TensileMill CNC MINI – Compact Flat Tensile Specimen Preparation System

Standards: ASTM E8, ASTM A370, ISO 6892-1, DIN 50125, JIS Z2201, ASTM E370

- ULTIMATE USER-FRIENDLINESS
- LEADING DEPENDABILITY AND RELIABILITY
- STRICT COMPLIANCE WITH INDUSTRY STANDARDS
- STOCKED CONSUMABLES AND SPARES
- TRUSTED AFTER SALES TECHNICAL SUPPORT
- LIFETIME PRODUCT SUPPORT ADVANTAGE

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Description

The TensileMill CNC MINI is a compact CNC system offered by our partner, TensileMill CNC, designed for preparing standardized flat tensile test specimens in laboratory and production environments. The system supports specimen geometries used in ASTM E8, ASTM A370 / E370, ISO 6892-1, DIN 50125, and JIS Z2201 standards. Operators can select preloaded specimen profiles within the TensileSoft™ interface or enter custom dimensions directly based on project requirements.

Despite its reduced footprint, the MINI integrates a cast iron machine frame, linear motion components, and a 2.2 kW water-cooled spindle, supporting stable cutting performance across a range of metallic and non-metallic materials, including heat-treated alloys and Inconel. The guided touchscreen control allows new users to become confident with the system in a short period of time, making the MINI well-suited for quality control labs and training environments where consistent repeatability is required.

The system provides a self-contained machining workflow for flat tensile specimens, allowing preparation to be carried out on-site with controlled dimensional accuracy and minimal

setup adjustments.

CNC Control Platform

The TensileMill CNC MINI is operated through a guided touchscreen interface designed specifically for flat tensile specimen preparation. The controller includes the TensileSoft™ interface with direct parameter entry for standardized specimen geometries.

The system can be optionally upgraded to the Carbon CNC Software Package, which replaces the standard panel with a 21" industrial touchscreen, expanded memory and connectivity, and access to full G-Code machining functions. The Carbon package adds support for features such as macro programming, multiple tool and work offsets, helical and circular interpolation, trajectory control, scaling, mirroring, and access to MACH4 Industrial CNC capabilities when required for general CNC machining tasks.

System Architecture

The MINI is built on a cast iron frame with linear rail motion components to support stable cutting conditions. A 2.2 kW (3 HP) water-cooled spindle operating at 24,000 RPM and high-precision servo drives allow the system to machine a wide range of metals and engineering materials, including heat-treated steels and nickel-based alloys.

Its compact footprint supports installation in small laboratory spaces while maintaining a full 400 × 400 × 200 mm (15.75 × 15.75 × 7.87 in) working envelope. The MINI is suitable for continuous flat tensile specimen preparation and routine quality control workflows where repeatable dimensional accuracy is required.

2026 Model Upgrade Option

Beginning July 2025, the MINI will be available with the updated 2026 control and motion platform. Orders placed before June 30, 2025 automatically receive the upgraded configuration at no additional cost.

The 2026 edition introduces:

- **21.6" industrial touchscreen interface**

- **Closed-loop drive system** for improved motion stability
- **Integrated diagnostic tools** for streamlined troubleshooting
- **Full G-Code compatibility** included as standard

Service & Training Support

A maintenance and training support plan is available to assist with long-term operation. Routine preventative service schedules support consistent system performance over time. Training programs can be provided for new or existing operators to standardize workflow practices and maintain consistent specimen preparation across shifts or personnel changes.

Technical Specifications

Parameter	Specification
Working Area (X/Y/Z)	15.75 × 15.75 × 7.87 in (400 × 400 × 200 mm)
Overall Dimensions – Closed Door (L × W × H)	72 × 43 × 44 in (1829 × 1092 × 1321 mm)
Overall Dimensions – Open Door (L × W × H)	72 × 73 × 52 in (1829 × 1855 × 1321 mm)
Suggested Floor Space	82.7 × 78.5 in (2100 × 2000 mm)
Machine Weight	1500 lb (680 kg)
Frame Material	Cast iron
Table T-Slot Size	0.472 in (12 mm)
Spindle Speed	24,000 rpm
Spindle Motor Power	3 hp (2.2 kW), water-cooled
Spindle Taper	ER20 collet (ISO20 optional)
Servo Motor Power	0.54 hp (400 W)
Servo Torque	566 oz-in (4.0 Nm)
Maximum Feedrate	500 ipm (12.7 m/min)
Position Repeatability	±0.0003 in (±0.01 mm)
Drive System	Precision ballscrew, servo drive

Parameter	Specification
Maximum Tool Shank Diameter	0.47 in (12 mm)
Input Voltage	220 V, single-phase
Total Power Consumption	15 A (3.3 kW)
Noise Level at Operator Position	70–90 dB
Controller Interface	TensileSoft™ on 10-inch touchscreen
Optional Upgrade	Carbon CNC package with 21-inch industrial touchscreen and full G-code support
Connection Requirements	Pneumatic (optional)

Included Turnkey Package

Item	Details
Tooling	(1) 0.250" ER Collet + (1) 0.250" Shank Endmill
Clamping Fixture	Custom Tensile Clamp Fixture for ASTM, ISO, DIN, JIS, EN specimen preparation
Motion System Upgrade	3-Axis Servo Package (Available as Upgrade)

Note: The TensileMill CNC MINI is undergoing a door design update to support improved operator safety and enhanced workflow accessibility.

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