

Vacuum Tribometer (VT-3.0)

A configurable, modular tribometer with vacuum, temperature, motion and loading options.

The VT-3.0 is our third generation vacuum tribometer that is now modular and more capable than ever. Easily switch from manual to automatic loading, change test modes from rotary to angular oscillation and even linear oscillation.

Available in both desktop and floor standing formats to accommodate your space requirements.

CONTACT US CALL US: +1 847 737 1590



VT-03 Vacuum Tribometer

Tribology testing in vacuum and temperatures from -150 to +1000 deg

Product features:

- Built for extreme tribology
- Rough, Medium and High Vacuum tests
- Fast chamber evacuation (<45 mins)
- Ultra low and high temperature options

- Automatic or manual loading for full flexibility
- Continuous rotation and angular oscillation modes are standard
- Linear oscillation available as an option
- Automatic wear track control is standard
- Computer controlled operation
- Unique chamber design for viewing and customization of tests.

Specifications

Technical Specifications

Motion and Loading

- Rotation:
 - Standard: 3000 rpm
 - Option: 5000 rpm
- Angular Reciprocation:
 - Angle: 5 to 180 degrees
 - Frequency: 20 Hz Max

Maximum allowable parameters change depending on load, COF, angle and frequency.
- Loading:
 - Deadweight: 200 N
 - Automatic: 200 N

(Optional. High frequency feedback controlled servo loop)

Environment

- Vacuum level: 10^{-7} torr
- Chamber evacuation time: <45 mins
- Polished chamber
- Viewing and customization ready ports
- Inert gas environment

Sensing

- High sensitivity capacitive friction sensor
- Ambient temperature sensor
- Sample temperature sensor

- Vacuum level sensor

*other sensors with optional modules. Custom sensor configurations available.

Request detailed specifications: [CONTACT US](#)

Options:

Standard Options

- Low Temperature Module
- High Temperature Module
- Debris Collector
- 2D and 3D Imaging

Special / Custom Options

The Ducom Vacuum Tribometer has been supplied in various configurations. Some examples of previously manufactured product variations are below:

- Horizontally orientated test setup
- Independently controlled disk and pin heating
- Extra large diameter disk for increased sliding velocity

Standards:

Test Standards

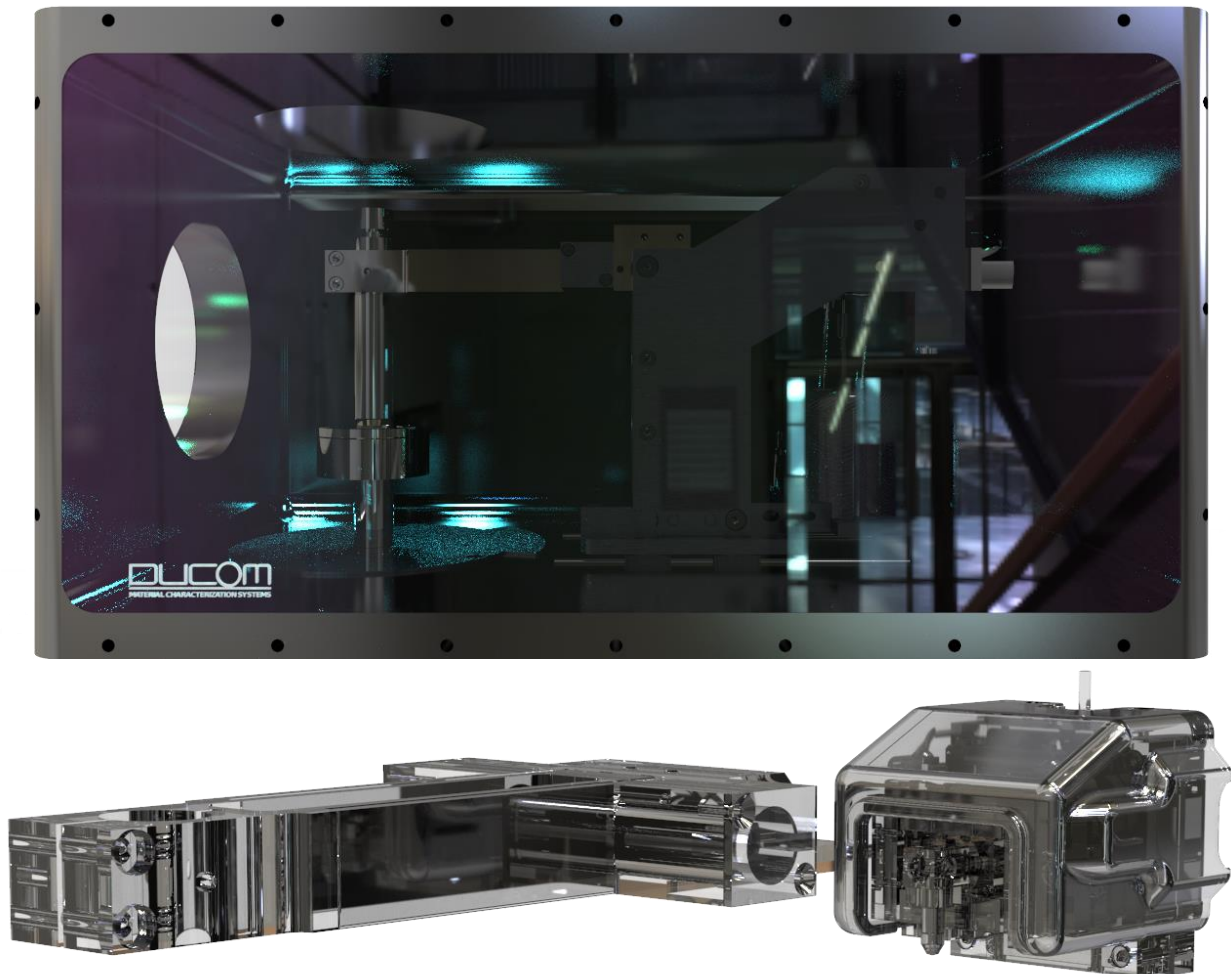
- **ASTM G99:** Standard Test Method for Wear Testing with a Pin-on-Disk Apparatus
- **ASTM G133:** Standard Test Method for Linearly Reciprocating Ball-on-Flat Sliding Wear

Product Features

Modular and easy to use.

The VT-3.0 makes extreme tribology easy. Modular sensors, loading, motion and environment options.

Large ports for observation and customization makes the VT-3.0 future ready for any technique you want to add to your tester. The access door opens wide for convenient test setup, cleaning and maintenance.



Patented high resolution sensors

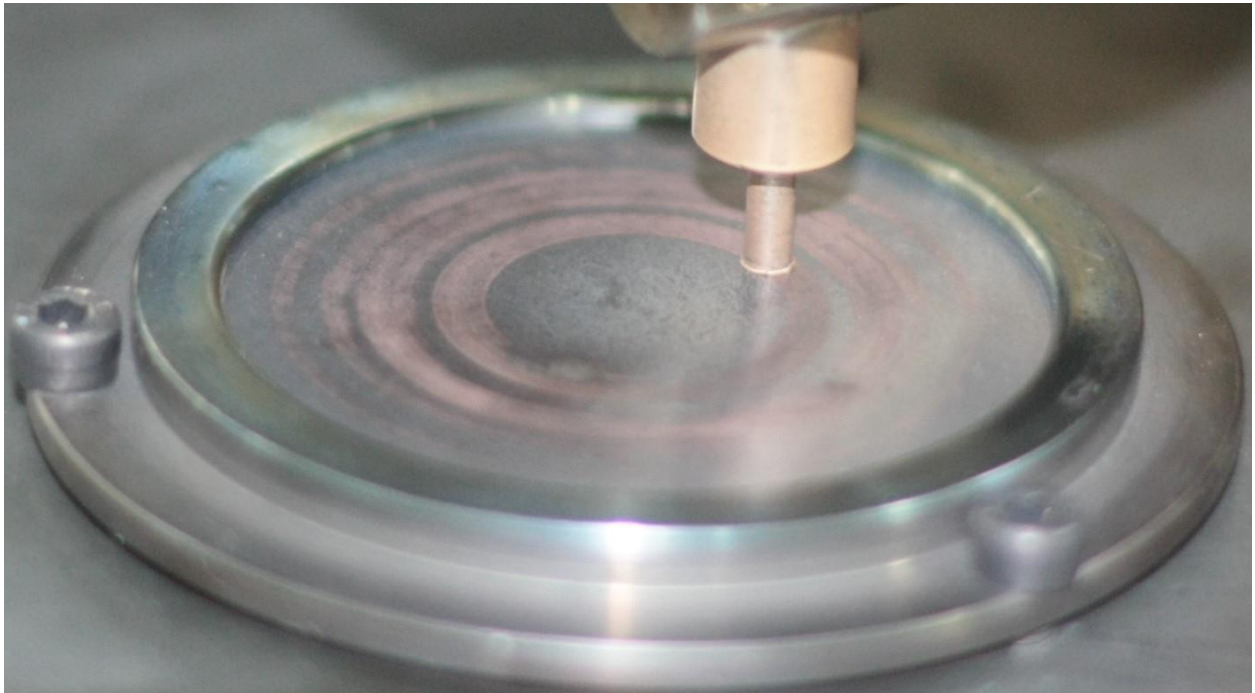
**Vacuum compatible capacitive and piezo sensors.
Fully mechanically decoupled design for excellent sensitivity.**

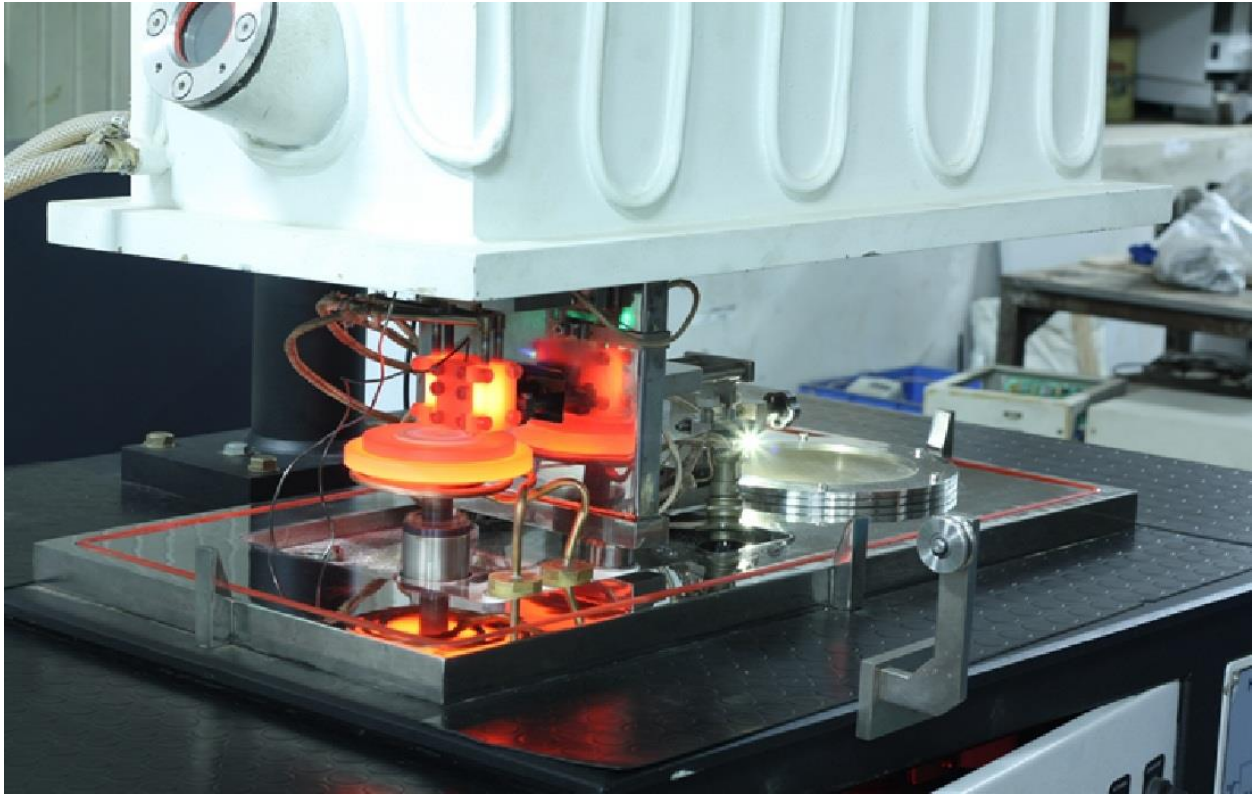
Our patented, fully decoupled multi axial sensor heads use capacitive transducers and can sense forces from a few milli Newtons (mN) to hundreds of Newtons (N). Sensing heads are easily interchangeable to the VT-3.0 to adapt to your evolving needs.

Multiple Testing Modes

Continuous Sliding, Angular Reciprocation, Angular Scratch, Linear Reciprocation and Linear Scratch

Every VT-3.0 tester comes standard with the capability to perform continuous clockwise and counterclockwise tests, angular reciprocation and angular scratch tests. With the addition of the Linear Module (LRM), linear reciprocation and linear scratches are also possible.





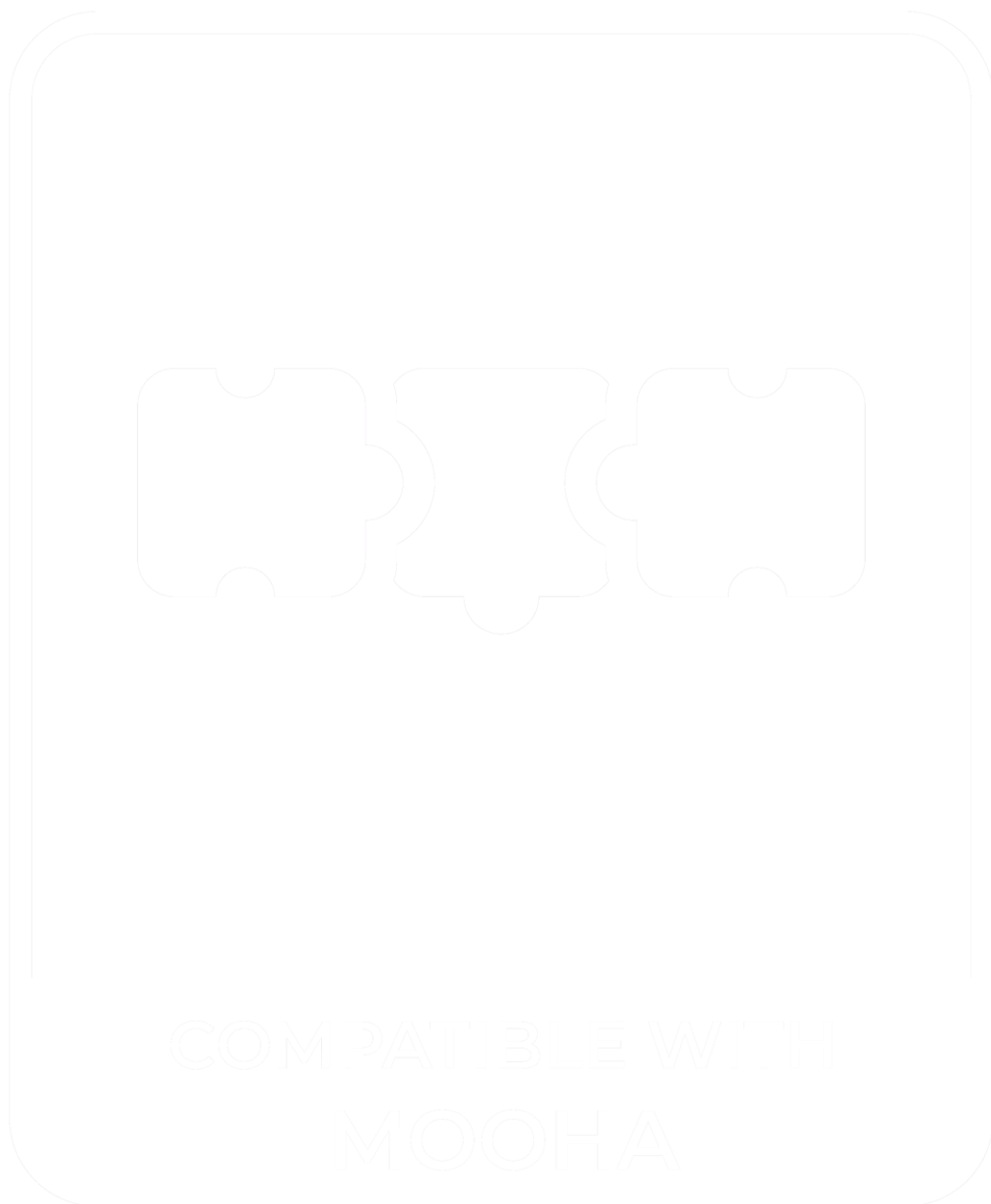
Customizable Architecture

When standard options aren't enough, customize your VT-3.0 tester.

Built on our POD-4.0 Multi-Capability Tribometer platform, the VT-3.0 is customizable. Now your truly unique applications can have a truly unique tester.

Applications

- Friction and wear behavior of advanced materials
- Space mechanism lubricants
- Coating, films and adhesives under high vacuum conditions
- Ion propulsion engines
- Spacesuits, satellite, moving mechanical assemblies and seals
- Particle accelerators
- Chemical Vapor Deposition (CVD) / Plasma Vapor Deposition (PVD)
- Semiconductor Equipment
- High vacuum and Cryogenic Processes



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CONTACT US

Ducom Instruments

USA: +1 (847) 737-1590

India: +91 (80) 4080-5555

Netherlands: +31 (85) 065 74 10

Email: info@ducom.com

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