UNIVERSAL TESTING MACHINE – FAQs

Model: TM-EML Series B – Dual-Column Benchtop Universal Testing Machine (100 N – 10 kN)

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INSTALLATION REQUIREMENTS

1) What are the power requirements for the TM-EML Series B Universal Testing Machine?

The TM-EML Series B operates on a single-phase AC 220 V ±10%, 50/60 Hz power supply with a total power consumption of approximately 1 kW. This compact configuration allows installation in standard laboratory environments without the need for an industrial 3-phase connection. The system connects directly to a standard laboratory outlet and includes integrated protection against voltage fluctuations, current surges, and overload conditions.

2) What are the installation requirements for the TM-EML Series B Universal Testing Machine?

1. Unpacking and Acceptance Check:

Carefully remove all packaging materials and verify that all components and accessories are complete and undamaged. The TM-EML Series B features a dual-column benchtop design and does not require special floor reinforcement or anchoring.

Place the unit on a stable, vibration-free laboratory bench or workstation capable of supporting its total weight (approximately 595 lbs / 270 kg). Allow adequate space at the rear and sides for cable routing and maintenance access.

Note:

- Handle the precision dual-column frame carefully—its aluminum-alloy construction must not support any external weight.
- Always lift the machine using proper mechanical assistance to avoid misalignment or shock.

2. Main Unit Installation:

Set the system vertically on the bench, ensuring it is level and stable. No foundation or bolting is required. Maintain sufficient clearance around the columns and crosshead for smooth motion and safe specimen handling.

3. Accessories for Installation:

Standard accessories include tensile grips, compression plates, and optional bending fixtures, depending on your testing configuration. Accessories are installed via plug-and-play mounting interfaces for quick changeovers.

4. Grip Installation:

Attach the selected grips to the load cell and base adapters. Choose grips suitable for your specimen material and geometry—manual, pneumatic, or wedge-type options are available.

No floor anchoring or extended clearance is required for this benchtop system.

GRIPS, FIXTURES AND SOFTWARE TURNKEY PACKAGE

3) What additional grips and fixtures are compatible with the TM-EML Series B Universal Testing Machine?

The TM-EML Series B is built for versatility and precision across a wide range of test types. Whether performing tensile, compression, flexural, peel, or shear testing, operators can easily interchange grips and fixtures to comply with ASTM, ISO, DIN, GB/T, and EN standards.

Available configurations include manual, pneumatic, and low- to mid-force specialized grips designed for rubber, plastics, composites, foams, films, adhesives, and soft metals. Additional accessories can be added as testing requirements evolve, maximizing system value and flexibility over time.

You can explore our full catalog of grips and fixtures directly on our website.

4) Can we integrate our existing fixtures into the TM-EML Series B system?

Yes. The TM-EML Series B supports full fixture compatibility and modular integration. If you already have grips, jigs, or fixtures from other systems, our engineers can provide custom adapter interfaces for seamless connection to your TM-EML frame. Simply inform your TensileMill CNC representative during purchase, and your unit will be configured to match your existing equipment setup.

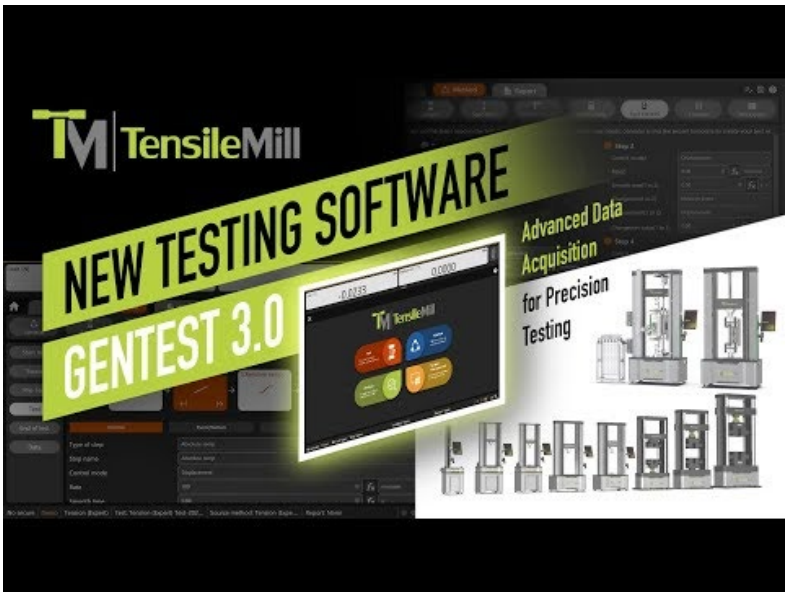
5) What type of software is used on the TM-EML Series B system?

The TM-EML Series B operates on the latest GenTest™ Software, a professional testing platform that simplifies setup, execution, and reporting.

Key features include:

- Full control of force, displacement, strain, and speed parameters
- Real-time graphing and multi-channel data visualization
- Automatic calculations for yield, modulus, and break points
- Preloaded ASTM, ISO, GB/T, and EN testing templates
- User-level access management and language options
- Auto-calibration, diagnostic, and safety notifications

Watch the GenTest™ Software in action:



6) What software readings can I expect from the TM-EML Series B system?

The GenTest™ Software delivers precise, real-time measurement and visualization for:

1. Force (N, kN, or lbf) – Real-time applied load
2. Displacement (mm or in) – Crosshead movement tracking
3. Stress (MPa or psi) – Calculated using specimen cross-section
4. Strain (%) – Based on elongation versus gauge length
5. Extension (mm or in) – Direct specimen elongation
6. Test Speed (mm/min) – Crosshead movement rate
7. Time (s) – Total test duration
8. Load vs. Displacement / Stress vs. Strain Curves – Continuous graph plotting
9. Yield, Break, and Peak Load Detection – Automatic identification
10. Modulus and Elongation at Break – Auto-calculated upon test completion

Export options:

- Complete data tables and graphs
- Auto-generated certificates of analysis
- CSV, Excel, and PDF report formats
- Custom user-defined test standard templates

7) What types of extensometers are compatible with the TM-EML Series B?

The TM-EML Series B supports clip-on, laser, video, and non-contact extensometers for both low- and medium-force applications. These devices measure strain, elongation, and displacement with high precision and connect through TEDS plug-and-play interfaces—no manual calibration required.

8) What types of customizations are available for the TM-EML Series B Universal Testing Machine?

Custom options include:

- Specific test space and crosshead travel modifications
- Tailored grips and fixtures for unique sample geometries
- Environmental chambers for temperature or humidity control
- Integrated pneumatic grip control modules
- Software automation and remote data synchronization systems

CALIBRATION AND MAINTENANCE

1) Is the TM-EML Series B delivered pre-calibrated and accompanied by the requisite certification?

Yes. Each TM-EML Series B machine is factory-calibrated prior to shipment and includes a traceable calibration certificate in accordance with ASTM E4, ISO 7500-1 (Class 0.5), and GB/T 16825.1 standards. The included certificate verifies that the system meets international accuracy and repeatability requirements for force and displacement measurements.

2) What is the recommended process for annual calibration of the TM-EML Series B system?

It is recommended to perform a full calibration once every 12 months or after any major mechanical or electronic service. Calibration should be conducted by an ISO 17025-accredited laboratory using certified reference standards.

TensileMill CNC provides access to a global network of authorized calibration partners to simplify this process and maintain compliance. Contact our team to schedule calibration or verify local partner availability.

3) What care and maintenance are suggested for the TM-EML Series B Universal Testing Machine?

Routine maintenance guidelines:

- Clean and inspect the load frame regularly to prevent dust buildup around the lead screw and guide columns.
- Avoid moisture exposure—although the system has partial protection, store it in a dry, temperature-controlled lab to prevent corrosion or condensation on electronic components.
- Power cycling: If unused for long periods, power on the system weekly to move the crosshead and maintain lubrication across the drive mechanism.
- Shutdown sequence: When turning off the system, follow this order for proper protection—main unit → software → computer → computer power. Wait at least 30 seconds before restarting to allow full system reset.
- Check alignment occasionally to ensure consistent coaxial positioning of the load cell and fixtures.

If the machine exhibits instability, abnormal readings, or unusual noises during operation, please contact us directly for diagnostic support, maintenance, or repair assistance. You can reach our technical service team online or by phone at (888) 332-3582 ext. 3 for immediate assistance.

TRAINING AND TECHNICAL SUPPORT

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

- Remote Training (Included): Comprehensive virtual sessions are provided, including customized videos, step-by-step visual guides, and live demonstrations performed directly on your system. These sessions are tailored to your specific testing needs and operator experience level.
- On-Site Training (Optional): Certified TensileMill CNC engineers can visit your facility to conduct in-person installation and operator training. On-site programs are available upon request and are delivered by ISO 17025-certified professionals to ensure your system is operated to full standard compliance.

2) What types of technical support services are offered with the TM-EML Series B system?

At TensileMill CNC, we are dedicated to providing fast and reliable support throughout your system's lifetime. Most technical issues are resolved within a few hours, and we aim to have your machine fully operational within 24–48 hours.

Our remote diagnostics and real-time software support tools allow for rapid troubleshooting, while complex mechanical or electrical issues are prioritized for on-site service within the same timeframe.

To further reduce downtime, we maintain an extensive inventory of spare parts, enabling prompt dispatch—often with overnight delivery—to ensure uninterrupted testing performance.

Additional advantages provided by TensileMill CNC:

- User-Friendly Design: The GenTest™ software and intuitive control interface allow operators of any experience level to achieve consistent, accurate results.
- Personalized Training: Continuous access to remote and on-site training resources ensures smooth system integration and confidence in daily operation.
- Ongoing Support: Assistance does not end after installation. You'll receive continuous access to expert guidance for test optimization, troubleshooting, and best practices.

For immediate support, please contact us at https://www.nextgentest.com/technical-support-inquiry/ or by phone at (888) 332-3582 ext. 3.