



**NEXTGEN**  
MATERIAL TESTING

METALS TESTING TECHNOLOGIES

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# ELECTROMECHANICAL UNIVERSAL TESTING MACHINES

The NextGen testing frames incorporate precision electromechanical load frame equipment to meet all of your testing needs. Built according to industry standards, the NextGen EML line features our latest TestPilot software which comes pre-programmed with some of the latest testing methods. TestPilot is designed for users to reach the most accurate results while providing an easy to use interface for even the most inexperienced users.

The EML line is broken down into Class A, B, C and D covering a wide variety of laboratory configurations. NextGen EML units can come equipped in the following variations:

- 50N-5kN Single Column Bench Top Units for Low Capacity Applications
- 1kN-10kN Dual Column Bench Top Units for Medium Capacity Applications
- 20kN-50kN Dual Column Floor Standing Units for High Capacity Applications
- 50kN-600kN Dual Column Floor Standing Units with High Rigidity for the Highest of Capacity Applications

Repeatable results are constantly achieved through the NextGen EML series. From advanced Aerospace Industries to Educational facilities, NextGen EML Electromechanical Universal Testing Machines are found across the industry.



## CLASS A

50N-5kN Single Column  
Electromechanical Bench Top  
Units for Low Capacity  
Applications



## CLASS B

1kN-10kN Dual Column  
Electromechanical Bench Top Units for  
Medium Capacity Applications



## CLASS C

20kN-50kN Dual Column  
Electromechanical Floor  
Standing Units for High Capacity  
Applications.



## CLASS D

50kN-600kN Dual Column  
Electromechanically Floor Standing Units  
with High Rigidity for the Highest of  
Capacity Applications.



## NG - EML Test Pilot Series - TestPilot Software

TestPilot is designed to enhance your ability to perform accurate and repeatable mechanical testing of materials, components and finished goods across a full spectrum of applications.

# SERVO-HYDRAULIC - STATIC - UNIVERSAL TESTING MACHINES

The NextGen testing frames provide a solution for high-capacity applications for a wide range of high-strength materials to meet all of your testing needs. Built according to industry standards, the NextGen SHM line features our latest TestPilot software which comes pre-programmed with some of the latest testing methods. TestPilot is designed for users to reach the most accurate results while providing an easy to use interface for even the most inexperienced users.

The SHM line is broken down into Class A, B, C, D and DP covering a wide variety of laboratory configurations. Each unit is built with different applications in mind for your benefit. Speak with a representative today to understand our complete line of servo hydraulic systems.

Repeatable results are constantly achieved through the NextGen SHM series combined with the TestPilot professional software. Suitable for high force applications, these units are offered with performance driven hydraulic packages with a complementary line of fixtures and accessories.



## CLASS A

200kN-2000kN - Servo-Hydraulic Universal Testing Machine 4 or 6 column, servo-controlled hydraulic



## CLASS B

300kN-3000kN - Servo-Hydraulic Universal Testing Machine 6 column, servo-controlled hydraulic



## CLASS C

600kN-1000kN - Servo-Hydraulic Universal Testing Machine 6 column, servo-controlled hydraulic



## CLASS D

600kN-2000kN - Servo-Hydraulic Universal Testing Machine 2/4 columns, servo-controlled hydraulic



## CLASS DP

600kN-2000kN - Servo-Hydraulic Universal Testing Machine - Side Action Wedge Grip 2/4 columns, servo-controlled hydraulic



## NG - EML Test Pilot Series - TestPilot Software

TestPilot is designed to enhance your ability to perform accurate and repeatable mechanical testing of materials, components and finished goods across a full spectrum of applications.

## PORTABLE HARDNESS TESTERS

Portable hardness testing allows for on site and field production testing on a wide variety of metals and specimen configurations. Portable hardness testers are available in a variety of scales including Rockwell, Brinell, Vickers, Leeb and Webster. NextGen provides the most up to date portable hardness testing equipment meeting the latest industry standards. Contact us today to determine the most suitable hardness testing solution for your portable testing requirements



### **NG - LEEBGEN 3000 – LEEB REBOUND PORTABLE HARDNESS TESTER**

LeebGen3000 is a non-destructive precision metal hardness tester developed according to the latest industry standards. LeebGen 3000 is equipped with features which provide the instrument with a combination of a user-friendly interface and exceptional test result accuracy. This in turn allows for ease of operation and an accurate conversion display of virtually any metal hardness testing value.

The Leeb Portable Rebound Tester– LeebGen 3000 is designed to replace the traditional stationary metal hardness testers, such as Vickers, Brinell and Rockwell. Its portable design allows to draw the most accurate test data regardless of the direction of the hardness test measurement. This is accomplished with a built-in 360° automatic angle adjustment system. LeebGen 3000 utilizes the latest in advanced micro-electronic technology, and provides you with a fast, convenient and a cost effective quality testing solution.



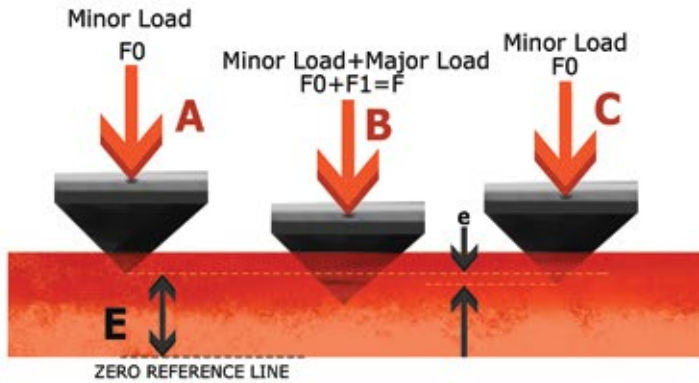
### **NEXTGEN TELEBRINELLER BRINELL HARDNESS TESTING SYSTEM**

Telebrineller – Measuring Brinell Hardness anywhere in the field, the plant or the laboratory. A test bar of known BHN (Brinell Hardness Number), approximating the hardness of the specimen to be tested, is selected. Consistent accuracy is maintained when the test bar BHN is within + or -15% of the specimen BHN and is of the same general material.



### **GENSONIC UHT2 - ULTRASONIC CONTACT IMPEDANCE HARDNESS TESTER**

The GenSonic UHT2 Portable Ultrasonic Hardness Tester differs completely from traditional hardness testers and uses a Vickers diamond indenter paired with ultrasonic contact impedance technology for determining your hardness values. The UHT2 is able to measure many configurations of test specimens varying in shape, thickness and composition.



Rockwell hardness tester is defined as the indentation resistance and determined by measuring the permanent depth of an indentation after undergoing a preliminary force. The more shallow the indentation, the harder the material. Rockwell testing is defined with the ASTM E18 industry standard for the testing procedure. The Rockwell hardness measurement is calculated by first applying a preliminary test force, called a preload, for a specific period of time, called dwell time. The preload penetrates through the surface of the material to eliminate any interference caused by the surface finish of the test specimen. This point reached represents the zero point, also known as the reference point.



## NG-ROCKGEN ANALOG SERIES - MANUAL AND ELECTRONIC MODELS

The NG RockGen Analog Series provides a cost effective solution to performing a variety of Rockwell Regular Scales. The RockGen Analog system has two configurations which include a hand operated dial display system and an electronically controlled dial display system.



## NG-ROCKGEN DGEN SERIES - ROCKWELL REGULAR, SUPERFICIAL AND TWIN DIGITAL MODELS

The NG RockGen Digital Series provides an automatic, digital, high accuracy solution to your Rockwell testing requirements. The Digital series is completely automated and is available in Rockwell Regular scales, Rockwell Superficial scales and TWIN Rockwell Regular and Superficial scale configurations.

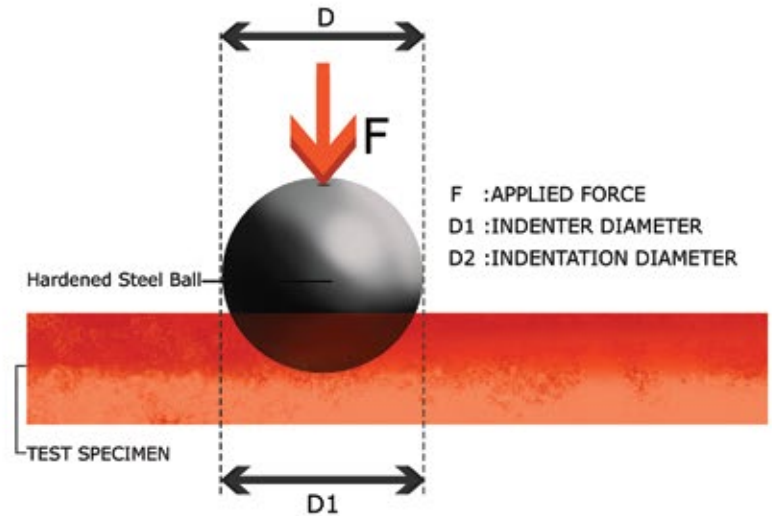


## NG-150 GENROCK ADVANCED LOAD CELL ROCKWELL HARDNESS TESTER

The NG150 GenRock system can be equipped with a variety of accessories to meet all of your hardness testing requirements. A fully motorized stage, Jominy accessories and a wide variety of specimen fixtures are available to configure the NG150 RockGen system to meet your application.

# BRINELL HARDNESS TESTER

The Brinell hardness test is described as the method for testing permanent change of metal specimens using a tungsten carbide ball indenter of various sizes. It measures the resistance of the material to permanent deformation. The diameter of the indentation having deformed the material is then used to calculate the Brinell hardness value. The Brinell indentation is commonly measured using a manual 20x/40x magnification microscope or through the use of CCD optics for removing all aspects of human error. The Brinell Hardness Test is a destructive unit of hardness calculations and is conducted according to the ASTM E10 and the ISO 6506 industry standard.

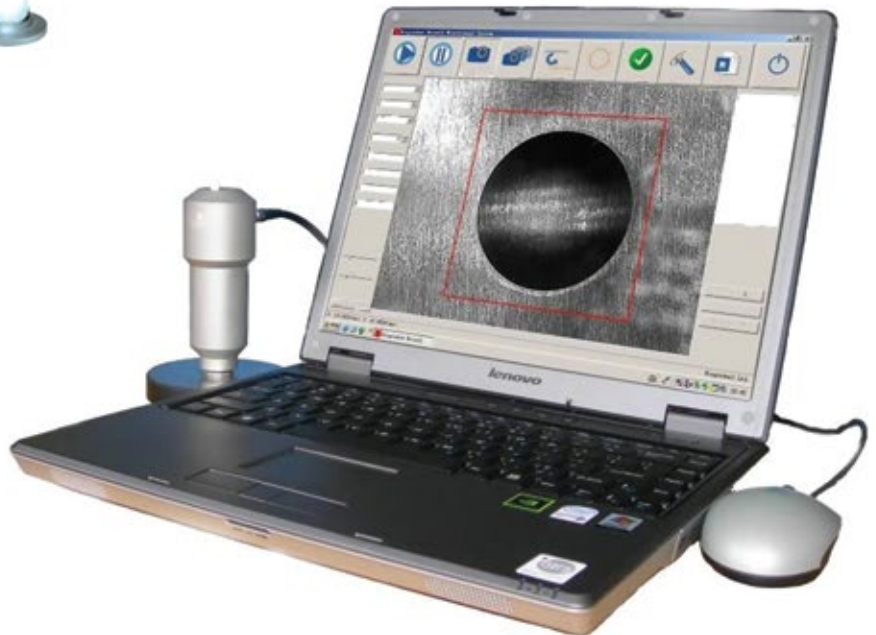


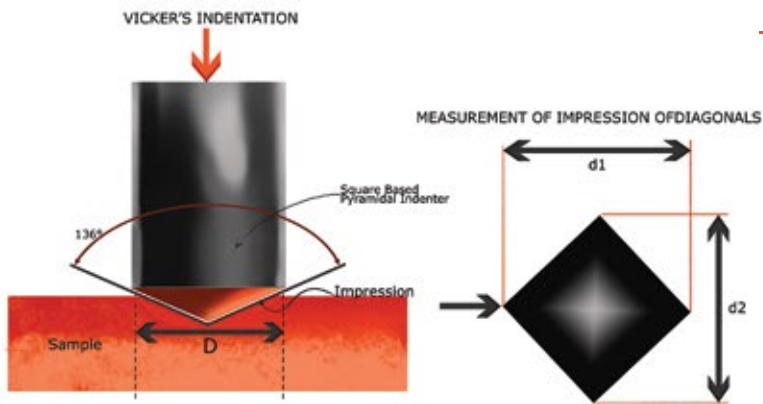
## BRINGEN-3000 SERIES - DIGITAL AND AUTOMATIC CLOSED LOOP BRINELL HARDNESS TESTER

BringGen 3000 is a digital and automatic Brinell testing system equipped with closed loop technology. The forces range from 62.5kgf to 3000kgf and are electronically controlled according to ASTM E10 for precise and repeatable measurements.

## BRINGEN SCOPE - OPTICALLY ADVANCED CCD BRINELL MEASURING SCOPE

The BrinGen Scope uses CCD optics to remove elements of human error when measuring Brinell indentations. Simply use our advanced BrinGen software and the BrinGen Scope for measurements within 0.001mm.





The Vickers Hardness Test is a method for measuring the hardness of metals, both ferrous and non-ferrous. The purpose of this metal hardness testing is to identify the material's resistance to deformation and permanent depth change. It is the most unique method of hardness testing due to its independent testing nature. The Vickers test allows for a uniform hardness testing value along the complete range of testing loads; regardless of which force is applied on any given material. The Vickers Hardness Value, symbolized as HV, or the Diamond Pyramid Hardness Value, symbolized as

DPH are the units of hardness in Vickers Hardness Testing. The Vickers Hardness Scale has a very extensive load range to cover all possible testing applications.



## NEXTGEN MICRO VICKERS/KNOOP HARDNESS TESTER

NextGen Micro Hardness testers provide solutions for Vickers and Knoop hardness testing with micro loads ranging from 10gf to 1kgf. The NG1000 series is available in Analog, Digital and CCD configurations for Micro Vickers/Knoop testing.



## NEXTGEN MACRO VICKERS HARDNESS TESTER

NextGen Macro Vickers Hardness testers are available with different load capacities and are available in Analog, Digital or CCD configurations. With 5kgf, 10kgf, 30kgf and 50kgf maximum loads available, the NextGen Macro hardness testers can fit all of your Macro testing requirements.

## AUTOMATIC MICRO/MACRO VICKERS/KNOOP/BRINELL HARDNESS TESTING

Automated Vickers/Knoop and low load Brinell hardness testers are available with complete automation for CHD curves and detailed hardness analysis. Complete with automated stages, optional overview cameras and optical zoom, the NG automated series is capable of analyzing your materials with high precision and accuracy.





# METALLOGRAPHY SAMPLE PREPARATION

NextGen metallography equipment is focused on the structure refining of metals and alloys. It specializes in different methods of specimen preparation including cutting, polishing and grinding. The process of evaluating physical properties of the specimen is made easy using the NextGen Metallography equipment. The final evaluation of the materials properties are analyzed with the use of a microscope (optical or electron). The GenCut series is focused on precision and abrasive cutting of materials ranging from soft to hard metals. The cutting equipment is designed to shape specimens into your exact size for further analysis. The GenGrind series is used to achieve the desired surface finish of your materials based on your application. Grinding and polishing equipment is often used to remove the damage caused by the cutting blades of the abrasive saws upon extraction of the desired specimen size.

## ABRASIVE AND PRECISION CUTTING EQUIPMENT

The GenCut Series offers a range of equipment to match your specific cutting requirements. The GenCut systems are equipped with the highest level of cutting accuracy and have a user friendly interface for ease of operation.



## MOUNTING PRESSES

The GenPress Series is designed to alleviate the user from the challenge of handling difficult specimen shapes and sizes during sample preparation procedures. The equipment is also used to protect the edges and any other defects found on the surface of the samples. A thermoplastic medium is required for stability to support the sample in the process of grinding and polishing.



## GRINDING AND POLISHING EQUIPMENT

The GenGrind Series is our Grinding and Polishing equipment utilized for achieving the highest precision of surface finish on a wide variety of samples. The GenGrind systems can be configured with either a single or a dual wheel as well as an automated option for low to high volume applications.



Pendulum Charpy/Izod Impact Testing is a high strain-rate test to determine the amount of energy absorbed by a material during fracture. The Impact tester involves a pendulum of known mass and length which is dropped from a known height to strike an Impact Specimen. Impact specimens are of standard or subsize dimensions that can be found in a variety of industry standards including ASTM E23, ASTM A370, EN 10045-1 and ISO 148. Various strikers and specimen vises are available to suit all requirements of Charpy or Izod Testing. Specimens are notched using a broaching machine to specific dimensions and geometries. The energy transferred to the material after impact can be inferred by comparing the change in height of the hammer before and after striking the specimen.



### **Class C - Single Column Charpy Impact Tester - 150J, 300J or 450J**

NextGen's Class C provides an economical single column solution for measuring Charpy Pendulum Impact Testing. ISO and ASTM strikers are available along with a variety of protective barriers from half to fully enclosed.



### **Class D - Dual Column Charpy Impact Tester - 150J, 300J, 450J, 600J or 750J**

NextGen's Class D is a dual column Charpy Impact Tester providing a higher level of rigidity. With a maximum capacity of 750J, Class D can also include automatic cooling and specimen feeding systems.



### **Class G - Servo-Motor Single Column Charpy/Izod Impact Tester - 150J, 300J or 450J**

NextGen's Class G is an advanced Charpy and Izod Impact tester commonly used in R&D laboratories. Equipped with a servo motor, the Class G can test at any preset angle and includes automatic braking of the pendulum.



### **Class H - Servo-Motor Dual Column Charpy Impact Tester – 300J, 450J, 600J or 750J**

NextGen's Class H provides a most durable Charpy Impact Tester with dual column configuration. Fully upgradable and designed for the highest volumes of Charpy testing.



### **Specimen Notching/Broaching Machine**

NextGen offers an economical solution for broaching/notching your Charpy/Izod specimens. Our motorized solution is capable of preparing two specimens at one time. A variety of broaches are available for different geometries of notches.

# TENSILEMILL CNC - FLAT SPECIMEN PREPARATION

## General

With TensileMill CNC, it has never been easier to prepare high quality tensile specimens with ease. Our TensileMill CNC is operated by our powerful Carbon software with a user friendly tensile milling interface. The interface allows the operator to quickly and easily enter your desired tensile specimen size based on the parameters listed in your ASTM, ISO, DIN, JIS or other industry standard. By simply entering your required measurements, the machine is ready to mill in seconds.

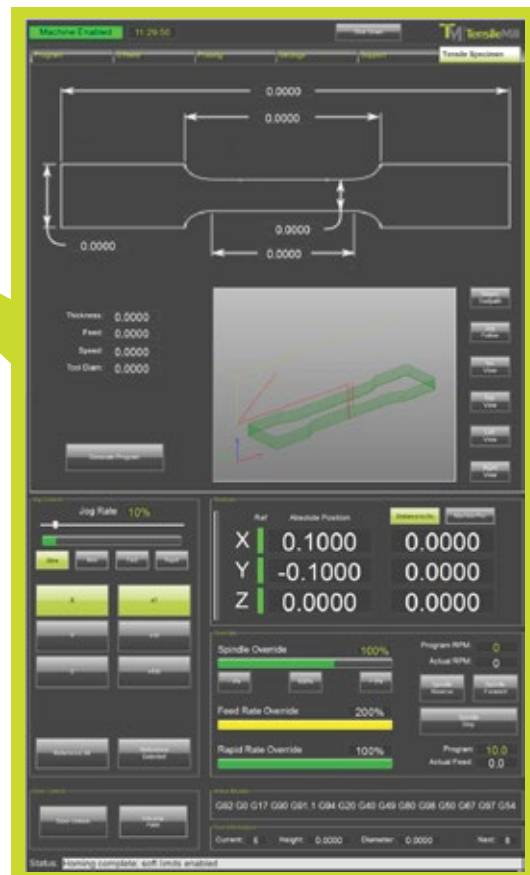
The tensile software interface saves and provides quick access to previously entered specimen sizes. It also includes a diverse library of preprogrammed tensile specimens allowing the operator to quickly launch a program without having to enter any measurements at all. With your new TensileMill CNC, you also have access to our standard Carbon software interface; our intuitive and powerful CNC control system with endless possibilities.

## Controller

Our easy to use touch screen controller is equipped with our complete Carbon software. Our control systems include 64 Gb of storage, 4 Gb of RAM, WiFi, Ethernet, USB ports, macro B programming, 254 tool offsets, 126 work offsets, helical interpolation, drilling canned cycles, scaling and mirroring, advanced trajectory planning, cutting edge dual mode cutter compensation, and more. Along with the tensile milling software interface, Carbon also allows the operator to access the MACH4 Industrial CNC Software used for professional CNC Control functions. Our Carbon software is constantly having new features developed, and every TensileMill CNC system includes updates at no additional cost.

## Specifications

TensileMill CNC is a small, high speed, machining center designed for the testing industry. Although small in size, our TensileMill CNC is built on a heavy cast iron frame and all axes slide smoothly on linear rails. 24,000 RPM ISO20 spindle and high powered servos provide excellent machining capability.



## General

The TensileTurn is a conveniently sized automatic CNC lathe designed to prepare accurate round tensile specimens to achieve the highest accuracy in tensile results. The TensileTurn features our award winning touch screen tensile milling interface to allow any operator, with or without machining experience, to quickly prepare tensile specimens as per your desired size. By simply selecting a common tensile size from our library of common standards (ASTM, ISO, DIN, etc) or by entering your own dimensions on the touch screen numerical keypad, the TensileTurn is ready to machine specimens up to 2" in diameter and up to 16" in length after only a few simple steps.

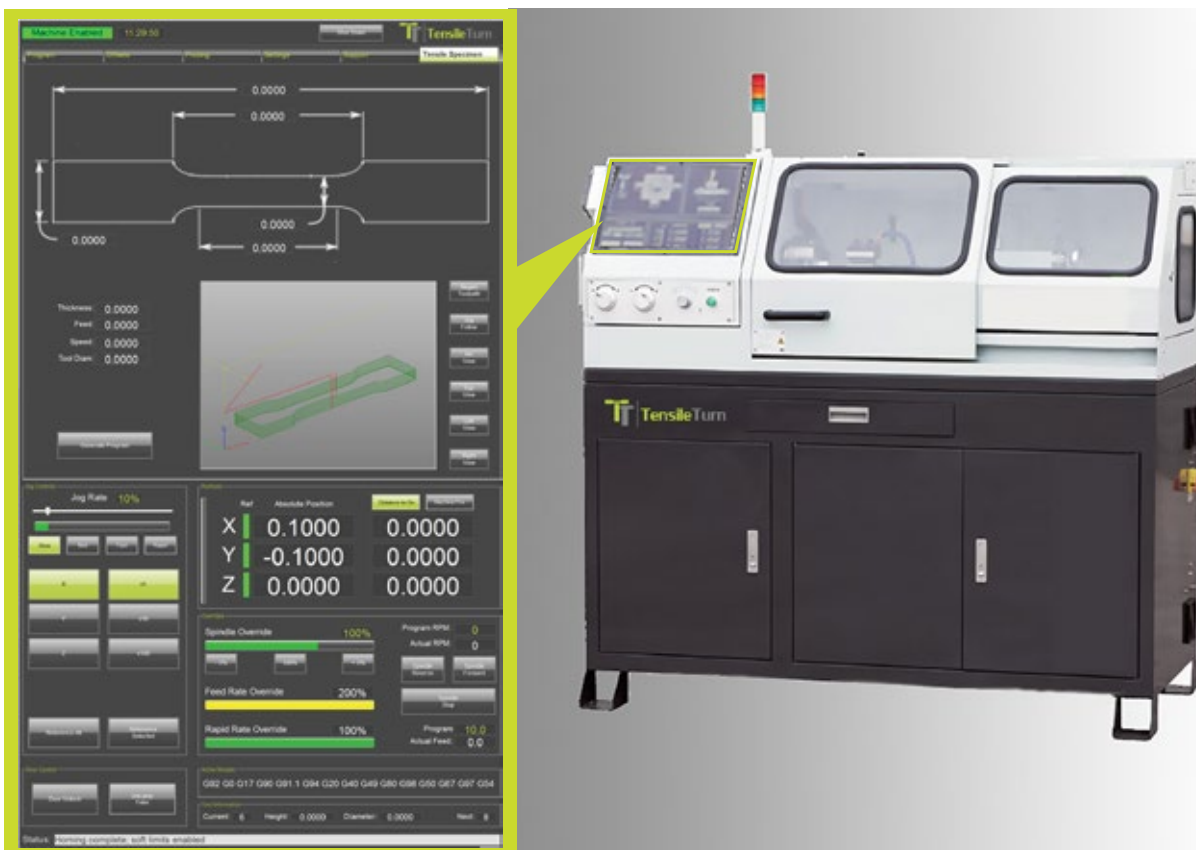
The TensileTurn also features our complete Carbon software which allows the more experience operators to program the TensileTurn for universal applications for cutting, sanding, knurling, drilling, facing or turning.

TensileTurn CNC can prepare standard round tensile specimens, sub-size specimens, threaded tensile specimens, button-head tensile bars, fatigue specimens and other round testing specimens. The operator is only required to simply load the machine with either round, square or irregular stock.

The TensileTurn allows your laboratory personnel to bypass any wait times with your machining center and prepare their own tensile specimens ready for testing in a matter of minutes. The production of high quality tensile specimens combined with ease of use is what sets the TensileTurn CNC apart. It enables the rapid milling of precisely measured round and button head specimens for superior tensile testing results.

## Controller

Our easy to use touch screen controller is equipped with our complete Carbon software. Our control systems include 64 Gb of storage, 4 Gb of RAM, WiFi, Ethernet, USB ports, macro B programming, 254 tool offsets, 126 work offsets, helical interpolation, drilling canned cycles, scaling and mirroring, advanced trajectory planning, cutting edge dual mode cutter compensation, and more. Along with the tensile milling software interface, Carbon also allows the operator to access the MACH4 Industrial CNC Software used for professional CNC Control functions. Our Carbon software is constantly having new features developed, and every TensileMill CNC system includes updates at no additional cost.





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