



IMV CORPORATION

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



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MES Business Division
IMV Advanced Technology Research Laboratory
Sales Division
Quality Assurance Department
Personnel/General Affairs Department



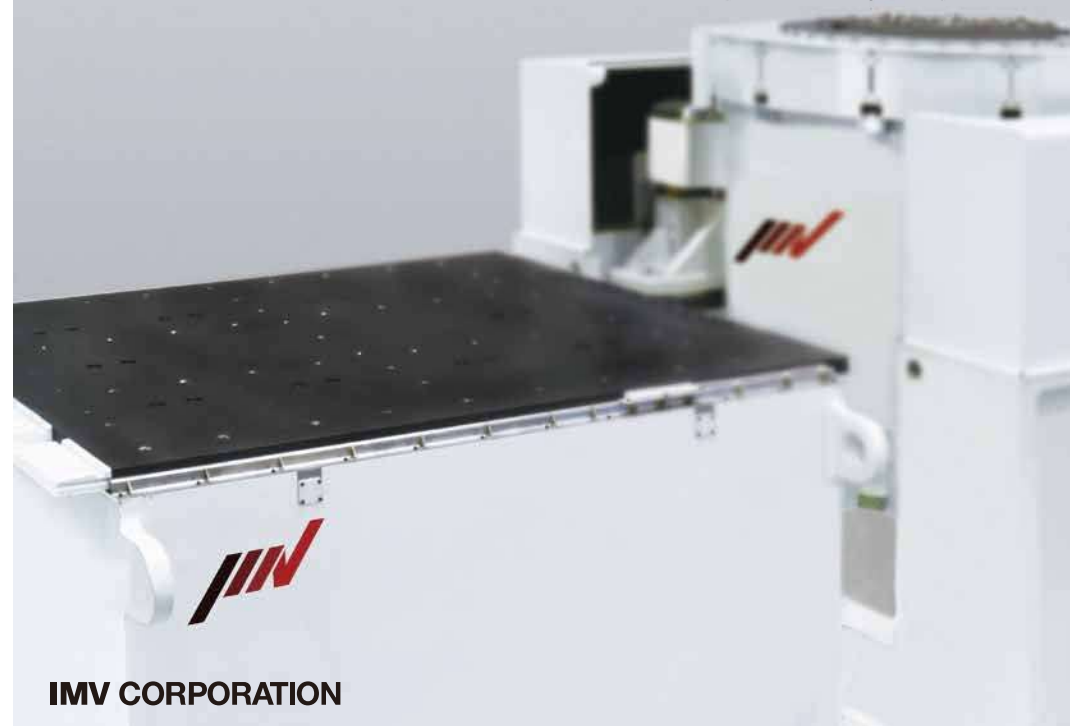
CN/14640E Osaka Site

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Global version

Dynamic Simulation System Full Lineup Catalogue



IMV CORPORATION



World's leading supplier of high reliability vibration test systems

Wide range of industries benefit through quality and reliability improvements

Since it was founded in 1957, IMV has been proud to be at the forefront of research and development in vibration testing systems, supplying technically-advanced systems, with safety and reliability as first priorities. The range of IMV vibration-test systems includes single-axis and simultaneous multi-axis systems for up to six degrees of freedom simulation. A range of vibration and diagnostic instruments are also available. Engineering consultancy services to assist customers with vibration measurement, analysis and testing can also be provided.

IMV designs, manufactures, markets and maintains vibration test systems which simulate actual vibration environments, and measuring systems which record and analyse vibration created or experienced by a product. IMV can also provide test laboratory and consultancy services.

We are proud to be contributing to the safety and reliability of a wide range of products by working with the automotive, aerospace, electrical machinery and structural engineering industries to solve problems caused by vibration.

Our policy is to continue to develop our skills and products to ensure we continue to provide the best possible service to our clients.



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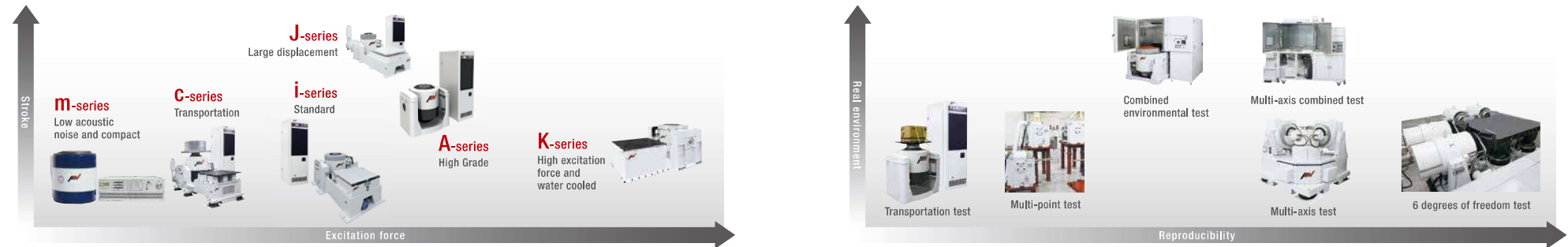
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Series Arrangements

Vibration Test Systems Lineup Chart



			Automotive parts	Aerospace	Electronic parts		Information and telecommunication equipment	Precision equipment	Electrical equipment	Transportation environment	Usage environment
A-series	High Grade Range	P09	Car audio, Navigation system, Door mirror, Inverter, Motor, Light associated part, ECU associated part, Solenoid, Car-mounted meter, Electric power station motor, Combination meter, Fuel pump, Inlet system part, Hybrid associated part, Battery, Electric pump, Muffler, Catalyst, Fuel battery, ABS coil, Seat belt, Breaking system	Personal monitor TV, Communications equipment, Resin product, Seal material, Dish, Chair, Aircraft engine component, Space environmental utilization, Airborne equipment	LCD TV, Connector component, Car mounted electric component, General purpose motor, In-rack equipment, PC, Printed circuit board, Impact from transportation equipment		Navigation system, Car mounted telecommunication equipment, Vending machine on the expressway, Industrial motor, Antenna associated component, Large antenna	Industrial robot, Digital camera, Lens, Optical equipment, Surface mounter associated component, Mobile phone, Copy machine, Video camera	Withstanding voltage transformer, Fuel battery, Inverter associated component, Space battery, Large lithium battery	Rail vehicle component, Construction equipment, Shipping on a rough road	Combination meter, Instrumental panel associated component, Solar system, Other car-mounted component, PC
J-series	Large Displacement Range	P13									
i-series	Standard Range	P15									
C-series	Transportation Test Range	P17	Door mirror	_____	Packing material, Transportation package, Usage environmental transportation, Domestic electric appliances, Projector		Packing material	Packing material, Transportation package, Usage environmental transportation, Game equipment	Inverter equipment	Transportation for medicine	Packing material
K-series	High Excitation Force Water Cooled Range	P19	Brake, Catalyst, Heat insulation, Hydraulic sensor, Starter, alternator, Muffler, Hybrid motor, Battery, Sensor, Dynamo, Power unit	Satellite equipment, Propeller engine	Servomotor, Refrigerator, Heater, Washing machine, Major electronics		Large parabolic antenna, Antenna associated component	_____	Large battery equipment	Rail vehicle component, Railway component	Display
m-series	Low Acoustic Noise and Compact Range	P21	Air-conditioner vent, ETC, ITS device, Car-mounted sensor, Car audio, Navigation system	_____	Board, Mobile phone, Mobile products, Electronic component, Compact motor		ETC for motorcycle, Mobile phone	Medical equipment, Usage board, Digital camera, Semiconductor component	_____	_____	Structure(miniature)
VSH/PET	High Frequency and Compact Range	P23	O ₂ sensor, Exhaust sensor	_____	Filling, Piezo-electric element, Sensor associated component, SW associated component		_____	_____	_____	_____	_____
DC-series	2-Axis Changeover Systems	P35	Radiator, Car air-conditioner module, Compressor	Aviation communication equipment, Aircraft component	Real environmental shipping, Car audio, LCD panel, Domestic electric appliances		Car navigation, Car audio, Bracket	Video camera, Car audio, Copy machine, Multi-function printer	Large battery equipment, Power board, Control board	Cushioning material, Packing material, Transportation equipment	Earthquake simulation system, Earthquake resistance test system
TC-series	3-Axis Changeover Systems	P36	Radiator, Car air-conditioner module								
DS-series	2-Axis Simultaneous Systems	P37	Radiator, Car air-conditioner module, Back mirror								
TS-series	3-Axis Simultaneous Systems	P38	Car audio, Navigation system, Car navigation system, Air-conditioner, Vibration insulation mount, Radiator								
TTS-series	6 Degrees of Freedom Systems	P39	Ride quality, Construction equipment, Cutaway body	_____	_____		_____	_____	Battery	_____	Cabin for construction equipment

Ecology

Environmentally-friendly vibration systems

Automatic energy saving

ECO-shaker is an electrodynamic vibration test system in which the output of the power amplifier, power input to the vibration generator and cooling blower speed are automatically optimised, according to the payload and test requirements. Complicated manual settings are no longer needed. Changes in the operating environment or in test level are accommodated without operator intervention.

[Features]

- Only vibration test pattern need to be set
- Automatic response to changes in sample under test or test level
- Continuous monitoring of temperatures used to control blower speed

*Operation condition selection system and method (JP Patent No. 4231095)
*Operation condition selection system and program (JP Patent No. 2632229)



Vibration controller K2+

Effect of energy saving

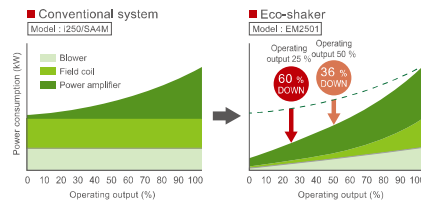
The lower the system output, the more energy saving can be achieved.

Calculation method Calculation of CO₂ reduction, referring to actual data of our i250/SA4M (Maximum force 32 kN)

Conditions 1) Random 2) Average operating output: 25 %
3) Average operating ratio per year: 70 %
*Results may vary for systems, test conditions and cases.

Save up to **80 %** on your running costs

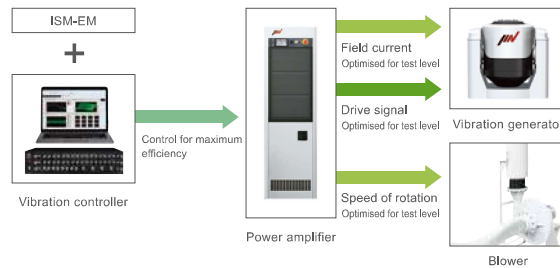
Reduce your CO₂ emissions by up to **80 %**



Comparison of power consumption with the conventional system

Operation of ISM-EM (Power consumption)

Minimising the energy consumption of a conventional vibration test system would require complex calculation and adjustments to suit the test requirements. The Integrated Shaker Manager (ISM-EM) technology incorporated within the ECO-shaker system automatically controls the power amplifier output, field level and blower speed to achieve the maximum efficiency under all test conditions.



Upgrading existing systems

ISM-EM technology can be added to existing IMV vibration test systems by installing the ISM-EM module and additional software. Contact IMV or your local distributor for further information and delivery.



Example design

Improvement of working conditions

Ensuring the vibration system is operating efficiently not only saves money; it also can reduce noise levels and heat dissipation into the workplace. This improves the working environment and can simplify initial installation.

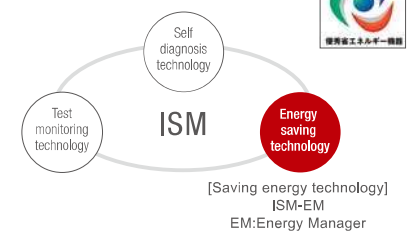


Blower

Energy saving type vibration test system [ECO-Shaker]

Vibration test systems consume a lot of electricity. IMV has developed environmentally friendly products which minimise the required electric power and cut down electric consumption and CO₂ emissions. Due to the great contribution to the promotion of efficient use of energy, the technology of ECO-Shaker received the Chairman's award from The Machinery Federation in 2012.

Intelligent Shaker Manager



Contribution to the environment

Many countries have legislated, such as the Clean Development Mechanism in the Kyoto Protocol, and the EU Energy Efficiency Directive, obliging businesses and their products to be more energy-efficient. The IMV ECO-shaker systems help to meet these regulations.



K-series

High Excitation Force Water Cooled Range



K350
(With a slip table)

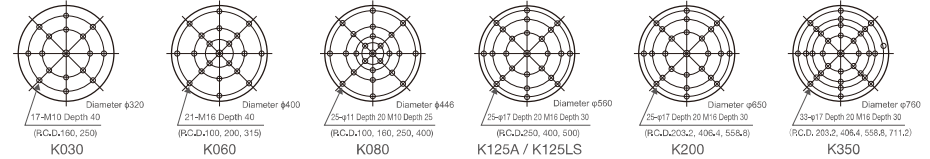
High excitation force and silent water cooled system for improving test environment

K-series, high excitation force water cooled vibration simulating test systems fully developed by IMV. Advanced function of the K-series will significantly improve the test environment.

[Silent system design] The water cooling system produces neither the intake nor exhaust sounds that an air cooling system emits.

[Record of significant accomplishments] IMV has been developing the most advanced water cooled system.

■ Table Insert Pattern (Unit: mm)



■ Specifications

System Model	K030/SA4HAG	K062/SA8HAG ¹⁾	K080/SA10HAG ¹⁾	K100/SA14HAG ¹⁾	K125A/SA18HAG ¹⁾	K100LS/SA18HAG ¹⁾	K125LS/SA20HAG ¹⁾	K160/SA20HAG ¹⁾	K200/SA24HAG ¹⁾	K350/SA38HAG ¹⁾
Frequency Range (Hz)	0-3000	0-2500	0-2500	0-2500	0-2500	0-2000	0-2000	0-2000	0-2000	0-2000
Rated Force	Sine (kN)	30.8	61.7	80	125	100	125	160	200	350
	Random (kN rms) ¹⁾	21.5	61.7	80	100	125	100	125	160	315
Maximum Acc.	Shock (kN)	61.6	123.4	160	200	250	200	250	320	700
	Sine (m/s ²)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Maximum Vel.	Random (m/s ² rms)	557	700	700	700	700	700	700	700	700
	Shock (m/s ² peak)	2000	2000	2000	2000	2000	2000	1600	2000	2000
Maximum Dis.	Sine (m/s) ¹⁾	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Shock (m/s peak)	1.8	2.0	2.0	2.0	2.0	2.0	2.4	2.4	3.5
Maximum Travel (mmp-p)	Sine (mmp-p)	51	51	51	51	51	100	76.2	76.2	76.2
	Shock (mmp-p)	58	60	59	62	62	116	86	86	94
Maximum Load (kg)	Maximum Load (kg)	500	1000	1000	2000	2000	2000	2000	2000	3000
	Power Requirements (kVA) ²⁾	49	87	100	150	170	170	190	270	300
Breaker Capacity (A) ⁴⁾	Breaker Capacity (A) ⁴⁾	175	350	350	600	600	700	-	-	-
Vibration Generator	Model	K030	K060	K080	K125A	K125A	K125LS	K200	K200	K350
	Armature Mass (kg)	27	40	60	80	80	100	100	200	350
Power Amplifier	Armature Diameter (φmm)	320	400	446	560	560	560	560	650	760
	Allowable Eccentric Moment (N·m)	980	980	1550	2450	2450	2450	4900	4900	4900
Controller	Dimensions (mm) W×H×D	1100×1090×824	1380×1085×1000	1595×1200×1050	1776×1373×1300	1776×1373×1300	1990×1546×1370	2465×1908×1740	2465×1908×1740	3020×2306×2080
	Shaker Body Diameter (φmm)	760	900	1000	1100	1100	1100	1260	1260	1630
Cooling	Mass (kg)	3000	3700	5000	7000	7000	8000	8000	19000	40000
	Model	SA4HAG-K30	SA8HAG-K60	SA10HAG-K80	SA14HAG-K125A	SA18HAG-K125A	SA20HAG-K125LS	SA20HAG-K200	SA24HAG-K200	SA38HAG-K350
Cooling	Maximum Output (kVA)	33	60	100	98	124	124	155	256	400
	Dimensions (mm) W×H×D	580×1950×850	1160×1950×850	1160×1950×850	1740×1950×850	1740×1950×850	1740×1950×850	2320×1950×850	2900×1950×850	4060×1950×850
Cooling	Mass (kg)	950	1350	1500	2500	2600	2600	3300	4850	5450
	Mass (kg)	950	1350	1500	2500	2600	2600	3300	4850	5450
Cooling	Heat Exchanger	Dimensions (mm) W×H×D	580×1700×850	580×1700×850	580×1700×850	580×1700×850	580×1700×850	580×1700×850	1050×1900×800	1050×1900×800
	Mass (kg)	400	400	400	400	400	400	400	600	950

■ Eco Specifications

System Model	K030/EM4HAG	K062/EM8HAG ¹⁾	K080/EM10HAG ¹⁾	K100/EM14HAG ¹⁾	K125A/EM18HAG ¹⁾	K100LS/EM18HAG ¹⁾	K125LS/EM20HAG ¹⁾	K160/EM20HAG ¹⁾	K200/EM24HAG ¹⁾	K350/EM38HAG ¹⁾
Frequency Range (Hz)	0-3000	0-2500	0-2500	0-2500	0-2500	0-2000	0-2000	0-2000	0-2000	0-2000
Rated Force	Sine (kN)	30.8	61.7	80	100	125	100	125	160	350
	Random (kN rms) ¹⁾	21.5	61.7	80	100	125	100	125	160	315
Maximum Acc.	Shock (kN)	61.6	123.4	160	200	250	200	250	320	700
	Sine (m/s ²)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Maximum Vel.	Random (m/s ² rms)	557	700	700	700	700	700	700	700	700
	Shock (m/s ² peak)	2000	2000	2000	2000	2000	2000	1600	2000	2000
Maximum Dis.	Sine (m/s) ¹⁾	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Shock (m/s peak)	1.8	2.0	2.0	2.0	2.0	2.0	2.4	2.4	3.5
Maximum Travel (mmp-p)	Sine (mmp-p)	51	51	51	51	51	100	76.2	76.2	76.2
	Shock (mmp-p)	58	60	59	62	62	116	86	86	94
Maximum Load (kg)	Maximum Load (kg)	500	1000	1000	2000	2000	2000	2000	2000	3000
	Power Requirements (kVA) ²⁾	49	87	100	150	170	170	190	270	300
Breaker Capacity (A) ⁴⁾	Breaker Capacity (A) ⁴⁾	175	350	350	600	600	700	-	-	-
Vibration Generator	Model	K030	K060	K080	K125A	K125A	K125LS	K200	K200	K350
	Armature Mass (kg)	27	40	60	80	80	100	100	200	350
Power Amplifier	Armature Diameter (φmm)	320	400	446	560	560	560	560	650	760
	Allowable Eccentric Moment (N·m)	980	980	1550	2450	2450	2450	4900	4900	4900
Controller	Dimensions (mm) W×H×D	1100×1090×824	1380×1085×1000	1595×1200×1050	1776×1373×1300	1776×1373×1300	1990×1546×1370	2465×1908×1740	2465×1908×1740	3020×2306×2080
	Shaker Body Diameter (φmm)	760	900	1000	1100	1100	1100	1260	1260	1630
Cooling	Mass (kg)	3000	3700	5000	7000	7000	8000	8000	19000	40000
	Model	EM4HAG-K30	EM8HAG-K60	EM10HAG-K80	EM14HAG-K125A	EM18HAG-K125A	EM20HAG-K125LS	EM20HAG-K200	EM24HAG-K200	EM38HAG-K350
Cooling	Maximum Output (kVA)	33	60	100	98	124	124	155	256	400
	Dimensions (mm) W×H×D	580×1950×850	1160×1950×850	1160×1950×850	1740×1950×850	1740×1950×850	1740×1950×850	2320×1950×850	2900×1950×850	4060×1950×850
Cooling	Mass (kg)	950	1350	1500	2500	2600	2600	3300	4850	5450
	Mass (kg)	950	1350	1500	2500	2600	2600	3300	4850	5450
Cooling	Heat Exchanger	Dimensions (mm) W×H×D	580×1700×850	580×1700×850	580×1700×850	580×1700×850	580×1700×850	580×1700×850	1050×1900×800	1050×1900×800
	Mass (kg)	400	400	400	400	400	400	400	600	950

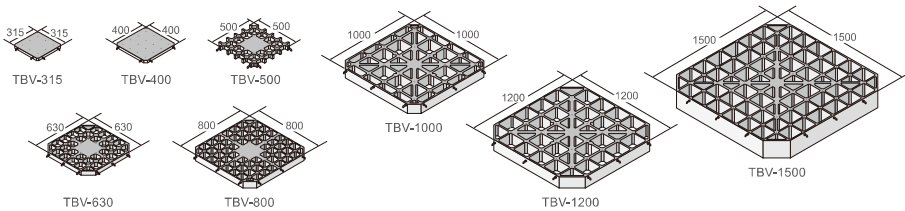
¹⁾ Random force ratings are specified in accordance with ISO5344 conditions. Please contact IMV or your local distributor with specific test requirements. ²⁾ Power supply: 3-phase 200/220/240/380/400/415 V (K200 and K350 is AC380/400/415V), 50/60 Hz. A transformer is required for other supply voltages. ³⁾ If the tests (Sweep or Spool) include high velocity, the maximum velocity value should be reduced to 1.4 m/s. ⁴⁾ Breaker capacity for 200 V. ⁵⁾ Bypass circuit is needed. Please contact IMV or your local distributor for further information. ⁶⁾ An export license is required for exporting the shaker system of over 50 kN sine force. (See P. 76) ⁷⁾ The specification shows the 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%. ⁸⁾ For random vibration tests, please set the test definition of the peak value of acceleration waveform to operate at less than the maximum acceleration of shock. ⁹⁾ Frequency range values vary according to the sensor and vibration controller. ¹⁰⁾ Armature mass and acceleration may change when a chamber is added. ¹¹⁾ Mass and dimensions may change for CE-marked systems.

Optional Units

Head expanders and cubic fixtures

Head expanders

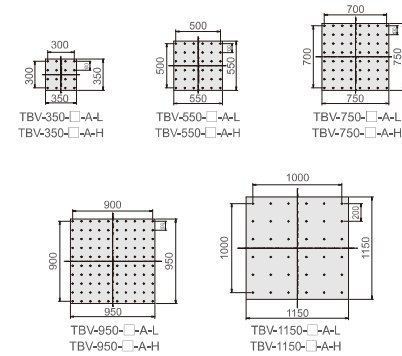
Where the size of the specimen exceeds the dimensions of the armature a head expander should be used. Generally, the maximum usable frequency is reduced as the size of specimen increases. The head expander should be selected based on specimen size and maximum test frequency required. Properties of the standard range of head expanders is shown in the table.



Model	Dimensions (mm)	Mass (kg)	Maximum Frequency (Hz)	A-series							I-series				
				A11	A22	A30	A45	A65	A74		I210	I220			
TBV-125-□-A	125×125 t 20	0.9	2000	—	—	—	—	—	—	—	○	—			
TBV-125-□-M		0.6		—	—	—	—	—	—	—	—	—			
TBV-315-□-A	315×315 t 30	8.5	1000	○	○	○	—	—	—	—	○	○			
TBV-315-□-M		5.8		○	○	○	—	—	—	—	○	○			
TBV-400-□-A	400×400 t 30	13	600	○	○	○	—	—	—	—	○	○			
TBV-400-□-M		9		○	○	○	—	—	—	—	○	○			
TBV-500-□-A	500×500 t 40	15	500	○	○	○	○	○	○	○	○	○			
TBV-500-□-M		10.4		○	○	○	○	○	○	○	○	○			
TBV-630-□-A	630×630 t 45	19	360	○	○	○	○	○	○	○	○	○			
TBV-630-□-M		12.5		○	○	○	○	○	○	○	○	○			
TBV-800-□-A	800×800 t 70	45	350	○	○	○	○	○	○	○	—	○			
TBV-800-□-M		30		○	○	○	○	○	○	○	—	○			
TBV-1000-□-A	1000×1000 t 110	110	350	○	○	○	○	○	○	○	—	—			
TBV-1000-□-M		78		○	○	○	○	○	○	○	—	—			
TBV-1200-□-A	1200×1200 t 125	180	200	—	○	○	○	○	○	○	—	—			
TBV-1500-□-A	1500×1500 t 200	300	200	—	—	—	—	○	○	○	—	—			
Model	Dimensions (mm)	Mass (kg)	Maximum Frequency (Hz)	J-series			C-series			K-series					
				J230	J240	J250	J260	C10	K030	K060	K080	K125	K125LS	K200	K350
TBV-125-□-A	125×125 t 20	0.9	2000	—	—	—	—	—	—	—	—	—	—	—	—
TBV-125-□-M		0.6		—	—	—	—	—	—	—	—	—	—	—	—
TBV-315-□-A	315×315 t 30	8.5	1000	○	○	—	—	○	—	—	—	—	—	—	—
TBV-315-□-M		5.8		○	○	—	—	○	—	—	—	—	—	—	—
TBV-400-□-A	400×400 t 30	13	600	○	○	—	—	○	○	—	—	—	—	—	—
TBV-400-□-M		9		○	○	—	—	○	○	—	—	—	—	—	—
TBV-500-□-A	500×500 t 40	15	500	○	○	○	○	○	○	○	○	—	—	—	—
TBV-500-□-M		10.4		○	○	○	○	○	○	○	○	—	—	—	—
TBV-630-□-A	630×630 t 45	19	360	○	○	○	○	○	○	○	○	○	○	—	—
TBV-630-□-M		12.5		○	○	○	○	○	○	○	○	○	—	—	—
TBV-800-□-A	800×800 t 70	45	350	○	○	○	○	○	○	○	○	○	○	○	○
TBV-800-□-M		30		○	○	○	○	○	○	○	○	○	○	○	○
TBV-1000-□-A	1000×1000 t 110	110	350	○	○	○	○	○	○	○	○	○	○	○	○
TBV-1000-□-M		78		○	○	○	○	○	○	○	○	○	○	○	○
TBV-1200-□-A	1200×1200 t 125	180	200	—	○	○	○	○	○	○	○	○	○	○	○
TBV-1500-□-A	1500×1500 t 200	300	200	—	—	○	○	—	○	○	○	○	○	○	○

Model names ending with "A" indicate aluminum body and "M" indicate magnesium alloy. Add the vibration generator type where "□" is shown.
*The data shown refers to the IMV standard range. Custom designs can also be supplied.

Head expander (flat surface type)



Model	Dimensions (mm)	Mass (kg)	Maximum Frequency (Hz)	Specimen Mounting Screw	Screw Pitch
TBV-350-□-A-L	350×350×t 33	6	750	M10 Depth 25	□100 mm Pitch
TBV-350-□-A-H	350×350×t 65	11	1500	M10 Depth 25	□100 mm Pitch
TBV-550-□-A-L	550×550×t 30	17	300	M10 Depth 25	□100 mm Pitch
TBV-550-□-A-H	550×550×t 60	30	600	M10 Depth 25	□100 mm Pitch
TBV-750-□-A-L	750×750×t 38	30	200	M10 Depth 25	□100 mm Pitch
TBV-750-□-A-H	750×750×t 75	55	400	M10 Depth 25	□100 mm Pitch
TBV-950-□-A-L	950×950×t 45	45	150	M10 Depth 25	□100 mm Pitch
TBV-950-□-A-H	950×950×t 90	80	300	M10 Depth 25	□100 mm Pitch
TBV-1150-□-A-L	1150×1150×t 60	90	120	M10 Depth 25	□200 mm Pitch
TBV-1150-□-A-H	1150×1150×t 120	160	240	M10 Depth 25	□200 mm Pitch

Model names ending with "A" indicate aluminum body.
Add the vibration generator type where "□" is shown.
Please contact us for more information.

Options for use with vertical tables

Guide system, additional air spring

The following option increases the allowable overturning moment of the head expander.

- Additional guide system
Enabling larger or off-centre specimens to be tested.
- Additional air spring
Providing additional load support to accommodate higher specimen & fixture mass.

*Some models do not support the options above



High-frequency model

A head-expander having exceptionally low mass and special dual conical shape giving excellent damping.

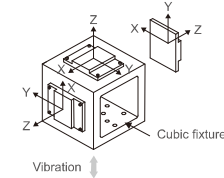


Cubic fixture

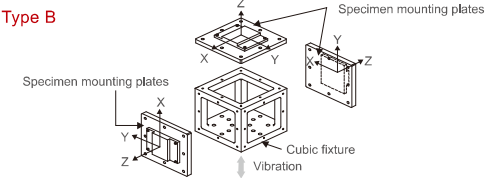
The specimen can be fastened to the top or the side face of the cubic fixture where testing in each axis is required.

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

Type A



Type B



Cubic Fixture (Type A)			
Model	Dimensions (mm)	Mass (kg)	Maximum Frequency (Hz)
TCJ-A150-□-A	150×150×150	5.5	2000
TCJ-A150-□-M		4	
TCJ-A160-□-A	160×160×160	6.5	2000
TCJ-A160-□-M		4.6	
TCJ-A200-□-A	200×200×200	8	1000
TCJ-A200-□-M		5.6	
TCJ-A250-□-A	250×250×250	13.5	650
TCJ-A250-□-M		9.5	
TCJ-A300-□-A	300×300×300	20	400
TCJ-A300-□-M		14	

Cubic Fixture (Type B)				Specimen Mounting Plates	
Model	Dimensions (mm)	Mass (kg)	Maximum Frequency (Hz)	Model	Mass (kg)
TCJ-B150-□-A	150×150×150	3.5	2000	TCJ-B150-P-A	1.5
TCJ-B150-□-M		2.5		TCJ-B150-P-M	1.1
TCJ-B160-□-A	160×160×160	4	2000	TCJ-B160-P-A	1.7
TCJ-B160-□-M		2.8		TCJ-B160-P-M	1.3
TCJ-B200-□-A	200×200×200	10	2000	TCJ-B200-P-A	3.5
TCJ-B200-□-M		7		TCJ-B200-P-M	2.5
TCJ-B250-□-A	250×250×250	20	1000	TCJ-B250-P-A	4.5
TCJ-B250-□-M		14		TCJ-B250-P-M	3.2
TCJ-B300-□-A	300×300×300	20	600	TCJ-B300-P-A	6.5
TCJ-B300-□-M		14		TCJ-B300-P-M	4.5

Model names ending with "A" indicate aluminum body and "M" indicate magnesium alloy. Add the vibration generator type where "□" is shown.

Optional Units

Slip table

Slip table

A slip table is required for testing a specimen along its horizontal axis, or when a heavy specimen is to be tested. Slip tables are designed to achieve low friction in the driven axis, while supporting heavy loads and introducing minimal waveform distortion.



■ Type and features of slip table

MS: Simultaneous use of Mechanical Bearing and Oil Film

Employs a combined structure of a high rigid linear bearing and an oil film method which purpose is to improve vibration dumping characteristic.

Model	TBH-550-□-A-MS			TBH-750-□-A-MS			TBH-950-□-A-MS			TBH-1150-□-A-MS		
Table Size (mm)	550 × 550			750 × 750			950 × 950			1150 × 1150		
Moment (N·m)	1100			2200			2200			4600		
Maximum Load (kg)	700			1000			1500			2000		
Vibration Generator	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)
A11	55	2000	40	93	2000	40	138	1250	40	-	-	-
A22	58	-	95	-	-	140	-	-	198	800	40	40

Model	TBH-550-□-A-MS			TBH-750-□-A-MS			TBH-950-□-A-MS			TBH-1150-□-A-MS		
Table Size (mm)	550 × 550			750 × 750			950 × 950			1150 × 1150		
Moment (N·m)	1100			2200			2200			4600		
Maximum Load (kg)	700			1000			1500			2000		
Vibration Generator	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)
A30	60	2000	40	100	2000	40	145	1250	40	203	800	40
A45	68	-	108	-	-	153	-	-	210	-	-	-
A65	-	-	-	-	-	-	-	-	-	-	-	-

*The weight is referring the plate made of aluminum.
*□ is the model number of the vibration generator.

MB: Mechanical Bearing

Mechanical bearing employs the linear motion guide which incorporates a component with a linear rolling motion into practical use. It significantly contributes to high performance of table which are high-rigidity, high load and long stroke motion. Another strong feature of the mechanical bearing is easy to operate. Since it is light weighted and no need for a hydraulic unit.

Model	TBH-550-□-A-MB		
Table Size (mm)	550 × 550		
Moment (N·m)	9300		
Maximum Load (kg)	1000		
Vibration Generator	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)
A11	46	2000	30
A22	47	-	-

Model	TBH-550-□-A-MB			TBH-750-□-A-MB			TBH-950-□-A-MB			TBH-1150-□-A-MB		
Table Size (mm)	550 × 550			750 × 750			950 × 950			1150 × 1150		
Moment (N·m)	9300			12700			61500			77000		
Maximum Load (kg)	1000			2000			2000			2000		
Vibration Generator	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Table Thickness (mm)
A30	47	2000	30	75	2000	30	106	2000	30	151	2000	40
A45	54	-	87	-	-	114	-	-	160	-	-	-
A65	-	2000 ^{*1}	-	-	2000 ^{*1}	-	-	2000 ^{*1}	-	-	2000 ^{*1}	-

*¹ Above 1600 Hz, the force rolls-off at a rate of -6db/oct.
*The weight is referring the plate made of aluminum.
*□ is the model number of the vibration generator.
*Please contact us about the table size over 1150 × 1300.

ST: Oil Film Type

It is supported on oil film. Constantly create oil film at reverse side of the table letting the table slide with low friction. Pump oil unit is located in the slip table base. Since moving mass is small, it becomes one of the most standard slip table with substantial sales record.

Model	TBH-500-□-A-ST			TBH-630-□-A-ST			TBH-800-□-A-ST			TBH-1000-□-A-ST		
Table Size (mm)	500 × 500			630 × 630			800 × 800			1000 × 1000		
Pitch Moment (N·m)	200			300			400			500		
Maximum Load (kg)	200			300			400			500		
Vibration Generator	Moving Mass* (kg)	Frequency (Hz)	Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Thickness (mm)	Moving Mass* (kg)	Frequency (Hz)	Thickness (mm)
I210	33	2500	30	45	2000	30	-	-	-	-	-	-
I220		-					-	-	-	-	-	-
K030		2000					65	2000	30	100	1250	30
K060	60	-	50	80	-	50	115	-	50	170	-	50
K080	-	-	-	-	-	-	-	-	-	-	-	-

*The material of slip plate is aluminum alloy. It is possible to change to magnesium. Please contact us for more information.
*□ is the model number of the vibration generator.

TT-L: Hydrostatic Bearing (Low Pressure)/TT-H: Hydrostatic Bearing (High Pressure)

Locating multiple hydrostatic bearing on high rigid base to support slip table. Special purpose designed hydrostatic bearing realizes high load and allowable eccentric moment.

TT-L: Hydrostatic Bearing (Low Pressure)

Model	TBH-500-□-A-TTL			TBH-630-□-A-TTL			TBH-800-□-A-TTL			TBH-1000-□-A-TTL			TBH-1200-□-A-TTL			TBH-1500-□-A-TTL			TBH-1800-□-A-TTL			TBH-2000-□-A-TTL		
Table Size (mm)	500 × 500			630 × 630			800 × 800			1000 × 1000			1200 × 1200			1500 × 1500			1800 × 1800			2000 × 2000		
Pitch Moment (N·m)	1100			1100			2200			2200			4600			6500			10000			10000		
Maximum Load (kg)	700			1000			1000			1500			2000			2000			2500			2500		
Vibration Generator	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)
I210	40	2000	53	55	2000	75	1600	105	108	30	30	280	900	50	450	800	50	650	600	50	800	500	50	
J220	43	2000	63	1600	85	1250	118	1000	40	40														
J230	50	1600	63	1600	85	1250	118	1000	40	40														
J240	50	1600	63	1600	85	1250	118	1000	40	40														
J250	70	1600	40	85	40	115	40	155	40	155														
J260																								

*The material of slip plate is aluminum alloy. It is possible to change to magnesium. Please contact us for more information. *□ is the model number of the vibration generator.

Model	TBH-550-□-A-TTL			TBH-750-□-A-TTL			TBH-950-□-A-TTL		
Table Size (mm)	550 × 550			750 × 750			950 × 950		
Pitch Moment (N·m)	1100			2200			2200		
Maximum Load (kg)	1000			1500			1500		
Vibration Generator	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)
A11	52	-	-	-	-	-	-	-	-
A22	53	2000	30	78	1600	30	105	1000	30
A30	54	-	89	1600	30	115	1000	30	-
A45	64	-	-	-	-	-	-	-	-
A65	-	2000*	-	-	-	-	-	-	-

*Above 1600 Hz, the force rolls-off at a rate of -6db/oct.
*□ is the model number of the vibration generator.

TT-H: Hydrostatic Bearing (High Pressure)

Model	TBH-500-□-A-TTH						TBH-630-□-A-TTH						TBH-800-□-A-TTH						TBH-1000-□-A-TTH						TBH-1200-□-A-TTH						TBH-1500-□-A-TTH						TBH-1800-□-A-TTH						TBH-2000-□-A-TTH					
Table Size (mm)	500 × 500						630 × 630						800 × 800						1000 × 1000						1200 × 1200						1500 × 1500						1800 × 1800						2000 × 2000					
Pitch Moment (N·m)	4000						4000						7700						7700						16000						22000						48000						48000					
Maximum Load (kg)	800						1200						1600						2000						2000						3000						3000						3000					
Vibration Generator	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)	Wt (kg)	Frequency (Hz)	Thickness (mm)															
I210	60	2000	50	70	2000	50	115	2000	50	165	1250	50	280	900	50	450	800	50	650	600	50	800	500	50	800	500	50																					
I220	63			83			118			168																																						
J230	68			88			125			175																																						
J240	70	1600	50	90	1600	50	130	1250	50	178	1000	50	280	900	50	450	800	50	650	600	50	800	500	50																								
J250	83			100			143			188																																						
K030	68			88			123			173																																						
K060	93	2000	50	108	2000	50	145	2000	50	193	1250	50	280	900	50	450	800	50	650	600	50	800	500	50																								
K080	78			95			133			205																																						
K125	103			118			155			205																																						
K125LS	113	1600	128	1600	170	1250	220	1000																																								

Optional Units

Slip table

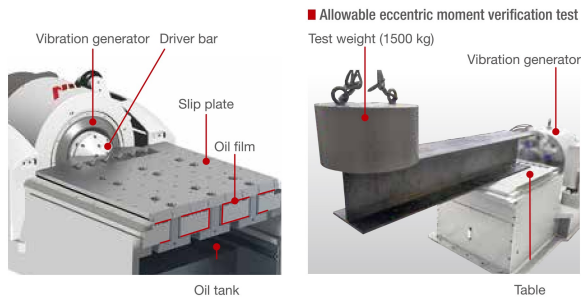
(5) TH: Hydrostatic Bearing & Oil Film (A-series Only)

Slip table for A-series provides the following features with a newly developed hydrostatic and hydraulic bearing and new structure.

[Features]

- High moment resistance
- Low cross-axis acceleration
- Low distortion
- No requirement for a separate hydraulic unit
- Good work efficacy
- Smaller system installation space

Watch the YouTube video



Model	TBH-550TH 550×550		TBH-750TH 750×750		TBH-950TH 950×950		TBH-1150TH 1150×1150		TBH-1450TH 1450×1450	
Table Size (mm)	550×550		750×750		950×950		1150×1150		1450×1450	
Thickness (mm)	50		50		50		50		50	
Pitch Moment (N·m)	6000		66000		85000		85000		198000	
Maximum Load (kg)	1500		9000		9000		9000		9000	
Vibration Generator	Moving Mass* (kg)	Frequency (Hz)	Moving Mass* (kg)	Frequency (Hz)	Moving Mass* (kg)	Frequency (Hz)	Moving Mass* (kg)	Frequency (Hz)	Moving Mass* (kg)	Frequency (Hz)
A11	85	2000	159	2000	215	1250	298	800	452	500
A22										
A30										
A45	—	—	180	2000	236	1250	318	800	473	500
A65										
A74										

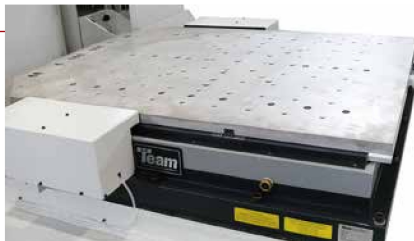
*The weight is referring the plate made of aluminum.

(6) T-Film bearing range

The T-Film bearing from Team Corporation is probably the most advanced design of linear bearing available to the vibration-test industry.

The slip table employs a number of bearings, each consisting of a U.S. patented bearing element and hydro-static oil film.

T-Film bearings provide excellent vibration waveform linearity and are considered to be the best solution for the aerospace industry and research establishments.

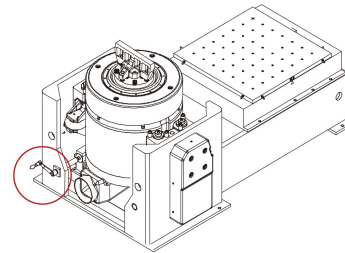


■ Option for slip table

1. Rotation reduction gearing

A reduction gearing unit enabling easier reconfiguration of the vibration generator.

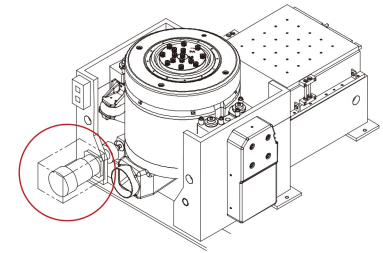
*i210 doesn't have this option.



2. Motor drive rotation

Powered rotation of the vibration generator.

The motor-driven rotation can be optionally installed on systems equipped with reduction gearing.

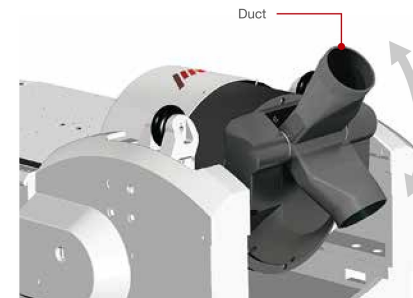


3. Duct

A newly developed duct is provided as standard.

No operation needed for direction change between vertical and horizontal.

Space behind the shaker is minimised.

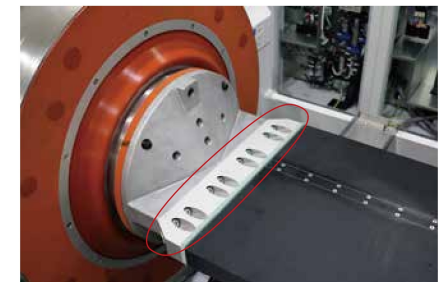


4. Drive bar adapter with diagonal bolt access

Method of fastening drive bar to a slip table was simplified by reflecting customers feedback.

Usability is improved and easier torque management of bolts is realized.

* Standard for MB/MS

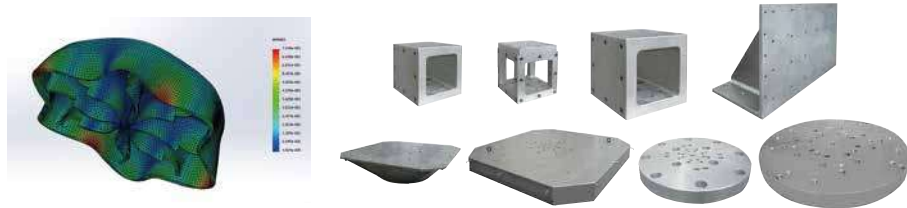


Optional Units

Fixture, Vibration Isolation, Reinforcement

Fixture

IMV has a range of fixtures, such as cube and 'L'-shaped types, to suit most applications. Customised fixtures are supplied, designed and analysed using finite-element modelling to ensure best performance.

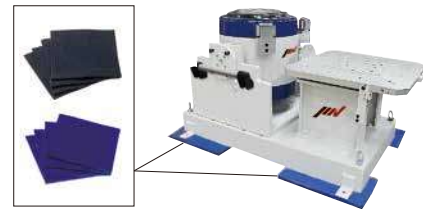


Vibration Isolation

Additional isolation mounts are available to reduce the effects of vibration on the floor and adjacent equipment.

■ Insulation pad

These are simple to install by placing under the vibration generator.



■ Air spring

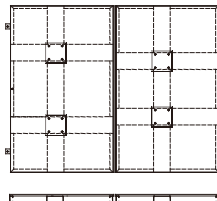
Air springs placed under each corner of the frame support the vibration generator and are an excellent way to isolate vibration above about 5 Hz.



Reinforcement

■ Load spreader base

The weight of the vibration generator can be distributed over a larger area where such load is acceptable.



Optional Units

Sound-proof enclosure, Cooling ducting, Launcher, System monitor

Sound-proof enclosure

A sound-proof enclosure for the cooling blower reduces noise in installations where the blower cannot be located outside the work area.



Inside

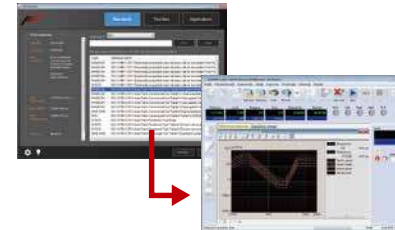
Cooling ducting

The standard arrangement for air-cooled systems is to install the blower inside the work area. Ducting the input air from outside eliminates the changes in ambient pressure and temperature caused by the cooling air flow.



Launcher

Test file will be automatically generated just on selection of the test condition defined by the test standard. Then, the test can be carried out just by pressing the start button.



In-built 'Quick Help' provides guidance on each operation.

System monitor

Condition of "vibration generator, amplifier test proceeding, specimen status" can be observed on the PC or tablet by either wired or wireless LAN. Solution will be seen on the Web browser on occurrence of any error. Installation of additional software is not necessary to the PC nor tablet.



Home screen

Home screen (error)



Eco screen

Camera screen