

Where can I find micro-module vibration damping and isolation devices

Article Overview

Micro-module vibration damping and isolation devices are available from specialized manufacturers offering both active and passive solutions for precision equipment and sensitive applications.

Key Suppliers and Solutions

1. Integrated Dynamics Engineering (IDE) IDE offers a wide range of passive and active vibration isolation modules, including compact LC series passive isolators and TCN active series systems. Their solutions address low-frequency floor vibrations and high-frequency payload-induced vibrations, using pneumatic, coil, or elastomeric springs combined with active feedback for real-time 6 degrees of freedom control. IDE provides both soft mount (SMS) and hard mount (HMS) systems suitable for laboratory and industrial applications . 2. MicroMega Dynamics MicroMega Dynamics specializes in Active Damping Devices (ADDs), which enhance precision by introducing structural active damping to mitigate resonances. These devices are lightweight, adaptable, and ideal for microscopes, imaging systems, inspection tools, and polishing machines. They can achieve up to 15% structural damping without major redesigns and remain insensitive to changes in supporting structure dynamics . 3. Vibro Anti-Vibration Systems Vibro provides elastomeric mounts, dampers, springs, and resilient materials for vibration isolation. Their products are suitable for industrial, commercial, and structural applications, offering solutions for both low- and high-frequency vibrations. Vibro's systems are customizable for shock absorption, seismic resilience, and operational efficiency in sectors like manufacturing, marine, HVAC, and power generation . 4. TechMFG / MaxDamp The MaxDamp system combines Gimbal Piston Air Isolators with internal viscous damping, providing high-performance isolation for motorized X-Y stages, robots, and semiconductor inspection tools. It offers faster payload settling times, reduced vibration from air currents, and modular design with options for Electro-Damp(R) active vibration cancellation . 5. Micro-Vibration Solutions for Aerospace and Precision Instruments For micro-vibration applications, such as satellites or sensitive instruments, solutions often use thin elastomer damping layers constrained by stiffer plates (aluminum or composite) to mitigate micro-vibrations. These can be bonded directly to structural panels or integrated into the panel itself. Systems like SMACMount isolators provide linear response over small displacements (microns) and are designed to maintain performance across wide temperature ranges .

Considerations for Selection

- o Active vs Passive: Active systems provide real-time damping and are better for dynamic payloads, while passive systems are simpler and effective for floor-induced vibrations.
- o Frequency Range: Ensure the isolator addresses the specific vibration frequencies of your application.
- o Payload and Size: Micro-module devices are designed for small displacements and sensitive equipment; check load capacity and modularity.

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o Environmental Conditions: Some isolators are optimized for temperature stability and long-term reliability, especially in aerospace or semiconductor applications. These suppliers and technologies provide a comprehensive starting point for sourcing micro-module vibration damping and isolation devices suitable for laboratory, industrial, and aerospace applications.

Abstract Micro-vibration caused by disturbance sources onboard spacecraft can severely degrade the working

Marian manufactures die-cut components using highly engineered materials that are formulated for sound deadening, vibration

What is Vibration Isolation? Vibration isolation is a technique widely used to reduce or suppress unwanted vibrations in

Shock and vibration are destructive agents in industrial environments. Find the best isolation solution for

MaxDamp is a highly damped version of our Gimbal Piston Air Isolator. Ideal for OEM equipment with motorized X-Y stages or robots

Vibration & Shock Mounts - Reliable Isolation for Sensitive Equipment Protect your equipment from the

Taylor Devices has an extensive history of developing isolation systems to protect against shock and

Choose from our selection of vibration isolators, including over 13,600 products in a wide range of styles and sizes. Same and Next

This paper studies the vibration isolation characteristics of four established semi-active damping control strategies,

Damping is a critical tool in shock and vibration isolation. Dampers can be designed to react with force as a function of relative

An active micromachined vibration isolation filter can be realized by combining a state sensor, and electrostatic

Taylor Devices provides isolation for reactors, entire buildings, nuclear battery storage, or shock and vibration control during

In scenarios where the existing isolation system lacks the required stiffness or is affected by perturbation



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With innovative engineering and advanced materials, we provide solutions for shock absorption, vibration damping, and seismic

Electro-Damp® is the first commercial active vibration isolation system designed specifically to increase throughput, resolution, and

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