DAEIL SYSTEMS

Active Vibration Isolation System

DVIA-T Series

User Manual

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Introduction

Purpose of this Manual

This manual provides clear and concise instructions for installing, operating, and maintaining the DVIA-T Series platform. It is intended for users who need to set up the system correctly, enable or disable active isolation function, interact with the software interface, and understand troubleshooting procedures. Please read this manual thoroughly before operating the DVIA-T platform.

About the DVIA-T

The DVIA-T Series is a compact tabletop active vibration isolation platform designed to actively canceling vibrations across all six degrees of freedom to meet the stringent vibration specifications required by advanced microscopes and precision instruments. Its hybrid feedback and feedforward control loop delivers outstanding low-frequency vibration isolation performance.

Safety Information

- Do not drop or shake the DVIA-T platform.
- Do not touch the top plate while the system is active.
- Do not disconnect power during operation.
- Do not attempt to repair or modify the DVIA-T.

⚠ Warnings

- Only press the Auto Leveling button once when initially placing a new instrument on the DVIA-T platform, or when the load has changed.
- Run the auto-leveling procedure only when necessary (e.g., after changing or significantly repositioning the payload).
- Frequent or unnecessary auto-leveling operations can cause the leveling system to malfunction or wear out.
- If the DVIA-T will remain unused for more than a week, disable active isolation.

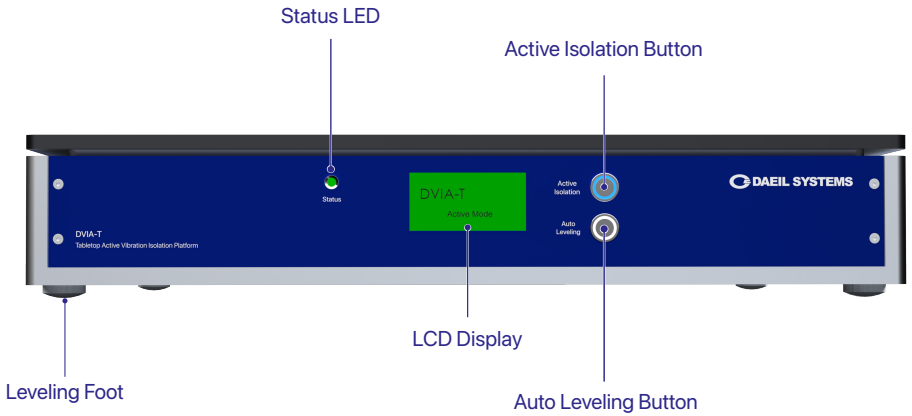
Compliance / Certifications

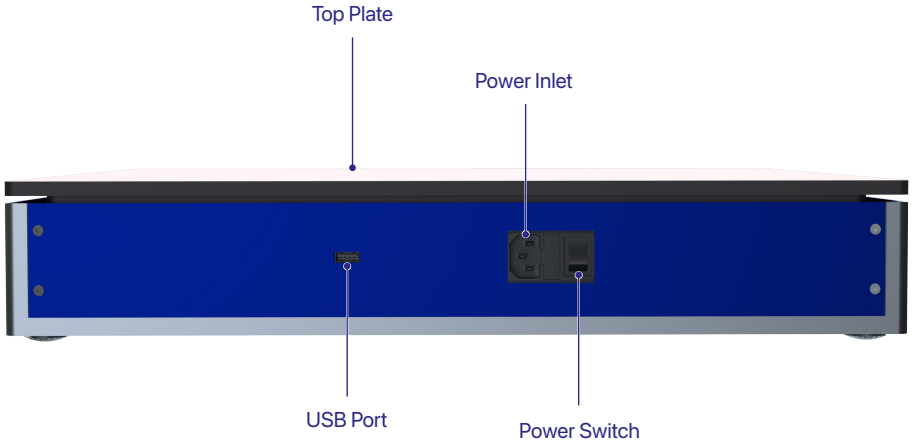
The system is fully CE-marked and TÜV SÜD-certified (GS mark) for compliance with mechanical and electrical safety standards.

Package Contents

- 1 x DVIA-T Platform
- 1 x USB Cable
- 1 x AC Power Cord

Product Overview





Setting Up the DVIA-T

1. Choose a rigid, stable surface for the DVIA-T. Place the platform on a sturdy table or optical bench that can support the weight.
   ⚠ A firm support is essential – a wobbly or unstable table will degrade the isolation performance.

2. Gradually adjust the four leveling feet of the DVIA-T until the platform sits level, firmly, and evenly on the surface.
   Each leveling foot should make solid contact with the table so that the platform is stable and does not rock.

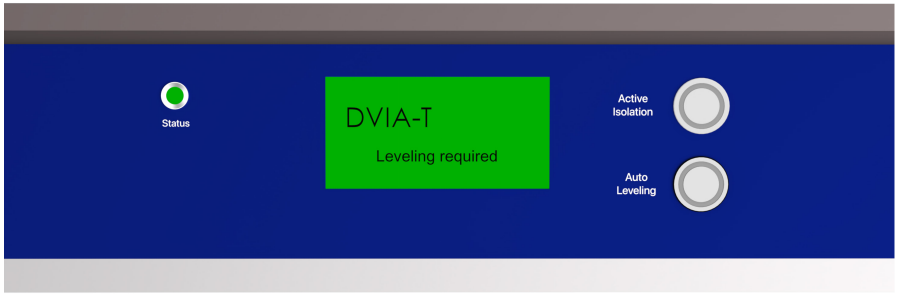
3. Place the instrument at the center of the top plate. The load should be as centered as possible to ensure balanced weight distribution.

4. With the power switch turned off, connect the supplied AC power cord to the platform's power inlet on the rear panel then plug the other end into a properly grounded electrical outlet.

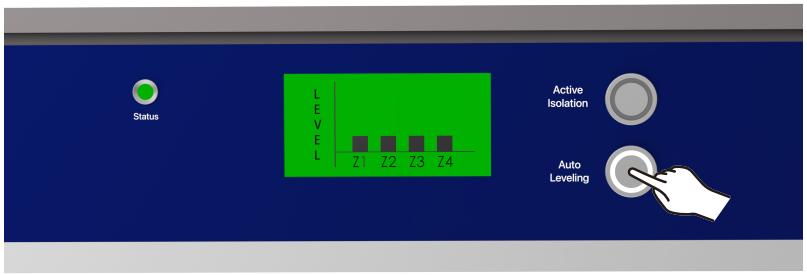
Starting Active Isolation

1. Turn the power switch on.

2. After initial installation, or if the platform is not leveled for the current load, the LCD shows 'Leveling required.'
   In this state, pressing the Active Isolation button will not enable Active Isolation mode.



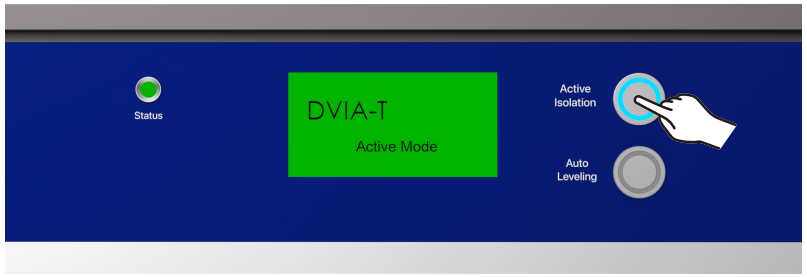
3 Press the Auto Leveling button once to initiate the automatic leveling process. The DVIA-T begins adjusting its internal gear motors to level the top plate under the instrument load.



The auto leveling process may take up to 90 seconds, depending on the instrument weight and load distribution.

When leveling is complete, the LCD will update to "Leveling complete".

4 Press the Active Isolation button to turn on the active vibration isolation mode. The Status LED will blink when the platform detects a large vibration.



Turning off the System

1. Press the Active Isolation button so that the active isolation mode turns off.

2. Turn off the power switch. It is now safe to unplug the power cord if needed.

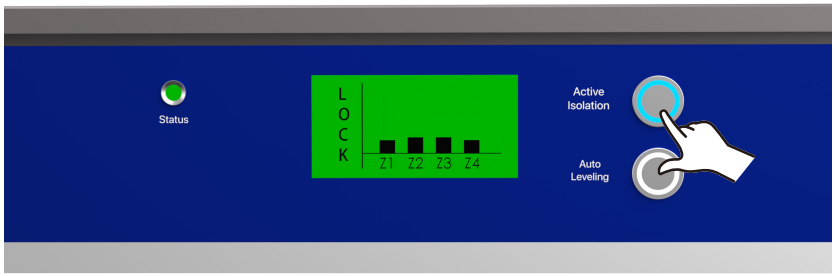
Moving and Locking the System

Before relocating the DVIA-T to a new location, follow these steps to prevent internal damage:

1. Press the Active Isolation button to disable the active isolation mode.

2. Remove the instrument from the top plate.

3. Press the Active Isolation button and the Auto Leveling button at the same time to engage the internal locking mechanism.



The LCD will display “Locking complete” once the platform is successfully locked.

4. Turn off the power switch. Once the platform is locked and powered off, the DVIA-T can be safely moved to a new location.

Customer User Interface (UI)

The DVIA-T Series includes a PC-based User Interface (UI) software application for real-time monitoring and data logging. This software allows you to visualize the platform's performance and status, including vibration isolation efficiency, auto-spectrum, Vibration Criterion (VC) curves, and sensor/actuator.

1 Enter the URL below in your browser's address bar to download the UI software.

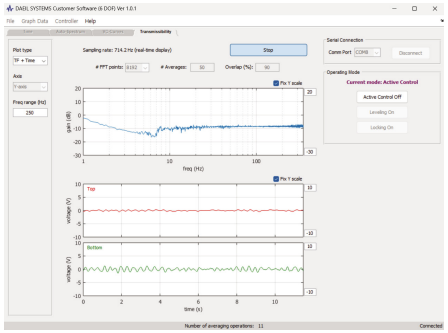
https://www.daeilsys.com/support-ui-v2/

2 Scan the QR code below for the software manual and follow the installation and usage instructions.

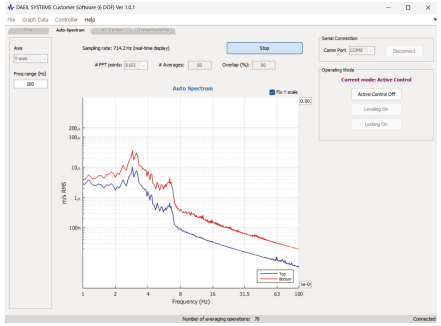
User Manual QR

3 Run the downloaded installer and follow the prompts to install the UI software. For details, see the UI Software Manual.

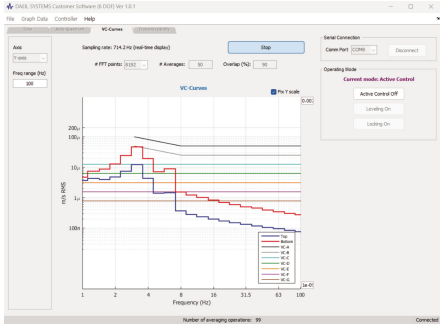
4 Use the software to view and save real-time transmissibility curves, auto-spectrum data, VC curves, and sensor/actuator status



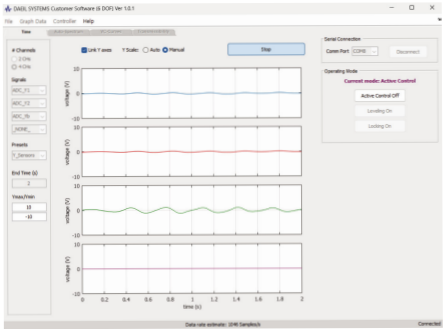
Transmissibility



Auto-Spectrum



VC curves



Actuator, Sensor

Troubleshooting

Problem > **Platform oscillates on its own.**

Cause > The instrument's weight is too light or the factory gain parameters are too high for the current load.

Solution

1 Contact DAEIL SYSTEMS to remotely tune the DVIA-T based on the instrument's actual weight.

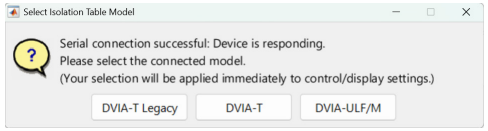
Problem > **UI software does not connect to the DVIA-T.**

Cause > Electrical noise on the communication line is interrupting the connection.

Solution

1 Check the physical connection first – ensure the USB cable is firmly plugged in.

2 If the connection is fine, make sure that in the UI software you have selected the correct model "DVIA-T" when prompted.



Problem > **Active Isolation button does not respond when pressed.**

Cause > The platform has not been leveled.

Solution

1 Check the LCD for any messages. If "Leveling required" is displayed, perform an auto-leveling cycle by pressing the Auto Leveling button.

Problem > **Status LED blinks while in active isolation mode.**

Cause > Either the platform is oscillating, or the table is not rigid enough and is wobbling.

Solution

1 Ensure that the supporting table is rigid and stable.

2 If the supporting table is already solid and rigid the status LED still blinks constantly, it may indicate that the control gain is slightly mismatched to the payload.
In that case, contact DAEIL SYSTEMS to remotely tune the DVIA-T's gain parameters for the actual instrument's weight.

Specifications

Model	DVIA-T45	DVIA-T56	DVIA-T67	DVIA-T78
Dimensions (mm)	420 x 500 x 95	500 x 600 x 95	600 x 700 x 95	700 x 800 x 95
Payload Capacity Options	90 / 150 / 250 kg			
Vibration Isolation Technology	Feedback & Feedforward Control			
Degrees of Freedom	6 DOF			
Active Isolation Bandwidth	0.5–200 Hz			
Vibration Isolation Peformance	80–90% at 1 Hz, 90–99% at 2 Hz			
Actuator	Electromagnetic Actuator			
Maximum Actuator Force	Vertical: 12 N, Horizontal: 12 N			
Vibration Sensor	Velocity, Sensitivity: 100.4 V/m/s ±10%			
Response Time	< 0.5 ms			
Leveling Repeatability	±0.08 mm			
Magnetic Field	< 0.05 µT			
User Interface	Real-Time Monitoring and Data Logging			
Controller	Built-in			
Compliance / Certifications	CE, TÜV			
Utility Requirements	100–240 V AC, 50/60 Hz, 72 W, 1.0 A			
Environmental Requirements	Operating Temperature: 5–50 °C, Relative Humidity: 20–90%			

Warranty

DAEIL SYSTEMS warrants the DAEIL SYSTEMS-branded product in its original packaging against defects in materials and workmanship under normal use for a period of five (5) years from the date of original shipment to the purchaser. During the warranty period, DAEIL SYSTEMS will repair or replace the product free of charge. Repaired or replaced products remain covered for the remainder of the original warranty term.

To obtain warranty service, please contact DAEIL Systems technical support (see Contact Information below) and provide the product model and serial number, details of the issue, and proof of purchase or shipment date. Further instructions will be provided (in some cases, the issue may be resolved with remote support or parts; in others, a return for repair or replacement will be arranged). Shipping costs for warranty service may be handled according to DAEIL Systems' warranty service policy at the time of claim.

This warranty does not apply to:
(a) damage caused by use with third-party components or products that do not meet DAEIL SYSTEMS product specifications;
(b) damage caused by accident, abuse, misuse, fire, earthquake, or other external causes;
(c) damage caused by operating the product outside DAEIL SYSTEMS' published user manual, technical specifications, or guidelines;
(d) products modified to alter functionality or capability without written permission from DAEIL SYSTEMS.

Contact Information

For technical support, warranty service, or any product inquiries, please contact DAEIL SYSTEMS through one of the following channels:

Email: cs@daeilsys.com

Telephone: +82-31-339-3375

Website: www.daeilsys.com

DAEIL SYSTEMS

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