

Model	KS-EM400
High frequency electromagnetic vibration tester	

## Product introduction

- 1、 Power supply: 380V
- 2、 Total power: 54KW
- 3、 Cooling water volume: 30 T
- 4、 After-sales service: 2 years lifetime free guidance for the whole machine warranty

**DONGGUAN KESION PRECISION INSTRUMENT CO.,LTD**

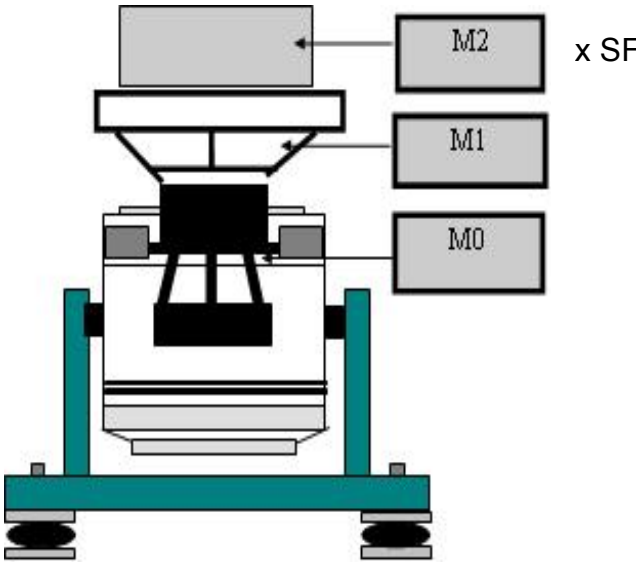
**This estimate is based on the test conditions provided by you. If there are any omissions or ambiguities, please call us for a review!**

1 Types of vibration wave forms	Sweep Sine & Random & Classical Shock
2 Response bandwidth range	1 ~ 4,000 Hz(System)
3Vibration machine thrust	400 kg F
4 Displacement	40 mm-Continuous
5 Acceleration	30g
6 Types of tests that can be done	<ul style="list-style-type: none"> <li><b>1</b> Monomer vibration test</li> <li><b>2</b> Non-operating random vibration test</li> <li><b>3</b> Operation of random vibration test</li> <li><b>4</b> Complete box vibration test</li> </ul>
	<b>5</b> Product 6-side test, test order is bottom side → top side → left side → right side → front side → back side
7Test results	The above 5 test methods time unlimited free setting (according to the standard or customer requirements) automatic calculation of results without manual calculation



**Thrust calculation method**

Sine Force (p-p)  
 $F = M \times A = (M0 + M1 + M2) \times A$   
 Random Force (RMS)  
 $F = \text{Sine Force} / \sqrt{2}$



The diagram shows a vertical vibration shaker system. At the base is a teal-colored instrument stand (M0). Above it is a white table or fixture (M1). At the top is a specimen (M2). Arrows point from labels M0, M1, and M2 to their respective components. The text 'x SF' is placed to the right of the M2 label.

M0	: Armature Mass	Kg w
M1	: Table or Fixture	Kg w
M2	: Specimen	Kg w
A	: Vibration Acceleration	G
SF	: Safety Factor	1.2

Number of items	Name and technical specifications
1	<ul style="list-style-type: none"> <li>✧ Model: KS-EM400</li> <li>✧ Frequency range: 1~ 4,000 Hz (Fn to 2,000 Hz)</li> <li>✧ Sine / Impact Thrust: 400 kg F / 800 kg F</li> <li>✧ Peak acceleration: 44 g</li> <li>✧ Maximum displacement: 40 mm</li> <li>✧ Maximum load capacity: 120 kg</li> <li>✧ Speed: 0.96 ~1.6m/s</li> <li>✧ Voice coil diameter: 150 mm</li> <li>✧ Cooling method: forced air cooling</li> <li>✧ Operating temperature: 0 ~ 45 °C / Recommended RT ± 2 °C</li> </ul>
2	<p><b>19-inch instrument stand</b></p> <p><b>※DC Servo Amplifier</b></p> <ul style="list-style-type: none"> <li>✧ Copley ODM 2 Series Original imported amplifier</li> <li>✧ Frequency Response: DC ~ 5,000 Hz (Max to 20 kHz)</li> <li>✧ Power efficiency: 96%</li> <li>✧ Distortion Rate &amp; Accuracy: ≦0.2% THD</li> <li>✧ Accuracy can be set to 0.1%</li> <li>✧ Safety compliance: UL, TUV, CSA and CE</li> <li>✧ DC control and output from 0.1Hz</li> </ul>

	<p><b>System protector</b></p> <ul style="list-style-type: none"> <li>◇ Kexun instrument unique abnormal light indicator module:                             <ol style="list-style-type: none"> <li>1. displacement</li> <li>2. current</li> <li>3. voice coil temperature</li> <li>4. amplifier temperature</li> <li>5. Heat sink</li> <li>6. Amplifier status</li> <li>7. Emergency switch</li> </ol> </li> <li>◇ Six groups of analog meters visually display the operation process without complicated operations, speeding up the user to understand the test status                             <ol style="list-style-type: none"> <li>1. Input signal</li> <li>2. Amplifier voltage</li> <li>3. Amplifier current</li> <li>4. voice coil temperature</li> <li>5. amplifier temperature</li> <li>6. heat sink</li> </ol> </li> </ul> <p>The system is equipped with the world's only Fix Sine 20 Hz / Sweep Sine 10~500 Hz generator, which can be used for self-calibration of the system and checking the suitability of the object and fixture installation before testing to avoid dropping of the object or loosening of the fixture.</p>
3	<p><b>Silent high-pressure extraction fan</b></p> <ul style="list-style-type: none"> <li>◇ Adopt imported turbine blower</li> <li>◇ The blower is made of aluminum alloy with light weight design</li> <li>◇ Special heat dissipation design, effectively reduce the heat of the blower unique patented silencing design, the noise is the smallest in the same type of design, effectively reduce noise to 70 dB or less</li> </ul>
Number of items	<p><b>Name and technical specifications</b></p>
4	<p><b>Fourth generation digital servo vibration controller</b></p> <ul style="list-style-type: none"> <li>◇ Model: KS-TG820</li> <li>◇ Frequency resolution: 6,400 line</li> <li>◇ Frequency range: 1 ~ 5,000 Hz</li> <li>◇ DA exchange capability: 24bit</li> <li>◇ Dynamic range: 135 dB</li> <li>◇ 204.8 kHz sampling frequency, 80 kHz analysis bandwidth</li> <li>◇ Number of channels: Input 2 Channel / Output 1 Channel</li> <li>◇ Number of software open channels: 2 Channel input channel integration: IEPE, charge amplifier, AC/DC coupling, TEDS</li> <li>◇ Supports recording of all channels with maximum sampling frequency</li> <li>◇ Software features: sine, random, shock, resonance search</li> <li>◇ Signal processor: 450MHz DSP processor</li> <li>◇ Hardware connection: Ethernet RJ-45</li> <li>◇ LED display panel</li> <li>◇ Conduction fanless cooling, significantly reducing system background noise</li> <li>◇ Latest software technology, different from the third generation USB type controller</li> <li>◇ 1 GB of internal flash memory space for temporary storage of text files</li> </ul>

	<ul style="list-style-type: none"> <li>◇ Software Language: English / Chinese (Traditional / Simplified) / Japanese</li> <li>◇ Support OS: Windows 2K / XP / Vista / 7</li> <li>◇ With Office can produce WORD file report, or output test results to Excel</li> </ul>
<b>Vibration Controller Computer</b>	
6	<p><b>System Acceleration Regulation</b></p> <ul style="list-style-type: none"> <li>◇ Brand: B&amp;W</li> <li>◇ Model : 13100</li> <li>◇ Sensitivity: 50 mV/g</li> </ul>
7	<p><b>Vertical Assist Platform</b></p> <ul style="list-style-type: none"> <li>◇ Model: KS-VF500-L</li> <li>◇ Platform size: 600 x 600 mm</li> <li>◇ Material: magnesium alloy / anodic hardening</li> <li>◇ Weight: 26 kg</li> <li>◇ Frequency response: Sine to 600 Hz, Random to 1,000 Hz</li> <li>◇ Screw hole size and distribution: M8 P50/ alloy bushing, can be changed according to customer requirements</li> </ul>
项次	<b>Name and technical specifications</b>
8	<p><b>Horizontal Sliding Table</b></p> <ul style="list-style-type: none"> <li>◇ Model: KS-ST500</li> <li>◇ Table top size: 600 x 600mm</li> <li>◇ Table top material: aluminum alloy / anodized</li> <li>◇ Table top weight: 29 kg</li> <li>◇ Maximum displacement: 40 mm</li> <li>◇ Frequency response: 2,000 Hz</li> <li>◇ Screw hole size: M8 P50 / stainless steel bushings, can be changed according to customer requirements</li> <li>◇ Sliding bed body is made of natural granite, formed naturally over the years with the characteristics of not easily affected by the environment</li> <li>◇ Granite bed wear rating up to 7.5 times compared to cast iron bed</li> <li>◇ Granite bed hardness is up to 2 times greater than cast iron bed hardness</li> <li>◇ High corrosion resistance, no magnetization problems and no adhesion</li> </ul>

9	<b>Quick Clamp &amp; Tooling Set</b>
	✧ Tool-free quick release nut M8 x 8
	✧ 60, 75 cm press strips x 2 each
	✧ 45, 60, 75 cm M8 screw x 4
	✧ Hexagonal wrench set x 1 set
	✧ T-wrench x 1
	✧ Inflator, magnetic pen x 1

## Shaker Features

- ✧ Magnesium alloy one-piece skeleton-free dynamic design, high rigidity, good response spectrum
- ✧ Special support mechanism, excellent vibration response in the low frequency range and flat vibration curve in the high frequency range
- ✧ Green energy low magnetic leakage design, does not affect the product testing process, improve test quality and reduce uncertainty
- ✧ Dual magnetic circuit design, high permeability alloy with H+/APTZ grade coils, highest magnetic efficiency
- ✧ The heat dissipation system of body and voice coil is designed according to the heat flow cooling air path, which is not easy to heat up and ensure the stability of the system.
- ✧ The side and bottom plates are made of spherical cast steel, which is strong and has the characteristic of low resonance, and is the senior product of vibration machine, which helps the product itself and the test piece to improve the test quality. Also not affected by the external environment.
- ✧ The whole machine is designed for foundationless positioning, reducing the user's troubles of the whole land, more efficient buffer device for users to choose with
- ✧ Power amplifier modular design, small size of a single piece, expandable and multi-



## Remagnetic vibration systems

- ✧ Electromagnetic vibration machine by the shaker, high power amplifier and multi-function controller combination, in line with IEC, GB, JB/T, GJB, JJG, MIL/STB, GEDEC, ERA, DIN, CNS and other countries of various industry test standards. Various national standards, trademarks, military standards and other test specifications for the use of modern commodity design and development, quality management of the necessary tools, electromagnetic vibration system with wide frequency response, high control accuracy, can simulate a variety of vibration environmental conditions and specifications.
- ✧ The bed is made of spherical cast steel, which is strong and beautiful with low resonance, safe and stable without ground pile fixing.
- ✧ Horizontal sliding bed oil circuit for non-stage silent help pump circulation, through the filter cotton and hydraulic monitoring system to keep the oil circuit smooth, horizontal sliding plate aluminum alloy forging, surface hard film anodic treatment, wear-resistant and scratch-resistant, fixed hole for alloy thread sheathing, high strength, high tensile strength, not collapse teeth.
- ✧ Cushion Isolators are air cushion isolators that use air as a medium to carry loads and maintain ideal elasticity. The outer layer uses the best weather resistant Neoprene Rubber combined with Nylon fiber, and the main body uses chlorobutyl Rubber to achieve the best overall combination of weather resistance, durability and safety, reducing the user's troubles in preparing the ground and making foundations, further saving money.
- ✧ Thrust range 2 to 12,000 kg F / 5 to 26,400 lb F, frequency response 1 to 2,000 Hz (up to 20k Hz).
- ✧ High permeability alloy dual magnetic circuit design to achieve the highest field magnetic efficiency, the body and voice coil adopt high flow airflow heat dissipation air circuit to maintain low heat to keep the system stable.
- ✧ 4,000~8,000 kg F large thrust table with atomized air cooling design, the industry's unique technology, rapid cooling without the need for an additional cooling water tower.



## System servo protector



- ◇ System servo protector overall use of high-efficiency switching power amplifier, high efficiency, less heat, good linearity, to achieve power saving, green energy and environmental protection, effective improvement of power factor, stable output voltage and current, the equipment itself also has a protective effect, the amplifier for the United States well-known brands and in line with the military, medical and aerospace industry use.
- ◇ Automatic air pressure adjustment system to keep the voice coil centered.
- ◇ 96% super high conversion efficiency, effectively reduce energy consumption and increase the use benefit.
- ◇ Single button system power and system linkage switch with a variety of equipment operation indication icons at the same time.
- ◇ digital system operation efficiency indicator meter with amplifier input signal, output voltage, output current, temperature, voice coil temperature and other display functions.
- ◇ Digital abnormal indicator with over displacement, over current, voice coil abnormal temperature indication, power amplifier abnormal temperature indication, pumping abnormal indication, amplifier AMP N.TR/AMP P.TR abnormal indication and emergency stop indication.
- ◇ Self-status test FIX SINE 20Hz / SWEEP SINE 10~500Hz with emergency stop switch.

- ◇ Aluminum alloy high pressure blower, light weight and high efficiency, from the motor coil winding, into the wire, insulation treatment and finished product testing are completed by automated machines to ensure excellent quality, to achieve high pressure, high air volume, low noise, light weight and high quality products.
- ◇ Aluminum alloy is used to significantly reduce weight and achieve light weight.
- ◇ Motor is I.E.C design (1HP or more), fully closed external fan type aluminum frame motor, special shaft design, can be suitable for long time use.
- ◇ Special blade design, high pressure, high air volume, low noise and long life.
- ◇ The external device muffler significantly reduces the noise generated by the motor operation, and the air outlet is equipped with a muffler tube to reduce wind cutting sound, which is very convenient to use when environmental factors require low noise.
- ◇ With the automatic power-on linkage system and standby energy-saving automatic shutdown function, so that the test is completed by the waste of energy to a minimum.



## Vertical Assist Platform

Magnesium alloy die-casting platform, not the general industry use of aluminum and magnesium alloy or magnesium aluminum alloy, magnesium alloy material has the characteristics of light weight and lighter than the common aluminum and magnesium alloy, has good mechanical properties, widely used in aviation, space.



▽ Platform structural analysis

