TensileMill CNC MICRO – Compact Flat Tensile & Impact Specimen Preparation Machine

Standards: ASTM E23, ASTM E8, ASTM A370, ISO 527, ASTM D638, ASTM D3039

- 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 MICRO is a compact 2-axis specimen preparation machine designed for precise flat tensile and impact sample preparation. Offered by NextGen Material Testing in partnership with TensileMill CNC, this system gives laboratories and manufacturers an efficient way to bring specimen preparation in-house while maintaining dimensional consistency, repeatability, and a clean, controlled workflow. Its compact footprint, enclosed design, and integrated coolant layout make it especially well suited for environments where space, cleanliness, and ease of operation matter.

Built for metals, plastics, and composite materials, the MICRO helps users prepare test-ready flat specimens for routine quality control, research, product development, and material qualification. Instead of relying on a full industrial CNC setup or outsourcing specimen preparation, teams can use a dedicated system made specifically for this task. The result is a more predictable preparation process, faster turnaround, and better control over specimen geometry from batch to batch.

The machine is also designed to simplify operation for non-machinists. With its touchscreen-driven workflow and guided software environment, operators can prepare specimens without the complexity of conventional CNC programming. This makes the TensileMill CNC MICRO a practical fit for testing labs that need reliable results with a simpler day-to-day workflow.

Applications and Uses

The TensileMill CNC MICRO is intended for preparing flat specimens used in tensile and impact testing programs. It is especially relevant in environments where consistent specimen geometry is critical to obtaining reliable and comparable mechanical test data. Because the system supports both standard specimen formats and custom dimensions, it can be used across a wide range of internal test methods and material evaluation workflows.

Typical users include QA and QC departments, R&D laboratories, universities, training facilities, and manufacturers performing routine material verification. It is well suited for operations that need to confirm mechanical properties during production, evaluate new material formulations, prepare samples for development work, or reduce the delays and inconsistencies that often come with outsourced specimen preparation.

Typical applications include:

- preparation of flat tensile specimens for metals, plastics, and composites
- preparation of impact specimens for laboratory and production testing
- batch-to-batch material verification in QA/QC workflows
- specimen preparation for research, development, and qualification programs
- educational and technical training environments requiring repeatable sample geometry
- in-house replacement of outsourced specimen preparation to improve turnaround and control

Main Features

The TensileMill CNC MICRO is built as a dedicated system for flat tensile and impact specimen preparation. Instead of adapting a large general-purpose CNC machine for laboratory work, this unit is designed specifically to prepare accurate, repeatable specimens with greater efficiency and consistency.

Its compact format makes it especially practical for laboratories, QA departments, and production support environments where floor space is limited and the workflow needs to stay clean and efficient. The enclosed cabinet supports safer day-to-day use, while the self-contained design makes the machine easier to integrate into an existing lab without turning installation into a major project.

Another important feature is ease of operation. The machine uses an integrated 15.6-inch touchscreen with the TensileSoft interface, allowing operators to work through specimen preparation in a more guided and intuitive way. This helps reduce the learning curve and makes the MICRO far more approachable for facilities that want precision but do not want the complexity of traditional CNC programming.

Key features include:

- compact 2-axis configuration for flat tensile and impact specimen preparation
- integrated 15.6-inch touchscreen with TensileSoft control
- support for standard specimen formats and custom geometries
- enclosed machine layout for cleaner and safer operation
- integrated recirculating flood coolant system
- self-contained coolant tank built into the machine base
- air-cooled spindle with no external water or chiller connection required
- optional Carbon interface upgrade for expanded CNC capability

Key Advantages

One of the biggest advantages of the TensileMill CNC MICRO is repeatability. In tensile and impact testing, specimen consistency has a direct effect on the reliability of the final result. The MICRO is designed to support more uniform specimen preparation, giving labs and manufacturers a dependable way to improve consistency across routine testing, qualification work, and development programs.

It also makes high-quality specimen preparation more accessible. Many facilities need precise and repeatable sample prep, but they do not want the overhead of a full industrial CNC workflow or the need for a highly specialized machinist for every setup. The MICRO gives those users a more practical solution by combining a dedicated preparation platform with a simpler, more lab-friendly operating experience.

Additional advantages include:

- easier installation with single-phase power and no external water connection
- compact footprint for laboratories and limited-space environments
- cleaner, more self-contained setup for everyday operation
- reduced dependence on outsourced specimen preparation
- faster internal turnaround for testing and development work
- more control over specimen quality, scheduling, and preparation workflow
- practical long-term value for facilities that prepare samples regularly

Technical Specifications

The TensileMill CNC MICRO is built to deliver the precision, stability, and ease of integration required for modern specimen preparation workflows. Its technical configuration makes it well suited for routine laboratory use while still offering the performance needed for consistent flat tensile and impact specimen preparation.

Specification	Value
Machine Dimensions	20.5" × 24" × 59" (52 × 60 × 150 cm)
Working / Traveling Area	8.27" × 4.72" × 0.79" (210 × 120 × 20 mm)
Weight	1500 lb (680 kg)
Suggested Floor Dimensions	2100 × 2000 mm (82.7 × 78.5 in)
Enclosure	Full safety enclosure
Base	Mobile stand with integrated coolant tank
Rotating Speed of Spindle	18,000 rpm
Spindle Motor Power	3.5 kW
Coolant System	Recirculating flood coolant
Traverse Speed (X / Y / Z)	Up to 8,000 mm/min
Feed Rate	1–3,000 mm/min
Positioning Accuracy	±0.03 mm
Repeatability	±0.02 mm

Specification	Value
Spindle Cooling	Air-cooled
Tool Holder	ER25
Input Voltage	220 V, 1 ph
Operating Voltage Range	200–240 V
Total Power	3.3 kW (15 Amps)
Recommended Receptacle	Standard 3-prong 20 A receptacle
Controller	MachMotion
Control Interface	TensileSoft
Display	Integrated 15.6-inch touchscreen
Coolant Tank	Self-contained, integrated in base
External Water Connection	Not required
Chiller Connection	Not required
Pneumatic Connection	Optional
Recommended Lubricant	ISO 68 equivalent way lube oil
Typical Coolant Replacement Interval	Every 6–12 months depending on usage
Common Coolant Brands	Cim Cool, Hocut, Blaser
Common Lubricant Brands	Mobil, Shell, Irving

Specification	Value
Routine Consumables	End-mills, coolant
Spare Parts Support	Available
Tooling Recommendation	Based on customer material type
Upgrade Option	Carbon interface available

TensileSoft Control Interface

The TensileMill CNC MICRO is operated through the TensileSoft control interface on an integrated 15.6-inch touchscreen. This software environment is built specifically for specimen preparation, allowing operators to enter specimen details, select the material, and generate the machining path automatically. Instead of requiring traditional CNC programming knowledge, the system guides the user through setup and execution in a more intuitive, lab-friendly workflow.

TensileSoft is designed to make repeat work faster and more consistent. Operators can select standard specimen geometries, enter custom dimensions when needed, and save previously used profiles for future recall. This is especially useful in testing environments where the same sample formats are prepared regularly and consistency from one run to the next is important.

For laboratories that may need broader machining flexibility in the future, the system can also be upgraded to the Carbon interface. This expands the MICRO beyond dedicated tensile and impact specimen preparation into more extended CNC capability, giving users a path for added versatility without replacing the base machine.

Ready to Improve Your Specimen Preparation Workflow?

The TensileMill CNC MICRO gives laboratories and manufacturers a compact, practical way to prepare flat tensile and impact specimens in-house. Offered by NextGen Material Testing in partnership with TensileMill CNC, it helps improve consistency, reduce delays, and simplify day-to-day sample preparation.

If you would like pricing, technical details, or help choosing the right setup for your workflow, contact our team or request an online quote. We'll be happy to answer your questions and help you determine whether the MICRO is the right fit for your lab or production environment.

GET A QUOTE