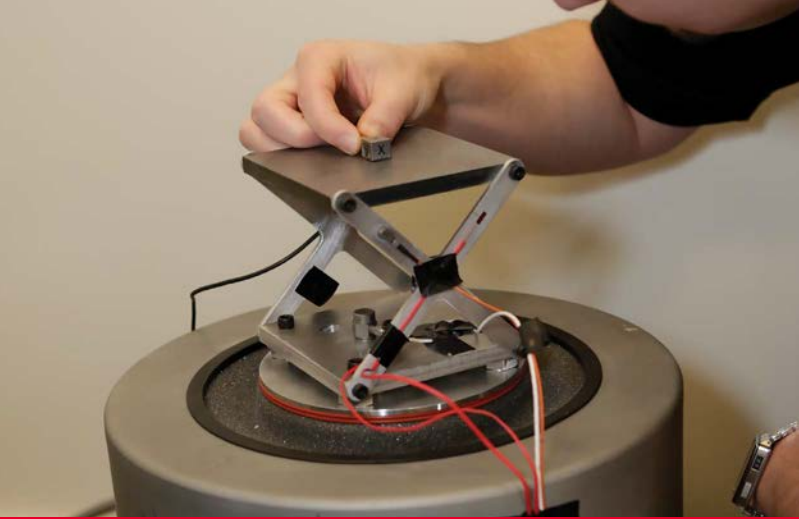


# Accelerometer Calibration & Verification



The Innovator in Sound and Vibration Technology





## KEY BENEFITS

Do you budget your time and money effectively?

### Save Time

VR knows your time is valuable. Our accelerometer calibration package eliminates the need to pack up each accelerometer for shipment back to the lab to be calibrated. Our convenient do-it-yourself software will reduce your downtime.

### Save Money

The VR calibration package can be used on all your accelerometers for one price, time and time again. Simply hook up each unit for calibration, run the 10-minute verification procedure, retrieve the report, and continue on with your day. No yearly fees. Once purchased, you own it for life.

$$\begin{aligned} & \times \text{\# of accelerometers} \\ & + \text{\$ service fees} \\ & + \text{\$ shipping fees} \\ & + \text{downtime} \\ & = \text{my current annual expense} \end{aligned}$$

## Principle Operation

Vibration Research uses back-to-back calibration involving coupling the test accelerometer directly to a NIST traceable double-ended calibration standard accelerometer. Then it drives the coupled pair with a vibration exciter at various frequencies and acceleration (g) levels. The assumption here is that since the accelerometers are tightly coupled together, both will experience exactly the same motion. Thus, the calibration of the back-to-back accelerometer can be precisely “transferred” to the test accelerometer.

## Calibration Verification

VR’s Accelerometer Calibration allows you to perform calibration verification on all the accelerometers in your lab. It provides an easy interface to calculate accelerometer sensitivity. This will allow the user to perform a sine sweep, controlling on a reference accelerometer, to produce a calibration report suitable for calibration record keeping. The package automatically calculates the accelerometer sensitivity at the chosen frequency. The package requires at least 2 input channels, SineVIEW, a reference accelerometer, and a small shaker system. High Frequency for Sine is required for accelerometers rated over 4,900 Hz.



### Typical Measurement Uncertainty

3Hz to 20Hz	2.1%
20Hz to 100Hz	2%
100Hz to 2.5kHz	1.5%
2.5kHz to 10kHz	2.8%



## FULL PACKAGE

Available as a complete turn-key system including: shaker, 2-channel controller, reference sensor, and software (including TEDS and sensor database).

### Controller (VR9502)

The VR9500 Controller comes with these standard features:

- 2 analog inputs
- 1 analog output (Drive) enabled

### Software (VR9100)

The SineVIEW control module includes:

- VR9101 Sine Notching
- VR9102 Sine multi-channel extremal control
- VR9104 COLA

### Accelerometer Calibration Verification (VR9106)

The VR9100 SineVIEW software is required:

- Minimum 2 input channels and reference accelerometer
- Allows you to perform calibration verification of all your accels
- Provides an easy interface to calculate accel sensitivity
- User can perform a Sine sweep, controlling on a reference accel, and produce a calibration report suitable for calibration record keeping

### Back-to-Back Accelerometer (VR3027B)

- Accelerometer Cable
- Sensitivity: 10mV/G, +/- 0.05mV/G
- Frequency Range: 10 to 10,000Hz, +/-2%
- Lower/higher frequency response available upon request (additional calibration fee applies)

### High Frequency Software (VR9103HF)

The Sine High Frequency Software involves:

- Extended frequency range to 50,000Hz control
- Extended 20,000Hz analysis (requires VR9100 Sine)

### Shaker (5200HF)

High frequency shaker includes:

- 13lbs-f peak
- DC to 14,000Hz
- Max displacement 0.5in

## Custom Packages

Already have one of the following? Ask for a quote today to complete your system!

Vibration Research software is compatible with your existing components and we can create a custom package to complete your system.

- Controller
- Small Shaker
- Back-to-Back accelerometer
- SineVIEW software
- HF SINE
- Software (VR9106)



# CALIBRATE AND VERIFY YOUR ACCELEROMETERS QUICKLY

Calibrate a vibration accelerometer accurately to determine its sensitivity at various frequencies of interest. Vibration Research uses the most convenient and least expensive technique (per ISO 16063-21): the back-to-back comparison method, approved by the International Society of Automation (ISA).

## Why perform sensor calibration?

- Early detection of incorrect sensor sensitivity
- Discover sensor defects
- Higher level of confidence
- Trust in your test results

### CUSTOM REPORTING

Use the standard report template or customize your report using Microsoft® Word. VR offers one of the most flexible custom reporting packages anywhere!

### REFERENCE SENSOR

Reference back-to-back accelerometer available. Allows for test accelerometer to be stacked on top for tight coupling.

### WRITES TO TEDS SENSORS

Upon test completion, new sensitivity values are optionally written to TEDS (Transducer Electronic Data Sheet) embedded within the sensor or accelerometer.



### AUTOMATIC CALIBRATION

Automatically compare sensitivities of reference and DUT transducers at the operating frequency range. New values saved at end of test.

### TEST PROFILE INCLUDED

Comes with pre-programmed test profile, including calibration test report. Create your own test profiles at any time.



+1-616-669-3028

vrsales@vibrationresearch.com

1294 Chicago Dr | Jenison, MI 49428 USA

[www.VibrationResearch.com](http://www.VibrationResearch.com)