

# HFe 3

## Test Elastomer Mounts from 50 to 3,000 Hz



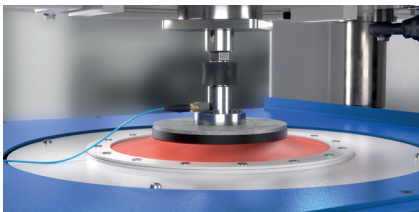
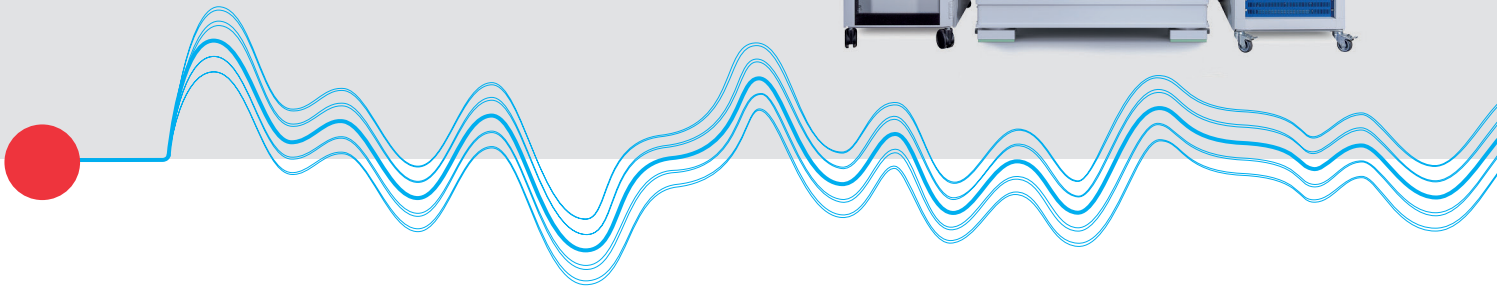
The **HFe 3** electrodynamic test rig is tailor-made to characterize the dynamic stiffness of elastomer mounts from 50 up to 3,000 Hz.

**HFe 3's** rigid design ensures resonance-free operation in an unsurpassed frequency range.

It combines robust m+p measurement hardware and user-friendly m+p VibControl software to provide test professionals with a fast and efficient testing experience.

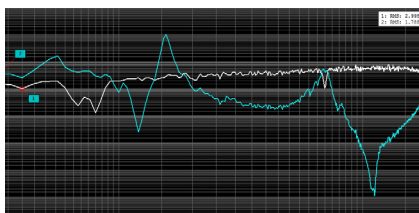
The integrated pneumatic air filter and condensation water separator minimize maintenance by ensuring sufficient air quality.

**HFe 3** is engineered and designed by experts in vibration and manufactured in Germany using best-in-class components made in Germany and Switzerland.



### Turnkey Solution Offering High Flexibility

The modular design offers different force sensors enabling optimal results for small specimens or larger bushings, which can be changed in a blink. For high reliability and ease of use, the static compression preload can be automatically adjusted up to 8 kN using the built-in industry grade automation PLC platform.



### Trustworthy, Traceable Results with Easy Reporting

All metadata for specimen and test definition are stored along with the measurement results in a single file. Exchanging data for review is easy in m+p VibControl native file formats. Export tools help to create customizable branded reports quickly and efficiently to provide demanded results in shortest time.



### State of the Art – Upgrade Your Existing Solution

Rely on m+p international's know-how as experts in vibration - we continuously improve and enhance our solutions. The modular design allows retrofitting and keeps your test rig up to date for future requirements. Profit from regular software enhancements and feature updates as well as latest force sensor advancements or even an upgrade of the entire PLC.



### Global Service Support

A network of service experts and partners provide fast remote and on-site support. Our comprehensive service offers sparepart kits, maintenance contracts and calibration services, allowing you to achieve regulatory compliance, high performance, and maximum uptime throughout the life cycle of your equipment.

## Main Components of the Test Rig

- Electrodynamic shaker introducing a dynamic excitation
- Seismic mass introducing a static preload to the test specimen
- Traverse supporting and moving the seismic mass
- Rigid frame holding shaker, seismic mass and traverse
- Power amplifier and a blower for shaker operation
- Control cabinet containing all electronics for test rig operation

## Key Specifications

Frequency range	50 to 3,000 Hz
Results	Dynamic stiffness with mass load compensation, loss factor, phase
Test area (shaker to force sensor)	600 x 600 x 600 mm <sup>3</sup>
Excitation types	Sine swept, random and more available
Shaker	90 g max acceleration, 8 kN dynamic force
Test specimen stiffness	250 N/mm to 50 kN/mm
Static preload	Up to 8 kN (compressive load on specimen only)
Machine weight	Approx. 3,500 kg
Maximum machine envelope	1250 x 950 x 2650 (w x d x h) mm <sup>3</sup> (traverse upmost position)

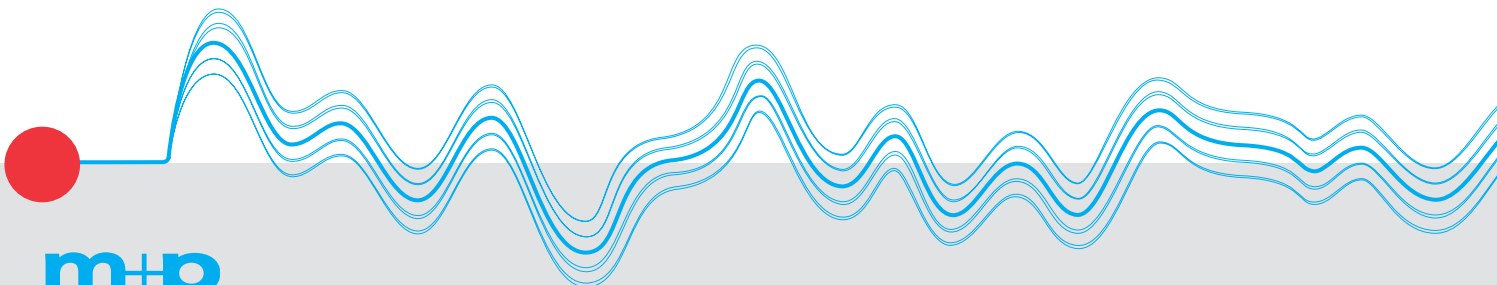
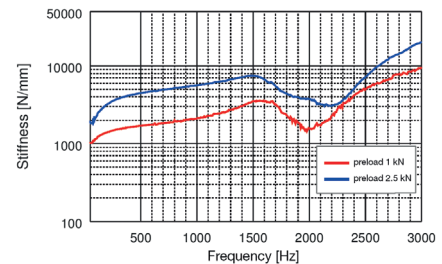
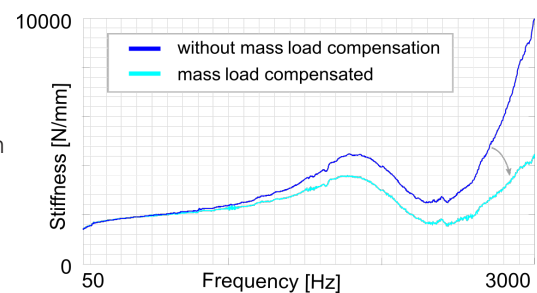
## Test Concept

The test specimen is mounted between an electrodynamic shaker and a seismic mass. With the seismic mass, a static preload of up to 8,000 N can be applied. m+p VibControl continuously optimizes and controls the acceleration of the shaker, inducing dynamic loading on the elastomer within the frequency range from 50 Hz to 3,000 Hz. The dynamic transfer stiffness of the specimen is calculated by measuring the input acceleration at the shaker and the output dynamic reaction force on the seismic mass. Accelerometers compensate the mass load effect resulting from the specimen's fixture weight to ensure correct results in the entire frequency range.

## Key Feature: Versatile Vibration Control System 2-in-1

The test rig's electrodynamic shaker system can also be used for regular vibration tests without changeover, allowing more advanced testing such as stepped sine and road load.

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**m+p**  
international

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

### GERMANY

**m+p international Mess- und  
Rechnertechnik GmbH**  
Phone: +49 511 856 03-0  
[sales.de@mpihome.com](mailto:sales.de@mpihome.com)

### USA

**m+p international, inc.**  
Phone: +1 973 239 3005  
[sales.na@mpihome.com](mailto:sales.na@mpihome.com)

### UNITED KINGDOM

**m+p international (UK) Ltd.**  
Phone: +44 1420 521222  
[sales.uk@mpihome.com](mailto:sales.uk@mpihome.com)

### FRANCE

**m+p international SARL**  
Phone: +33 130 157874  
[sales.fr@mpihome.com](mailto:sales.fr@mpihome.com)

### CHINA

**m+p international China Co., Ltd.**  
Phone: +86 512 6510 0765  
[sales.cn@mpihome.com](mailto:sales.cn@mpihome.com)