






■ Specifications

System Model		m030/MA1-CE	m060/MA1-CE	m120/MA1-CE	m130LS/MA1-CE	m030H/MA1 (High frequency)	
Image							
Frequency Range (Hz)		0 - 3000	0 - 3000	0 - 2000	2 - 1000	1000 - 10000	
System Specifications	Rated force	Sine (N)	300	600	1200	1300	380
		Random (N rms)	210	420	840	650	266
		Shock (N)	300	600	1200	1300	380
	Maximum Acc.	No load (m/s ²)	500	500	500	130	200
		0.5 kg load (m/s ²)	272	352	413	123	158
		1.0 kg load (m/s ²)	187	272	352	118	131
	Maximum Velocity (m/s)	1.6	1.6	1.6	1.0	— *1	
	Maximum Displacement (mm-p)	26	30	30	51	— *1	
	Maximum Load (kg)	15	15	120	100	15	
	Power Requirements (kVA)*2	0.4	0.7	1.1	1.1	0.5	
Vibration Generator	Model	m030-CE	m060-CE	m120-CE	m130LS-CE	m030H	
	Armature Support Method	Diaphragm spring	Diaphragm spring	Air Suspension	Air Suspension	Rubber spring	
	Armature Mass (kg)	0.6	1.2	2.4	10	1.9	
	Armature Diameter (φmm)	114	114	174	φ180	65	
	Dimensions (mm)	φ190 x H240	φ230 x H281	φ320 x H327*3	W410 x H592 x D460	φ190 x H275	
	Mass (kg)	22	40	110	250	30	
Power Amplifier	Model	MA1-CE	MA1-CE	MA1-CE	MA1-CE	MA1-CE	
	Maximum Output (kVA)	1.0	1.0	1.0	1.0	1.0	
	Dimensions (mm) W x H x D	430 x 149 x 430	430 x 149 x 430	430 x 149 x 430	430 x 149 x 430	430 x 149 x 430	
	Mass (kg)	25	25	25	25	25	
	Cooling Method	Air cooling	Air cooling	Air cooling	Air cooling	Air cooling	
Cooling	Blower	Housed in vibration generator	Housed in vibration generator	Housed in vibration generator	Housed in vibration generator		

*1 The displacement at the lower limit of frequency (1000 Hz) and maximum acceleration (200 m/s²) 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 (W410 x H45 x D410 mm) 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.



m-series

Silent model ideal for abnormal noise inspection

Compact BSR Vibration test systems

- Feature 01** Compact and silent, but also powerful enough for full-scale tests
- Feature 02** Can be installed anywhere with AC100V
- Feature 03** Silent design with a built-in cooling fan



	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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*The specifications and design are subject to change without notice.

May 2021

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m030/MA1-CE

Compact and silent, but also powerful enough for full-scale tests.

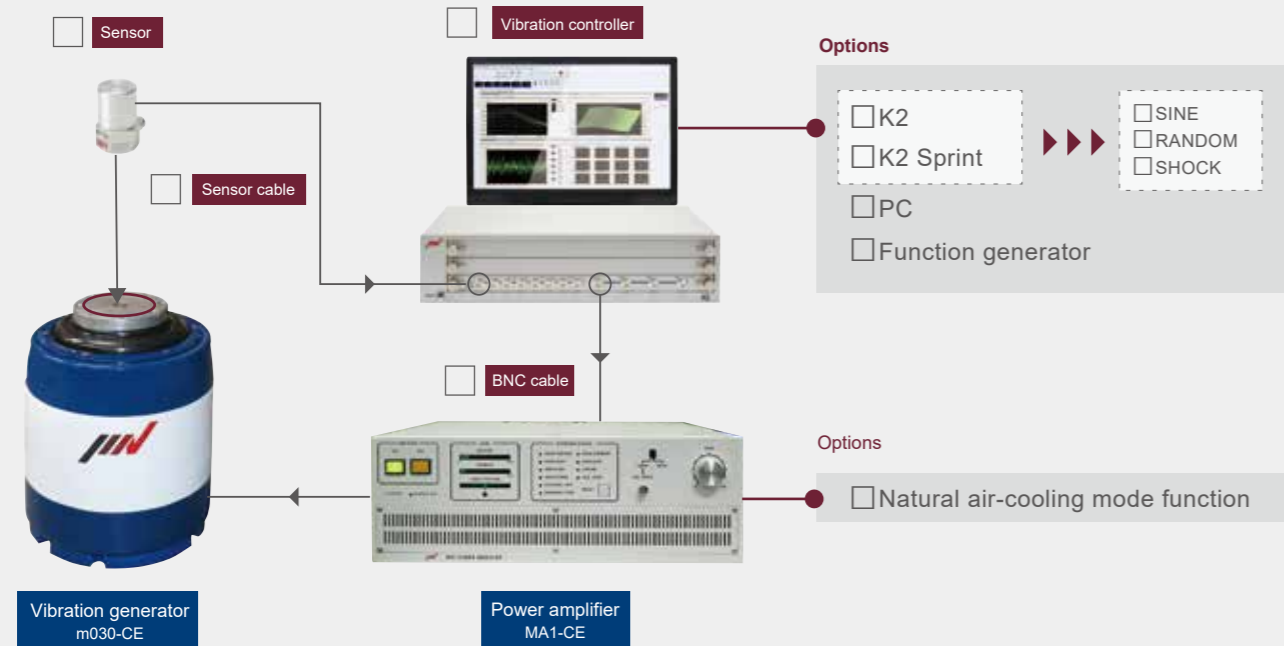


System Model		m030/MA1-CE		Model	m030-CE	
System Specifications	Frequency Range (Hz)	0 - 3000	Vibration Generator	Armature Support Method	Diaphragm spring	
	Rated force	Sine (N)		300	Armature Mass (kg)	0.6
		Random (N rms)		210	Armature Diameter (φmm)	114
		Shock (N)		300	Dimensions (mm)	φ190 x H240
	Maximum Acc.	No load (m/s ²)		500	Mass (kg)	22
		0.5 kg load (m/s ²)	272	Model	MA1-CE	
	Power Amplifier	1.0 kg load (m/s ²)	187	Maximum Output (kVA)	1.0	
		Maximum Velocity (m/s)	1.6	Dimensions (mm) W x H x D	430 x 149 x 430	
		Maximum Displacement (mmp-p)	26	Mass (kg)	25	
		Maximum Load (kg)	15	Cooling Method	Air cooling	
Power Requirements (kVA)*	0.4	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 specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%.
 *3 Continuous use at maximum levels may cause failure. Please contact IMV if your system operates at more than 70%.
 *4 Frequency range values vary according to sensor and vibration controller.

System composition

■ Standard equipment ■ Optional items



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 (15 kg) 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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TBV-125-m30-A	125 × 125 × t 20	0.9	2000	Aluminum alloy
<input type="checkbox"/> TBV-200-m30-A-G*	200 × 200 × t 20	2.7	1500	Aluminum alloy
<input type="checkbox"/> TBV-200-m30-M-G*	200 × 200 × t 20	1.9	1500	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 (15 kg) 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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TBH-200-m30-A-MB	200 × 200 × t 20	4.0	500	Aluminum alloy
<input type="checkbox"/> TBH-315-m30-A-MB	315 × 315 × t 20	7.5	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).

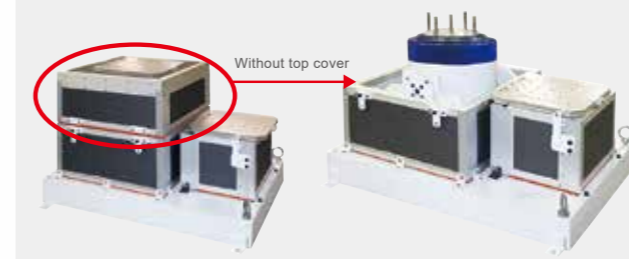
Two types of cubic fixture are available. Type A has mounting holes on each face and type B has specimen mounting plates which attach to the cubic frame.

Model	Dimensions (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TCJ-A150-m30-A	150 × 150 × 150	5.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-A150-m30-M	150 × 150 × 150	4.0	2000	Magnesium alloy
<input type="checkbox"/> TCJ-A160-m30-A	160 × 160 × 160	6.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-A160-m30-M	160 × 160 × 160	4.6	2000	Magnesium alloy
<input type="checkbox"/> TCJ-B150-m30-A	150 × 150 × 150	3.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-B150-m30-M	150 × 150 × 150	2.5	2000	Magnesium alloy
<input type="checkbox"/> TCJ-B160-m30-A	160 × 160 × 160	4.0	2000	Aluminum alloy
<input type="checkbox"/> TCJ-B160-m30-M	160 × 160 × 160	2.8	2000	Magnesium alloy



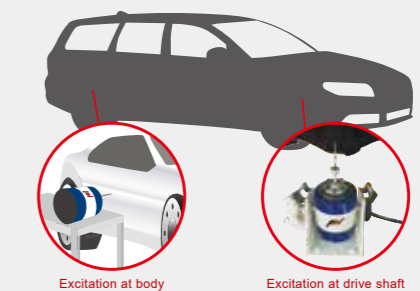
Soundproof enclosure

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



Excitation at any selected point

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



Emergency stop switch

It is possible to stop the system in an emergency.



Trunnion Base

It is possible to use the vibration generator horizontally.



m060/MA1-CE

Compact and silent, but also powerful enough for full-scale tests.

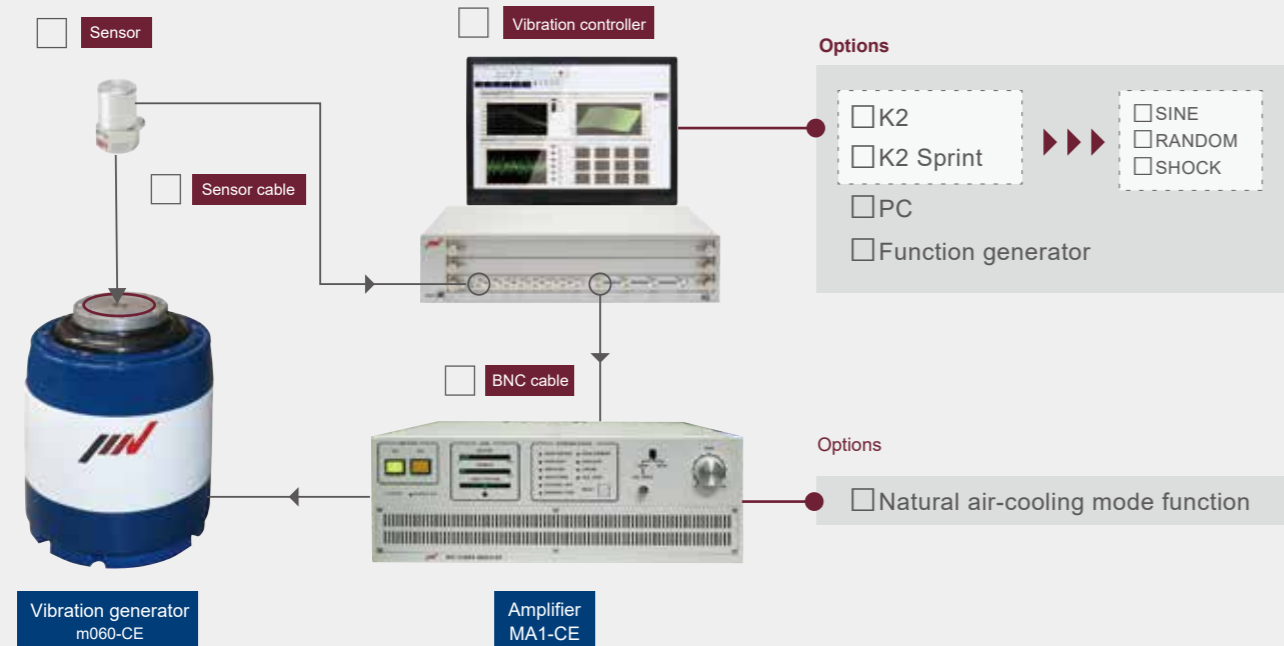


System Model		m060/MA1-CE		Model	m060-CE	
System Specifications	Frequency Range (Hz)	0 - 3000	Vibration Generator	Armature Support Method	Diaphragm spring	
	Rated force	Sine (N)		600	Armature Mass (kg)	1.2
		Random (N rms)		420	Armature Diameter (φmm)	114
		Shock (N)		600	Dimensions (mm)	φ230 x H281
	Maximum Acc.	No load (m/s ²)		500	Mass (kg)	40
		0.5 kg load (m/s ²)	352	Model	MA1-CE	
		1.0 kg load (m/s ²)	272	Maximum Output (kVA)	1.0	
		Maximum Velocity (m/s)	1.6	Dimensions (mm) W x H x D	430 x 149 x 430	
	Maximum Displacement (mmp-p)	30	Power Amplifier	Mass (kg)	25	
	Maximum Load (kg)	15		Cooling Method	Air cooling	
Power Requirements (kVA)*	0.7	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.
 *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



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 (15 kg) 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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TBV-125-m60-A	125 x 125 x t 20	0.9	2000	Aluminum alloy
<input type="checkbox"/> TBV-200-m60-A	200 x 200 x t 20	2.5	1500	Aluminum alloy
<input type="checkbox"/> TBV-200-m60-M	200 x 200 x t 20	1.7	1500	Magnesium alloy
<input type="checkbox"/> TBV-315-m60-A-G*	315 x 315 x t 30	8.8	1000	Aluminum alloy
<input type="checkbox"/> TBV-315-m60-M-G*	315 x 315 x t 30	6.1	1000	Magnesium alloy

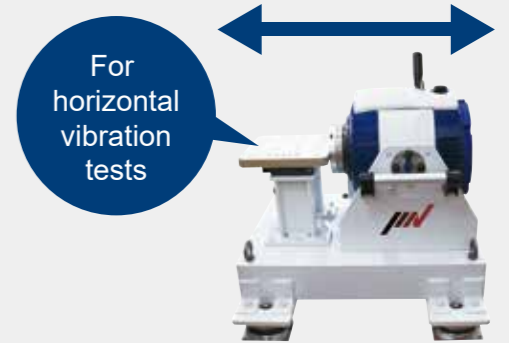
*A supplementary guidance system with linear bearings is used with the vibration generator when combined with the head expander. Armature mass is increased due to the addition of the guide support.



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 (15 kg) 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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TBH-200-m60-A-MB	200 x 200 x t 20	4.0	500	Aluminum alloy
<input type="checkbox"/> TBH-315-m60-A-MB	315 x 315 x t 20	7.5	500	Aluminum alloy
<input type="checkbox"/> TBH-400-m60-A-MB	400 x 400 x t 20	12.3	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).

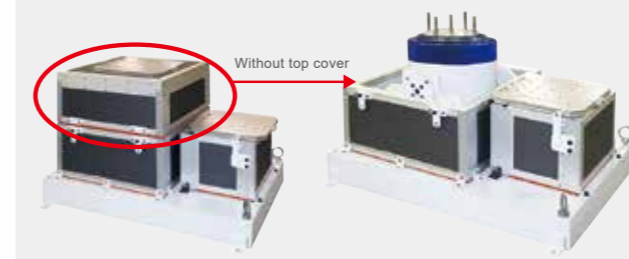
Two types of cubic fixture are available. Type A has mounting holes on each face and type B has specimen mounting plates which attach to the cubic frame.

Model	Dimensions (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TCJ-A150-m60-A	150 x 150 x 150	5.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-A150-m60-M	150 x 150 x 150	4.0	2000	Magnesium alloy
<input type="checkbox"/> TCJ-A160-m60-A	160 x 160 x 160	6.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-A160-m60-M	160 x 160 x 160	4.6	2000	Magnesium alloy
<input type="checkbox"/> TCJ-B150-m60-A	150 x 150 x 150	3.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-B150-m60-M	150 x 150 x 150	2.5	2000	Magnesium alloy
<input type="checkbox"/> TCJ-B160-m60-A	160 x 160 x 160	4.0	2000	Aluminum alloy
<input type="checkbox"/> TCJ-B160-m60-M	160 x 160 x 160	2.8	2000	Magnesium alloy



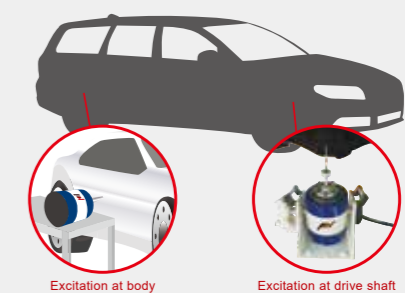
Soundproof enclosure

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



Excitation at any selected point

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



Emergency stop switch

It is possible to stop the system in an emergency.



Trunnion Base

It is possible to use the vibration generator horizontally.



m120/MA1-CE

Compact and silent, but also powerful enough for full-scale tests.

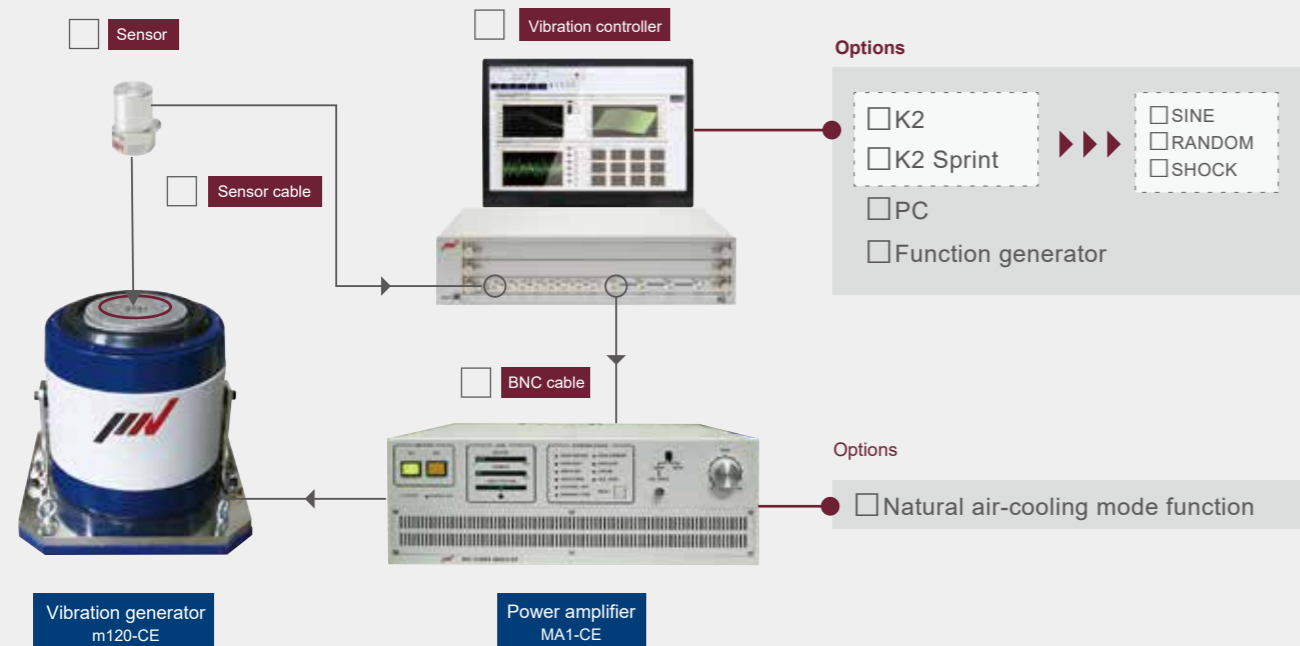


System Model		m120/MA1-CE		Model	m120-CE	
System Specifications	Frequency Range (Hz)	0 - 2000	Vibration Generator	Armature Support Method	Air suspension	
	Rated force	Sine (N)		1200	Armature Mass (kg)	2.4
		Random (N rms)		840	Armature Diameter (φmm)	174
		Shock (N)		1200	Dimensions (mm)	φ320 x H327*2
	Maximum Acc.	No load (m/s ²)	500	Mass (kg)	110	
		0.5 kg load (m/s ²)	413	Power Amplifier	Model	MA1-CE
		1.0 kg load (m/s ²)	352		Maximum Output (kVA)	1.0
		Maximum Velocity (m/s)	1.6		Dimensions (mm) W x H x D	430 x 149 x 430
		Maximum Displacement (mmp-p)	30		Mass (kg)	25
		Maximum Load (kg)	120		Cooling Method	Air cooling
Power Requirements (kVA)*	1.1	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 Insulation pad (W410 x H45 x D410 mm) 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



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 (120 kg) 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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TBV-200-m120-A	200 × 200 × t 20	2.5	1500	Aluminum alloy
<input type="checkbox"/> TBV-200-m120-M	200 × 200 × t 20	1.7	1500	Magnesium alloy
<input type="checkbox"/> TBV-315-m120-A	315 × 315 × t 35	9.0	1000	Aluminum alloy
<input type="checkbox"/> TBV-315-m120-M	315 × 315 × t 35	6.2	1000	Magnesium alloy
<input type="checkbox"/> TBV-400-m120-A-G*	400 × 400 × t 35	15	600	Aluminum alloy
<input type="checkbox"/> TBV-400-m120-M-G*	400 × 400 × t 35	10.4	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 (120 kg) 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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TBH-200-m120-A-MB	200 × 200 × t 20	5.5	500	Aluminum alloy
<input type="checkbox"/> TBH-315-m120-A-MB	315 × 315 × t 20	9.0	500	Aluminum alloy
<input type="checkbox"/> TBH-400-m120-A-MB	400 × 400 × t 20	14.0	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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
<input type="checkbox"/> TCJ-A150-m120-A	150 × 150 × 150	5.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-A150-m120-M	150 × 150 × 150	4.0	2000	Magnesium alloy
<input type="checkbox"/> TCJ-A160-m120-A	160 × 160 × 160	6.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-A160-m120-M	160 × 160 × 160	4.6	2000	Magnesium alloy
<input type="checkbox"/> TCJ-B150-m120-A	150 × 150 × 150	3.5	2000	Aluminum alloy
<input type="checkbox"/> TCJ-B150-m120-M	150 × 150 × 150	2.5	2000	Magnesium alloy
<input type="checkbox"/> TCJ-B160-m120-A	160 × 160 × 160	4.0	2000	Aluminum alloy
<input type="checkbox"/> TCJ-B160-m120-M	160 × 160 × 160	2.8	2000	Magnesium alloy



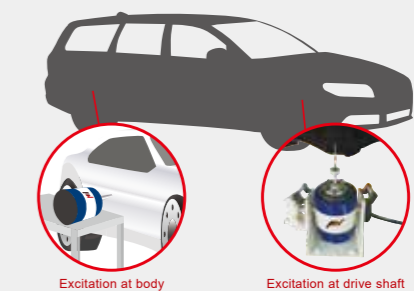
Soundproof enclosure

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



Excitation at any selected point

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



Emergency stop switch

It is possible to stop the system in an emergency.



Trunnion Base

It is possible to use the vibration generator horizontally.



m130LS/MA1-CE

Ideal for transport vibration tests for maximum 100 kg, 120 size class packages.



System Model		m130LS/MA1-CE		Model		m130LS-CE	
System Specifications	Frequency Range (Hz)	2 - 1000		Armature Support Method	Air suspension		
	Rated force	Sine (N)	1300	Vibration Generator	Armature Mass (kg)	10	
		Random (N rms)	650		Armature Diameter (φmm)	180	
		Shock (N)	1300		Dimensions (mm)	W410 x H592 x D460	
	Maximum Acc.	No load (m/s ²)	130	Power Amplifier	Mass (kg)	250	
		0.5 kg load (m/s ²)	123		Model	MA1-CE	
1.0 kg load (m/s ²)		118	Maximum Output (kVA)		1.0		
Maximum Velocity (m/s)		1.0	Dimensions (mm) W x H x D		430 x 149 x 430		
Maximum Displacement (mmp-p)		51	Mass (kg)		25		
Maximum Load (kg)	100	Cooling	Cooling Method	Air cooling			
Power Requirements (kVA)*	1.1		Blower	Housed in vibration generator			

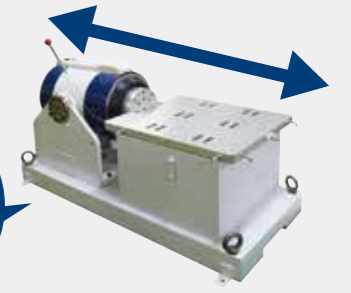
*1 Power supply: single-phase AC100 V/200 V or AC110 V/220 V or AC120 V/240 V ±10% 50/60 Hz. A transformer is required for other supply voltages.
 *The specifications show maximum system performance. For long-duration tests, system must be de-rated up to 70%.
 Continuous use at maximum levels may cause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

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 (100 kg) minus the head expander mass. When using the head expander, the upper limit frequency is smaller than when using the test system alone.

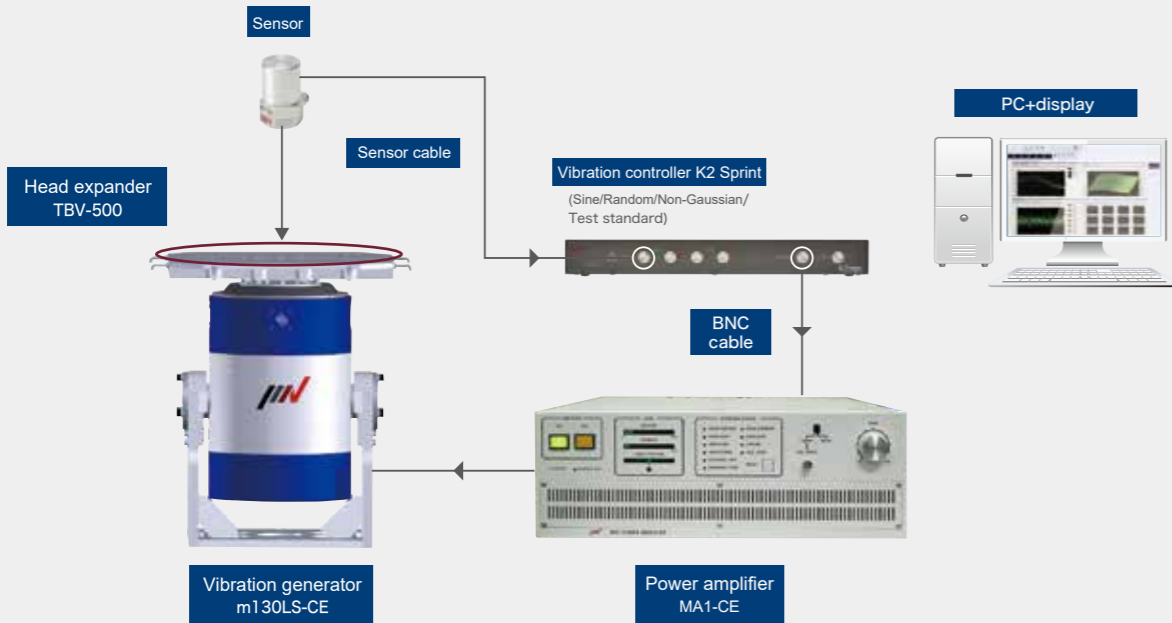
Model	Dimensions (mm)	Mass (kg)	Maximum frequency (Hz)	Material
TBH-500-m130LS-A-MB	500 × 500 × t 20	28	500	Aluminum alloy

For horizontal vibration tests



System composition

Standard equipment



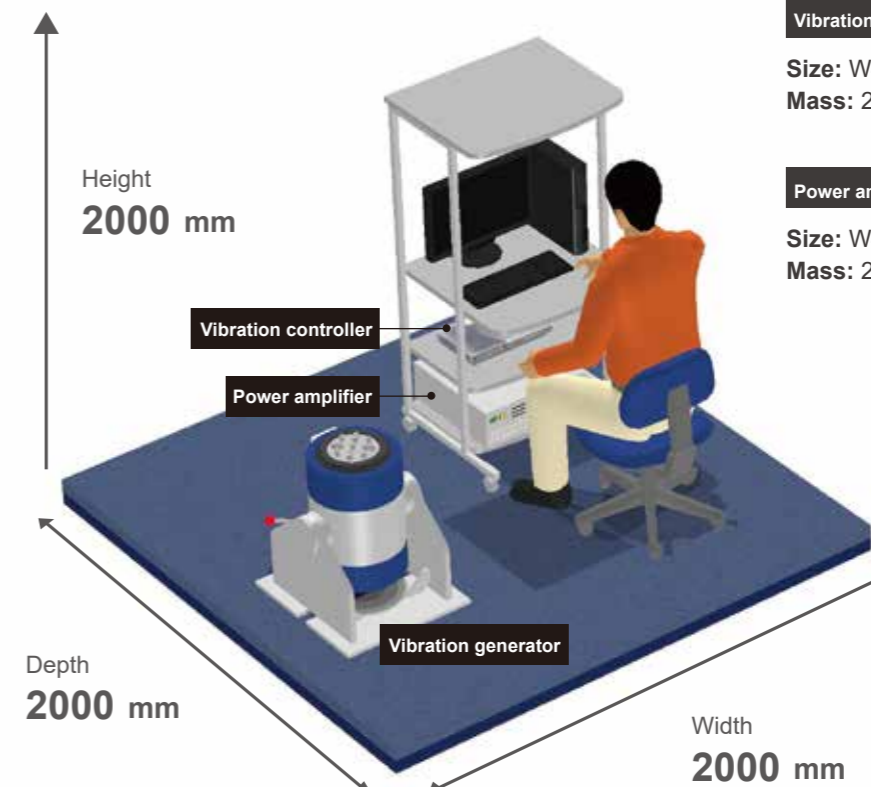
Head expander compatible with m130LS

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 (100 kg) 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 (mm)	Mass (kg)	Maximum frequency (Hz)	Material
TBV-500-m130LS-A	500 × 500 × t 45	15	500	Aluminum alloy



m130LS layout image



Vibration controller m130LS-CE
 Size: W410 x H592 x D460 mm
 Mass: 250 kg

Power amplifier MA1-CE
 Size: W430 x H149 x D430 mm
 Mass: 25 kg

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

m030H/MA1

Supports high frequencies (up to 10,000 Hz)

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



System Model		m030H/MA1		Model	m030H	
System Specifications	Frequency Range (Hz)	1000 - 10000	Vibration Generator	Armature Support Method	Rubber spring	
	Rated force	Sine (N)		380	Armature Mass (kg)	1.9
		Random (N rms)		266	Armature Diameter (φmm)	65
		Shock (N)	380	Dimensions (mm)	φ190 x H275	
	Maximum Acc.	No load (m/s ²)	200	Mass (kg)	30	
		0.5 kg load (m/s ²)	158	Model	MA1-CE	
		1.0 kg load (m/s ²)	131	Maximum Output (kVA)	1.0	
		Maximum Velocity (m/s)	~*2	Dimensions (mm) W x H x D	430 x 149 x 430	
		Maximum Displacement (mmp-p)	~*2	Mass (kg)	25	
	Maximum Load (kg)	15	Power Amplifier	Cooling Method	Air cooling	
Power Requirements (kVA)*	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 (1000 Hz) and maximum acceleration (200 m/s²) 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.

Automobile related parts

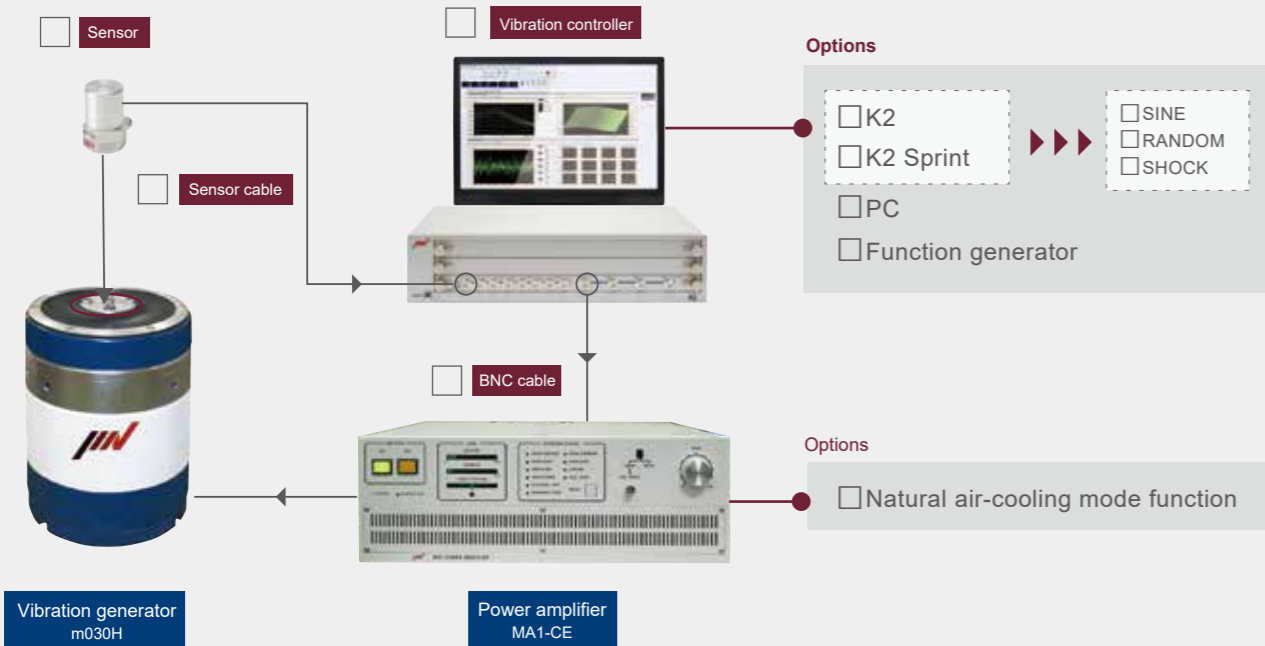


Electronic devices



System composition

■ Standard equipment ■ Optional items



Emergency stop switch

It is possible to stop the system in an emergency.



Pharmaceuticals



Cosmetics



Food



Beverages



Various Sensors



Packing material



Drones



Medical equipment



Test cases using the m-series

Electronic parts

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



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.



Seismic evaluation tests

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



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

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

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

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

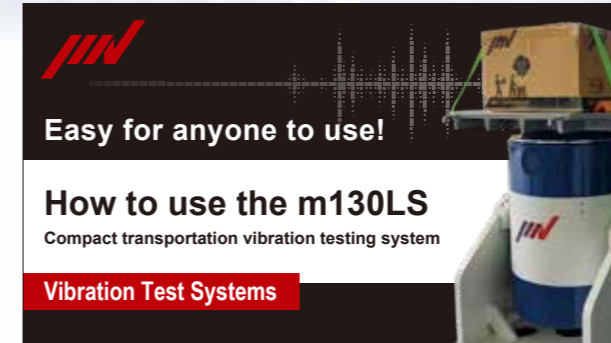


Automotive tests

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



Videos



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

