Specifications

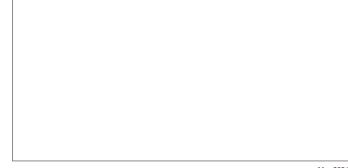
	System N	Nodel	m030/MA1-CE	m060/MA1-CE	m120/MA1-CE	m130LS/MA1-CE	m030H/MA1 (High frequency)
	Imag	e	¢7.5		¢12.6	23.3	♥7.5 ● 11 11
	Frequen	cy Range (Hz)	0 - 3,000	0 - 3,000	0 - 2,000	2 - 1,000	1,000 - 10,000
		Sine (lbf)	67	135	270	292	85
	Rated force	Random (lbf rms)	47	94	189	146	60
		Shock (lbf)	67	135	270	292	85
		No load (g)	51	51	51	13	20
System	Maximum	0.5 kg load (g)	28	35	42	12	16
Specifications	Acc.	1.0 kg load (g)	19	27	36	11	13
	Maximum Velocity (in/s)		63	63	63	1.0	_"
	Maximum Displacement(inp-p)		1.0	1.2	1.2	2.0	- "1
	Maximur	n Load (lbs)	33	33	265	220	33
	Power R	equirements (kVA)*2	0.4	0.7	1.1	1.1	0.5
	Model		m030-CE	m060-CE	m120-CE	m130LS-CE	
	Armature	e Support Method	Diaphragm spring	Diaphragm spring	Air Suspension	Air Suspension	Rubber spring
Vibration	Armature	e Mass (Ibs)	1.3	2.7	5.3	22	4.2
Generator	Armature	e Diameter (φin)	4.5	4.5	6.9	7.1	2.6
	Dimensi	ons (in)	φ7.5 x H10	φ9 x H11	φ12.6 x H12.9 ^{•3}	W16.1 x H23.3 x D18.1	φ7.5 x H11
	Mass (Ib	s)	49	90	245	550	66
	Model		MA1-CE	MA1-CE	MA1-CE	MA1-CE	MA1-CE
	Maximur	n Output (kVA)	1.0	1.0	1.0	1.0	1.0
Power	Dimensi	ons (in) W x H x D	17 x 6 x 17				
Amplifier	Mass (Ib	s)	55	55	55	55	55
	Cooling	Method	Air cooling				
Cooling	Blower		Housed in vibration generator				

* The displacement at the lower limit of frequency (1.000 Hz) and maximum acceleration (20 g) is so small that there is no certified value. *2 Power supply: single-phase AC100 V/200 V or AC110 V/220 V or AC120 V/240 V ±10% 50/60 Hz. A transformer is required for other supply voltages. *3 Insulation pad (W16.1 × H1.8 × D16.2 in) is standard equipment. *The specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%. Continuous use at maximum levels may cause failure. Please contact IMV if your system operates at more than 70%. * Frequency range values vary according to sensor and vibration controller.



	_{For} Light test samples	_{For} Heavy test samples	For Transportation tests	_{For} High-frequency tests
Frequency range	0 - 3000 Hz	0 - 2000 Hz	2 - 1000 Hz	1000 - 10000 Hz
Maximum load	15 kg	120 kg	100 kg	15 kg
Applicable model	≥ m030 ≥ m060	▶ m120	➢ m130LS	➢ m030H

IMV CORPORATION



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https://www.imv-usa.com/ *The specifications and design are subject to change without notice.

May 2021

M030/MA1-CE



Armature Support Method Diaphragm spring 0 - 3,000 Frequency Range (Hz) 67 1.3 Sine (lbf) Armature Mass (lbs) Vibration Rated force 47 Generator 4.5 Random (lbf rms) Armature Diameter (qin) 67 φ7.5 x H10 Shock (lbf) Dimensions (in) 49 51 No load (g) Mass (lbs) IA1-CF 28 0.5 kg load(g)Acc 19 1.0 kg load (g)Maximum Output (kVA) 1.0 Power 63 17 x 6 x 17 Maximum Velocity (in/s) Dimensions (in) W x H x D Amplifier 1.0 55 Maximum Displacement (inp-p) Mass (lbs) Maximum Load (lbs) 33 Cooling Method Air cooling Power Requirements (kVA)*1 0.4 Cooling Housed in vibration generator Blower

but also powerful enough for full-scale tests.

Compact and silent,

*1 Power supply: single-phase AC100 V/200 V or AC110 V/220 V or AC120 V/240 V ±10% 50/60 Hz. A transformer is required for other supply voltages. * The specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%. Continuous use at maximum levels may cause failure. Please contact IMV if your system operates at more than 70%. * Frequency range values vary according to sensor and vibration controller.

System composition Standard equipment Optional items Vibration controller Sensor Options □K2+ K2 Sprint □зноск Sensor cable □PC Function generator Summer Contraction BNC cable Options 111 É. Natural air-cooling mode function Vibration generator Power amplifie MA1-CE m030-CE

Head expander compatible with m030

Use a head expander for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (33 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

Model	Dimensions (in)	Mass(lbs)		Material
TBV-125-m30-A	4.9 × 4.9 × t 0.8	2.0	2,000	Aluminum alloy
TBV-200-m30-A-G*	7.9 × 7.9 × t 0.8	6.0	1,500	Aluminum alloy
TBV-200-m30-M-G*	7.9 × 7.9 × t 0.8	4.2	1,500	Magnesium alloy

*A supplementary guidance system with linear bearings is used with the vibration generator when combined with the head expander. Armature mass is increased due to the addition of the guide support.



Slip table compatible with m030

Use a slip table for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (33 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

	Model	Dimensions (in)	Mass(lbs)		Material
	TBH-200-m30-A-MB	7.9 × 7.9 × t 0.8	8.8	500	Aluminum alloy
	TBH-315-m30-A-MB	12.4 × 12.4 × t 0.8	16.5	500	Aluminum alloy

Cubic fixture compatible with m030

Use when mounting directly on a vibration generator and performing vibration in 3 axes (X, Y, and Z).

Two types of cubic fixture are available. Type A has mounting holes on each face and type B has specimen mounting plates which attach to the cubic frame.

Model	Dimensions (in)	Mass (lbs)		Material
TCJ-A150-m30-A	5.9 × 5.9 × 5.9	12.1	2,000	Aluminum alloy
TCJ-A150-m30-M	5.9 × 5.9 × 5.9	8.8	2,000	Magnesium alloy
TCJ-A160-m30-A	6.3 × 6.3 × 6.3	14.3	2,000	Aluminum alloy
TCJ-A160-m30-M	6.3 × 6.3 × 6.3	10.1	2,000	Magnesium alloy
TCJ-B150-m30-A	5.9 × 5.9 × 5.9	7.7	2,000	Aluminum alloy
TCJ-B150-m30-M	5.9 × 5.9 × 5.9	5.5	2,000	Magnesium alloy
TCJ-B160-m30-A	6.3 × 6.3 × 6.3	8.8	2,000	Aluminum alloy
TCJ-B160-m30-M	6.3 × 6.3 × 6.3	6.1	2,000	Magnesium alloy

□ Soundproof enclosure

Acoustic noise testing is made possible by placing the shaker in a soundproof box.



Emergency stop switch

It is possible to stop the system in an emergency.











Excitation at any selected point

Modal analysis can be done by applying vibration to the car body, etc.



Trunnion Base

It is possible to use the vibration generator horizontally.



M060/MA1-CE



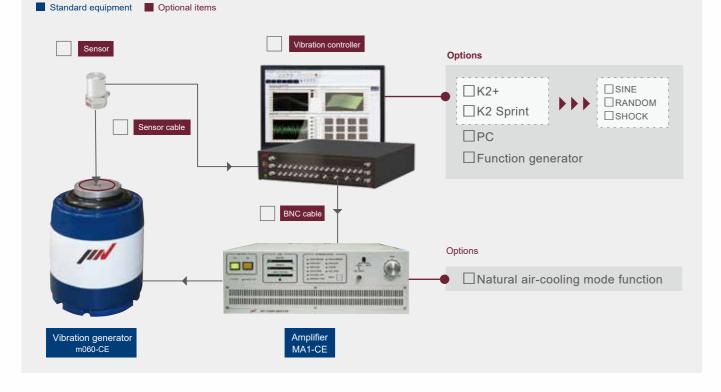
	Syste	m Model	m060/MA1-CE		Model	m060-CE
	Freque	ncy Range (Hz)	0 - 3,000		Armature Support Method	Diaphragm spring
		Sine (lbf)	135	Vibration	Armature Mass (lbs)	2.7
	Rated force	Random (lbf rms)	94	Generator	Armature Diameter (φin)	4.5
		Shock (lbf)	135		Dimensions (in)	φ9 x H11
	Maximum Acc.	No load (g)	51		Mass (lbs)	90
System Specifications		0.5 kg load (g)	35		Model	MA1-CE
		1.0 kg load (g)	27		Maximum Output (kVA)	1.0
	Maximu	um Velocity (in/s)	63	Power Amplifier	Dimensions (in) W x H x D	17 x 6 x 17
	Maximu	m Displacement(inp-p)	1.2	Ampliner	Mass (lbs)	55
	Maximu	um Load (lbs)	33		Cooling Method	Air cooling
	Power	Requirements (kVA)*1	0.7	Cooling	Blower	Housed in vibration generator

but also powerful enough for full-scale tests.

Compact and silent,

*1 Power supply: single-phase AC100 V/200 V or AC110 V/220 V or AC120 V/240 V ±10% 50/60 Hz. A transformer is required for other supply voltages. * The specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%. Continuous use at maximum levels may cause failure. Please contact IMV if your system operates at more than 70%. * Frequency range values vary according to sensor and vibration controller.

System composition



Head expander compatible with m060

Use a head expander for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (33 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

Model	Dimensions (in)	Mass(lbs)		Material
TBV-125-m60-A	4.9 × 4.9 × t 0.8	2.0	2,000	Aluminum alloy
TBV-200-m60-A	7.9 × 7.9 × t 0.8	5.5	1,500	Aluminum alloy
TBV-200-m60-M	7.9 × 7.9 × t 0.8	3.7	1,500	Magnesium alloy
TBV-315-m60-A-G*	12.4 × 12.4 × t 1.2	19.4	1,000	Aluminum alloy
TBV-315-m60-M-G*	12.4 × 12.4 × t 1.2	13.4	1,000	Magnesium alloy

* A supplementary guidance system with linear bearings is used with the vibration generator when combined with the head expander. Armature mass is increased due to the addition of the guide support.



Slip table compatible with m060

Use a slip table for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (33 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

	Model	Dimensions (in)	Mass(lbs)		Material
	TBH-200-m60-A-MB	7.9 × 7.9 × t 0.8	8.8	500	Aluminum alloy
	TBH-315-m60-A-MB	12.4 × 12.4 × t 0.8	16.5	500	Aluminum alloy
	TBH-400-m60-A-MB	15.7 × 15.7 × t 0.8	27.1	500	Aluminum alloy

Cubic fixture compatible with m060

Use when mounting directly on a vibration generator and performing vibration in 3 axes (X, Y, and Z).

Two types of cubic fixture are available. Type A has mounting holes on each face and type B has specimen mounting plates which attach to the cubic frame.

Model	Dimensions (in)	Mass(lbs)		Material
TCJ-A150-m60-A	5.9 × 5.9 × 5.9	12.1	2,000	Aluminum alloy
TCJ-A150-m60-M	5.9 × 5.9 × 5.9	8.8	2,000	Magnesium alloy
TCJ-A160-m60-A	6.3 × 6.3 × 6.3	14.3	2,000	Aluminum alloy
TCJ-A160-m60-M	6.3 × 6.3 × 6.3	10.1	2,000	Magnesium alloy
TCJ-B150-m60-A	5.9 × 5.9 × 5.9	7.7	2,000	Aluminum alloy
TCJ-B150-m60-M	5.9 × 5.9 × 5.9	5.5	2,000	Magnesium alloy
TCJ-B160-m60-A	6.3 × 6.3 × 6.3	8.8	2,000	Aluminum alloy
TCJ-B160-m60-M	6.3 × 6.3 × 6.3	6.1	2,000	Magnesium alloy

□ Soundproof enclosure

Acoustic noise testing is made possible by placing the shaker in a soundproof box.



Emergency stop switch

It is possible to stop the system in an emergency.





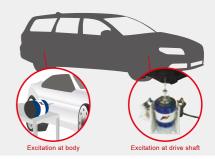






Excitation at any selected point

Modal analysis can be done by applying vibration to the car body, etc.



Trunnion Base

It is possible to use the vibration generator horizontally.



M120/MA1-CE



	System Model		m120/MA1-CE		Model	m120-CE
	Frequency Range (Hz)		0 - 2,000		Armature Support Method	Air suspension
		Sine (lbf)	270	Vibration	Armature Mass (lbs)	5.3
	Rated force	Random (lbf rms)	189	Generator	Armature Diameter (qin)	6.9
		Shock (lbf)	270		Dimensions (in)	φ12.6 x H12.9*2
	Maximum Acc.	No load (g)	51		Mass (lbs)	245
System Specifications		0.5 kg load (g)	42		Model	MA1-CE
		1.0 kg load (g)	36		Maximum Output (kVA)	1.0
	Maximu	um Velocity (in/s)	63	Power Amplifier	Dimensions (in) W x H x D	17 x 6 x 17
	Maximu	m Displacement(inp-p)	1.2	7 dispinior	Mass (lbs)	55
	Maximu	um Load (lbs)	265		Cooling Method	Air cooling
	Power	Requirements (kVA)*1	1.1	Cooling	Blower	Housed in vibration generator

but also powerful enough for full-scale tests.

Compact and silent,

*1 Power supply: single-phase AC100 V/200 V or AC110 V/220 V or AC120 V/240 V ±10% 50/60 Hz. A transformer is required for other supply voltages.
 *2 Insulation pad (W16.1 × H1.8 × D16.2 in) is standard equipment.
 * The specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%. Continuous use at maximum levels may cause failure. Please contact IMV if your system operates at more than 70%.
 * Frequency range values vary according to sensor and vibration controller.

System composition Standard equipment Optional items Vibration controller Sensor Options □K2+ K2 Sprint □зноск Sensor cable □PC Function generator -----BNC cable Options 1 Natural air-cooling mode function Vibration generator Power amplifier MA1-CE m120-CE

Head expander compatible with m120

Use a head expander for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (265 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

Model	Dimensions (in)	Mass (lbs)		Material
TBV-200-m120-A	4.9 × 4.9 × t 0.8	5.5	1,500	Aluminum alloy
TBV-200-m120-M	4.9 × 4.9 × t 0.8	3.7	1,500	Magnesium alloy
TBV-315-m120-A	12.4 × 12.4× t 1.4	19.8	1,000	Aluminum alloy
TBV-315-m120-M	12.4 × 12.4× t 1.4	13.6	1,000	Magnesium alloy
TBV-400-m120-A-G*	15.7 × 15.7 × t 1.4	33.0	600	Aluminum alloy
TBV-400-m120-M-G*	15.7 × 15.7 × t 1.4	23.0	600	Magnesium alloy

 $^{*}\!A$ supplementary guidance system using linear bearings is used with the vibration generator when combined with the head expander. Armature mass is increased due to the addition of the guide support.



Slip table compatible with m120

Use a slip table for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (265 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

	Model	Dimensions (in)	Mass(lbs)		Material
	TBH-200-m120-A-MB	4.9 × 4.9 × t 0.8	12.1	500	Aluminum alloy
	TBH-315-m120-A-MB	12.4 × 12.4 × t 0.8	19.8	500	Aluminum alloy
	TBH-400-m120-A-MB	15.7 × 15.7 × t 0.8	30.8	500	Aluminum alloy

Cubic fixture compatible with m120

Use when mounting directly on a vibration generator and performing vibration in 3 axes (X, Y, and Z).

Two types of cubic fixture are available. Type A has mounting holes on each face and type B has specimen mounting plates which attach to the cubic frame.

Model	Dimensions (in)	Mass(lbs)		Material	
TCJ-A150-m120-A	5.9 × 5.9 × 5.9	12.1	2,000	Aluminum alloy	
TCJ-A150-m120-M	5.9 × 5.9 × 5.9	8.8	2,000	Magnesium alloy	
TCJ-A160-m120-A	6.3 × 6.3 × 6.3	14.3	2,000	Aluminum alloy	
TCJ-A160-m120-M	6.3 × 6.3 × 6.3	10.1	2,000	Magnesium alloy	
TCJ-B150-m120-A	5.9 × 5.9 × 5.9	7.7	2,000	Aluminum alloy	
TCJ-B150-m120-M	5.9 × 5.9 × 5.9	5.5	2,000	Magnesium alloy	
TCJ-B160-m120-A	6.3 × 6.3 × 6.3	8.8	2,000	Aluminum alloy	
TCJ-B160-m120-M	6.3 × 6.3 × 6.3	6.1	2,000	Magnesium alloy	

□ Soundproof enclosure

Acoustic noise testing is made possible by placing the shaker in a soundproof box.



Emergency stop switch

It is possible to stop the system in an emergency.





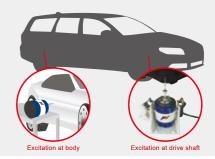






Excitation at any selected point

Modal analysis can be done by applying vibration to the car body, etc.



Trunnion Base

It is possible to use the vibration generator horizontally.



M130LS/MA1-CE



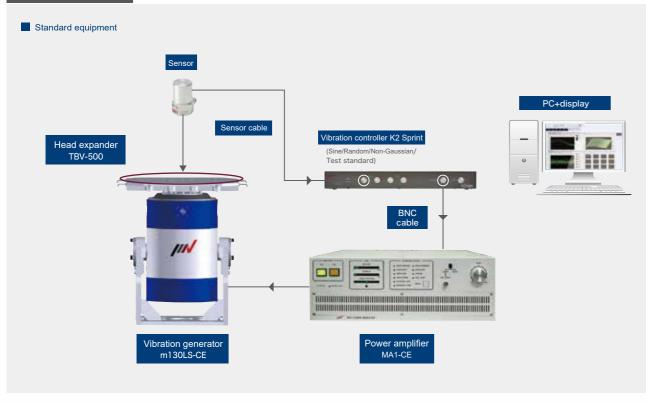
Air suspension Armature Support Method Frequency Range (Hz) 2 - 1,00022 Sine (lbf) 292 Armature Mass (lbs) Vibration Rated force Generator 7.1 Random (lbf rms) 146 Armature Diameter (qin) W16.1 x H23.3 x D18.1 Shock (lbf) 292 Dimensions (in) 550 No load (g)13 Mass (lbs) 0.5 kg load(g)12 Acc 1.0 1.0 kg load (g)11 Maximum Output (kVA) Power 17 x 6 x 17 Maximum Velocity (in/s) 1.0 Dimensions (in) W x H x D Amplifier 55 Maximum Displacement (inp-p) 2.0 Mass (lbs) Maximum Load (lbs) 220 Cooling Method Air cooling Power Requirements (kVA)*1 1.1 Cooling Housed in vibration generator Blower

Ideal for transport vibration tests for

maximum 220 lbs, 120 size class packages.

*1 Power supply: single-phase AC100 V/200 V or AC110 V/220 V or AC120 V/240 V ±10 % 50/60 Hz. A transformer is required for other supply voltages. * The specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%. Continuous use at maximum levels may cause failure. Please contact IMV if your system operates at more than 70%. * Frequency range values vary according to sensor and vibration controller.

System composition



Head expander compatible with m130LS

Use a head expander for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (220 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

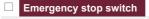
Model	Dim	ensions(in)	Mass(kg)		Material
TBV-500-m130	LS-A 19.7 :	× 19.7 × t 1.8	33	500	Aluminum alloy



Slip table compatible with m130LS

Use a slip table for test samples that are too large to put on the table. The test sample mass must fall within the load limit of the shaker (220 lbs) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

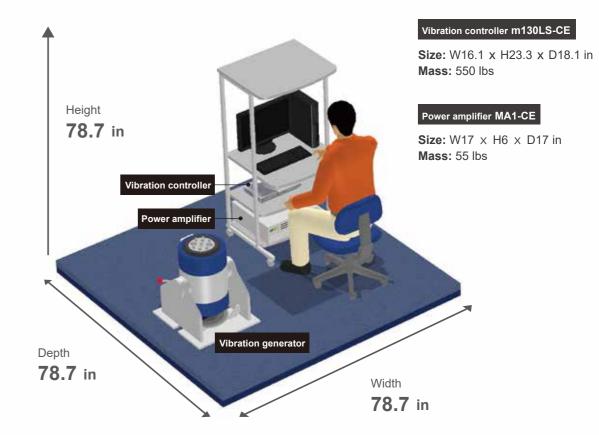
Model	Dimensions (in)	Mass (lbs)		Material
TBH-500-m130LS-A-MB	19.7 × 19.7 × t 0.8	61.7	500	Aluminum alloy



It is possible to stop the system in an emergency.



m130LS layout image



*L



Test standards

A test file will be automatically generated upon selection of the test conditions defined by the test standards.

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*This is the recommended layout. *Layout can be changed depending on the characteristics of the installation location.

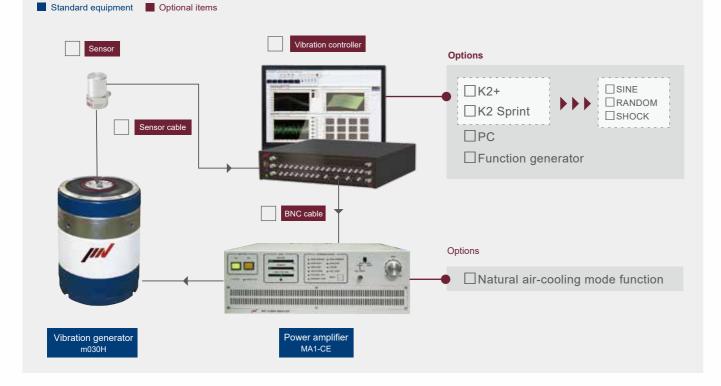
M030H/MA1-CE



	System Model		m030H/MA1-CE		Model	m030H	
	Frequency Range (Hz)		1,000 - 10,000		Armature Support Method	Rubber spring	
		Sine (lbf)	85	Vibration Generator	Armature Mass (lbs)	4.2	
	Rated force	Random (lbf rms)	60		Armature Diameter (φin)	2.6	
		Shock (lbf)	85		Dimensions (in)	φ7.5 x H11	
	Maximum Acc.	No load (g)	20		Mass (lbs)	66	
System Specifications		0.5 kg load (g)	16		Model	MA1-CE	
		1.0 kg load (g)	13		Maximum Output (kVA)	1.0	
	Maximum Velocity (in/s)		_*2	Power Amplifier	Dimensions (in) W x H x D	17 x 6 x 17	
	Maximum Displacement(inp-p)		_*2	Ampliner	Mass (lbs)	55	
	Maximum Load (lbs)		33		Cooling Method	Air cooling	
	Power Requirements (kVA)*1		0.5	Cooling	Blower	Housed in vibration generator	

*1 Power supply: single-phase AC100 V/200 V or AC110 V/220 V or AC120 V/240 V ±10 % 50/60 Hz. A transformer is required for other supply voltages.
 *2 The displacement at the lower limit of frequency (1,000 Hz) and maximum acceleration (20 g) is so small that there is no certified value.
 * The specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%. Continuous use at maximum levels may cause failure. Please contact IMV if your system operates at more than 70%.
 * Frequency range values vary according to sensor and vibration controller.

System composition



Emergency stop switch

It is possible to stop the system in an emergency.



Supports high frequencies (up to 10,000 Hz)

Sample test products that can be tested with the m-series

Automobile related parts















Cosmetics









9









Packing material



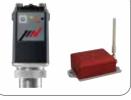
Drones



Medical equipment







Test cases using the m-series

Videos

Electronic parts

Vibration tests can be done on small electronic components such as connectors, capacitors, sensors, resistors, and LEDs.



Seismic evaluation tests

Complete systems are available for the reproduction and study of seismic events.



Automotive tests

A vibration system can be set up to move along guide rails.

The system can be combined with other types of test equipment, including temperature chambers, if necessary.



Automotive tests

Function and durability tests can be done on parts exposed to rapid temperature changes.



Fatigue testing of copper plating

A custom system developed using a compact m-series shaker for fatigue testing copper plating. Up to 12 sheets of copper plating can be tested simultaneously using this system.



A Transportation tests

Transportation tests can be done on small and packaged products. (Compatible with various test standards including JIS, IEC, MIL, and ASTM.)



Automotive tests

Simulation testing using actual measured data or more traditional random testing can be done in simultaneous 3-axis. When the shaker system is combined with a half-anechoic chamber, 3D squeak-and-rattle testing can be done in an environment with a background noise level of less than 30 dB.



Automotive tests

A 6-DOF vibration test system with 8 compact, silent shakers for squeak-and-rattle acoustic noise evaluation of instrument panels.





IMV's compact transport vibration test system, ideal for conducting a wide variety of transport tests, can be operated easily by anyone.



