



# Daeil Systems DVIA-MB Series



## Active Vibration Isolation for Ultra-High-Resolution Instruments

The DVIA-MB Series reduces vibrations in the critical range of very low frequencies (1–10 Hz), in which electron microscopes are highly susceptible to vibration interference. The exceptional performance of the DVIA-MB Series makes it the optimal choice for customers performing high- and ultra-high-resolution imaging and analysis.

**Every DVIA-MB includes a 10-year limited warranty**

### Superior Low and High-Frequency Active Vibration Isolation

The DVIA-MB mitigates low-frequency vibration (~1–20 Hz) through feedback and feedforward controls that take the input of high-performance sensors. For high-frequency vibration (~20–200 Hz), pneumatic springs integrated into the system offer outstanding vibration isolation performance.

### Unbeatable Vibration Isolation Performance

The resonant frequency of active isolation systems is much lower than that of passive isolation systems. The active component of the DVIA-MB excels in controlling vibrations in the 1–10 Hz range. Typical passive systems amplify the low-frequency vibrations rather than filtering them. DVIA-MB is highly effective in isolating ultra-precision instruments from the low-frequency vibrations that cause disruptions and instability. Active isolation starts at 0.5 Hz, with DVIA-MB delivering 90% at 2 Hz and 99% at 10 Hz.

### Controlling Vibrations in all Six Degrees of Motion

Inertial sensors and electromagnetic actuators installed in the DVIA-MB active vibration isolation systems detect and control vibrations in three translational degrees of motion (X, Y, and Z), and three rotational degrees of motion (pitch, roll, and yaw).

### Configurable to your Exact Requirements

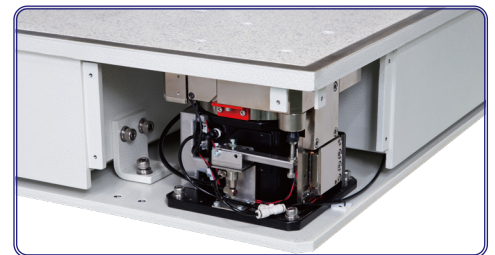
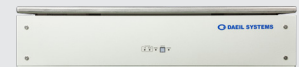
Custom designed to meet any microscope requirement, VEC and Daeil Systems size the base to accommodate your microscope's footprint. VEC also selects the isolators to match the mass of the microscope, optimizing performance.

### DVIA-MB Series

**Ultra High Resolution Imaging and Analytical Instruments (<6000 kg)**

- Scanning Electron Microscopes (SEM)
- Focused Ion Beam Microscopes (FIB & FIB/SEM)
- Transmission Electron Microscopes (TEM & STEM)
- Analytical Instruments

**10-Year Limited Warranty**

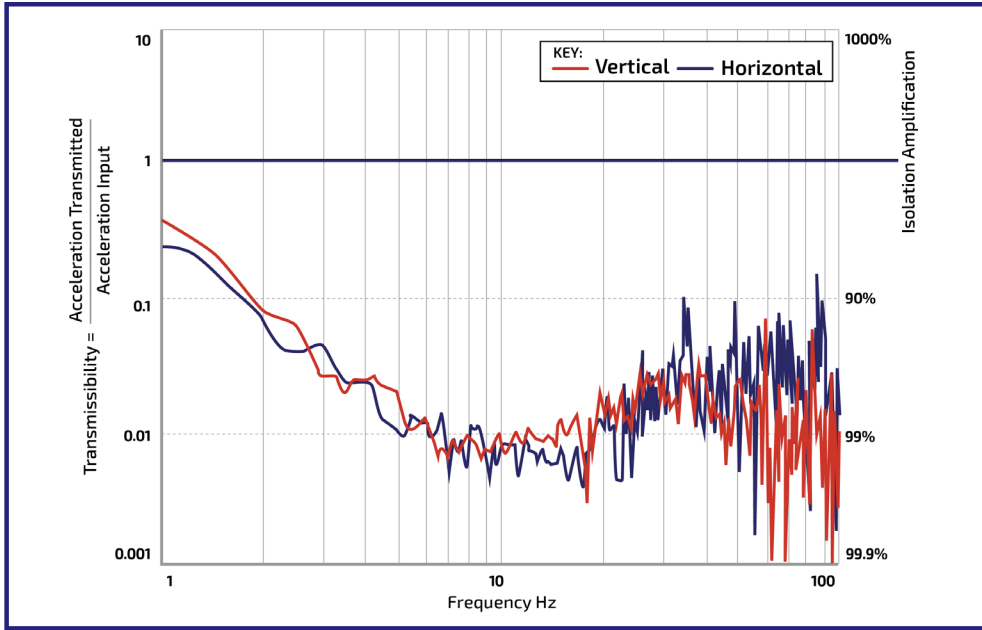


*Cutaway of a Daeil DVIA-MB shows the vibration isolator with integrated sensors and actuators.*

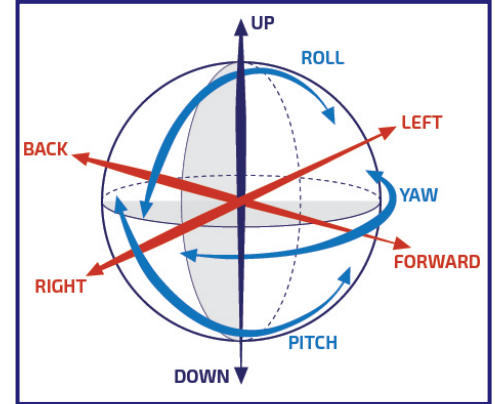


# Daeil Systems DVIA-MB Series

## Active Vibration Isolation



DVIA-MB active vibration isolation performance.



The DVIA-MB provides vibration cancellation along all six degrees of motion.

## Specifications

Model No.		DVIA-MB1000	DVIA-MB3000	DVIA-MB6000
Dimensions (W x D x H)	Isolator Unit	180 x 180 x 180 mm	232 x 232 x 180 mm	308 x 308 x 180 mm
	Platform	Custom-made		
Maximum Load Capacity		500 - 1700 kg	1500 - 3500 kg	3000 - 6000 kg
Actuator		Electromagnetic Actuator		
Maximum Actuator Force		Vertical : 40 N, Horizontal : 20 N		Vertical : 80 N Horizontal : 40 N
Active Isolation Range		0.5 - 100 Hz		
Degrees of Freedom		6 degrees		
Vibration Isolation Performance		≥90% at 2 Hz / 99% at 10 Hz		
Settling Time		≤0.3 sec*		
Input Voltage (V)		AC 80 - 260 V / 50 - 60 Hz		
Power Consumption (W)		Maximum 110 W, Below 50 W in normal operation		
Operating Range	Temperature (°C)	5 - 50 °C		
	Humidity (%)	20 - 90%		
Required Air Pressure		≥5 kg/cm <sup>2</sup>		

\*0.3 sec settling time is measured after 90% reduction of input. (The settling time varies with several conditions, such as payload, force, natural frequency, etc.)



At installation, VEC tunes the DVIA-M control systems based on the data recorded during the site survey.

All Daeil systems are TUV and CE certified. Daeil and VEC provide a 10-year limited warranty on all DVIA-MB products.

Daeil Vibration Isolation Systems are TUV Certified

Daeil Active Vibration Isolation Systems are CE Certified



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**DAEIL SYSTEMS**



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