 Hz	More than 6500 Hz	More than 4300 Hz	More than 4300 Hz
Armature Mass	1.0kg	1.8kg	1.2kg	
Armature Material	Aluminum	Aluminum	Aluminum	
Suspension & Guide	Half Loop Flexure Sleeve Shaft	Half Loop Flexure Sleeve Shaft	Half Loop Flexure Sleeve Shaft	Half Loop Flexure Sleeve Shaft
Stiffness	25.0N/mm	28.0N/mm	30.0N/mm	
Armature Diameter	φ50mm	φ75mm	φ83mm	
Maximum Payload	8.0kg	12kg	10kg	
Thrust Axis	Vertical(Any direction by using flexure)	Vertical	Vertical	
Stray Field	Less than 3 mT(※3)	Less than 3 mT(※3)	Less than 3 mT(※3)	
Field Power	Permanent Magnet	Permanent Magnet	Permanent Magnet	
Ambient Temp.	-10 °C to +40 °C(Without dew drop)	-10 °C to +40 °C(Without dew drop)	-40 °C to +125 °C(Humidity : Less than 98% RH)	
Cooling method	Natural	Forced Air (Blower)	Forced Air (Blower)	
Dimensions(※5)	283W×270H×205Dmm	283W×270H×205Dmm	382.5W×205H×333.5Dmm	
Mass	26kg	26kg	31kg	
Matched Amplifier	373-A/Z13	375-A/Z22	373-FW	375-D
Blower	—	—	Standard Accessory	Standard Accessory
Accessory	Collet-and-chuck Set(φ1.0, φ1.5, φ2.0, φ2.35, φ3.0)	—	Built-in Accelerometer Model : 731-B, T-wrench (M5)	
Option	■ Accelerometer ■ Counter Mass(※4) ■ Isolation (Rubber) Pad ■ Model : 9514-AN/MD/Z12 Reinforced Stiffness : 50 N/mm (limited to max. 10 mm _{p-p}) ■ Model : 9514-AN/MD/Z13 Low level acceleration with low distortion (limited to max. 10 mm _{p-p})	■ Accelerometer ■ Isolation (Rubber) Pad	■ Interconnection compatibility with chamber whose wall thickness is other than 70 to 100 mm ■ Muffler for Air Cooling Blower	■ Interconnection compatibility with chamber whose wall thickness is other than 70 to 100 mm ■ Muffler for Air Cooling Blower

Note : Photo is for illustrative purposes only. Specifications subject to change without prior notice.

(※1) Except for grip. (※2) 25 mm_{p-p} displacement is available by changing axial stiffness to 15 N/mm. (※3) At 50 mm above table center. (※4) When attempting to drive the vibration generator at its maximum exciting force, vibration generator should be secured to counter mass, rigid base or floor. (※5) Without any projection.

Matched Power Amplifier

Model	371-A	372-A	373-A	373-A/Z12	373-A/Z13	373-FW	374-A	375-A	375-D
Apparent Power	110VA	220VA	330VA			360VA	440VA	720VA	840VA
Output Voltage	20.0Vrms	27.5Vrms	20.0Vrms			30.0Vrms	40.0Vrms	30.0Vrms	35.0Vrms
Output Current	5.5Arms	8.0Arms	16.5Arms			12.0Arms	11.0Arms	24.0Arms	24.0Arms
Frequency Range	2Hz to 30kHz	2Hz to 30kHz	2Hz to 10kHz	2Hz to 10kHz	DC to 10kHz(★1) DC to 4kHz(★2)	1Hz to 5kHz	2Hz to 20kHz	2Hz to 5.0kHz	DC to 5.0kHz
Input Impedance	10kΩ	10kΩ	10kΩ			50kΩ	10kΩ	10kΩ	10kΩ
Input Voltage	1.0Vrms	1.0Vrms	1.0Vrms			1.0Vrms	1.0Vrms	1.5Vrms	1.5Vrms
Matching Impedance	3.64Ω	3.44Ω	1.21Ω			3.64Ω	1.25Ω	1.46Ω	1.46Ω
Load Impedance	1.82Ω	1.72Ω	0.67Ω			1.82Ω	0.63Ω	0.73Ω	0.73Ω
S/N	80dB	80dB	80dB			70dB	80dB	80dB	70dB
Distortion	Less than 0.5%	Less than 0.5%	Less than 0.5%			Less than 0.5%	Less than 0.5%	Less than 1.0%	Less than 1.0%
Meter	7.5Arms	10.0Arms	20Arms			20Arms	25.0Arms	25.0Arms	25.0Arms
Input Connector	BNC	BNC	BNC			BNC	BNC	BNC	BNC
Input to Blower	—	Max.200VA	—			Max.200VA	Max.300VA	Max.400VA	Max.200VA
Protector	●Overcurrent ●Transistor temperature	●Overcurrent ●Transistor temperature	●Overcurrent ●Transistor temperature	●Overcurrent ●Transistor temperature ●Overload	●Overcurrent ●Overvoltage ●Transistor temperature	●Overcurrent ●Transistor temperature	●Overcurrent ●Transistor temperature ●Leakage Protector	●Overcurrent ●Transistor temperature ●Leakage Protector	●Overcurrent ●Overvoltage ●Transistor temperature ●Overdisplacement ●Interlock
Power supply	AC100V 50/60Hz	AC100V 50/60Hz	AC100V 50/60Hz			AC100V 50/60Hz	AC200V 50/60Hz	AC200V 50/60Hz	AC200V 50/60Hz
Max. Power Consumption	300VA	800VA	1.1kVA			1.5kVA	2.4kVA	1.8kVA	1.8kVA
Dimensions	480W×149H×350Dmm	480W×149H×350Dmm	480W×249H×400Dmm			480W×249H×400Dmm	480W×249H×602Dmm	480W×200H×450Dmm	480W×200H×450Dmm
Mass	12.5kg	18.5kg	37.0kg			37.0kg	52.0kg	35.0kg	35.0kg
Operating Environment	Temperature Range: 0°C to 40°C, Humidity Range: 20%RH to 85%RH without dewdrop								

Note : Photo is for illustrative purposes only. Specifications subject to change without prior notice. (★1)Under voltage mode (★2)Under current mode

Matched Power Amplifier w/ Oscillator Option

Models	371-A/G, 372-A/G, 373-A/G, 374-A/G
Frequency Range	1 Hz to 100 kHz (2 ranges: 1 Hz to 1 kHz and 100 Hz to 100 kHz)
Frequency Adjust	Fine : Min. 2 Hz for 1 Hz to 1 kHz, Min. 200 Hz for 100 Hz to 100 kHz Coarse : Variable of more than 5 Hz for 1 Hz to 1 kHz, Variable of more than 50 Hz for 100 Hz to 100 kHz
Frequency Accuracy	Less than 2% (+2 reticles)
Frequency Stability	0.5 Hz/°C typical at 1 kHz for range from 1 Hz to 1 kHz
Output Waveform	sinusoidal wave
Frequency Response	±1.0 dB within same range, reference levels for ranges are ones at 500 Hz and 5 kHz respectively.
Harmonic Distortion	Less than 0.3% from 5 Hz to 1 kHz Less than 0.5% from 100 Hz to 50 kHz Less than 0.7% from 50 kHz to 100 kHz
Frequency Display	6 digits
Display Resolution	1.0Hz
Frequency Accuracy	±1.0Hz
Gate Time	1.0s(fixed)

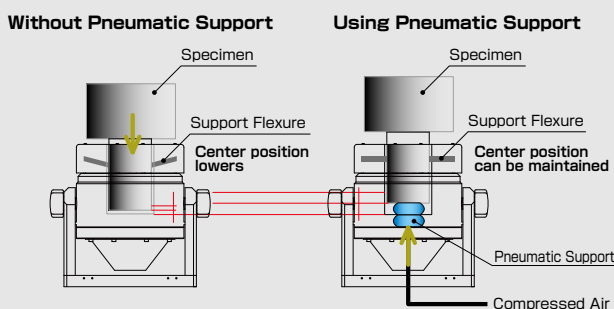
Miscellaneous (Option Feature)

- Manual Operation of Blower
- DC 12 V Input Power with Pressure Alarm Switch
- Constant Current Mode
- Remote Start/Stop with Remote Control Box
- Remote Start/Stop with Timer and Remote Control Box
- Duct Silencer
- Stop Function of Fan
- Oscillator, Vibration Meter, Timer, Remote Control Switch

Pneumatic Payload Support enabling full displacement 9514 Series

Payload Mass vs Full Displacement

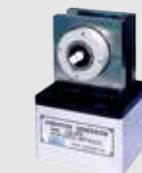
Since the Armature of the compact vibration generator is suspended by the flexures, the central position lowers as the payload mass increases, reducing the maximum displacement for the system. Without proper caution the tests can exceed the maximum rated specification of the system. The 9514 Series Vibration Generators include additional options such as pneumatic payload support to compensate when effected by heavy specimens.



Super High Frequency Vibration Generator Model : EM-983

The EM-983 is primarily designed for measuring the extremely high frequency characteristics of a suspension-head unit in hard disk drives and can meet the needs with low cross-talk.

- Upper limit of operating frequency : 100 kHz
- Armature structure : ceramics
- Applications :
 - Measurement of frequency characteristics of suspension head unit in hard disk drives
 - Measurement of spurious characteristics of crystal oscillator for mobile phone
 - Measurement of frequency characteristics of acceleration sensor



Raised Type for Horizontal Application



Equipped with Degaussing Coil

FP Series Compact Vibration Testing System

The FP series compact vibration testing system uses high-efficiency permanent magnets to generate magnetic field, and can operate with low noise and excellent power saving.

Since the power of the field coil is not required, there is little heat generation, and the maximum vibration force under low noise conditions where the cooling blower does not operate is 0.6 kN. When a cooling blower is used, a maximum vibration force of 2.0 kN is generated.

Taking advantage of this characteristic, the FP series can be used not only for general vibration tests but also for applications that require a low noise environment such as precision equipment, sensors, and rattle noise tests.

- Excitation source for rattle noise test
- Functional test of precision mechanical equipment
- Stress screening in production
- Experiments in the place such as laboratory where any sound should be avoided



Specifications

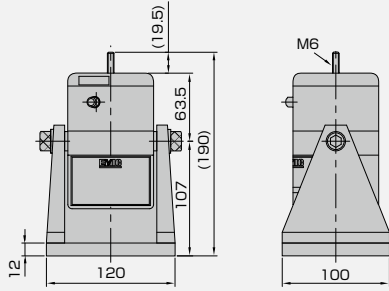
Model	FP-01K/30	FP-02K/25	FP-02K/30
Category	AC100V Input Power Model	High Force	High Force w/ Pneumatic Support
Rated Force	Sine	1.2 kN _{0-p}	2.0 kN _{0-p}
	Random	480 Nrms	1.4 kNrms
	Shock	1.5 kN _{0-p}	3.0 kN _{0-p}
Frequency range	to 2500 Hz	to 3000 Hz	to 2500 Hz
Max. acceleration	500 m/s ²	800 m/s ²	444 m/s ²
Max. velocity	1.6 m/s	1.5 m/s	1.5 m/s
Max. displacement	30 mm _{p-p}	25 mm _{p-p}	30 mm _{p-p}
Max. payload	150 kg	40 kg	100 kg
Input power	1.4 kVA	6.2 kVA	6.2 kVA
Armature Mass	2.4 kg	2.5 kg	4.5 kg
Allowable offset load	3 N·m	5 N·m	4 N·m
Stiffness	-	38 N/mm	-
Cooling method	Air-cooled	Air-cooled	Air-cooled
Field Power	Permanent Magnet	Permanent Magnet	Permanent Magnet
Stray Field (★1)	Less than 5 mT	Less than 5 mT	Less than 5 mT
Model	Vibration Generator	P01-AB/AS	Σ9515-AB/AS
	Power Amplifier	375-D/P012	369A-0101-Σ15
	Console Rack	-	CRD-1500-Σ15
Size	Armature Size	φ120 mm	φ120 mm
	Vib. Generator	384W×391.5H×360D mm	442W×360H×340D mm
	Power Amplifier	480W×189H×450D mm	554W×1462H×920D mm
	Blower	365.5W×700H×434D mm	474.5W×1040H×495D mm
Mass approx.	Vib. Generator	75 kg	160 kg
	Power Amplifier	35 kg	290 kg
	Blower	16 kg	31 kg
Ambient Temp.	-10 to +40°C (Without dew drop)	-10 to +40°C (Without dew drop)	-10 to +40°C (Without dew drop)
Power supply	AC 100V 50/60 Hz 1φ or AC 100V 50/60 Hz 3φ	AC 200/220V 50/60 Hz 3φ	AC 200/220V 50/60 Hz 3φ
Shop Air	-	-	0.5MPa 1L/min
Option (★2)	Accelerometer Pneumatic Spring · Isolation (Rubber) Pad Counter Mass Simplified Slip Table System	Accelerometer Pneumatic Spring · Isolation (Rubber) Pad Counter Mass Simplified Slip Table System Abnormal Sound Analysis Feature (Additional Code : /Z01, Max. Displacement : 15 mmp-p)(★3)	Accelerometer Pneumatic Spring · Isolation (Rubber) Pad Counter Mass Simplified Slip Table System

Note : Photo is for illustrative purposes only. Specifications subject to change without prior notice.

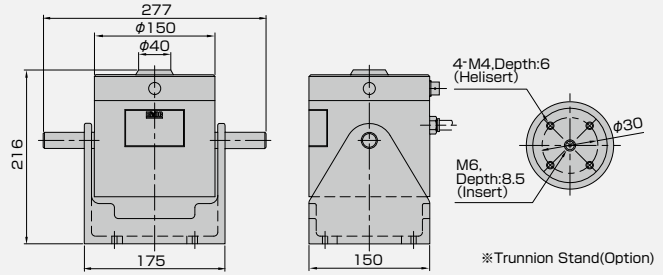
(★1) Stray field value is at 50 mm above table center. (★2) When attempting to drive the vibration generator at its rated force, vibration generator should be secured to reaction mass, rigid base or floor. (★3) This optional feature is available only when ordered in advance.

Compact Vibration Generator Outline Drawing

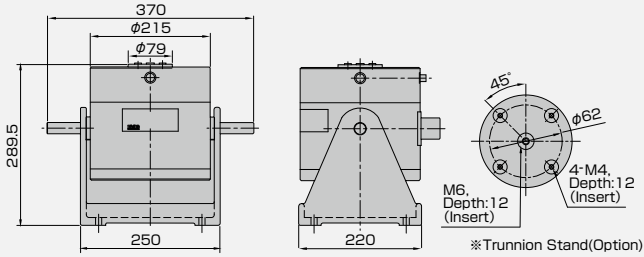
511-A



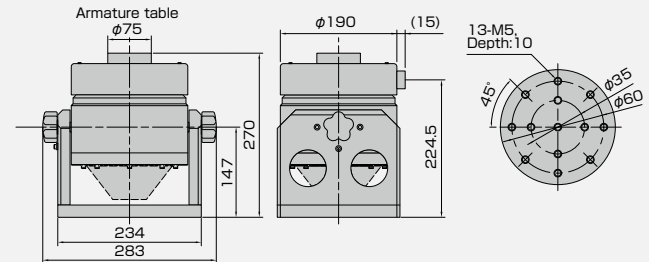
512 Series



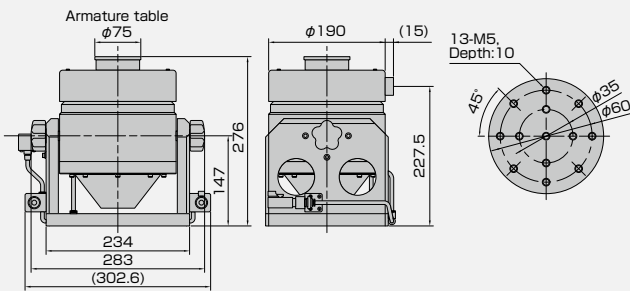
513 Series



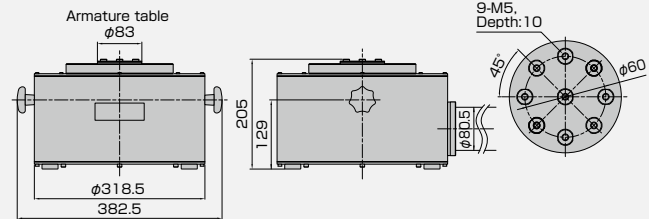
9514-AN/SD 9514-AB/SD 9514-AB/WF



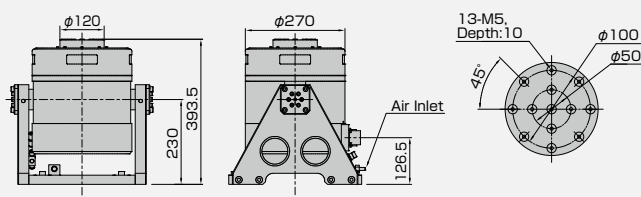
9514-AN/AS 9514-AB/AS



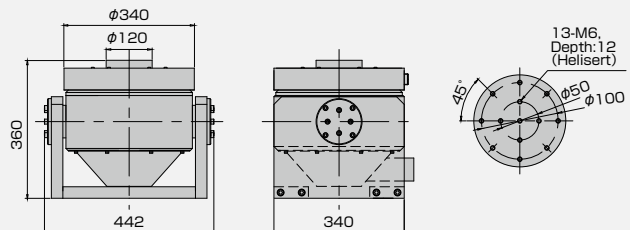
9514-AB/AW



P01-AB/AS



Σ9515 Series



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※ Specifications are subject to change without notice for improvement.

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