

Vibration / Shake Tables

FOR SUSPENSION AND STRUCTURE TESTING

Requirements:

Design shaker table - table top version that eg. fit on low bench in modal lab

i) Investigate availability of commercially off the shelf shaker table and compare against designing and making one, or outside testing service.

ii) Should be ~ 4ft x 4ft with with holes on pattern

iii) X, Y and Z excitation. **Excitation should be small** i.e. not for flight or transport or earthquake. More for excitation of multi stage suspension system.

iv) Consider (*if going route of in-house design) whether either a iLIGO HAM ISIS could work or if a Newport table is right or other. (I am worried about extra damping from a Newport optics table.)

v) Big enough (strong enough) to hold a **Quad or BS** or e.g. 2x HLTS suspensions

QUESTIONS: REF. E1300574

1. HOW MANY AXIS? X-Y-Z
2. FREQUENCY
3. TRAVEL
4. MAX /MIN G'
5. SINUSOIDAL

Following are: VARIOUS LABS AND VIBRATOR TABLE SERVICES AND OFF THE SHELF EQUIPMENT.

1.

http://www.google.com/search?q=shake+table&tbm=isch&tbo=u&source=univ&sa=X&ei=NO-oUdCoF4fjiAK3-oCADQ&sqi=2&ved=0CEoQsAQ&biw=1398&bih=811#facrc=_&imgrc=S_1lpD9vHIUjYM%3A%3BEXjOS1ACFHmaSM%3Bhttp%253A%252F%252F2.imimg.com%252Fdata2%252FWT%252FLC%252FMY-1450799%252Fvertical-shake-table-250x250.jpg%3Bhttp%253A%252F%252Fwww.microfablabtech.com%252Fvertical-shake-tables.html%3B250%3B250

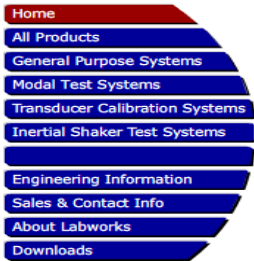
2. <http://quanser.blogspot.com/2013/03/what-makes-xy-shake-table-iii.html>

3. <http://www.mathworks.com/products/simulink/>

4.



For Over 30 years, Labworks has specialized in user friendly, turn-key Vibration Systems.
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Labworks Inc. manufactures a **complete line of electrodynamic vibration test systems**, including general purpose, modal, inertial shakers, and electrodynamic vibration tables with a force range from 2 to 500 lbf., vibration controllers, power amplifiers, shaker head expanders, slip tables, and other shaker fixture and stinger options.

5. Smithers Pira has a 98" x 60" table in both Lansing, MI and Sunnyvale, CA. I am not aware of a 150" table out there.

6. <http://www.martin-eng.com/products/flow-aid-solutions/cougar-vibrating-table.html>



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7. <http://www.dwilliamscompany.com/fmccvp-51.html>

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[Anti-Vibration Table](#)
\$629.00
Global Industr...



[Relative Density Vibra...](#)
\$6314.75
Certified Mate...



[Vibration Cushion For...](#)
\$99.95
HSN



[The Vibe Chocovision...](#)
\$747.00
eBay



[Carepeutic Do-it-All Delu...](#)
\$109.95
Sears



[Spaceguard Alien Shooter...](#)
\$20.70
DX.com



[Concrete Vibrating Tab...](#)
\$2027.89
Certified Mate...



[Vibrator For Vibrating Table](#)
\$399.00
eBay

[Images for Vibrating Tables - Report images](#)



8. <http://www.stlvibrator.com/vibratingtables.htm>

Electric Vibrating Tables are available with variable speed and timing controls allow you to dial into the best operating frequency with digital accuracy. Digital sequence timers allow operation at multiple frequencies and durations. All to provide you with the most versatile and accurate vibration system available. Call us with your load and size requirements, we will be happy to assist you with your vibration application.



Portable Casting Table
Digital Speed Control
Spring Isolated



Casting Vibration Table
Digital Speed Control
Digital 3-Stage Auto-Cycle
Air Spring Isolated



Low Profile
Compaction Vibrating Table
Loads up to 20,000 LBS.



Roller Conveyor
Compaction Table
Foot Pedal Activated
Air Spring Isolated

Air powered vibrating tables are easily controlled with the supplied filter, regulator and lubricator assembly. Varying the vibrator input pressure with the regulator will allow you to determine and operate at the best operating frequency. Our digital timing and sequence system can be used to automate the control of your vibration cycle.

VARIOUS SHAKE TABLES

AVITEQ
Vibrationstechnik GmbH



SCAN-VIBRO viv



VIBRA FRANCE



ERIEZ



EURO PERCUSSION



ERIEZ



TARNOS



Gruber
THE RIGHT TOOLS



VIBCO

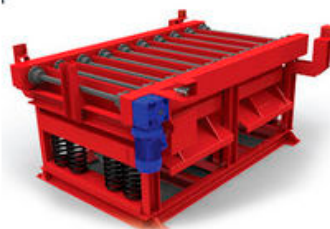
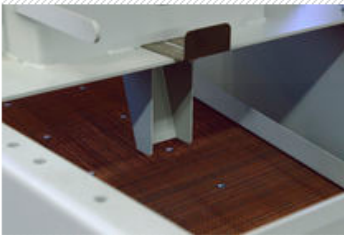




2



4



8.

<http://www.chicagovibrator.com/Home/IndustrialVibratorTypes/VibratingTables/tabid/256/Default.aspx>

Vibrating Tables for Non-Destructive Testing



Sizing the vibratory drive for non-destructive testing depends on:

1. weight of product
2. frequency range
3. acceleration range
4. weight of table top
5. weight of vibratory drive

Provide us with items 1, 2, and 3 along with physical dimensions of the product and the desired power source, and we will recommend the *best applicable* vibratory drive and table configuration for your application. We will help you determine the desired frequency and acceleration based on shipping and operational environments. Call us for a proposal on your standard or custom vibrating table today.

9. <http://www.cascadetek.com/testing-services/vibration-shock-testing?mfept=pt&gclid=CMf79euNwbcCFaN7Qgodaz8APg>

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Vibration & Shock Testing



Cascade TEK understands shock and vibration testing. Our Dynamics labs are outfitted with multiple vibration tables and shock towers. Transportation Simulation, Cargo Bounce, ESS Stress Screens, Sine, Random, Sine-on-Random, "Shake and Bake" (combined temp and vibration) SRS, Sine Sweep, Resonance Search and Dwell, Gunfire, Sawtooth, Half-sine, and Square-Wave Profiles are all within our capabilities. **Contact Cascade TEK for assistance in determining which tests may be appropriate for your products.**

Electro-dynamic vibration tables:

- Slip plates for easy 3-axis testing
- High displacement, up to 40,000 force pounds
- Multiple response channels
- "Shake and Bake" - combined temperature and vibration

Hydraulic and mechanical vibration tables:

- Ideal for low frequency, high displacement testing. (Transportation vibration on fully

10. http://www.csztesting.com/Services/Test-Conditions/Shockand-Vibration-Testing.aspx?gclid=CP3Osa6OwbcCFeh_QgodaFoAHw

The screenshot shows the CSZ Testing website. The header features the CSZ logo and the text 'Cincinnati Sub-Zero TESTING' with an 'in' icon. A navigation menu on the left lists various test conditions and applications. The main content area includes a breadcrumb trail, a section header for 'Shock And Vibration Testing Services', a descriptive paragraph about the services, a bulleted list of capabilities, and a section for 'Vibration Testing Capabilities' with a list of technical specifications.

CSZ TESTING
Cincinnati Sub-Zero

[Home](#) > [Services](#) > [Test Conditions](#) > [Shock and Vibration Testing](#)

Shock And Vibration Testing Services

CSZ Test Laboratory offers a variety of shock and vibration testing services for testing a wide range of products across many industries. Automotive components are tested to simulate the effect of road conditions. Other products may be exposed to vibration during transportation until they reach their final destination. Aerospace/Defense products are also exposed to vibration conditions thus requiring vibration testing to ensure product quality and safety. Below is a list of our vibration and shock testing capabilities:

- Random, Sinusoidal, Mixed Mode
- Transportation and Packaging
- Gunfire
- NAVMAT Screening
- Combined with Temperature and/or Humidity

Vibration Testing Capabilities


Force Output:	13,000 lbf-sine, 13,000 lbf-random, 3-axis vibration
Displacement:	2.0 inch pk-pk
Velocity:	78.0 inches/second
Acceleration:	125 g's Sine, 60 g's Random
Frequency Range:	5-3000 hz

Test Conditions

- Environmental Testing
- Climatic Testing
- Temperature and Humidity Testing
- Corrosion Testing and Salt Spray Testing
- Shock and Vibration Testing
- Thermal Shock Testing
- Altitude Testing
- HALT & HASS Testing

Test Applications

11. <http://vibrationmaster.com/products/vibration-tables/>




vibrationmaster

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Off-the-shelf or completely bespoke models available

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Vibration Tables

Vibrationmaster's Vibration Tables can be used to test an enormous variety of products, components and containers – from components weighing as little as a few kilo to light trucks weighing up to 12,000 kg. Using unique Variator technology, the tables can electronically control and vary displacement of up to 30mm in real time, and vary frequencies from 0-100Hz (sine wave), enabling a wide range of test regimes to be applied.

A closed-loop system monitors and adjusts actual displacement several times per second, offering exceptional accuracy. The test bed and fixings can be varied in size and configuration according to specifications. When connected via the internet to Vibrationmaster's diagnostic servers, each Vibration Table features a troubleshooting function to optimise performance or for fault tracking.

Vibrationmaster Vibration Tables:


- Vibration Tables can be constructed featuring variable displacement of up to a maximum of 30mm, adjustable in real time using electronic controls; frequency can also be varied between 0 and 100Hz, depending on the specifications
- Customisable test bed area and fixings can be configured according to client specifications
- G-force and acceleration can be customised according to application and client specifications
- A closed-loop system Vibration Table maintains accuracy by comparing actual with required displacement several times a second, then adjusting settings accordingly
- Payload is completely scalable up to 12,000 kg
- No matter what the payload, displacement control and closed-loop system accuracy are maintained.

For more information and to download a comprehensive product datasheet please visit our [downloads page](#).

VT500 specification

[Download datasheet here](#).

Get a quote and support



Contact us now.

12. <http://vibratingtables.us/>

<p>Flat Decks electric or air powered</p> 	<p>Grid Decks - electric powered - for roller conveyor systems</p> 	<p><u>We sell & ship Nationwide & Worldwide</u></p> <p>** For a competitive price quote, contact us today or fill out our inquiry form.</p> <p>Custom designed to fit your application.</p> <p>Features for our vibrating tables include:</p> <ul style="list-style-type: none"> - air or electric powered - load capacities to 10 tons - flat deck or grid deck styles <p>Settle Product Contents in: Drums, Bulk Bags, Portable Bins, Bulk Boxes, Gaylords, Lever Packs, Foundries, and Moulds</p>	
<p>Flat Deck vibrating tables over scales</p> 	<p>Grid Decks - air powered - for roller conveyor systems</p> 	<p>Grid Deck vibrating tables over scales</p> 	<p>Light Duty electric or air powered</p> 
<p>Industrial Vibrators - 53 different models - Frequency ranges: 3600, 1800, 1200, & 900 RPM</p>  <p>Click to Visit: industrialvibrators.us</p>	<p style="text-align: center;">Need Help?</p> <p style="text-align: center;">Our representatives can help you find the vibrating table(s) that fits your application. We have over 30 years experience in the Bulk Processing Industry.</p> <p style="text-align: center;">INQUIRY FORM</p> <p style="text-align: center;">(979) 217-1480</p> <p style="text-align: center;">Custom and Competitive Price Quotes!</p>		

12. [Vibration Test Laboratory - MIL-STD 810, ISTA, A2LA Accred](#)

13.

http://www.respondedynamics.com/?gclid=CN3qz_OPwbcCFQXZQgodNTkAIA

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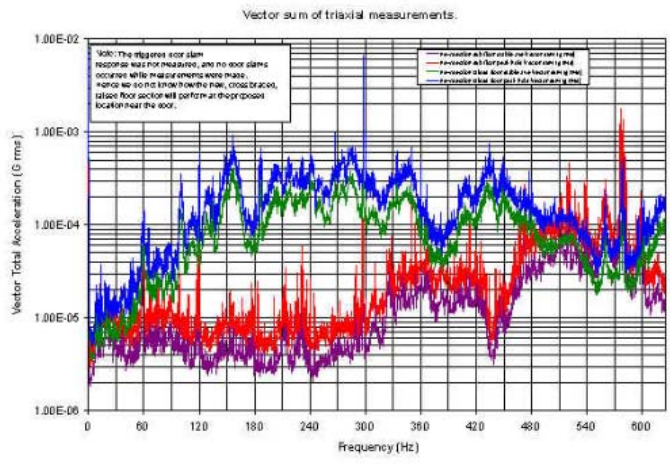


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14. <http://www.datasysttest.com/testing-services.php?name=Vibration&gclid=CMnQ2ZCQwbcCFbGDQgodAGgAHg>



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Vibration Testing


DATASYST provides vibration testing and analysis using random, sine sweep, sine dwell a sine-on-random, and can combine the testing with environmental conditions.

Mechanical and Thermal Shock Testing

15.

http://www.siliconcert.com/m_varvibe.htm?gclid=CKnw3raQwbcCFS9dQg
 oduTEAeg





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Reliability Newsletters

No Obligation Online Quote

Variable Frequency Vibration


Variable Frequency Vibration testing is performed to evaluate the ability of parts to withstand vibration of varying frequency within a specified frequency range. This test simulates withstanding moderate to severe vibration as a result of motion produced by transportation or field operation. Vibration of this type may disturb operating characteristics, particularly if the repetitive stress causes fatigue.

For design purposes, a swept frequency sinusoidal test may yield more pertinent design information such as resonant frequencies and modes than a random vibration test. This test is considered to be destructive.

[← Back to Mechanical Testing](#)

Test Specifications / Standards
JESD22-B103
AEC-Q100
AEC-Q101
MIL-STD-883, Methods 2007
MIL-STD-750, Methods 2056
MIL-STD-202 Method 201A

ISO 17025:2005 Accredited




ACCREDITED
Testing Cert 2930.01

Commercial Laboratory Suitability



VQC-09-01881211



DNV
ISO 9001:2008 Certified

16. http://www.lansmont.com/VibrationTest/High_Performance/Vibration_15000.htm

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Field-to-Lab[®]

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Vibration Test System - Performance

Model 15000

The Lansmont Model 15000 vibration test system is the largest stroke actuator in the current Lansmont vibration product line. The Model 15000 has an enormous 10" (25.4 cm) of stroke.

In addition to stroke, the Model 15000 generates (15,000 lbs.) of stall Force, making it ideally suited to massive payloads being tested out to 100 Hz. The Model 15000 can be configured with a multitude of table sizes, ranging from 48" (122 cm) square all the way up to 60" (152 cm) square. Contact Lansmont for further details on configurations and performance of the Model 15000 vibration test system.

Lansmont's TouchTest Vibration Controls completely integrate all of the test hardware, operating controls, data analysis and reporting functions. The system can perform random vibration, Field-to-Lab[®] simulations and direct downloads from Lansmont's SAVER field data recorder, resonance search and dwell, sine sweep and repetitive bounce, all under closed-loop computer control. All of Lansmont's servo-hydraulic vibration test systems include the following:

- Single control system for all operational and safety functions
- Reliable, self-contained hydraulic power supply
- Lansmont initiation and system level training
- Full range of applications training programs available
- Comprehensive one-year warranty on all components

Table Size: 60" x 60" (152cm x 152cm) - Maximum
Capacity: 3,500 lbs. (1,588 kg)
Piston Stroke: 10" (25.4cm)

15000

- TTV2 - Vibration Controller
TouchTest Vibration Controller
Integrated Sine & Random Vibration Control
- Movie - See It Work
Flash Movie
TouchTest Vibration 2 - Overview
- Product Specification Sheet
PDF Data Sheet
Download Data Sheet - Letter A4

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Specifications (various)Relating: Shake Tables

Test Specifications / Standards
JESD22-B103
AEC-Q100
AEC-Q101
MIL-STD-883, Methods 2007
MIL-STD-750, Methods 2056
MIL-STD-202 Method 201A