

HERZAN

www.herzan.com

**Acoustic, Vibration, and
EMI Isolation Specialists**

TS Series Product Guide

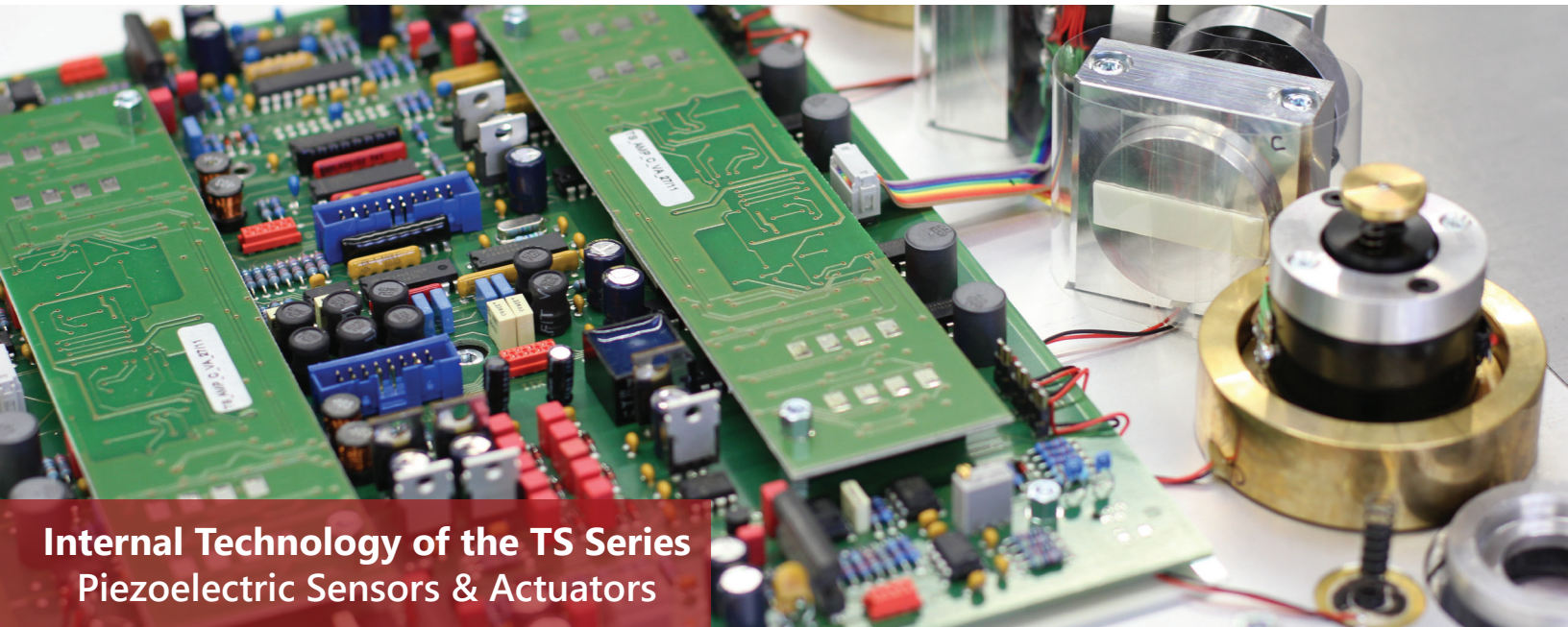
Overview

TS Series tables provide industry leading active vibration isolation performance (0.7-200 Hz), helping users achieve more from their research by removing disruptive vibrations from their measurements.

The TS Series is designed to prioritize the user experience with automatic leveling, LCD display, and more; becoming the perfect solution for users wanting to focus on their research and not on their research equipment.



TS-150 Active Vibration Isolation Table



Internal Technology of the TS Series
Piezoelectric Sensors & Actuators

Product Highlights

- > Active isolation from 0.7 to 200 Hz
- > Isolates vibrations in all six degrees of freedom
- > Advanced piezoelectric sensors & actuators
- > Automatic leveling and adjustment for load
- > Internal feedback loop damps resonances
- > Easy to install and simple to use (via LCD Display)

www.herzan.com



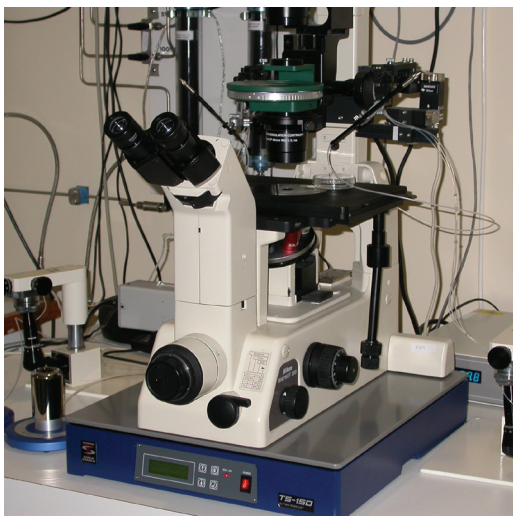
TS-150 Platform Supporting an Asylum Research Cypher AFM

Popular Applications

The TS Series support a wide range of high-precision microscopes sensitive to low-frequency vibration noise. The most common application for the TS Series tables is atomic force microscopy, supporting both end users and OEMs around the world by removing low-frequency vibration noise from important measurements.

In addition to AFMs, the TS Series tables often support:

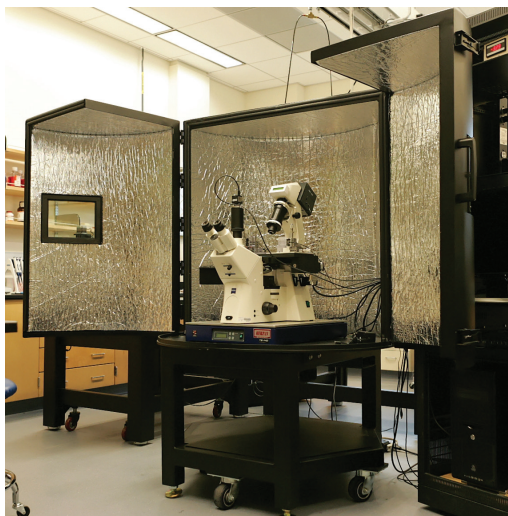
- > Interferometry
- > Profilometry
- > Micromanipulation Systems
- > High Precision Metrology
- > And More!



TS-150 Supporting Nikon Microscope with Micro-Manipulators

Fertility Research Associates needed an isolation system to reduce local vibrations affecting their intracytoplasmic sperm injection (ICSI) process. They chose the TS-150 table, which immediately eliminated the disruptive vibrations and improved their workflow.

The end user was able to continue working without disruption when new construction began nearby, removing the effect of severe vibration noise limiting their operations.

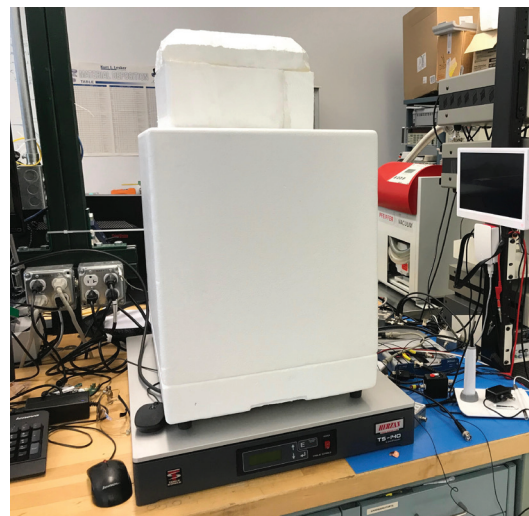


TS-140 and Custom Enclosure Supporting Custom AFM

The Heinrich Lab built a custom force probe to investigate the adhesive properties and other mechanical characteristics of biomolecules to further their cutting-edge bioengineering research. They soon found that environmental noise was limiting the measurement precision.

Customer Testimonial

Our experiments would not be possible without the equipment from Herzan. It allows us to do single-molecule experiments on the second floor of a shaky building!



TS-140 Supporting A Custom Metrology Tool

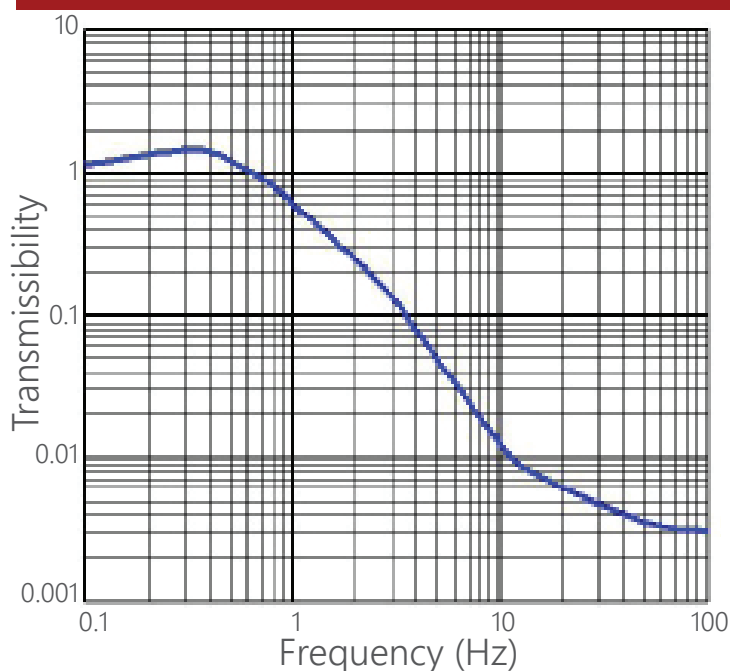
Researchers at Boston University were in search of isolating vibrations from a custom metrology platform consisting of a MEMs accelerometer, which was re-purposed to perform a sensitive, room temperature measurement of the Casimir force. Because the forces needing to be measured are so small, it was imperative the noise floor of the accelerometer was as low as possible.

Customer Testimonial

The active vibration isolation in the TS-140 allowed us to remove much of this noise floor.



TRANSMISSIBILITY



Performance

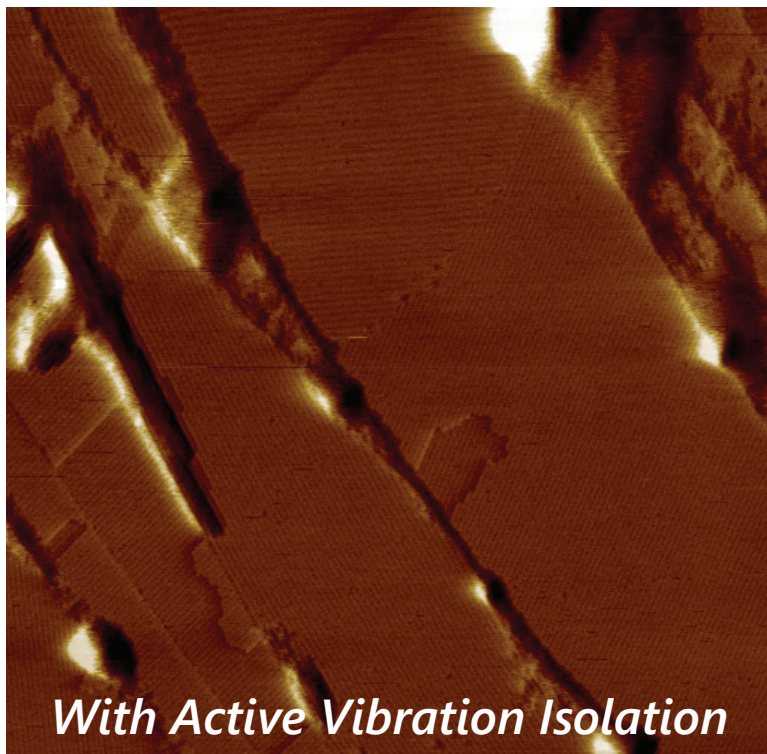
The performance graph is to be considered for all TS Series tables. The transmissibility graph is a conservative estimate of performance in any given lab environment and pertains to all six translational and rotational modes of vibration (all six degrees of freedom).

Performance Highlights

- > Active vibration isolation from 0.7 - 1,000 Hz
- > Passive vibration isolation from 1,000 Hz+
- > 90% vibration attenuation at 3.5 Hz
- > 99% vibration attenuation at 10 Hz+
- > Up to 55 dB of reduction

Vibration Control Visualized

A researcher operating an AFM imaged a sample under two unique conditions: **without a vibration isolation system** and **with a TS Series table**. The resulting images demonstrate a significant improvement in image quality and overall measurement clarity when a TS Series table is used to support an AFM.





Technical Specifications

SPECIFICATION		TS SERIES MODELS				
		TS-150	TS-140	TS-140+40	TS-300	TS-300LT
Dimensions (W x D x H)	<i>Imperial</i>	15.7 x 17.1 x 3.1 in.	19.6 x 23.6 x 3.3 in.	19.6 x 23.6 x 3.3 in.	23.6 x 31.5 x 4.7 in.	23.6 x 31.5 x 4.7 in.
	<i>Metric</i>	400 x 450 x 78.5 mm	500 x 600 x 84 mm	500 x 600 x 84 mm	600 x 800 x 120 mm	600 x 800 x 120 mm
Load Capacity	<i>Imperial</i>	0 - 330 Lbs	0 - 298 Lbs	88 - 396 Lbs	0 - 660 Lbs	0 - 264 Lbs
	<i>Metric</i>	0 - 150 Kg	0 - 140 Kg	40 - 180 Kg	0 - 300 Kg	0 - 120 Kg
System Weight	<i>Imperial</i>	38.5 Lbs	62.7 Lbs	62.7 Lbs	116.8 Lbs	116.8 Lbs
	<i>Metric</i>	17.5 Kg	28.5 Kg	28.5 Kg	53 Kg	53 Kg
Isolation Technology		Piezoelectric sensors, actuators, and control electronics				
Correction Directions		Active vibration isolation in all six translational and rotational vibration modes				
Isolation Characteristics		Dynamic 0.7 Hz to 200 Hz, Passive beyond 200 Hz				
Transmissibility		See transmission curve and product highlights section for more details. Above 10 Hz transmissibility <0.01 (-40 dB)				
Correction Forces		Maximum +/- 4N horizontally; +/- 8N vertically				
System Noise		Less than 20nG/√Hz from 0.1 - 200Hz in any direction				
Table Top		Damped aluminium sandwich construction				
Input Voltage		90 – 120V AC, 47 – 63 Hz; 200 – 240V AC, 47 – 63 Hz				
Power Consumption		When Isolating: 10W (Max); When Adjusting for Load: 20W (Max)				
Safety Class		1				
Fuses		2x1.6A/250V slow; located in the power socket on the rear side of the unit				
Table Top		Damped aluminium sandwich construction				
Protection Class		IP 20				
Temperature Range		5° - 40°C / 41°-104°F				
Relative humidity		10 – 90% (5° – 30°C / 41°-86°F); 10 – 60% (30° – 40°C/ 86°-104°F)				
Application		Indoor				
Altitude		Up to 2000m (6500ft)				



Acoustic, Vibration, and EMI Isolation Specialists

Popular Upgrades

The design of the TS Series enables the tables to integrate seamlessly with a variety of upgrades that improve the user experience and overall effectiveness of the platform. These upgrades relate to improvements in performance, form factor, operation, and more.



Drilled & Tapped Top Plate

TS Series tables can customize the top plates to include one or more of the following:

- > Custom top plate sizes
- > Custom top plate materials like stainless steel, ferromagnetic steel, and more
- > Drilled/tapped hole grid (1/4-20 or M6)
- > Customized hole pattern based on the researcher's needs.



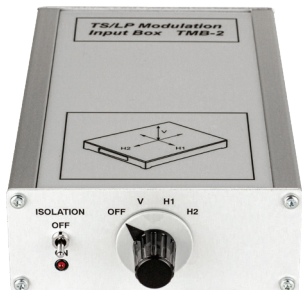
Acoustic Enclosures

The TS Series can easily integrate with any Herzan acoustic enclosure, providing comprehensive environmental control by targeting vibration and acoustic noise. Herzan acoustic enclosures can be entirely customized to fit the needs of a customer's application, ensuring maximum protection for their research instrument.



NanoDamp Workstations

NanoDamp Workstations provide the TS Series with an optimal support surface to maximize the vibration isolation performance offered by the table. NanoDamp workstations also provide a comfortable working area for users operating sensitive instruments.



Exciter Box

The Exciter Box transforms the TS Series Tables into a shaker system (in X, Y, and Z), making the platform a multi-faceted tool for researchers needing to introduce vibrations at exact frequencies and amplitudes. No separate power supply is required, but a sin wave generator will be needed for operation.



Adjustable Gain

The adjustable gain upgrade for the TS Series allows researchers to operate microscopes with moving stages without interfering with the isolation capability of the table. The reduced gain values limit the tables ability to read the moving stage as vibration noise, where it would normally try to cancel out that stage movement.



External Display/Power

External display and power upgrades are available to make features of the TS Series more accessible, while removing heat/EMI sources from an enclosure. These upgrades are popular for researchers wanting to minimize thermal drift and EMI noise disruptions from their microscope.



Address: 23042 Alcalde Drive, Suite E
Laguna Hills, CA 92653
Email: sales@herzan.com
Phone: (949) 363-2905
Website: www.herzan.com

Connect With Us



www.herzan.com