A-series

High Grade Range

A30/EM3HM

A new standard created by listening to our customers.

A wider range of test requirements and higher test specifications.
A-series meets the needs for such a versatile test environment.
Advanced automatic energy saving, high level of functionality and a protected test environment.
A-series improves the working environment of vibration testing.

[Improvement of performance]
[User friendly and Secure]
[User first principle]

Improvement of performance

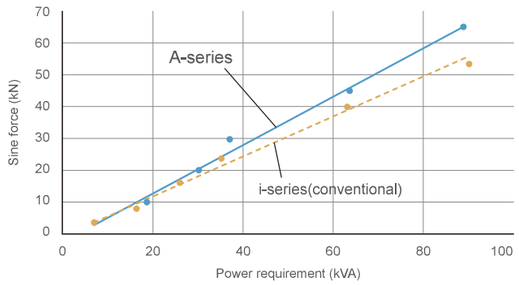
A-series meets the demand

A wider range of test requirements and higher test specifications.
A-series meets the needs for such a versatile test environment.

Improvement in excitation force

When compared with the conventional i & J-series, the A-series increases the relative excitation force.

- Increased force per system power requirement
- Increased force per system mass
- Increased force per system size



Standard 76.2 mmp-p displacement *Only for A30, A45, A65, A74

A-series has a displacement of 76.2 mmp-p (3 inch stroke) which gives good balance between specification of velocity, acceleration and displacement.
This single system can be used in a very wide variety of tests.

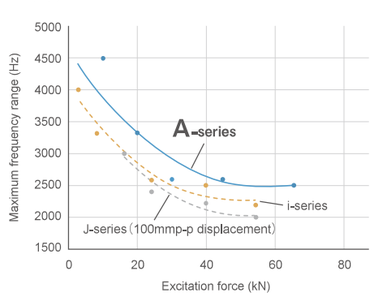
i-series (conventional)
51mmp-p displacement

A-series

J-series (conventional)
100mmp-p displacement

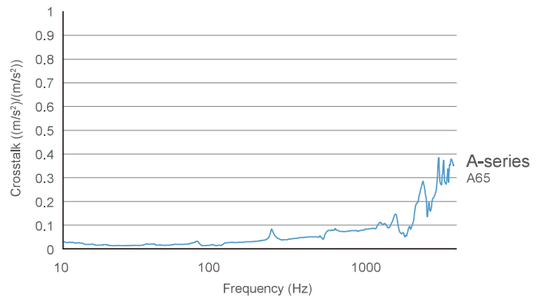
Increase in frequency range

A-series has wider frequency range than conventional systems.
(Secured stroke of A30, A45 & A65 is 76.2 mmp-p based on mechanical stroke 82 mmp-p)



Cross-axis acceleration reduction

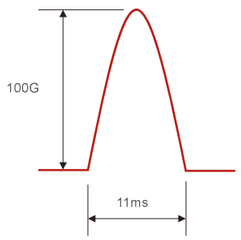
A-series dramatically reduces cross-axis (crosstalk) acceleration (horizontal vibration).Highly accurate testing is achieved.



High velocity shock testing *Only for A30, A45, A65, A74

Where a test requires a high shock velocity, traditional shaker systems use a matching transformer to achieve the necessary higher armature voltage. Since IMV's ECO-system has complete control over the field level, the field value can be adjusted to increase the maximum shock velocity capability of the system. By entering the specified shock profile into IMV's K2 controller. The field level in the shaker is automatically adjusted to ensure that the required velocity is achieved. A-series (EM amplifier model) provides a maximum of 4.6 m/s shock velocity testing.

Examples of shock test



	Model	i240/SA3M	i250/SA5M	i260/SA7M	No applicable system
i-series (conventional)	Rated Force Shock (kN)	48	80	108	-
	Maximum Velocity Shock (m/s)	2.2	2.2	2.2	-
	Maximum Displacement (mmp-p)	51	51	51	-
	Maximum Load (kg)	Not achievable *not enough velocity *not enough displacement	Not achievable *not enough velocity *not enough displacement	Not achievable *not enough velocity *not enough displacement	-

	Model	J240/SA4M	J250/SA6M	J260/SA7M	No applicable system
J-series (conventional)	Rated Force Shock (kN)	55	80	108	-
	Maximum Velocity Shock (m/s)	2.4	2.4	2.4	-
	Maximum Displacement (mmp-p)	100	100	100	-
	Maximum Load (kg)	Not achievable *not enough velocity	Not achievable *not enough velocity	Not achievable *not enough velocity	-

	Model	A30/EM3HM	A45/EM5HM	A65/EM7HM	A74/EM10HM
A-series	Rated Force Shock (kN)	60 (50)	90 (80)	130 (120)	180 (160)
	Maximum Velocity Shock (m/s)	2.5 (3.5)	2.5 (3.5)	2.5 (3.5)	2.5 (3.5)
	Maximum Displacement (mmp-p)	76.2	76.2	76.2	76.2
	Maximum Load (kg)	18	31	50	89

*Maximum load on bare table

User friendly and Secure

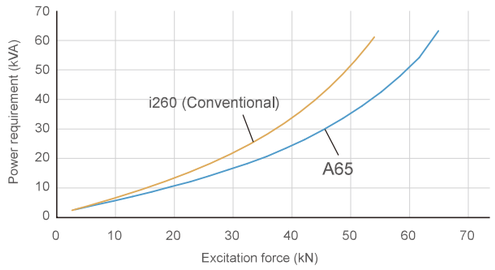
A-series changes

Advanced automatic energy saving, high level of functionality and a protected test environment.
A-series improves the working environment of vibration testing.

Lower power consumption

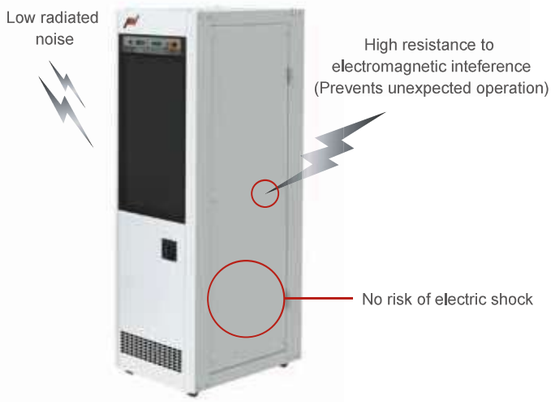
In comparison with the same class of conventional systems (i,J-series), the A-series achieves lower power consumption. With an automatic energy-saving function, increased energy saving is achieved across all force ranges.

Comparison of consumed power per excitation force A65 vs i260



International safety standards

A-series complies with international safety standards.

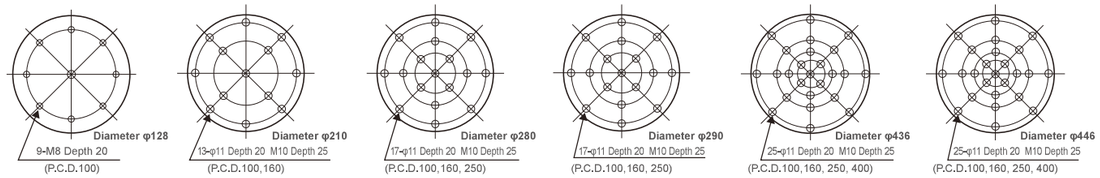


Combined option with high thermal insulation *Only for A30, A45, A65, A74

Combined option of direct coupling of A-series uses a newly designed high thermal insulation structure. Improved temperature uniformity inside the chamber reduces the effect of dew condensation.

Down to 1/5

Table Insert Pattern (Unit:mm)



Specifications

System Model			A03/ SA1MM	A10/ SA1HM	A10/ EM1HM	A20/ SA2HM	A20/ EM2HM	A30/ SA3HM	A30/ EM3HM	A45/ SA5HM	A45/ EM5HM	A65/ SA6HM	A65/ EM7HM	A74/ EM8HM	A74/ EM10HM
System Specifications	Frequency Range (Hz)		0–4000	0–4500*3	0–4500*3	0–3300	0–3300	0–2600	0–2600	0–2600	0–2600	0–2600*5	0–2600*5	0–2600*5	0–2600*5
	Rated Force	Sine (kN)	3	10	10	20	20	30	30	45	45	65	65	74	74
		Random (kN rms)*1	3	10	10	20	20	30	30	45	45	65	65	74	74
		Shock (kN)	9	20	20 (16)*4	40	40 (32)*4	60	60 (50)*4	90	90 (80)*4	130	130 (120)*4	148 (120)*4	180 (160)*4
	Maximum Acc.	Sine (m/s²)	1000	900	900	900	900	900	900	900	900	900	900	1000	1000
		Random (m/s² rms)	700	630	630	630	630	630	630	630	630	630	630	630	630
		Shock (m/s² peak)	2000	1500	1500*4	1500	1500*4	1500	1500	1500	1500	1500	1500	1500	1500
	Maximum Vel.	Sine (m/s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		Shock (m/s peak)	2.3	2.5	2.5 (3.5)*4	2.5	2.5 (3.5)*4	2.5	2.5 (3.5)*4	2.5	2.5 (3.5)*4	2.5	2.5 (3.5)*4	2.5 (3.5)*4	2.5 (3.5)*4
	Maximum Disp.	Sine (mmp-p)	30	51	51	51	51	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
		Maximum Travel (mmp-p)	40	64	64	66	66	82	82	82	82	82	82	82	82
	Maximum Load (kg)		120	200	200	300	300	400	400	600	600	1000	1000	1000	1000
	Power Requirements (kVA)*2		8.7	20.4	20.4	30	30	36	36	57	57	83	83	100	100
Vibration Generator	Model		A03	A10	A10	A20	A20	A30	A30	A45	A45	A65	A65	A74	A74
	Armature Mass (kg)		3	11	11	22	22	33	33	50	50	72	72	74	74
	Armature Diameter (φmm)		128	210	210	280	280	290	290	436	436	446	446	446	446
	Allowable Eccentric Moment (N·m)		160	294	294	700	700	850	850	1550	1550	1550	1550	1550	1550
	Dimensions (mm) W×H×D		868× 700× 500	946× 827× 676	946× 827× 676	1038× 920× 775	1038× 920× 775	1100× 1048× 840	1100× 1048× 840	1232× 1215× 1040	1232× 1215× 1040	1310× 1253× 1040	1310× 1253× 1040	1310× 1253× 1040	1310× 1253× 1040
	Shaker Body Diameter (φmm)		480	585	585	678	678	725	725	825	825	925	925	925	925
	Mass (kg)		400	1080	1080	1600	1600	2000	2000	3000	3000	3500	3500	3500	3500
Power Amplifier	Model		SA1MM-A03	SA1HM-A10	EM1HM-A10	SA2HM-A20	EM2HM-A20	SA3HM-A30	EM3HM-A30	SA5HM-A45	EM5HM-A45	SA6HM-A65	EM7HM-A65	EM8HM-A74	EM10HM-A74
	Maximum Output (kVA)		5.4	11	11	21	21	31	31	44	44	68	68	100	100
	Dimensions (mm) W×H×D		580× 1950× 850	580× 1950× 850	580× 1950× 850	580× 1950× 850	580× 1950× 850	580× 1950× 850	580× 1950× 850	580× 1950× 850	1160× 1950× 850	580× 1950× 850	1160× 1950× 850	1160× 1950× 850	1740× 1950× 850
	Mass (kg)		240	280	330	350	410	420	500	900	1000	1000	1150	1500	1850
Controller	Vibration Controller		See Vibration Controller K2												
Cooling	Cooling Method		Air cooling												
	Blower	Dimensions (mm) W×H×D	600× 1905× 557	1044× 2285× 704	1044× 2285× 704	929× 2175× 534	929× 2175× 534	929× 2175× 534	929× 2175× 534	1160× 2405× 787	1160× 2405× 787	1294× 2540× 861	1294× 2540× 861	1400× 2500× 874	1400× 2500× 874
		Mass (kg)	45	150	150	150	150	150	150	250	250	268	268	460	460

*1) 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 200/220/240/380/400/415/440 V, 50/60 Hz. A transformer is required for other supply voltages.
*3) Above 4000 Hz, the force rolls-off at a rate of -6 dB/oct.
*4) Maximum velocity 4.6 m/s. High velocity restricts maximum Shock force. Please contact IMV or your local distributor with specific test requirements.
*5) Above 2000 Hz, the force rolls-off at a rate of -12 dB/oct.
* The specification shows the maximum system performance. For long-duration tests, de-rating by up to 70 % must be applied. Continuous use at maximum levels may cause failure.
* In the case of Random vibration test, please set the test definition of the peak value of acceleration waveform to be operated less than the maximum acceleration of Shock.
* Frequency range values vary according to sensor and vibration controller.

Special table insert pattern

The A-series has the option to freely select the table insert pattern on the shaker armature.
*1) Selecting this option, the armature mass will increase.
*2) Due to combining with other options; the horizontal slip table insert pattern may have restrictions.