

Elastomer Test System

KCH SERIES Elastomer Test System

● *High Accuracy*

Uses floating mass method.

● *High Performance*

Measures micro amplitudes and loads in high frequencies.

● *Ability*

Allows testing with preloading equivalent to that of an actual vehicle.



Elastomer Test System

● A reliable system to help maintain the performance and reliability required for vibration control rubber.

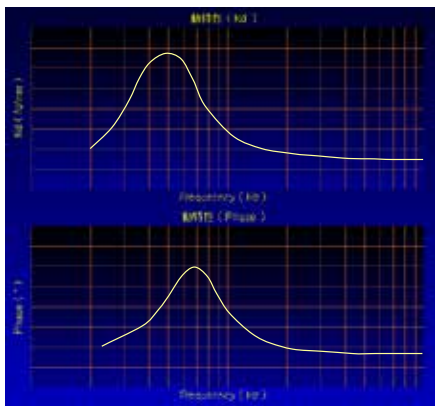
The dynamic characteristics of vibration control rubber are a vital factor in determining the damping properties, ride comfort, handling stability, maneuverability, soundproofing and energy conservation of vehicles. It is extremely important that these dynamic characteristics are managed not only by manufacturers of the vibration control rubber but also by vehicle manufacturers.

As the dynamic characteristics of vibration control rubber are affected by factors such as frequency, ambient temperature, amplitude and preloading, accurate measurement requires advanced design, measurement and signal processing technology.

The engine mount requires particularly complex characteristics, meaning that high frequency zones require a load measurement accuracy of several newtons and a displacement measurement accuracy of several tens of microns.

Saginomiya's KCH series of elastomer test equipments include a

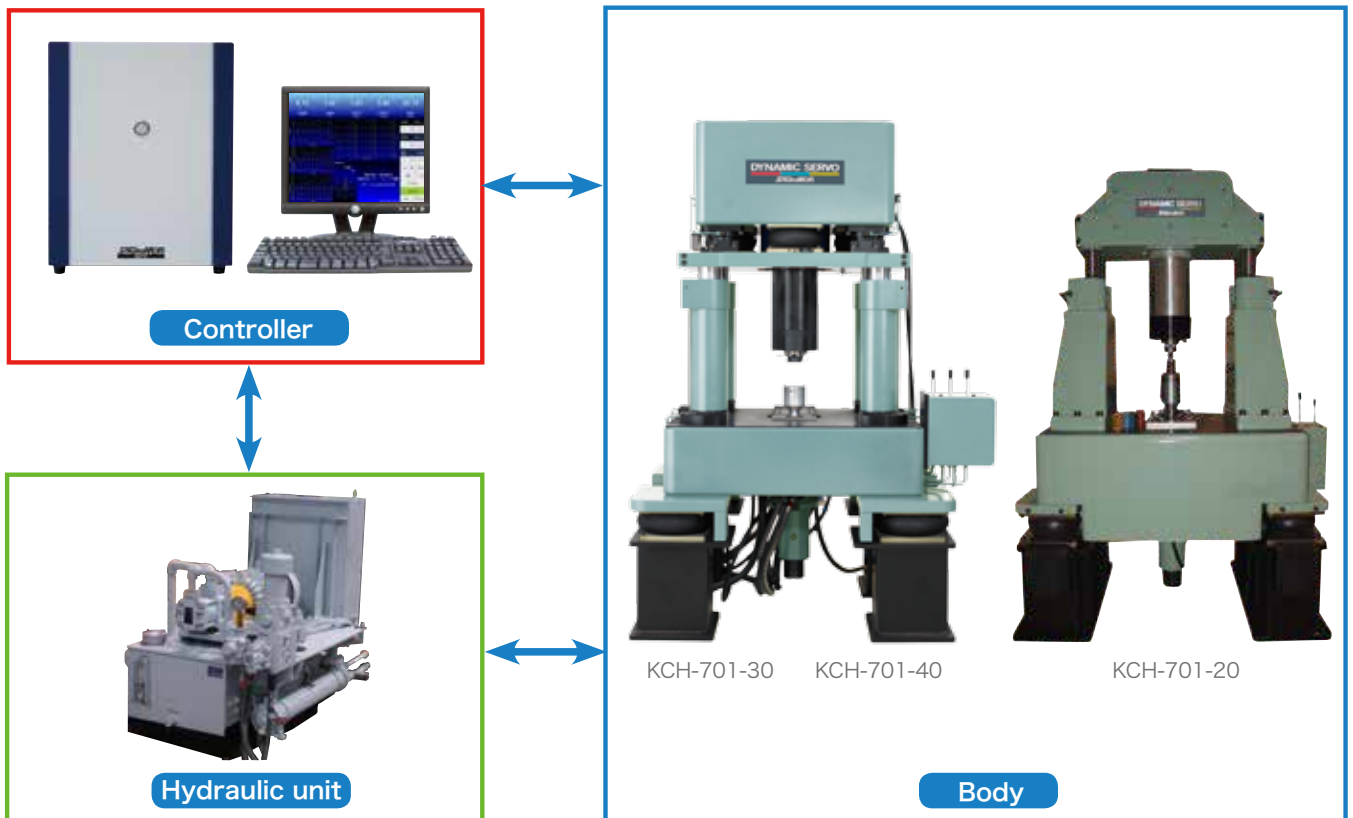
range of functions to improve the measurement accuracy of dynamic spring constants, attenuation coefficients and loss tangents in vibration control rubber up to high-frequency zones. They are used as a standard test system by a large number of vibration control manufacturers and vehicle manufacturers in Japan.



Dynamic Characteristic Diagram (reference)



● Overview of Test Equipment

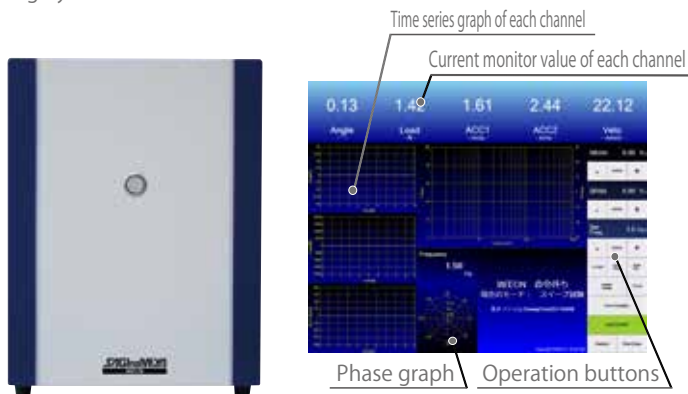


Elastomer Test System

Digital Servo Controller M2110

Highly accurate compensation of sensor measurement accuracy throughout a wide usage frequency range

A high-speed calculation device is included in the control equipment to provide a linearization function during elastomer test equipment. Sensor linearity is corrected at a high speed, producing highly accurate measurements.



Model	M2110
Control method	Full digital control
Control mode	Displacement
Control modes	Up to 6 channels
Waveform	Sine wave, triangle wave, square wave, sweep wave, ramp wave
AGC/AMC Function	SPAN/MEAN, MAX/MIN, fundamental wave/mean value
Control range	Auto range
Monitor output	Output from back side centralized connector $\pm 10V/F.S.$ *1
Limiter function	The included modes come with an over limiter, 4-point limiter function and a protection function in the event of unstable control
Display	17" LCD color display
Power supply	100/200V.AC 50/60Hz 1kVA
Dimensions	W400×D300×H400
Installation method	Direct installation
Weight	Approx. 18kg

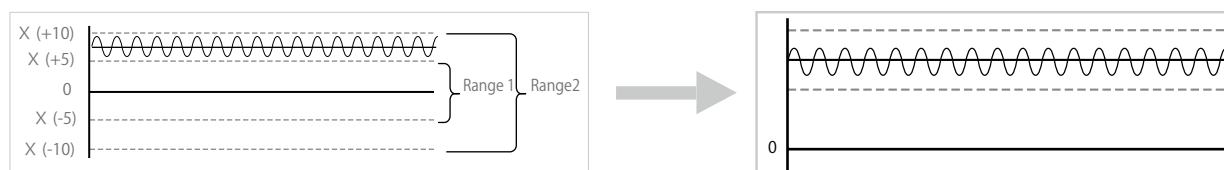
*1 A dedicated cable (optional) is required for connection.

Easy-to-view information and interactive operation

Information is summarized in functional display sections so that the necessary information can be seen immediately.

Auto-focus function

Zoom in on data even when the vibration point is offset, by changing the concept from the standard "range" to "Focus on measured area".



Auto-focus function

Details of Dynamic Characteristic Measurement

Test items: spot, sweep and static spring testing
(optional: resonance point tracing inspection testing)

Measurement items: Absolute, storage and loss spring constant, phase angle, attenuation coefficient, loss tangent, dynamic multiplication, dynamic load, dynamic displacement

Static spring testing

Measurement items
Static spring constant
Halfway mark (target mode)
Displacement or load can be selected

An arbitrary movement speed can be prescribed

Outward or return average can be selected



Test condition setting screen

Specifications

Specifications of Vibration Exciter

Models KCH-701-		20	30	40
Maximum force	±kN		20	
Maximum stroke	±mm	static	25	10
		dynamic	10	10
Maximum speed	±cm/s	35	50	50
Dynamic characteristic measurement Frequency range	Hz	5 to 300	5 to 1000	5 to 500(dynamic)
				5 to 2000(transfer function)
Cross head lifting method		Hydraulic pressure		
Cross head fastening method		Hydraulic pressure		
Dimensions/Weight	mm	W1400×D800×H2260	W1350×D1210×H2236 - 2658	W1350×D1210×H2080 - 2380
	kg	3200	6500	
Paint color		Mansell 5B8/2		

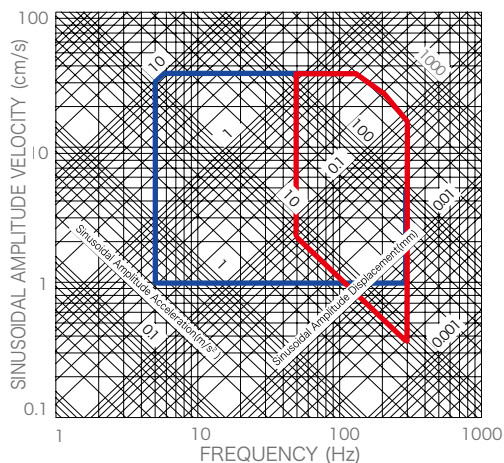
Elastomer Test System

Specifications of Hydraulic Power Unit

Hydraulic unit		HPT15W-J01 (KCH-701-20)	HPT22W-J01 (KCH-701-30/40)
Rated pressure	MPa	20.5	
Flow rate	L/min	31.5	52
Current onsumption	kVA	22	33
Dimensions/Weight	mm	W860×D1580×H1125	W900×D1720×H1175
	kg	730	1000
Paint color		Mansell 5B8/2	
Utilities	Power supply	200/220/380/400/440V.AC 3Phase	
		25kVA	36kVA
	Cooling water	35L/min	55L/min
	Air source	30°C or cooler difference Pressure 0.2MPa or higher 0.6MPa (for air spring)	

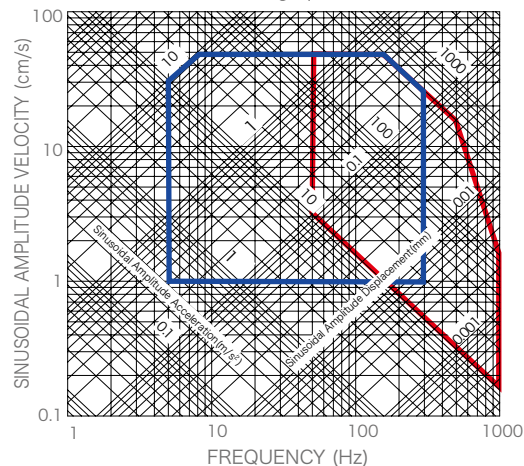
Performance Limit Diagram

KCH-701-20

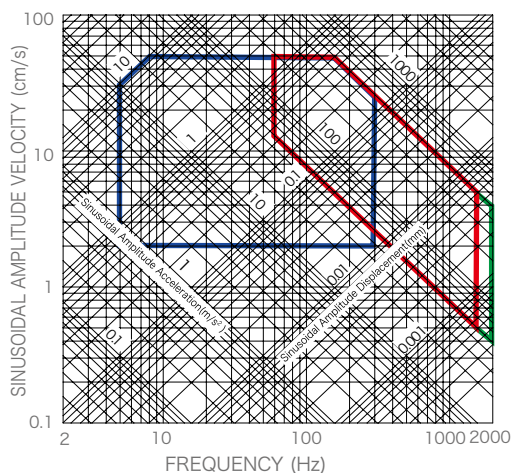


KCH-701-30

※ The graph shows the condition at no load.



KCH-701-40



- Measurement range of velocity sensor
- Measurement range of accelerometer
- Measurement range of transfer function

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NOTES FOR SAFETY

Failure to read and follow all instruction carefully before installing or operating the product could cause personal injury and / or property damage.

Specifications are subject to change without notice.