

UNIVERSAL TESTING MACHINE FAQs

Model: Electro Mechanical Universal Testing System 50kN / 600kN with Precision Load Cell

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INSTALLATION REQUIREMENTS

1) What are the power requirements for the 50kN / 600kN Electromechanical Universal Testing Machine?

The power supply for the machine is 3-phase at 220V±10%, operating at a frequency of 60Hz. Additionally, the computer and printer require a 1-phase power supply at 110V, 60Hz, with a power rating of 0.5kW.

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2) What are the installation requirements for the 50kN / 600kN Universal Testing Machine?

1. Unpacking and Acceptance Check:

Upon delivery, carefully unpack the machine and check all contents. The main unit should be vertically installed on a flat, stable, and level surface—no foundation required. Ensure your facility has a clearance height of at least 110" (2800mm). Use caution when handling the aluminum alloy outer casing and follow the provided installation guidelines for safe and effective setup.

Note:

- a. Exercise caution as the outer board is made of aluminum alloy and should not bear weight.
- b. Lift and place the machine gently on the ground.

2. Main Unit Installation:

Raise the main unit in a vertical position and position it on a flat, stable, and level ground.

There are no foundation requirements for this unit.

Note:

- a. Ensure the ground is stable and level without the need for a foundation.
- b. Be mindful of protecting the surface paint coat from collisions with the outer board.
- c. The space height should be at least 110" (2800mm).

3. Accessories for Installation:

The accessories for this machine include: Tensile test clamp, Compression plate (for load calibration) and/or Bending test fixture. The appropriate accessories are installed based on test requirements.

4. Install Wedge Tensile Clamp:

For materials' tensile tests, install the tensile clamps on the main unit. Choose suitable grips for the test specimen as needed.



GRIPS, FIXTURES AND SOFTWARE TURNKEY PACKAGE

1) What additional grips and fixtures are compatible with the Universal Testing Machine?

Our universal testing machines are engineered for adaptability. Whether you're performing tensile, compression, or bending tests, simply swap in the appropriate grips and fixtures to meet virtually any industry standard. You can acquire additional fixtures later as your testing needs evolve, maximizing long-term value.

2) Can we integrate our existing fixtures into the TM-EML system?

Absolutely. The TM-EML is designed for fixture compatibility. If you have existing grips or jigs, just inform your TensileMill consultant at the time of purchase. We'll ensure the unit includes the required adapters to seamlessly integrate your fixtures with the TM-EML model.

3) What type of software is used on the TM-EML system?

The TM-EML runs on the next-generation GenTest Software—a powerful, user-friendly platform built for both new and experienced operators. GenTest Software features include:

- Full control of test speed and settings
- Real-time graphing and data analysis
- Integrated test report generation
- Custom test templates
- Multi-language support
- Automatic calibration and safety alerts

Watch the GenTest Software operational video in action:



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4) What software readings can I expect from the system?

You'll get precise, comprehensive output for:

1. Force (kN or lbf) – Real-time load applied during the test.
2. Displacement (mm or inches) – Crosshead movement during testing.
3. Stress (MPa or psi) – Calculated from load and specimen cross-sectional area.
4. Strain (%) – Calculated from elongation relative to gauge length.
5. Extension (mm or inches) – Direct elongation of the specimen.
6. Test Speed – Applied crosshead or actuator speed.
7. Time – Duration of the test.
8. Load vs. Displacement / Stress vs. Strain Graphs – Real-time curve plotting.
9. Yield Point (if applicable) – Based on offset method or system recognition.
10. Maximum Load / Break Point – Peak force and break detection.

Additional Outputs (Exportable Reports):

- Complete data tables and graphs
- Auto-generated test certificates
- CSV, Excel, or PDF data export options
- User-defined test standards (ASTM, ISO, etc.)

5) What types of extensometers are compatible with the quoted solution?

A comprehensive range of extensometer types for Universal Testing Machines (UTMs) is available to cater to diverse testing needs. Whether it's contacting, non-contacting, or video extensometers, our offerings cover the spectrum. These precision instruments are designed to measure elongation, strain, and displacement with the utmost accuracy. With various models tailored for specific materials and testing conditions, our extensometers provide the flexibility required for an extensive array of applications. From standard to specialized requirements, our lineup ensures that your Universal Testing Machine is equipped with the perfect extensometer for achieving reliable and precise results in material testing.

6) What types of customizations are possible with the Universal Testing Machines?

Our electromechanical UTMs can be customized with:

- Specific testing dimensions
- Custom grips and jigs
- Environmental test chambers for controlled temperature or humidity
- Software integrations for automated test protocols

This level of flexibility makes the TM-EML ideal for both R&D and production testing.



CALIBRATION AND MAINTENANCE

1) Is the system delivered pre-calibrated and accompanied by the requisite certification?

All supplied systems come pre-calibrated from the factory and are accompanied by a certificate of calibration.

2) Could you provide guidance on the process for annual calibration of the Universal Testing Machine (UTM) system?

We recommend annual calibrations via any ISO17025-certified calibration lab. TensileMill also offers access to a global network of trusted partners to simplify your annual calibration process.

Learn more about TensileMill's [Scope of Accreditation](#) to help you with your Universal Testing and other quality control equipment calibration needs.

3) What type of care and maintenance is suggested for the Universal Testing System?

Testing Machine Maintenance Guidelines:

- **Regular Maintenance:** This complex equipment requires consistent care, including waterproofing and moisture-proofing to prevent rust on mechanical parts and the outer shell.
- **If Not in Use:** Power on the machine weekly to move the beam and nut mover, preventing rust.
- **Restart Procedure:** After shutdown, wait 30 seconds before restarting. Power down in this order: main unit → software → computer → computer power.

If the machine exhibits problems such as instability or abnormalities in force value, deformation, displacement display, or any other issues, please contact us directly for guidance, maintenance, or repair. [Contact us](#) online or call us at (888) 332-3582 ext. 3. for help with any abnormal readings, force irregularities, or system faults.



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TRAINING AND TECHNICAL SUPPORT

1) What training is offered with the TM-EML Universal Testing System?

- **Remote Training (Included):** Customized videos, images, and live sessions made with your actual system for personalized training.
- **On-Site Training (Optional):** ISO 17025 certified engineers can visit your facility upon request and quote.

2) What types of technical support services are offered with the UTM system?

At TensileMill, we're committed to being there for you every step of the way. Our priority is to resolve all technical issues within a few hours and have your system fully operational within 24–48 hours. While the vast majority of issues are resolved remotely, more complex cases are quickly diagnosed and, if needed, followed by an on-site visit within 24–48 hours of the incident.

To further minimize downtime, we maintain a stock of spare parts for prompt and often overnight delivery—ensuring your testing workflow remains uninterrupted.

With industry-leading technical support, TensileMill is focused on maximizing your system's uptime, performance, and long-term adoption.

Additional value offered by TensileMill to help eliminate downtime:

- **User-Friendly Design:** Our system is built for operators of all experience levels, with intuitive GenTest Software and simplified controls.
- **Personalized Training:** We provide remote or on-site training to ensure seamless integration and use of the system.
- **Ongoing Guidance:** Our support doesn't end after installation. You'll have access to continuous technical assistance, helping reduce errors and improve test consistency.



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